COMUNE DI SIENA

STUDIO IDROLOGICO IDRAULICO DEI TORRENTI TRESSA, RILUOGO, BOZZONE, SORRA E SERPENNA NEL TERRITORIO COMUNALE DI SIENA

ET. 02.2 VERIFICHE IDRAULICHE E ALLEGATI DI CALCOLO: T. RILUOGO

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Progettista

Dott. Ing. CLAUDIO LOMBARDI

Collaboratori

Dott. Ing. ALESSIO GIUNTI

Dott. Ing. ALESSIO MAGAZZINI

Dott. Ing. ALBERTO NASTASI

Studio Tecnico Ing. CLAUDIO LOMBARDI

Strada di Busseto 18, 53100 SIENA (Italy) T-F: +39 0577 47463 E: claudio.lombardi@sitingegneria.it

Risultati delle verifiche idrauliche

Torrente Riluogo – tratto Ril.01

Il tratto oggetto delle verifiche idrauliche si estende per circa 5350 metri dalla zona a monte del complesso Ex Socini (a valle dello ex scalo merci ferroviario), fino allo svincolo di Ruffolo - lotto 0.

Per circa 2700 metri, fino alla località Due Ponti, il T. Riluogo risulta quasi esclusivamente tombato, ad eccezione del tratto iniziale a monte del complesso Ex Socini e di quello a monte dello svincolo fra Viale Toselli e la SS Senese Aretina (zona Due Ponti). A valle del suddetto attraversamento ferroviario, per altri 2650 metri è attraversato da vari ponti o è costituito da tratti tombati di limitata lunghezza.

Nel tratto a sezione chiusa sono presenti significative immissioni laterali, in corrispondenza delle quali si riscontreranno le criticità più importanti per il regime fluviale, non facilmente individuabili attraverso la cartografia, e che sono state rilevate mediante ispezione diretta e rilievo effettuati con l'ausilio del personale messo a disposizione dal Servizio Manutenzione del Comune di Siena.

Si elencano di seguito i principali immissari:

- n. 2 tombini d. 1500 mm in sinistra idraulica (sezioni 65.5 e 65) che raccolgono le acque dei versanti nei pressi della Basilica dell'Osservanza;
- n. 1 tombino d. 1500 mm in sinistra idraulica (sezione 60.5) che raccoglie le acque dei versanti a valle della SS per Montevarchi, zona Bottega Nuova;
- n. 1 scatolare 1,50x1,50(h) mxm in sinistra idraulica (sezione 57.7) che raccoglie le acque di vari fossi individuabili anche su cartografia CTR, e provenienti da zona Ascarello;
- Fosso di Ravacciano di dimensioni 3,20x2,00(h) mxm in destra idraulica (sezione 57.5);
- n. 1 tombino d. 1500 mm in destra idraulica (sezione 57) e provenienti da Via Algero Rosi;
- Fosso della Tombola in destra idraulica (sezione 51.3);
- Fosso del Paradiso in sinistra idraulica (sezione 51.2);

A valle della sezione 51 sono presenti le immissioni individuabili direttamente dalla cartografia, fra cui il Fosso del Borrino.

Foto 1 -imbocco del tratto tombato a monte del complesso Ex Socini (sezione 90)

Foto 2 - interno del tratto tombato (transizione tratti 15-14)

Foto 3 – vista interno tratto tombato (immissione su tratto 56)

Foto 4 – interno del tratto tombato

Foto 5 - interno tratto tombato

Foto 6 –immissione del F.sso Ravacciano (sezione 57,7)

Foto 7 - interno tratto tombato a monte dello sbocco in prossimità del parcheggio in loc.tà Due Ponti

Foto 8 - sbocco del tratto tombato a monte del parcheggio in loc.tà Due Ponti (sezione 54)

Foto 9 - imbocco del tombino in zona Due Ponti (sezione 52)

Foto 10 – attraversamento stradale in corrispondenza dell'incrocio con Strada del Casone (sezione 49,25)

Foto 11 – imbocco scatolare all'inizio di Viale Europa (sezione 47,5)

Foto 12 – attraversamento in Via delle Arti (sezione 43,75)

Foto 13 – tratto con sezione rettangolare in calcestruzzo a monte zona Speranza (sezione 43,4)

Foto 14 – attraversamento di Viale Europa - zona Speranza (sezione 42,5)

Foto 15 – imbocco del tombino in prossimità della nuova caserma dei VVF (sezione 35)

foto 16 - briglia a monte del Molino della Morte a Ruffolo

Le verifiche idrauliche sono state divise in due tratti:

- tratto di monte (compreso tra il nodo 900 il nodo 51): è stato implementato il modello idraulico sull'applicatico SWMM, in ragione della presenza di tratti a sezione prevalentemente chiusa;
- tratto di valle (compreso tra la sezione 51 e la sezione 31): è stato implementato il modello idraulico su SWMM, in ragione della presenza di tratti a sezione prevalentemente aperta;

Tratto di monte (compreso tra il nodo 900 il nodo 51)

Per il primo tratto di monte, i "nodi" del modello idraulico sviluppato in ambiente SWMM 5.0 sono stati introdotti in corrispondenza dei pozzetti di ispezione dello scatolare oggetto di ispezione diretta o in punti dell'alveo a sezione aperta. Ad ogni tratto compreso fra diversi nodi è stata associata una sezione dei tratti chiusi (*conduit*) o dei tratti aperti (*channel*).

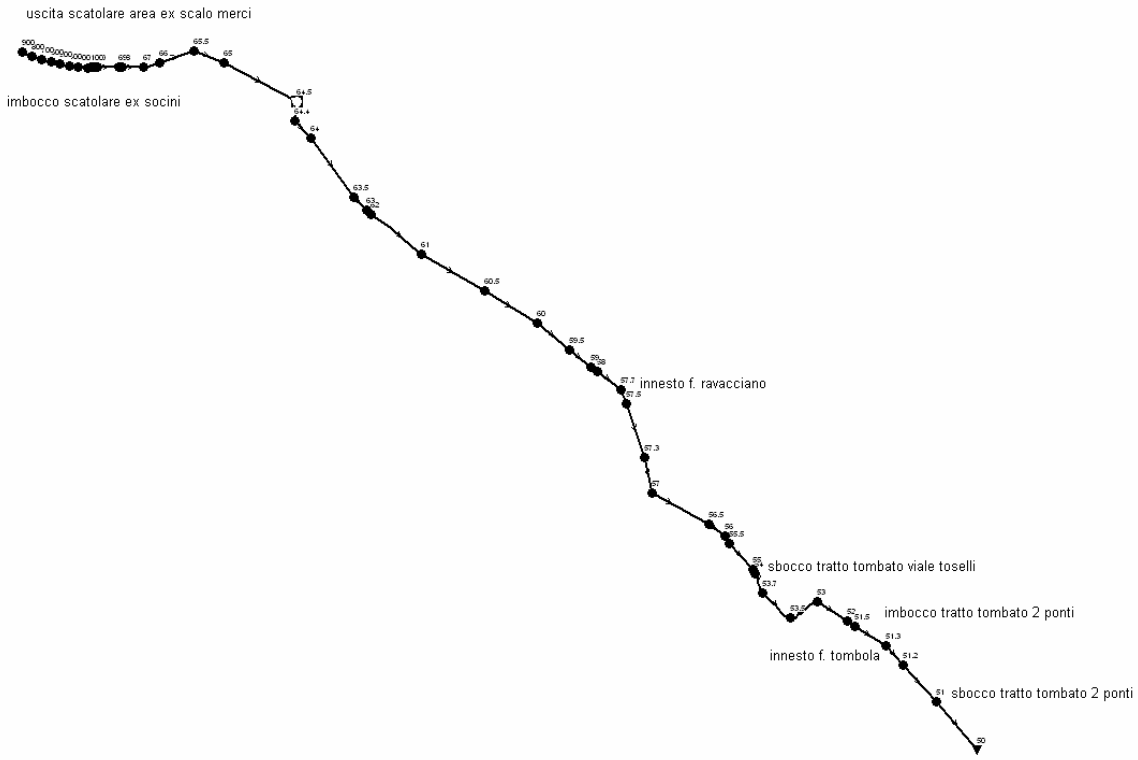


Figura 1 - modello del primo tratto del T. Riluogo simulato con SWMM 5.0

Nei tratti aperti si verificano ovunque condizioni di corrente lenta (Fr<1), con velocità massime comprese tra 1,6 m/s e 5,4 m/s. Nei tratti chiusi si verificano condizioni di corrente veloce (Fr>1) fra i nodi 63.5-58, 57.5-55 e 51.5-51.2, con velocità massime comprese tra 6,9 m/s e 7,9 m/s. Negli altri tratti chiusi si verificano condizioni di corrente lenta (Fr<1), con velocità massime comprese tra 3,9 m/s e 7,4 m/s.

Nel tratto a valle della zona dei Due Ponti si verificano ovunque condizioni di corrente lenta (Fr<1), con velocità medie comprese tra 1,6 m/s e 4,7 m/s.

Ad eccezione del tratto fra le sezioni 64-63,5-63-62 (zona mercati generali), in tutti gli altri tratti chiusi si verifica il funzionamento idraulico del tombino in pressione o con franco di sicurezza inferiore ad un metro per evento con Tr≥200 anni. Inoltre per il tratto fra le sezioni 58-57,7-57,5-57,3 (immissione Fosso Ravacciano – Via Bruno Marzi), fra le sezioni 56,5-56-55,5-55 (a valle di Piazza Maestri del Lavoro) e fra le sezioni 51,5-51,3-51,2-51 (zona Due Ponti) si verifica il funzionamento idraulico del tombino in pressione o con franco di sicurezza inferiore ad un metro per evento con Tr≥30 anni.

Il modello idraulico ha consentito di individuare i nodi critici nei quali il sistema non è in grado di smaltire la portata in ingresso per l'evento con Tr≥200 anni. Non si verificano tali criticità per l'evento con Tr=30 anni, pur risultando lo scatolare in pressione in alcuni tratti.

Di seguito si riporta una tabella con i nodi critici (*node flooding*, corrispondenti a zone potenzialmente esondabili in corrispondenza dei pozzetti di ispezione per i tratti chiusi idraulicamente insufficienti o zone esondabili in corrispondenza di tratti aperti con sezioni idrauliche insufficienti) e i rispetti volumi che il sistema idraulico non è in grado di smaltire in riferimento all'evento con Tr≥200 anni:

Nodo	*Zona*	*Volume esondato per evento Tr≥200 anni [mc]*
90	a monte edificio Ex Socini (tratto aperto)[1]	1170
64.5	a monte zona Mercati Generali	1970
60.5	inizio Via dell'Artigianato	6800
57.7	rotatoria strada di Busseto (immissione Fosso Ravacciano)	43150
51.5	zona 2 ponti (tratto aperto)	8550

Risultano quindi potenzialmente allagabili, per evento con Tr≥200 anni, le zone a monte del complesso Ex-Socini, le zone dei Mercati Generali, di Via dell'Artigianato, di Via Bruno Marzi e Piazza dei Maestri del Lavoro e dell'innesto di Via Aretina su V.le Toselli in loc.tà Due Ponti, collocate in prossimità di suddetti nodi critici, riportate negli elaborati grafici EG.05.1-2.

Il funzionamento in pressione dei manufatti è dovuto principalmente a sezioni idrauliche non in grado di smaltire tutta la portata immessa, in particolar modo in corrispondenza di restringimenti che causano rigurgiti a monte degli stessi. Inoltre si fa notare che le sezioni idrauliche di numerosi tratti a valle (vedere elaborati grafici EG05.1 e EG05.2) risultano inferiori a quelle di monte, contrariamente quindi all'incremento del bacino idraulico sotteso e delle conseguenti portate idrauliche da smaltire.

Nelle pagine seguenti si riportano gli idrogrammi relativi ai nodi 900, 70, 57.5, 51.5 e 50, per gli eventi Tr30 e Tr200 anni, dai quali si deduce l'effetto di laminazione dovuto alla fuoriuscita di volume riportata nella tabella precedente.

Nella figura 4 sono riportati gli idrogrammi di piena con Tr200 anni effluenti dai nodi critici soggetti ad allagamenti.

[1] Il tratto iniziale è già stato oggetto di studio idraulico (Lombardi 2008) allegato alla Variante PRG (pratica 159/07/07) relativa al PN 2.3 "Ex Socini", i cui risultati sono confermati dal presente studio, a meno del funzionamento idraulico di un breve tratto tombato a valle simulato per disporre della condizione al contorno.

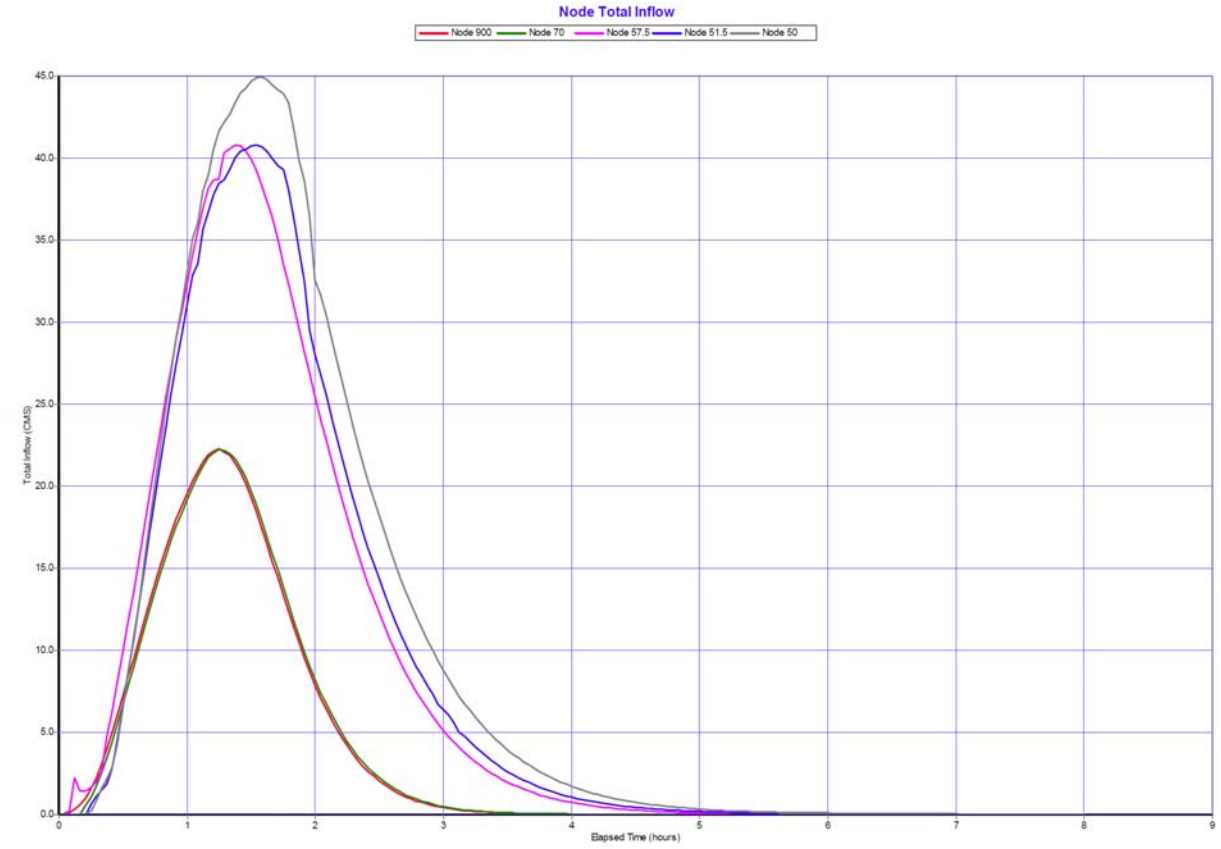


Figura 2 - idrogrammi di piena con Tr 30 anni del primo tratto del T. Riluogo (SWMM 5.0)

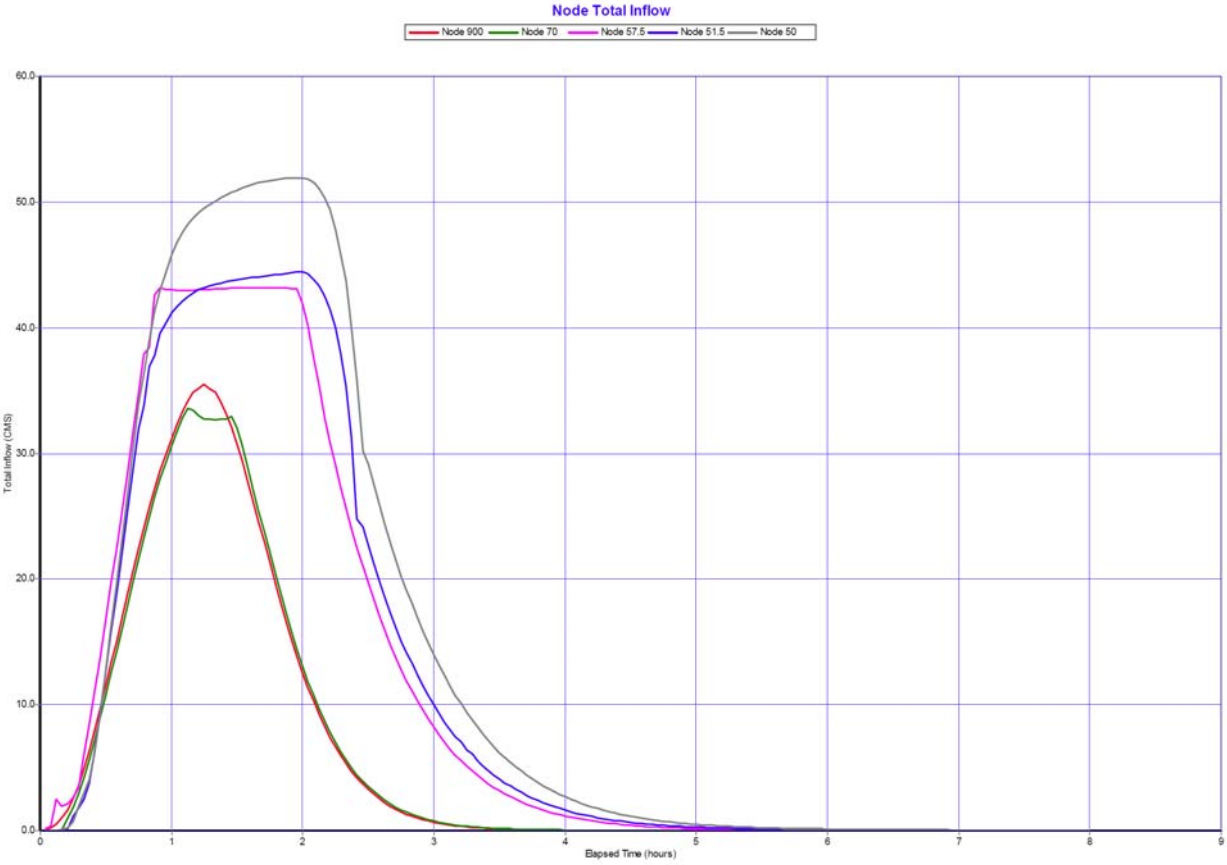


Figura 3 – idrogrammi di piena con Tr 200 anni del primo tratto del T. Riluogo (SWMM 5.0)

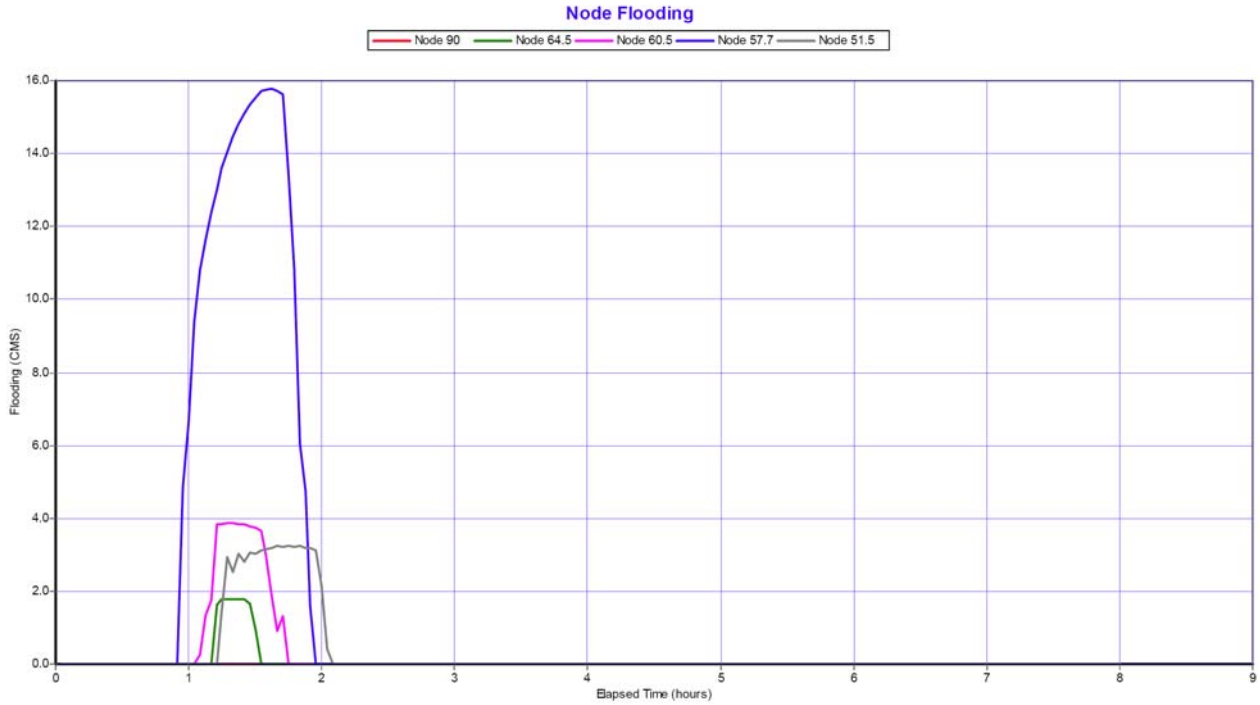


Figura 4 – idrogrammi di piena con Tr 200 anni effluenti dai nodi critici soggetti ad allagamento

In funzione di tali portate, sono state effettuate delle verifiche qualitative per individuare i battenti nelle aree soggette ad allagamenti potenziali dovuti alle fuoriuscite dai nodi critici.

Considerando che:

- gran parte del tratto scatolato è sovrastato da viabilità comunicante da monte a valle;

- i picchi delle portate effluenti dai nodi critici risultano sovrapponibili temporalmente;

si è ipotizzato a vantaggio di sicurezza che le portate effluenti possano allagare e defluire lungo la viabilità e i piazzali sovrastanti (zona Mercati Generali, Viale dell'Artigianato, Via B. Marzi, Piazza Maestri del Lavoro) fuoriuscendo dai pozzetti tramite i chiusini e le griglie del sistema fognario connesso, sommandosi procedendo da monte verso valle fino all'incrocio di Via Aretina con Viale Toselli, come sintetizzato nella tabella riportata di seguito.

Nodo	*Area soggetta ad allagamento*	*Portata transitante per evento Tr≥200 anni [mc/s]*
64.5	zona Mercati Generali	1,8
60.5	Via dell'Artigianato	5,6
57.7	Via Marzi	21,6
51.5	Via Aretina – Viale Toselli	24,9

Tali ipotesi risultano cautelative poiché non considerano l'effetto di laminazione legato all'invaso dei volumi d'acqua procedendo da monte verso valle che andrebbe comunque ad attenuare le portate ritardandone il transito.

I battenti massimi teorici sono stati individuati attraverso verifiche in moto uniforme, individuando delle sezioni stradali rettangolari tipo per i vari tratti considerati, associando una pendenza longitudinale minima prudenziale pari all'1%.

Si riportano di seguito le verifiche idrauliche in moto uniforme dei quattro tratti studiati.

TRATTO "MERCATI GENERALI" FRA NODI 64.5-60.5

Simbolo	*Descrizione*	*Udm*	*valori*
Qp	Portata di progetto (mc/s)	mc/s	1.80
L	Base canale (m)	m	30.00
Ks	coefficiente scabrezza Gauckler-Strickler	m^1/3 s^-1	65
if	Pendenza canale	adim.	0.01
hcrit	**Profondità critica (iterare fino a quando non si rispetta la condizione critica)**	m	0.07
Cond. Crit.	Condizione critica: Qp^2 L / 9,81 (L hcrit)^3=1	adim.	**1.00**
h	**Profondità di moto uniforme**	**m**	**0.06**
B	Perimetro bagnato canale	m	30.12
A	Sezione bagnata canale	mq	1.81
R	Raggio idraulico canale (sezione bagnata / perimetro bagnato)	m	0.06
v	velocità v = Ks R^(2/3) if^(1/2)	m/s	1.00
Qcalc	Portata calcolata per h (iterare h fino a quando non è pari a Qp) Q= v A	mc/s	**1.80**
tau	tensione tangenziale al fondo tau = gamma R if	N/mq	5.89
Fr	Numeo di Froude corrente Fr = v / radq(9,81 h)	adim.	1.30

TRATTO "VIA ARTIGIANATO" FRA NODI 60.5-57.7

Simbolo	*Descrizione*	*Udm*	*valori*
Qp	Portata di progetto (mc/s)	mc/s	5.60
L	Base canale (m)	m	15.00
Ks	coefficiente scabrezza Gauckler-Strickler	m^1/3 s^-1	65
if	Pendenza canale	adim.	0.01
hcrit	**Profondità critica (iterare fino a quando non si rispetta la condizione critica)**	m	0.24
Cond. Crit.	Condizione critica: Qp^2 L / 9,81 (L hcrit)^3=1	adim.	**1.00**
h	**Profondità di moto uniforme**	**m**	**0.18**
B	Perimetro bagnato canale	m	15.36
A	Sezione bagnata canale	mq	2.73
R	Raggio idraulico canale (sezione bagnata / perimetro bagnato)	m	0.18
v	velocità v = Ks R^(2/3) if^(1/2)	m/s	2.05
Qcalc	Portata calcolata per h (iterare h fino a quando non è pari a Qp) Q= v A	mc/s	**5.60**
tau	tensione tangenziale al fondo tau = gamma R if	N/mq	17.42
Fr	Numeo di Froude corrente Fr = v / radq(9,81 h)	adim.	1.54

TRATTO "VIA B. MARZI" FRA NODI 57.7-51.5

Simbolo	*Descrizione*	*Udm*	*valori*
Qp	Portata di progetto (mc/s)	mc/s	21.60
L	Base canale (m)	m	30.00
Ks	coefficiente scabrezza Gauckler-Strickler	m^1/3 s^-1	65
if	Pendenza canale	adim.	0.01
hcrit	**Profondità critica (iterare fino a quando non si rispetta la condizione critica)**	m	0.38
Cond. Crit.	Condizione critica: Qp^2 L / 9,81 (L hcrit)^3=1	adim.	**1.00**
h	**Profondità di moto uniforme**	**m**	**0.27**
B	Perimetro bagnato canale	m	30.54
A	Sezione bagnata canale	mq	8.07
R	Raggio idraulico canale (sezione bagnata / perimetro bagnato)	m	0.26
v	velocità v = Ks R^(2/3) if^(1/2)	m/s	2.68
Qcalc	Portata calcolata per h (iterare h fino a quando non è pari a Qp) Q= v A	mc/s	**21.60**
tau	tensione tangenziale al fondo tau = gamma R if	N/mq	25.92
Fr	Numeo di Froude corrente Fr = v / radq(9,81 h)	adim.	1.65

TRATTO "VIA ARETINA E VIALE TOSELLI" FRA NODI 57.7-51.5

Simbolo	*Descrizione*	*Udm*	*valori*
Qp	Portata di progetto (mc/s)	mc/s	24.90
L	Base canale (m)	m	30.00
Ks	coefficiente scabrezza Gauckler-Strickler	m^1/3 s^-1	65
if	Pendenza canale	adim.	0.01
hcrit	**Profondità critica (iterare fino a quando non si rispetta la condizione critica)**	m	0.41
Cond. Crit.	Condizione critica: Qp^2 L / 9,81 (L hcrit)^3=1	adim.	**1.00**
h	**Profondità di moto uniforme**	**m**	**0.29**
B	Perimetro bagnato canale	m	30.59
A	Sezione bagnata canale	mq	8.79
R	Raggio idraulico canale (sezione bagnata / perimetro bagnato)	m	0.29
v	velocità v = Ks R^(2/3) if^(1/2)	m/s	2.83
Qcalc	Portata calcolata per h (iterare h fino a quando non è pari a Qp) Q= v A	mc/s	**24.90**
tau	tensione tangenziale al fondo tau = gamma R if	N/mq	28.20
Fr	Numeo di Froude corrente Fr = v / radq(9,81 h)	adim.	1.67

I battenti massimi ipotizzabili secondo le ipotesi semplificate ma cautelative anzidette, risultano variabili tra un minimo di circa cm 10 e un massimo di circa cm 30; le aree allagate potenziali in corrispondenza dei sottostanti tratti scatolati sono state pertanto individuate e riportate qualitativamente sulla CTR in scala 1:2000.

Tratto di valle (compreso tra la sezione 51 e la sezione 31)

La portata al colmo effluente dall'ultimo tratto dello scatolare è pari a circa 50 mc/s per Tr Tr≥200 anni (sezione 51); per le verifiche del tratto a valle sono stati utilizzati comunque gli idrogrammi di piena Ril.01.e e Ril.01.f, rispettivamente a valle del Fosso Paradiso e a monte del Fosso del Borrino, con portate al colmo di circa 74 mc/s per Tr Tr≥200 anni (sezione 51); a favore di sicurezza, tali idrogrammi non tengono infatti conto dei volumi esondati a monte del tratto studiato.

Per il tratto a valle della zona dei Due Ponti, modellato con applicativo Hec Ras, si segnalano le seguenti criticità, legate ai seguenti manufatti interferenti:

- funzionamento idraulico con franco di sicurezza inferiore ad 1 metro dell'attraversamento stradale in corrispondenza dell'incrocio con Strada del Casone per evento con Tr≥200 anni (sezione 49,5);
- funzionamento idraulico con franco di sicurezza inferiore ad 1 metro dell'attraversamento stradale in Via delle Arti per evento con Tr≥200 anni (sezione 43,75);
- funzionamento idraulico con franco di sicurezza inferiore ad 1 metro dell'attraversamento stradale in Viale Europa per evento con Tr≥30 anni (sezione 42,5);
- sormonto per evento con Tr≥200 anni e funzionamento idraulico con franco di sicurezza inferiore ad 1 metro per evento con Tr≥30 anni del tombino al di sotto dell'incrocio fra il Raccordo autostradale Siena-Bettolle e la strada di Ruffolo (sezione 38,5);
- sormonto per evento con Tr≥200 anni e funzionamento idraulico con franco di sicurezza inferiore ad 1 metro per evento con Tr≥30 anni del tombino al di sotto dell'incrocio fra il Raccordo autostradale Siena-Bettolle e la SP n.136 Traversa Romana Aretina (sezione 34,5) in prossimità della nuova caserma dei VVF.

Torrente Riluogo – tratto Ril.02

Il tratto del T. Riluogo verificato si sviluppa per circa 450 metri a monte della confluenza con il T. Ribucciano e circa 400 a metri a valle della stessa fino alla confluenza con il T. Arbia; il modello comprende anche un tratto del T. Ribucciano di circa 520 metri, immediatamente a monte della confluenza con il Riluogo.

I torrenti Ribucciano e Riluogo sono stati estesi a monte della confluenza, estraendo delle sezioni integrative dal modello digitale del terreno creato dalla cartografia CTR 1:2000.

I risultati delle verifiche idrauliche, riportati nella planimetria delle aree allagate, sintetizzano i valori dei livelli idraulici massimi relativi a due condizioni:

- portata massima sul T. Riluogo;
- rigurgito indotto dalla piena del T. Arbia.

Quest'ultima condizione produce i valori massimi a partire dalla confluenza fino alla sezione 300, a monte della quale prevalgono i livelli idraulici legati alle portate del T. Riluogo.

Lungo il tracciato del T. Riluogo sono presenti n. 2 ponti, posti immediatamente a valle della confluenza con il T. Ribucciano; su quest'ultimo è presente un tombino in lamiera ondulata tipo "Finsider"[2], a sezione ellittica ribassata di metri 4,20x2,60 (h).

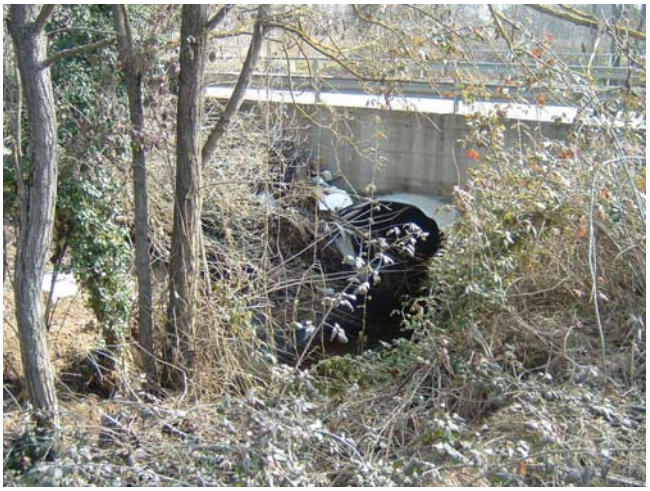


Foto 17 - attraversamento del T. Ribucciano (sezione RB250)

[2] Le dimensioni di tale manufatto sono state rilevate in sede di verifica idraulica del tratto in quanto non sono previste nell'elenco delle sezioni affidate allo Studio Tecnico Bellavista – Bondi – Sili.

Foto 18 - ponte sul T. Riluogo a valle della confluenza con il T. Ribucciano (sezione RL650)

Nel tratto studiato si verificano ovunque condizioni di corrente lenta (Fr<1), con velocità medie comprese tra 0,6 m/s e 4,1 m/s.

Si segnalano le seguenti criticità per i manufatti (attraversamenti stradali/ferroviari) presenti sui corsi d'acqua:

- sormonto per evento con Tr≥200 anni e funzionamento idraulico con franco di sicurezza inferiore ad 1 metro per evento con Tr≥30 anni del tombino in lamiera ondulata sul T. Ribucciano (sezione RB250);
- funzionamento idraulico con franco di sicurezza inferiore ad 1 metro dell'attraversamento stradale della Traversa Romana Aretina sul T. Riluogo per evento con Tr≥30 anni (sezione RL650).

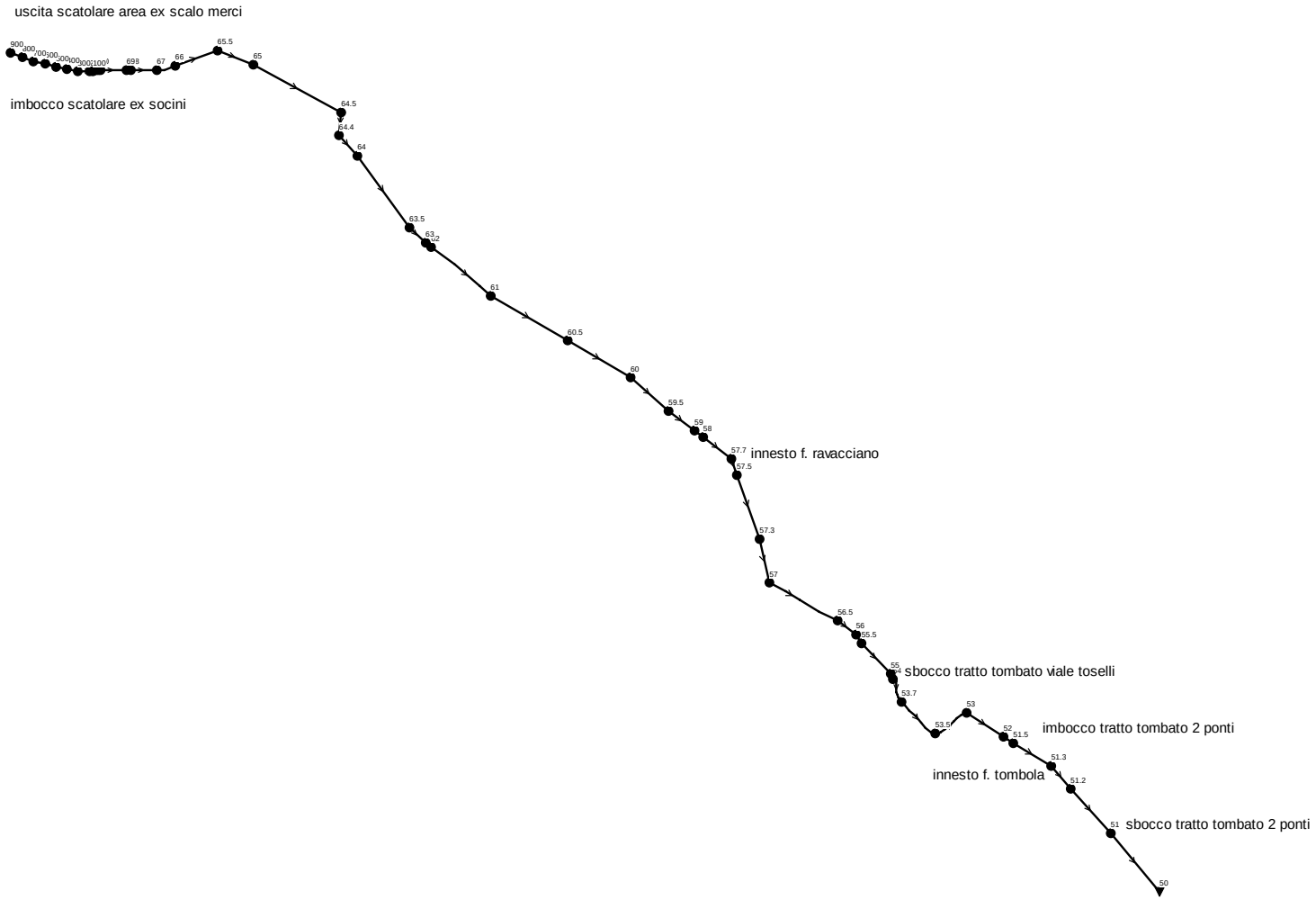
Per quanto riguarda le zone a rischio di allagamento si segnalano:

- area in sinistra idraulica del T. Ribucciano e in destra idraulica del T. Riluogo (sezioni RB400 e RL1000) in corrispondenza di capannone industriale, per evento con Tr≥200 anni;
- area immediatamente a monte della confluenza (sezioni RB100, RB90, RL900 e RL850) in corrispondenza della rotatoria sulla Strada di Ribucciano, per evento con Tr≥30 anni.

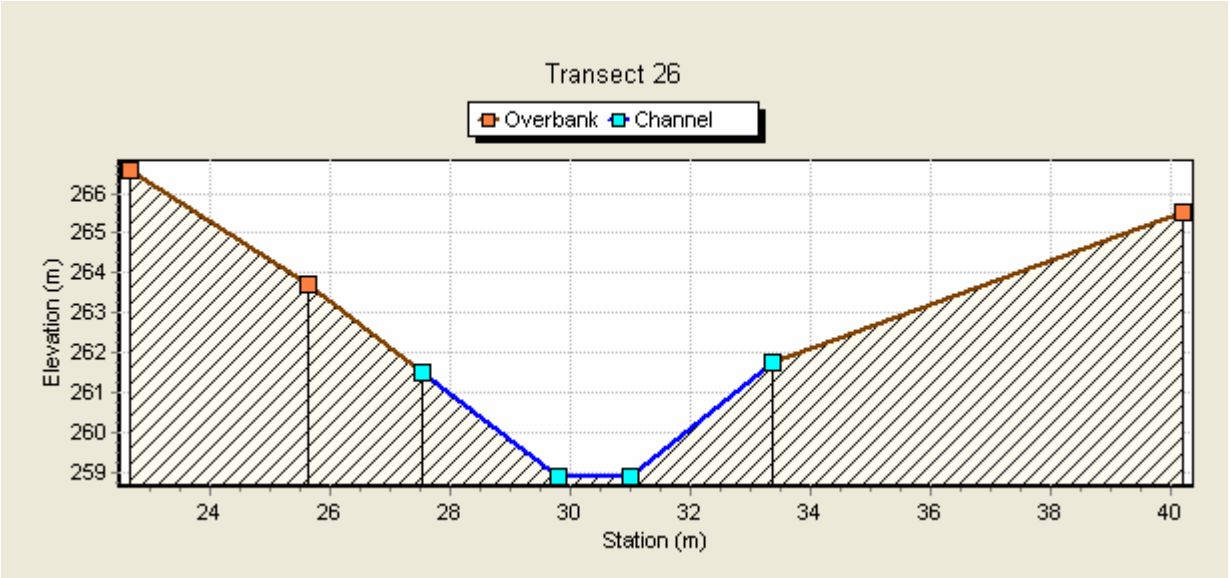
ALLEGATI DI CALCOLO SWMM 5.0

TRATTO RIL01 – TORRENTE RILUOGO

DA SEZ. 900 A SEZ 51


uscita scatolare area ex scalo merci
imbocco scatolare ex socini
innesto f. ravacciano
sbocco tratto tombato viale toselli
imbocco tratto tombato 2 ponti
innesto f. tombola
sbocco tratto tombato 2 ponti

SWMM 5


Transect 26
Overbank
Channel
Elevation (m)
266
265
264
263
262
261
260
259
24
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28
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32
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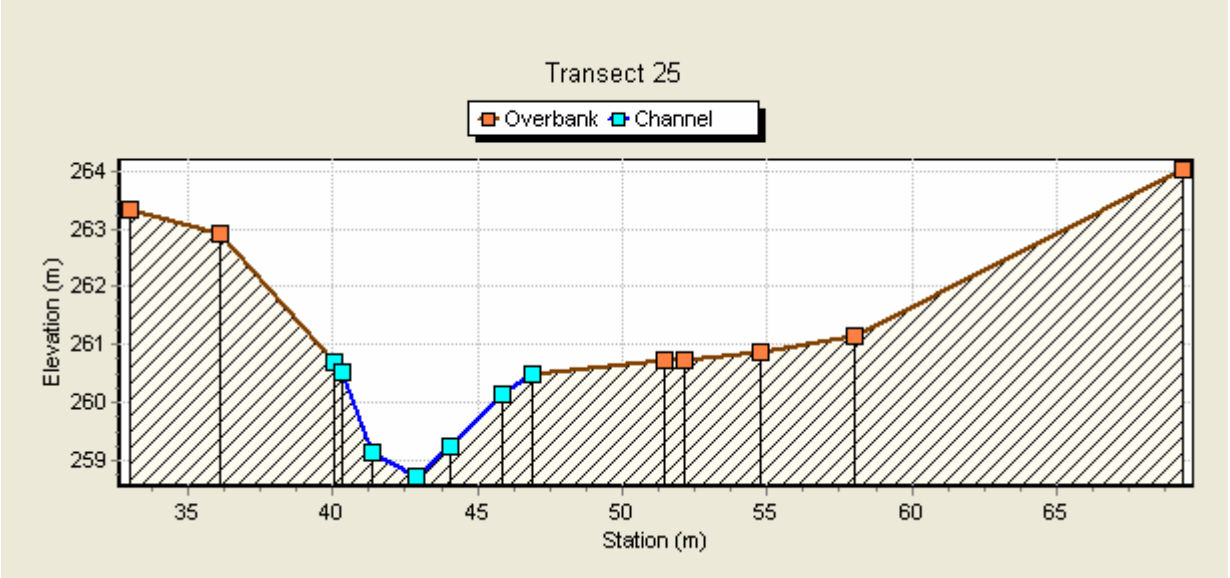
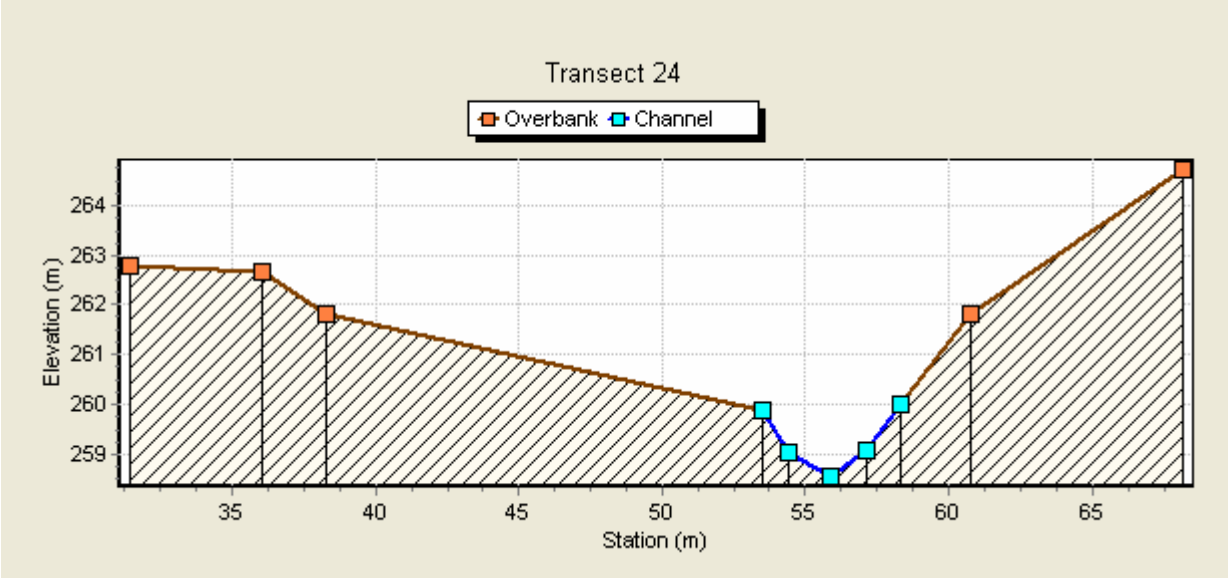
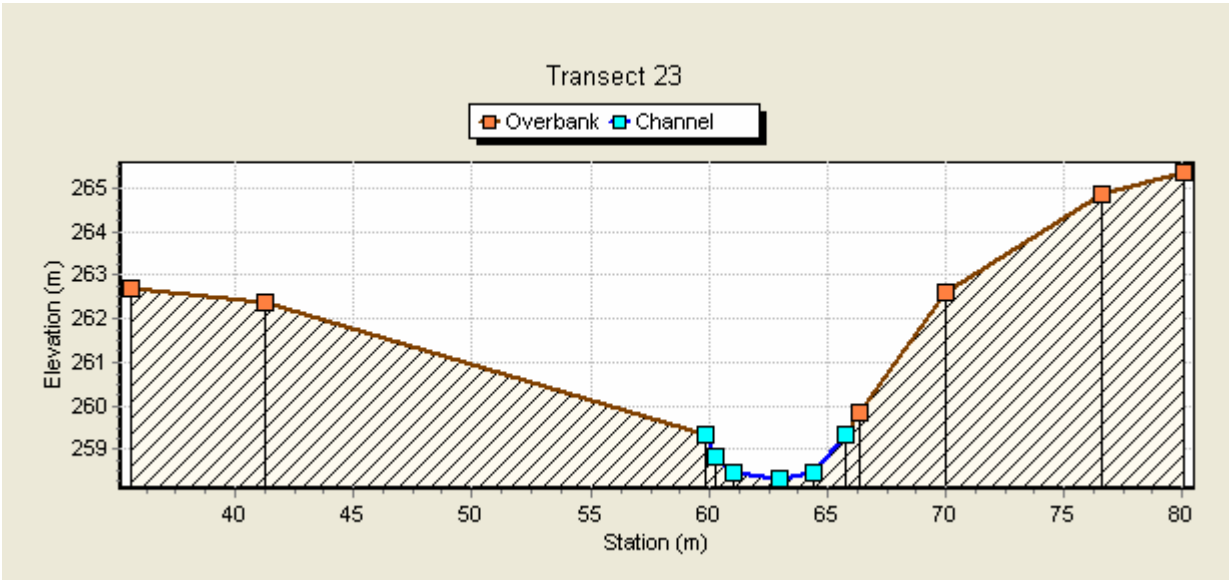
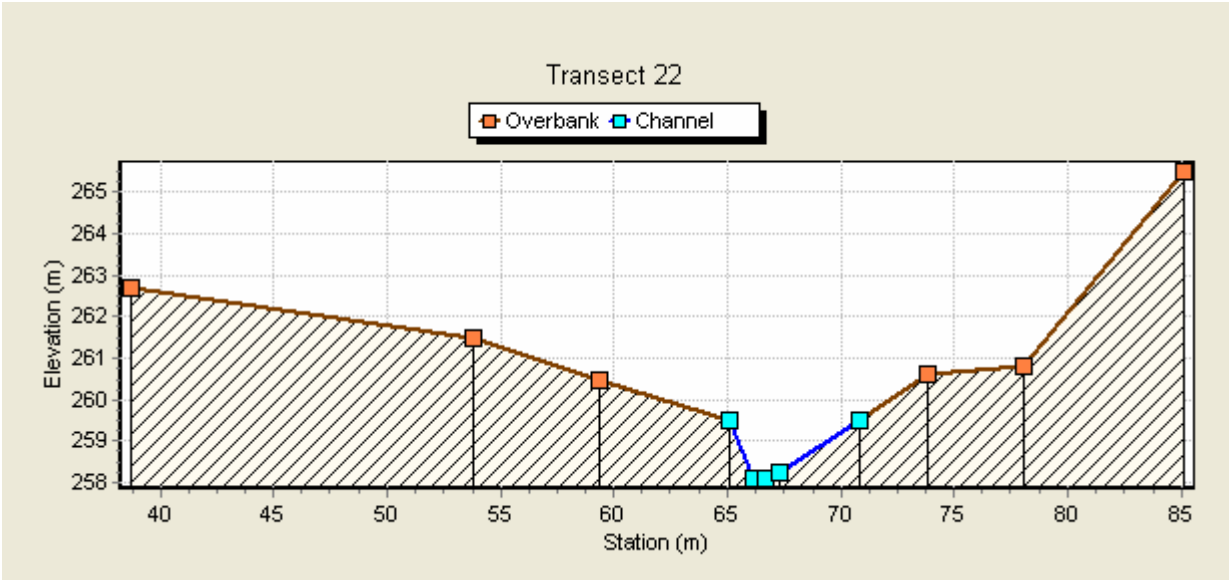
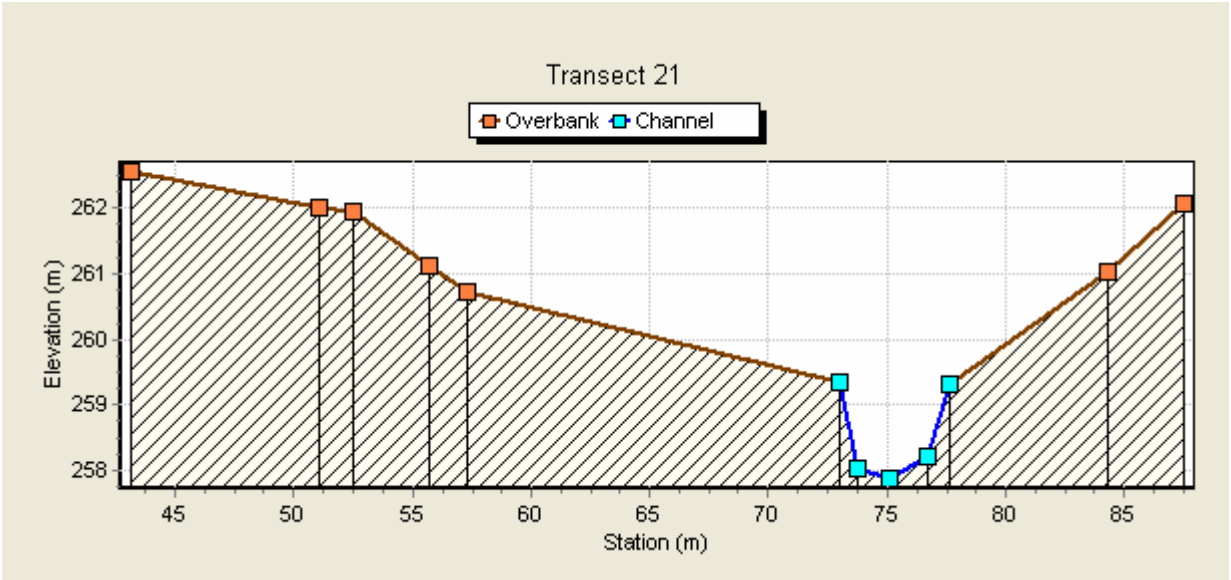
36
38
40
Station (m)

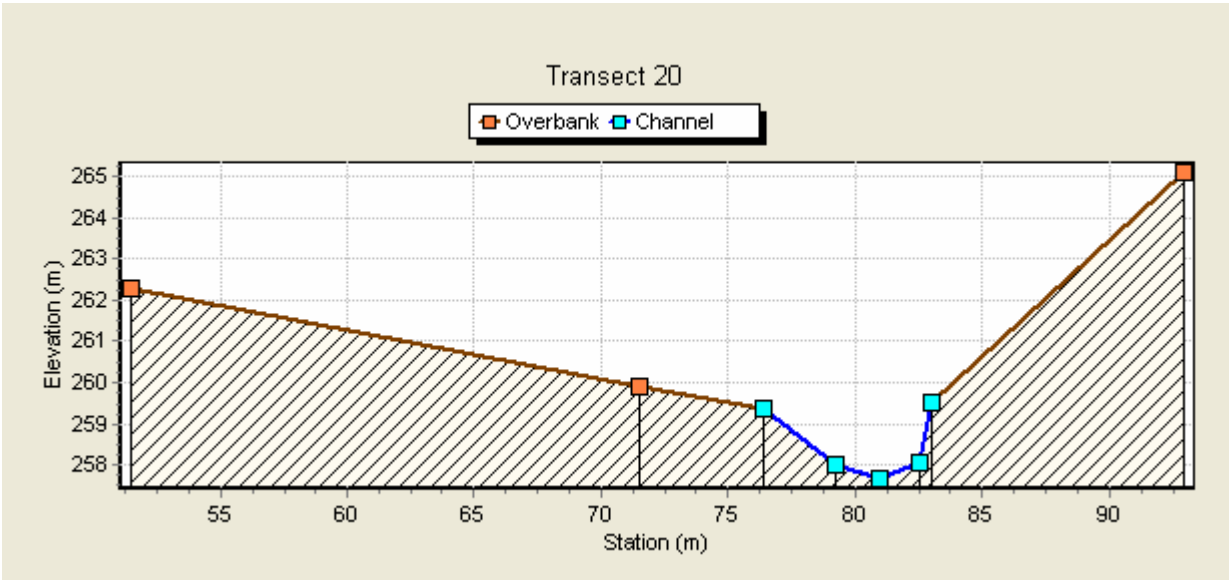

Transect 25
Overbank
Channel
Elevation (m)
264
263
262
261
260
259
35
40
45
50
55
60
65
Station (m)

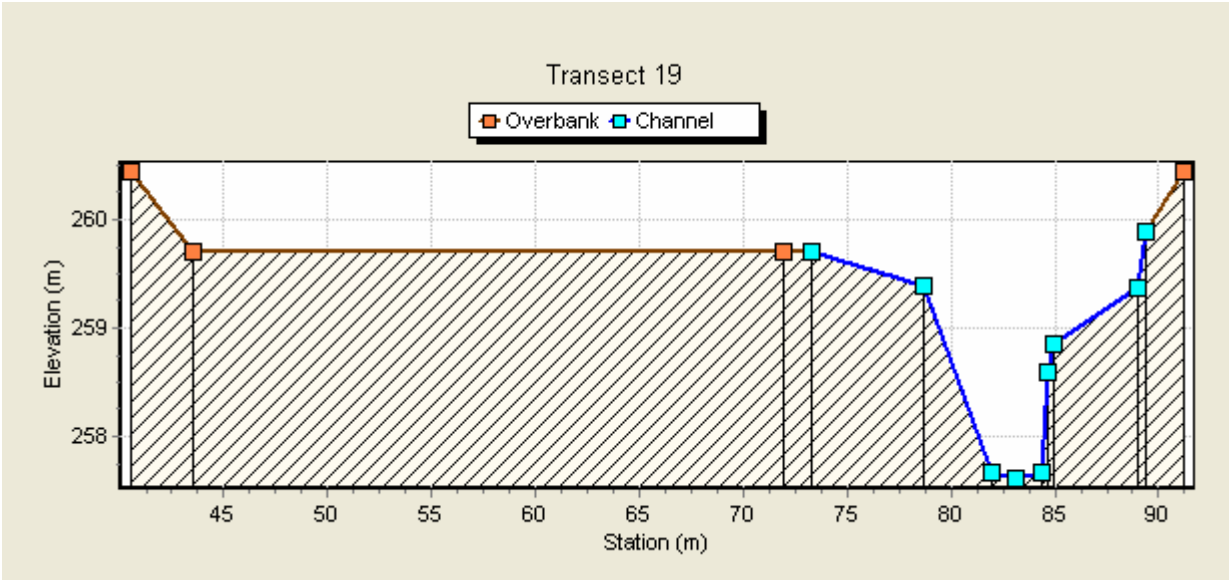

Transect 24
Overbank
Channel
Elevation (m)
264
263
262
261
260
259
35
40
45
50
55
60
65
Station (m)

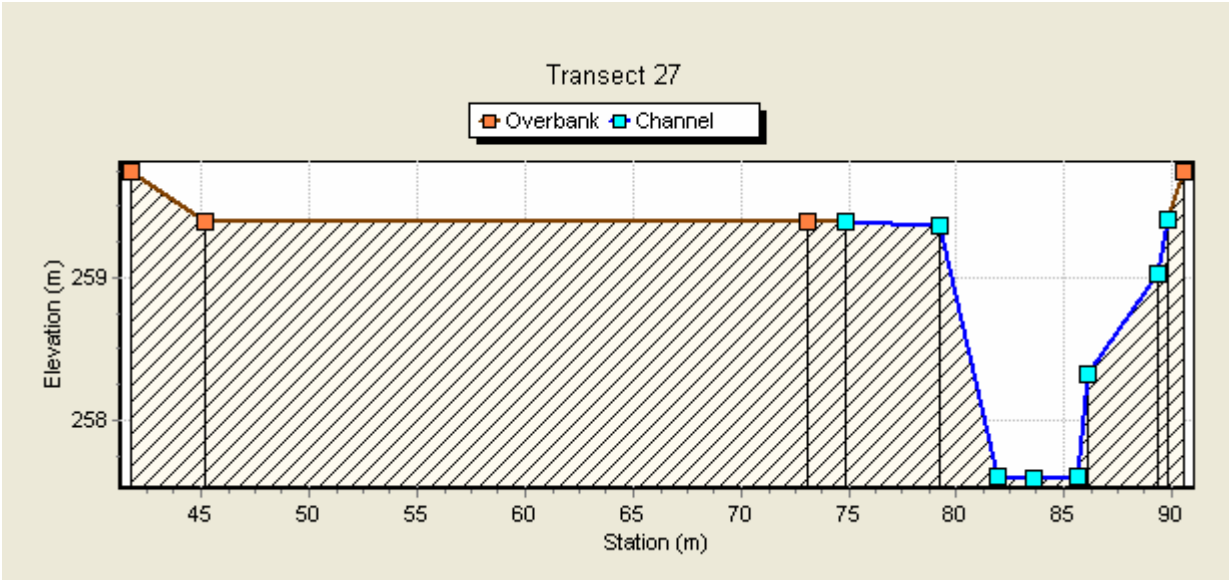

Transect 23
Overbank
Channel
Elevation (m)
265
264
263
262
261
260
259
40
45
50
55
60
65
70
75
80
Station (m)

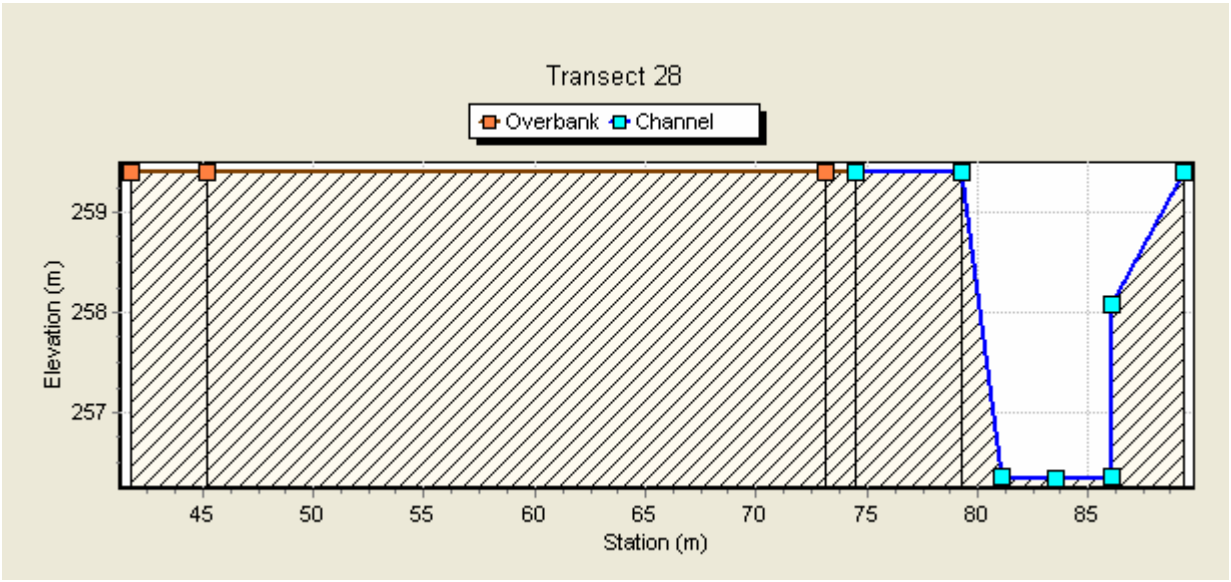

Transect 22
Overbank
Channel
Elevation (m)
265
264
263
262
261
260
259
258
40
45
50
55
60
65
70
75
80
85
Station (m)

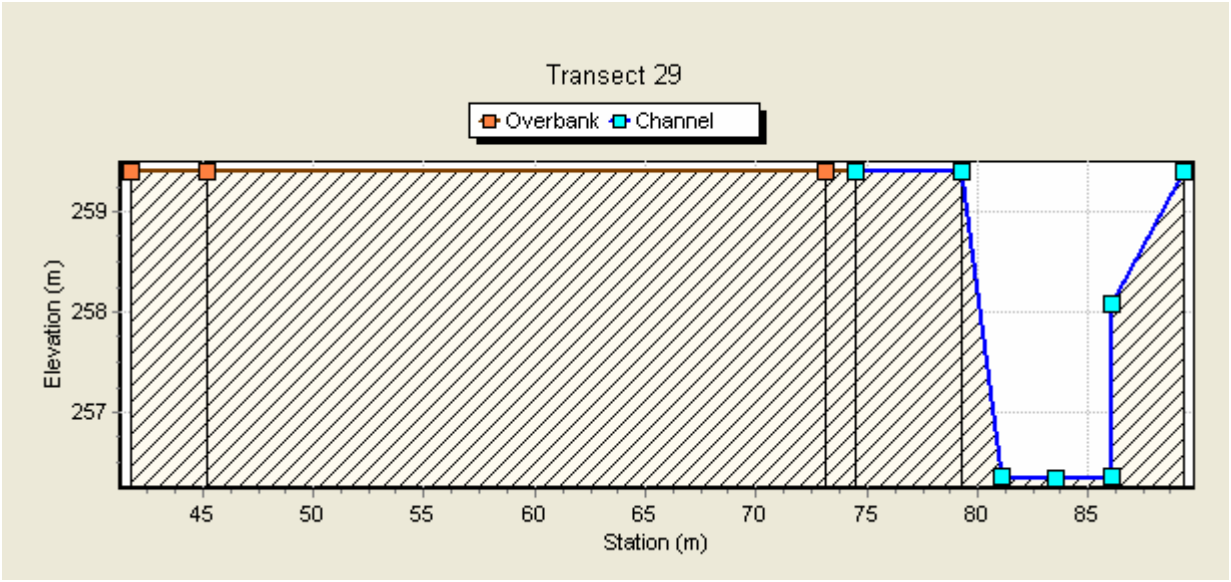

Transect 21
Overbank
Channel
Elevation (m)
262
261
260
259
258
45
50
55
60
65
70
75
80
85
Station (m)

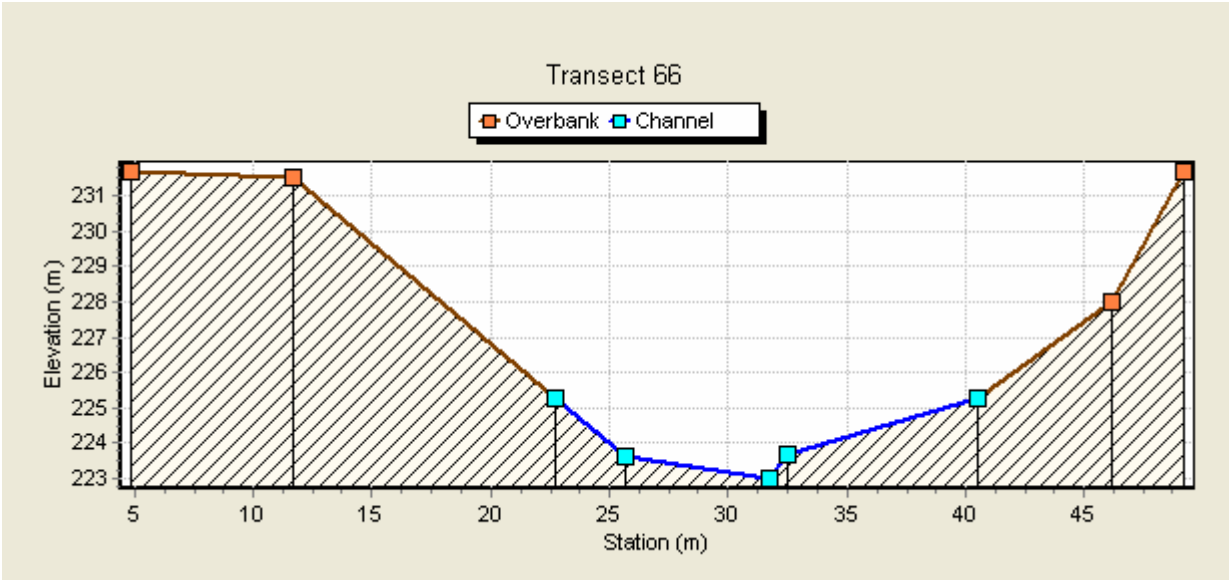

Transect 20
Overbank
Channel
Elevation (m)
265
264
263
262
261
260
259
258
55
60
65
70
75
80
85
90
Station (m)

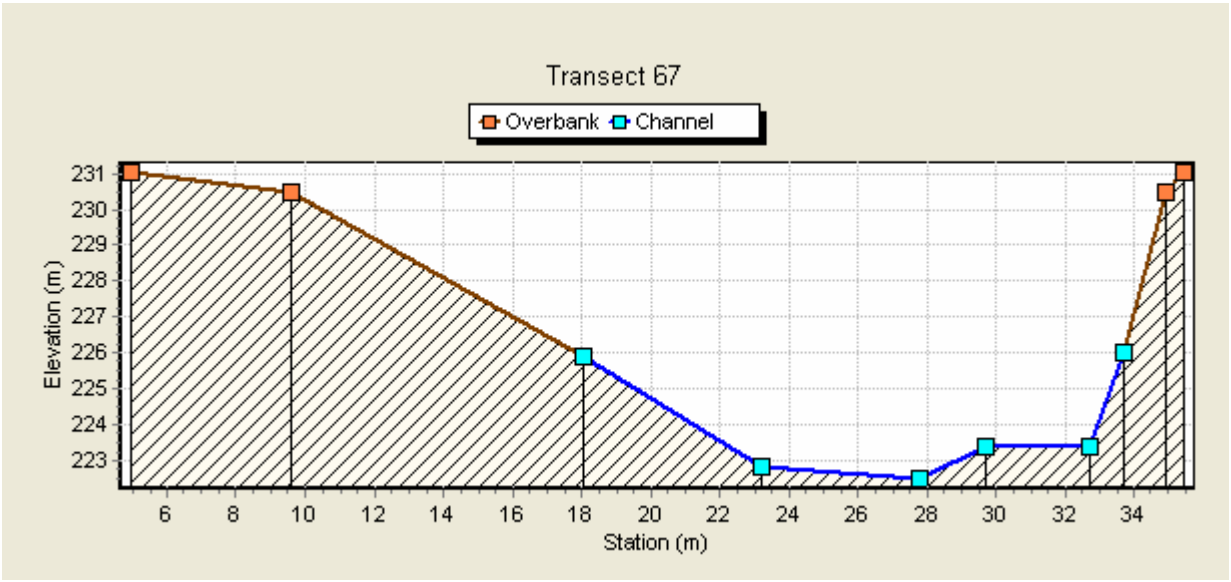

Transect 19
Overbank
Channel
Elevation (m)
260
259
258
45
50
55
60
65
70
75
80
85
90
Station (m)

