



PROVINCIA DI SASSARI  
COMUNE DI TISSI

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ADEGUAMENTO DEL PIANO URBANISTICO COMUNALE  
AL P.A.I.

PERIMETRAZIONE DELLE AREE A PERICOLOSITA'  
IDRAULICA IN APPLICAZIONE DELL'ART.8 COMMA 2  
DELLE NORME DI ATTUAZIONE DEL P.A.I.

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RIO BADDE S'ENA  
VERIFICHE IDRAULICHE

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TAVOLA N°	SCALA	DATA
		Febbraio 2013
		agg. Dicembre 2013
3.2		agg. Aprile 2015

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I TECNICI INCARICATI

Ing. Maddalena Idili

Geol. Maddalena Moroso

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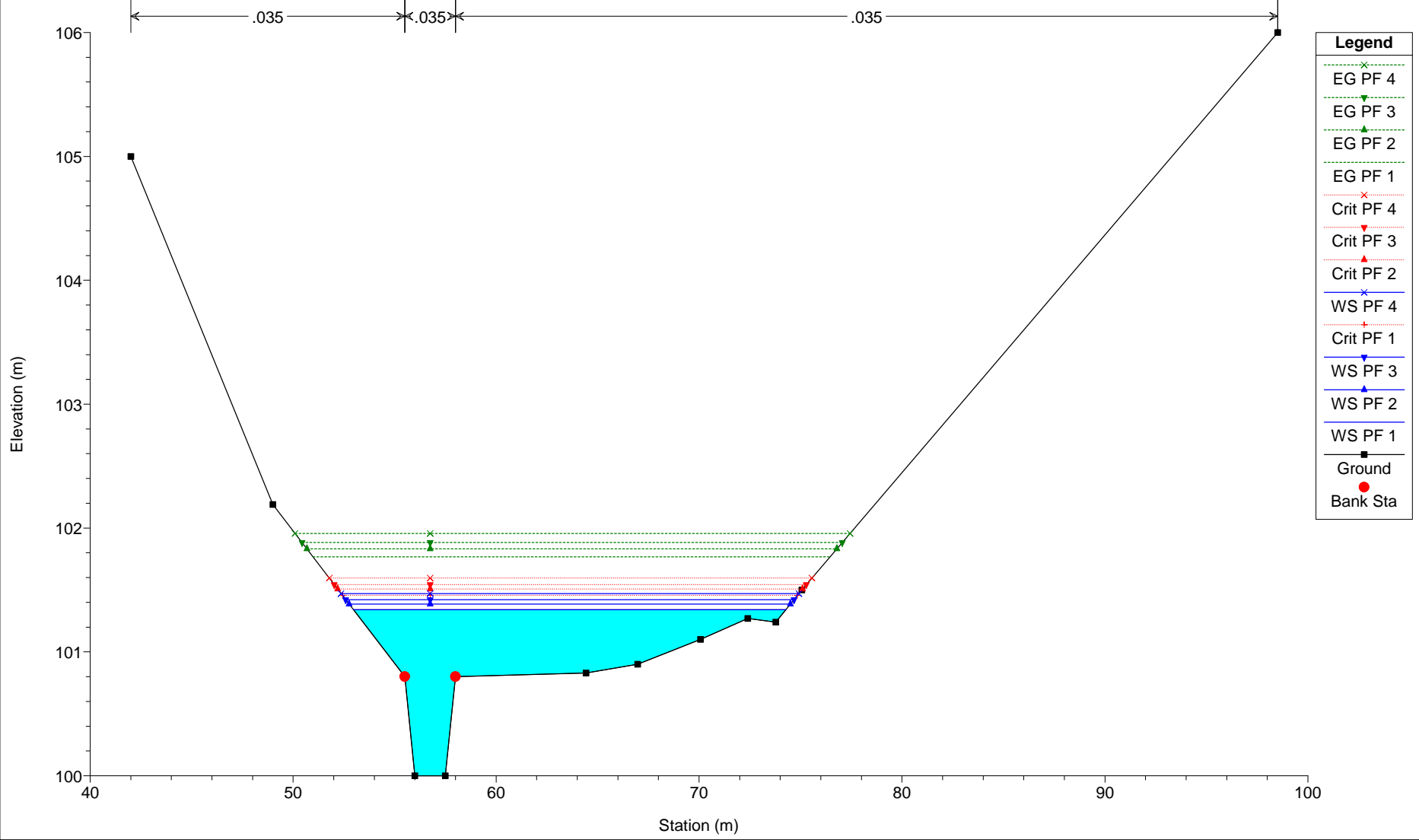
IL SINDACO  
Mauro Scarpa

IL RESPONSABILE DEL PROCEDIMENTO  
Geom. Angelino Pani

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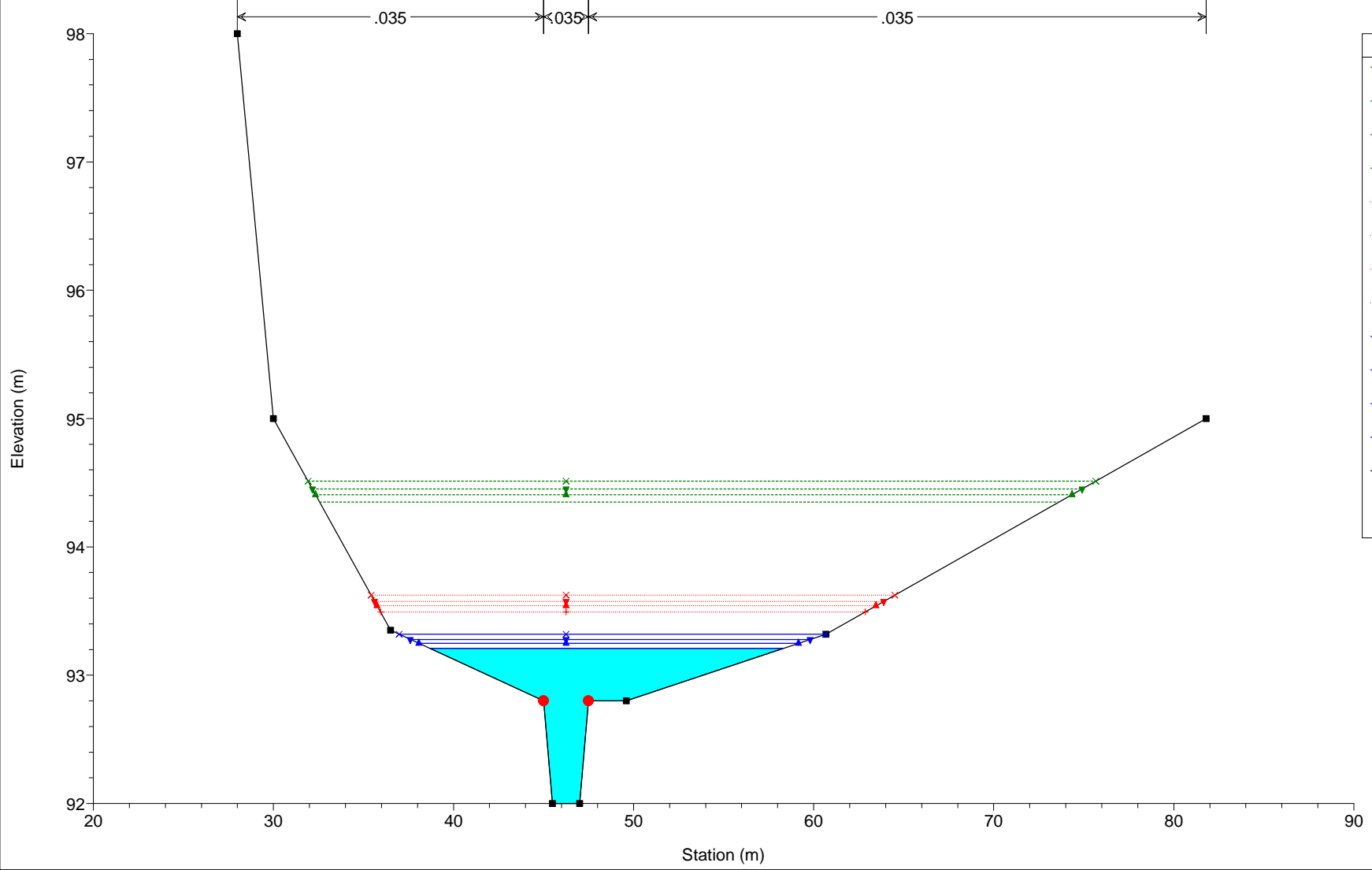
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Affluente1 Reach = Affluente1 RS = 276.7336



### Tissi

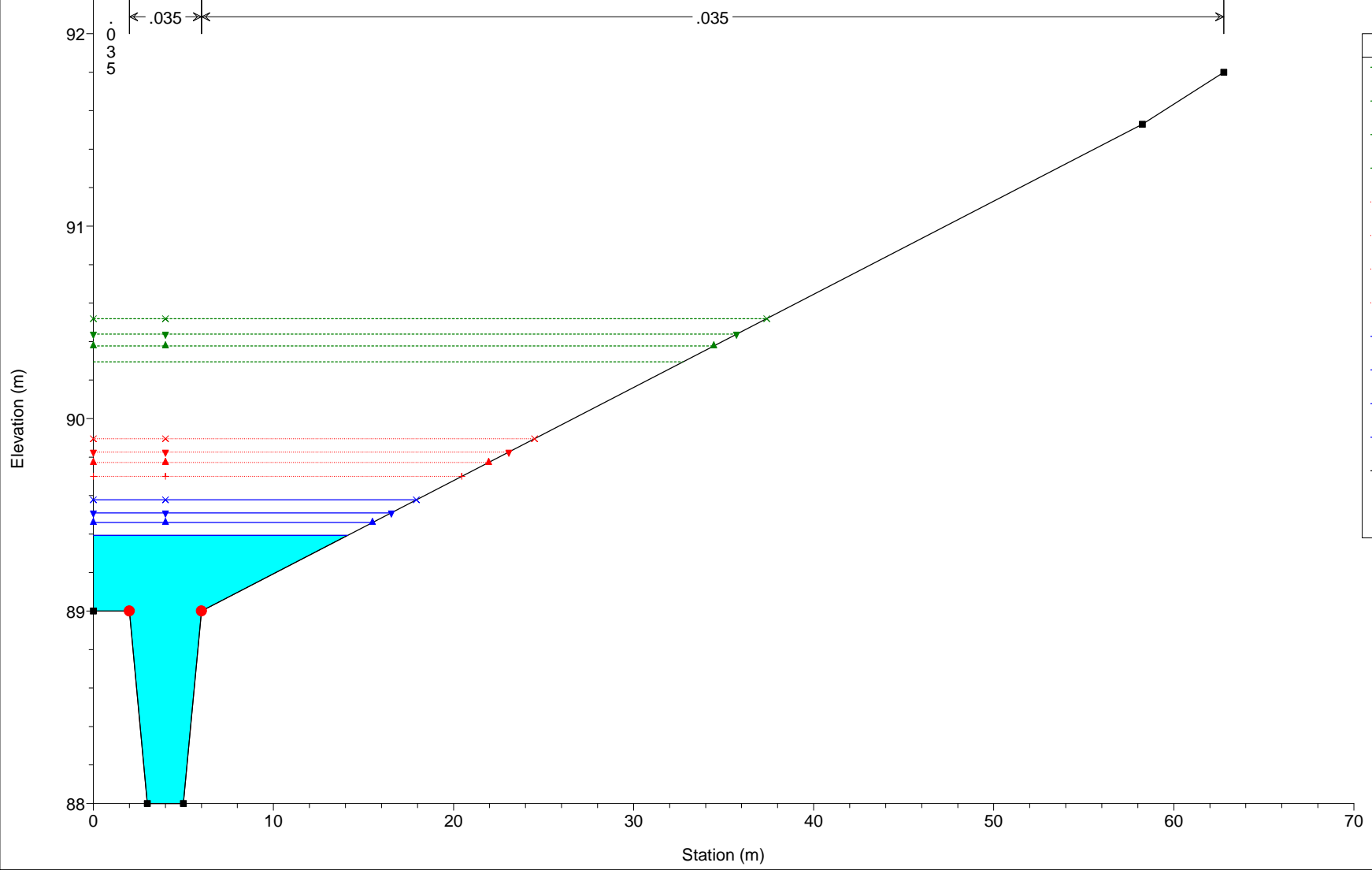
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Affluente1 Reach = Affluente1 RS = 135.7637



Legend	
EG PF 4	Green dashed line with 'x' marker
EG PF 3	Green dashed line with inverted triangle marker
EG PF 2	Green dashed line with triangle marker
EG PF 1	Green dashed line with 'x' marker
Crit PF 4	Red dotted line with 'x' marker
Crit PF 3	Red dotted line with inverted triangle marker
Crit PF 2	Red dotted line with triangle marker
Crit PF 1	Red dotted line with 'x' marker
WS PF 4	Blue solid line with 'x' marker
WS PF 3	Blue solid line with inverted triangle marker
WS PF 2	Blue solid line with triangle marker
WS PF 1	Blue solid line with 'x' marker
Ground	Black solid line with square marker
Bank Sta	Red solid line with circle marker

### Tissi

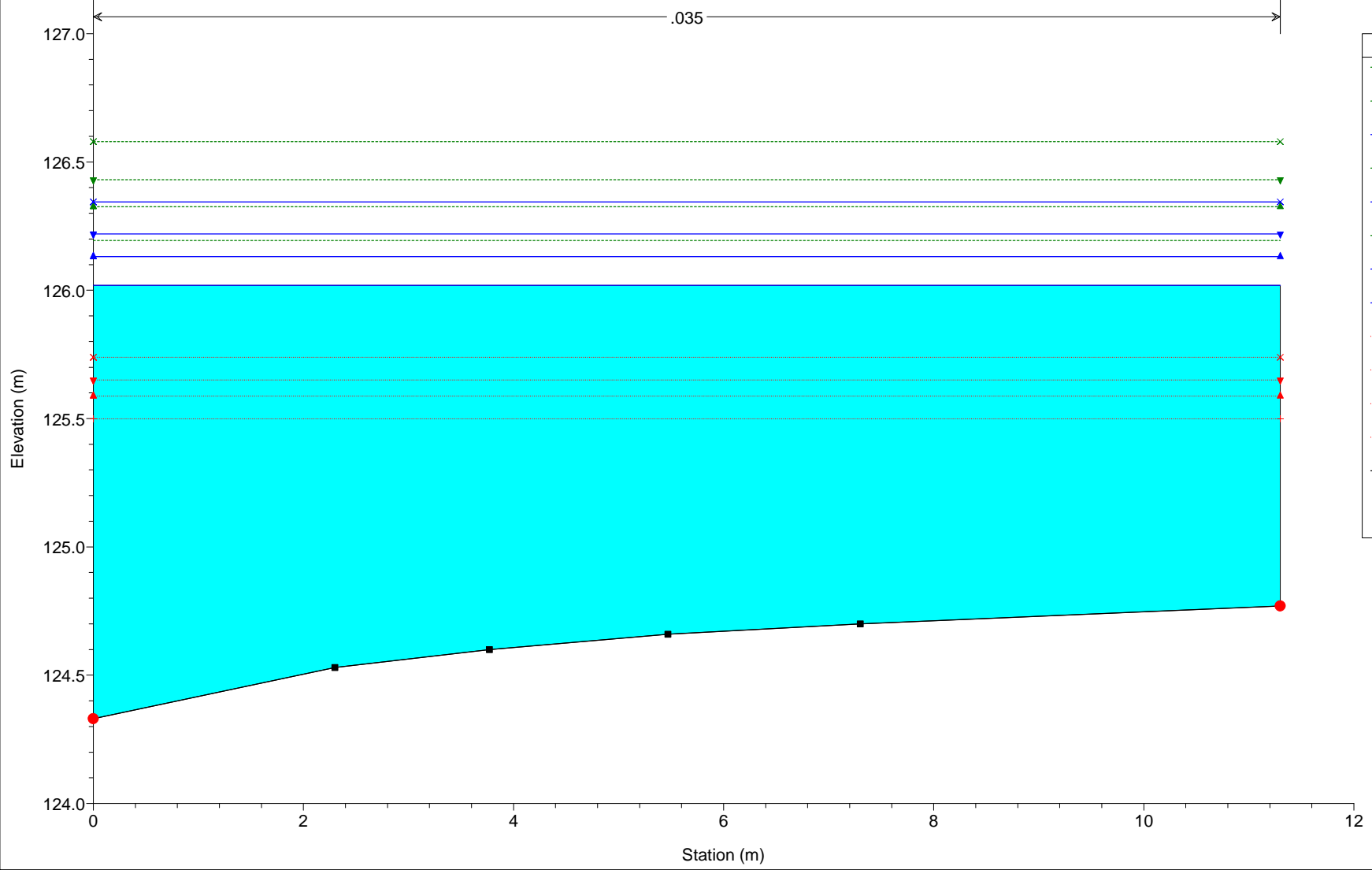
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Affluente1 Reach = Affluente1 RS = 3.39368



