



# COMUNE DI AREZZO

## Assessorato Urbanistica

Servizio Pianificazione Urbanistica e Governo del Territorio

Piano Strutturale  
2019



PS  
PS

## B Quadro conoscitivo

### B1 Relazione illustrativa - Indagini geologiche e idrauliche

**Sindaco**  
Alessandro Ghinelli

**Assessore all'Urbanistica**  
Marco Sacchetti

**Responsabile del Procedimento**  
Ing. Paolo Frescucci

RTI Raggruppamento Temporaneo di Professionisti

**Studio D:RH Architetti associati**

*Arch. Sergio Dinale*

**Criteria srl**

*Arch. Paolo Falqui*

**Arch. Luca Di Figlia**

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

**Avv. Agostino Zanelli Quarantini**

# B1.2.1e

## Settore Sud1 - Fascicolo delle sezioni e profili idraulici

Garante dell'informazione e della partecipazione

**Dott.ssa Daniela Farsetti**

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

Dirigente Servizio Ambiente  
**Ing. Giovanni Baldini**

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

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

Direttore Ufficio Mobilità  
**Ing. Roberto Bernardini**

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

Direttore Ufficio Edilizia  
**Geom. Gianna Pezuoli**

**Ufficio del Piano**

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

**Gruppo di progettazione**

**Studio D:RH Architetti associati**

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

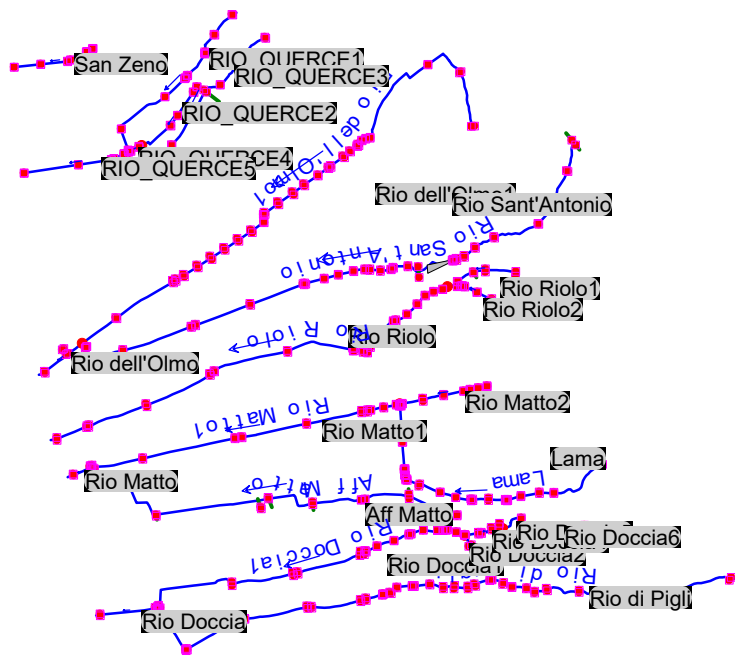
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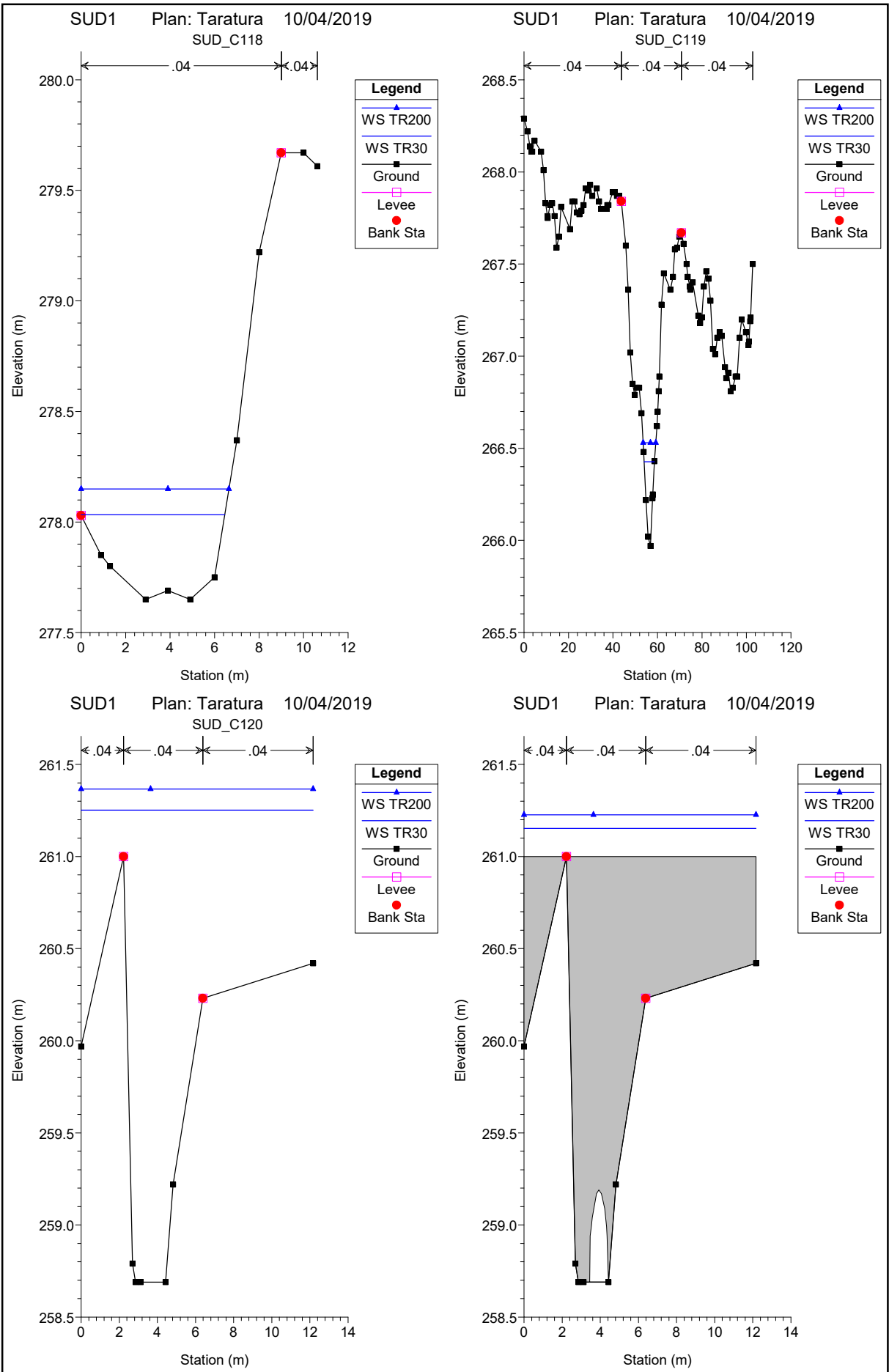
Arch. Paolo Falqui  
Ing. Paolo Bagliani  
Ing. Roberto Ledda  
Biol. Patrizia Carla Sechi  
Geol. Andrea Soriga  
Arch. Laura Zanini  
Dott.ssa Giulia Cubadda  
Dott. Riccardo Frau  
Arch. Veronica Saddi  
Ing. Gianfilippo Serra  
Dott. Vittorio Serra  
Dott.ssa Cinzia Marcella Orrù  
Arch. Salvatore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

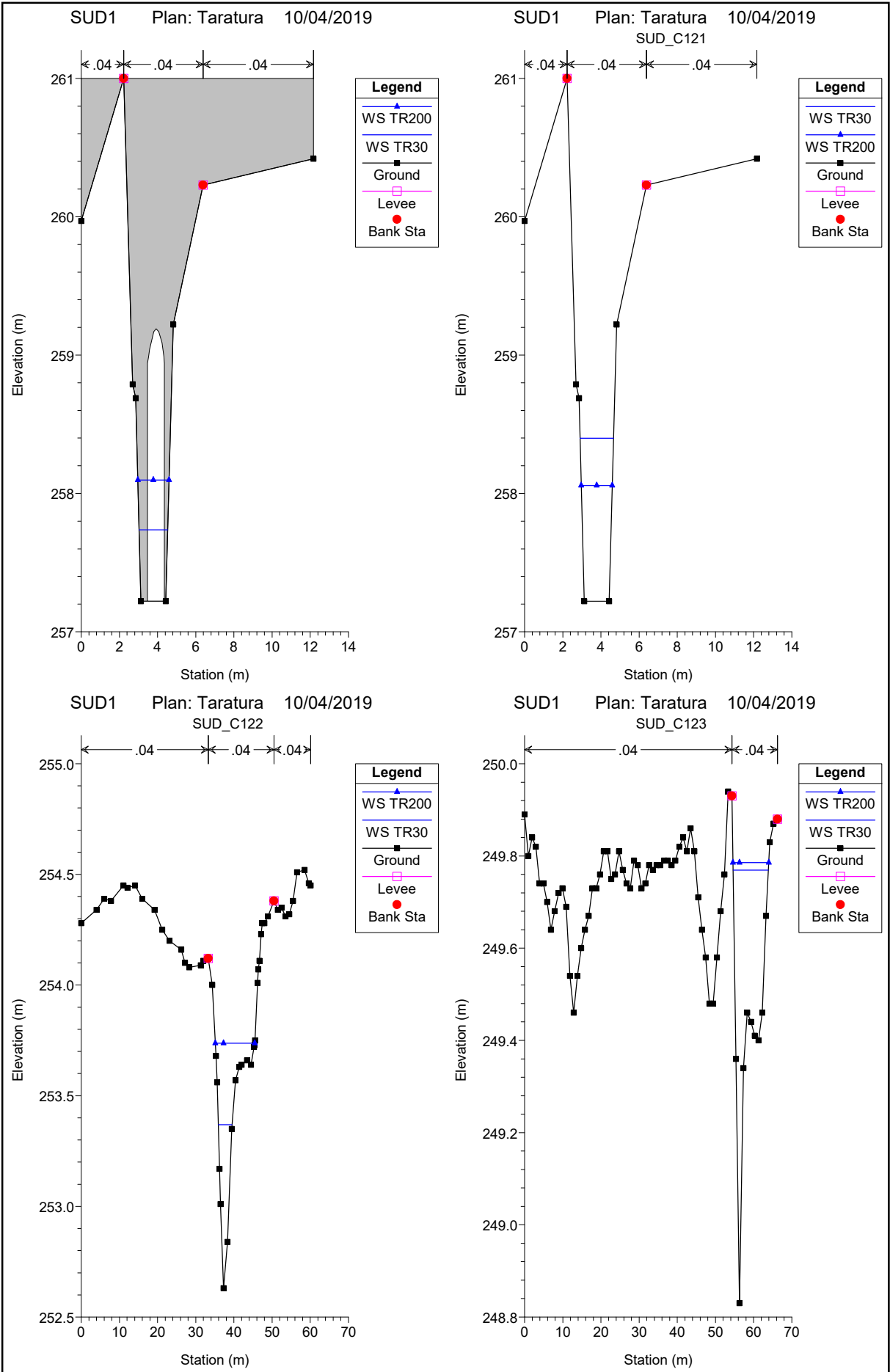
**Indagini geologiche e idrauliche**

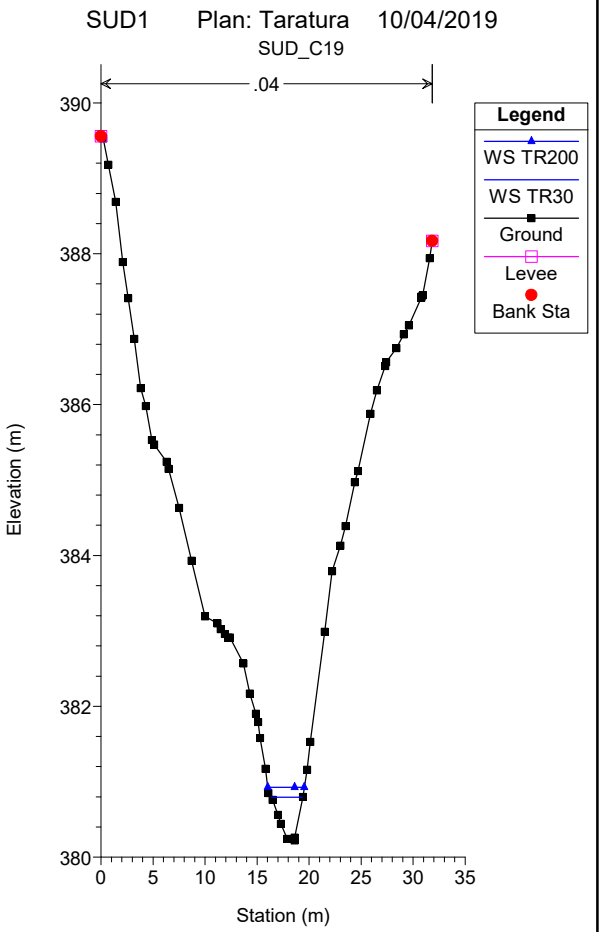
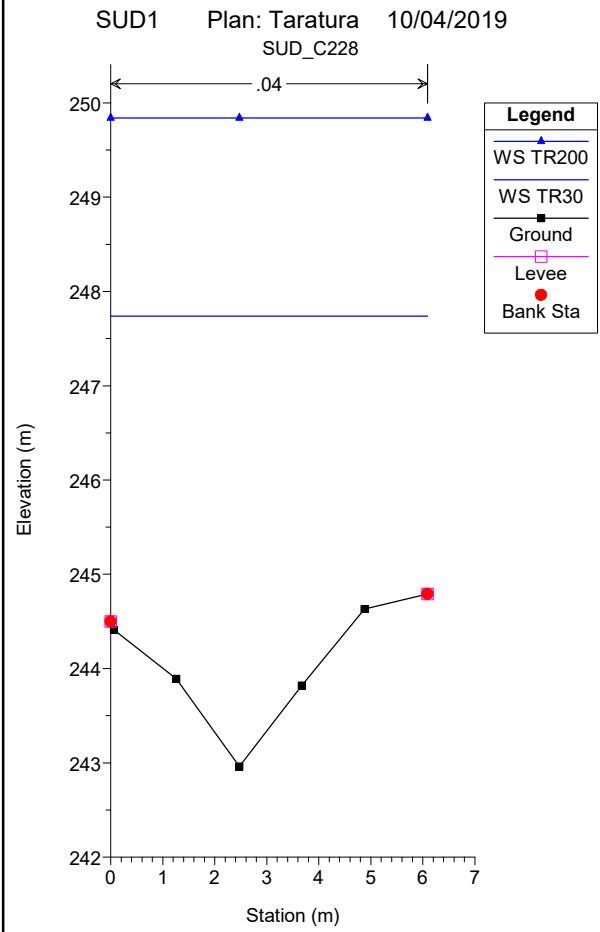
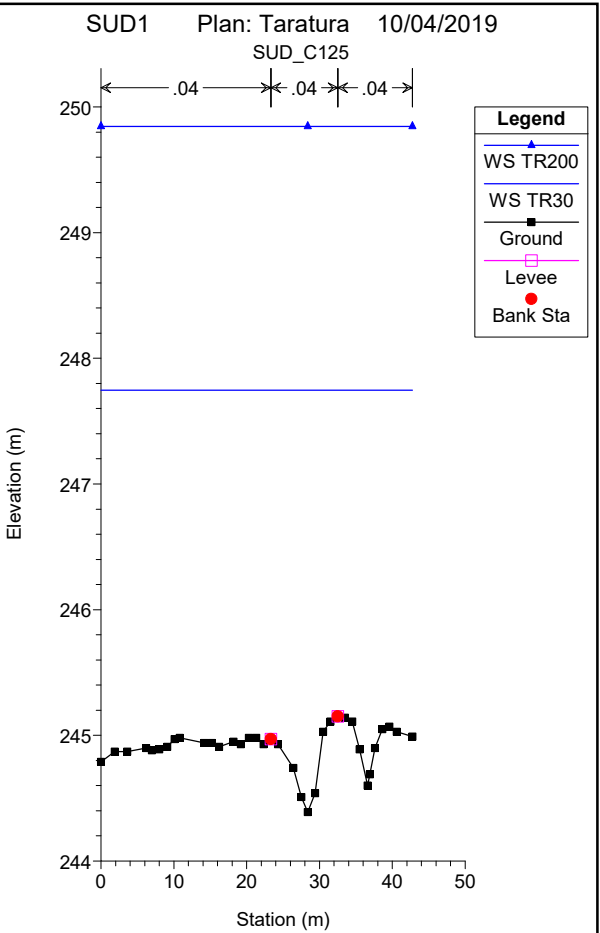
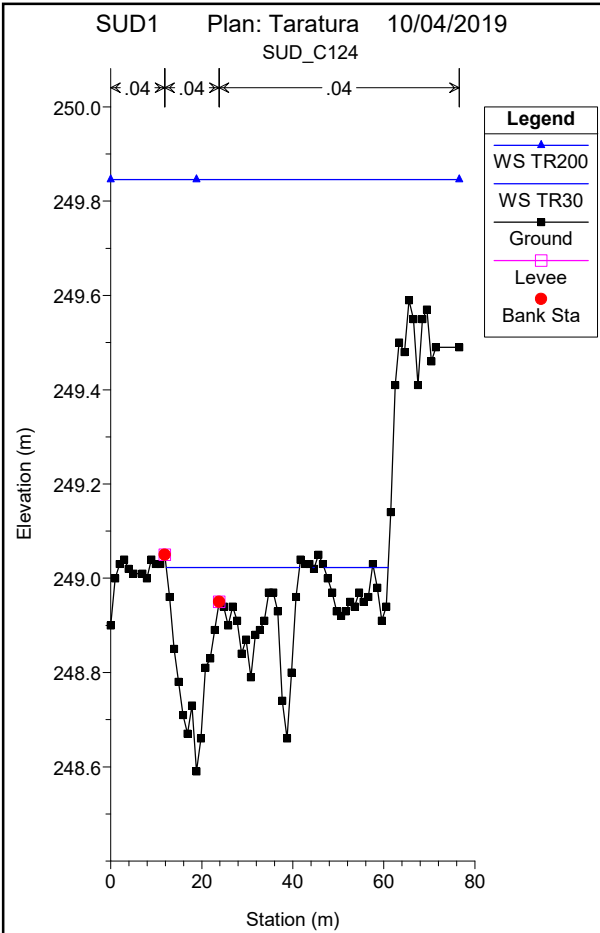
Geol. Maurizio Costa  
Geol. Antonio Pitzalis  
Ing. Nicola Buchignani (Prima STP)  
Ing. Pietro Chiavaccini  
Ing. Elisa Formica

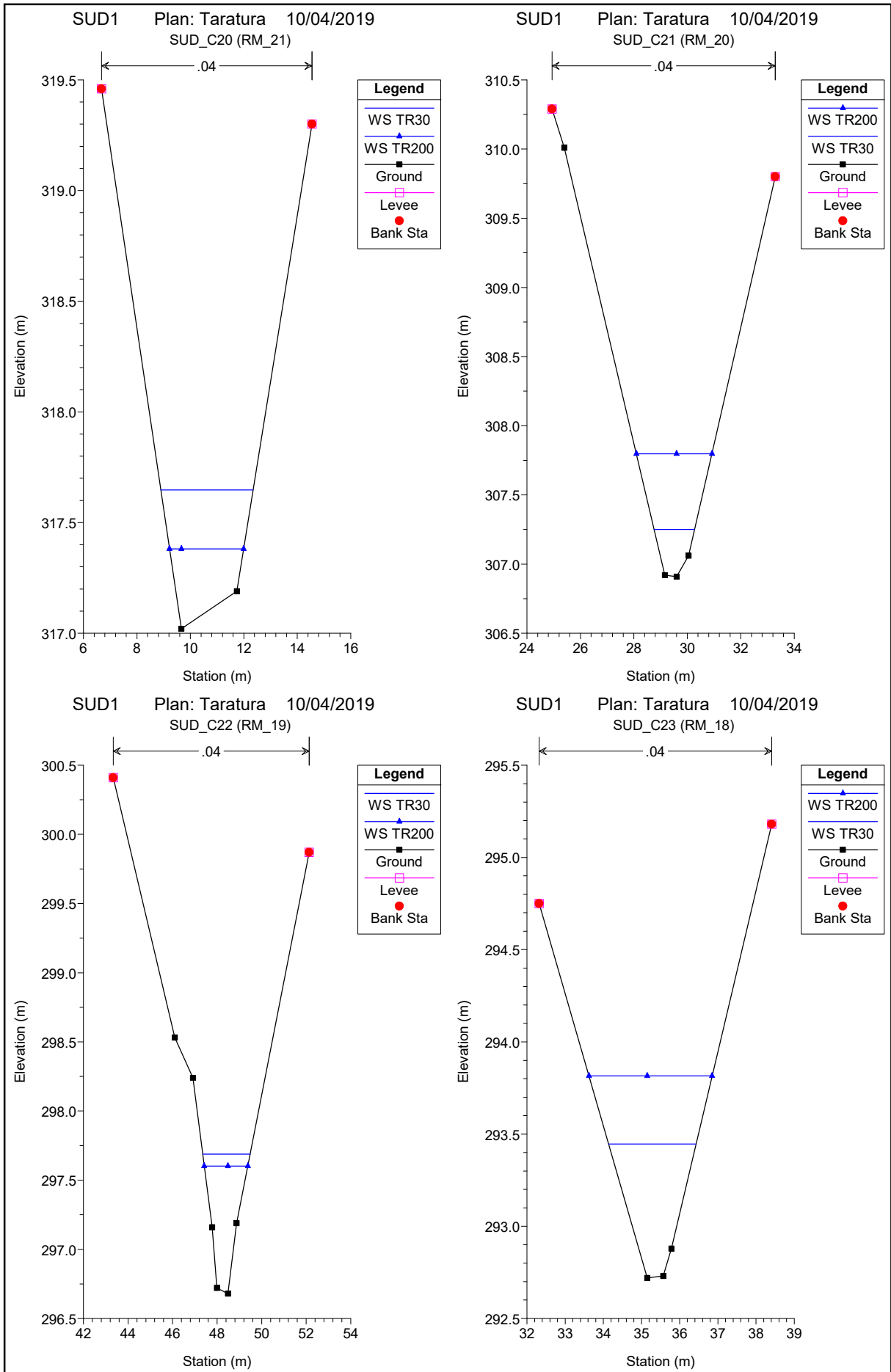
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**Arch Luca Di Figlia**  
**Avv. Agostino Zanelli Quarantini**

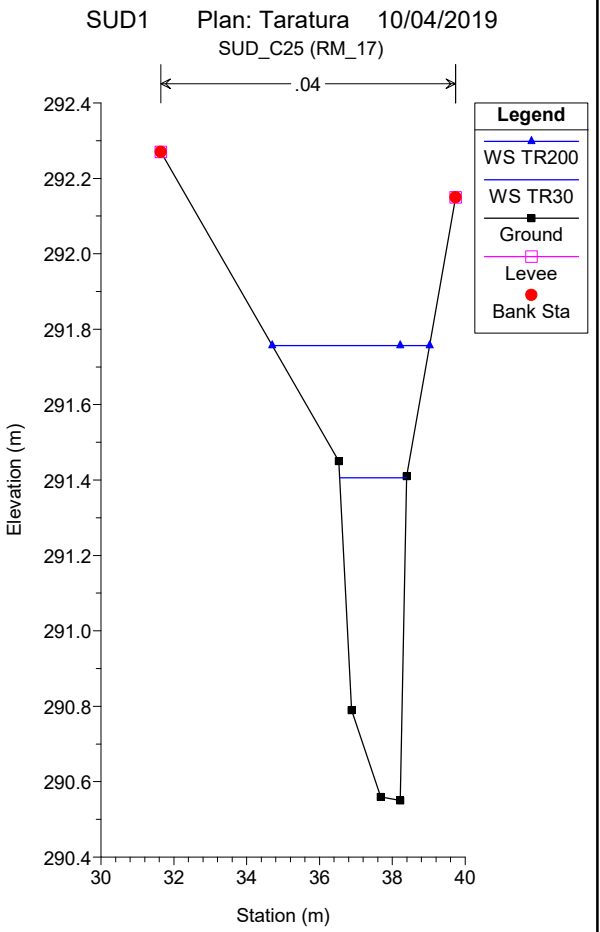
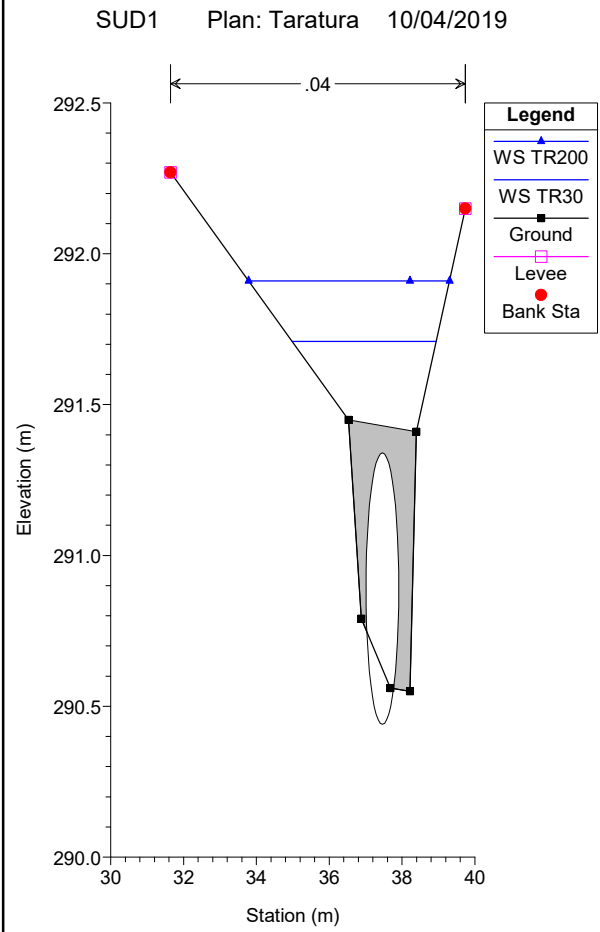
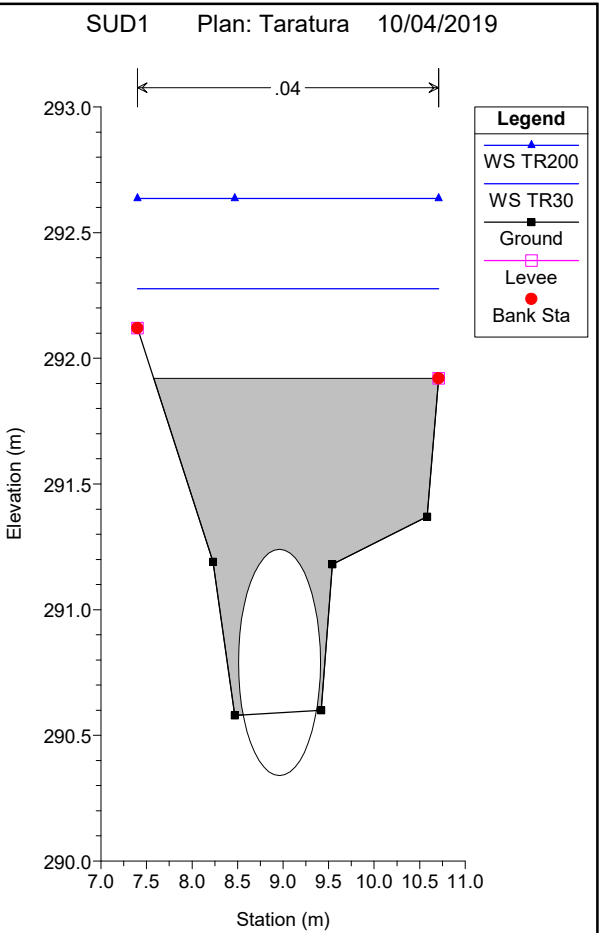
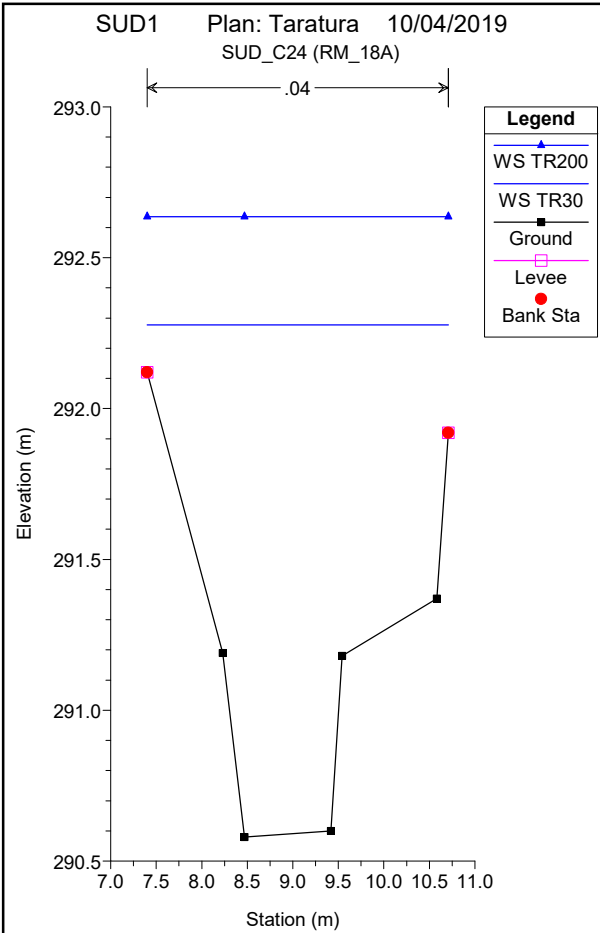




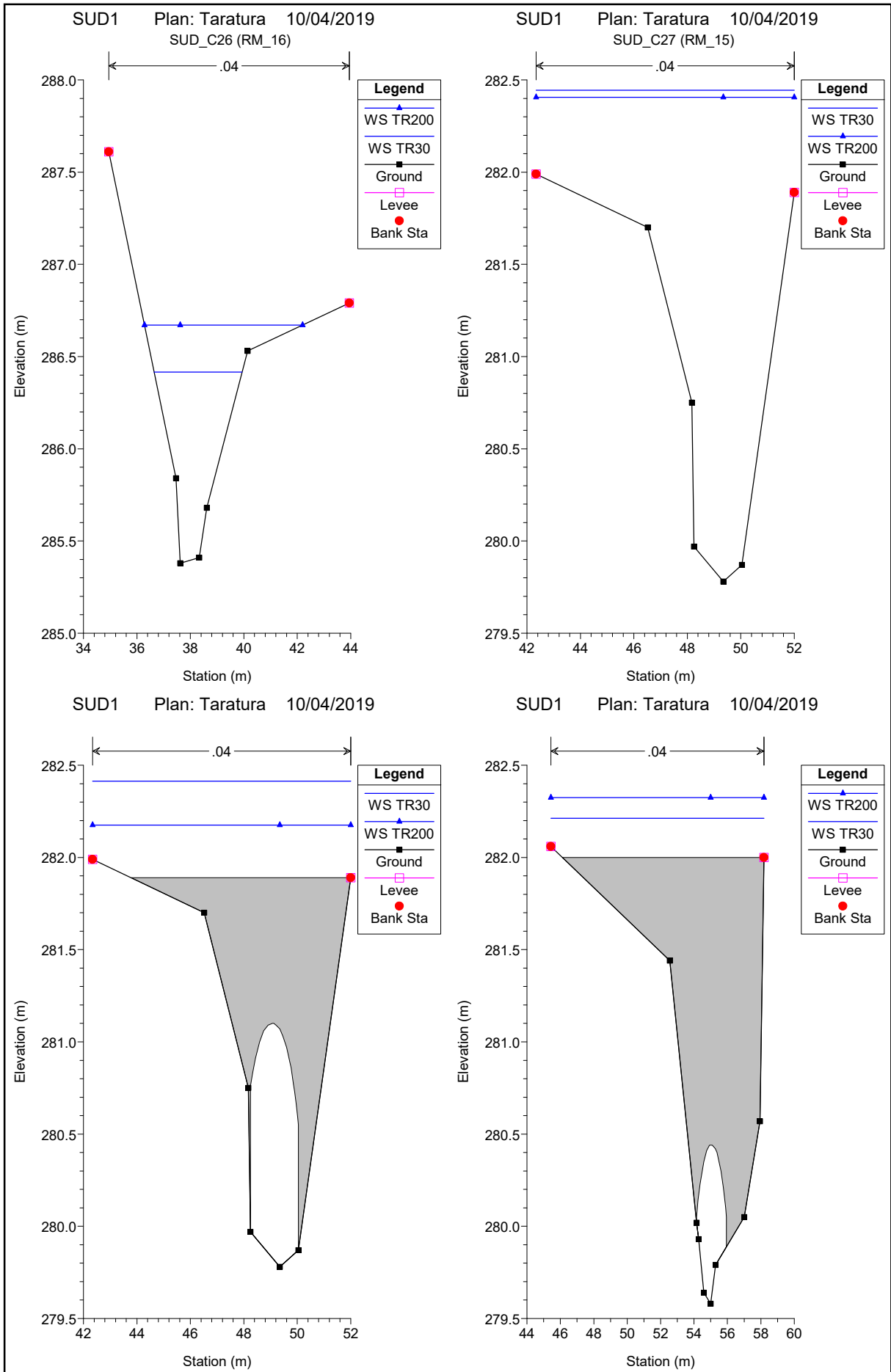


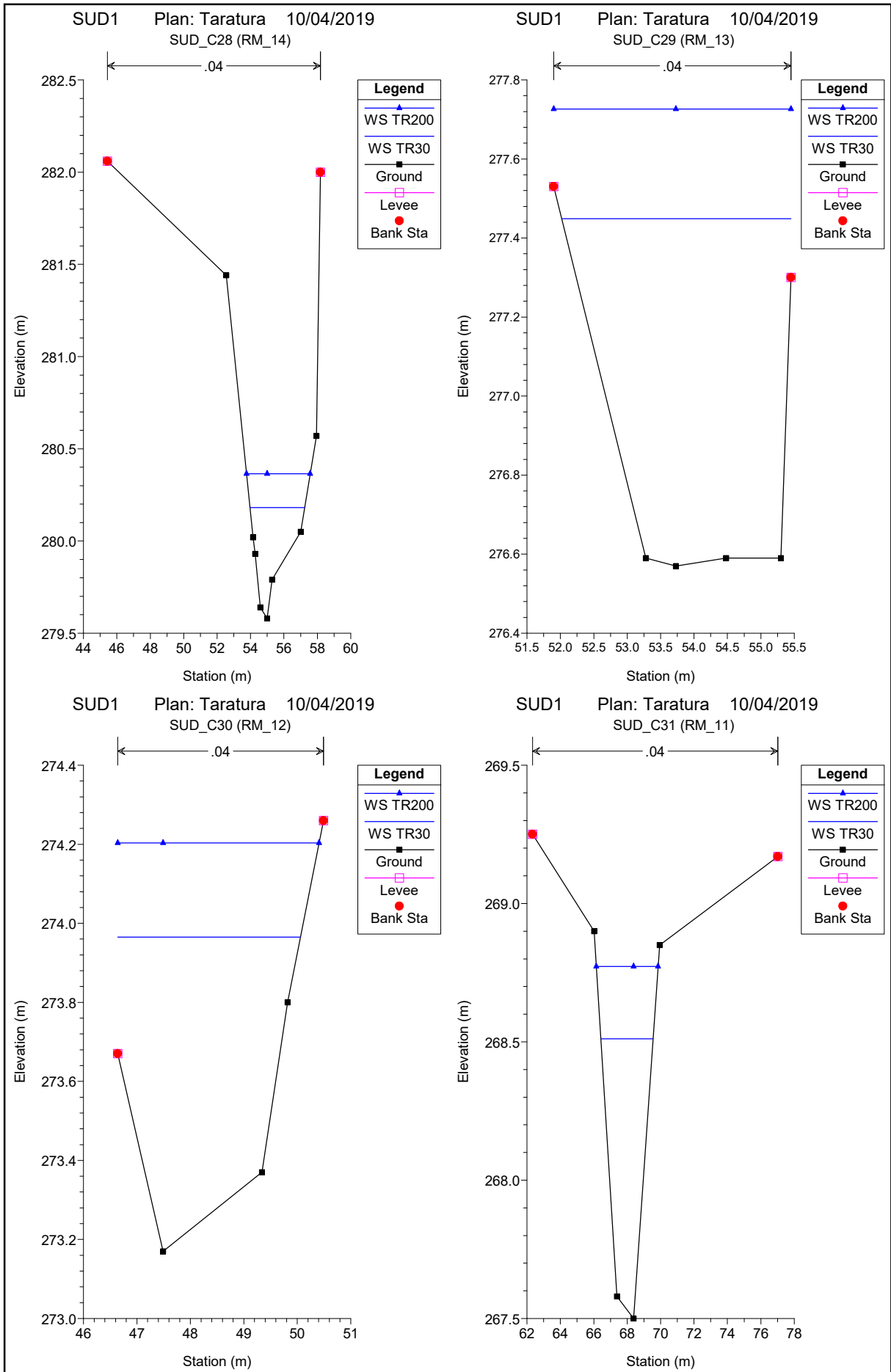




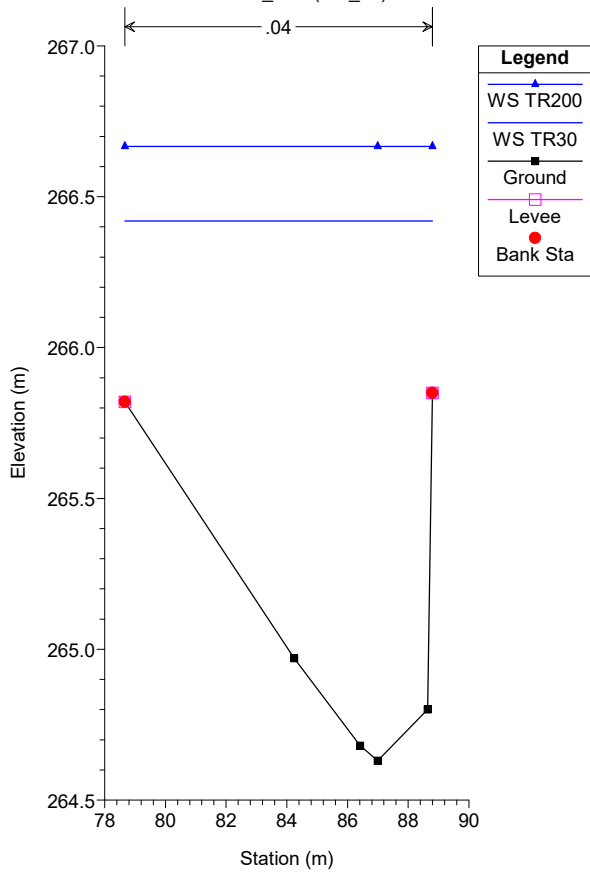




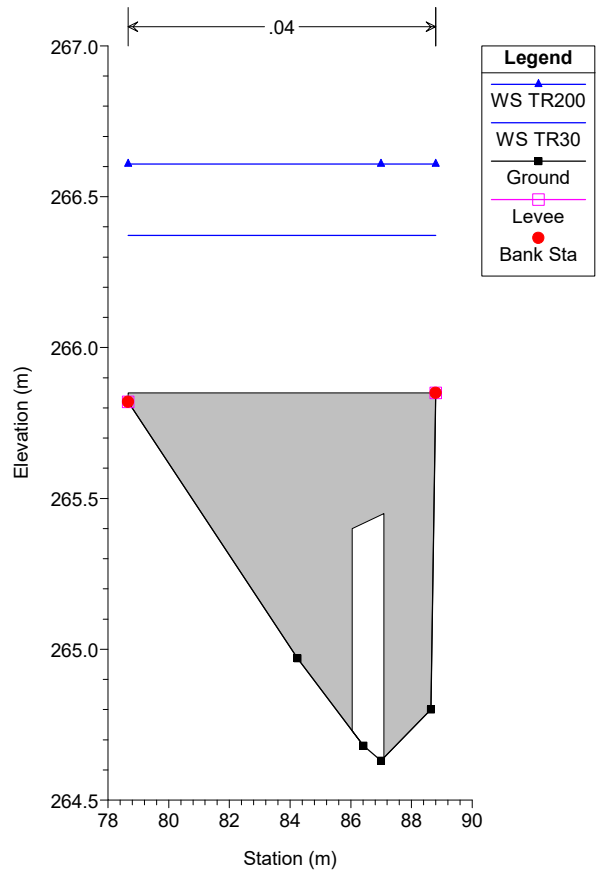




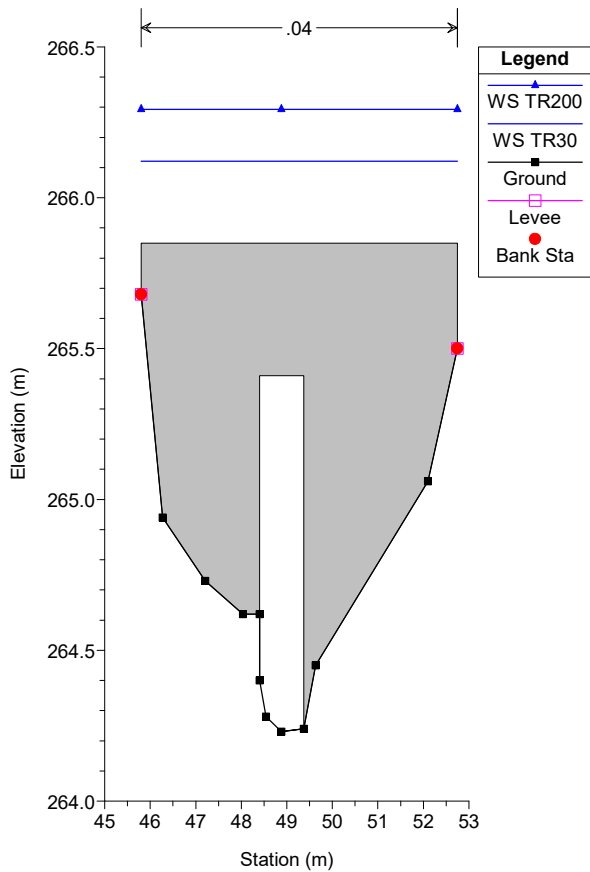
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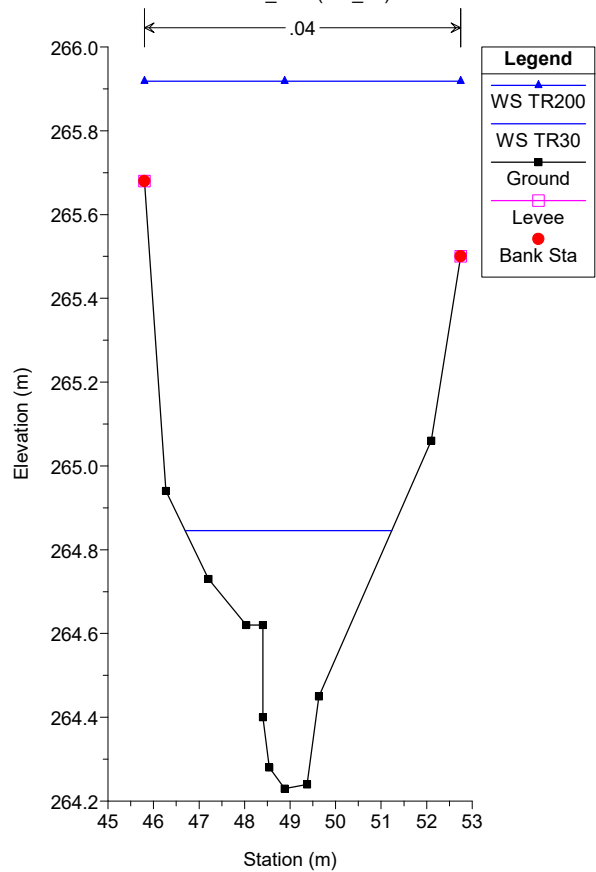
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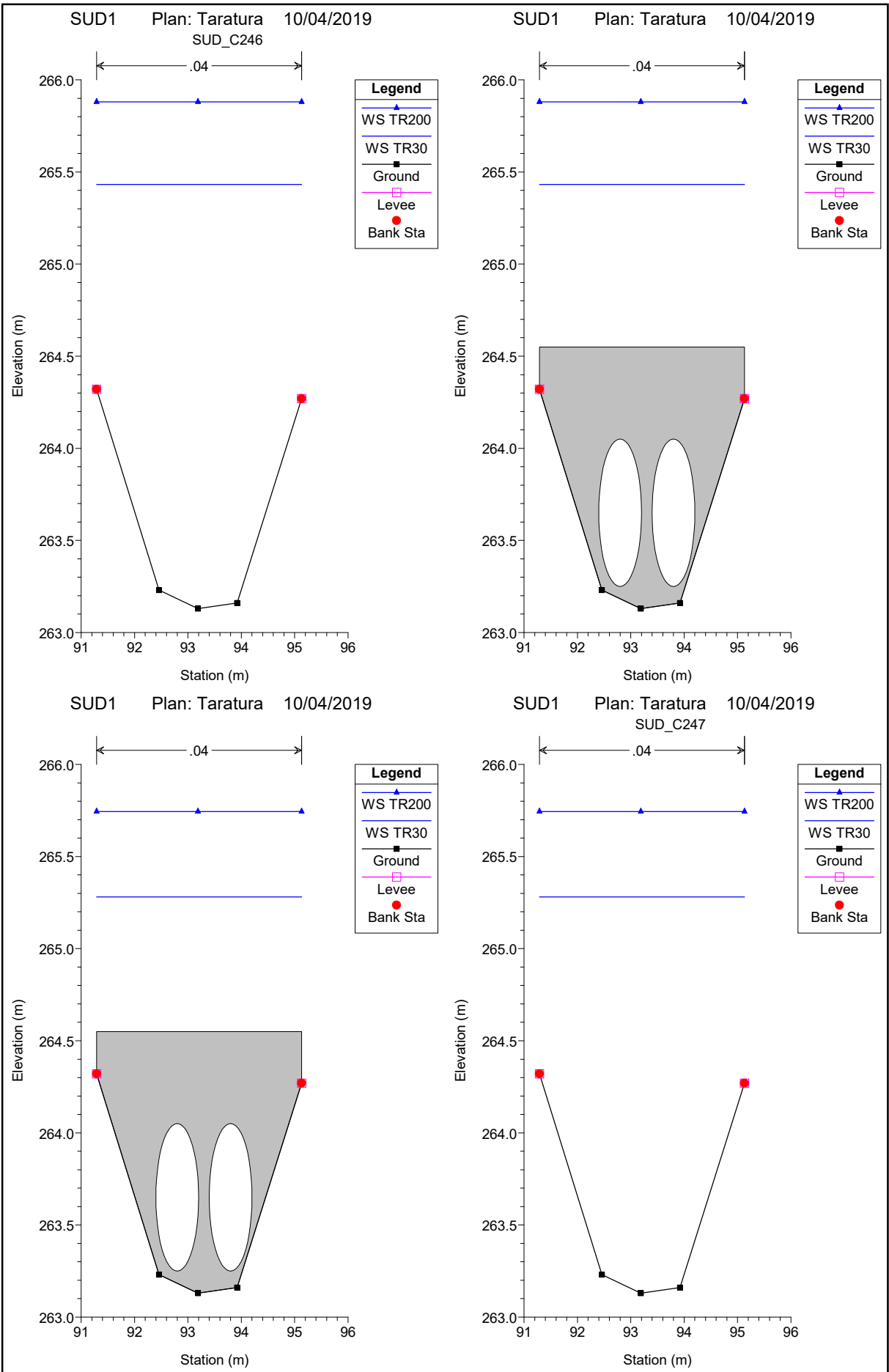


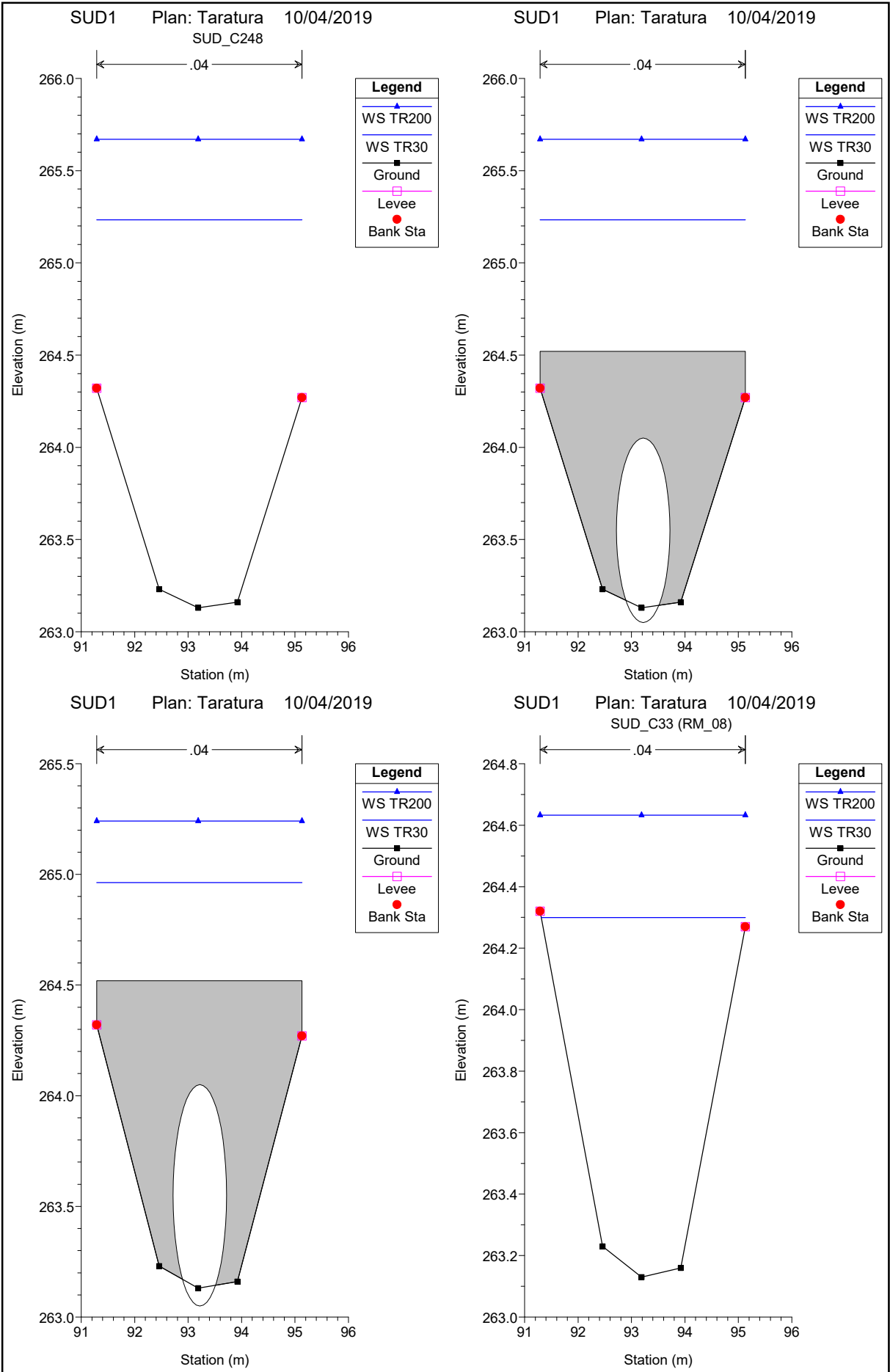
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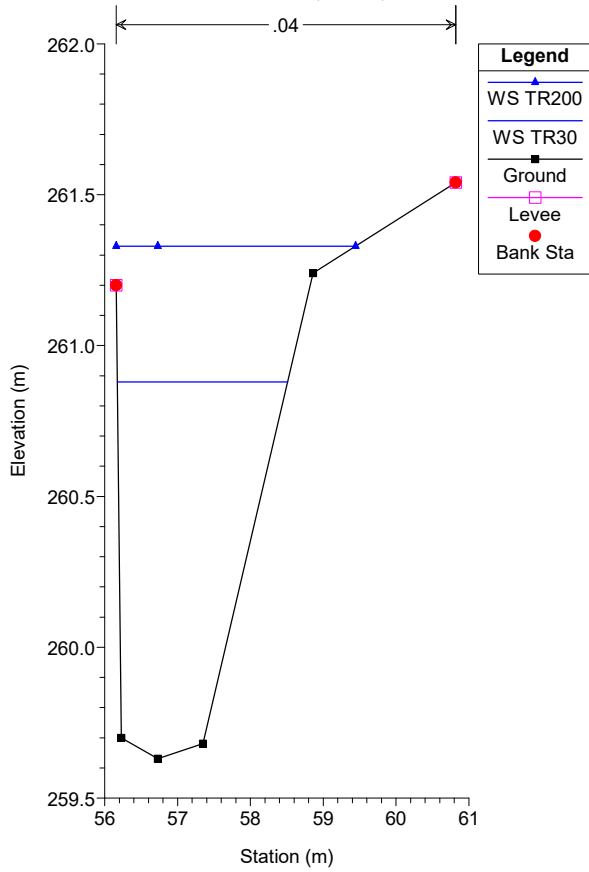
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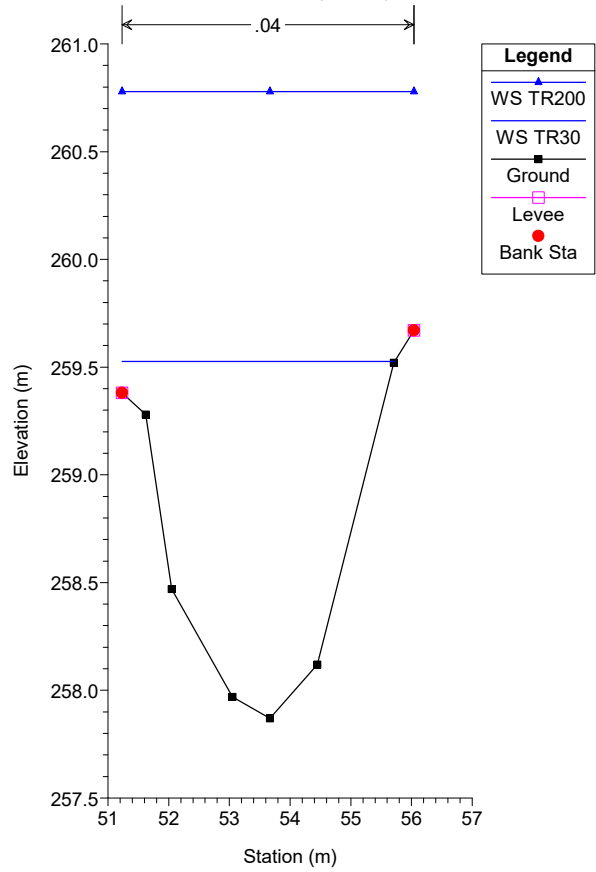




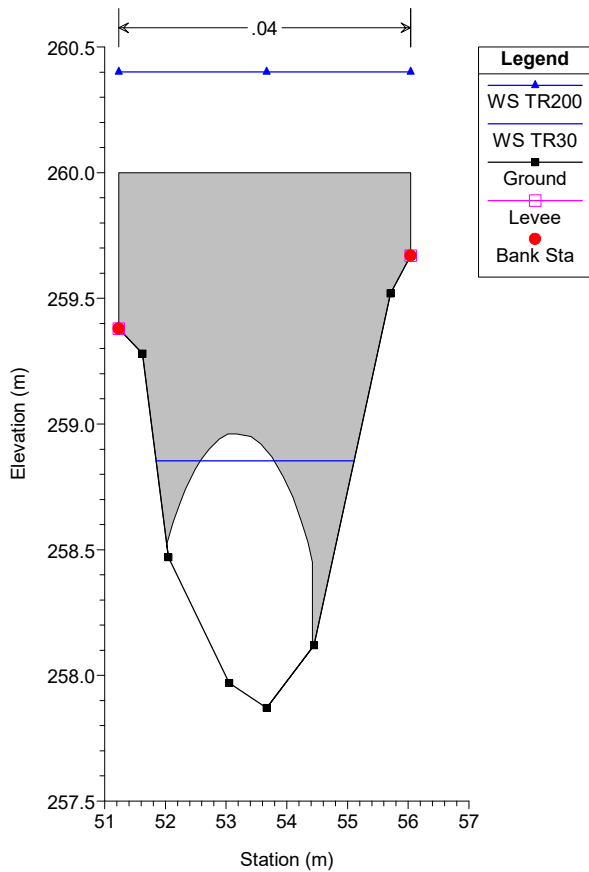
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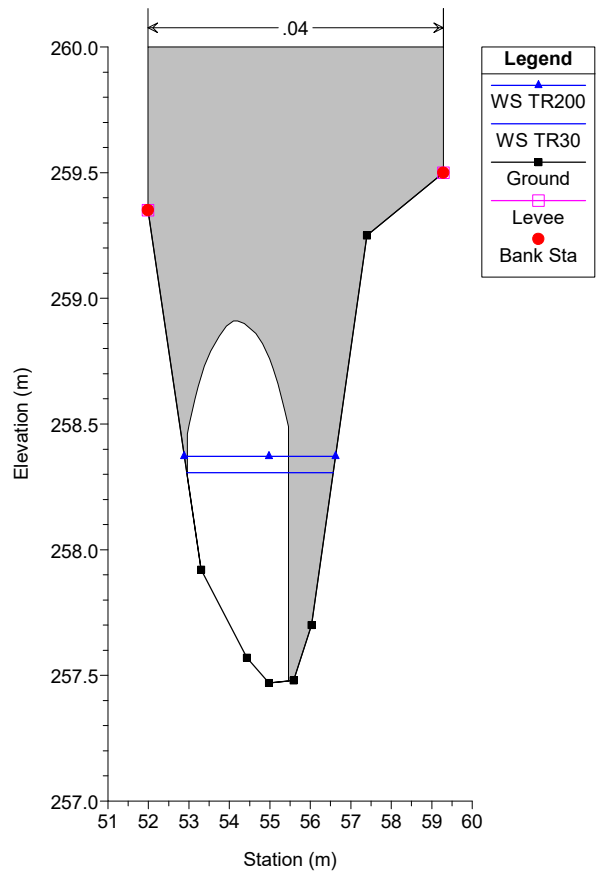
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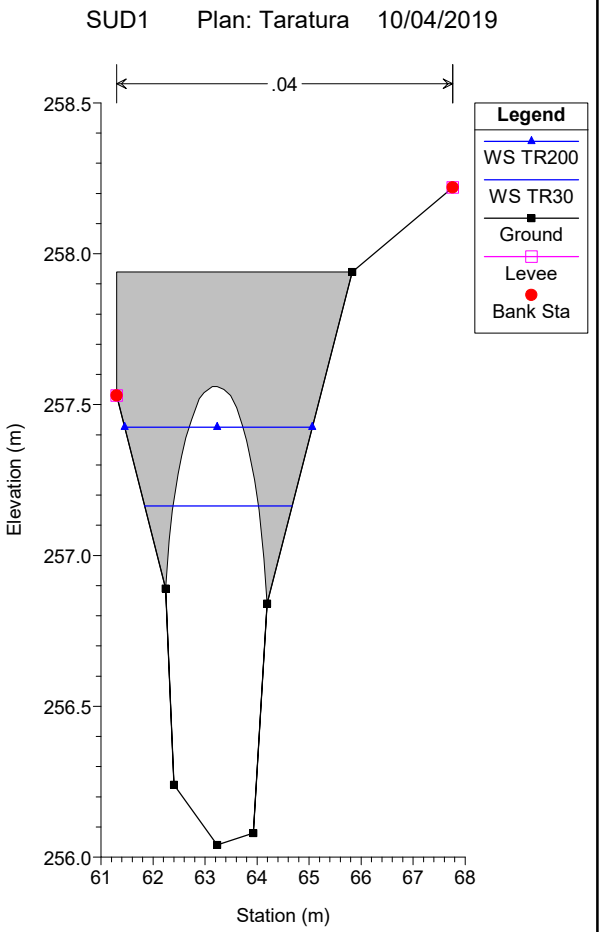
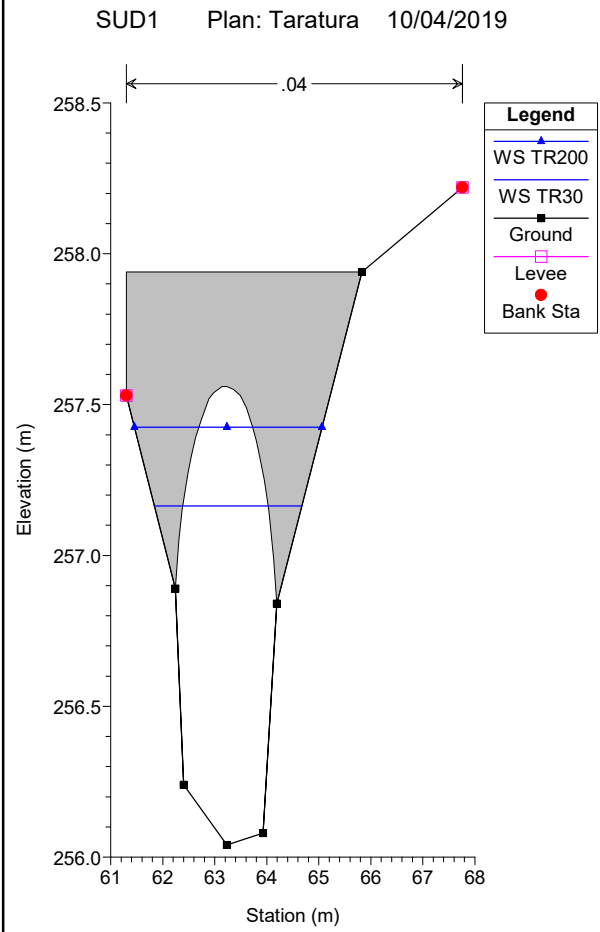
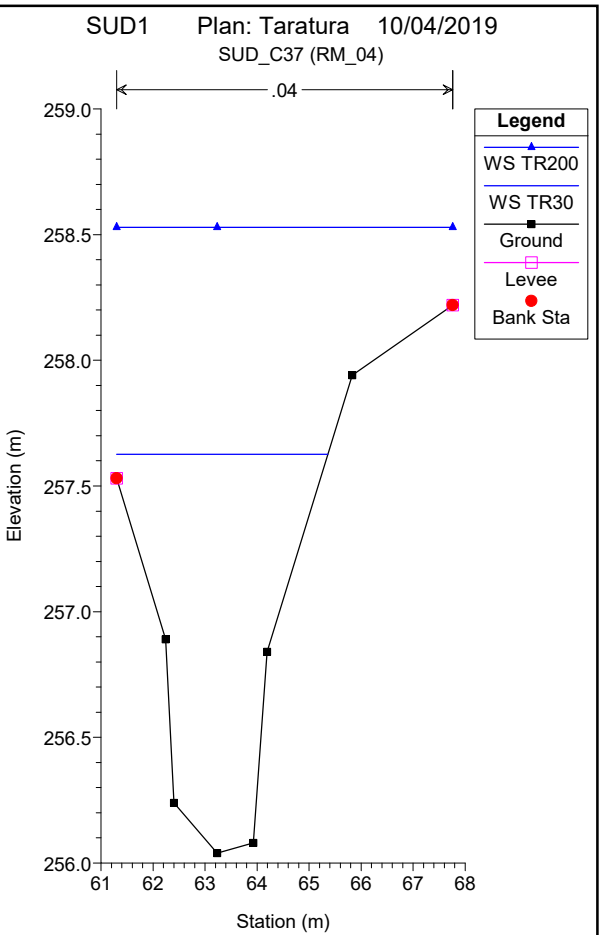
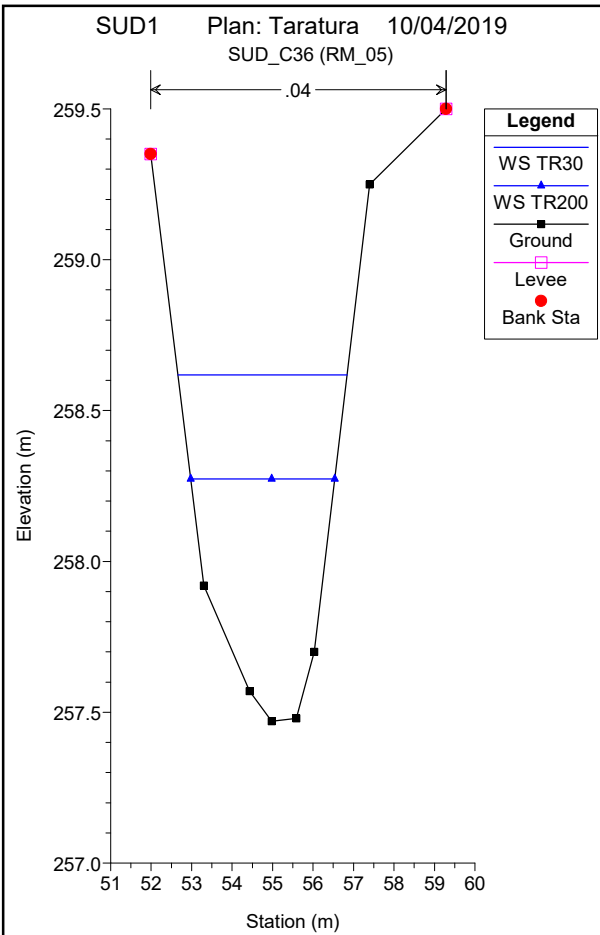


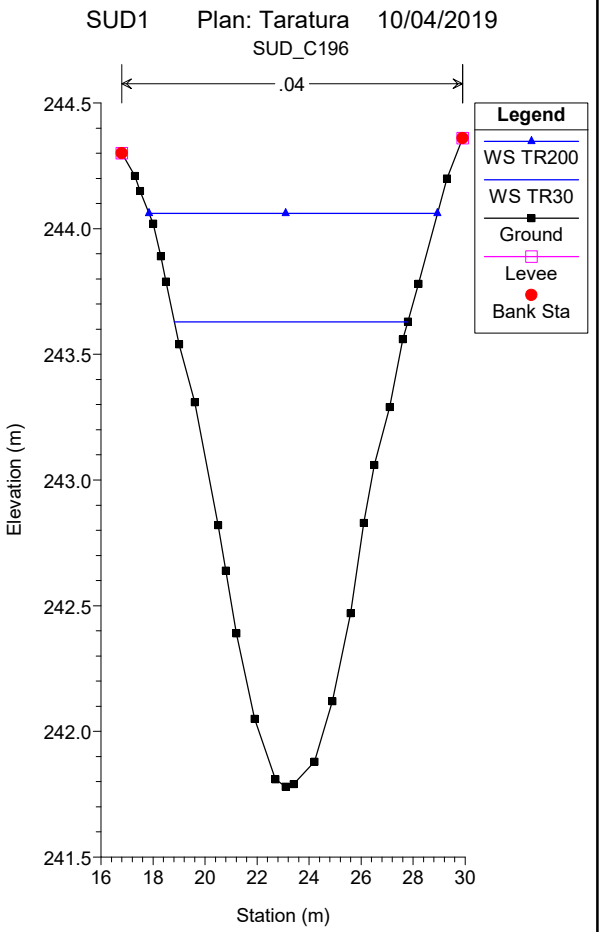
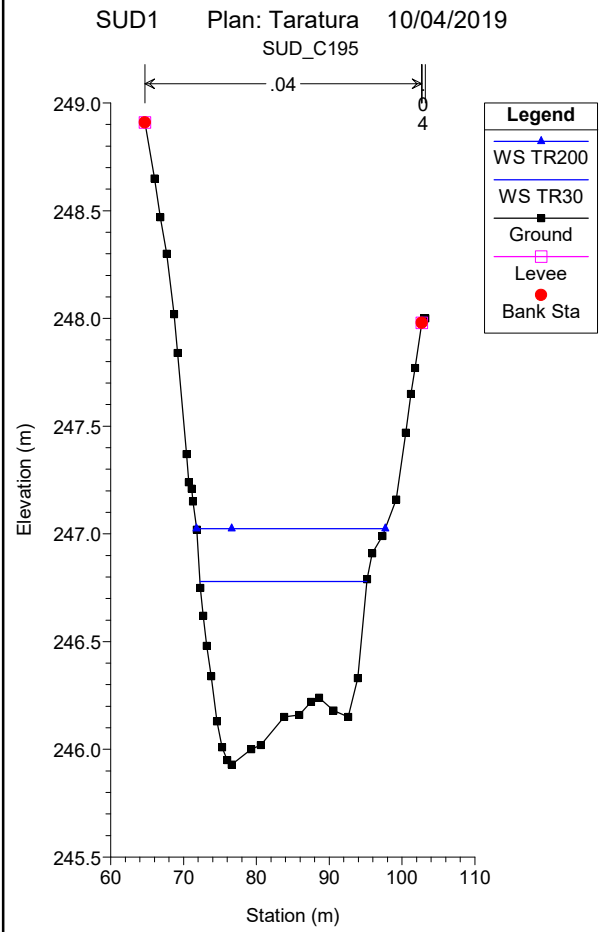
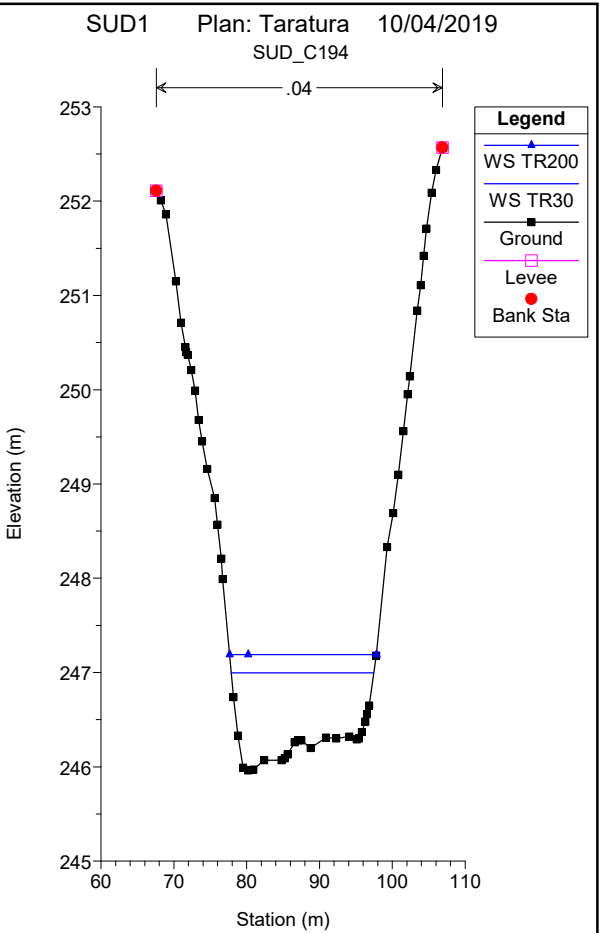
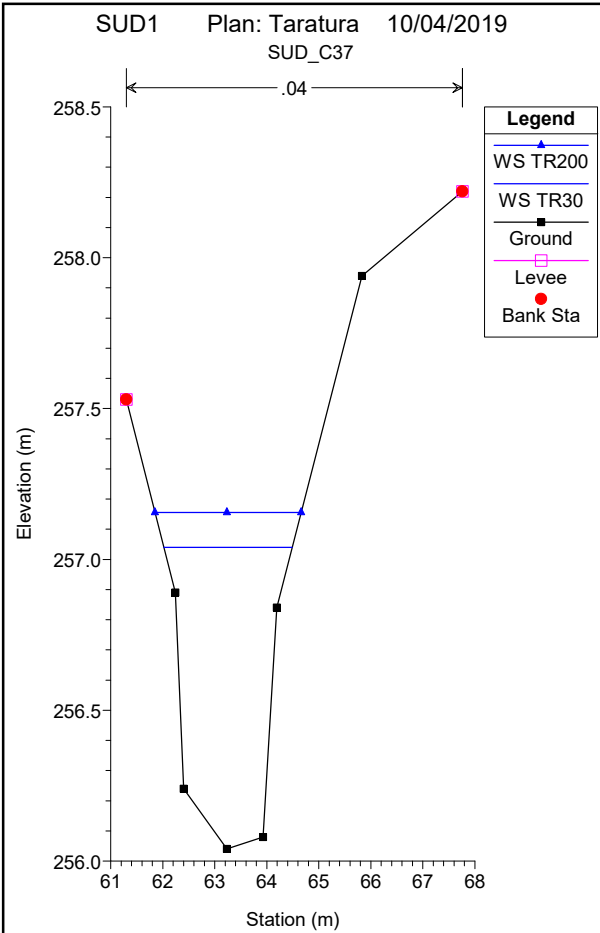
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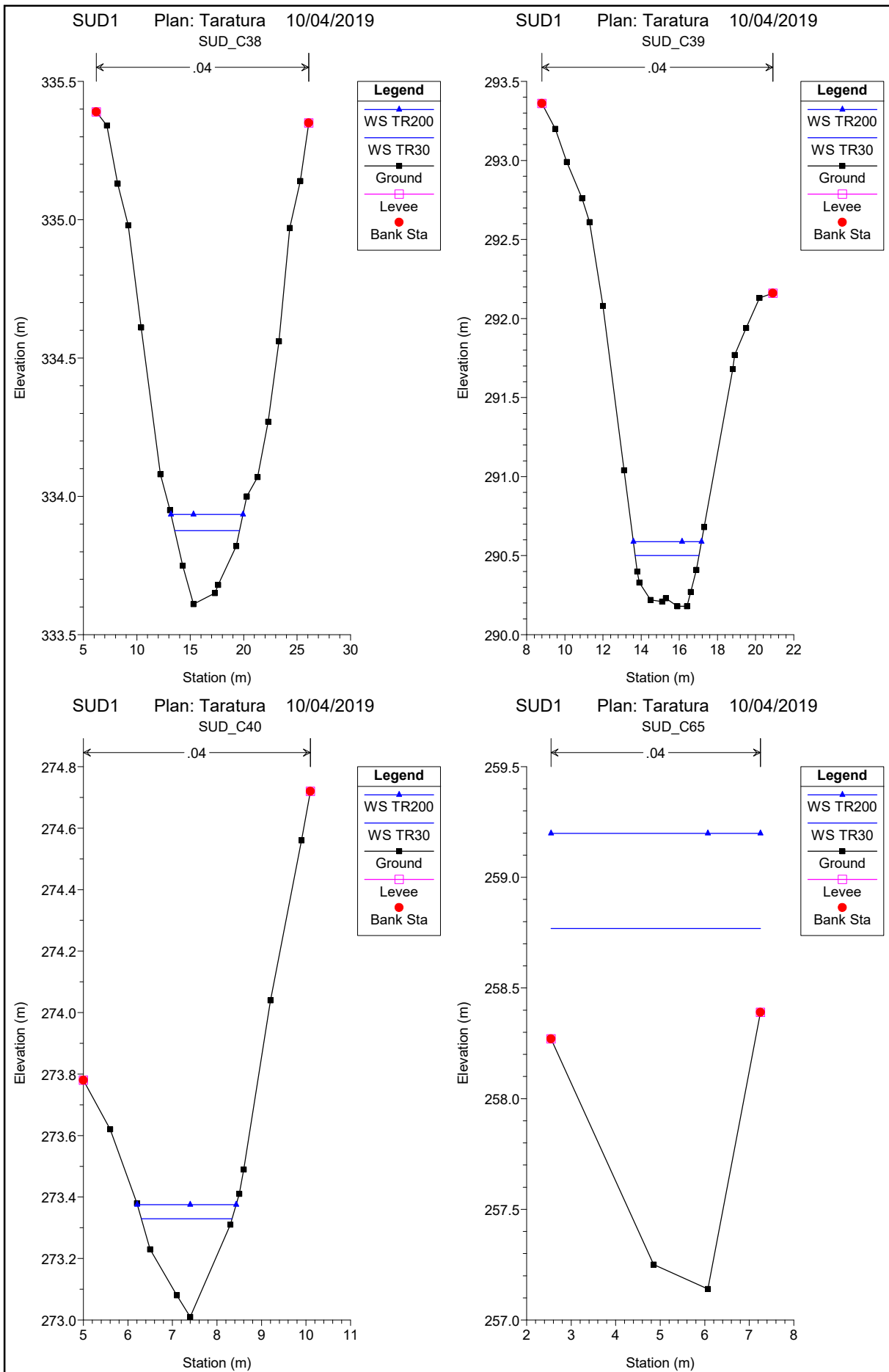
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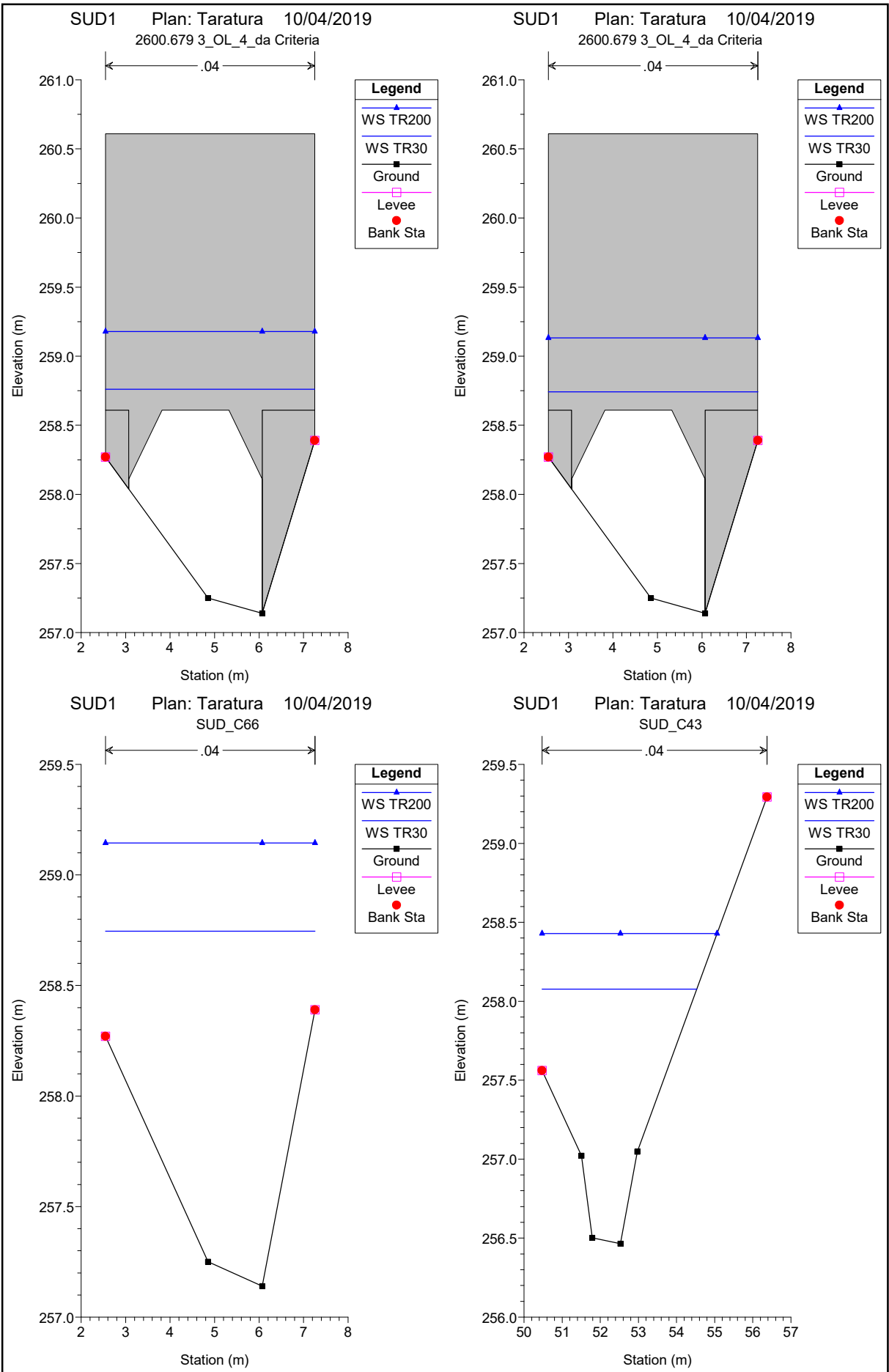