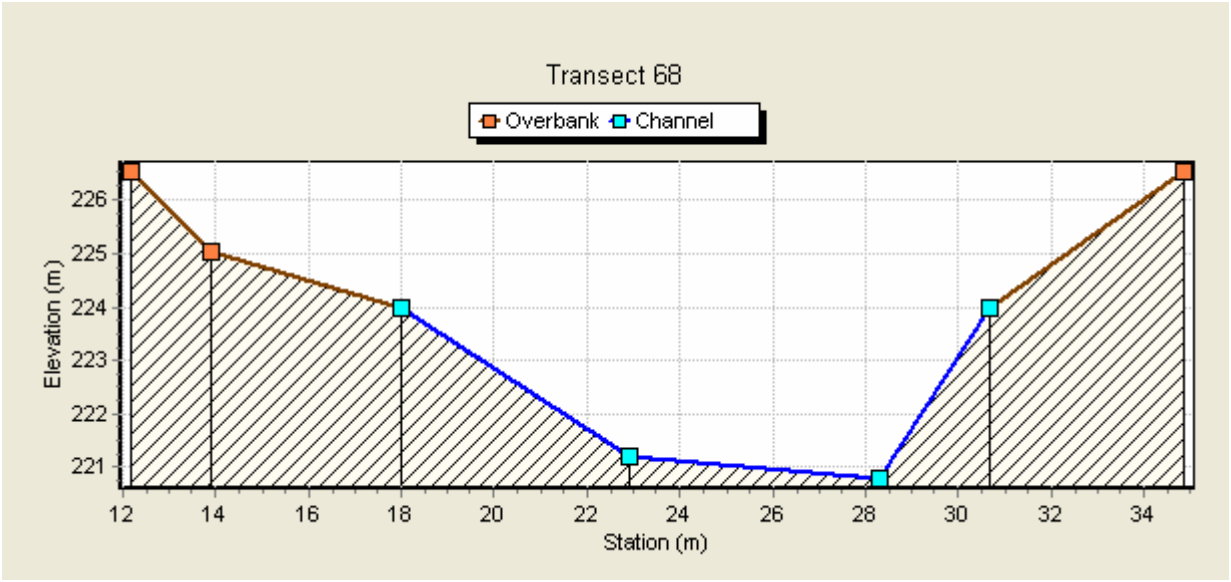

Transect 27
Overbank
Channel
Elevation (m)
259
258
45
50
55
60
65
70
75
80
85
90
Station (m)

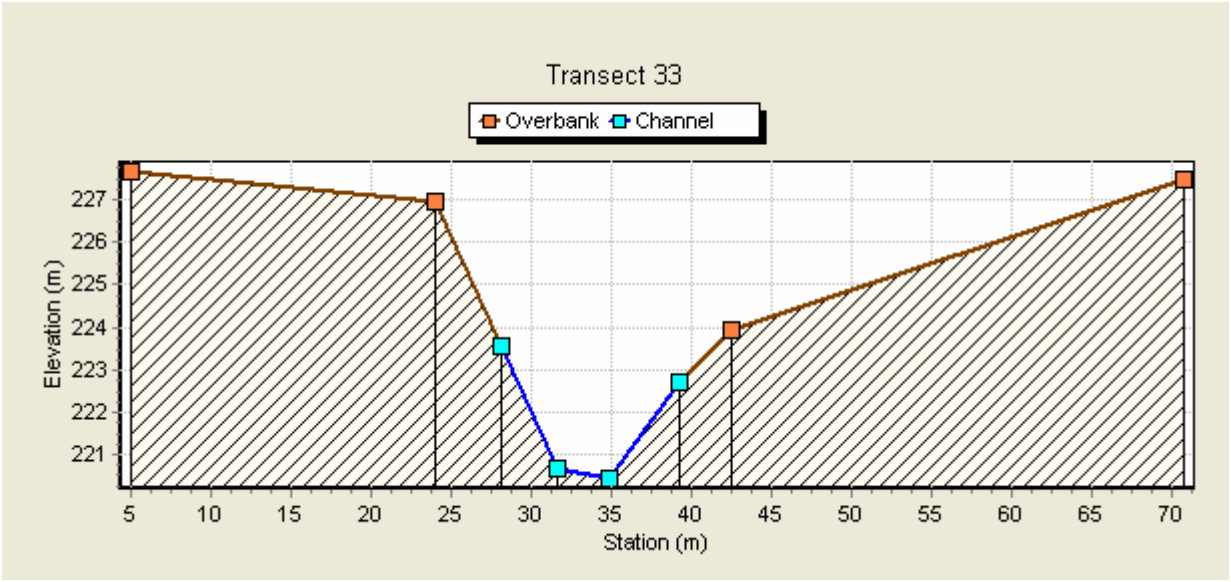

Transect 28
Overbank
Channel
Elevation (m)
259
258
257
45
50
55
60
65
70
75
80
85
Station (m)

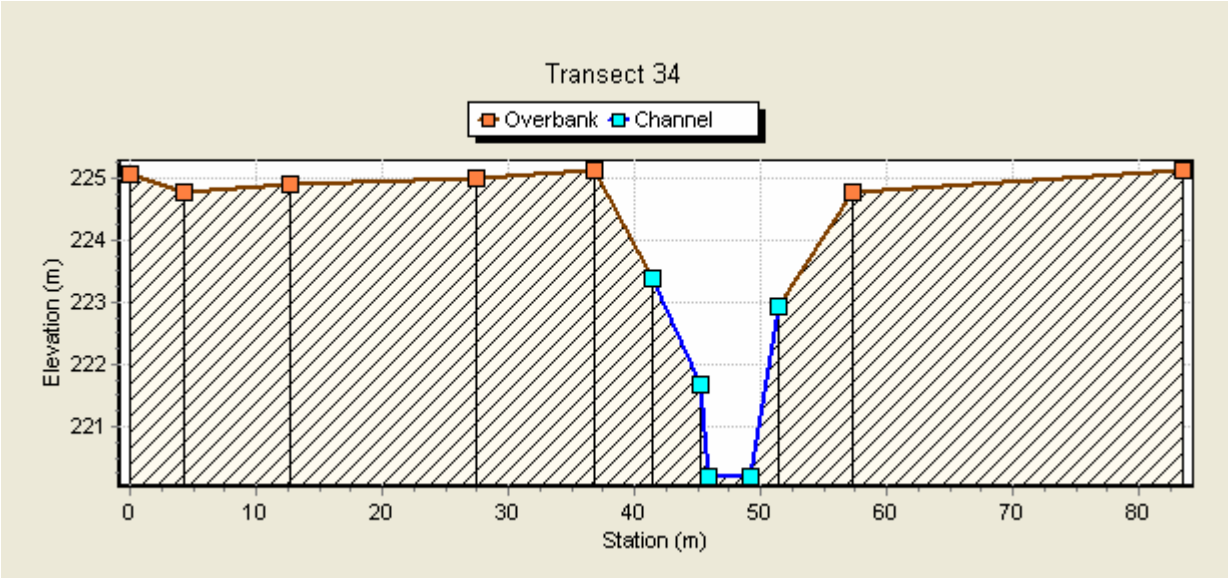

Transect 29
Overbank
Channel
Elevation (m)
259
258
257
45
50
55
60
65
70
75
80
85
Station (m)

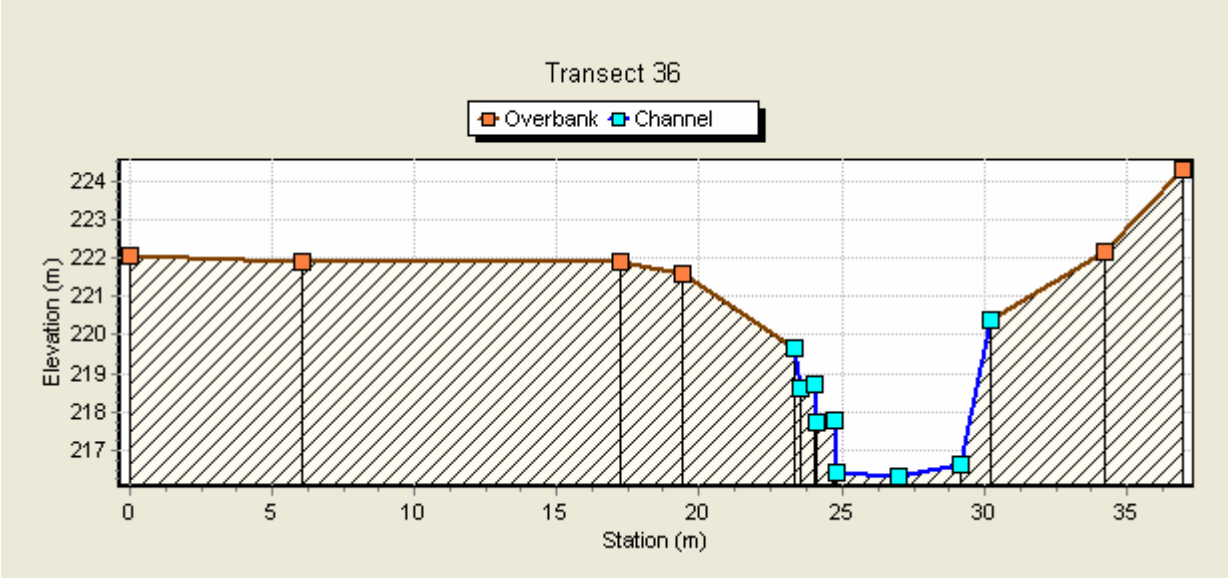

Transect 66
Overbank
Channel
Elevation (m)
231
230
229
228
227
226
225
224
223
5
10
15
20
25
30
35
40
45
Station (m)


Transect 67
Overbank
Channel
Elevation (m)
231
230
229
228
227
226
225
224
223
6
8
10
12
14
16
18
20
22
24
26
28
30
32
34
Station (m)


Transect 68
Overbank
Channel
Elevation (m)
226
225
224
223
222
221
12
14
16
18
20
22
24
26
28
30
32
34
Station (m)

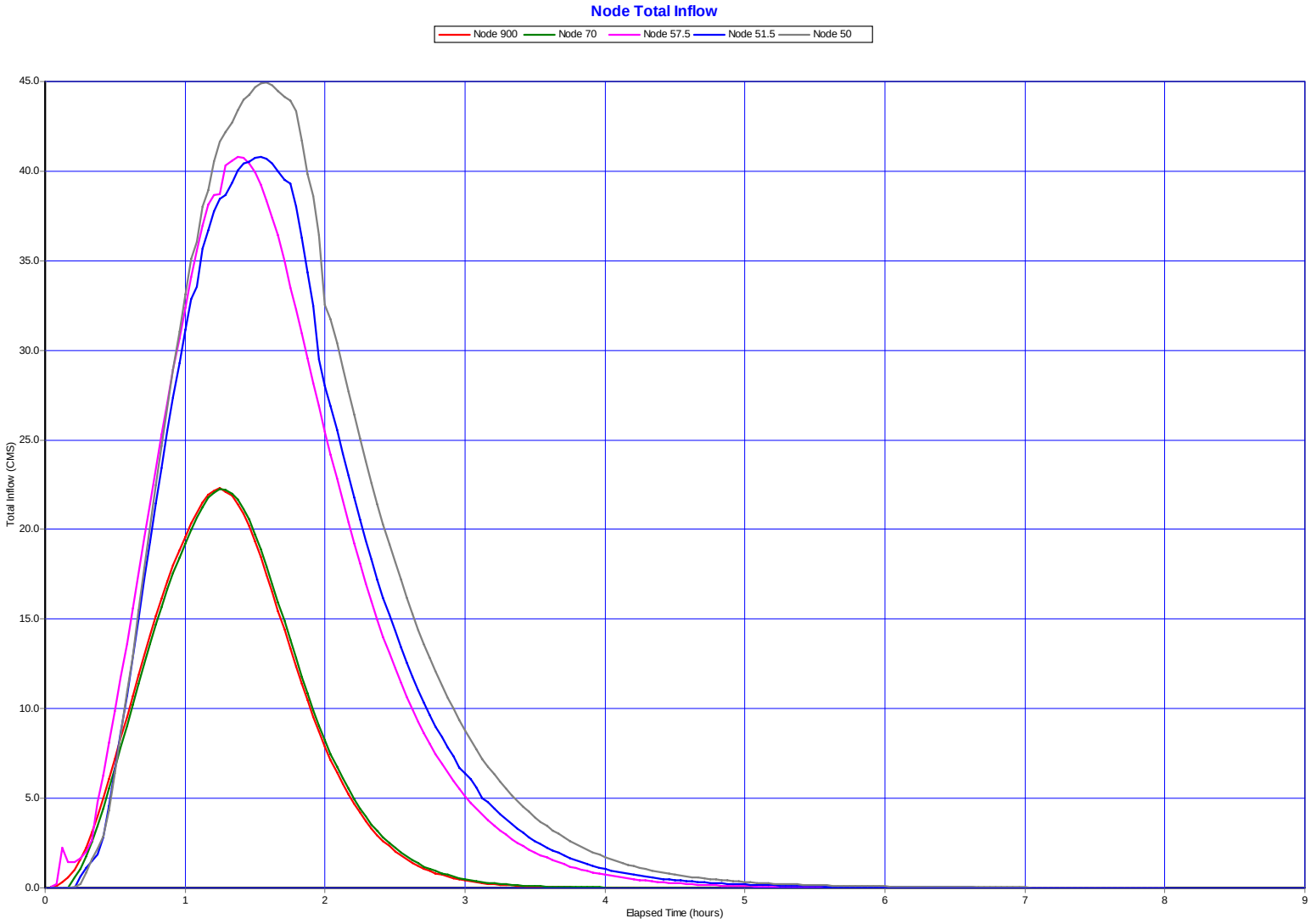

Transect 33
Overbank
Channel
Elevation (m)
227
226
225
224
223
222
221
5
10
15
20
25
30
35
40
45
50
55
60
65
70
Station (m)


Transect 34
Overbank
Channel
Elevation (m)
225
224
223
222
221
0
10
20
30
40
50
60
70
80
Station (m)


Transect 36
Overbank
Channel
Elevation (m)
224
223
222
221
220
219
218
217
0
5
10
15
20
25
30
35
Station (m)

ALLEGATI DI CALCOLO SWMM 5.0

TORRENTE RILUOGO TR = 30 ANNI


Node Total Inflow
Node 900
Node 70
Node 57.5
Node 51.5
Node 50
Total Inflow (CMS)
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
0
1
2
3
4
5
6
7
8
9
Elapsed Time (hours)

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.013)

****
Analysis Options
****
Flow Units ..... CMS
Flow Routing Method ..... DYNWAVE
Starting Date JUN-19-2008 00:00:00
Ending Date JUN-19-2008 08:00:00
Antecedent Dry Days 0.0
Report Time Step 00:02:30
Routing Time Step ..... 0.40 sec

****
Element Count
****
Number of rain gages 0
Number of subcatchments ... 0
Number of nodes 48
Number of links 47
Number of pollutants 0
Number of land uses 0

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
53	JUNCTION	220.84	7.26	0.0	
54	JUNCTION	223.10	8.69	0.0	
55	JUNCTION	223.30	4.00	0.0	
55.5	JUNCTION	224.90	6.50	0.0	
56	JUNCTION	225.00	6.50	0.0	
57	JUNCTION	229.60	3.40	0.0	Yes
58	JUNCTION	232.60	4.20	0.0	
59	JUNCTION	233.60	3.50	0.0	
60	JUNCTION	236.75	3.45	0.0	Yes
61	JUNCTION	242.06	2.74	0.0	
62	JUNCTION	245.05	4.25	0.0	
63	JUNCTION	246.45	2.85	0.0	
64	JUNCTION	249.00	2.80	0.0	
65	JUNCTION	253.46	5.94	0.0	Yes
66	JUNCTION	254.46	6.34	0.0	
67	JUNCTION	254.66	5.74	0.0	
68	JUNCTION	254.85	5.15	0.0	
69	JUNCTION	256.15	3.85	0.0	
70	JUNCTION	256.30	3.05	0.0	
80	JUNCTION	256.35	3.05	0.0	
200	JUNCTION	257.60	7.46	0.0	
300	JUNCTION	257.66	7.46	0.0	
400	JUNCTION	257.88	7.40	0.0	
500	JUNCTION	258.10	7.40	0.0	
600	JUNCTION	258.32	7.05	0.0	
700	JUNCTION	258.54	6.19	0.0	
800	JUNCTION	258.71	7.70	0.0	
900	JUNCTION	258.88	7.70	0.0	Yes
52	JUNCTION	220.25	7.26	0.0	
51.5	JUNCTION	220.20	4.94	0.0	
51	JUNCTION	216.33	7.96	0.0	
90	JUNCTION	256.58	3.05	0.0	
100	JUNCTION	257.58	2.85	0.0	
63.5	JUNCTION	247.70	3.30	0.0	
51.3	JUNCTION	218.77	4.60	0.0	Yes
51.2	JUNCTION	217.85	4.60	0.0	Yes
65.5	JUNCTION	253.90	6.60	0.0	
64.5	JUNCTION	250.30	2.80	0.0	
64.4	JUNCTION	249.50	3.50	0.0	
60.5	JUNCTION	239.05	2.95	0.0	
59.5	JUNCTION	235.00	4.45	0.0	
57.7	JUNCTION	231.50	4.00	0.0	Yes
57.3	JUNCTION	230.20	2.90	0.0	
56.5	JUNCTION	226.20	6.10	0.0	
57.5	JUNCTION	231.30	4.00	0.0	Yes
53.7	JUNCTION	222.19	8.69	0.0	
53.5	JUNCTION	221.43	8.56	0.0	

50	OUTFALL	215.00	7.96	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
2	55	54	CONDUIT	10.0	2.0000	0.0150
4	57	56.5	CONDUIT	137.0	2.4818	0.0150
6	59	58	CONDUIT	1.0	100.0000	0.0150
9	62	61	CONDUIT	135.0	2.2148	0.0150
10	63	62	CONDUIT	1.0	140.0000	0.0150
14	67	66	CONDUIT	33.0	0.6061	0.0150
15	68	67	CONDUIT	50.0	0.3800	0.0150
16	70	69	CONDUIT	50.0	0.3000	0.0150
17	69	68	CONDUIT	1.0	130.0000	0.0150
19	200	100	CONDUIT	7.0	0.2857	0.0600
20	300	200	CONDUIT	20.0	0.3000	0.0600
21	400	300	CONDUIT	20.0	1.1000	0.0600
22	500	400	CONDUIT	20.0	1.1000	0.0600
23	600	500	CONDUIT	20.0	1.1000	0.0600
24	700	600	CONDUIT	20.0	1.1000	0.0600
25	800	700	CONDUIT	20.0	0.8500	0.0600
26	900	800	CONDUIT	20.0	0.8500	0.0600
30	56	55.5	CONDUIT	10.0	1.0000	0.0150
31	55.5	55	CONDUIT	90.0	1.7778	0.0150
33	53	52	CONDUIT	80.0	0.7375	0.0600
34	52	51.5	CONDUIT	12.0	0.4167	0.0120
36	51	50	CONDUIT	145.2	0.9161	0.0600
27	100	90	CONDUIT	2.0	50.0000	0.0600
28	90	80	CONDUIT	9.0	2.5556	0.0600
29	80	70	CONDUIT	9.0	0.5556	0.0600
45	65	64.5	CONDUIT	173.0	1.8266	0.0150
46	64.5	64.4	CONDUIT	42.0	1.9048	0.0150
47	64.4	64	CONDUIT	48.0	1.0417	0.0150
48	64	63.5	CONDUIT	148.0	0.8784	0.0150
49	63.5	63	CONDUIT	56.0	2.2321	0.0150
52	51.5	51.3	CONDUIT	87.0	1.6437	0.0150
53	51.3	51.2	CONDUIT	57.0	1.6140	0.0150
54	51.2	51	CONDUIT	100.0	1.5200	0.0150
55	66	65.5	CONDUIT	80.0	0.7000	0.0150
56	65.5	65	CONDUIT	68.0	0.6471	0.0150
57	61	60.5	CONDUIT	135.0	2.2296	0.0150
58	60.5	60	CONDUIT	154.5	1.4887	0.0150
59	60	59.5	CONDUIT	90.0	1.9444	0.0150
60	59.5	59	CONDUIT	70.0	2.0000	0.0150
61	58	57.7	CONDUIT	68.0	1.6176	0.0150
62	57.3	57	CONDUIT	76.0	0.7895	0.0150
63	56.5	56	CONDUIT	42.0	2.8571	0.0150
64	57.7	57.5	CONDUIT	30.0	0.6667	0.0150
65	57.5	57.3	CONDUIT	120.0	0.9167	0.0150
66	54	53.7	CONDUIT	43.0	2.1163	0.0600
67	53.7	53.5	CONDUIT	63.0	1.2063	0.0600
68	53.5	53	CONDUIT	64.0	0.9219	0.0600

****
Cross Section Summary
****

Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
2	RECT_OPEN	4.00	10.40	0.98	2.60	1	96.83
4	RECT_CLOSED	2.10	6.72	0.63	3.20	1	52.09
6	RECT_CLOSED	2.00	6.40	0.62	3.20	1	308.74
9	RECT_CLOSED	2.25	5.85	0.60	2.60	1	41.44
10	RECT_CLOSED	2.25	5.85	0.60	2.60	1	329.45
14	MODBASKETHANDLE	2.65	5.85	0.64	2.45	1	22.53
15	MODBASKETHANDLE	3.50	13.58	0.97	4.50	1	54.50
16	RECT_CLOSED	2.20	9.90	0.74	4.50	1	29.55
17	MODBASKETHANDLE	3.50	13.58	0.97	4.50	1	1008.02
19	19	2.85	48.97	0.76	50.69	1	36.45
20	20	7.46	180.65	2.14	41.47	1	273.94
21	21	4.68	87.55	1.08	44.36	1	161.00
22	22	7.40	200.58	1.97	46.43	1	550.82
23	23	7.05	170.45	2.06	44.44	1	483.02
24	24	6.19	121.12	1.65	36.75	1	295.55
25	25	5.32	94.65	1.56	36.34	1	195.67
26	26	7.70	70.28	2.59	17.51	1	203.67
30	RECT_OPEN	6.50	16.90	1.08	2.60	1	118.86

31	RECT_CLOSED	2.20	5.72	0.60	2.60	1	36.01
33	33	7.26	155.73	2.41	65.75	1	400.38
34	34	4.94	60.37	1.47	83.50	1	419.86
36	36	7.96	124.68	1.82	36.98	1	296.18
27	27	2.18	29.15	0.64	48.75	1	255.02
28	28	3.05	20.01	1.07	47.56	1	55.90
29	29	3.05	20.01	1.07	47.56	1	26.06
45	RECT_CLOSED	2.25	5.85	0.60	2.60	1	37.63
46	RECT_CLOSED	2.25	5.85	0.60	2.60	1	38.43
47	RECT_CLOSED	2.25	5.85	0.60	2.60	1	28.42
48	RECT_CLOSED	2.25	5.85	0.60	2.60	1	26.10
49	RECT_CLOSED	2.25	5.85	0.60	2.60	1	41.60
52	RECT_CLOSED	2.10	6.09	0.61	2.90	1	37.40
53	RECT_CLOSED	3.00	9.00	0.75	3.00	1	62.93
54	RECT_CLOSED	3.00	9.00	0.75	3.00	1	61.07
55	RECT_CLOSED	2.70	16.20	0.93	6.00	1	86.17
56	RECT_CLOSED	2.70	16.20	0.93	6.00	1	82.85
57	RECT_CLOSED	1.80	5.76	0.58	3.20	1	39.70
58	RECT_CLOSED	1.80	5.76	0.58	3.20	1	32.44
59	RECT_CLOSED	2.00	6.40	0.62	3.20	1	43.05
60	RECT_CLOSED	2.00	6.40	0.62	3.20	1	43.66
61	RECT_CLOSED	2.00	6.40	0.62	3.20	1	39.27
62	RECT_CLOSED	2.10	6.72	0.63	3.20	1	29.38
63	RECT_CLOSED	2.10	6.72	0.63	3.20	1	55.89
64	RECT_CLOSED	2.10	6.72	0.63	3.20	1	27.00
65	RECT_CLOSED	2.10	6.72	0.63	3.20	1	31.66
66	66	8.69	208.04	4.63	44.35	1	1400.82
67	67	8.56	146.69	4.90	30.47	1	774.88
68	68	5.75	73.97	3.05	22.67	1	248.95

****
Transect Summary
****

Transect 26
Area:

0.0027	0.0061	0.0101	0.0147	0.0198
0.0255	0.0317	0.0386	0.0460	0.0539
0.0625	0.0716	0.0812	0.0915	0.1023
0.1136	0.1256	0.1381	0.1512	0.1650
0.1799	0.1956	0.2122	0.2297	0.2482
0.2676	0.2878	0.3090	0.3311	0.3541
0.3781	0.4029	0.4287	0.4555	0.4832
0.5119	0.5416	0.5722	0.6038	0.6364
0.6699	0.7045	0.7399	0.7760	0.8125
0.8493	0.8865	0.9240	0.9618	1.0000

Hrad:

0.0464	0.0839	0.1151	0.1428	0.1683
0.1924	0.2154	0.2377	0.2595	0.2809
0.3019	0.3226	0.3432	0.3636	0.3838
0.4039	0.4239	0.4536	0.4842	0.5203
0.5529	0.5826	0.6097	0.6344	0.6571
0.6781	0.6975	0.7156	0.7325	0.7485
0.7635	0.7776	0.7910	0.8037	0.8158
0.8274	0.8386	0.8493	0.8597	0.8699
0.8797	0.8894	0.8988	0.9121	0.9258
0.9400	0.9546	0.9695	0.9846	1.0000

Width:

0.0818	0.0966	0.1114	0.1262	0.1410
0.1558	0.1706	0.1854	0.2002	0.2150
0.2298	0.2446	0.2594	0.2742	0.2890
0.3038	0.3186	0.3333	0.3502	0.3740
0.3977	0.4215	0.4453	0.4690	0.4928
0.5166	0.5403	0.5641	0.5879	0.6117
0.6354	0.6601	0.6852	0.7104	0.7356
0.7608	0.7859	0.8111	0.8363	0.8614
0.8866	0.9118	0.9367	0.9458	0.9548
0.9638	0.9729	0.9819	0.9910	1.0000

Transect 25
Area:

0.0004	0.0014	0.0032	0.0057	0.0086
0.0119	0.0155	0.0195	0.0238	0.0284
0.0333	0.0386	0.0442	0.0502	0.0566
0.0634	0.0708	0.0803	0.0924	0.1071
0.1240	0.1427	0.1631	0.1845	0.2066
0.2294	0.2529	0.2771	0.3020	0.3275
0.3537	0.3806	0.4082	0.4365	0.4655
0.4951	0.5254	0.5564	0.5881	0.6206

0.6543 0.6893 0.7257 0.7634 0.8016
0.8404 0.8796 0.9192 0.9594 1.0000
Hrad:
0.0321 0.0642 0.0963 0.1315 0.1738
0.2132 0.2501 0.2852 0.3189 0.3516
0.3834 0.4146 0.4452 0.4712 0.4963
0.5217 0.5540 0.5765 0.5868 0.5930
0.5940 0.5953 0.5974 0.6051 0.6160
0.6289 0.6433 0.6585 0.6745 0.6908
0.7075 0.7243 0.7412 0.7581 0.7750
0.7919 0.8087 0.8254 0.8420 0.8570
0.8700 0.8825 0.8946 0.9077 0.9225
0.9376 0.9530 0.9685 0.9842 1.0000
Width:
0.0175 0.0350 0.0525 0.0678 0.0763
0.0844 0.0926 0.1007 0.1089 0.1170
0.1252 0.1334 0.1415 0.1514 0.1620
0.1725 0.2010 0.2634 0.3284 0.3895
0.4376 0.4778 0.5164 0.5331 0.5499
0.5666 0.5833 0.6001 0.6168 0.6335
0.6503 0.6670 0.6838 0.7005 0.7172
0.7340 0.7507 0.7674 0.7842 0.8081
0.8414 0.8747 0.9080 0.9307 0.9423
0.9538 0.9654 0.9769 0.9885 1.0000

Transect 24
Area:
0.0003 0.0014 0.0031 0.0055 0.0085
0.0117 0.0152 0.0189 0.0230 0.0274
0.0321 0.0377 0.0444 0.0523 0.0613
0.0715 0.0829 0.0954 0.1091 0.1240
0.1400 0.1572 0.1755 0.1950 0.2157
0.2376 0.2605 0.2841 0.3084 0.3334
0.3590 0.3852 0.4122 0.4405 0.4728
0.5057 0.5389 0.5724 0.6063 0.6405
0.6750 0.7098 0.7449 0.7804 0.8162
0.8523 0.8888 0.9255 0.9626 1.0000
Hrad:
0.0351 0.0702 0.1052 0.1426 0.1893
0.2339 0.2754 0.3146 0.3521 0.3882
0.4252 0.4669 0.5032 0.5279 0.5450
0.5573 0.5666 0.5742 0.5809 0.5872
0.5935 0.5999 0.6065 0.6134 0.6205
0.6280 0.6387 0.6528 0.6677 0.6832
0.6990 0.7151 0.7313 0.7133 0.7124
0.7298 0.7478 0.7664 0.7854 0.8046
0.8240 0.8436 0.8632 0.8829 0.9025
0.9221 0.9417 0.9612 0.9807 1.0000
Width:
0.0185 0.0370 0.0554 0.0724 0.0814
0.0893 0.0971 0.1049 0.1127 0.1205
0.1324 0.1634 0.1944 0.2253 0.2563
0.2872 0.3182 0.3492 0.3801 0.4111
0.4420 0.4730 0.5040 0.5349 0.5659
0.5968 0.6206 0.6381 0.6555 0.6729
0.6903 0.7078 0.7252 0.8164 0.8714
0.8800 0.8886 0.8971 0.9057 0.9143
0.9228 0.9314 0.9400 0.9486 0.9571
0.9657 0.9743 0.9829 0.9914 1.0000

Transect 23
Area:
0.0014 0.0044 0.0079 0.0117 0.0159
0.0203 0.0250 0.0301 0.0361 0.0430
0.0507 0.0593 0.0687 0.0791 0.0902
0.1023 0.1152 0.1291 0.1437 0.1593
0.1757 0.1930 0.2112 0.2302 0.2501
0.2709 0.2926 0.3151 0.3386 0.3639
0.3913 0.4201 0.4493 0.4788 0.5087
0.5388 0.5694 0.6002 0.6314 0.6630
0.6949 0.7271 0.7597 0.7926 0.8258
0.8594 0.8933 0.9281 0.9636 1.0000
Hrad:
0.0359 0.0907 0.1404 0.1883 0.2356
0.2797 0.3213 0.3728 0.4171 0.4520
0.4799 0.5027 0.5218 0.5382 0.5528
0.5661 0.5784 0.5900 0.6012 0.6120
0.6225 0.6329 0.6432 0.6535 0.6637
0.6738 0.6840 0.6942 0.6996 0.6966
0.6934 0.7060 0.7207 0.7363 0.7525
0.7692 0.7861 0.8034 0.8208 0.8383

0.8559 0.8735 0.8910 0.9086 0.9261
0.9435 0.9590 0.9729 0.9865 1.0000
Width:
0.0719 0.0880 0.1000 0.1097 0.1167
0.1237 0.1308 0.1515 0.1748 0.1981
0.2215 0.2452 0.2689 0.2926 0.3163
0.3400 0.3638 0.3875 0.4112 0.4349
0.4586 0.4823 0.5061 0.5298 0.5535
0.5772 0.6009 0.6246 0.6599 0.7167
0.7765 0.7890 0.7982 0.8074 0.8167
0.8259 0.8351 0.8443 0.8535 0.8627
0.8719 0.8811 0.8903 0.8995 0.9088
0.9180 0.9341 0.9561 0.9780 1.0000

Transect 22
Area:
0.0007 0.0019 0.0034 0.0054 0.0077
0.0105 0.0136 0.0171 0.0210 0.0255
0.0308 0.0370 0.0442 0.0522 0.0612
0.0711 0.0819 0.0949 0.1101 0.1262
0.1430 0.1606 0.1790 0.1987 0.2199
0.2426 0.2669 0.2926 0.3199 0.3486
0.3789 0.4101 0.4414 0.4730 0.5047
0.5365 0.5686 0.6008 0.6331 0.6657
0.6984 0.7312 0.7642 0.7974 0.8308
0.8643 0.8980 0.9318 0.9658 1.0000
Hrad:
0.0492 0.0927 0.1305 0.1660 0.2002
0.2338 0.2668 0.2995 0.3320 0.3819
0.4267 0.4596 0.4842 0.5034 0.5191
0.5326 0.5430 0.5387 0.5372 0.5417
0.5491 0.5585 0.5675 0.5719 0.5768
0.5820 0.5875 0.5934 0.5995 0.6059
0.6127 0.6285 0.6464 0.6652 0.6848
0.7048 0.7253 0.7461 0.7670 0.7882
0.8094 0.8307 0.8520 0.8733 0.8946
0.9158 0.9370 0.9581 0.9791 1.0000
Width:
0.0286 0.0401 0.0515 0.0629 0.0743
0.0857 0.0971 0.1085 0.1199 0.1417
0.1685 0.1953 0.2221 0.2489 0.2757
0.3024 0.3354 0.4196 0.4573 0.4800
0.5028 0.5255 0.5531 0.5972 0.6412
0.6852 0.7292 0.7733 0.8173 0.8613
0.9053 0.9133 0.9181 0.9230 0.9278
0.9326 0.9374 0.9422 0.9470 0.9518
0.9567 0.9615 0.9663 0.9711 0.9759
0.9807 0.9856 0.9904 0.9952 1.0000

Transect 21
Area:
0.0007 0.0026 0.0053 0.0085 0.0119
0.0154 0.0191 0.0229 0.0269 0.0310
0.0352 0.0396 0.0441 0.0488 0.0536
0.0587 0.0649 0.0727 0.0820 0.0928
0.1052 0.1192 0.1346 0.1516 0.1702
0.1903 0.2119 0.2351 0.2598 0.2861
0.3137 0.3422 0.3714 0.4015 0.4323
0.4638 0.4960 0.5289 0.5625 0.5967
0.6317 0.6674 0.7037 0.7412 0.7807
0.8217 0.8641 0.9080 0.9533 1.0000
Hrad:
0.0427 0.0919 0.1504 0.2088 0.2728
0.3321 0.3874 0.4394 0.4885 0.5353
0.5800 0.6230 0.6644 0.7044 0.7433
0.7928 0.8373 0.8594 0.8658 0.8621
0.8527 0.8408 0.8283 0.8164 0.8059
0.7969 0.7897 0.7842 0.7805 0.7782
0.7817 0.7896 0.7994 0.8108 0.8240
0.8382 0.8532 0.8688 0.8849 0.9013
0.9180 0.9349 0.9520 0.9515 0.9554
0.9632 0.9716 0.9806 0.9901 1.0000
Width:
0.0282 0.0512 0.0620 0.0699 0.0729
0.0760 0.0790 0.0820 0.0850 0.0880
0.0910 0.0941 0.0971 0.1001 0.1031
0.1151 0.1475 0.1800 0.2125 0.2450
0.2775 0.3100 0.3425 0.3749 0.4074
0.4399 0.4724 0.5049 0.5374 0.5699
0.5920 0.6088 0.6257 0.6419 0.6568
0.6715 0.6861 0.7008 0.7154 0.7300

```
            0.7447     0.7593     0.7739     0.8147     0.8500
            0.8800     0.9100     0.9400     0.9700     1.0000

Transect 20
Area:
            0.0006     0.0022     0.0049     0.0080     0.0113
            0.0150     0.0189     0.0232     0.0278     0.0326
            0.0378     0.0434     0.0501     0.0582     0.0676
            0.0784     0.0903     0.1036     0.1180     0.1338
            0.1507     0.1689     0.1883     0.2090     0.2310
            0.2541     0.2785     0.3042     0.3311     0.3592
            0.3886     0.4188     0.4493     0.4799     0.5108
            0.5419     0.5732     0.6047     0.6364     0.6684
            0.7006     0.7330     0.7656     0.7984     0.8315
            0.8647     0.8982     0.9319     0.9659     1.0000
Hrad:
            0.0339     0.0678     0.1128     0.1606     0.2035
            0.2429     0.2797     0.3146     0.3481     0.3803
            0.4116     0.4497     0.4868     0.5137     0.5309
            0.5426     0.5511     0.5577     0.5633     0.5685
            0.5735     0.5786     0.5840     0.5896     0.5955
            0.6018     0.6084     0.6153     0.6226     0.6301
            0.6379     0.6533     0.6705     0.6884     0.7069
            0.7259     0.7452     0.7646     0.7843     0.8040
            0.8238     0.8436     0.8634     0.8831     0.9028
            0.9225     0.9420     0.9614     0.9808     1.0000
Width:
            0.0328     0.0657     0.0847     0.0935     0.1023
            0.1111     0.1199     0.1287     0.1375     0.1463
            0.1552     0.1780     0.2158     0.2557     0.2955
            0.3318     0.3680     0.4043     0.4406     0.4769
            0.5132     0.5495     0.5858     0.6220     0.6583
            0.6946     0.7309     0.7672     0.8035     0.8398
            0.8760     0.8854     0.8917     0.8981     0.9045
            0.9108     0.9172     0.9236     0.9299     0.9363
            0.9427     0.9491     0.9554     0.9618     0.9682
            0.9745     0.9809     0.9873     0.9936     1.0000

Transect 19
Area:
            0.0015     0.0044     0.0074     0.0106     0.0139
            0.0174     0.0211     0.0248     0.0288     0.0328
            0.0370     0.0414     0.0459     0.0505     0.0553
            0.0603     0.0654     0.0706     0.0761     0.0817
            0.0875     0.0936     0.1001     0.1072     0.1150
            0.1235     0.1326     0.1423     0.1527     0.1637
            0.1754     0.1878     0.2013     0.2160     0.2319
            0.2490     0.2727     0.3261     0.3799     0.4340
            0.4885     0.5434     0.5988     0.6546     0.7110
            0.7678     0.8252     0.8830     0.9412     1.0000
Hrad:
            0.0392     0.1064     0.1691     0.2272     0.2816
            0.3328     0.3814     0.4277     0.4721     0.5148
            0.5560     0.5959     0.6347     0.6725     0.7093
            0.7454     0.7808     0.8126     0.8437     0.8747
            0.9057     0.9330     0.9160     0.9070     0.9043
            0.9068     0.9134     0.9234     0.9362     0.9515
            0.9689     0.9652     0.9551     0.9516     0.9534
            0.9594     0.9490     0.8718     0.8341     0.8180
            0.8170     0.8250     0.8385     0.8559     0.8760
            0.8983     0.9222     0.9473     0.9733     1.0000
Width:
            0.0468     0.0505     0.0529     0.0554     0.0578
            0.0603     0.0628     0.0652     0.0677     0.0702
            0.0726     0.0751     0.0775     0.0800     0.0825
            0.0849     0.0874     0.0906     0.0940     0.0974
            0.1008     0.1047     0.1157     0.1266     0.1376
            0.1485     0.1594     0.1704     0.1813     0.1923
            0.2032     0.2196     0.2395     0.2594     0.2792
            0.2991     0.9037     0.9089     0.9142     0.9194
            0.9266     0.9347     0.9429     0.9510     0.9592
            0.9674     0.9755     0.9837     0.9918     1.0000

Transect 29
Area:
            0.0140     0.0294     0.0449     0.0605     0.0762
            0.0920     0.1080     0.1240     0.1401     0.1564
            0.1727     0.1892     0.2057     0.2224     0.2392
            0.2560     0.2730     0.2901     0.3073     0.3246
            0.3420     0.3595     0.3772     0.3949     0.4127
            0.4307     0.4487     0.4669     0.4852     0.5040
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            0.5234     0.5434     0.5639     0.5850     0.6067
            0.6289     0.6517     0.6751     0.6990     0.7235
            0.7486     0.7743     0.8005     0.8273     0.8547
            0.8826     0.9111     0.9402     0.9698     1.0000
Hrad:
            0.0510     0.1042     0.1551     0.2040     0.2510
            0.2962     0.3397     0.3816     0.4221     0.4612
            0.4990     0.5356     0.5710     0.6054     0.6387
            0.6711     0.7026     0.7333     0.7631     0.7921
            0.8205     0.8481     0.8751     0.9014     0.9271
            0.9523     0.9769     1.0011     1.0191     1.0313
            1.0441     1.0573     1.0710     1.0851     1.0996
            1.1144     1.1296     1.1451     1.1609     1.1770
            1.1933     1.2099     1.2267     1.2437     1.2610
            1.2784     1.2960     1.3138     1.3318     1.0000
Width:
            0.1057     0.1065     0.1072     0.1079     0.1087
            0.1094     0.1101     0.1109     0.1116     0.1124
            0.1131     0.1138     0.1146     0.1153     0.1160
            0.1168     0.1175     0.1182     0.1190     0.1197
            0.1204     0.1212     0.1219     0.1226     0.1234
            0.1241     0.1248     0.1256     0.1278     0.1317
            0.1357     0.1396     0.1435     0.1474     0.1514
            0.1553     0.1592     0.1631     0.1671     0.1710
            0.1749     0.1789     0.1828     0.1867     0.1906
            0.1946     0.1985     0.2024     0.2063     1.0000

Transect sez54
Area:
            0.0004     0.0015     0.0033     0.0058     0.0091
            0.0131     0.0178     0.0231     0.0288     0.0348
            0.0410     0.0476     0.0545     0.0618     0.0696
            0.0779     0.0869     0.0963     0.1064     0.1171
            0.1291     0.1425     0.1567     0.1714     0.1865
            0.2037     0.2285     0.2573     0.2866     0.3163
            0.3464     0.3770     0.4079     0.4393     0.4712
            0.5034     0.5361     0.5692     0.6028     0.6368
            0.6712     0.7060     0.7412     0.7769     0.8130
            0.8496     0.8865     0.9239     0.9618     1.0000
Hrad:
            0.0309     0.0619     0.0928     0.1238     0.1547
            0.1857     0.2166     0.2571     0.2981     0.3370
            0.3740     0.4095     0.4438     0.4914     0.5419
            0.5874     0.6285     0.6660     0.7002     0.7296
            0.7512     0.7667     0.7826     0.7995     0.8168
            0.8040     0.7748     0.7532     0.7427     0.7392
            0.7405     0.7455     0.7531     0.7627     0.7738
            0.7861     0.7993     0.8132     0.8276     0.8425
            0.8577     0.8731     0.8888     0.9045     0.9204
            0.9363     0.9522     0.9682     0.9841     1.0000
Width:
            0.0189     0.0378     0.0567     0.0756     0.0945
            0.1134     0.1323     0.1429     0.1510     0.1591
            0.1672     0.1753     0.1834     0.1957     0.2102
            0.2247     0.2392     0.2537     0.2682     0.2944
            0.3306     0.3629     0.3748     0.3868     0.3987
            0.5628     0.7298     0.7553     0.7664     0.7775
            0.7887     0.7998     0.8109     0.8220     0.8332
            0.8443     0.8554     0.8665     0.8776     0.8888
            0.8999     0.9110     0.9221     0.9333     0.9444
            0.9555     0.9666     0.9778     0.9889     1.0000

Transect sez53
Area:
            0.0005     0.0018     0.0034     0.0053     0.0076
            0.0101     0.0129     0.0160     0.0194     0.0231
            0.0271     0.0312     0.0356     0.0402     0.0450
            0.0501     0.0557     0.0617     0.0684     0.0755
            0.0832     0.0914     0.1002     0.1095     0.1194
            0.1297     0.1407     0.1521     0.1641     0.1766
            0.1897     0.2049     0.2316     0.2629     0.2975
            0.3358     0.3788     0.4238     0.4692     0.5151
            0.5614     0.6083     0.6556     0.7034     0.7516
            0.8003     0.8496     0.8992     0.9494     1.0000
Hrad:
            0.0165     0.0386     0.0606     0.0803     0.0986
            0.1160     0.1328     0.1492     0.1653     0.1823
            0.2004     0.2181     0.2354     0.2522     0.2688
            0.2881     0.3105     0.3319     0.3535     0.3759
            0.3995     0.4244     0.4507     0.4785     0.5076
            0.5381     0.5699     0.6029     0.6370     0.6722
```

0.7084 0.7371 0.7209 0.7008 0.6847
0.6728 0.4955 0.5305 0.5666 0.6037
0.6415 0.6799 0.7188 0.7581 0.7978
0.8377 0.8780 0.9184 0.9591 1.0000
Width:
0.0188 0.0293 0.0350 0.0408 0.0467
0.0525 0.0583 0.0641 0.0700 0.0752
0.0796 0.0839 0.0883 0.0927 0.0970
0.1038 0.1143 0.1249 0.1355 0.1460
0.1566 0.1671 0.1777 0.1883 0.1988
0.2094 0.2200 0.2305 0.2411 0.2516
0.2622 0.4763 0.5842 0.6473 0.7117
0.8003 0.8790 0.8883 0.8976 0.9069
0.9162 0.9255 0.9349 0.9442 0.9535
0.9628 0.9721 0.9814 0.9907 1.0000

Transect 34
Area:
0.0056 0.0115 0.0175 0.0238 0.0302
0.0368 0.0436 0.0507 0.0579 0.0653
0.0729 0.0807 0.0887 0.0969 0.1052
0.1140 0.1232 0.1329 0.1431 0.1538
0.1650 0.1768 0.1890 0.2017 0.2149
0.2286 0.2428 0.2575 0.2731 0.2895
0.3068 0.3249 0.3440 0.3640 0.3849
0.4068 0.4296 0.4534 0.4781 0.5037
0.5303 0.5578 0.5862 0.6156 0.6459
0.6772 0.7150 0.7767 0.8746 1.0000
Hrad:
0.0638 0.1219 0.1753 0.2248 0.2709
0.3142 0.3551 0.3939 0.4308 0.4661
0.4999 0.5325 0.5640 0.5944 0.6240
0.6417 0.6597 0.6787 0.6984 0.7187
0.7396 0.7611 0.7830 0.8053 0.8279
0.8509 0.8742 0.9013 0.9324 0.9612
0.9877 1.0124 1.0481 1.0864 1.1212
1.1528 1.1813 1.2071 1.2304 1.2513
1.2701 1.2871 1.3022 1.3158 1.3280
1.3389 1.3225 1.2549 1.1320 1.0000
Width:
0.0420 0.0435 0.0449 0.0463 0.0477
0.0492 0.0506 0.0520 0.0535 0.0549
0.0563 0.0577 0.0592 0.0606 0.0620
0.0656 0.0692 0.0729 0.0765 0.0802
0.0838 0.0875 0.0912 0.0948 0.0985
0.1021 0.1058 0.1104 0.1168 0.1232
0.1297 0.1361 0.1428 0.1497 0.1566
0.1634 0.1703 0.1771 0.1840 0.1909
0.1977 0.2046 0.2114 0.2183 0.2252
0.2320 0.3568 0.5738 0.8288 1.0000

Transect 36
Area:
0.0024 0.0073 0.0129 0.0186 0.0244
0.0302 0.0361 0.0420 0.0481 0.0550
0.0620 0.0690 0.0761 0.0833 0.0908
0.0988 0.1068 0.1150 0.1233 0.1317
0.1402 0.1490 0.1583 0.1680 0.1782
0.1889 0.2005 0.2130 0.2263 0.2404
0.2555 0.2714 0.2882 0.3062 0.3263
0.3647 0.4084 0.4523 0.4965 0.5409
0.5857 0.6307 0.6759 0.7214 0.7672
0.8132 0.8595 0.9061 0.9529 1.0000
Hrad:
0.0483 0.1089 0.1799 0.2429 0.2995
0.3505 0.3970 0.4395 0.4781 0.4790
0.5183 0.5552 0.5900 0.6228 0.6214
0.6544 0.6860 0.7163 0.7456 0.7738
0.8013 0.8370 0.8691 0.8982 0.9245
0.9547 0.9856 1.0123 1.0353 1.0552
1.0726 1.0878 1.1012 1.1068 1.1020
1.0165 0.9668 0.9355 0.9167 0.9068
0.9034 0.9047 0.9098 0.9178 0.9281
0.9401 0.9535 0.9681 0.9837 1.0000
Width:
0.0894 0.1182 0.1196 0.1211 0.1225
0.1240 0.1254 0.1268 0.1413 0.1470
0.1486 0.1502 0.1518 0.1534 0.1676
0.1699 0.1721 0.1743 0.1766 0.1788
0.1812 0.1912 0.2012 0.2112 0.2212
0.2359 0.2543 0.2727 0.2911 0.3095

```
            0.3279     0.3462     0.3646     0.4031     0.4752
            0.9196     0.9277     0.9333     0.9389     0.9444
            0.9500     0.9555     0.9611     0.9667     0.9722
            0.9778     0.9833     0.9889     0.9944     1.0000

Transect 27
Area:
            0.0049     0.0106     0.0165     0.0224     0.0286
            0.0348     0.0412     0.0478     0.0545     0.0613
            0.0683     0.0754     0.0826     0.0900     0.0976
            0.1052     0.1131     0.1211     0.1296     0.1385
            0.1478     0.1575     0.1675     0.1780     0.1889
            0.2001     0.2118     0.2238     0.2363     0.2491
            0.2623     0.2760     0.2900     0.3044     0.3190
            0.3338     0.3487     0.3639     0.3792     0.3947
            0.4104     0.4408     0.5081     0.5761     0.6449
            0.7144     0.7847     0.8557     0.9275     1.0000
Hrad:
            0.0590     0.1230     0.1844     0.2435     0.3005
            0.3556     0.4089     0.4605     0.5107     0.5596
            0.6072     0.6536     0.6989     0.7433     0.7867
            0.8292     0.8703     0.8901     0.9109     0.9326
            0.9551     0.9783     1.0022     1.0267     1.0516
            1.0771     1.1029     1.1291     1.1557     1.1825
            1.2097     1.2371     1.2647     1.3007     1.3441
            1.3871     1.4296     1.4718     1.5135     1.5549
            1.5960     1.1678     1.0856     1.0370     1.0083
            0.9927     0.9863     0.9864     0.9914     1.0000
Width:
            0.0772     0.0791     0.0811     0.0830     0.0849
            0.0869     0.0888     0.0907     0.0927     0.0946
            0.0966     0.0985     0.1004     0.1024     0.1043
            0.1062     0.1083     0.1137     0.1191     0.1246
            0.1300     0.1354     0.1408     0.1462     0.1517
            0.1571     0.1625     0.1679     0.1734     0.1788
            0.1842     0.1896     0.1951     0.1990     0.2015
            0.2040     0.2065     0.2090     0.2115     0.2140
            0.2165     0.9174     0.9276     0.9380     0.9483
            0.9586     0.9690     0.9793     0.9897     1.0000

Transect sez53.7
Area:
            0.0008     0.0032     0.0063     0.0100     0.0166
            0.0241     0.0321     0.0406     0.0497     0.0593
            0.0695     0.0802     0.0915     0.1034     0.1159
            0.1290     0.1426     0.1568     0.1714     0.1866
            0.2022     0.2183     0.2349     0.2520     0.2696
            0.2876     0.3061     0.3251     0.3451     0.3733
            0.4036     0.4339     0.4644     0.4950     0.5257
            0.5565     0.5874     0.6185     0.6496     0.6809
            0.7123     0.7438     0.7754     0.8072     0.8390
            0.8710     0.9031     0.9353     0.9676     1.0000
Hrad:
            0.0233     0.0505     0.0838     0.1001     0.1054
            0.1411     0.1747     0.2065     0.2369     0.2662
            0.2962     0.3384     0.3776     0.4141     0.4483
            0.4804     0.5106     0.5392     0.5667     0.5932
            0.6185     0.6430     0.6665     0.6892     0.7112
            0.7324     0.7530     0.7729     0.7772     0.7633
            0.7632     0.7664     0.7723     0.7801     0.7895
            0.8002     0.8118     0.8243     0.8373     0.8509
            0.8649     0.8792     0.8938     0.9087     0.9237
            0.9388     0.9540     0.9693     0.9846     1.0000
Width:
            0.0492     0.0889     0.1047     0.1384     0.2218
            0.2384     0.2550     0.2716     0.2882     0.3048
            0.3215     0.3393     0.3572     0.3750     0.3928
            0.4106     0.4285     0.4443     0.4591     0.4739
            0.4887     0.5035     0.5183     0.5331     0.5479
            0.5627     0.5775     0.5923     0.7114     0.9289
            0.9328     0.9364     0.9399     0.9434     0.9470
            0.9505     0.9541     0.9576     0.9611     0.9647
            0.9682     0.9717     0.9753     0.9788     0.9823
            0.9859     0.9894     0.9929     0.9965     1.0000

Transect sez53.5
Area:
            0.0014     0.0038     0.0066     0.0099     0.0135
            0.0175     0.0219     0.0267     0.0318     0.0373
            0.0432     0.0495     0.0569     0.0658     0.0762
            0.0919     0.1085     0.1254     0.1425     0.1598
```

0.1774 0.1952 0.2132 0.2314 0.2501
0.2735 0.3021 0.3315 0.3609 0.3904
0.4201 0.4498 0.4796 0.5095 0.5394
0.5695 0.5997 0.6299 0.6603 0.6907
0.7212 0.7518 0.7825 0.8133 0.8442
0.8752 0.9063 0.9374 0.9687 1.0000
Hrad:
0.0404 0.0890 0.1303 0.1673 0.2025
0.2356 0.2669 0.2971 0.3263 0.3548
0.3827 0.4146 0.4455 0.4654 0.4736
0.4548 0.4499 0.4543 0.4640 0.4770
0.4921 0.5087 0.5274 0.5534 0.5615
0.5404 0.5405 0.5552 0.5718 0.5896
0.6085 0.6281 0.6481 0.6686 0.6893
0.7102 0.7312 0.7522 0.7733 0.7943
0.8153 0.8363 0.8572 0.8779 0.8986
0.9191 0.9395 0.9598 0.9800 1.0000
Width:
0.0702 0.0835 0.0968 0.1101 0.1220
0.1338 0.1456 0.1575 0.1693 0.1811
0.1929 0.2155 0.2596 0.3036 0.4056
0.5271 0.5342 0.5414 0.5485 0.5557
0.5628 0.5700 0.5770 0.5836 0.6473
0.8451 0.9338 0.9366 0.9395 0.9424
0.9453 0.9482 0.9510 0.9539 0.9568
0.9597 0.9626 0.9654 0.9683 0.9712
0.9741 0.9770 0.9798 0.9827 0.9856
0.9885 0.9914 0.9942 0.9971 1.0000

Transect 66
Area:
0.0008 0.0033 0.0074 0.0129 0.0194
0.0268 0.0352 0.0447 0.0551 0.0665
0.0789 0.0923 0.1067 0.1218 0.1375
0.1538 0.1706 0.1880 0.2059 0.2244
0.2434 0.2630 0.2832 0.3039 0.3251
0.3469 0.3693 0.3922 0.4157 0.4396
0.4639 0.4886 0.5136 0.5391 0.5648
0.5910 0.6176 0.6445 0.6718 0.6995
0.7275 0.7560 0.7848 0.8140 0.8435
0.8735 0.9038 0.9345 0.9656 1.0000
Hrad:
0.0180 0.0360 0.0540 0.0775 0.0996
0.1205 0.1408 0.1606 0.1799 0.1991
0.2180 0.2367 0.2563 0.2909 0.3238
0.3552 0.3853 0.4141 0.4417 0.4682
0.4937 0.5183 0.5420 0.5648 0.5869
0.6083 0.6290 0.6490 0.6686 0.6881
0.7074 0.7264 0.7451 0.7635 0.7817
0.7996 0.8172 0.8345 0.8517 0.8685
0.8851 0.9015 0.9177 0.9336 0.9493
0.9648 0.9800 0.9951 1.0074 1.0000
Width:
0.0441 0.0883 0.1324 0.1607 0.1875
0.2143 0.2411 0.2679 0.2947 0.3215
0.3483 0.3751 0.4013 0.4163 0.4313
0.4463 0.4613 0.4763 0.4913 0.5063
0.5213 0.5363 0.5513 0.5663 0.5813
0.5963 0.6114 0.6264 0.6403 0.6504
0.6606 0.6708 0.6810 0.6912 0.7013
0.7115 0.7217 0.7319 0.7421 0.7522
0.7624 0.7726 0.7828 0.7930 0.8031
0.8133 0.8235 0.8337 0.8563 1.0000

Transect 67
Area:
0.0016 0.0062 0.0128 0.0201 0.0281
0.0392 0.0519 0.0650 0.0785 0.0924
0.1067 0.1214 0.1366 0.1522 0.1682
0.1846 0.2014 0.2186 0.2363 0.2544
0.2729 0.2918 0.3112 0.3310 0.3512
0.3718 0.3928 0.4143 0.4361 0.4584
0.4811 0.5043 0.5278 0.5518 0.5762
0.6010 0.6262 0.6519 0.6779 0.7044
0.7313 0.7586 0.7864 0.8146 0.8431
0.8721 0.9016 0.9326 0.9654 1.0000
Hrad:
0.0171 0.0344 0.0622 0.0874 0.1106
0.1049 0.1326 0.1589 0.1840 0.2081
0.2312 0.2536 0.2752 0.2961 0.3165
0.3363 0.3556 0.3745 0.3930 0.4126

0.4391 0.4671 0.4943 0.5206 0.5463
0.5712 0.5954 0.6190 0.6419 0.6643
0.6862 0.7074 0.7282 0.7485 0.7683
0.7876 0.8066 0.8251 0.8432 0.8609
0.8783 0.8953 0.9119 0.9283 0.9443
0.9600 0.9741 0.9840 0.9927 1.0000
Width:
0.0873 0.1736 0.1949 0.2161 0.2374
0.3499 0.3617 0.3734 0.3852 0.3969
0.4086 0.4204 0.4321 0.4439 0.4556
0.4673 0.4791 0.4908 0.5025 0.5144
0.5266 0.5384 0.5502 0.5620 0.5738
0.5856 0.5974 0.6092 0.6210 0.6328
0.6446 0.6564 0.6682 0.6799 0.6917
0.7035 0.7153 0.7271 0.7389 0.7507
0.7625 0.7743 0.7861 0.7979 0.8097
0.8215 0.8444 0.8962 0.9481 1.0000

Transect 68
Area:
0.0012 0.0049 0.0111 0.0196 0.0288
0.0385 0.0487 0.0592 0.0703 0.0817
0.0937 0.1060 0.1188 0.1321 0.1458
0.1600 0.1746 0.1896 0.2051 0.2211
0.2375 0.2543 0.2716 0.2893 0.3075
0.3262 0.3452 0.3648 0.3851 0.4064
0.4287 0.4521 0.4764 0.5018 0.5281
0.5555 0.5839 0.6129 0.6424 0.6724
0.7030 0.7340 0.7655 0.7975 0.8300
0.8630 0.8965 0.9305 0.9650 1.0000
Hrad:
0.0181 0.0361 0.0542 0.0782 0.1083
0.1367 0.1636 0.1892 0.2138 0.2375
0.2604 0.2826 0.3041 0.3251 0.3456
0.3657 0.3853 0.4047 0.4237 0.4424
0.4608 0.4791 0.4971 0.5149 0.5325
0.5499 0.5672 0.5861 0.6163 0.6444
0.6705 0.6948 0.7174 0.7384 0.7581
0.7764 0.7937 0.8109 0.8279 0.8447
0.8613 0.8777 0.8938 0.9096 0.9253
0.9407 0.9558 0.9708 0.9855 1.0000
Width:
0.0702 0.1404 0.2106 0.2558 0.2685
0.2812 0.2939 0.3065 0.3192 0.3319
0.3446 0.3573 0.3700 0.3827 0.3954
0.4081 0.4207 0.4334 0.4461 0.4588
0.4715 0.4842 0.4969 0.5096 0.5223
0.5349 0.5476 0.5621 0.5907 0.6193
0.6479 0.6765 0.7051 0.7337 0.7623
0.7910 0.8164 0.8305 0.8447 0.8588
0.8729 0.8870 0.9011 0.9153 0.9294
0.9435 0.9576 0.9718 0.9859 1.0000