Legend	
EG PF 4	Green dashed line with 'x' markers
EG PF 3	Green dashed line with inverted triangle markers
EG PF 2	Green dashed line with triangle markers
EG PF 1	Green dashed line with no markers
Crit PF 4	Red dotted line with 'x' markers
Crit PF 3	Red dotted line with inverted triangle markers
Crit PF 2	Red dotted line with triangle markers
Crit PF 1	Red dotted line with no markers
WS PF 4	Blue solid line with 'x' markers
WS PF 3	Blue solid line with inverted triangle markers
WS PF 2	Blue solid line with triangle markers
WS PF 1	Blue solid line with no markers
Ground	Black solid line with square markers
Bank Sta	Red solid line with circle markers

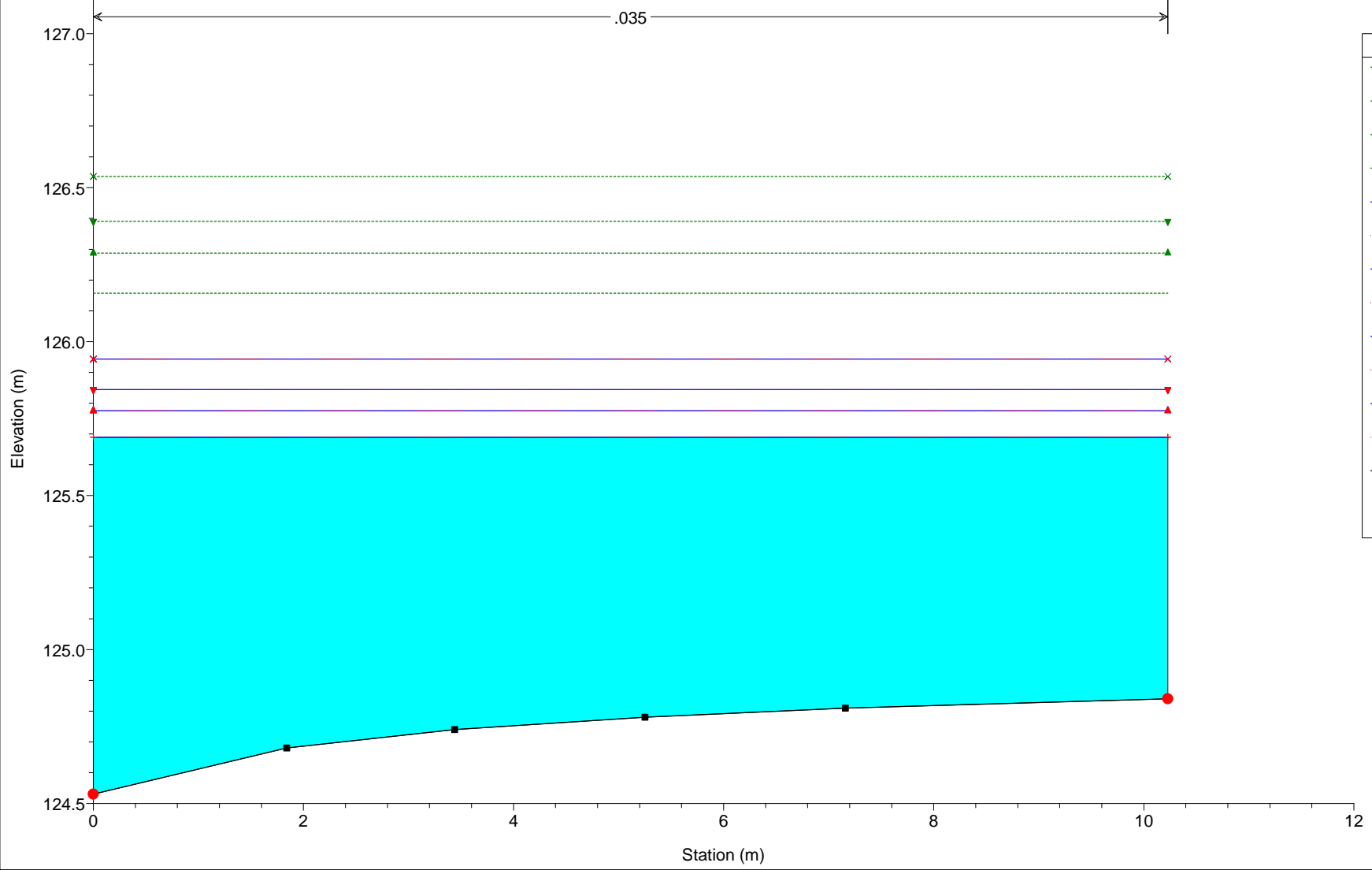
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Affluente2 Reach = aff2 RS = 1.874877



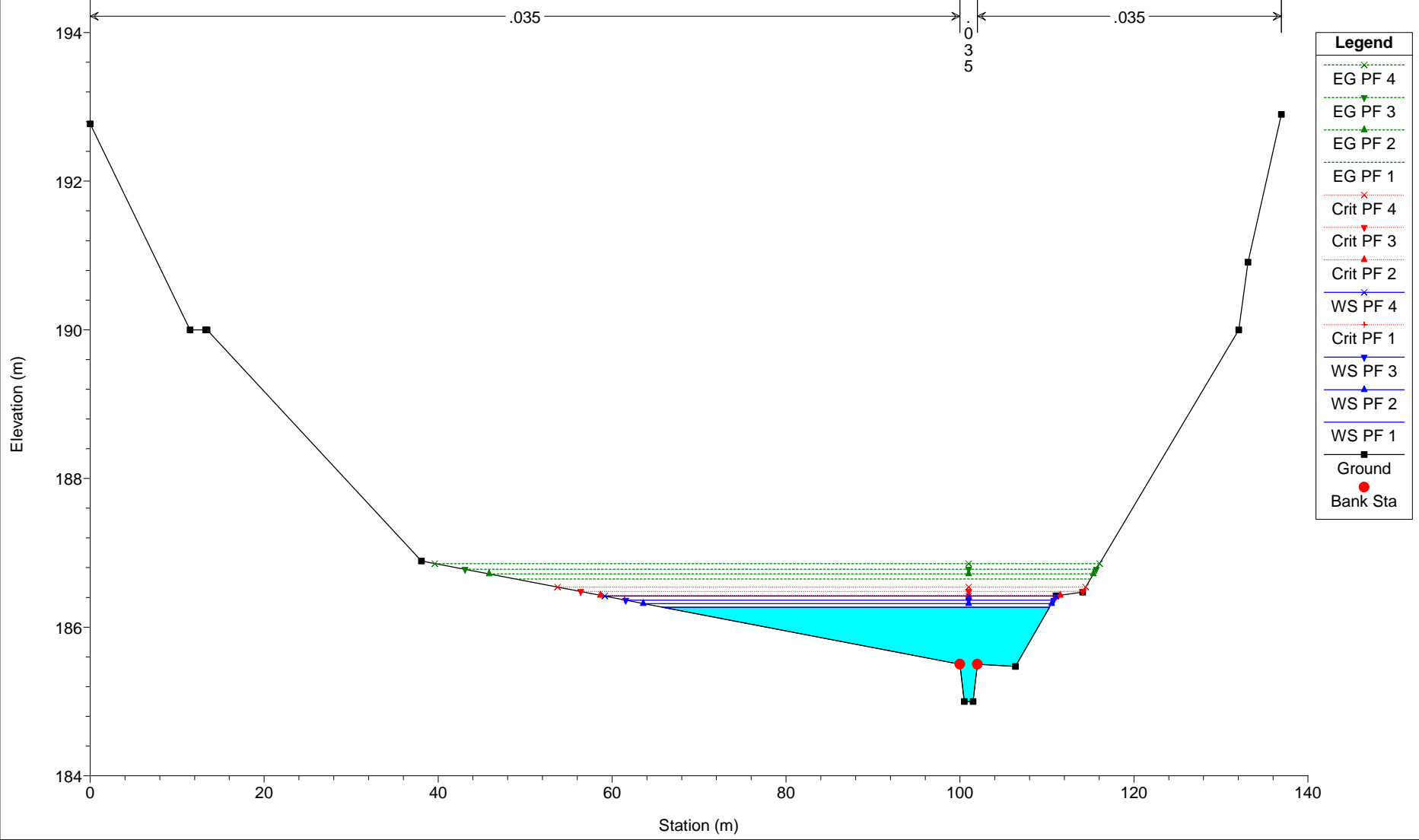
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Affluente2 Reach = aff2 RS = 0.534812



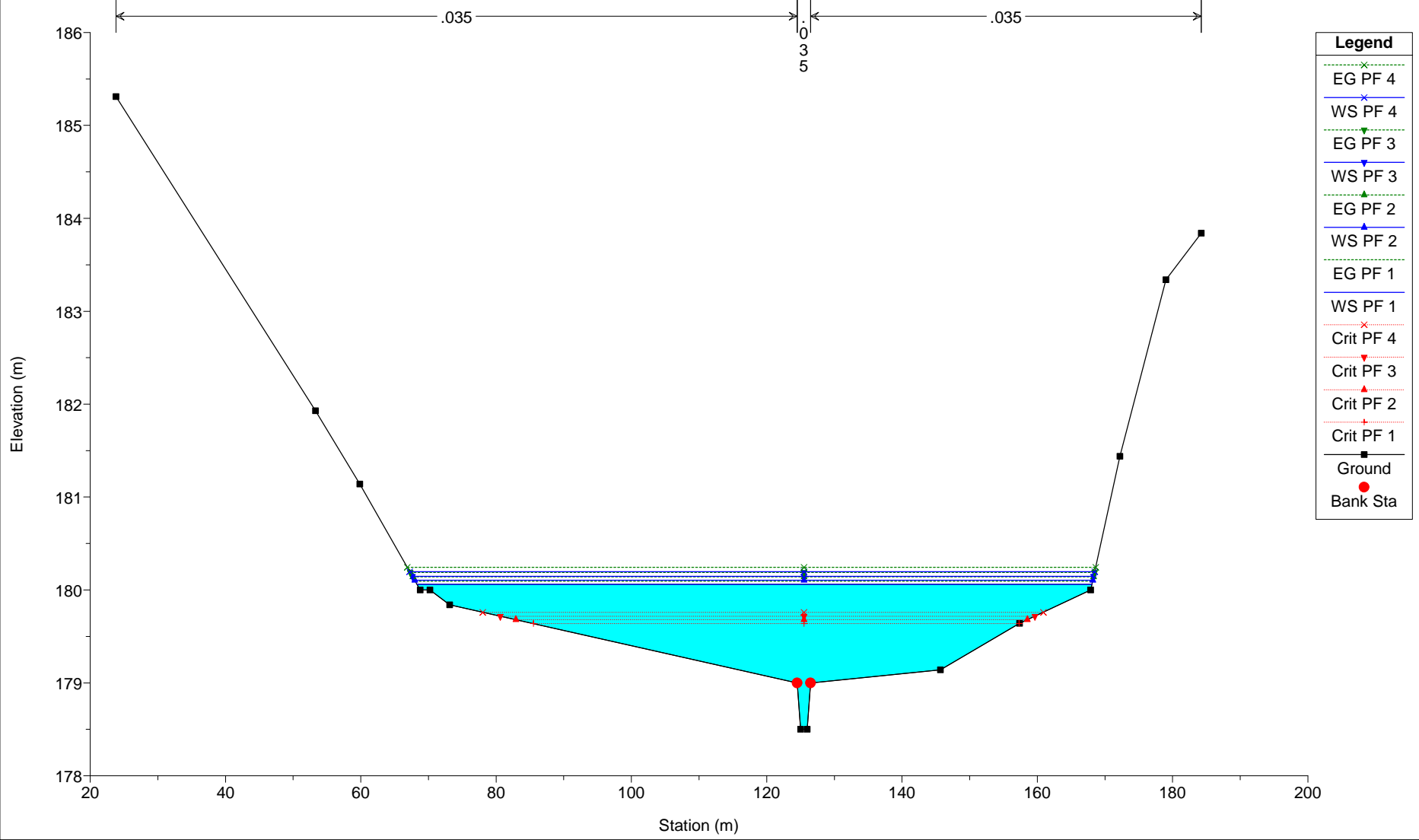
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 4688.966



### Tissi

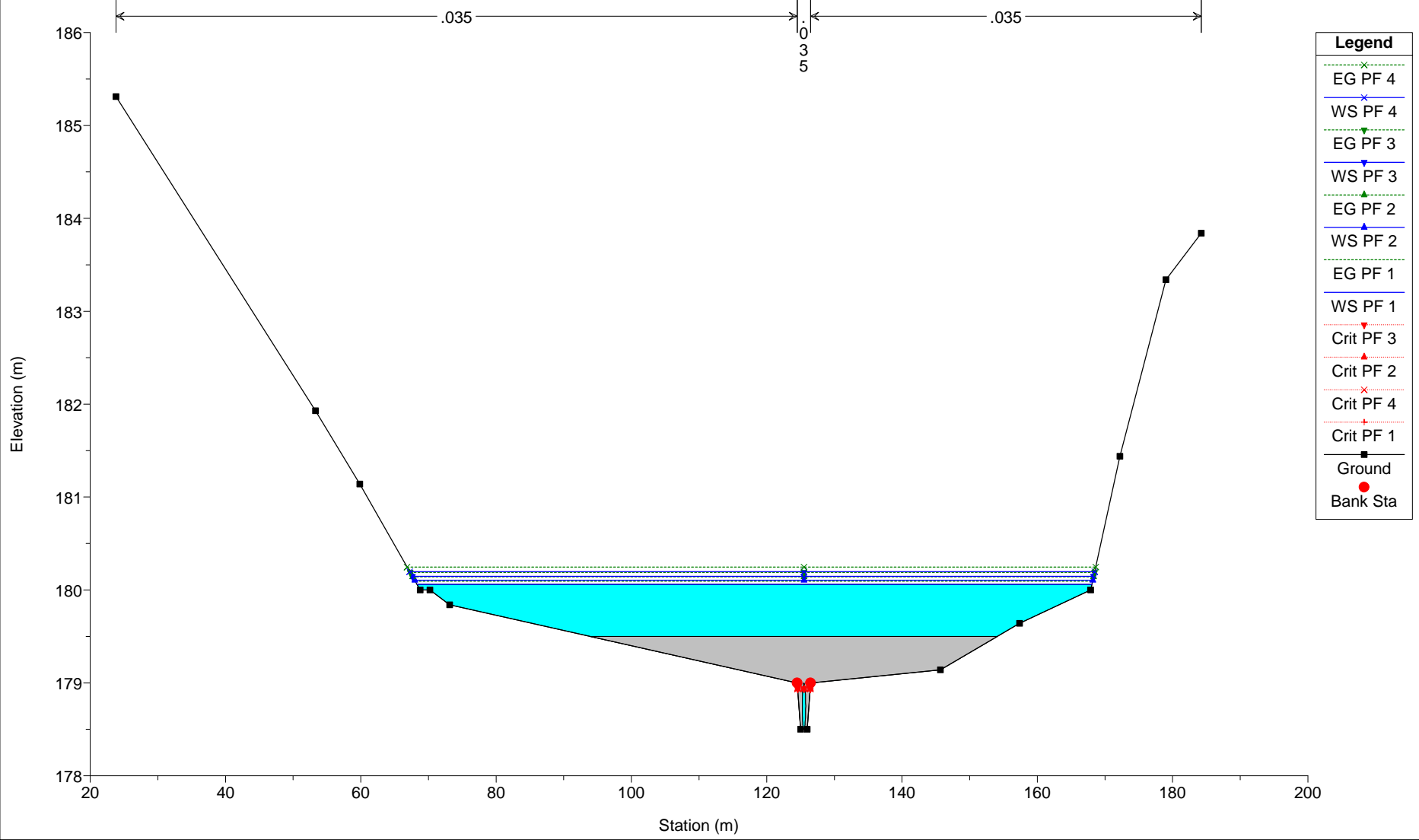
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 4572.14