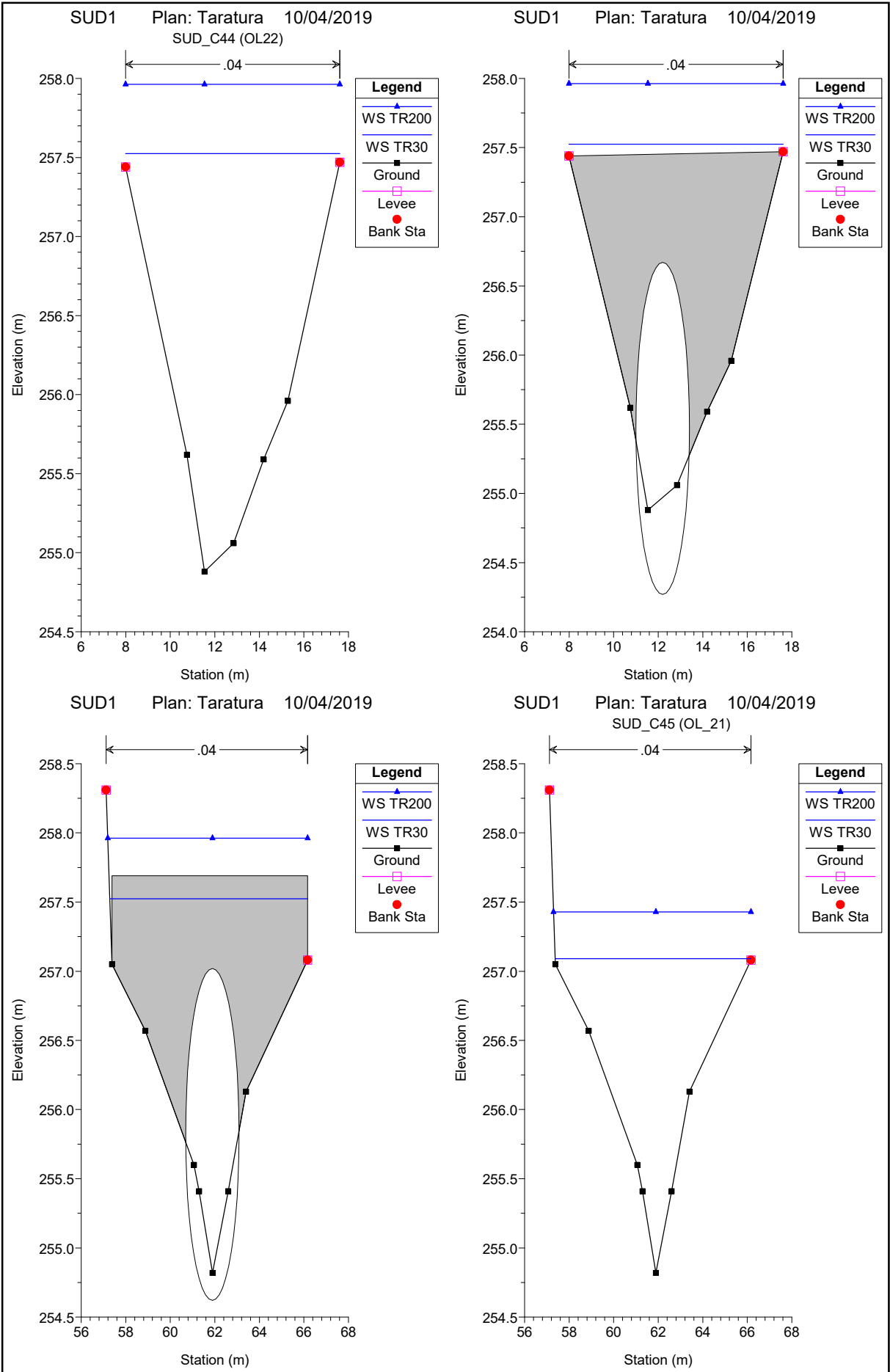


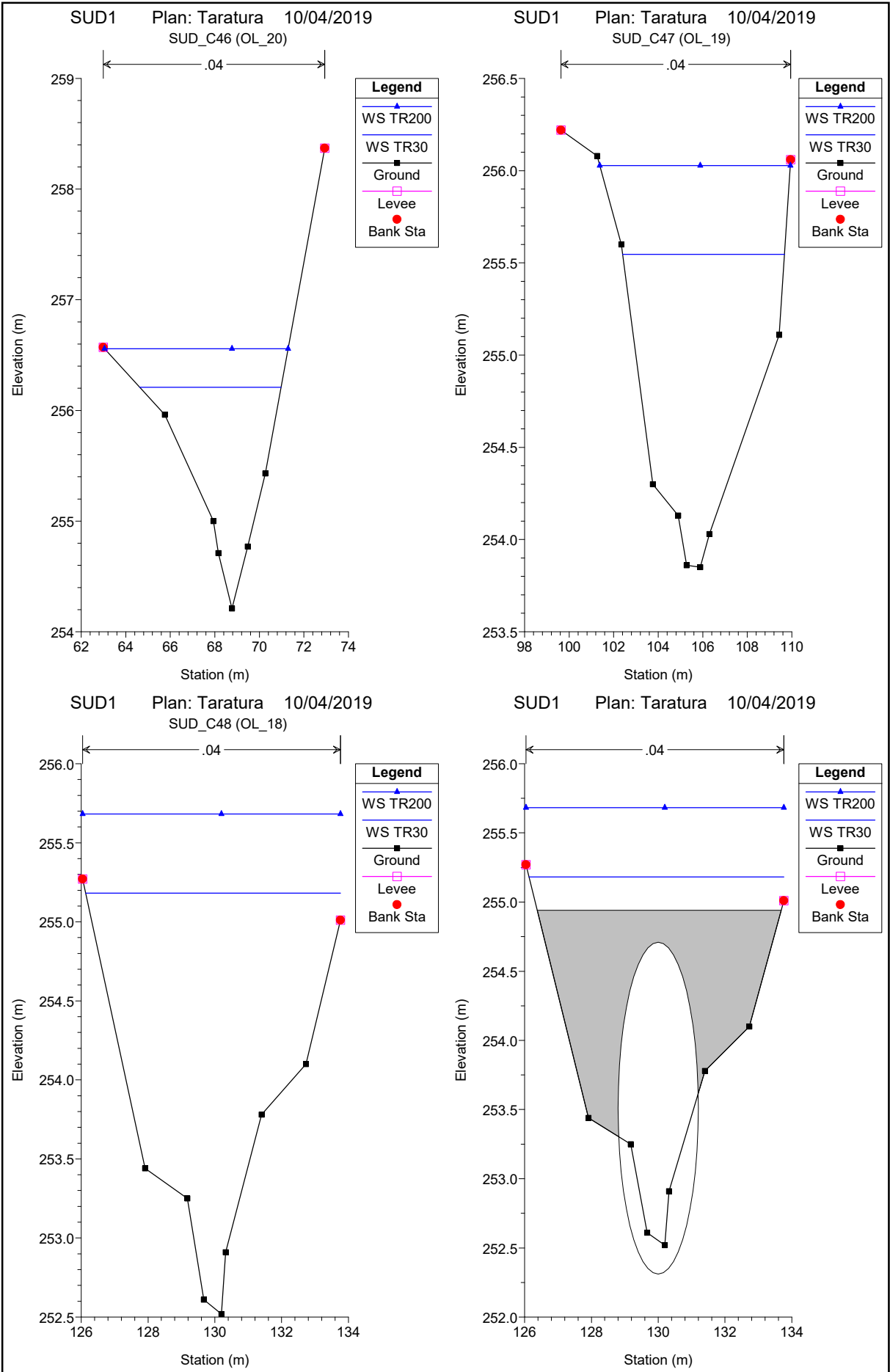




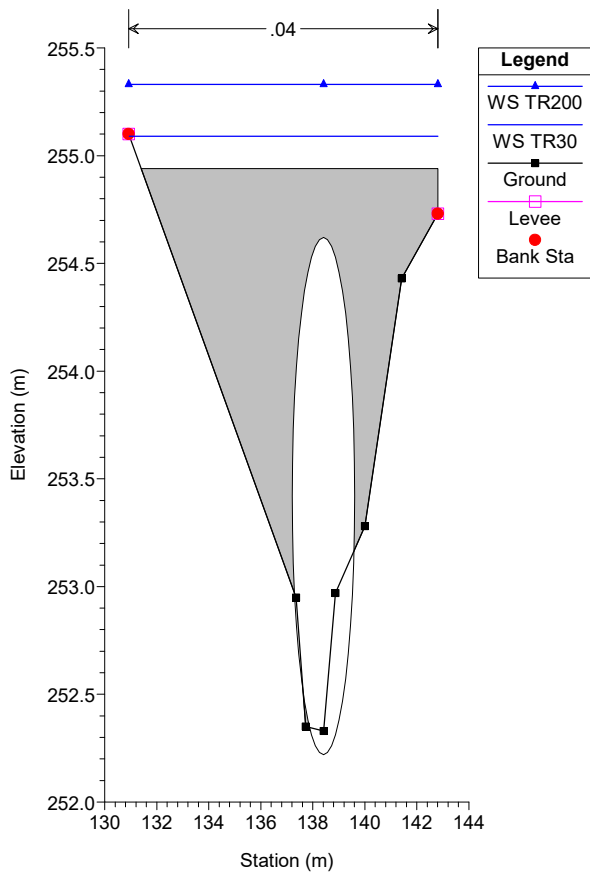




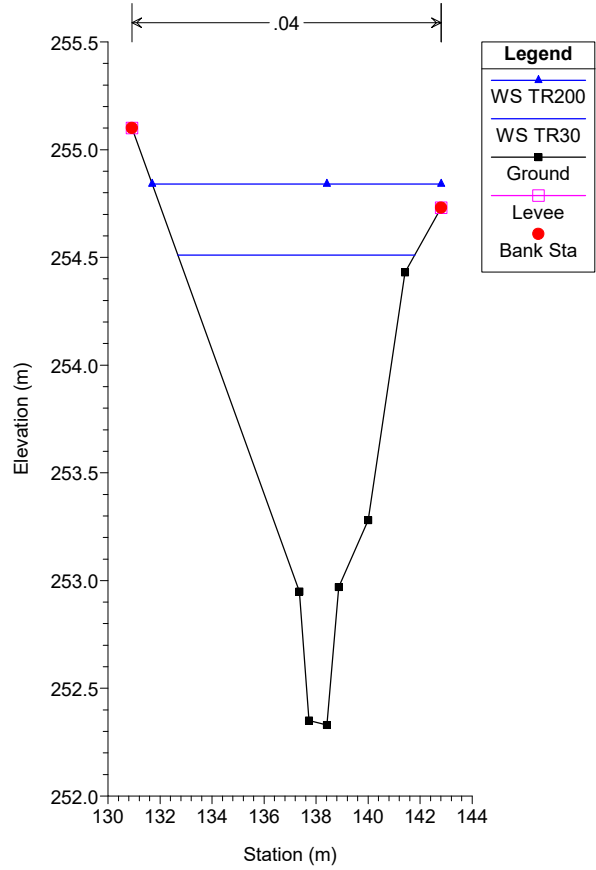




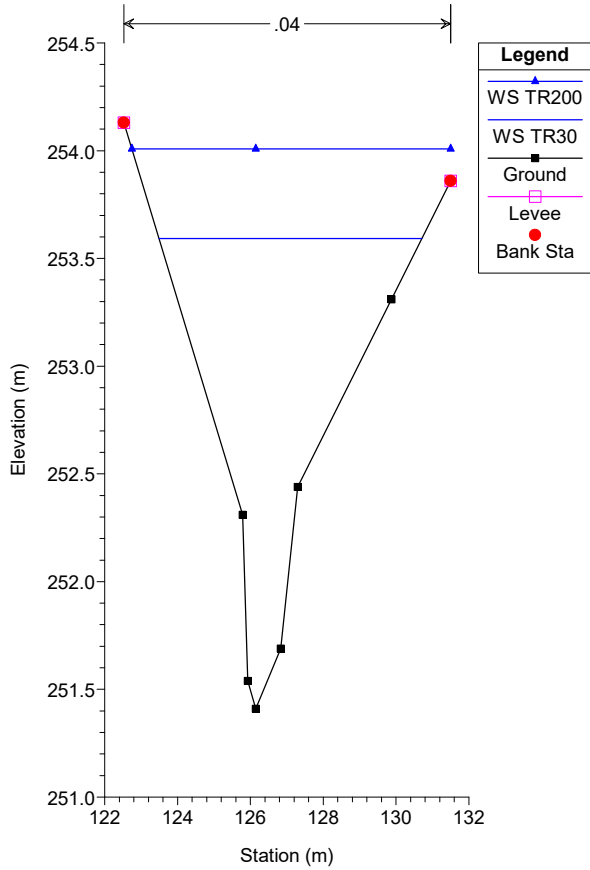
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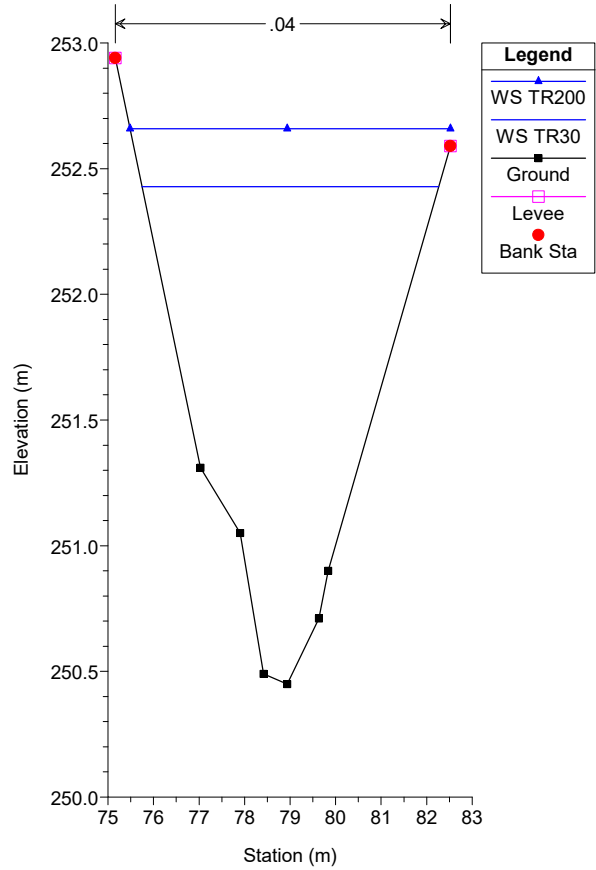
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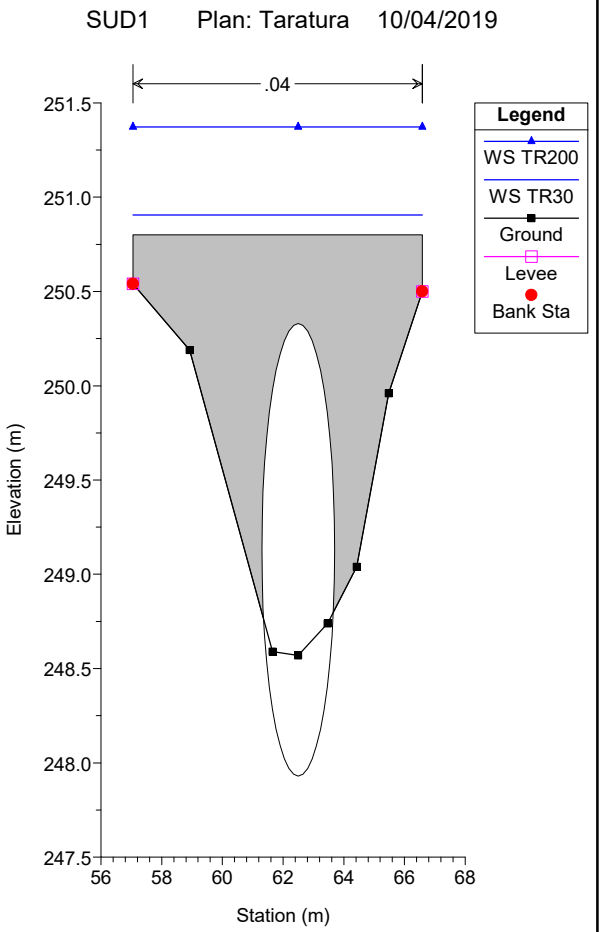
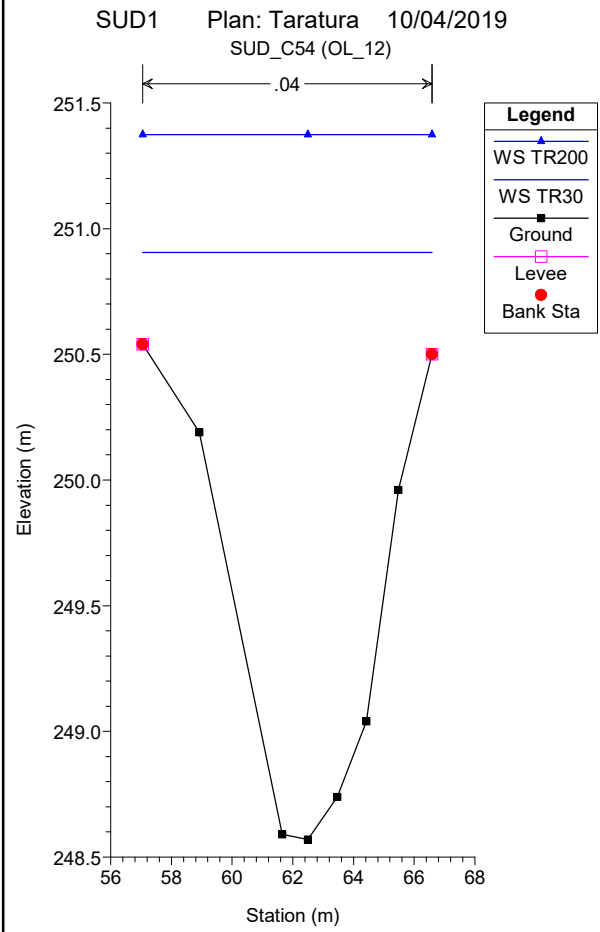
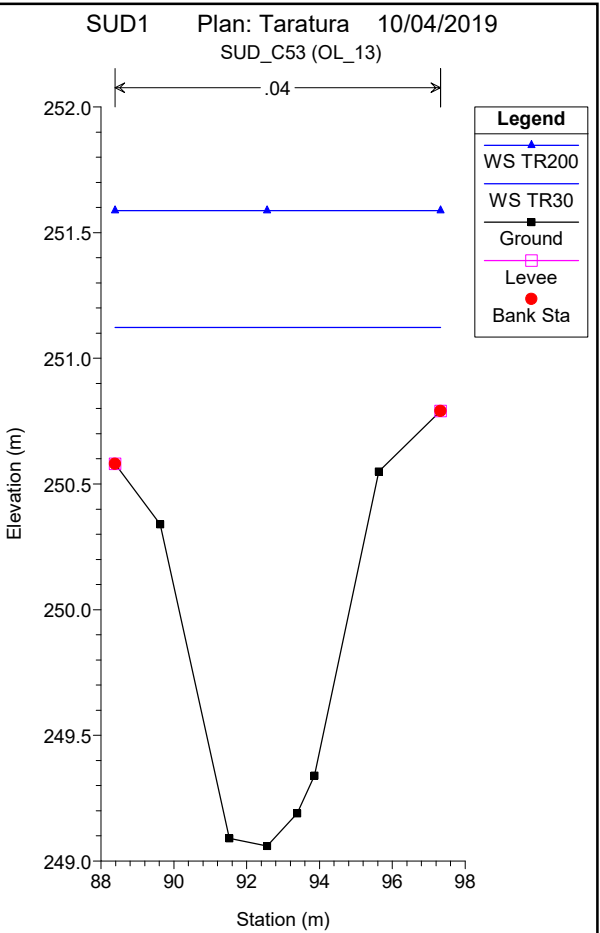
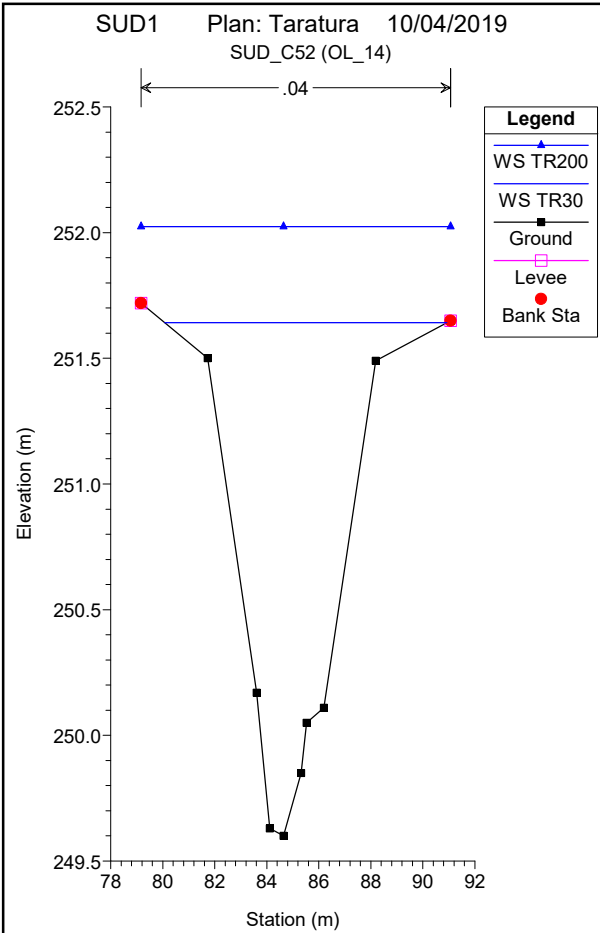


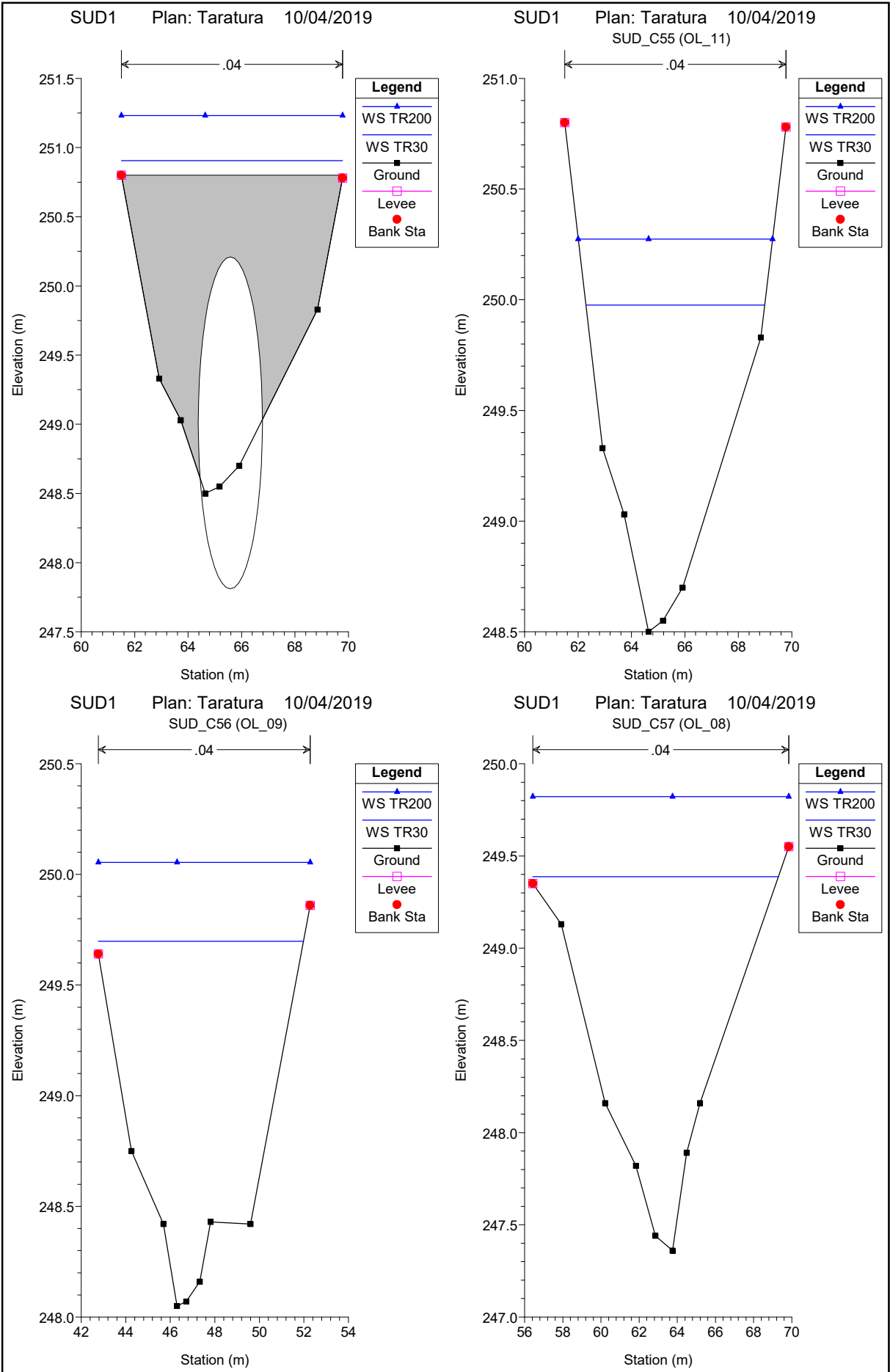
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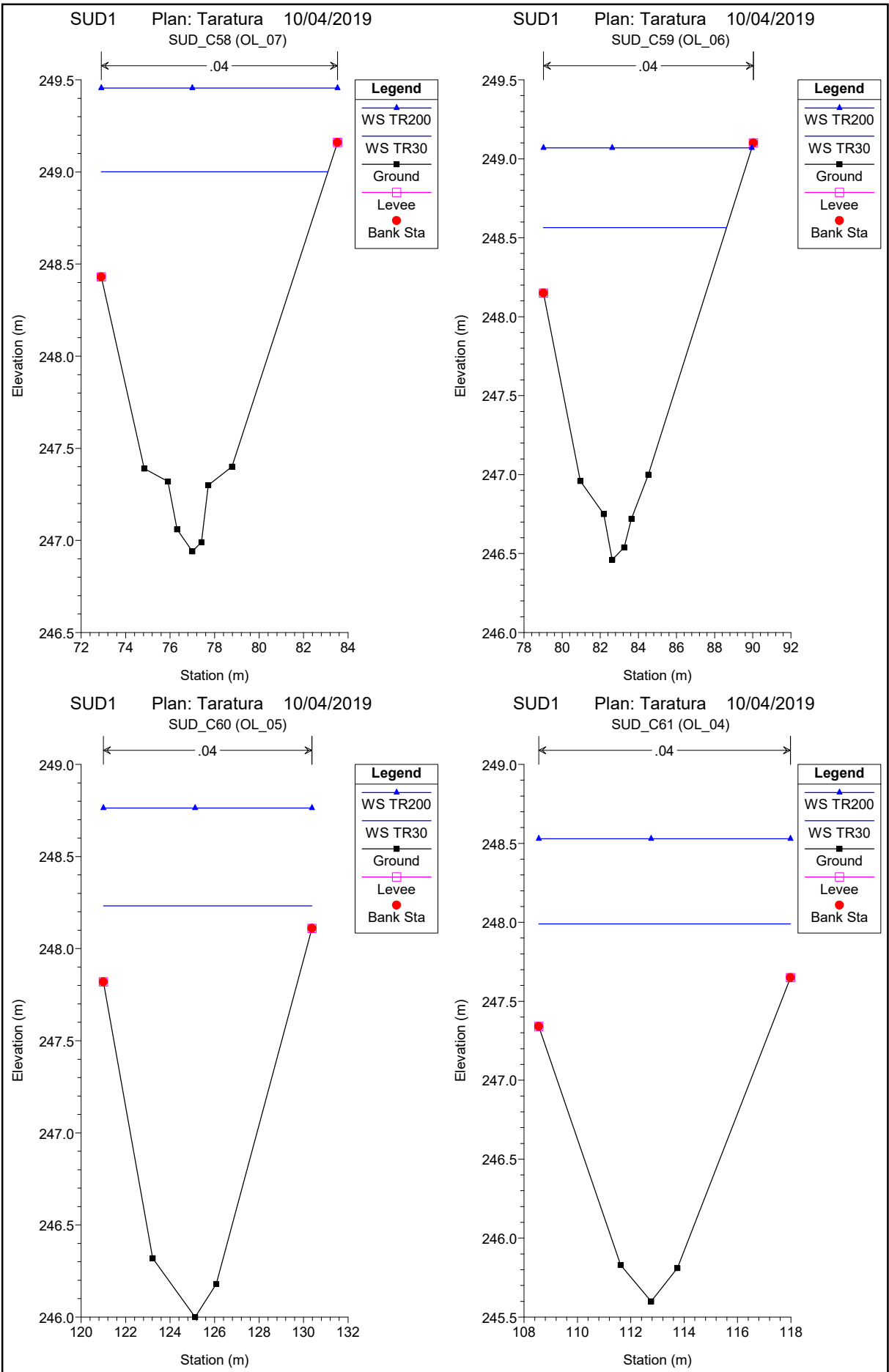


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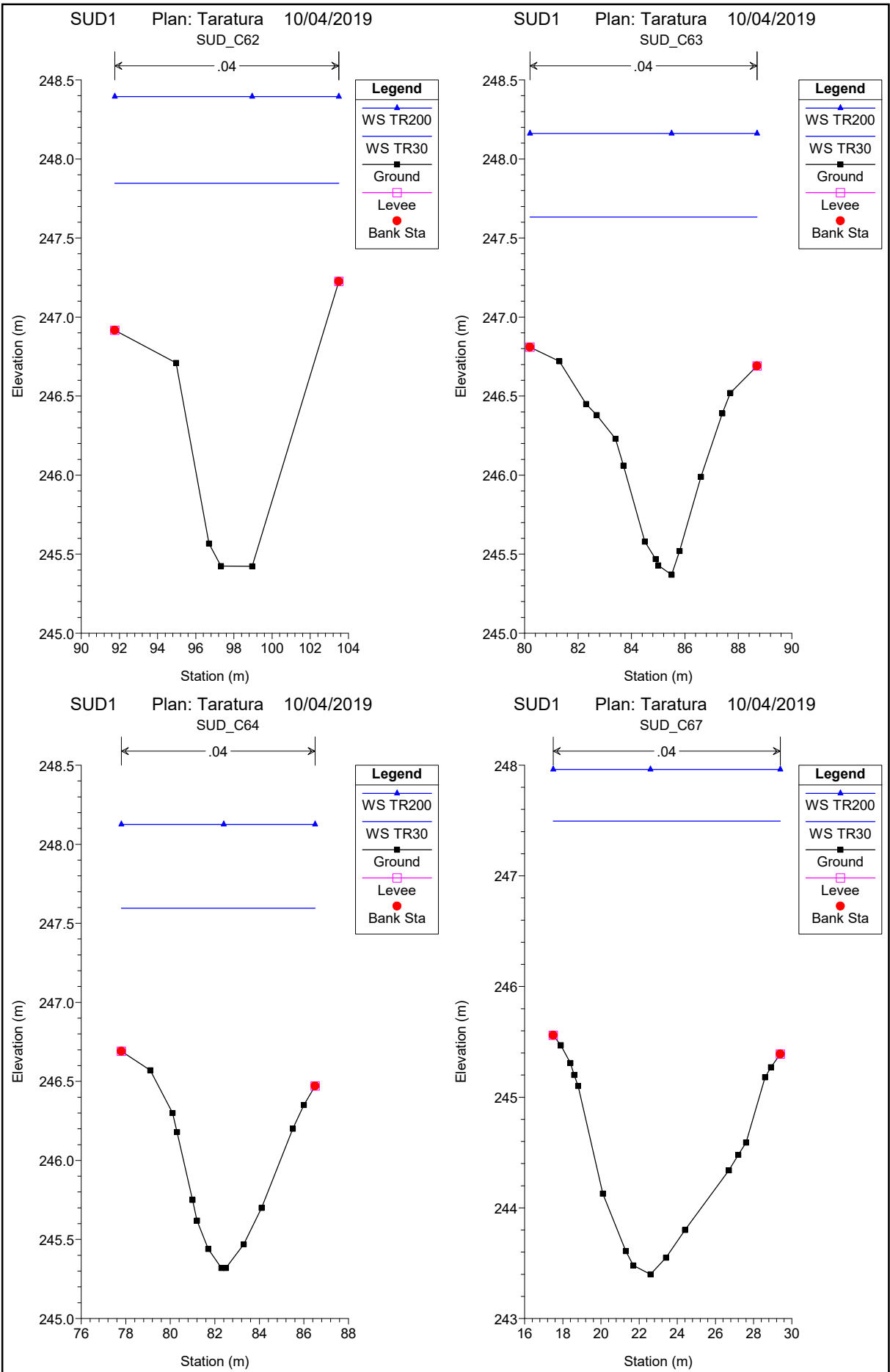


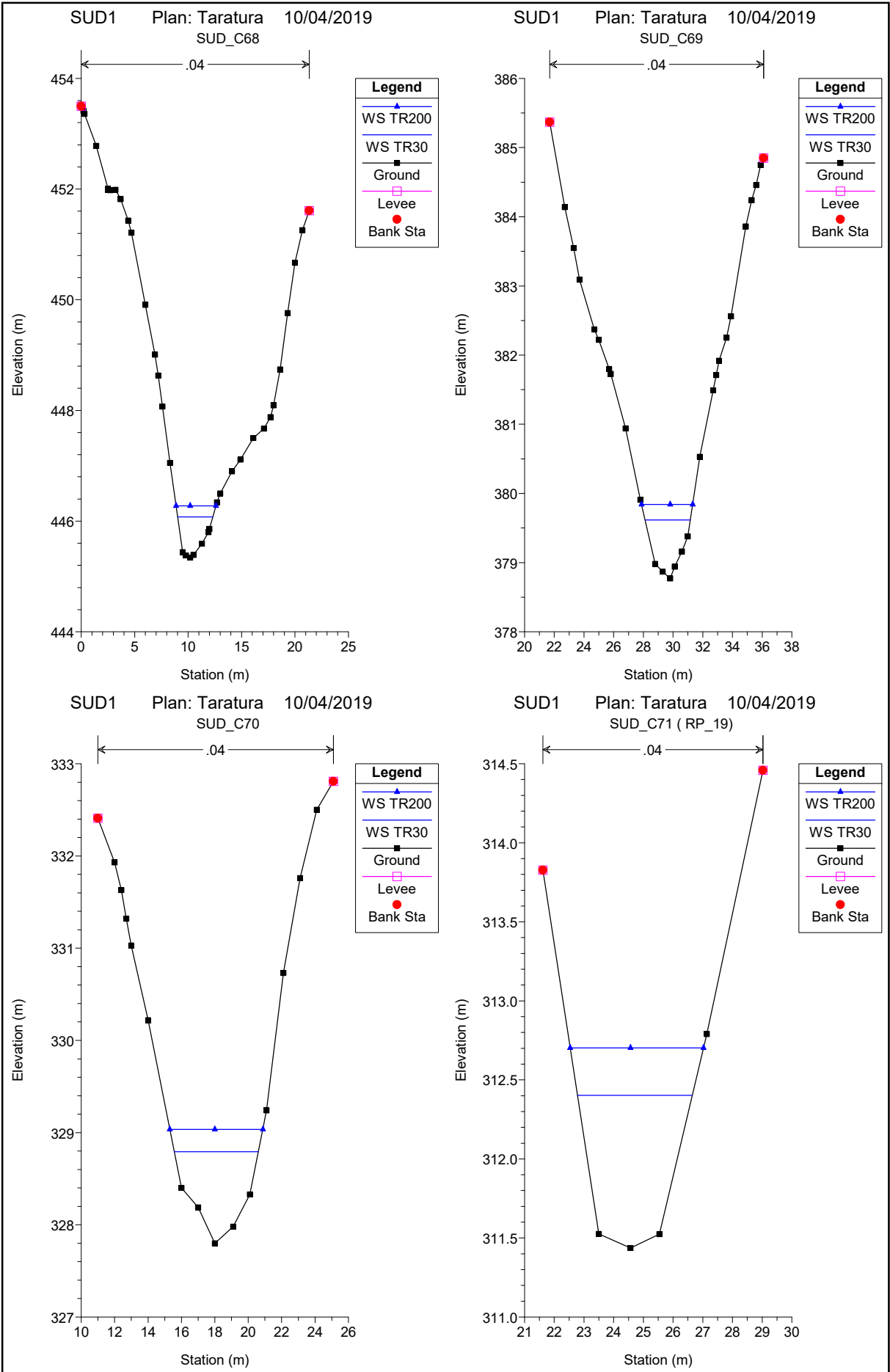


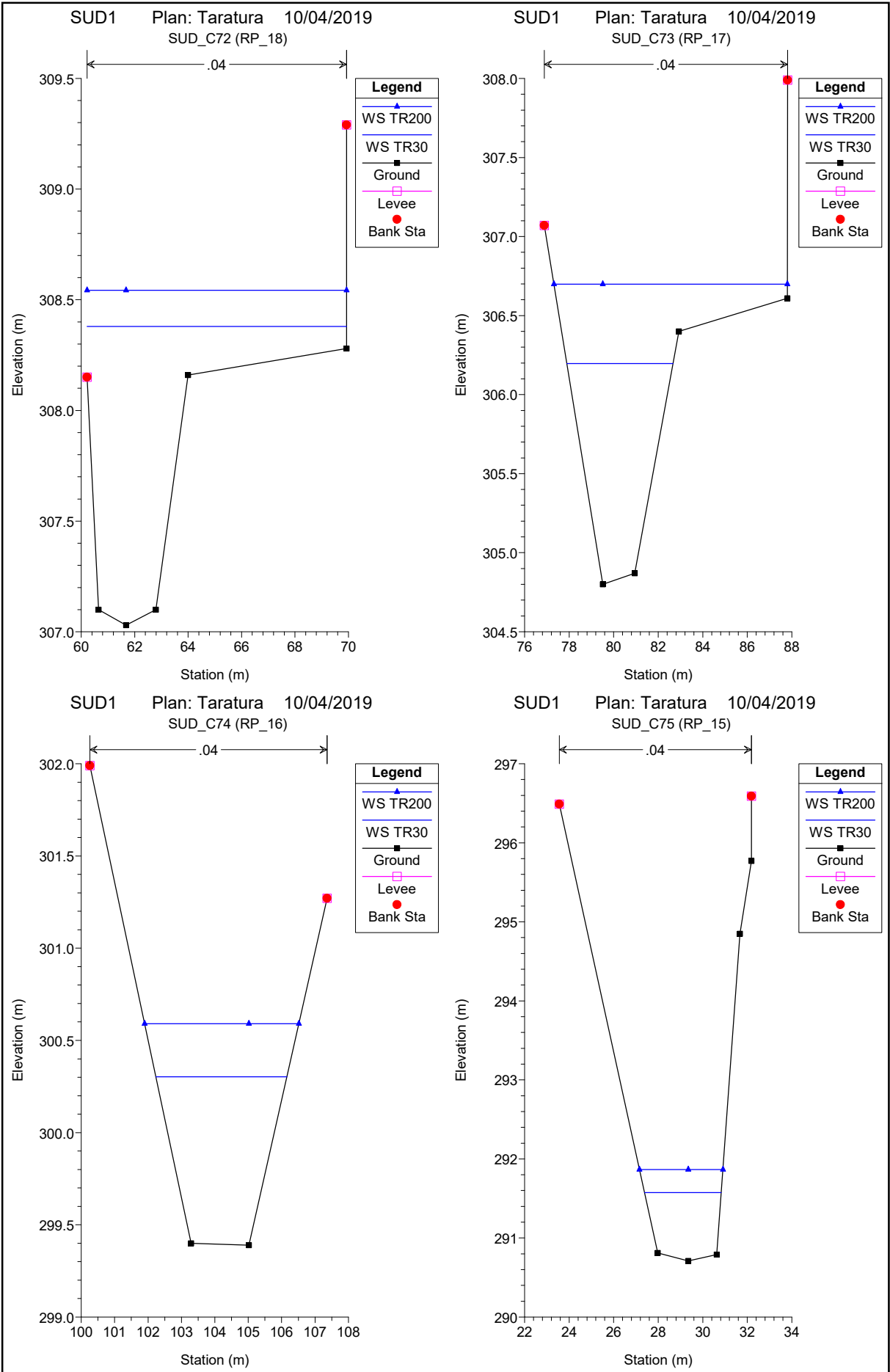


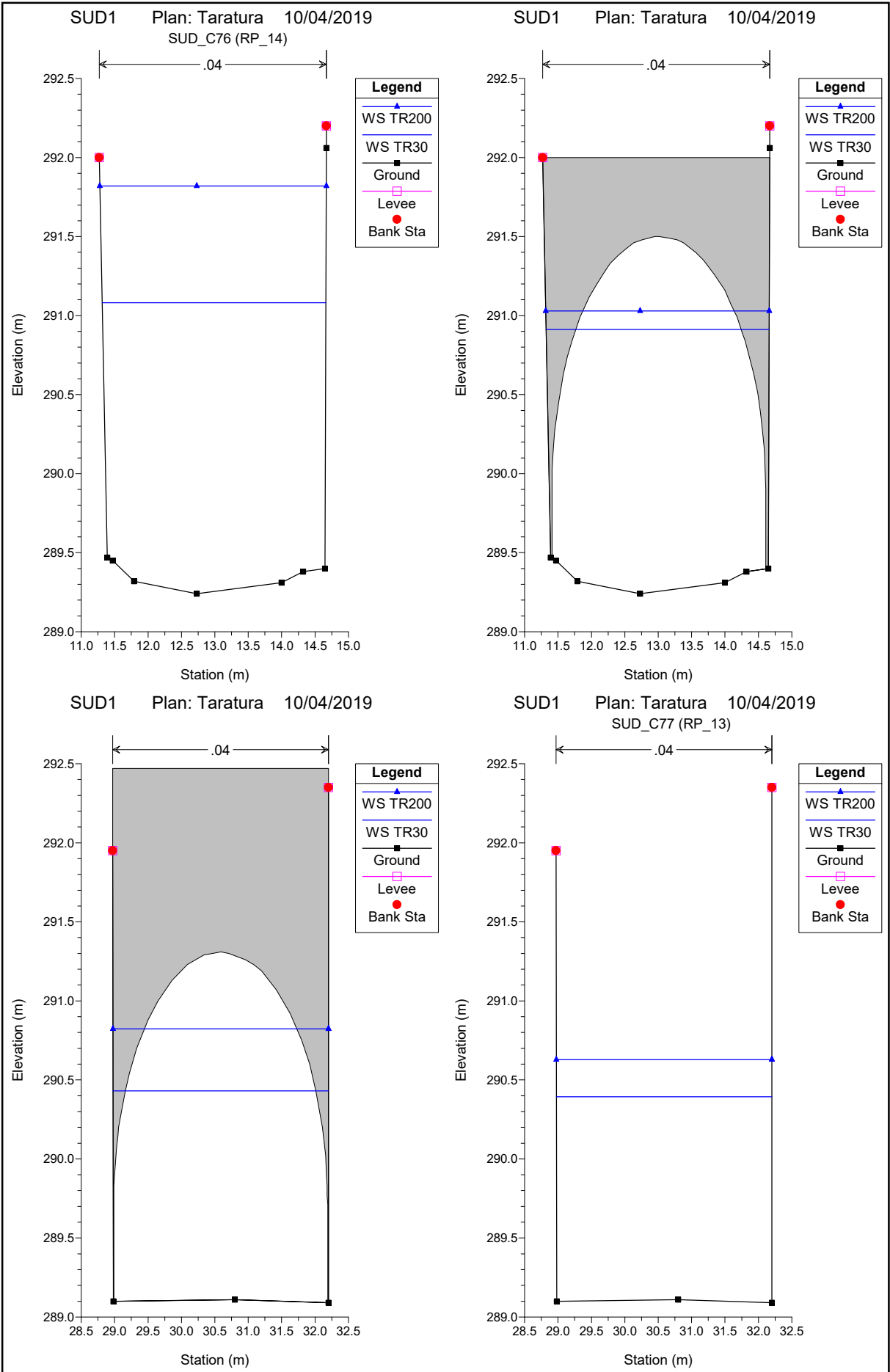


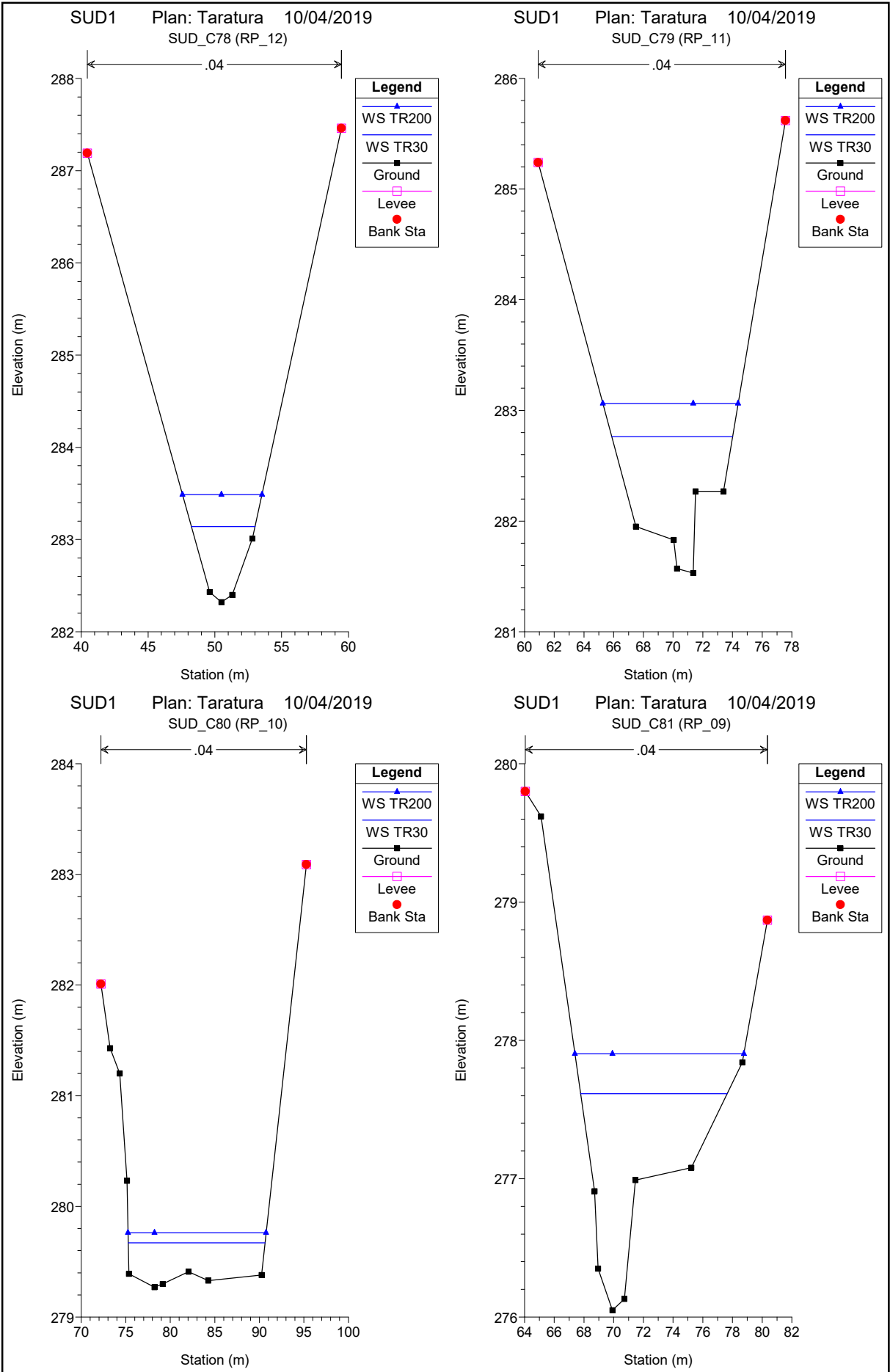


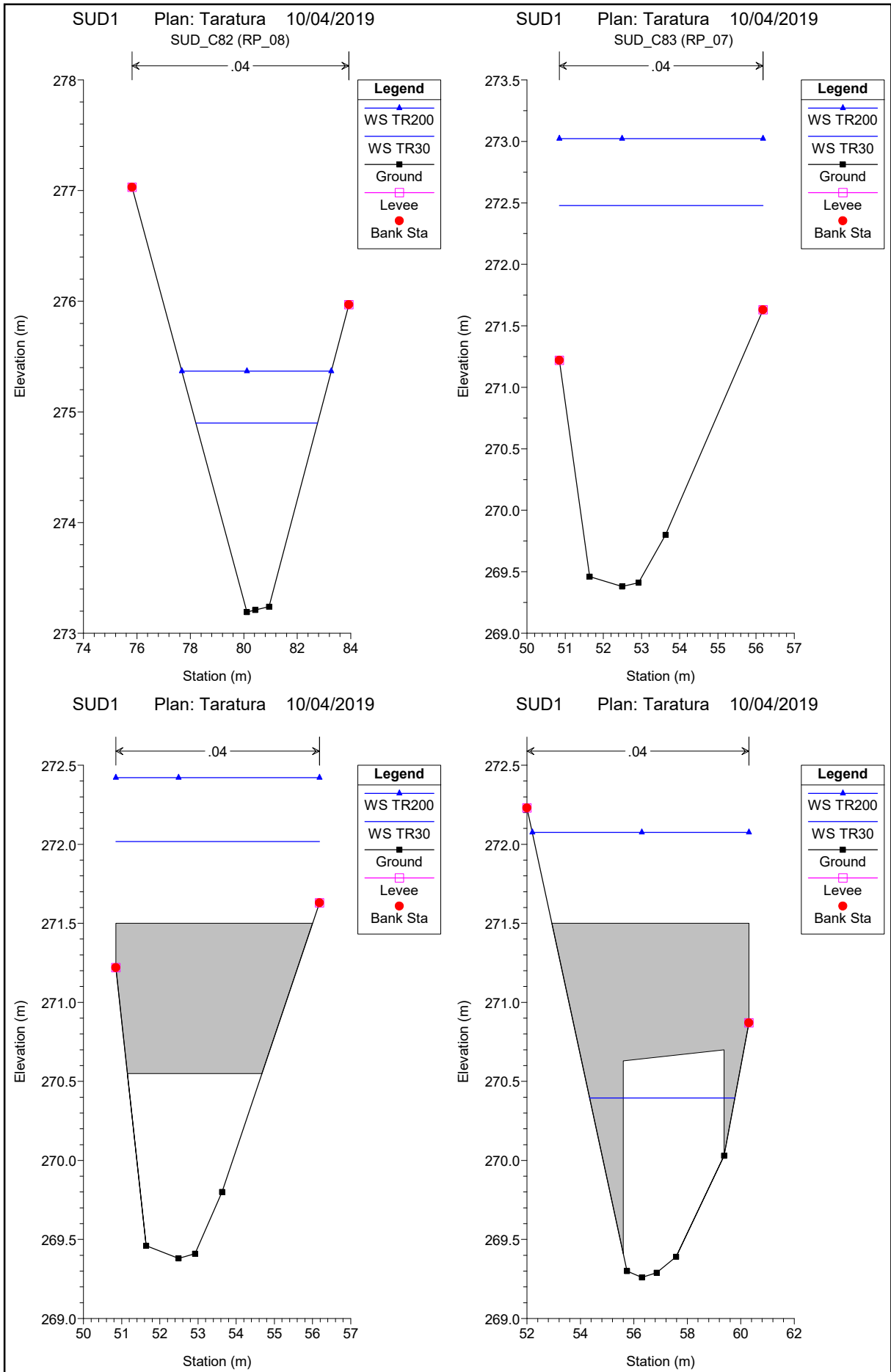


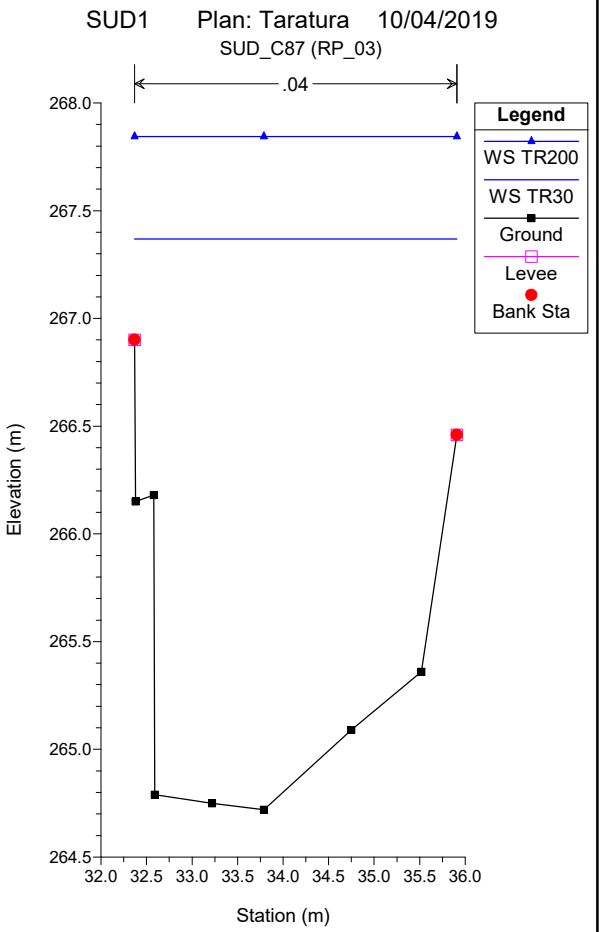
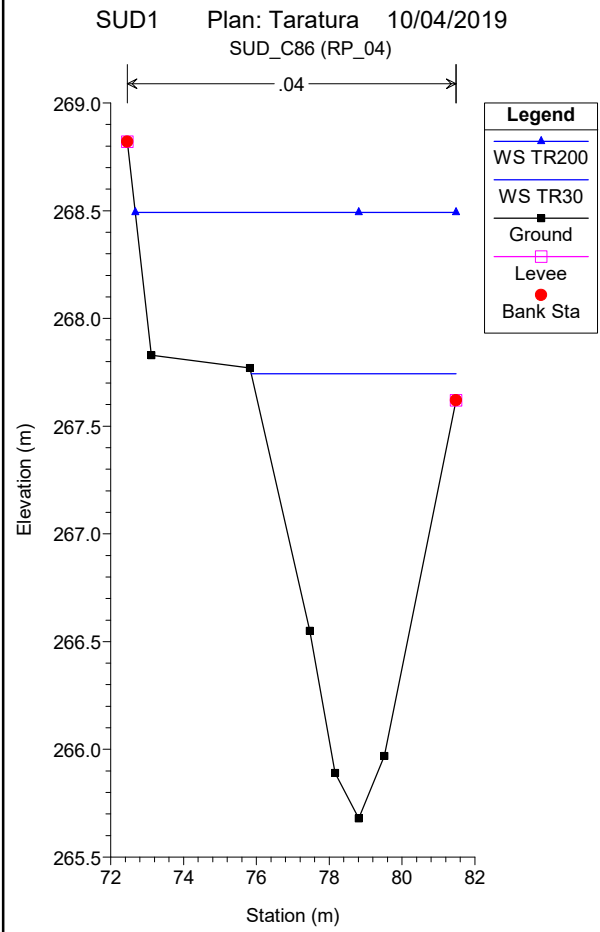
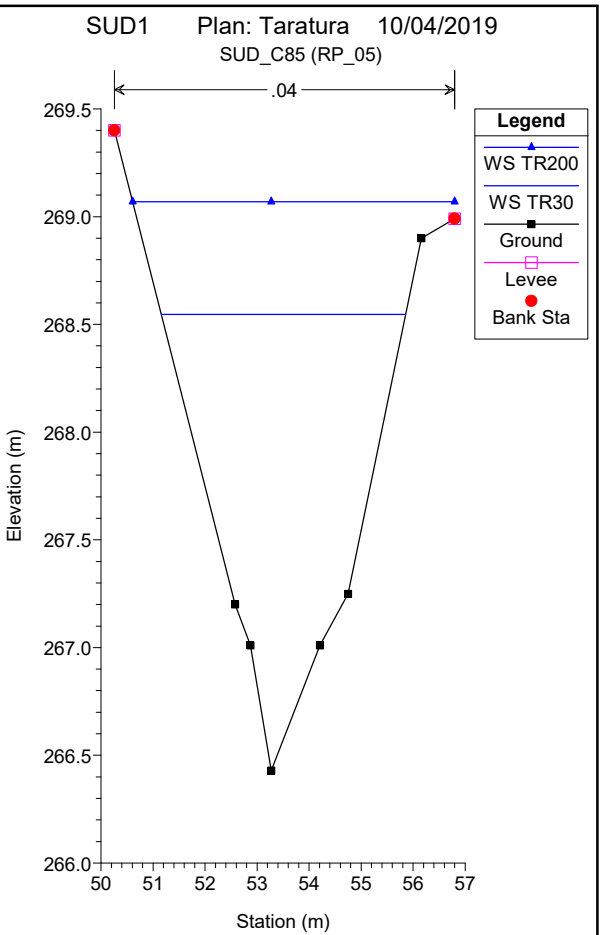
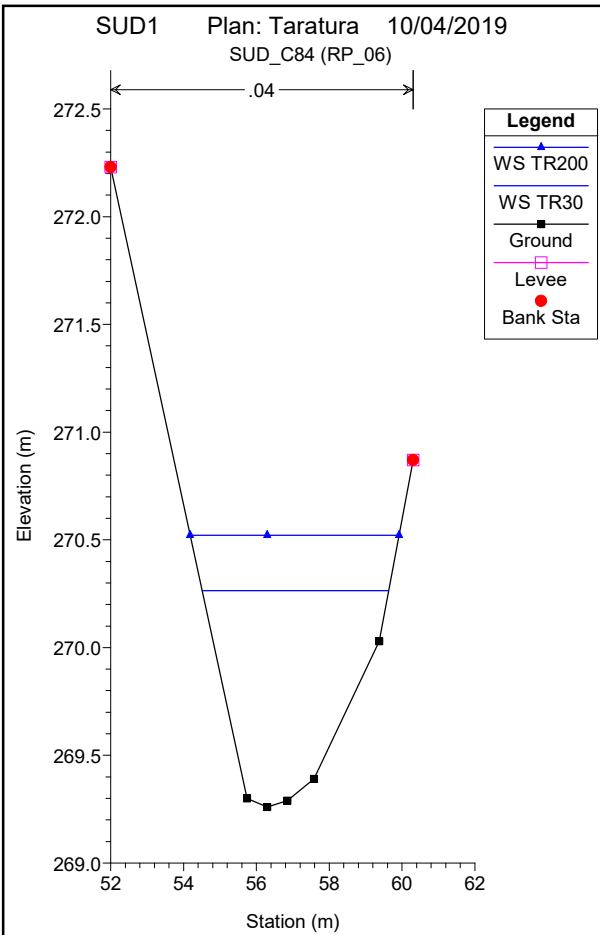




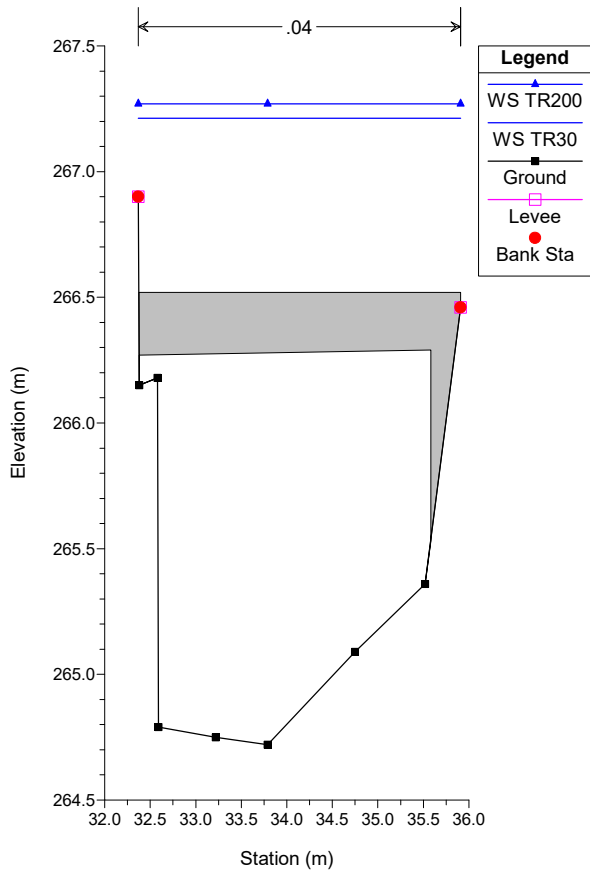




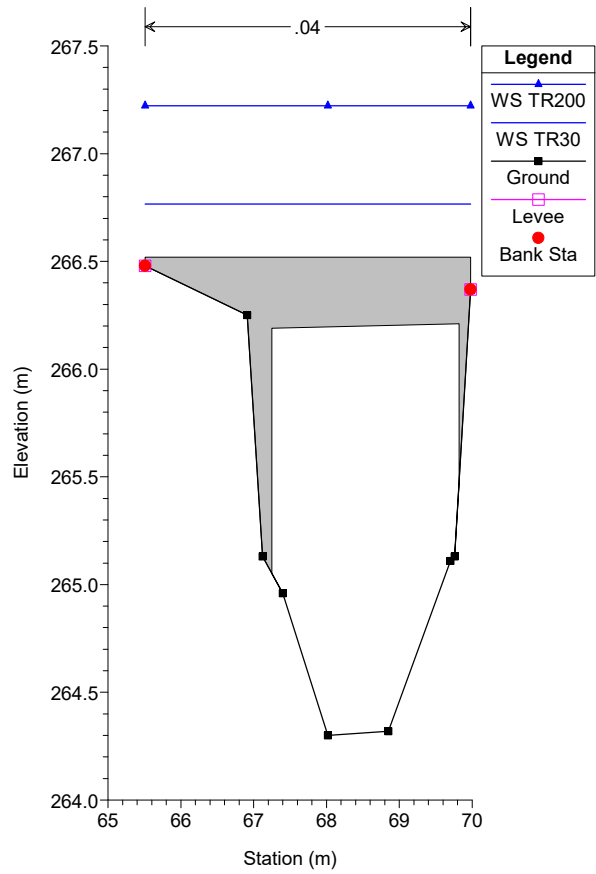




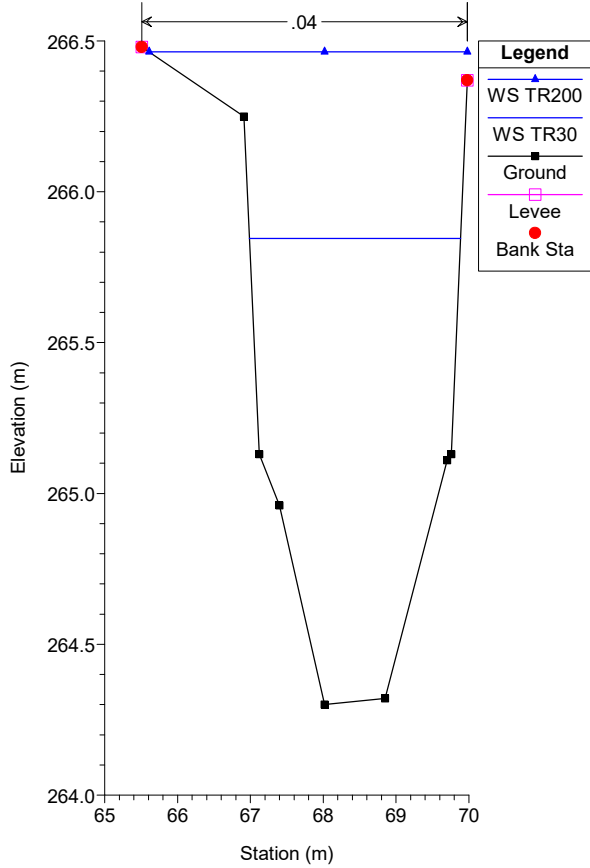
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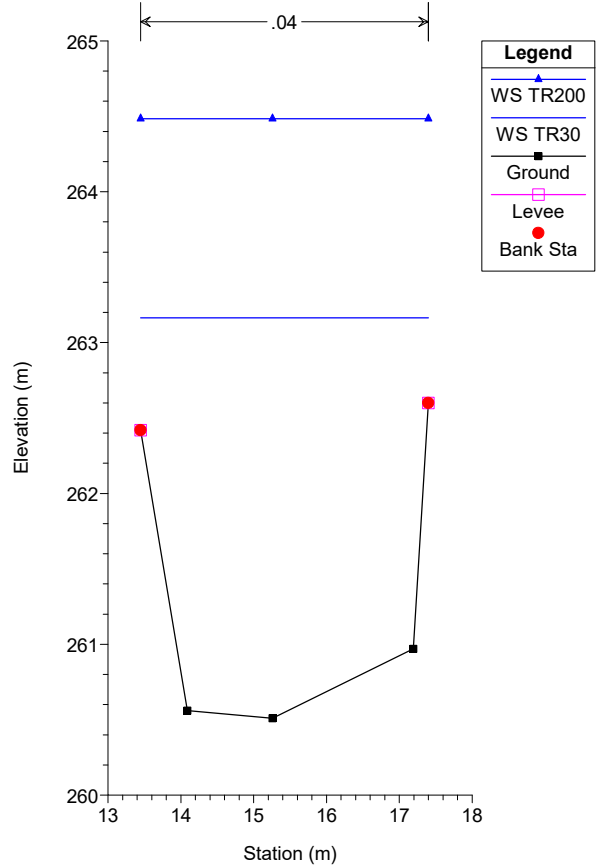
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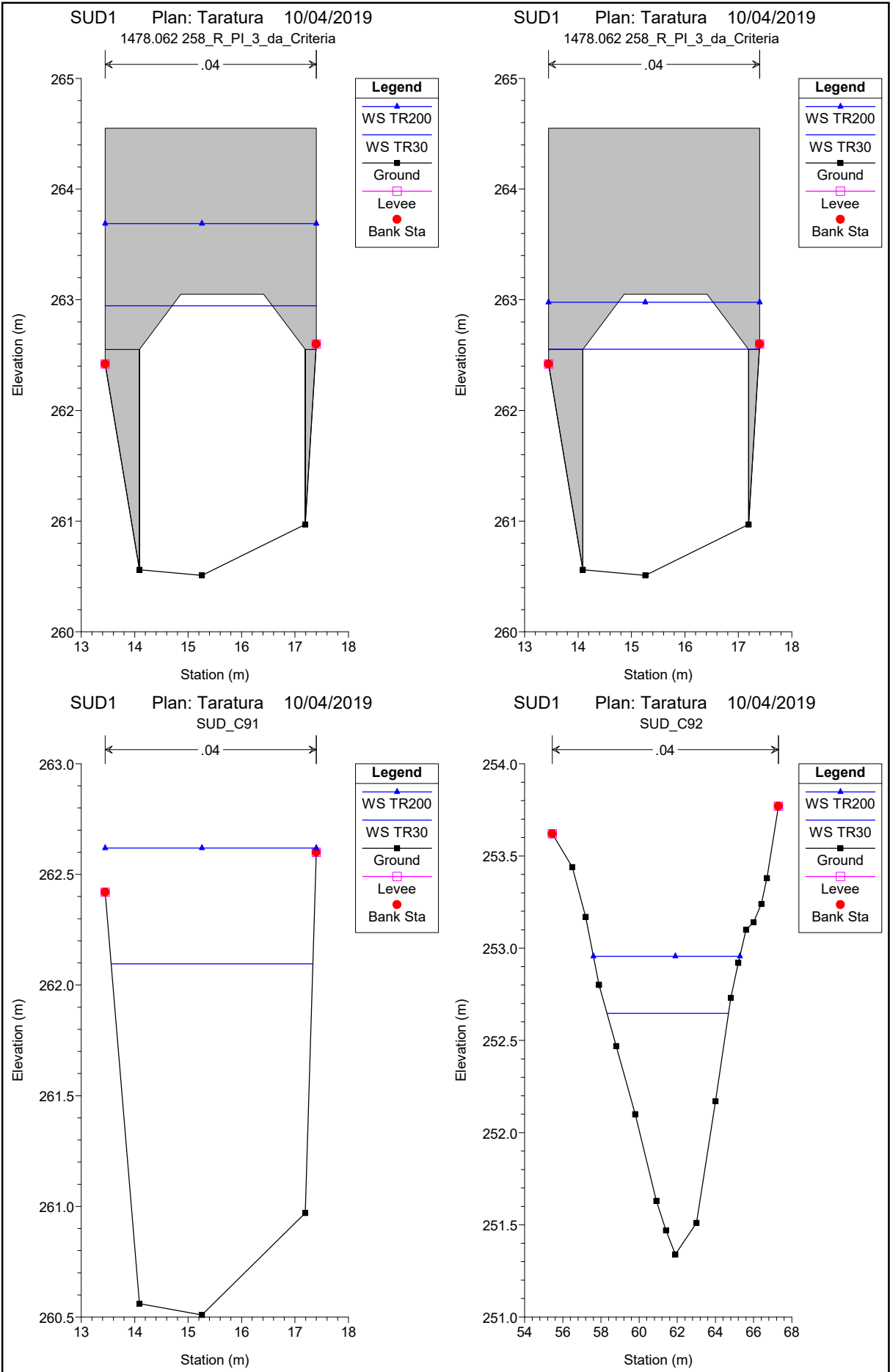
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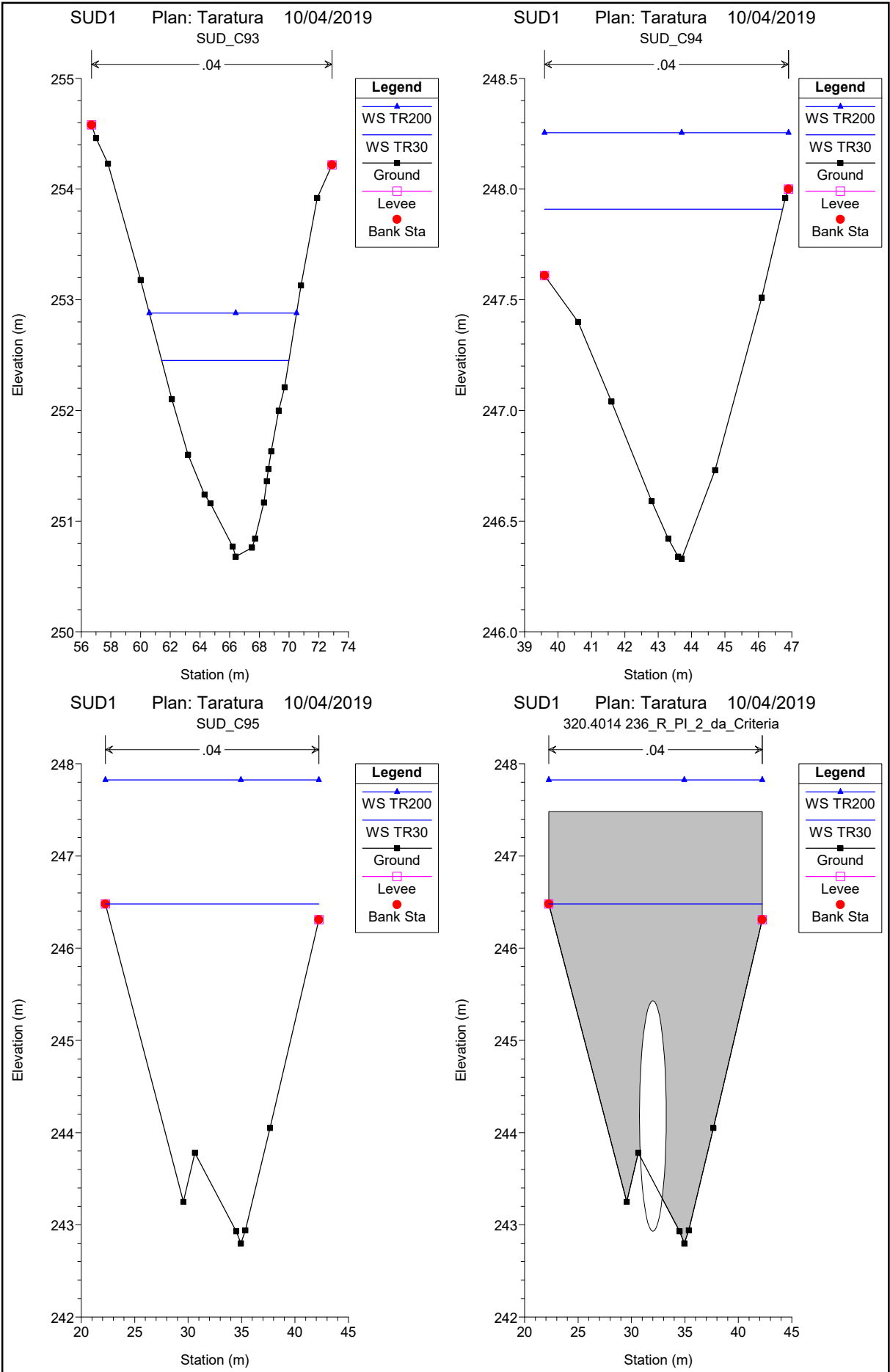