Transect 33
Area:
0.0011 0.0042 0.0080 0.0122 0.0169
0.0219 0.0274 0.0334 0.0397 0.0465
0.0538 0.0614 0.0695 0.0780 0.0870
0.0964 0.1062 0.1166 0.1275 0.1389
0.1507 0.1631 0.1760 0.1894 0.2034
0.2187 0.2352 0.2530 0.2720 0.2922
0.3137 0.3365 0.3604 0.3857 0.4121
0.4398 0.4688 0.4990 0.5304 0.5631
0.5970 0.6322 0.6686 0.7063 0.7452
0.7871 0.8336 0.8848 0.9405 1.0000
Hrad:
0.0295 0.0693 0.1152 0.1567 0.1949
0.2309 0.2651 0.2979 0.3297 0.3606
0.3908 0.4204 0.4496 0.4784 0.5068
0.5410 0.5807 0.6176 0.6520 0.6842
0.7146 0.7506 0.7897 0.8266 0.8589
0.8858 0.9083 0.9270 0.9425 0.9553
0.9660 0.9750 0.9827 0.9892 0.9950
1.0001 1.0048 1.0092 1.0133 1.0173
1.0212 1.0252 1.0291 1.0332 1.0369
1.0301 1.0231 1.0141 1.0048 1.0000
Width:
0.0362 0.0582 0.0652 0.0722 0.0793
0.0863 0.0933 0.1003 0.1073 0.1144
0.1214 0.1284 0.1354 0.1424 0.1495
0.1570 0.1652 0.1733 0.1815 0.1897

```
            0.1979     0.2060     0.2142     0.2224     0.2389
            0.2592     0.2795     0.2998     0.3201     0.3404
            0.3607     0.3810     0.4013     0.4215     0.4418
            0.4621     0.4824     0.5027     0.5230     0.5433
            0.5636     0.5839     0.6042     0.6245     0.6463
            0.7214     0.7965     0.8716     0.9425     1.0000

  Transect 28
  Area:
            0.0140     0.0294     0.0449     0.0605     0.0762
            0.0920     0.1080     0.1240     0.1401     0.1564
            0.1727     0.1892     0.2057     0.2224     0.2392
            0.2560     0.2730     0.2901     0.3073     0.3246
            0.3420     0.3595     0.3772     0.3949     0.4127
            0.4307     0.4487     0.4669     0.4852     0.5040
            0.5234     0.5434     0.5639     0.5850     0.6067
            0.6289     0.6517     0.6751     0.6990     0.7235
            0.7486     0.7743     0.8005     0.8273     0.8547
            0.8826     0.9111     0.9402     0.9698     1.0000
  Hrad:
            0.0510     0.1042     0.1551     0.2040     0.2510
            0.2962     0.3397     0.3816     0.4221     0.4612
            0.4990     0.5356     0.5710     0.6054     0.6387
            0.6711     0.7026     0.7333     0.7631     0.7921
            0.8205     0.8481     0.8751     0.9014     0.9271
            0.9523     0.9769     1.0011     1.0191     1.0313
            1.0441     1.0573     1.0710     1.0851     1.0996
            1.1144     1.1296     1.1451     1.1609     1.1770
            1.1933     1.2099     1.2267     1.2437     1.2610
            1.2784     1.2960     1.3138     1.3318     1.0000
  Width:
            0.1057     0.1065     0.1072     0.1079     0.1087
            0.1094     0.1101     0.1109     0.1116     0.1124
            0.1131     0.1138     0.1146     0.1153     0.1160
            0.1168     0.1175     0.1182     0.1190     0.1197
            0.1204     0.1212     0.1219     0.1226     0.1234
            0.1241     0.1248     0.1256     0.1278     0.1317
            0.1357     0.1396     0.1435     0.1474     0.1514
            0.1553     0.1592     0.1631     0.1671     0.1710
            0.1749     0.1789     0.1828     0.1867     0.1906
            0.1946     0.1985     0.2024     0.2063     1.0000


  **********************
  Control Actions Taken
  **********************


  *************************          Volume        Volume
  Flow Routing Continuity        hectare-m       Mliters
  *************************     ---------     ---------
  Dry Weather Inflow .......          0.000         0.000
  Wet Weather Inflow .......          0.000         0.000
  Groundwater Inflow .......          0.000         0.000
  RDII Inflow ..............          0.000         0.000
  External Inflow ..........         27.472       274.721
  External Outflow .........         27.542       275.425
  Internal Outflow .........          0.000         0.000
  Evaporation Loss .........          0.000         0.000
  Initial Stored Volume ....          0.040         0.401
  Final Stored Volume ......          0.005         0.049
  Continuity Error (%) .....         -0.128


  *******************************
  Highest Flow Instability Indexes
  *******************************
  All links are stable.


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :     0.40 sec
  Average Time Step           :     0.40 sec
  Maximum Time Step           :     0.40 sec
  Percent in Steady State     :     0.00
  Average Iterations per Step :     2.01


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Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days hr:min
53	JUNCTION	1.00	3.54	224.38	0 01:33
54	JUNCTION	0.66	2.05	225.15	0 01:29
55	JUNCTION	0.77	3.01	226.31	0 01:25
55.5	JUNCTION	0.63	3.58	228.48	0 01:24
56	JUNCTION	0.65	3.53	228.53	0 01:24
57	JUNCTION	0.37	1.71	231.31	0 01:23
58	JUNCTION	0.36	2.50	235.10	0 01:19
59	JUNCTION	0.14	1.51	235.11	0 01:19
60	JUNCTION	0.27	1.29	238.04	0 01:18
61	JUNCTION	0.23	1.09	243.15	0 01:18
62	JUNCTION	0.27	1.34	246.39	0 01:18
63	JUNCTION	0.07	0.35	246.80	0 01:18
64	JUNCTION	0.37	1.78	250.78	0 01:17
65	JUNCTION	0.29	1.43	254.89	0 01:17
66	JUNCTION	0.19	1.08	255.54	0 00:00
67	JUNCTION	0.39	3.16	257.82	0 00:00
68	JUNCTION	0.37	5.56	260.41	0 00:00
69	JUNCTION	0.08	3.50	259.65	0 00:00
70	JUNCTION	0.24	1.17	257.47	0 01:15
80	JUNCTION	0.32	1.44	257.79	0 01:15
200	JUNCTION	0.38	1.54	259.14	0 01:15
300	JUNCTION	0.54	1.98	259.64	0 01:15
400	JUNCTION	0.53	2.12	260.00	0 01:15
500	JUNCTION	0.54	2.17	260.27	0 01:15
600	JUNCTION	0.49	2.08	260.40	0 01:15
700	JUNCTION	0.59	2.20	260.74	0 01:15
800	JUNCTION	0.60	2.30	261.01	0 01:15
900	JUNCTION	0.63	2.62	261.50	0 01:14
52	JUNCTION	0.67	3.98	224.23	0 01:33
51.5	JUNCTION	0.68	4.03	224.23	0 01:33
51	JUNCTION	1.18	3.68	220.01	0 01:34
90	JUNCTION	0.30	1.48	258.06	0 01:15
100	JUNCTION	0.15	0.82	258.40	0 01:15
63.5	JUNCTION	0.27	1.28	248.98	0 01:17
51.3	JUNCTION	0.62	3.10	221.87	0 01:33
51.2	JUNCTION	0.77	3.60	221.45	0 01:34
65.5	JUNCTION	0.21	1.16	255.06	0 01:16
64.5	JUNCTION	0.30	1.55	251.85	0 01:17
64.4	JUNCTION	0.36	1.78	251.28	0 01:17
60.5	JUNCTION	0.26	1.26	240.31	0 01:18
59.5	JUNCTION	0.28	1.31	236.31	0 01:19
57.7	JUNCTION	0.54	5.00	236.50	0 01:14
57.3	JUNCTION	0.48	1.99	232.19	0 01:22
56.5	JUNCTION	0.47	3.01	229.21	0 01:24
57.5	JUNCTION	0.53	5.00	236.30	0 01:14
53.7	JUNCTION	0.74	2.61	224.80	0 01:32
53.5	JUNCTION	0.86	3.15	224.58	0 01:32
50	OUTFALL	0.67	2.26	217.26	0 01:34

****
Node InFlow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days hr:min	Lateral Inflow Volume Mltrs	Total Inflow Volume Mltrs
53	JUNCTION	0.000	41.410	0 01:25	0.000	239.596
54	JUNCTION	0.000	41.952	0 01:23	0.000	239.608
55	JUNCTION	0.000	41.955	0 01:23	0.000	239.608
55.5	JUNCTION	0.000	41.957	0 01:23	0.000	239.609
56	JUNCTION	0.000	41.960	0 01:22	0.000	239.609
57	JUNCTION	1.264	41.965	0 01:22	8.861	239.597
58	JUNCTION	0.000	30.458	0 01:19	0.000	150.971
59	JUNCTION	0.000	30.484	0 01:19	0.000	150.971
60	JUNCTION	4.505	30.495	0 01:18	26.540	150.971
61	JUNCTION	0.000	25.997	0 01:18	0.000	124.433
62	JUNCTION	0.000	25.992	0 01:18	0.000	124.434
63	JUNCTION	0.000	25.992	0 01:18	0.000	124.434
64	JUNCTION	0.000	25.982	0 01:17	0.000	124.435

65	JUNCTION	3.686	25.984	0	01:16	21.715	124.436
66	JUNCTION	0.000	23.491	0	00:00	0.000	102.722
67	JUNCTION	0.000	47.241	0	00:00	0.000	102.800
68	JUNCTION	0.000	29.596	0	00:00	0.000	102.455
69	JUNCTION	0.000	22.309	0	01:15	0.000	102.125
70	JUNCTION	0.000	22.307	0	01:15	0.000	102.174
80	JUNCTION	0.000	22.308	0	01:15	0.000	102.031
200	JUNCTION	0.000	22.308	0	01:15	0.000	101.931
300	JUNCTION	0.000	22.308	0	01:15	0.000	101.933
400	JUNCTION	0.000	22.311	0	01:15	0.000	101.933
500	JUNCTION	0.000	22.315	0	01:15	0.000	101.933
600	JUNCTION	0.000	22.320	0	01:15	0.000	101.934
700	JUNCTION	0.000	22.326	0	01:15	0.000	101.935
800	JUNCTION	0.000	22.330	0	01:14	0.000	101.934
900	JUNCTION	22.330	22.330	0	01:14	101.934	101.934
52	JUNCTION	0.000	40.876	0	01:25	0.000	239.553
51.5	JUNCTION	0.000	40.604	0	01:32	0.000	239.545
51	JUNCTION	0.000	44.736	0	01:34	0.000	275.460
90	JUNCTION	0.000	22.308	0	01:15	0.000	101.962
100	JUNCTION	0.000	22.308	0	01:15	0.000	101.931
63.5	JUNCTION	0.000	25.989	0	01:17	0.000	124.435
51.3	JUNCTION	1.980	42.394	0	01:33	15.958	255.502
51.2	JUNCTION	2.400	44.736	0	01:34	19.960	275.460
65.5	JUNCTION	0.000	22.313	0	01:16	0.000	102.721
64.5	JUNCTION	0.000	25.976	0	01:17	0.000	124.434
64.4	JUNCTION	0.000	25.979	0	01:17	0.000	124.435
60.5	JUNCTION	0.000	25.993	0	01:18	0.000	124.433
59.5	JUNCTION	0.000	30.498	0	01:19	0.000	150.970
57.7	JUNCTION	6.952	36.774	0	01:19	48.737	199.711
57.3	JUNCTION	0.000	40.801	0	01:20	0.000	230.736
56.5	JUNCTION	0.000	41.960	0	01:22	0.000	239.595
57.5	JUNCTION	4.424	40.801	0	01:20	31.014	230.730
53.7	JUNCTION	0.000	41.928	0	01:23	0.000	239.615
53.5	JUNCTION	0.000	41.714	0	01:25	0.000	239.600
50	OUTFALL	0.000	44.736	0	01:34	0.000	275.424

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
58	JUNCTION	0.33	0.499	2.701
68	JUNCTION	0.01	2.062	0.588
69	JUNCTION	0.01	0.000	1.350
51.3	JUNCTION	0.27	0.098	2.502
51.2	JUNCTION	0.73	0.601	1.999
57.7	JUNCTION	0.50	2.900	0.000
56.5	JUNCTION	0.59	0.906	4.094
57.5	JUNCTION	0.47	2.900	0.000

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CMS	Time of Max Occurrence days hr:min	Total Flood Volume Mltrs	Maximum Ponded Volume ha-mm
57.7	0.01	0.607	0 01:14	0.000	0.00
57.5	0.01	0.607	0 01:14	0.000	0.00

****
Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CMS	Max. Flow CMS	Total Volume Mltrs

50	99.11	9.650	44.736	275.424
System	99.11	9.650	44.736	275.424

****
Link Flow Summary
****

Link	Type	Maximum Flow CMS	Time of Max Occurrence days	hr:min	Maximum Velocity m/sec	Max/ Full Flow	Max/ Full Depth
2	CONDUIT	41.952	0	01:23	6.41	0.43	0.63
4	CONDUIT	41.960	0	01:22	7.77	0.81	0.91
6	CONDUIT	30.458	0	01:19	8.60	0.10	0.88
9	CONDUIT	25.997	0	01:18	8.23	0.63	0.54
10	CONDUIT	25.992	0	01:18	11.80	0.08	0.38
14	CONDUIT	23.491	0	00:00	7.48	1.04	0.59
15	CONDUIT	47.241	0	00:00	5.04	0.87	0.63
16	CONDUIT	22.309	0	01:15	6.11	0.76	0.57
17	CONDUIT	29.596	0	00:00	3.89	0.03	1.00
19	CHANNEL	22.308	0	01:15	5.32	0.61	0.41
20	CHANNEL	22.308	0	01:15	2.93	0.08	0.24
21	CHANNEL	22.308	0	01:15	2.17	0.14	0.44
22	CHANNEL	22.311	0	01:15	1.96	0.04	0.29
23	CHANNEL	22.315	0	01:15	1.44	0.05	0.30
24	CHANNEL	22.320	0	01:15	2.14	0.08	0.35
25	CHANNEL	22.326	0	01:15	1.91	0.11	0.42
26	CHANNEL	22.330	0	01:14	2.80	0.11	0.32
30	CONDUIT	41.957	0	01:23	6.37	0.35	0.55
31	CONDUIT	41.955	0	01:23	7.33	1.17	1.00
33	CHANNEL	40.876	0	01:25	2.40	0.10	0.52
34	CHANNEL	40.604	0	01:32	3.79	0.10	0.81
36	CHANNEL	44.736	0	01:34	2.98	0.15	0.37
27	CHANNEL	22.308	0	01:15	3.79	0.09	0.53
28	CHANNEL	22.308	0	01:15	2.83	0.40	0.48
29	CHANNEL	22.307	0	01:15	3.20	0.86	0.43
45	CONDUIT	25.976	0	01:17	6.69	0.69	0.66
46	CONDUIT	25.979	0	01:17	6.00	0.68	0.74
47	CONDUIT	25.982	0	01:17	5.63	0.91	0.79
48	CONDUIT	25.989	0	01:17	6.55	1.00	0.68
49	CONDUIT	25.992	0	01:18	12.26	0.62	0.36
52	CONDUIT	40.586	0	01:33	6.66	1.09	1.00
53	CONDUIT	42.394	0	01:33	4.75	0.67	1.00
54	CONDUIT	44.736	0	01:34	4.97	0.73	1.00
55	CONDUIT	22.313	0	01:16	4.73	0.26	0.39
56	CONDUIT	22.313	0	01:16	3.58	0.27	0.48
57	CONDUIT	25.993	0	01:18	6.91	0.65	0.65
58	CONDUIT	25.999	0	01:18	6.38	0.80	0.71
59	CONDUIT	30.498	0	01:19	7.54	0.71	0.65
60	CONDUIT	30.484	0	01:19	9.98	0.70	0.70
61	CONDUIT	30.458	0	01:19	5.17	0.78	1.00
62	CONDUIT	40.793	0	01:20	7.28	1.39	0.88
63	CONDUIT	41.960	0	01:22	6.24	0.75	1.00
64	CONDUIT	36.774	0	01:19	5.47	1.36	1.00
65	CONDUIT	40.801	0	01:20	6.27	1.29	0.97
66	CHANNEL	41.928	0	01:23	2.79	0.03	0.27
67	CHANNEL	41.714	0	01:25	2.04	0.05	0.34
68	CHANNEL	41.410	0	01:25	1.90	0.17	0.58

****
Flow Classification Summary
****

Conduit	Adjusted /Actual Length	Fraction of Time in Flow Class: Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Avg. Froude Number	Avg. Flow Change
2	1.00	0.01	0.00	0.00	0.71	0.27	0.00	0.00	0.57	0.0000
4	1.00	0.00	0.00	0.00	0.36	0.64	0.00	0.00	1.50	0.0000
6	1.00	0.01	0.00	0.00	0.42	0.57	0.00	0.00	1.80	0.0000
9	1.00	0.00	0.00	0.00	0.49	0.51	0.00	0.00	1.29	0.0000
10	1.00	0.00	0.00	0.00	0.44	0.56	0.00	0.00	2.15	0.0000
14	1.00	0.00	0.00	0.00	0.59	0.41	0.00	0.00	0.79	0.0001
15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.30	0.0000
16	1.00	0.00	0.00	0.00	0.60	0.40	0.00	0.00	0.98	0.0000
17	1.00	0.00	0.00	0.00	0.62	0.38	0.00	0.00	0.69	0.0000

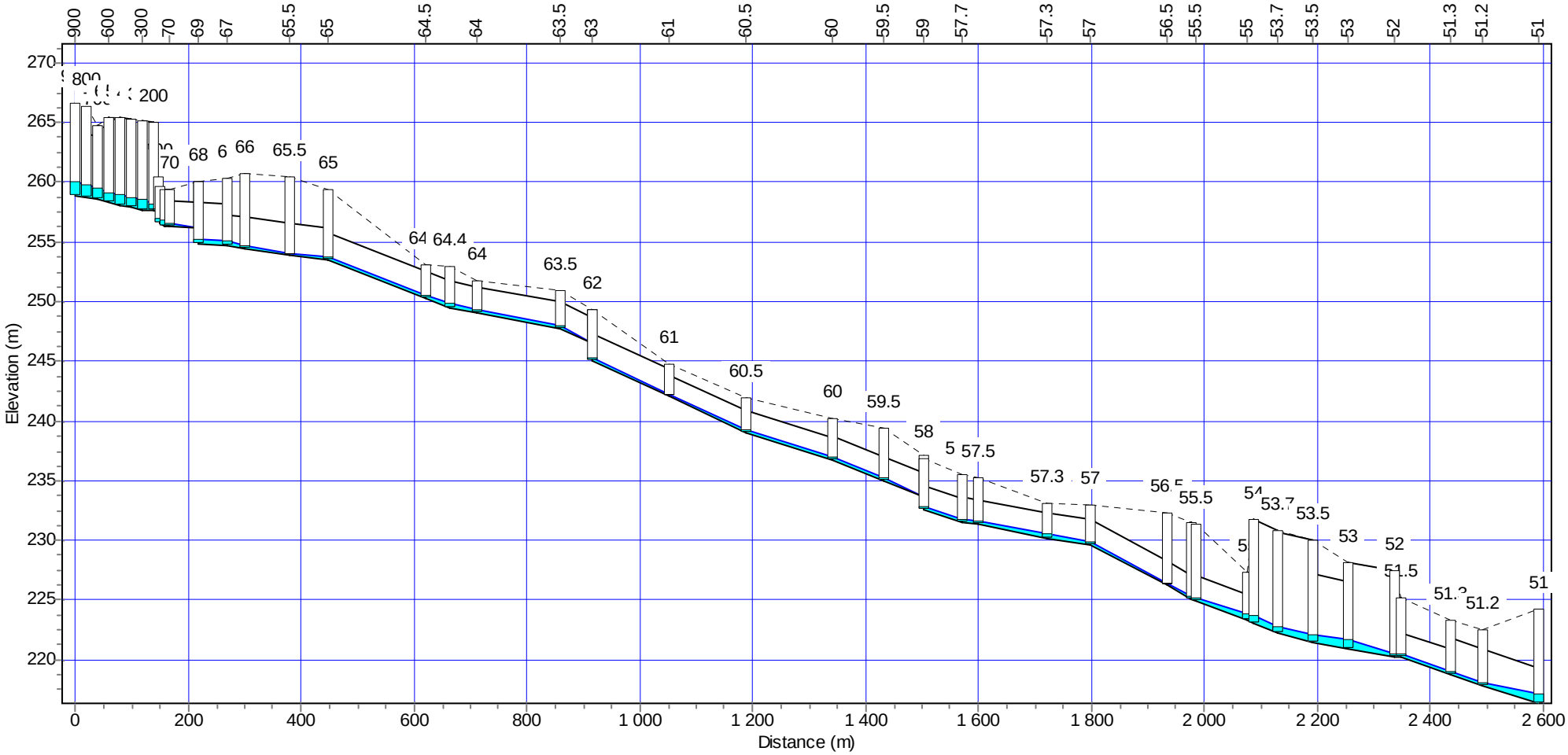
19	1.00	0.00	0.00	0.00	0.61	0.39	0.00	0.00	0.73	0.0000
20	1.00	0.00	0.02	0.00	0.98	0.00	0.00	0.00	0.34	0.0000
21	1.00	0.01	0.00	0.00	0.98	0.00	0.00	0.00	0.26	0.0000
22	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.27	0.0000
23	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.17	0.0000
24	1.00	0.00	0.00	0.00	0.99	0.00	0.00	0.00	0.36	0.0000
25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.25	0.0000
26	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.23	0.0000
30	1.00	0.01	0.00	0.00	0.54	0.45	0.00	0.00	0.95	0.0000
31	1.00	0.01	0.00	0.00	0.35	0.63	0.00	0.00	0.95	0.0000
33	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.41	0.0000
34	1.00	0.02	0.00	0.00	0.58	0.40	0.00	0.00	0.77	0.0000
36	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.39	0.0000
27	1.00	0.00	0.00	0.00	0.61	0.39	0.00	0.00	0.66	0.0000
28	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.29	0.0000
29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.34	0.0000
45	1.00	0.00	0.00	0.00	0.51	0.49	0.00	0.00	1.04	0.0000
46	1.00	0.00	0.00	0.00	0.52	0.48	0.00	0.00	0.92	0.0000
47	1.00	0.00	0.00	0.00	0.54	0.46	0.00	0.00	0.79	0.0000
48	1.00	0.00	0.00	0.00	0.53	0.47	0.00	0.00	0.88	0.0000
49	1.00	0.00	0.00	0.00	0.45	0.55	0.00	0.00	2.03	0.0000
52	1.00	0.00	0.02	0.00	0.35	0.63	0.00	0.00	1.16	0.0000
53	1.00	0.00	0.00	0.00	0.52	0.48	0.00	0.00	1.02	0.0000
54	1.00	0.00	0.00	0.00	0.99	0.01	0.00	0.00	0.48	0.0000
55	1.00	0.00	0.00	0.00	0.65	0.35	0.00	0.00	0.56	0.0000
56	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.40	0.0000
57	1.00	0.01	0.00	0.00	0.50	0.50	0.00	0.00	1.12	0.0000
58	1.00	0.00	0.01	0.00	0.52	0.48	0.00	0.00	0.98	0.0000
59	1.00	0.00	0.00	0.00	0.49	0.51	0.00	0.00	1.13	0.0000
60	1.00	0.00	0.00	0.00	0.43	0.56	0.00	0.00	1.87	0.0000
61	1.00	0.00	0.01	0.00	0.68	0.31	0.00	0.00	0.62	0.0000
62	1.00	0.00	0.00	0.00	0.41	0.59	0.00	0.00	1.15	0.0000
63	1.00	0.00	0.00	0.00	0.40	0.60	0.00	0.00	1.12	0.0000
64	1.00	0.00	0.00	0.00	0.48	0.52	0.00	0.00	0.78	0.0001
65	1.00	0.00	0.00	0.00	0.42	0.58	0.00	0.00	0.95	0.0000
66	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.43	0.0000
67	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.30	0.0000
68	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.25	0.0000

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
14	0.01	0.01	0.01	0.01	0.01
17	0.01	0.01	0.01	0.01	0.01
31	0.79	0.79	0.79	0.66	0.66
52	0.88	0.88	0.88	0.59	0.88
53	0.27	0.27	0.27	0.01	0.01
54	0.73	0.73	0.73	0.01	0.01
61	0.33	0.33	0.33	0.01	0.01
62	0.01	0.01	0.01	0.95	0.01
63	0.59	0.59	0.59	0.01	0.01
64	0.47	0.47	0.47	0.89	0.47
65	0.01	0.01	0.01	0.83	0.01

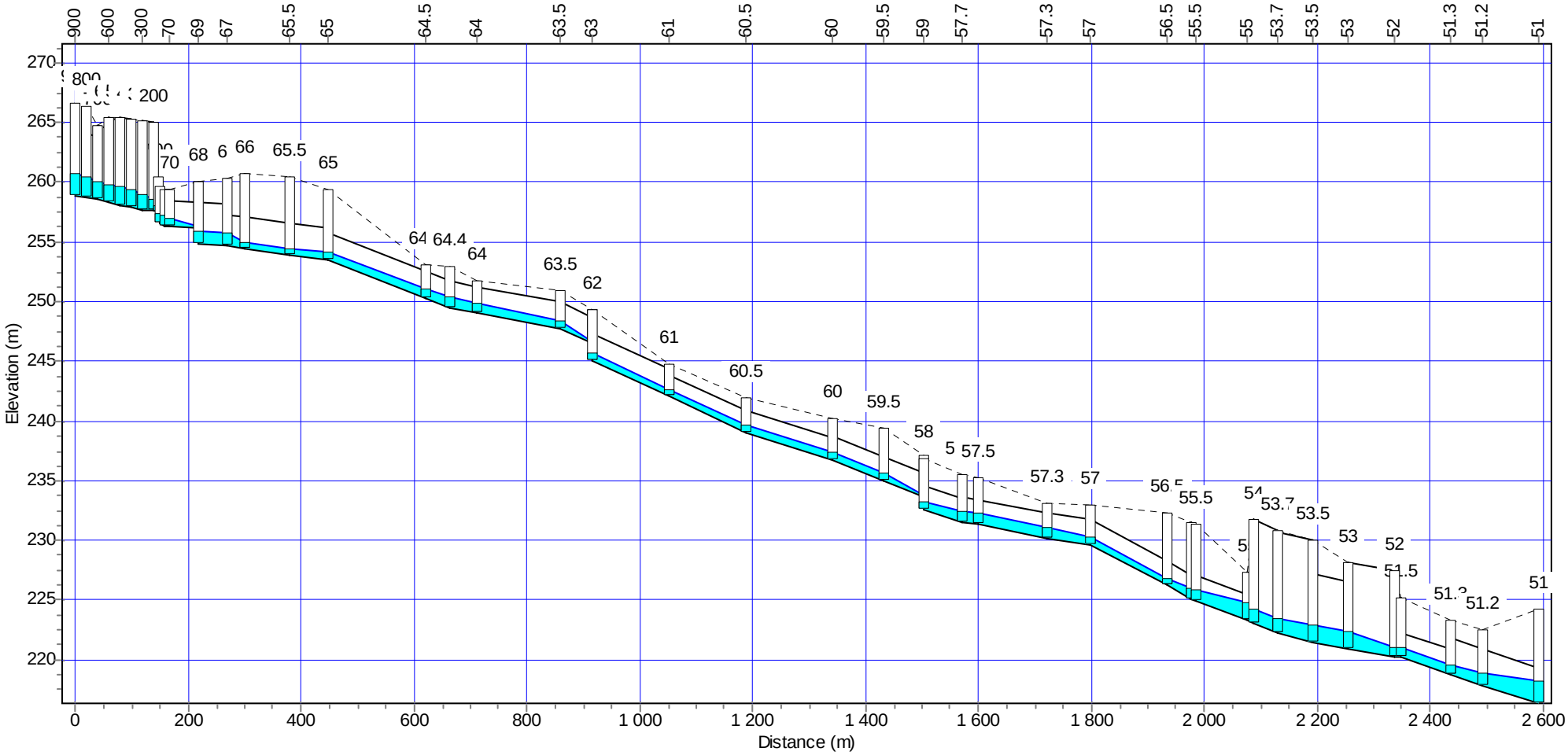
Analysis begun on: Thu Aug 28 12:17:34 2008
Analysis ended on: Thu Aug 28 12:17:51 2008
Total elapsed time: 00:00:17

Water Elevation Profile: Node 900 - 51



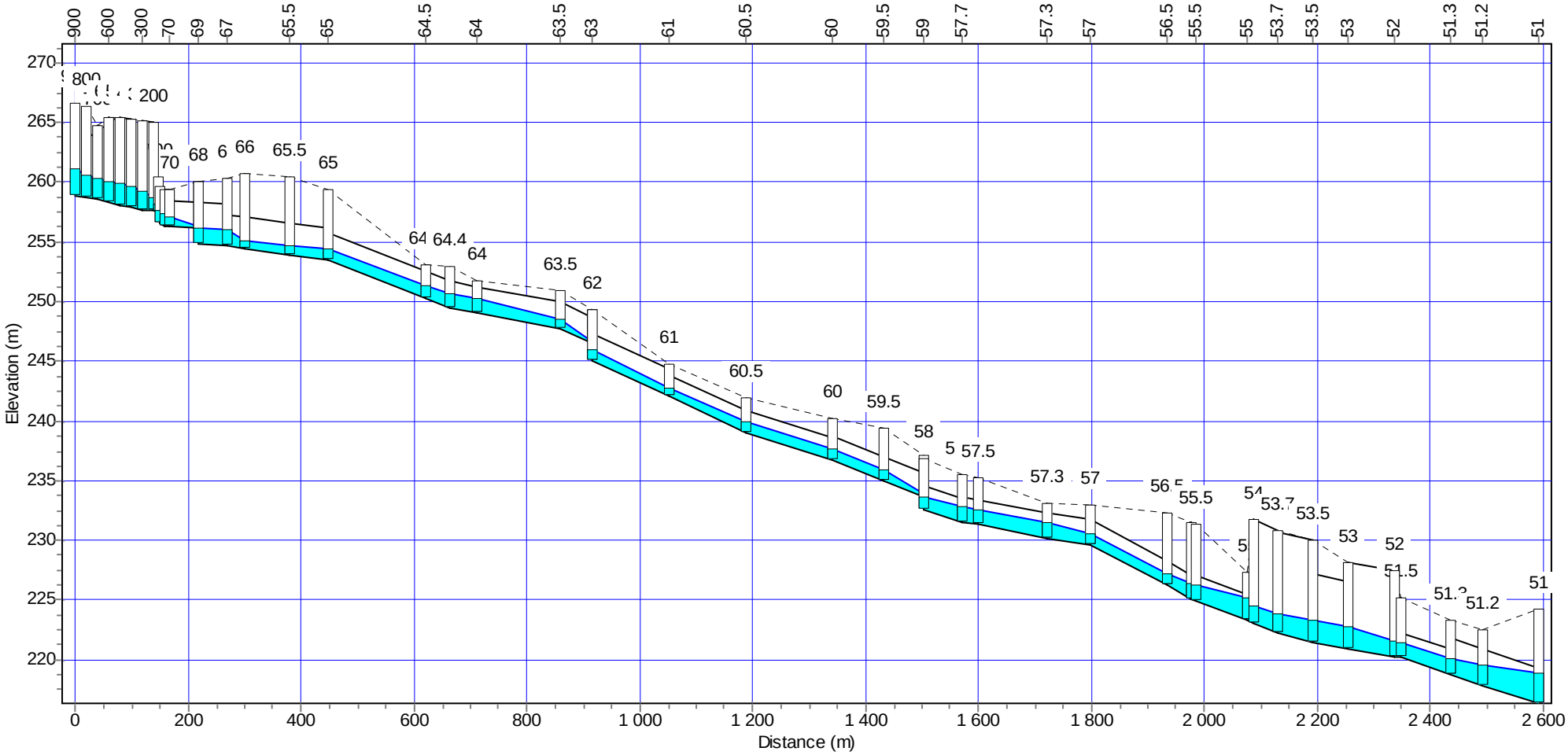
06/19/2008 00:20:00

Water Elevation Profile: Node 900 - 51



06/19/2008 00:35:00

Water Elevation Profile: Node 900 - 51



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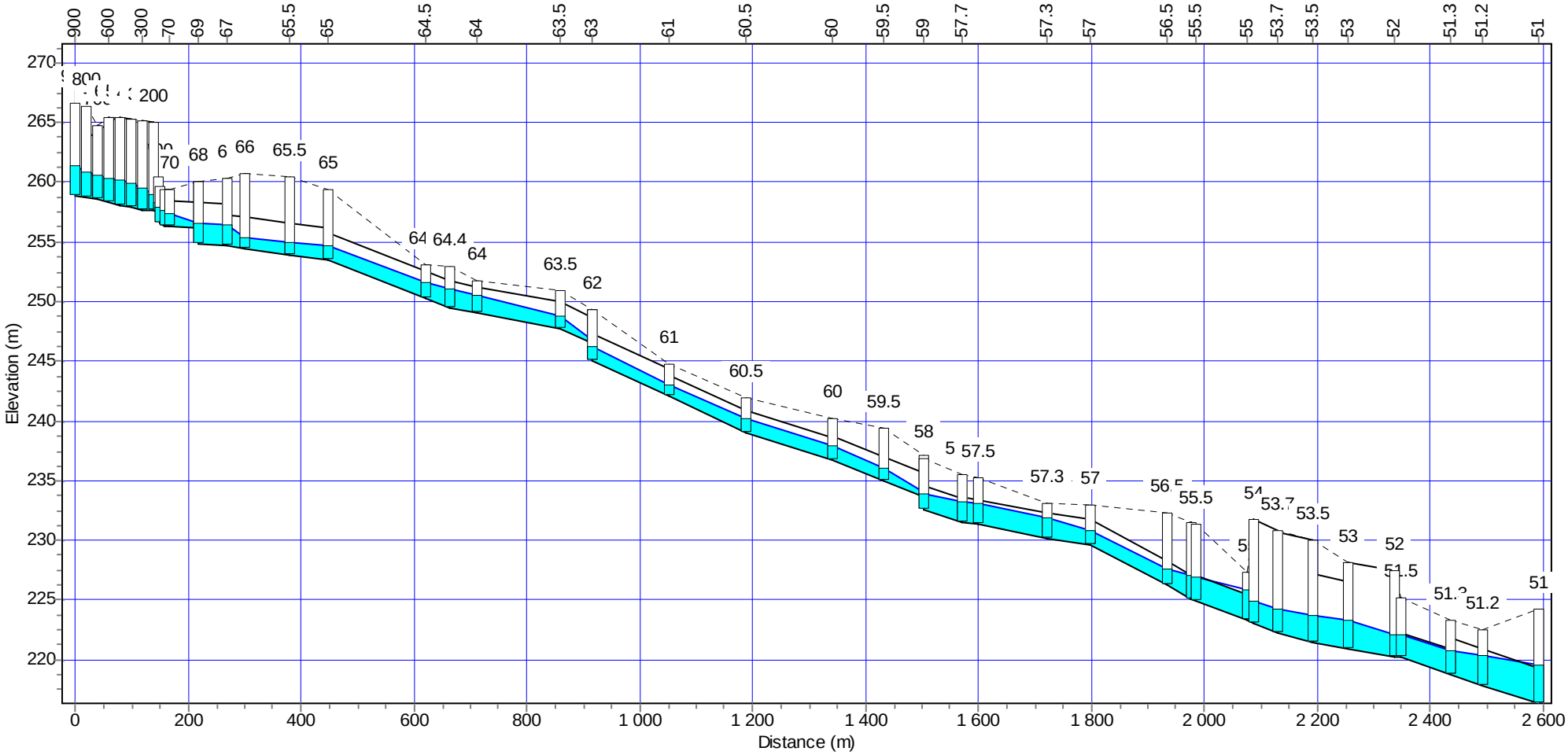
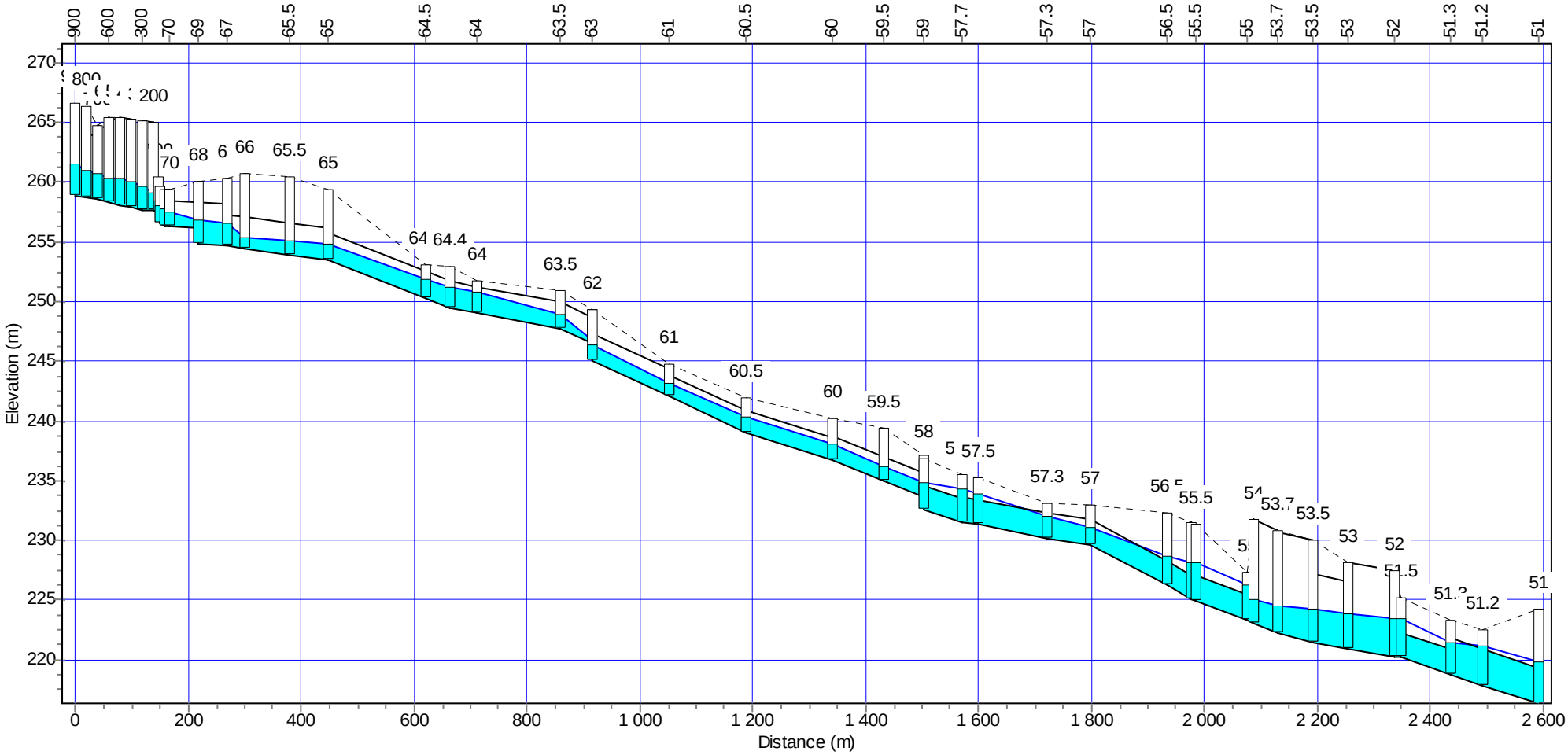
Water Elevation Profile: Node 900 - 51



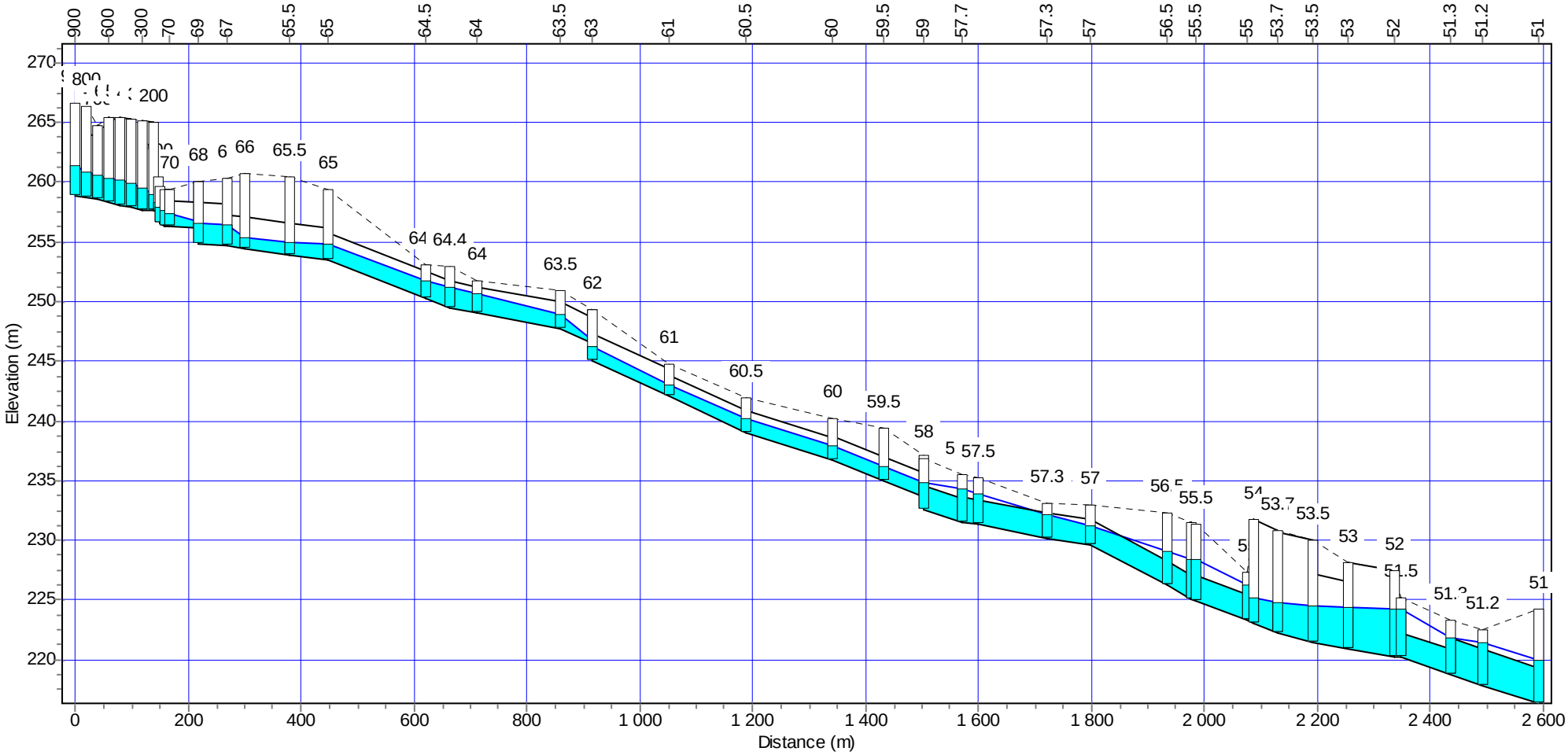
06/19/2008 01:00:00

Water Elevation Profile: Node 900 - 51



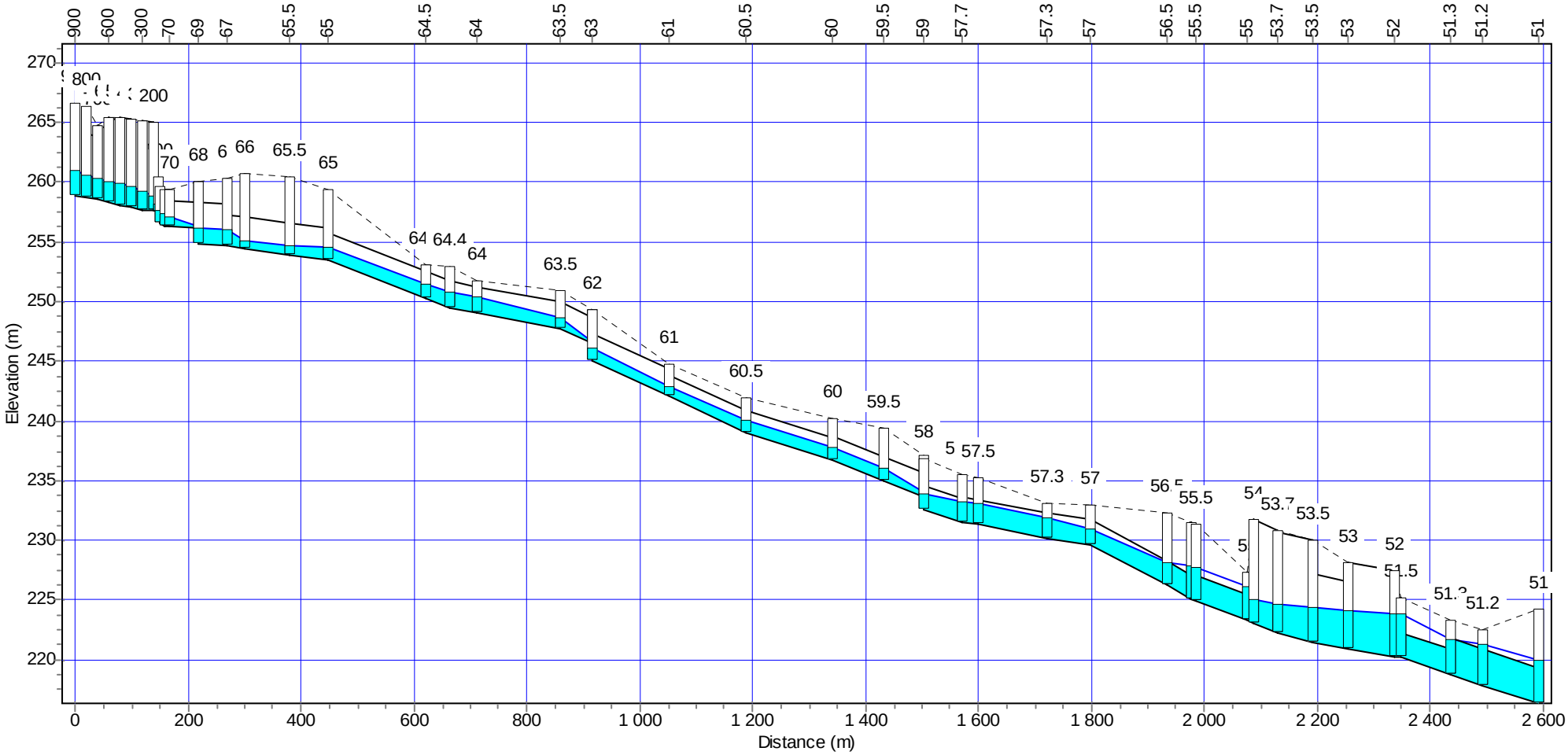
06/19/2008 01:15:00

Water Elevation Profile: Node 900 - 51



06/19/2008 01:30:00

Water Elevation Profile: Node 900 - 51



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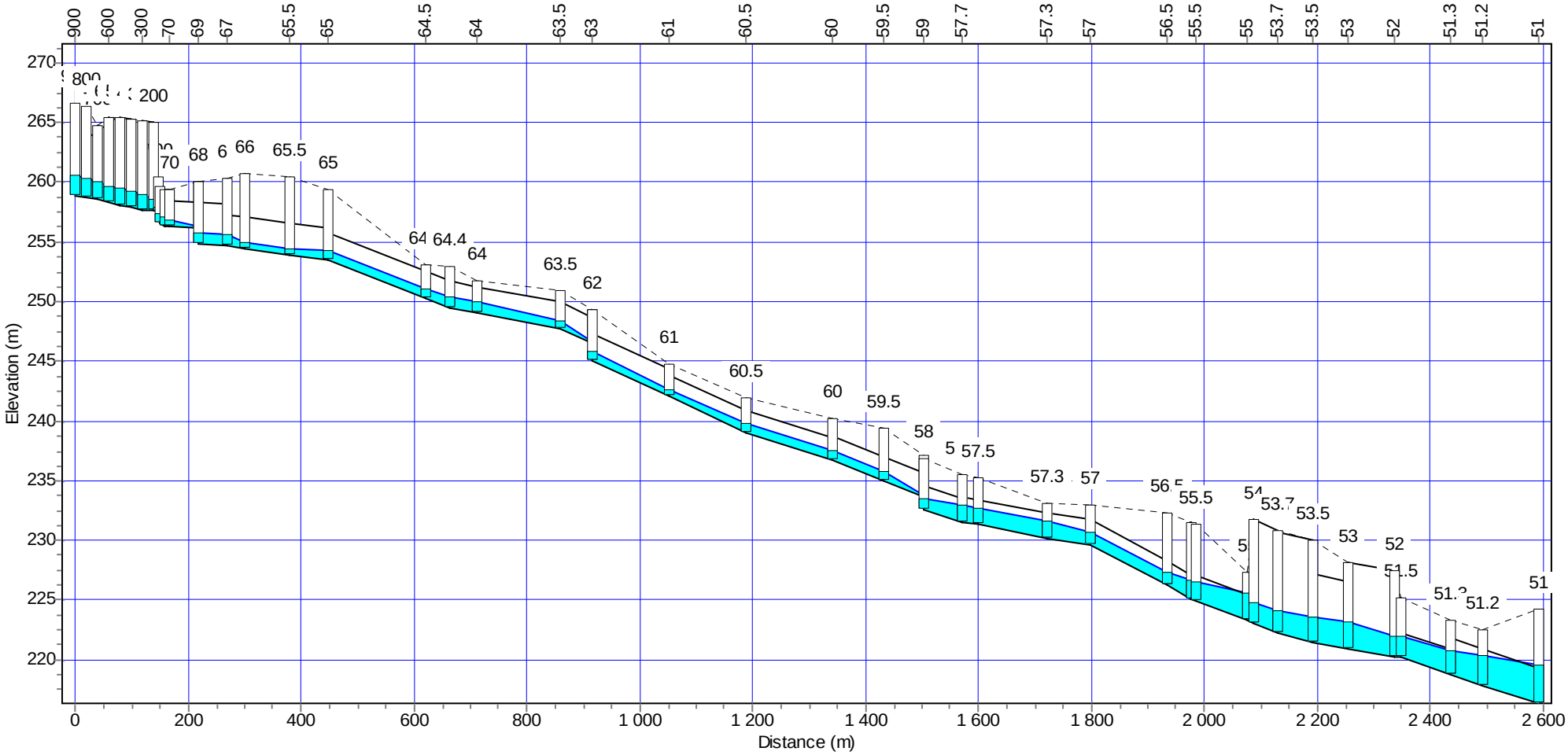
Water Elevation Profile: Node 900 - 51



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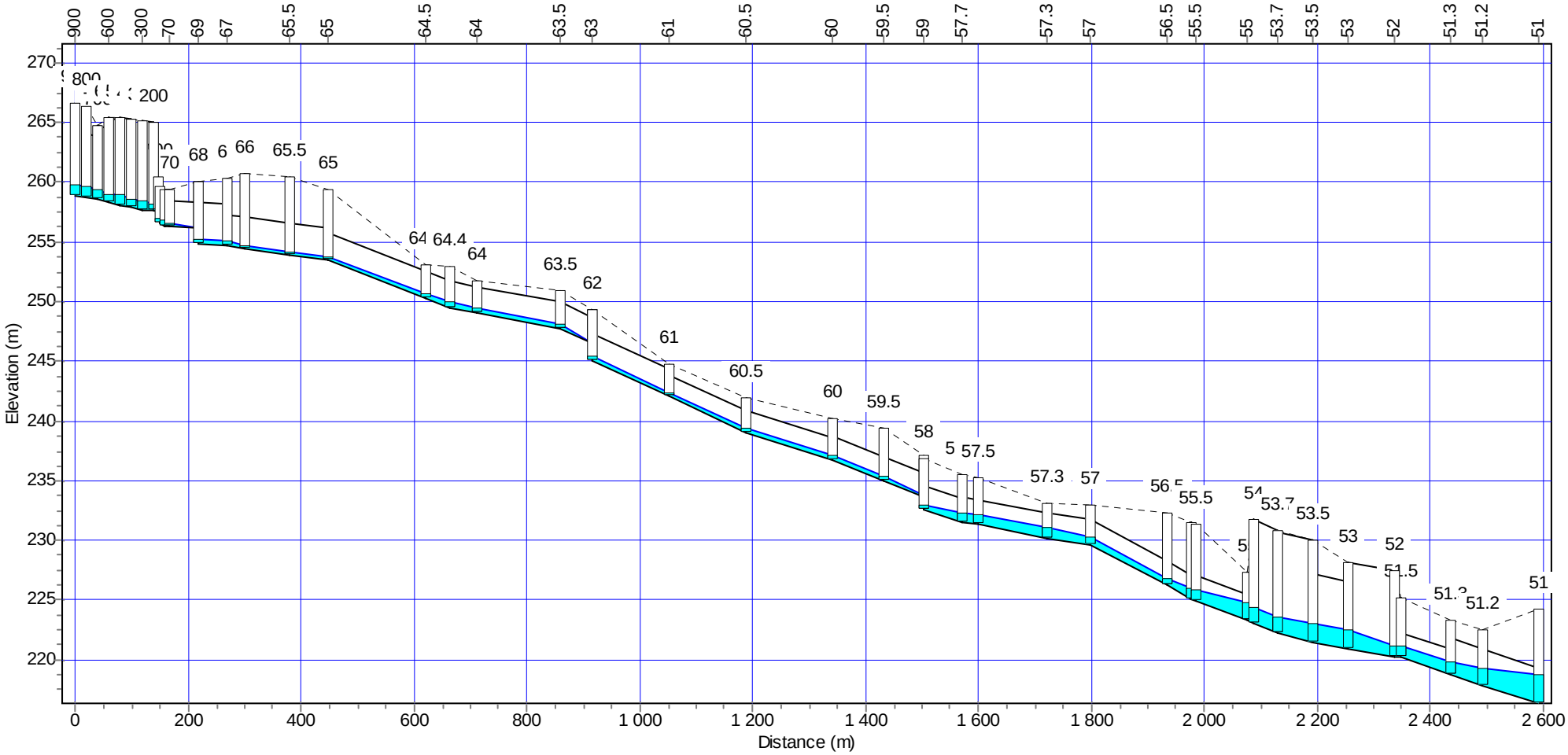
Water Elevation Profile: Node 900 - 51



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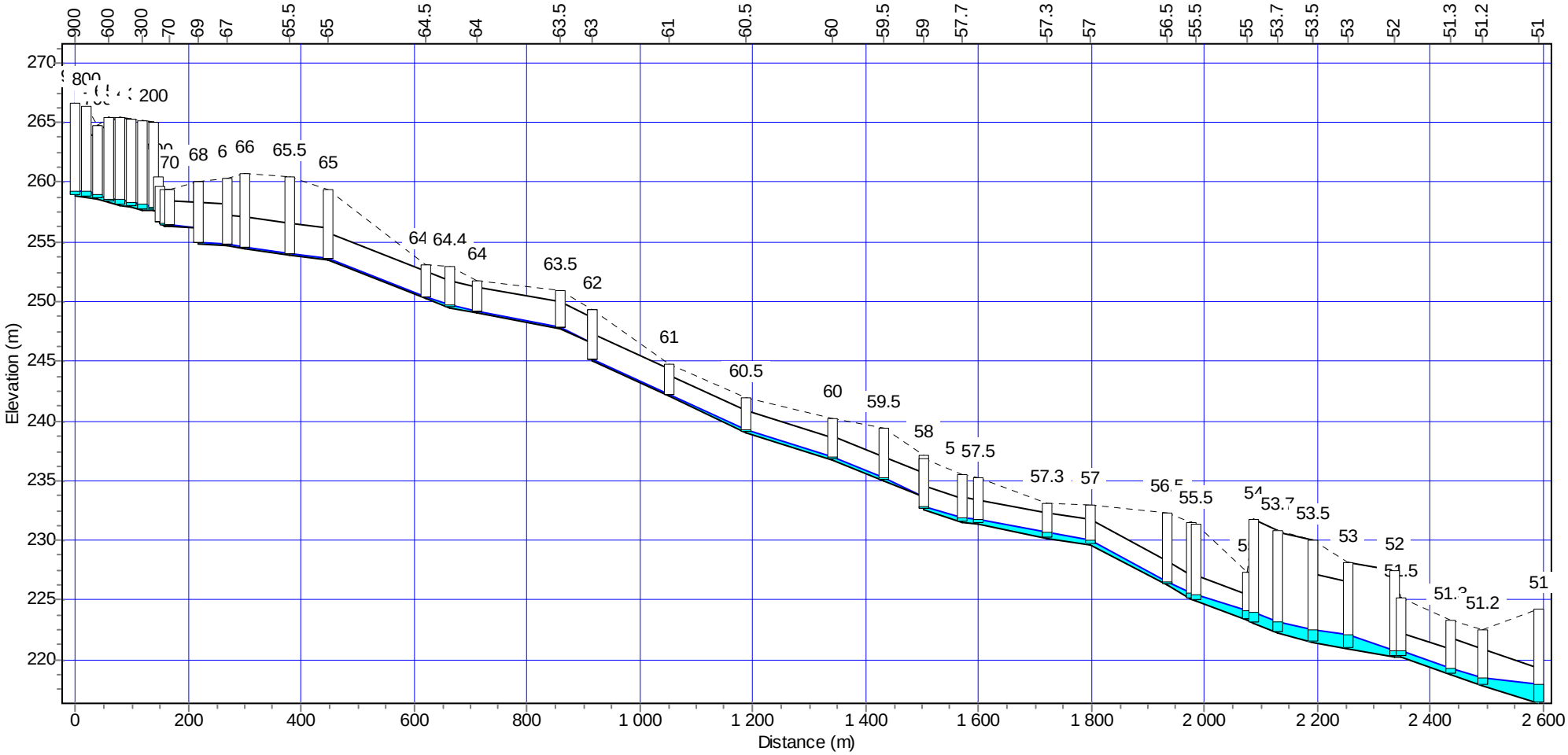
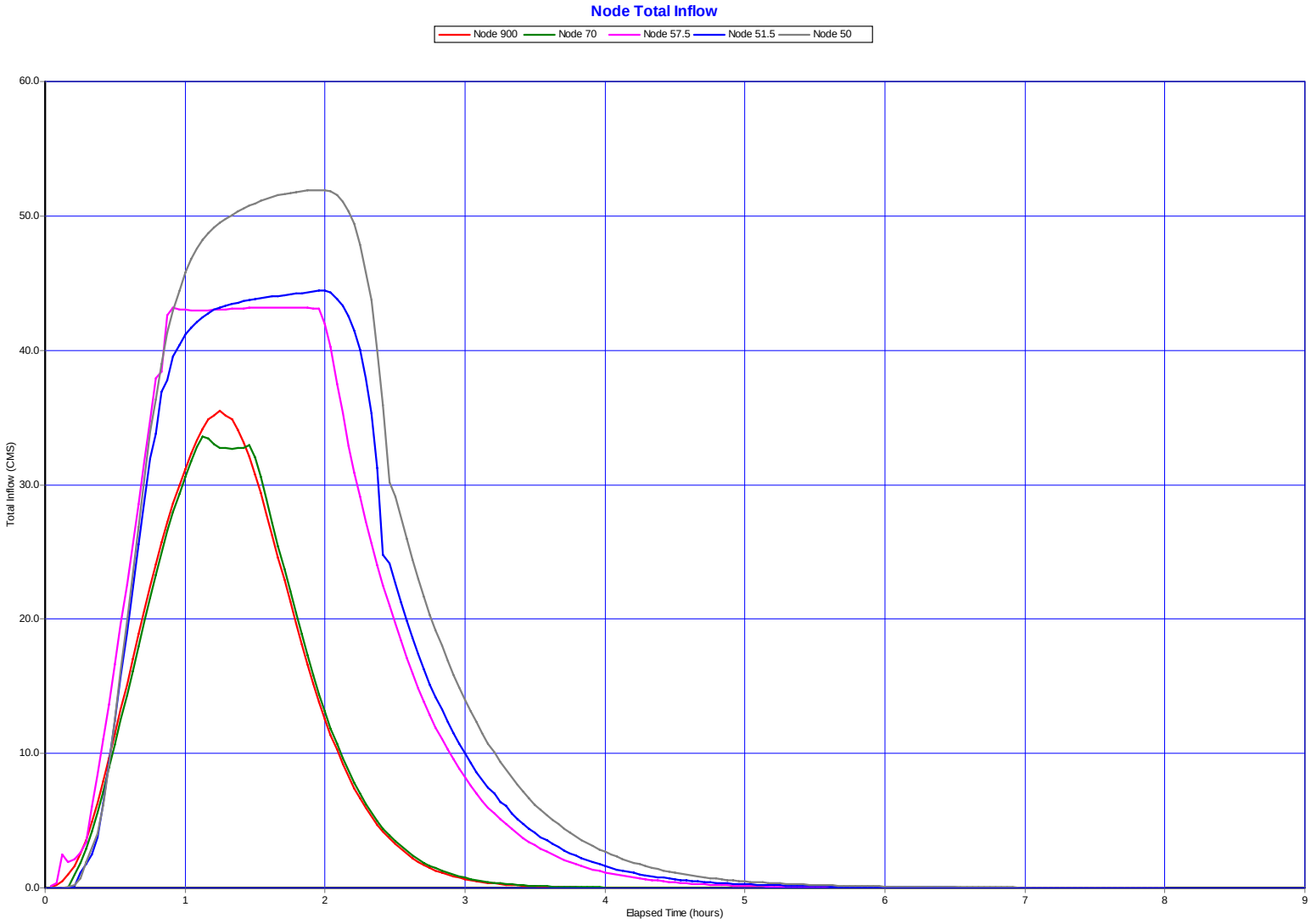
Water Elevation Profile: Node 900 - 51



06/19/2008 03:00:00

ALLEGATI DI CALCOLO SWMM 5.0

TORRENTE RILUOGO TR = 200 ANNI


Node Total Inflow
Node 900
Node 70
Node 57.5
Node 51.5
Node 50
Total Inflow (CMS)
60.0
50.0
40.0
30.0
20.0
10.0
0.0
0
1
2
3
4
5
6
7
8
9
Elapsed Time (hours)

EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.013)

****
Analysis Options
****
Flow Units ..... CMS
Flow Routing Method ..... DYNWAVE
Starting Date JUN-19-2008 00:00:00
Ending Date JUN-19-2008 08:00:00
Antecedent Dry Days 0.0
Report Time Step 00:02:30
Routing Time Step ..... 0.40 sec

****
Element Count
****
Number of rain gages 0
Number of subcatchments ... 0
Number of nodes 48
Number of links 47
Number of pollutants 0
Number of land uses 0

****
Node Summary
****

Name	Type	Invert Elev.	Max. Depth	Ponded Area	External Inflow
53	JUNCTION	220.84	7.26	0.0	
54	JUNCTION	223.10	8.69	0.0	
55	JUNCTION	223.30	4.00	0.0	
55.5	JUNCTION	224.90	6.50	0.0	
56	JUNCTION	225.00	6.50	0.0	
57	JUNCTION	229.60	3.40	0.0	Yes
58	JUNCTION	232.60	4.20	0.0	
59	JUNCTION	233.60	3.50	0.0	
60	JUNCTION	236.75	3.45	0.0	Yes
61	JUNCTION	242.06	2.74	0.0	
62	JUNCTION	245.05	4.25	0.0	
63	JUNCTION	246.45	2.85	0.0	
64	JUNCTION	249.00	2.80	0.0	
65	JUNCTION	253.46	5.94	0.0	Yes
66	JUNCTION	254.46	6.34	0.0	
67	JUNCTION	254.66	5.74	0.0	
68	JUNCTION	254.85	5.15	0.0	
69	JUNCTION	256.15	3.85	0.0	
70	JUNCTION	256.30	3.05	0.0	
80	JUNCTION	256.35	3.05	0.0	
200	JUNCTION	257.60	7.46	0.0	
300	JUNCTION	257.66	7.46	0.0	
400	JUNCTION	257.88	7.40	0.0	
500	JUNCTION	258.10	7.40	0.0	
600	JUNCTION	258.32	7.05	0.0	
700	JUNCTION	258.54	6.19	0.0	
800	JUNCTION	258.71	7.70	0.0	
900	JUNCTION	258.88	7.70	0.0	Yes
52	JUNCTION	220.25	7.26	0.0	
51.5	JUNCTION	220.20	4.94	0.0	
51	JUNCTION	216.33	7.96	0.0	
90	JUNCTION	256.58	3.05	0.0	
100	JUNCTION	257.58	2.85	0.0	
63.5	JUNCTION	247.70	3.30	0.0	
51.3	JUNCTION	218.77	4.60	0.0	Yes
51.2	JUNCTION	217.85	4.60	0.0	Yes
65.5	JUNCTION	253.90	6.60	0.0	
64.5	JUNCTION	250.30	2.80	0.0	
64.4	JUNCTION	249.50	3.50	0.0	
60.5	JUNCTION	239.05	2.95	0.0	
59.5	JUNCTION	235.00	4.45	0.0	
57.7	JUNCTION	231.50	4.00	0.0	Yes
57.3	JUNCTION	230.20	2.90	0.0	
56.5	JUNCTION	226.20	6.10	0.0	
57.5	JUNCTION	231.30	4.00	0.0	Yes
53.7	JUNCTION	222.19	8.69	0.0	
53.5	JUNCTION	221.43	8.56	0.0	

50	OUTFALL	215.00	7.96	0.0	

****
Link Summary
****

Name	From Node	To Node	Type	Length	%Slope	Roughness
2	55	54	CONDUIT	10.0	2.0000	0.0150
4	57	56.5	CONDUIT	137.0	2.4818	0.0150
6	59	58	CONDUIT	1.0	100.0000	0.0150
9	62	61	CONDUIT	135.0	2.2148	0.0150
10	63	62	CONDUIT	1.0	140.0000	0.0150
14	67	66	CONDUIT	33.0	0.6061	0.0150
15	68	67	CONDUIT	50.0	0.3800	0.0150
16	70	69	CONDUIT	50.0	0.3000	0.0150
17	69	68	CONDUIT	1.0	130.0000	0.0150
19	200	100	CONDUIT	7.0	0.2857	0.0600
20	300	200	CONDUIT	20.0	0.3000	0.0600
21	400	300	CONDUIT	20.0	1.1000	0.0600
22	500	400	CONDUIT	20.0	1.1000	0.0600
23	600	500	CONDUIT	20.0	1.1000	0.0600
24	700	600	CONDUIT	20.0	1.1000	0.0600
25	800	700	CONDUIT	20.0	0.8500	0.0600
26	900	800	CONDUIT	20.0	0.8500	0.0600
30	56	55.5	CONDUIT	10.0	1.0000	0.0150
31	55.5	55	CONDUIT	90.0	1.7778	0.0150
33	53	52	CONDUIT	80.0	0.7375	0.0600
34	52	51.5	CONDUIT	12.0	0.4167	0.0120
36	51	50	CONDUIT	145.2	0.9161	0.0600
27	100	90	CONDUIT	2.0	50.0000	0.0600
28	90	80	CONDUIT	9.0	2.5556	0.0600
29	80	70	CONDUIT	9.0	0.5556	0.0600
45	65	64.5	CONDUIT	173.0	1.8266	0.0150
46	64.5	64.4	CONDUIT	42.0	1.9048	0.0150
47	64.4	64	CONDUIT	48.0	1.0417	0.0150
48	64	63.5	CONDUIT	148.0	0.8784	0.0150
49	63.5	63	CONDUIT	56.0	2.2321	0.0150
52	51.5	51.3	CONDUIT	87.0	1.6437	0.0150
53	51.3	51.2	CONDUIT	57.0	1.6140	0.0150
54	51.2	51	CONDUIT	100.0	1.5200	0.0150
55	66	65.5	CONDUIT	80.0	0.7000	0.0150
56	65.5	65	CONDUIT	68.0	0.6471	0.0150
57	61	60.5	CONDUIT	135.0	2.2296	0.0150
58	60.5	60	CONDUIT	154.5	1.4887	0.0150
59	60	59.5	CONDUIT	90.0	1.9444	0.0150
60	59.5	59	CONDUIT	70.0	2.0000	0.0150
61	58	57.7	CONDUIT	68.0	1.6176	0.0150
62	57.3	57	CONDUIT	76.0	0.7895	0.0150
63	56.5	56	CONDUIT	42.0	2.8571	0.0150
64	57.7	57.5	CONDUIT	30.0	0.6667	0.0150
65	57.5	57.3	CONDUIT	120.0	0.9167	0.0150
66	54	53.7	CONDUIT	43.0	2.1163	0.0600
67	53.7	53.5	CONDUIT	63.0	1.2063	0.0600
68	53.5	53	CONDUIT	64.0	0.9219	0.0600

****
Cross Section Summary
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Conduit	Shape	Full Depth	Full Area	Hyd. Rad.	Max. Width	No. of Barrels	Full Flow
2	RECT_OPEN	4.00	10.40	0.98	2.60	1	96.83
4	RECT_CLOSED	2.10	6.72	0.63	3.20	1	52.09
6	RECT_CLOSED	2.00	6.40	0.62	3.20	1	308.74
9	RECT_CLOSED	2.25	5.85	0.60	2.60	1	41.44
10	RECT_CLOSED	2.25	5.85	0.60	2.60	1	329.45
14	MODBASKETHANDLE	2.65	5.85	0.64	2.45	1	22.53
15	MODBASKETHANDLE	3.50	13.58	0.97	4.50	1	54.50
16	RECT_CLOSED	2.20	9.90	0.74	4.50	1	29.55
17	MODBASKETHANDLE	3.50	13.58	0.97	4.50	1	1008.02
19	19	2.85	48.97	0.76	50.69	1	36.45
20	20	7.46	180.65	2.14	41.47	1	273.94
21	21	4.68	87.55	1.08	44.36	1	161.00
22	22	7.40	200.58	1.97	46.43	1	550.82
23	23	7.05	170.45	2.06	44.44	1	483.02
24	24	6.19	121.12	1.65	36.75	1	295.55
25	25	5.32	94.65	1.56	36.34	1	195.67
26	26	7.70	70.28	2.59	17.51	1	203.67
30	RECT_OPEN	6.50	16.90	1.08	2.60	1	118.86

31	RECT_CLOSED	2.20	5.72	0.60	2.60	1	36.01
33	33	7.26	155.73	2.41	65.75	1	400.38
34	34	4.94	60.37	1.47	83.50	1	419.86
36	36	7.96	124.68	1.82	36.98	1	296.18
27	27	2.18	29.15	0.64	48.75	1	255.02
28	28	3.05	20.01	1.07	47.56	1	55.90
29	29	3.05	20.01	1.07	47.56	1	26.06
45	RECT_CLOSED	2.25	5.85	0.60	2.60	1	37.63
46	RECT_CLOSED	2.25	5.85	0.60	2.60	1	38.43
47	RECT_CLOSED	2.25	5.85	0.60	2.60	1	28.42
48	RECT_CLOSED	2.25	5.85	0.60	2.60	1	26.10
49	RECT_CLOSED	2.25	5.85	0.60	2.60	1	41.60
52	RECT_CLOSED	2.10	6.09	0.61	2.90	1	37.40
53	RECT_CLOSED	3.00	9.00	0.75	3.00	1	62.93
54	RECT_CLOSED	3.00	9.00	0.75	3.00	1	61.07
55	RECT_CLOSED	2.70	16.20	0.93	6.00	1	86.17
56	RECT_CLOSED	2.70	16.20	0.93	6.00	1	82.85
57	RECT_CLOSED	1.80	5.76	0.58	3.20	1	39.70
58	RECT_CLOSED	1.80	5.76	0.58	3.20	1	32.44
59	RECT_CLOSED	2.00	6.40	0.62	3.20	1	43.05
60	RECT_CLOSED	2.00	6.40	0.62	3.20	1	43.66
61	RECT_CLOSED	2.00	6.40	0.62	3.20	1	39.27
62	RECT_CLOSED	2.10	6.72	0.63	3.20	1	29.38
63	RECT_CLOSED	2.10	6.72	0.63	3.20	1	55.89
64	RECT_CLOSED	2.10	6.72	0.63	3.20	1	27.00
65	RECT_CLOSED	2.10	6.72	0.63	3.20	1	31.66
66	66	8.69	208.04	4.63	44.35	1	1400.82
67	67	8.56	146.69	4.90	30.47	1	774.88
68	68	5.75	73.97	3.05	22.67	1	248.95

****
Transect Summary
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Transect 26
Area:

0.0027	0.0061	0.0101	0.0147	0.0198
0.0255	0.0317	0.0386	0.0460	0.0539
0.0625	0.0716	0.0812	0.0915	0.1023
0.1136	0.1256	0.1381	0.1512	0.1650
0.1799	0.1956	0.2122	0.2297	0.2482
0.2676	0.2878	0.3090	0.3311	0.3541
0.3781	0.4029	0.4287	0.4555	0.4832
0.5119	0.5416	0.5722	0.6038	0.6364
0.6699	0.7045	0.7399	0.7760	0.8125
0.8493	0.8865	0.9240	0.9618	1.0000

Hrad:

0.0464	0.0839	0.1151	0.1428	0.1683
0.1924	0.2154	0.2377	0.2595	0.2809
0.3019	0.3226	0.3432	0.3636	0.3838
0.4039	0.4239	0.4536	0.4842	0.5203
0.5529	0.5826	0.6097	0.6344	0.6571
0.6781	0.6975	0.7156	0.7325	0.7485
0.7635	0.7776	0.7910	0.8037	0.8158
0.8274	0.8386	0.8493	0.8597	0.8699
0.8797	0.8894	0.8988	0.9121	0.9258
0.9400	0.9546	0.9695	0.9846	1.0000

Width:

0.0818	0.0966	0.1114	0.1262	0.1410
0.1558	0.1706	0.1854	0.2002	0.2150
0.2298	0.2446	0.2594	0.2742	0.2890
0.3038	0.3186	0.3333	0.3502	0.3740
0.3977	0.4215	0.4453	0.4690	0.4928
0.5166	0.5403	0.5641	0.5879	0.6117
0.6354	0.6601	0.6852	0.7104	0.7356
0.7608	0.7859	0.8111	0.8363	0.8614
0.8866	0.9118	0.9367	0.9458	0.9548
0.9638	0.9729	0.9819	0.9910	1.0000

Transect 25
Area:

0.0004	0.0014	0.0032	0.0057	0.0086
0.0119	0.0155	0.0195	0.0238	0.0284
0.0333	0.0386	0.0442	0.0502	0.0566
0.0634	0.0708	0.0803	0.0924	0.1071
0.1240	0.1427	0.1631	0.1845	0.2066
0.2294	0.2529	0.2771	0.3020	0.3275
0.3537	0.3806	0.4082	0.4365	0.4655
0.4951	0.5254	0.5564	0.5881	0.6206

0.6543 0.6893 0.7257 0.7634 0.8016
0.8404 0.8796 0.9192 0.9594 1.0000
Hrad:
0.0321 0.0642 0.0963 0.1315 0.1738
0.2132 0.2501 0.2852 0.3189 0.3516
0.3834 0.4146 0.4452 0.4712 0.4963
0.5217 0.5540 0.5765 0.5868 0.5930
0.5940 0.5953 0.5974 0.6051 0.6160
0.6289 0.6433 0.6585 0.6745 0.6908
0.7075 0.7243 0.7412 0.7581 0.7750
0.7919 0.8087 0.8254 0.8420 0.8570
0.8700 0.8825 0.8946 0.9077 0.9225
0.9376 0.9530 0.9685 0.9842 1.0000
Width:
0.0175 0.0350 0.0525 0.0678 0.0763
0.0844 0.0926 0.1007 0.1089 0.1170
0.1252 0.1334 0.1415 0.1514 0.1620
0.1725 0.2010 0.2634 0.3284 0.3895
0.4376 0.4778 0.5164 0.5331 0.5499
0.5666 0.5833 0.6001 0.6168 0.6335
0.6503 0.6670 0.6838 0.7005 0.7172
0.7340 0.7507 0.7674 0.7842 0.8081
0.8414 0.8747 0.9080 0.9307 0.9423
0.9538 0.9654 0.9769 0.9885 1.0000

Transect 24
Area:
0.0003 0.0014 0.0031 0.0055 0.0085
0.0117 0.0152 0.0189 0.0230 0.0274
0.0321 0.0377 0.0444 0.0523 0.0613
0.0715 0.0829 0.0954 0.1091 0.1240
0.1400 0.1572 0.1755 0.1950 0.2157
0.2376 0.2605 0.2841 0.3084 0.3334
0.3590 0.3852 0.4122 0.4405 0.4728
0.5057 0.5389 0.5724 0.6063 0.6405
0.6750 0.7098 0.7449 0.7804 0.8162
0.8523 0.8888 0.9255 0.9626 1.0000
Hrad:
0.0351 0.0702 0.1052 0.1426 0.1893
0.2339 0.2754 0.3146 0.3521 0.3882
0.4252 0.4669 0.5032 0.5279 0.5450
0.5573 0.5666 0.5742 0.5809 0.5872
0.5935 0.5999 0.6065 0.6134 0.6205
0.6280 0.6387 0.6528 0.6677 0.6832
0.6990 0.7151 0.7313 0.7133 0.7124
0.7298 0.7478 0.7664 0.7854 0.8046
0.8240 0.8436 0.8632 0.8829 0.9025
0.9221 0.9417 0.9612 0.9807 1.0000
Width:
0.0185 0.0370 0.0554 0.0724 0.0814
0.0893 0.0971 0.1049 0.1127 0.1205
0.1324 0.1634 0.1944 0.2253 0.2563
0.2872 0.3182 0.3492 0.3801 0.4111
0.4420 0.4730 0.5040 0.5349 0.5659
0.5968 0.6206 0.6381 0.6555 0.6729
0.6903 0.7078 0.7252 0.8164 0.8714
0.8800 0.8886 0.8971 0.9057 0.9143
0.9228 0.9314 0.9400 0.9486 0.9571
0.9657 0.9743 0.9829 0.9914 1.0000

Transect 23
Area:
0.0014 0.0044 0.0079 0.0117 0.0159
0.0203 0.0250 0.0301 0.0361 0.0430
0.0507 0.0593 0.0687 0.0791 0.0902
0.1023 0.1152 0.1291 0.1437 0.1593
0.1757 0.1930 0.2112 0.2302 0.2501
0.2709 0.2926 0.3151 0.3386 0.3639
0.3913 0.4201 0.4493 0.4788 0.5087
0.5388 0.5694 0.6002 0.6314 0.6630
0.6949 0.7271 0.7597 0.7926 0.8258
0.8594 0.8933 0.9281 0.9636 1.0000
Hrad:
0.0359 0.0907 0.1404 0.1883 0.2356
0.2797 0.3213 0.3728 0.4171 0.4520
0.4799 0.5027 0.5218 0.5382 0.5528
0.5661 0.5784 0.5900 0.6012 0.6120
0.6225 0.6329 0.6432 0.6535 0.6637
0.6738 0.6840 0.6942 0.6996 0.6966
0.6934 0.7060 0.7207 0.7363 0.7525
0.7692 0.7861 0.8034 0.8208 0.8383

0.8559 0.8735 0.8910 0.9086 0.9261
0.9435 0.9590 0.9729 0.9865 1.0000
Width:
0.0719 0.0880 0.1000 0.1097 0.1167
0.1237 0.1308 0.1515 0.1748 0.1981
0.2215 0.2452 0.2689 0.2926 0.3163
0.3400 0.3638 0.3875 0.4112 0.4349
0.4586 0.4823 0.5061 0.5298 0.5535
0.5772 0.6009 0.6246 0.6599 0.7167
0.7765 0.7890 0.7982 0.8074 0.8167
0.8259 0.8351 0.8443 0.8535 0.8627
0.8719 0.8811 0.8903 0.8995 0.9088
0.9180 0.9341 0.9561 0.9780 1.0000

Transect 22
Area:
0.0007 0.0019 0.0034 0.0054 0.0077
0.0105 0.0136 0.0171 0.0210 0.0255
0.0308 0.0370 0.0442 0.0522 0.0612
0.0711 0.0819 0.0949 0.1101 0.1262
0.1430 0.1606 0.1790 0.1987 0.2199
0.2426 0.2669 0.2926 0.3199 0.3486
0.3789 0.4101 0.4414 0.4730 0.5047
0.5365 0.5686 0.6008 0.6331 0.6657
0.6984 0.7312 0.7642 0.7974 0.8308
0.8643 0.8980 0.9318 0.9658 1.0000
Hrad:
0.0492 0.0927 0.1305 0.1660 0.2002
0.2338 0.2668 0.2995 0.3320 0.3819
0.4267 0.4596 0.4842 0.5034 0.5191
0.5326 0.5430 0.5387 0.5372 0.5417
0.5491 0.5585 0.5675 0.5719 0.5768
0.5820 0.5875 0.5934 0.5995 0.6059
0.6127 0.6285 0.6464 0.6652 0.6848
0.7048 0.7253 0.7461 0.7670 0.7882
0.8094 0.8307 0.8520 0.8733 0.8946
0.9158 0.9370 0.9581 0.9791 1.0000
Width:
0.0286 0.0401 0.0515 0.0629 0.0743
0.0857 0.0971 0.1085 0.1199 0.1417
0.1685 0.1953 0.2221 0.2489 0.2757
0.3024 0.3354 0.4196 0.4573 0.4800
0.5028 0.5255 0.5531 0.5972 0.6412
0.6852 0.7292 0.7733 0.8173 0.8613
0.9053 0.9133 0.9181 0.9230 0.9278
0.9326 0.9374 0.9422 0.9470 0.9518
0.9567 0.9615 0.9663 0.9711 0.9759
0.9807 0.9856 0.9904 0.9952 1.0000

Transect 21
Area:
0.0007 0.0026 0.0053 0.0085 0.0119
0.0154 0.0191 0.0229 0.0269 0.0310
0.0352 0.0396 0.0441 0.0488 0.0536
0.0587 0.0649 0.0727 0.0820 0.0928
0.1052 0.1192 0.1346 0.1516 0.1702
0.1903 0.2119 0.2351 0.2598 0.2861
0.3137 0.3422 0.3714 0.4015 0.4323
0.4638 0.4960 0.5289 0.5625 0.5967
0.6317 0.6674 0.7037 0.7412 0.7807
0.8217 0.8641 0.9080 0.9533 1.0000
Hrad:
0.0427 0.0919 0.1504 0.2088 0.2728
0.3321 0.3874 0.4394 0.4885 0.5353
0.5800 0.6230 0.6644 0.7044 0.7433
0.7928 0.8373 0.8594 0.8658 0.8621
0.8527 0.8408 0.8283 0.8164 0.8059
0.7969 0.7897 0.7842 0.7805 0.7782
0.7817 0.7896 0.7994 0.8108 0.8240
0.8382 0.8532 0.8688 0.8849 0.9013
0.9180 0.9349 0.9520 0.9515 0.9554
0.9632 0.9716 0.9806 0.9901 1.0000
Width:
0.0282 0.0512 0.0620 0.0699 0.0729
0.0760 0.0790 0.0820 0.0850 0.0880
0.0910 0.0941 0.0971 0.1001 0.1031
0.1151 0.1475 0.1800 0.2125 0.2450
0.2775 0.3100 0.3425 0.3749 0.4074
0.4399 0.4724 0.5049 0.5374 0.5699
0.5920 0.6088 0.6257 0.6419 0.6568
0.6715 0.6861 0.7008 0.7154 0.7300