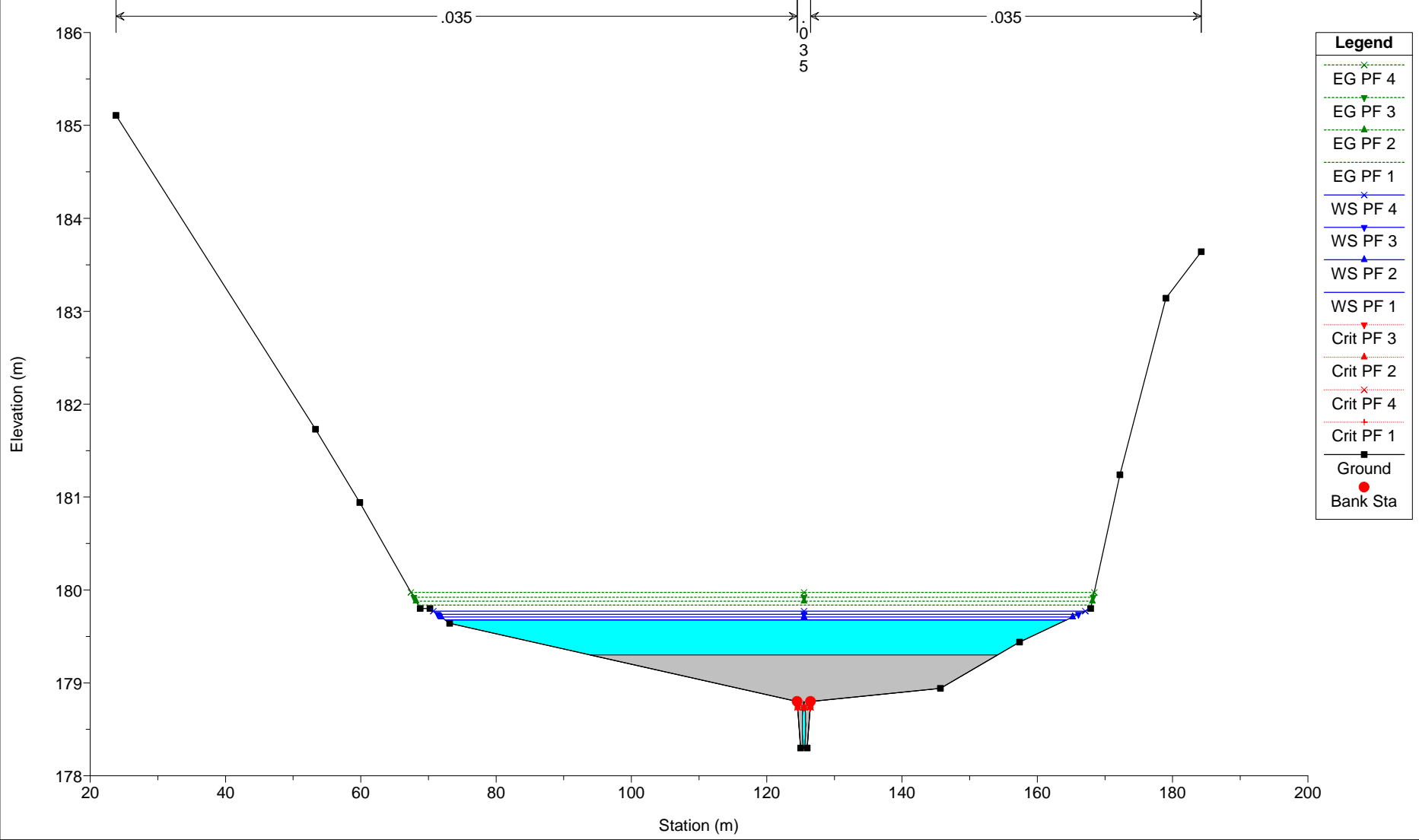
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 4570 Culv



### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 4570 Culv

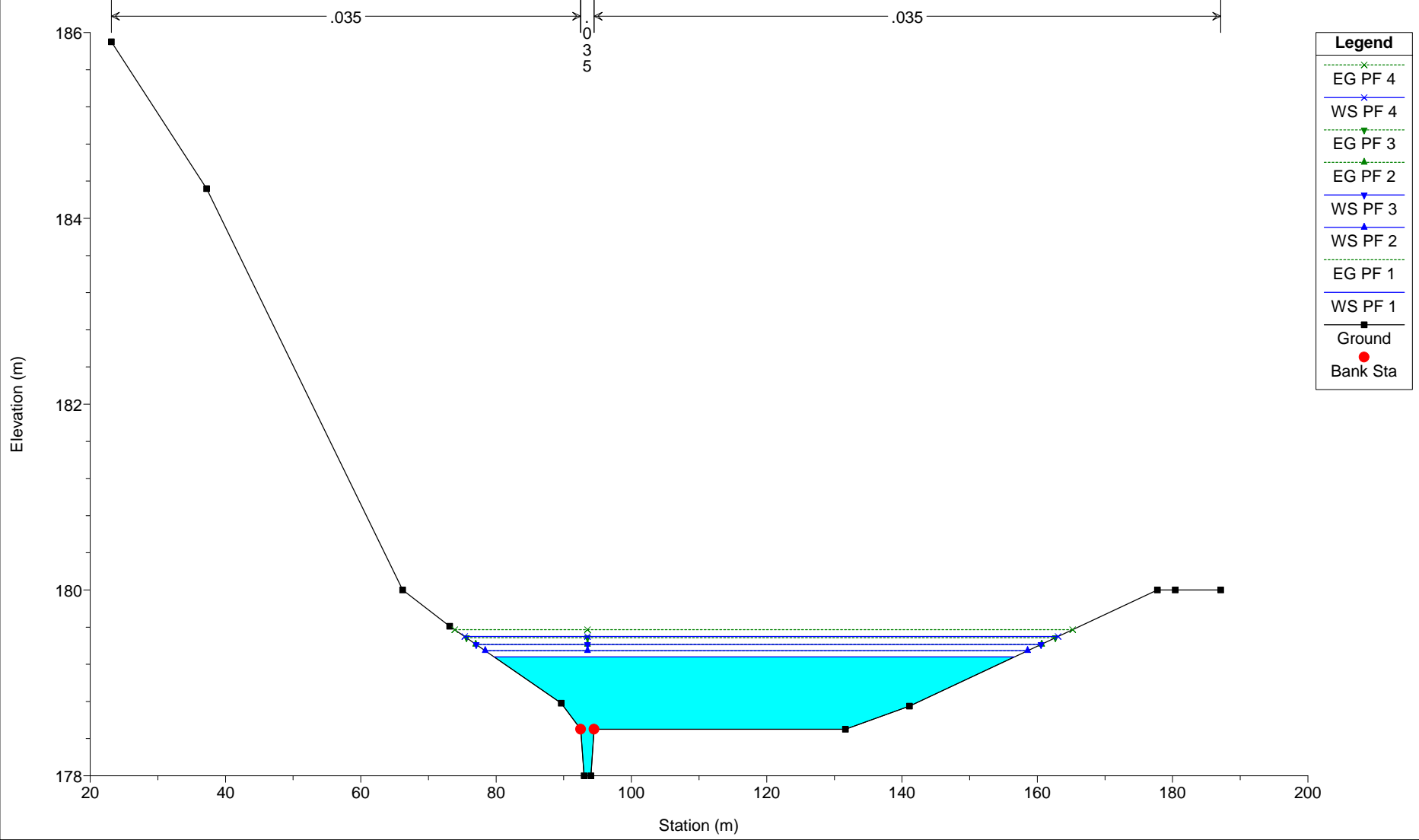


- EG PF 4
- EG PF 3
- EG PF 2
- EG PF 1
- WS PF 4
- WS PF 3
- WS PF 2
- WS PF 1
- Crit PF 3
- Crit PF 2
- Crit PF 4
- Crit PF 1
- Ground
- Bank Sta



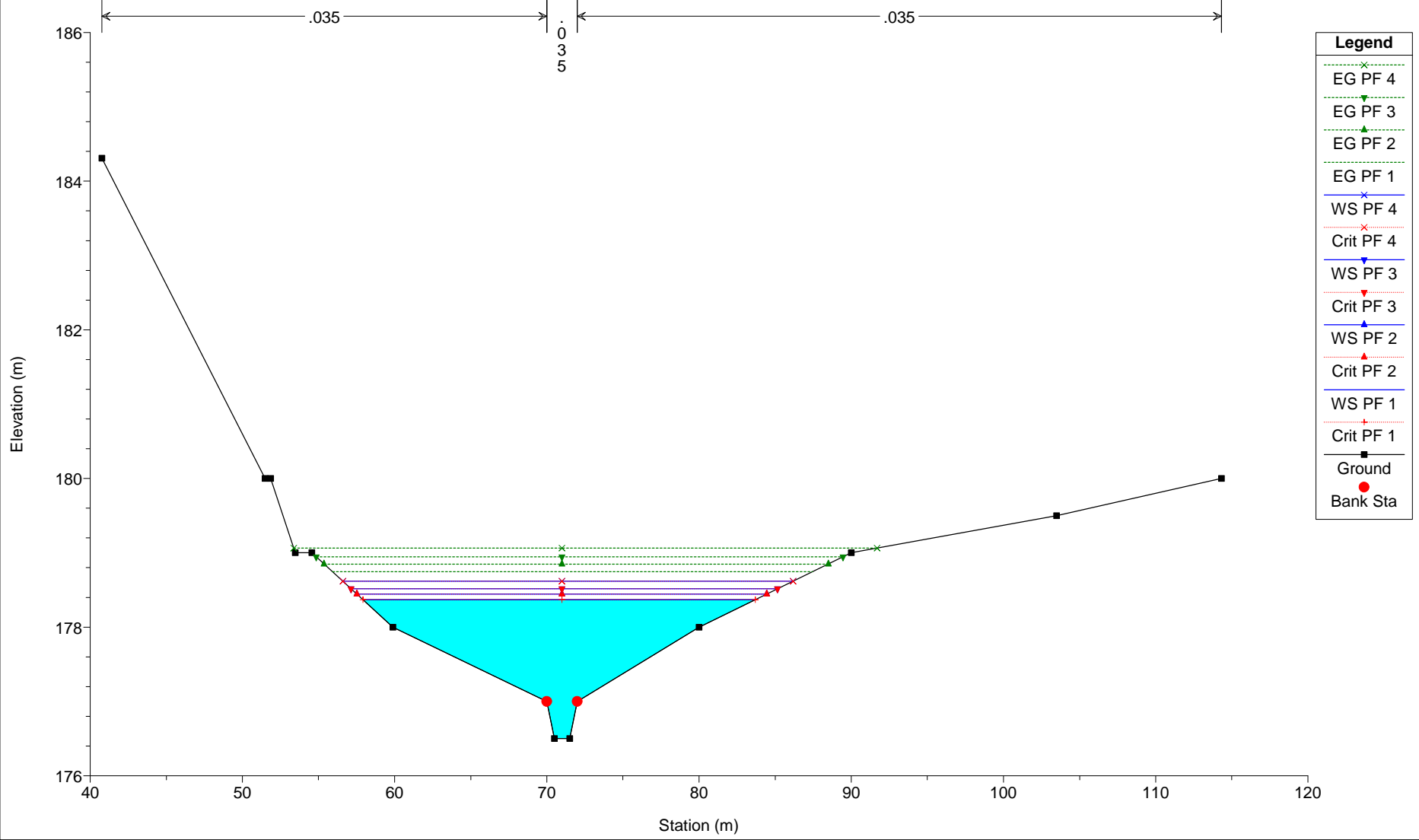
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 4523.031



### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
 River = Rio Badde S'Ena Reach = monte RS = 4402.578



0.035      0.035

186

184

182

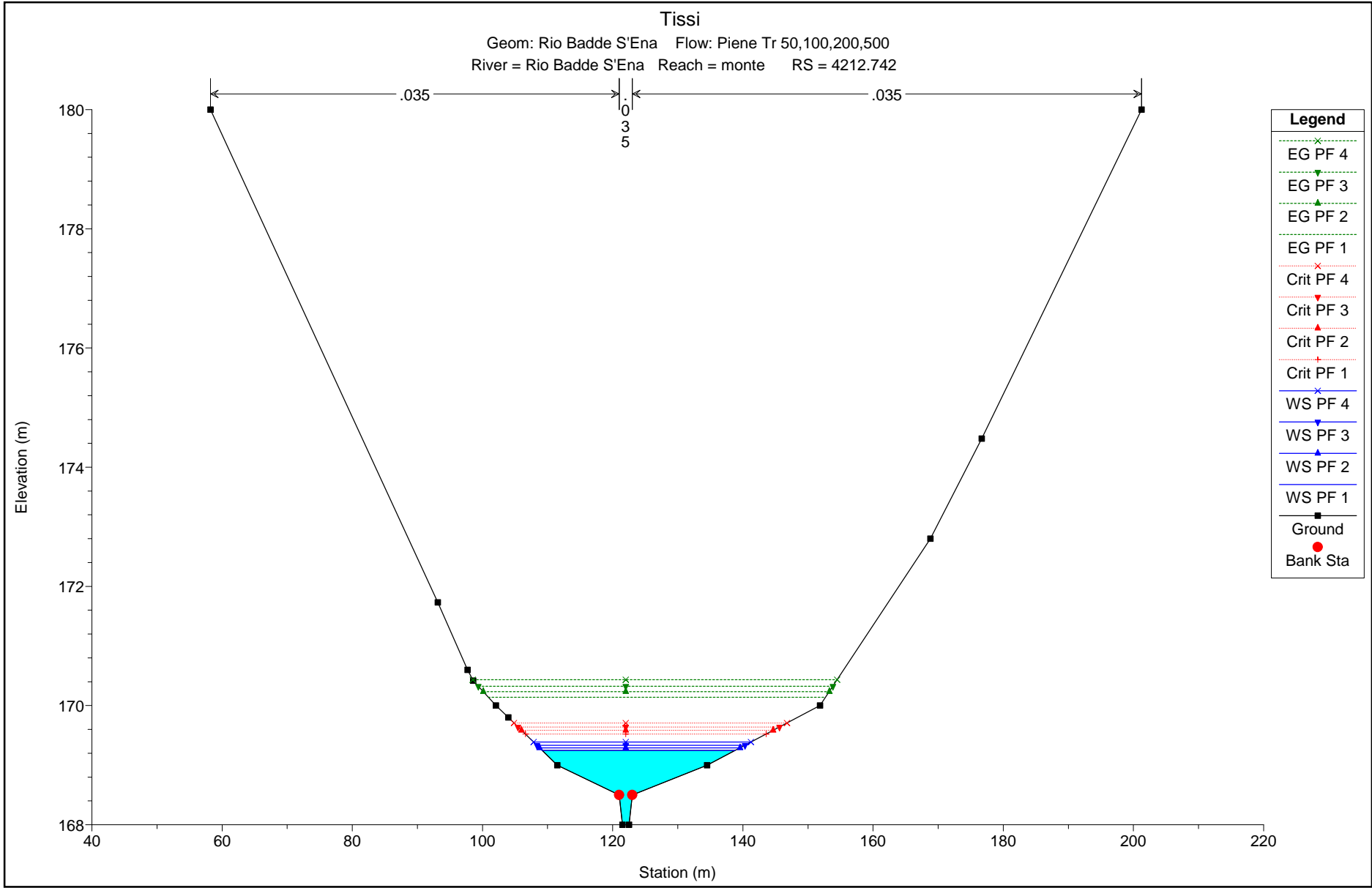
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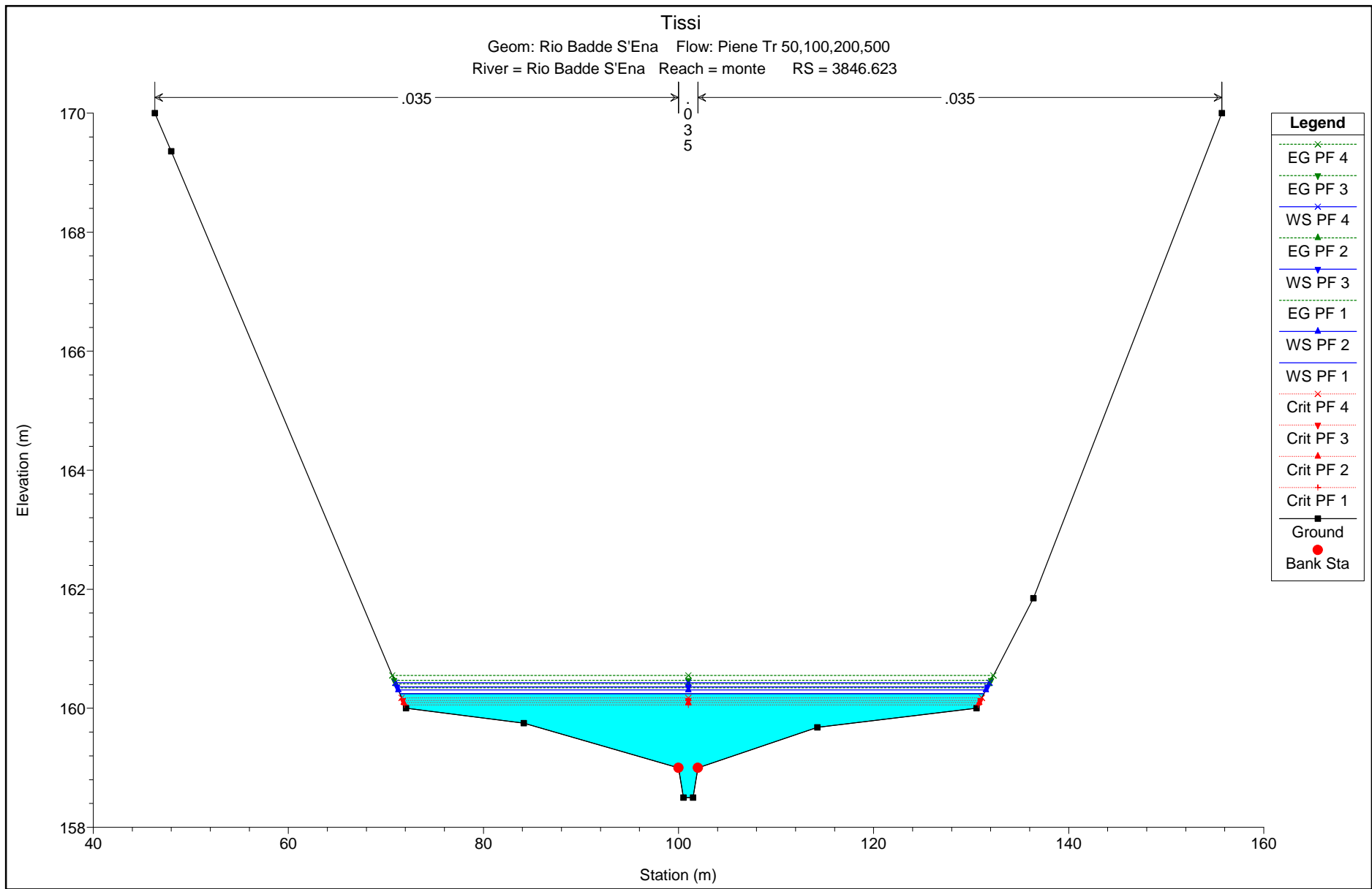
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176