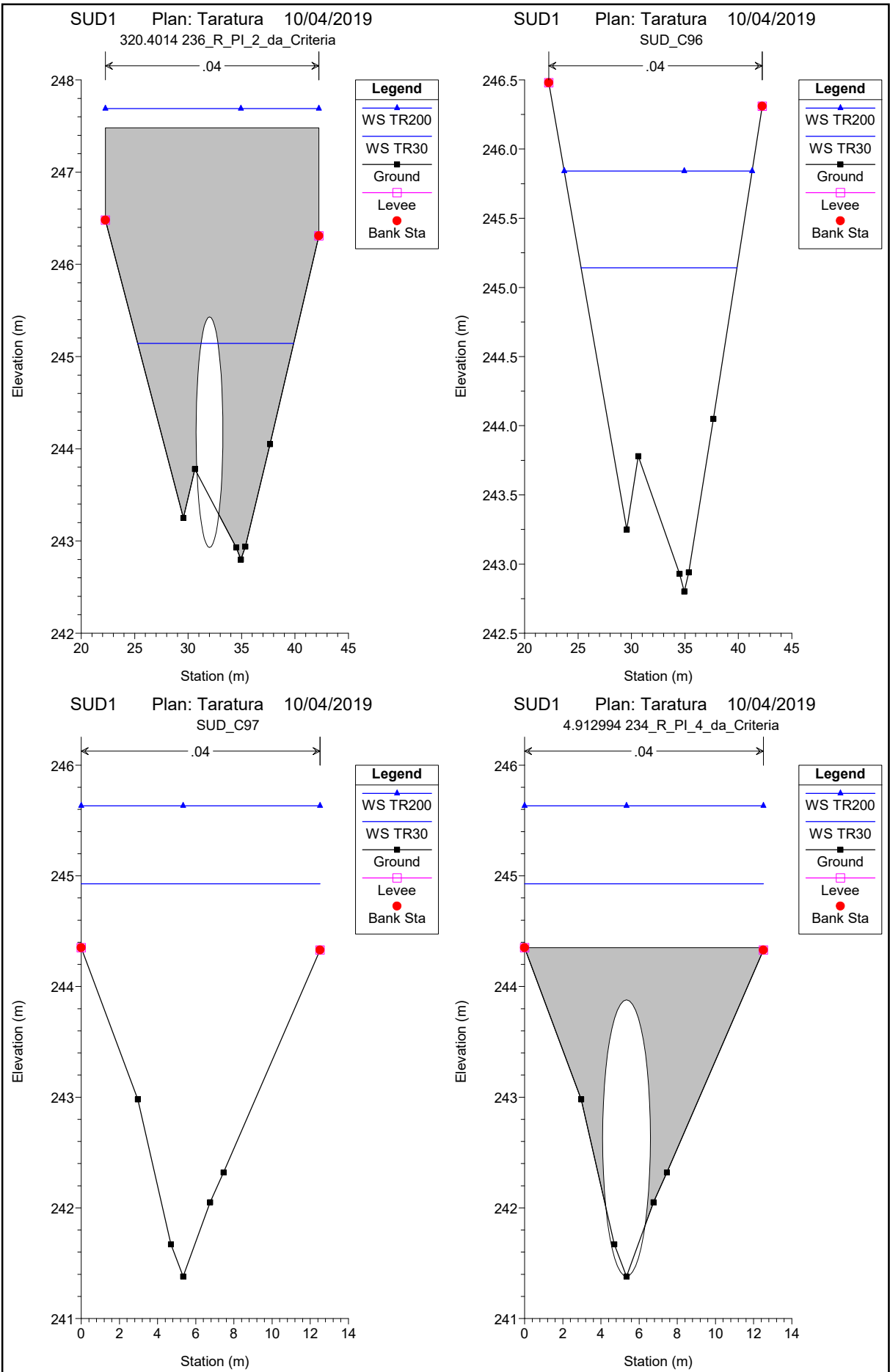
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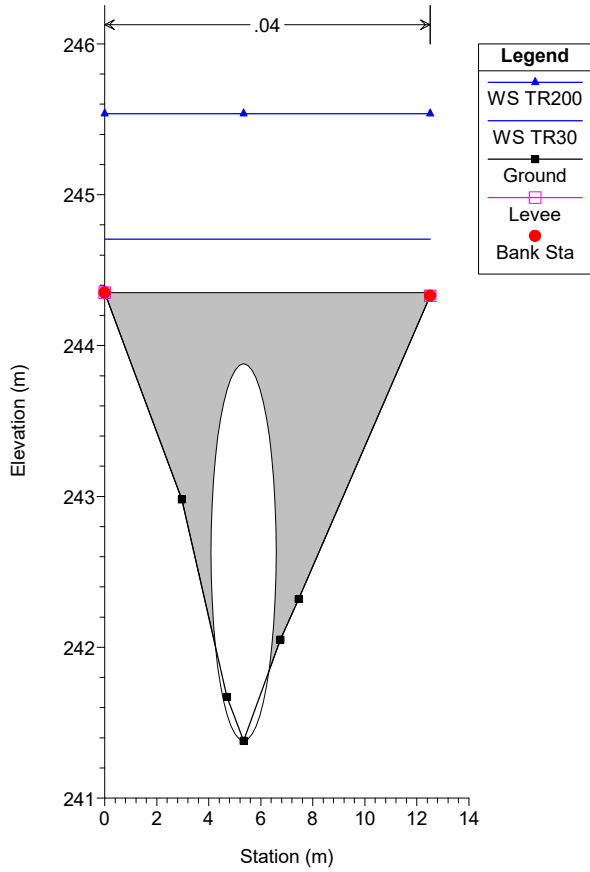




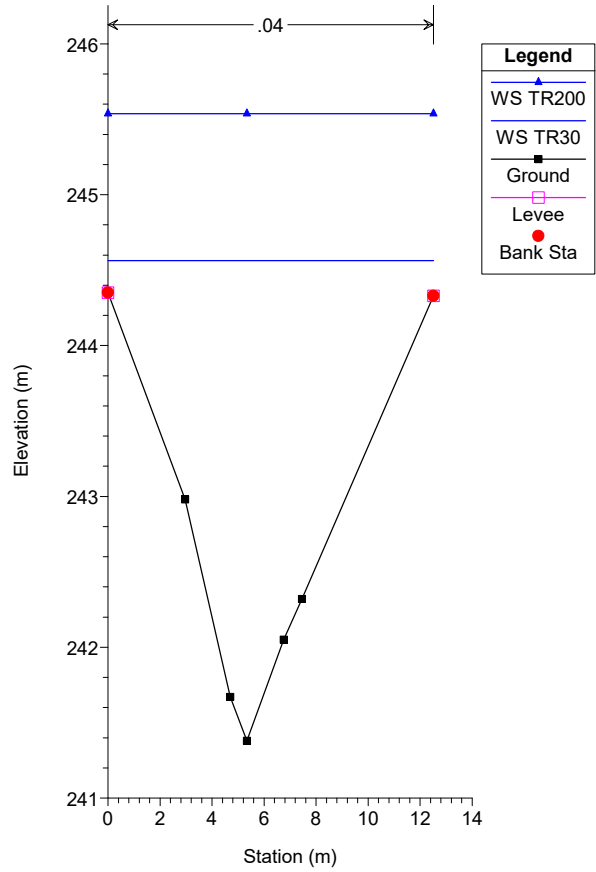




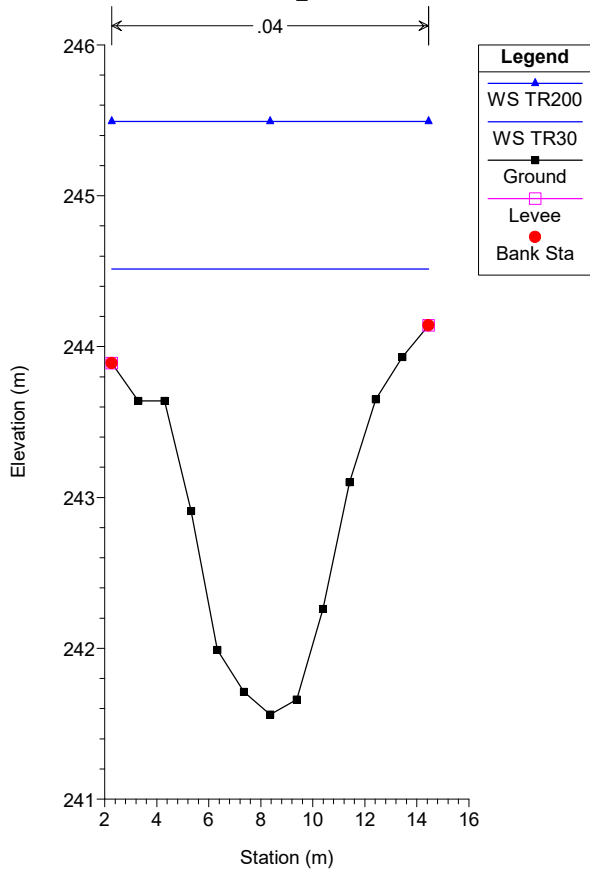
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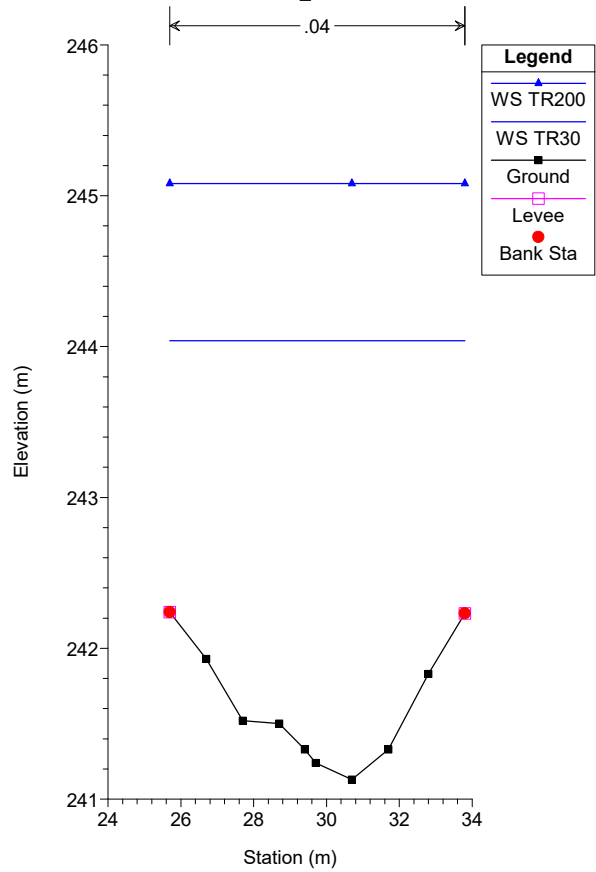
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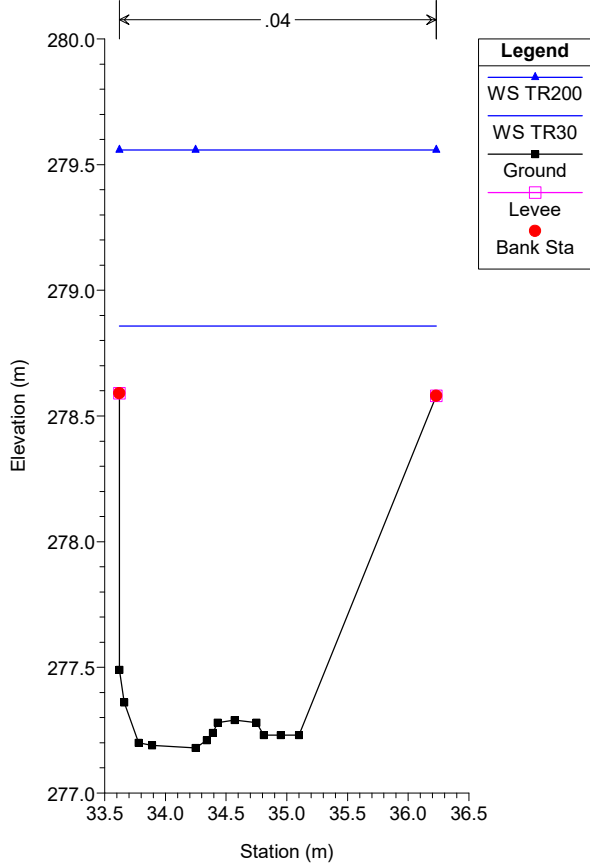
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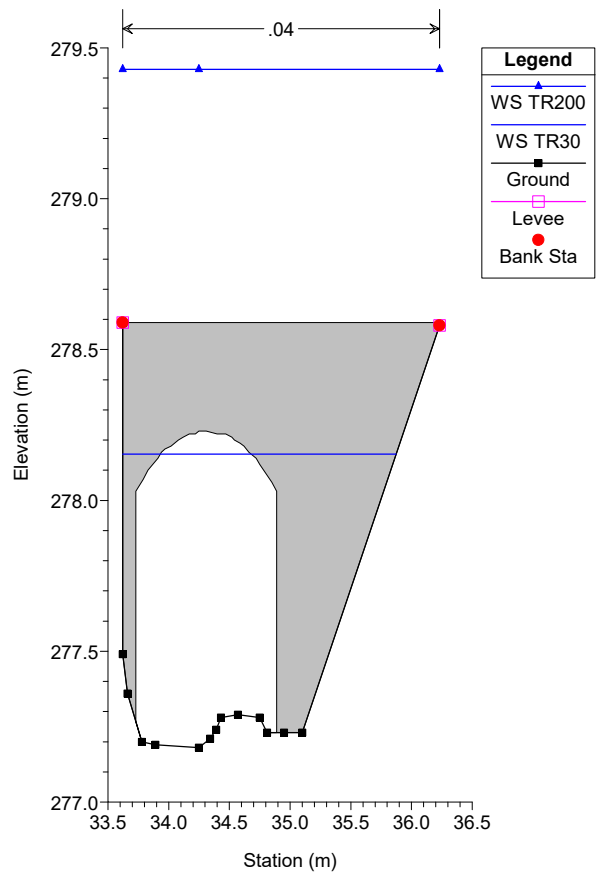
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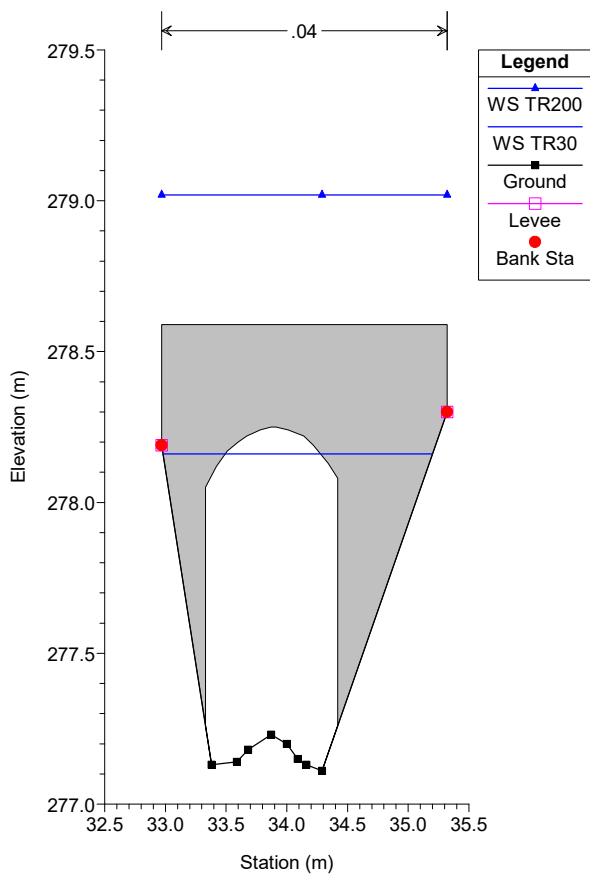
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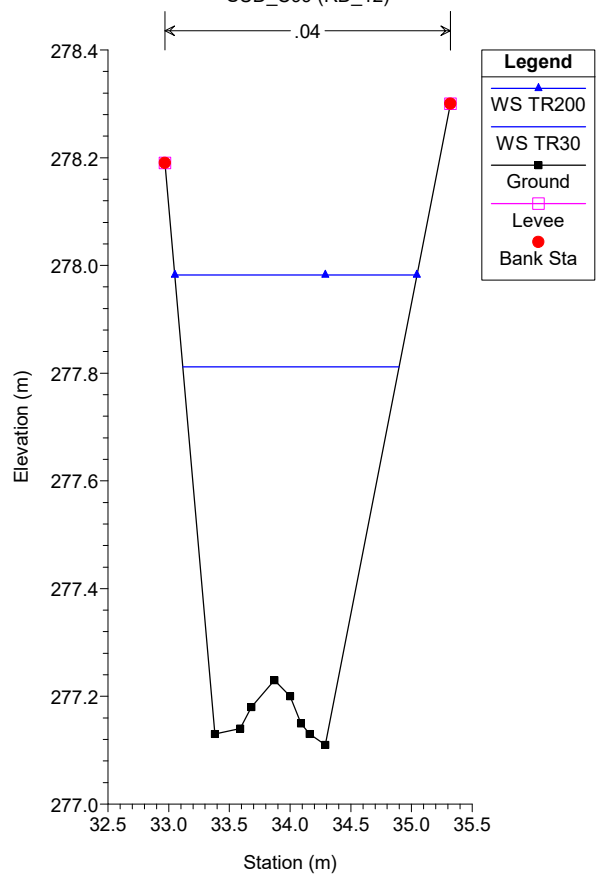
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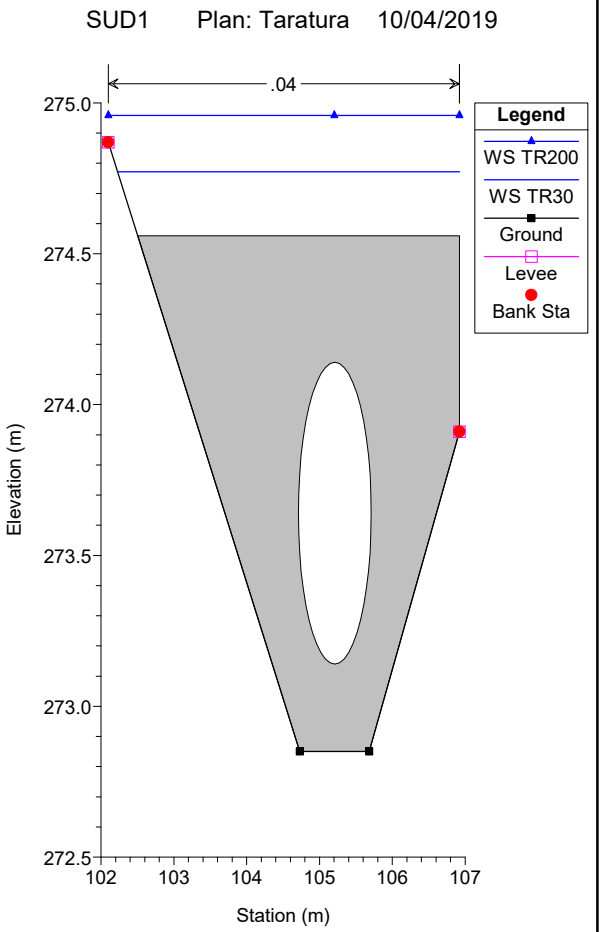
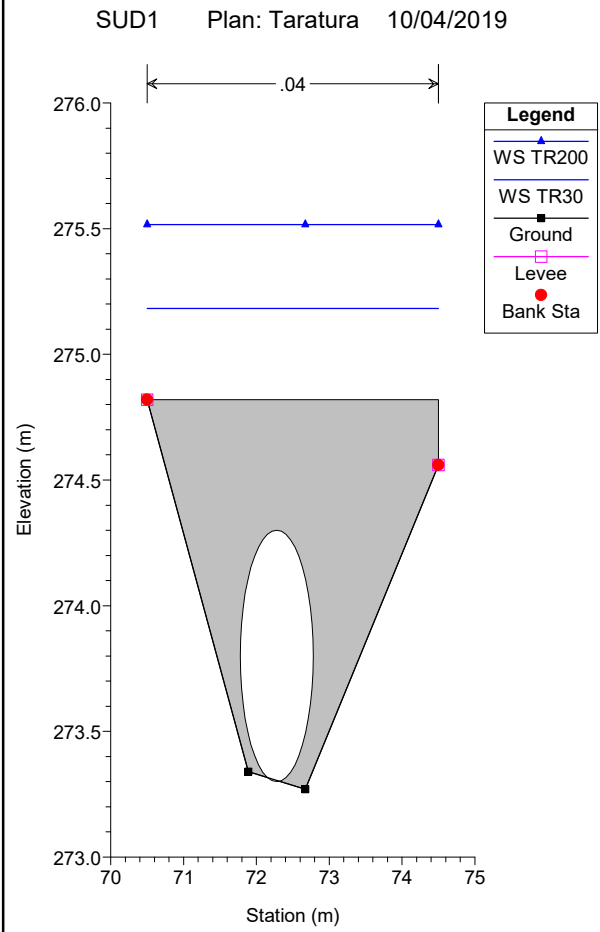
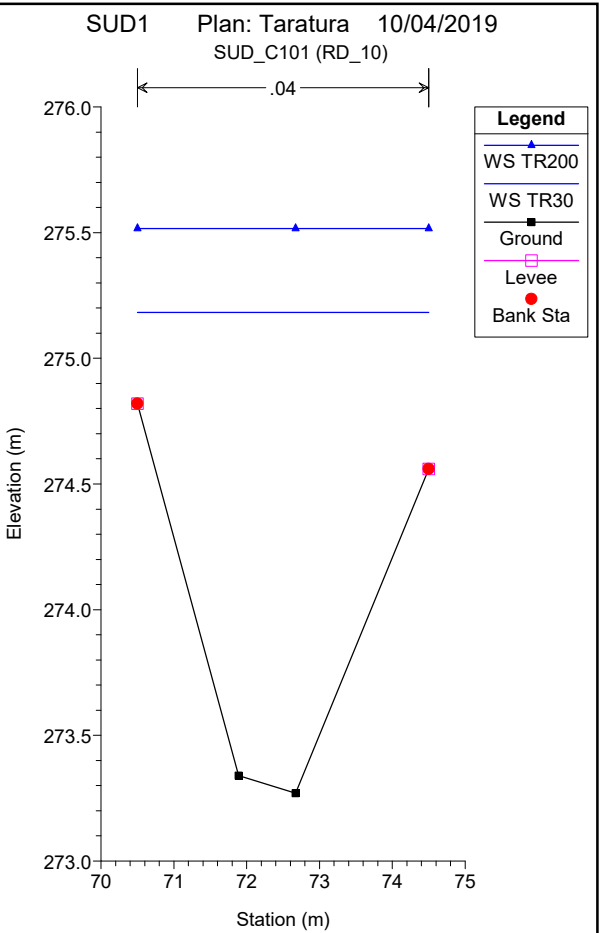
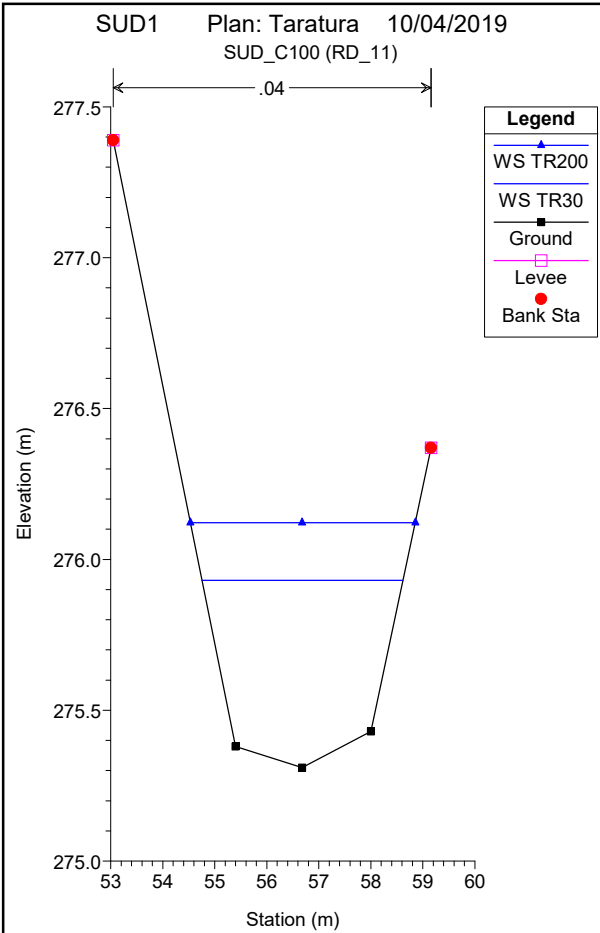


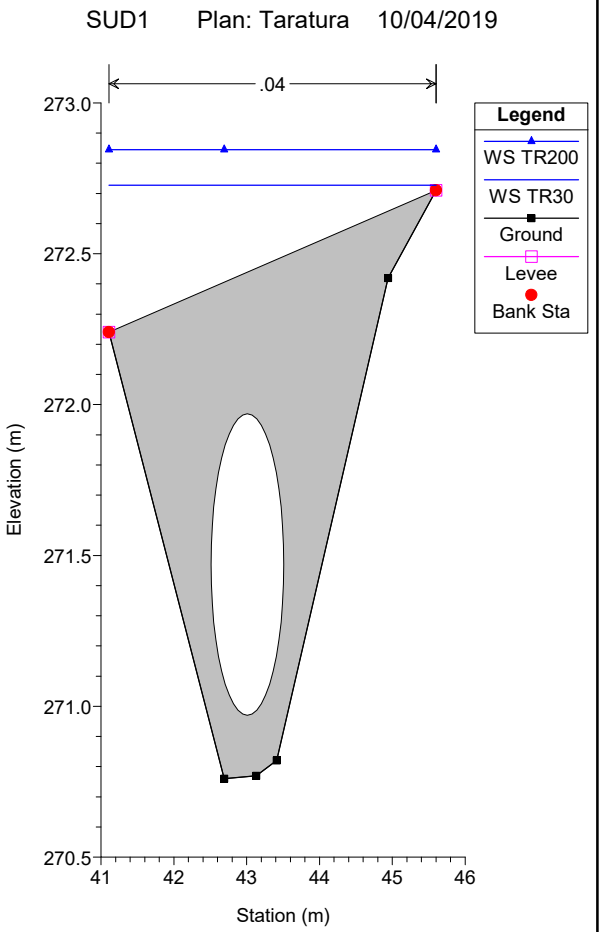
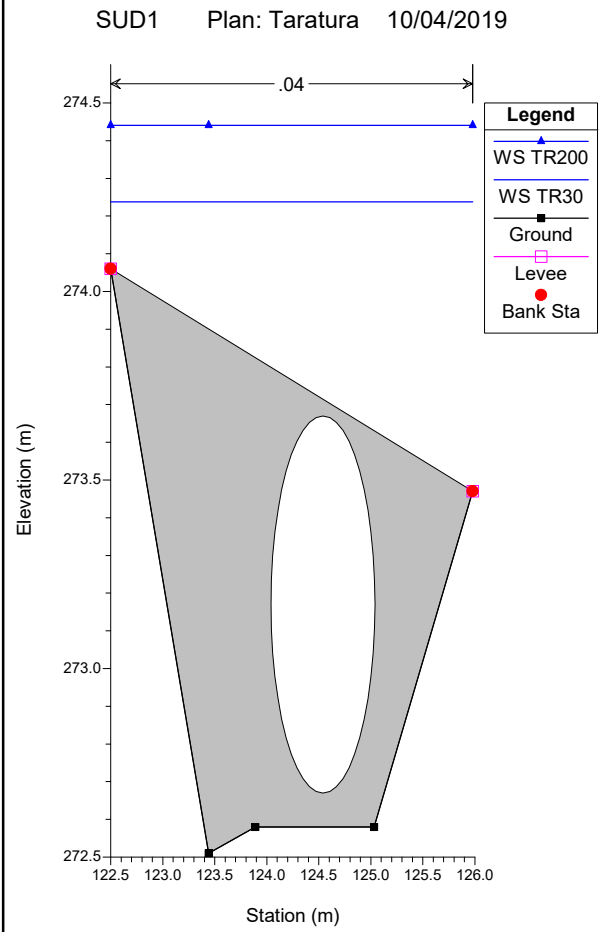
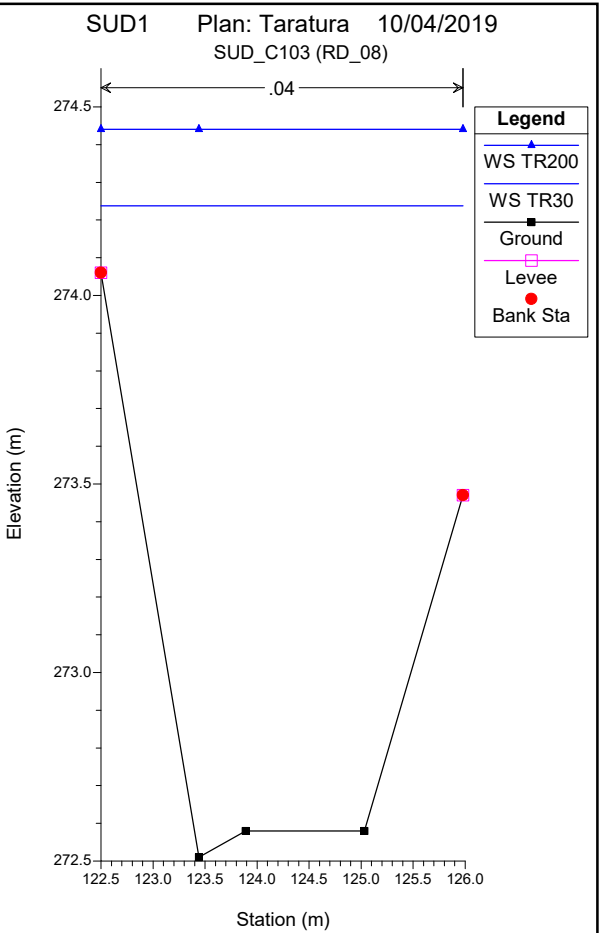
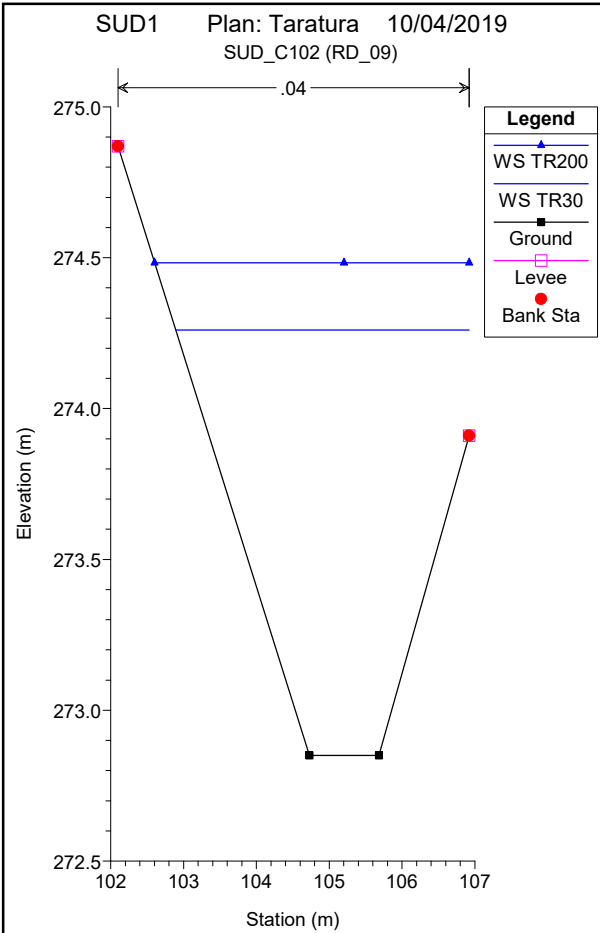
SUD1 Plan: Taratura 10/04/2019

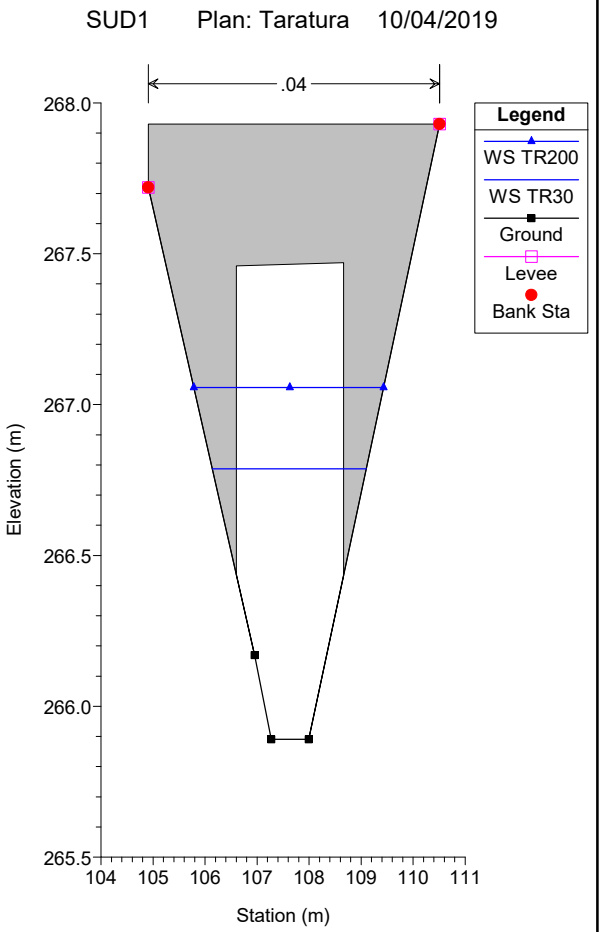
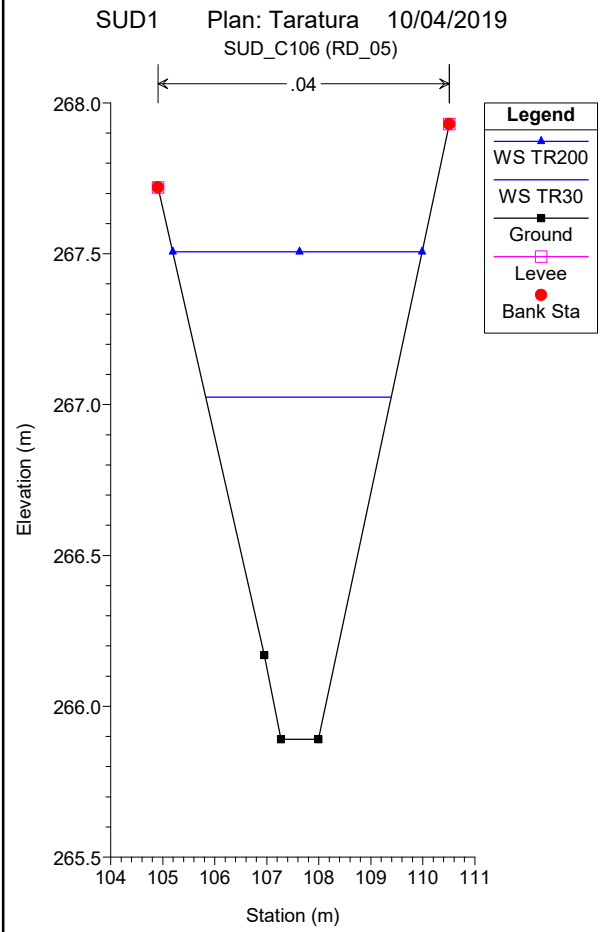
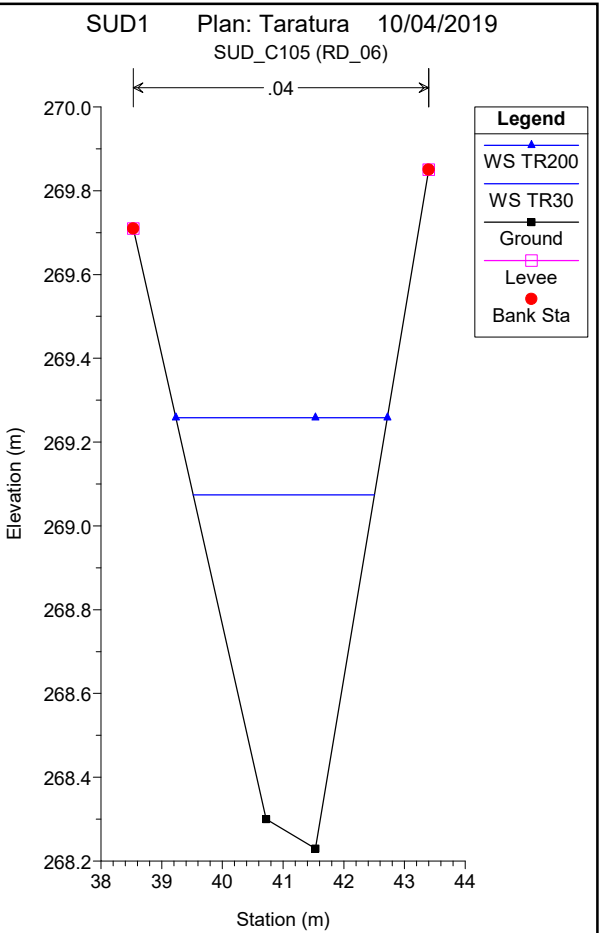
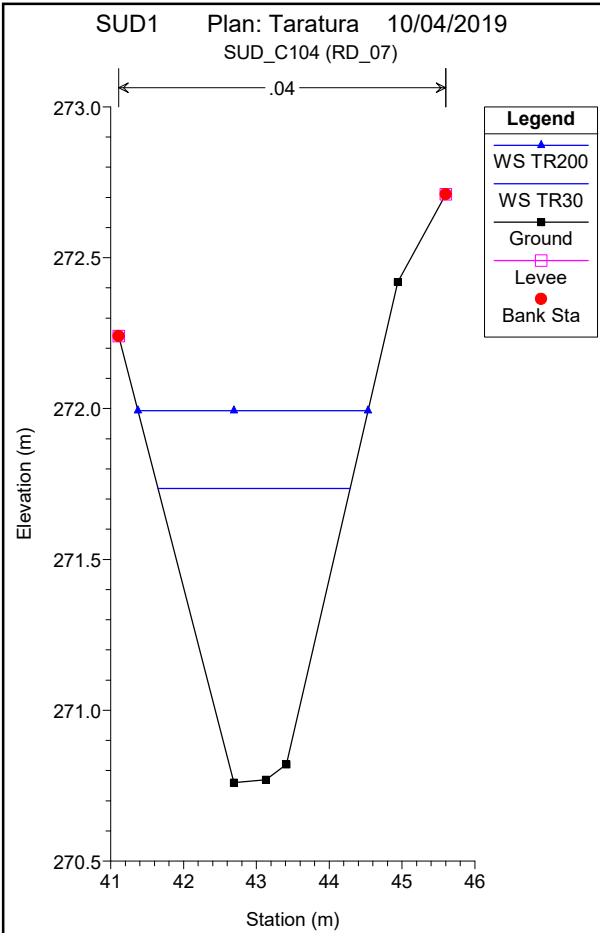


SUD1 Plan: Taratura 10/04/2019  
SUD\_C99 (RD\_12)



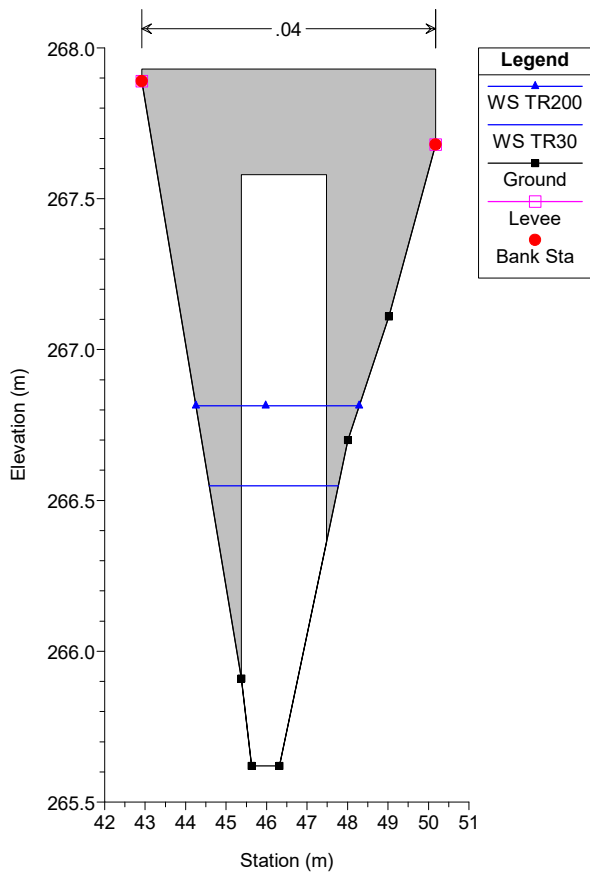




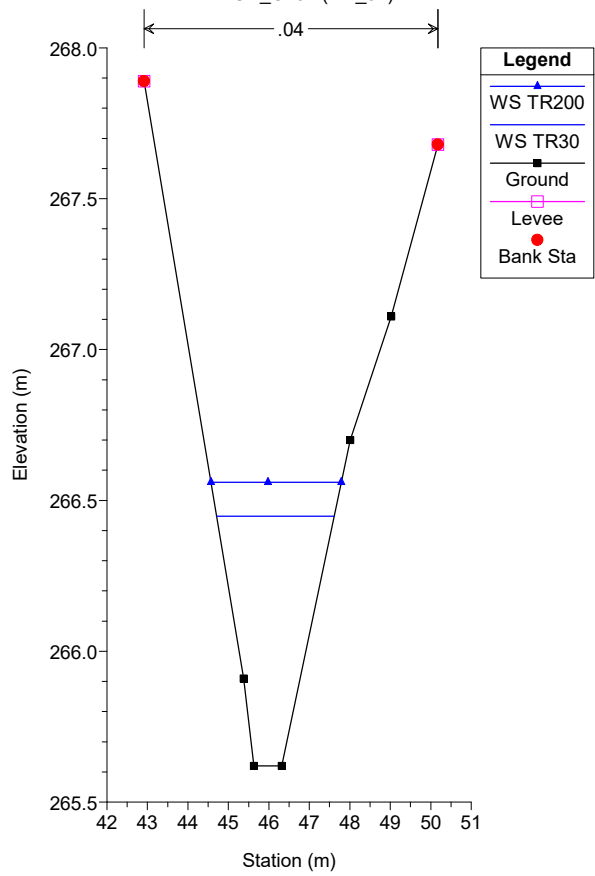




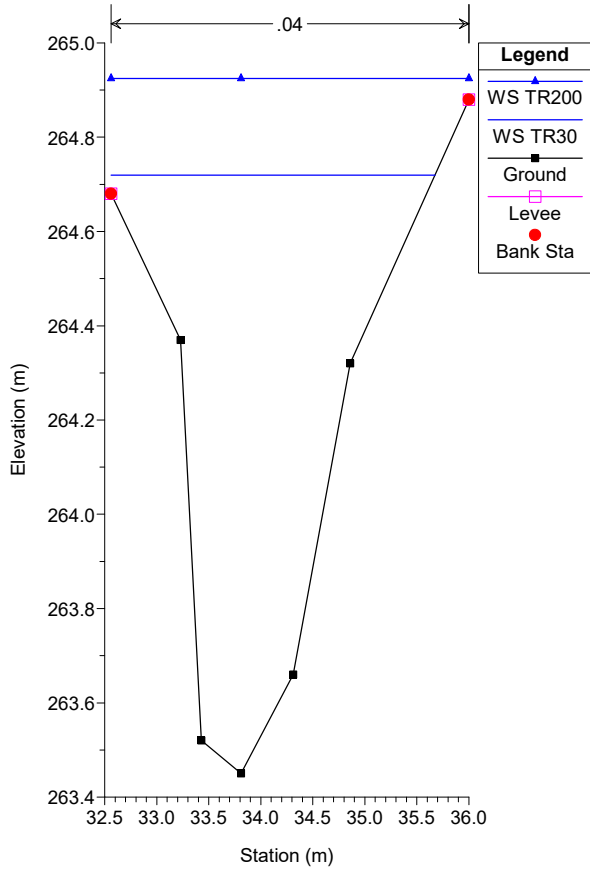
SUD1 Plan: Taratura 10/04/2019



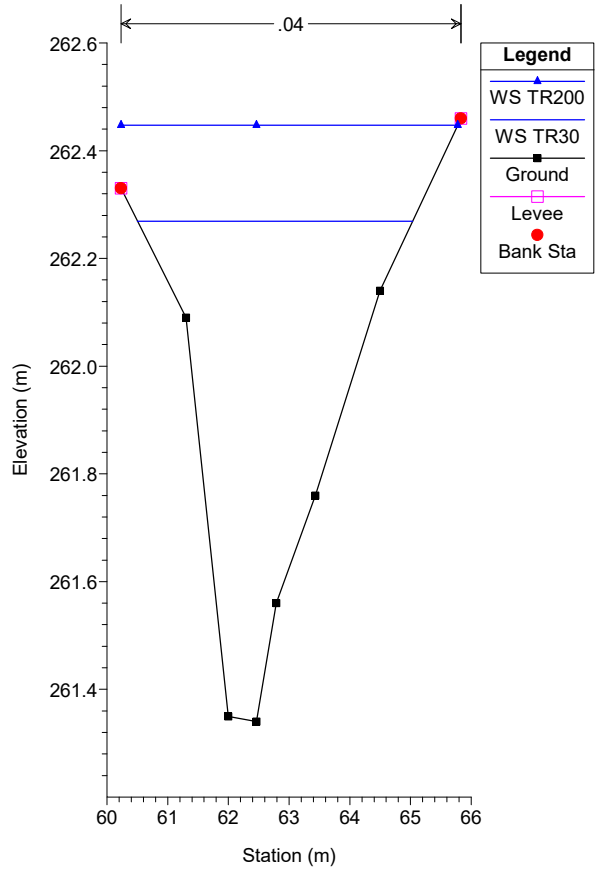
SUD1 Plan: Taratura 10/04/2019  
SUD\_C107 (RD\_04)

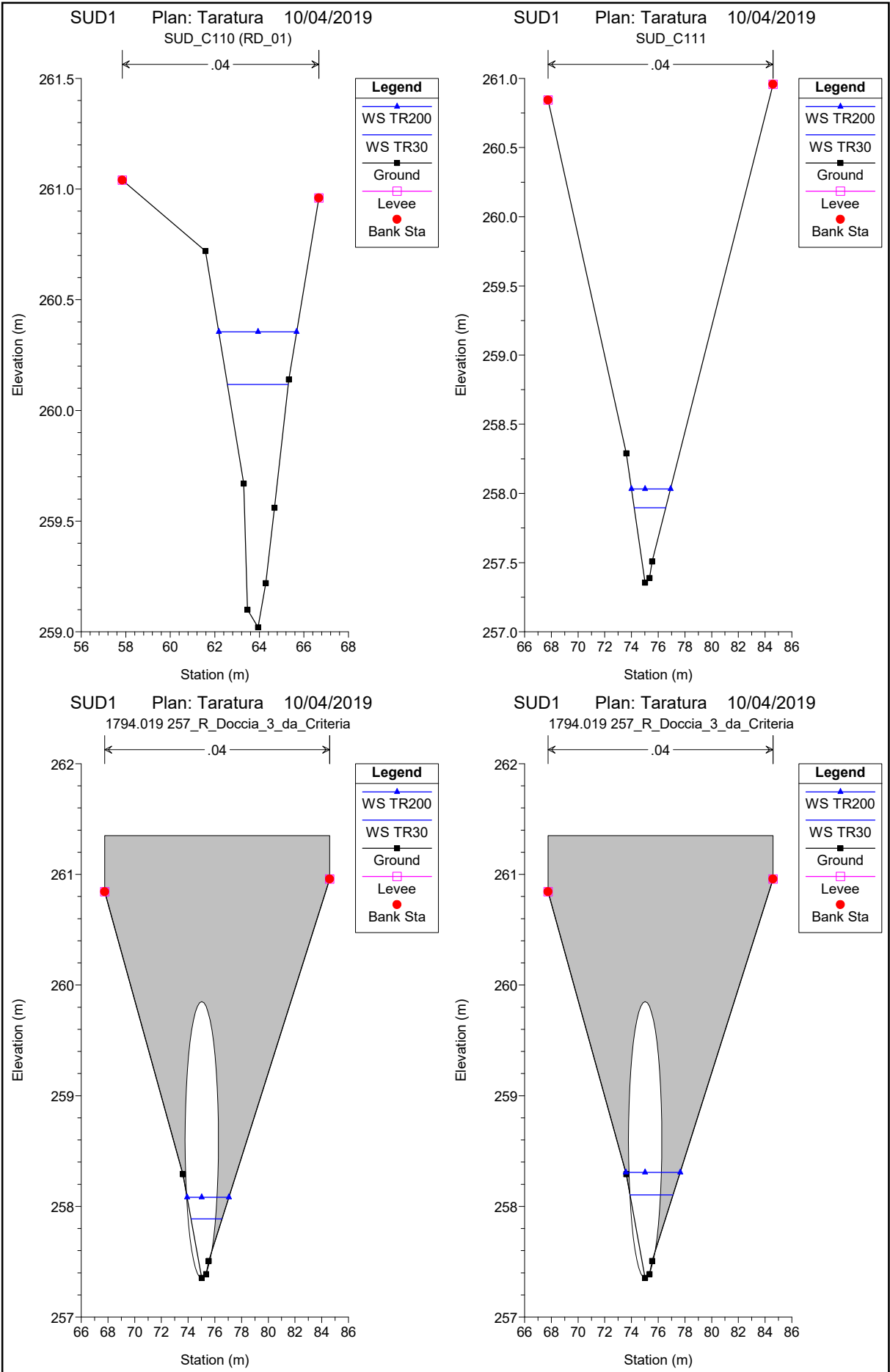


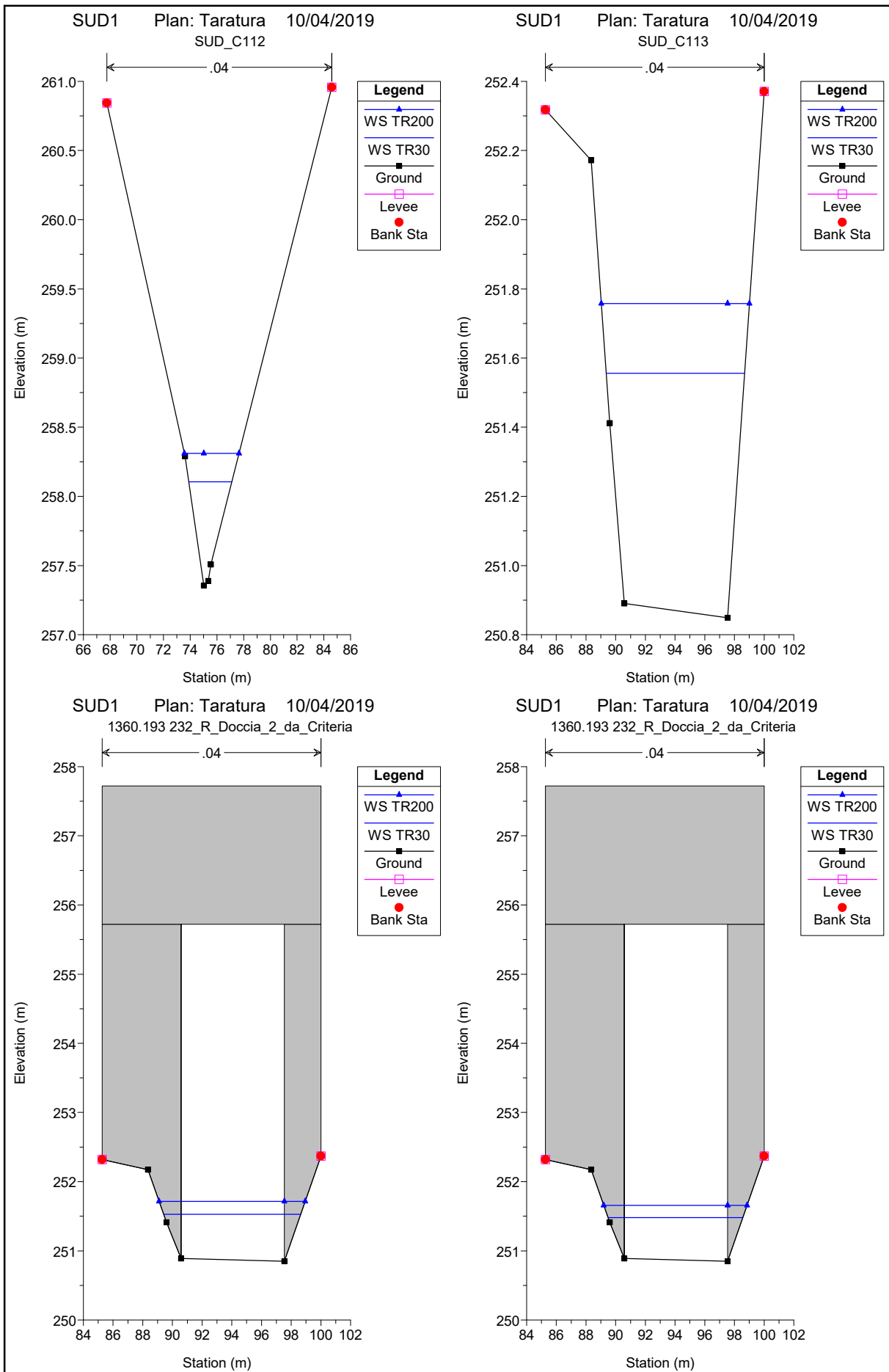
SUD1 Plan: Taratura 10/04/2019  
SUD\_C108 (RD\_03)

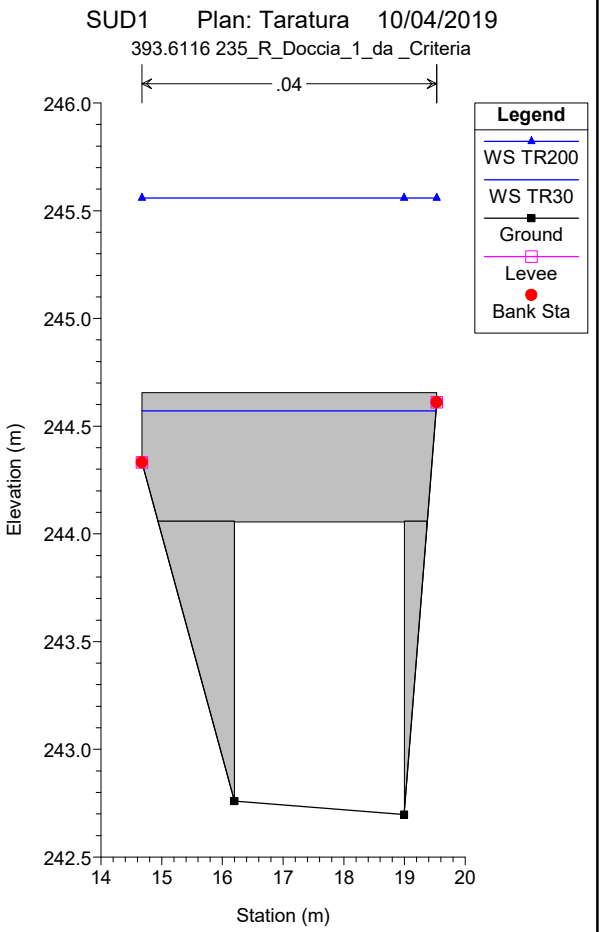
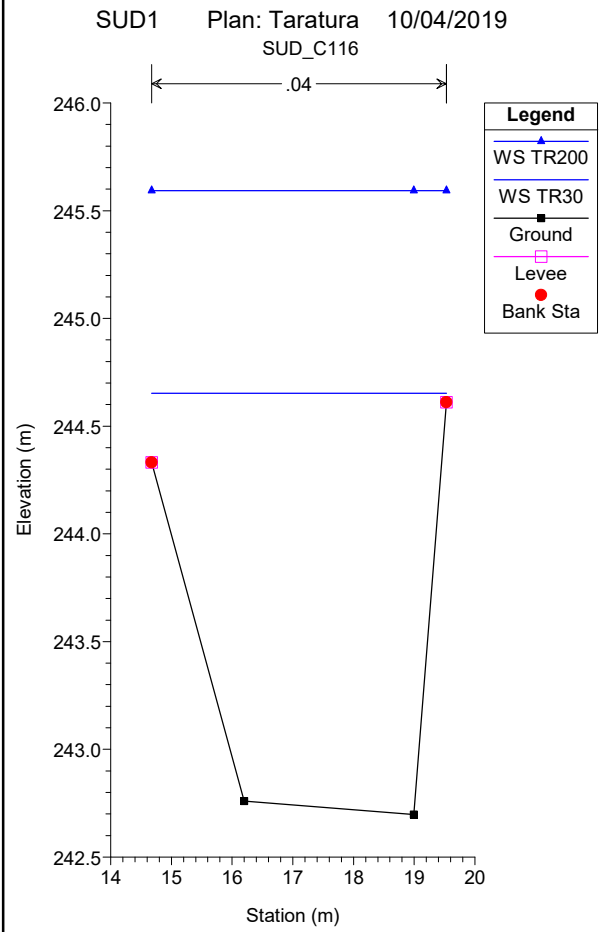
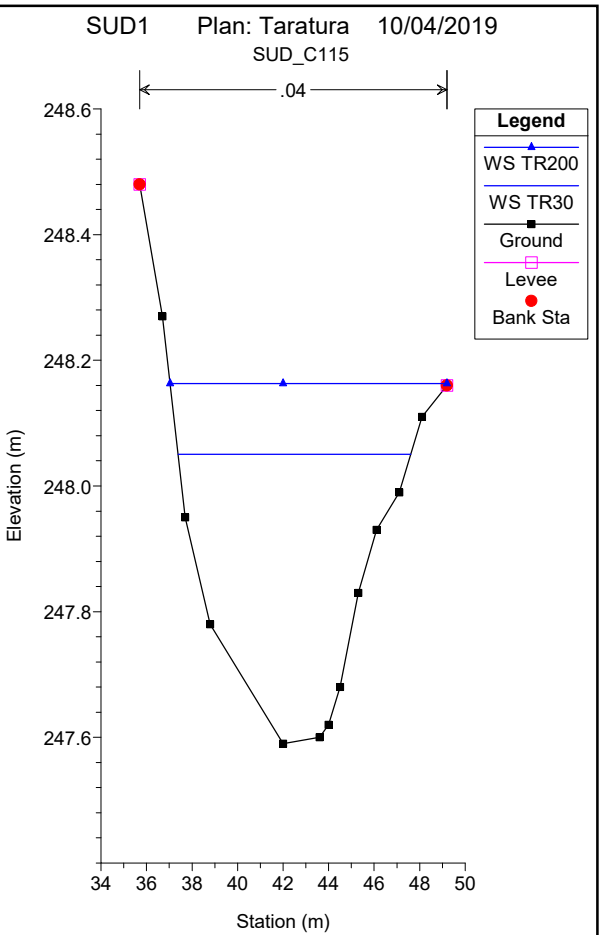
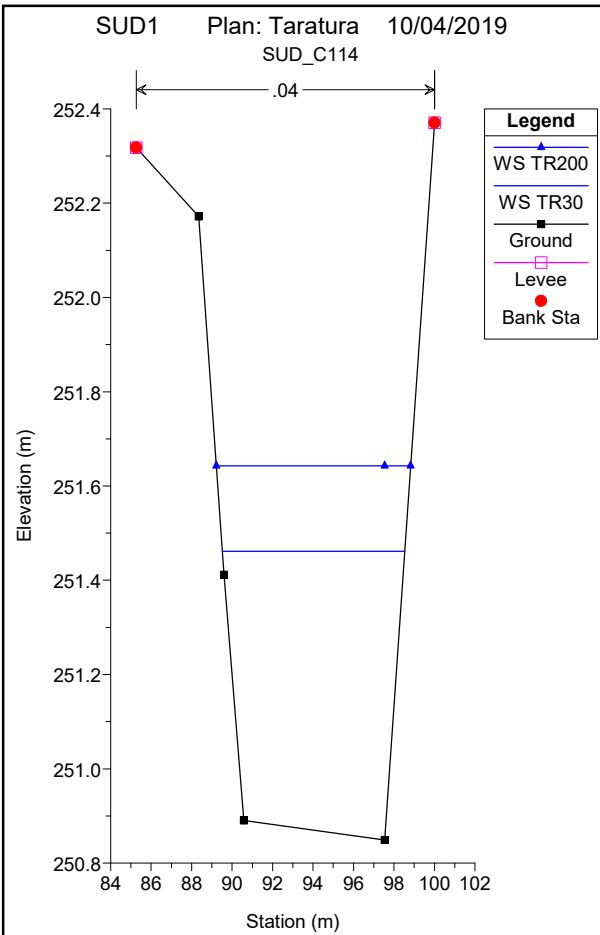


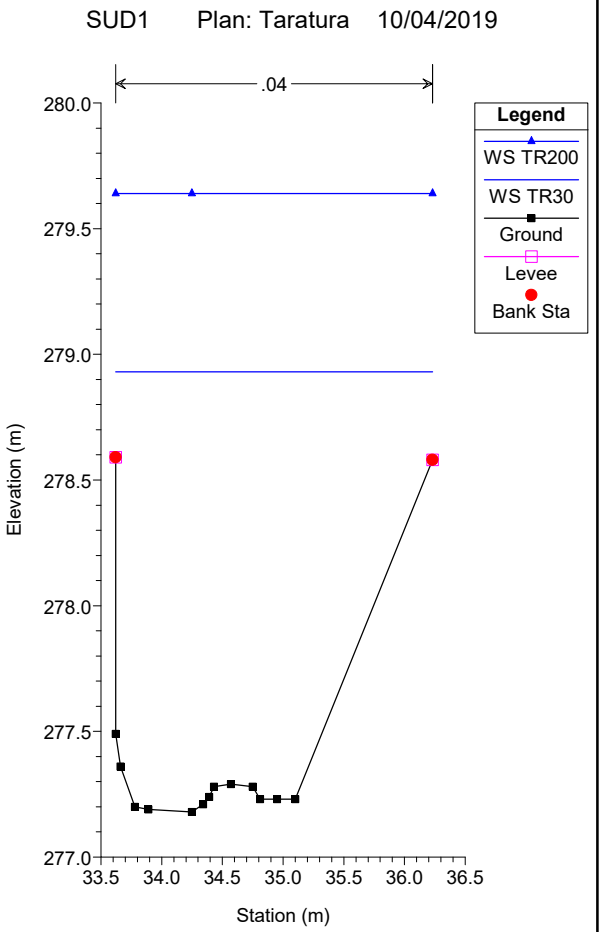
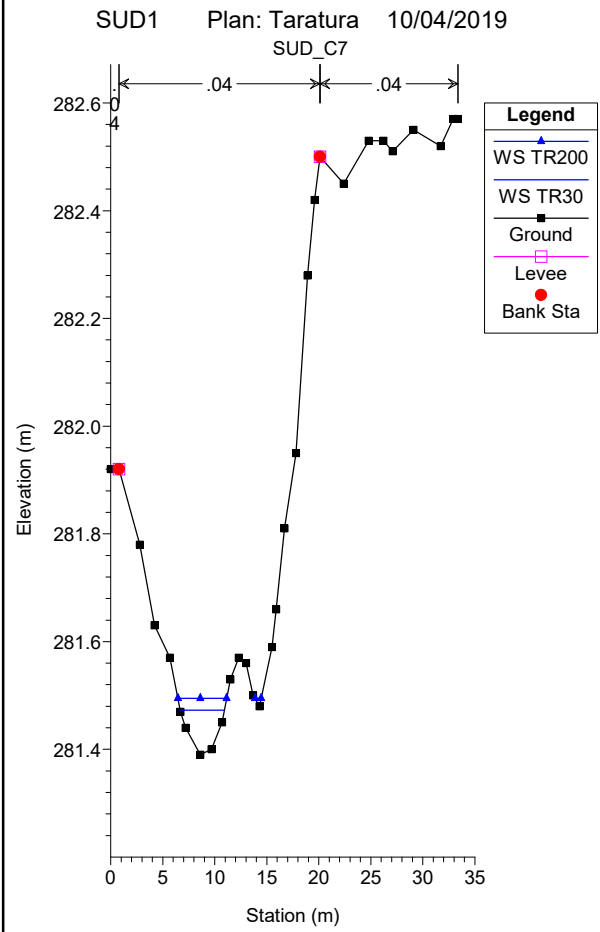
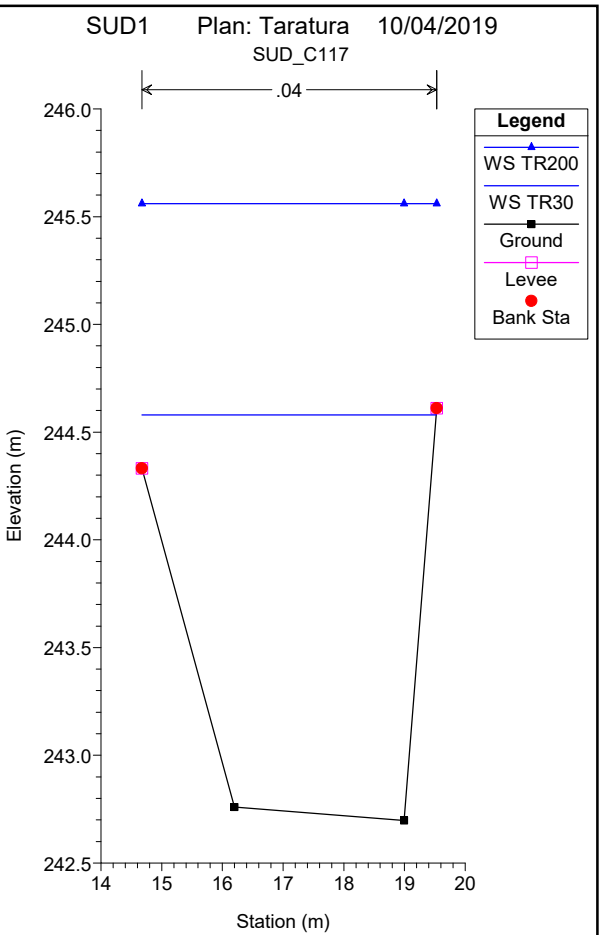
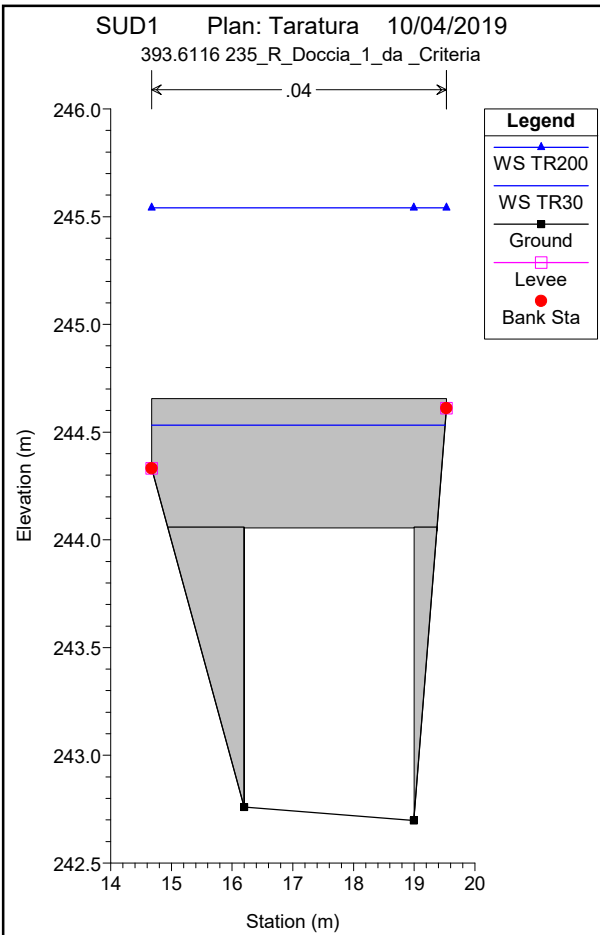
SUD1 Plan: Taratura 10/04/2019  
SUD\_C109 (RD\_02)