```
            0.7447     0.7593     0.7739     0.8147     0.8500
            0.8800     0.9100     0.9400     0.9700     1.0000

Transect 20
Area:
            0.0006     0.0022     0.0049     0.0080     0.0113
            0.0150     0.0189     0.0232     0.0278     0.0326
            0.0378     0.0434     0.0501     0.0582     0.0676
            0.0784     0.0903     0.1036     0.1180     0.1338
            0.1507     0.1689     0.1883     0.2090     0.2310
            0.2541     0.2785     0.3042     0.3311     0.3592
            0.3886     0.4188     0.4493     0.4799     0.5108
            0.5419     0.5732     0.6047     0.6364     0.6684
            0.7006     0.7330     0.7656     0.7984     0.8315
            0.8647     0.8982     0.9319     0.9659     1.0000
Hrad:
            0.0339     0.0678     0.1128     0.1606     0.2035
            0.2429     0.2797     0.3146     0.3481     0.3803
            0.4116     0.4497     0.4868     0.5137     0.5309
            0.5426     0.5511     0.5577     0.5633     0.5685
            0.5735     0.5786     0.5840     0.5896     0.5955
            0.6018     0.6084     0.6153     0.6226     0.6301
            0.6379     0.6533     0.6705     0.6884     0.7069
            0.7259     0.7452     0.7646     0.7843     0.8040
            0.8238     0.8436     0.8634     0.8831     0.9028
            0.9225     0.9420     0.9614     0.9808     1.0000
Width:
            0.0328     0.0657     0.0847     0.0935     0.1023
            0.1111     0.1199     0.1287     0.1375     0.1463
            0.1552     0.1780     0.2158     0.2557     0.2955
            0.3318     0.3680     0.4043     0.4406     0.4769
            0.5132     0.5495     0.5858     0.6220     0.6583
            0.6946     0.7309     0.7672     0.8035     0.8398
            0.8760     0.8854     0.8917     0.8981     0.9045
            0.9108     0.9172     0.9236     0.9299     0.9363
            0.9427     0.9491     0.9554     0.9618     0.9682
            0.9745     0.9809     0.9873     0.9936     1.0000

Transect 19
Area:
            0.0015     0.0044     0.0074     0.0106     0.0139
            0.0174     0.0211     0.0248     0.0288     0.0328
            0.0370     0.0414     0.0459     0.0505     0.0553
            0.0603     0.0654     0.0706     0.0761     0.0817
            0.0875     0.0936     0.1001     0.1072     0.1150
            0.1235     0.1326     0.1423     0.1527     0.1637
            0.1754     0.1878     0.2013     0.2160     0.2319
            0.2490     0.2727     0.3261     0.3799     0.4340
            0.4885     0.5434     0.5988     0.6546     0.7110
            0.7678     0.8252     0.8830     0.9412     1.0000
Hrad:
            0.0392     0.1064     0.1691     0.2272     0.2816
            0.3328     0.3814     0.4277     0.4721     0.5148
            0.5560     0.5959     0.6347     0.6725     0.7093
            0.7454     0.7808     0.8126     0.8437     0.8747
            0.9057     0.9330     0.9160     0.9070     0.9043
            0.9068     0.9134     0.9234     0.9362     0.9515
            0.9689     0.9652     0.9551     0.9516     0.9534
            0.9594     0.9490     0.8718     0.8341     0.8180
            0.8170     0.8250     0.8385     0.8559     0.8760
            0.8983     0.9222     0.9473     0.9733     1.0000
Width:
            0.0468     0.0505     0.0529     0.0554     0.0578
            0.0603     0.0628     0.0652     0.0677     0.0702
            0.0726     0.0751     0.0775     0.0800     0.0825
            0.0849     0.0874     0.0906     0.0940     0.0974
            0.1008     0.1047     0.1157     0.1266     0.1376
            0.1485     0.1594     0.1704     0.1813     0.1923
            0.2032     0.2196     0.2395     0.2594     0.2792
            0.2991     0.9037     0.9089     0.9142     0.9194
            0.9266     0.9347     0.9429     0.9510     0.9592
            0.9674     0.9755     0.9837     0.9918     1.0000

Transect 29
Area:
            0.0140     0.0294     0.0449     0.0605     0.0762
            0.0920     0.1080     0.1240     0.1401     0.1564
            0.1727     0.1892     0.2057     0.2224     0.2392
            0.2560     0.2730     0.2901     0.3073     0.3246
            0.3420     0.3595     0.3772     0.3949     0.4127
            0.4307     0.4487     0.4669     0.4852     0.5040
```

```
            0.5234     0.5434     0.5639     0.5850     0.6067
            0.6289     0.6517     0.6751     0.6990     0.7235
            0.7486     0.7743     0.8005     0.8273     0.8547
            0.8826     0.9111     0.9402     0.9698     1.0000
Hrad:
            0.0510     0.1042     0.1551     0.2040     0.2510
            0.2962     0.3397     0.3816     0.4221     0.4612
            0.4990     0.5356     0.5710     0.6054     0.6387
            0.6711     0.7026     0.7333     0.7631     0.7921
            0.8205     0.8481     0.8751     0.9014     0.9271
            0.9523     0.9769     1.0011     1.0191     1.0313
            1.0441     1.0573     1.0710     1.0851     1.0996
            1.1144     1.1296     1.1451     1.1609     1.1770
            1.1933     1.2099     1.2267     1.2437     1.2610
            1.2784     1.2960     1.3138     1.3318     1.0000
Width:
            0.1057     0.1065     0.1072     0.1079     0.1087
            0.1094     0.1101     0.1109     0.1116     0.1124
            0.1131     0.1138     0.1146     0.1153     0.1160
            0.1168     0.1175     0.1182     0.1190     0.1197
            0.1204     0.1212     0.1219     0.1226     0.1234
            0.1241     0.1248     0.1256     0.1278     0.1317
            0.1357     0.1396     0.1435     0.1474     0.1514
            0.1553     0.1592     0.1631     0.1671     0.1710
            0.1749     0.1789     0.1828     0.1867     0.1906
            0.1946     0.1985     0.2024     0.2063     1.0000

Transect sez54
Area:
            0.0004     0.0015     0.0033     0.0058     0.0091
            0.0131     0.0178     0.0231     0.0288     0.0348
            0.0410     0.0476     0.0545     0.0618     0.0696
            0.0779     0.0869     0.0963     0.1064     0.1171
            0.1291     0.1425     0.1567     0.1714     0.1865
            0.2037     0.2285     0.2573     0.2866     0.3163
            0.3464     0.3770     0.4079     0.4393     0.4712
            0.5034     0.5361     0.5692     0.6028     0.6368
            0.6712     0.7060     0.7412     0.7769     0.8130
            0.8496     0.8865     0.9239     0.9618     1.0000
Hrad:
            0.0309     0.0619     0.0928     0.1238     0.1547
            0.1857     0.2166     0.2571     0.2981     0.3370
            0.3740     0.4095     0.4438     0.4914     0.5419
            0.5874     0.6285     0.6660     0.7002     0.7296
            0.7512     0.7667     0.7826     0.7995     0.8168
            0.8040     0.7748     0.7532     0.7427     0.7392
            0.7405     0.7455     0.7531     0.7627     0.7738
            0.7861     0.7993     0.8132     0.8276     0.8425
            0.8577     0.8731     0.8888     0.9045     0.9204
            0.9363     0.9522     0.9682     0.9841     1.0000
Width:
            0.0189     0.0378     0.0567     0.0756     0.0945
            0.1134     0.1323     0.1429     0.1510     0.1591
            0.1672     0.1753     0.1834     0.1957     0.2102
            0.2247     0.2392     0.2537     0.2682     0.2944
            0.3306     0.3629     0.3748     0.3868     0.3987
            0.5628     0.7298     0.7553     0.7664     0.7775
            0.7887     0.7998     0.8109     0.8220     0.8332
            0.8443     0.8554     0.8665     0.8776     0.8888
            0.8999     0.9110     0.9221     0.9333     0.9444
            0.9555     0.9666     0.9778     0.9889     1.0000

Transect sez53
Area:
            0.0005     0.0018     0.0034     0.0053     0.0076
            0.0101     0.0129     0.0160     0.0194     0.0231
            0.0271     0.0312     0.0356     0.0402     0.0450
            0.0501     0.0557     0.0617     0.0684     0.0755
            0.0832     0.0914     0.1002     0.1095     0.1194
            0.1297     0.1407     0.1521     0.1641     0.1766
            0.1897     0.2049     0.2316     0.2629     0.2975
            0.3358     0.3788     0.4238     0.4692     0.5151
            0.5614     0.6083     0.6556     0.7034     0.7516
            0.8003     0.8496     0.8992     0.9494     1.0000
Hrad:
            0.0165     0.0386     0.0606     0.0803     0.0986
            0.1160     0.1328     0.1492     0.1653     0.1823
            0.2004     0.2181     0.2354     0.2522     0.2688
            0.2881     0.3105     0.3319     0.3535     0.3759
            0.3995     0.4244     0.4507     0.4785     0.5076
            0.5381     0.5699     0.6029     0.6370     0.6722
```

0.7084 0.7371 0.7209 0.7008 0.6847
0.6728 0.4955 0.5305 0.5666 0.6037
0.6415 0.6799 0.7188 0.7581 0.7978
0.8377 0.8780 0.9184 0.9591 1.0000
Width:
0.0188 0.0293 0.0350 0.0408 0.0467
0.0525 0.0583 0.0641 0.0700 0.0752
0.0796 0.0839 0.0883 0.0927 0.0970
0.1038 0.1143 0.1249 0.1355 0.1460
0.1566 0.1671 0.1777 0.1883 0.1988
0.2094 0.2200 0.2305 0.2411 0.2516
0.2622 0.4763 0.5842 0.6473 0.7117
0.8003 0.8790 0.8883 0.8976 0.9069
0.9162 0.9255 0.9349 0.9442 0.9535
0.9628 0.9721 0.9814 0.9907 1.0000

Transect 34
Area:
0.0056 0.0115 0.0175 0.0238 0.0302
0.0368 0.0436 0.0507 0.0579 0.0653
0.0729 0.0807 0.0887 0.0969 0.1052
0.1140 0.1232 0.1329 0.1431 0.1538
0.1650 0.1768 0.1890 0.2017 0.2149
0.2286 0.2428 0.2575 0.2731 0.2895
0.3068 0.3249 0.3440 0.3640 0.3849
0.4068 0.4296 0.4534 0.4781 0.5037
0.5303 0.5578 0.5862 0.6156 0.6459
0.6772 0.7150 0.7767 0.8746 1.0000
Hrad:
0.0638 0.1219 0.1753 0.2248 0.2709
0.3142 0.3551 0.3939 0.4308 0.4661
0.4999 0.5325 0.5640 0.5944 0.6240
0.6417 0.6597 0.6787 0.6984 0.7187
0.7396 0.7611 0.7830 0.8053 0.8279
0.8509 0.8742 0.9013 0.9324 0.9612
0.9877 1.0124 1.0481 1.0864 1.1212
1.1528 1.1813 1.2071 1.2304 1.2513
1.2701 1.2871 1.3022 1.3158 1.3280
1.3389 1.3225 1.2549 1.1320 1.0000
Width:
0.0420 0.0435 0.0449 0.0463 0.0477
0.0492 0.0506 0.0520 0.0535 0.0549
0.0563 0.0577 0.0592 0.0606 0.0620
0.0656 0.0692 0.0729 0.0765 0.0802
0.0838 0.0875 0.0912 0.0948 0.0985
0.1021 0.1058 0.1104 0.1168 0.1232
0.1297 0.1361 0.1428 0.1497 0.1566
0.1634 0.1703 0.1771 0.1840 0.1909
0.1977 0.2046 0.2114 0.2183 0.2252
0.2320 0.3568 0.5738 0.8288 1.0000

Transect 36
Area:
0.0024 0.0073 0.0129 0.0186 0.0244
0.0302 0.0361 0.0420 0.0481 0.0550
0.0620 0.0690 0.0761 0.0833 0.0908
0.0988 0.1068 0.1150 0.1233 0.1317
0.1402 0.1490 0.1583 0.1680 0.1782
0.1889 0.2005 0.2130 0.2263 0.2404
0.2555 0.2714 0.2882 0.3062 0.3263
0.3647 0.4084 0.4523 0.4965 0.5409
0.5857 0.6307 0.6759 0.7214 0.7672
0.8132 0.8595 0.9061 0.9529 1.0000
Hrad:
0.0483 0.1089 0.1799 0.2429 0.2995
0.3505 0.3970 0.4395 0.4781 0.4790
0.5183 0.5552 0.5900 0.6228 0.6214
0.6544 0.6860 0.7163 0.7456 0.7738
0.8013 0.8370 0.8691 0.8982 0.9245
0.9547 0.9856 1.0123 1.0353 1.0552
1.0726 1.0878 1.1012 1.1068 1.1020
1.0165 0.9668 0.9355 0.9167 0.9068
0.9034 0.9047 0.9098 0.9178 0.9281
0.9401 0.9535 0.9681 0.9837 1.0000
Width:
0.0894 0.1182 0.1196 0.1211 0.1225
0.1240 0.1254 0.1268 0.1413 0.1470
0.1486 0.1502 0.1518 0.1534 0.1676
0.1699 0.1721 0.1743 0.1766 0.1788
0.1812 0.1912 0.2012 0.2112 0.2212
0.2359 0.2543 0.2727 0.2911 0.3095

```
            0.3279     0.3462     0.3646     0.4031     0.4752
            0.9196     0.9277     0.9333     0.9389     0.9444
            0.9500     0.9555     0.9611     0.9667     0.9722
            0.9778     0.9833     0.9889     0.9944     1.0000

Transect 27
Area:
            0.0049     0.0106     0.0165     0.0224     0.0286
            0.0348     0.0412     0.0478     0.0545     0.0613
            0.0683     0.0754     0.0826     0.0900     0.0976
            0.1052     0.1131     0.1211     0.1296     0.1385
            0.1478     0.1575     0.1675     0.1780     0.1889
            0.2001     0.2118     0.2238     0.2363     0.2491
            0.2623     0.2760     0.2900     0.3044     0.3190
            0.3338     0.3487     0.3639     0.3792     0.3947
            0.4104     0.4408     0.5081     0.5761     0.6449
            0.7144     0.7847     0.8557     0.9275     1.0000
Hrad:
            0.0590     0.1230     0.1844     0.2435     0.3005
            0.3556     0.4089     0.4605     0.5107     0.5596
            0.6072     0.6536     0.6989     0.7433     0.7867
            0.8292     0.8703     0.8901     0.9109     0.9326
            0.9551     0.9783     1.0022     1.0267     1.0516
            1.0771     1.1029     1.1291     1.1557     1.1825
            1.2097     1.2371     1.2647     1.3007     1.3441
            1.3871     1.4296     1.4718     1.5135     1.5549
            1.5960     1.1678     1.0856     1.0370     1.0083
            0.9927     0.9863     0.9864     0.9914     1.0000
Width:
            0.0772     0.0791     0.0811     0.0830     0.0849
            0.0869     0.0888     0.0907     0.0927     0.0946
            0.0966     0.0985     0.1004     0.1024     0.1043
            0.1062     0.1083     0.1137     0.1191     0.1246
            0.1300     0.1354     0.1408     0.1462     0.1517
            0.1571     0.1625     0.1679     0.1734     0.1788
            0.1842     0.1896     0.1951     0.1990     0.2015
            0.2040     0.2065     0.2090     0.2115     0.2140
            0.2165     0.9174     0.9276     0.9380     0.9483
            0.9586     0.9690     0.9793     0.9897     1.0000

Transect sez53.7
Area:
            0.0008     0.0032     0.0063     0.0100     0.0166
            0.0241     0.0321     0.0406     0.0497     0.0593
            0.0695     0.0802     0.0915     0.1034     0.1159
            0.1290     0.1426     0.1568     0.1714     0.1866
            0.2022     0.2183     0.2349     0.2520     0.2696
            0.2876     0.3061     0.3251     0.3451     0.3733
            0.4036     0.4339     0.4644     0.4950     0.5257
            0.5565     0.5874     0.6185     0.6496     0.6809
            0.7123     0.7438     0.7754     0.8072     0.8390
            0.8710     0.9031     0.9353     0.9676     1.0000
Hrad:
            0.0233     0.0505     0.0838     0.1001     0.1054
            0.1411     0.1747     0.2065     0.2369     0.2662
            0.2962     0.3384     0.3776     0.4141     0.4483
            0.4804     0.5106     0.5392     0.5667     0.5932
            0.6185     0.6430     0.6665     0.6892     0.7112
            0.7324     0.7530     0.7729     0.7772     0.7633
            0.7632     0.7664     0.7723     0.7801     0.7895
            0.8002     0.8118     0.8243     0.8373     0.8509
            0.8649     0.8792     0.8938     0.9087     0.9237
            0.9388     0.9540     0.9693     0.9846     1.0000
Width:
            0.0492     0.0889     0.1047     0.1384     0.2218
            0.2384     0.2550     0.2716     0.2882     0.3048
            0.3215     0.3393     0.3572     0.3750     0.3928
            0.4106     0.4285     0.4443     0.4591     0.4739
            0.4887     0.5035     0.5183     0.5331     0.5479
            0.5627     0.5775     0.5923     0.7114     0.9289
            0.9328     0.9364     0.9399     0.9434     0.9470
            0.9505     0.9541     0.9576     0.9611     0.9647
            0.9682     0.9717     0.9753     0.9788     0.9823
            0.9859     0.9894     0.9929     0.9965     1.0000

Transect sez53.5
Area:
            0.0014     0.0038     0.0066     0.0099     0.0135
            0.0175     0.0219     0.0267     0.0318     0.0373
            0.0432     0.0495     0.0569     0.0658     0.0762
            0.0919     0.1085     0.1254     0.1425     0.1598
```

0.1774 0.1952 0.2132 0.2314 0.2501
0.2735 0.3021 0.3315 0.3609 0.3904
0.4201 0.4498 0.4796 0.5095 0.5394
0.5695 0.5997 0.6299 0.6603 0.6907
0.7212 0.7518 0.7825 0.8133 0.8442
0.8752 0.9063 0.9374 0.9687 1.0000
Hrad:
0.0404 0.0890 0.1303 0.1673 0.2025
0.2356 0.2669 0.2971 0.3263 0.3548
0.3827 0.4146 0.4455 0.4654 0.4736
0.4548 0.4499 0.4543 0.4640 0.4770
0.4921 0.5087 0.5274 0.5534 0.5615
0.5404 0.5405 0.5552 0.5718 0.5896
0.6085 0.6281 0.6481 0.6686 0.6893
0.7102 0.7312 0.7522 0.7733 0.7943
0.8153 0.8363 0.8572 0.8779 0.8986
0.9191 0.9395 0.9598 0.9800 1.0000
Width:
0.0702 0.0835 0.0968 0.1101 0.1220
0.1338 0.1456 0.1575 0.1693 0.1811
0.1929 0.2155 0.2596 0.3036 0.4056
0.5271 0.5342 0.5414 0.5485 0.5557
0.5628 0.5700 0.5770 0.5836 0.6473
0.8451 0.9338 0.9366 0.9395 0.9424
0.9453 0.9482 0.9510 0.9539 0.9568
0.9597 0.9626 0.9654 0.9683 0.9712
0.9741 0.9770 0.9798 0.9827 0.9856
0.9885 0.9914 0.9942 0.9971 1.0000

Transect 66
Area:
0.0008 0.0033 0.0074 0.0129 0.0194
0.0268 0.0352 0.0447 0.0551 0.0665
0.0789 0.0923 0.1067 0.1218 0.1375
0.1538 0.1706 0.1880 0.2059 0.2244
0.2434 0.2630 0.2832 0.3039 0.3251
0.3469 0.3693 0.3922 0.4157 0.4396
0.4639 0.4886 0.5136 0.5391 0.5648
0.5910 0.6176 0.6445 0.6718 0.6995
0.7275 0.7560 0.7848 0.8140 0.8435
0.8735 0.9038 0.9345 0.9656 1.0000
Hrad:
0.0180 0.0360 0.0540 0.0775 0.0996
0.1205 0.1408 0.1606 0.1799 0.1991
0.2180 0.2367 0.2563 0.2909 0.3238
0.3552 0.3853 0.4141 0.4417 0.4682
0.4937 0.5183 0.5420 0.5648 0.5869
0.6083 0.6290 0.6490 0.6686 0.6881
0.7074 0.7264 0.7451 0.7635 0.7817
0.7996 0.8172 0.8345 0.8517 0.8685
0.8851 0.9015 0.9177 0.9336 0.9493
0.9648 0.9800 0.9951 1.0074 1.0000
Width:
0.0441 0.0883 0.1324 0.1607 0.1875
0.2143 0.2411 0.2679 0.2947 0.3215
0.3483 0.3751 0.4013 0.4163 0.4313
0.4463 0.4613 0.4763 0.4913 0.5063
0.5213 0.5363 0.5513 0.5663 0.5813
0.5963 0.6114 0.6264 0.6403 0.6504
0.6606 0.6708 0.6810 0.6912 0.7013
0.7115 0.7217 0.7319 0.7421 0.7522
0.7624 0.7726 0.7828 0.7930 0.8031
0.8133 0.8235 0.8337 0.8563 1.0000

Transect 67
Area:
0.0016 0.0062 0.0128 0.0201 0.0281
0.0392 0.0519 0.0650 0.0785 0.0924
0.1067 0.1214 0.1366 0.1522 0.1682
0.1846 0.2014 0.2186 0.2363 0.2544
0.2729 0.2918 0.3112 0.3310 0.3512
0.3718 0.3928 0.4143 0.4361 0.4584
0.4811 0.5043 0.5278 0.5518 0.5762
0.6010 0.6262 0.6519 0.6779 0.7044
0.7313 0.7586 0.7864 0.8146 0.8431
0.8721 0.9016 0.9326 0.9654 1.0000
Hrad:
0.0171 0.0344 0.0622 0.0874 0.1106
0.1049 0.1326 0.1589 0.1840 0.2081
0.2312 0.2536 0.2752 0.2961 0.3165
0.3363 0.3556 0.3745 0.3930 0.4126

0.4391 0.4671 0.4943 0.5206 0.5463
0.5712 0.5954 0.6190 0.6419 0.6643
0.6862 0.7074 0.7282 0.7485 0.7683
0.7876 0.8066 0.8251 0.8432 0.8609
0.8783 0.8953 0.9119 0.9283 0.9443
0.9600 0.9741 0.9840 0.9927 1.0000
Width:
0.0873 0.1736 0.1949 0.2161 0.2374
0.3499 0.3617 0.3734 0.3852 0.3969
0.4086 0.4204 0.4321 0.4439 0.4556
0.4673 0.4791 0.4908 0.5025 0.5144
0.5266 0.5384 0.5502 0.5620 0.5738
0.5856 0.5974 0.6092 0.6210 0.6328
0.6446 0.6564 0.6682 0.6799 0.6917
0.7035 0.7153 0.7271 0.7389 0.7507
0.7625 0.7743 0.7861 0.7979 0.8097
0.8215 0.8444 0.8962 0.9481 1.0000

Transect 68
Area:
0.0012 0.0049 0.0111 0.0196 0.0288
0.0385 0.0487 0.0592 0.0703 0.0817
0.0937 0.1060 0.1188 0.1321 0.1458
0.1600 0.1746 0.1896 0.2051 0.2211
0.2375 0.2543 0.2716 0.2893 0.3075
0.3262 0.3452 0.3648 0.3851 0.4064
0.4287 0.4521 0.4764 0.5018 0.5281
0.5555 0.5839 0.6129 0.6424 0.6724
0.7030 0.7340 0.7655 0.7975 0.8300
0.8630 0.8965 0.9305 0.9650 1.0000
Hrad:
0.0181 0.0361 0.0542 0.0782 0.1083
0.1367 0.1636 0.1892 0.2138 0.2375
0.2604 0.2826 0.3041 0.3251 0.3456
0.3657 0.3853 0.4047 0.4237 0.4424
0.4608 0.4791 0.4971 0.5149 0.5325
0.5499 0.5672 0.5861 0.6163 0.6444
0.6705 0.6948 0.7174 0.7384 0.7581
0.7764 0.7937 0.8109 0.8279 0.8447
0.8613 0.8777 0.8938 0.9096 0.9253
0.9407 0.9558 0.9708 0.9855 1.0000
Width:
0.0702 0.1404 0.2106 0.2558 0.2685
0.2812 0.2939 0.3065 0.3192 0.3319
0.3446 0.3573 0.3700 0.3827 0.3954
0.4081 0.4207 0.4334 0.4461 0.4588
0.4715 0.4842 0.4969 0.5096 0.5223
0.5349 0.5476 0.5621 0.5907 0.6193
0.6479 0.6765 0.7051 0.7337 0.7623
0.7910 0.8164 0.8305 0.8447 0.8588
0.8729 0.8870 0.9011 0.9153 0.9294
0.9435 0.9576 0.9718 0.9859 1.0000

Transect 33
Area:
0.0011 0.0042 0.0080 0.0122 0.0169
0.0219 0.0274 0.0334 0.0397 0.0465
0.0538 0.0614 0.0695 0.0780 0.0870
0.0964 0.1062 0.1166 0.1275 0.1389
0.1507 0.1631 0.1760 0.1894 0.2034
0.2187 0.2352 0.2530 0.2720 0.2922
0.3137 0.3365 0.3604 0.3857 0.4121
0.4398 0.4688 0.4990 0.5304 0.5631
0.5970 0.6322 0.6686 0.7063 0.7452
0.7871 0.8336 0.8848 0.9405 1.0000
Hrad:
0.0295 0.0693 0.1152 0.1567 0.1949
0.2309 0.2651 0.2979 0.3297 0.3606
0.3908 0.4204 0.4496 0.4784 0.5068
0.5410 0.5807 0.6176 0.6520 0.6842
0.7146 0.7506 0.7897 0.8266 0.8589
0.8858 0.9083 0.9270 0.9425 0.9553
0.9660 0.9750 0.9827 0.9892 0.9950
1.0001 1.0048 1.0092 1.0133 1.0173
1.0212 1.0252 1.0291 1.0332 1.0369
1.0301 1.0231 1.0141 1.0048 1.0000
Width:
0.0362 0.0582 0.0652 0.0722 0.0793
0.0863 0.0933 0.1003 0.1073 0.1144
0.1214 0.1284 0.1354 0.1424 0.1495
0.1570 0.1652 0.1733 0.1815 0.1897

```
            0.1979     0.2060     0.2142     0.2224     0.2389
            0.2592     0.2795     0.2998     0.3201     0.3404
            0.3607     0.3810     0.4013     0.4215     0.4418
            0.4621     0.4824     0.5027     0.5230     0.5433
            0.5636     0.5839     0.6042     0.6245     0.6463
            0.7214     0.7965     0.8716     0.9425     1.0000

  Transect 28
  Area:
            0.0140     0.0294     0.0449     0.0605     0.0762
            0.0920     0.1080     0.1240     0.1401     0.1564
            0.1727     0.1892     0.2057     0.2224     0.2392
            0.2560     0.2730     0.2901     0.3073     0.3246
            0.3420     0.3595     0.3772     0.3949     0.4127
            0.4307     0.4487     0.4669     0.4852     0.5040
            0.5234     0.5434     0.5639     0.5850     0.6067
            0.6289     0.6517     0.6751     0.6990     0.7235
            0.7486     0.7743     0.8005     0.8273     0.8547
            0.8826     0.9111     0.9402     0.9698     1.0000
  Hrad:
            0.0510     0.1042     0.1551     0.2040     0.2510
            0.2962     0.3397     0.3816     0.4221     0.4612
            0.4990     0.5356     0.5710     0.6054     0.6387
            0.6711     0.7026     0.7333     0.7631     0.7921
            0.8205     0.8481     0.8751     0.9014     0.9271
            0.9523     0.9769     1.0011     1.0191     1.0313
            1.0441     1.0573     1.0710     1.0851     1.0996
            1.1144     1.1296     1.1451     1.1609     1.1770
            1.1933     1.2099     1.2267     1.2437     1.2610
            1.2784     1.2960     1.3138     1.3318     1.0000
  Width:
            0.1057     0.1065     0.1072     0.1079     0.1087
            0.1094     0.1101     0.1109     0.1116     0.1124
            0.1131     0.1138     0.1146     0.1153     0.1160
            0.1168     0.1175     0.1182     0.1190     0.1197
            0.1204     0.1212     0.1219     0.1226     0.1234
            0.1241     0.1248     0.1256     0.1278     0.1317
            0.1357     0.1396     0.1435     0.1474     0.1514
            0.1553     0.1592     0.1631     0.1671     0.1710
            0.1749     0.1789     0.1828     0.1867     0.1906
            0.1946     0.1985     0.2024     0.2063     1.0000


  ********************
  Control Actions Taken
  ********************


  *************************        Volume        Volume
  Flow Routing Continuity        hectare-m       Mliters
  *************************     ---------     ---------
  Dry Weather Inflow .......         0.000         0.000
  Wet Weather Inflow .......         0.000         0.000
  Groundwater Inflow .......         0.000         0.000
  RDII Inflow ..............         0.000         0.000
  External Inflow ..........        44.975       449.756
  External Outflow .........        38.888       388.886
  Internal Outflow .........         6.167        61.674
  Evaporation Loss .........         0.000         0.000
  Initial Stored Volume ....         0.040         0.401
  Final Stored Volume ......         0.005         0.053
  Continuity Error (%) .....        -0.101


  ******************************
  Highest Flow Instability Indexes
  ******************************
  Link 62 (1)
  Link 63 (1)
  Link 4 (1)
  Link 6 (1)