40      50      60      70      80      90      100      110      120

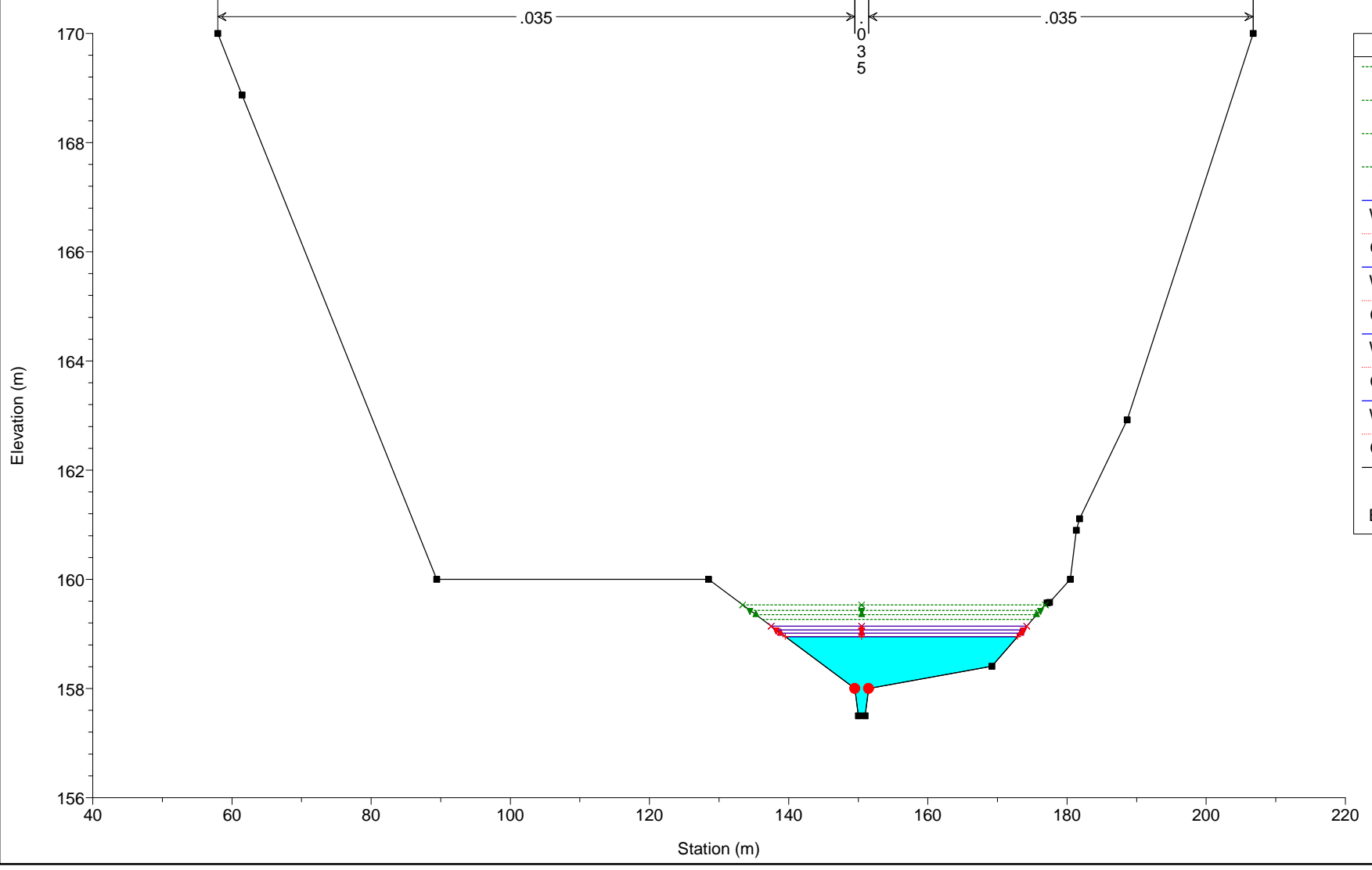
Station (m)





Tissi

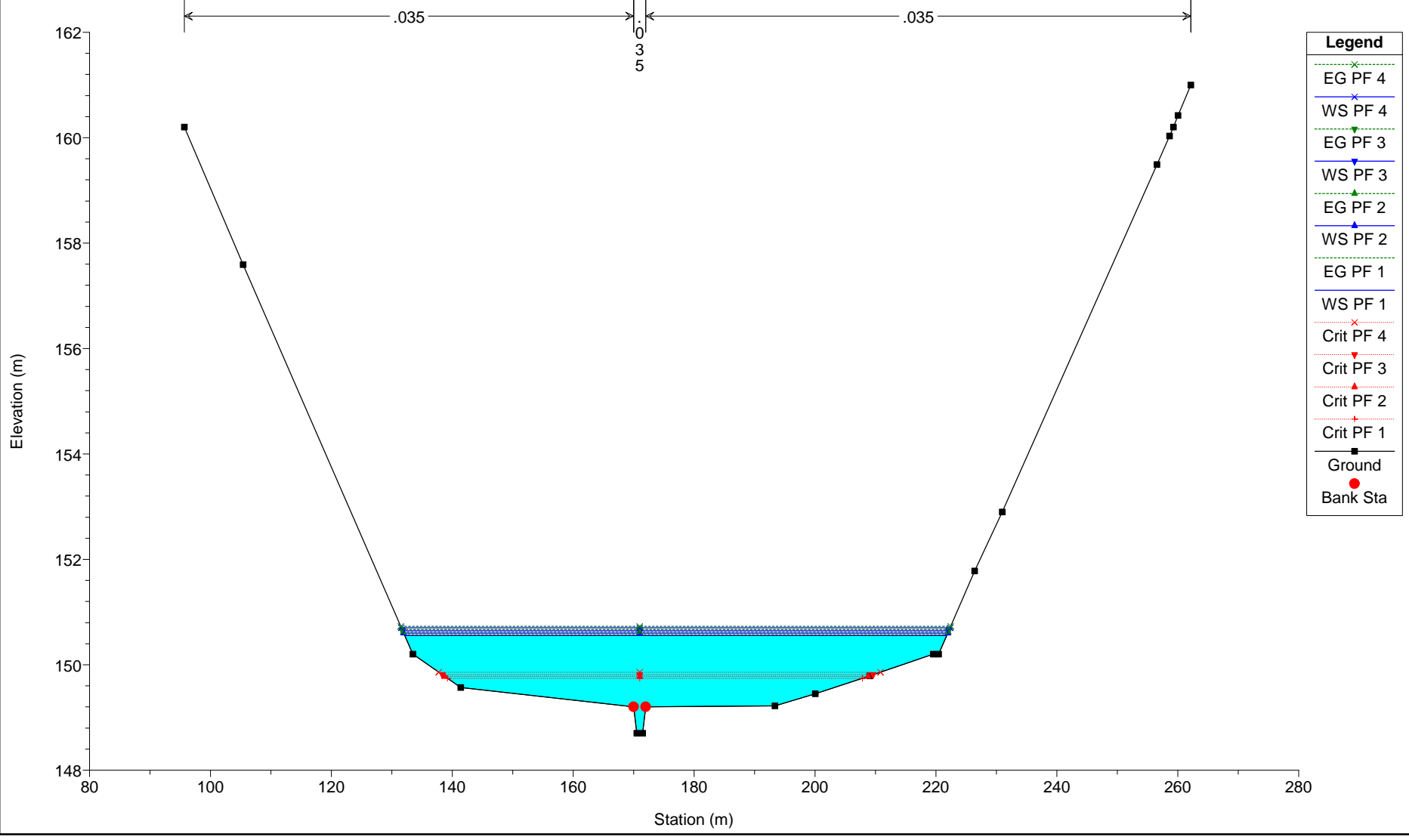
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
 River = Rio Badde S'Ena Reach = monte RS = 3644.158

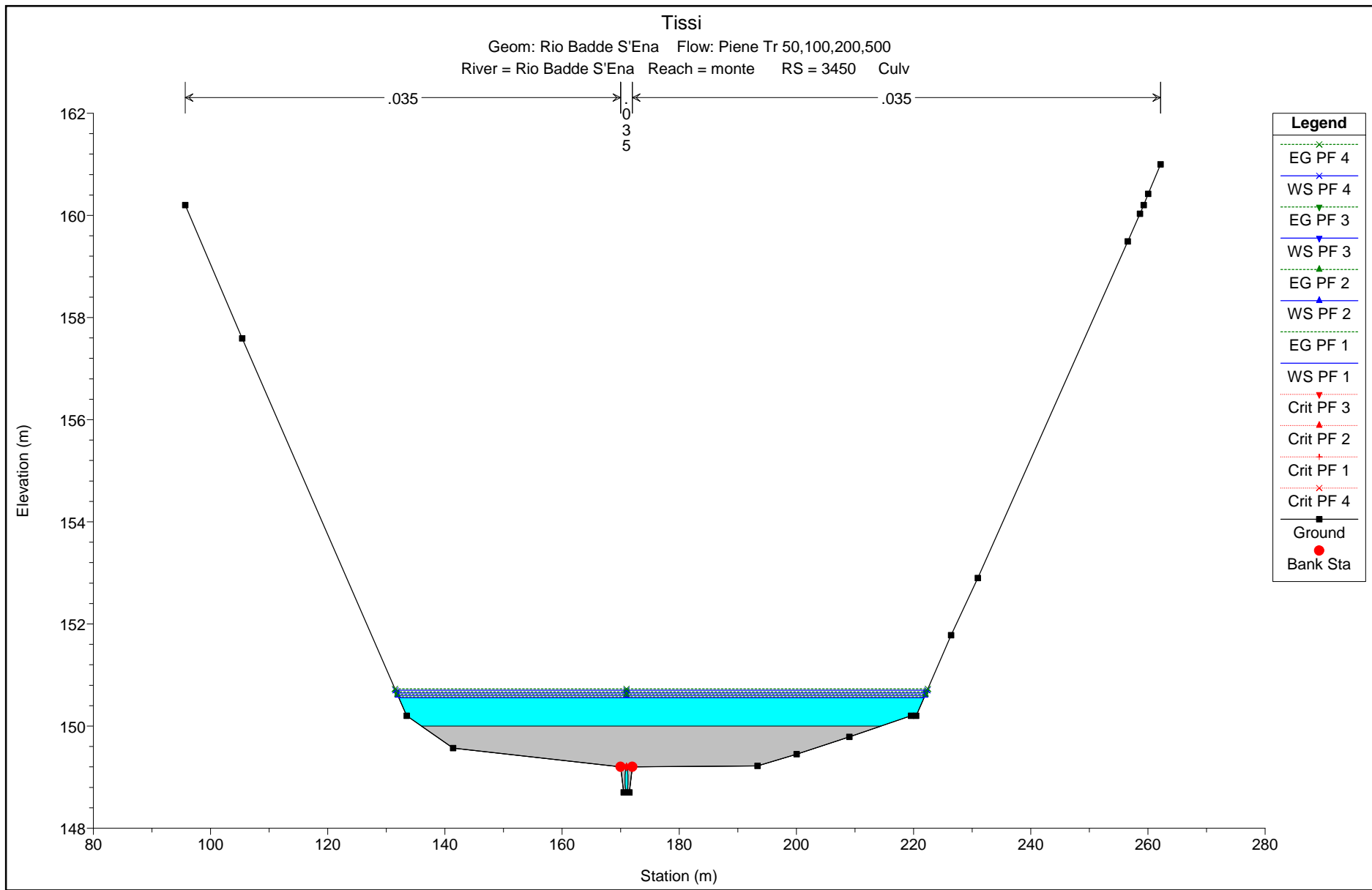




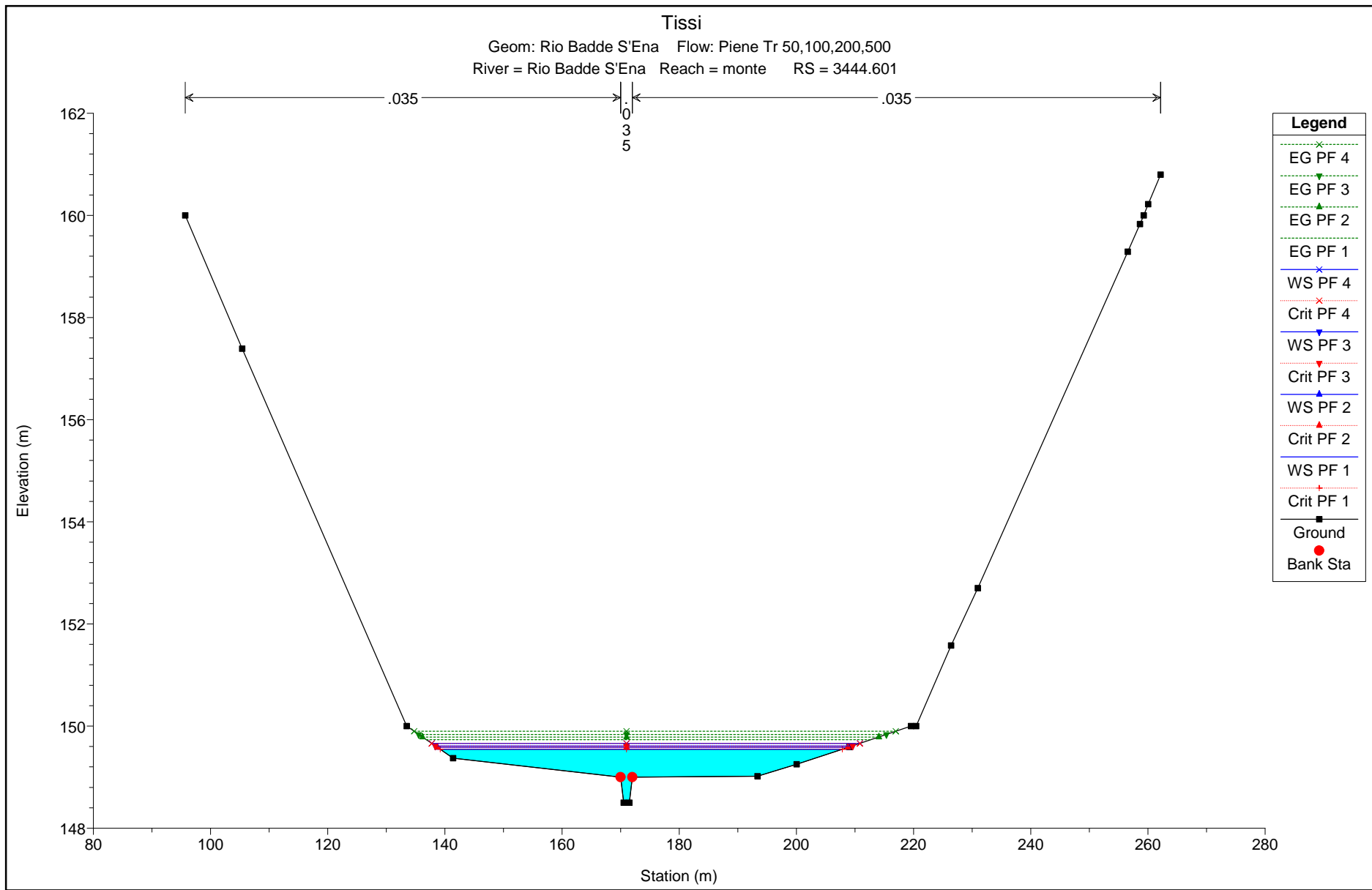
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 3452