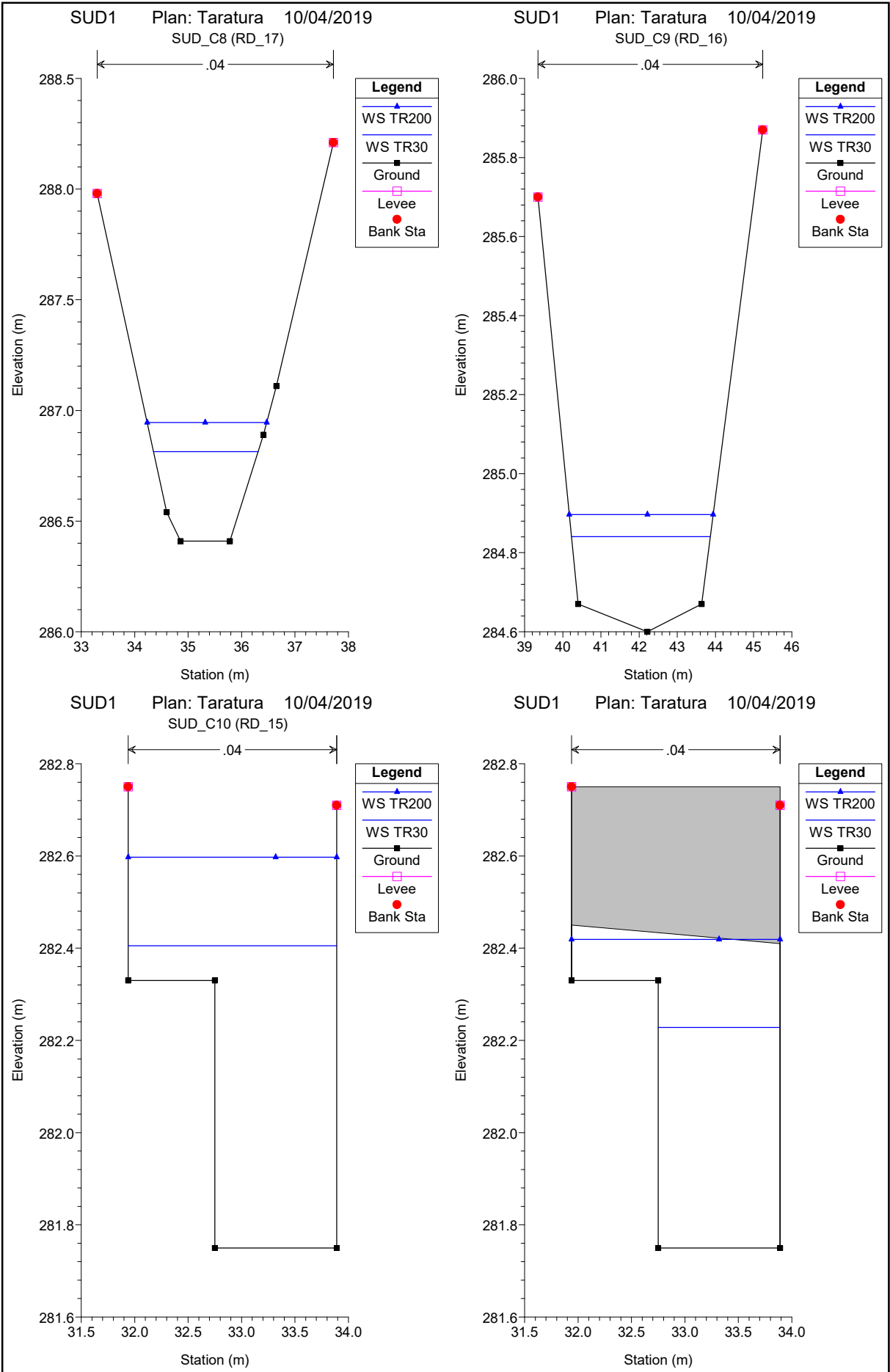


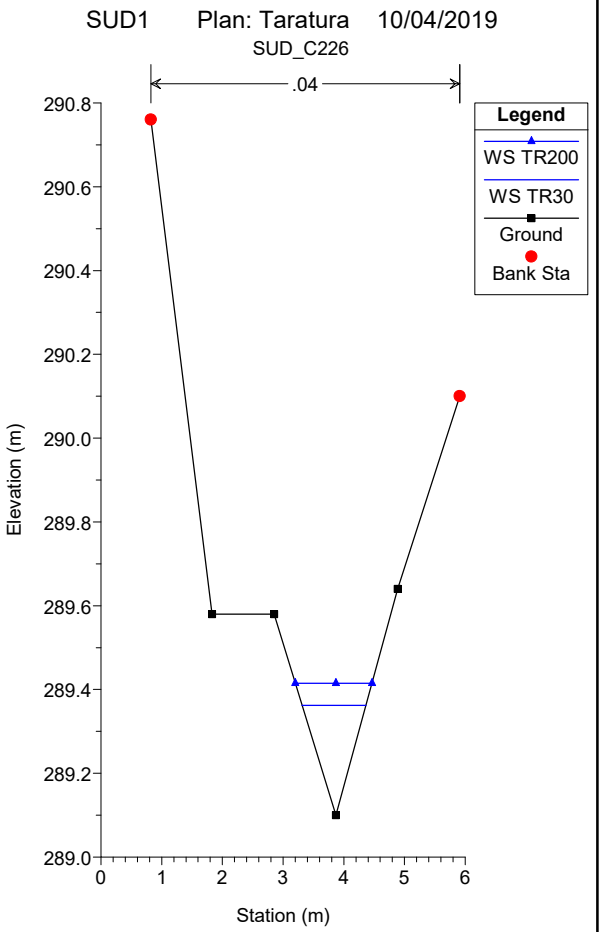
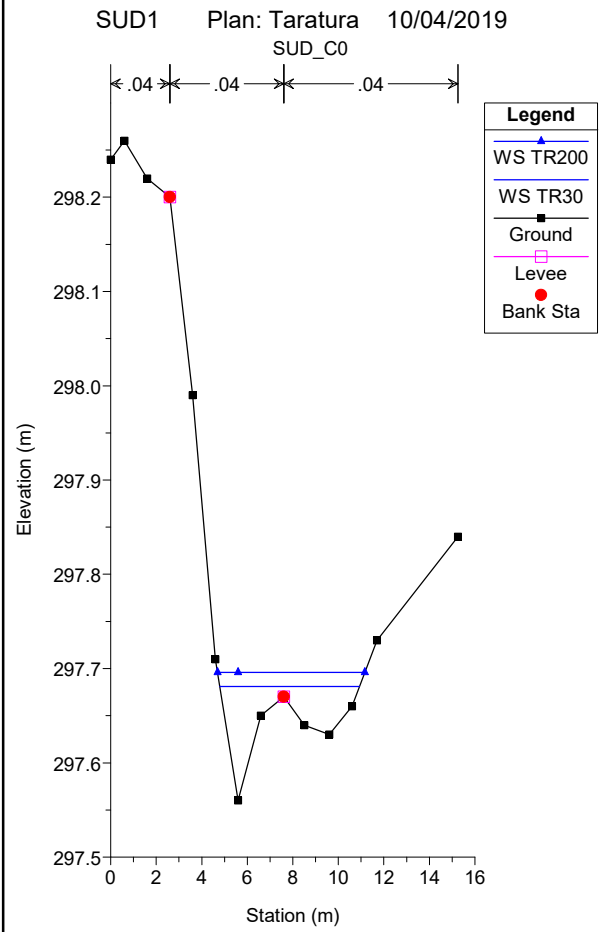
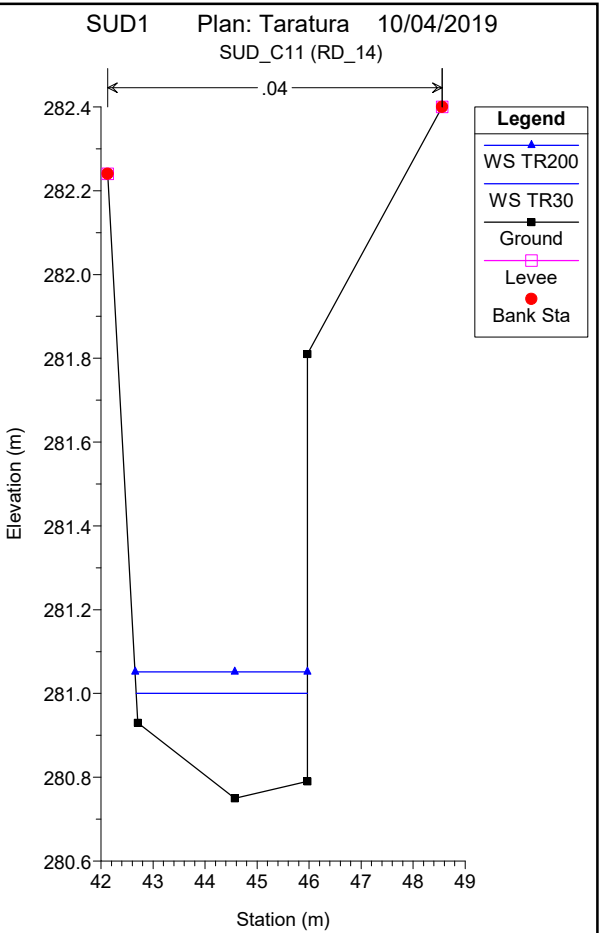
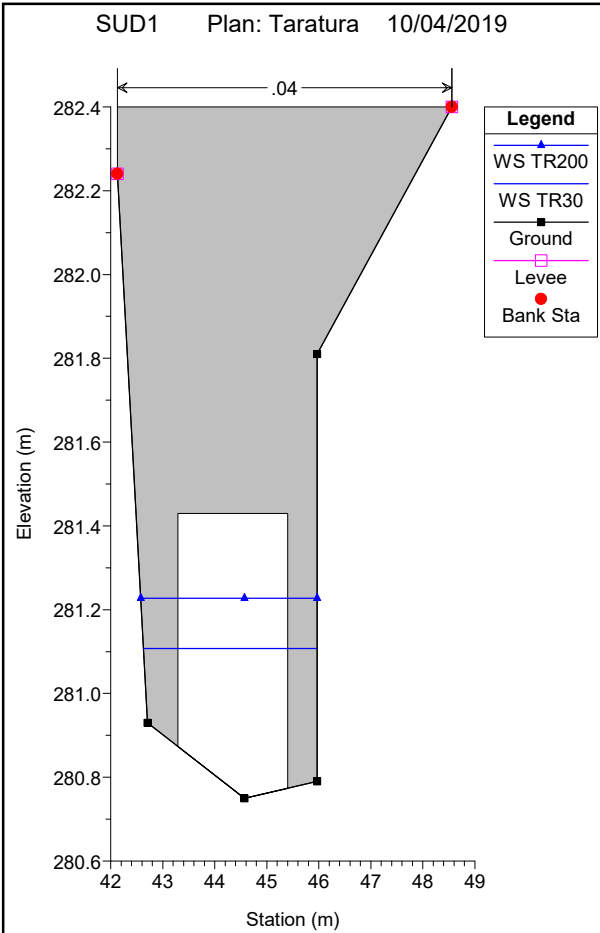


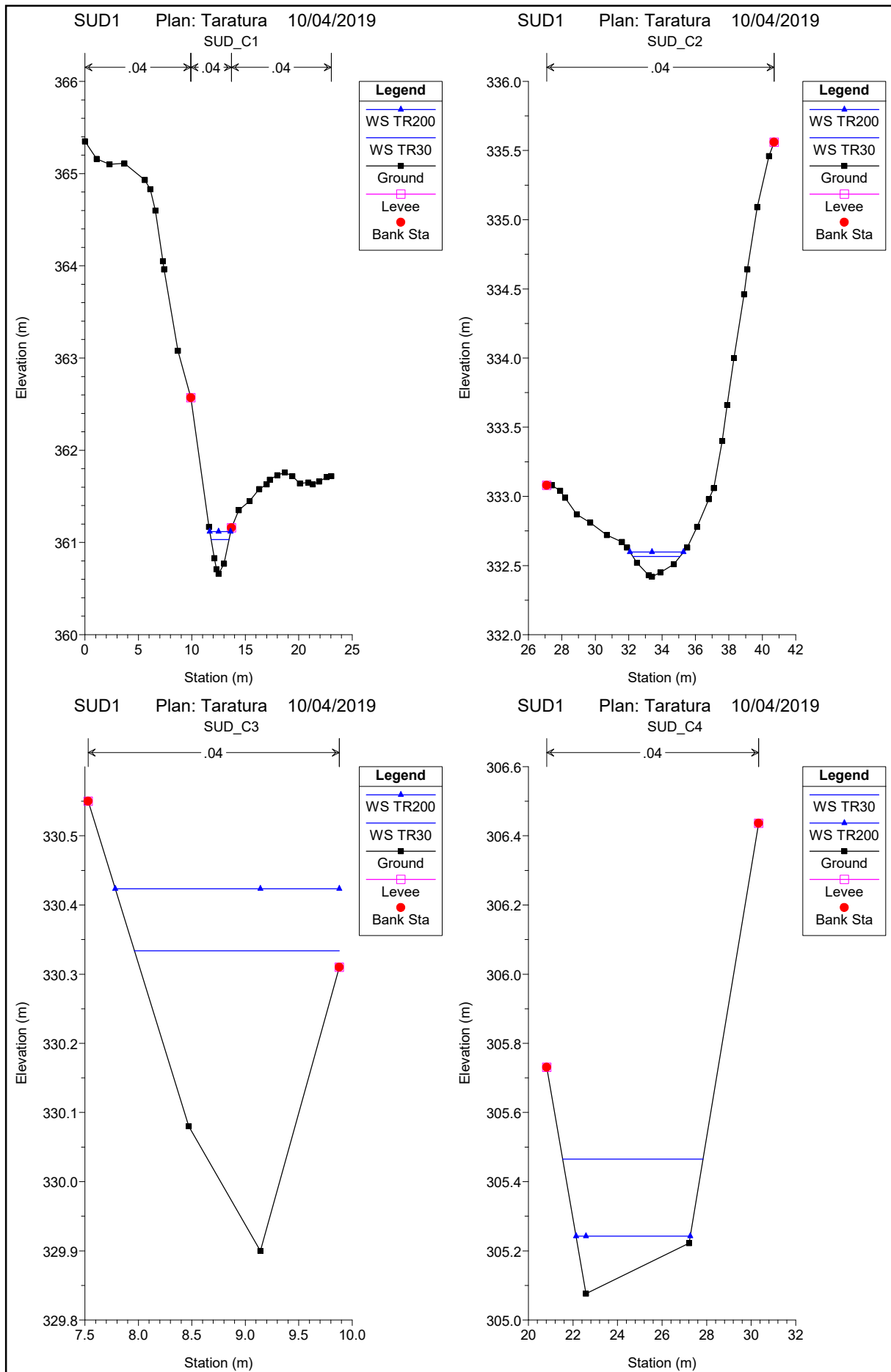




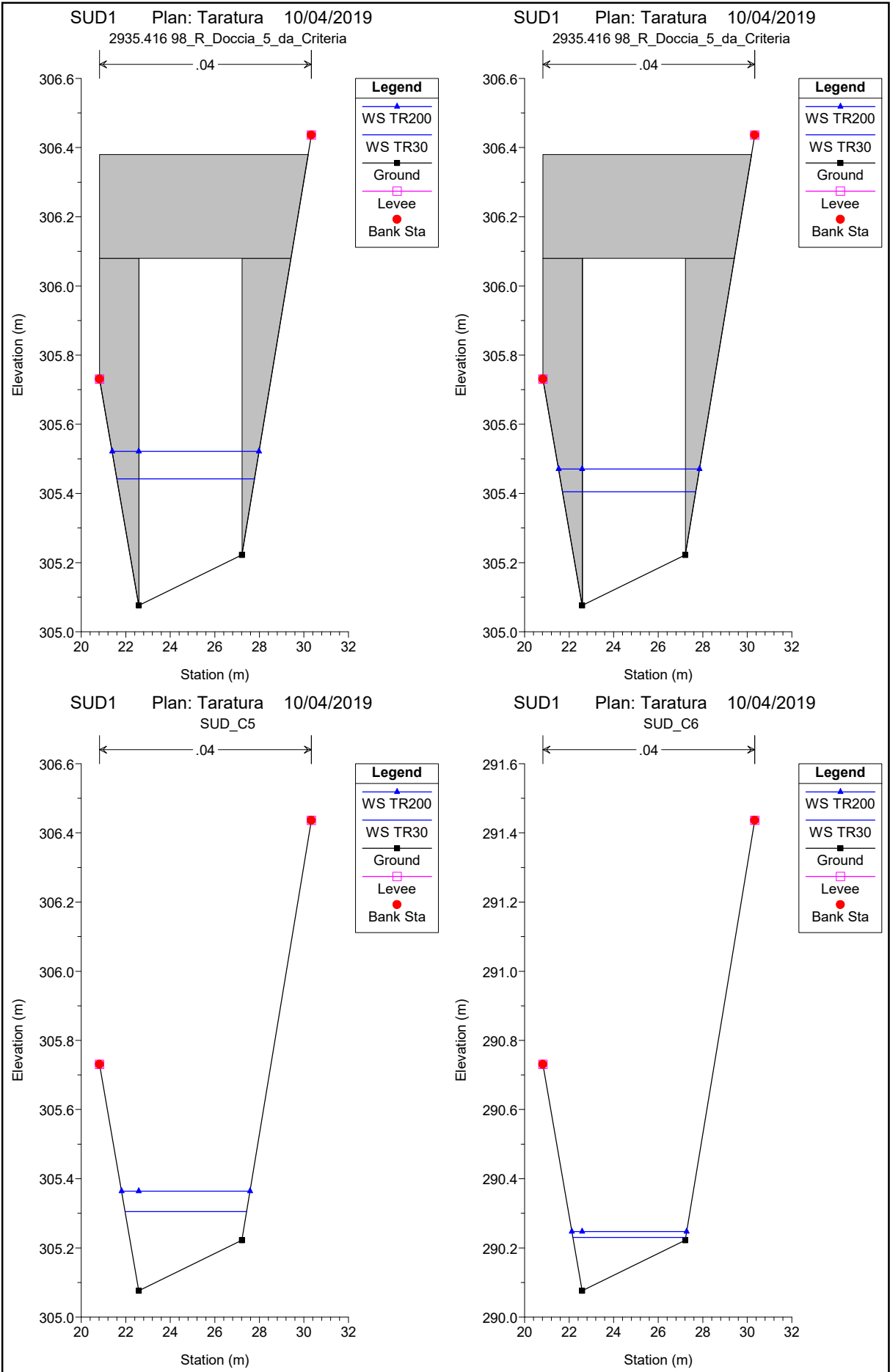




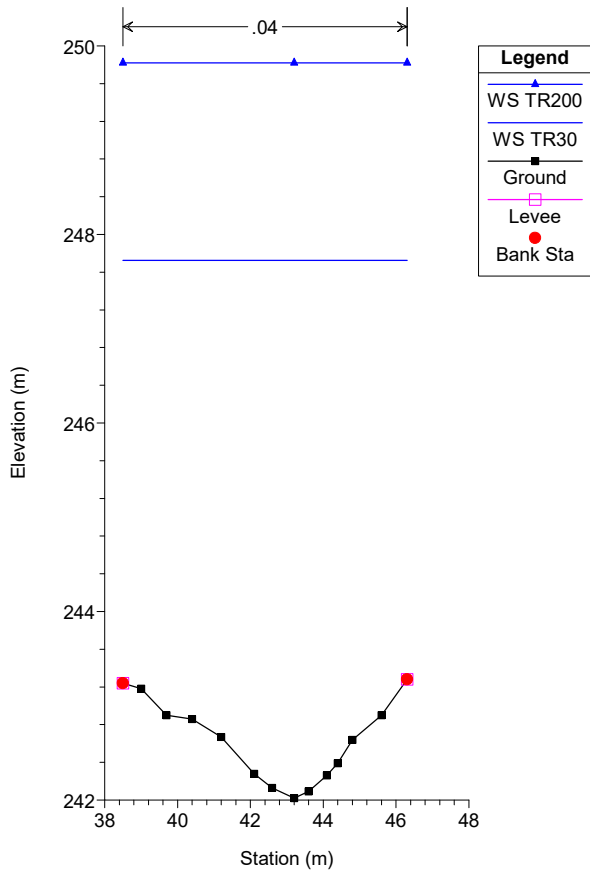




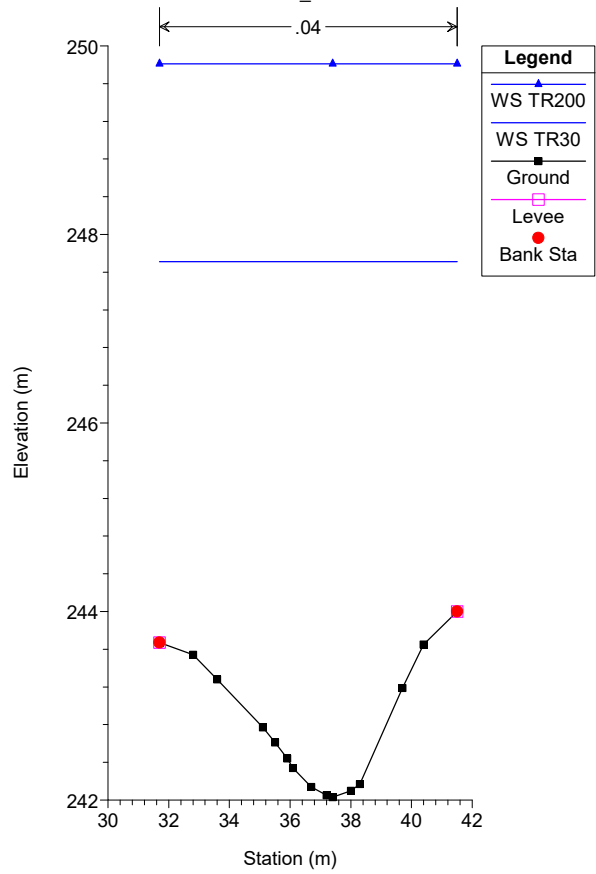




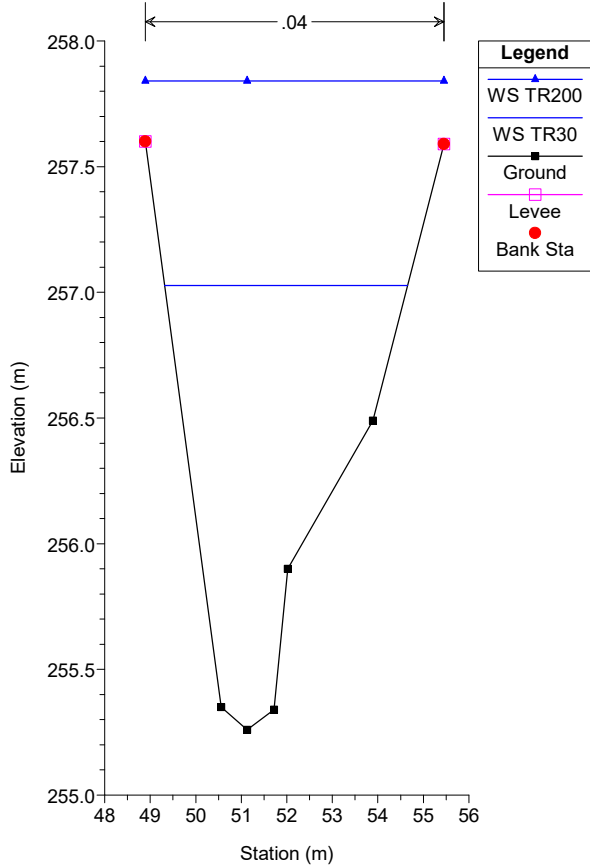
SUD1 Plan: Taratura 10/04/2019



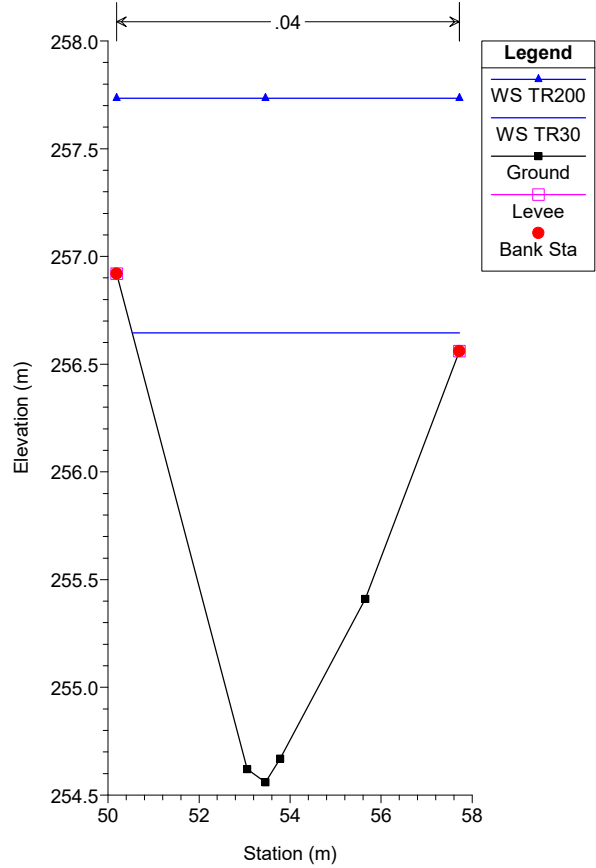
SUD1 Plan: Taratura 10/04/2019  
SUD\_C199

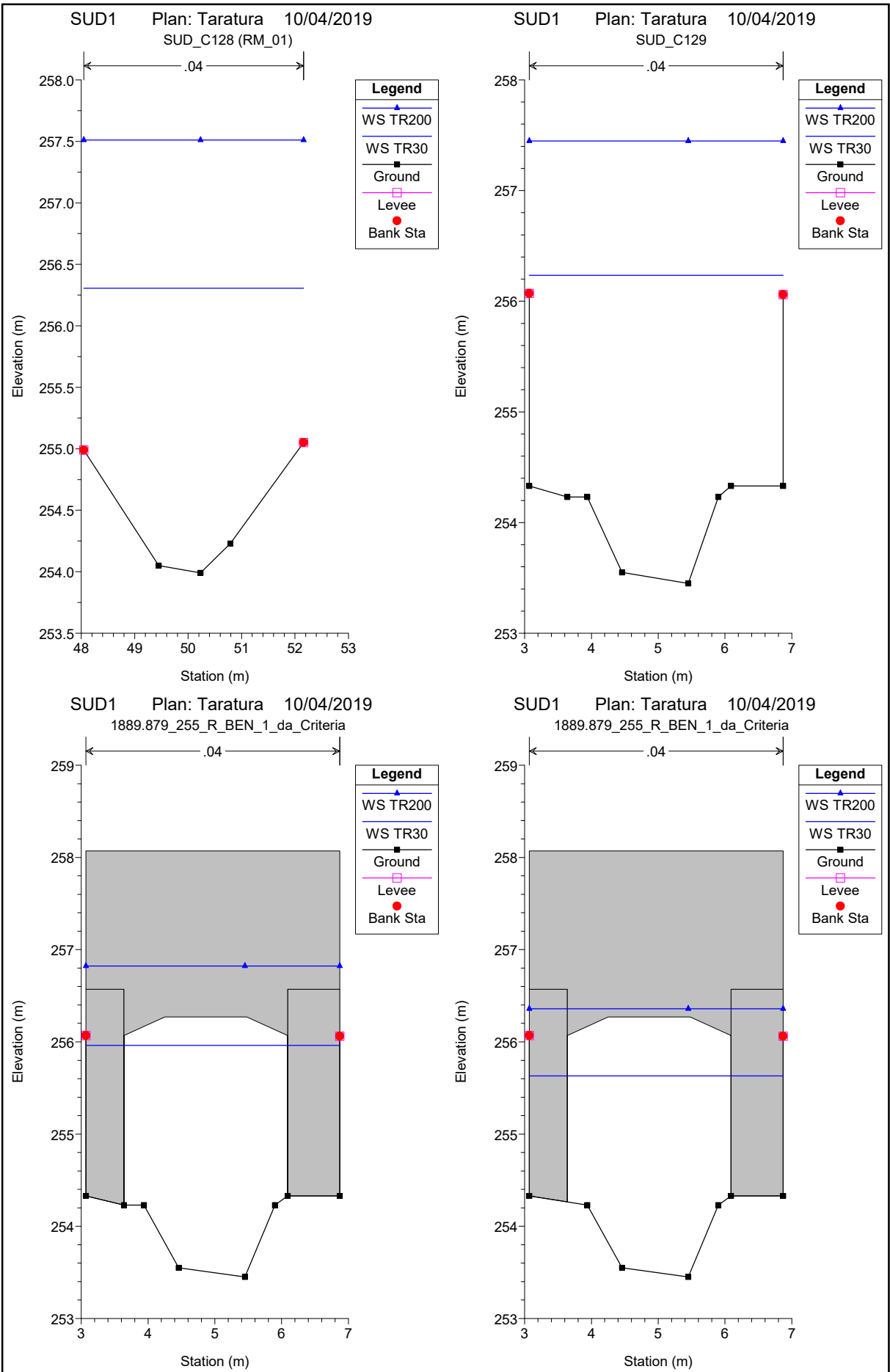


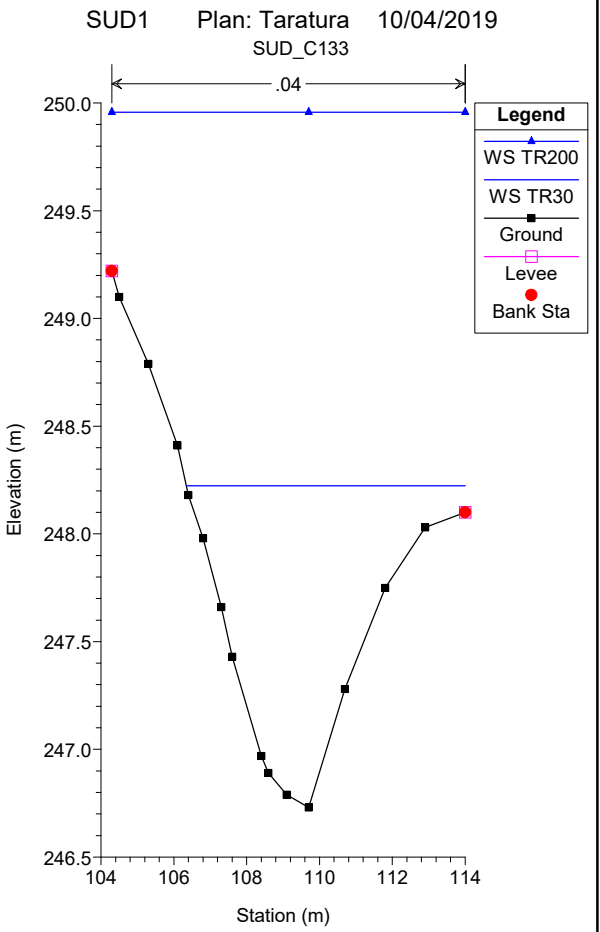
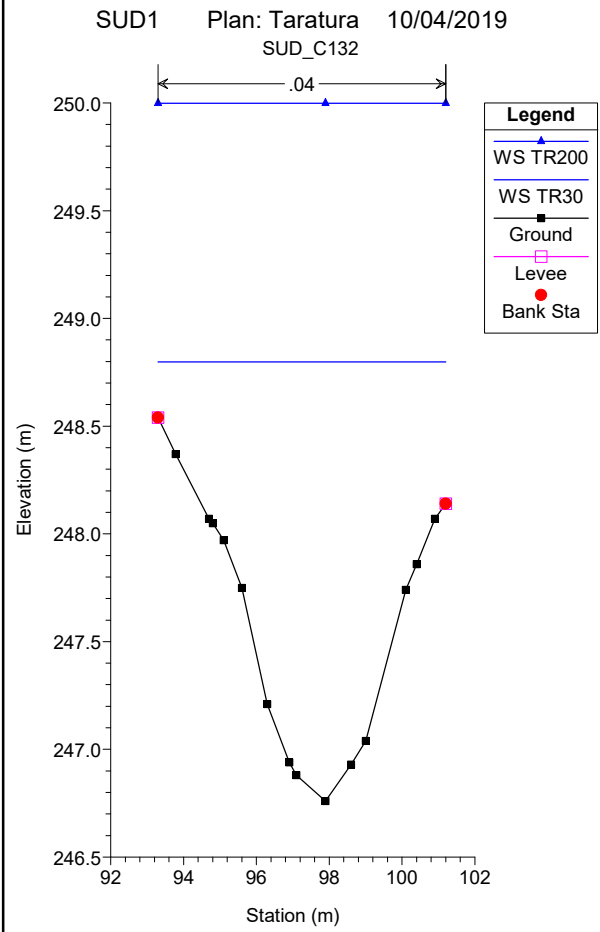
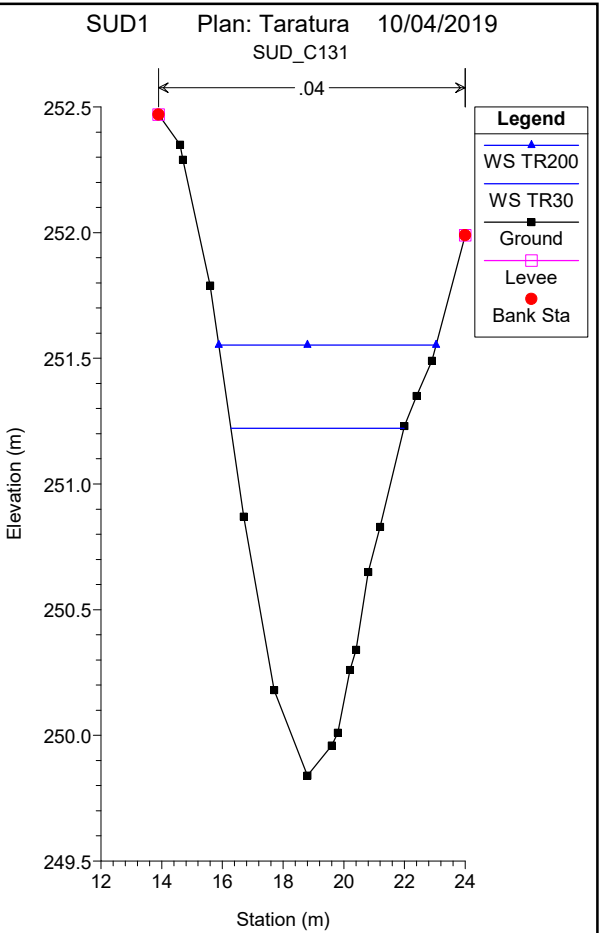
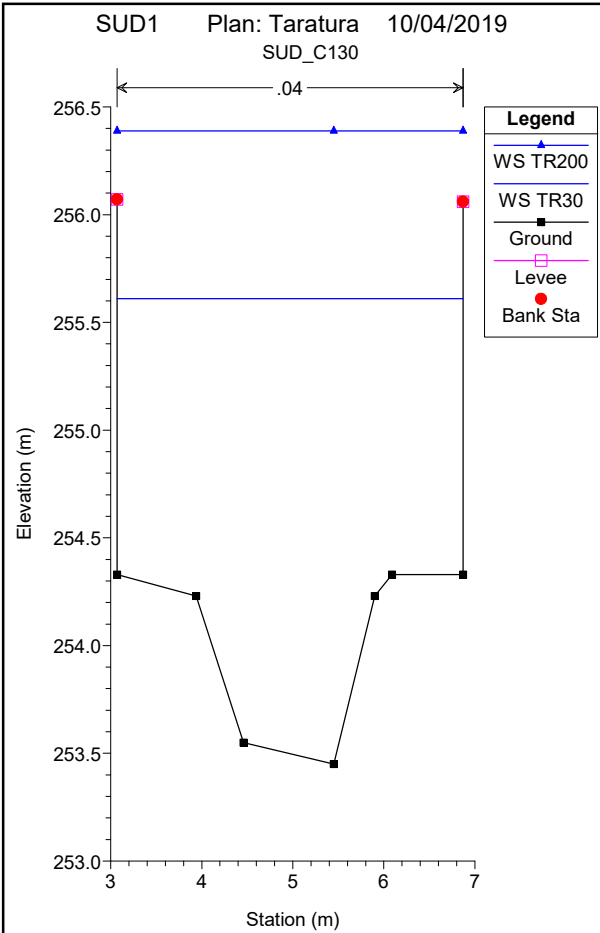
SUD1 Plan: Taratura 10/04/2019  
SUD\_C126 (RM\_03)

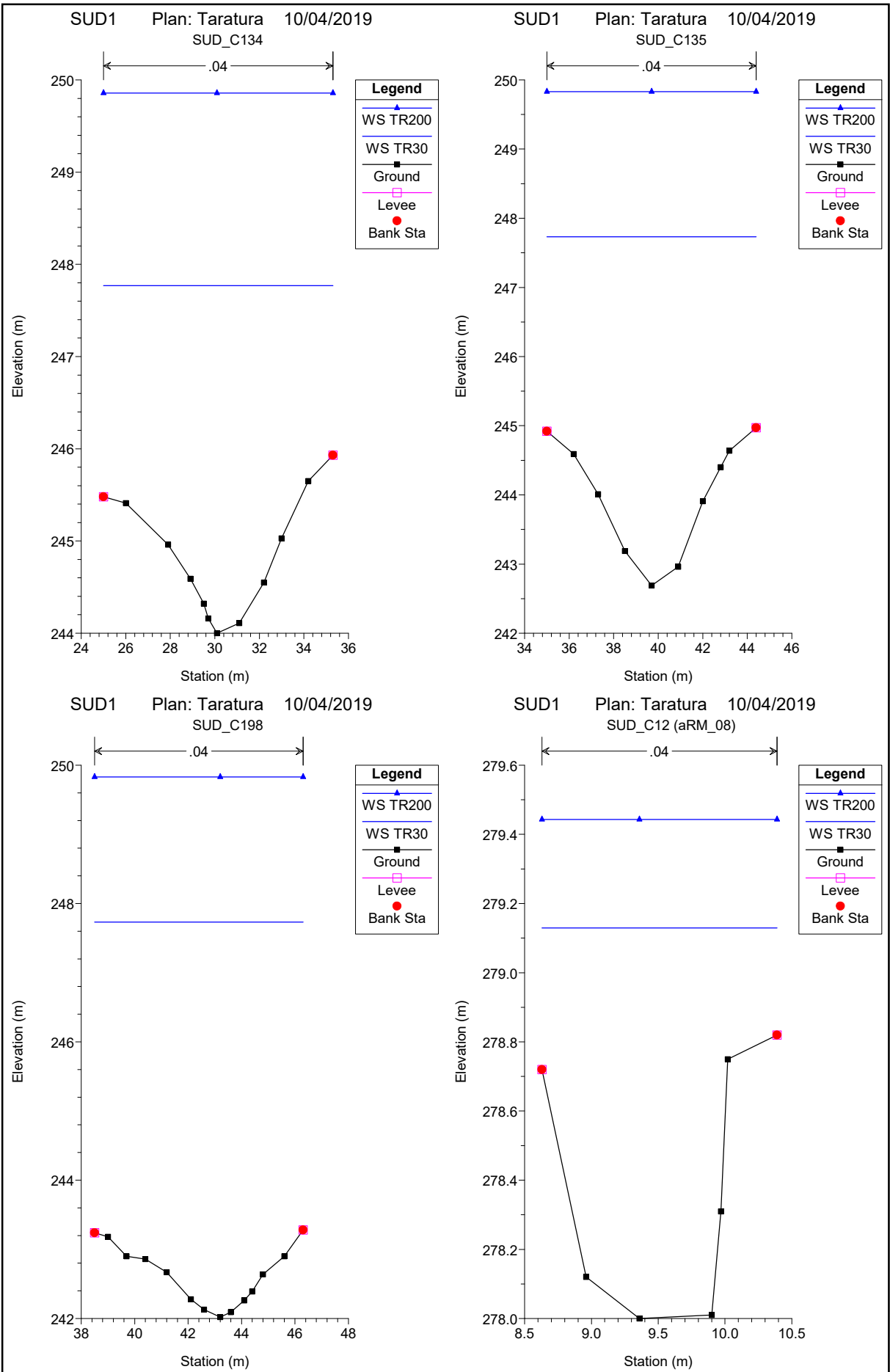


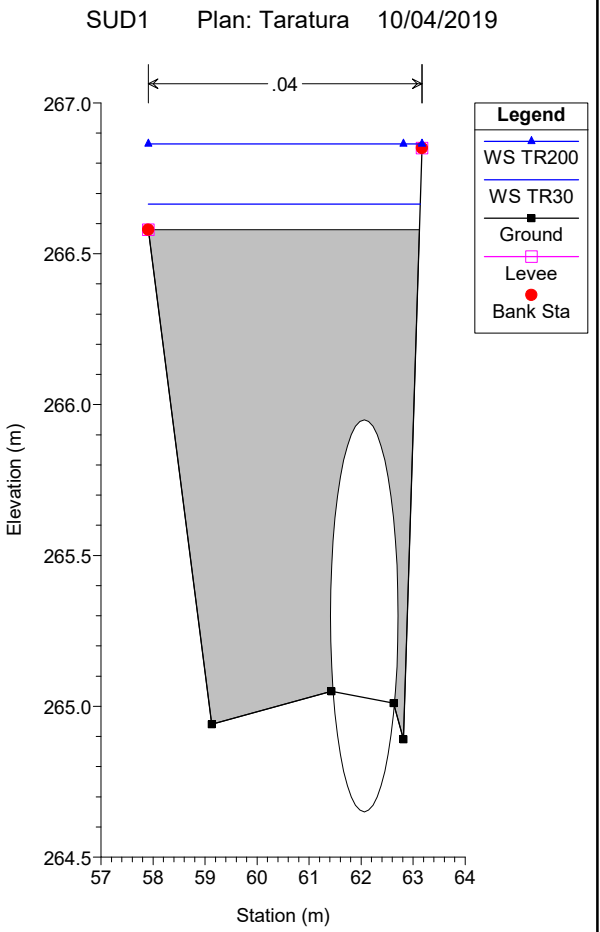
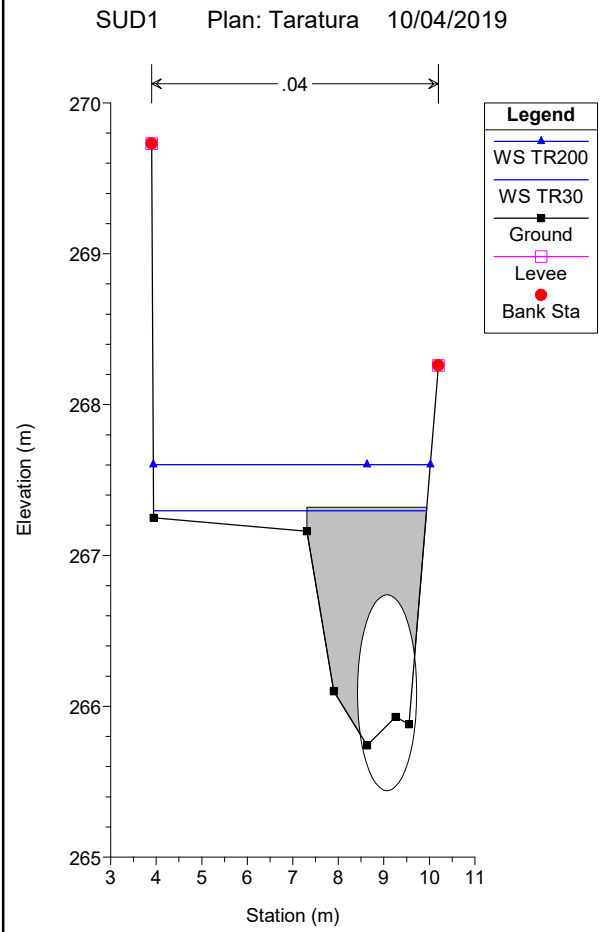
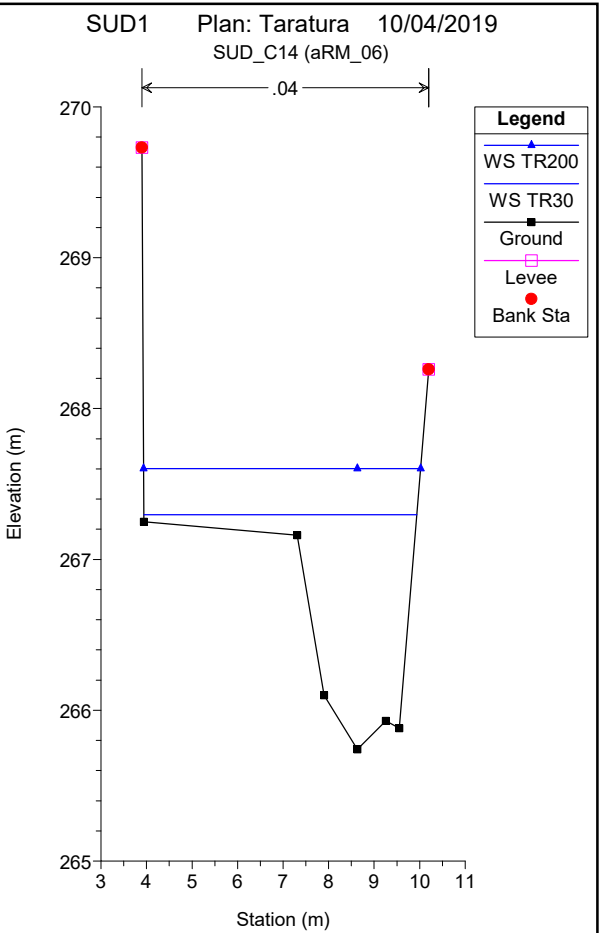
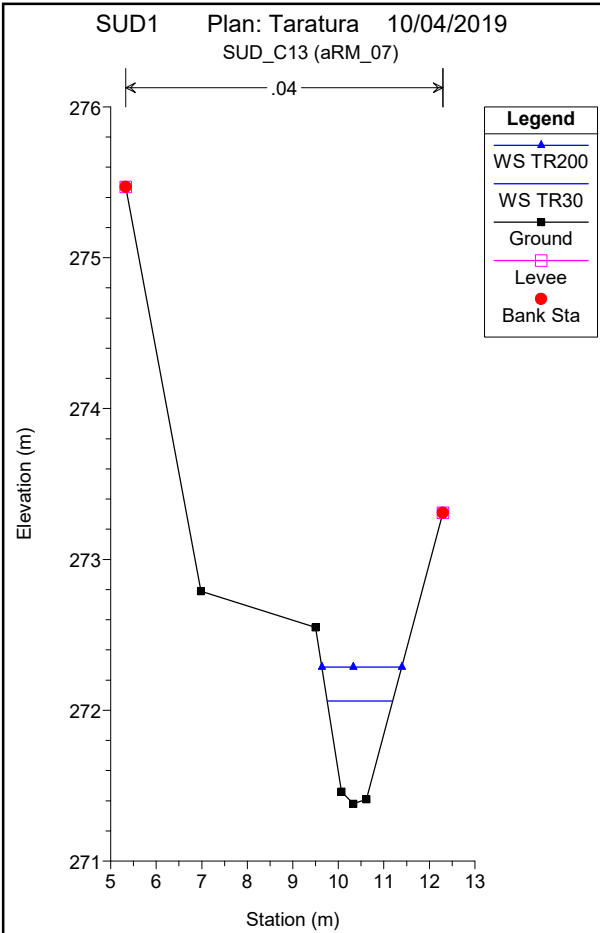
SUD1 Plan: Taratura 10/04/2019  
SUD\_C127 (RM\_02)

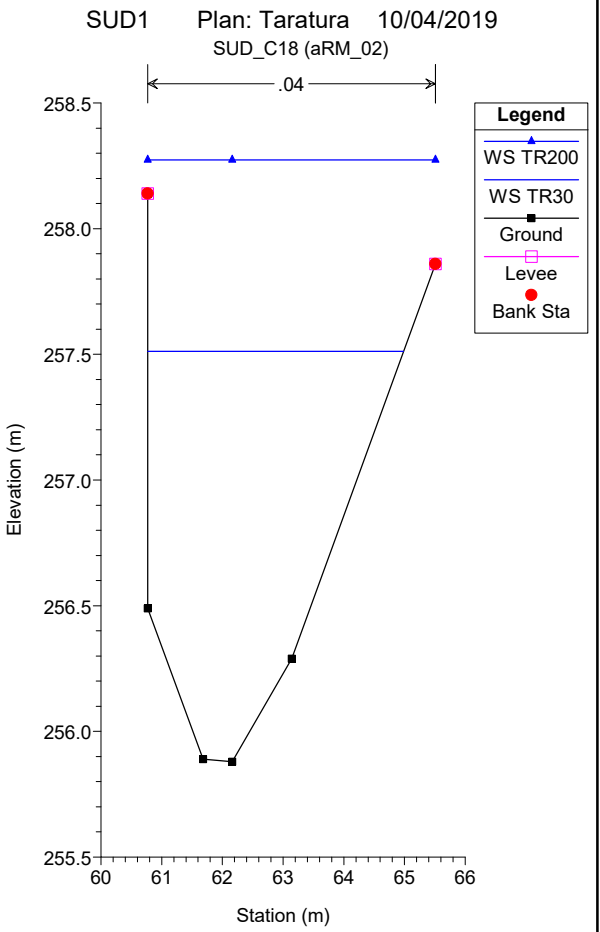
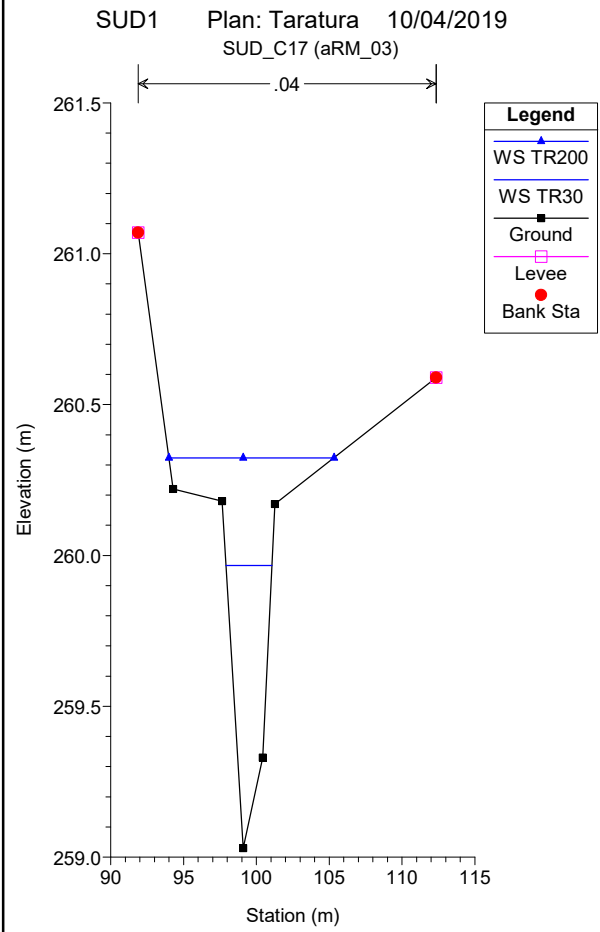
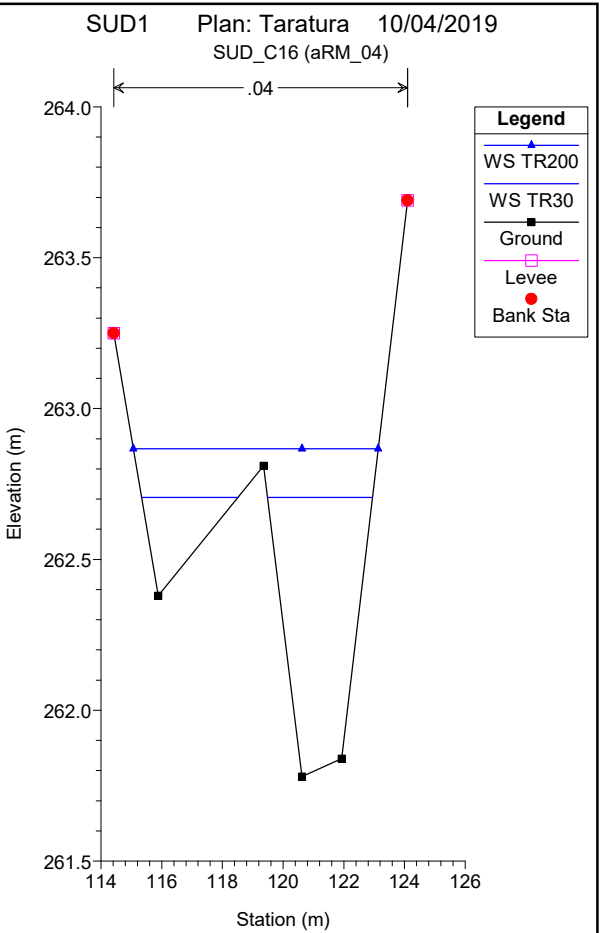
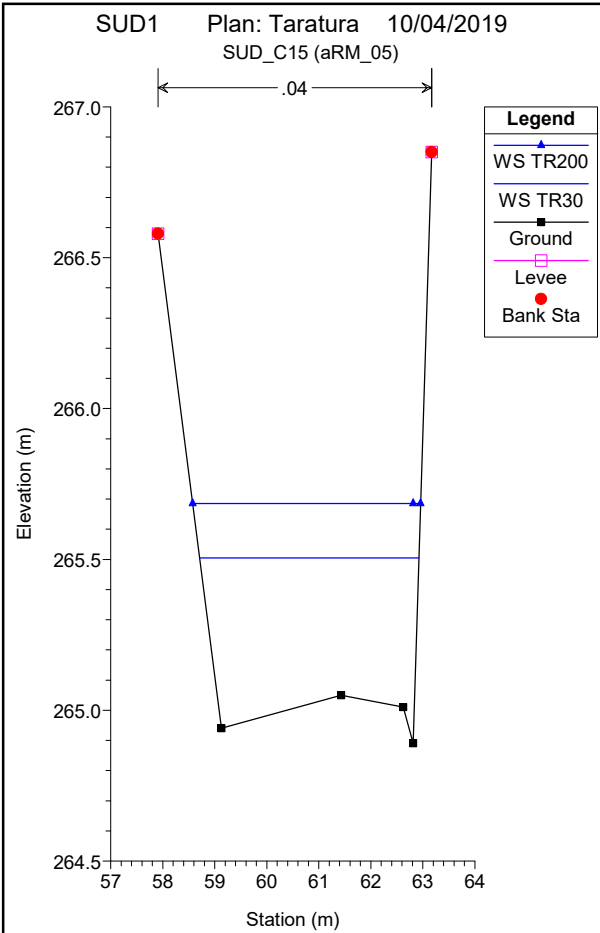




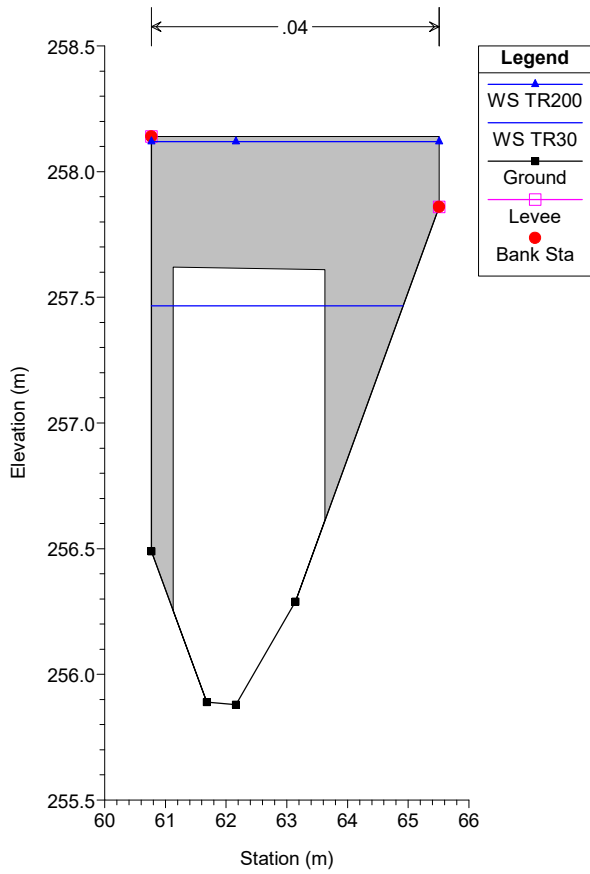




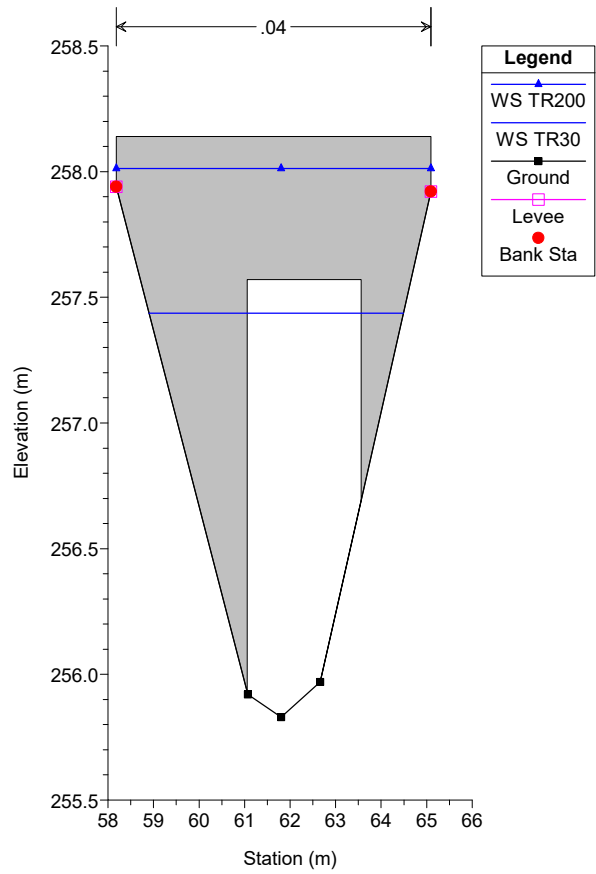




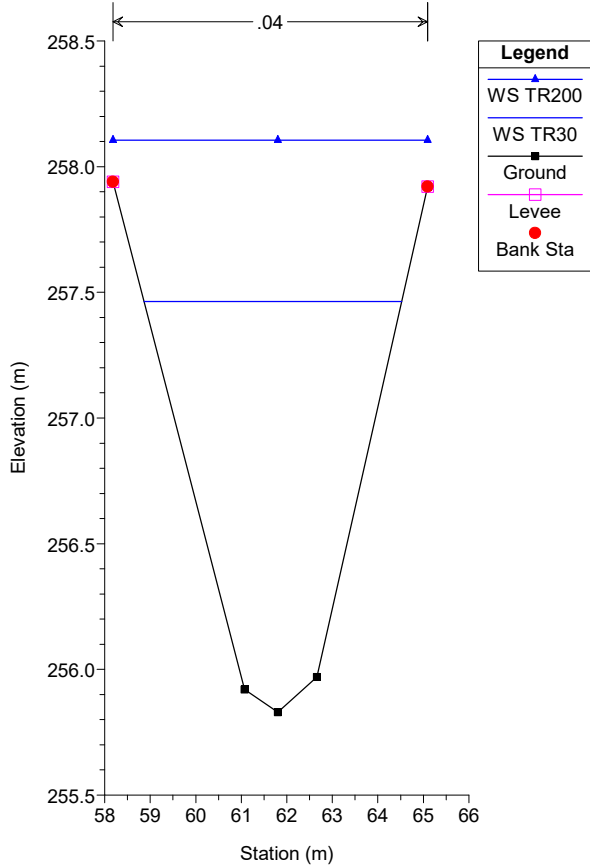
SUD1 Plan: Taratura 10/04/2019



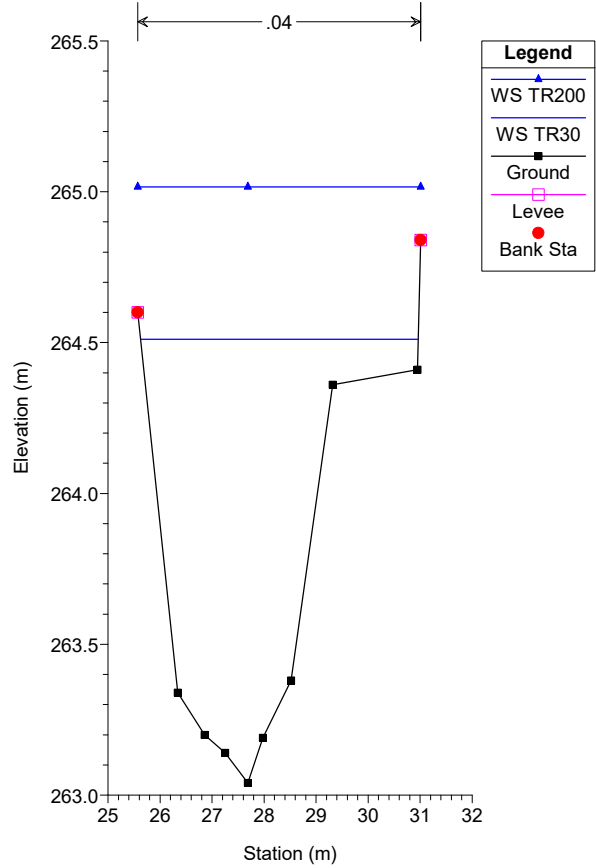
SUD1 Plan: Taratura 10/04/2019



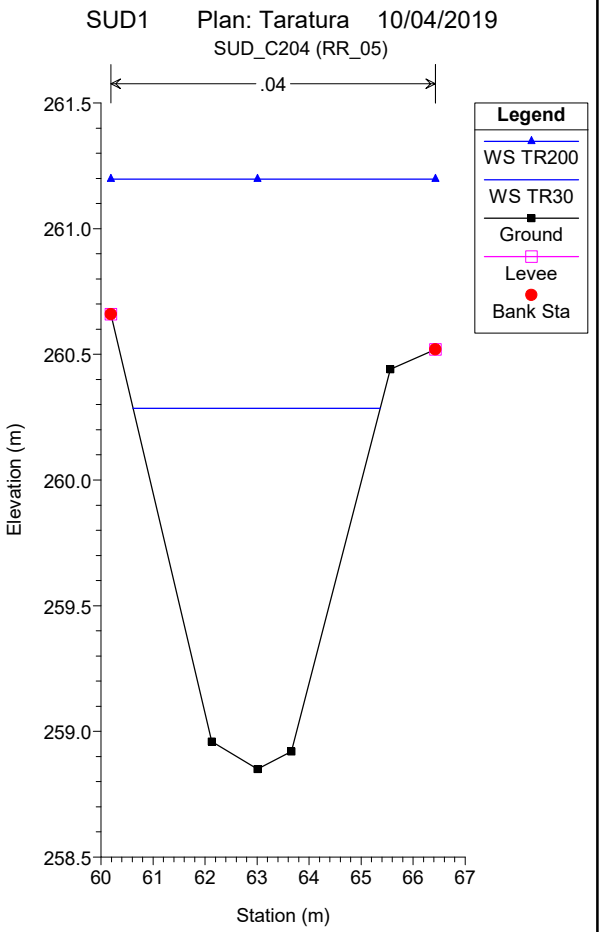
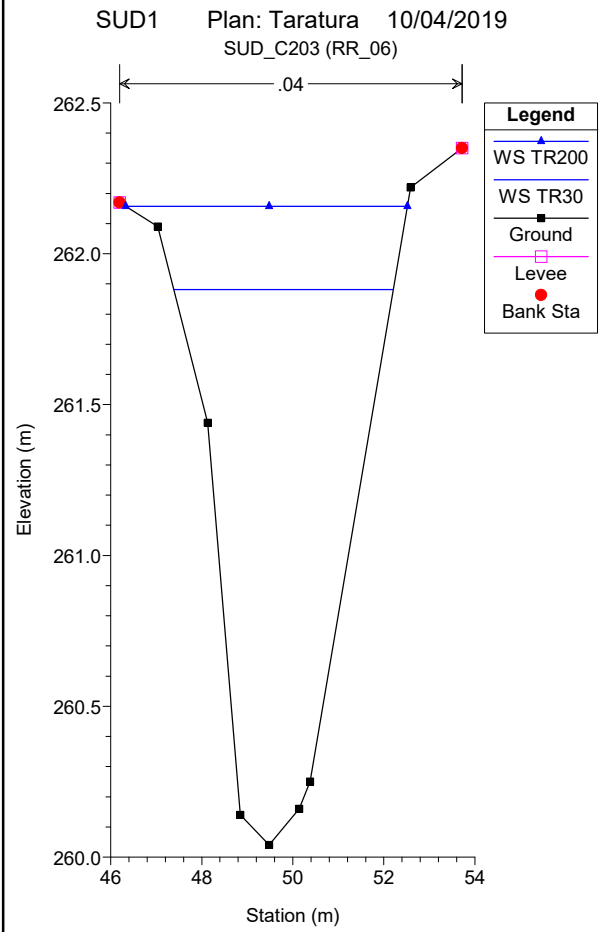
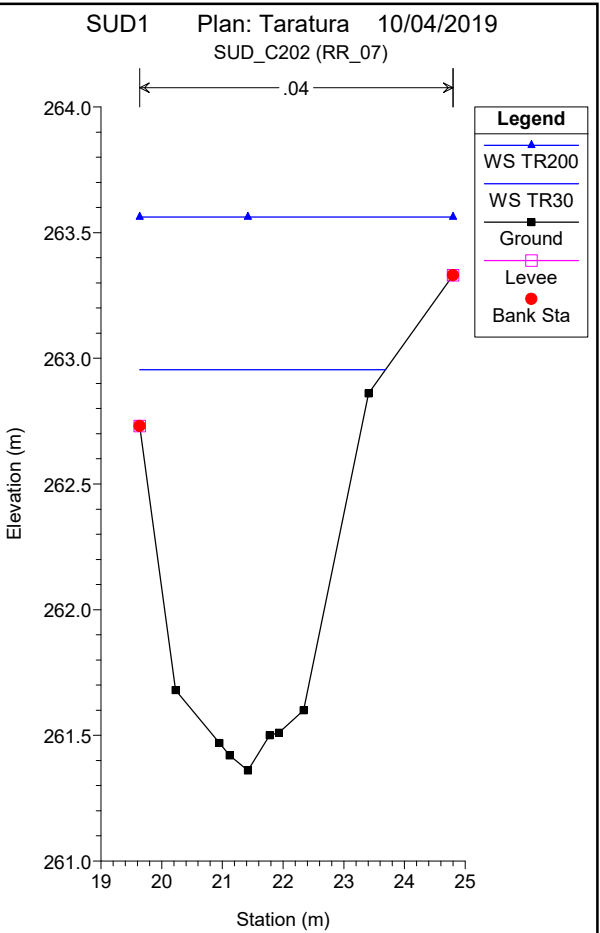
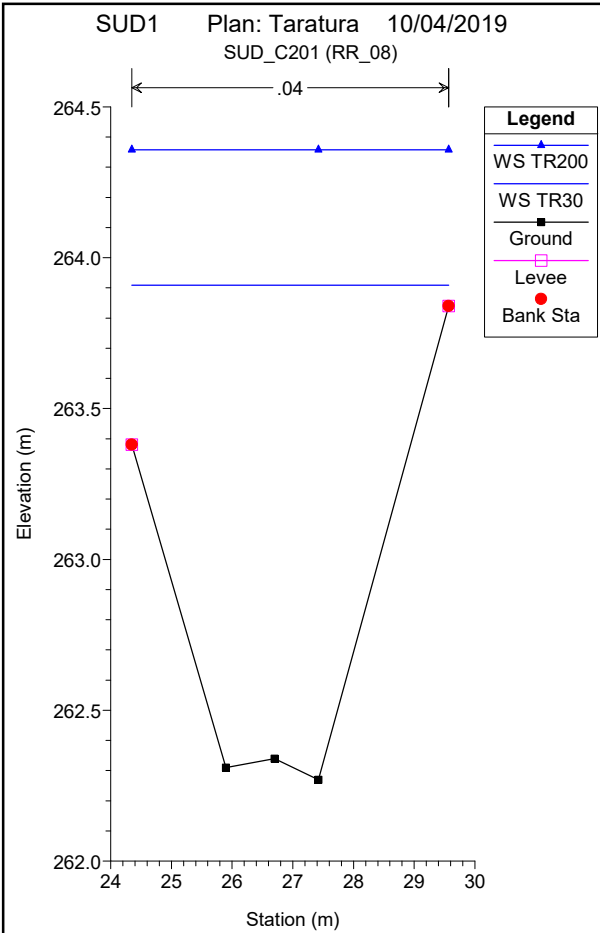
SUD1 Plan: Taratura 10/04/2019  
SUD\_C250 (aRM\_01)

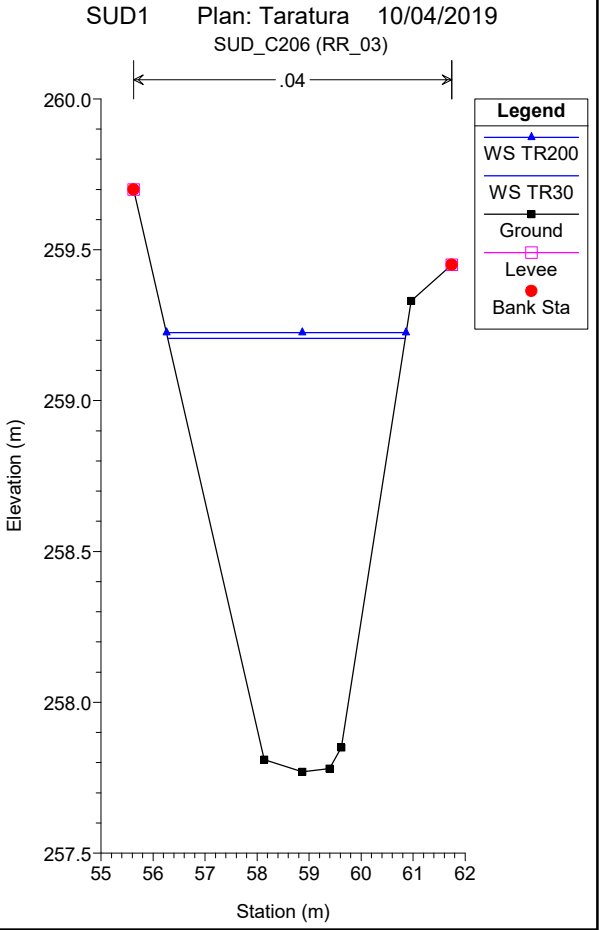
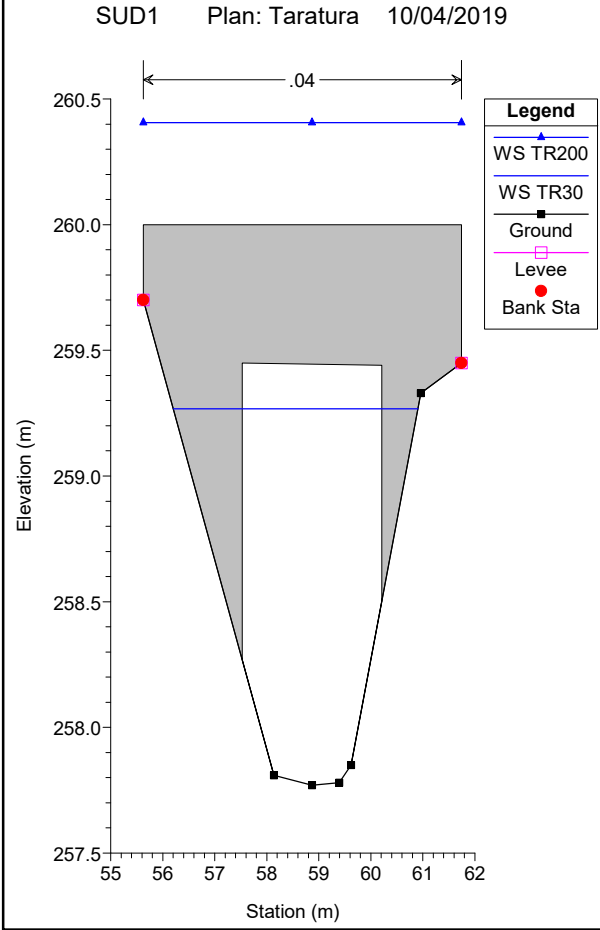
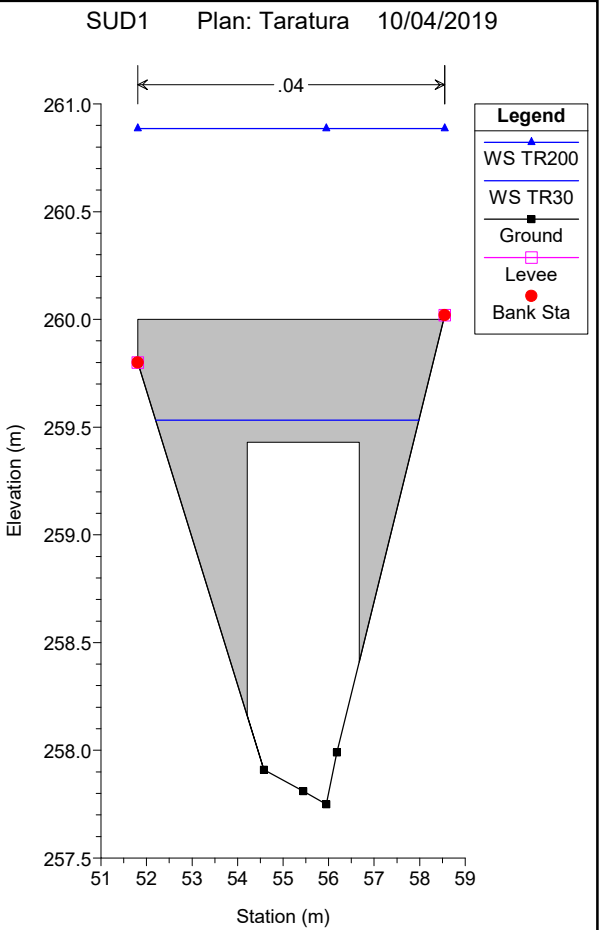
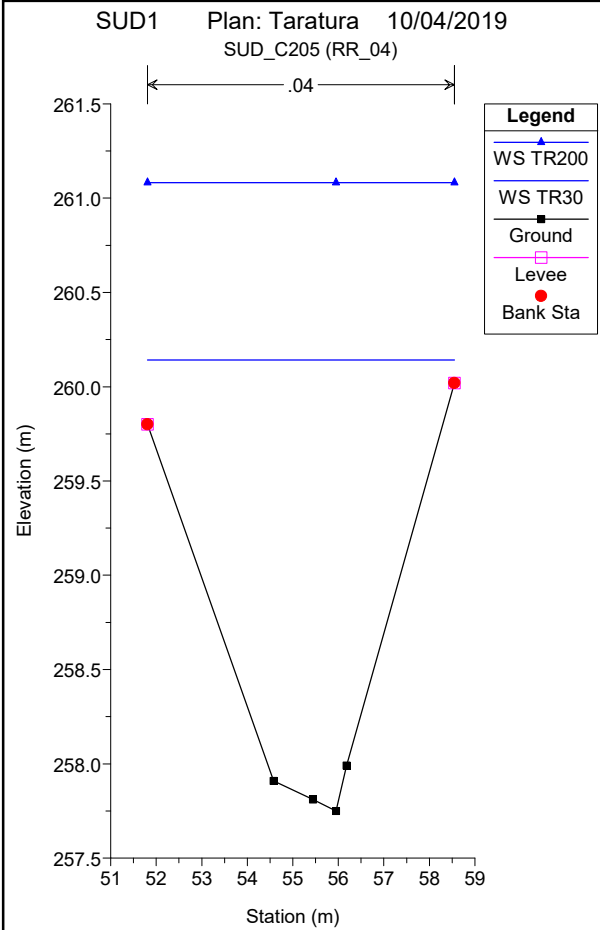