  ************************
  Routing Time Step Summary
  ************************
  Minimum Time Step           :     0.40 sec
  Average Time Step           :     0.40 sec
  Maximum Time Step           :     0.40 sec
  Percent in Steady State     :     0.00
  Average Iterations per Step :     2.07
```

****
Node Depth Summary
****

Node	Type	Average Depth Meters	Maximum Depth Meters	Maximum HGL Meters	Time of Max Occurrence days	hr:min
53	JUNCTION	1.35	4.38	225.22	0	01:14
54	JUNCTION	0.83	2.47	225.57	0	01:15
55	JUNCTION	0.98	3.32	226.62	0	01:38
55.5	JUNCTION	1.00	4.31	229.21	0	01:38
56	JUNCTION	1.01	4.25	229.25	0	01:38
57	JUNCTION	0.68	4.40	234.00	0	00:54
58	JUNCTION	0.90	5.20	237.80	0	00:55
59	JUNCTION	0.62	4.23	237.83	0	00:55
60	JUNCTION	0.61	4.45	241.20	0	00:55
61	JUNCTION	0.51	3.74	245.80	0	01:00
62	JUNCTION	0.47	3.11	248.16	0	01:11
63	JUNCTION	0.18	1.73	248.18	0	01:11
64	JUNCTION	0.59	3.80	252.80	0	01:00
65	JUNCTION	0.54	4.08	257.54	0	01:20
66	JUNCTION	0.38	3.24	257.70	0	01:20
67	JUNCTION	0.62	4.12	258.78	0	01:12
68	JUNCTION	0.60	5.56	260.41	0	00:00
69	JUNCTION	0.26	3.50	259.65	0	00:00
70	JUNCTION	0.40	3.02	259.32	0	01:12
80	JUNCTION	0.47	3.05	259.40	0	01:12
200	JUNCTION	0.48	2.18	259.78	0	01:15
300	JUNCTION	0.64	2.49	260.15	0	01:15
400	JUNCTION	0.64	2.58	260.46	0	01:15
500	JUNCTION	0.66	2.62	260.72	0	01:15
600	JUNCTION	0.60	2.53	260.85	0	01:15
700	JUNCTION	0.70	2.64	261.18	0	01:15
800	JUNCTION	0.71	2.71	261.42	0	01:15
900	JUNCTION	0.76	3.08	261.96	0	01:14
52	JUNCTION	1.13	4.90	225.15	0	01:14
51.5	JUNCTION	1.14	4.94	225.14	0	01:14
51	JUNCTION	1.42	3.89	220.22	0	01:49
90	JUNCTION	0.45	2.89	259.47	0	01:12
100	JUNCTION	0.26	1.92	259.50	0	01:15
63.5	JUNCTION	0.37	1.75	249.45	0	01:11
51.3	JUNCTION	0.95	3.77	222.54	0	01:47
51.2	JUNCTION	1.11	4.20	222.05	0	01:47
65.5	JUNCTION	0.44	3.72	257.62	0	01:20
64.5	JUNCTION	0.56	3.80	254.10	0	01:01
64.4	JUNCTION	0.61	4.50	254.00	0	01:01
60.5	JUNCTION	0.59	3.95	243.00	0	00:56
59.5	JUNCTION	0.67	4.44	239.44	0	00:55
57.7	JUNCTION	1.04	5.00	236.50	0	00:49
57.3	JUNCTION	0.86	3.90	234.10	0	00:51
56.5	JUNCTION	0.83	4.75	230.95	0	00:47
57.5	JUNCTION	1.02	5.00	236.30	0	00:49
53.7	JUNCTION	0.99	3.24	225.43	0	01:15
53.5	JUNCTION	1.16	3.88	225.31	0	01:15
50	OUTFALL	0.83	2.45	217.45	0	01:49

****
Node InFlow Summary
****

Node	Type	Maximum Lateral Inflow CMS	Maximum Total Inflow CMS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume Mltrs	Total Inflow Volume Mltrs
53	JUNCTION	0.000	46.101	0	01:16	0.000	334.917
54	JUNCTION	0.000	45.886	0	01:38	0.000	334.925
55	JUNCTION	0.000	45.886	0	01:38	0.000	334.925
55.5	JUNCTION	0.000	46.271	0	00:55	0.000	334.926
56	JUNCTION	0.000	45.886	0	01:37	0.000	334.926
57	JUNCTION	2.101	46.941	0	00:54	14.691	334.917
58	JUNCTION	0.000	40.951	0	01:20	0.000	231.147
59	JUNCTION	0.000	40.951	0	01:20	0.000	231.141
60	JUNCTION	7.326	40.951	0	01:20	43.009	231.126
61	JUNCTION	0.000	37.560	0	01:12	0.000	194.932

62	JUNCTION	0.000	37.558	0	01:12	0.000	194.925
63	JUNCTION	0.000	37.540	0	01:11	0.000	194.925
64	JUNCTION	0.000	37.526	0	01:10	0.000	194.924
65	JUNCTION	5.994	39.285	0	01:20	35.189	196.885
66	JUNCTION	0.000	33.339	0	01:13	0.000	161.668
67	JUNCTION	0.000	47.241	0	00:00	0.000	161.746
68	JUNCTION	0.000	33.342	0	01:13	0.000	161.400
69	JUNCTION	0.000	33.524	0	01:08	0.000	161.070
70	JUNCTION	0.000	33.840	0	01:08	0.000	161.119
80	JUNCTION	0.000	35.463	0	01:15	0.000	162.145
200	JUNCTION	0.000	35.459	0	01:15	0.000	162.045
300	JUNCTION	0.000	35.458	0	01:15	0.000	162.048
400	JUNCTION	0.000	35.462	0	01:15	0.000	162.048
500	JUNCTION	0.000	35.468	0	01:15	0.000	162.047
600	JUNCTION	0.000	35.475	0	01:15	0.000	162.048
700	JUNCTION	0.000	35.484	0	01:15	0.000	162.049
800	JUNCTION	0.000	35.490	0	01:14	0.000	162.049
900	JUNCTION	35.490	35.490	0	01:14	162.048	162.048
52	JUNCTION	0.000	46.273	0	01:16	0.000	334.875
51.5	JUNCTION	0.000	46.638	0	01:16	0.000	334.858
51	JUNCTION	0.000	50.273	0	01:49	0.000	388.922
90	JUNCTION	0.000	35.462	0	01:15	0.000	162.076
100	JUNCTION	0.000	35.461	0	01:15	0.000	162.045
63.5	JUNCTION	0.000	37.526	0	01:10	0.000	194.926
51.3	JUNCTION	3.580	46.239	0	02:04	28.906	355.213
51.2	JUNCTION	4.070	50.274	0	01:47	33.696	388.913
65.5	JUNCTION	0.000	33.339	0	01:26	0.000	161.678
64.5	JUNCTION	0.000	39.285	0	01:20	0.000	196.886
64.4	JUNCTION	0.000	37.526	0	01:10	0.000	194.921
60.5	JUNCTION	0.000	37.560	0	01:12	0.000	194.935
59.5	JUNCTION	0.000	40.951	0	01:20	0.000	231.135
57.7	JUNCTION	11.556	52.235	0	01:37	80.798	311.950
57.3	JUNCTION	0.000	45.703	0	00:54	0.000	320.231
56.5	JUNCTION	0.000	45.886	0	01:37	0.000	334.919
57.5	JUNCTION	7.354	45.706	0	00:54	51.417	320.227
53.7	JUNCTION	0.000	45.886	0	01:38	0.000	334.937
53.5	JUNCTION	0.000	45.983	0	01:15	0.000	334.920
50	OUTFALL	0.000	50.273	0	01:49	0.000	388.884

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Meters	Min. Depth Below Rim Meters
57	JUNCTION	1.13	2.300	0.000
58	JUNCTION	1.23	3.200	0.000
59	JUNCTION	1.16	2.233	0.267
60	JUNCTION	0.92	2.450	0.000
61	JUNCTION	0.74	1.490	0.000
62	JUNCTION	0.52	0.861	2.139
64	JUNCTION	0.74	1.550	0.000
65	JUNCTION	0.54	1.384	2.856
66	JUNCTION	0.40	0.539	4.101
67	JUNCTION	0.39	0.619	2.621
68	JUNCTION	0.39	2.062	0.588
69	JUNCTION	0.01	0.000	1.350
80	JUNCTION	0.22	0.000	0.000
51.5	JUNCTION	0.82	0.000	0.000
51.3	JUNCTION	1.37	0.773	1.827
51.2	JUNCTION	1.54	1.197	1.403
65.5	JUNCTION	0.48	1.015	3.885
64.5	JUNCTION	0.71	1.550	0.000
64.4	JUNCTION	0.76	2.250	0.000
60.5	JUNCTION	0.86	2.150	0.000
59.5	JUNCTION	1.09	2.442	1.008
57.7	JUNCTION	1.32	2.900	0.000
57.3	JUNCTION	1.22	1.800	0.000
56.5	JUNCTION	1.37	2.648	2.352
57.5	JUNCTION	1.30	2.900	0.000

****
Node Flooding Summary
****

Flooding refers to all water that overflows a node, whether it ponds or not.

Node	Hours Flooded	Maximum Rate CMS	Time of Max Occurrence days hr:min	Total Flood Volume Mltrs	Maximum Ponded Volume ha-mm
57	0.01	3.010	0 00:54	0.004	0.00
58	0.01	0.405	0 00:55	0.001	0.00
60	0.01	2.800	0 00:55	0.004	0.00
61	0.01	1.152	0 01:00	0.001	0.00
64	0.01	1.934	0 01:01	0.004	0.00
80	0.22	2.152	0 01:15	1.169	0.00
51.5	0.82	3.522	0 01:16	8.551	0.00
64.5	0.36	2.217	0 01:01	1.969	0.00
64.4	0.01	0.559	0 01:01	0.000	0.00
60.5	0.67	3.870	0 01:20	6.816	0.00
57.7	1.03	15.803	0 01:37	43.145	0.00
57.3	0.01	2.634	0 00:51	0.010	0.00
57.5	0.01	1.234	0 00:49	0.000	0.00

****
Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CMS	Max. Flow CMS	Total Volume Mltrs
50	99.25	13.606	50.273	388.884
System	99.25	13.606	50.273	388.884

****
Link Flow Summary
****

Link	Type	Maximum Flow CMS	Time of Max Occurrence days hr:min	Maximum Velocity m/sec	Max/ Full Flow	Max/ Full Depth
2	CONDUIT	45.886	0 01:38	6.66	0.47	0.72
4	CONDUIT	45.886	0 01:37	7.77	0.88	1.00
6	CONDUIT	40.951	0 01:20	8.52	0.13	1.00
9	CONDUIT	37.560	0 01:12	8.68	0.91	1.00
10	CONDUIT	37.558	0 01:12	12.15	0.11	0.88
14	CONDUIT	33.339	0 01:13	7.48	1.48	1.00
15	CONDUIT	47.241	0 00:00	5.04	0.87	1.00
16	CONDUIT	33.524	0 01:08	6.12	1.13	1.00
17	CONDUIT	33.342	0 01:13	3.90	0.03	1.00
19	CHANNEL	35.461	0 01:15	5.41	0.97	0.72
20	CHANNEL	35.459	0 01:15	3.19	0.13	0.31
21	CHANNEL	35.458	0 01:15	2.18	0.22	0.54
22	CHANNEL	35.462	0 01:15	2.08	0.06	0.35
23	CHANNEL	35.468	0 01:15	1.60	0.07	0.37
24	CHANNEL	35.475	0 01:15	2.17	0.12	0.42
25	CHANNEL	35.484	0 01:15	1.91	0.18	0.50
26	CHANNEL	35.490	0 01:14	3.40	0.17	0.38
30	CONDUIT	46.271	0 00:55	6.29	0.39	0.66
31	CONDUIT	45.886	0 01:38	8.02	1.27	1.00
33	CHANNEL	46.273	0 01:16	2.39	0.12	0.64
34	CHANNEL	46.638	0 01:16	3.77	0.11	1.00
36	CHANNEL	50.273	0 01:49	3.08	0.17	0.40
27	CHANNEL	35.462	0 01:15	3.79	0.14	0.94
28	CHANNEL	35.463	0 01:15	3.00	0.63	0.97
29	CHANNEL	33.840	0 01:08	3.26	1.30	1.00
45	CONDUIT	39.285	0 01:20	7.07	1.04	1.00
46	CONDUIT	37.526	0 01:10	6.41	0.98	1.00
47	CONDUIT	37.526	0 01:10	6.41	1.32	1.00
48	CONDUIT	37.526	0 01:10	7.41	1.44	0.89
49	CONDUIT	37.540	0 01:11	12.91	0.90	0.77
52	CONDUIT	43.155	0 01:14	7.09	1.15	1.00
53	CONDUIT	46.240	0 02:04	5.14	0.73	1.00
54	CONDUIT	50.273	0 01:49	5.59	0.82	1.00
55	CONDUIT	33.339	0 01:26	4.73	0.39	1.00
56	CONDUIT	33.339	0 01:26	3.57	0.40	1.00
57	CONDUIT	37.560	0 01:12	7.18	0.95	1.00

58	CONDUIT	34.191	0	01:43	6.48	1.05	1.00
59	CONDUIT	40.951	0	01:20	7.62	0.95	1.00
60	CONDUIT	40.951	0	01:20	9.95	0.94	1.00
61	CONDUIT	40.951	0	01:20	6.40	1.04	1.00
62	CONDUIT	45.701	0	00:54	7.30	1.56	1.00
63	CONDUIT	45.886	0	01:37	6.83	0.82	1.00
64	CONDUIT	41.366	0	00:54	6.16	1.53	1.00
65	CONDUIT	45.703	0	00:54	6.80	1.44	1.00
66	CHANNEL	45.886	0	01:38	2.83	0.03	0.33
67	CHANNEL	45.983	0	01:15	2.09	0.06	0.42
68	CHANNEL	46.101	0	01:16	1.98	0.19	0.72

****
Flow Classification Summary
****

	Adjusted	--- Fraction of Time in Flow Class ----							Avg.	Avg.
Conduit	/Actual Length	Dry	Up Dry	Down Dry	Sub Crit	Sup Crit	Up Crit	Down Crit	Froude Number	Flow Change
2	1.00	0.01	0.00	0.00	0.67	0.32	0.00	0.00	0.60	0.0000
4	1.00	0.00	0.00	0.00	0.33	0.67	0.00	0.00	1.48	0.0000
6	1.00	0.01	0.00	0.00	0.42	0.57	0.00	0.00	1.65	0.0000
9	1.00	0.00	0.00	0.00	0.47	0.53	0.00	0.00	1.23	0.0000
10	1.00	0.00	0.00	0.00	0.42	0.57	0.00	0.00	2.03	0.0000
14	1.00	0.00	0.00	0.00	0.58	0.42	0.00	0.00	0.78	0.0001
15	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.30	0.0001
16	1.00	0.00	0.00	0.00	0.65	0.35	0.00	0.00	0.88	0.0001
17	1.00	0.00	0.00	0.00	0.71	0.29	0.00	0.00	0.64	0.0000
19	1.00	0.00	0.00	0.00	0.59	0.41	0.00	0.00	0.73	0.0000
20	1.00	0.00	0.01	0.00	0.96	0.03	0.00	0.00	0.37	0.0000
21	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.28	0.0000
22	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.28	0.0000
23	1.00	0.01	0.00	0.00	0.99	0.00	0.00	0.00	0.18	0.0000
24	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.37	0.0000
25	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.26	0.0000
26	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.26	0.0000
30	1.00	0.01	0.00	0.00	0.61	0.38	0.00	0.00	0.89	0.0000
31	1.00	0.01	0.00	0.00	0.33	0.66	0.00	0.00	1.04	0.0000
33	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.37	0.0000
34	1.00	0.02	0.00	0.00	0.64	0.34	0.00	0.00	0.70	0.0000
36	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.41	0.0000
27	1.00	0.00	0.00	0.00	0.65	0.35	0.00	0.00	0.64	0.0000
28	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.29	0.0000
29	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.34	0.0001
45	1.00	0.00	0.00	0.00	0.49	0.51	0.00	0.00	1.03	0.0000
46	1.00	0.00	0.00	0.00	0.50	0.50	0.00	0.00	0.92	0.0000
47	1.00	0.00	0.00	0.00	0.52	0.48	0.00	0.00	0.81	0.0001
48	1.00	0.00	0.00	0.00	0.51	0.49	0.00	0.00	0.91	0.0001
49	1.00	0.00	0.00	0.00	0.43	0.57	0.00	0.00	1.96	0.0000
52	1.00	0.00	0.02	0.00	0.32	0.66	0.00	0.00	1.19	0.0000
53	1.00	0.00	0.00	0.00	0.58	0.42	0.00	0.00	1.01	0.0000
54	1.00	0.00	0.00	0.00	0.86	0.14	0.00	0.00	0.54	0.0000
55	1.00	0.00	0.00	0.00	0.73	0.27	0.00	0.00	0.51	0.0000
56	1.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.37	0.0000
57	1.00	0.01	0.00	0.00	0.48	0.52	0.00	0.00	1.10	0.0000
58	1.00	0.00	0.01	0.00	0.49	0.50	0.00	0.00	0.95	0.0000
59	1.00	0.00	0.00	0.00	0.47	0.53	0.00	0.00	1.06	0.0000
60	1.00	0.00	0.00	0.00	0.43	0.57	0.00	0.00	1.66	0.0000
61	1.00	0.00	0.01	0.00	0.74	0.25	0.00	0.00	0.64	0.0000
62	1.00	0.00	0.00	0.00	0.38	0.62	0.00	0.00	1.14	0.0001
63	1.00	0.00	0.00	0.00	0.37	0.63	0.00	0.00	1.16	0.0000
64	1.00	0.00	0.00	0.00	0.46	0.54	0.00	0.00	0.80	0.0001
65	1.00	0.00	0.00	0.00	0.40	0.60	0.00	0.00	0.99	0.0001
66	1.00	0.01	0.00	0.00	0.98	0.00	0.00	0.00	0.41	0.0000
67	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.29	0.0000
68	1.00	0.02	0.00	0.00	0.98	0.00	0.00	0.00	0.23	0.0000

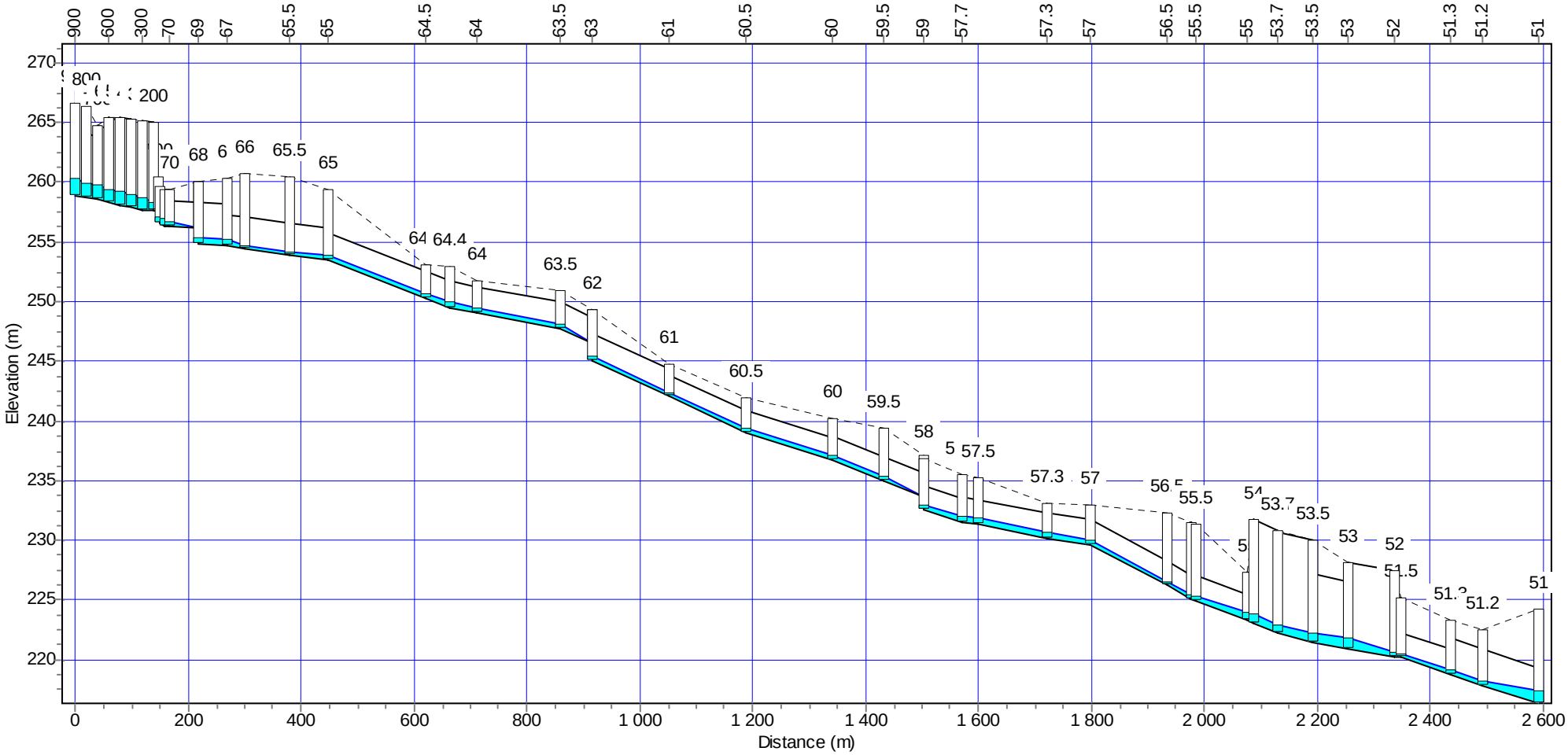
****
Conduit Surcharge Summary
****

	--- Hours Full ---			Hours Above Full	Hours Capacity
Conduit	Both Ends	Upstream	Dnstream	Normal Flow	Limited
4	1.13	1.13	1.13	0.01	0.01

6	1.16	1.16	1.16	0.01	0.01
9	0.52	0.52	0.52	0.01	0.01
14	0.41	0.41	0.41	0.97	0.41
15	0.38	0.38	0.38	0.01	0.01
16	0.38	0.38	0.38	0.61	0.38
17	0.01	0.01	0.01	0.01	0.01
31	1.49	1.49	1.49	1.39	1.39
29	0.01	0.01	0.01	0.79	0.01
45	0.62	0.62	0.62	0.35	0.35
46	0.71	0.71	0.71	0.01	0.01
47	0.74	0.74	0.74	0.92	0.73
48	0.01	0.01	0.01	1.01	0.01
52	1.63	1.63	1.63	1.43	1.61
53	1.37	1.37	1.37	0.01	0.01
54	1.54	1.54	1.54	0.01	1.28
55	0.40	0.40	0.40	0.01	0.01
56	0.48	0.48	0.48	0.01	0.01
57	0.80	0.80	0.80	0.01	0.01
58	0.86	0.86	0.86	0.75	0.75
59	0.92	0.92	0.92	0.01	0.01
60	1.09	1.09	1.09	0.01	0.01
61	1.23	1.23	1.23	0.72	0.72
62	1.13	1.13	1.13	1.57	1.12
63	1.37	1.37	1.37	0.01	0.01
64	1.30	1.30	1.30	1.48	1.30
65	1.22	1.22	1.22	1.48	1.22

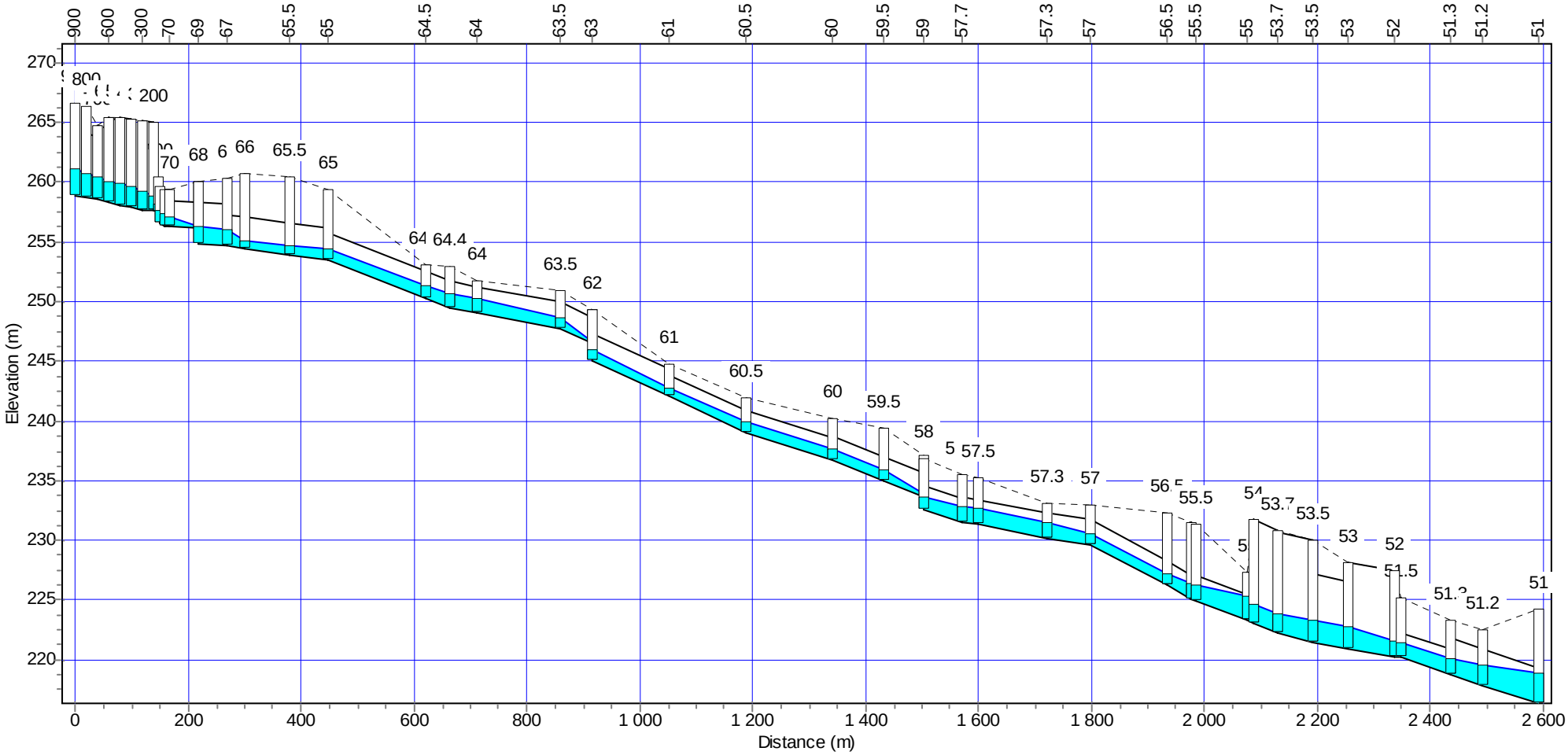
Analysis begun on: Thu Aug 28 11:47:49 2008
Analysis ended on: Thu Aug 28 11:48:05 2008
Total elapsed time: 00:00:16

Water Elevation Profile: Node 900 - 51



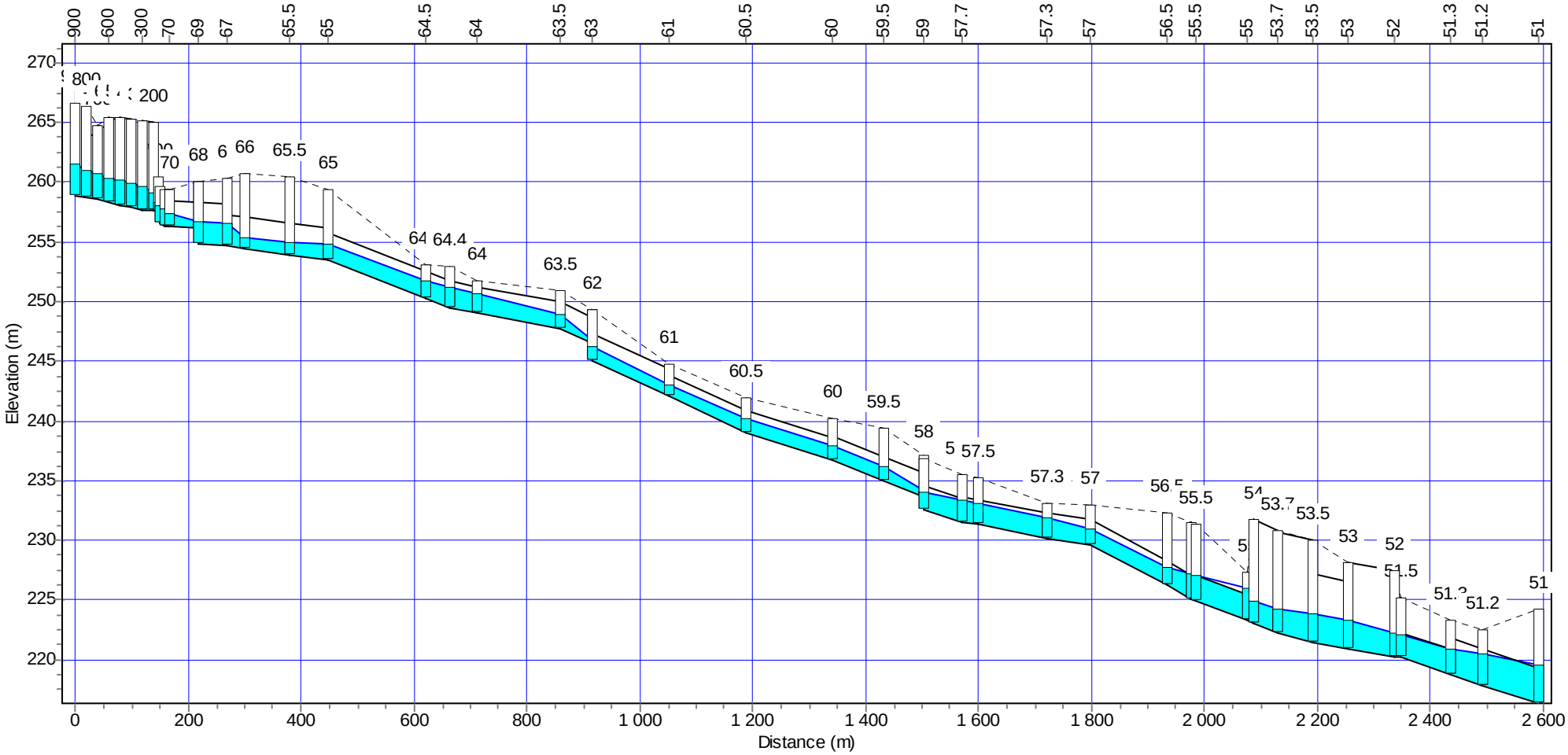
06/19/2008 00:20:00

Water Elevation Profile: Node 900 - 51



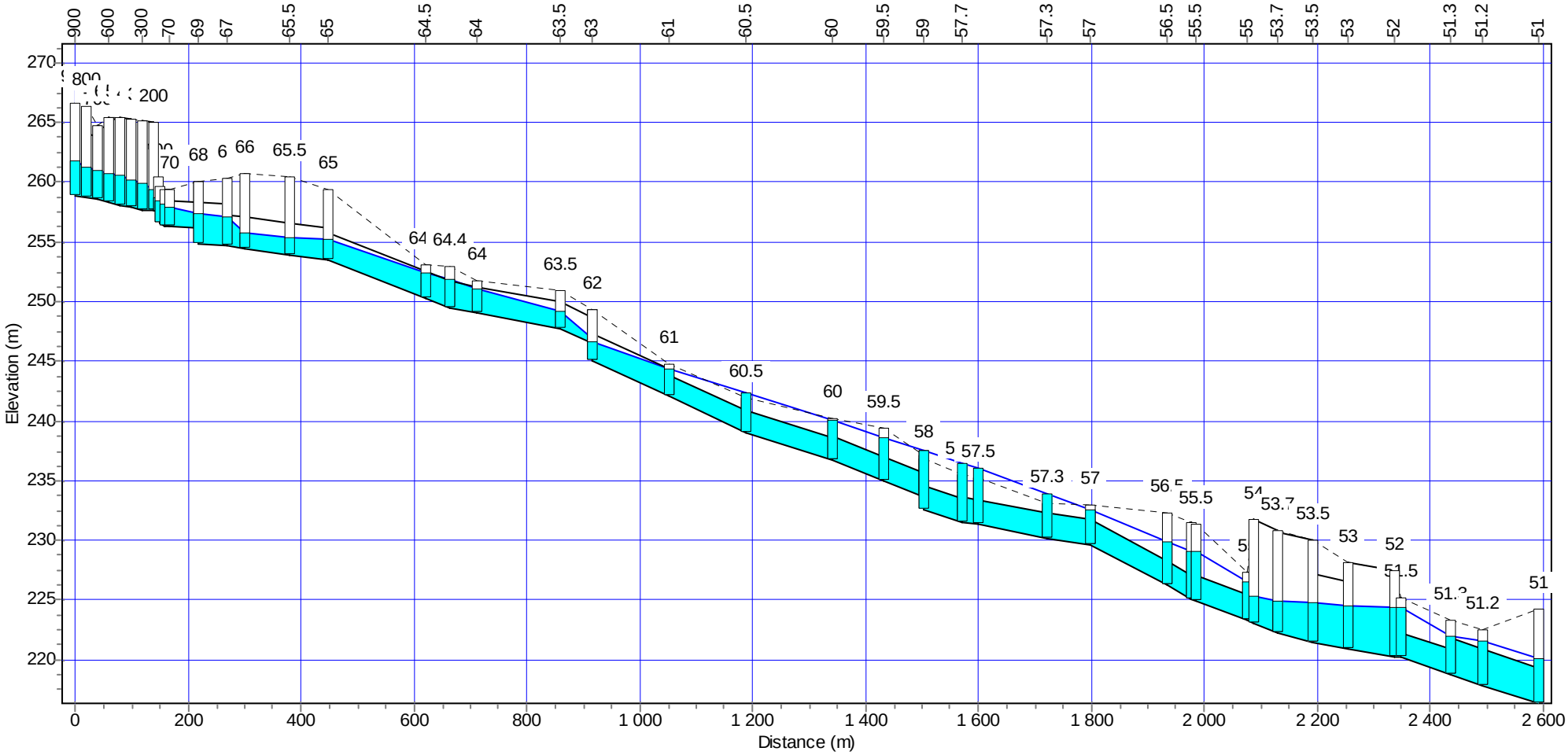
06/19/2008 00:35:00

Water Elevation Profile: Node 900 - 51



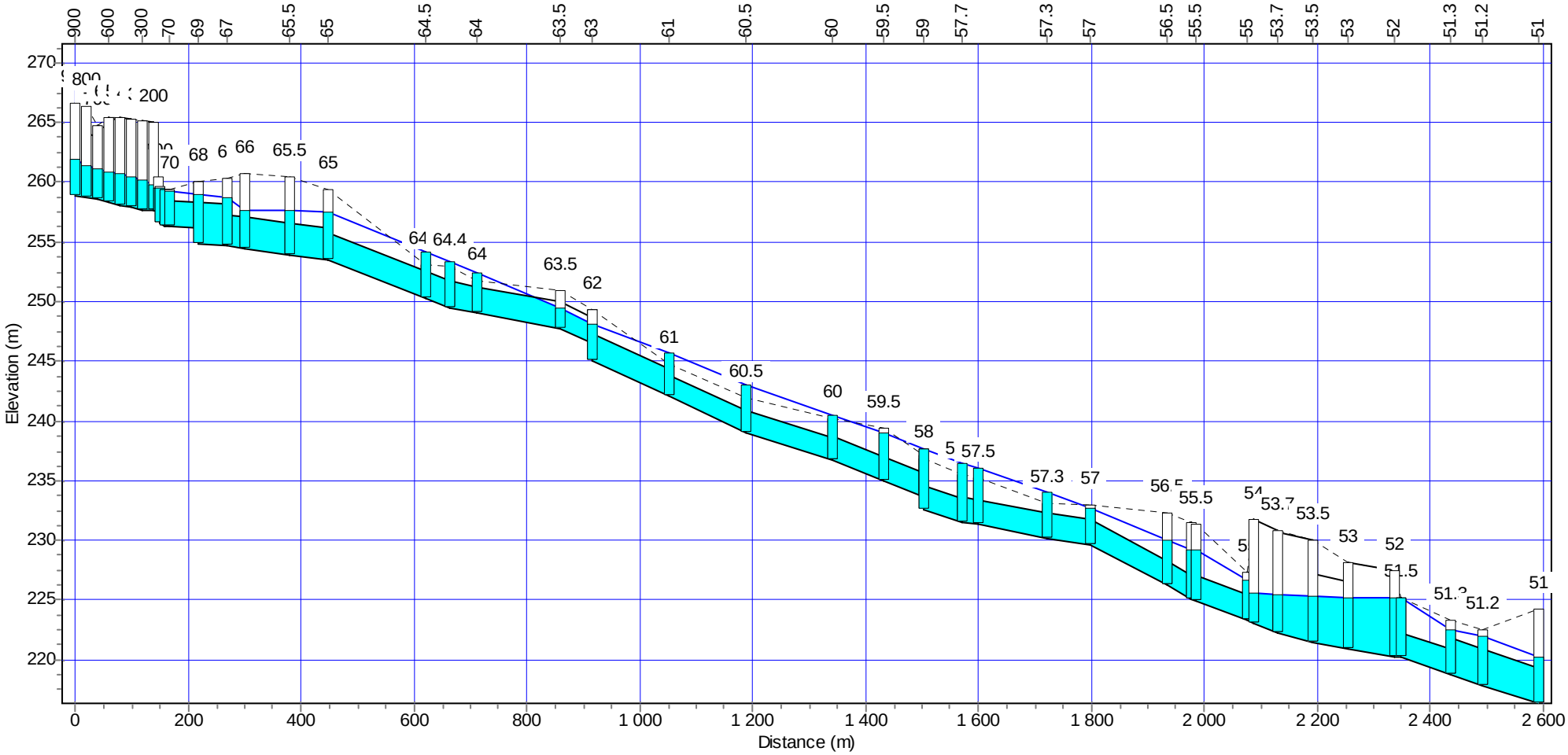
06/19/2008 00:45:00

Water Elevation Profile: Node 900 - 51



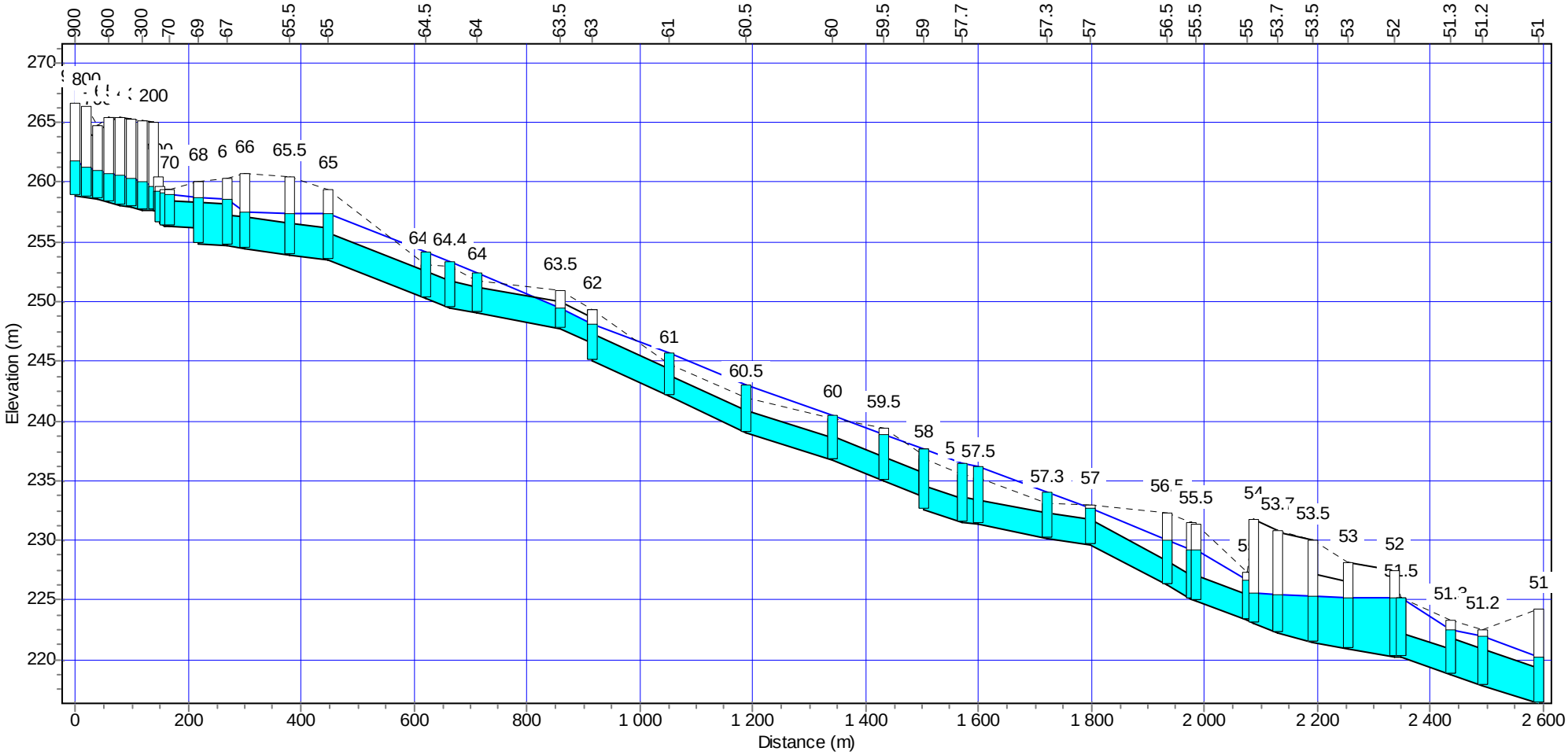
06/19/2008 01:00:00

Water Elevation Profile: Node 900 - 51



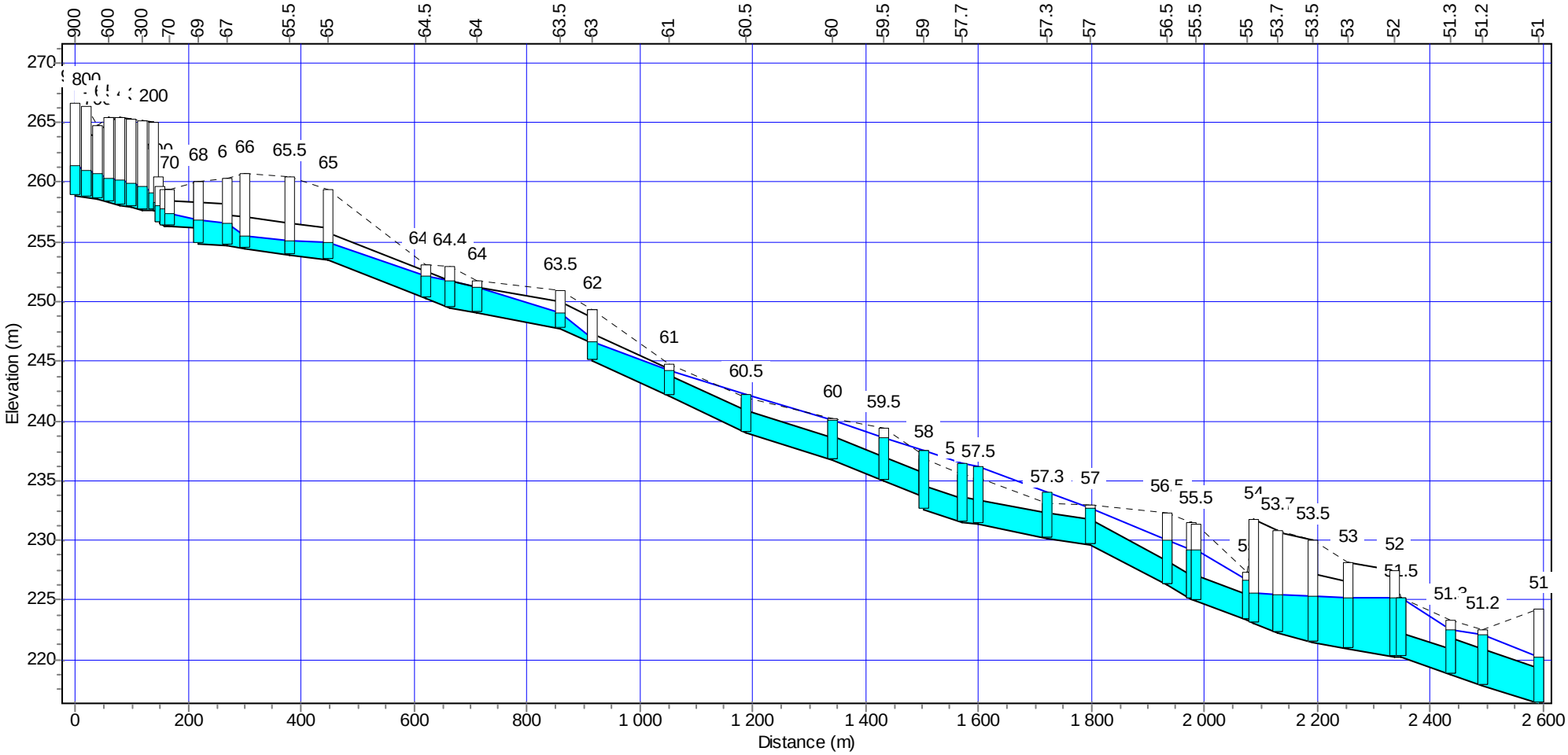
06/19/2008 01:15:00

Water Elevation Profile: Node 900 - 51



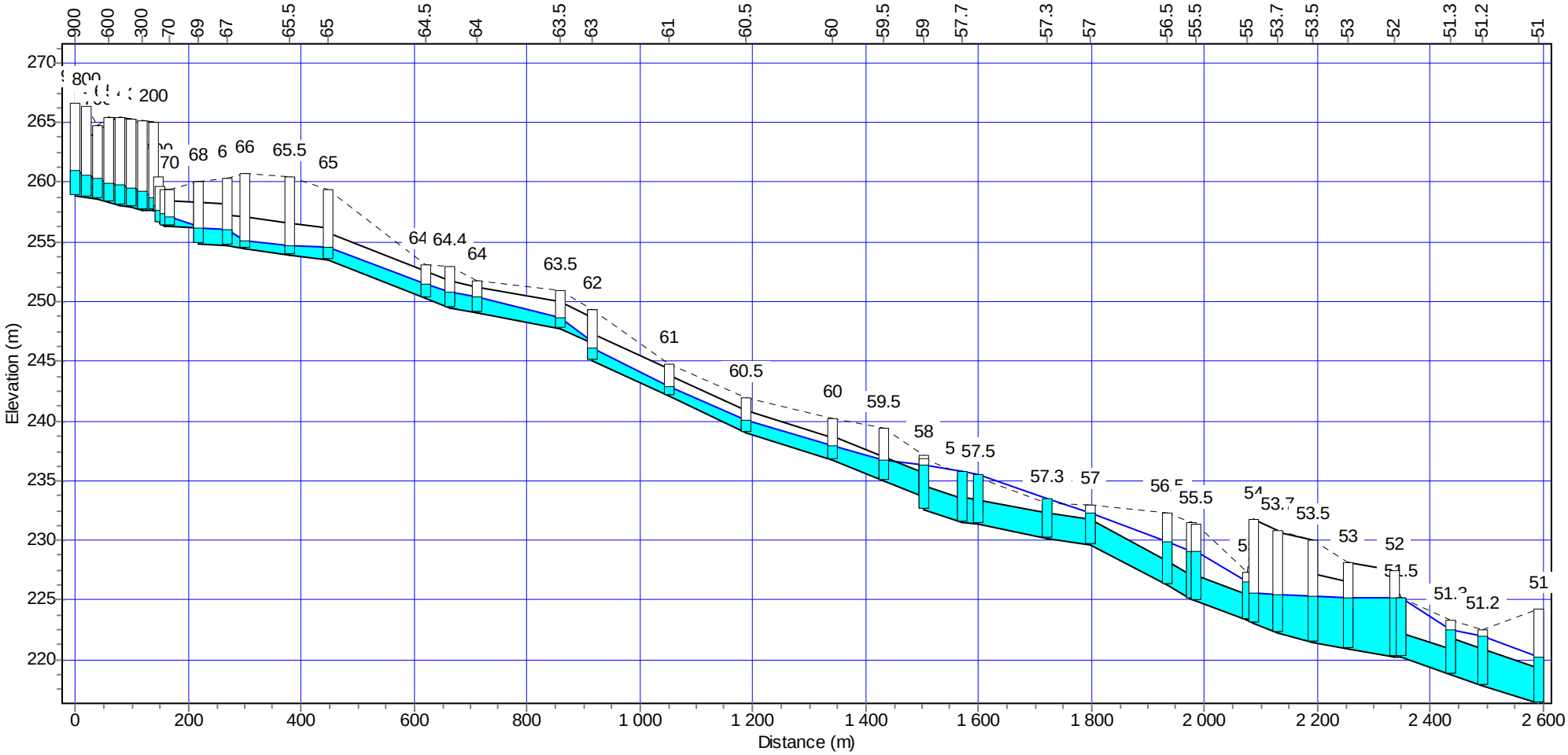
06/19/2008 01:30:00

Water Elevation Profile: Node 900 - 51



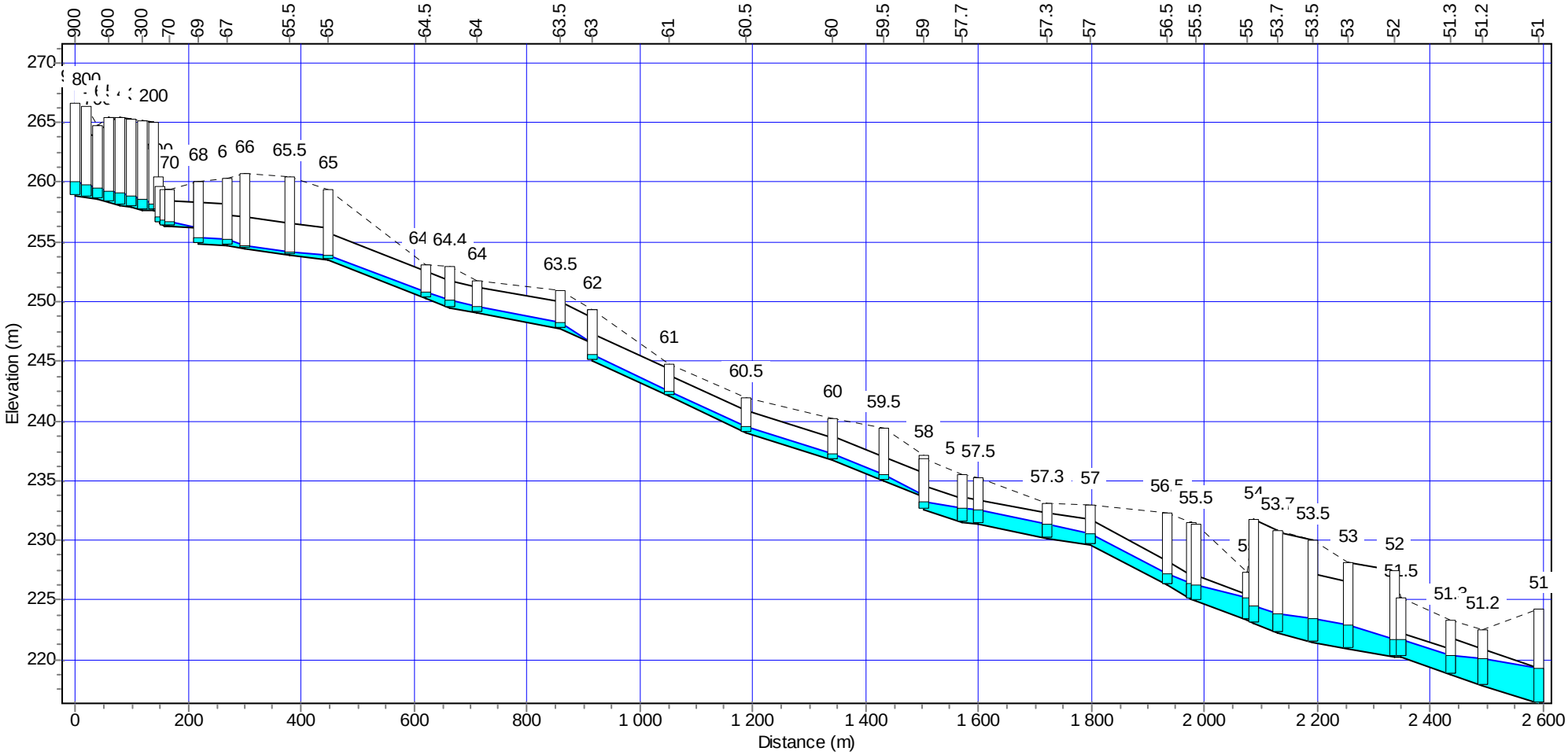
06/19/2008 01:45:00

Water Elevation Profile: Node 900 - 51



06/19/2008 02:00:00

Water Elevation Profile: Node 900 - 51



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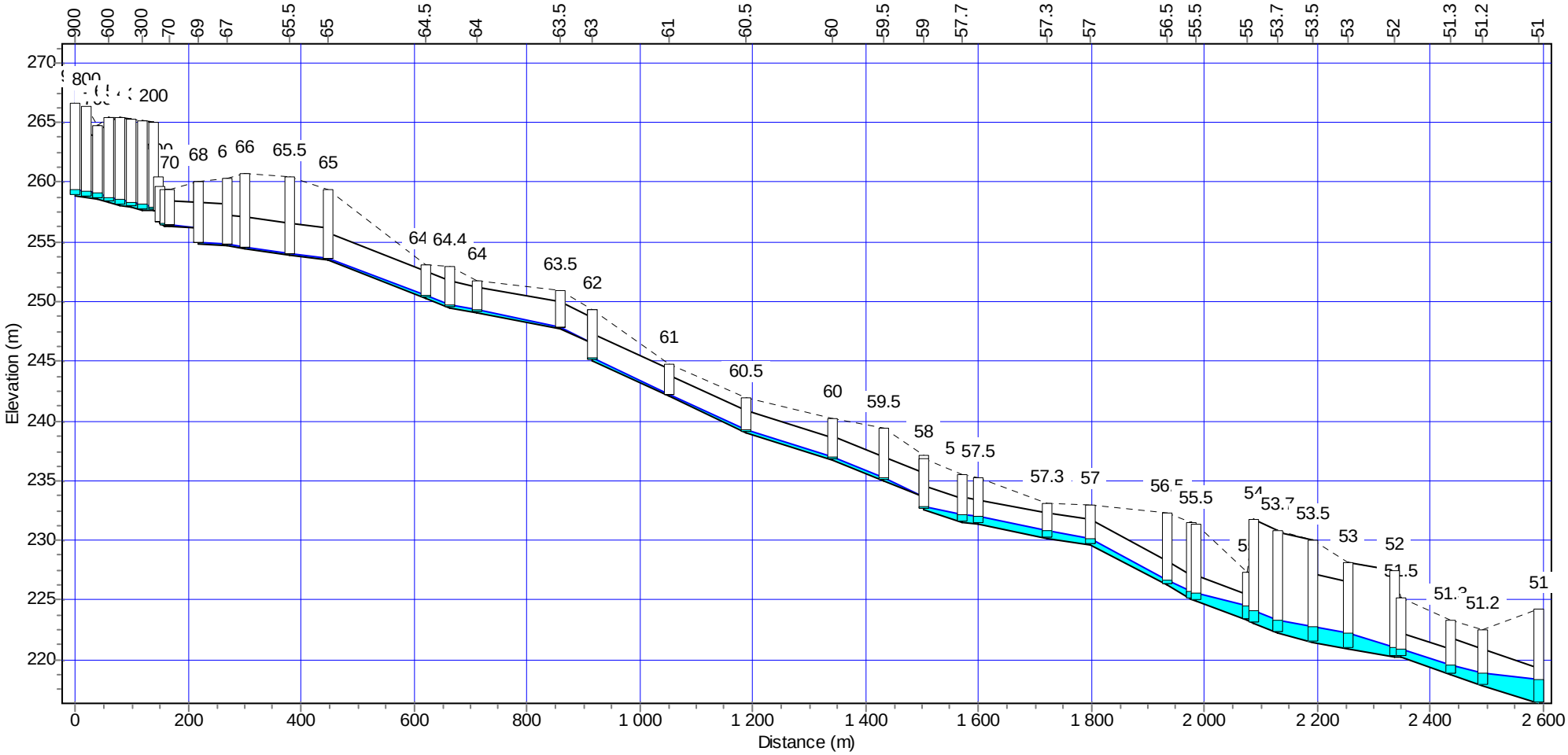
Water Elevation Profile: Node 900 - 51

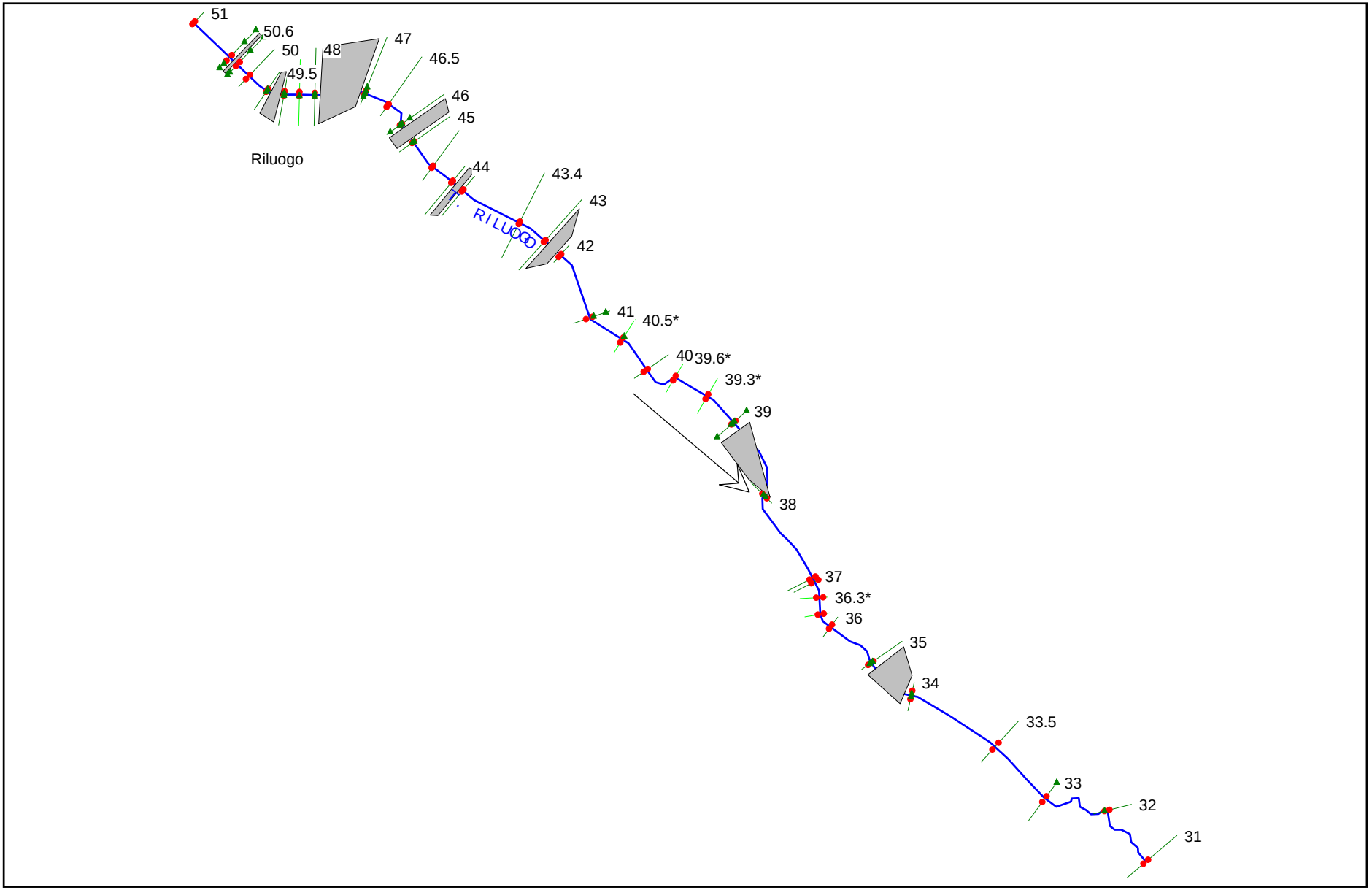


06/19/2008 03:00:00

ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO RIL01 – TORRENTE RILUOGO

DA SEZ. 51 A SEZ. 31


51
50.6
50
48
47
46.5
49.5
46
45
Riluogo
44
43.4
43
RILUOGO
42
41
40.5*
40
39.6*
39.3*
39
38
37
36.3*
36
35
34
33.5
33
32
31

HEC-RAS Plan: RIL01 River: T. RILUOGO Reach: Riluogo

Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
			(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
Riluogo	51	TR20	40.60		40.60		216.33	219.31	218.45	219.68	0.012055	2.69	2.69	15.08	6.50	0.56	0.56
Riluogo	51	TR30	45.40		45.40		216.33	219.53	218.63	219.91	0.011732	2.75	2.75	16.52	6.62	0.56	0.56
Riluogo	51	TR200	74.40	1.11	73.25	0.04	216.33	220.74	219.36	221.17	0.008890	2.96	2.86	26.05	9.86	0.50	0.56
Riluogo	50.6	TR20	40.60		40.60		215.96	218.66	217.54	218.81	0.003911	1.76	1.76	23.09	11.58	0.40	0.40
Riluogo	50.6	TR30	45.40		45.40		215.96	218.92	217.64	219.07	0.003438	1.73	1.73	26.25	12.18	0.38	0.38
Riluogo	50.6	TR200	74.40		74.16	0.24	215.96	220.38	218.20	220.51	0.001839	1.61	1.58	47.15	17.05	0.29	0.30
Riluogo	50.5 BR U	TR20	40.60		40.60		215.96	218.59	217.54	218.77	0.004524	1.88	1.88	21.54	10.04	0.41	0.41
Riluogo	50.5 BR U	TR30	45.40		45.40		215.96	218.85	217.64	219.03	0.004072	1.87	1.87	24.23	10.29	0.39	0.39
Riluogo	50.5 BR U	TR200	74.40		74.16	0.24	215.96	220.31	218.19	220.48	0.002939	1.83	1.80	41.33	14.31	0.32	0.34
Riluogo	50.5 BR D	TR20	40.60		40.60		215.28	218.54	217.29	218.74	0.004704	1.99	1.99	20.44	8.23	0.40	0.40
Riluogo	50.5 BR D	TR30	45.40		45.40		215.28	218.79	217.42	219.00	0.004488	2.01	2.01	22.58	8.36	0.39	0.39
Riluogo	50.5 BR D	TR200	74.40	0.14	73.30	0.96	215.28	220.23	218.05	220.45	0.003541	2.09	1.92	38.66	20.16	0.34	0.44
Riluogo	50.4	TR20	40.60		40.60		215.28	218.52	217.29	218.71	0.004564	1.94	1.94	20.91	9.32	0.41	0.41
Riluogo	50.4	TR30	45.40		45.40		215.28	218.78	217.41	218.97	0.004211	1.94	1.94	23.39	9.70	0.40	0.40
Riluogo	50.4	TR200	74.40	0.12	73.29	0.99	215.28	220.23	218.07	220.41	0.002558	1.89	1.74	42.79	24.39	0.32	0.42
Riluogo	50	TR20	40.60		40.60		215.00	218.29	217.04	218.53	0.006419	2.16	2.16	18.80	8.13	0.45	0.45
Riluogo	50	TR30	45.40		45.40		215.00	218.57	217.18	218.80	0.005923	2.15	2.15	21.12	8.69	0.44	0.44
Riluogo	50	TR200	74.40	0.01	74.21	0.18	215.00	220.10	217.94	220.31	0.003479	2.02	1.96	37.91	18.61	0.36	0.44
Riluogo	49.5	TR20	40.60		40.60		214.75	218.06	216.61	218.36	0.000511	2.41	2.41	16.83	7.16	0.42	0.42
Riluogo	49.5	TR30	45.40		45.40		214.75	218.32	216.76	218.64	0.000498	2.50	2.50	18.14	8.29	0.42	0.42
Riluogo	49.5	TR200	74.40		74.40		214.75	219.71	217.55	220.15	0.000445	2.95	2.95	25.24	38.00	0.42	0.42
Riluogo	49.25	TR20	40.60														
Riluogo	49.25	TR30	45.40														
Riluogo	49.25	TR200	74.40														
Riluogo	49	TR20	40.60		40.60		214.13	215.91	216.02	216.97	0.003232	4.55	4.55	8.92	5.06	0.42	0.42
Riluogo	49	TR30	45.40		45.40		214.13	216.28	216.16	217.19	0.002323	4.22	4.22	10.76	5.08	0.92	0.92
Riluogo	49	TR200	74.40		74.40		214.13	217.49	216.95	218.49	0.001747	4.43	4.43	16.78	5.91	0.77	0.77
Riluogo	48.5*	TR20	40.60		40.60		213.87	216.10	215.75	216.77	0.002362	3.62	3.62	11.20	5.05	0.78	0.78
Riluogo	48.5*	TR30	45.40		45.40		213.87	216.32	215.89	217.01	0.002298	3.69	3.69	12.30	5.06	0.76	0.76
Riluogo	48.5*	TR200	74.40		74.40		213.87	217.54	216.72	218.32	0.002031	3.91	3.91	19.01	6.10	0.71	0.71
Riluogo	48	TR20	40.60		40.60		213.60	216.11	215.48	216.64	0.001723	3.24	3.24	12.54	5.06	0.65	0.65
Riluogo	48	TR30	45.40		45.40		213.60	216.32	215.63	216.89	0.001686	3.34	3.34	13.61	5.17	0.65	0.65
Riluogo	48	TR200	74.40		74.40		213.60	217.51	216.42	218.25	0.001576	3.81	3.81	19.53	5.80	0.62	0.62
Riluogo	47.5	TR20	40.60														
Riluogo	47.5	TR30	45.40														
Riluogo	47.5	TR200	74.40														

HEC-RAS Plan: RIL01 River: T. RILUOGO Reach: Riluogo (Continued)

Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
			(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
Riluogo	47	TR20	40.60		40.60		211.38	212.46	213.35	215.86	0.018985	8.18	8.18	4.96	5.54	0.65	0.65
Riluogo	47	TR30	45.40		45.40		211.38	212.55	213.49	216.10	0.017884	8.35	8.35	5.44	5.59	0.65	0.65
Riluogo	47	TR200	74.40		74.40		211.38	213.09	214.28	217.36	0.014100	9.15	9.15	8.13	5.86	0.62	0.62
Riluogo	46.5	TR20	40.60		40.60		211.25	213.92	213.09	214.29	0.001043	2.71	2.71	14.98	6.29	0.56	0.56
Riluogo	46.5	TR30	45.40		45.40		211.25	214.20	213.23	214.58	0.000962	2.71	2.71	16.77	6.43	0.53	0.53
Riluogo	46.5	TR200	74.40	0.00	74.33	0.07	211.25	215.73	213.96	216.12	0.000684	2.74	2.70	27.51	8.47	0.44	0.48
Riluogo	46	TR20	40.60		40.60		211.12	213.67	213.00	214.18	0.001680	3.19	3.19	12.73	5.00	0.64	0.64
Riluogo	46	TR30	45.90		45.90		211.12	213.90	213.16	214.46	0.001700	3.30	3.30	13.90	5.00	0.63	0.63
Riluogo	46	TR200	78.30		78.30		211.12	215.20	214.03	215.95	0.001844	3.84	3.84	20.42	5.00	0.61	0.61
Riluogo	45.5	TR20	40.60														
Riluogo	45.5	TR30	45.90														
Riluogo	45.5	TR200	78.30														
Riluogo	45	TR20	40.60		40.60		210.62	212.31	212.50	213.49	0.005161	4.81	4.81	8.44	5.00	0.64	0.64
Riluogo	45	TR30	45.90		45.90		210.62	212.45	212.66	213.73	0.005261	5.02	5.02	9.15	5.00	0.63	0.63
Riluogo	45	TR200	78.30		78.30		210.62	213.24	213.53	215.06	0.005768	5.97	5.97	13.12	5.00	0.61	0.61
Riluogo	44.5	TR20	40.60		40.60		210.30	212.43	212.18	213.17	0.002697	3.80	3.80	10.67	5.00	0.83	0.83
Riluogo	44.5	TR30	45.90		45.90		210.30	212.63	212.34	213.42	0.002707	3.93	3.93	11.67	5.00	0.82	0.82
Riluogo	44.5	TR200	78.30		78.30		210.30	213.62	213.21	214.75	0.003115	4.71	4.71	16.61	5.00	0.83	0.83
Riluogo	44	TR20	40.60		40.60		209.98	212.36	211.86	212.96	0.003556	3.41	3.41	11.92	5.00	0.70	0.70
Riluogo	44	TR30	45.90		45.90		209.98	212.56	212.02	213.21	0.003684	3.56	3.56	12.90	5.00	0.71	0.71
Riluogo	44	TR200	78.30		78.30		209.98	213.51	212.90	214.51	0.004742	4.44	4.44	17.64	5.00	0.75	0.75
Riluogo	43.75 BR U	TR20	40.60		40.60		209.98	211.86	211.86	212.81	0.006752	4.31	4.31	9.42	5.00	1.00	1.00
Riluogo	43.75 BR U	TR30	45.90		45.90		209.98	212.03	212.03	213.05	0.006856	4.48	4.48	10.24	5.00	1.00	1.00
Riluogo	43.75 BR U	TR200	78.30		78.30		209.98	213.06	212.91	214.38	0.006719	5.08	5.08	15.41	5.00	0.92	0.92
Riluogo	43.75 BR D	TR20	40.60		40.60		209.59	211.91	211.48	212.53	0.006017	3.51	3.51	11.58	5.00	0.74	0.74
Riluogo	43.75 BR D	TR30	45.90		45.90		209.59	212.09	211.64	212.78	0.006232	3.67	3.67	12.52	5.00	0.74	0.74
Riluogo	43.75 BR D	TR200	78.30		78.30		209.59	213.14	212.52	214.13	0.007298	4.41	4.41	17.75	5.00	0.75	0.75
Riluogo	43.5	TR20	40.60		40.60		209.59	211.63	211.47	212.44	0.008527	3.99	3.99	10.18	5.00	0.89	0.89
Riluogo	43.5	TR30	45.90		45.90		209.59	211.81	211.63	212.68	0.008587	4.13	4.13	11.11	5.00	0.88	0.88
Riluogo	43.5	TR200	78.30		78.30		209.59	212.91	212.51	214.04	0.008634	4.71	4.71	16.62	5.00	0.82	0.82