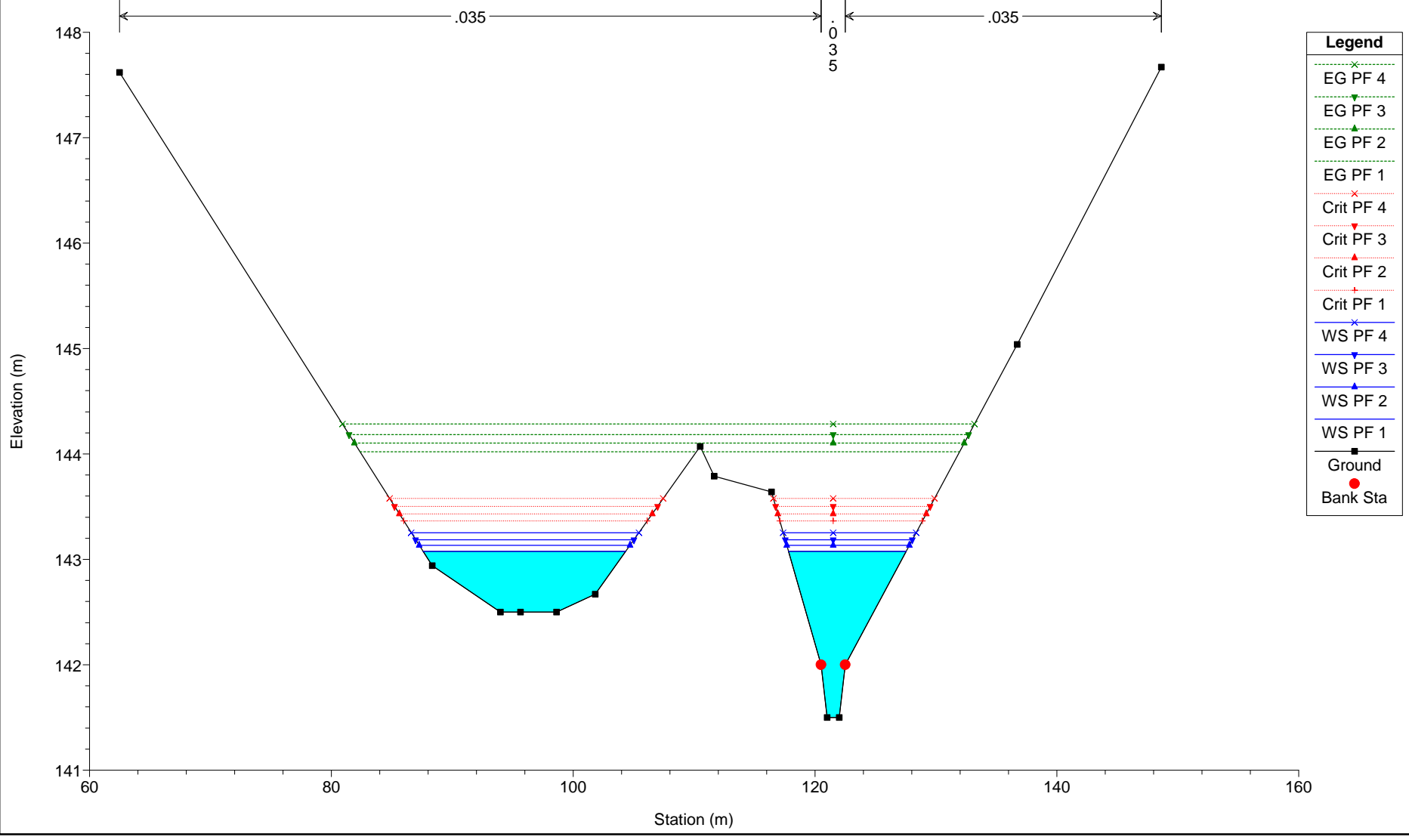






Tissi

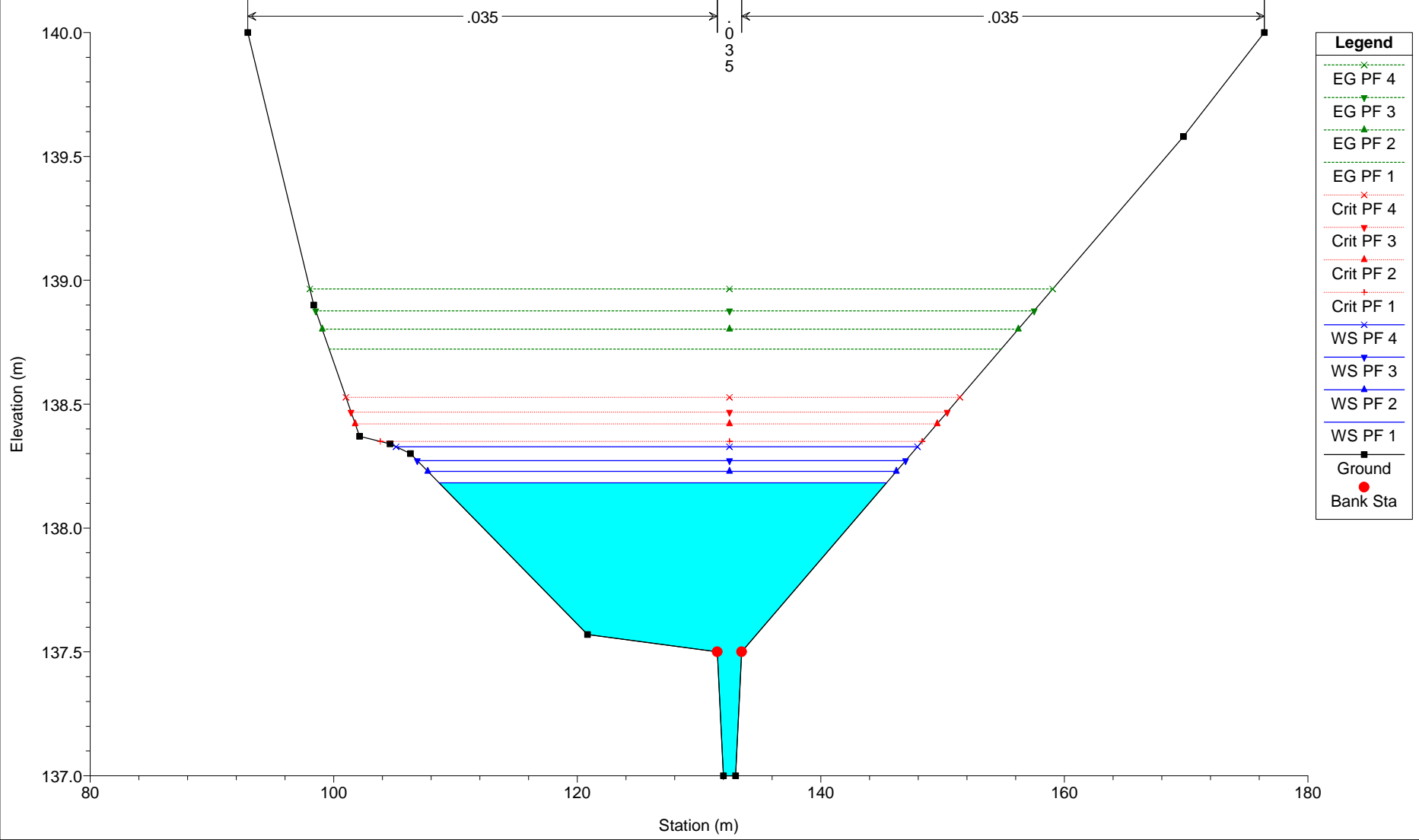
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 3265.508



- Legend**
- EG PF 4
  - EG PF 3
  - EG PF 2
  - EG PF 1
  - Crit PF 4
  - Crit PF 3
  - Crit PF 2
  - Crit PF 1
  - WS PF 4
  - WS PF 3
  - WS PF 2
  - WS PF 1
  - Ground
  - Bank Sta

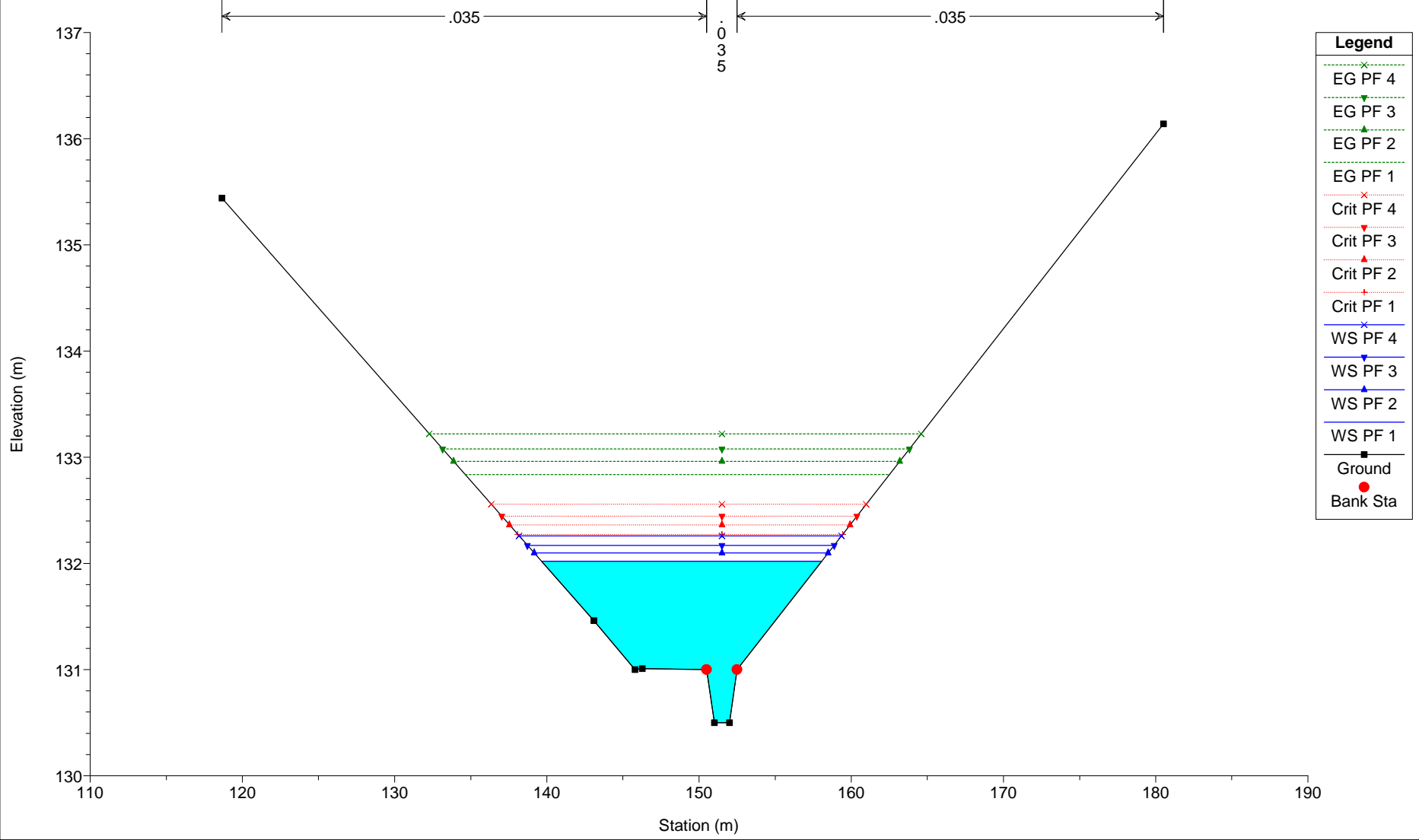
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
 River = Rio Badde S'Ena Reach = monte RS = 3099.194



Tissi

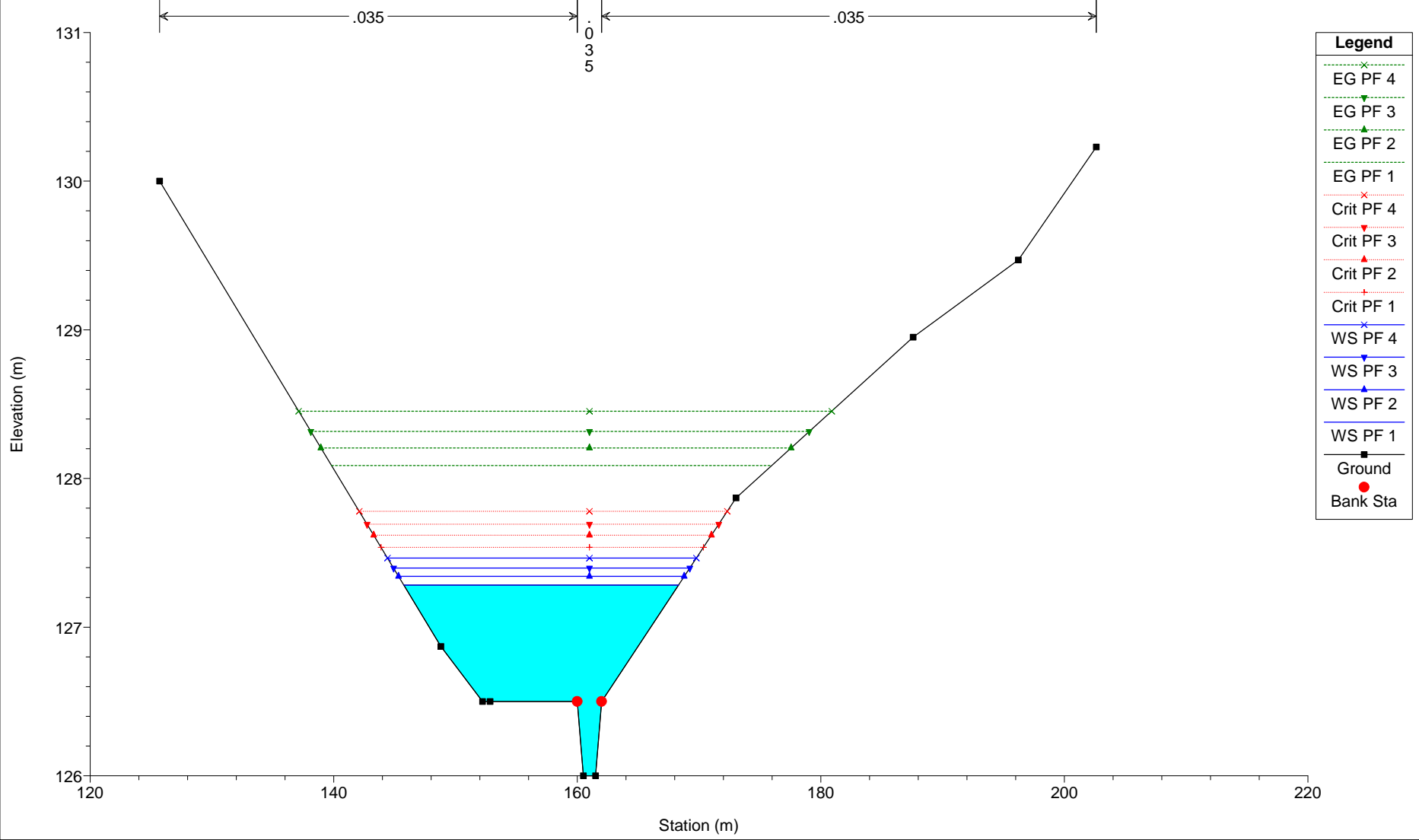
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 2870.112



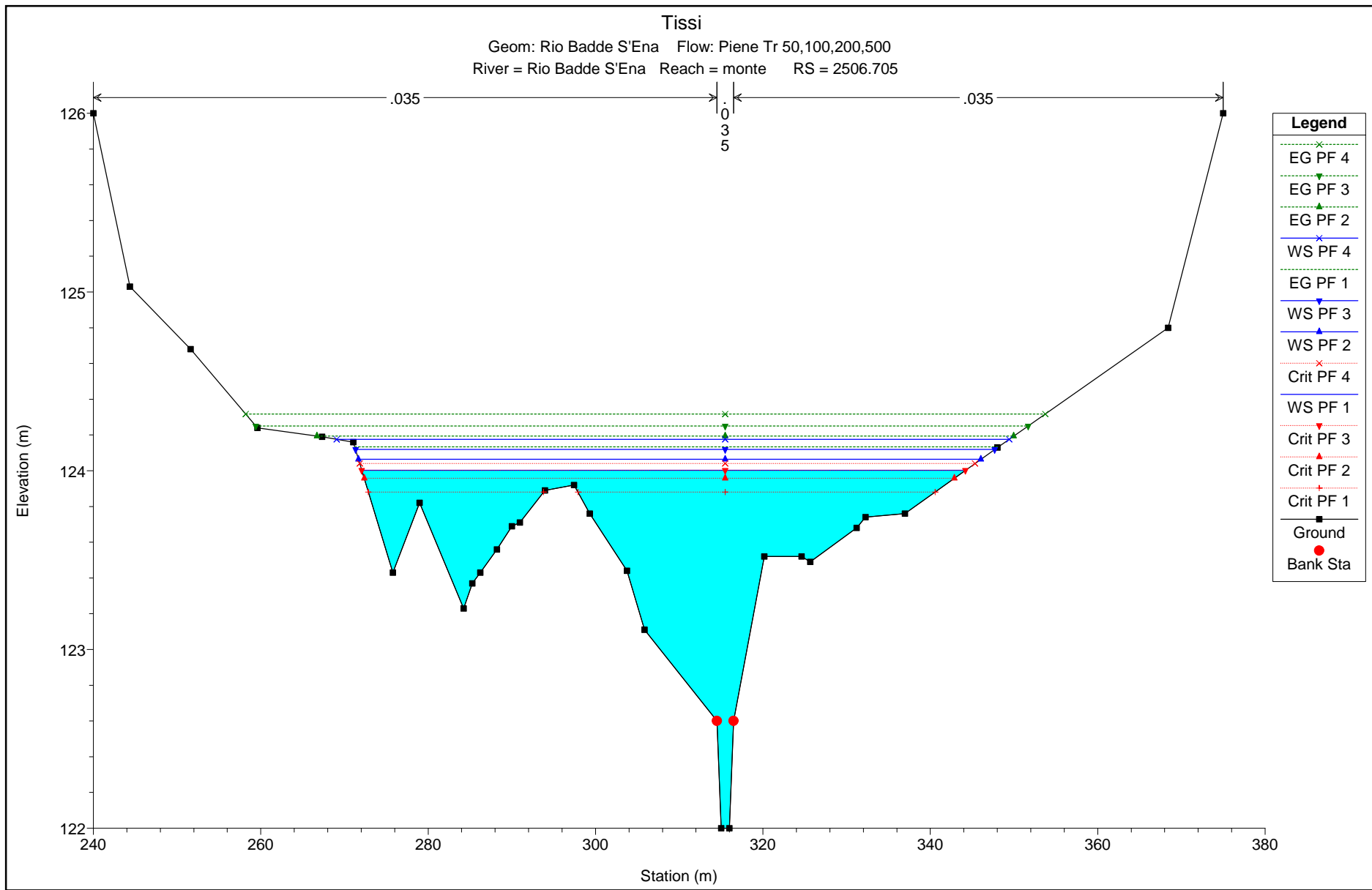
- Legend**
- EG PF 4
  - EG PF 3
  - EG PF 2
  - EG PF 1
  - Crit PF 4
  - Crit PF 3
  - Crit PF 2
  - Crit PF 1
  - WS PF 4
  - WS PF 3
  - WS PF 2
  - WS PF 1
  - Ground
  - Bank Sta