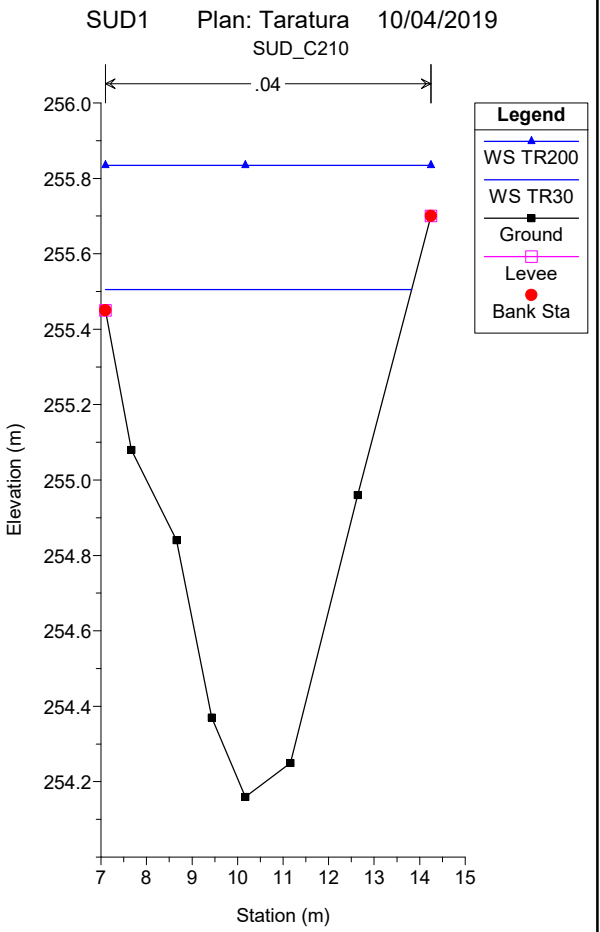
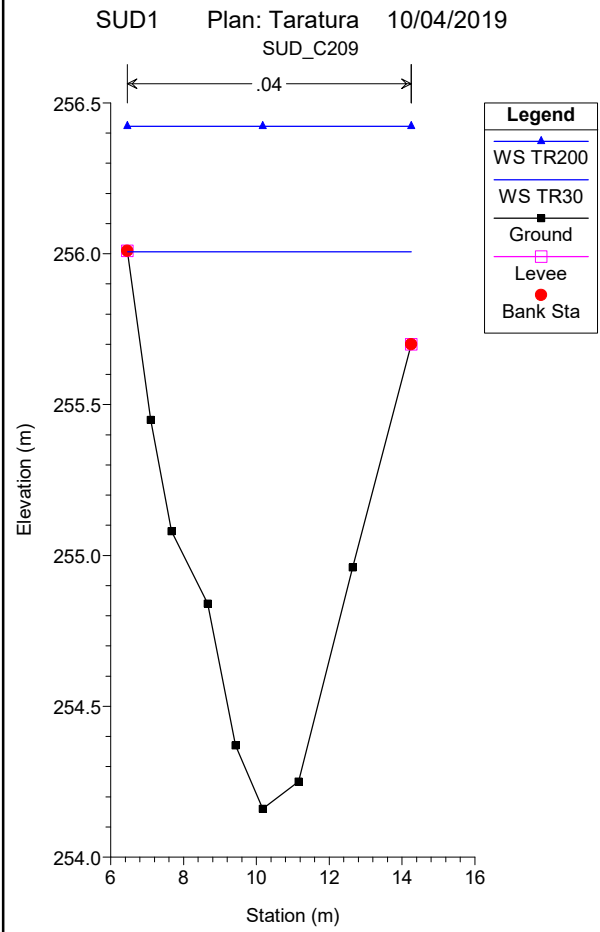
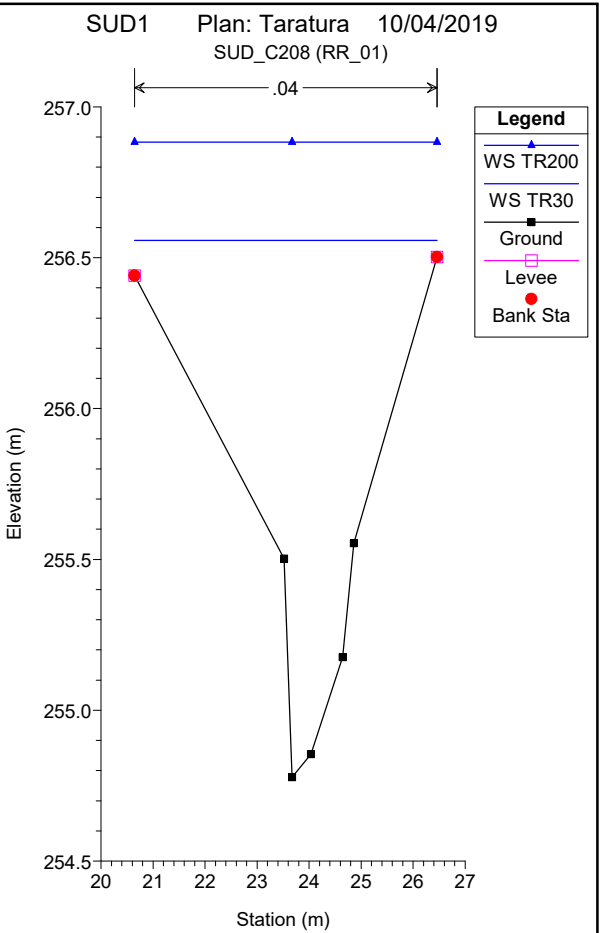
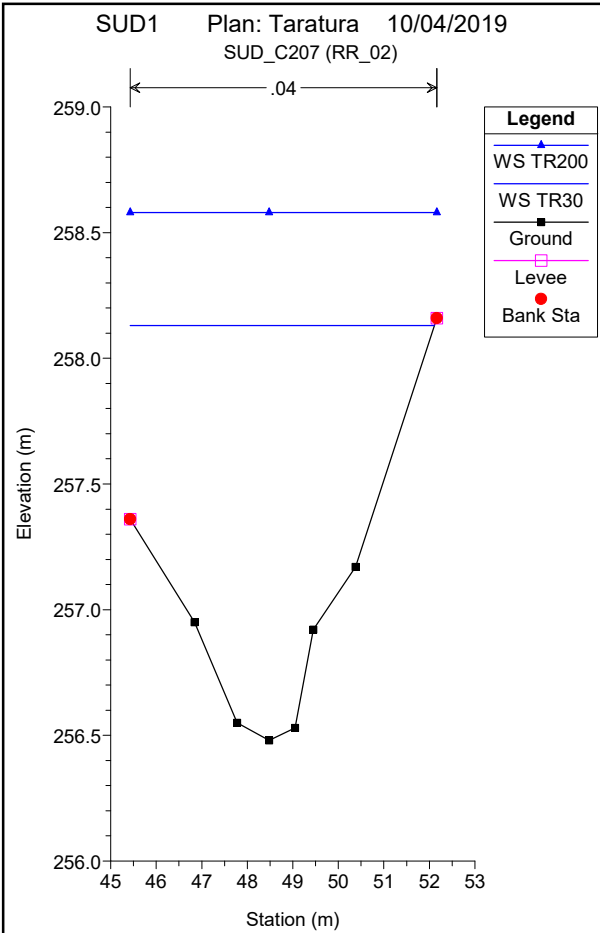
SUD1 Plan: Taratura 10/04/2019  
SUD\_C200 (RR\_09)

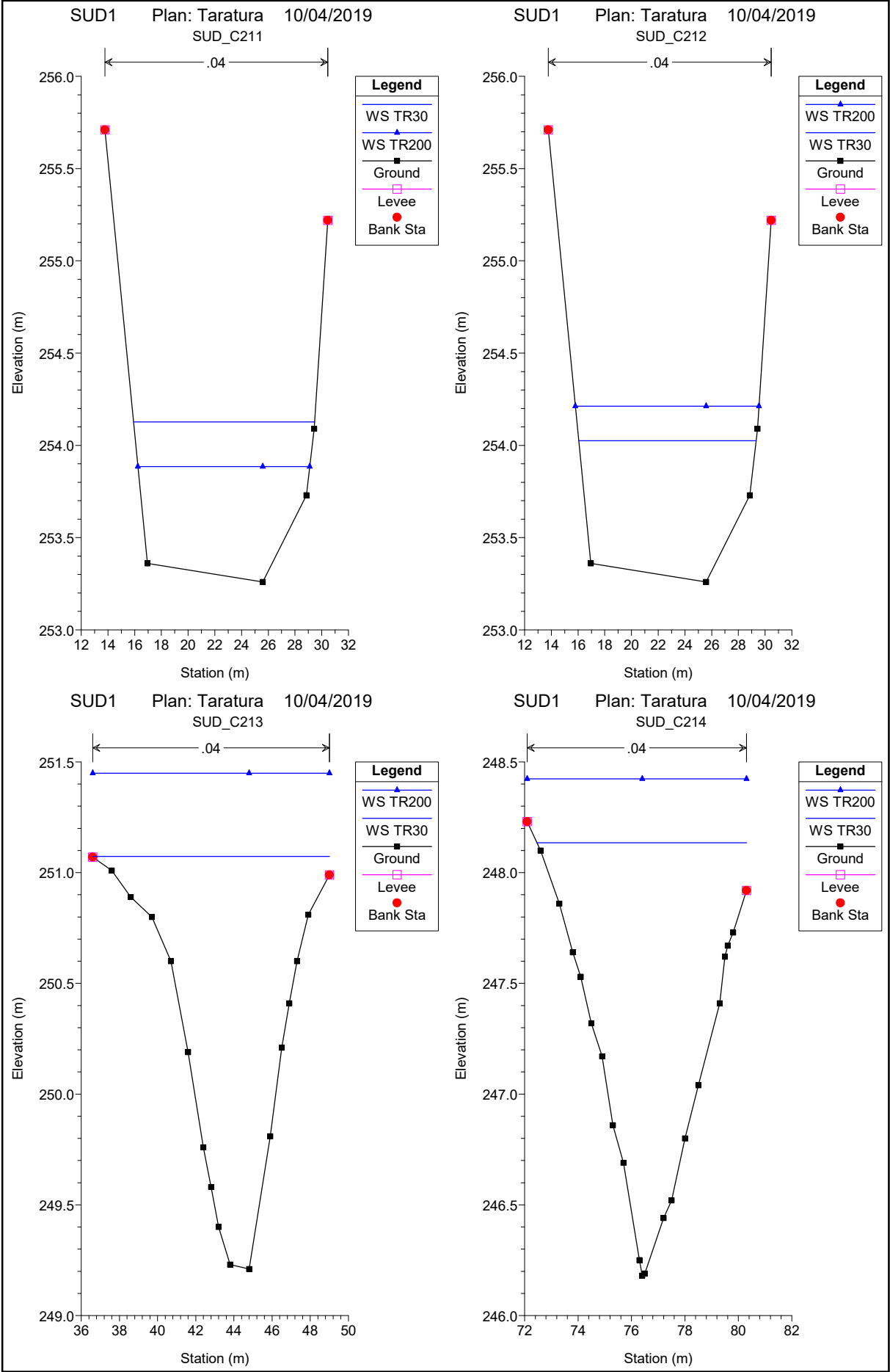


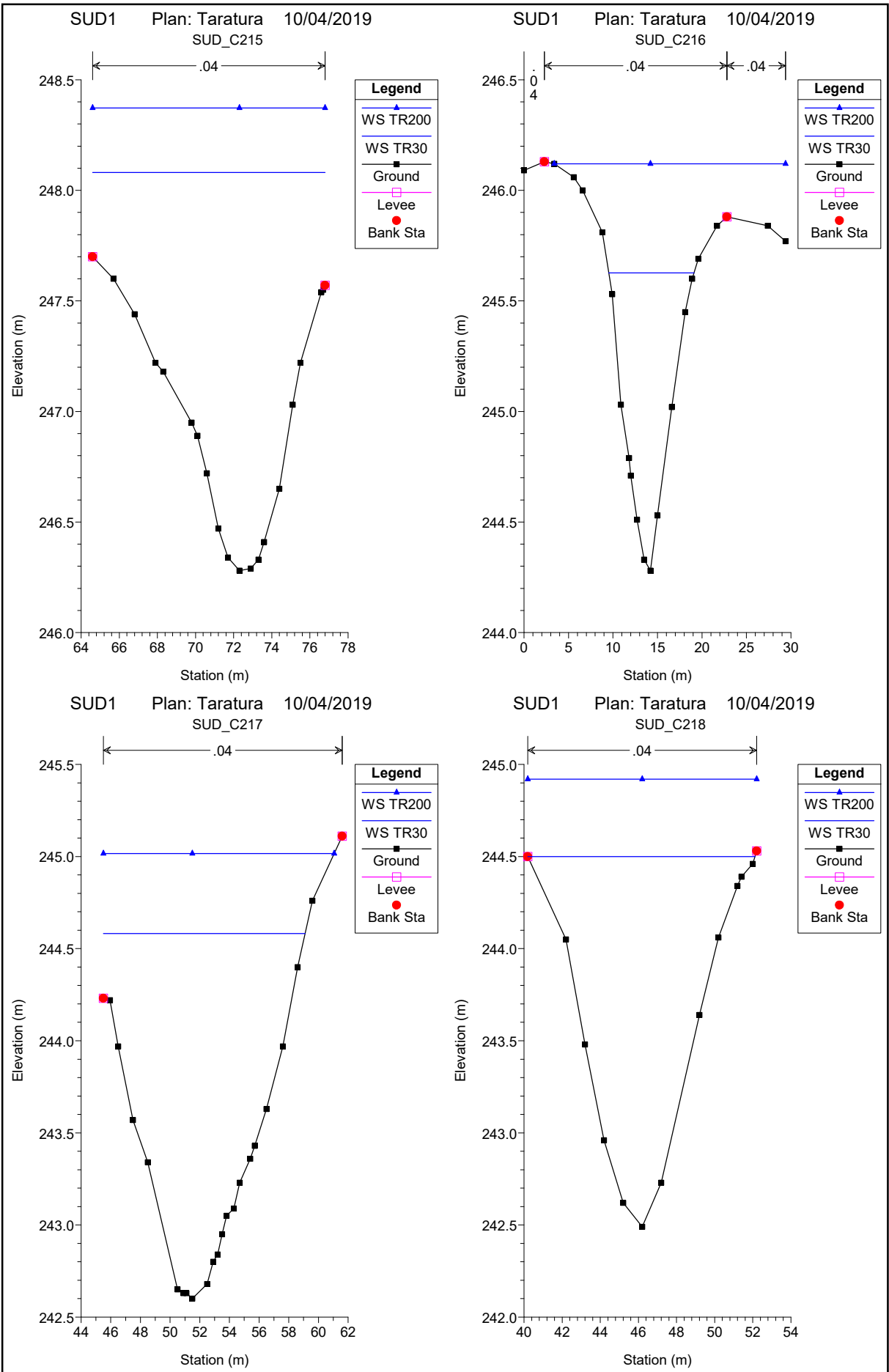


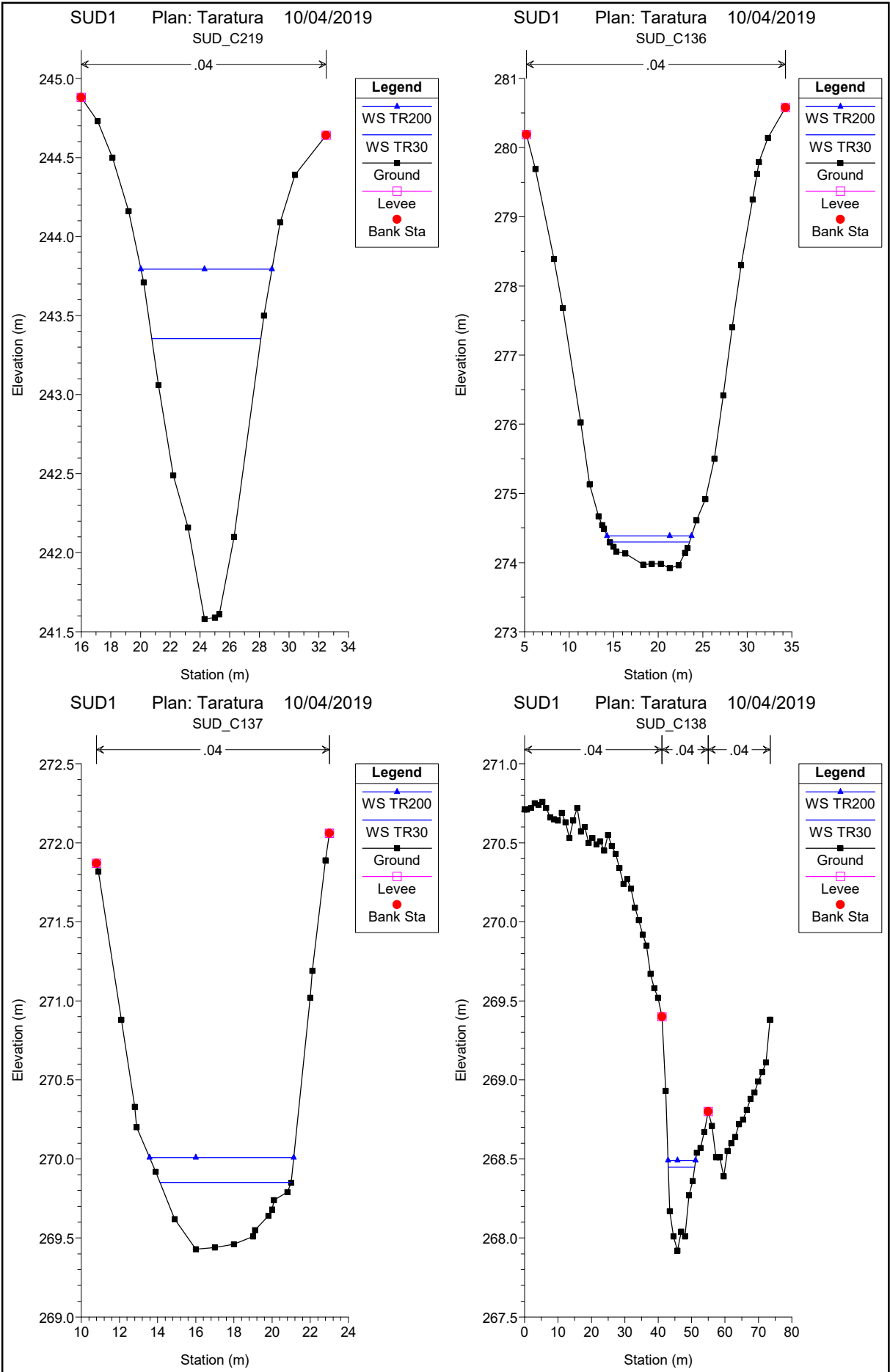


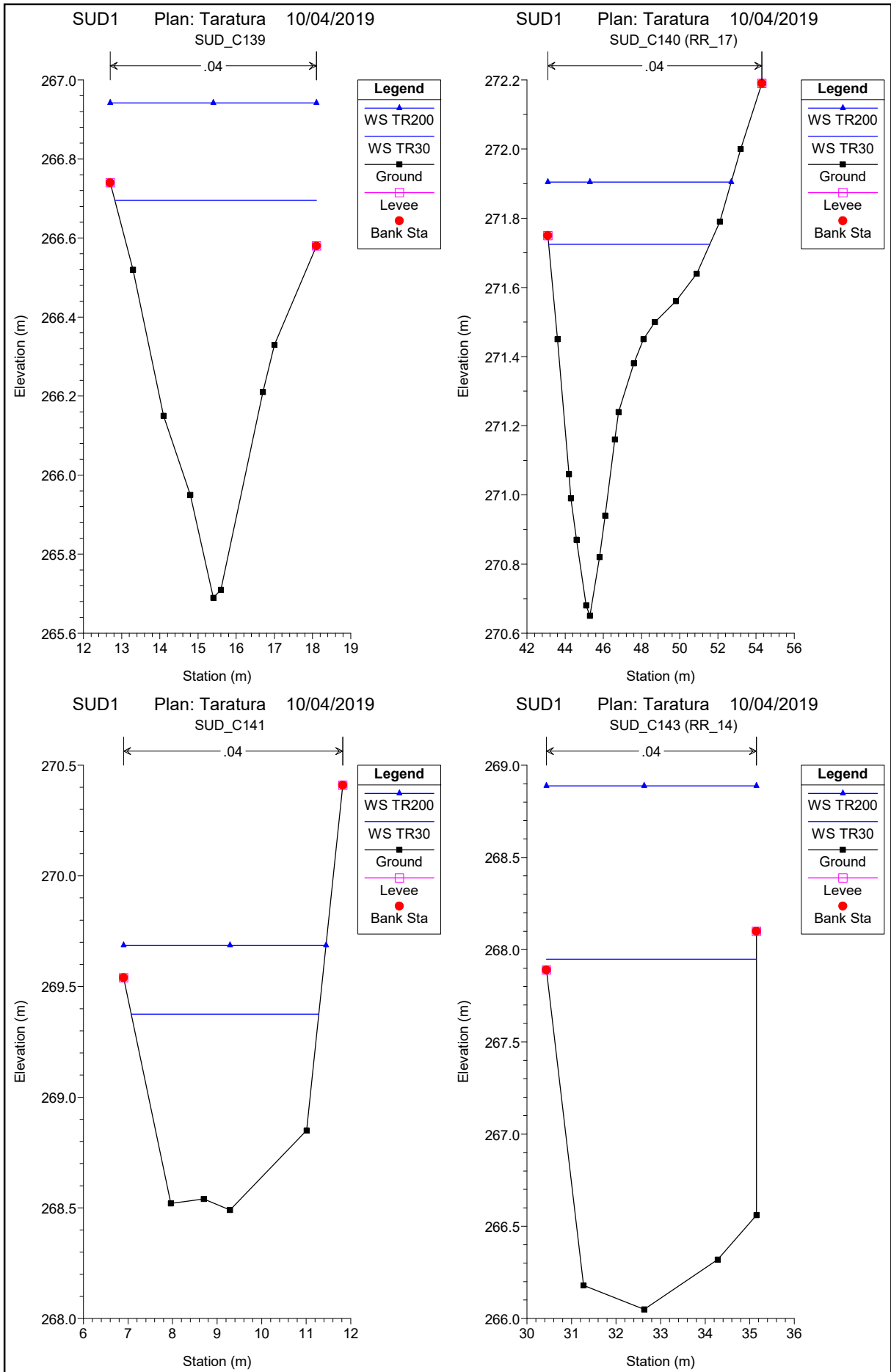




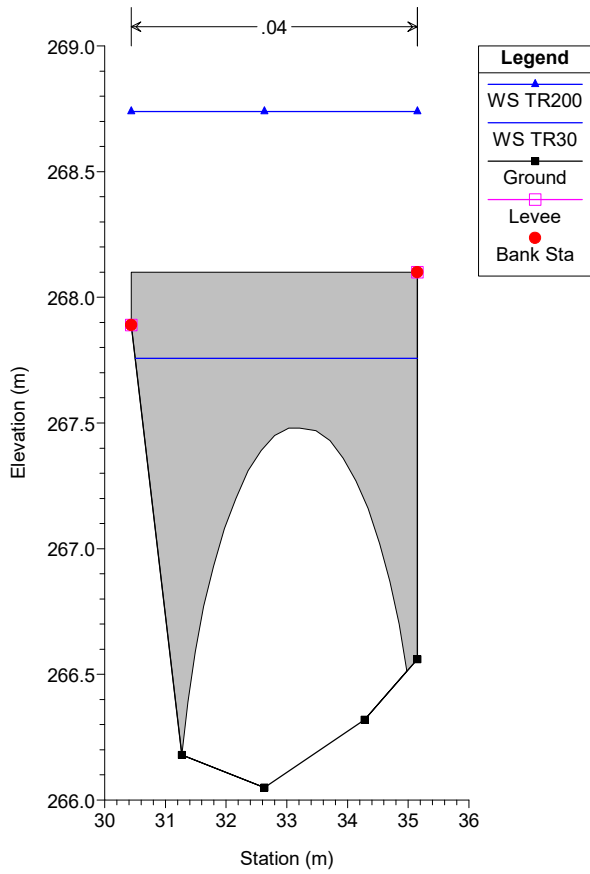




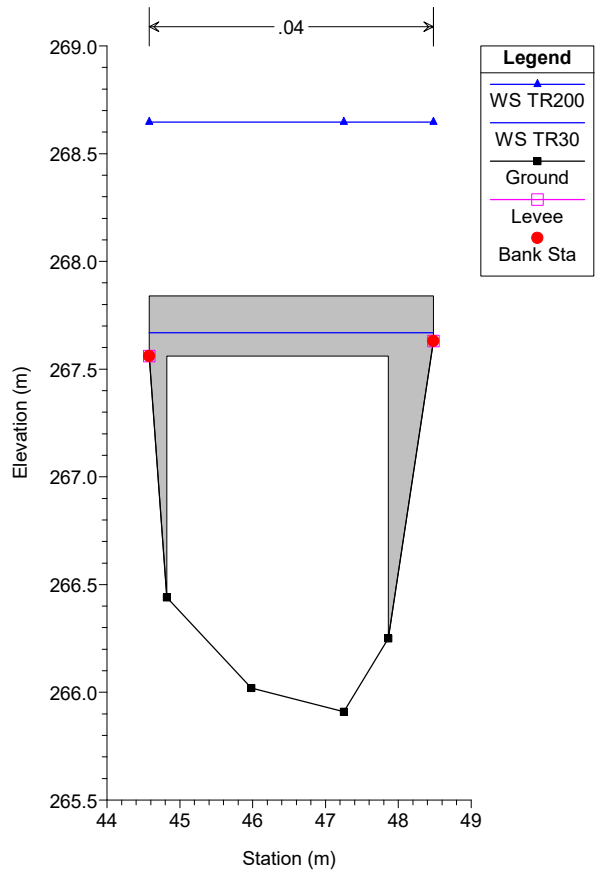




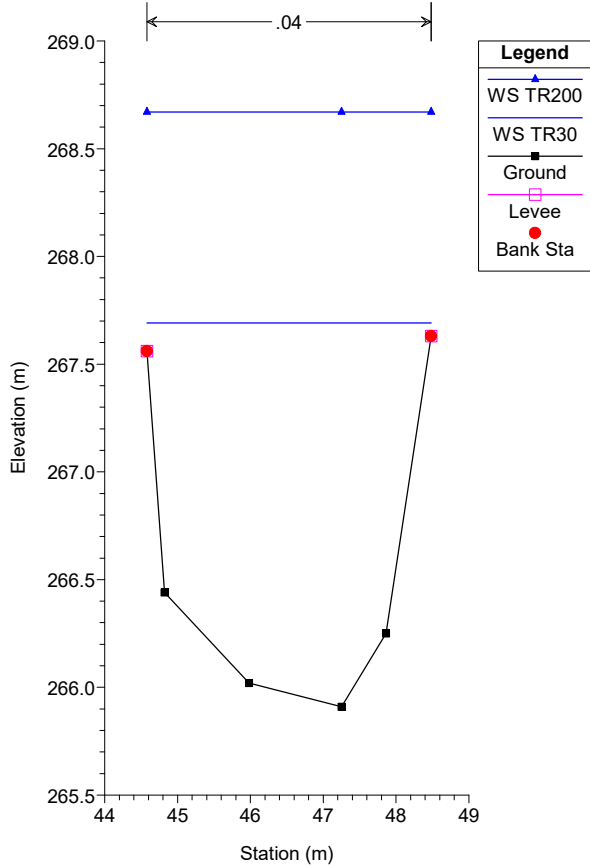
SUD1 Plan: Taratura 10/04/2019



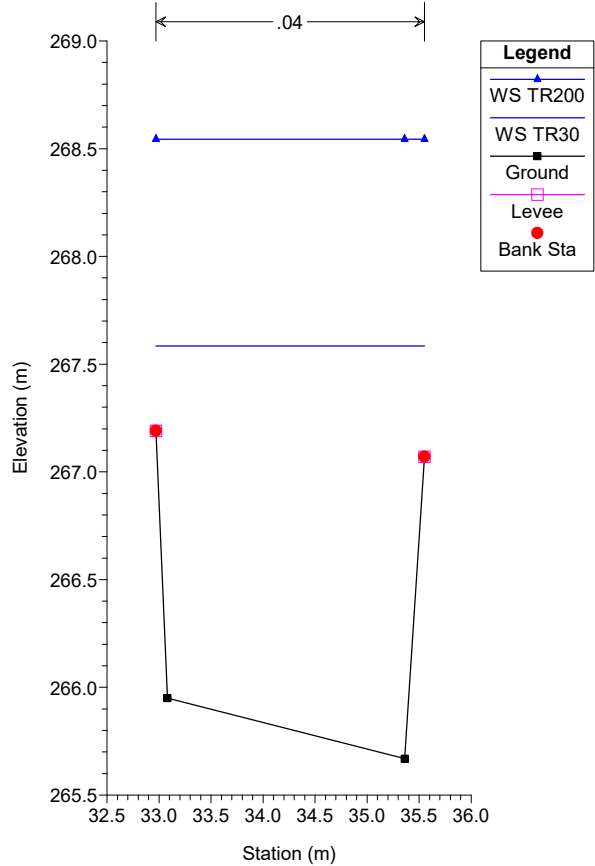
SUD1 Plan: Taratura 10/04/2019



SUD1 Plan: Taratura 10/04/2019  
SUD\_C144 (RR\_13)

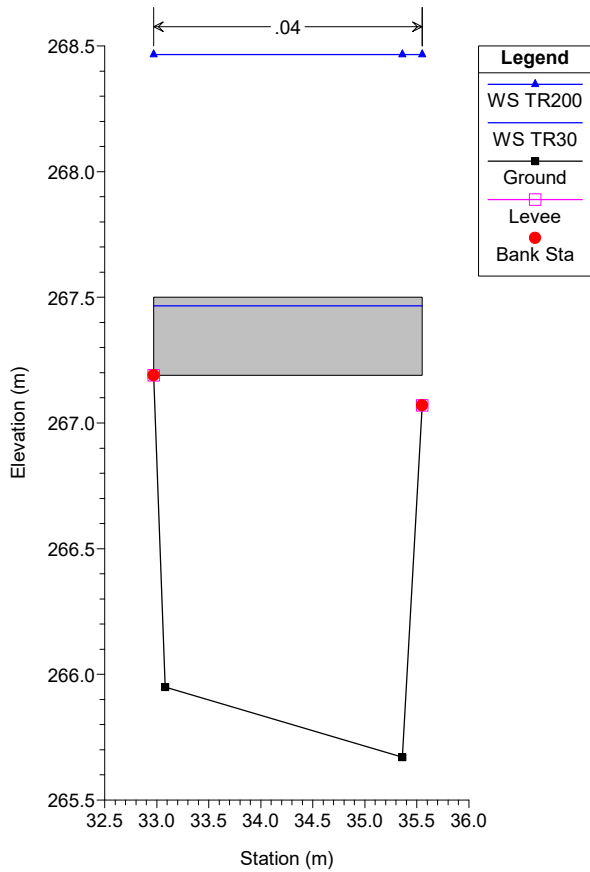


SUD1 Plan: Taratura 10/04/2019  
SUD\_C145 (RR\_12)

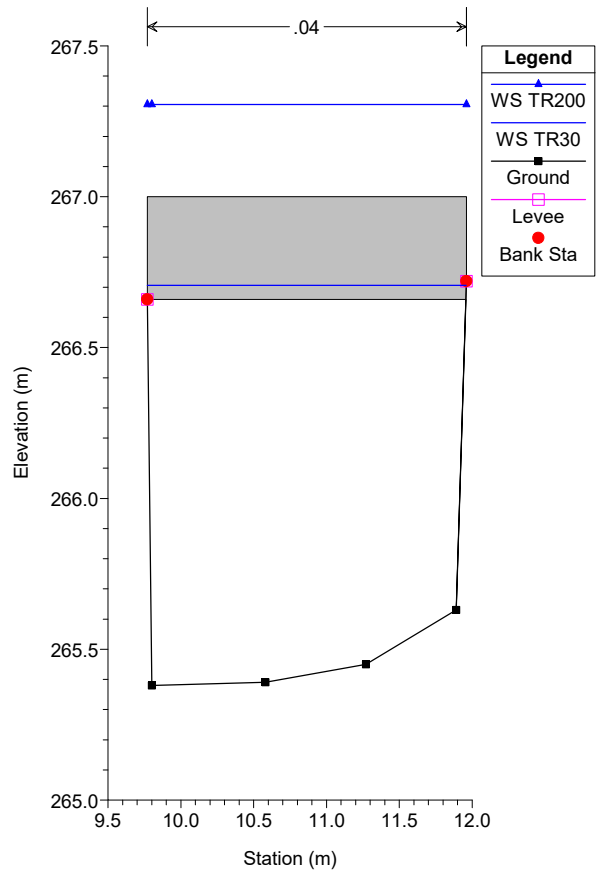




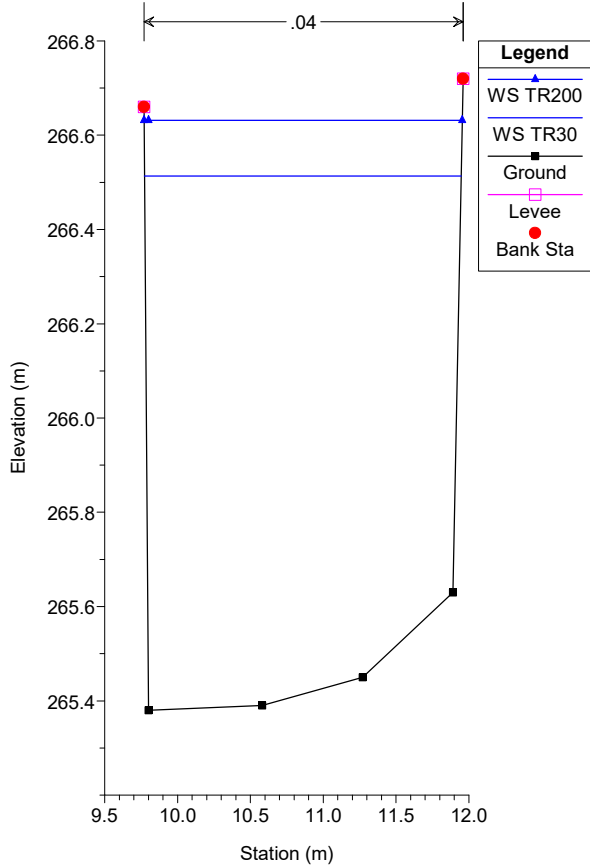
SUD1 Plan: Taratura 10/04/2019



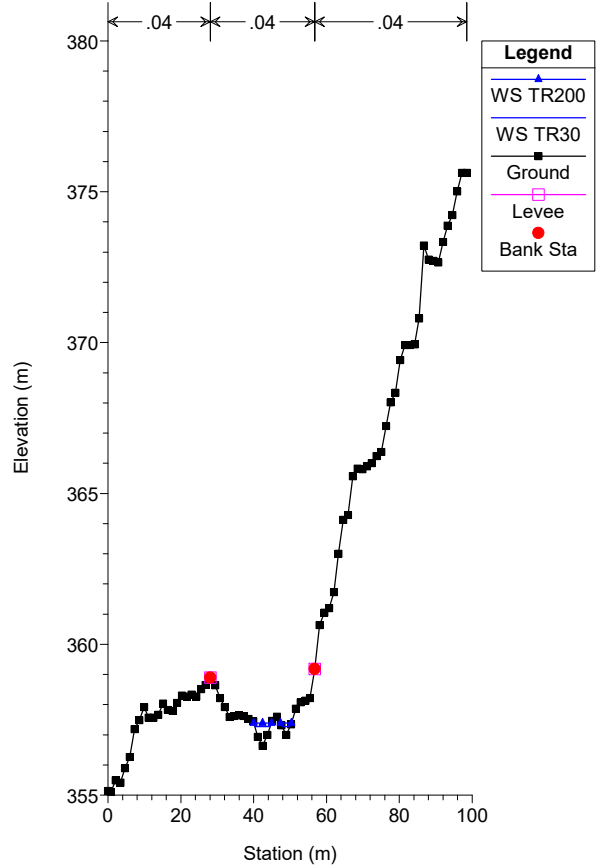
SUD1 Plan: Taratura 10/04/2019

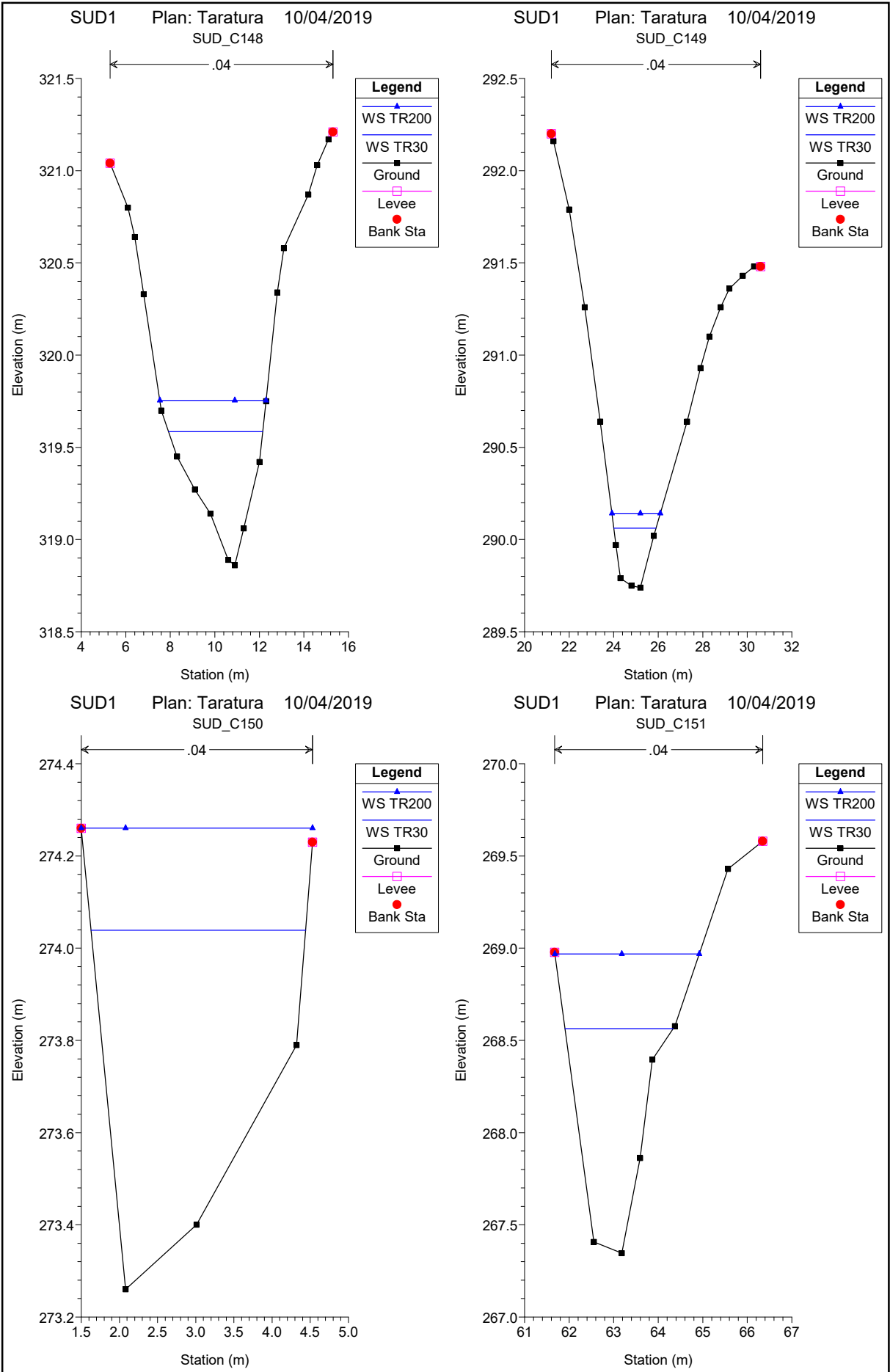


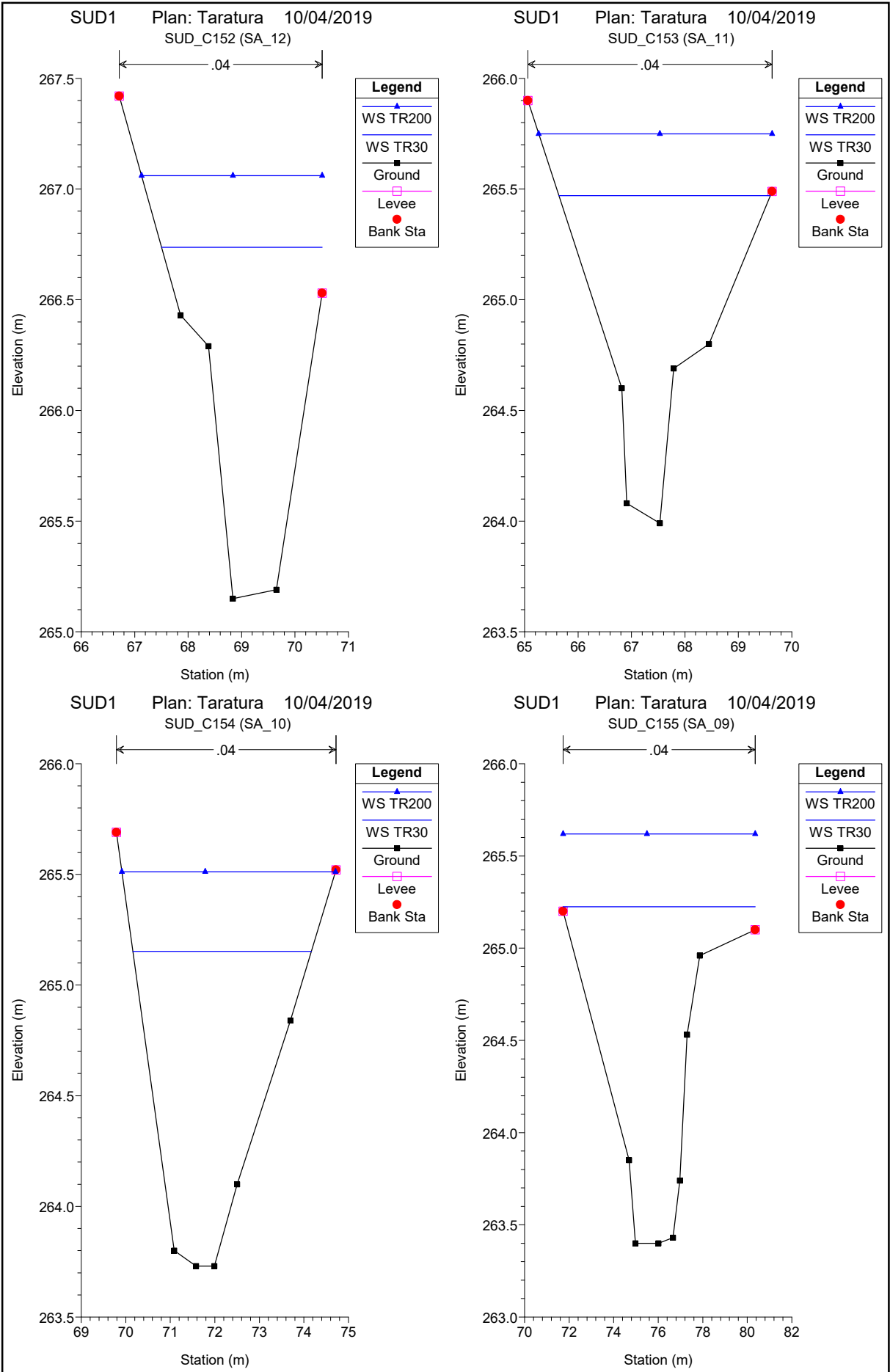
SUD1 Plan: Taratura 10/04/2019  
SUD\_C146 (RR\_11)



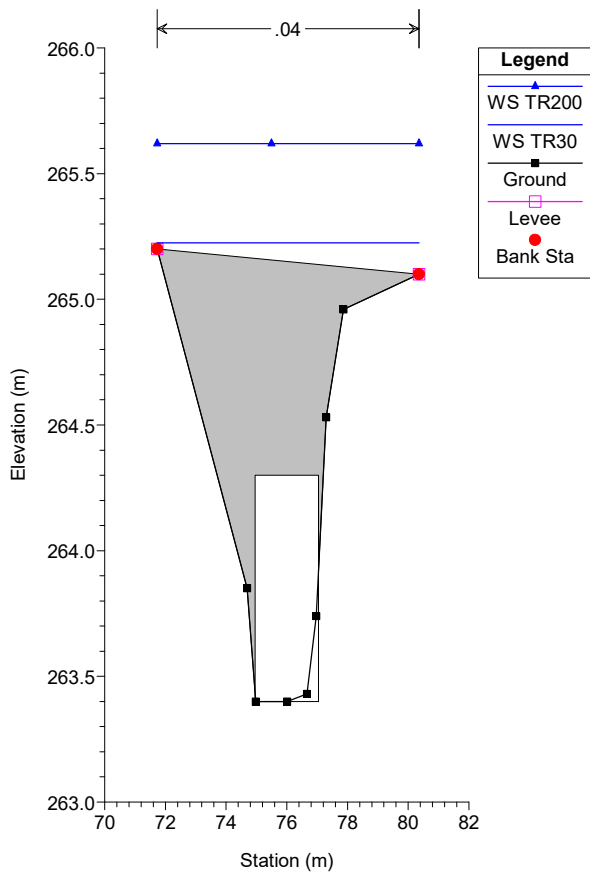
SUD1 Plan: Taratura 10/04/2019  
SUD\_C147



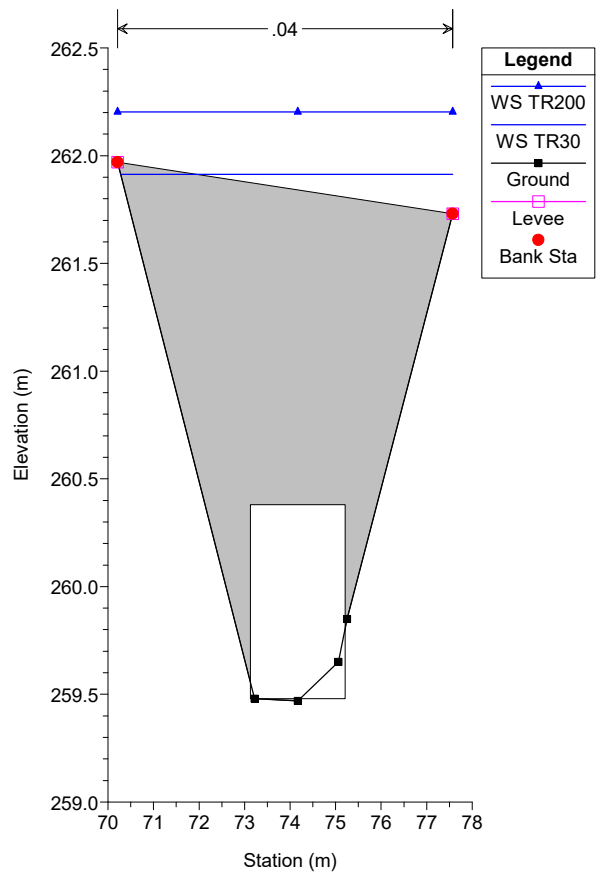




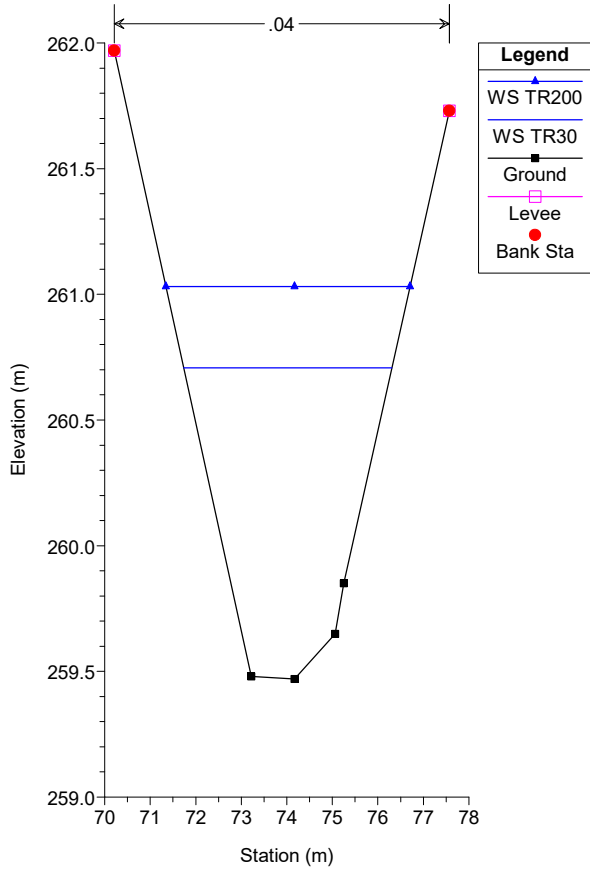
SUD1 Plan: Taratura 10/04/2019



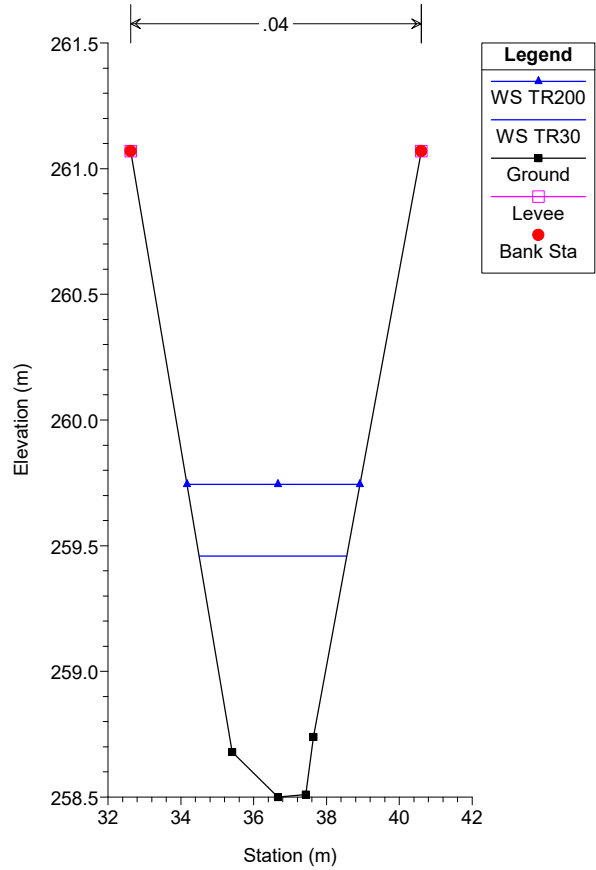
SUD1 Plan: Taratura 10/04/2019

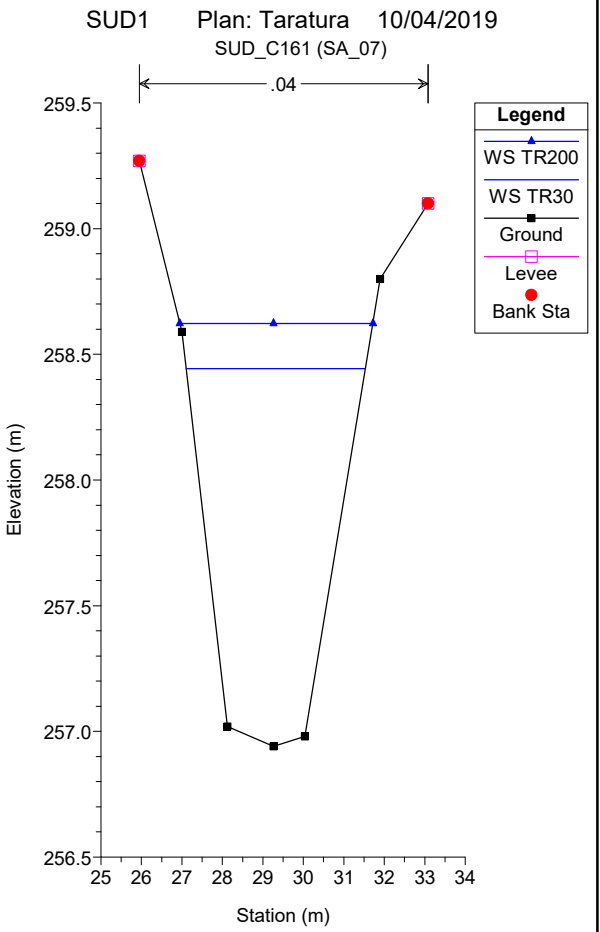
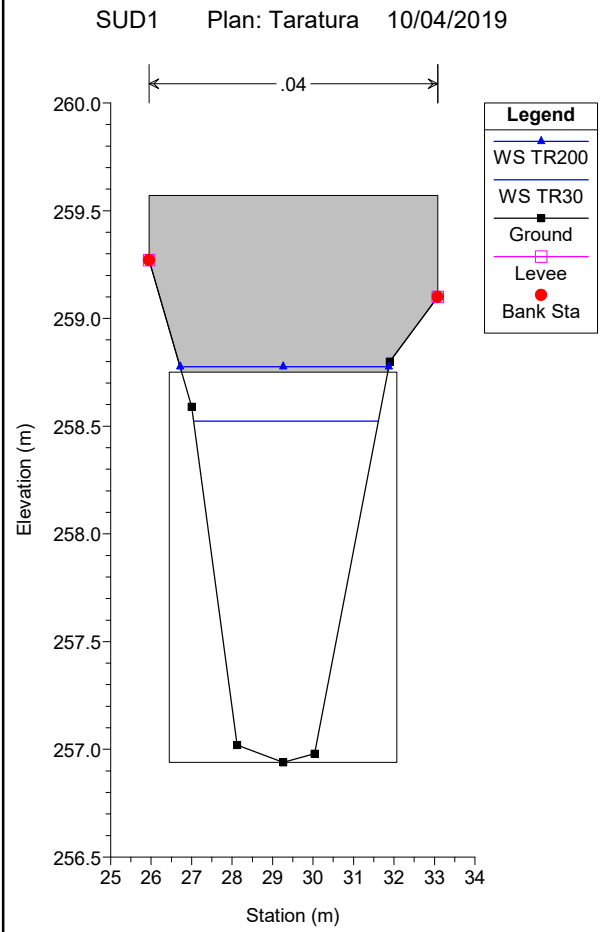
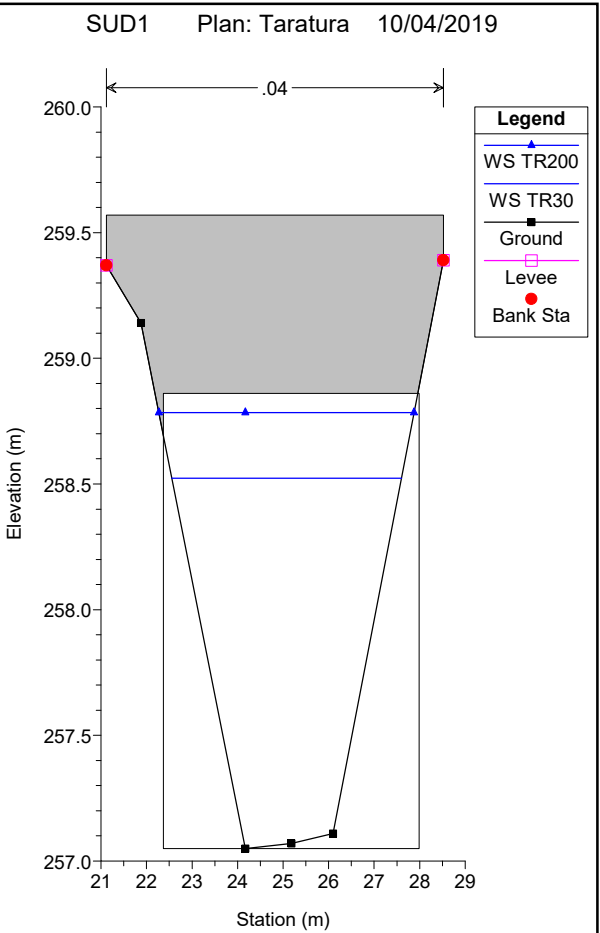
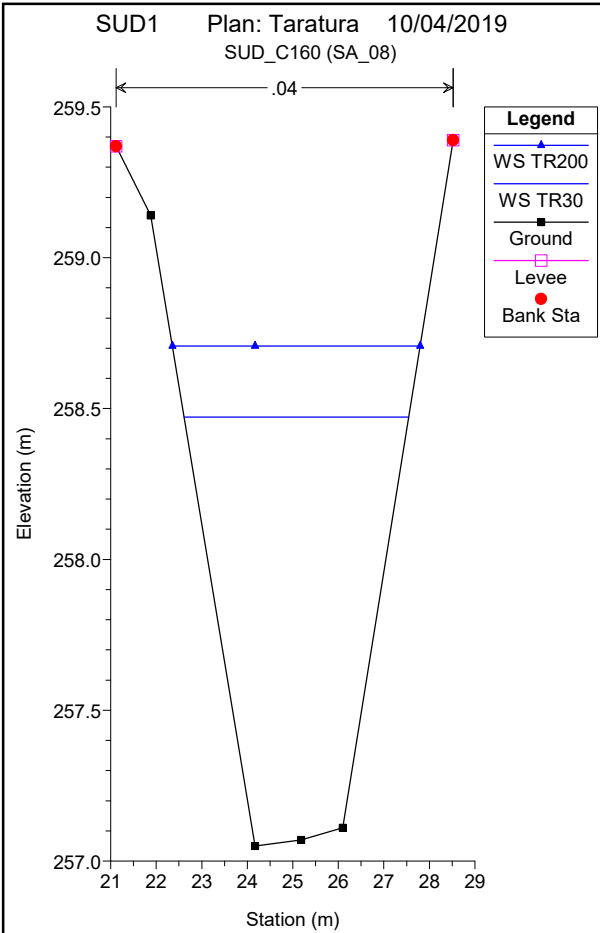


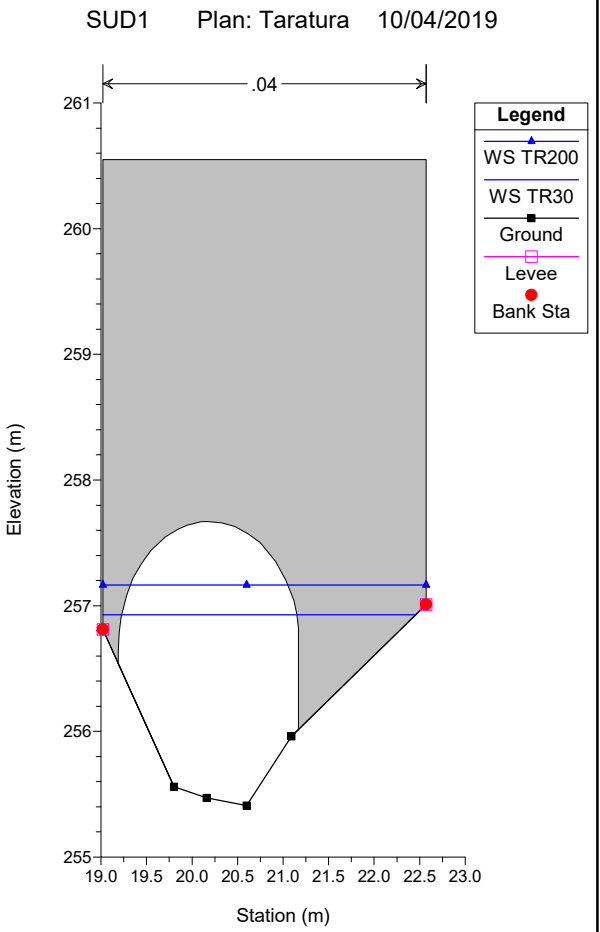
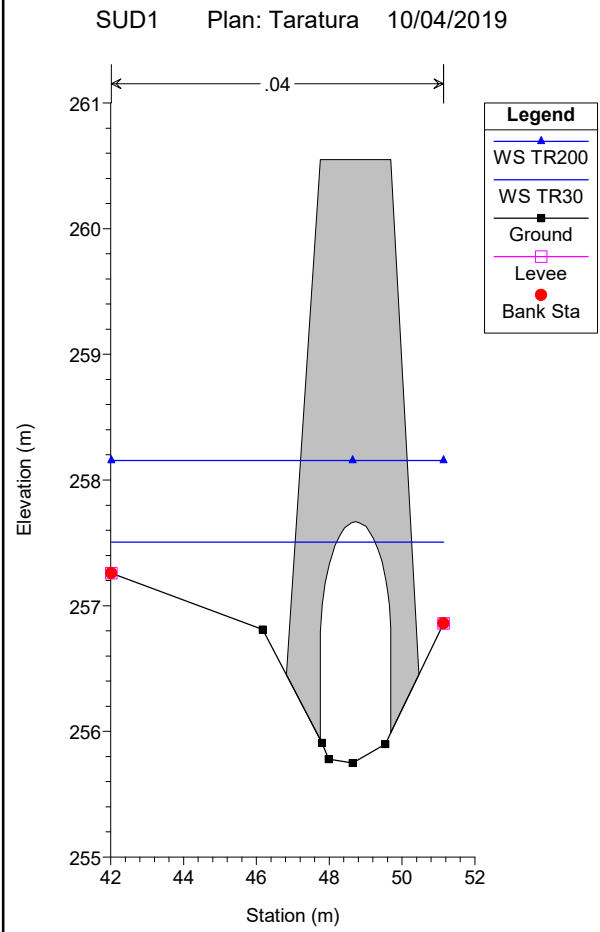
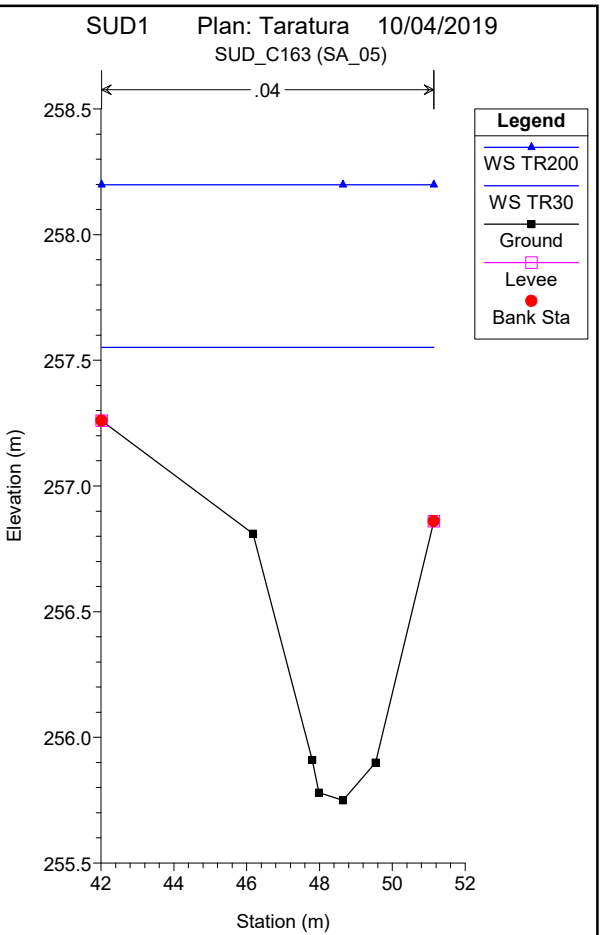
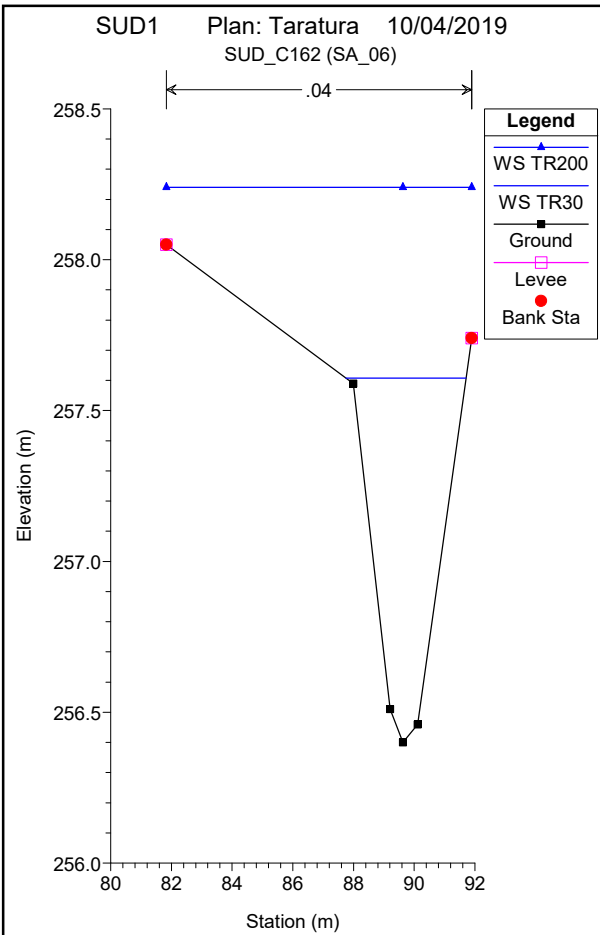
SUD1 Plan: Taratura 10/04/2019  
SUD\_C158 (SA\_08C)

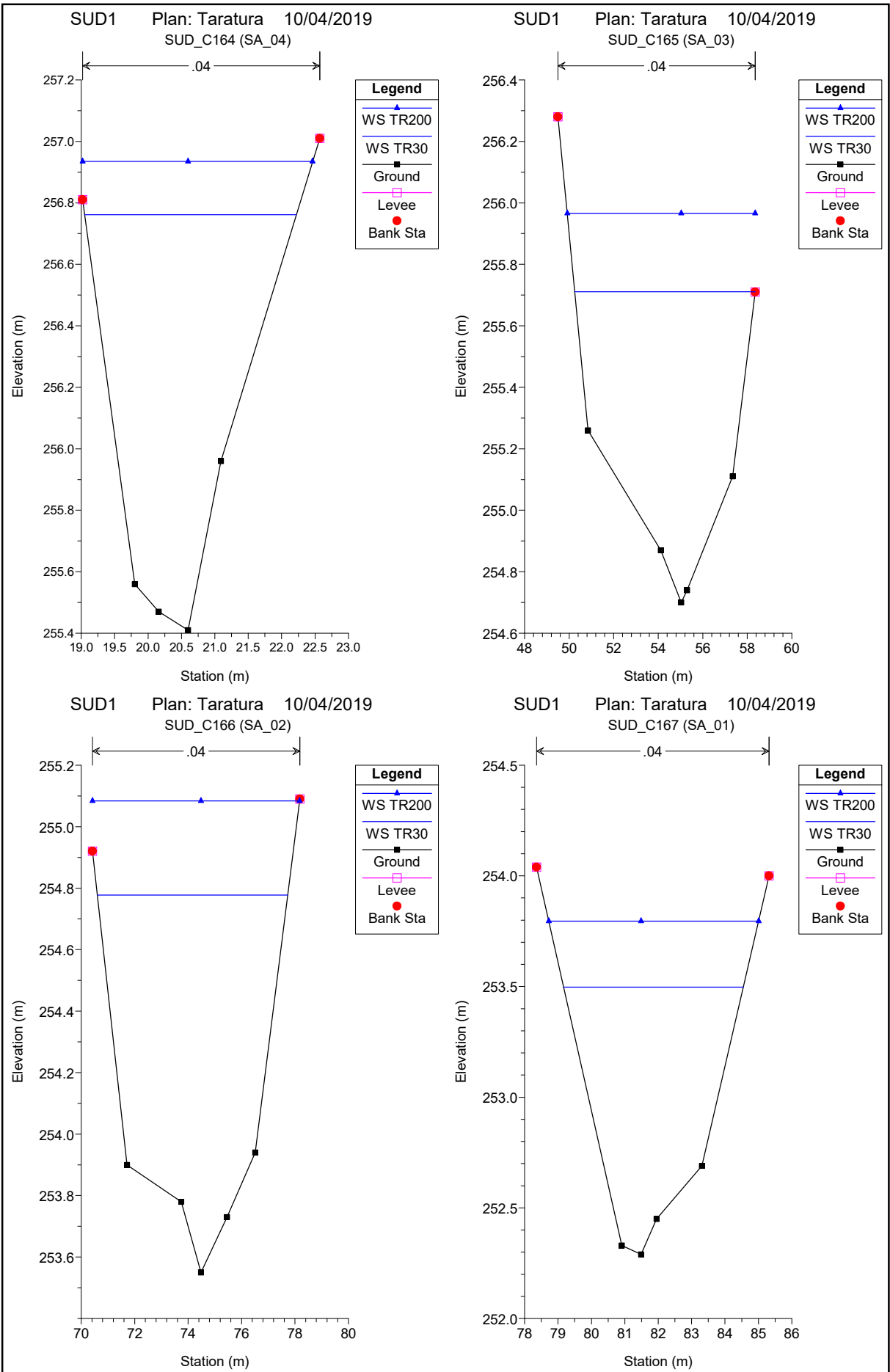


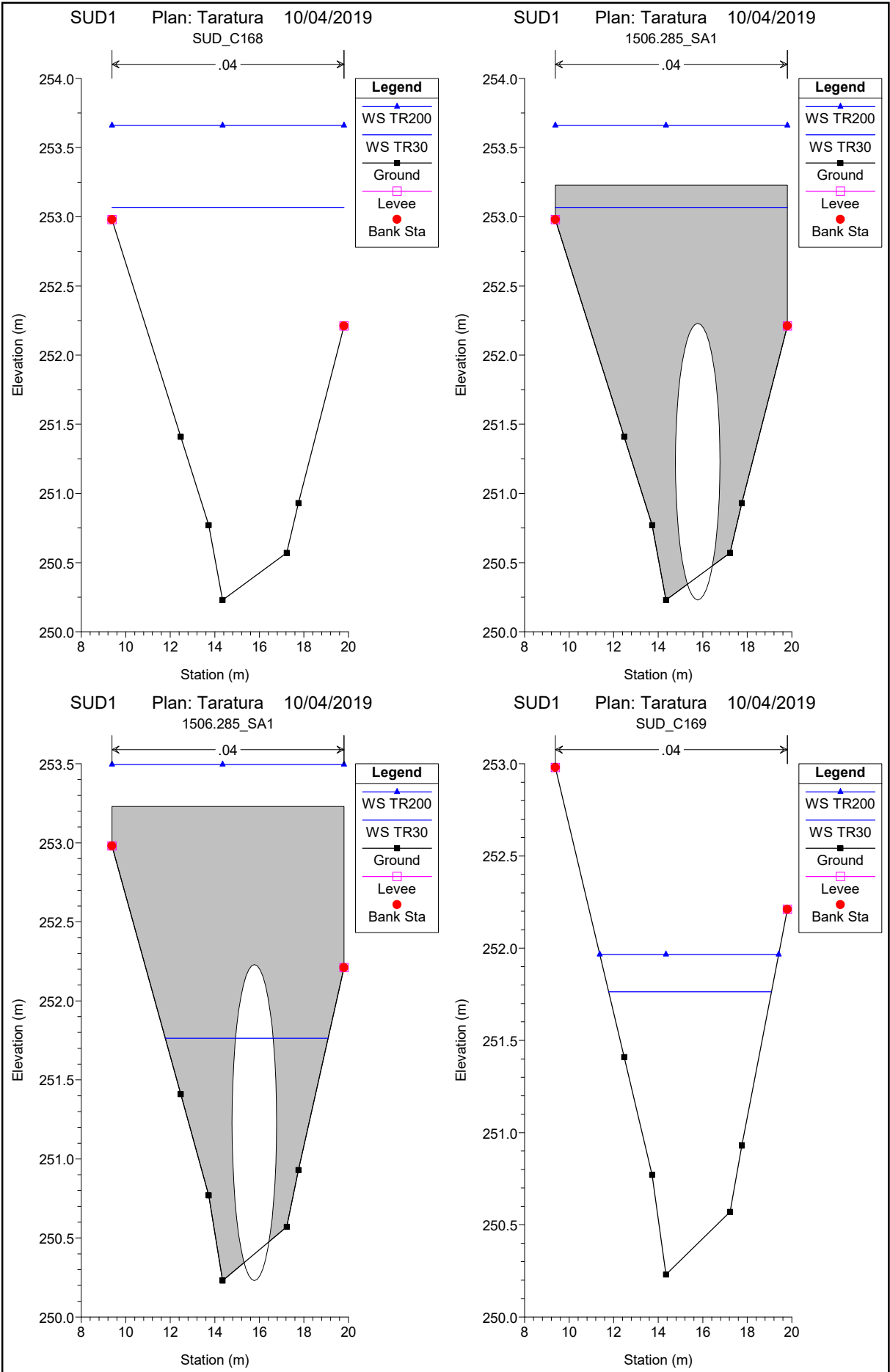
SUD1 Plan: Taratura 10/04/2019  
SUD\_C159 (SA\_08B)