Riluogo	43.4	TR20	40.60		40.60		208.84	210.81	210.72	211.68	0.003371	4.13	4.13	9.84	5.00	0.94	0.94
Riluogo	43.4	TR30	45.90		45.90		208.84	211.00	210.88	211.92	0.003345	4.25	4.25	10.79	5.00	0.92	0.92
Riluogo	43.4	TR200	78.30		78.30		208.84	212.20	211.75	213.31	0.003032	4.67	4.67	16.78	5.00	0.81	0.81
Riluogo	43	TR20	40.70		40.70		208.51	210.72	210.39	211.41	0.002467	3.68	3.68	11.05	5.00	0.79	0.79
Riluogo	43	TR30	46.10		46.10		208.51	210.91	210.56	211.66	0.002547	3.85	3.85	11.98	5.00	0.79	0.79
Riluogo	43	TR200	80.30		80.30		208.51	212.05	211.47	213.10	0.002778	4.53	4.53	17.71	5.00	0.77	0.77

HEC-RAS Plan: RIL01 River: T. RILUOGO Reach: Riluogo (Continued)

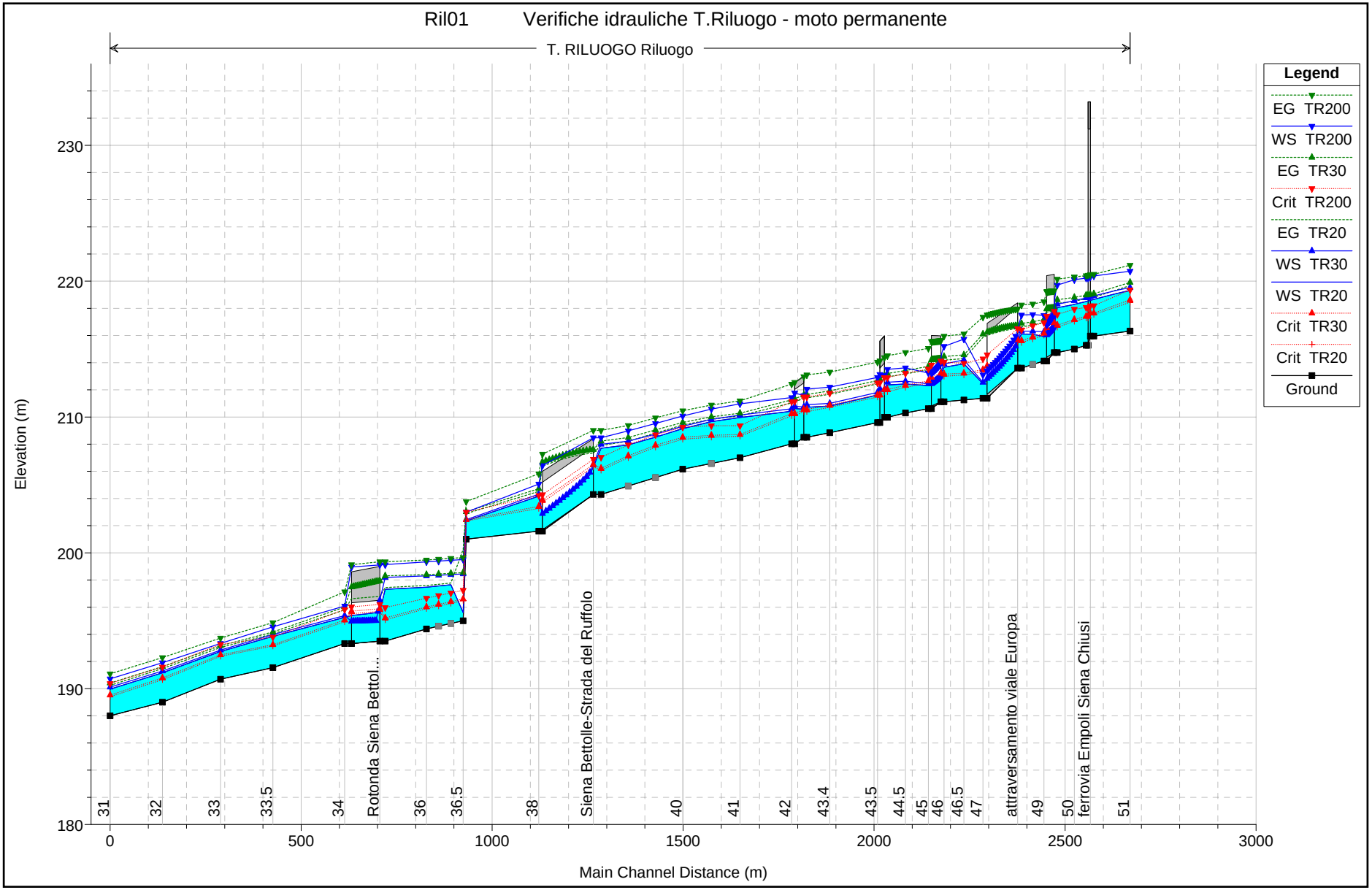
Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
			(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
Riluogo	42.50 BR U	TR20	40.70		40.70		208.51	210.58	210.40	211.37	0.002963	3.94	3.94	10.33	5.00	0.87	0.87
Riluogo	42.50 BR U	TR30	46.10		46.10		208.51	210.73	210.56	211.61	0.003116	4.15	4.15	11.11	5.00	0.89	0.89
Riluogo	42.50 BR U	TR200	80.30		80.30		208.51	211.58	211.48	212.97	0.004006	5.23	5.23	15.36	5.00	0.95	0.95
Riluogo	42.50 BR D	TR20	40.70		40.70		208.03	210.63	210.10	211.13	0.005910	3.13	3.13	12.99	6.14	0.69	0.69
Riluogo	42.50 BR D	TR30	46.10		46.10		208.03	210.80	210.26	211.35	0.006141	3.28	3.28	14.05	6.27	0.70	0.70
Riluogo	42.50 BR D	TR200	80.30		80.17	0.13	208.03	211.77	211.14	212.55	0.006420	3.91	3.87	20.77	7.98	0.73	0.76
Riluogo	42	TR20	40.70		40.70		208.03	210.43	210.09	211.04	0.007657	3.45	3.45	11.80	5.98	0.78	0.78
Riluogo	42	TR30	46.10		46.10		208.03	210.60	210.25	211.26	0.007795	3.59	3.59	12.86	6.12	0.79	0.79
Riluogo	42	TR200	80.30		80.29	0.01	208.03	211.43	211.14	212.42	0.009158	4.41	4.40	18.24	7.09	0.86	0.88
Riluogo	41	TR20	40.70		40.70		207.00	209.96	208.58	210.09	0.002807	1.58	1.58	25.80	11.81	0.34	0.34
Riluogo	41	TR30	46.10		46.10		207.00	210.14	208.71	210.28	0.002900	1.65	1.65	27.93	12.19	0.35	0.35
Riluogo	41	TR200	80.30	0.03	80.27		207.00	210.97	209.36	211.19	0.003419	2.08	2.07	38.71	13.78	0.39	0.40
Riluogo	40.5*	TR20	40.70	0.00	40.70		206.58	209.66	208.52	209.83	0.004280	1.84	1.84	22.09	10.98	0.41	0.41
Riluogo	40.5*	TR30	46.10	0.00	46.10		206.58	209.83	208.65	210.01	0.004318	1.92	1.92	23.97	11.46	0.42	0.42
Riluogo	40.5*	TR200	80.30	0.24	79.84	0.21	206.58	210.58	209.36	210.88	0.004809	2.46	2.37	33.89	17.39	0.46	0.51
Riluogo	40	TR20	40.70	0.02	40.67	0.01	206.16	209.15	208.36	209.41	0.007440	2.29	2.27	17.96	11.99	0.53	0.59
Riluogo	40	TR30	46.10	0.17	45.89	0.04	206.16	209.32	208.51	209.60	0.007072	2.37	2.28	20.26	14.89	0.53	0.62
Riluogo	40	TR200	80.30	4.19	75.06	1.04	206.16	210.08	209.26	210.46	0.006604	2.82	2.21	36.40	27.69	0.54	0.61
Riluogo	39.6*	TR20	40.70		40.70		205.54	208.52	207.78	208.82	0.009100	2.44	2.44	16.67	9.06	0.57	0.57
Riluogo	39.6*	TR30	46.10	0.00	46.10		205.54	208.74	207.93	209.05	0.008391	2.45	2.45	18.83	10.75	0.56	0.59
Riluogo	39.6*	TR200	80.30	3.07	76.85	0.38	205.54	209.53	208.69	209.94	0.007774	2.90	2.39	33.64	28.11	0.57	0.70
Riluogo	39.3*	TR20	40.70		40.70		204.92	207.95	207.00	208.21	0.007448	2.29	2.29	17.81	8.75	0.51	0.51
Riluogo	39.3*	TR30	46.10		46.10		204.92	208.23	207.15	208.49	0.006708	2.27	2.27	20.34	9.33	0.49	0.49
Riluogo	39.3*	TR200	80.30	2.10	78.20		204.92	208.98	207.95	209.37	0.007754	2.82	2.45	32.79	25.77	0.54	0.69
Riluogo	39	TR20	40.70		40.70		204.30	207.70	206.08	207.91	0.000233	2.06	2.06	19.71	9.36	0.36	0.36
Riluogo	39	TR30	46.10		46.10		204.30	207.99	206.22	208.23	0.000224	2.15	2.15	21.49	9.87	0.36	0.36
Riluogo	39	TR200	80.30	0.09	80.21		204.30	208.47	207.03	209.01	0.001202	3.26	3.08	26.10	42.97	0.67	1.07
Riluogo	38.5	TR20	40.70														
Riluogo	38.5	TR30	46.10														
Riluogo	38.5	TR200	80.30														
Riluogo	38	TR20	40.70		40.70		201.60	204.17	203.27	204.52	0.004961	2.64	2.64	15.41	11.74	0.53	0.53
Riluogo	38	TR30	46.10		46.10		201.60	204.32	203.41	204.72	0.005271	2.83	2.83	16.30	12.07	0.55	0.55
Riluogo	38	TR200	80.30		80.30		201.60	205.07	204.22	205.83	0.007103	3.86	3.86	20.80	14.06	0.66	0.66
Riluogo	37	TR20	40.70	0.06	40.64		201.00	202.34	202.34	202.89	0.025418	3.28	3.25	12.53	12.10	1.00	1.02
Riluogo	37	TR30	46.10	0.12	45.98		201.00	202.44	202.44	203.03	0.024773	3.39	3.35	13.76	12.47	1.00	1.02
Riluogo	37	TR200	80.30	0.94	79.36		201.00	202.99	202.99	203.78	0.022136	3.96	3.80	21.14	14.50	0.99	1.00

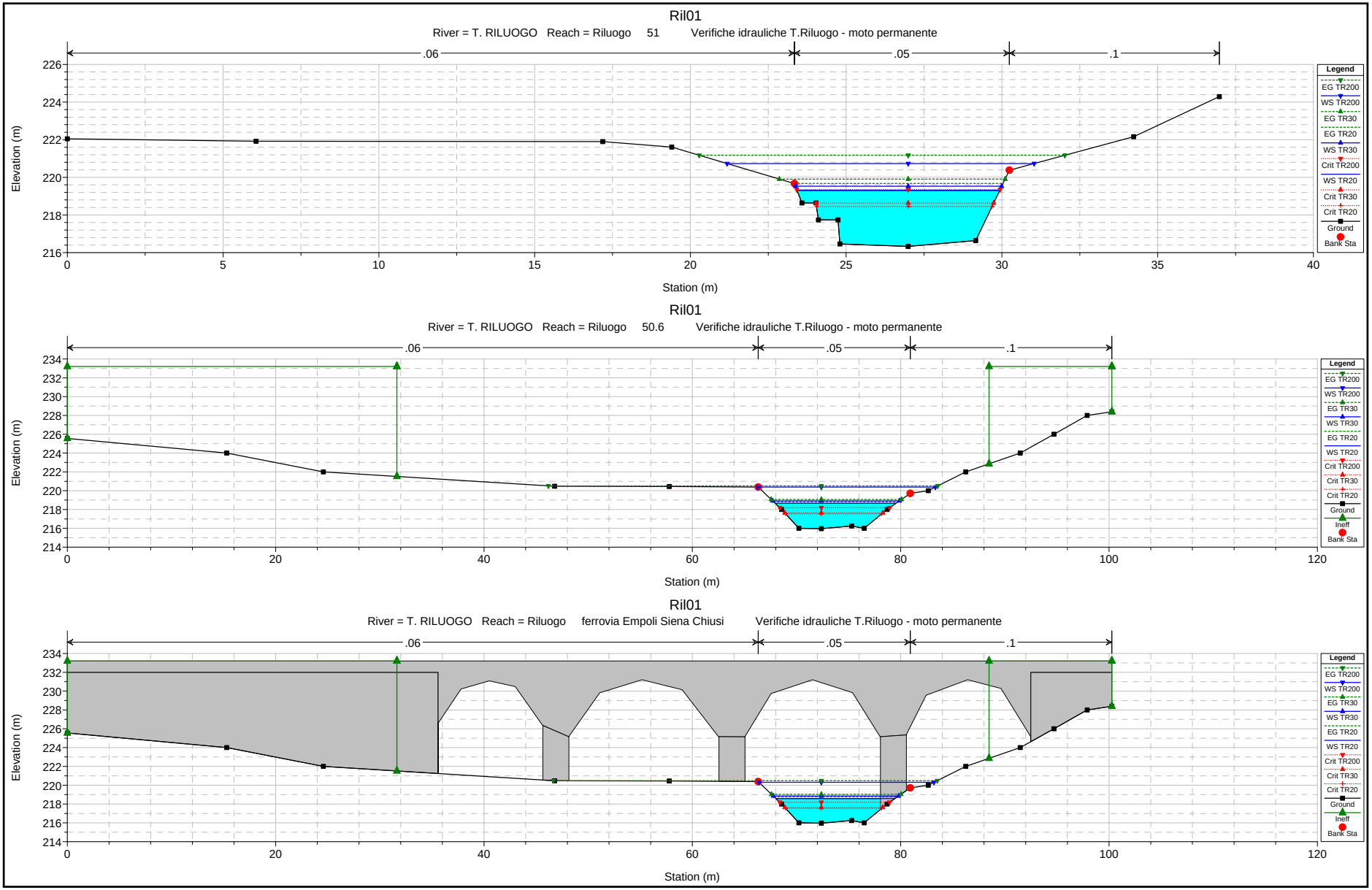
HEC-RAS Plan: RIL01 River: T. RILUOGO Reach: Riluogo (Continued)

Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
			(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
Riluogo	36.5	TR20	40.70		40.70		195.00	195.61	196.48	200.25	0.532789	9.54	9.54	4.26	7.53	4.05	4.05
Riluogo	36.5	TR30	46.10		46.10		195.00	198.45	196.60	198.55	0.001815	1.40	1.40	32.99	12.65	0.28	0.28
Riluogo	36.5	TR200	80.30		80.23	0.07	195.00	199.50	197.25	199.65	0.001970	1.70	1.69	47.56	15.58	0.30	0.31
Riluogo	36.3*	TR20	40.70		40.70		194.80	197.65	196.28	197.78	0.002922	1.61	1.61	25.29	11.28	0.34	0.34
Riluogo	36.3*	TR30	46.10		46.10		194.80	198.40	196.40	198.49	0.001617	1.35	1.35	34.14	12.10	0.26	0.26
Riluogo	36.3*	TR200	80.30		79.79	0.51	194.80	199.45	197.05	199.59	0.001833	1.69	1.64	49.11	16.62	0.28	0.30
Riluogo	36.1*	TR20	40.70		40.70		194.60	197.56	196.08	197.69	0.002682	1.58	1.58	25.84	10.51	0.32	0.32
Riluogo	36.1*	TR30	46.10		46.03	0.07	194.60	198.35	196.20	198.44	0.001493	1.34	1.32	34.84	13.20	0.24	0.26
Riluogo	36.1*	TR200	80.30	0.04	78.49	1.77	194.60	199.39	196.86	199.53	0.001743	1.70	1.55	51.70	20.37	0.27	0.31
Riluogo	36	TR20	40.70		40.69	0.01	194.40	197.47	195.89	197.60	0.002752	1.61	1.60	25.40	10.48	0.31	0.33
Riluogo	36	TR30	46.10	0.03	45.18	0.89	194.40	198.30	196.01	198.39	0.001449	1.36	1.24	37.15	18.22	0.23	0.28
Riluogo	36	TR200	80.30	1.39	73.05	5.86	194.40	199.34	196.66	199.48	0.001576	1.69	1.29	62.35	30.96	0.25	0.29
Riluogo	35	TR20	40.70		40.70		193.50	197.31	195.07	197.44	0.000099	1.62	1.62	25.15	12.99	0.26	0.26
Riluogo	35	TR30	46.10		46.10		193.50	198.19	195.20	198.31	0.000063	1.49	1.49	30.97	50.62	0.22	0.22
Riluogo	35	TR200	80.30	0.34	79.94	0.02	193.50	199.12	195.97	199.35	0.000328	2.12	1.74	46.17	84.66	0.39	0.75
Riluogo	34.5	TR20	40.70														
Riluogo	34.5	TR30	46.10														
Riluogo	34.5	TR200	80.30														
Riluogo	34	TR20	40.70		40.70		193.32	195.24	194.92	195.80	0.011405	3.30	3.30	12.32	12.30	0.76	0.76
Riluogo	34	TR30	46.10		46.10		193.32	195.38	195.06	196.00	0.011646	3.50	3.50	13.19	13.03	0.78	0.78
Riluogo	34	TR200	80.30		80.30		193.32	196.08	195.84	197.13	0.013316	4.54	4.54	17.68	16.67	0.87	0.87
Riluogo	33.5	TR20	40.70		40.70		191.55	193.85	193.14	194.03	0.005392	1.87	1.87	21.79	14.18	0.48	0.48
Riluogo	33.5	TR30	46.10		46.10		191.55	193.98	193.24	194.18	0.005524	1.95	1.95	23.61	14.62	0.49	0.49
Riluogo	33.5	TR200	80.30		80.30		191.55	194.55	193.79	194.86	0.006947	2.48	2.48	32.44	16.55	0.56	0.56
Riluogo	33	TR20	40.70		40.70	0.00	190.70	192.74	192.38	193.03	0.011119	2.38	2.38	17.09	14.67	0.67	0.70
Riluogo	33	TR30	46.10		46.04	0.06	190.70	192.84	192.48	193.16	0.011135	2.49	2.45	18.82	18.51	0.68	0.78
Riluogo	33	TR200	80.30	3.92	73.09	3.28	190.70	193.33	193.26	193.72	0.010100	2.90	1.94	41.33	68.24	0.68	0.80
Riluogo	32	TR20	40.70	0.87	39.83		189.00	191.17	190.66	191.48	0.009235	2.50	2.21	18.45	24.74	0.61	0.75
Riluogo	32	TR30	46.10	1.81	44.29		189.00	191.30	190.79	191.63	0.009037	2.58	2.13	21.61	31.63	0.60	0.73
Riluogo	32	TR200	80.30	12.57	67.73		189.00	191.91	191.59	192.29	0.008850	2.97	1.91	41.99	62.10	0.61	0.61
Riluogo	31	TR20	40.70		40.70		188.00	189.97	189.40	190.24	0.008610	2.33	2.33	17.46	10.66	0.58	0.58
Riluogo	31	TR30	46.40	0.06	46.34		188.00	190.11	189.52	190.41	0.008604	2.44	2.38	19.47	18.86	0.59	0.75
Riluogo	31	TR200	82.30	8.68	73.62		188.00	190.72	190.38	191.09	0.008602	2.86	1.86	44.27	62.93	0.61	0.71

HEC-RAS Plan: RIL01 River: T. RILUOGO Reach: Riluogo

Reach	River Sta	Profile	E.G. US.	W.S. US.	E.G. IC	E.G. OC	Min El Weir Flow	Q Culv Group	Q Weir	Delta WS	Culv Vel US	Culv Vel DS
			(m)	(m)	(m)	(m)	(m)	(m3/s)	(m3/s)	(m)	(m/s)	(m/s)
Riluogo	49.25 Culvert #1	TR20	218.36	218.06	218.36	218.29	220.50	40.60		2.01	4.46	5.96
Riluogo	49.25 Culvert #1	TR30	218.64	218.32	218.64	218.57	220.50	45.40		2.03	4.63	6.12
Riluogo	49.25 Culvert #1	TR200	220.15	219.71	220.15	220.05	220.50	74.40		2.22	5.45	6.93
Riluogo	47.5 Culvert #1	TR20	216.64	216.11	216.64	216.99	218.40	40.60		2.23	4.36	8.01
Riluogo	47.5 Culvert #1	TR30	216.89	216.32	216.89	217.26	218.40	45.40		2.17	4.53	8.18
Riluogo	47.5 Culvert #1	TR200	218.25	217.51	218.25	218.68	218.40	74.40		1.86	5.34	8.98
Riluogo	45.5 Culvert #1	TR20	214.18	213.67	214.18	214.51	216.00	40.60		1.13	4.36	5.69
Riluogo	45.5 Culvert #1	TR30	214.46	213.90	214.46	214.80	216.00	45.90		1.16	4.54	5.87
Riluogo	45.5 Culvert #1	TR200	215.95	215.20	215.95	216.38	216.00	78.30		1.45	5.43	6.73
Riluogo	38.5 Culvert #1	TR20	207.91	207.70	207.91	207.85	208.40	40.70		3.53	4.46	8.42
Riluogo	38.5 Culvert #1	TR30	208.23	207.99	208.23	208.16	208.40	46.10		3.67	4.65	8.63
Riluogo	38.5 Culvert #1	TR200	209.01	208.47	209.01	208.83	208.40	58.66	21.64	3.41	5.04	9.04
Riluogo	34.5 Culvert #1	TR20	197.45	197.31	197.45	197.34	199.00	40.70		2.07	4.64	4.92
Riluogo	34.5 Culvert #1	TR30	198.31	198.19	198.31	197.67	199.00	46.10		2.81	3.84	7.04
Riluogo	34.5 Culvert #1	TR200	199.35	199.12	199.35	198.23	199.00	55.71	24.73	3.04	4.64	7.90


Ril01 Verifiche idrauliche T.Riluogo - moto permanente
T. RILUOGO Riluogo
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Elevation (m)
Main Channel Distance (m)
180
190
200
210
220
230
0
500
1000
1500
2000
2500
3000
31
32
33
33.5
34
Rotonda Siena Bettol...
36
36.5
38
Siena Bettolle-Strada del Ruffolo
40
41
42
43.4
43.5
44.5
45
46
46.5
47
attraversamento viale Europa
49
50
ferrovia Empoli Siena Chiusi
51


Ril01
River = T. RILUOGO Reach = Riluogo 51 Verifiche idrauliche T.Riluogo - moto permanente
.06
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
Crit TR200
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 50.6 Verifiche idrauliche T.Riluogo - moto permanente
.06
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo ferrovia Empoli Siena Chiusi Verifiche idrauliche T.Riluogo - moto permanente
.06
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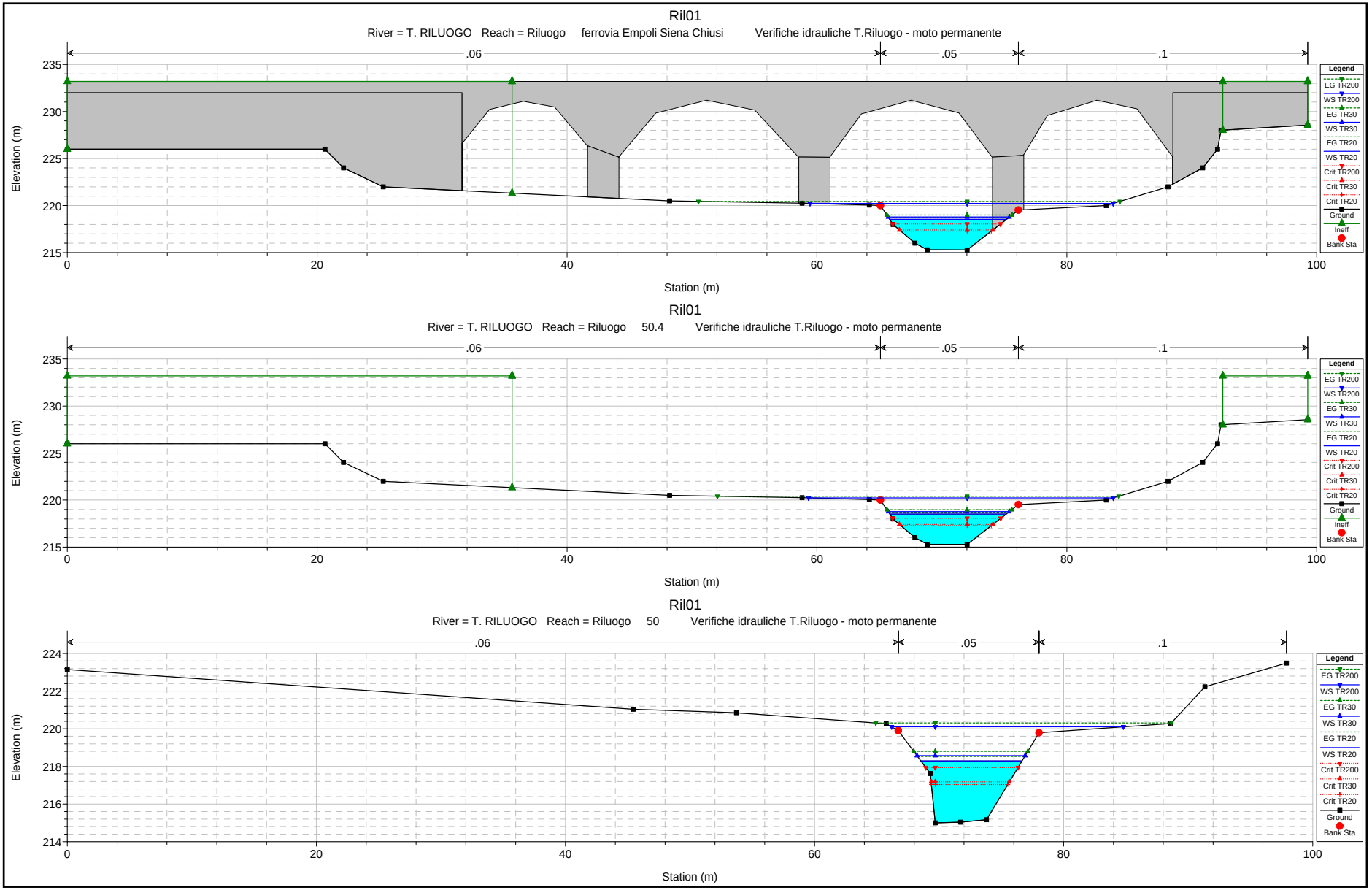
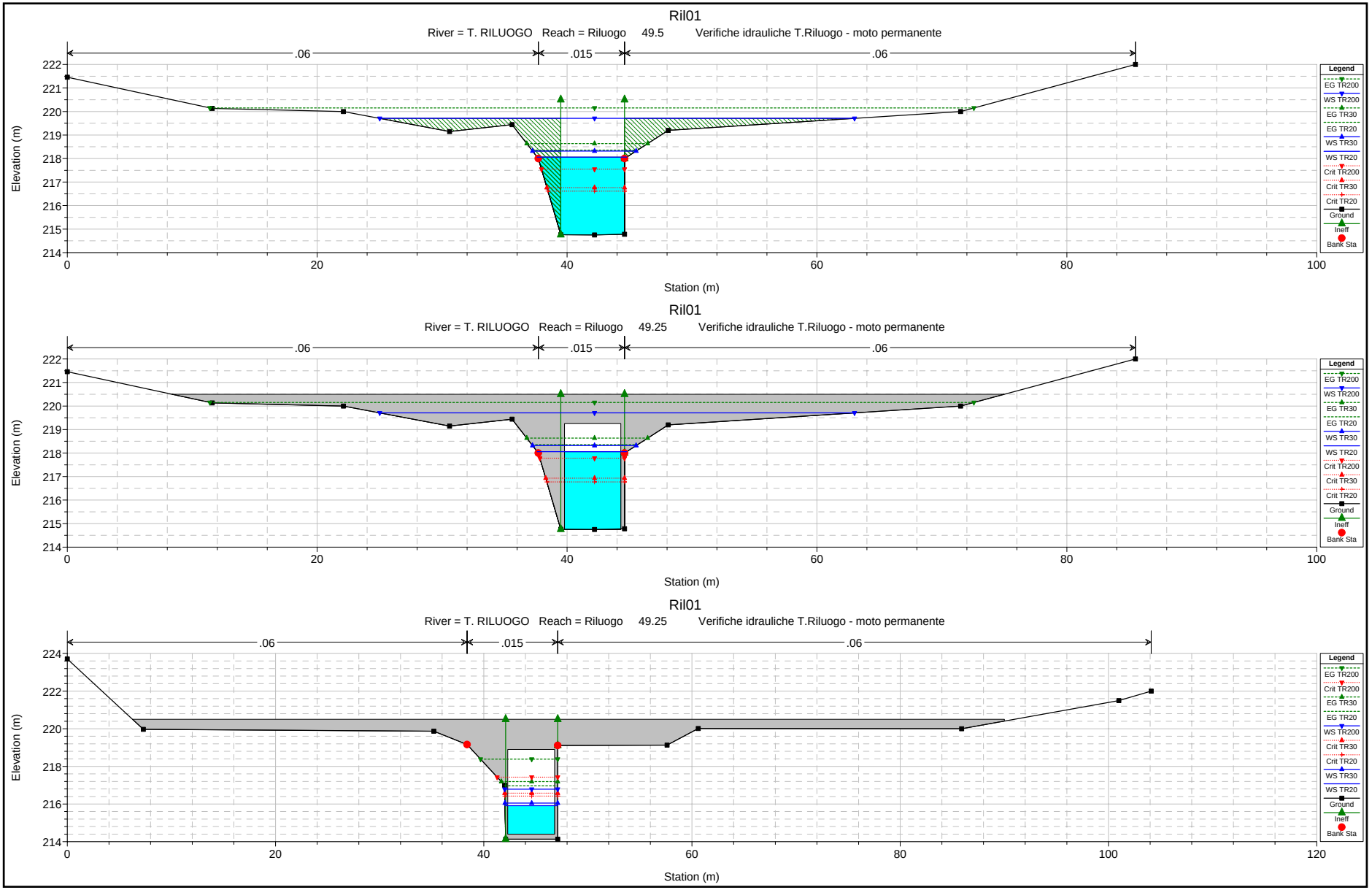
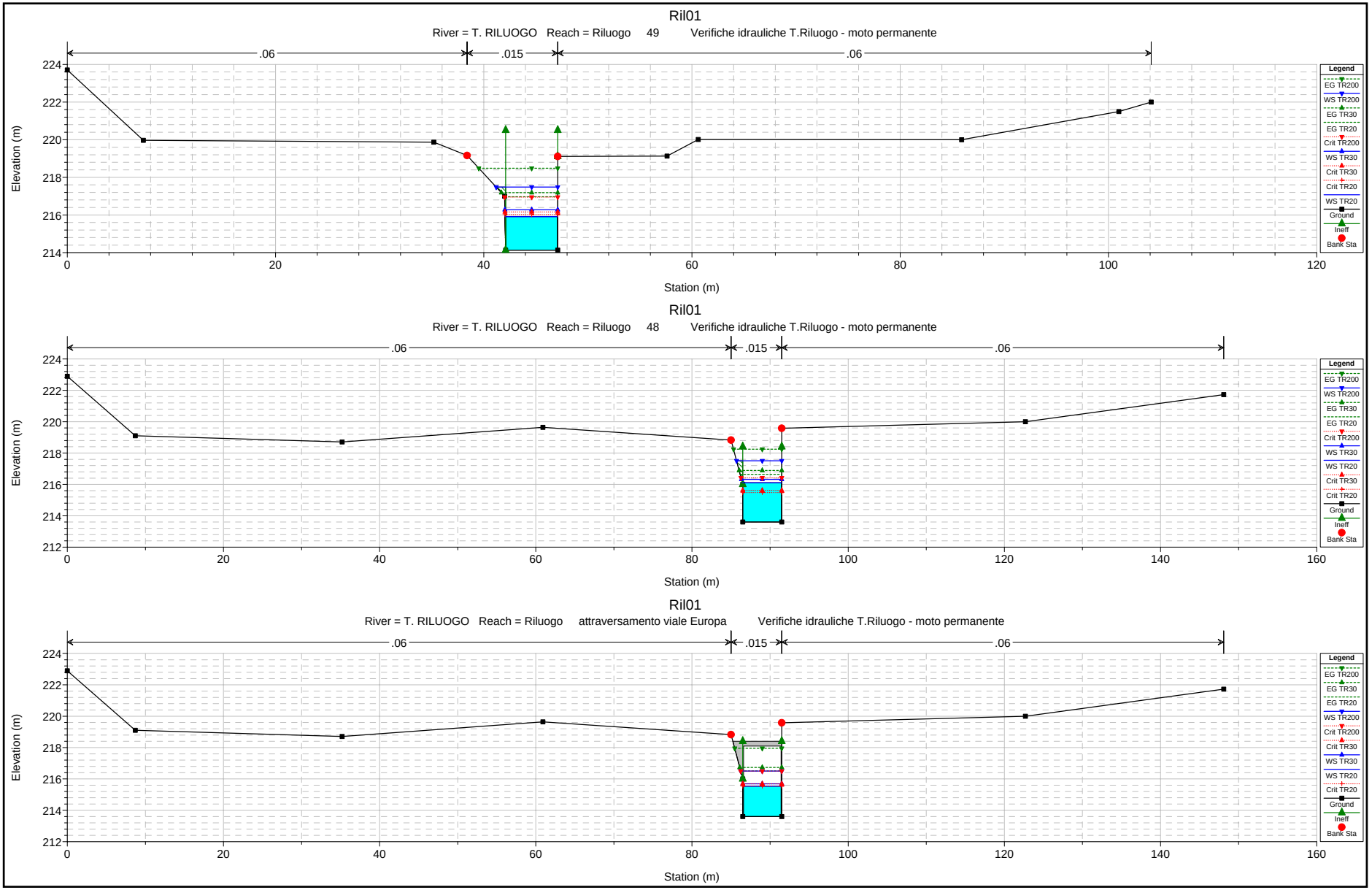
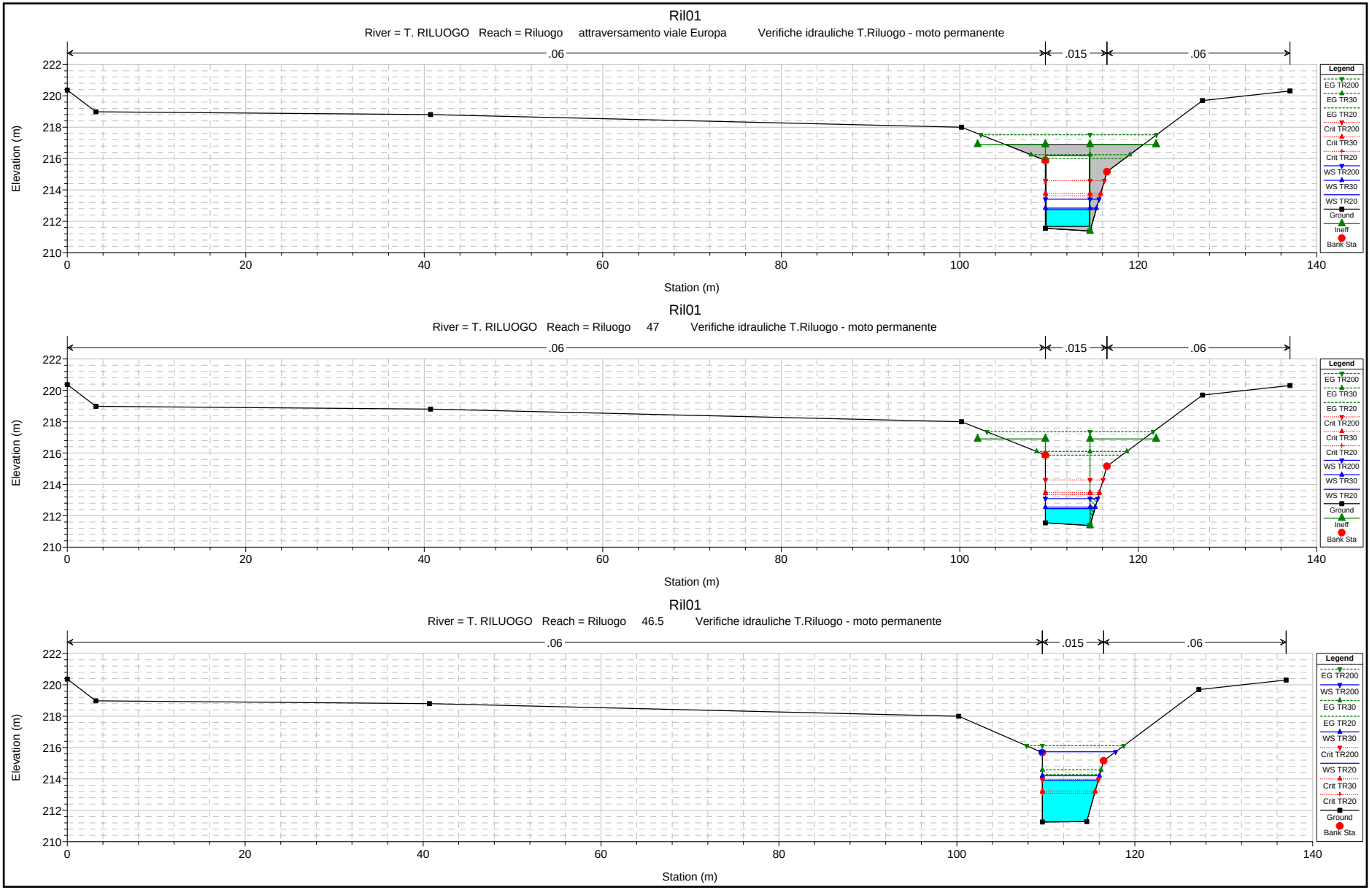
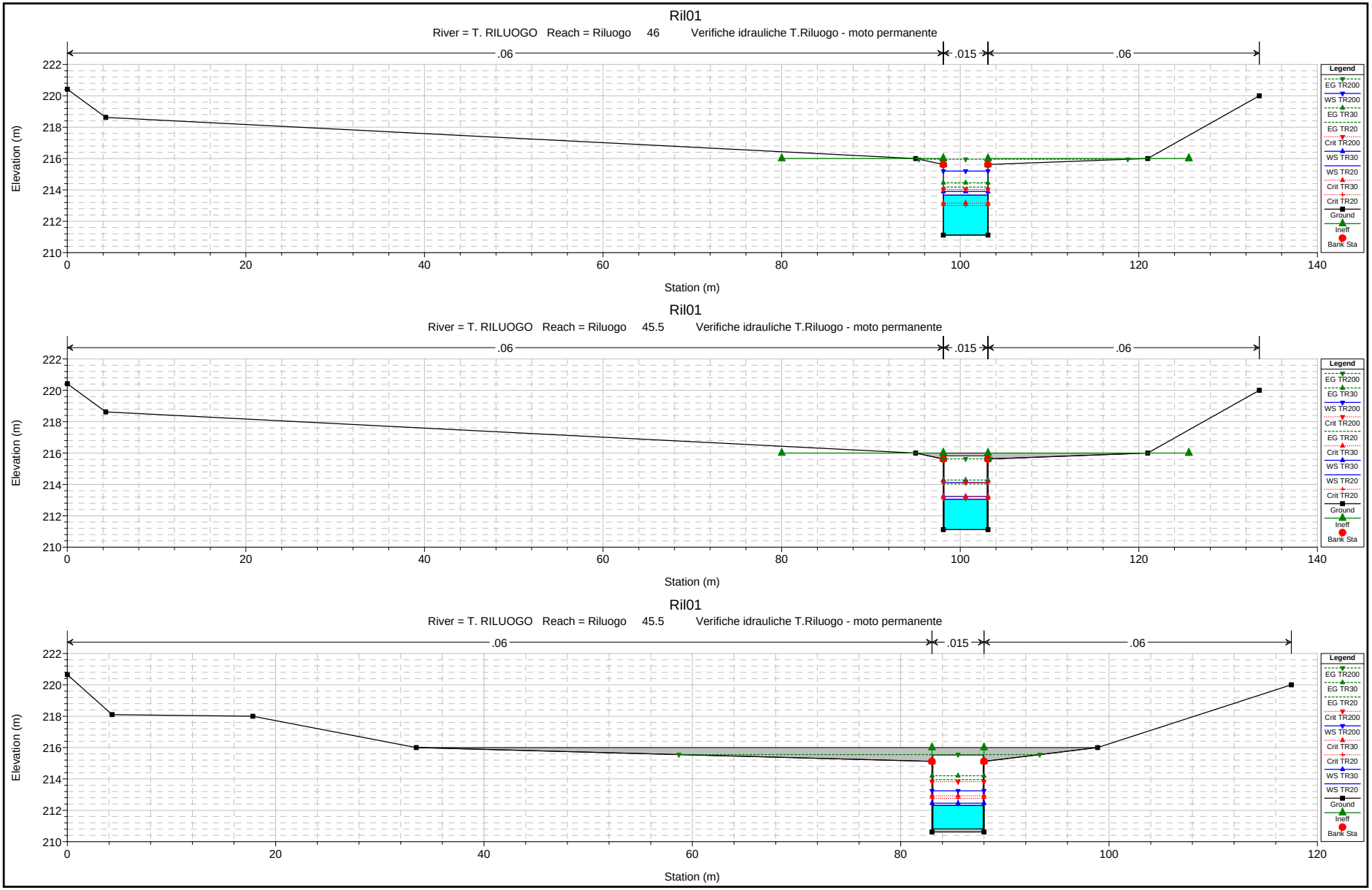
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta

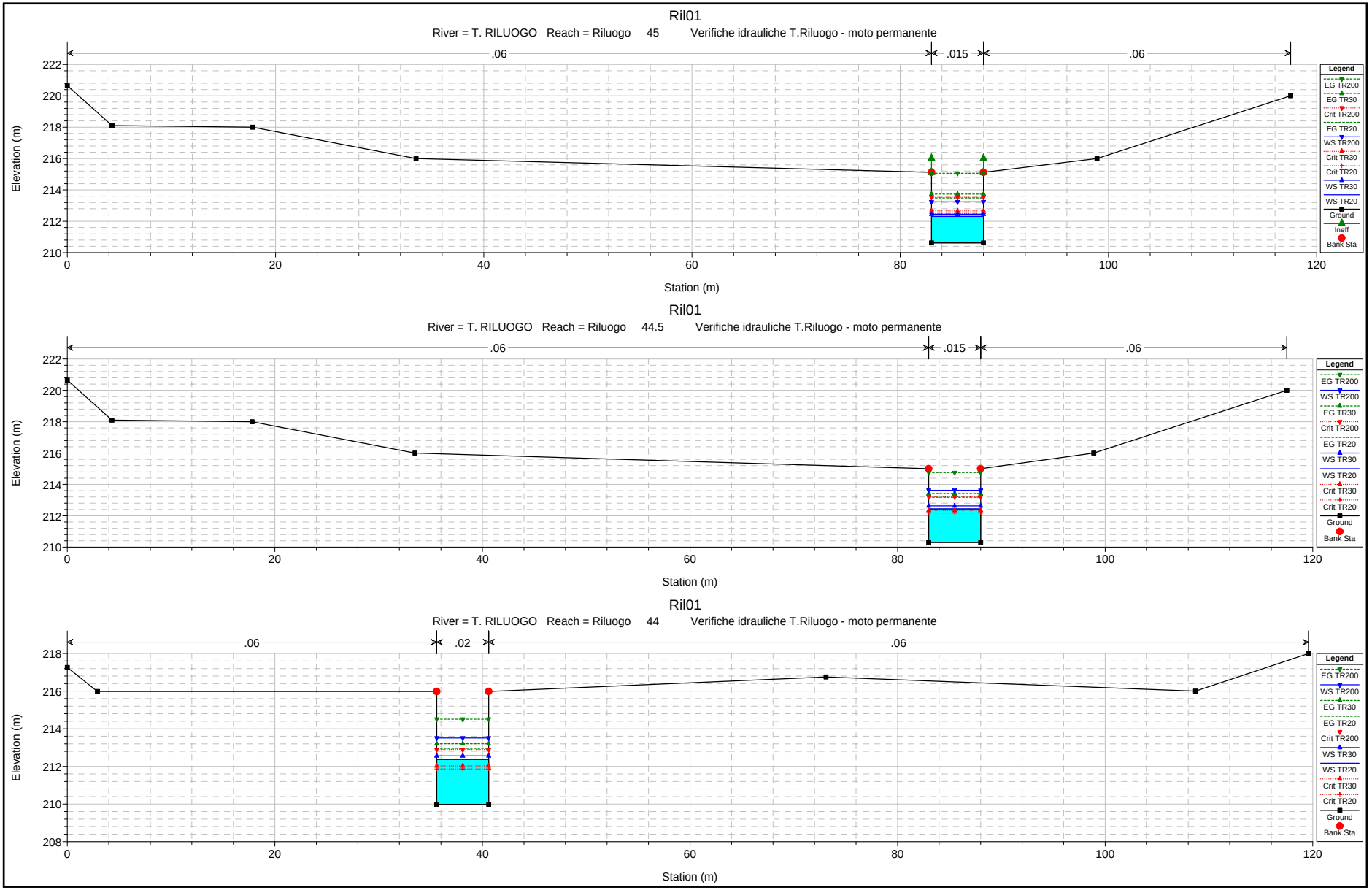

Ril01
River = T. RILUOGO Reach = Riluogo ferrovia Empoli Siena Chiusi Verifiche idrauliche T.Riluogo - moto permanente
.06
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 50.4 Verifiche idrauliche T.Riluogo - moto permanente
Ril01
River = T. RILUOGO Reach = Riluogo 50 Verifiche idrauliche T.Riluogo - moto permanente

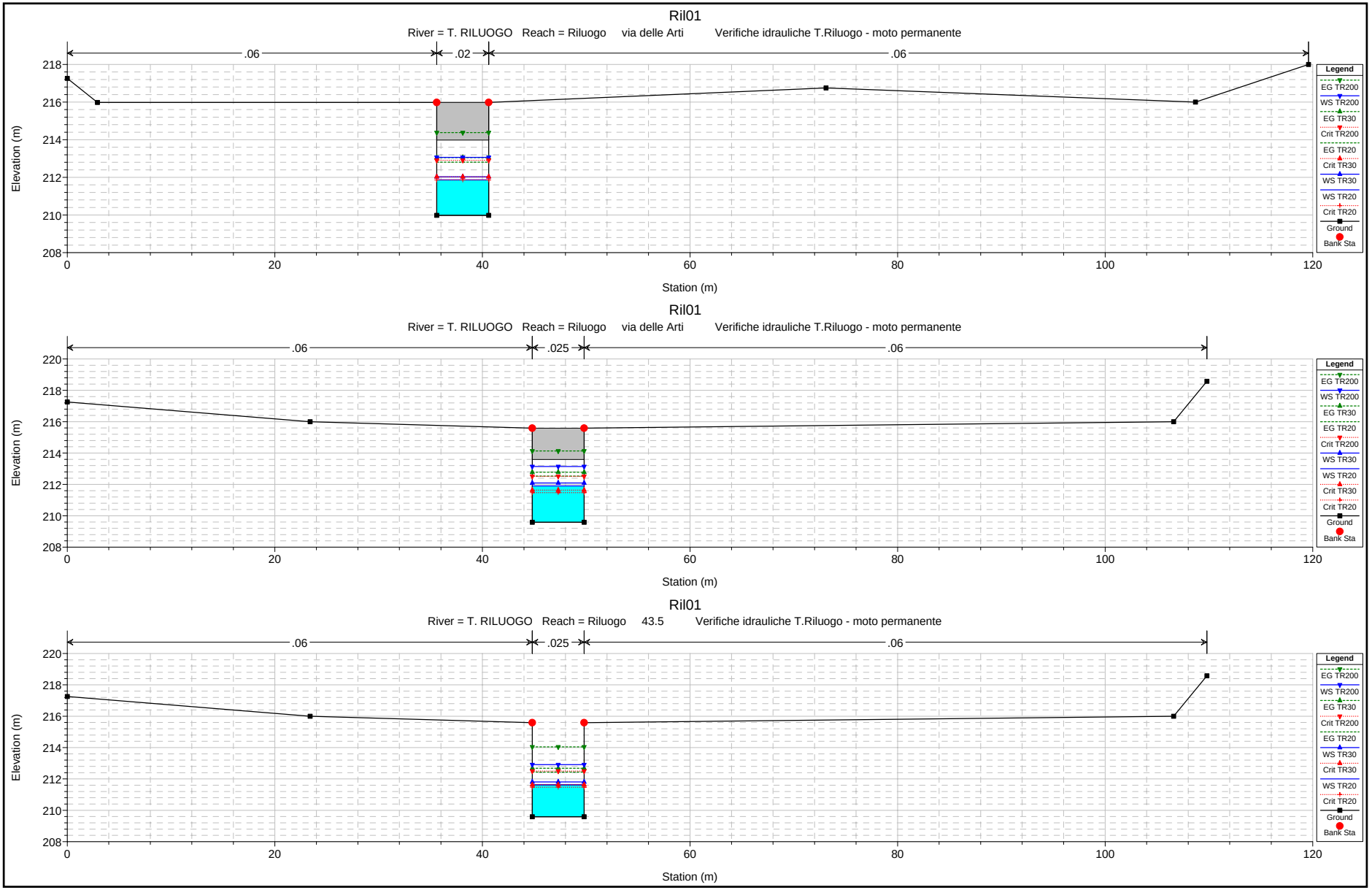

Ril01
River = T. RILUOGO Reach = Riluogo 49.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 49.25 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 49.25 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
Crit TR200
EG TR30
EG TR20
WS TR200
Crit TR30
Crit TR20
WS TR30
WS TR20
Ground
Ineff
Bank Sta

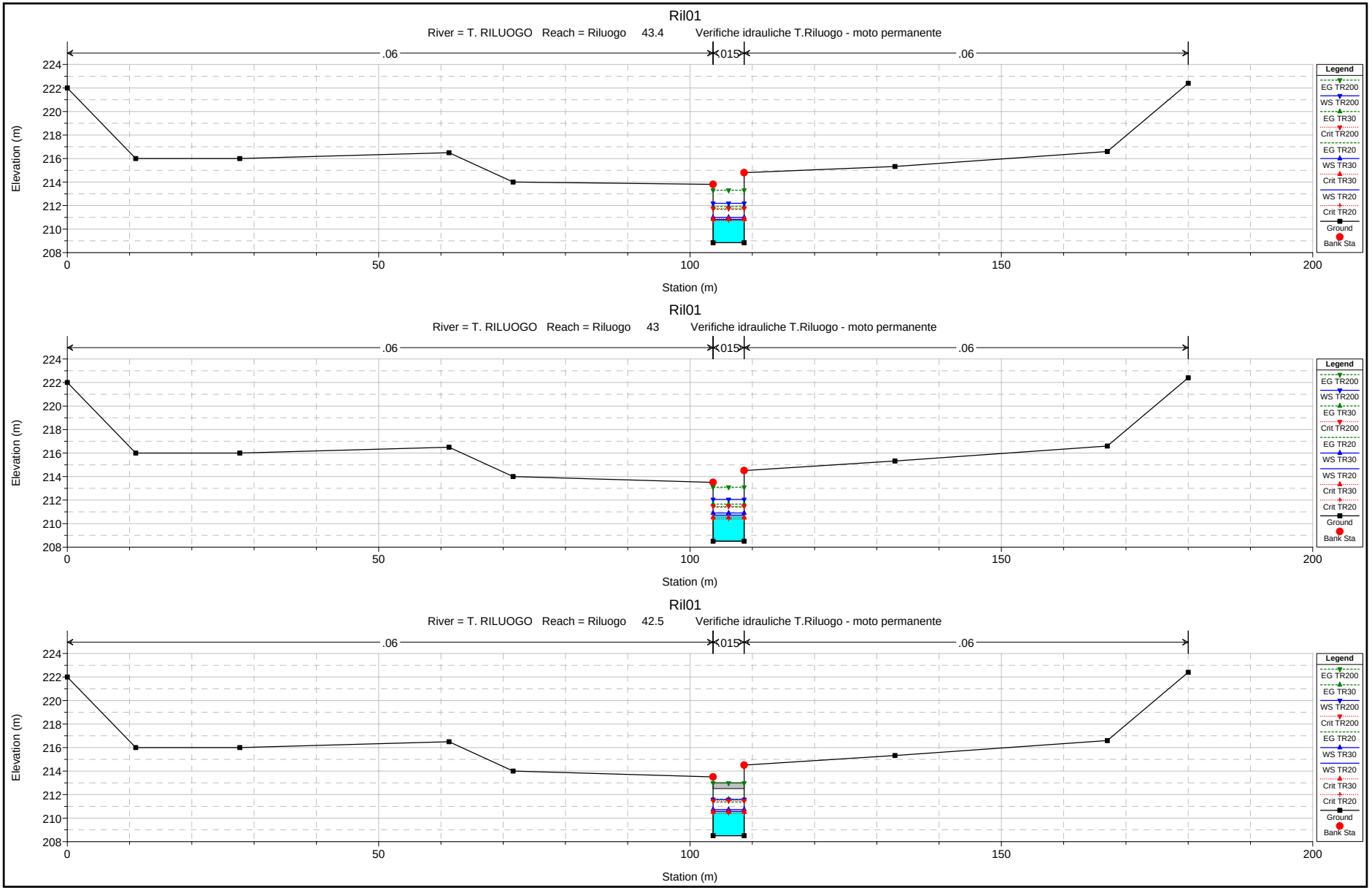

Ril01
River = T. RILUOGO Reach = Riluogo 49 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
WS TR30
Crit TR30
Crit TR20
WS TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 48 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo attraversamento viale Europa Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
EG TR20
WS TR200
Crit TR200
Crit TR30
WS TR30
WS TR20
Crit TR20
Ground
Ineff
Bank Sta

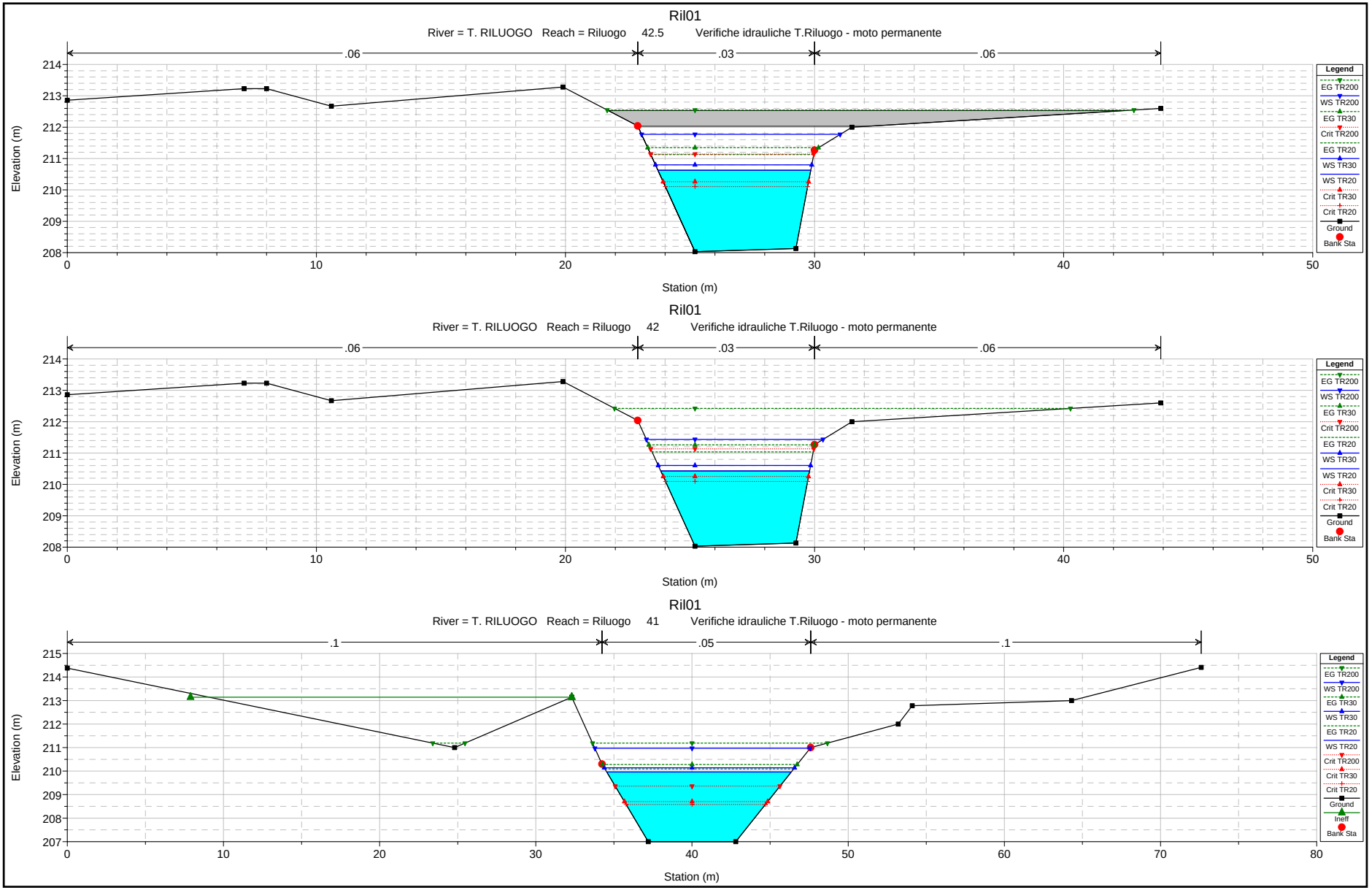

Ril01
River = T. RILUOGO Reach = Riluogo attraversamento viale Europa Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
EG TR20
Crit TR200
Crit TR30
Crit TR20
WS TR200
WS TR30
WS TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 47 Verifiche idrauliche T.Riluogo - moto permanente
Ril01
River = T. RILUOGO Reach = Riluogo 46.5 Verifiche idrauliche T.Riluogo - moto permanente

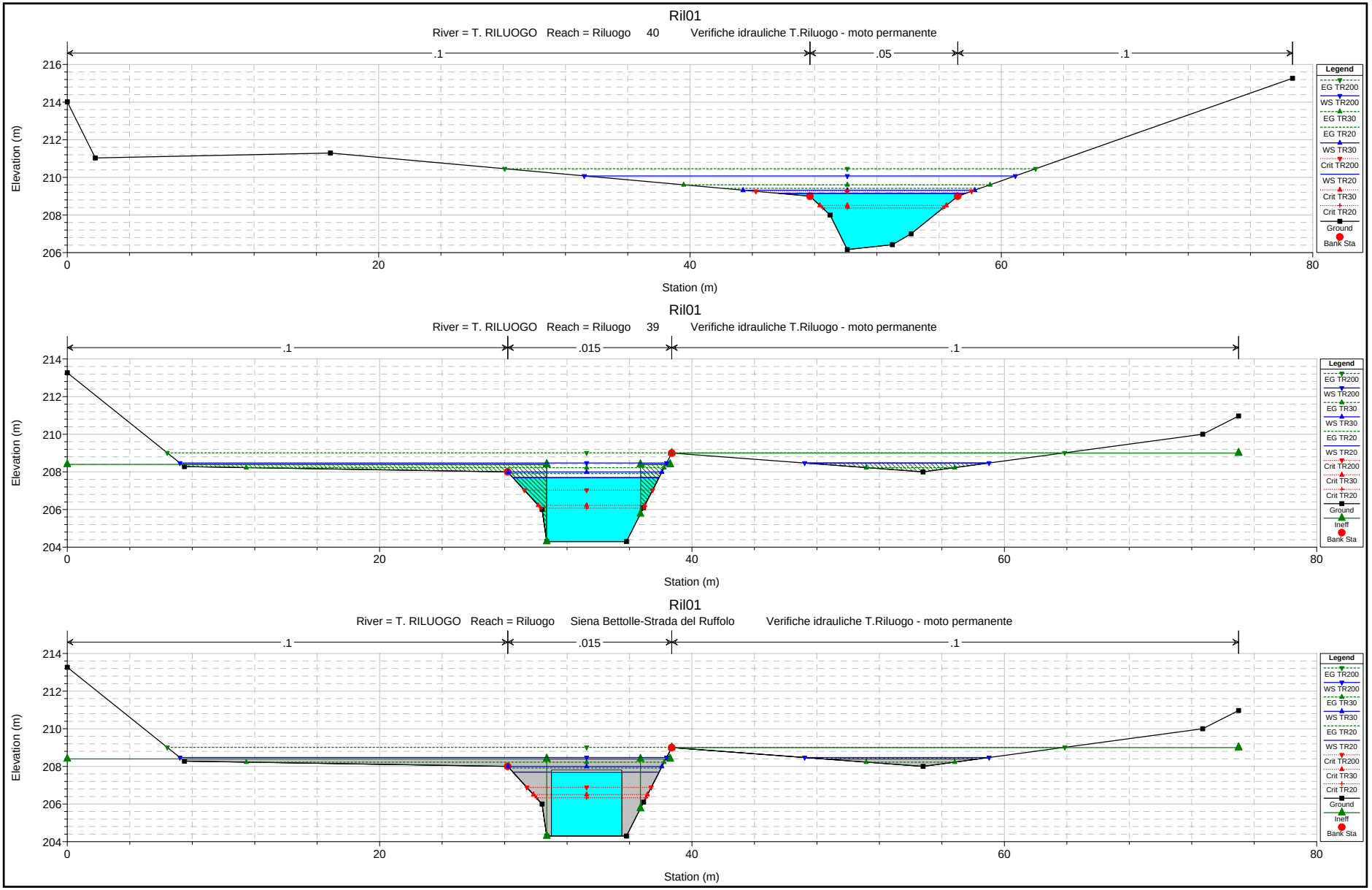

Ril01
River = T. RILUOGO Reach = Riluogo 46 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 45.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
WS TR200
Crit TR200
EG TR20
Crit TR30
WS TR30
WS TR20
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 45.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
EG TR20
Crit TR200
WS TR200
Crit TR30
Crit TR20
WS TR30
WS TR20
Ground
Ineff
Bank Sta

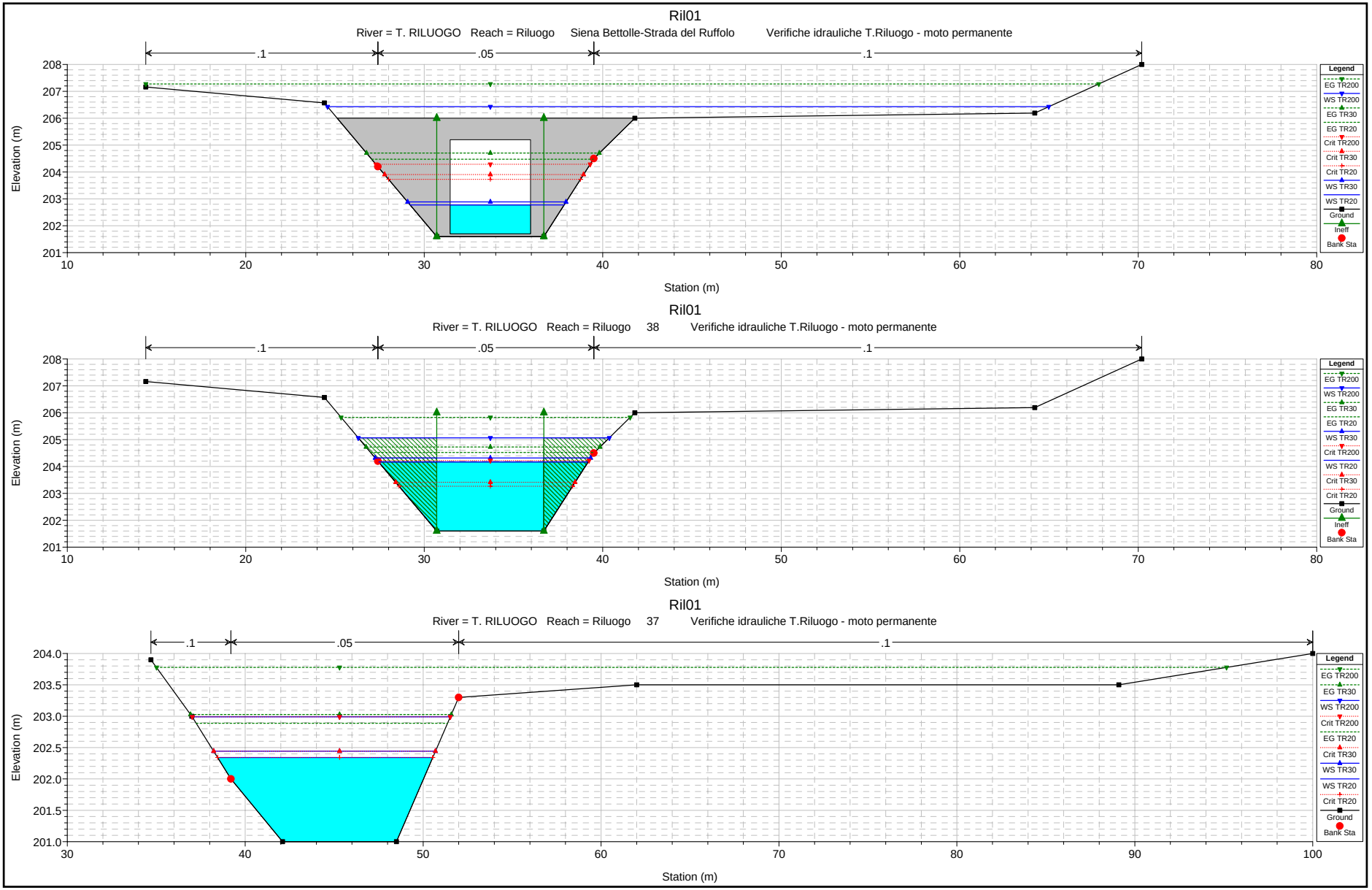

Ril01
River = T. RILUOGO Reach = Riluogo 45 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
Crit TR200
EG TR20
WS TR200
Crit TR30
Crit TR20
WS TR30
WS TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 44.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 44 Verifiche idrauliche T.Riluogo - moto permanente
.06
.02
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta

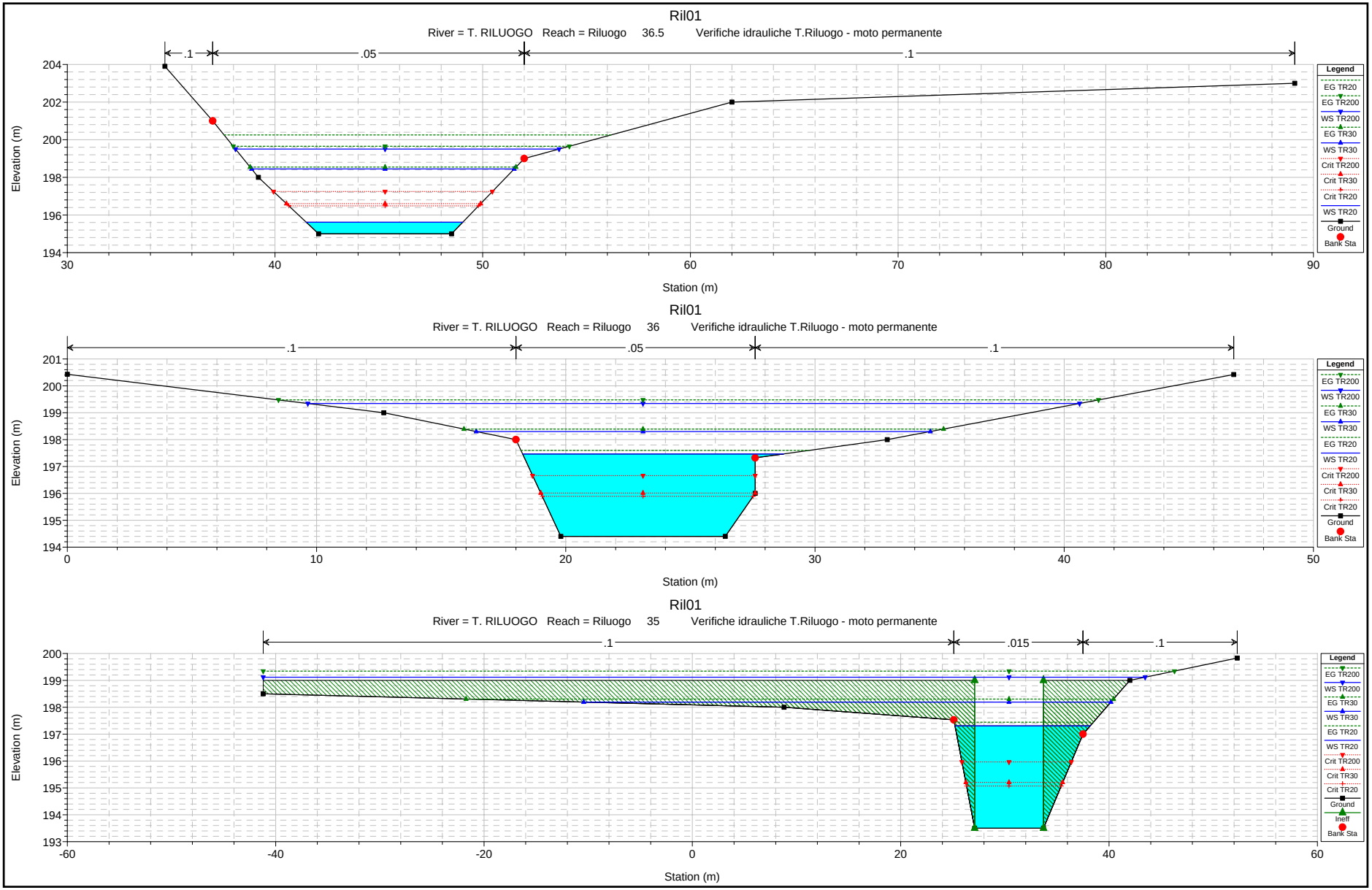

Ril01
River = T. RILUOGO Reach = Riluogo via delle Arti Verifiche idrauliche T.Riluogo - moto permanente
.06
.02
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
Crit TR30
WS TR30
WS TR20
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo via delle Arti Verifiche idrauliche T.Riluogo - moto permanente
.06
.025
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 43.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.025
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
Crit TR30
WS TR20
Crit TR20
Ground
Bank Sta

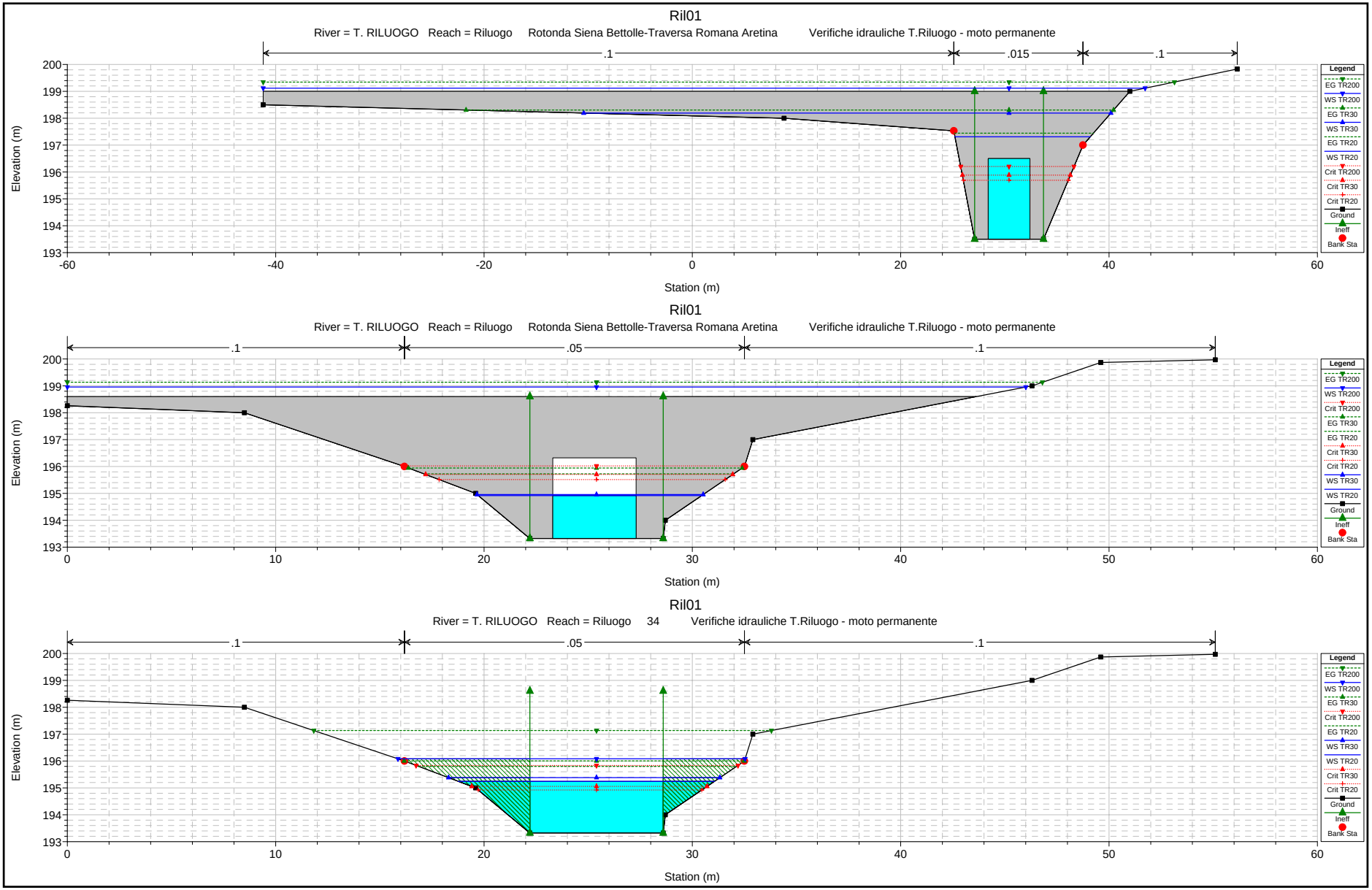

Ril01
River = T. RILUOGO Reach = Riluogo 43.4 Verifiche idrauliche T.Riluogo - moto permanente
.06
015
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
Crit TR30
WS TR20
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 43 Verifiche idrauliche T.Riluogo - moto permanente
Ril01
River = T. RILUOGO Reach = Riluogo 42.5 Verifiche idrauliche T.Riluogo - moto permanente

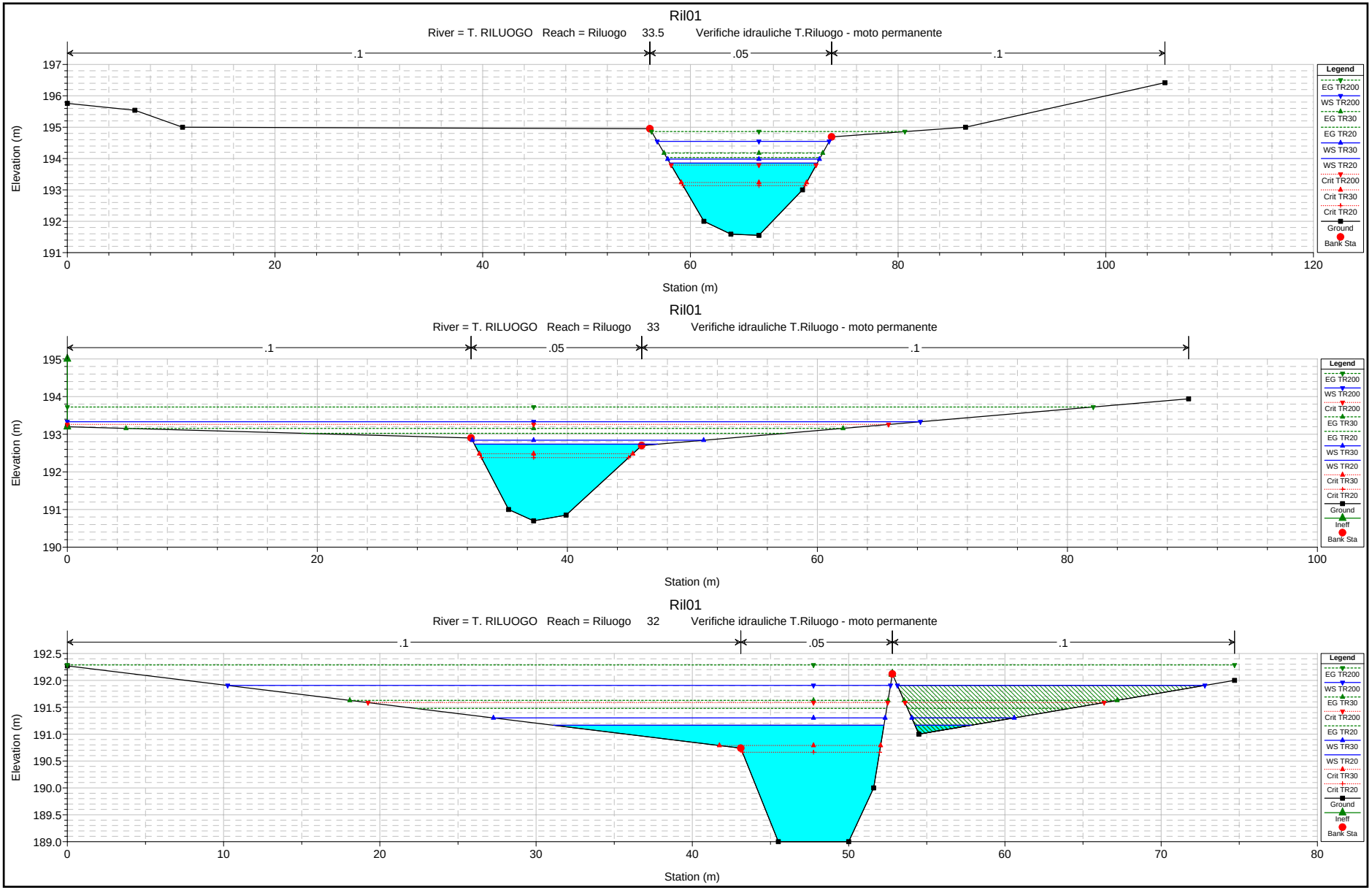

Ril01
River = T. RILUOGO Reach = Riluogo 42.5 Verifiche idrauliche T.Riluogo - moto permanente
.06
.03
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 42 Verifiche idrauliche T.Riluogo - moto permanente
.06
.03
.06
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 41 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta

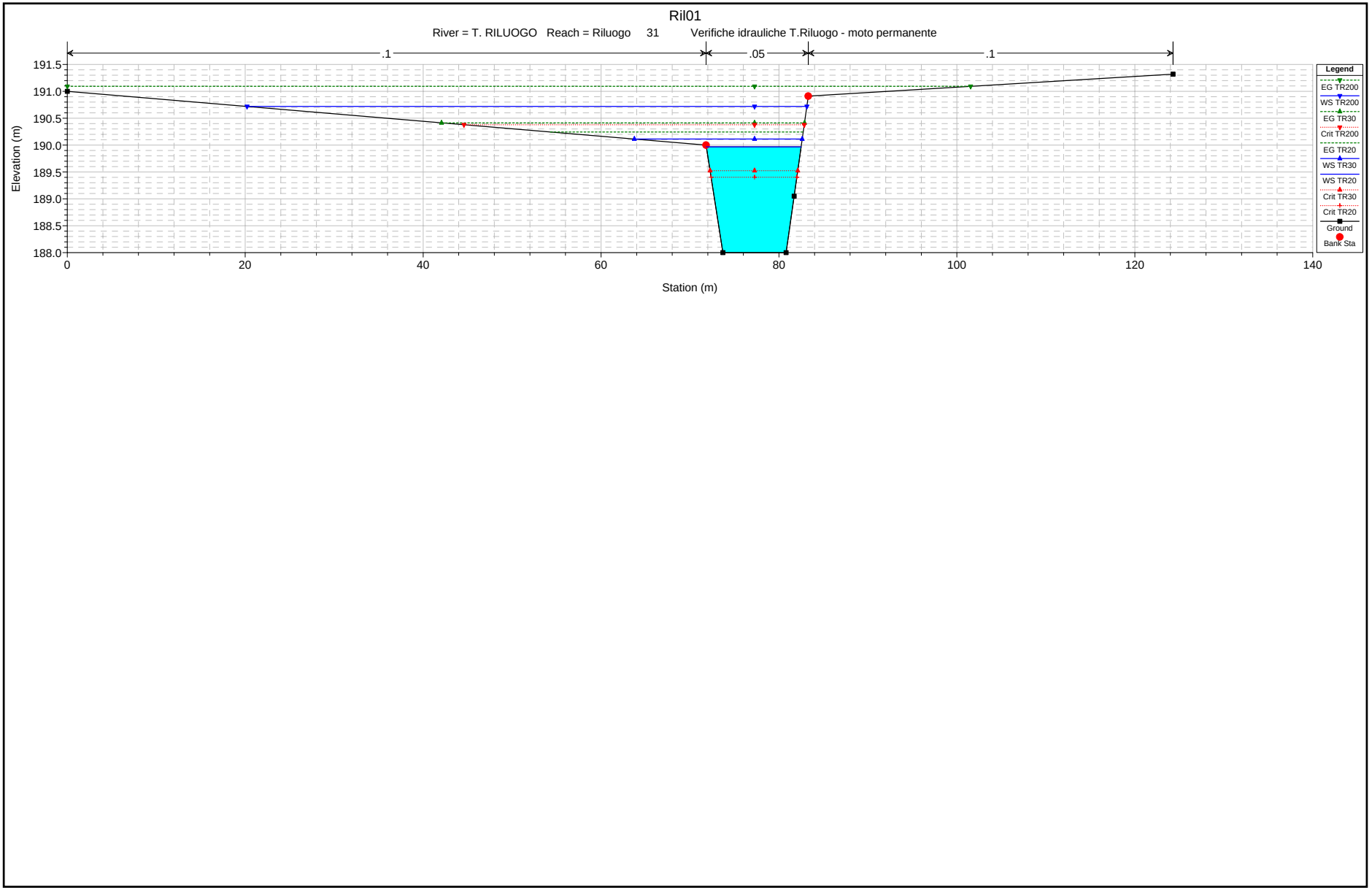

Ril01
River = T. RILUOGO Reach = Riluogo 40 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
Crit TR200
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 39 Verifiche idrauliche T.Riluogo - moto permanente
.1
.015
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo Siena Bettolle-Strada del Ruffolo Verifiche idrauliche T.Riluogo - moto permanente
.1
.015
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta


Ril01
River = T. RILUOGO Reach = Riluogo Siena Bettolle-Strada del Ruffolo Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
Crit TR200
Crit TR30
Crit TR20
WS TR30
WS TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 38 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
Crit TR200
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 37 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
EG TR30
WS TR200
Crit TR200
EG TR20
Crit TR30
WS TR30
WS TR20
Crit TR20
Ground
Bank Sta


Ril01
River = T. RILUOGO Reach = Riluogo 36.5 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR20
EG TR200
WS TR200
EG TR30
WS TR30
Crit TR200
Crit TR30
Crit TR20
WS TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 36 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 35 Verifiche idrauliche T.Riluogo - moto permanente
.1
.015
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta


Ril01
River = T. RILUOGO Reach = Riluogo Rotonda Siena Bettolle-Traversa Romana Aretina Verifiche idrauliche T.Riluogo - moto permanente
.1
.015
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
WS TR30
EG TR20
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo Rotonda Siena Bettolle-Traversa Romana Aretina Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
Crit TR200
EG TR30
EG TR20
Crit TR30
Crit TR20
WS TR30
WS TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 34 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta

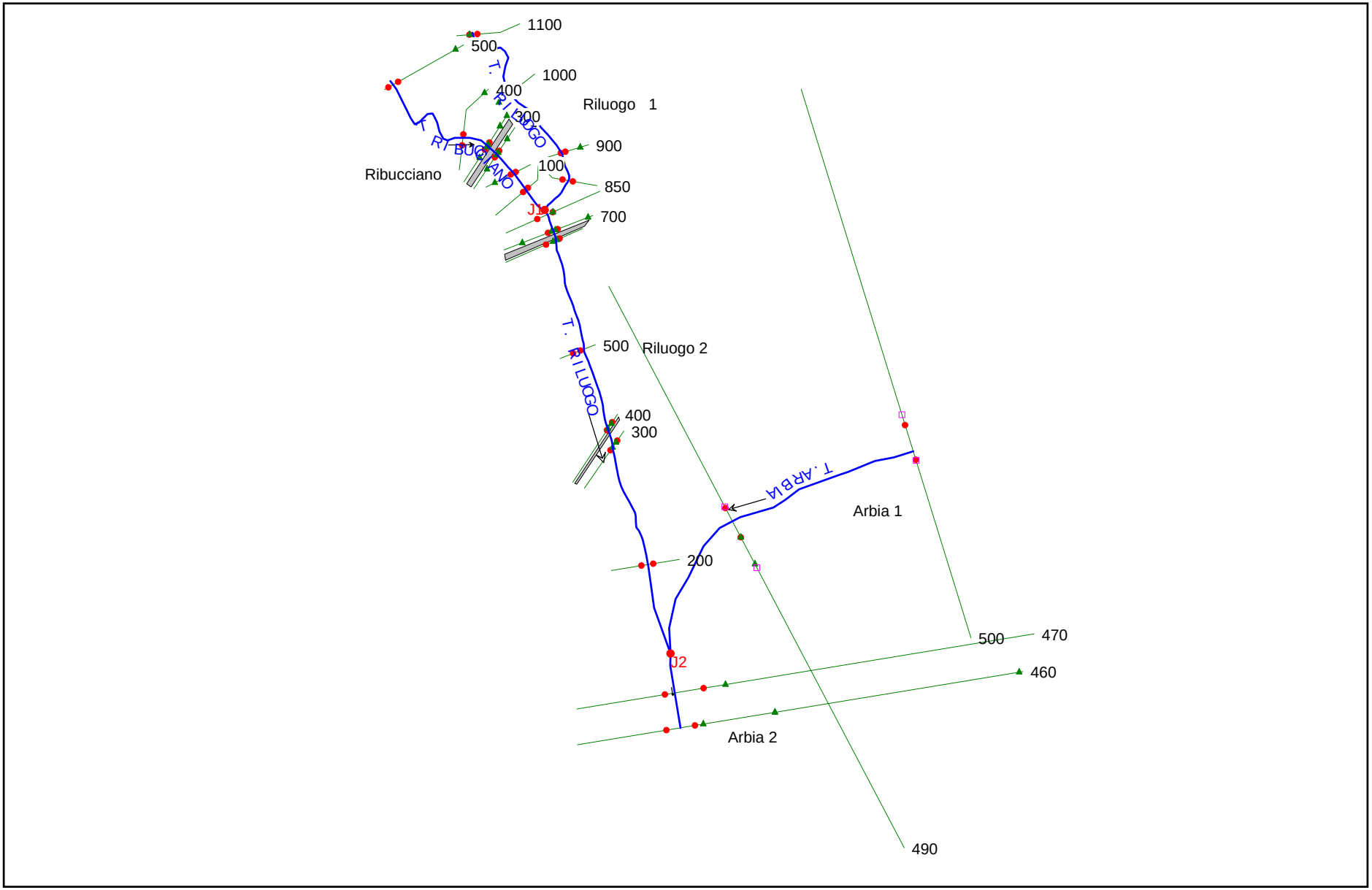

Ril01
River = T. RILUOGO Reach = Riluogo 33.5 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
EG TR20
WS TR30
WS TR20
Crit TR200
Crit TR30
Crit TR20
Ground
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 33 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
Crit TR200
EG TR30
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta
Ril01
River = T. RILUOGO Reach = Riluogo 32 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Ineff
Bank Sta


Ril01
River = T. RILUOGO Reach = Riluogo 31 Verifiche idrauliche T.Riluogo - moto permanente
.1
.05
.1
Elevation (m)
191.5
191.0
190.5
190.0
189.5
189.0
188.5
188.0
0
20
40
60
80
100
120
140
Station (m)
Legend
EG TR200
WS TR200
EG TR30
Crit TR200
EG TR20
WS TR30
WS TR20
Crit TR30
Crit TR20
Ground
Bank Sta

ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO RIL02 – TORRENTE RILUOGO

EVENTO CON PORTATA MASSIMA T. RILUOGO (Dcr = 1.97)

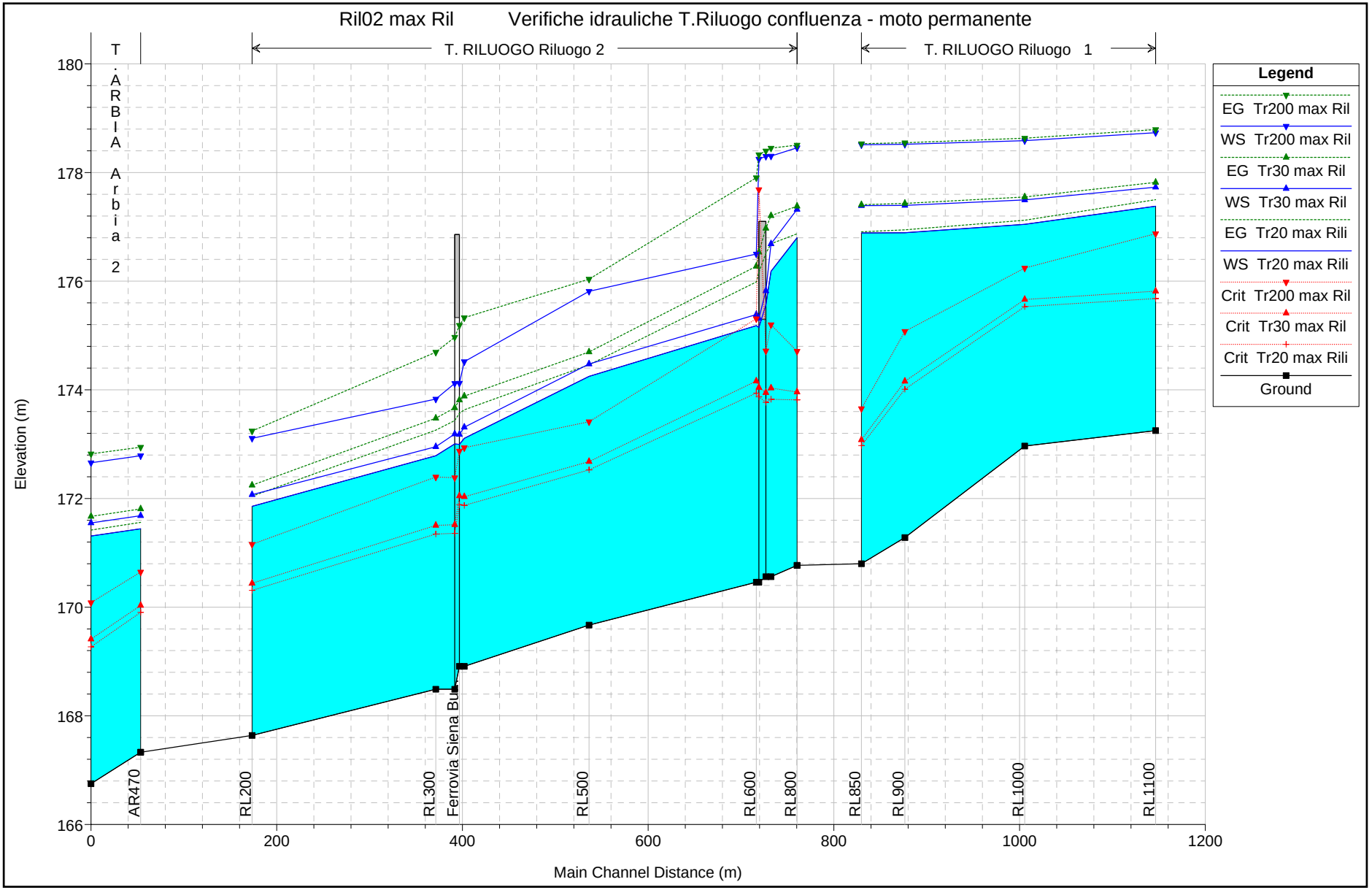

1100
500
T. RILUOGO
1000
400
Riluogo 1
300
900
Ribucciano
100
850
J1
700
T. RILUOGO
500
Riluogo 2
400
300
T. ARBIA
Arbia 1
200
500
470
J2
460
Arbia 2
490

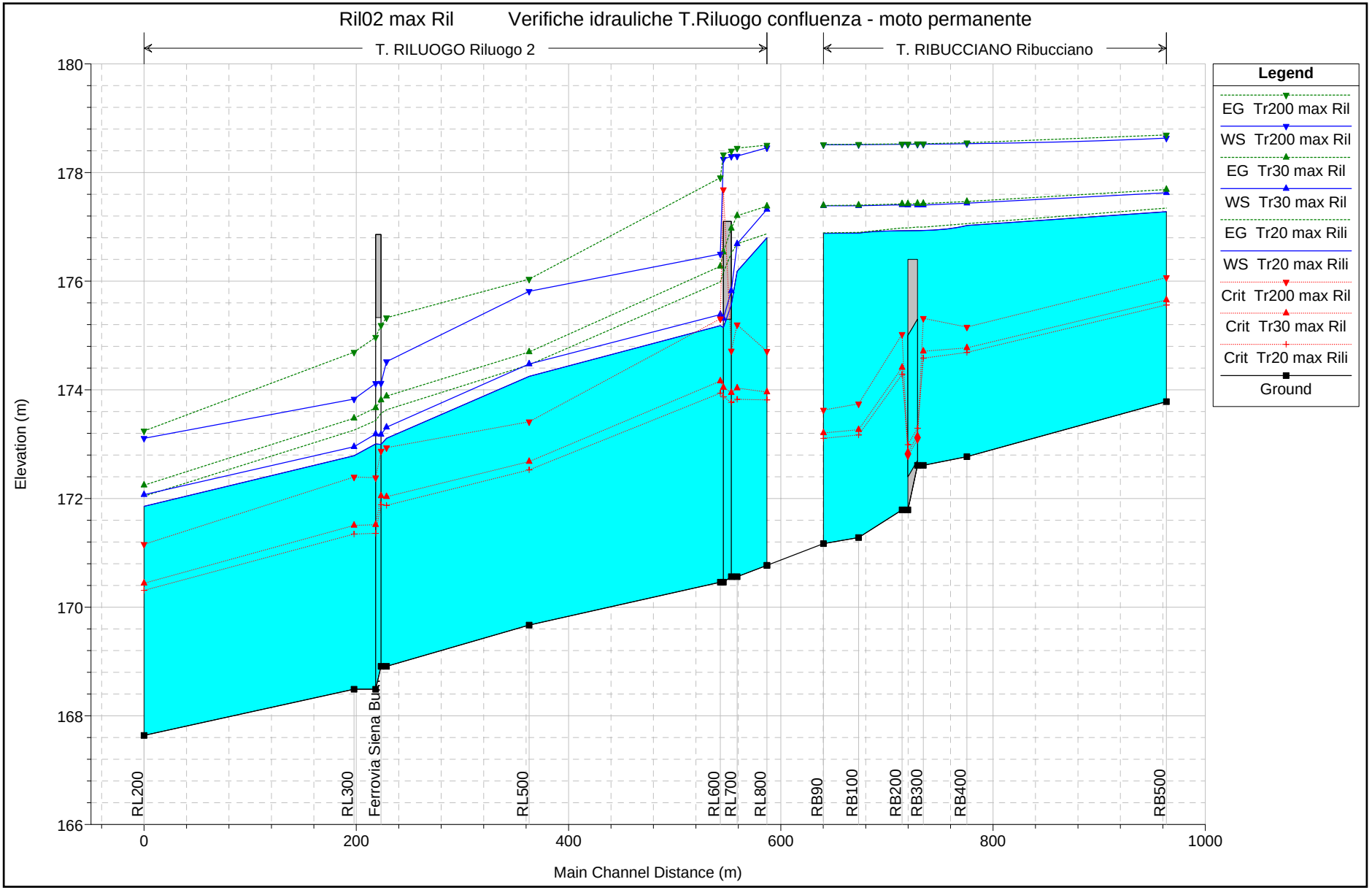
HEC-RAS Plan: RIL02

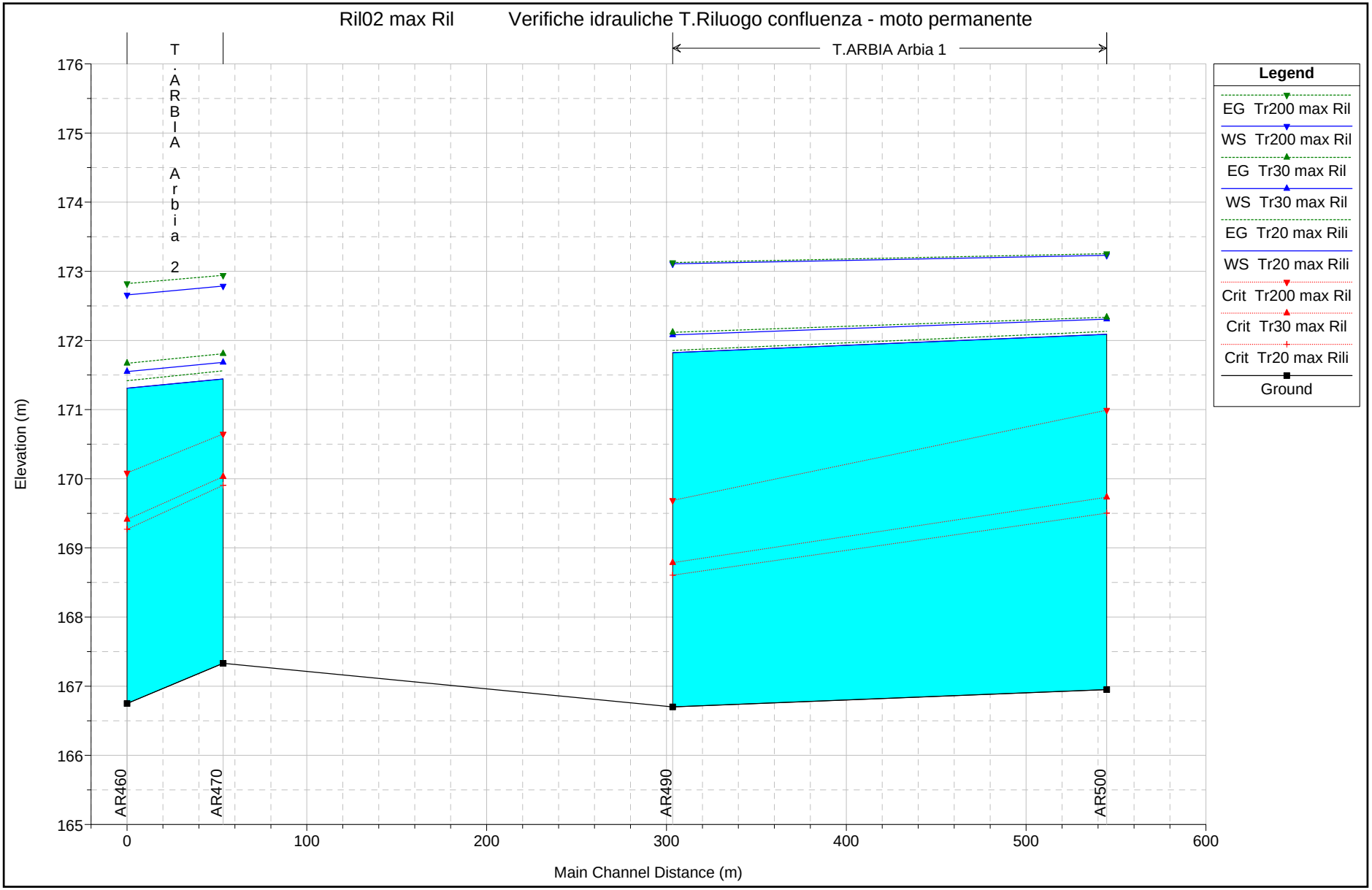
River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Total	Vel Chnl	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T.ARBIA	Arbia 1	500	Tr20 max Rili	91.60	0.02	91.58		166.95	172.09	169.50	172.13	0.001595	0.92	0.92	99.88	45.37	0.20	0.20
T.ARBIA	Arbia 1	500	Tr30 max Ril	107.50	19.78	87.72	0.00	166.95	172.31	169.73	172.34	0.001070	0.56	0.80	193.48	181.95	0.16	0.17
T.ARBIA	Arbia 1	500	Tr200 max Ril	198.20	74.64	123.34	0.22	166.95	173.23	170.99	173.26	0.000729	0.54	0.82	367.05	194.01	0.14	0.13
T.ARBIA	Arbia 1	490	Tr20 max Rili	91.60		91.60		166.70	171.82	168.61	171.85	0.000692	0.79	0.79	116.15	76.10	0.15	0.15
T.ARBIA	Arbia 1	490	Tr30 max Ril	107.50	0.15	107.35	0.00	166.70	172.08	168.79	172.12	0.000748	0.83	0.85	129.61	78.54	0.15	0.21
T.ARBIA	Arbia 1	490	Tr200 max Ril	198.20	8.75	124.82	64.64	166.70	173.11	169.69	173.13	0.000390	0.39	0.74	511.82	344.93	0.12	0.10
T.ARBIA	Arbia 2	470	Tr20 max Rili	203.80		203.80		167.33	171.44	169.90	171.56	0.003227	1.52	1.52	133.73	438.53	0.32	0.32
T.ARBIA	Arbia 2	470	Tr30 max Ril	231.10	0.10	231.00		167.33	171.68	170.03	171.81	0.003089	1.56	1.56	148.44	455.48	0.31	0.33
T.ARBIA	Arbia 2	470	Tr200 max Ril	391.60	11.54	378.84	1.22	167.33	172.79	170.65	172.94	0.002508	1.62	1.78	241.49	520.12	0.30	0.33
T.ARBIA	Arbia 2	460	Tr20 max Rili	203.80	0.02	203.50	0.28	166.75	171.31	169.27	171.42	0.002001	1.44	1.46	141.12	474.01	0.26	0.29
T.ARBIA	Arbia 2	460	Tr30 max Ril	231.10	0.17	229.73	1.20	166.75	171.55	169.41	171.67	0.002000	1.48	1.53	156.60	495.29	0.26	0.32
T.ARBIA	Arbia 2	460	Tr200 max Ril	391.60	5.54	366.64	19.43	166.75	172.66	170.08	172.82	0.002003	1.57	1.85	249.59	539.47	0.28	0.30
T. RILUOGO	Riluogo 1	1100	Tr20 max Rili	69.40	12.72	56.68		173.25	177.38	175.68	177.50	0.003396	1.15	1.68	60.58	51.35	0.31	0.33
T. RILUOGO	Riluogo 1	1100	Tr30 max Ril	76.40	19.80	56.60		173.25	177.73	175.82	177.82	0.002547	0.97	1.50	78.75	62.45	0.27	0.26
T. RILUOGO	Riluogo 1	1100	Tr200 max Ril	119.70	48.41	67.24	4.05	173.25	178.73	176.87	178.79	0.001390	0.80	1.33	149.94	72.32	0.21	0.18
T. RILUOGO	Riluogo 1	1000	Tr20 max Rili	69.40	12.56	50.27	6.57	172.96	177.05	175.53	177.12	0.001757	0.89	1.39	78.38	50.30	0.25	0.22
T. RILUOGO	Riluogo 1	1000	Tr30 max Ril	76.40	16.24	50.72	9.44	172.96	177.50	175.66	177.55	0.001146	0.74	1.23	103.87	58.58	0.21	0.18
T. RILUOGO	Riluogo 1	1000	Tr200 max Ril	119.70	30.37	65.86	23.47	172.96	178.59	176.24	178.63	0.000798	0.70	1.23	171.77	67.01	0.18	0.14
T. RILUOGO	Riluogo 1	900	Tr20 max Rili	69.40	4.05	49.52	15.83	171.28	176.89	174.01	176.94	0.000883	0.69	1.18	99.92	59.14	0.17	0.17
T. RILUOGO	Riluogo 1	900	Tr30 max Ril	76.40	7.50	48.15	20.75	171.28	177.39	174.16	177.43	0.000593	0.56	1.03	136.56	79.05	0.15	0.14