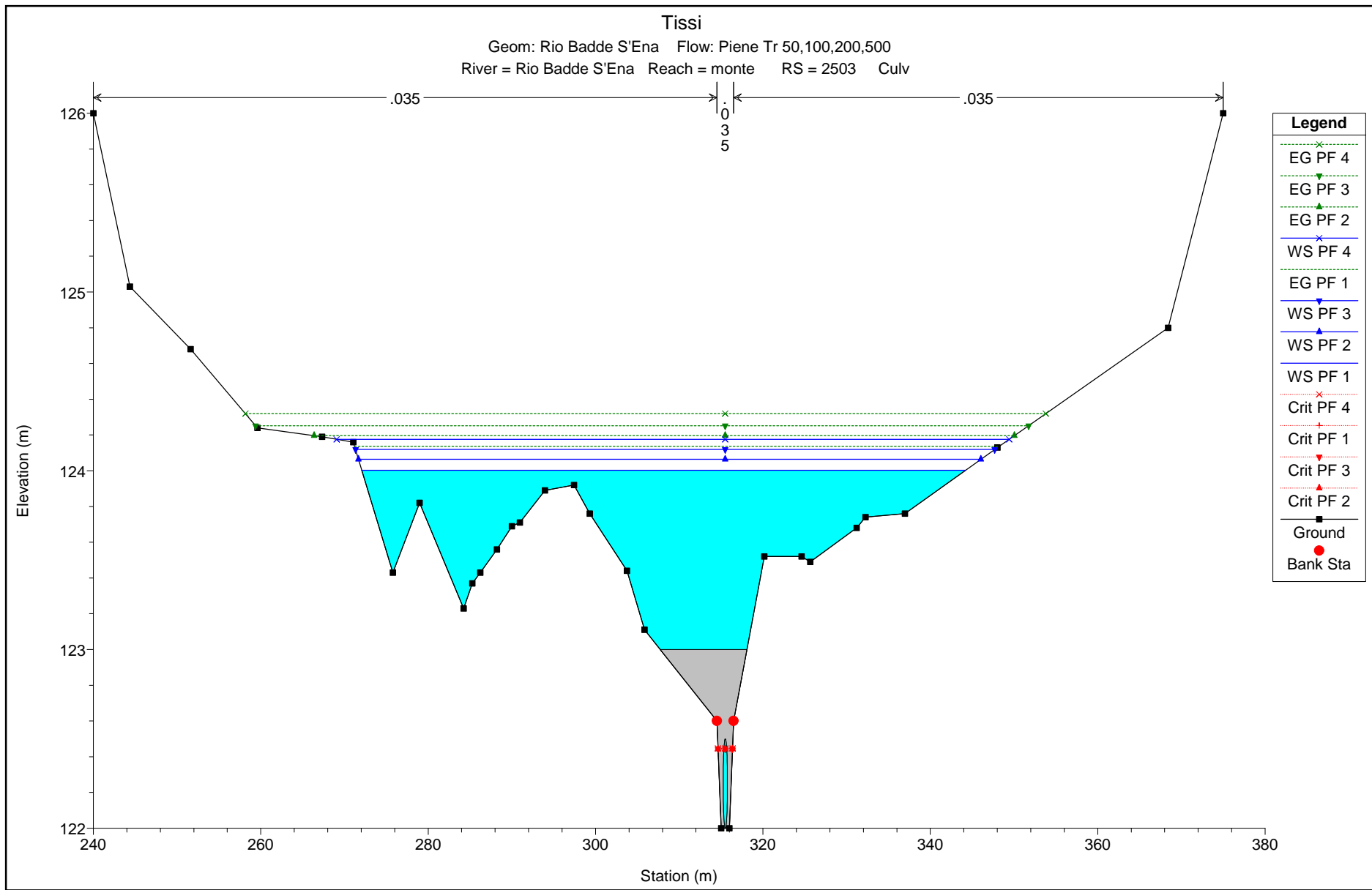
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 2725.343





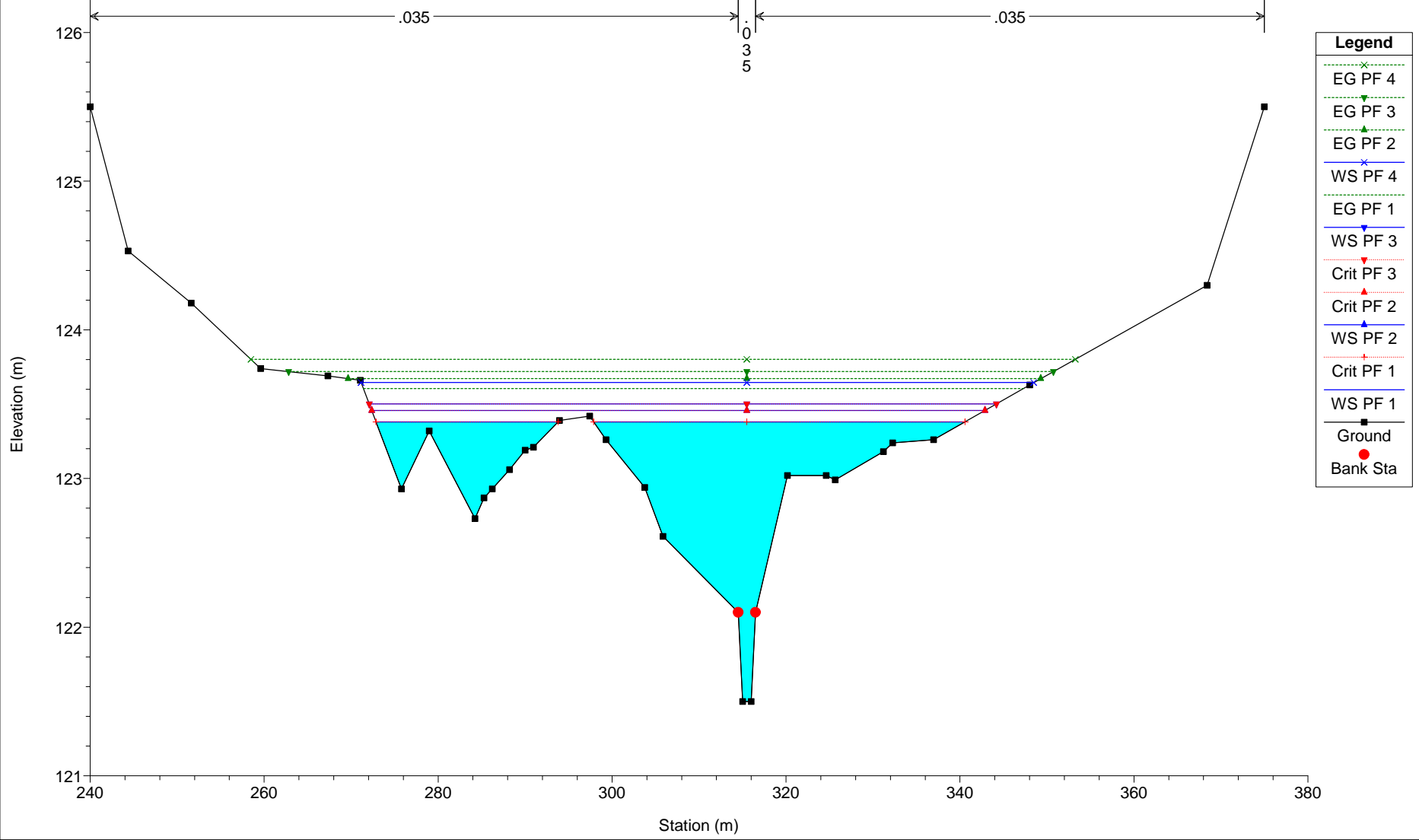






Tissi

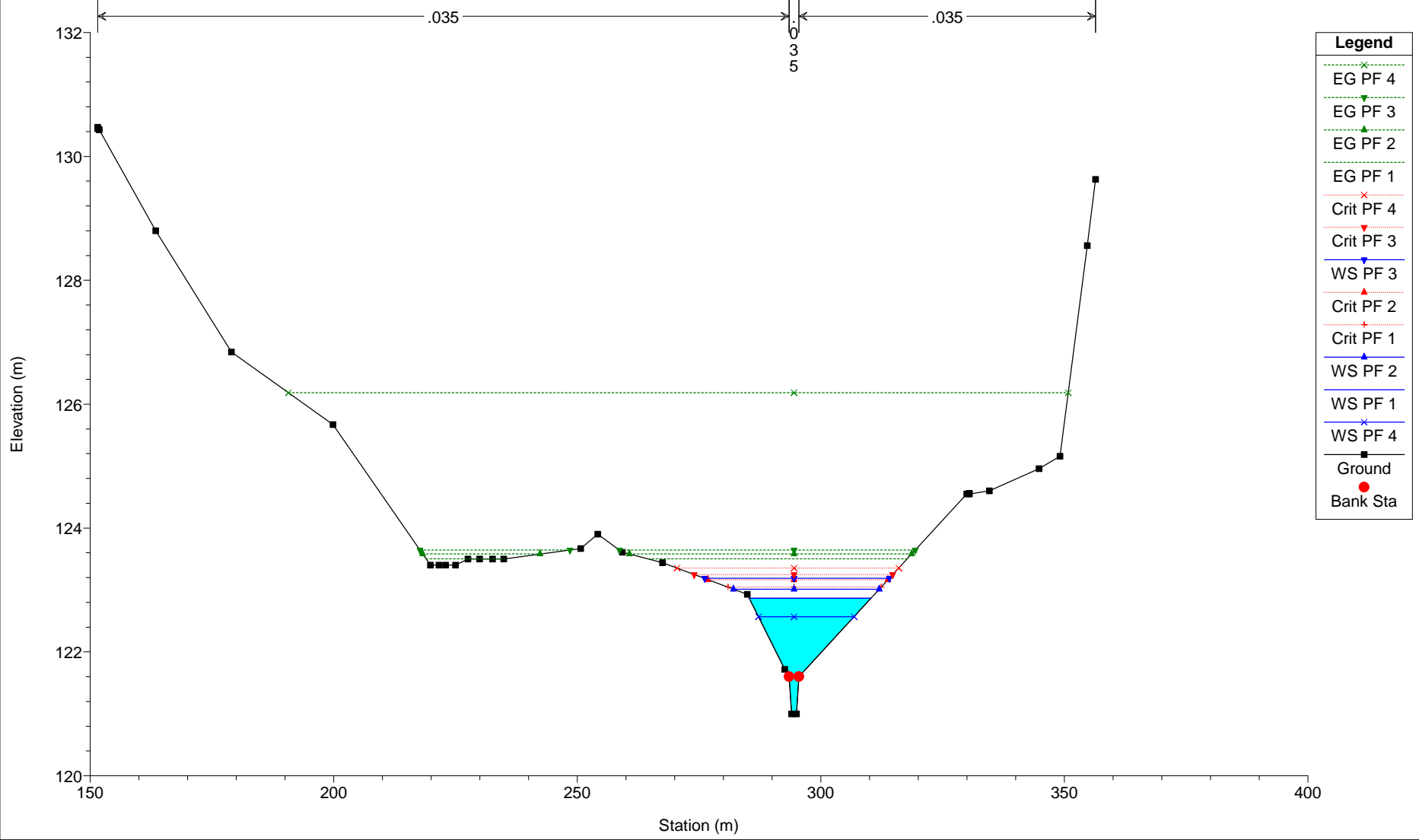
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = monte RS = 2500



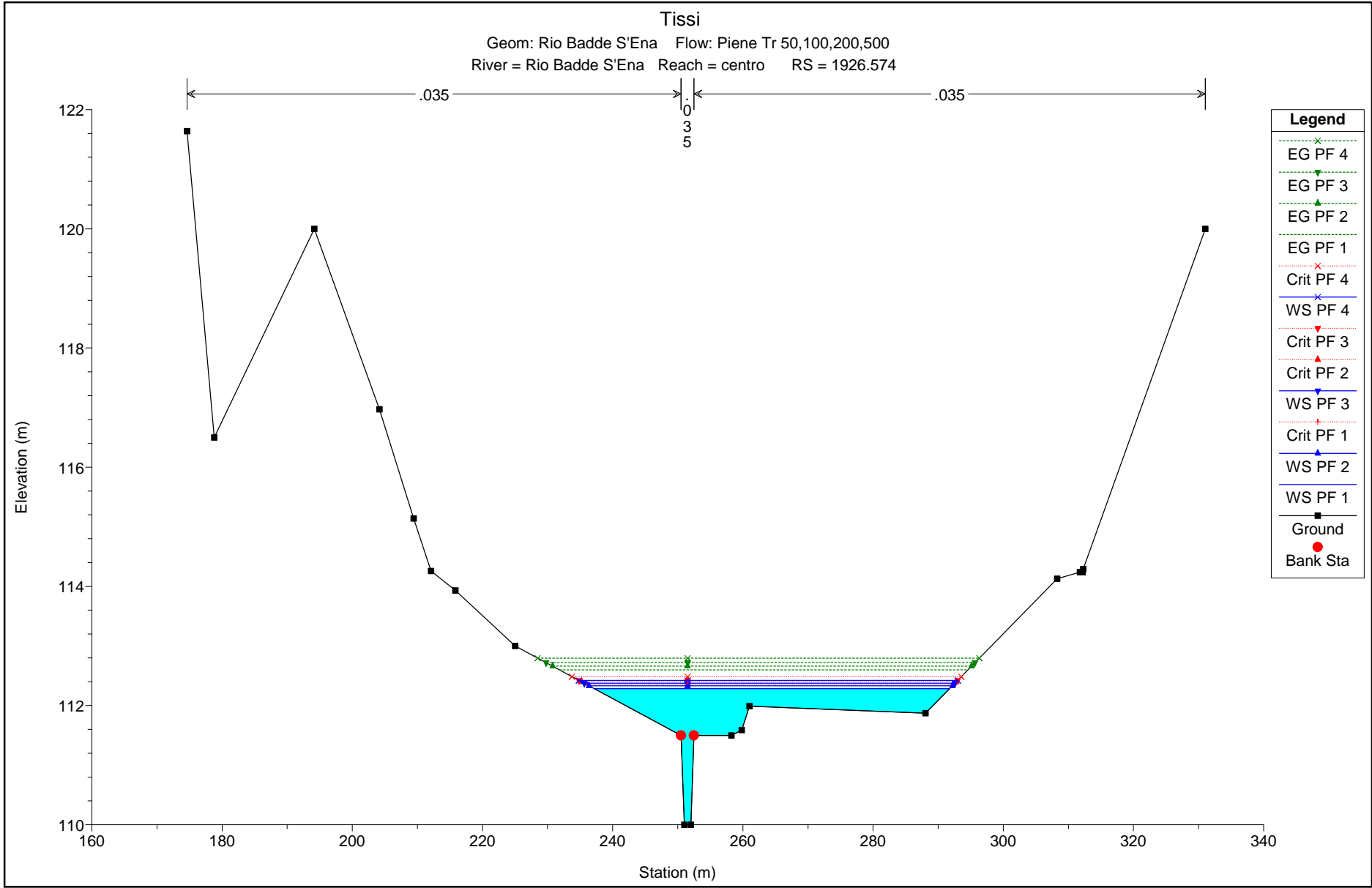
- | Legend    |   |
|-----------|---|
| EG PF 4   | x |
| EG PF 3   | ∇ |
| EG PF 2   | ▲ |
| WS PF 4   | x |
| EG PF 1   | x |
| WS PF 3   | ∇ |
| Crit PF 3 | ▼ |
| Crit PF 2 | ▲ |
| WS PF 2   | x |
| Crit PF 1 | + |
| WS PF 1   | x |
| Ground    | ■ |
| Bank Sta  | ● |