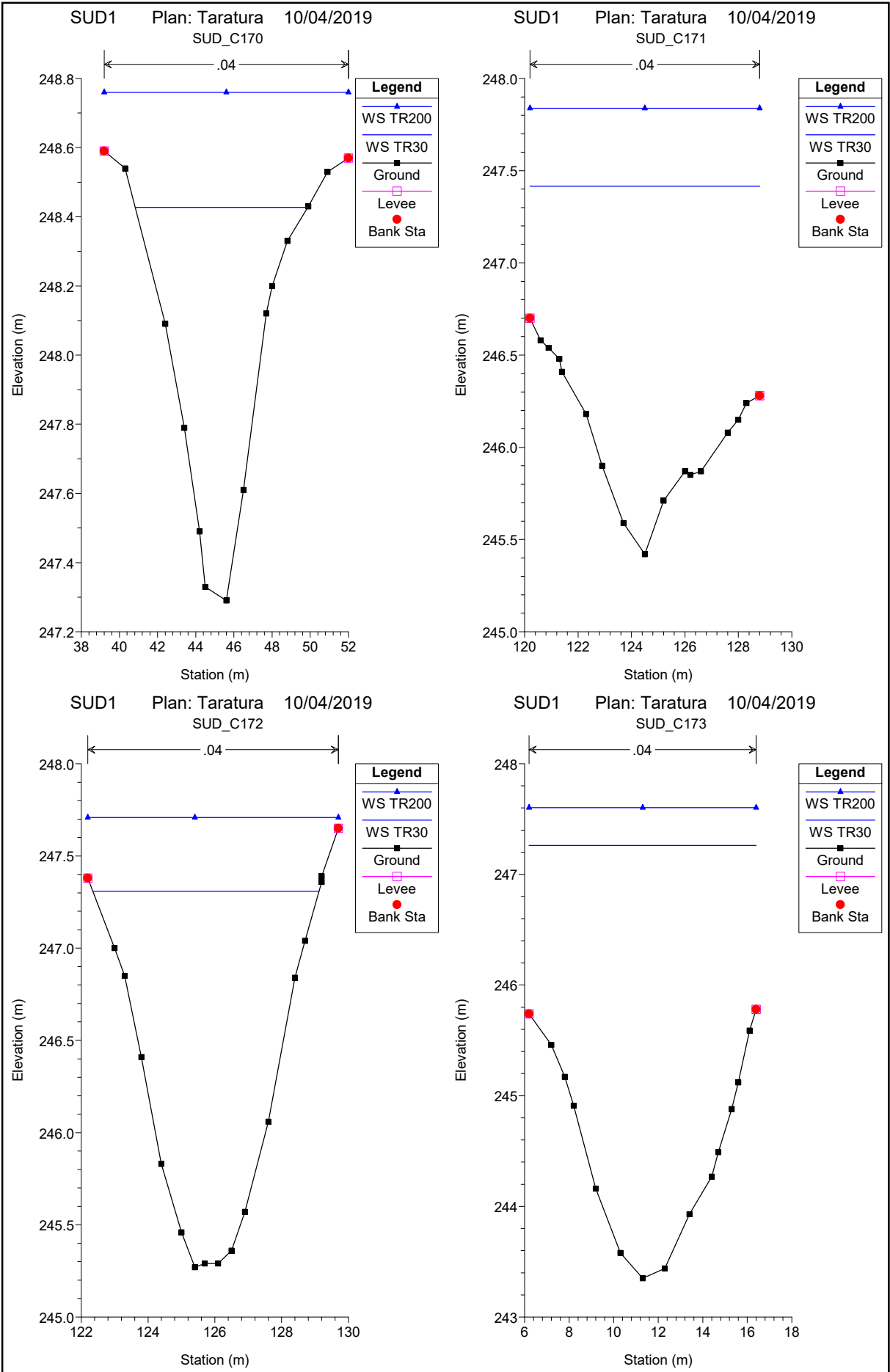


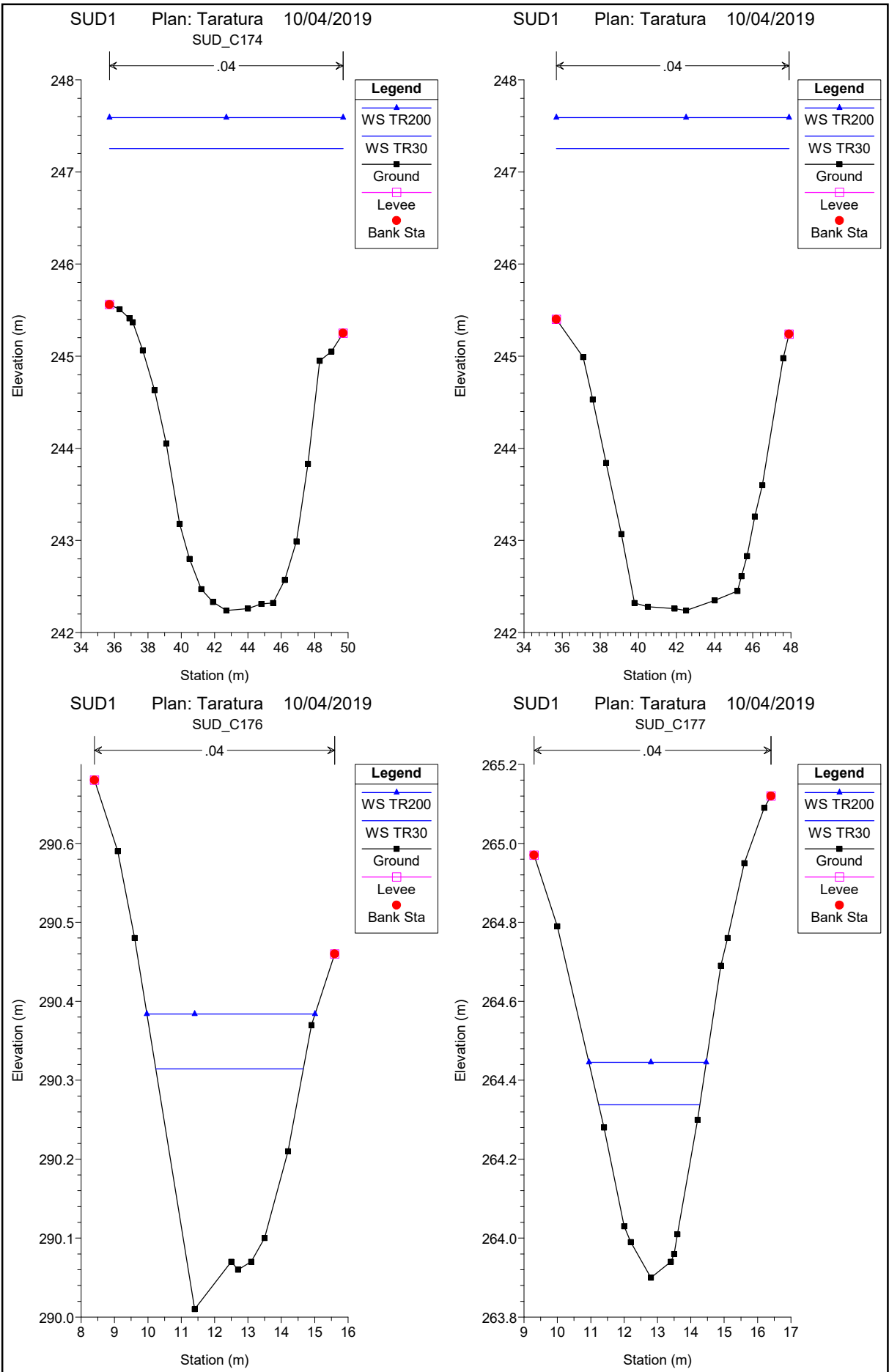


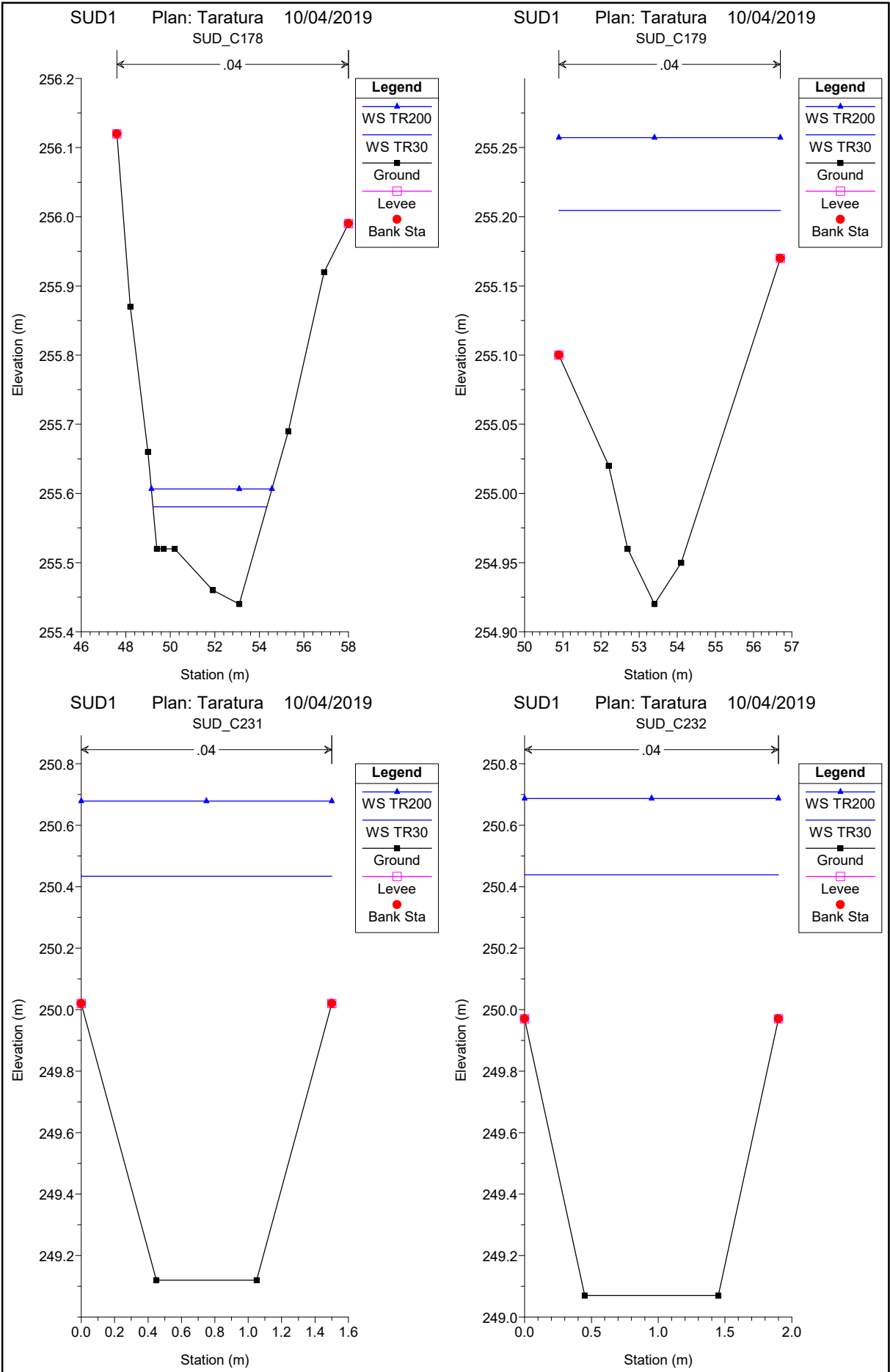




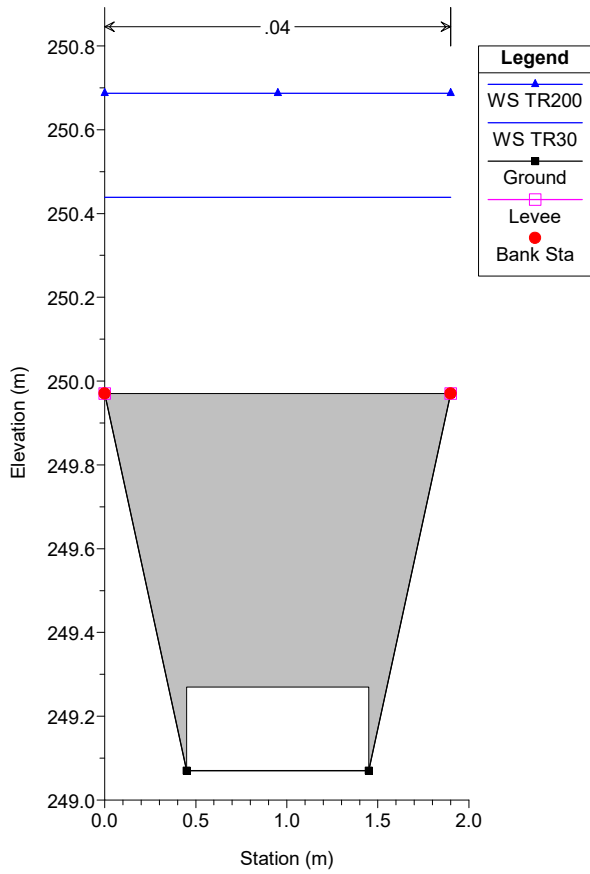




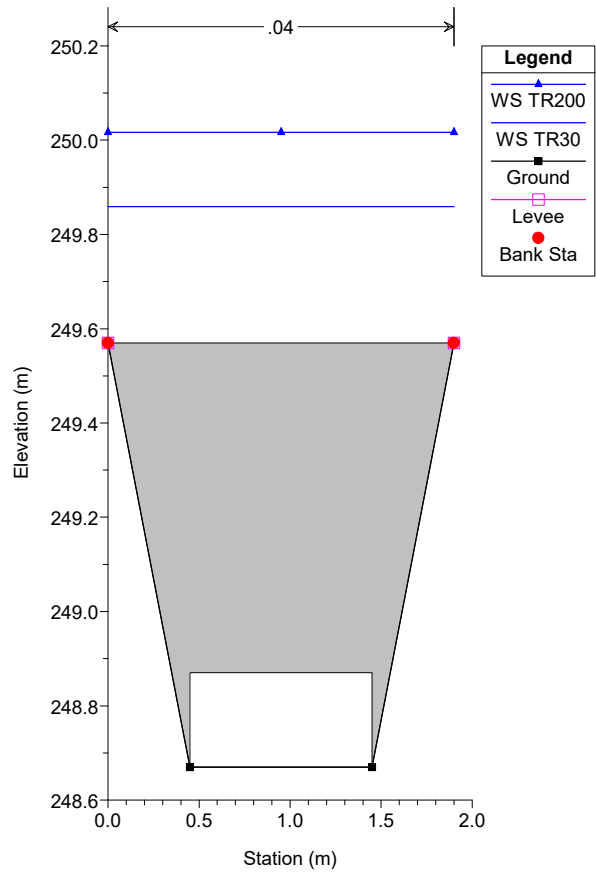




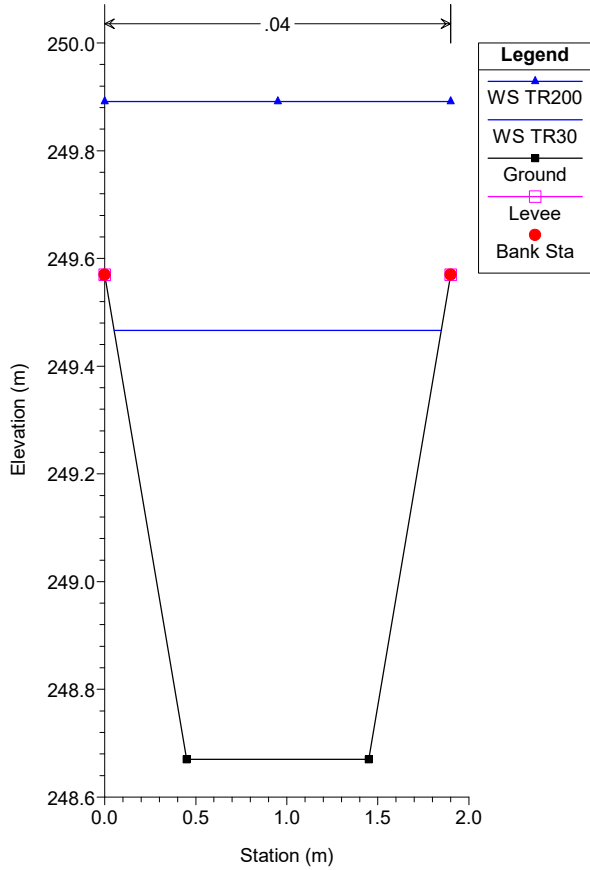
SUD1 Plan: Taratura 10/04/2019



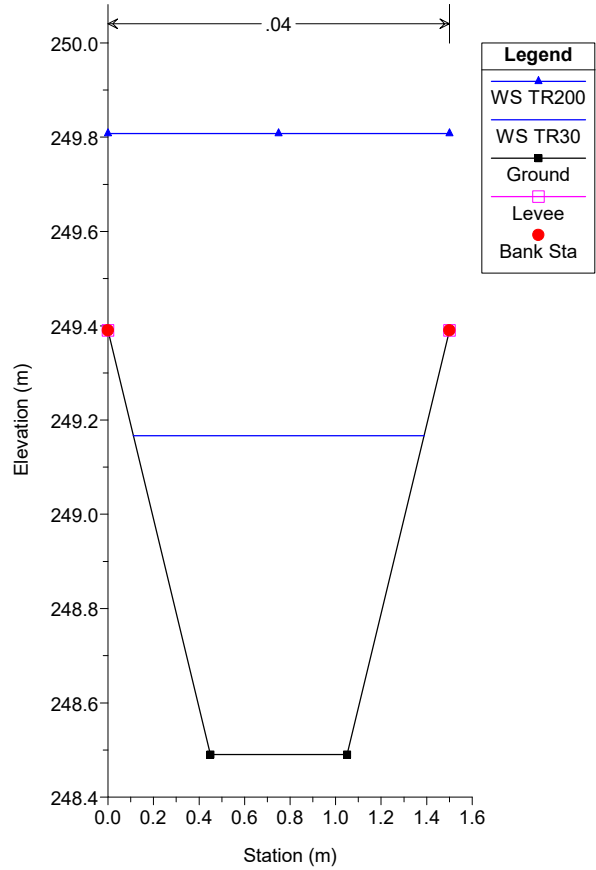
SUD1 Plan: Taratura 10/04/2019

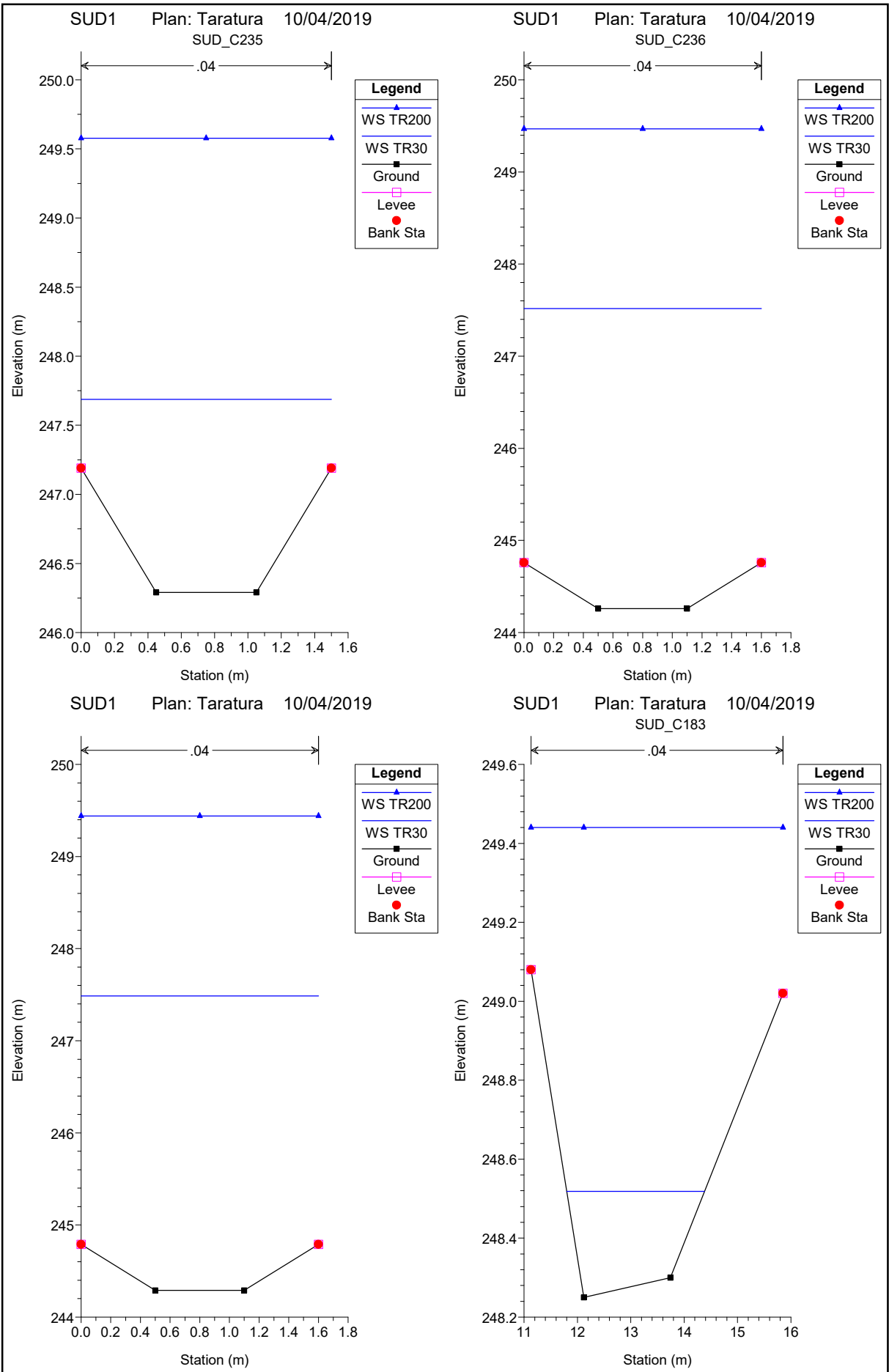


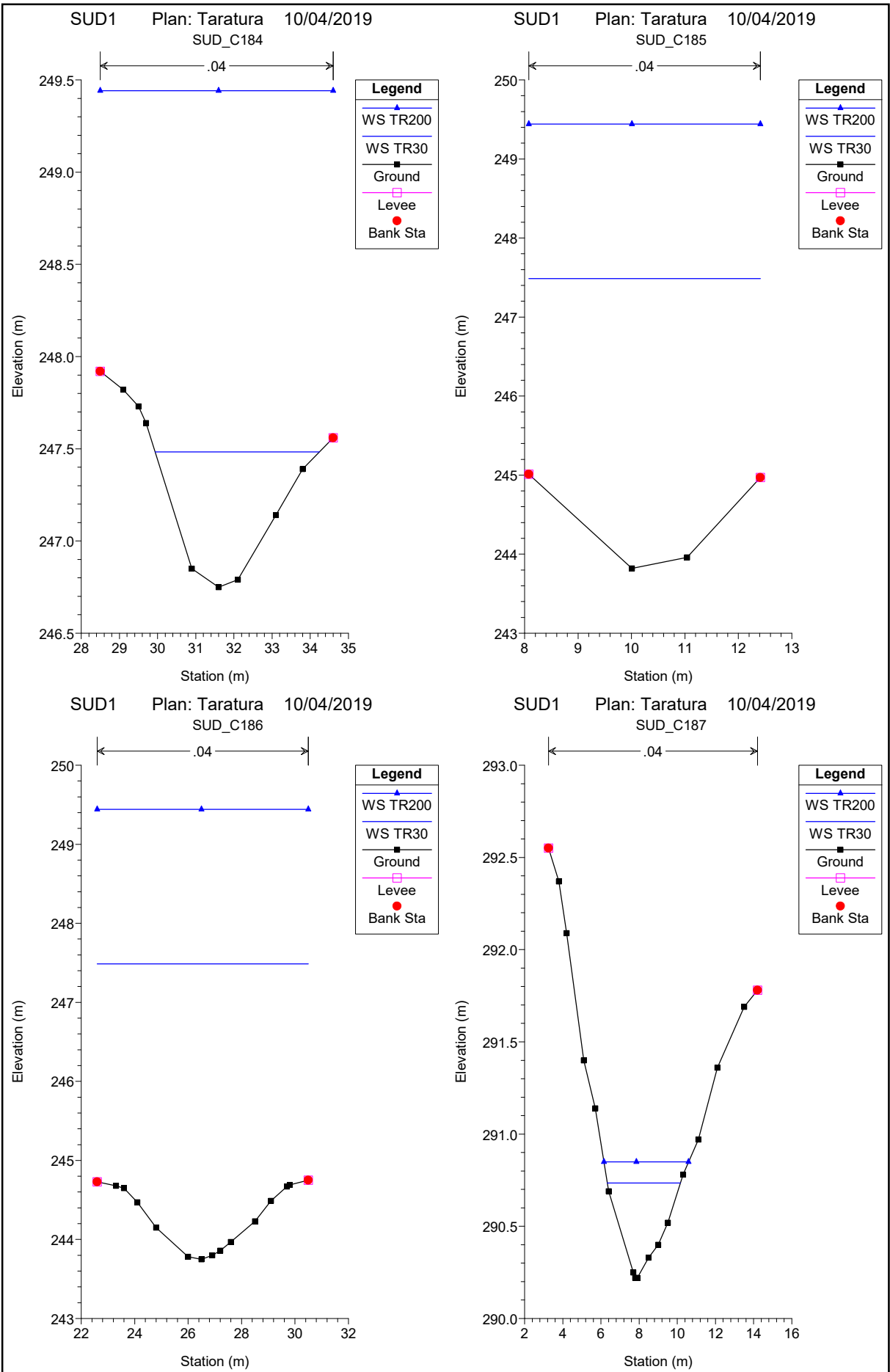
SUD1 Plan: Taratura 10/04/2019  
SUD\_C233

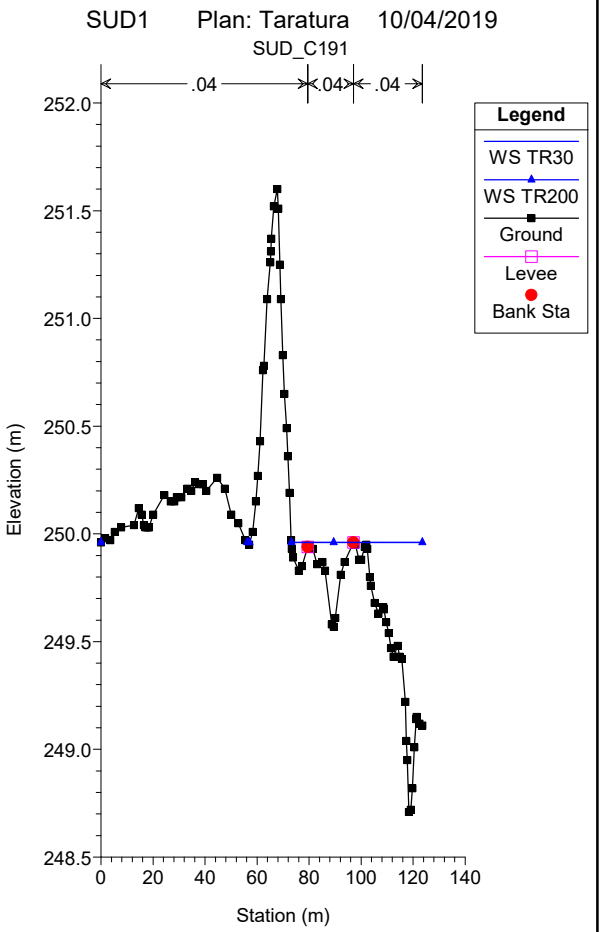
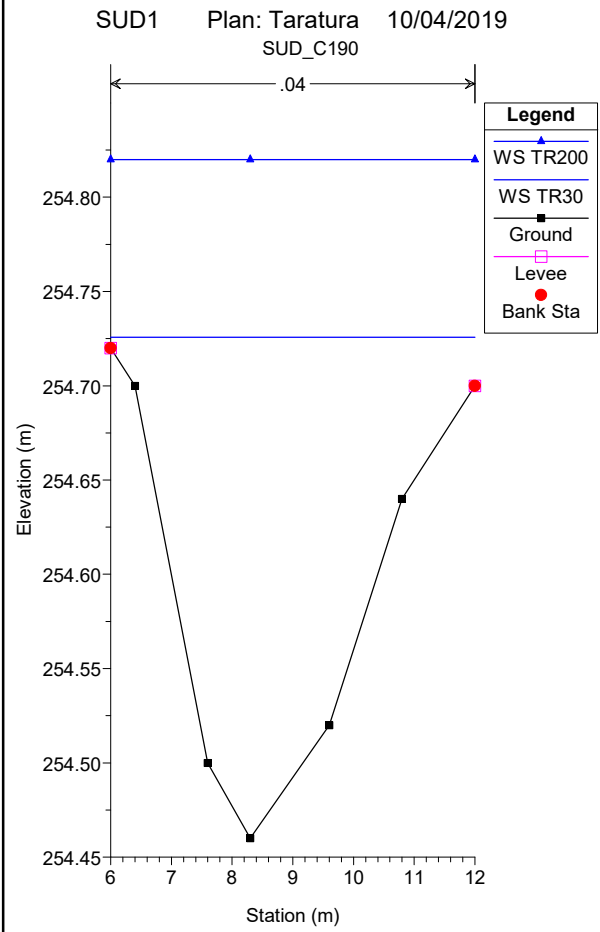
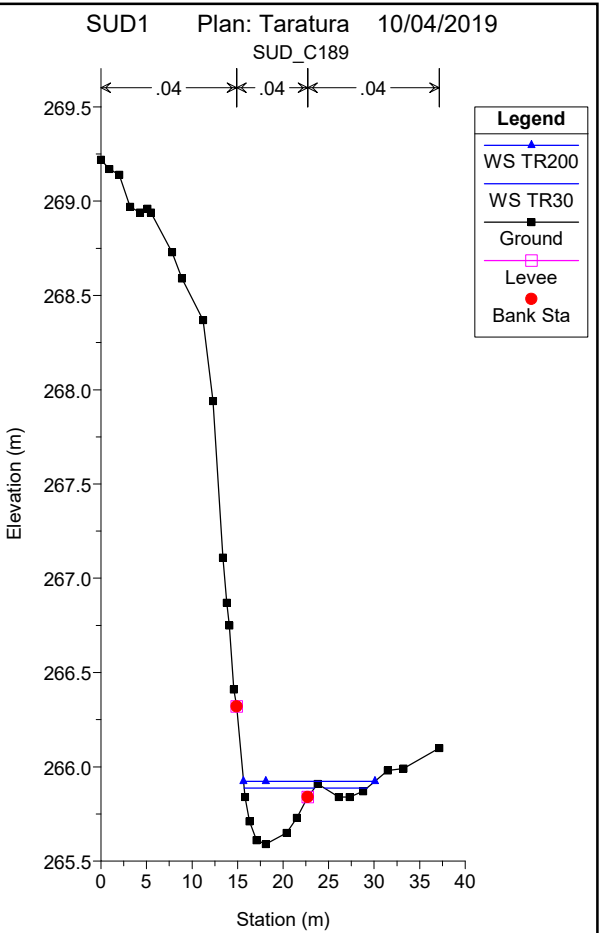
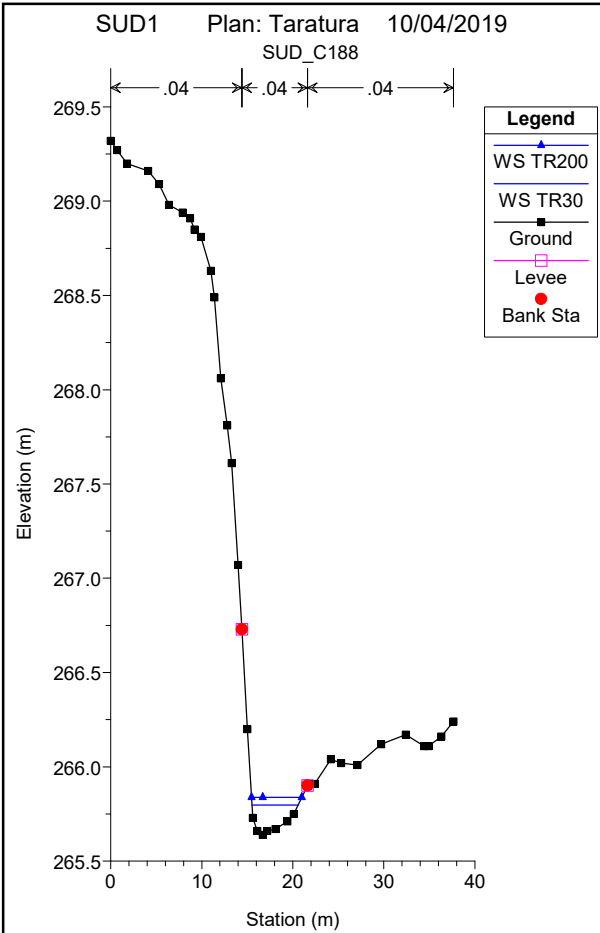


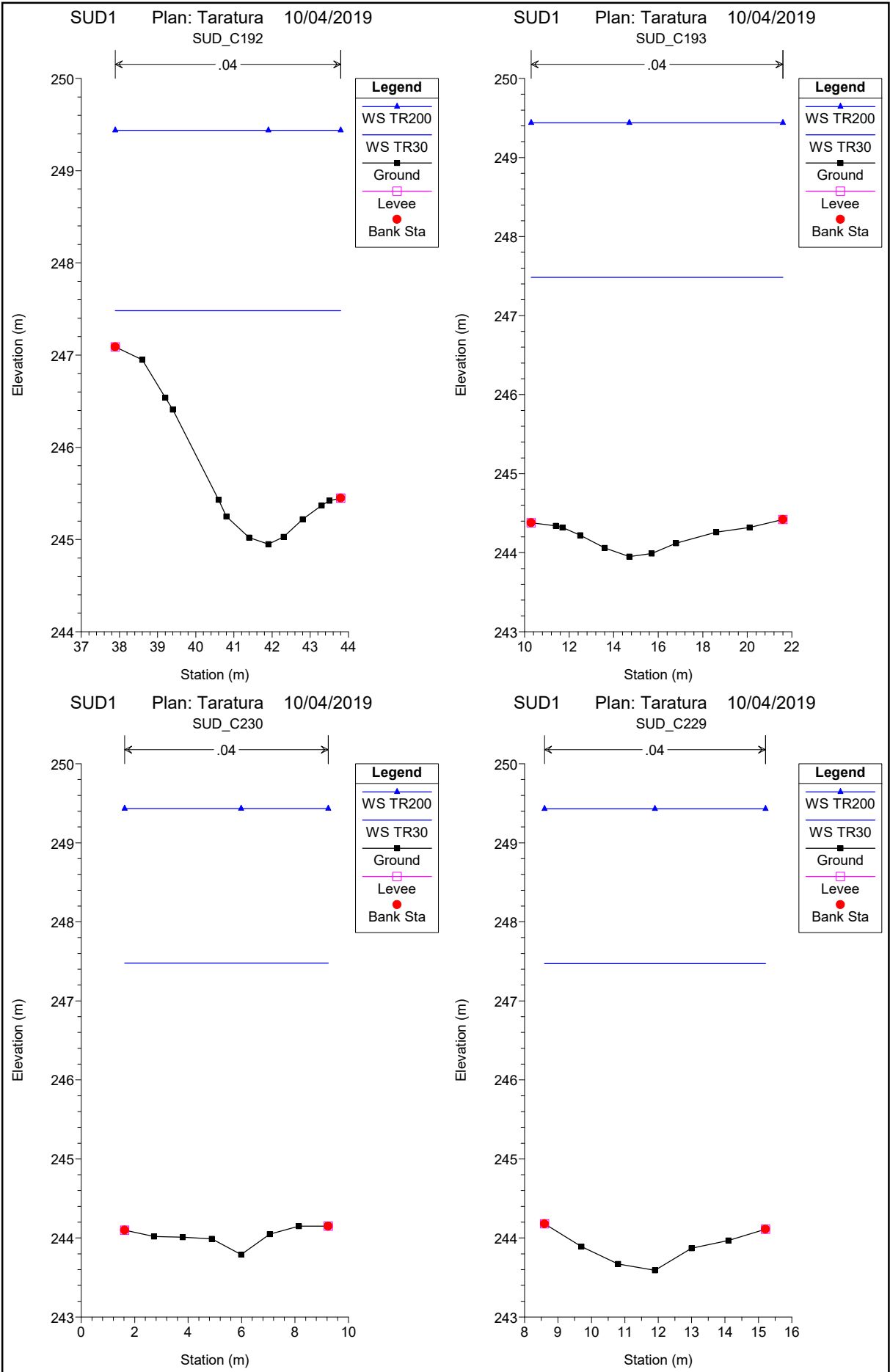
SUD1 Plan: Taratura 10/04/2019  
SUD\_C234





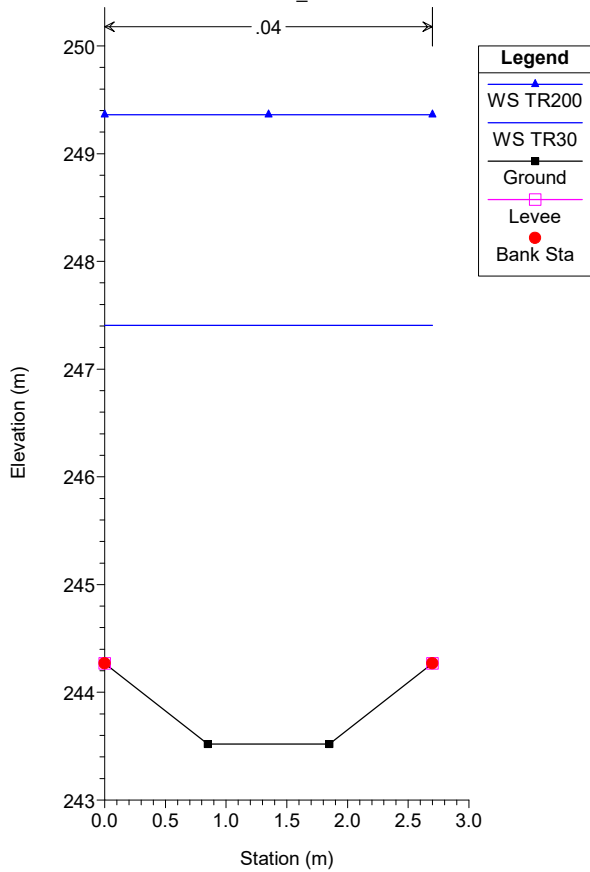




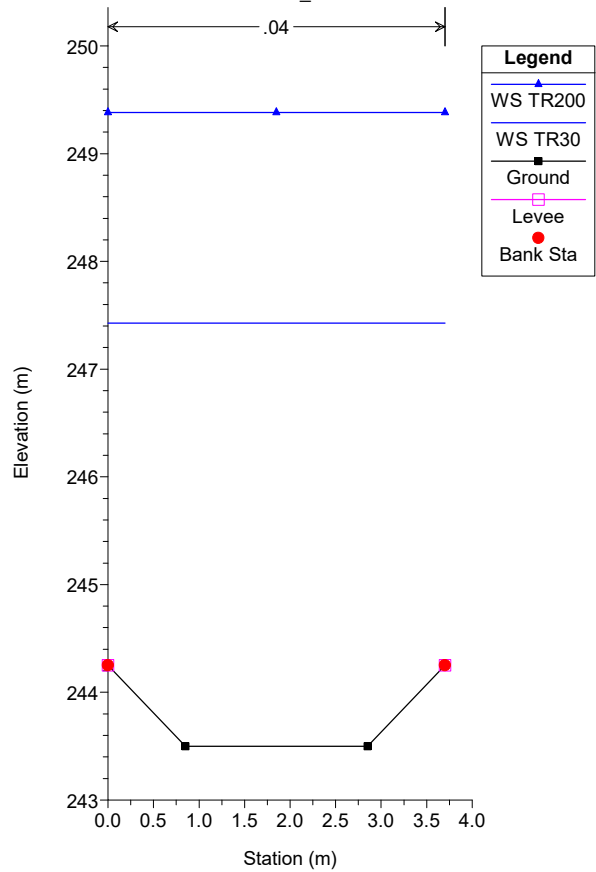




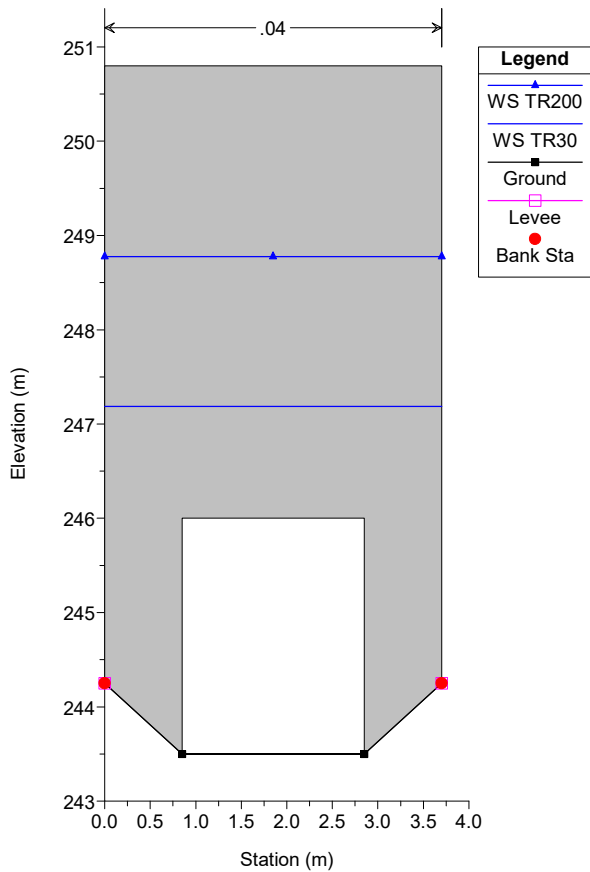
SUD1 Plan: Taratura 10/04/2019  
SUD\_C238



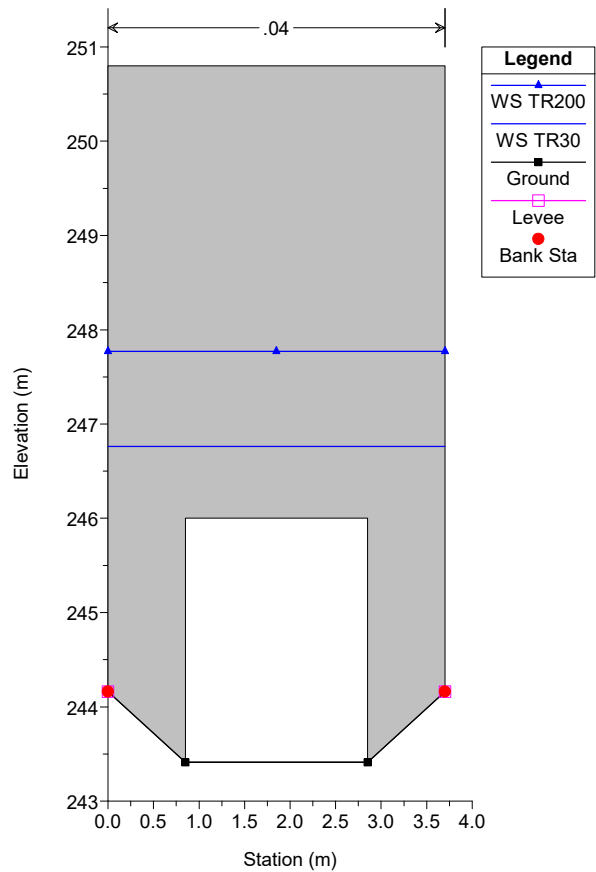
SUD1 Plan: Taratura 10/04/2019  
SUD\_C239

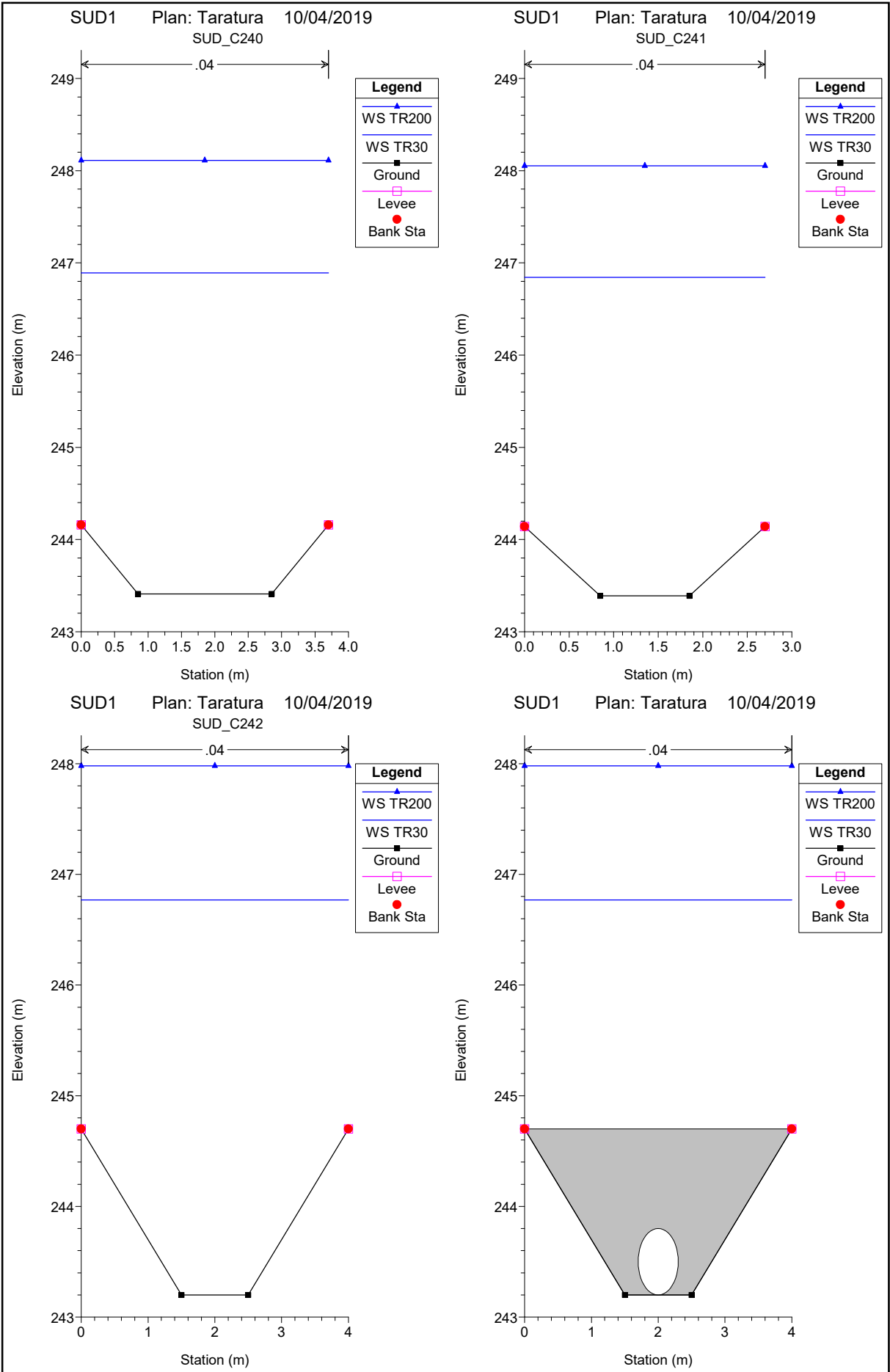


SUD1 Plan: Taratura 10/04/2019

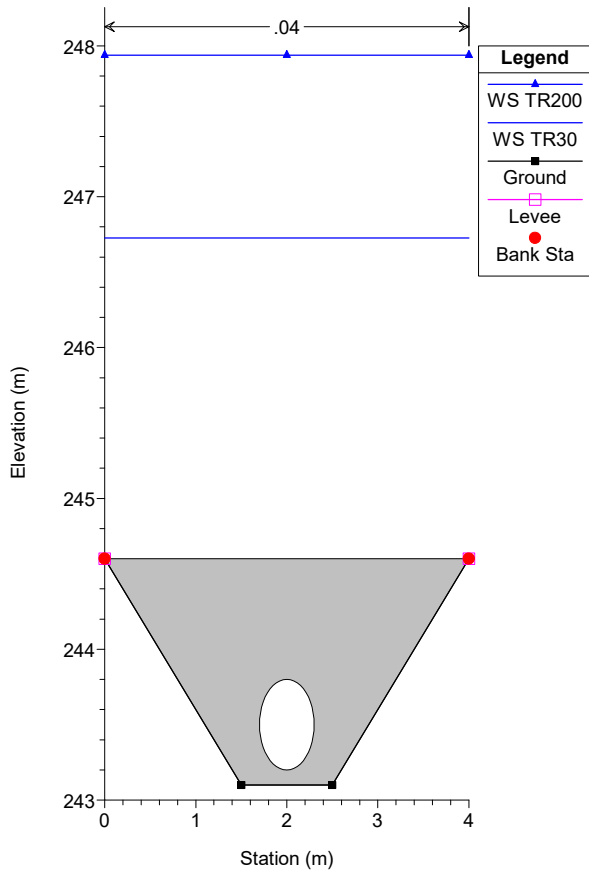


SUD1 Plan: Taratura 10/04/2019

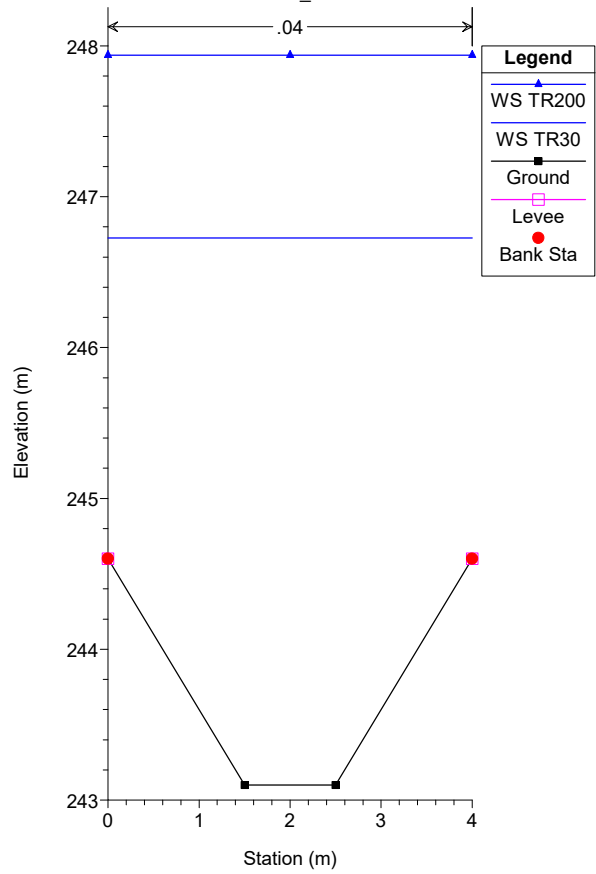




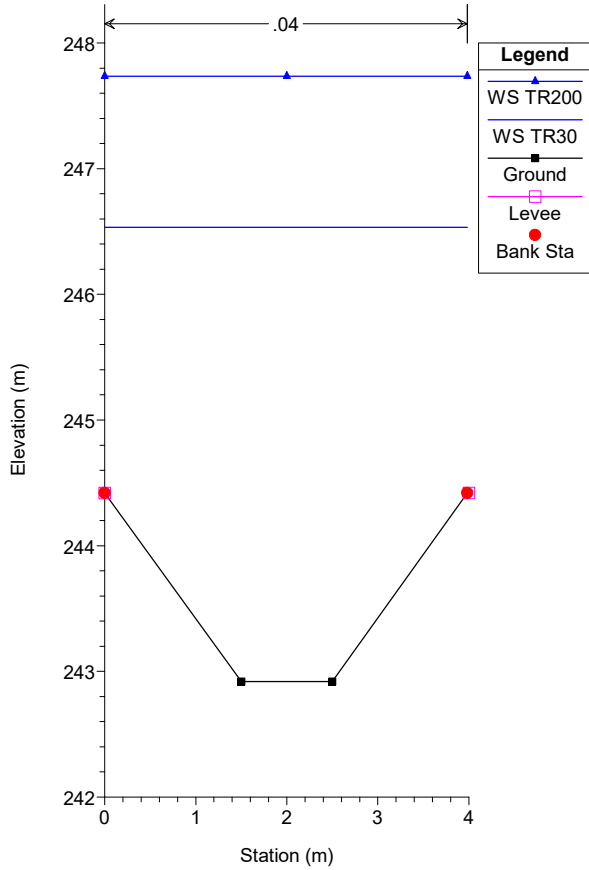
SUD1 Plan: Taratura 10/04/2019



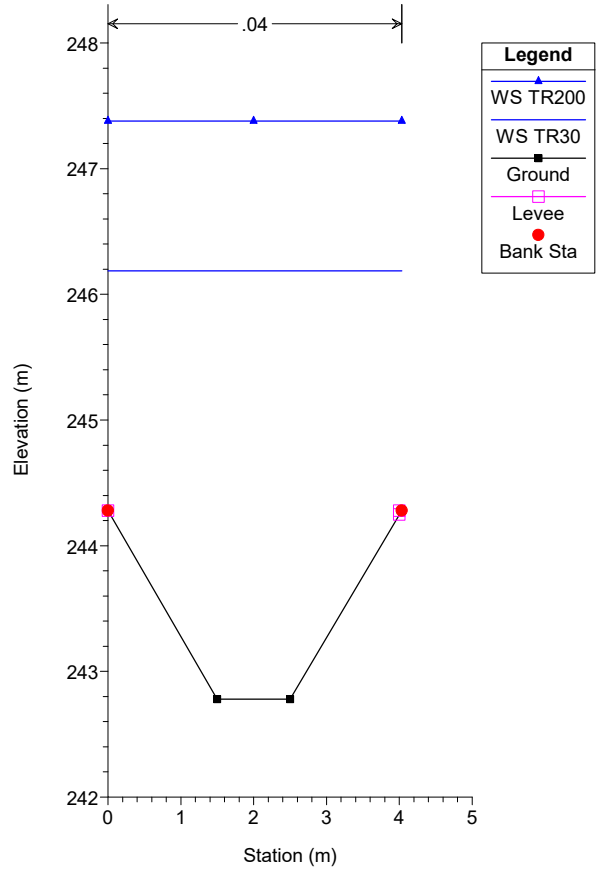
SUD1 Plan: Taratura 10/04/2019  
SUD\_C243



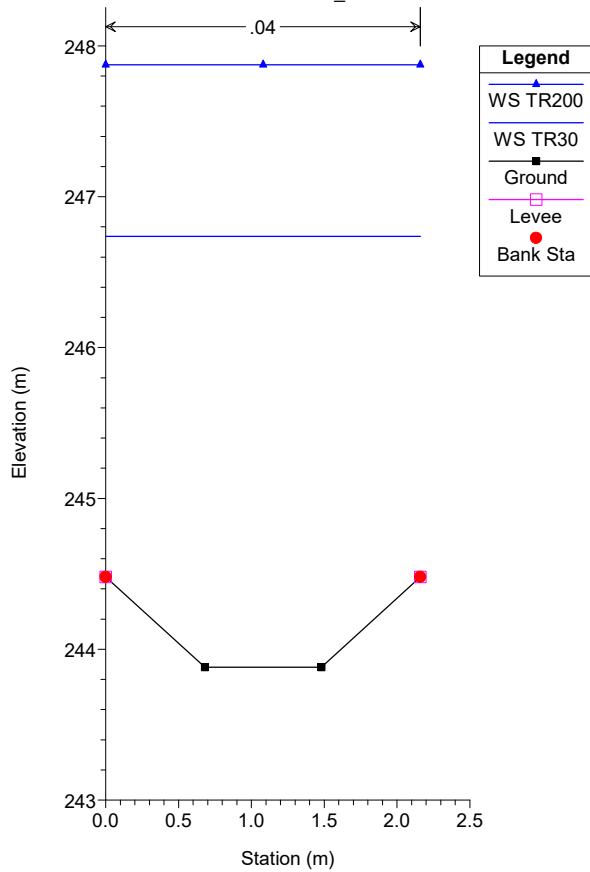
SUD1 Plan: Taratura 10/04/2019  
SUD\_C244



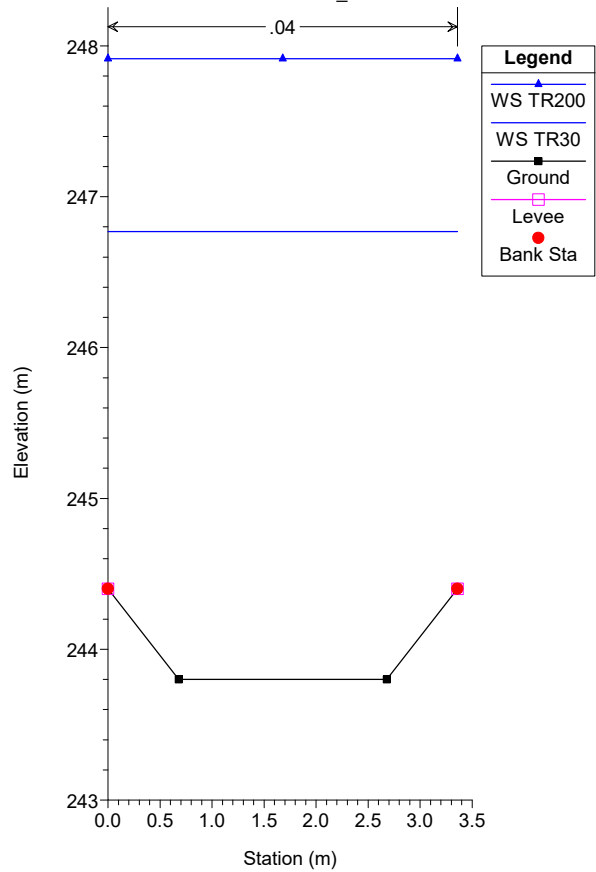
SUD1 Plan: Taratura 10/04/2019  
SUD\_C245



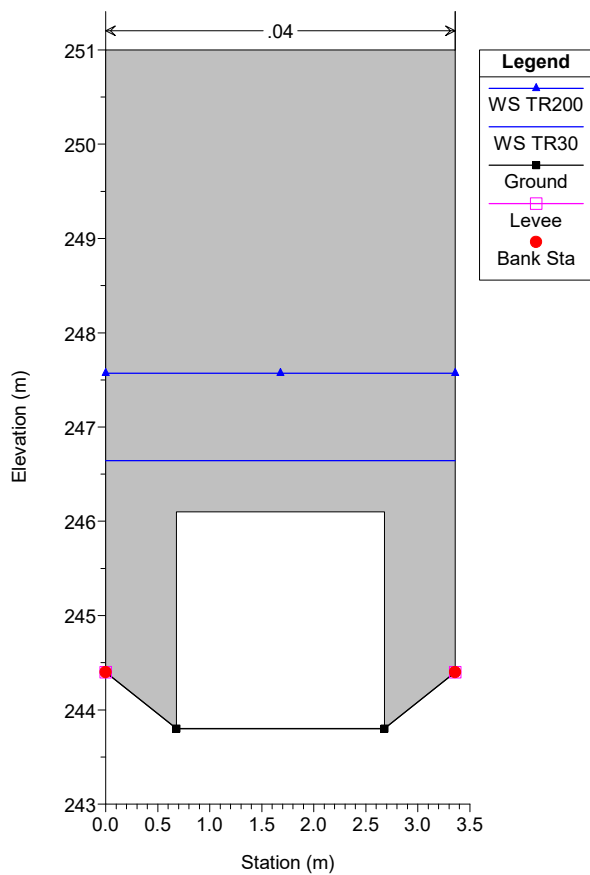
SUD1 Plan: Taratura 10/04/2019  
SANZENO\_C0



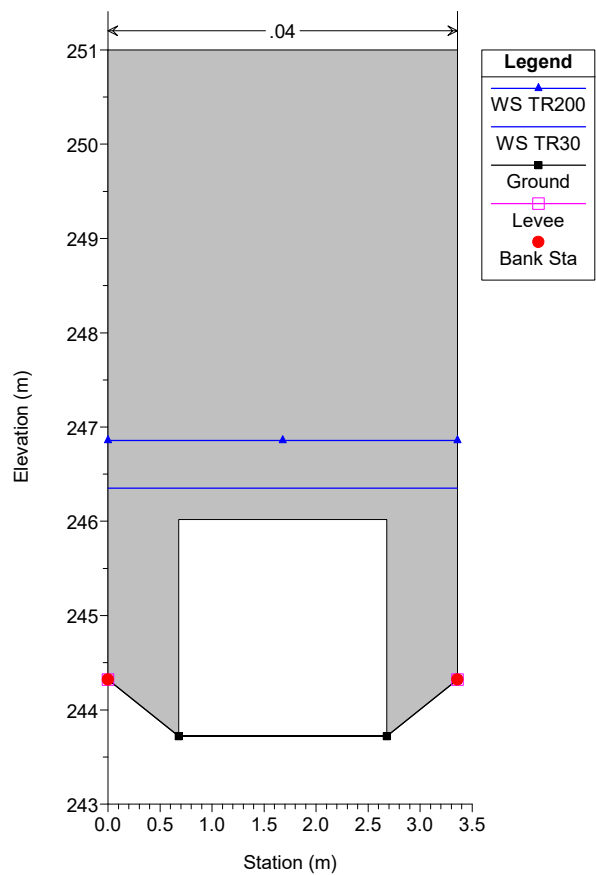
SUD1 Plan: Taratura 10/04/2019  
SANZENO\_C1

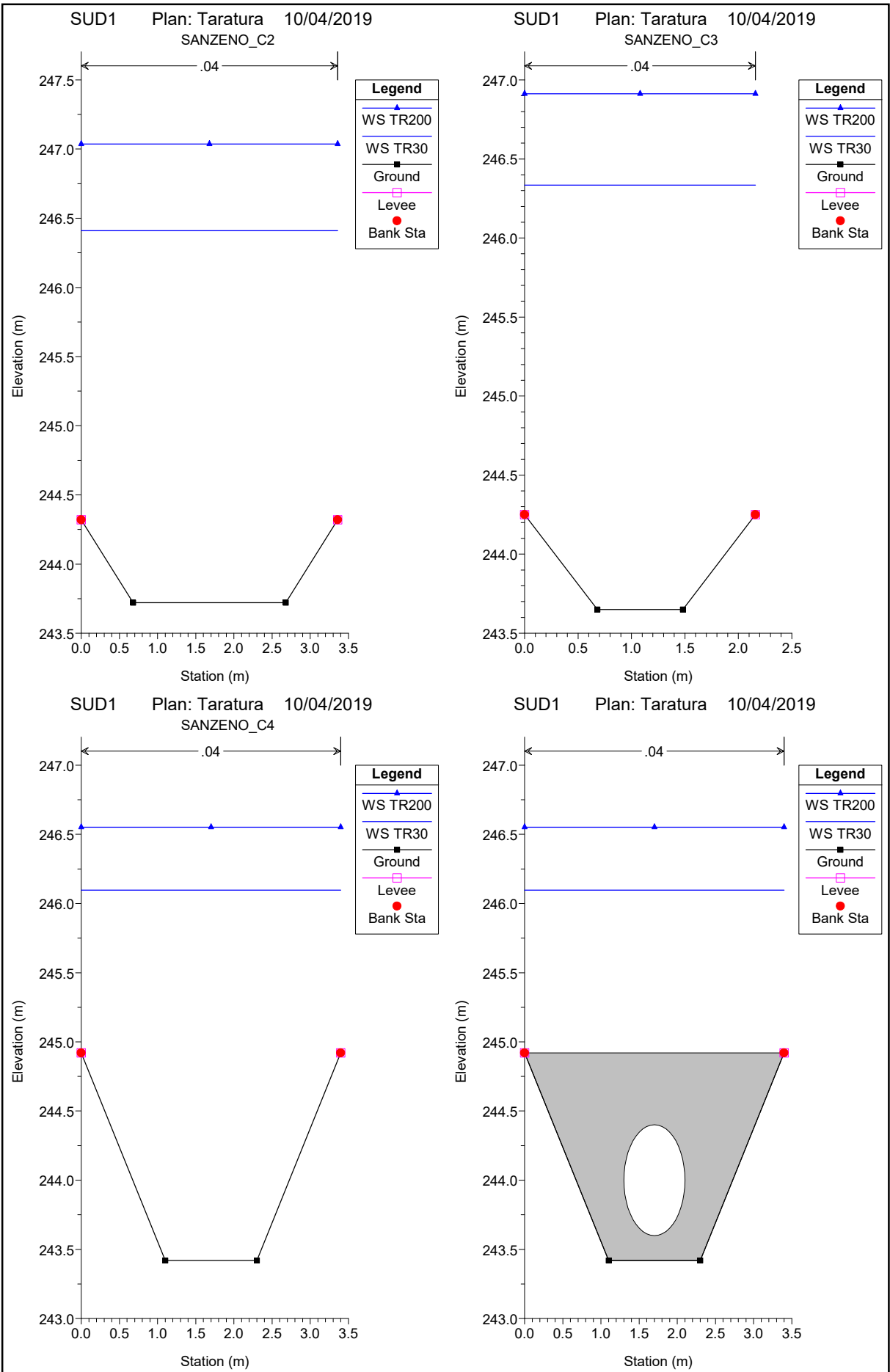


SUD1 Plan: Taratura 10/04/2019

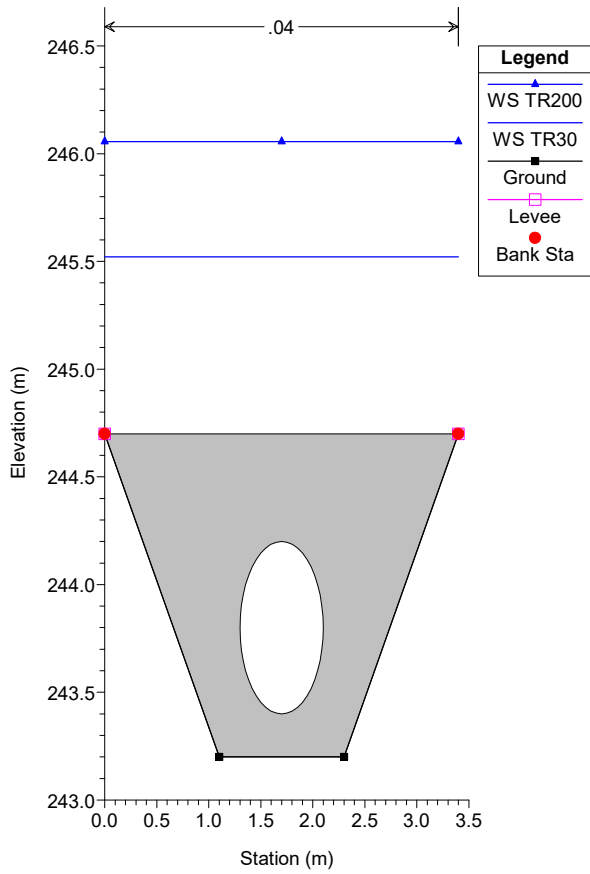


SUD1 Plan: Taratura 10/04/2019

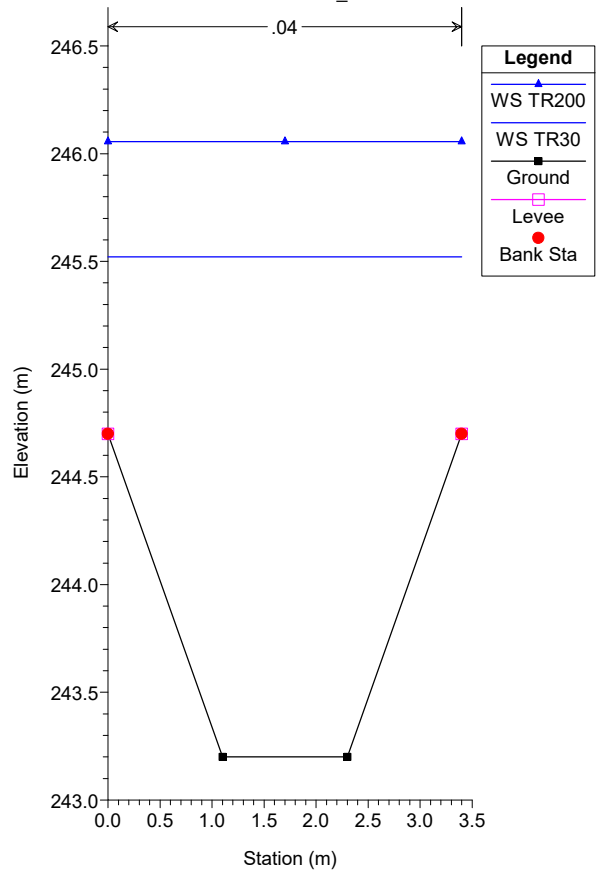




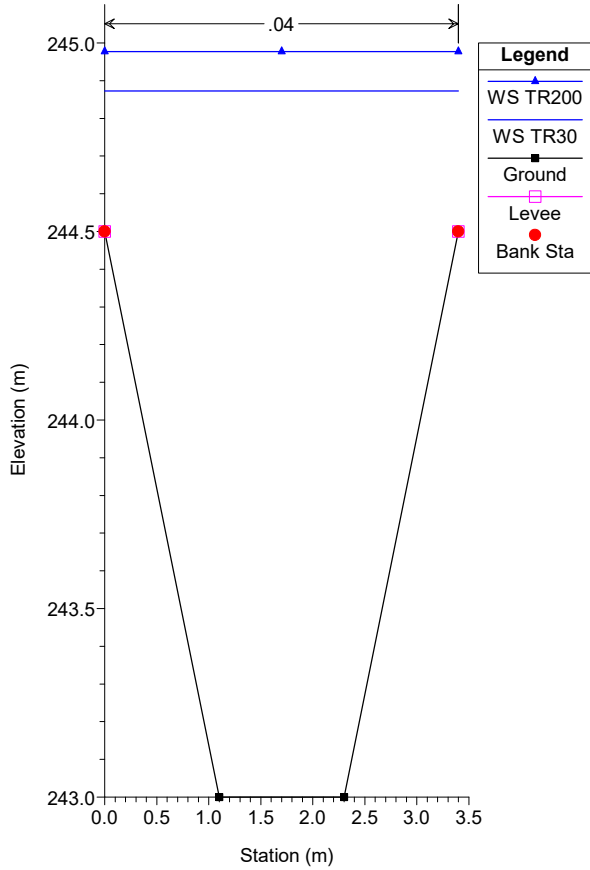
SUD1 Plan: Taratura 10/04/2019



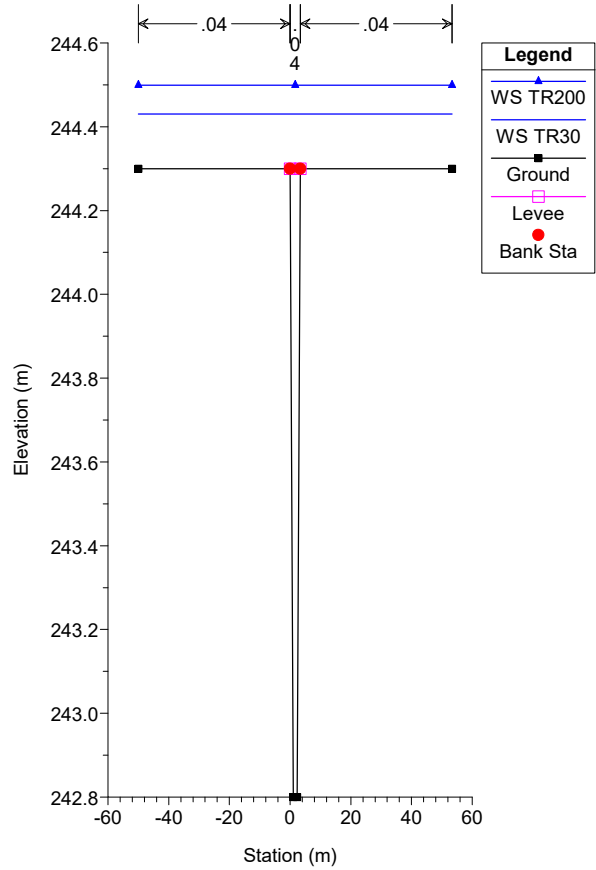
SUD1 Plan: Taratura 10/04/2019  
SANZENO\_C5



SUD1 Plan: Taratura 10/04/2019  
SANZENO\_C6

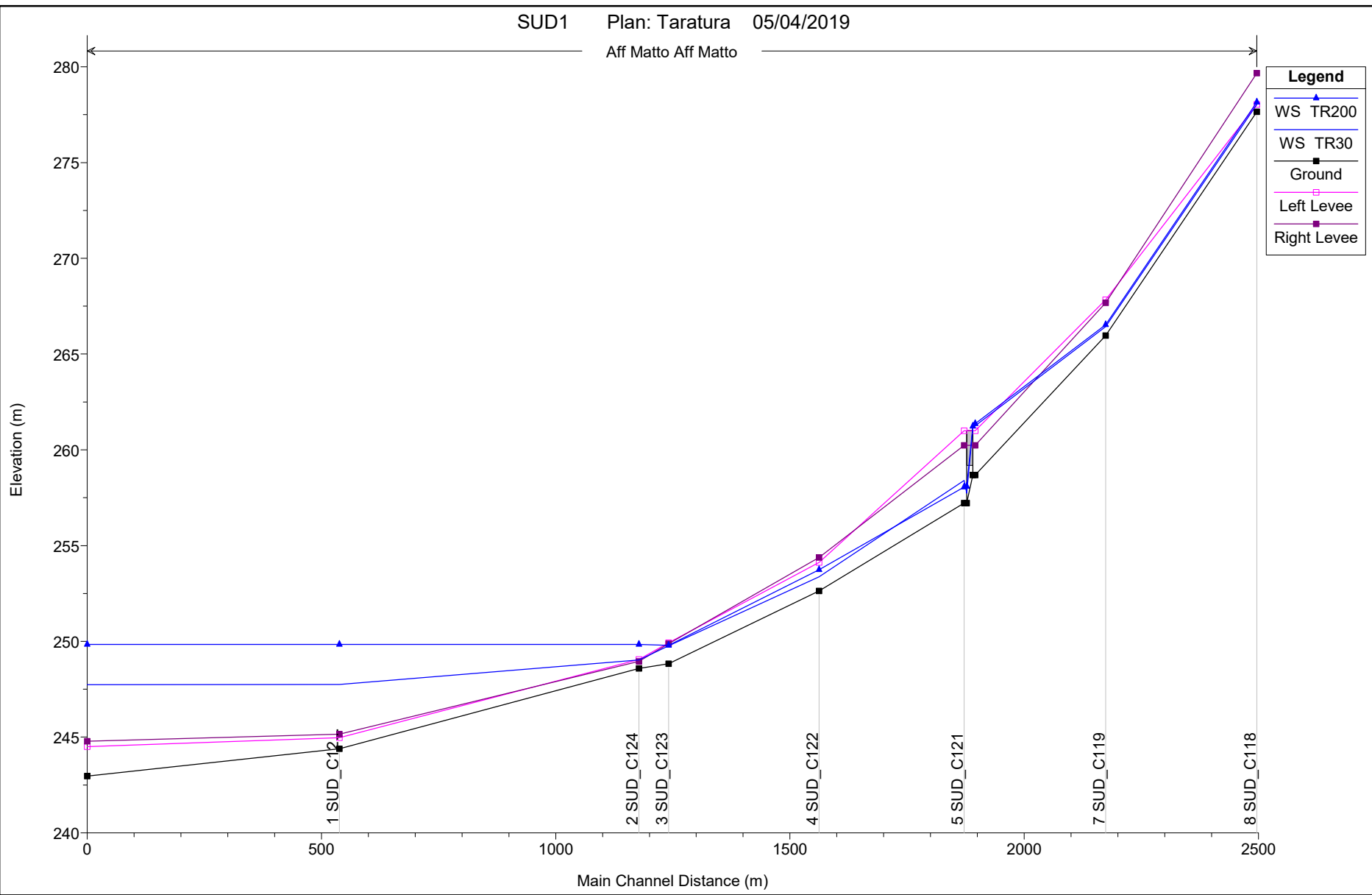


SUD1 Plan: Taratura 10/04/2019  
SANZENO\_C7



SUD1 Plan: Taratura 05/04/2019

Aff Matto Aff Matto



**Legend**

- WS TR200 (Blue line with triangle)
- WS TR30 (Blue line)
- Ground (Black line with square)
- Left Levee (Magenta line with square)
- Right Levee (Blue line with square)