T. RILUOGO	Riluogo 1	900	Tr200 max Ril	119.70	26.49	57.00	36.21	171.28	178.52	175.08	178.55	0.000432	0.53	1.01	226.40	80.74	0.13	0.10
T. RILUOGO	Riluogo 1	850	Tr20 max Rili	69.40	0.08	55.50	13.82	170.80	176.89	172.97	176.91	0.000288	0.48	0.70	144.32	63.09	0.10	0.10
T. RILUOGO	Riluogo 1	850	Tr30 max Ril	76.40	0.15	56.73	19.52	170.80	177.39	173.08	177.41	0.000214	0.43	0.65	176.15	63.47	0.09	0.08
T. RILUOGO	Riluogo 1	850	Tr200 max Ril	119.70	2.63	76.87	40.21	170.80	178.51	173.65	178.53	0.000204	0.44	0.72	269.33	101.00	0.09	0.09
T. RILUOGO	Riluogo 2	800	Tr20 max Rili	112.20	0.06	110.72	1.43	170.77	176.80	173.82	176.87	0.001135	1.11	1.20	101.04	55.09	0.21	0.26
T. RILUOGO	Riluogo 2	800	Tr30 max Ril	123.60	1.81	117.47	4.32	170.77	177.32	173.96	177.38	0.000795	0.89	1.10	139.60	92.90	0.18	0.23
T. RILUOGO	Riluogo 2	800	Tr200 max Ril	193.40	19.80	152.83	20.76	170.77	178.46	174.71	178.51	0.000578	0.66	1.11	292.27	163.96	0.16	0.16
T. RILUOGO	Riluogo 2	700	Tr20 max Rili	112.20		112.20		170.56	176.18	173.83	176.69	0.004306	3.16	3.16	35.50	21.15	0.43	0.43
T. RILUOGO	Riluogo 2	700	Tr30 max Ril	123.60		123.60		170.56	176.69	174.03	177.20	0.003886	3.19	3.19	38.80	37.39	0.42	0.42
T. RILUOGO	Riluogo 2	700	Tr200 max Ril	193.40	36.85	126.46	30.08	170.56	178.30	175.20	178.45	0.003665	1.07	2.06	180.00	149.23	0.34	0.31
T. RILUOGO	Riluogo 2	650	Tr20 max Rili	112.20					176.18		176.69							
T. RILUOGO	Riluogo 2	650	Tr30 max Ril	123.60					176.69		177.20							
T. RILUOGO	Riluogo 2	650	Tr200 max Ril	193.40					178.30		178.45							
T. RILUOGO	Riluogo 2	600	Tr20 max Rili	112.20		112.20		170.46	175.18	173.94	175.99	0.009379	3.97	3.97	28.25	43.86	0.61	0.61
T. RILUOGO	Riluogo 2	600	Tr30 max Ril	123.60		123.60		170.46	175.38	174.16	176.27	0.009776	4.18	4.18	29.57	49.09	0.63	0.63
T. RILUOGO	Riluogo 2	600	Tr200 max Ril	193.40		193.40		170.46	176.50	175.31	177.91	0.011523	5.25	5.25	36.82	77.86	0.70	0.70
T. RILUOGO	Riluogo 2	500	Tr20 max Rili	112.20	0.00	112.15	0.05	169.67	174.25	172.53	174.46	0.004266	2.04	2.05	55.07	22.20	0.38	0.41
T. RILUOGO	Riluogo 2	500	Tr30 max Ril	123.60	0.02	123.21	0.36	169.67	174.48	172.68	174.70	0.004020	2.04	2.09	60.64	26.56	0.37	0.43
T. RILUOGO	Riluogo 2	500	Tr200 max Ril	193.40	0.53	180.42	12.45	169.67	175.81	173.41	176.04	0.002687	1.76	2.16	109.97	57.66	0.32	0.41
T. RILUOGO	Riluogo 2	400	Tr20 max Rili	112.20		112.20		168.91	173.11	171.87	173.63	0.007595	3.21	3.21	34.90	22.01	0.54	0.54

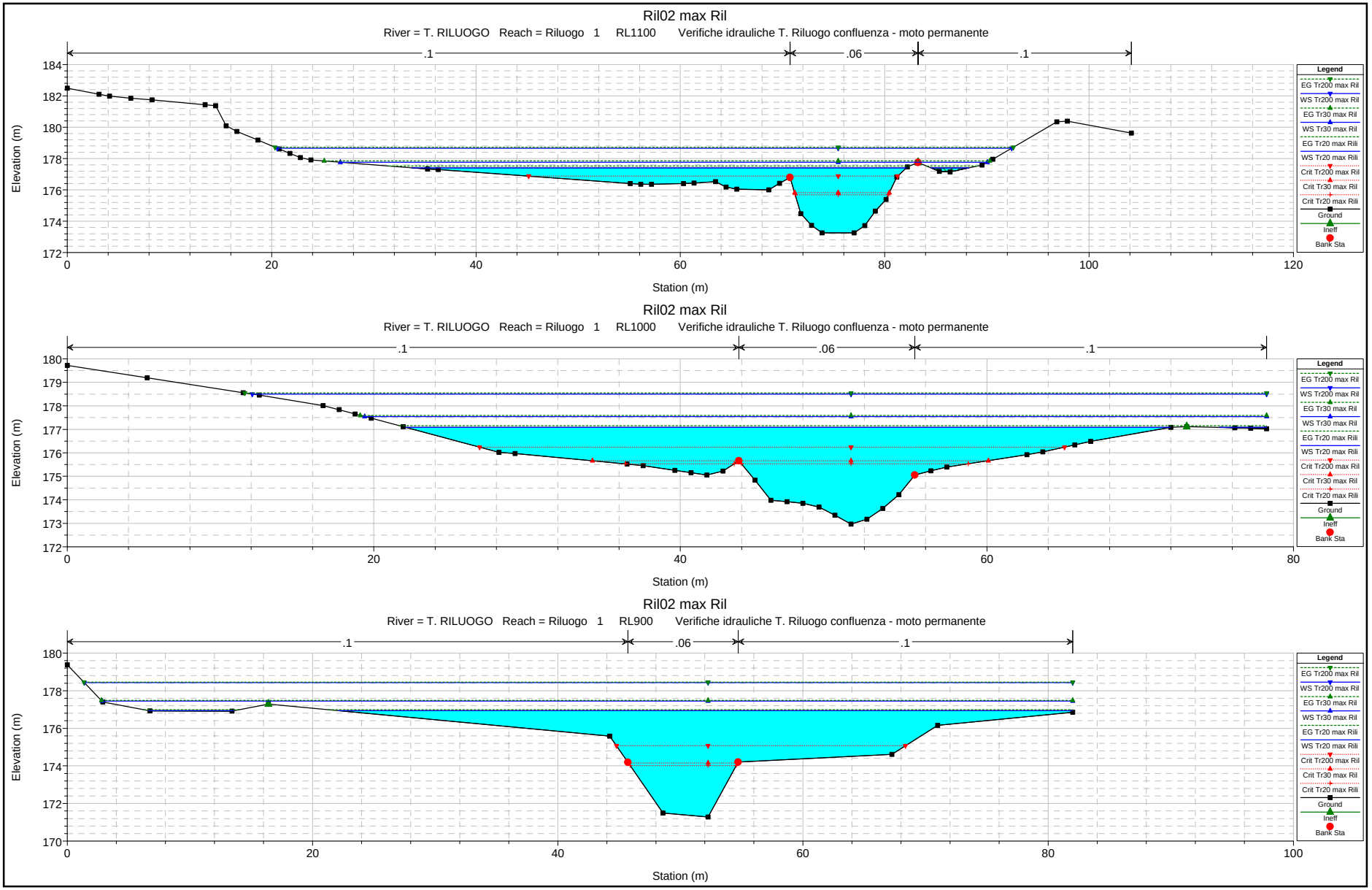
HEC-RAS Plan: RIL02 (Continued)

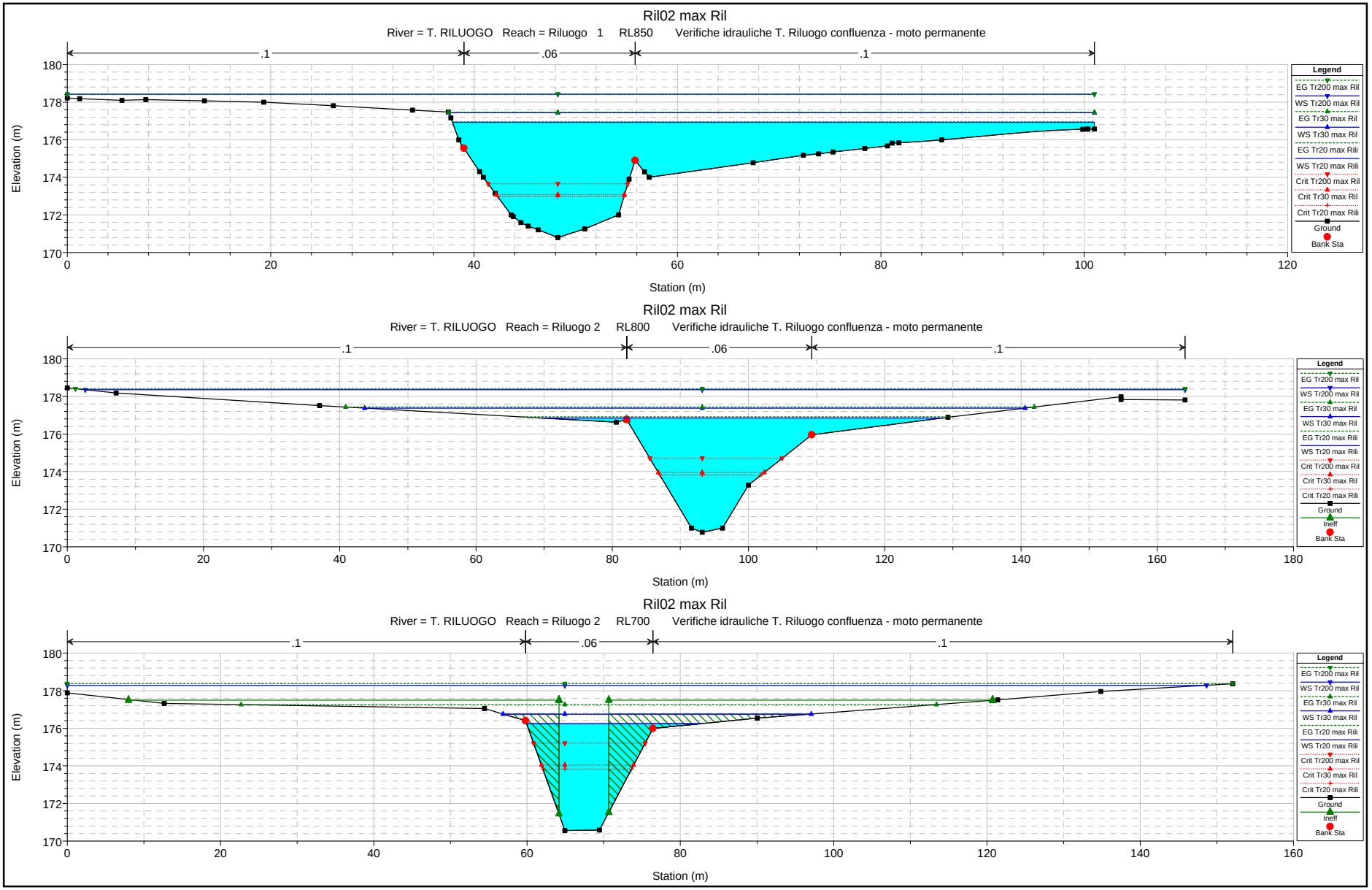
River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Total	Vel Chnl	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RILUOGO	Riluogo 2	400	Tr30 max Ril	123.60		123.60		168.91	173.31	172.03	173.88	0.007669	3.35	3.35	36.88	48.36	0.55	0.55
T. RILUOGO	Riluogo 2	400	Tr200 max Ril	193.40		193.40		168.91	174.52	172.94	175.33	0.007516	3.98	3.98	48.54	74.50	0.57	0.57
T. RILUOGO	Riluogo 2	350	Tr20 max Rili	112.20					173.11		173.63							
T. RILUOGO	Riluogo 2	350	Tr30 max Ril	123.60					173.31		173.88							
T. RILUOGO	Riluogo 2	350	Tr200 max Ril	193.40					174.52		175.33							
T. RILUOGO	Riluogo 2	300	Tr20 max Rili	112.20		112.20		168.49	172.79	171.35	173.26	0.006384	3.04	3.04	36.93	20.09	0.50	0.50
T. RILUOGO	Riluogo 2	300	Tr30 max Ril	123.60		123.60		168.49	172.95	171.51	173.48	0.006724	3.21	3.21	38.53	21.51	0.51	0.51
T. RILUOGO	Riluogo 2	300	Tr200 max Ril	193.40		193.40		168.49	173.83	172.40	174.69	0.008489	4.11	4.11	47.00	66.31	0.60	0.60
T. RILUOGO	Riluogo 2	200	Tr20 max Rili	112.20	7.30	104.90		167.64	171.85	170.31	172.04	0.004459	1.57	1.99	71.63	60.95	0.38	0.46
T. RILUOGO	Riluogo 2	200	Tr30 max Ril	123.60	13.24	110.36		167.64	172.07	170.44	172.24	0.003949	1.46	1.94	84.86	61.29	0.36	0.40
T. RILUOGO	Riluogo 2	200	Tr200 max Ril	193.40	49.58	142.72	1.10	167.64	173.11	171.16	173.24	0.002474	1.27	1.86	152.22	69.47	0.30	0.27
T. RIBUCCIANO	Ribucciano	500	Tr20 max Rili	34.60		34.60		173.78	177.28	175.56	177.35	0.002059	1.14	1.14	30.26	14.21	0.25	0.25
T. RIBUCCIANO	Ribucciano	500	Tr30 max Ril	38.20		38.20		173.78	177.63	175.66	177.69	0.001641	1.08	1.08	35.37	15.20	0.23	0.23
T. RIBUCCIANO	Ribucciano	500	Tr200 max Ril	56.70	0.89	55.80	0.01	173.78	178.64	176.07	178.69	0.001177	0.95	1.07	59.96	56.82	0.20	0.29
T. RIBUCCIANO	Ribucciano	400	Tr20 max Rili	34.60		34.60	0.00	172.77	177.03	174.69	177.06	0.000879	0.82	0.82	42.28	17.68	0.17	0.17
T. RIBUCCIANO	Ribucciano	400	Tr30 max Ril	38.20	0.33	37.85	0.01	172.77	177.44	174.77	177.47	0.000628	0.71	0.76	53.71	42.54	0.15	0.20
T. RIBUCCIANO	Ribucciano	400	Tr200 max Ril	56.70	11.83	44.70	0.17	172.77	178.53	175.16	178.55	0.000291	0.39	0.65	147.24	109.14	0.10	0.11
T. RIBUCCIANO	Ribucciano	300	Tr20 max Rili	34.60	5.47	27.89	1.24	172.61	176.93	174.58	176.99	0.003427	0.83	1.22	41.93	74.68	0.30	0.30
T. RIBUCCIANO	Ribucciano	300	Tr30 max Ril	38.20	10.20	25.37	2.63	172.61	177.40	174.71	177.43	0.001249	0.56	0.87	68.75	79.29	0.19	0.16
T. RIBUCCIANO	Ribucciano	300	Tr200 max Ril	56.70	22.37	27.66	6.67	172.61	178.52	175.32	178.53	0.000370	0.36	0.62	157.75	85.68	0.11	0.08
T. RIBUCCIANO	Ribucciano	250	Tr20 max Rili	34.60														
T. RIBUCCIANO	Ribucciano	250	Tr30 max Ril	38.20														
T. RIBUCCIANO	Ribucciano	250	Tr200 max Ril	56.70														
T. RIBUCCIANO	Ribucciano	200	Tr20 max Rili	34.60	3.50	26.88	4.21	171.79	176.93	174.28	176.98	0.002829	0.67	1.14	51.46	88.11	0.26	0.28
T. RIBUCCIANO	Ribucciano	200	Tr30 max Ril	38.20	8.87	21.58	7.75	171.79	177.41	174.41	177.42	0.000859	0.41	0.73	93.98	89.88	0.15	0.13
T. RIBUCCIANO	Ribucciano	200	Tr200 max Ril	56.70	19.69	21.52	15.49	171.79	178.52	175.02	178.53	0.000236	0.29	0.49	196.34	93.82	0.08	0.06
T. RIBUCCIANO	Ribucciano	100	Tr20 max Rili	34.60	7.91	24.67	2.01	171.28	176.88	173.17	176.90	0.000224	0.35	0.59	99.29	59.02	0.09	0.09
T. RIBUCCIANO	Ribucciano	100	Tr30 max Ril	38.20	10.42	24.04	3.75	171.28	177.39	173.27	177.40	0.000151	0.28	0.52	135.91	79.00	0.07	0.07
T. RIBUCCIANO	Ribucciano	100	Tr200 max Ril	56.70	17.21	26.91	12.58	171.28	178.51	173.74	178.52	0.000098	0.25	0.48	225.71	80.73	0.06	0.05
T. RIBUCCIANO	Ribucciano	90	Tr20 max Rili	34.60	9.33	23.27	2.00	171.17	176.88	173.11	176.89	0.000135	0.26	0.49	132.70	85.99	0.07	0.07
T. RIBUCCIANO	Ribucciano	90	Tr30 max Ril	38.20	12.23	22.28	3.69	171.17	177.39	173.21	177.39	0.000088	0.21	0.42	181.00	104.61	0.06	0.05
T. RIBUCCIANO	Ribucciano	90	Tr200 max Ril	56.70	20.26	24.59	11.85	171.17	178.51	173.63	178.52	0.000056	0.19	0.38	301.37	108.56	0.05	0.04

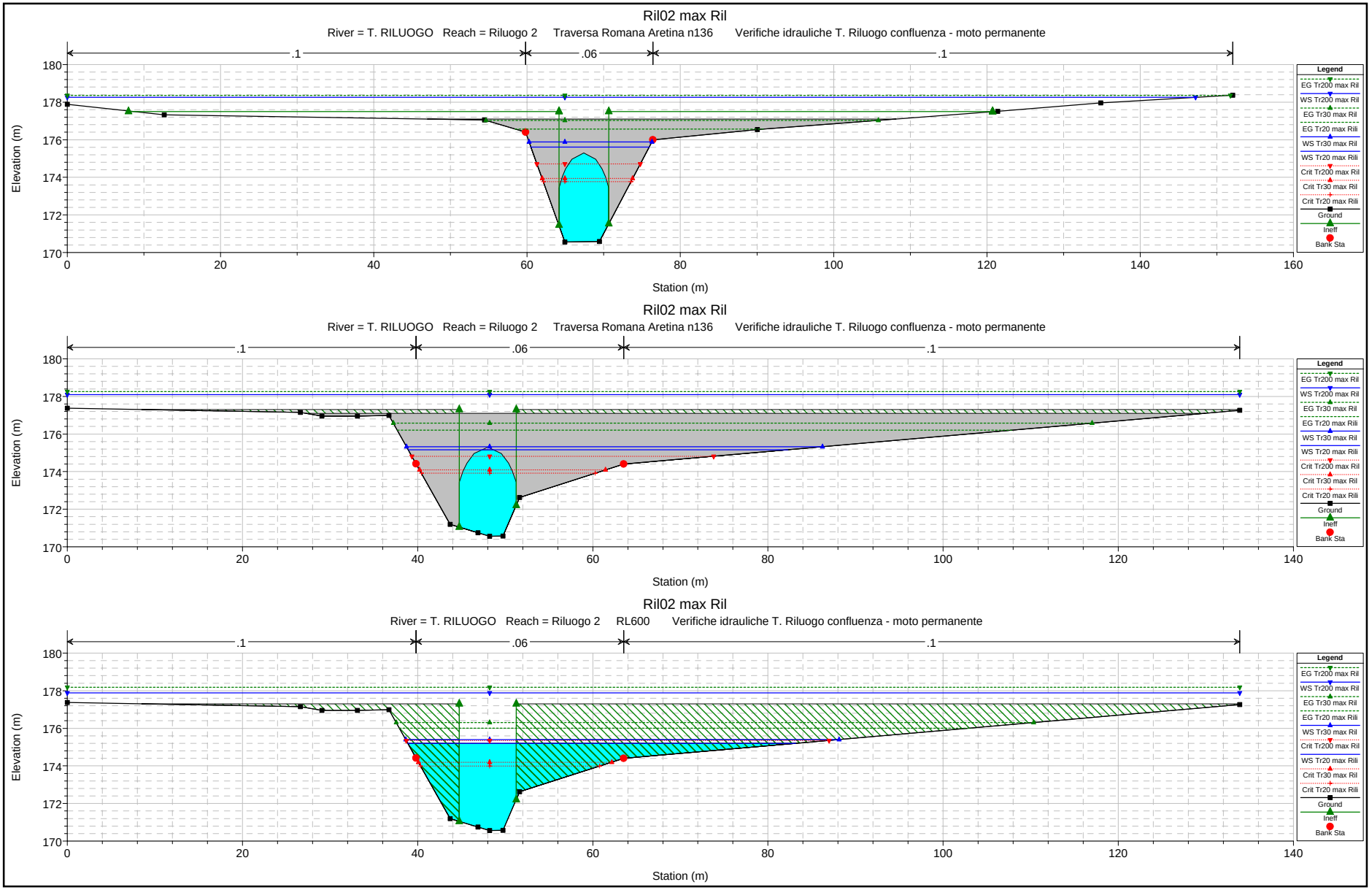

Ril02 max Ril
Verifiche idrauliche T.Riluogo confluenza - moto permanente
T. RILUOGO Riluogo 2
T. RILUOGO Riluogo 1
T. ARBIA Arbia 2
Elevation (m)
Main Channel Distance (m)
180
178
176
174
172
170
168
166
0
200
400
600
800
1000
1200
AR470
RL200
RL300
Ferrovia Siena Bu
RL500
RL600
RL800
RL850
RL900
RL1000
RL1100
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground

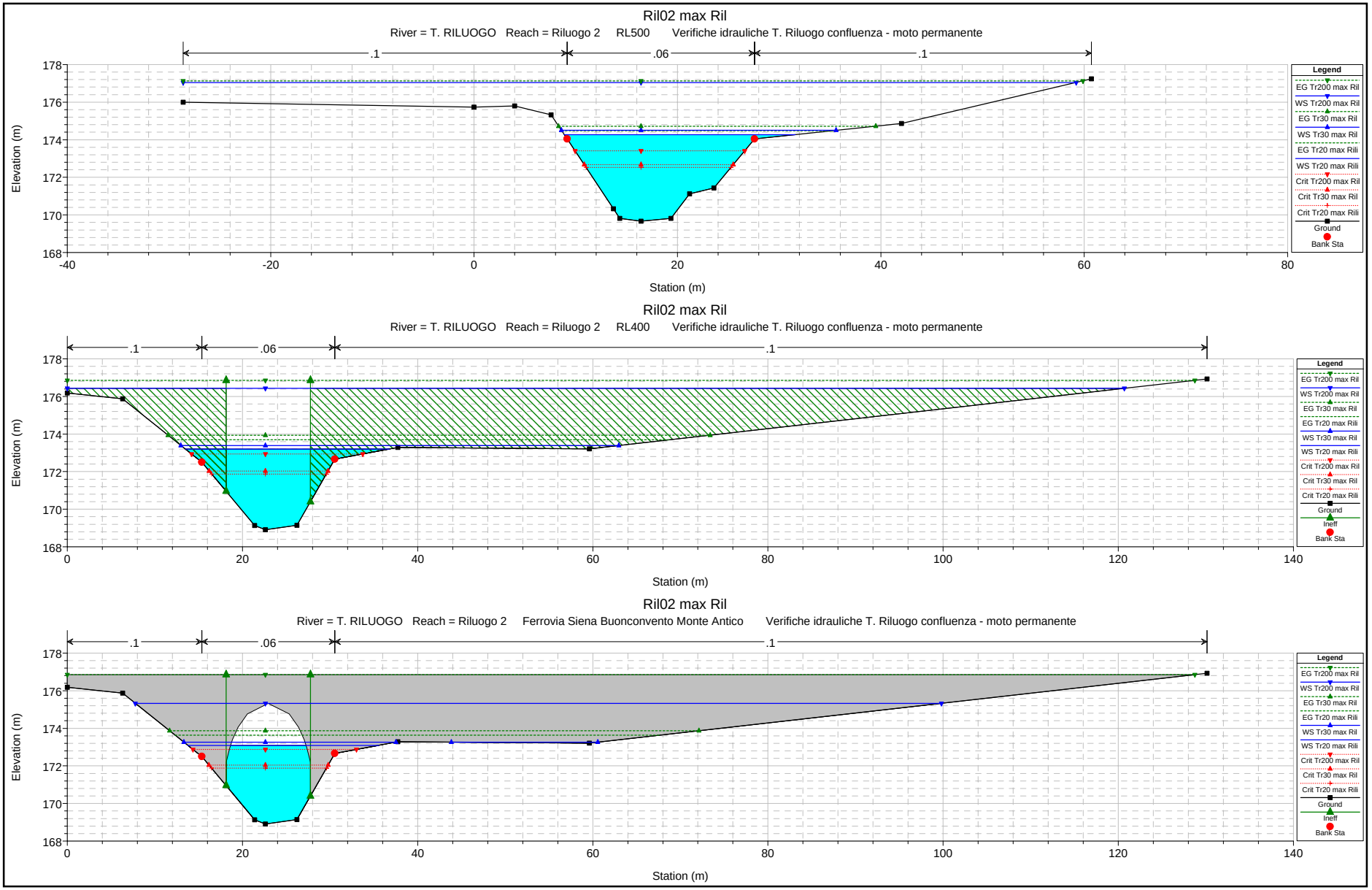

Ril02 max Ril
Verifiche idrauliche T.Riluogo confluenza - moto permanente
T. RILUOGO Riluogo 2
T. RIBUCCIANO Ribucciano
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Elevation (m)
Main Channel Distance (m)
180
178
176
174
172
170
168
166
0
200
400
600
800
1000
RL200
RL300
Ferrovia Siena Buo
RL500
RL600
RL700
RL800
RB90
RB100
RB200
RB300
RB400
RB500

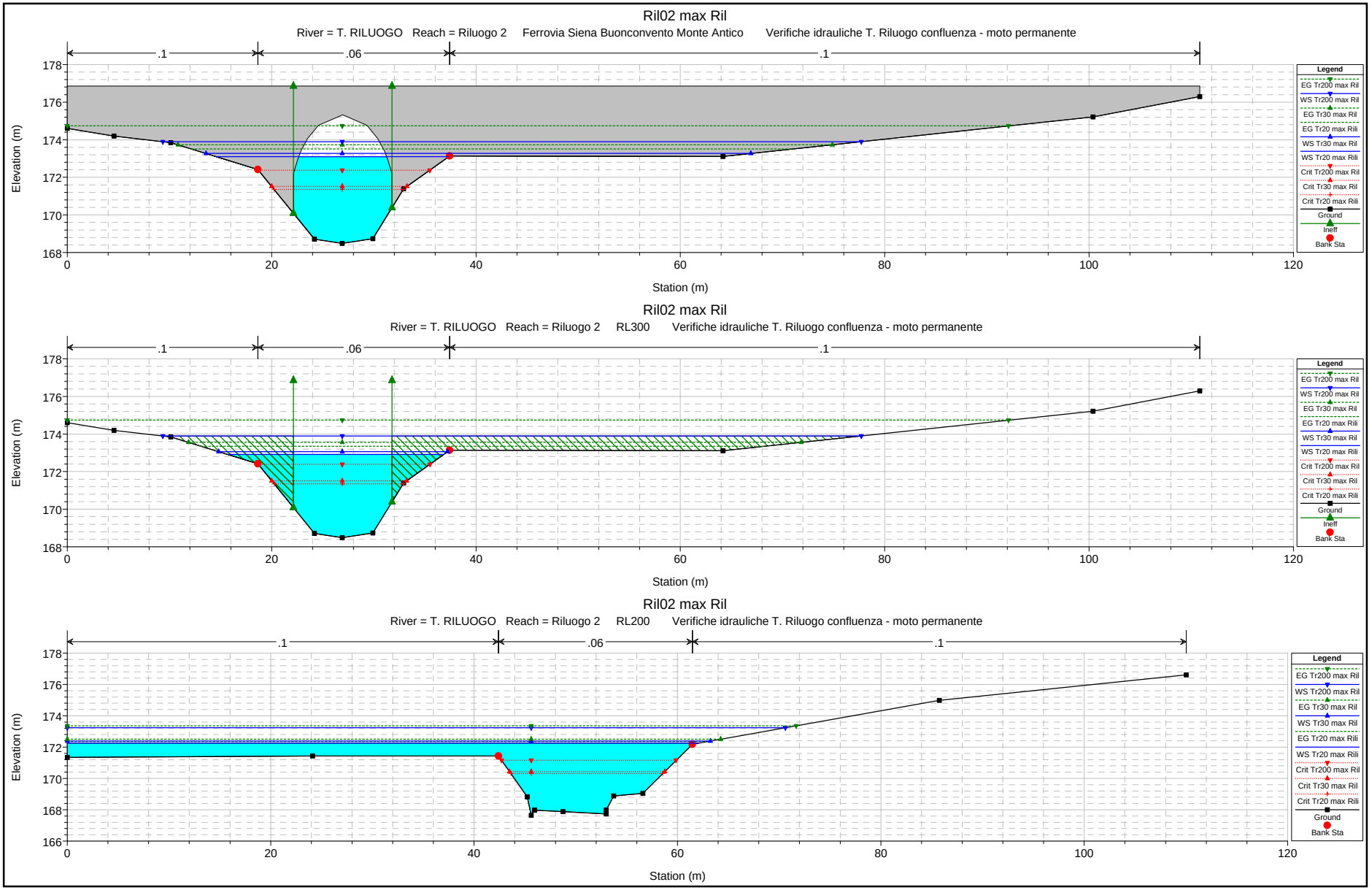

Ril02 max Ril
Verifiche idrauliche T.Riluogo confluenza - moto permanente
T.ARBIA Arbia 2
T.ARBIA Arbia 1
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Elevation (m)
Main Channel Distance (m)
AR460
AR470
AR490
AR500
165
166
167
168
169
170
171
172
173
174
175
176
0
100
200
300
400
500
600

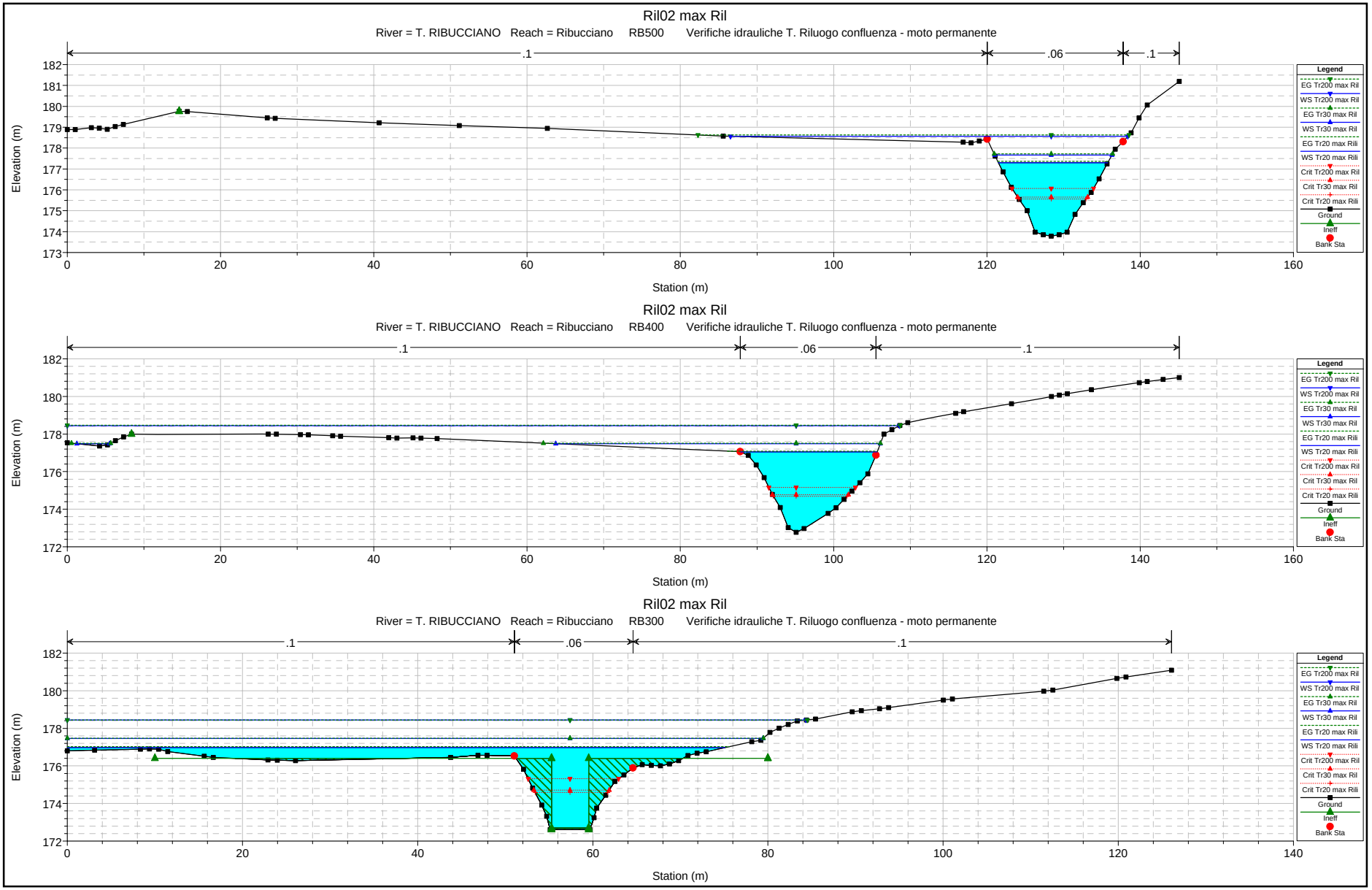

Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 1 RL1100 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 1 RL1000 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 1 RL900 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta

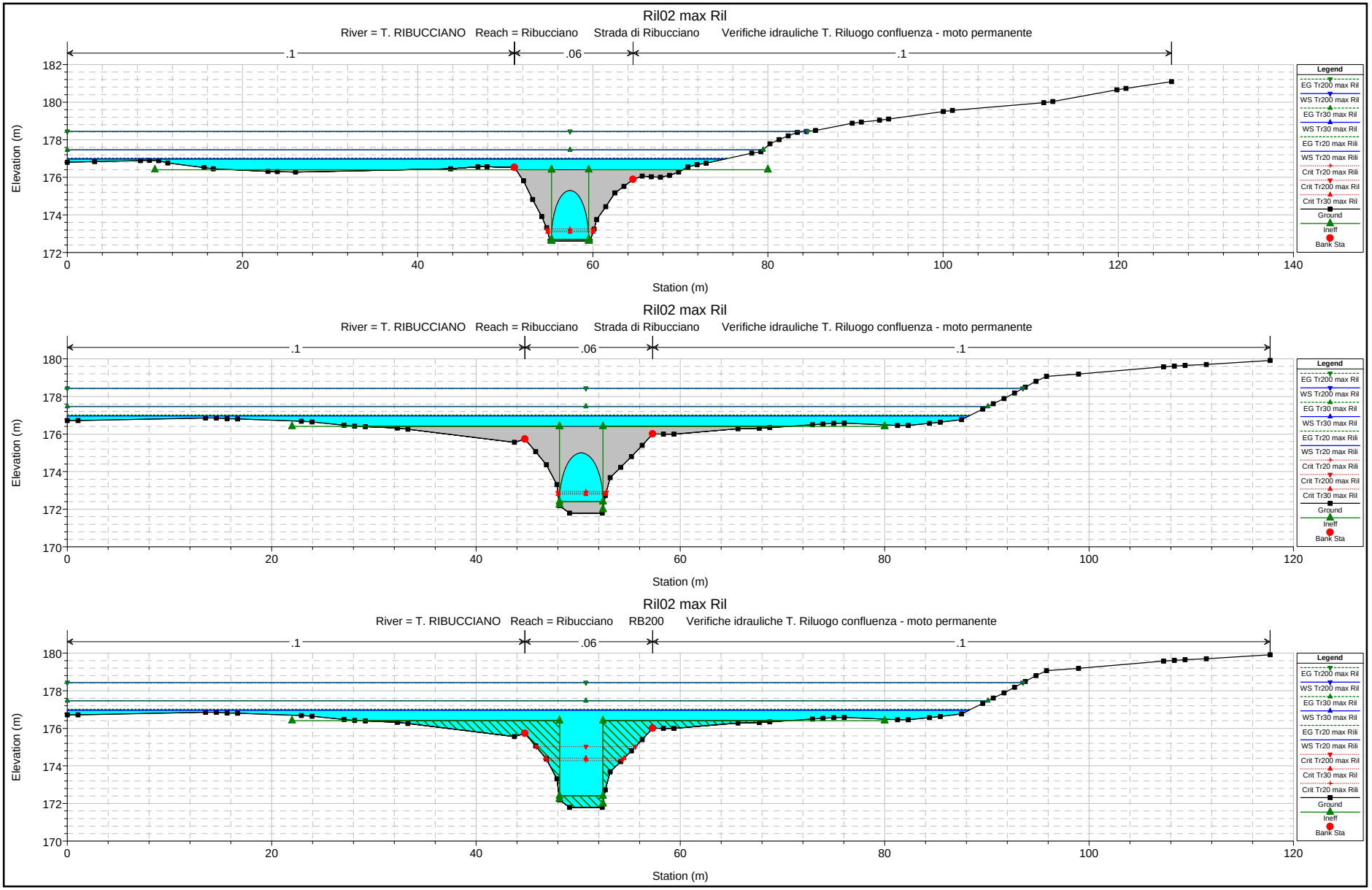

Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 1 RL850 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL800 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL700 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta

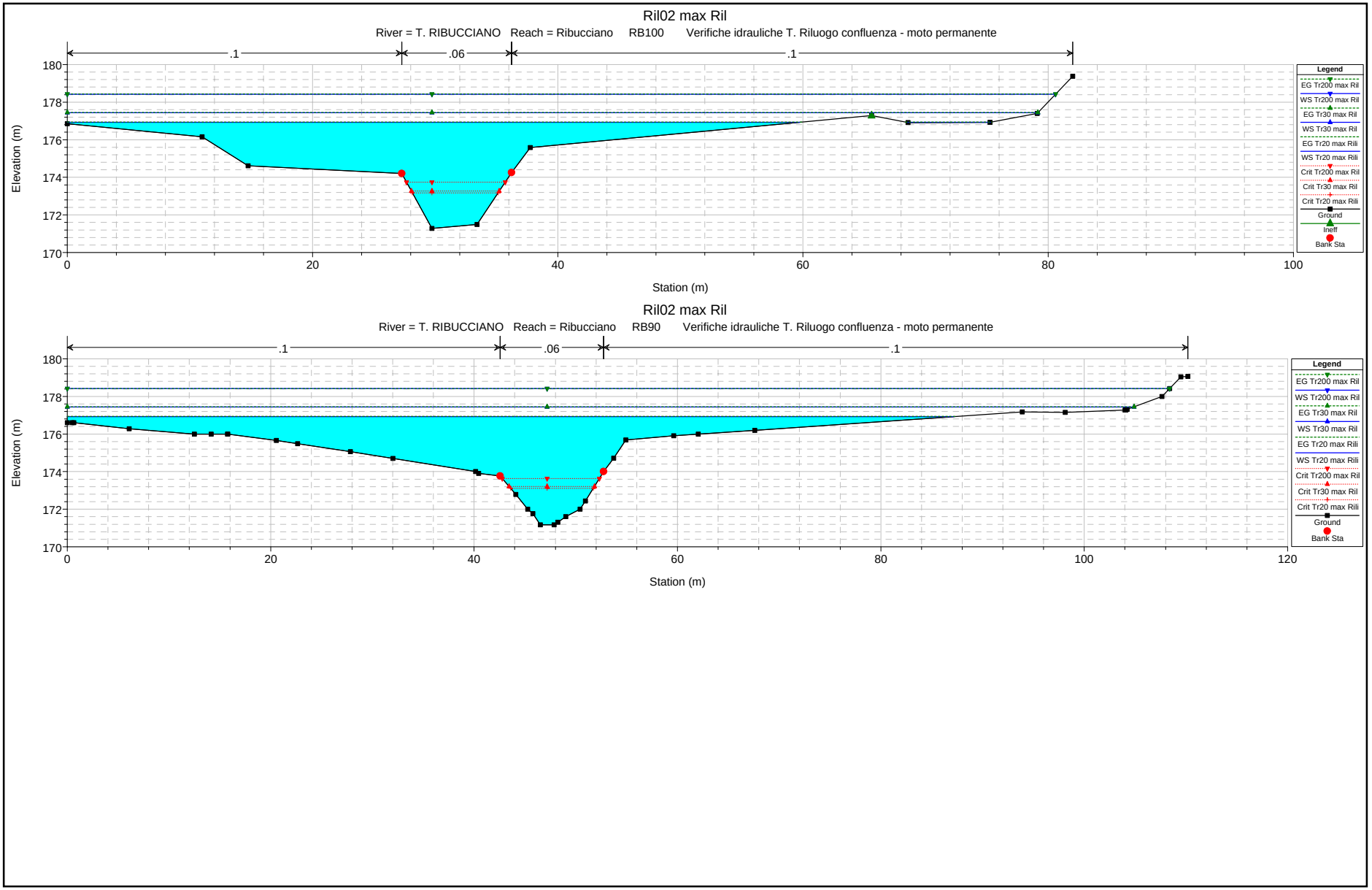

Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 Traversa Romana Aretina n136 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 Traversa Romana Aretina n136 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL600 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
Crit Tr200 max Ril
WS Tr20 max Rili
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta

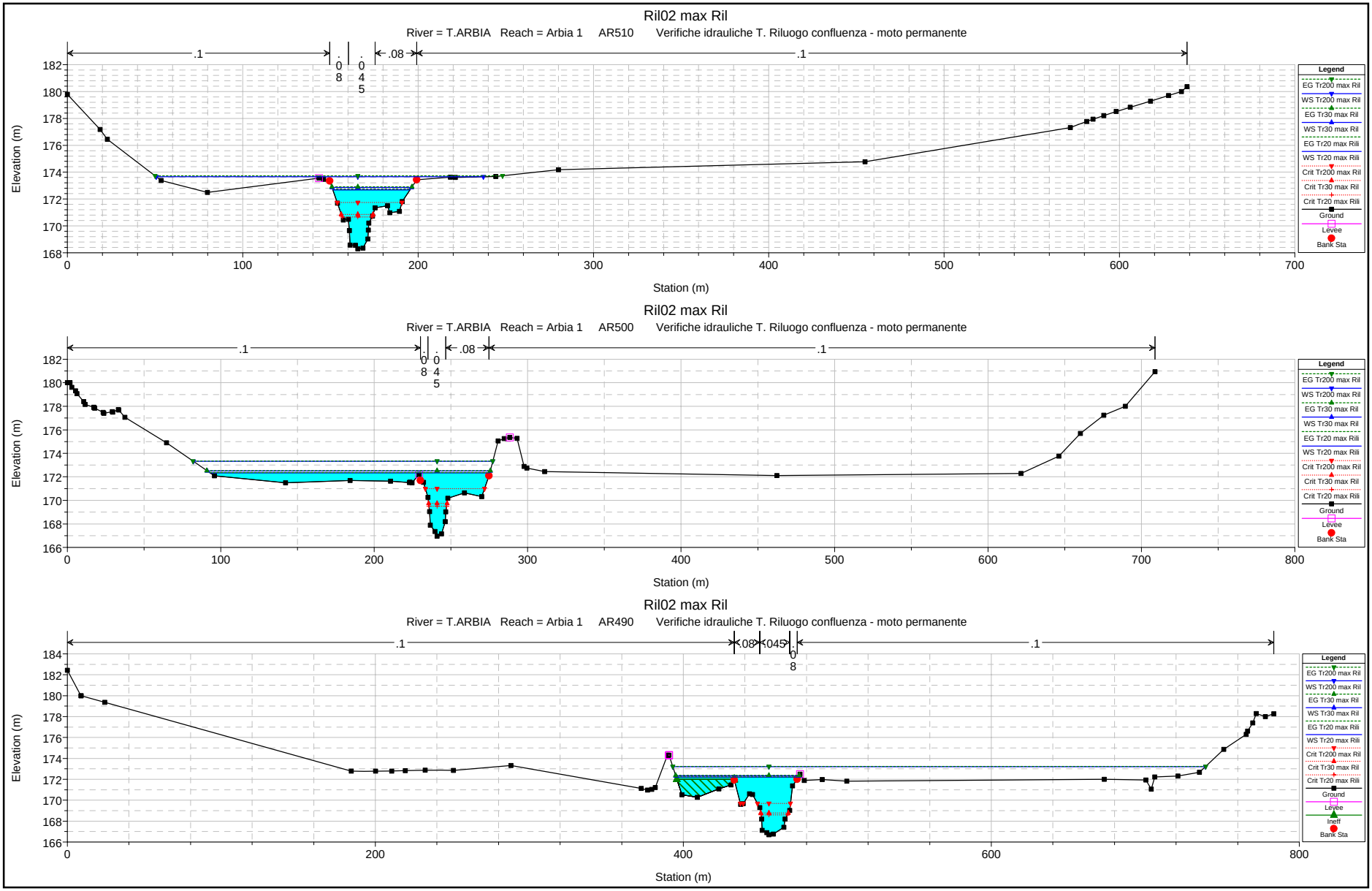

Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL500 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL400 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 Ferrovia Siena Buonconvento Monte Antico Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta

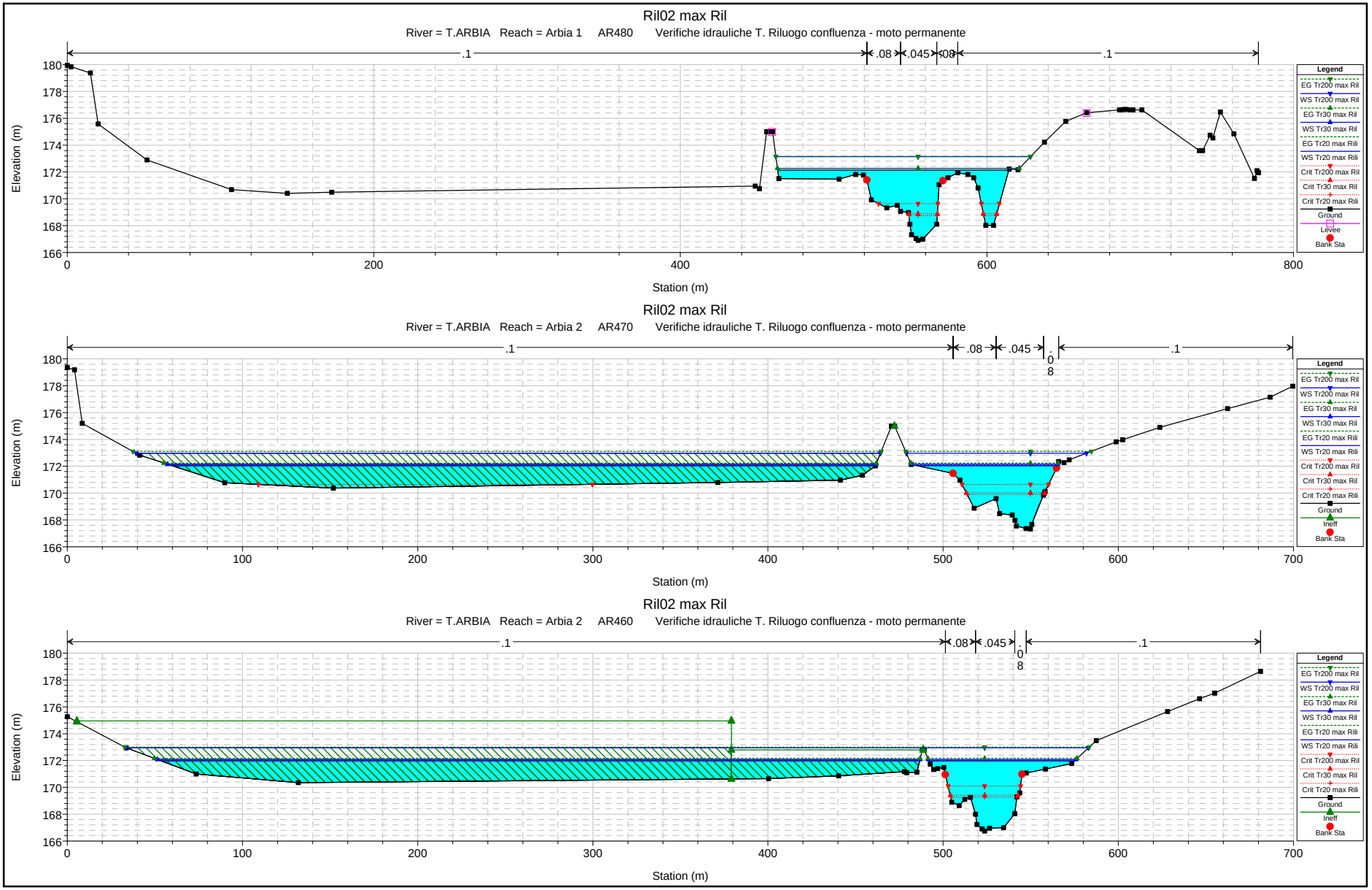

Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 Ferrovia Siena Buonconvento Monte Antico Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
EG Tr20 max Rili
WS Tr30 max Ril
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL300 Verifiche idrauliche T. Riluogo confluenza - moto permanente
Ril02 max Ril
River = T. RILUOGO Reach = Riluogo 2 RL200 Verifiche idrauliche T. Riluogo confluenza - moto permanente

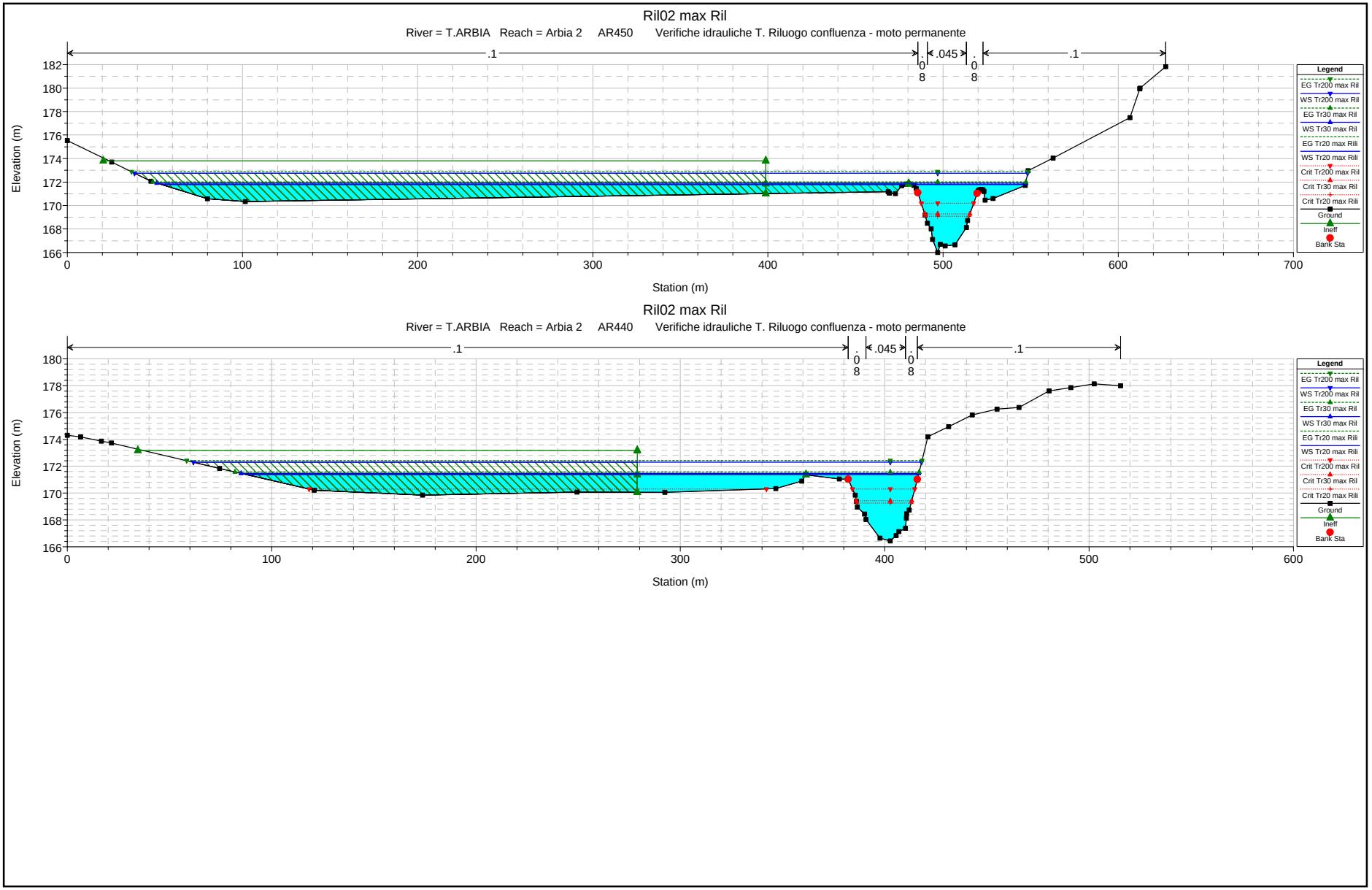

Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB500 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB400 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB300 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta


Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano Strada di Ribucciano Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano Strada di Ribucciano Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB200 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta


Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB100 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T. RIBUCCIANO Reach = Ribucciano RB90 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Bank Sta


Ril02 max Ril
River = T.ARBIA Reach = Arbia 1 AR510 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Levee
Bank Sta
Ril02 max Ril
River = T.ARBIA Reach = Arbia 1 AR500 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Levee
Bank Sta
Ril02 max Ril
River = T.ARBIA Reach = Arbia 1 AR490 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Levee
Ineff
Bank Sta

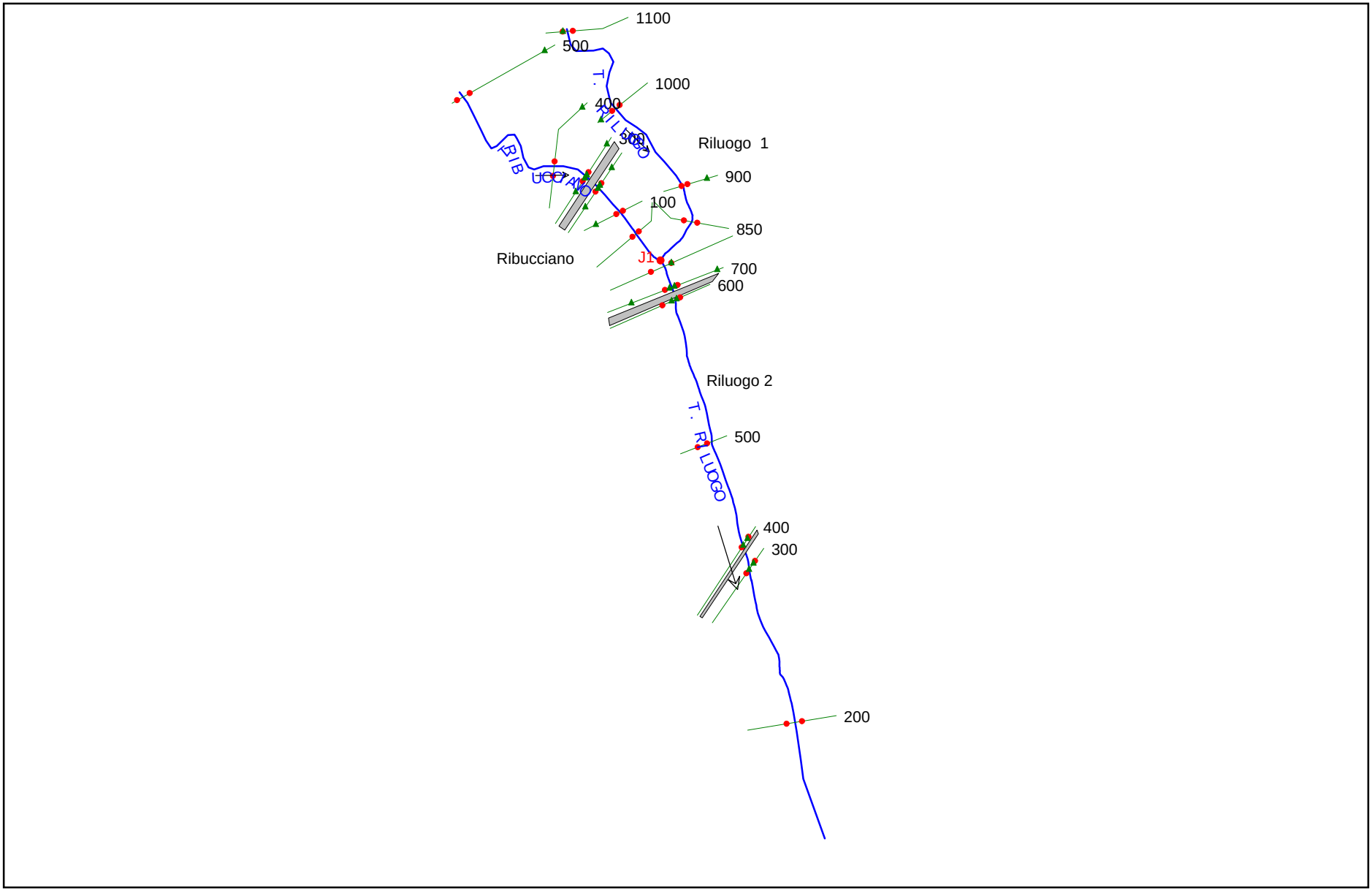

Ril02 max Ril
River = T.ARBIA Reach = Arbia 1 AR480 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.045
.03
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Levee
Bank Sta
Ril02 max Ril
River = T.ARBIA Reach = Arbia 2 AR470 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.045
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T.ARBIA Reach = Arbia 2 AR460 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.08
.045
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta


Ril02 max Ril
River = T.ARBIA Reach = Arbia 2 AR450 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.045
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta
Ril02 max Ril
River = T.ARBIA Reach = Arbia 2 AR440 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.045
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Ril
WS Tr200 max Ril
EG Tr30 max Ril
WS Tr30 max Ril
EG Tr20 max Rili
WS Tr20 max Rili
Crit Tr200 max Ril
Crit Tr30 max Ril
Crit Tr20 max Rili
Ground
Ineff
Bank Sta

ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO RIL02 – TORRENTE RILUOGO

EVENTO CON PORTATA MASSIMA T. ARBIA (Dcr = 6.34)


1100
500
T. RILUOGO
1000
400
300
Riluogo 1
RIB UCCIANO
900
100
850
Ribucciano
J1
700
600
Riluogo 2
T. RILUOGO
500
400
300
200

HEC-RAS Plan: Ril02MA

River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RILUOGO	Riluogo 1	1100	Tr20 max Arb	33.20	0.17	33.03		173.25	176.23	174.88	176.35	0.003965	1.53	1.48	22.51	14.69	0.33	0.38
T. RILUOGO	Riluogo 1	1100	Tr30 max Arb	36.80	0.40	36.40		173.25	176.36	174.97	176.49	0.004130	1.59	1.51	24.40	16.34	0.33	0.39
T. RILUOGO	Riluogo 1	1100	Tr200 max Arb	58.70	5.83	52.87		173.25	176.98	175.47	177.13	0.004413	1.81	1.36	43.17	38.40	0.35	0.41
T. RILUOGO	Riluogo 1	1000	Tr20 max Arb	33.20	0.29	32.81	0.10	172.96	175.41	174.76	175.59	0.008298	1.90	1.78	18.64	18.67	0.49	0.57
T. RILUOGO	Riluogo 1	1000	Tr30 max Arb	36.80	0.63	35.93	0.24	172.96	175.54	174.85	175.73	0.007690	1.91	1.72	21.41	22.28	0.47	0.56
T. RILUOGO	Riluogo 1	1000	Tr200 max Arb	58.70	7.21	47.98	3.51	172.96	176.46	175.31	176.58	0.003173	1.63	1.13	52.08	41.00	0.33	0.32
T. RILUOGO	Riluogo 1	900	Tr20 max Arb	33.20	0.03	32.09	1.08	171.28	174.75	173.12	174.85	0.002870	1.41	1.22	27.13	22.43	0.28	0.36
T. RILUOGO	Riluogo 1	900	Tr30 max Arb	36.80	0.07	34.53	2.20	171.28	174.94	173.22	175.04	0.002592	1.41	1.16	31.59	23.12	0.27	0.32
T. RILUOGO	Riluogo 1	900	Tr200 max Arb	58.70	1.03	45.81	11.86	171.28	176.21	173.78	176.28	0.001277	1.28	0.88	66.68	37.80	0.20	0.21
T. RILUOGO	Riluogo 1	850	Tr20 max Arb	33.20		32.71	0.49	170.80	174.71	172.35	174.74	0.000698	0.77	0.72	46.35	26.25	0.15	0.17
T. RILUOGO	Riluogo 1	850	Tr30 max Arb	36.80		35.85	0.95	170.80	174.91	172.42	174.94	0.000685	0.78	0.71	51.92	29.38	0.15	0.17
T. RILUOGO	Riluogo 1	850	Tr200 max Arb	58.70	0.02	51.37	7.31	170.80	176.20	172.81	176.23	0.000419	0.76	0.57	103.06	52.65	0.12	0.13
T. RILUOGO	Riluogo 2	800	Tr20 max Arb	53.20		53.20		170.77	174.57	172.84	174.66	0.002771	1.35	1.35	39.31	18.69	0.30	0.30
T. RILUOGO	Riluogo 2	800	Tr30 max Arb	58.60		58.60		170.77	174.77	172.95	174.86	0.002636	1.36	1.36	43.20	19.72	0.29	0.29
T. RILUOGO	Riluogo 2	800	Tr200 max Arb	91.70		91.69	0.01	170.77	176.10	173.51	176.18	0.001556	1.24	1.24	74.11	28.99	0.24	0.25
T. RILUOGO	Riluogo 2	700	Tr20 max Arb	53.20		53.20		170.56	174.23	172.61	174.51	0.004210	2.33	2.33	22.84	12.45	0.40	0.40
T. RILUOGO	Riluogo 2	700	Tr30 max Arb	58.60		58.60		170.56	174.40	172.74	174.71	0.004378	2.45	2.45	23.92	12.81	0.41	0.41
T. RILUOGO	Riluogo 2	700	Tr200 max Arb	91.70		91.70		170.56	175.58	173.45	176.01	0.004253	2.90	2.90	31.57	15.37	0.42	0.42
T. RILUOGO	Riluogo 2	650	Tr20 max Arb	53.20					174.23		174.51							
T. RILUOGO	Riluogo 2	650	Tr30 max Arb	58.60					174.40		174.71							
T. RILUOGO	Riluogo 2	650	Tr200 max Arb	91.70					175.58		176.01							
T. RILUOGO	Riluogo 2	600	Tr20 max Arb	53.20		53.20		170.56	173.98	172.77	174.34	0.006432	2.64	2.64	20.13	20.38	0.48	0.48
T. RILUOGO	Riluogo 2	600	Tr30 max Arb	58.60		58.60		170.56	174.11	172.90	174.51	0.006788	2.79	2.79	21.00	21.42	0.50	0.50
T. RILUOGO	Riluogo 2	600	Tr200 max Arb	91.70		91.70		170.56	174.95	173.60	175.56	0.007736	3.47	3.47	26.41	37.77	0.55	0.55
T. RILUOGO	Riluogo 2	500	Tr20 max Arb	53.20		53.20		169.67	173.27	171.67	173.37	0.002815	1.42	1.42	37.56	16.30	0.30	0.30
T. RILUOGO	Riluogo 2	500	Tr30 max Arb	58.60		58.60		169.67	173.36	171.76	173.48	0.003063	1.50	1.50	39.06	16.55	0.31	0.31
T. RILUOGO	Riluogo 2	500	Tr200 max Arb	91.70	0.00	91.67	0.03	169.67	174.22	172.26	174.37	0.002929	1.69	1.68	54.54	21.74	0.31	0.34
T. RILUOGO	Riluogo 2	400	Tr20 max Arb	53.20		53.20		168.91	172.90	170.94	173.04	0.002069	1.61	1.61	32.95	19.12	0.28	0.28
T. RILUOGO	Riluogo 2	400	Tr30 max Arb	58.60		58.60		168.91	172.94	171.03	173.10	0.002427	1.76	1.76	33.28	19.61	0.30	0.30
T. RILUOGO	Riluogo 2	400	Tr200 max Arb	91.70		91.70		168.91	173.66	171.57	173.92	0.003157	2.28	2.28	40.24	55.89	0.36	0.36
T. RILUOGO	Riluogo 2	350	Tr20 max Arb	53.20					172.90		173.04							
T. RILUOGO	Riluogo 2	350	Tr30 max Arb	58.60					172.94		173.10							
T. RILUOGO	Riluogo 2	350	Tr200 max Arb	91.70					173.66		173.92							
T. RILUOGO	Riluogo 2	300	Tr20 max Arb	53.20		53.20		168.49	172.85	170.41	172.95	0.001359	1.42	1.42	37.54	20.63	0.23	0.23
T. RILUOGO	Riluogo 2	300	Tr30 max Arb	58.60		58.60		168.49	172.87	170.51	173.00	0.001616	1.55	1.55	37.77	20.83	0.25	0.25
T. RILUOGO	Riluogo 2	300	Tr200 max Arb	91.70		91.70		168.49	173.54	171.04	173.76	0.002347	2.08	2.08	44.18	59.55	0.31	0.31
T. RILUOGO	Riluogo 2	200	Tr20 max Arb	53.20	11.32	41.78	0.09	167.64	172.73	169.50	172.74	0.000295	0.60	0.42	126.63	66.21	0.10	0.10
T. RILUOGO	Riluogo 2	200	Tr30 max Arb	58.60	12.47	46.03	0.10	167.64	172.73	169.58	172.75	0.000357	0.66	0.46	126.63	66.21	0.11	0.11
T. RILUOGO	Riluogo 2	200	Tr200 max Arb	91.70	25.67	65.16	0.86	167.64	173.36	170.06	173.38	0.000421	0.80	0.54	170.06	71.66	0.12	0.11
T. RIBUCCIANO	Ribucciano	500	Tr20 max Arb	16.00		16.00		173.78	175.84	174.93	175.92	0.004587	1.25	1.25	12.84	9.87	0.35	0.35
T. RIBUCCIANO	Ribucciano	500	Tr30 max Arb	17.50		17.50		173.78	175.97	175.00	176.04	0.004266	1.24	1.24	14.09	10.30	0.34	0.34

HEC-RAS Plan: Ril02MA (Continued)

River	Reach	River Sta	Profile	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
				(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RIBUCCIANO	Ribucciano	500	Tr200 max Arb	26.40		26.40		173.78	176.90	175.32	176.96	0.002000	1.05	1.05	25.09	13.13	0.24	0.24
T. RIBUCCIANO	Ribucciano	400	Tr20 max Arb	16.00		16.00		172.77	175.17	174.13	175.22	0.002856	1.03	1.03	15.56	11.33	0.28	0.28
T. RIBUCCIANO	Ribucciano	400	Tr30 max Arb	17.50		17.50		172.77	175.37	174.19	175.42	0.002310	0.97	0.97	17.96	12.05	0.25	0.25
T. RIBUCCIANO	Ribucciano	400	Tr200 max Arb	26.40		26.40		172.77	176.66	174.47	176.69	0.000765	0.73	0.73	36.20	16.04	0.15	0.15
T. RIBUCCIANO	Ribucciano	300	Tr20 max Arb	16.00		16.00		172.61	174.91	173.83	175.06	0.003608	1.70	1.70	9.41	9.11	0.36	0.36
T. RIBUCCIANO	Ribucciano	300	Tr30 max Arb	17.50		17.50		172.61	175.14	173.89	175.28	0.003140	1.69	1.69	10.35	9.66	0.35	0.35
T. RIBUCCIANO	Ribucciano	300	Tr200 max Arb	26.40	0.22	26.10	0.07	172.61	176.48	174.27	176.60	0.008353	1.56	1.40	18.87	47.91	0.44	0.71
T. RIBUCCIANO	Ribucciano	250	Tr20 max Arb	16.00														
T. RIBUCCIANO	Ribucciano	250	Tr30 max Arb	17.50														
T. RIBUCCIANO	Ribucciano	250	Tr200 max Arb	26.40														
T. RIBUCCIANO	Ribucciano	200	Tr20 max Arb	16.00		16.00		171.79	174.74	173.53	174.87	0.003266	1.61	1.61	9.92	8.75	0.34	0.34
T. RIBUCCIANO	Ribucciano	200	Tr30 max Arb	17.50		17.50		171.79	174.92	173.60	175.06	0.003019	1.63	1.63	10.72	9.37	0.33	0.33
T. RIBUCCIANO	Ribucciano	200	Tr200 max Arb	26.40		26.40		171.79	176.17	173.97	176.31	0.001794	1.65	1.65	16.04	28.67	0.27	0.27
T. RIBUCCIANO	Ribucciano	100	Tr20 max Arb	16.00	0.44	15.55	0.01	171.28	174.71	172.51	174.73	0.000727	0.70	0.61	26.08	22.23	0.14	0.18
T. RIBUCCIANO	Ribucciano	100	Tr30 max Arb	17.50	0.96	16.51	0.02	171.28	174.90	172.58	174.93	0.000635	0.69	0.57	30.54	22.94	0.13	0.16
T. RIBUCCIANO	Ribucciano	100	Tr200 max Arb	26.40	5.37	20.58	0.45	171.28	176.19	172.90	176.21	0.000266	0.58	0.40	65.90	37.28	0.09	0.10
T. RIBUCCIANO	Ribucciano	90	Tr20 max Arb	16.00	0.63	15.34	0.03	171.17	174.69	172.50	174.71	0.000484	0.61	0.53	30.39	21.58	0.12	0.14
T. RIBUCCIANO	Ribucciano	90	Tr30 max Arb	17.50	0.99	16.45	0.06	171.17	174.89	172.56	174.91	0.000430	0.60	0.50	34.94	24.14	0.12	0.13
T. RIBUCCIANO	Ribucciano	90	Tr200 max Arb	26.40	4.83	21.14	0.43	171.17	176.19	172.87	176.20	0.000190	0.52	0.32	81.23	59.39	0.08	0.09

Ril02 max Arb Verifiche idrauliche T. Riluogo confluenza - moto permanente

T. RILUOGO Riluogo 2

T. RILUOGO Riluogo 1

Legend

- EG Tr200 max Arb
- WS Tr200 max Arb
- EG Tr30 max Arb
- EG Tr20 max Arb
- WS Tr30 max Arb
- WS Tr20 max Arb
- Crit Tr200 max Arb
- Crit Tr30 max Arb
- Crit Tr20 max Arb
- Ground

Elevation (m)

178
176
174
172
170
168
166
164

RL200
RL300
Ferrovia Siena Buonconvento Monte Antico
RL500
RL600
Traversa Romana Aretina N136
RL800
RL850
RL900
RL1000
RL1100

0
200
400
600
800
1000

Main Channel Distance (m)

Ril02 max Arb Verifiche idrauliche T. Riluogo confluenza - moto permanente

T. RILUOGO Riluogo 2

T. RIBUCCIANO Ribucciano

Legend

- EG Tr200 max Arb
- WS Tr200 max Arb
- EG Tr30 max Arb
- EG Tr20 max Arb
- WS Tr30 max Arb
- WS Tr20 max Arb
- Crit Tr200 max Arb
- Crit Tr30 max Arb
- Crit Tr20 max Arb
- Ground

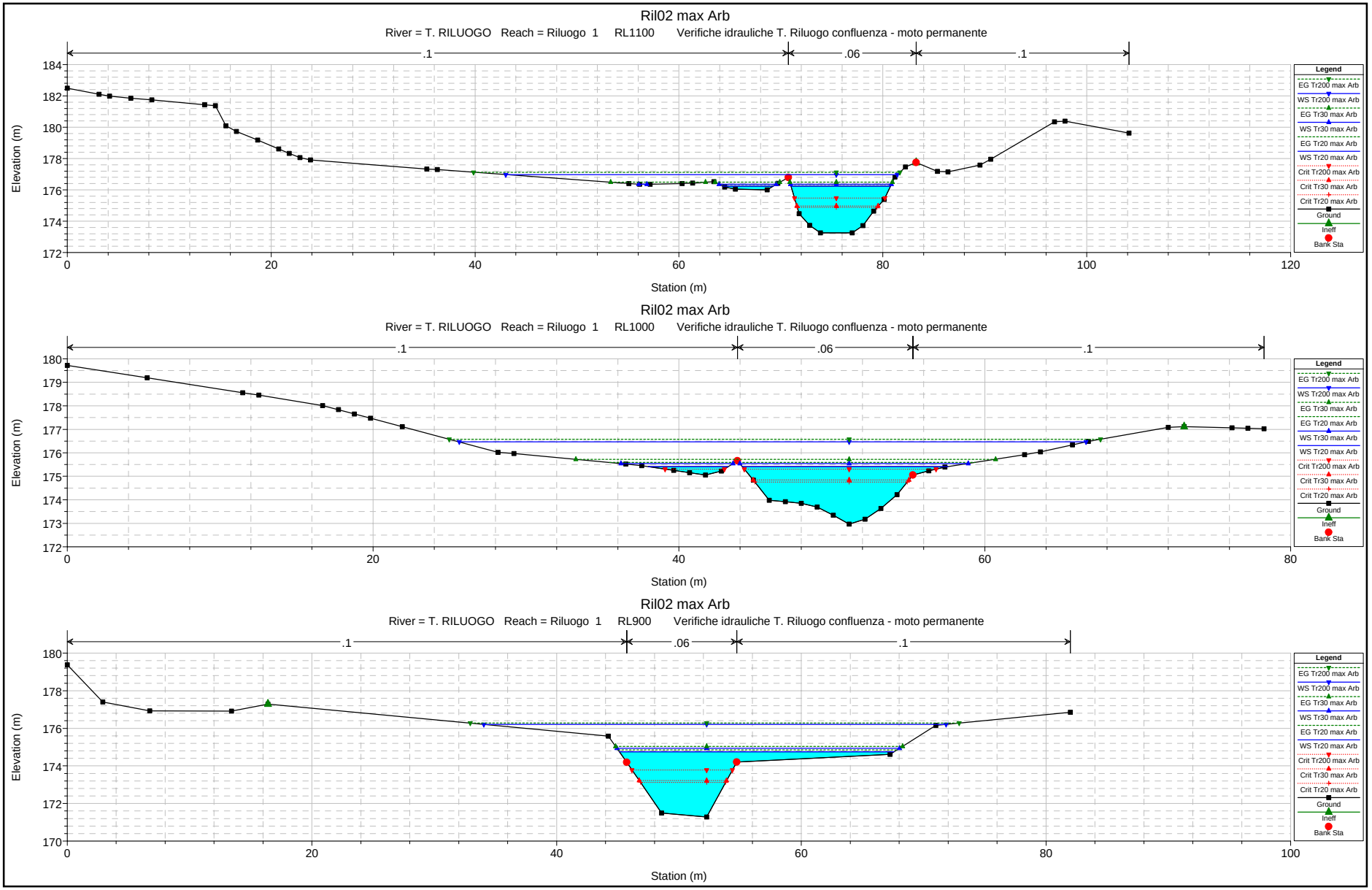
Elevation (m)

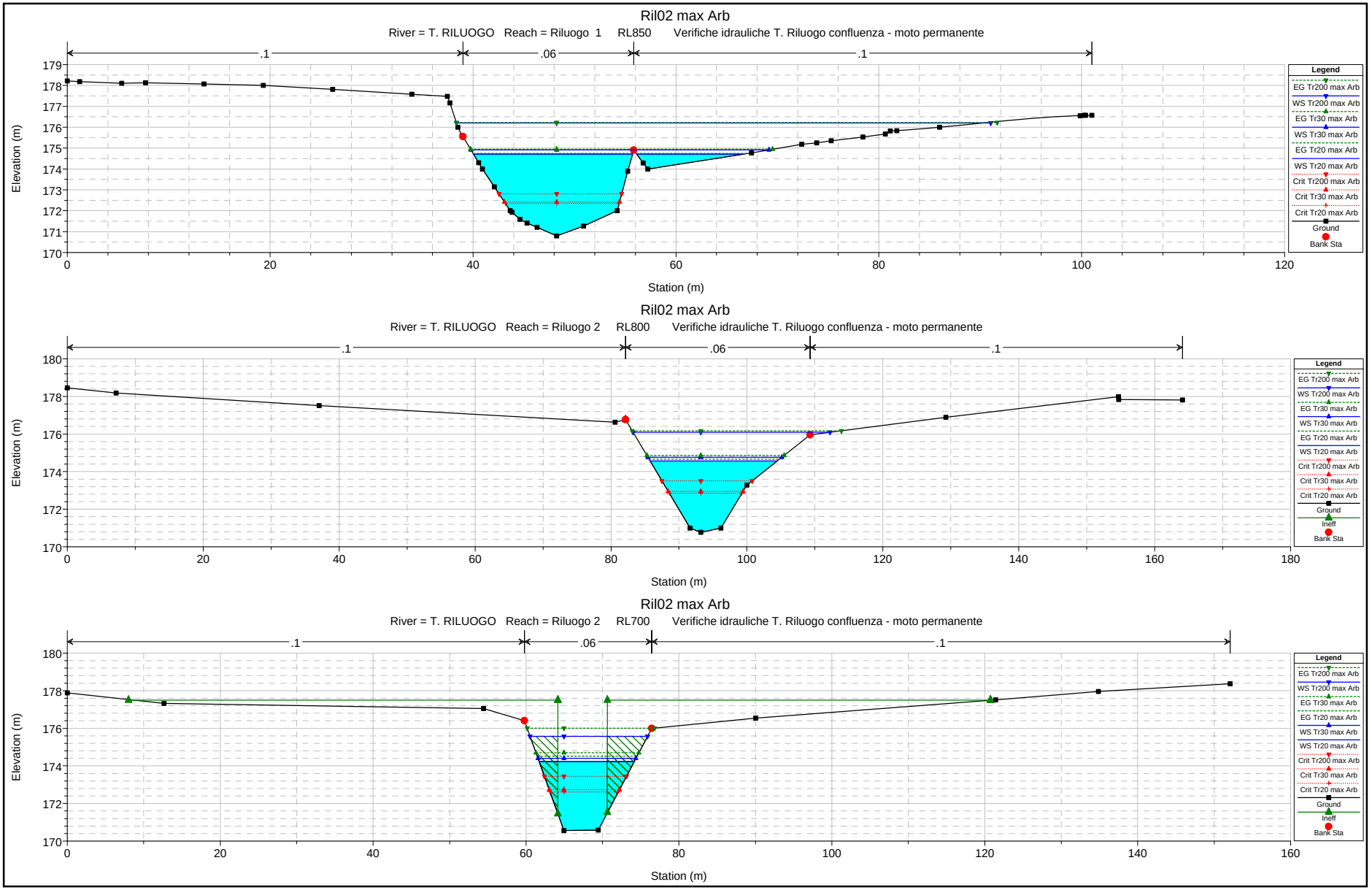
178
176
174
172
170
168
166
164

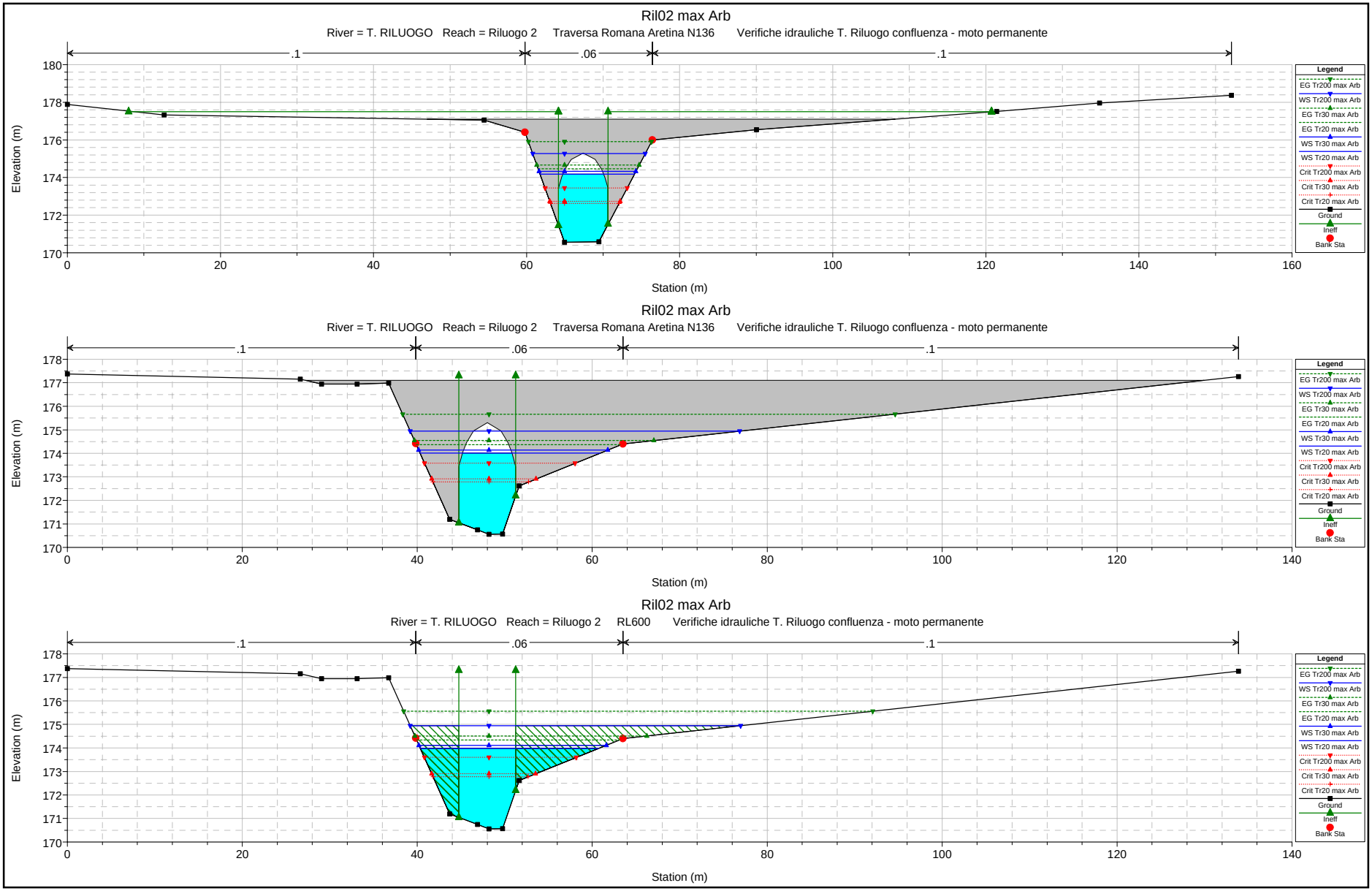
RL200
RL300
Ferrovia Siena Buonconvento Monte Antico
RL500
RL600
Traversa Romana Aretina N136
RL800
RB90
RB100
RB200
Strada di Ribucciano
RB400
RB500