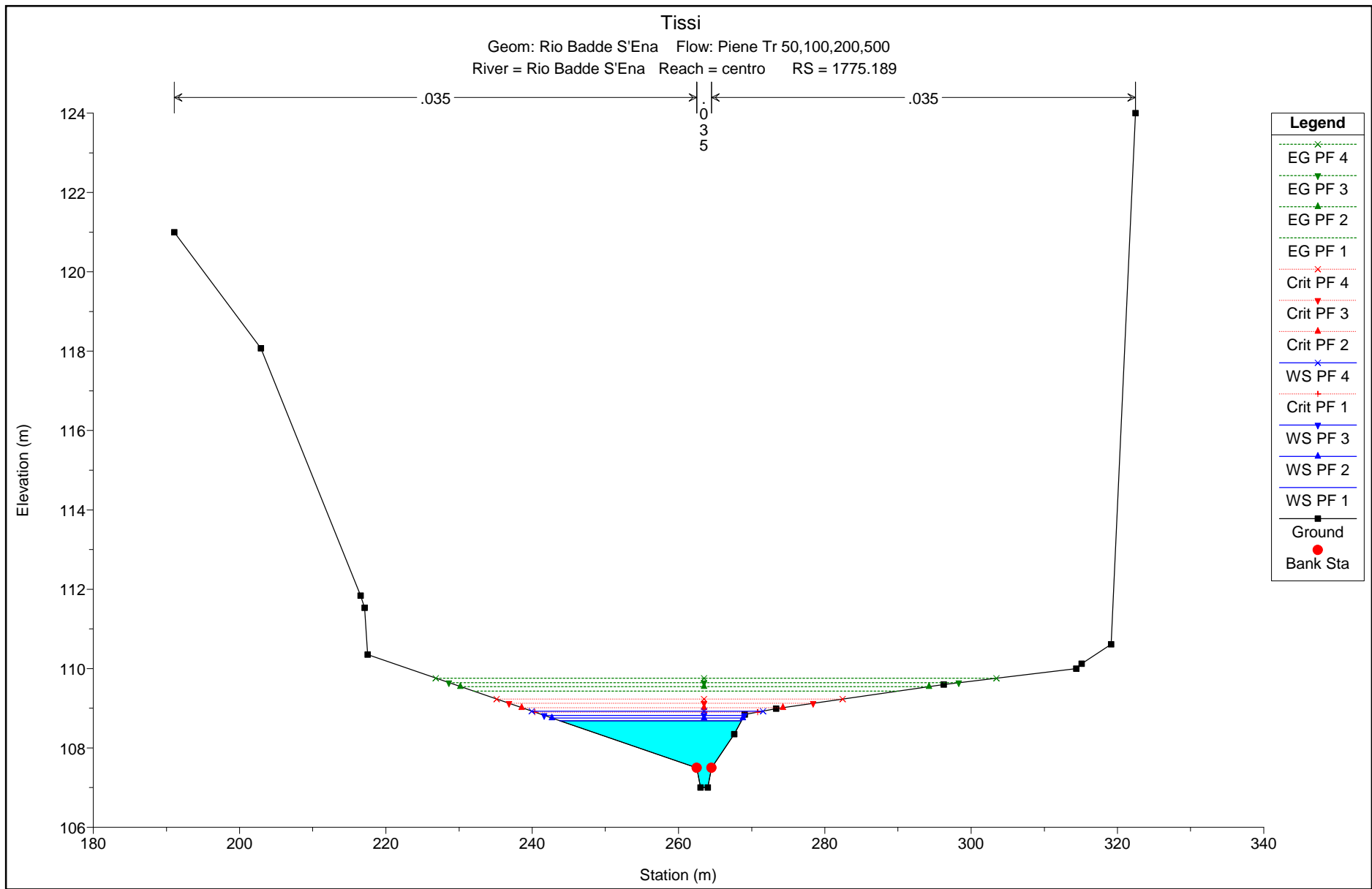
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = centro RS = 2482.154





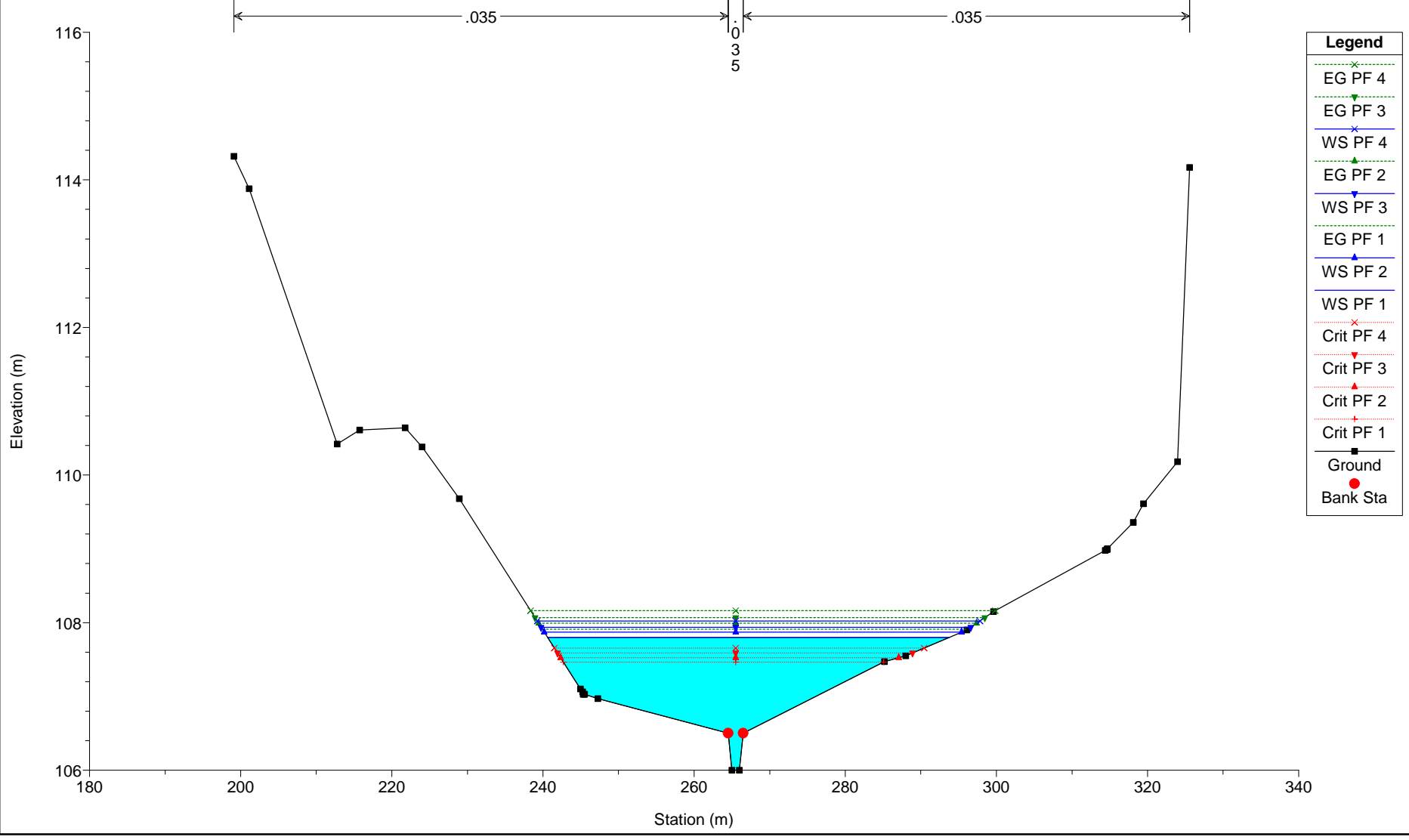






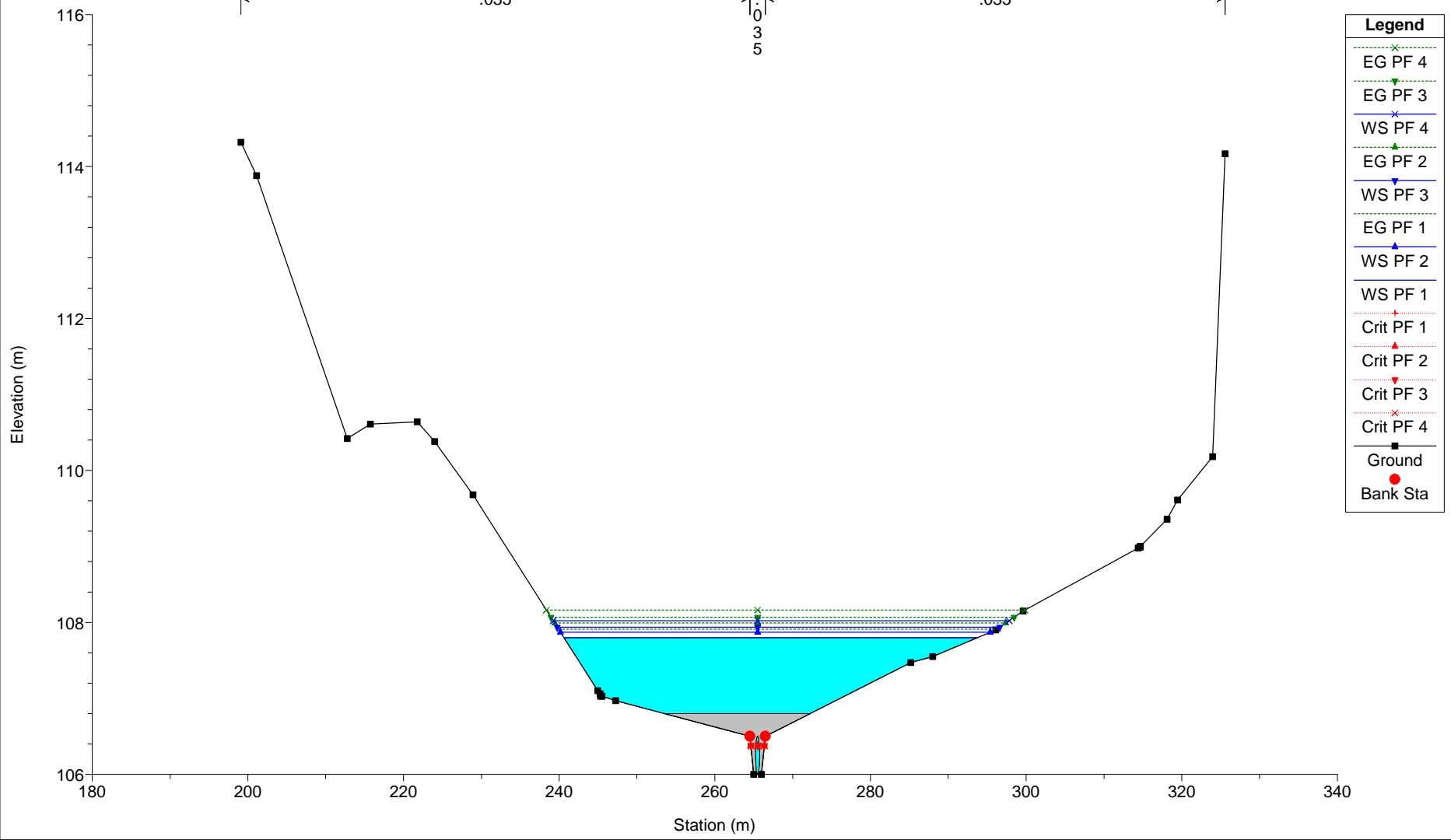
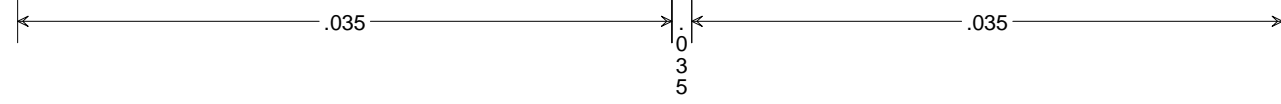
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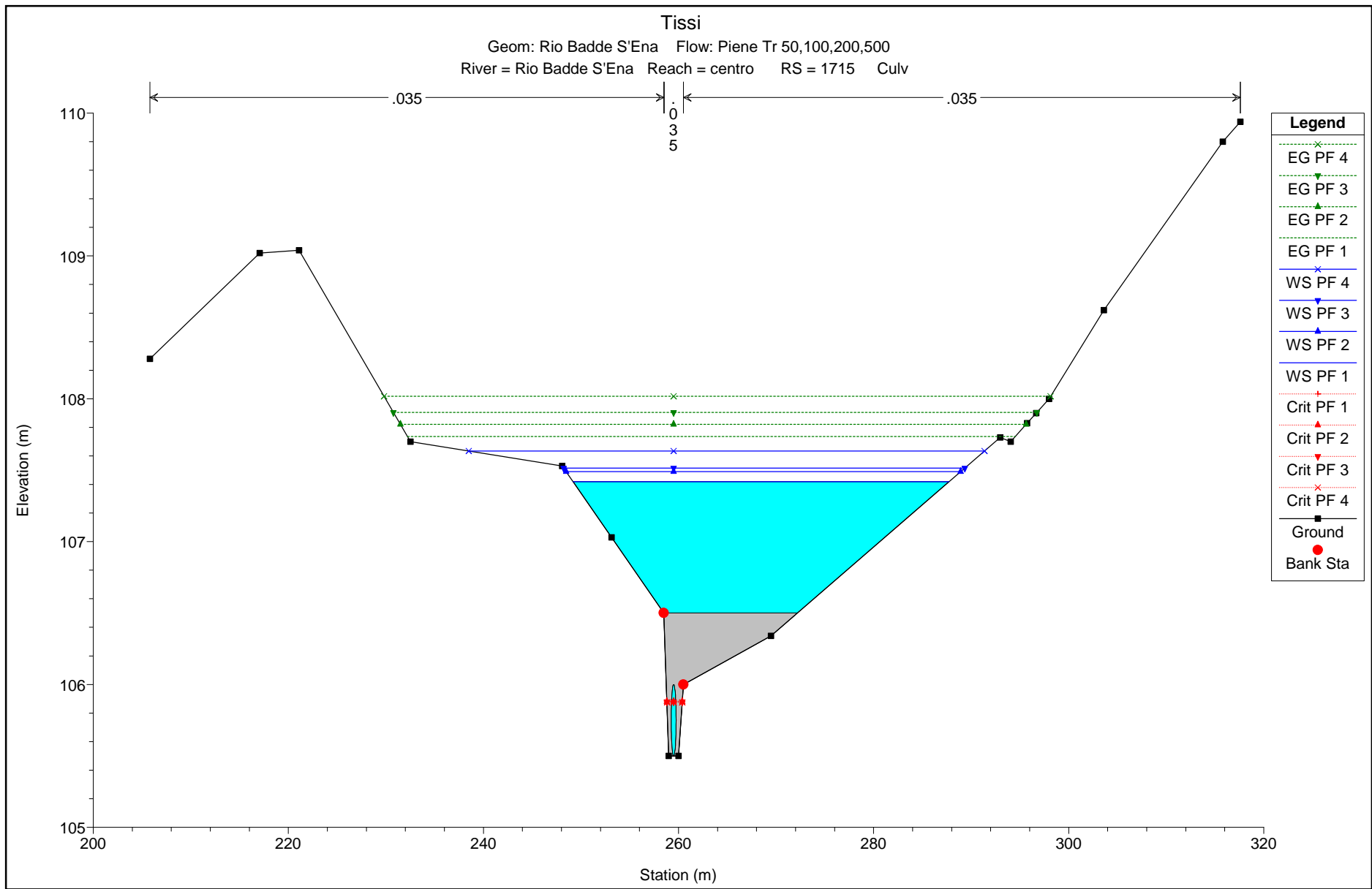
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = centro RS = 1720.669



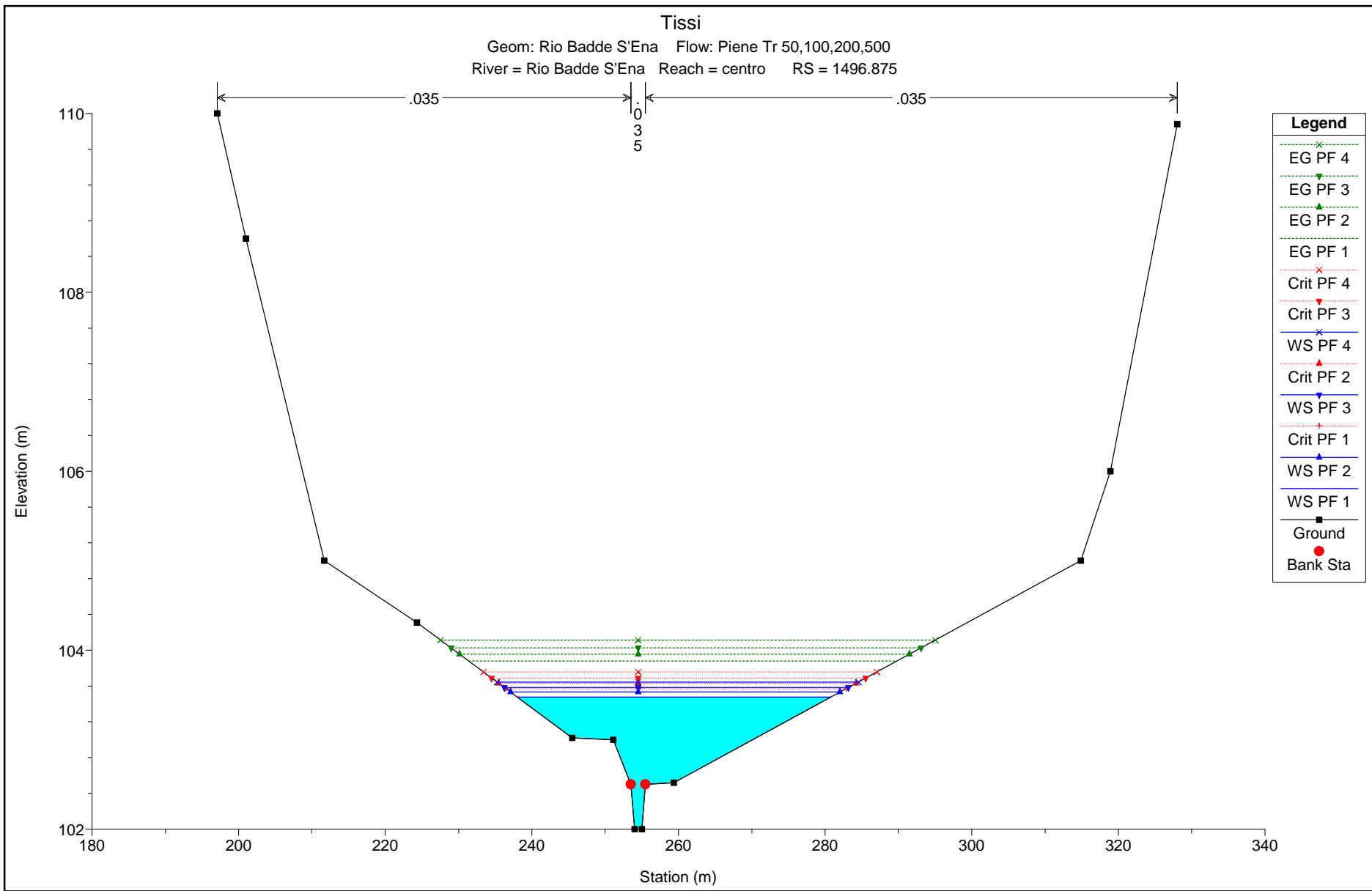
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = centro RS = 1715 Culv