1 SUD\_C12

2 SUD\_C124

3 SUD\_C123

4 SUD\_C122

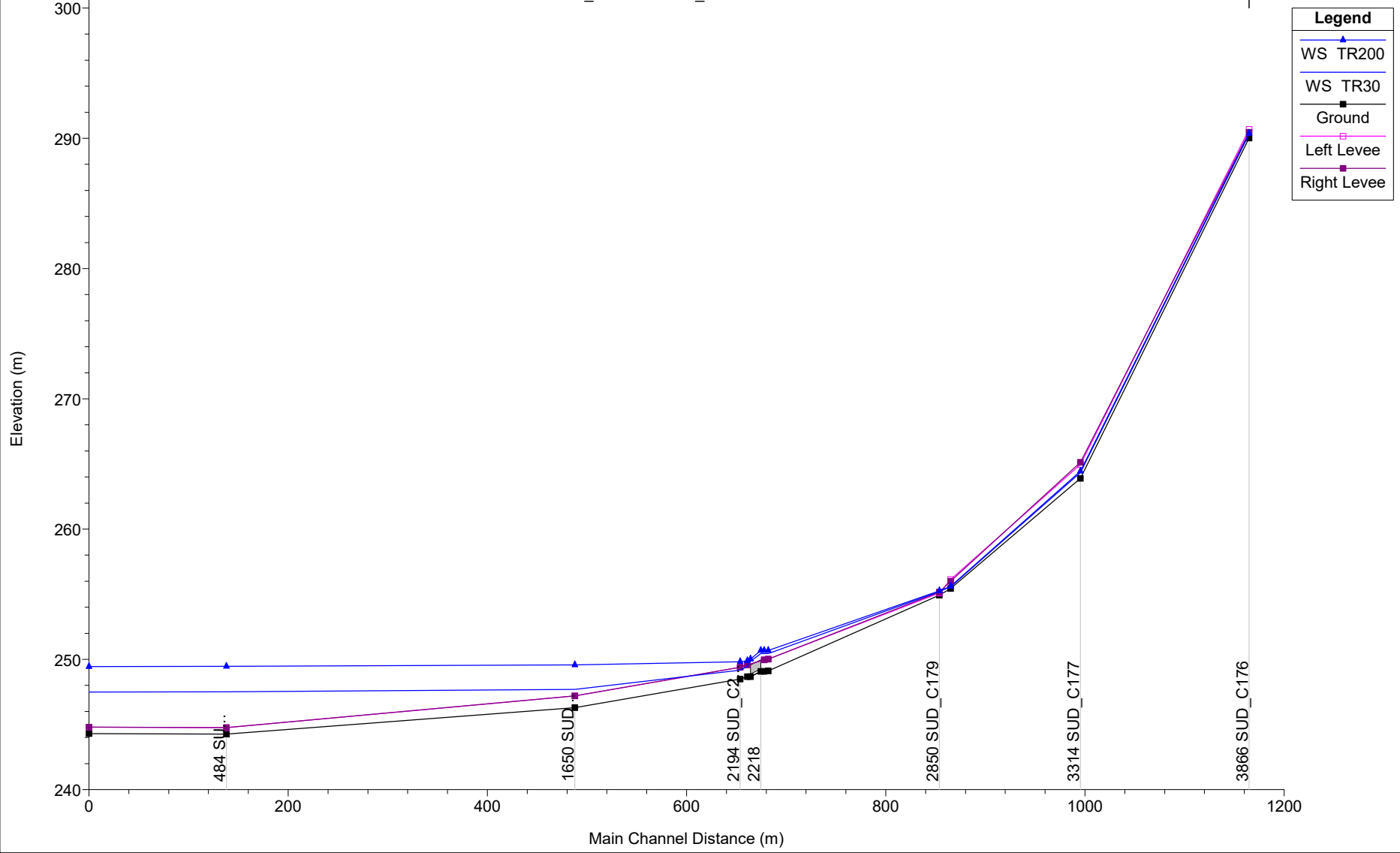
5 SUD\_C121

7 SUD\_C119

8 SUD\_C118

SUD1 Plan: Taratura 05/04/2019

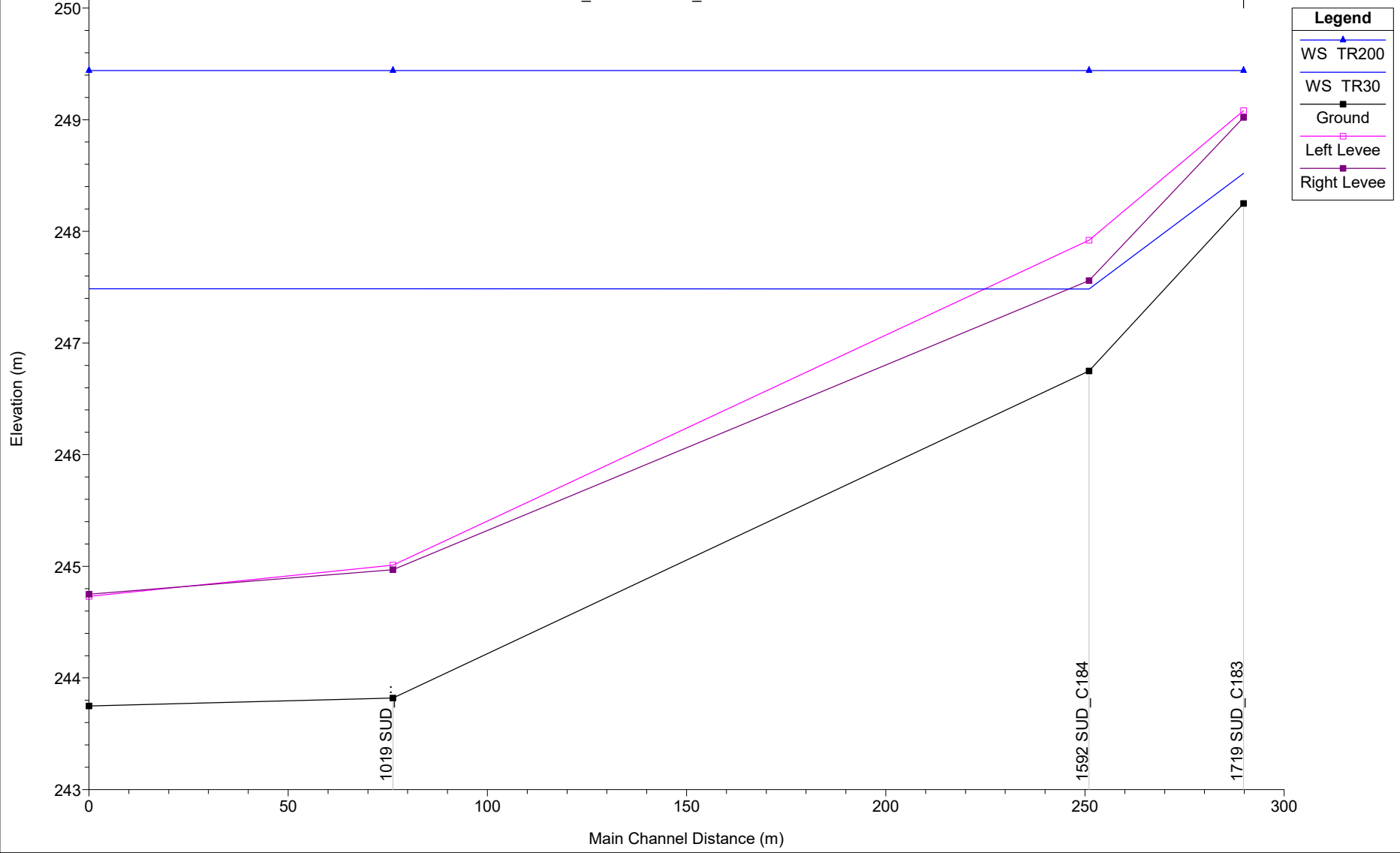
RIO\_QUERCE RIO\_QUERCE1





SUD1 Plan: Taratura 05/04/2019

RIO\_QUERCE RIO\_QUERCE2

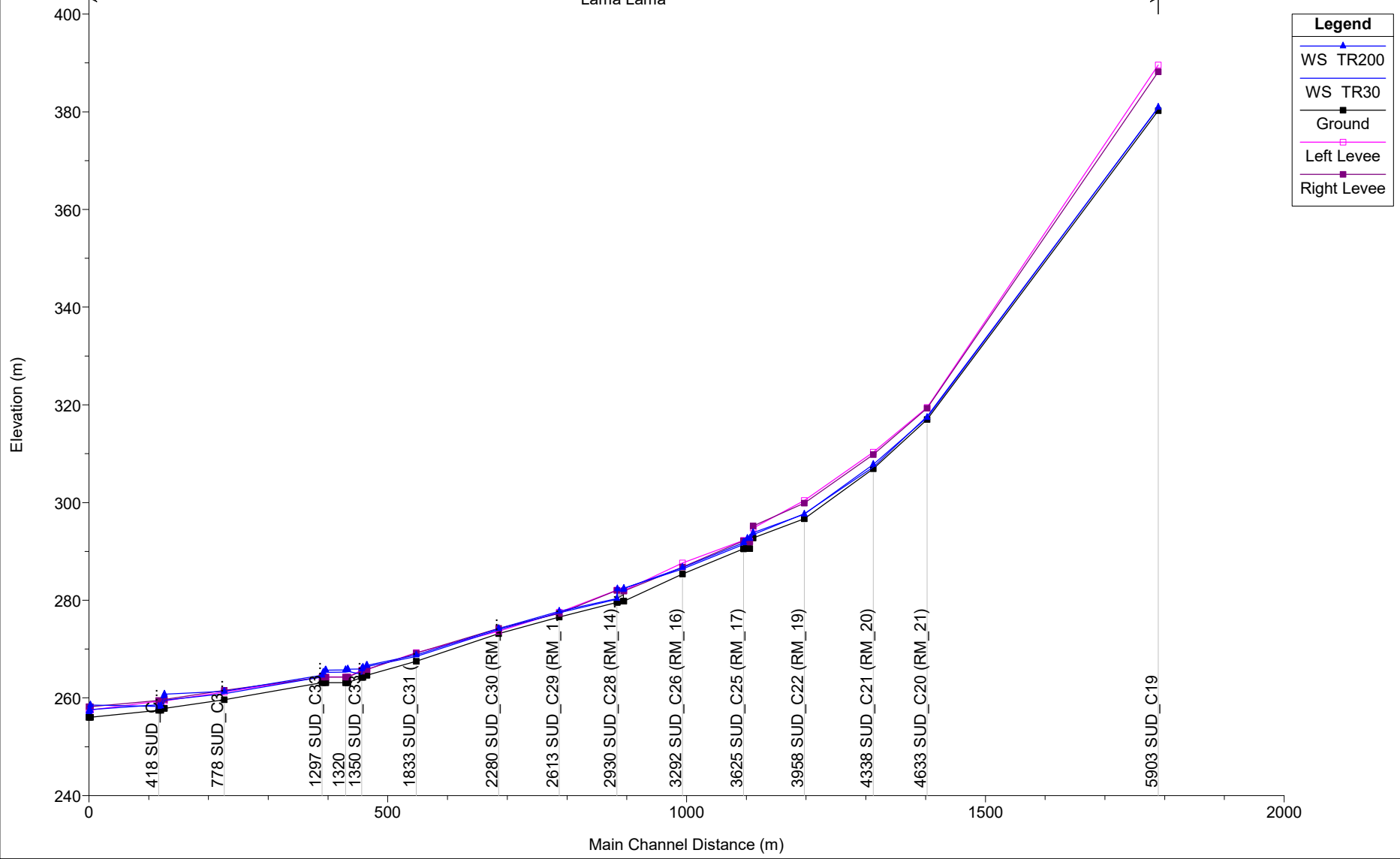


**Legend**

- WS TR200
- WS TR30
- Ground
- Left Levee
- Right Levee

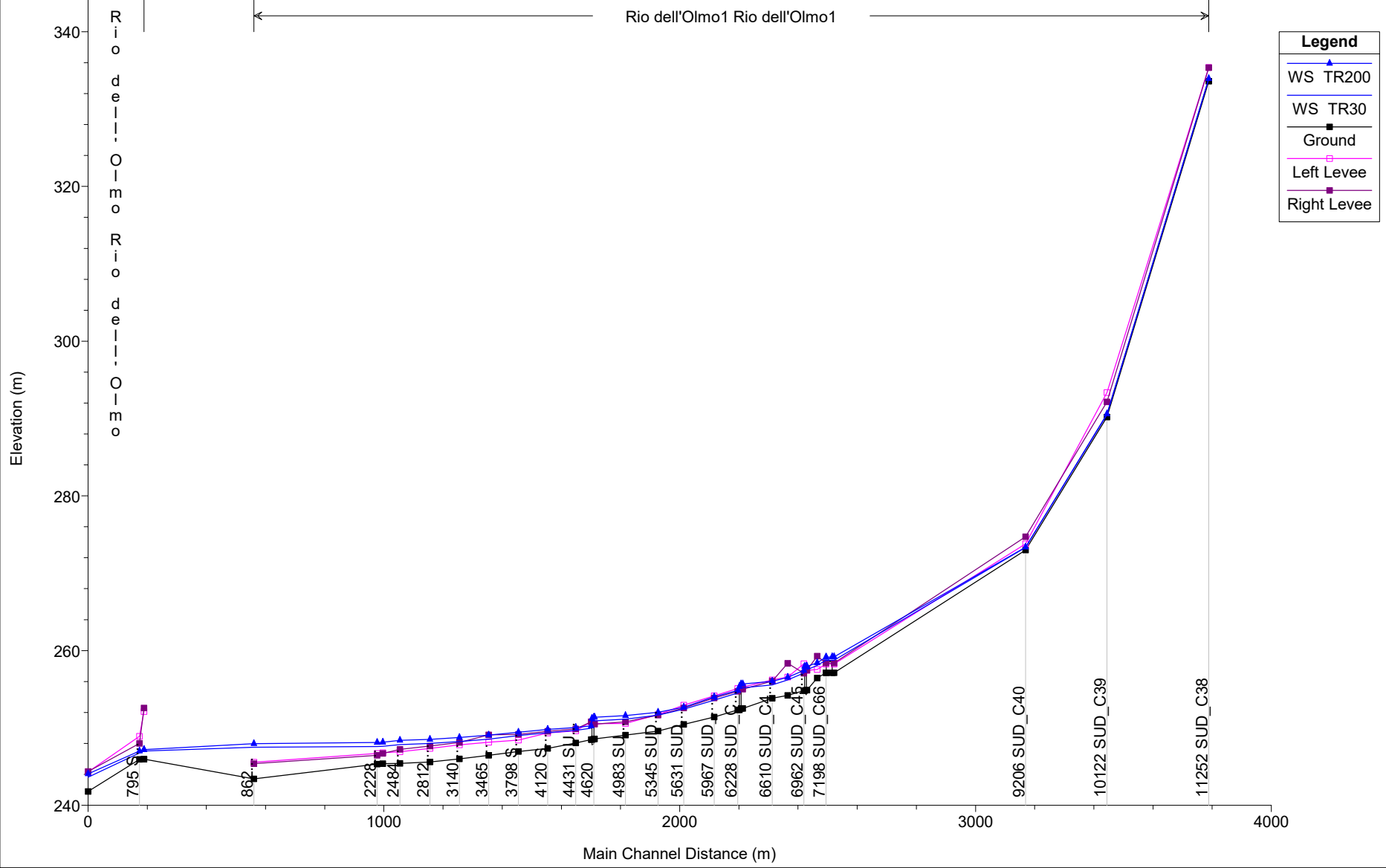
SUD1 Plan: Taratura 05/04/2019

Lama Lama

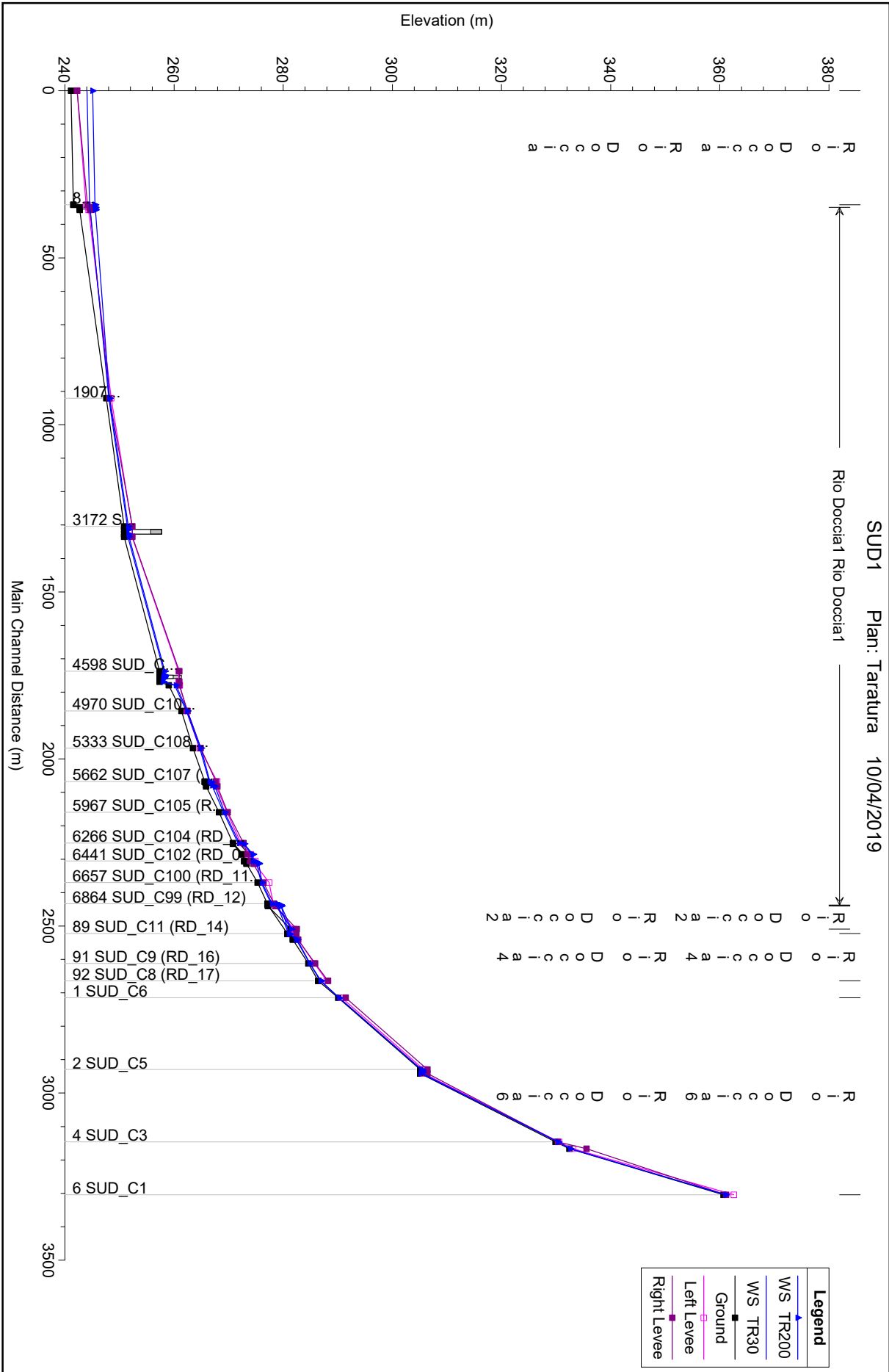


SUD1 Plan: Taratura 05/04/2019

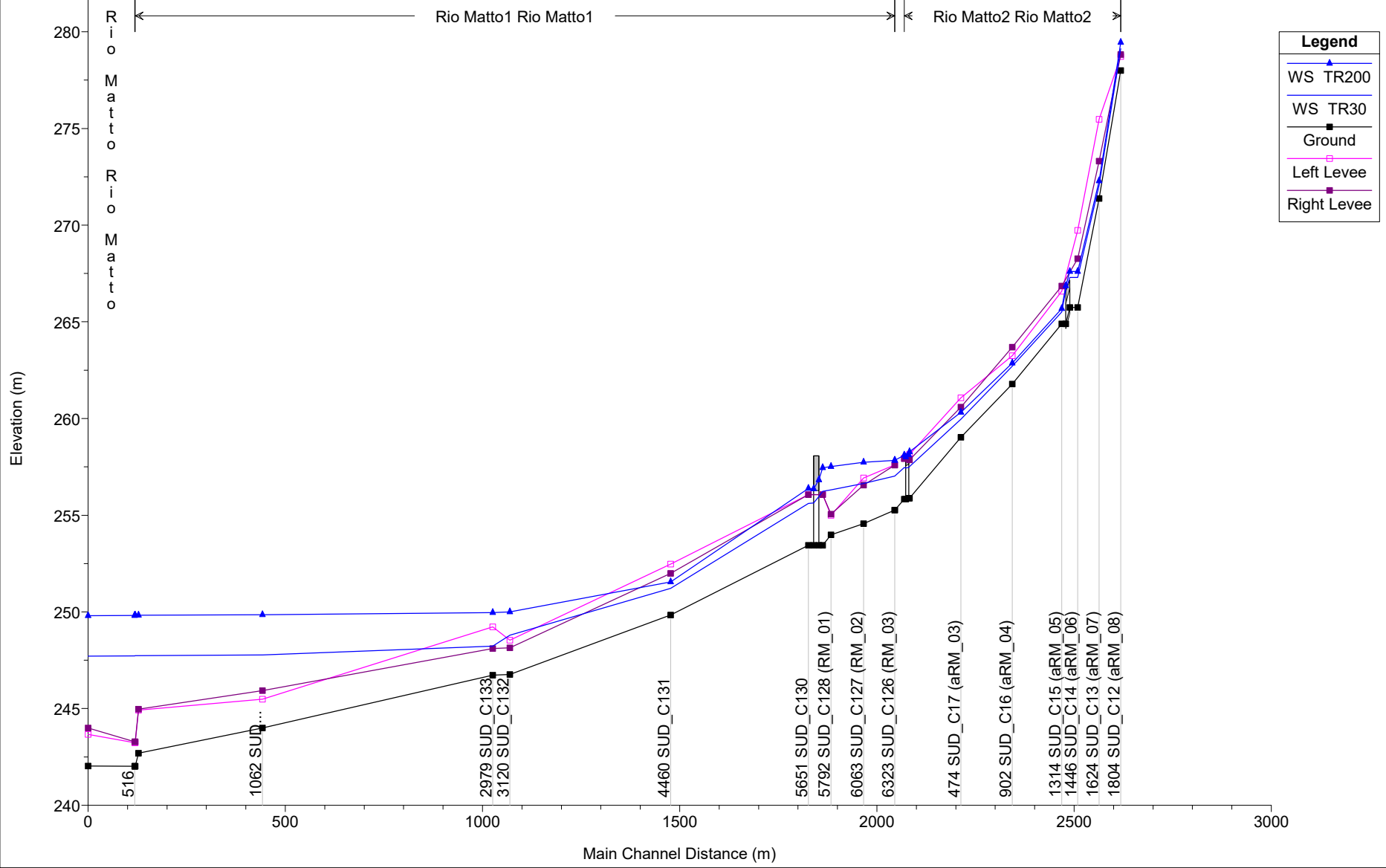
Rio dell'Olmo1 Rio dell'Olmo1



SUD1 Plan: Taratura 10/04/2019



SUD1 Plan: Taratura 05/04/2019



**Legend**

- WS TR200
- WS TR30
- Ground
- Left Levee
- Right Levee

Rio Matto1  
Rio Matto  
Rio Matto

Rio Matto1 Rio Matto1

Rio Matto2 Rio Matto2

516

1062 SUD...

2979 SUD\_C133

3120 SUD\_C132

4460 SUD\_C131

5661 SUD\_C130

5792 SUD\_C128 (RM\_01)

6063 SUD\_C127 (RM\_02)

6323 SUD\_C126 (RM\_03)

474 SUD\_C17 (aRM\_03)

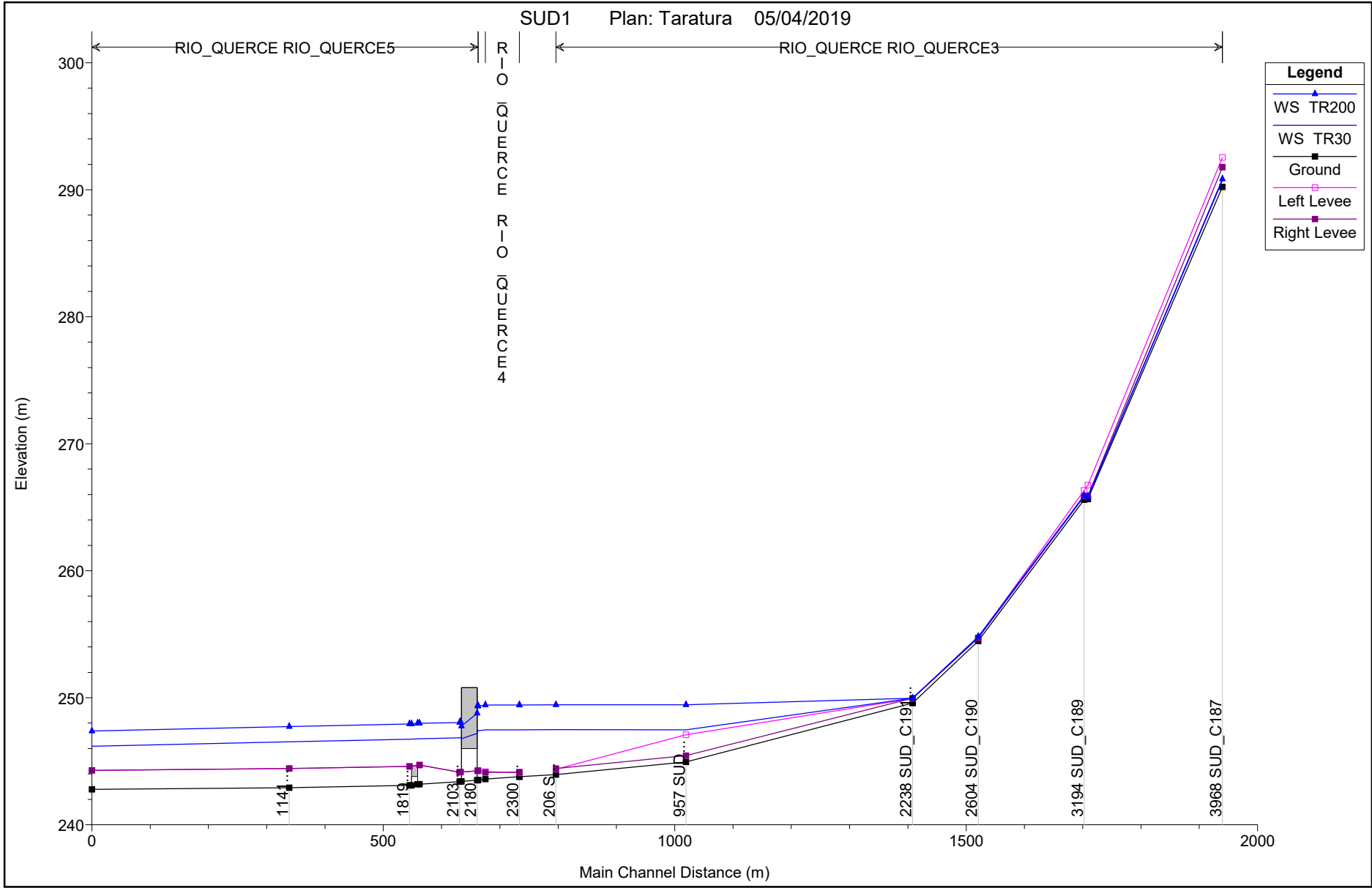
902 SUD\_C16 (aRM\_04)

1314 SUD\_C15 (aRM\_05)

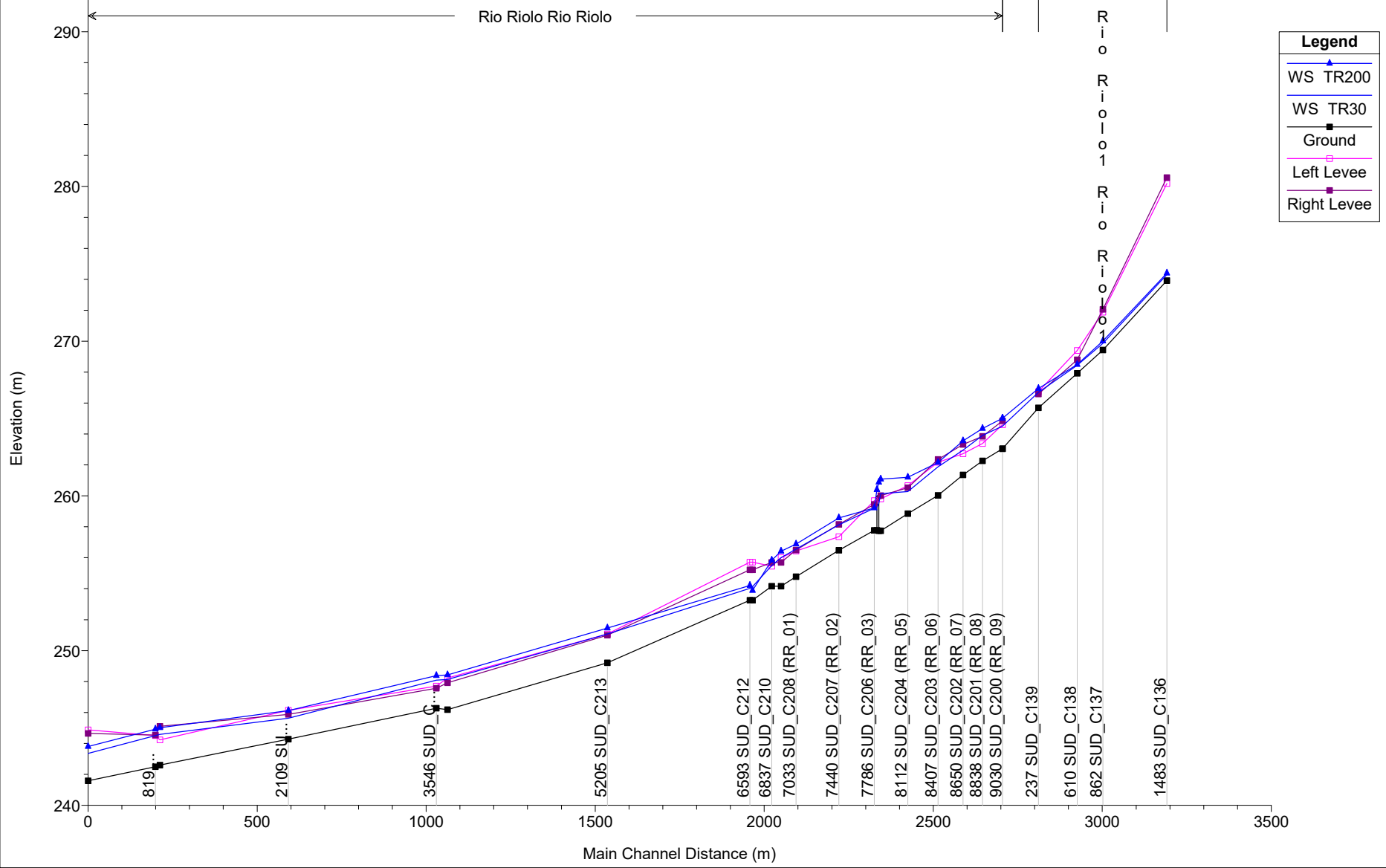
1446 SUD\_C14 (aRM\_06)

1624 SUD\_C13 (aRM\_07)

1804 SUD\_C12 (aRM\_08)



SUD1 Plan: Taratura 05/04/2019



**Legend**

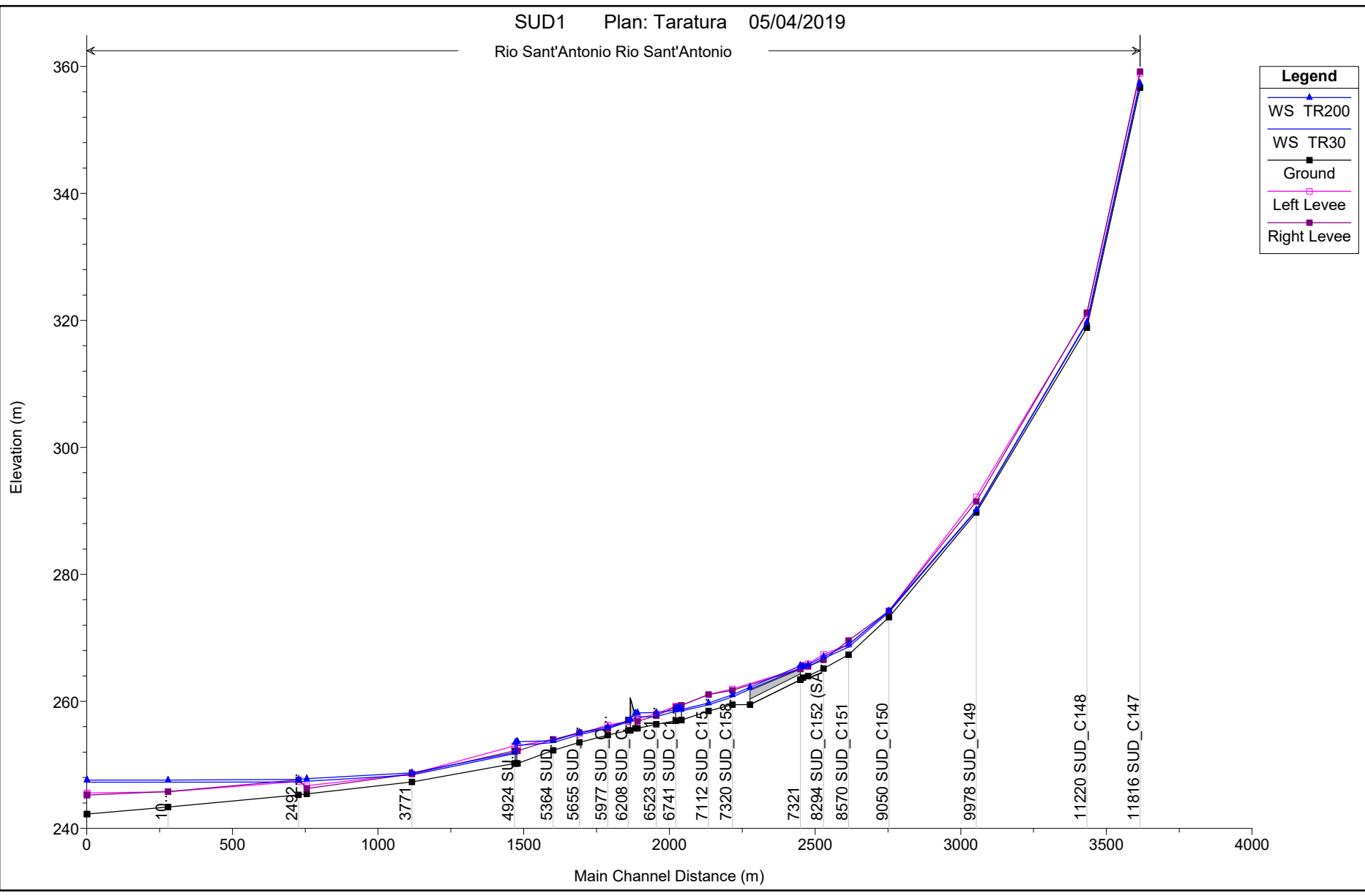
- WS TR200
- WS TR30
- Ground
- Left Levee
- Right Levee

Rio Riolo Rio Riolo

Rio Riolo

SUD1 Plan: Taratura 05/04/2019

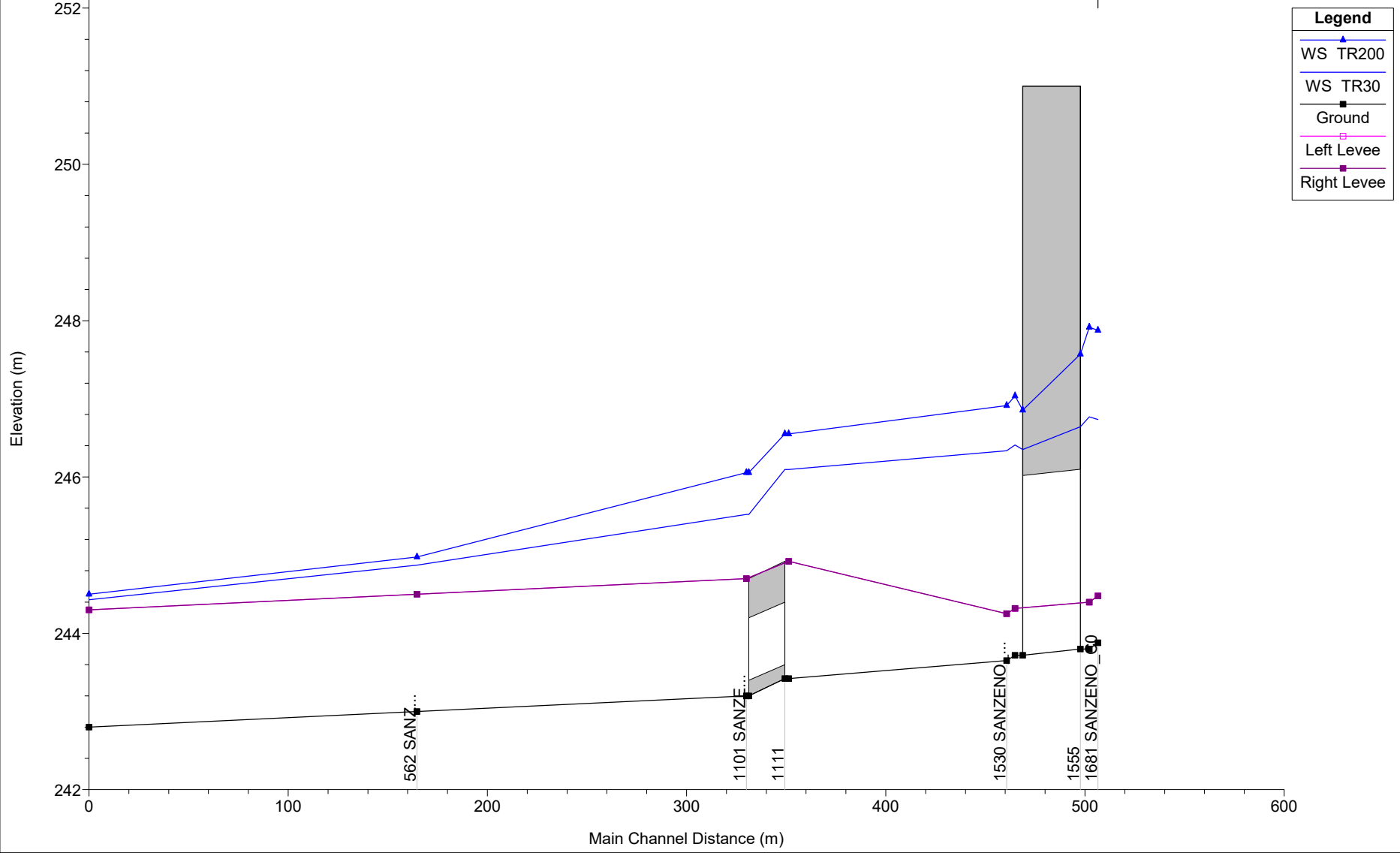
Rio Sant'Antonio Rio Sant'Antonio





SUD1 Plan: Taratura 05/04/2019

San Zeno San Zeno



**Legend**

- WS TR200
- WS TR30
- Ground
- Left Levee
- Right Levee

HEC-RAS Plan: Taratura

| River      | Reach       | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|------------|-------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| San Zeno   | San Zeno    | 1681      | TR30    | 7.60              | 243.88           | 246.74           | 245.15           | 246.83           | 0.003695            | 1.32              | 5.76              | 2.16             | 0.26         |
| San Zeno   | San Zeno    | 1681      | TR200   | 11.90             | 243.88           | 247.88           | 245.53           | 247.98           | 0.004008            | 1.45              | 8.22              | 2.16             | 0.24         |
| San Zeno   | San Zeno    | 1667      | TR30    | 7.60              | 243.80           | 246.77           | 244.73           | 246.80           | 0.000869            | 0.79              | 9.57              | 3.36             | 0.15         |
| San Zeno   | San Zeno    | 1667      | TR200   | 11.90             | 243.80           | 247.91           | 245.01           | 247.96           | 0.000947            | 0.89              | 13.42             | 3.36             | 0.14         |
| San Zeno   | San Zeno    | 1555      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| San Zeno   | San Zeno    | 1542      | TR30    | 7.60              | 243.72           | 246.41           | 244.65           | 246.45           | 0.001119            | 0.88              | 8.63              | 3.36             | 0.18         |
| San Zeno   | San Zeno    | 1542      | TR200   | 11.90             | 243.72           | 247.04           | 244.92           | 247.10           | 0.001611            | 1.11              | 10.73             | 3.36             | 0.20         |
| San Zeno   | San Zeno    | 1530      | TR30    | 7.60              | 243.65           | 246.33           | 244.92           | 246.44           | 0.004319            | 1.41              | 5.39              | 2.16             | 0.28         |
| San Zeno   | San Zeno    | 1530      | TR200   | 11.90             | 243.65           | 246.91           | 245.30           | 247.08           | 0.006522            | 1.79              | 6.64              | 2.16             | 0.33         |
| San Zeno   | San Zeno    | 1173      | TR30    | 7.60              | 243.42           | 246.10           | 244.66           | 246.15           | 0.001612            | 1.02              | 7.45              | 3.40             | 0.22         |
| San Zeno   | San Zeno    | 1173      | TR200   | 11.90             | 243.42           | 246.55           | 244.98           | 246.64           | 0.002467            | 1.32              | 9.00              | 3.40             | 0.26         |
| San Zeno   | San Zeno    | 1111      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| San Zeno   | San Zeno    | 1101      | TR30    | 7.60              | 243.20           | 245.52           | 244.43           | 245.60           | 0.002535            | 1.22              | 6.24              | 3.40             | 0.29         |
| San Zeno   | San Zeno    | 1101      | TR200   | 11.90             | 243.20           | 246.06           | 244.77           | 246.17           | 0.003243            | 1.48              | 8.06              | 3.40             | 0.31         |
| San Zeno   | San Zeno    | 562       | TR30    | 7.60              | 243.00           | 244.87           | 244.24           | 245.01           | 0.005298            | 1.61              | 4.72              | 3.40             | 0.44         |
| San Zeno   | San Zeno    | 562       | TR200   | 11.90             | 243.00           | 244.98           | 244.56           | 245.26           | 0.010707            | 2.35              | 5.07              | 3.40             | 0.61         |
| San Zeno   | San Zeno    | 19        | TR30    | 7.60              | 242.80           | 244.43           | 244.04           | 244.46           | 0.002073            | 0.97              | 16.93             | 103.40           | 0.29         |
| San Zeno   | San Zeno    | 19        | TR200   | 11.90             | 242.80           | 244.50           | 244.44           | 244.52           | 0.002070            | 1.01              | 24.07             | 103.40           | 0.29         |
| RIO_QUERCE | RIO_QUERCE1 | 3866      | TR30    | 1.40              | 290.01           | 290.31           | 290.34           | 290.45           | 0.038934            | 1.64              | 0.86              | 4.42             | 1.19         |
| RIO_QUERCE | RIO_QUERCE1 | 3866      | TR200   | 2.20              | 290.01           | 290.38           | 290.43           | 290.56           | 0.038939            | 1.86              | 1.18              | 5.04             | 1.22         |
| RIO_QUERCE | RIO_QUERCE1 | 3314      | TR30    | 1.40              | 263.90           | 264.34           | 264.34           | 264.48           | 0.025257            | 1.65              | 0.85              | 3.03             | 0.99         |
| RIO_QUERCE | RIO_QUERCE1 | 3314      | TR200   | 2.20              | 263.90           | 264.45           | 264.45           | 264.62           | 0.024182            | 1.83              | 1.20              | 3.51             | 1.00         |
| RIO_QUERCE | RIO_QUERCE1 | 2887      | TR30    | 1.40              | 255.44           | 255.58           | 255.69           | 256.07           | 0.392799            | 3.10              | 0.45              | 5.11             | 3.33         |
| RIO_QUERCE | RIO_QUERCE1 | 2887      | TR200   | 2.20              | 255.44           | 255.61           | 255.75           | 256.32           | 0.433944            | 3.74              | 0.59              | 5.41             | 3.62         |
| RIO_QUERCE | RIO_QUERCE1 | 2850      | TR30    | 1.40              | 254.92           | 255.20           | 255.20           | 255.30           | 0.029213            | 1.34              | 1.05              | 5.80             | 1.01         |
| RIO_QUERCE | RIO_QUERCE1 | 2850      | TR200   | 2.20              | 254.92           | 255.26           | 255.27           | 255.39           | 0.031426            | 1.63              | 1.35              | 5.80             | 1.08         |
| RIO_QUERCE | RIO_QUERCE1 | 2284      | TR30    | 1.40              | 249.12           | 250.43           | 249.80           | 250.47           | 0.003655            | 0.89              | 1.57              | 1.50             | 0.28         |
| RIO_QUERCE | RIO_QUERCE1 | 2284      | TR200   | 2.20              | 249.12           | 250.68           | 249.99           | 250.74           | 0.005342            | 1.14              | 1.93              | 1.50             | 0.32         |
| RIO_QUERCE | RIO_QUERCE1 | 2271      | TR30    | 1.40              | 249.07           | 250.44           | 249.60           | 250.46           | 0.001423            | 0.64              | 2.20              | 1.90             | 0.19         |
| RIO_QUERCE | RIO_QUERCE1 | 2271      | TR200   | 2.20              | 249.07           | 250.69           | 249.77           | 250.72           | 0.002151            | 0.82              | 2.67              | 1.90             | 0.22         |
| RIO_QUERCE | RIO_QUERCE1 | 2218      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| RIO_QUERCE | RIO_QUERCE1 | 2217      | TR30    | 1.40              | 248.67           | 249.47           | 249.20           | 249.55           | 0.008569            | 1.26              | 1.11              | 1.80             | 0.51         |
| RIO_QUERCE | RIO_QUERCE1 | 2217      | TR200   | 2.20              | 248.67           | 249.89           | 249.37           | 249.96           | 0.004991            | 1.15              | 1.92              | 1.90             | 0.37         |
| RIO_QUERCE | RIO_QUERCE1 | 2194      | TR30    | 1.40              | 248.49           | 249.17           | 249.17           | 249.41           | 0.038605            | 2.20              | 0.64              | 1.28             | 1.00         |
| RIO_QUERCE | RIO_QUERCE1 | 2194      | TR200   | 2.20              | 248.49           | 249.81           | 249.36           | 249.91           | 0.008940            | 1.40              | 1.57              | 1.50             | 0.44         |
| RIO_QUERCE | RIO_QUERCE1 | 1650      | TR30    | 1.40              | 246.29           | 247.69           | 246.97           | 247.72           | 0.003010            | 0.83              | 1.69              | 1.50             | 0.25         |
| RIO_QUERCE | RIO_QUERCE1 | 1650      | TR200   | 2.20              | 246.29           | 249.58           | 247.16           | 249.59           | 0.000727            | 0.49              | 4.53              | 1.50             | 0.09         |
| RIO_QUERCE | RIO_QUERCE1 | 484       | TR30    | 1.40              | 244.26           | 247.52           | 244.84           | 247.52           | 0.000222            | 0.28              | 4.96              | 1.60             | 0.05         |
| RIO_QUERCE | RIO_QUERCE1 | 484       | TR200   | 2.20              | 244.26           | 249.47           | 245.00           | 249.47           | 0.000188            | 0.27              | 8.08              | 1.60             | 0.04         |
| RIO_QUERCE | RIO_QUERCE1 | 33        | TR30    | 1.40              | 244.29           | 247.49           | 244.87           | 247.49           | 0.000232            | 0.29              | 4.86              | 1.60             | 0.05         |
| RIO_QUERCE | RIO_QUERCE1 | 33        | TR200   | 2.20              | 244.29           | 249.44           | 245.02           | 249.44           | 0.000193            | 0.28              | 7.99              | 1.60             | 0.04         |
| RIO_QUERCE | RIO_QUERCE2 | 1719      | TR30    | 0.70              | 248.25           | 248.52           | 248.52           | 248.62           | 0.028471            | 1.38              | 0.51              | 2.58             | 0.99         |
| RIO_QUERCE | RIO_QUERCE2 | 1719      | TR200   | 1.10              | 248.25           | 249.44           | 248.59           | 249.44           | 0.000160            | 0.26              | 4.30              | 4.72             | 0.09         |
| RIO_QUERCE | RIO_QUERCE2 | 1592      | TR30    | 0.70              | 246.75           | 247.48           | 247.07           | 247.49           | 0.000803            | 0.38              | 1.83              | 4.30             | 0.19         |
| RIO_QUERCE | RIO_QUERCE2 | 1592      | TR200   | 1.10              | 246.75           | 249.44           | 247.15           | 249.44           | 0.000007            | 0.08              | 13.35             | 6.10             | 0.02         |
| RIO_QUERCE | RIO_QUERCE2 | 1019      | TR30    | 0.70              | 243.82           | 247.49           | 244.19           | 247.49           | 0.000003            | 0.05              | 13.77             | 4.33             | 0.01         |
| RIO_QUERCE | RIO_QUERCE2 | 1019      | TR200   | 1.10              | 243.82           | 249.44           | 244.28           | 249.44           | 0.000002            | 0.05              | 22.23             | 4.33             | 0.01         |
| RIO_QUERCE | RIO_QUERCE2 | 768       | TR30    | 0.70              | 243.75           | 247.49           | 244.06           | 247.49           | 0.000001            | 0.03              | 25.46             | 7.90             | 0.00         |
| RIO_QUERCE | RIO_QUERCE2 | 768       | TR200   | 1.10              | 243.75           | 249.44           | 244.13           | 249.44           | 0.000000            | 0.03              | 40.90             | 7.90             | 0.00         |
| RIO_QUERCE | RIO_QUERCE3 | 3968      | TR30    | 2.40              | 290.22           | 290.73           | 290.79           | 290.97           | 0.040302            | 2.15              | 1.12              | 3.83             | 1.27         |
| RIO_QUERCE | RIO_QUERCE3 | 3968      | TR200   | 3.90              | 290.22           | 290.85           | 290.93           | 291.16           | 0.040308            | 2.46              | 1.59              | 4.44             | 1.31         |
| RIO_QUERCE | RIO_QUERCE3 | 3216      | TR30    | 2.40              | 265.64           | 265.80           | 265.98           | 266.85           | 0.675322            | 4.54              | 0.53              | 5.05             | 4.48         |
| RIO_QUERCE | RIO_QUERCE3 | 3216      | TR200   | 3.90              | 265.64           | 265.84           | 266.09           | 267.24           | 0.642559            | 5.24              | 0.74              | 5.51             | 4.56         |
| RIO_QUERCE | RIO_QUERCE3 | 3194      | TR30    | 2.40              | 265.59           | 265.89           | 265.92           | 266.01           | 0.031269            | 1.57              | 1.65              | 12.45            | 1.09         |
| RIO_QUERCE | RIO_QUERCE3 | 3194      | TR200   | 3.90              | 265.59           | 265.92           | 265.98           | 266.13           | 0.045713            | 2.08              | 2.12              | 14.44            | 1.34         |
| RIO_QUERCE | RIO_QUERCE3 | 2604      | TR30    | 2.40              | 254.46           | 254.73           | 254.83           | 255.11           | 0.157584            | 2.74              | 0.88              | 6.00             | 2.29         |
| RIO_QUERCE | RIO_QUERCE3 | 2604      | TR200   | 3.90              | 254.46           | 254.82           | 254.93           | 255.19           | 0.082520            | 2.70              | 1.44              | 6.00             | 1.76         |
| RIO_QUERCE | RIO_QUERCE3 | 2238      | TR30    | 6.80              | 249.57           | 249.96           | 249.96           | 249.97           | 0.001145            | 0.23              | 15.41             | 51.35            | 0.19         |
| RIO_QUERCE | RIO_QUERCE3 | 2238      | TR200   | 10.50             | 249.57           | 249.96           | 249.96           | 249.99           | 0.002731            | 0.36              | 15.41             | 51.35            | 0.30         |
| RIO_QUERCE | RIO_QUERCE3 | 957       | TR30    | 6.80              | 244.95           | 247.48           | 245.94           | 247.50           | 0.000602            | 0.67              | 10.22             | 5.91             | 0.16         |
| RIO_QUERCE | RIO_QUERCE3 | 957       | TR200   | 10.50             | 244.95           | 249.44           | 246.18           | 249.45           | 0.000186            | 0.48              | 21.79             | 5.91             | 0.08         |
| RIO_QUERCE | RIO_QUERCE3 | 206       | TR30    | 6.80              | 243.95           | 247.48           | 244.53           | 247.48           | 0.000020            | 0.18              | 37.11             | 11.30            | 0.03         |
| RIO_QUERCE | RIO_QUERCE3 | 206       | TR200   | 10.50             | 243.95           | 249.44           | 244.64           | 249.44           | 0.000013            | 0.18              | 59.21             | 11.30            | 0.02         |
| RIO_QUERCE | RIO_QUERCE4 | 2300      | TR30    | 7.50              | 243.79           | 247.48           | 244.48           | 247.48           | 0.000058            | 0.29              | 26.31             | 7.61             | 0.05         |
| RIO_QUERCE | RIO_QUERCE4 | 2300      | TR200   | 11.60             | 243.79           | 249.43           | 244.64           | 249.44           | 0.000043            | 0.28              | 41.20             | 7.61             | 0.04         |
| RIO_QUERCE | RIO_QUERCE4 | 2200      | TR30    | 7.50              | 243.59           | 247.47           | 244.36           | 247.48           | 0.000073            | 0.31              | 23.91             | 6.61             | 0.05         |
| RIO_QUERCE | RIO_QUERCE4 | 2200      | TR200   | 11.60             | 243.59           | 249.43           | 244.54           | 249.43           | 0.000058            | 0.31              | 36.84             | 6.61             | 0.04         |

HEC-RAS Plan: Taratura (Continued)

| River            | Reach            | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|------------------|------------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| RIO_QUERCE       | RIO_QUERCE5      | 2190      | TR30    | 11.00             | 243.52           | 247.40           | 244.95           | 247.47           | 0.001910            | 1.12              | 9.85              | 2.70             | 0.19         |
| RIO_QUERCE       | RIO_QUERCE5      | 2190      | TR200   | 16.90             | 243.52           | 249.36           | 245.34           | 249.43           | 0.001704            | 1.12              | 15.14             | 2.70             | 0.15         |
| RIO_QUERCE       | RIO_QUERCE5      | 2188      | TR30    | 11.00             | 243.50           | 247.43           | 244.64           | 247.46           | 0.000702            | 0.79              | 13.89             | 3.70             | 0.13         |
| RIO_QUERCE       | RIO_QUERCE5      | 2188      | TR200   | 16.90             | 243.50           | 249.38           | 244.96           | 249.42           | 0.000621            | 0.80              | 21.13             | 3.70             | 0.11         |
| RIO_QUERCE       | RIO_QUERCE5      | 2180      |         |                   | Bridge           |                  |                  |                  |                     |                   |                   |                  |              |
| RIO_QUERCE       | RIO_QUERCE5      | 2108      | TR30    | 11.00             | 243.41           | 246.89           | 244.55           | 246.93           | 0.000951            | 0.90              | 12.24             | 3.70             | 0.16         |
| RIO_QUERCE       | RIO_QUERCE5      | 2108      | TR200   | 16.90             | 243.41           | 248.11           | 244.87           | 248.16           | 0.001063            | 1.01              | 16.76             | 3.70             | 0.15         |
| RIO_QUERCE       | RIO_QUERCE5      | 2103      | TR30    | 11.00             | 243.39           | 246.84           | 244.82           | 246.93           | 0.002560            | 1.27              | 8.69              | 2.70             | 0.23         |
| RIO_QUERCE       | RIO_QUERCE5      | 2103      | TR200   | 16.90             | 243.39           | 248.05           | 245.22           | 248.16           | 0.002896            | 1.41              | 11.95             | 2.70             | 0.21         |
| RIO_QUERCE       | RIO_QUERCE5      | 1880      | TR30    | 11.00             | 243.20           | 246.77           | 244.68           | 246.81           | 0.000961            | 0.91              | 12.03             | 4.00             | 0.17         |
| RIO_QUERCE       | RIO_QUERCE5      | 1880      | TR200   | 16.90             | 243.20           | 247.98           | 244.98           | 248.03           | 0.000997            | 1.00              | 16.87             | 4.00             | 0.16         |
| RIO_QUERCE       | RIO_QUERCE5      | 1820      |         |                   | Culvert          |                  |                  |                  |                     |                   |                   |                  |              |
| RIO_QUERCE       | RIO_QUERCE5      | 1819      | TR30    | 11.00             | 243.10           | 246.73           | 244.58           | 246.77           | 0.000917            | 0.90              | 12.25             | 4.00             | 0.16         |
| RIO_QUERCE       | RIO_QUERCE5      | 1819      | TR200   | 16.90             | 243.10           | 247.94           | 244.88           | 247.99           | 0.000965            | 0.99              | 17.10             | 4.00             | 0.15         |
| RIO_QUERCE       | RIO_QUERCE5      | 1141      | TR30    | 11.00             | 242.92           | 246.53           | 244.40           | 246.58           | 0.000937            | 0.90              | 12.16             | 3.98             | 0.17         |
| RIO_QUERCE       | RIO_QUERCE5      | 1141      | TR200   | 16.90             | 242.92           | 247.74           | 244.71           | 247.79           | 0.000989            | 1.00              | 16.95             | 3.98             | 0.15         |
| RIO_QUERCE       | RIO_QUERCE5      | 31        | TR30    | 11.00             | 242.78           | 246.19           | 244.25           | 246.23           | 0.001090            | 0.96              | 11.46             | 4.03             | 0.18         |
| RIO_QUERCE       | RIO_QUERCE5      | 31        | TR200   | 16.90             | 242.78           | 247.38           | 244.56           | 247.43           | 0.001090            | 1.04              | 16.27             | 4.03             | 0.17         |
| Rio Sant'Antonio | Rio Sant'Antonio | 11816     | TR30    | 3.20              | 356.63           | 357.27           | 357.29           | 357.44           | 0.031687            | 1.84              | 1.74              | 6.31             | 1.12         |
| Rio Sant'Antonio | Rio Sant'Antonio | 11816     | TR200   | 5.40              | 356.63           | 357.39           | 357.42           | 357.61           | 0.031696            | 2.07              | 2.61              | 7.90             | 1.15         |
| Rio Sant'Antonio | Rio Sant'Antonio | 11220     | TR30    | 3.20              | 318.86           | 319.58           | 319.58           | 319.78           | 0.023508            | 1.95              | 1.64              | 4.23             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 11220     | TR200   | 5.40              | 318.86           | 319.75           | 319.75           | 320.01           | 0.022250            | 2.24              | 2.41              | 4.77             | 1.01         |
| Rio Sant'Antonio | Rio Sant'Antonio | 9978      | TR30    | 3.20              | 289.74           | 290.06           | 290.48           | 292.98           | 0.760888            | 7.56              | 0.42              | 1.89             | 5.11         |
| Rio Sant'Antonio | Rio Sant'Antonio | 9978      | TR200   | 5.40              | 289.74           | 290.14           | 290.69           | 294.46           | 0.886383            | 9.20              | 0.59              | 2.17             | 5.66         |
| Rio Sant'Antonio | Rio Sant'Antonio | 9050      | TR30    | 3.20              | 273.26           | 274.04           | 274.04           | 274.29           | 0.026144            | 2.23              | 1.43              | 2.81             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 9050      | TR200   | 5.40              | 273.26           | 274.26           | 274.26           | 274.60           | 0.025624            | 2.60              | 2.08              | 3.03             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8570      | TR30    | 3.20              | 267.35           | 268.56           | 268.36           | 268.75           | 0.016988            | 1.91              | 1.67              | 2.43             | 0.74         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8570      | TR200   | 5.40              | 267.35           | 268.97           | 268.69           | 269.16           | 0.012170            | 1.91              | 2.82              | 3.24             | 0.65         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8294      | TR30    | 6.80              | 265.15           | 266.74           | 266.61           | 267.05           | 0.021032            | 2.48              | 2.74              | 3.01             | 0.83         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8294      | TR200   | 11.20             | 265.15           | 267.06           | 266.97           | 267.51           | 0.024224            | 2.97              | 3.77              | 3.38             | 0.90         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8115      | TR30    | 6.80              | 263.99           | 265.47           | 265.47           | 265.80           | 0.026626            | 2.56              | 2.66              | 3.95             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8115      | TR200   | 11.20             | 263.99           | 265.75           | 265.75           | 266.19           | 0.025707            | 2.93              | 3.83              | 4.37             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8060      | TR30    | 6.80              | 263.73           | 265.15           | 264.92           | 265.35           | 0.010970            | 1.99              | 3.41              | 4.01             | 0.69         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8060      | TR200   | 11.20             | 263.73           | 265.51           | 265.24           | 265.77           | 0.010778            | 2.24              | 5.00              | 4.80             | 0.70         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8029      | TR30    | 6.80              | 263.40           | 265.22           | 264.41           | 265.27           | 0.002231            | 0.94              | 7.21              | 8.62             | 0.33         |
| Rio Sant'Antonio | Rio Sant'Antonio | 8029      | TR200   | 11.20             | 263.40           | 265.62           | 264.72           | 265.68           | 0.001847            | 1.06              | 10.61             | 8.62             | 0.30         |
| Rio Sant'Antonio | Rio Sant'Antonio | 7321      |         |                   | Culvert          |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Sant'Antonio | Rio Sant'Antonio | 7320      | TR30    | 6.80              | 259.47           | 260.71           | 260.45           | 260.88           | 0.008675            | 1.82              | 3.74              | 4.57             | 0.64         |
| Rio Sant'Antonio | Rio Sant'Antonio | 7320      | TR200   | 11.20             | 259.47           | 261.03           | 260.74           | 261.26           | 0.008999            | 2.09              | 5.35              | 5.36             | 0.67         |
| Rio Sant'Antonio | Rio Sant'Antonio | 7112      | TR30    | 6.80              | 258.50           | 259.46           | 259.46           | 259.79           | 0.021871            | 2.54              | 2.68              | 4.05             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 7112      | TR200   | 11.20             | 258.50           | 259.74           | 259.74           | 260.16           | 0.020834            | 2.85              | 3.93              | 4.75             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6805      | TR30    | 6.80              | 257.05           | 258.47           | 257.99           | 258.57           | 0.004380            | 1.42              | 4.79              | 4.93             | 0.46         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6805      | TR200   | 11.20             | 257.05           | 258.71           | 258.28           | 258.88           | 0.006443            | 1.86              | 6.01              | 5.44             | 0.57         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6750      |         |                   | Culvert          |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Sant'Antonio | Rio Sant'Antonio | 6741      | TR30    | 6.80              | 256.94           | 258.44           | 257.92           | 258.55           | 0.004580            | 1.46              | 4.64              | 4.43             | 0.46         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6741      | TR200   | 11.20             | 256.94           | 258.62           | 258.23           | 258.84           | 0.008045            | 2.05              | 5.47              | 4.77             | 0.61         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6523      | TR30    | 6.80              | 256.40           | 257.61           | 257.61           | 257.94           | 0.022993            | 2.57              | 2.65              | 3.96             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6523      | TR200   | 11.20             | 256.40           | 258.24           | 257.95           | 258.35           | 0.005898            | 1.46              | 7.68              | 10.05            | 0.53         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6311      | TR30    | 6.80              | 255.75           | 257.55           | 256.73           | 257.58           | 0.001147            | 0.76              | 9.00              | 9.12             | 0.24         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6311      | TR200   | 11.20             | 255.75           | 258.20           | 257.03           | 258.23           | 0.000676            | 0.75              | 14.90             | 9.12             | 0.19         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6300      |         |                   | Bridge           |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Sant'Antonio | Rio Sant'Antonio | 6208      | TR30    | 6.80              | 255.41           | 256.76           | 256.76           | 257.15           | 0.026176            | 2.76              | 2.46              | 3.17             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 6208      | TR200   | 11.20             | 255.41           | 256.93           | 257.09           | 257.63           | 0.040539            | 3.69              | 3.03              | 3.44             | 1.26         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5977      | TR30    | 10.70             | 254.70           | 255.71           | 255.61           | 255.92           | 0.012517            | 2.03              | 5.26              | 8.11             | 0.81         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5977      | TR200   | 17.10             | 254.70           | 255.97           | 255.83           | 256.24           | 0.011490            | 2.32              | 7.38              | 8.44             | 0.79         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5655      | TR30    | 10.70             | 253.55           | 254.78           | 254.54           | 254.95           | 0.007912            | 1.84              | 5.83              | 7.13             | 0.65         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5655      | TR200   | 17.10             | 253.55           | 255.08           | 254.79           | 255.31           | 0.007781            | 2.11              | 8.12              | 7.75             | 0.66         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5364      | TR30    | 10.70             | 252.29           | 253.50           | 253.50           | 253.87           | 0.020012            | 2.69              | 3.99              | 5.38             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 5364      | TR200   | 17.10             | 252.29           | 253.80           | 253.80           | 254.25           | 0.019083            | 2.99              | 5.72              | 6.28             | 1.00         |
| Rio Sant'Antonio | Rio Sant'Antonio | 4965      | TR30    | 10.70             | 250.23           | 253.07           | 251.36           | 253.08           | 0.000307            | 0.57              | 18.75             | 10.42            | 0.14         |
| Rio Sant'Antonio | Rio Sant'Antonio | 4965      | TR200   | 17.10             | 250.23           | 253.66           | 251.64           | 253.68           | 0.000342            | 0.69              | 24.92             | 10.42            | 0.14         |
| Rio Sant'Antonio | Rio Sant'Antonio | 4945      |         |                   | Culvert          |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Sant'Antonio | Rio Sant'Antonio | 4924      | TR30    | 10.70             | 250.23           | 251.76           | 251.36           | 251.89           | 0.005096            | 1.58              | 6.77              | 7.31             | 0.52         |
| Rio Sant'Antonio | Rio Sant'Antonio | 4924      | TR200   | 17.10             | 250.23           | 251.97           | 251.64           | 252.18           | 0.007439            | 2.05              | 8.32              | 8.03             | 0.64         |
| Rio Sant'Antonio | Rio Sant'Antonio | 3771      | TR30    | 10.70             | 247.29           | 248.43           | 248.43           | 248.69           | 0.020411            | 2.26              | 4.73              | 9.05             | 1.00         |