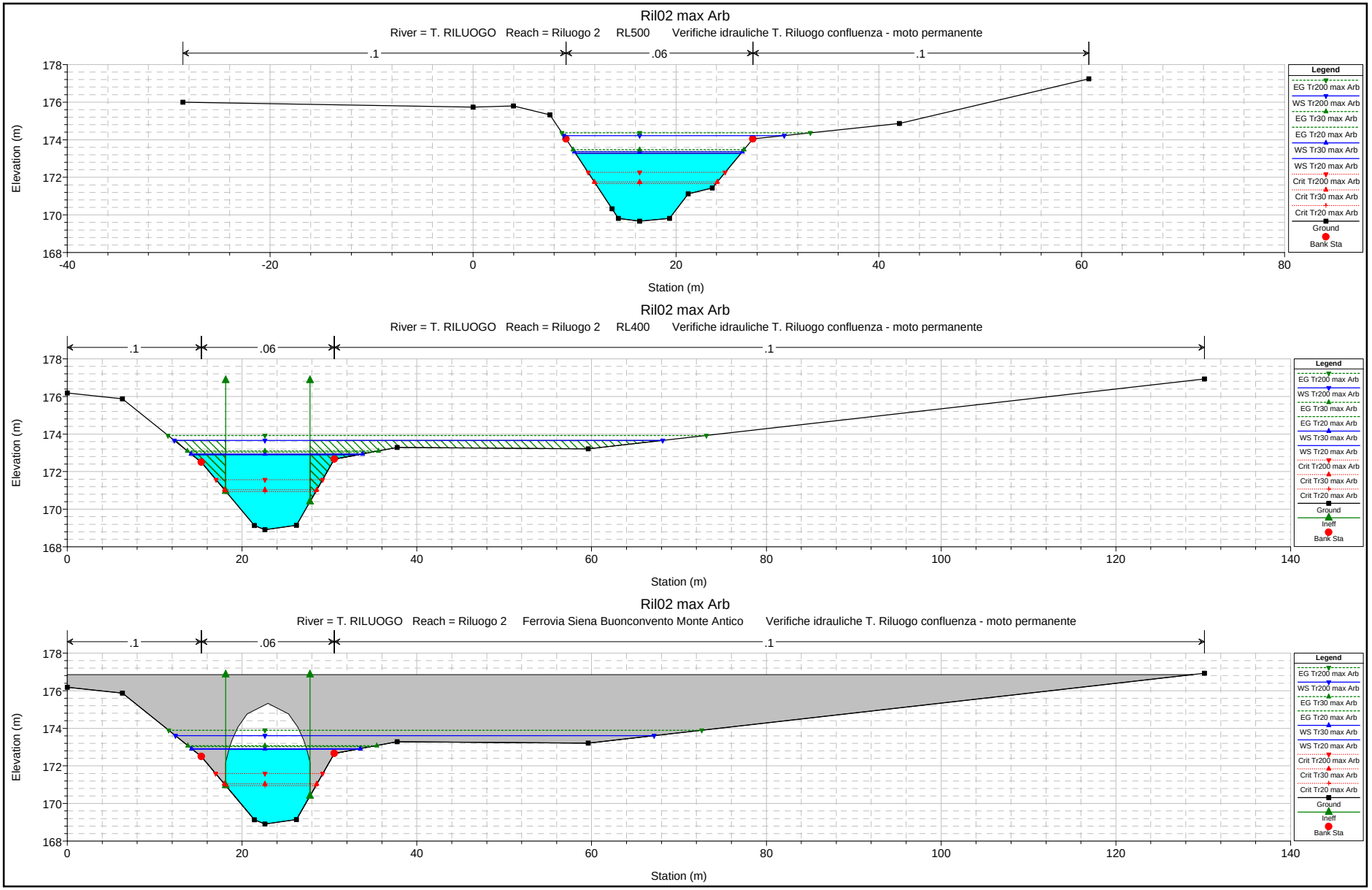
0
200
400
600
800
1000

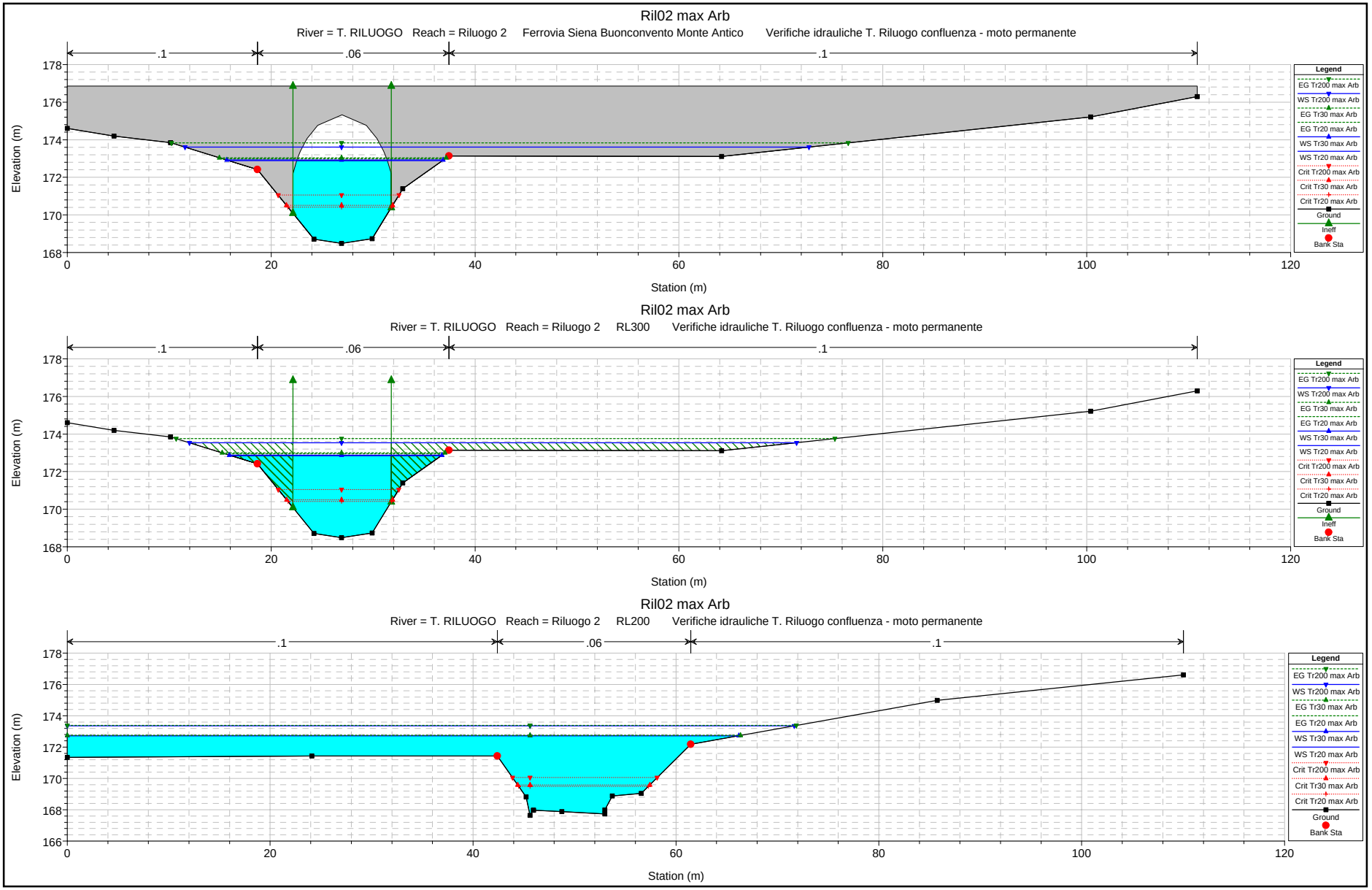
Main Channel Distance (m)

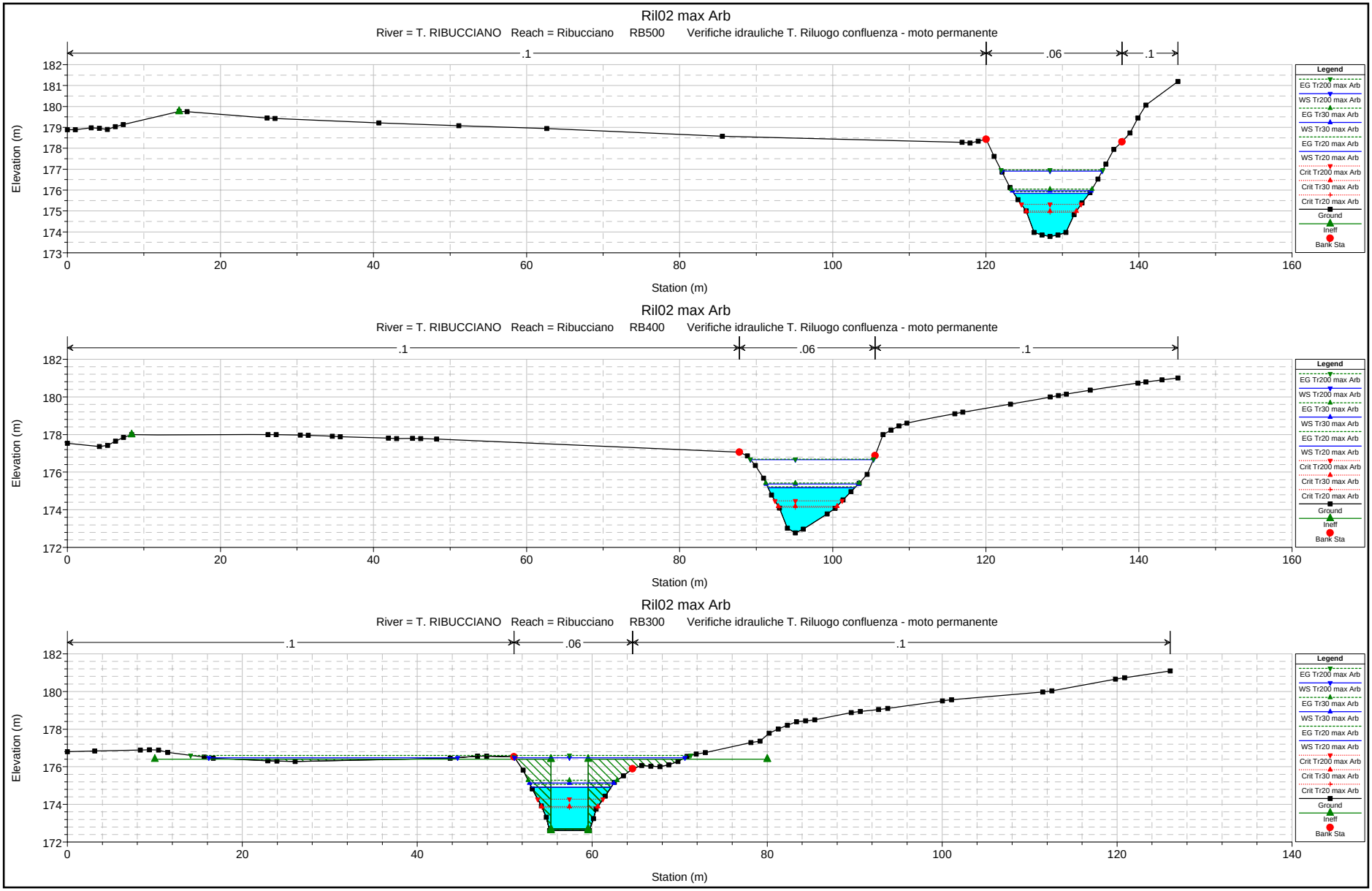

Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 1 RL1100 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 1 RL1000 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 1 RL900 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta

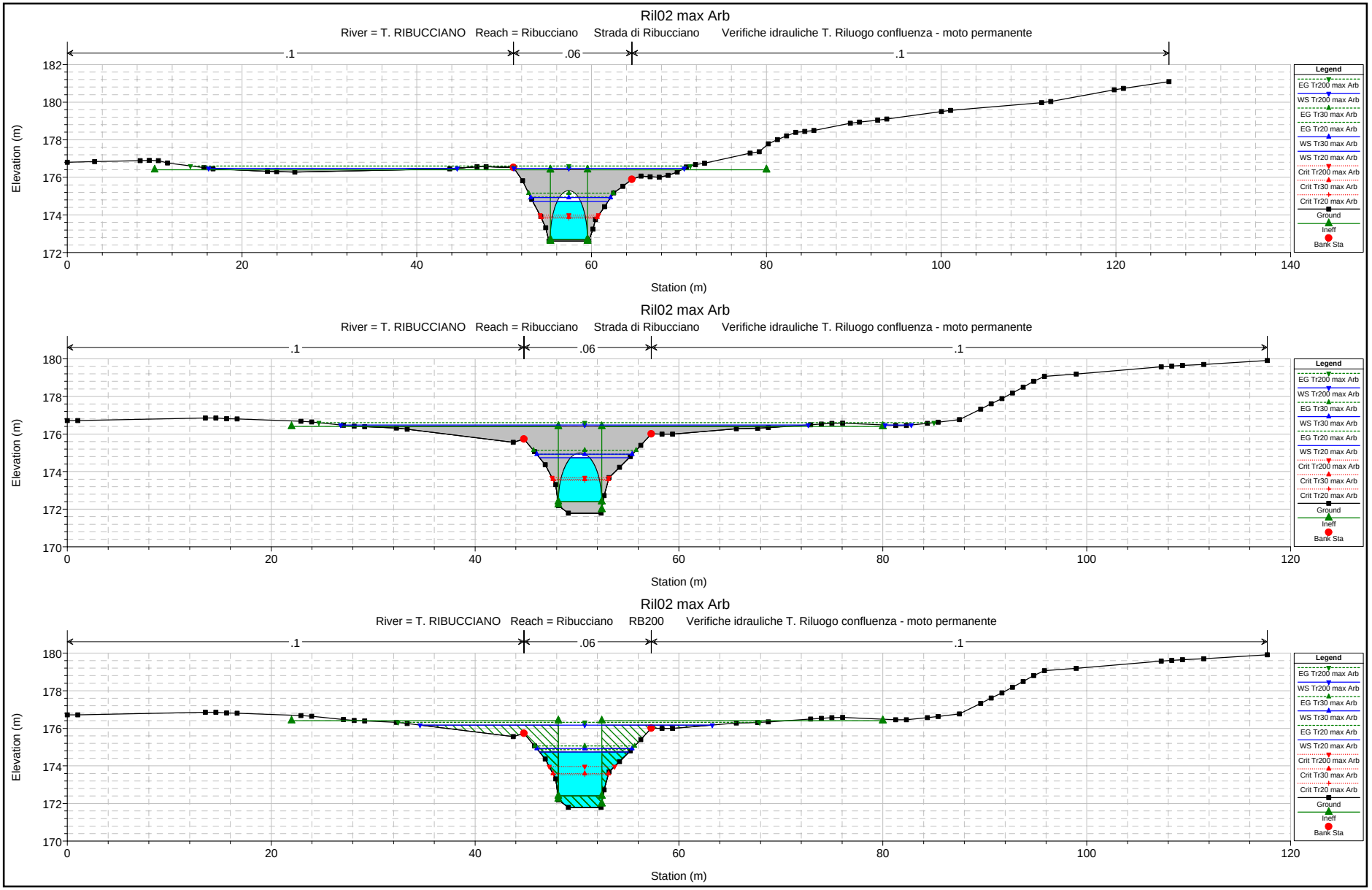

Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 1 RL850 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL800 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL700 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta

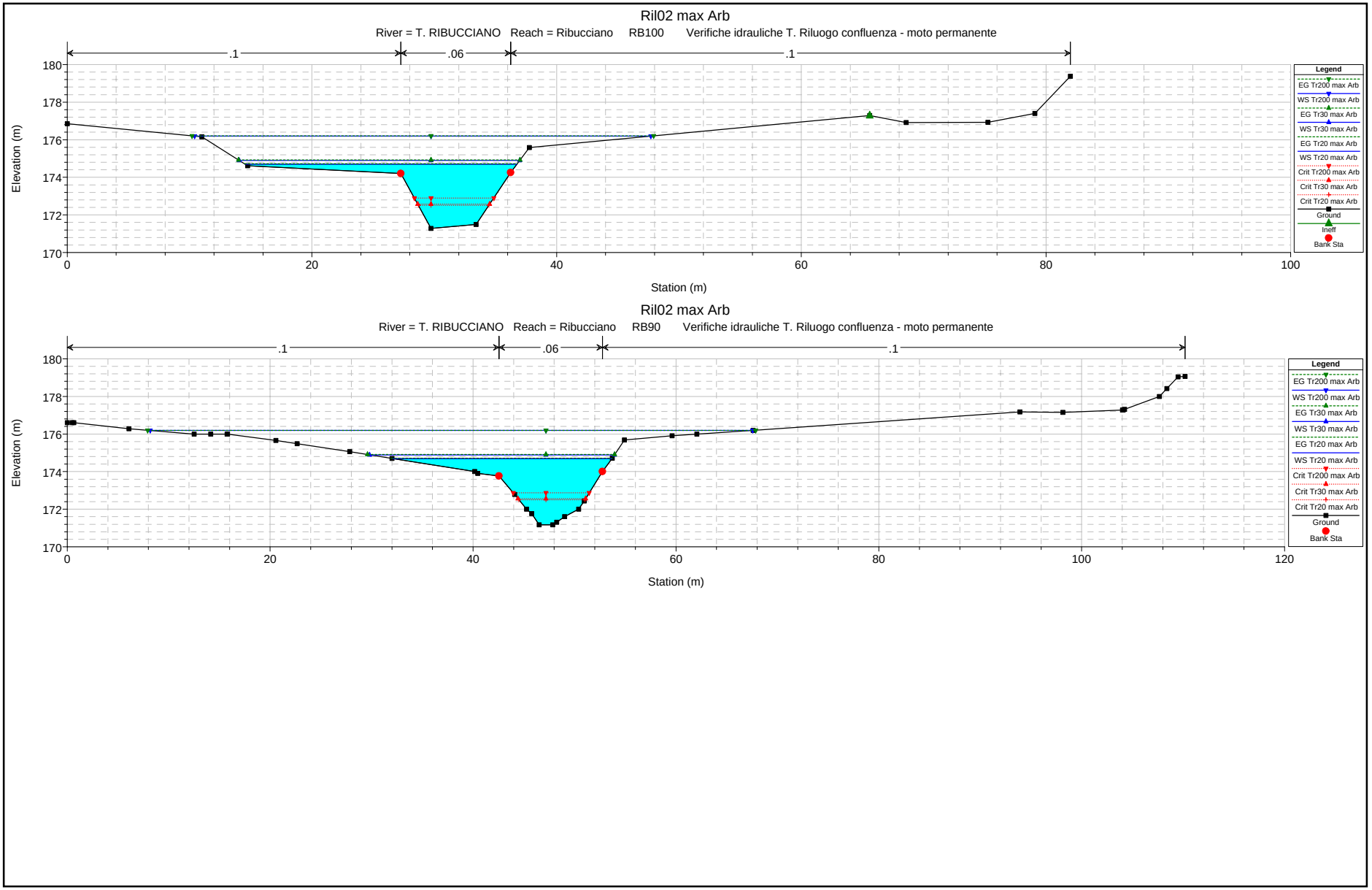

Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 Traversa Romana Aretina N136 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 Traversa Romana Aretina N136 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL600 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta


Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL500 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL400 Verifiche idrauliche T. Riluogo confluenza - moto permanente
Ineff
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 Ferrovia Siena Buonconvento Monte Antico Verifiche idrauliche T. Riluogo confluenza - moto permanente


Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 Ferrovia Siena Buonconvento Monte Antico Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL300 Verifiche idrauliche T. Riluogo confluenza - moto permanente
Ril02 max Arb
River = T. RILUOGO Reach = Riluogo 2 RL200 Verifiche idrauliche T. Riluogo confluenza - moto permanente


Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB500 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB400 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB300 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta


Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano Strada di Ribucciano Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
EG Tr20 max Arb
WS Tr30 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano Strada di Ribucciano Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB200 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta


Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB100 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Ineff
Bank Sta
Ril02 max Arb
River = T. RIBUCCIANO Reach = Ribucciano RB90 Verifiche idrauliche T. Riluogo confluenza - moto permanente
.1
.06
.1
Elevation (m)
Station (m)
Legend
EG Tr200 max Arb
WS Tr200 max Arb
EG Tr30 max Arb
WS Tr30 max Arb
EG Tr20 max Arb
WS Tr20 max Arb
Crit Tr200 max Arb
Crit Tr30 max Arb
Crit Tr20 max Arb
Ground
Bank Sta

ALLEGATI DI CALCOLO HEC-RAS 3.1.3

TRATTO RIL02 – TORRENTE RILUOGO

tabelle complete

HEC-RAS

River	Reach	River Sta	Profile	Plan	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
					(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RILUOGO	Riluogo 1	1100	Tr20 max Arb	Ril02 MA	33.20	0.17	33.03		173.25	176.23	174.88	176.35	0.003965	1.53	1.48	22.51	14.69	0.33	0.38
T. RILUOGO	Riluogo 1	1100	Tr30 max Arb	Ril02 MA	36.80	0.40	36.40		173.25	176.36	174.97	176.49	0.004130	1.59	1.51	24.40	16.34	0.33	0.39
T. RILUOGO	Riluogo 1	1100	Tr200 max Arb	Ril02 MA	58.70	5.83	52.87		173.25	176.98	175.47	177.13	0.004413	1.81	1.36	43.17	38.40	0.35	0.41
T. RILUOGO	Riluogo 1	1000	Tr20 max Arb	Ril02 MA	33.20	0.29	32.81	0.10	172.96	175.41	174.76	175.59	0.008298	1.90	1.78	18.64	18.67	0.49	0.57
T. RILUOGO	Riluogo 1	1000	Tr30 max Arb	Ril02 MA	36.80	0.63	35.93	0.24	172.96	175.54	174.85	175.73	0.007690	1.91	1.72	21.41	22.28	0.47	0.56
T. RILUOGO	Riluogo 1	1000	Tr200 max Arb	Ril02 MA	58.70	7.21	47.98	3.51	172.96	176.46	175.31	176.58	0.003173	1.63	1.13	52.08	41.00	0.33	0.32
T. RILUOGO	Riluogo 1	900	Tr20 max Arb	Ril02 MA	33.20	0.03	32.09	1.08	171.28	174.75	173.12	174.85	0.002870	1.41	1.22	27.13	22.43	0.28	0.36
T. RILUOGO	Riluogo 1	900	Tr30 max Arb	Ril02 MA	36.80	0.07	34.53	2.20	171.28	174.94	173.22	175.04	0.002592	1.41	1.16	31.59	23.12	0.27	0.32
T. RILUOGO	Riluogo 1	900	Tr200 max Arb	Ril02 MA	58.70	1.03	45.81	11.86	171.28	176.21	173.78	176.28	0.001277	1.28	0.88	66.68	37.80	0.20	0.21
T. RILUOGO	Riluogo 1	850	Tr20 max Arb	Ril02 MA	33.20		32.71	0.49	170.80	174.71	172.35	174.74	0.000698	0.77	0.72	46.35	26.25	0.15	0.17
T. RILUOGO	Riluogo 1	850	Tr30 max Arb	Ril02 MA	36.80		35.85	0.95	170.80	174.91	172.42	174.94	0.000685	0.78	0.71	51.92	29.38	0.15	0.17
T. RILUOGO	Riluogo 1	850	Tr200 max Arb	Ril02 MA	58.70	0.02	51.37	7.31	170.80	176.20	172.81	176.23	0.000419	0.76	0.57	103.06	52.65	0.12	0.13
T. RILUOGO	Riluogo 2	800	Tr20 max Arb	Ril02 MA	53.20		53.20		170.77	174.57	172.84	174.66	0.002771	1.35	1.35	39.31	18.69	0.30	0.30
T. RILUOGO	Riluogo 2	800	Tr20 max Rili	RIL02	112.20	0.06	110.72	1.43	170.77	176.80	173.82	176.87	0.001135	1.20	1.11	101.04	55.09	0.21	0.26
T. RILUOGO	Riluogo 2	800	Tr30 max Arb	Ril02 MA	58.60		58.60		170.77	174.77	172.95	174.86	0.002636	1.36	1.36	43.20	19.72	0.29	0.29
T. RILUOGO	Riluogo 2	800	Tr30 max Ril	RIL02	123.60	1.81	117.47	4.32	170.77	177.32	173.96	177.38	0.000795	1.10	0.89	139.60	92.90	0.18	0.23
T. RILUOGO	Riluogo 2	800	Tr200 max Arb	Ril02 MA	91.70		91.69	0.01	170.77	176.10	173.51	176.18	0.001556	1.24	1.24	74.11	28.99	0.24	0.25
T. RILUOGO	Riluogo 2	800	Tr200 max Ril	RIL02	193.40	19.80	152.83	20.76	170.77	178.46	174.71	178.51	0.000578	1.11	0.66	292.27	163.96	0.16	0.16
T. RILUOGO	Riluogo 2	700	Tr20 max Arb	Ril02 MA	53.20		53.20		170.56	174.23	172.61	174.51	0.004210	2.33	2.33	22.84	12.45	0.40	0.40
T. RILUOGO	Riluogo 2	700	Tr20 max Rili	RIL02	112.20		112.20		170.56	176.18	173.83	176.69	0.004306	3.16	3.16	35.50	21.15	0.43	0.43
T. RILUOGO	Riluogo 2	700	Tr30 max Arb	Ril02 MA	58.60		58.60		170.56	174.40	172.74	174.71	0.004378	2.45	2.45	23.92	12.81	0.41	0.41
T. RILUOGO	Riluogo 2	700	Tr30 max Ril	RIL02	123.60		123.60		170.56	176.69	174.03	177.20	0.003886	3.19	3.19	38.80	37.39	0.42	0.42
T. RILUOGO	Riluogo 2	700	Tr200 max Arb	Ril02 MA	91.70		91.70		170.56	175.58	173.45	176.01	0.004253	2.90	2.90	31.57	15.37	0.42	0.42
T. RILUOGO	Riluogo 2	700	Tr200 max Ril	RIL02	193.40	36.85	126.46	30.08	170.56	178.30	175.20	178.45	0.003665	2.06	1.07	180.00	149.23	0.34	0.31
T. RILUOGO	Riluogo 2	650 BR U	Tr20 max Arb	Ril02 MA	53.20		53.20		170.56	174.17	172.62	174.47	0.010345	2.41	2.41	22.05	5.34	0.41	0.41
T. RILUOGO	Riluogo 2	650 BR U	Tr20 max Rili	RIL02	112.20		112.20		170.56	175.56	173.77	176.51	0.043887	4.32	4.32	26.00		0.63	0.63
T. RILUOGO	Riluogo 2	650 BR U	Tr30 max Arb	Ril02 MA	58.60		58.60		170.56	174.33	172.74	174.66	0.011666	2.56	2.56	22.85	5.02	0.43	0.43
T. RILUOGO	Riluogo 2	650 BR U	Tr30 max Ril	RIL02	123.60		123.60		170.56	175.82	173.95	176.97	0.053258	4.75	4.75	26.00		0.67	0.67
T. RILUOGO	Riluogo 2	650 BR U	Tr200 max Arb	Ril02 MA	91.70		91.70		170.56	175.27	173.44	175.90	0.028737	3.53	3.53	25.99	0.28	0.53	0.53
T. RILUOGO	Riluogo 2	650 BR U	Tr200 max Ril	RIL02	193.40	57.79	84.75	50.86	170.56	178.30	174.72	178.40	0.008720	1.85	1.15	168.24	149.04	0.13	0.13
T. RILUOGO	Riluogo 2	650 BR D	Tr20 max Arb	Ril02 MA	53.20		53.20		170.56	174.01	172.78	174.36	0.013152	2.65	2.65	20.06	5.67	0.48	0.48
T. RILUOGO	Riluogo 2	650 BR D	Tr20 max Rili	RIL02	112.20		112.20		170.46	175.15	173.87	176.16	0.043791	4.46	4.46	25.14	1.38	0.69	0.69
T. RILUOGO	Riluogo 2	650 BR D	Tr30 max Arb	Ril02 MA	58.60		58.60		170.56	174.14	172.91	174.54	0.014725	2.82	2.82	20.80	5.41	0.50	0.50
T. RILUOGO	Riluogo 2	650 BR D	Tr30 max Ril	RIL02	123.60		123.60		170.46	175.31	174.04	176.53	0.058182	4.90	4.90	25.24		0.74	0.74
T. RILUOGO	Riluogo 2	650 BR D	Tr200 max Arb	Ril02 MA	91.70		91.70		170.56	174.94	173.58	175.66	0.027769	3.77	3.77	24.34	3.19	0.60	0.60
T. RILUOGO	Riluogo 2	650 BR D	Tr200 max Ril	RIL02	193.40	35.29	84.76	73.35	170.46	178.25	177.68	178.33	0.007104	1.62	1.11	174.21	133.87	0.13	0.13
T. RILUOGO	Riluogo 2	600	Tr20 max Arb	Ril02 MA	53.20		53.20		170.56	173.98	172.77	174.34	0.006432	2.64	2.64	20.13	20.38	0.48	0.48
T. RILUOGO	Riluogo 2	600	Tr20 max Rili	RIL02	112.20		112.20		170.46	175.18	173.94	175.99	0.009379	3.97	3.97	28.25	43.86	0.61	0.61
T. RILUOGO	Riluogo 2	600	Tr30 max Arb	Ril02 MA	58.60		58.60		170.56	174.11	172.90	174.51	0.006788	2.79	2.79	21.00	21.42	0.50	0.50
T. RILUOGO	Riluogo 2	600	Tr30 max Ril	RIL02	123.60		123.60		170.46	175.38	174.16	176.27	0.009776	4.18	4.18	29.57	49.09	0.63	0.63
T. RILUOGO	Riluogo 2	600	Tr200 max Arb	Ril02 MA	91.70		91.70		170.56	174.95	173.60	175.56	0.007736	3.47	3.47	26.41	37.77	0.55	0.55
T. RILUOGO	Riluogo 2	600	Tr200 max Ril	RIL02	193.40		193.40		170.46	176.50	175.31	177.91	0.011523	5.25	5.25	36.82	77.86	0.70	0.70
T. RILUOGO	Riluogo 2	500	Tr20 max Arb	Ril02 MA	53.20		53.20		169.67	173.27	171.67	173.37	0.002815	1.42	1.42	37.56	16.30	0.30	0.30
T. RILUOGO	Riluogo 2	500	Tr20 max Rili	RIL02	112.20	0.00	112.15	0.05	169.67	174.25	172.53	174.46	0.004266	2.05	2.04	55.07	22.20	0.38	0.41
T. RILUOGO	Riluogo 2	500	Tr30 max Arb	Ril02 MA	58.60		58.60		169.67	173.36	171.76	173.48	0.003063	1.50	1.50	39.06	16.55	0.31	0.31
T. RILUOGO	Riluogo 2	500	Tr30 max Ril	RIL02	123.60	0.02	123.21	0.36	169.67	174.48	172.68	174.70	0.004020	2.09	2.04	60.64	26.56	0.37	0.43
T. RILUOGO	Riluogo 2	500	Tr200 max Arb	Ril02 MA	91.70	0.00	91.67	0.03	169.67	174.22	172.26	174.37	0.002929	1.69	1.68	54.54	21.74	0.31	0.34
T. RILUOGO	Riluogo 2	500	Tr200 max Ril	RIL02	193.40	0.53	180.42	12.45	169.67	175.81	173.41	176.04	0.002687	2.16	1.76	109.97	57.66	0.32	0.41

HEC-RAS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
					(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RILUOGO	Riluogo 2	400	Tr20 max Arb	Ril02 MA	53.20		53.20		168.91	172.90	170.94	173.04	0.002069	1.61	1.61	32.95	19.12	0.28	0.28
T. RILUOGO	Riluogo 2	400	Tr20 max Rili	RIL02	112.20		112.20		168.91	173.11	171.87	173.63	0.007595	3.21	3.21	34.90	22.01	0.54	0.54
T. RILUOGO	Riluogo 2	400	Tr30 max Arb	Ril02 MA	58.60		58.60		168.91	172.94	171.03	173.10	0.002427	1.76	1.76	33.28	19.61	0.30	0.30
T. RILUOGO	Riluogo 2	400	Tr30 max Ril	RIL02	123.60		123.60		168.91	173.31	172.03	173.88	0.007669	3.35	3.35	36.88	48.36	0.55	0.55
T. RILUOGO	Riluogo 2	400	Tr200 max Arb	Ril02 MA	91.70		91.70		168.91	173.66	171.57	173.92	0.003157	2.28	2.28	40.24	55.89	0.36	0.36
T. RILUOGO	Riluogo 2	400	Tr200 max Ril	RIL02	193.40		193.40		168.91	174.52	172.94	175.33	0.007516	3.98	3.98	48.54	74.50	0.57	0.57
T. RILUOGO	Riluogo 2	350 BR U	Tr20 max Arb	Ril02 MA	53.20		53.20		168.91	172.89	170.95	173.02	0.003499	1.64	1.64	32.52	8.89	0.28	0.28
T. RILUOGO	Riluogo 2	350 BR U	Tr20 max Rili	RIL02	112.20		112.20		168.91	173.00	171.89	173.57	0.014443	3.35	3.35	33.48	8.75	0.57	0.57
T. RILUOGO	Riluogo 2	350 BR U	Tr30 max Arb	Ril02 MA	58.60		58.60		168.91	172.92	171.04	173.08	0.004155	1.79	1.79	32.79	8.86	0.31	0.31
T. RILUOGO	Riluogo 2	350 BR U	Tr30 max Ril	RIL02	123.60		123.60		168.91	173.18	172.05	173.81	0.015620	3.53	3.53	35.06	8.48	0.59	0.59
T. RILUOGO	Riluogo 2	350 BR U	Tr200 max Arb	Ril02 MA	91.70		91.70		168.91	173.61	171.59	173.90	0.006865	2.38	2.38	38.55	7.75	0.37	0.37
T. RILUOGO	Riluogo 2	350 BR U	Tr200 max Ril	RIL02	193.40		193.40		168.91	174.12	172.87	175.19	0.025100	4.57	4.57	42.28	6.67	0.68	0.68
T. RILUOGO	Riluogo 2	350 BR D	Tr20 max Arb	Ril02 MA	53.20		53.20		168.49	172.89	170.42	172.99	0.002338	1.41	1.41	37.64	8.89	0.23	0.23
T. RILUOGO	Riluogo 2	350 BR D	Tr20 max Rili	RIL02	112.20		112.20		168.49	173.00	171.36	173.43	0.009728	2.90	2.90	38.67	8.74	0.46	0.46
T. RILUOGO	Riluogo 2	350 BR D	Tr30 max Arb	Ril02 MA	58.60		58.60		168.49	172.92	170.51	173.04	0.002785	1.55	1.55	37.92	8.86	0.25	0.25
T. RILUOGO	Riluogo 2	350 BR D	Tr30 max Ril	RIL02	123.60		123.60		168.49	173.19	171.52	173.67	0.010718	3.07	3.07	40.24	8.47	0.48	0.48
T. RILUOGO	Riluogo 2	350 BR D	Tr200 max Arb	Ril02 MA	91.70		91.70		168.49	173.61	171.05	173.83	0.004888	2.10	2.10	43.67	7.75	0.31	0.31
T. RILUOGO	Riluogo 2	350 BR D	Tr200 max Ril	RIL02	193.40		193.40		168.49	174.12	172.38	174.97	0.018420	4.08	4.08	47.36	6.69	0.57	0.57
T. RILUOGO	Riluogo 2	300	Tr20 max Arb	Ril02 MA	53.20		53.20		168.49	172.85	170.41	172.95	0.001359	1.42	1.42	37.54	20.63	0.23	0.23
T. RILUOGO	Riluogo 2	300	Tr20 max Rili	RIL02	112.20		112.20		168.49	172.79	171.35	173.26	0.006384	3.04	3.04	36.93	20.09	0.50	0.50
T. RILUOGO	Riluogo 2	300	Tr30 max Arb	Ril02 MA	58.60		58.60		168.49	172.87	170.51	173.00	0.001616	1.55	1.55	37.77	20.83	0.25	0.25
T. RILUOGO	Riluogo 2	300	Tr30 max Ril	RIL02	123.60		123.60		168.49	172.95	171.51	173.48	0.006724	3.21	3.21	38.53	21.51	0.51	0.51
T. RILUOGO	Riluogo 2	300	Tr200 max Arb	Ril02 MA	91.70		91.70		168.49	173.54	171.04	173.76	0.002347	2.08	2.08	44.18	59.55	0.31	0.31
T. RILUOGO	Riluogo 2	300	Tr200 max Ril	RIL02	193.40		193.40		168.49	173.83	172.40	174.69	0.008489	4.11	4.11	47.00	66.31	0.60	0.60
T. RILUOGO	Riluogo 2	200	Tr20 max Arb	Ril02 MA	53.20	11.32	41.78	0.09	167.64	172.73	169.50	172.74	0.000295	0.60	0.42	126.63	66.21	0.10	0.10
T. RILUOGO	Riluogo 2	200	Tr20 max Rili	RIL02	112.20	7.30	104.90		167.64	171.85	170.31	172.04	0.004459	1.99	1.57	71.63	60.95	0.38	0.46
T. RILUOGO	Riluogo 2	200	Tr30 max Arb	Ril02 MA	58.60	12.47	46.03	0.10	167.64	172.73	169.58	172.75	0.000357	0.66	0.46	126.63	66.21	0.11	0.11
T. RILUOGO	Riluogo 2	200	Tr30 max Ril	RIL02	123.60	13.24	110.36		167.64	172.07	170.44	172.24	0.003949	1.94	1.46	84.86	61.29	0.36	0.40
T. RILUOGO	Riluogo 2	200	Tr200 max Arb	Ril02 MA	91.70	25.67	65.16	0.86	167.64	173.36	170.06	173.38	0.000421	0.80	0.54	170.06	71.66	0.12	0.11
T. RILUOGO	Riluogo 2	200	Tr200 max Ril	RIL02	193.40	49.58	142.72	1.10	167.64	173.11	171.16	173.24	0.002474	1.86	1.27	152.22	69.47	0.30	0.27
T. RIBUCCIANO	Ribucciano	500	Tr20 max Arb	Ril02 MA	16.00		16.00		173.78	175.84	174.93	175.92	0.004587	1.25	1.25	12.84	9.87	0.35	0.35
T. RIBUCCIANO	Ribucciano	500	Tr20 max Rili	RIL02	34.60		34.60		173.78	177.28	175.56	177.35	0.002059	1.14	1.14	30.26	14.21	0.25	0.25
T. RIBUCCIANO	Ribucciano	500	Tr30 max Arb	Ril02 MA	17.50		17.50		173.78	175.97	175.00	176.04	0.004266	1.24	1.24	14.09	10.30	0.34	0.34
T. RIBUCCIANO	Ribucciano	500	Tr30 max Ril	RIL02	38.20		38.20		173.78	177.63	175.66	177.69	0.001641	1.08	1.08	35.37	15.20	0.23	0.23
T. RIBUCCIANO	Ribucciano	500	Tr200 max Arb	Ril02 MA	26.40		26.40		173.78	176.90	175.32	176.96	0.002000	1.05	1.05	25.09	13.13	0.24	0.24
T. RIBUCCIANO	Ribucciano	500	Tr200 max Ril	RIL02	56.70	0.89	55.80	0.01	173.78	178.64	176.07	178.69	0.001177	1.07	0.95	59.96	56.82	0.20	0.29
T. RIBUCCIANO	Ribucciano	400	Tr20 max Arb	Ril02 MA	16.00		16.00		172.77	175.17	174.13	175.22	0.002856	1.03	1.03	15.56	11.33	0.28	0.28
T. RIBUCCIANO	Ribucciano	400	Tr20 max Rili	RIL02	34.60		34.60	0.00	172.77	177.03	174.69	177.06	0.000879	0.82	0.82	42.28	17.68	0.17	0.17
T. RIBUCCIANO	Ribucciano	400	Tr30 max Arb	Ril02 MA	17.50		17.50		172.77	175.37	174.19	175.42	0.002310	0.97	0.97	17.96	12.05	0.25	0.25
T. RIBUCCIANO	Ribucciano	400	Tr30 max Ril	RIL02	38.20	0.33	37.85	0.01	172.77	177.44	174.77	177.47	0.000628	0.76	0.71	53.71	42.54	0.15	0.20
T. RIBUCCIANO	Ribucciano	400	Tr200 max Arb	Ril02 MA	26.40		26.40		172.77	176.66	174.47	176.69	0.000765	0.73	0.73	36.20	16.04	0.15	0.15
T. RIBUCCIANO	Ribucciano	400	Tr200 max Ril	RIL02	56.70	11.83	44.70	0.17	172.77	178.53	175.16	178.55	0.000291	0.65	0.39	147.24	109.14	0.10	0.11
T. RIBUCCIANO	Ribucciano	300	Tr20 max Arb	Ril02 MA	16.00		16.00		172.61	174.91	173.83	175.06	0.003608	1.70	1.70	9.41	9.11	0.36	0.36
T. RIBUCCIANO	Ribucciano	300	Tr20 max Rili	RIL02	34.60	5.47	27.89	1.24	172.61	176.93	174.58	176.99	0.003427	1.22	0.83	41.93	74.68	0.30	0.30
T. RIBUCCIANO	Ribucciano	300	Tr30 max Arb	Ril02 MA	17.50		17.50		172.61	175.14	173.89	175.28	0.003140	1.69	1.69	10.35	9.66	0.35	0.35
T. RIBUCCIANO	Ribucciano	300	Tr30 max Ril	RIL02	38.20	10.20	25.37	2.63	172.61	177.40	174.71	177.43	0.001249	0.87	0.56	68.75	79.29	0.19	0.16
T. RIBUCCIANO	Ribucciano	300	Tr200 max Arb	Ril02 MA	26.40	0.22	26.10	0.07	172.61	176.48	174.27	176.60	0.008353	1.56	1.40	18.87	47.91	0.44	0.71
T. RIBUCCIANO	Ribucciano	300	Tr200 max Ril	RIL02	56.70	22.37	27.66	6.67	172.61	178.52	175.32	178.53	0.000370	0.62	0.36	157.75	85.68	0.11	0.08
T. RIBUCCIANO	Ribucciano	250	Tr20 max Arb	Ril02 MA	16.00														
T. RIBUCCIANO	Ribucciano	250	Tr20 max Rili	RIL02	34.60														

HEC-RAS (Continued)

River	Reach	River Sta	Profile	Plan	Q Total	Q Left	Q Channel	Q Right	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Vel Total	Flow Area	Top Width	Froude # Chl	Froude # XS
					(m3/s)	(m3/s)	(m3/s)	(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m/s)	(m2)	(m)		
T. RIBUCCIANO	Ribucciano	250	Tr30 max Arb	Ril02 MA	17.50														
T. RIBUCCIANO	Ribucciano	250	Tr30 max Ril	RIL02	38.20														
T. RIBUCCIANO	Ribucciano	250	Tr200 max Arb	Ril02 MA	26.40														
T. RIBUCCIANO	Ribucciano	250	Tr200 max Ril	RIL02	56.70														
T. RIBUCCIANO	Ribucciano	200	Tr20 max Arb	Ril02 MA	16.00		16.00		171.79	174.74	173.53	174.87	0.003266	1.61	1.61	9.92	8.75	0.34	0.34
T. RIBUCCIANO	Ribucciano	200	Tr20 max Rili	RIL02	34.60	3.50	26.88	4.21	171.79	176.93	174.28	176.98	0.002829	1.14	0.67	51.46	88.11	0.26	0.28
T. RIBUCCIANO	Ribucciano	200	Tr30 max Arb	Ril02 MA	17.50		17.50		171.79	174.92	173.60	175.06	0.003019	1.63	1.63	10.72	9.37	0.33	0.33
T. RIBUCCIANO	Ribucciano	200	Tr30 max Ril	RIL02	38.20	8.87	21.58	7.75	171.79	177.41	174.41	177.42	0.000859	0.73	0.41	93.98	89.88	0.15	0.13
T. RIBUCCIANO	Ribucciano	200	Tr200 max Arb	Ril02 MA	26.40		26.40		171.79	176.17	173.97	176.31	0.001794	1.65	1.65	16.04	28.67	0.27	0.27
T. RIBUCCIANO	Ribucciano	200	Tr200 max Ril	RIL02	56.70	19.69	21.52	15.49	171.79	178.52	175.02	178.53	0.000236	0.49	0.29	196.34	93.82	0.08	0.06
T. RIBUCCIANO	Ribucciano	100	Tr20 max Arb	Ril02 MA	16.00	0.44	15.55	0.01	171.28	174.71	172.51	174.73	0.000727	0.70	0.61	26.08	22.23	0.14	0.18
T. RIBUCCIANO	Ribucciano	100	Tr20 max Rili	RIL02	34.60	7.91	24.67	2.01	171.28	176.88	173.17	176.90	0.000224	0.59	0.35	99.29	59.02	0.09	0.09
T. RIBUCCIANO	Ribucciano	100	Tr30 max Arb	Ril02 MA	17.50	0.96	16.51	0.02	171.28	174.90	172.58	174.93	0.000635	0.69	0.57	30.54	22.94	0.13	0.16
T. RIBUCCIANO	Ribucciano	100	Tr30 max Ril	RIL02	38.20	10.42	24.04	3.75	171.28	177.39	173.27	177.40	0.000151	0.52	0.28	135.91	79.00	0.07	0.07
T. RIBUCCIANO	Ribucciano	100	Tr200 max Arb	Ril02 MA	26.40	5.37	20.58	0.45	171.28	176.19	172.90	176.21	0.000266	0.58	0.40	65.90	37.28	0.09	0.10
T. RIBUCCIANO	Ribucciano	100	Tr200 max Ril	RIL02	56.70	17.21	26.91	12.58	171.28	178.51	173.74	178.52	0.000098	0.48	0.25	225.71	80.73	0.06	0.05
T. RIBUCCIANO	Ribucciano	90	Tr20 max Arb	Ril02 MA	16.00	0.63	15.34	0.03	171.17	174.69	172.50	174.71	0.000484	0.61	0.53	30.39	21.58	0.12	0.14
T. RIBUCCIANO	Ribucciano	90	Tr20 max Rili	RIL02	34.60	9.33	23.27	2.00	171.17	176.88	173.11	176.89	0.000135	0.49	0.26	132.70	85.99	0.07	0.07
T. RIBUCCIANO	Ribucciano	90	Tr30 max Arb	Ril02 MA	17.50	0.99	16.45	0.06	171.17	174.89	172.56	174.91	0.000430	0.60	0.50	34.94	24.14	0.12	0.13
T. RIBUCCIANO	Ribucciano	90	Tr30 max Ril	RIL02	38.20	12.23	22.28	3.69	171.17	177.39	173.21	177.39	0.000088	0.42	0.21	181.00	104.61	0.06	0.05
T. RIBUCCIANO	Ribucciano	90	Tr200 max Arb	Ril02 MA	26.40	4.83	21.14	0.43	171.17	176.19	172.87	176.20	0.000190	0.52	0.32	81.23	59.39	0.08	0.09
T. RIBUCCIANO	Ribucciano	90	Tr200 max Ril	RIL02	56.70	20.26	24.59	11.85	171.17	178.51	173.63	178.52	0.000056	0.38	0.19	301.37	108.56	0.05	0.04

HEC-RAS

River	Reach	River Sta	Profile	Plan	E.G. US.	W.S. US.	E.G. IC	E.G. OC	Min El Weir Flow	Q Culv Group	Q Weir	Delta WS	Culv Vel US	Culv Vel DS
					(m)	(m)	(m)	(m)	(m)	(m3/s)	(m3/s)	(m)	(m/s)	(m/s)
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr20 max Arb	Ril02 MA	175.06	174.91	174.48	175.06	176.40	16.00		0.18	2.10	1.92
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr20 max Rili	RIL02	177.00	176.93	176.43	177.00	176.40	6.04	28.56	0.00	0.70	0.70
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr30 max Arb	Ril02 MA	175.28	175.14	174.61	175.28	176.40	17.50		0.21	2.15	2.03
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr30 max Ril	RIL02	177.43	177.40	176.86	177.43	176.40	4.09	34.11	0.00	0.47	0.47
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr200 max Arb	Ril02 MA	176.60	176.48	175.39	176.60	176.40	19.53	6.87	0.31	2.25	2.25
T. RIBUCCIANO	Ribucciano	250 Culvert #1	Tr200 max Ril	RIL02	178.53	178.52	178.51	178.53	176.40	3.19	53.51	0.00	0.37	0.37