HEC-RAS Plan: Taratura (Continued)

| River            | Reach            | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|------------------|------------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio Sant'Antonio | Rio Sant'Antonio | 3771      | TR200   | 17.10             | 247.29           | 248.76           | 248.65           | 248.96           | 0.011489            | 1.98              | 8.62              | 12.80            | 0.77         |
| Rio Sant'Antonio | Rio Sant'Antonio | 2585      | TR30    | 10.70             | 245.42           | 247.42           | 246.52           | 247.46           | 0.001055            | 0.88              | 12.16             | 8.60             | 0.24         |
| Rio Sant'Antonio | Rio Sant'Antonio | 2585      | TR200   | 17.10             | 245.42           | 247.84           | 246.74           | 247.90           | 0.001246            | 1.08              | 15.80             | 8.60             | 0.26         |
| Rio Sant'Antonio | Rio Sant'Antonio | 2492      | TR30    | 10.70             | 245.27           | 247.31           | 246.55           | 247.40           | 0.003045            | 1.36              | 7.89              | 6.77             | 0.40         |
| Rio Sant'Antonio | Rio Sant'Antonio | 2492      | TR200   | 17.10             | 245.27           | 247.71           | 246.89           | 247.84           | 0.003328            | 1.59              | 10.77             | 7.50             | 0.42         |
| Rio Sant'Antonio | Rio Sant'Antonio | 1024      | TR30    | 10.70             | 243.35           | 247.26           | 244.48           | 247.27           | 0.000082            | 0.36              | 29.44             | 10.20            | 0.07         |
| Rio Sant'Antonio | Rio Sant'Antonio | 1024      | TR200   | 17.10             | 243.35           | 247.60           | 244.75           | 247.62           | 0.000153            | 0.52              | 32.93             | 10.20            | 0.09         |
| Rio Sant'Antonio | Rio Sant'Antonio | 112       | TR30    | 10.70             | 242.24           | 247.25           | 243.07           | 247.26           | 0.000019            | 0.21              | 51.69             | 14.00            | 0.03         |
| Rio Sant'Antonio | Rio Sant'Antonio | 112       | TR200   | 17.10             | 242.24           | 247.59           | 243.31           | 247.59           | 0.000038            | 0.30              | 56.39             | 14.00            | 0.05         |
| Rio Sant'Antonio | Rio Sant'Antonio | 107       | TR30    | 10.70             | 242.24           | 247.25           | 243.02           | 247.26           | 0.000021            | 0.22              | 48.64             | 12.20            | 0.04         |
| Rio Sant'Antonio | Rio Sant'Antonio | 107       | TR200   | 17.10             | 242.24           | 247.59           | 243.26           | 247.59           | 0.000043            | 0.32              | 52.73             | 12.20            | 0.05         |
| Rio Riolo2       | Rio Riolo2       | 948       | TR30    | 7.30              | 270.65           | 271.72           | 271.73           | 271.94           | 0.022972            | 2.06              | 3.55              | 8.43             | 1.01         |
| Rio Riolo2       | Rio Riolo2       | 948       | TR200   | 12.50             | 270.65           | 271.90           | 271.92           | 272.20           | 0.022974            | 2.41              | 5.18              | 9.60             | 1.05         |
| Rio Riolo2       | Rio Riolo2       | 624       | TR30    | 7.30              | 268.49           | 269.37           | 269.39           | 269.72           | 0.023140            | 2.61              | 2.80              | 4.21             | 1.02         |
| Rio Riolo2       | Rio Riolo2       | 624       | TR200   | 12.50             | 268.49           | 269.69           | 269.69           | 270.14           | 0.021536            | 3.00              | 4.17              | 4.54             | 1.00         |
| Rio Riolo2       | Rio Riolo2       | 349       | TR30    | 7.30              | 266.05           | 267.95           | 266.92           | 268.00           | 0.001477            | 0.98              | 7.47              | 4.71             | 0.25         |
| Rio Riolo2       | Rio Riolo2       | 349       | TR200   | 12.50             | 266.05           | 268.89           | 267.21           | 268.94           | 0.001534            | 1.05              | 11.90             | 4.71             | 0.21         |
| Rio Riolo2       | Rio Riolo2       | 320       |         |                   |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Riolo2       | Rio Riolo2       | 306       | TR30    | 7.30              | 265.91           | 267.69           | 266.92           | 267.78           | 0.003206            | 1.33              | 5.50              | 3.90             | 0.36         |
| Rio Riolo2       | Rio Riolo2       | 306       | TR200   | 12.50             | 265.91           | 268.67           | 267.27           | 268.76           | 0.002355            | 1.34              | 9.32              | 3.90             | 0.28         |
| Rio Riolo2       | Rio Riolo2       | 268       | TR30    | 7.30              | 265.67           | 267.58           | 266.80           | 267.73           | 0.006516            | 1.66              | 4.39              | 2.58             | 0.41         |
| Rio Riolo2       | Rio Riolo2       | 268       | TR200   | 12.50             | 265.67           | 268.54           | 267.22           | 268.71           | 0.006274            | 1.82              | 6.86              | 2.58             | 0.36         |
| Rio Riolo2       | Rio Riolo2       | 200       |         |                   |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Riolo2       | Rio Riolo2       | 196       | TR30    | 7.30              | 265.38           | 266.51           | 266.51           | 267.04           | 0.036390            | 3.20              | 2.28              | 2.17             | 1.00         |
| Rio Riolo2       | Rio Riolo2       | 196       | TR200   | 12.50             | 265.38           | 266.63           | 266.96           | 267.87           | 0.080465            | 4.93              | 2.54              | 2.18             | 1.46         |
| Rio Riolo1       | Rio Riolo1       | 1483      | TR30    | 3.30              | 273.92           | 274.30           | 274.28           | 274.41           | 0.022130            | 1.47              | 2.24              | 8.93             | 0.94         |
| Rio Riolo1       | Rio Riolo1       | 1483      | TR200   | 5.50              | 273.92           | 274.39           | 274.39           | 274.55           | 0.023108            | 1.78              | 3.08              | 9.48             | 1.00         |
| Rio Riolo1       | Rio Riolo1       | 862       | TR30    | 3.30              | 269.43           | 269.85           | 269.85           | 270.00           | 0.024608            | 1.68              | 1.96              | 6.87             | 1.01         |
| Rio Riolo1       | Rio Riolo1       | 862       | TR200   | 5.50              | 269.43           | 270.01           | 269.98           | 270.17           | 0.017188            | 1.78              | 3.09              | 7.55             | 0.89         |
| Rio Riolo1       | Rio Riolo1       | 610       | TR30    | 3.30              | 267.92           | 268.45           | 268.37           | 268.53           | 0.011749            | 1.27              | 2.59              | 7.91             | 0.71         |
| Rio Riolo1       | Rio Riolo1       | 610       | TR200   | 5.50              | 267.92           | 268.49           | 268.49           | 268.67           | 0.022787            | 1.87              | 2.94              | 8.25             | 1.00         |
| Rio Riolo1       | Rio Riolo1       | 237       | TR30    | 3.30              | 265.69           | 266.70           | 266.49           | 266.77           | 0.006488            | 1.22              | 2.71              | 5.28             | 0.54         |
| Rio Riolo1       | Rio Riolo1       | 237       | TR200   | 5.50              | 265.69           | 266.94           | 266.66           | 267.04           | 0.005413            | 1.36              | 4.04              | 5.40             | 0.50         |
| Rio Riolo        | Rio Riolo        | 9030      | TR30    | 12.70             | 263.04           | 264.51           | 264.60           | 265.03           | 0.031880            | 3.18              | 4.00              | 5.34             | 1.17         |
| Rio Riolo        | Rio Riolo        | 9030      | TR200   | 21.40             | 263.04           | 265.02           | 264.94           | 265.53           | 0.019218            | 3.18              | 6.74              | 5.44             | 0.91         |
| Rio Riolo        | Rio Riolo        | 8838      | TR30    | 12.70             | 262.27           | 263.91           | 263.59           | 264.14           | 0.008700            | 2.15              | 5.91              | 5.22             | 0.65         |
| Rio Riolo        | Rio Riolo        | 8838      | TR200   | 21.40             | 262.27           | 264.36           | 263.98           | 264.70           | 0.009597            | 2.59              | 8.25              | 5.22             | 0.66         |
| Rio Riolo        | Rio Riolo        | 8650      | TR30    | 12.70             | 261.36           | 262.95           | 262.88           | 263.40           | 0.019861            | 2.96              | 4.29              | 4.05             | 0.92         |
| Rio Riolo        | Rio Riolo        | 8650      | TR200   | 21.40             | 261.36           | 263.56           | 263.37           | 264.01           | 0.015043            | 2.97              | 7.21              | 5.16             | 0.80         |
| Rio Riolo        | Rio Riolo        | 8407      | TR30    | 12.70             | 260.04           | 261.88           | 261.65           | 262.19           | 0.012916            | 2.47              | 5.15              | 4.83             | 0.76         |
| Rio Riolo        | Rio Riolo        | 8407      | TR200   | 21.40             | 260.04           | 262.16           | 262.16           | 262.69           | 0.021264            | 3.24              | 6.61              | 6.19             | 1.00         |
| Rio Riolo        | Rio Riolo        | 8112      | TR30    | 12.70             | 258.85           | 260.29           | 260.28           | 260.73           | 0.020609            | 2.96              | 4.29              | 4.75             | 0.99         |
| Rio Riolo        | Rio Riolo        | 8112      | TR200   | 21.40             | 258.85           | 261.20           | 260.70           | 261.44           | 0.006632            | 2.20              | 9.72              | 6.24             | 0.56         |
| Rio Riolo        | Rio Riolo        | 7851      | TR30    | 12.70             | 257.75           | 260.14           | 259.22           | 260.23           | 0.002162            | 1.28              | 9.95              | 6.74             | 0.34         |
| Rio Riolo        | Rio Riolo        | 7851      | TR200   | 21.40             | 257.75           | 261.08           | 259.61           | 261.17           | 0.001543            | 1.31              | 16.29             | 6.74             | 0.27         |
| Rio Riolo        | Rio Riolo        | 7800      |         |                   |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Riolo        | Rio Riolo        | 7786      | TR30    | 12.70             | 257.77           | 259.21           | 259.21           | 259.67           | 0.021237            | 3.00              | 4.23              | 4.56             | 1.00         |
| Rio Riolo        | Rio Riolo        | 7786      | TR200   | 21.40             | 257.77           | 259.23           | 259.64           | 260.48           | 0.057160            | 4.96              | 4.31              | 4.60             | 1.64         |
| Rio Riolo        | Rio Riolo        | 7440      | TR30    | 12.70             | 256.48           | 258.13           | 257.73           | 258.29           | 0.005955            | 1.78              | 7.13              | 6.68             | 0.55         |
| Rio Riolo        | Rio Riolo        | 7440      | TR200   | 21.40             | 256.48           | 258.58           | 258.07           | 258.81           | 0.006020            | 2.11              | 10.15             | 6.73             | 0.55         |
| Rio Riolo        | Rio Riolo        | 7033      | TR30    | 12.70             | 254.78           | 256.56           | 256.56           | 256.95           | 0.023005            | 2.78              | 4.57              | 5.81             | 1.00         |
| Rio Riolo        | Rio Riolo        | 7033      | TR200   | 21.40             | 254.78           | 256.88           | 256.88           | 257.44           | 0.023060            | 3.31              | 6.46              | 5.81             | 1.00         |
| Rio Riolo        | Rio Riolo        | 6898      | TR30    | 14.50             | 254.16           | 256.01           | 255.51           | 256.14           | 0.004181            | 1.62              | 8.95              | 7.79             | 0.48         |
| Rio Riolo        | Rio Riolo        | 6898      | TR200   | 24.20             | 254.16           | 256.42           | 255.84           | 256.62           | 0.004684            | 1.98              | 12.19             | 7.79             | 0.51         |
| Rio Riolo        | Rio Riolo        | 6837      | TR30    | 14.50             | 254.16           | 255.51           | 255.51           | 255.90           | 0.019422            | 2.77              | 5.23              | 6.73             | 1.00         |
| Rio Riolo        | Rio Riolo        | 6837      | TR200   | 24.20             | 254.16           | 255.83           | 255.83           | 256.36           | 0.018698            | 3.21              | 7.54              | 7.15             | 1.00         |
| Rio Riolo        | Rio Riolo        | 6615      | TR30    | 14.50             | 253.26           | 254.13           | 253.89           | 254.24           | 0.005923            | 1.50              | 9.64              | 13.55            | 0.57         |
| Rio Riolo        | Rio Riolo        | 6615      | TR200   | 24.20             | 253.26           | 253.88           | 254.10           | 254.60           | 0.058161            | 3.75              | 6.45              | 12.87            | 1.69         |
| Rio Riolo        | Rio Riolo        | 6593      | TR30    | 14.50             | 253.26           | 254.02           | 253.89           | 254.18           | 0.009538            | 1.75              | 8.28              | 13.28            | 0.71         |
| Rio Riolo        | Rio Riolo        | 6593      | TR200   | 24.20             | 253.26           | 254.21           | 254.10           | 254.47           | 0.011570            | 2.24              | 10.81             | 13.74            | 0.81         |
| Rio Riolo        | Rio Riolo        | 5205      | TR30    | 14.50             | 249.21           | 251.07           | 250.58           | 251.19           | 0.005450            | 1.50              | 9.68              | 12.40            | 0.54         |
| Rio Riolo        | Rio Riolo        | 5205      | TR200   | 24.20             | 249.21           | 251.45           | 250.99           | 251.59           | 0.004408            | 1.69              | 14.34             | 12.40            | 0.50         |
| Rio Riolo        | Rio Riolo        | 3655      | TR30    | 14.50             | 246.18           | 248.13           | 247.78           | 248.31           | 0.006810            | 1.87              | 7.74              | 7.83             | 0.60         |
| Rio Riolo        | Rio Riolo        | 3655      | TR200   | 24.20             | 246.18           | 248.42           | 248.14           | 248.72           | 0.008856            | 2.40              | 10.09             | 8.20             | 0.69         |
| Rio Riolo        | Rio Riolo        | 3546      | TR30    | 16.30             | 246.28           | 248.08           | 247.52           | 248.16           | 0.002486            | 1.23              | 13.24             | 12.20            | 0.38         |
| Rio Riolo        | Rio Riolo        | 3546      | TR200   | 27.00             | 246.28           | 248.37           | 247.79           | 248.50           | 0.003261            | 1.61              | 16.80             | 12.20            | 0.44         |

HEC-RAS Plan: Taratura (Continued)

| River       | Reach       | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|-------------|-------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio Riolo   | Rio Riolo   | 2109      | TR30    | 16.30             | 244.28           | 245.63           | 245.57           | 245.92           | 0.015369            | 2.40              | 6.80              | 9.59             | 0.91         |
| Rio Riolo   | Rio Riolo   | 2109      | TR200   | 27.00             | 244.28           | 246.12           | 245.97           | 246.28           | 0.008898            | 1.84              | 15.54             | 26.03            | 0.70         |
| Rio Riolo   | Rio Riolo   | 863       | TR30    | 16.30             | 242.60           | 244.58           | 243.75           | 244.63           | 0.001342            | 0.99              | 16.41             | 13.61            | 0.29         |
| Rio Riolo   | Rio Riolo   | 863       | TR200   | 27.00             | 242.60           | 245.02           | 244.04           | 245.09           | 0.001543            | 1.19              | 22.67             | 15.56            | 0.32         |
| Rio Riolo   | Rio Riolo   | 819       | TR30    | 16.30             | 242.49           | 244.50           | 243.86           | 244.60           | 0.003488            | 1.40              | 11.67             | 11.91            | 0.45         |
| Rio Riolo   | Rio Riolo   | 819       | TR200   | 27.00             | 242.49           | 244.92           | 244.24           | 245.05           | 0.003172            | 1.62              | 16.70             | 12.00            | 0.44         |
| Rio Riolo   | Rio Riolo   | 167       | TR30    | 16.30             | 241.58           | 243.35           | 243.04           | 243.58           | 0.007941            | 2.12              | 7.69              | 7.34             | 0.66         |
| Rio Riolo   | Rio Riolo   | 167       | TR200   | 27.00             | 241.58           | 243.79           | 243.43           | 244.09           | 0.007946            | 2.40              | 11.23             | 8.83             | 0.68         |
| Rio Matto2  | Rio Matto2  | 1804      | TR30    | 4.30              | 278.00           | 279.13           | 279.13           | 279.55           | 0.041078            | 2.88              | 1.49              | 1.76             | 1.00         |
| Rio Matto2  | Rio Matto2  | 1804      | TR200   | 6.90              | 278.00           | 279.44           | 279.44           | 280.02           | 0.046156            | 3.37              | 2.05              | 1.76             | 1.00         |
| Rio Matto2  | Rio Matto2  | 1624      | TR30    | 4.30              | 271.38           | 272.06           | 272.68           | 274.36           | 0.353394            | 6.71              | 0.64              | 1.44             | 3.21         |
| Rio Matto2  | Rio Matto2  | 1624      | TR200   | 6.90              | 271.38           | 272.29           | 272.90           | 274.71           | 0.281349            | 6.90              | 1.00              | 1.76             | 2.92         |
| Rio Matto2  | Rio Matto2  | 1446      | TR30    | 4.30              | 265.74           | 267.30           | 266.74           | 267.38           | 0.008629            | 1.30              | 3.30              | 6.00             | 0.56         |
| Rio Matto2  | Rio Matto2  | 1446      | TR200   | 6.90              | 265.74           | 267.60           | 267.02           | 267.69           | 0.005572            | 1.34              | 5.16              | 6.09             | 0.46         |
| Rio Matto2  | Rio Matto2  | 1320      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Matto2  | Rio Matto2  | 1314      | TR30    | 4.30              | 264.89           | 265.50           | 265.50           | 265.74           | 0.025628            | 2.16              | 1.99              | 4.21             | 1.00         |
| Rio Matto2  | Rio Matto2  | 1314      | TR200   | 6.90              | 264.89           | 265.68           | 265.68           | 266.00           | 0.024514            | 2.49              | 2.77              | 4.38             | 1.00         |
| Rio Matto2  | Rio Matto2  | 902       | TR30    | 4.30              | 261.78           | 262.71           | 262.63           | 262.84           | 0.016503            | 1.62              | 2.65              | 6.63             | 0.82         |
| Rio Matto2  | Rio Matto2  | 902       | TR200   | 6.90              | 261.78           | 262.87           | 262.81           | 263.03           | 0.015693            | 1.79              | 3.86              | 8.07             | 0.82         |
| Rio Matto2  | Rio Matto2  | 474       | TR30    | 4.30              | 259.03           | 259.97           | 259.97           | 260.25           | 0.023900            | 2.37              | 1.82              | 3.16             | 1.00         |
| Rio Matto2  | Rio Matto2  | 474       | TR200   | 6.90              | 259.03           | 260.32           | 260.32           | 260.49           | 0.024747            | 1.81              | 3.80              | 11.34            | 1.00         |
| Rio Matto2  | Rio Matto2  | 48        | TR30    | 4.30              | 255.88           | 257.51           | 256.77           | 257.56           | 0.002068            | 0.95              | 4.51              | 4.21             | 0.29         |
| Rio Matto2  | Rio Matto2  | 48        | TR200   | 6.90              | 255.88           | 258.27           | 257.00           | 258.31           | 0.001113            | 0.86              | 8.03              | 4.74             | 0.21         |
| Rio Matto2  | Rio Matto2  | 5         |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Matto2  | Rio Matto2  | 1         | TR30    | 4.30              | 255.83           | 257.46           | 256.65           | 257.49           | 0.001198            | 0.77              | 5.60              | 5.66             | 0.25         |
| Rio Matto2  | Rio Matto2  | 1         | TR200   | 6.90              | 255.83           | 258.11           | 256.87           | 258.13           | 0.000680            | 0.71              | 9.74              | 6.91             | 0.19         |
| Rio Matto1  | Rio Matto1  | 6323      | TR30    | 12.85             | 255.26           | 257.03           | 256.86           | 257.34           | 0.013684            | 2.46              | 5.23              | 5.34             | 0.79         |
| Rio Matto1  | Rio Matto1  | 6323      | TR200   | 20.70             | 255.26           | 257.84           | 257.22           | 258.05           | 0.005520            | 2.03              | 10.22             | 6.56             | 0.52         |
| Rio Matto1  | Rio Matto1  | 6063      | TR30    | 12.85             | 254.56           | 256.65           | 256.04           | 256.76           | 0.003773            | 1.53              | 8.40              | 7.19             | 0.45         |
| Rio Matto1  | Rio Matto1  | 6063      | TR200   | 20.70             | 254.56           | 257.73           | 256.38           | 257.81           | 0.001415            | 1.25              | 16.55             | 7.53             | 0.27         |
| Rio Matto1  | Rio Matto1  | 5792      | TR30    | 12.85             | 253.99           | 256.31           | 255.41           | 256.44           | 0.003946            | 1.65              | 7.79              | 4.11             | 0.38         |
| Rio Matto1  | Rio Matto1  | 5792      | TR200   | 20.70             | 253.99           | 257.51           | 255.79           | 257.65           | 0.002912            | 1.62              | 12.75             | 4.11             | 0.29         |
| Rio Matto1  | Rio Matto1  | 5709      | TR30    | 12.85             | 253.45           | 256.23           | 255.03           | 256.35           | 0.004506            | 1.50              | 8.58              | 3.80             | 0.32         |
| Rio Matto1  | Rio Matto1  | 5709      | TR200   | 20.70             | 253.45           | 257.45           | 255.42           | 257.57           | 0.003703            | 1.57              | 13.19             | 3.80             | 0.27         |
| Rio Matto1  | Rio Matto1  | 5680      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Matto1  | Rio Matto1  | 5651      | TR30    | 12.85             | 253.45           | 255.61           | 255.04           | 255.83           | 0.008411            | 2.08              | 6.19              | 3.80             | 0.52         |
| Rio Matto1  | Rio Matto1  | 5651      | TR200   | 20.70             | 253.45           | 256.39           | 255.43           | 256.65           | 0.009818            | 2.26              | 9.14              | 3.80             | 0.47         |
| Rio Matto1  | Rio Matto1  | 4460      | TR30    | 12.85             | 249.84           | 251.22           | 251.20           | 251.61           | 0.018633            | 2.75              | 4.67              | 5.71             | 0.97         |
| Rio Matto1  | Rio Matto1  | 4460      | TR200   | 20.70             | 249.84           | 251.55           | 251.55           | 252.03           | 0.018626            | 3.05              | 6.80              | 7.15             | 1.00         |
| Rio Matto1  | Rio Matto1  | 3120      | TR30    | 15.20             | 246.76           | 248.80           | 248.21           | 248.92           | 0.003508            | 1.53              | 9.96              | 7.90             | 0.43         |
| Rio Matto1  | Rio Matto1  | 3120      | TR200   | 24.30             | 246.76           | 250.00           | 248.53           | 250.08           | 0.001302            | 1.25              | 19.44             | 7.90             | 0.25         |
| Rio Matto1  | Rio Matto1  | 2979      | TR30    | 15.20             | 246.73           | 248.22           | 248.22           | 248.59           | 0.019797            | 2.69              | 5.65              | 7.66             | 1.00         |
| Rio Matto1  | Rio Matto1  | 2979      | TR200   | 24.30             | 246.73           | 249.96           | 248.51           | 250.02           | 0.001086            | 1.14              | 21.38             | 9.70             | 0.24         |
| Rio Matto1  | Rio Matto1  | 1062      | TR30    | 15.20             | 244.00           | 247.77           | 245.44           | 247.78           | 0.000177            | 0.52              | 29.36             | 10.30            | 0.10         |
| Rio Matto1  | Rio Matto1  | 1062      | TR200   | 24.30             | 244.00           | 249.86           | 245.71           | 249.87           | 0.000100            | 0.48              | 50.88             | 10.30            | 0.07         |
| Rio Matto1  | Rio Matto1  | 31        | TR30    | 15.20             | 242.69           | 247.73           | 244.25           | 247.74           | 0.000095            | 0.42              | 36.33             | 9.40             | 0.07         |
| Rio Matto1  | Rio Matto1  | 31        | TR200   | 24.30             | 242.69           | 249.83           | 244.63           | 249.84           | 0.000078            | 0.43              | 56.07             | 9.40             | 0.06         |
| Rio Matto1  | Rio Matto1  | 30        | TR30    | 15.20             | 242.02           | 247.73           | 243.36           | 247.74           | 0.000076            | 0.38              | 39.79             | 7.80             | 0.05         |
| Rio Matto1  | Rio Matto1  | 30        | TR200   | 24.30             | 242.02           | 249.83           | 243.63           | 249.84           | 0.000083            | 0.43              | 56.15             | 7.80             | 0.05         |
| Rio Matto   | Rio Matto   | 516       | TR30    | 21.80             | 242.02           | 247.72           | 243.56           | 247.74           | 0.000158            | 0.55              | 39.72             | 7.80             | 0.08         |
| Rio Matto   | Rio Matto   | 516       | TR200   | 34.90             | 242.02           | 249.82           | 243.90           | 249.84           | 0.000171            | 0.62              | 56.06             | 7.80             | 0.07         |
| Rio Matto   | Rio Matto   | 130       | TR30    | 21.80             | 242.03           | 247.71           | 243.70           | 247.72           | 0.000100            | 0.47              | 46.75             | 9.80             | 0.07         |
| Rio Matto   | Rio Matto   | 130       | TR200   | 34.90             | 242.03           | 249.81           | 244.03           | 249.82           | 0.000100            | 0.52              | 67.30             | 9.80             | 0.06         |
| Rio Doccia6 | Rio Doccia6 | 6         | TR30    | 0.98              | 360.66           | 361.03           | 361.15           | 361.38           | 0.094065            | 2.63              | 0.37              | 1.67             | 1.78         |
| Rio Doccia6 | Rio Doccia6 | 6         | TR200   | 1.58              | 360.66           | 361.12           | 361.27           | 361.57           | 0.094102            | 2.98              | 0.53              | 1.95             | 1.83         |
| Rio Doccia6 | Rio Doccia6 | 5         | TR30    | 0.98              | 332.42           | 332.57           | 332.71           | 333.41           | 0.711649            | 4.07              | 0.24              | 2.81             | 4.45         |
| Rio Doccia6 | Rio Doccia6 | 5         | TR200   | 1.58              | 332.42           | 332.60           | 332.78           | 333.70           | 0.699710            | 4.65              | 0.34              | 3.21             | 4.57         |
| Rio Doccia6 | Rio Doccia6 | 4         | TR30    | 0.98              | 329.90           | 330.33           | 330.39           | 330.56           | 0.053888            | 2.10              | 0.46              | 1.92             | 1.36         |
| Rio Doccia6 | Rio Doccia6 | 4         | TR200   | 1.58              | 329.90           | 330.42           | 330.51           | 330.73           | 0.055881            | 2.44              | 0.64              | 2.10             | 1.41         |
| Rio Doccia6 | Rio Doccia6 | 3         | TR30    | 0.98              | 305.08           | 305.47           | 305.30           | 305.48           | 0.002847            | 0.56              | 1.74              | 6.30             | 0.34         |
| Rio Doccia6 | Rio Doccia6 | 3         | TR200   | 1.58              | 305.08           | 305.24           | 305.36           | 305.82           | 0.439573            | 3.35              | 0.47              | 5.13             | 3.54         |
| Rio Doccia6 | Rio Doccia6 | 2.5       |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia6 | Rio Doccia6 | 2         | TR30    | 0.98              | 305.08           | 305.30           | 305.30           | 305.38           | 0.030949            | 1.22              | 0.80              | 5.46             | 1.01         |
| Rio Doccia6 | Rio Doccia6 | 2         | TR200   | 1.58              | 305.08           | 305.36           | 305.36           | 305.46           | 0.027541            | 1.39              | 1.13              | 5.77             | 1.00         |
| Rio Doccia6 | Rio Doccia6 | 1         | TR30    | 0.98              | 290.08           | 290.23           | 290.31           | 290.52           | 0.267990            | 2.40              | 0.41              | 5.06             | 2.70         |
| Rio Doccia6 | Rio Doccia6 | 1         | TR200   | 1.58              | 290.08           | 290.25           | 290.36           | 290.76           | 0.373353            | 3.19              | 0.49              | 5.15             | 3.28         |

HEC-RAS Plan: Taratura (Continued)

| River       | Reach       | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|-------------|-------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio Doccia5 | Rio Doccia5 | 16        | TR30    | 0.20              | 297.56           | 297.68           | 297.69           | 297.71           | 0.059244            | 0.84              | 0.26              | 6.13             | 1.18         |
| Rio Doccia5 | Rio Doccia5 | 16        | TR200   | 0.32              | 297.56           | 297.70           | 297.71           | 297.74           | 0.059383            | 0.98              | 0.35              | 6.47             | 1.23         |
| Rio Doccia5 | Rio Doccia5 | 8         | TR30    | 0.20              | 289.10           | 289.36           | 289.38           | 289.46           | 0.055753            | 1.41              | 0.14              | 1.05             | 1.25         |
| Rio Doccia5 | Rio Doccia5 | 8         | TR200   | 0.32              | 289.10           | 289.41           | 289.44           | 289.54           | 0.054916            | 1.59              | 0.20              | 1.26             | 1.28         |
| Rio Doccia4 | Rio Doccia4 | 92        | TR30    | 1.17              | 286.41           | 286.81           | 286.84           | 287.01           | 0.035062            | 1.94              | 0.60              | 1.96             | 1.12         |
| Rio Doccia4 | Rio Doccia4 | 92        | TR200   | 1.89              | 286.41           | 286.95           | 286.97           | 287.18           | 0.032186            | 2.16              | 0.88              | 2.24             | 1.10         |
| Rio Doccia4 | Rio Doccia4 | 91        | TR30    | 1.17              | 284.60           | 284.84           | 284.87           | 284.98           | 0.042120            | 1.67              | 0.70              | 3.64             | 1.22         |
| Rio Doccia4 | Rio Doccia4 | 91        | TR200   | 1.89              | 284.60           | 284.90           | 284.95           | 285.12           | 0.049078            | 2.08              | 0.91              | 3.77             | 1.35         |
| Rio Doccia4 | Rio Doccia4 | 90        | TR30    | 1.17              | 281.75           | 282.41           | 282.23           | 282.51           | 0.021552            | 1.45              | 0.81              | 1.95             | 0.72         |
| Rio Doccia4 | Rio Doccia4 | 90        | TR200   | 1.89              | 281.75           | 282.60           | 282.45           | 282.73           | 0.018318            | 1.60              | 1.18              | 1.95             | 0.66         |
| Rio Doccia4 | Rio Doccia4 | 89.5      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia4 | Rio Doccia4 | 89        | TR30    | 1.17              | 280.75           | 281.00           | 281.04           | 281.18           | 0.057879            | 1.88              | 0.62              | 3.29             | 1.38         |
| Rio Doccia4 | Rio Doccia4 | 89        | TR200   | 1.89              | 280.75           | 281.05           | 281.14           | 281.34           | 0.070935            | 2.39              | 0.79              | 3.31             | 1.57         |
| Rio Doccia2 | Rio Doccia2 | 231       | TR30    | 0.20              | 281.39           | 281.47           | 281.48           | 281.51           | 0.060106            | 0.86              | 0.23              | 4.26             | 1.20         |
| Rio Doccia2 | Rio Doccia2 | 231       | TR200   | 0.32              | 281.39           | 281.49           | 281.51           | 281.54           | 0.060115            | 0.96              | 0.33              | 5.30             | 1.23         |
| Rio Doccia2 | Rio Doccia2 | 1         | TR30    | 0.20              | 277.18           | 278.93           | 277.35           | 278.93           | 0.000007            | 0.05              | 3.66              | 2.61             | 0.01         |
| Rio Doccia2 | Rio Doccia2 | 1         | TR200   | 0.32              | 277.18           | 279.64           | 277.40           | 279.64           | 0.000007            | 0.06              | 5.51              | 2.61             | 0.01         |
| Rio Doccia1 | Rio Doccia1 | 6870      | TR30    | 3.90              | 277.18           | 278.86           | 278.06           | 278.92           | 0.003371            | 1.12              | 3.47              | 2.61             | 0.31         |
| Rio Doccia1 | Rio Doccia1 | 6870      | TR200   | 6.30              | 277.18           | 279.56           | 278.33           | 279.63           | 0.002969            | 1.19              | 5.30              | 2.61             | 0.27         |
| Rio Doccia1 | Rio Doccia1 | 6865      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 6864      | TR30    | 3.90              | 277.11           | 277.81           | 278.11           | 278.79           | 0.128245            | 4.38              | 0.89              | 1.78             | 1.98         |
| Rio Doccia1 | Rio Doccia1 | 6864      | TR200   | 6.30              | 277.11           | 277.98           | 278.39           | 279.36           | 0.145313            | 5.20              | 1.21              | 1.99             | 2.13         |
| Rio Doccia1 | Rio Doccia1 | 6657      | TR30    | 3.90              | 275.31           | 275.93           | 275.93           | 276.16           | 0.022670            | 2.14              | 1.82              | 3.86             | 0.99         |
| Rio Doccia1 | Rio Doccia1 | 6657      | TR200   | 6.30              | 275.31           | 276.12           | 276.12           | 276.42           | 0.021514            | 2.42              | 2.60              | 4.32             | 1.00         |
| Rio Doccia1 | Rio Doccia1 | 6469      | TR30    | 3.90              | 273.27           | 275.18           | 274.20           | 275.21           | 0.001021            | 0.73              | 5.31              | 4.00             | 0.20         |
| Rio Doccia1 | Rio Doccia1 | 6469      | TR200   | 6.30              | 273.27           | 275.52           | 274.44           | 275.56           | 0.001450            | 0.95              | 6.65              | 4.00             | 0.23         |
| Rio Doccia1 | Rio Doccia1 | 6450      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 6441      | TR30    | 3.90              | 272.85           | 274.26           | 273.69           | 274.32           | 0.002765            | 1.05              | 3.73              | 4.03             | 0.35         |
| Rio Doccia1 | Rio Doccia1 | 6441      | TR200   | 6.30              | 272.85           | 274.48           | 273.92           | 274.58           | 0.003953            | 1.35              | 4.66              | 4.32             | 0.42         |
| Rio Doccia1 | Rio Doccia1 | 6379      | TR30    | 3.90              | 272.51           | 274.24           | 273.31           | 274.27           | 0.001410            | 0.83              | 4.70              | 3.48             | 0.23         |
| Rio Doccia1 | Rio Doccia1 | 6379      | TR200   | 6.30              | 272.51           | 274.44           | 273.54           | 274.51           | 0.002532            | 1.17              | 5.41              | 3.48             | 0.30         |
| Rio Doccia1 | Rio Doccia1 | 6300      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 6266      | TR30    | 3.90              | 270.76           | 271.74           | 271.74           | 272.04           | 0.026243            | 2.44              | 1.60              | 2.64             | 1.00         |
| Rio Doccia1 | Rio Doccia1 | 6266      | TR200   | 6.30              | 270.76           | 271.99           | 271.99           | 272.36           | 0.024735            | 2.69              | 2.34              | 3.16             | 1.00         |
| Rio Doccia1 | Rio Doccia1 | 5967      | TR30    | 3.90              | 268.23           | 269.07           | 269.13           | 269.40           | 0.031589            | 2.55              | 1.53              | 2.99             | 1.14         |
| Rio Doccia1 | Rio Doccia1 | 5967      | TR200   | 6.30              | 268.23           | 269.26           | 269.35           | 269.71           | 0.034283            | 2.96              | 2.13              | 3.48             | 1.21         |
| Rio Doccia1 | Rio Doccia1 | 5711      | TR30    | 3.90              | 265.89           | 267.03           | 266.80           | 267.16           | 0.009209            | 1.62              | 2.41              | 3.57             | 0.63         |
| Rio Doccia1 | Rio Doccia1 | 5711      | TR200   | 6.30              | 265.89           | 267.51           | 267.03           | 267.61           | 0.004784            | 1.42              | 4.43              | 4.80             | 0.47         |
| Rio Doccia1 | Rio Doccia1 | 5700      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 5662      | TR30    | 3.90              | 265.62           | 266.45           | 266.53           | 266.81           | 0.036528            | 2.68              | 1.46              | 2.90             | 1.21         |
| Rio Doccia1 | Rio Doccia1 | 5662      | TR200   | 6.30              | 265.62           | 266.56           | 266.76           | 267.18           | 0.053997            | 3.50              | 1.80              | 3.22             | 1.49         |
| Rio Doccia1 | Rio Doccia1 | 5333      | TR30    | 3.90              | 263.45           | 264.72           | 264.63           | 264.93           | 0.020321            | 2.05              | 1.90              | 3.11             | 0.84         |
| Rio Doccia1 | Rio Doccia1 | 5333      | TR200   | 6.30              | 263.45           | 264.92           | 264.88           | 265.23           | 0.022781            | 2.44              | 2.58              | 3.44             | 0.90         |
| Rio Doccia1 | Rio Doccia1 | 4970      | TR30    | 3.90              | 261.34           | 262.27           | 262.27           | 262.48           | 0.024108            | 2.03              | 1.92              | 4.53             | 1.00         |
| Rio Doccia1 | Rio Doccia1 | 4970      | TR200   | 6.30              | 261.34           | 262.45           | 262.45           | 262.70           | 0.022568            | 2.23              | 2.83              | 5.55             | 0.99         |
| Rio Doccia1 | Rio Doccia1 | 4718      | TR30    | 3.90              | 259.02           | 260.12           | 260.13           | 260.42           | 0.029521            | 2.45              | 1.59              | 2.73             | 1.03         |
| Rio Doccia1 | Rio Doccia1 | 4718      | TR200   | 6.30              | 259.02           | 260.35           | 260.38           | 260.73           | 0.028992            | 2.71              | 2.33              | 3.49             | 1.06         |
| Rio Doccia1 | Rio Doccia1 | 4670      | TR30    | 3.90              | 257.35           | 257.90           | 258.26           | 259.56           | 0.316573            | 5.71              | 0.68              | 2.37             | 3.40         |
| Rio Doccia1 | Rio Doccia1 | 4670      | TR200   | 6.30              | 257.35           | 258.03           | 258.46           | 259.89           | 0.266917            | 6.04              | 1.04              | 2.93             | 3.23         |
| Rio Doccia1 | Rio Doccia1 | 4634      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 4598      | TR30    | 3.90              | 257.35           | 258.11           | 258.26           | 258.59           | 0.061005            | 3.08              | 1.27              | 3.23             | 1.57         |
| Rio Doccia1 | Rio Doccia1 | 4598      | TR200   | 6.30              | 257.35           | 258.31           | 258.46           | 258.81           | 0.046486            | 3.13              | 2.01              | 4.09             | 1.42         |
| Rio Doccia1 | Rio Doccia1 | 3257      | TR30    | 3.90              | 250.85           | 251.56           | 251.18           | 251.58           | 0.001617            | 0.70              | 5.60              | 9.33             | 0.29         |
| Rio Doccia1 | Rio Doccia1 | 3257      | TR200   | 6.30              | 250.85           | 251.76           | 251.29           | 251.79           | 0.001726            | 0.84              | 7.54              | 9.98             | 0.31         |
| Rio Doccia1 | Rio Doccia1 | 3215      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 3172      | TR30    | 5.00              | 250.85           | 251.46           | 251.23           | 251.52           | 0.004434            | 1.06              | 4.73              | 9.02             | 0.47         |
| Rio Doccia1 | Rio Doccia1 | 3172      | TR200   | 8.00              | 250.85           | 251.64           | 251.36           | 251.72           | 0.004506            | 1.25              | 6.42              | 9.61             | 0.49         |
| Rio Doccia1 | Rio Doccia1 | 1907      | TR30    | 5.00              | 247.59           | 248.05           | 248.05           | 248.19           | 0.023643            | 1.68              | 2.97              | 10.22            | 1.00         |
| Rio Doccia1 | Rio Doccia1 | 1907      | TR200   | 8.00              | 247.59           | 248.16           | 248.16           | 248.35           | 0.023950            | 1.90              | 4.21              | 12.17            | 1.03         |
| Rio Doccia1 | Rio Doccia1 | 61        | TR30    | 5.00              | 242.70           | 244.65           | 243.39           | 244.67           | 0.000661            | 0.66              | 7.60              | 4.86             | 0.17         |
| Rio Doccia1 | Rio Doccia1 | 61        | TR200   | 8.00              | 242.70           | 245.59           | 243.61           | 245.61           | 0.000478            | 0.66              | 12.16             | 4.86             | 0.13         |
| Rio Doccia1 | Rio Doccia1 | 45        |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio Doccia1 | Rio Doccia1 | 28        | TR30    | 5.00              | 242.70           | 244.58           | 243.39           | 244.60           | 0.000754            | 0.69              | 7.24              | 4.85             | 0.18         |
| Rio Doccia1 | Rio Doccia1 | 28        | TR200   | 8.00              | 242.70           | 245.56           | 243.61           | 245.58           | 0.000494            | 0.67              | 12.01             | 4.86             | 0.14         |
| Rio Doccia  | Rio Doccia  | 84        | TR30    | 24.70             | 241.56           | 244.51           | 243.25           | 244.59           | 0.001489            | 1.21              | 20.41             | 12.18            | 0.30         |

HEC-RAS Plan: Taratura (Continued)

| River        | Reach        | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|--------------|--------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio Doccia   | Rio Doccia   | 84        | TR200   | 40.10             | 241.56           | 245.49           | 243.79           | 245.57           | 0.001002            | 1.24              | 32.33             | 12.18            | 0.24         |
| Rio Doccia   | Rio Doccia   | 83        | TR30    | 24.70             | 241.13           | 244.04           | 242.57           | 244.12           | 0.001282            | 1.25              | 19.83             | 8.10             | 0.25         |
| Rio Doccia   | Rio Doccia   | 83        | TR200   | 40.10             | 241.13           | 245.08           | 242.95           | 245.18           | 0.001280            | 1.42              | 28.27             | 8.10             | 0.24         |
| Rio di Pigli | Rio di Pigli | 12808     | TR30    | 5.10              | 445.34           | 446.08           | 446.23           | 446.59           | 0.050021            | 3.17              | 1.61              | 3.29             | 1.45         |
| Rio di Pigli | Rio di Pigli | 12808     | TR200   | 8.40              | 445.34           | 446.27           | 446.48           | 446.95           | 0.050015            | 3.65              | 2.30              | 3.73             | 1.48         |
| Rio di Pigli | Rio di Pigli | 11252     | TR30    | 12.10             | 378.77           | 379.62           | 380.26           | 382.43           | 0.253132            | 7.43              | 1.63              | 3.05             | 3.24         |
| Rio di Pigli | Rio di Pigli | 11252     | TR200   | 20.00             | 378.77           | 379.84           | 380.68           | 383.49           | 0.246616            | 8.46              | 2.36              | 3.45             | 3.27         |
| Rio di Pigli | Rio di Pigli | 9488      | TR30    | 12.10             | 327.80           | 328.79           | 329.02           | 329.55           | 0.051032            | 3.86              | 3.13              | 5.04             | 1.56         |
| Rio di Pigli | Rio di Pigli | 9488      | TR200   | 20.00             | 327.80           | 329.04           | 329.35           | 330.08           | 0.052177            | 4.53              | 4.42              | 5.57             | 1.62         |
| Rio di Pigli | Rio di Pigli | 8779      | TR30    | 14.85             | 311.44           | 312.40           | 312.88           | 313.96           | 0.100318            | 5.53              | 2.68              | 3.87             | 2.12         |
| Rio di Pigli | Rio di Pigli | 8779      | TR200   | 24.45             | 311.44           | 312.70           | 313.31           | 314.67           | 0.095457            | 6.21              | 3.94              | 4.50             | 2.12         |
| Rio di Pigli | Rio di Pigli | 8525      | TR30    | 14.85             | 307.03           | 308.38           | 308.49           | 308.83           | 0.041364            | 2.98              | 4.99              | 9.71             | 1.33         |
| Rio di Pigli | Rio di Pigli | 8525      | TR200   | 24.45             | 307.03           | 308.54           | 308.73           | 309.25           | 0.046407            | 3.72              | 6.58              | 9.71             | 1.44         |
| Rio di Pigli | Rio di Pigli | 8341      | TR30    | 14.85             | 304.80           | 306.20           | 306.32           | 306.83           | 0.029765            | 3.51              | 4.23              | 4.77             | 1.19         |
| Rio di Pigli | Rio di Pigli | 8341      | TR200   | 24.45             | 304.80           | 306.70           | 306.78           | 307.20           | 0.027096            | 3.13              | 7.82              | 10.48            | 1.16         |
| Rio di Pigli | Rio di Pigli | 8041      | TR30    | 14.85             | 299.39           | 300.30           | 300.81           | 302.01           | 0.116100            | 5.79              | 2.56              | 3.92             | 2.29         |
| Rio di Pigli | Rio di Pigli | 8041      | TR200   | 24.45             | 299.39           | 300.59           | 301.22           | 302.71           | 0.108695            | 6.45              | 3.79              | 4.62             | 2.27         |
| Rio di Pigli | Rio di Pigli | 7809      | TR30    | 14.85             | 290.71           | 291.57           | 292.11           | 293.41           | 0.125155            | 6.00              | 2.48              | 3.45             | 2.26         |
| Rio di Pigli | Rio di Pigli | 7809      | TR200   | 24.45             | 290.71           | 291.86           | 292.59           | 294.32           | 0.126615            | 6.95              | 3.52              | 3.75             | 2.29         |
| Rio di Pigli | Rio di Pigli | 7568      | TR30    | 14.85             | 289.24           | 291.08           | 290.59           | 291.41           | 0.012141            | 2.54              | 5.84              | 3.35             | 0.61         |
| Rio di Pigli | Rio di Pigli | 7568      | TR200   | 24.45             | 289.24           | 291.82           | 291.10           | 292.26           | 0.013198            | 2.93              | 8.33              | 3.39             | 0.60         |
| Rio di Pigli | Rio di Pigli | 7560      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli | Rio di Pigli | 7525      | TR30    | 14.85             | 289.09           | 290.39           | 290.39           | 291.04           | 0.031962            | 3.57              | 4.16              | 3.22             | 1.00         |
| Rio di Pigli | Rio di Pigli | 7525      | TR200   | 24.45             | 289.09           | 290.63           | 290.91           | 291.89           | 0.055022            | 4.98              | 4.91              | 3.23             | 1.29         |
| Rio di Pigli | Rio di Pigli | 7203      | TR30    | 14.85             | 282.32           | 283.14           | 283.64           | 284.99           | 0.153659            | 6.03              | 2.46              | 4.77             | 2.68         |
| Rio di Pigli | Rio di Pigli | 7203      | TR200   | 24.45             | 282.32           | 283.49           | 283.99           | 285.11           | 0.087629            | 5.65              | 4.33              | 5.96             | 2.12         |
| Rio di Pigli | Rio di Pigli | 7048      | TR30    | 14.85             | 281.53           | 282.76           | 282.76           | 283.12           | 0.021168            | 2.62              | 5.66              | 8.13             | 1.01         |
| Rio di Pigli | Rio di Pigli | 7048      | TR200   | 24.45             | 281.53           | 283.06           | 283.06           | 283.51           | 0.019206            | 2.97              | 8.23              | 9.10             | 1.00         |
| Rio di Pigli | Rio di Pigli | 6773      | TR30    | 14.85             | 279.27           | 279.67           | 279.81           | 280.14           | 0.070323            | 3.04              | 4.88              | 15.36            | 1.72         |
| Rio di Pigli | Rio di Pigli | 6773      | TR200   | 24.45             | 279.27           | 279.76           | 279.99           | 280.53           | 0.083876            | 3.89              | 6.28              | 15.50            | 1.95         |
| Rio di Pigli | Rio di Pigli | 6543      | TR30    | 17.60             | 276.05           | 277.61           | 277.61           | 277.96           | 0.020499            | 2.60              | 6.78              | 9.88             | 1.00         |
| Rio di Pigli | Rio di Pigli | 6543      | TR200   | 28.90             | 276.05           | 277.90           | 277.90           | 278.34           | 0.019089            | 2.93              | 9.87              | 11.38            | 1.00         |
| Rio di Pigli | Rio di Pigli | 6263      | TR30    | 17.60             | 273.19           | 274.90           | 275.08           | 275.67           | 0.034194            | 3.89              | 4.52              | 4.55             | 1.25         |
| Rio di Pigli | Rio di Pigli | 6263      | TR200   | 28.90             | 273.19           | 275.37           | 275.56           | 276.26           | 0.029900            | 4.18              | 6.91              | 5.59             | 1.20         |
| Rio di Pigli | Rio di Pigli | 5933      | TR30    | 17.60             | 269.38           | 272.48           | 271.16           | 272.58           | 0.002341            | 1.45              | 12.15             | 5.33             | 0.31         |
| Rio di Pigli | Rio di Pigli | 5933      | TR200   | 28.90             | 269.38           | 273.02           | 271.64           | 273.21           | 0.003585            | 1.92              | 15.05             | 5.33             | 0.36         |
| Rio di Pigli | Rio di Pigli | 5900      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli | Rio di Pigli | 5886      | TR30    | 17.60             | 269.26           | 270.26           | 270.69           | 271.64           | 0.085885            | 5.20              | 3.39              | 5.12             | 2.04         |
| Rio di Pigli | Rio di Pigli | 5886      | TR200   | 28.90             | 269.26           | 270.52           | 271.08           | 272.39           | 0.087608            | 6.05              | 4.78              | 5.73             | 2.12         |
| Rio di Pigli | Rio di Pigli | 5590      | TR30    | 17.60             | 266.43           | 268.55           | 268.55           | 269.11           | 0.022652            | 3.32              | 5.31              | 4.70             | 1.00         |
| Rio di Pigli | Rio di Pigli | 5590      | TR200   | 28.90             | 266.43           | 269.07           | 269.07           | 269.72           | 0.021323            | 3.57              | 8.09              | 6.19             | 1.00         |
| Rio di Pigli | Rio di Pigli | 5408      | TR30    | 17.60             | 265.68           | 267.74           | 267.56           | 268.12           | 0.013202            | 2.71              | 6.50              | 5.62             | 0.80         |
| Rio di Pigli | Rio di Pigli | 5408      | TR200   | 28.90             | 265.68           | 268.49           | 268.06           | 268.75           | 0.007078            | 2.27              | 12.74             | 8.80             | 0.60         |
| Rio di Pigli | Rio di Pigli | 5259      | TR30    | 17.60             | 264.72           | 267.37           | 266.47           | 267.62           | 0.007684            | 2.20              | 7.99              | 3.54             | 0.47         |
| Rio di Pigli | Rio di Pigli | 5259      | TR200   | 28.90             | 264.72           | 267.84           | 267.01           | 268.30           | 0.012748            | 2.99              | 9.67              | 3.54             | 0.58         |
| Rio di Pigli | Rio di Pigli | 5240      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli | Rio di Pigli | 5235      | TR30    | 17.60             | 264.30           | 265.85           | 266.34           | 267.25           | 0.070249            | 5.26              | 3.35              | 2.90             | 1.56         |
| Rio di Pigli | Rio di Pigli | 5235      | TR200   | 28.90             | 264.30           | 266.46           | 266.89           | 267.95           | 0.068216            | 5.41              | 5.35              | 4.37             | 1.56         |
| Rio di Pigli | Rio di Pigli | 4900      | TR30    | 17.60             | 260.51           | 263.16           | 262.10           | 263.35           | 0.005078            | 1.93              | 9.11              | 3.95             | 0.41         |
| Rio di Pigli | Rio di Pigli | 4900      | TR200   | 28.90             | 260.51           | 264.48           | 262.62           | 264.69           | 0.004414            | 2.02              | 14.33             | 3.95             | 0.34         |
| Rio di Pigli | Rio di Pigli | 4861      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli | Rio di Pigli | 4822      | TR30    | 17.60             | 260.51           | 262.10           | 262.10           | 262.75           | 0.025996            | 3.57              | 4.93              | 3.77             | 1.00         |
| Rio di Pigli | Rio di Pigli | 4822      | TR200   | 28.90             | 260.51           | 262.62           | 262.62           | 263.50           | 0.027666            | 4.15              | 6.96              | 3.95             | 1.00         |
| Rio di Pigli | Rio di Pigli | 3771      | TR30    | 17.60             | 251.34           | 252.65           | 252.84           | 253.35           | 0.036684            | 3.71              | 4.74              | 6.36             | 1.37         |
| Rio di Pigli | Rio di Pigli | 3771      | TR200   | 28.90             | 251.34           | 252.96           | 253.23           | 253.85           | 0.036195            | 4.18              | 6.92              | 7.68             | 1.40         |
| Rio di Pigli | Rio di Pigli | 3684      | TR30    | 18.65             | 250.68           | 252.45           | 252.12           | 252.67           | 0.007049            | 2.05              | 9.10              | 8.57             | 0.63         |
| Rio di Pigli | Rio di Pigli | 3684      | TR200   | 30.55             | 250.68           | 252.88           | 252.49           | 253.16           | 0.006988            | 2.34              | 13.07             | 9.92             | 0.65         |
| Rio di Pigli | Rio di Pigli | 2393      | TR30    | 18.65             | 246.33           | 247.91           | 247.91           | 248.35           | 0.019044            | 2.95              | 6.33              | 7.12             | 1.00         |
| Rio di Pigli | Rio di Pigli | 2393      | TR200   | 30.55             | 246.33           | 248.26           | 248.26           | 248.86           | 0.019007            | 3.45              | 8.85              | 7.30             | 1.00         |
| Rio di Pigli | Rio di Pigli | 1064      | TR30    | 18.65             | 242.80           | 246.48           | 244.13           | 246.49           | 0.000122            | 0.43              | 43.00             | 19.98            | 0.09         |
| Rio di Pigli | Rio di Pigli | 1064      | TR200   | 30.55             | 242.80           | 247.82           | 244.43           | 247.83           | 0.000076            | 0.44              | 69.84             | 19.98            | 0.07         |
| Rio di Pigli | Rio di Pigli | 1050      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli | Rio di Pigli | 1035      | TR30    | 19.70             | 242.80           | 245.14           | 244.16           | 245.19           | 0.001194            | 1.00              | 19.67             | 14.60            | 0.28         |
| Rio di Pigli | Rio di Pigli | 1035      | TR200   | 32.10             | 242.80           | 245.84           | 244.46           | 245.90           | 0.000905            | 1.04              | 30.92             | 17.59            | 0.25         |
| Rio di Pigli | Rio di Pigli | 41        | TR30    | 19.70             | 241.38           | 244.93           | 243.23           | 244.96           | 0.000506            | 0.79              | 25.00             | 12.51            | 0.18         |
| Rio di Pigli | Rio di Pigli | 41        | TR200   | 32.10             | 241.38           | 245.63           | 243.62           | 245.68           | 0.000553            | 0.95              | 33.82             | 12.51            | 0.18         |

HEC-RAS Plan: Taratura (Continued)

| River          | Reach          | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|----------------|----------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio di Pigli   | Rio di Pigli   | 27        |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio di Pigli   | Rio di Pigli   | 12        | TR30    | 19.70             | 241.38           | 244.56           | 243.23           | 244.61           | 0.000927            | 0.96              | 20.44             | 12.51            | 0.24         |
| Rio di Pigli   | Rio di Pigli   | 12        | TR200   | 32.10             | 241.38           | 245.54           | 243.62           | 245.59           | 0.000614            | 0.98              | 32.62             | 12.51            | 0.19         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 11252     | TR30    | 1.30              | 333.61           | 333.88           | 333.88           | 333.96           | 0.028056            | 1.27              | 1.02              | 6.07             | 0.99         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 11252     | TR200   | 2.00              | 333.61           | 333.93           | 333.93           | 334.04           | 0.027103            | 1.43              | 1.39              | 6.74             | 1.01         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 10122     | TR30    | 1.30              | 290.18           | 290.50           | 290.50           | 290.63           | 0.026748            | 1.57              | 0.83              | 3.34             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 10122     | TR200   | 2.00              | 290.18           | 290.59           | 290.59           | 290.75           | 0.024838            | 1.76              | 1.13              | 3.57             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 9206      | TR30    | 1.30              | 273.01           | 273.33           | 273.51           | 274.02           | 0.240552            | 3.68              | 0.35              | 2.04             | 2.83         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 9206      | TR200   | 2.00              | 273.01           | 273.38           | 273.61           | 274.38           | 0.284735            | 4.44              | 0.45              | 2.22             | 3.15         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7220      | TR30    | 1.30              | 257.14           | 258.77           | 257.60           | 258.77           | 0.000113            | 0.24              | 5.43              | 4.71             | 0.07         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7220      | TR200   | 2.00              | 257.14           | 259.20           | 257.72           | 259.20           | 0.000110            | 0.27              | 7.45              | 4.71             | 0.07         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7209      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7198      | TR30    | 11.30             | 257.14           | 258.75           | 258.45           | 258.98           | 0.009023            | 2.12              | 5.32              | 4.71             | 0.64         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7198      | TR200   | 17.70             | 257.14           | 259.14           | 258.75           | 259.45           | 0.009482            | 2.46              | 7.20              | 4.71             | 0.63         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7098      | TR30    | 11.30             | 256.47           | 258.08           | 258.08           | 258.54           | 0.024818            | 3.01              | 3.75              | 4.06             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 7098      | TR200   | 17.70             | 256.47           | 258.43           | 258.43           | 259.00           | 0.024330            | 3.36              | 5.27              | 4.59             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6988      | TR30    | 11.30             | 254.88           | 257.52           | 256.18           | 257.55           | 0.000669            | 0.77              | 14.64             | 9.62             | 0.20         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6988      | TR200   | 17.70             | 254.88           | 257.96           | 256.47           | 258.01           | 0.000780            | 0.94              | 18.85             | 9.62             | 0.21         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6980      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6962      | TR30    | 11.30             | 254.82           | 257.09           | 256.59           | 257.19           | 0.004404            | 1.42              | 7.97              | 8.80             | 0.48         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6962      | TR200   | 17.70             | 254.82           | 257.43           | 256.89           | 257.56           | 0.004086            | 1.62              | 10.95             | 8.87             | 0.46         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6782      | TR30    | 15.90             | 254.21           | 256.21           | 256.21           | 256.64           | 0.021248            | 2.91              | 5.47              | 6.35             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6782      | TR200   | 24.75             | 254.21           | 256.56           | 256.56           | 257.04           | 0.019831            | 3.09              | 8.02              | 8.25             | 1.00         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6610      | TR30    | 15.90             | 253.85           | 255.55           | 255.24           | 255.76           | 0.007399            | 2.05              | 7.76              | 7.27             | 0.63         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6610      | TR200   | 24.75             | 253.85           | 256.03           | 255.54           | 256.26           | 0.006081            | 2.14              | 11.54             | 8.55             | 0.59         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6283      | TR30    | 15.90             | 252.52           | 255.18           | 254.38           | 255.29           | 0.002922            | 1.45              | 10.95             | 7.63             | 0.39         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6283      | TR200   | 24.75             | 252.52           | 255.68           | 254.71           | 255.82           | 0.002959            | 1.67              | 14.81             | 7.72             | 0.39         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6230      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6228      | TR30    | 15.90             | 252.33           | 254.51           | 254.06           | 254.66           | 0.005721            | 1.73              | 9.19              | 9.11             | 0.55         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 6228      | TR200   | 24.75             | 252.33           | 254.84           | 254.37           | 255.04           | 0.006282            | 1.97              | 12.56             | 11.11            | 0.59         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5967      | TR30    | 15.90             | 251.41           | 253.59           | 253.50           | 253.92           | 0.016627            | 2.55              | 6.24              | 7.21             | 0.87         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5967      | TR200   | 24.75             | 251.41           | 254.01           | 253.83           | 254.35           | 0.012245            | 2.57              | 9.62              | 8.75             | 0.78         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5631      | TR30    | 15.90             | 250.45           | 252.43           | 252.12           | 252.68           | 0.008851            | 2.22              | 7.15              | 6.52             | 0.68         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5631      | TR200   | 24.75             | 250.45           | 252.66           | 252.47           | 253.07           | 0.012446            | 2.84              | 8.72              | 7.04             | 0.81         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5345      | TR30    | 15.90             | 249.60           | 251.64           | 251.23           | 251.84           | 0.010236            | 1.95              | 8.16              | 10.85            | 0.72         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 5345      | TR200   | 24.75             | 249.60           | 252.02           | 251.72           | 252.22           | 0.006861            | 1.96              | 12.66             | 11.89            | 0.61         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4983      | TR30    | 15.90             | 249.06           | 251.12           | 250.47           | 251.23           | 0.003196            | 1.45              | 11.00             | 8.93             | 0.42         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4983      | TR200   | 24.75             | 249.06           | 251.59           | 250.81           | 251.72           | 0.002984            | 1.63              | 15.14             | 8.93             | 0.40         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4640      | TR30    | 15.90             | 248.57           | 250.91           | 249.93           | 250.98           | 0.001768            | 1.18              | 13.46             | 9.54             | 0.32         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4640      | TR200   | 24.75             | 248.57           | 251.37           | 250.30           | 251.47           | 0.001832            | 1.38              | 17.93             | 9.54             | 0.32         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4620      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4603      | TR30    | 15.90             | 248.50           | 249.98           | 249.94           | 250.36           | 0.016674            | 2.74              | 5.81              | 6.69             | 0.94         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4603      | TR200   | 24.75             | 248.50           | 250.27           | 250.24           | 250.78           | 0.016760            | 3.13              | 7.90              | 7.27             | 0.96         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4431      | TR30    | 15.90             | 248.05           | 249.70           | 249.29           | 249.85           | 0.005077            | 1.70              | 9.36              | 9.21             | 0.54         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4431      | TR200   | 24.75             | 248.05           | 250.05           | 249.57           | 250.25           | 0.004957            | 1.95              | 12.72             | 9.51             | 0.54         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4120      | TR30    | 15.90             | 247.36           | 249.39           | 248.76           | 249.47           | 0.002872            | 1.27              | 12.54             | 12.87            | 0.41         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 4120      | TR200   | 24.75             | 247.36           | 249.82           | 249.03           | 249.91           | 0.002220            | 1.35              | 18.31             | 13.41            | 0.37         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3798      | TR30    | 20.50             | 246.94           | 249.00           | 248.43           | 249.14           | 0.003779            | 1.63              | 12.59             | 10.19            | 0.47         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3798      | TR200   | 31.80             | 246.94           | 249.46           | 248.73           | 249.63           | 0.003538            | 1.83              | 17.38             | 10.62            | 0.46         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3465      | TR30    | 20.50             | 246.46           | 248.56           | 248.04           | 248.72           | 0.004474            | 1.76              | 11.67             | 9.60             | 0.51         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3465      | TR200   | 31.80             | 246.46           | 249.07           | 248.36           | 249.25           | 0.003924            | 1.89              | 16.86             | 10.93            | 0.48         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3140      | TR30    | 20.50             | 246.00           | 248.23           | 247.50           | 248.35           | 0.002936            | 1.55              | 13.24             | 9.38             | 0.42         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 3140      | TR200   | 31.80             | 246.00           | 248.76           | 247.84           | 248.92           | 0.002759            | 1.75              | 18.22             | 9.38             | 0.40         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2812      | TR30    | 20.50             | 245.60           | 247.99           | 247.16           | 248.09           | 0.002265            | 1.41              | 14.50             | 9.43             | 0.36         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2812      | TR200   | 31.80             | 245.60           | 248.53           | 247.49           | 248.66           | 0.002262            | 1.62              | 19.59             | 9.43             | 0.36         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2484      | TR30    | 20.50             | 245.42           | 247.85           | 246.91           | 247.91           | 0.001333            | 1.10              | 18.59             | 11.73            | 0.28         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2484      | TR200   | 31.80             | 245.42           | 248.40           | 247.16           | 248.48           | 0.001316            | 1.27              | 25.03             | 11.73            | 0.28         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2292      | TR30    | 20.50             | 245.37           | 247.63           | 247.04           | 247.78           | 0.003873            | 1.68              | 12.18             | 8.50             | 0.45         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2292      | TR200   | 31.80             | 245.37           | 248.16           | 247.32           | 248.35           | 0.003700            | 1.91              | 16.68             | 8.50             | 0.43         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2228      | TR30    | 20.50             | 245.32           | 247.60           | 246.82           | 247.71           | 0.002571            | 1.47              | 13.95             | 8.70             | 0.37         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 2228      | TR200   | 31.80             | 245.32           | 248.13           | 247.10           | 248.28           | 0.002694            | 1.71              | 18.56             | 8.70             | 0.37         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 862       | TR30    | 20.50             | 243.40           | 247.50           | 244.78           | 247.51           | 0.000156            | 0.54              | 38.10             | 11.90            | 0.10         |
| Rio dell'Olmo1 | Rio dell'Olmo1 | 862       | TR200   | 31.80             | 243.40           | 247.96           | 245.09           | 247.99           | 0.000255            | 0.73              | 43.66             | 11.90            | 0.12         |
| Rio dell'Olmo  | Rio dell'Olmo  | 843       | TR30    | 31.20             | 245.96           | 247.00           | 246.88           | 247.23           | 0.010834            | 2.12              | 14.72             | 19.56            | 0.78         |
| Rio dell'Olmo  | Rio dell'Olmo  | 843       | TR200   | 48.90             | 245.96           | 247.19           | 247.11           | 247.54           | 0.012870            | 2.64              | 18.56             | 20.15            | 0.88         |



HEC-RAS Plan: Taratura (Continued)

| River         | Reach         | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|---------------|---------------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Rio dell'Olmo | Rio dell'Olmo | 795       | TR30    | 31.20             | 245.93           | 246.78           | 246.74           | 247.03           | 0.015542            | 2.23              | 13.99             | 22.92            | 0.91         |
| Rio dell'Olmo | Rio dell'Olmo | 795       | TR200   | 48.90             | 245.93           | 247.02           | 246.96           | 247.33           | 0.013893            | 2.46              | 19.91             | 25.90            | 0.89         |
| Rio dell'Olmo | Rio dell'Olmo | 225       | TR30    | 31.20             | 241.78           | 243.63           | 243.63           | 244.16           | 0.017195            | 3.24              | 9.64              | 8.98             | 1.00         |
| Rio dell'Olmo | Rio dell'Olmo | 225       | TR200   | 48.90             | 241.78           | 244.06           | 244.06           | 244.69           | 0.016301            | 3.51              | 13.95             | 11.09            | 1.00         |
| Lama          | Lama          | 5903      | TR30    | 3.10              | 380.22           | 380.79           | 380.94           | 381.25           | 0.069379            | 3.01              | 1.03              | 3.03             | 1.65         |
| Lama          | Lama          | 5903      | TR200   | 5.10              | 380.22           | 380.93           | 381.12           | 381.53           | 0.069341            | 3.45              | 1.48              | 3.51             | 1.70         |
| Lama          | Lama          | 4633      | TR30    | 3.10              | 317.02           | 317.65           | 317.65           | 317.86           | 0.023604            | 2.06              | 1.51              | 3.45             | 1.00         |
| Lama          | Lama          | 4633      | TR200   | 5.10              | 317.02           | 317.38           | 317.83           | 320.27           | 0.651767            | 7.53              | 0.68              | 2.77             | 4.86         |
| Lama          | Lama          | 4338      | TR30    | 3.10              | 306.91           | 307.25           | 307.74           | 311.11           | 0.999143            | 8.70              | 0.36              | 1.52             | 5.74         |
| Lama          | Lama          | 4338      | TR200   | 5.10              | 306.91           | 307.80           | 307.96           | 308.35           | 0.051028            | 3.31              | 1.54              | 2.83             | 1.43         |
| Lama          | Lama          | 3958      | TR30    | 3.10              | 296.68           | 297.69           | 297.72           | 298.02           | 0.036997            | 2.57              | 1.21              | 2.13             | 1.09         |
| Lama          | Lama          | 3958      | TR200   | 5.10              | 296.68           | 297.60           | 297.99           | 298.85           | 0.151126            | 4.94              | 1.03              | 1.96             | 2.17         |
| Lama          | Lama          | 3677      | TR30    | 3.10              | 292.72           | 293.45           | 293.61           | 293.95           | 0.062792            | 3.14              | 0.99              | 2.29             | 1.53         |
| Lama          | Lama          | 3677      | TR200   | 5.10              | 292.72           | 293.82           | 293.83           | 294.14           | 0.025782            | 2.54              | 2.01              | 3.23             | 1.03         |
| Lama          | Lama          | 3659      | TR30    | 3.10              | 290.58           | 292.28           | 291.51           | 292.31           | 0.001868            | 0.83              | 3.74              | 3.31             | 0.25         |
| Lama          | Lama          | 3659      | TR200   | 5.10              | 290.58           | 292.64           | 291.72           | 292.69           | 0.002369            | 1.03              | 4.93              | 3.31             | 0.27         |
| Lama          | Lama          | 3650      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 3625      | TR30    | 3.10              | 290.55           | 291.41           | 291.41           | 291.74           | 0.033627            | 2.55              | 1.22              | 1.84             | 1.00         |
| Lama          | Lama          | 3625      | TR200   | 5.10              | 290.55           | 291.76           | 291.76           | 292.02           | 0.027239            | 2.26              | 2.26              | 4.32             | 1.00         |
| Lama          | Lama          | 3292      | TR30    | 6.20              | 285.38           | 286.42           | 286.66           | 287.01           | 0.054940            | 3.41              | 1.82              | 3.29             | 1.46         |
| Lama          | Lama          | 3292      | TR200   | 10.20             | 285.38           | 286.67           | 286.87           | 287.31           | 0.062960            | 3.53              | 2.89              | 5.91             | 1.61         |
| Lama          | Lama          | 2967      | TR30    | 6.20              | 279.78           | 282.44           | 280.84           | 282.46           | 0.000406            | 0.50              | 12.39             | 9.66             | 0.14         |
| Lama          | Lama          | 2967      | TR200   | 10.20             | 279.78           | 282.41           | 281.18           | 282.44           | 0.001210            | 0.85              | 12.01             | 9.66             | 0.24         |
| Lama          | Lama          | 2940      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 2930      | TR30    | 6.20              | 279.58           | 280.18           | 280.59           | 282.12           | 0.333781            | 6.17              | 1.01              | 3.27             | 3.55         |
| Lama          | Lama          | 2930      | TR200   | 10.20             | 279.58           | 280.36           | 280.83           | 282.30           | 0.214785            | 6.17              | 1.65              | 3.81             | 2.99         |
| Lama          | Lama          | 2613      | TR30    | 6.20              | 276.57           | 277.45           | 277.45           | 277.80           | 0.025349            | 2.62              | 2.36              | 3.43             | 1.01         |
| Lama          | Lama          | 2613      | TR200   | 10.20             | 276.57           | 277.73           | 277.73           | 278.20           | 0.025722            | 3.05              | 3.34              | 3.55             | 1.00         |
| Lama          | Lama          | 2280      | TR30    | 6.20              | 273.17           | 273.96           | 274.10           | 274.48           | 0.043202            | 3.18              | 1.95              | 3.42             | 1.34         |
| Lama          | Lama          | 2280      | TR200   | 10.20             | 273.17           | 274.20           | 274.37           | 274.88           | 0.042430            | 3.63              | 2.81              | 3.77             | 1.34         |
| Lama          | Lama          | 1833      | TR30    | 6.20              | 267.50           | 268.51           | 268.62           | 269.00           | 0.036754            | 3.09              | 2.01              | 3.13             | 1.23         |
| Lama          | Lama          | 1833      | TR200   | 10.20             | 267.50           | 268.77           | 269.08           | 269.40           | 0.037201            | 3.52              | 2.90              | 3.70             | 1.27         |
| Lama          | Lama          | 1562      | TR30    | 6.20              | 264.63           | 266.42           | 265.34           | 266.43           | 0.000323            | 0.47              | 13.18             | 10.14            | 0.13         |
| Lama          | Lama          | 1562      | TR200   | 10.20             | 264.63           | 266.67           | 265.53           | 266.69           | 0.000515            | 0.65              | 15.70             | 10.14            | 0.17         |
| Lama          | Lama          | 1400      |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 1350      | TR30    | 6.20              | 264.23           | 264.85           | 265.14           | 266.06           | 0.232930            | 4.87              | 1.27              | 4.54             | 2.94         |
| Lama          | Lama          | 1350      | TR200   | 10.20             | 264.23           | 265.92           | 265.33           | 266.00           | 0.002731            | 1.26              | 8.11              | 6.95             | 0.37         |
| Lama          | Lama          | 1340      | TR30    | 6.20              | 263.13           | 265.43           | 264.14           | 265.47           | 0.001072            | 0.85              | 7.33              | 3.84             | 0.20         |
| Lama          | Lama          | 1340      | TR200   | 10.20             | 263.13           | 265.88           | 264.42           | 265.95           | 0.001688            | 1.13              | 9.05              | 3.84             | 0.23         |
| Lama          | Lama          | 1330      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 1320      | TR30    | 6.20              | 263.13           | 265.28           | 264.14           | 265.32           | 0.001332            | 0.92              | 6.75              | 3.84             | 0.22         |
| Lama          | Lama          | 1320      | TR200   | 10.20             | 263.13           | 265.74           | 264.42           | 265.82           | 0.001966            | 1.20              | 8.53              | 3.84             | 0.26         |
| Lama          | Lama          | 1300      | TR30    | 6.20              | 263.13           | 265.23           | 264.14           | 265.28           | 0.001433            | 0.94              | 6.56              | 3.84             | 0.23         |
| Lama          | Lama          | 1300      | TR200   | 10.20             | 263.13           | 265.67           | 264.42           | 265.75           | 0.002142            | 1.24              | 8.25              | 3.84             | 0.27         |
| Lama          | Lama          | 1298      |         | Culvert           |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 1297      | TR30    | 6.20              | 263.13           | 264.30           | 264.14           | 264.52           | 0.012715            | 2.08              | 2.98              | 3.82             | 0.75         |
| Lama          | Lama          | 1297      | TR200   | 10.20             | 263.13           | 264.63           | 264.42           | 264.93           | 0.012529            | 2.39              | 4.26              | 3.84             | 0.73         |
| Lama          | Lama          | 778       | TR30    | 6.20              | 259.63           | 260.88           | 260.88           | 261.33           | 0.032943            | 2.96              | 2.09              | 2.34             | 1.00         |
| Lama          | Lama          | 778       | TR200   | 10.20             | 259.63           | 261.33           | 261.33           | 261.83           | 0.031280            | 3.12              | 3.27              | 3.28             | 1.00         |
| Lama          | Lama          | 449       | TR30    | 6.20              | 257.87           | 259.53           | 258.91           | 259.61           | 0.003678            | 1.31              | 4.75              | 4.49             | 0.41         |
| Lama          | Lama          | 449       | TR200   | 10.20             | 257.87           | 260.78           | 259.21           | 260.83           | 0.001077            | 0.95              | 10.75             | 4.81             | 0.20         |
| Lama          | Lama          | 420       |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 418       | TR30    | 6.20              | 257.47           | 258.62           | 258.40           | 258.79           | 0.009522            | 1.86              | 3.34              | 4.18             | 0.66         |
| Lama          | Lama          | 418       | TR200   | 10.20             | 257.47           | 258.27           | 258.67           | 259.60           | 0.107696            | 5.10              | 2.00              | 3.56             | 2.17         |
| Lama          | Lama          | 44        | TR30    | 6.20              | 256.04           | 257.63           | 257.25           | 257.77           | 0.008288            | 1.70              | 3.65              | 4.06             | 0.57         |
| Lama          | Lama          | 44        | TR200   | 10.20             | 256.04           | 258.53           | 257.58           | 258.60           | 0.002593            | 1.19              | 8.54              | 6.46             | 0.33         |
| Lama          | Lama          | 10        |         | Bridge            |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Lama          | Lama          | 4         | TR30    | 6.20              | 256.04           | 257.04           | 257.25           | 257.71           | 0.058223            | 3.63              | 1.71              | 2.47             | 1.39         |
| Lama          | Lama          | 4         | TR200   | 10.20             | 256.04           | 257.16           | 257.58           | 258.47           | 0.105191            | 5.07              | 2.01              | 2.81             | 1.91         |
| Aff Matto     | Aff Matto     | 8         | TR30    | 3.00              | 277.65           | 278.03           | 278.03           | 278.17           | 0.024217            | 1.65              | 1.82              | 6.46             | 0.99         |
| Aff Matto     | Aff Matto     | 8         | TR200   | 5.00              | 277.65           | 278.15           | 278.15           | 278.34           | 0.022366            | 1.94              | 2.58              | 6.64             | 0.99         |
| Aff Matto     | Aff Matto     | 7         | TR30    | 3.00              | 265.97           | 266.43           | 266.52           | 266.73           | 0.056691            | 2.44              | 1.23              | 4.59             | 1.50         |
| Aff Matto     | Aff Matto     | 7         | TR200   | 5.00              | 265.97           | 266.53           | 266.67           | 266.94           | 0.063702            | 2.85              | 1.76              | 5.67             | 1.63         |
| Aff Matto     | Aff Matto     | 6         | TR30    | 3.00              | 258.69           | 261.25           | 259.34           | 261.25           | 0.000060            | 0.23              | 15.42             | 12.17            | 0.05         |
| Aff Matto     | Aff Matto     | 6         | TR200   | 5.00              | 258.69           | 261.37           | 259.58           | 261.37           | 0.000129            | 0.35              | 16.81             | 12.17            | 0.08         |

HEC-RAS Plan: Taratura (Continued)

| River     | Reach     | River Sta | Profile | Q Total<br>(m3/s) | Min Ch El<br>(m) | W.S. Elev<br>(m) | Crit W.S.<br>(m) | E.G. Elev<br>(m) | E.G. Slope<br>(m/m) | Vel Chnl<br>(m/s) | Flow Area<br>(m2) | Top Width<br>(m) | Froude # Chl |
|-----------|-----------|-----------|---------|-------------------|------------------|------------------|------------------|------------------|---------------------|-------------------|-------------------|------------------|--------------|
| Aff Matto | Aff Matto | 5.5       |         |                   |                  |                  |                  |                  |                     |                   |                   |                  |              |
|           |           |           | Bridge  |                   |                  |                  |                  |                  |                     |                   |                   |                  |              |
| Aff Matto | Aff Matto | 5         | TR30    | 3.00              | 257.22           | 258.40           | 258.01           | 258.54           | 0.011611            | 1.67              | 1.80              | 1.75             | 0.53         |
| Aff Matto | Aff Matto | 5         | TR200   | 5.00              | 257.22           | 258.06           | 258.30           | 258.91           | 0.088326            | 4.08              | 1.22              | 1.62             | 1.50         |
| Aff Matto | Aff Matto | 4         | TR30    | 3.00              | 252.63           | 253.37           | 253.37           | 253.58           | 0.023491            | 2.01              | 1.49              | 3.59             | 1.00         |
| Aff Matto | Aff Matto | 4         | TR200   | 5.00              | 252.63           | 253.74           | 253.56           | 253.83           | 0.012765            | 1.37              | 3.64              | 10.32            | 0.74         |
| Aff Matto | Aff Matto | 3         | TR30    | 3.00              | 248.83           | 249.77           | 249.59           | 249.81           | 0.004840            | 0.87              | 3.43              | 9.23             | 0.46         |
| Aff Matto | Aff Matto | 3         | TR200   | 5.00              | 248.83           | 249.79           | 249.70           | 249.88           | 0.011836            | 1.39              | 3.59              | 9.36             | 0.72         |
| Aff Matto | Aff Matto | 2         | TR30    | 6.60              | 248.59           | 249.02           | 249.02           | 249.09           | 0.019601            | 1.34              | 6.17              | 43.35            | 0.88         |
| Aff Matto | Aff Matto | 2         | TR200   | 10.60             | 248.59           | 249.85           | 249.08           | 249.85           | 0.000062            | 0.20              | 62.19             | 76.55            | 0.06         |
| Aff Matto | Aff Matto | 1         | TR30    | 6.60              | 244.39           | 247.75           | 245.06           | 247.75           | 0.000001            | 0.06              | 121.25            | 42.74            | 0.01         |
| Aff Matto | Aff Matto | 1         | TR200   | 10.60             | 244.39           | 249.85           | 245.13           | 249.85           | 0.000001            | 0.06              | 210.99            | 42.74            | 0.01         |
| Aff Matto | Aff Matto | 0.5       | TR30    | 6.60              | 242.96           | 247.74           | 244.33           | 247.74           | 0.000065            | 0.29              | 22.86             | 6.09             | 0.05         |
| Aff Matto | Aff Matto | 0.5       | TR200   | 10.60             | 242.96           | 249.84           | 244.58           | 249.84           | 0.000055            | 0.30              | 35.65             | 6.09             | 0.04         |