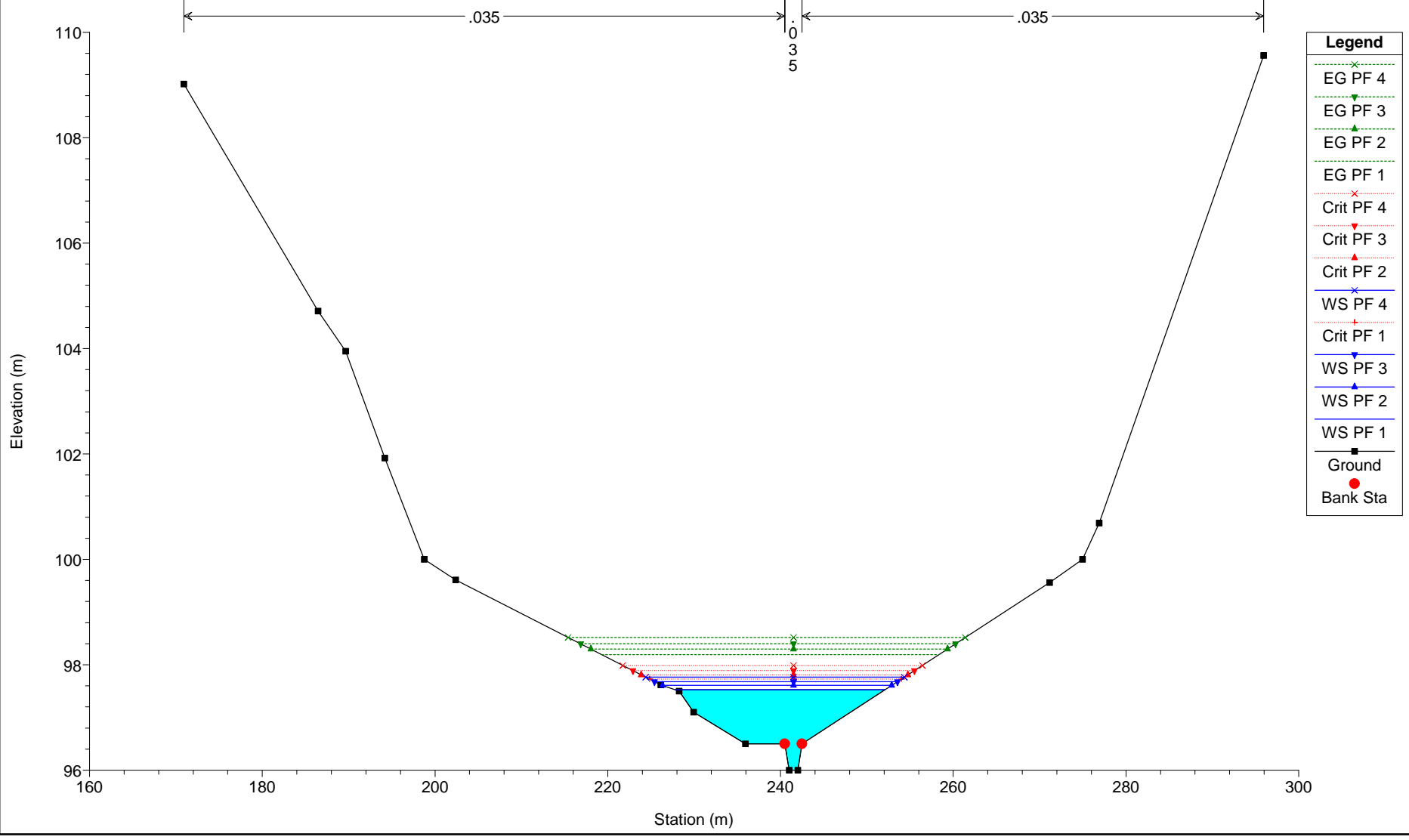


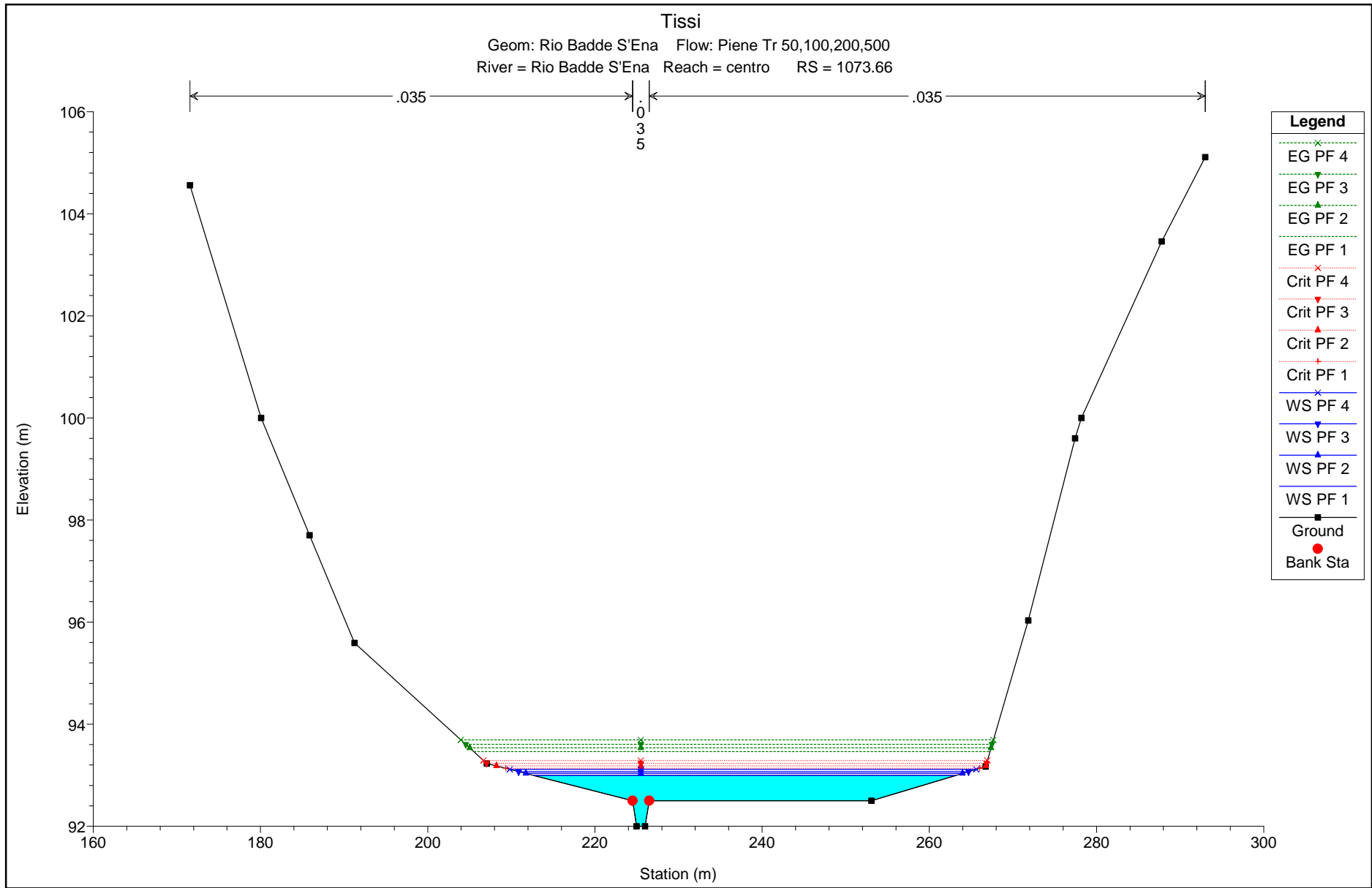




### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = centro RS = 1232.082



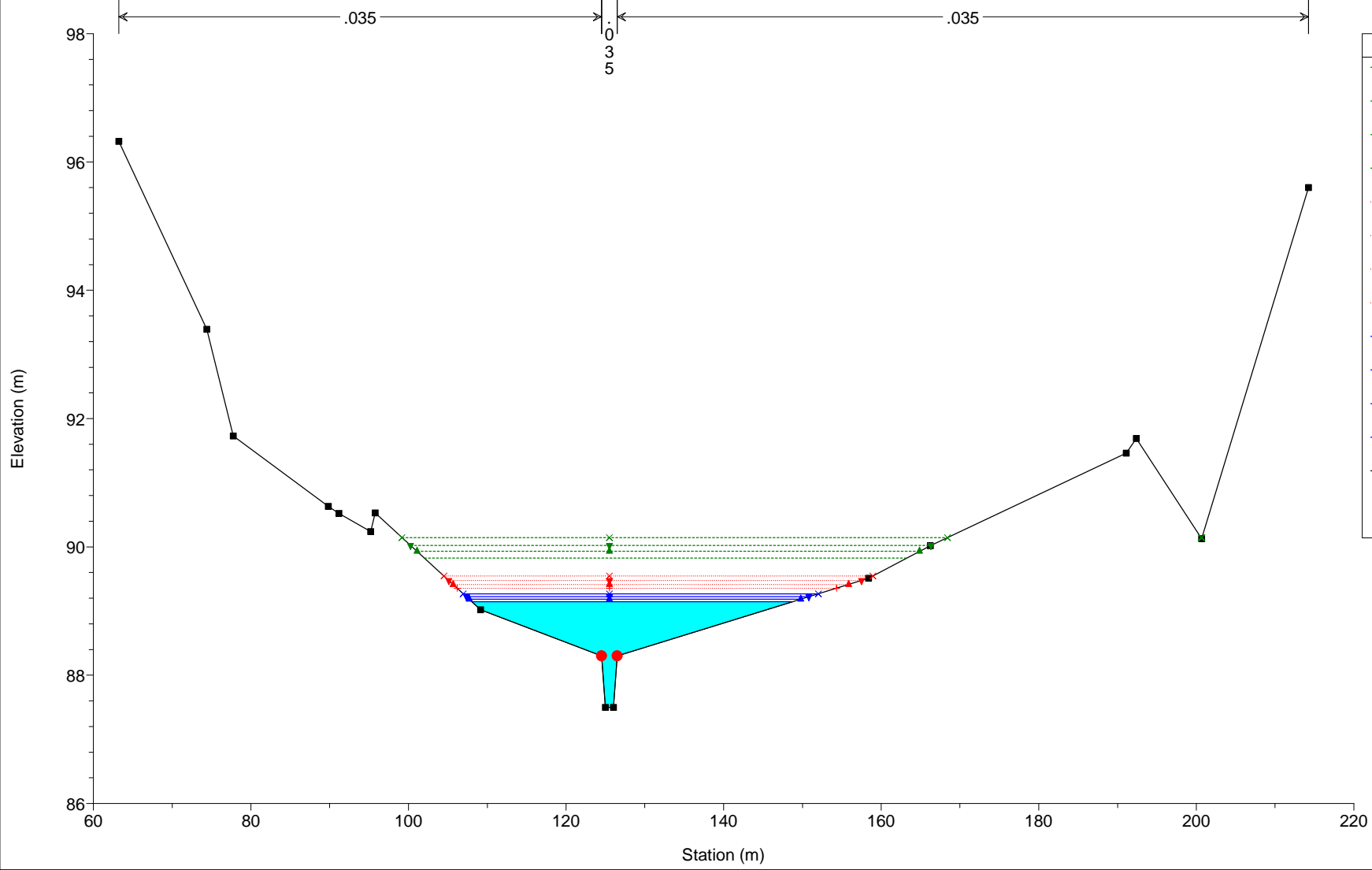






### Tissi

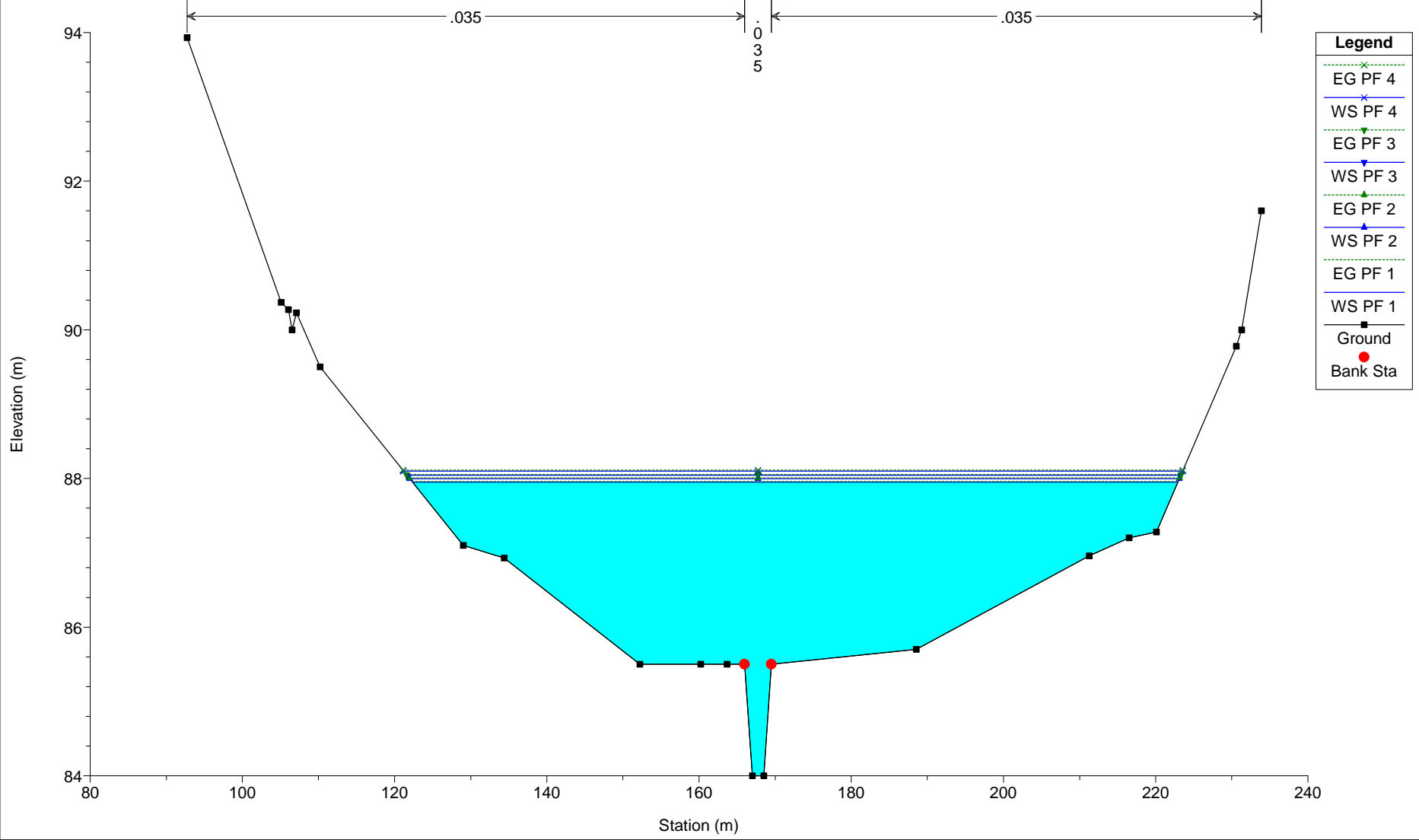
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 881.6205



- EG PF 4
- EG PF 3
- EG PF 2
- EG PF 1
- Crit PF 4
- Crit PF 3
- Crit PF 2
- Crit PF 1
- WS PF 4
- WS PF 3
- WS PF 2
- WS PF 1
- Ground
- Bank Sta

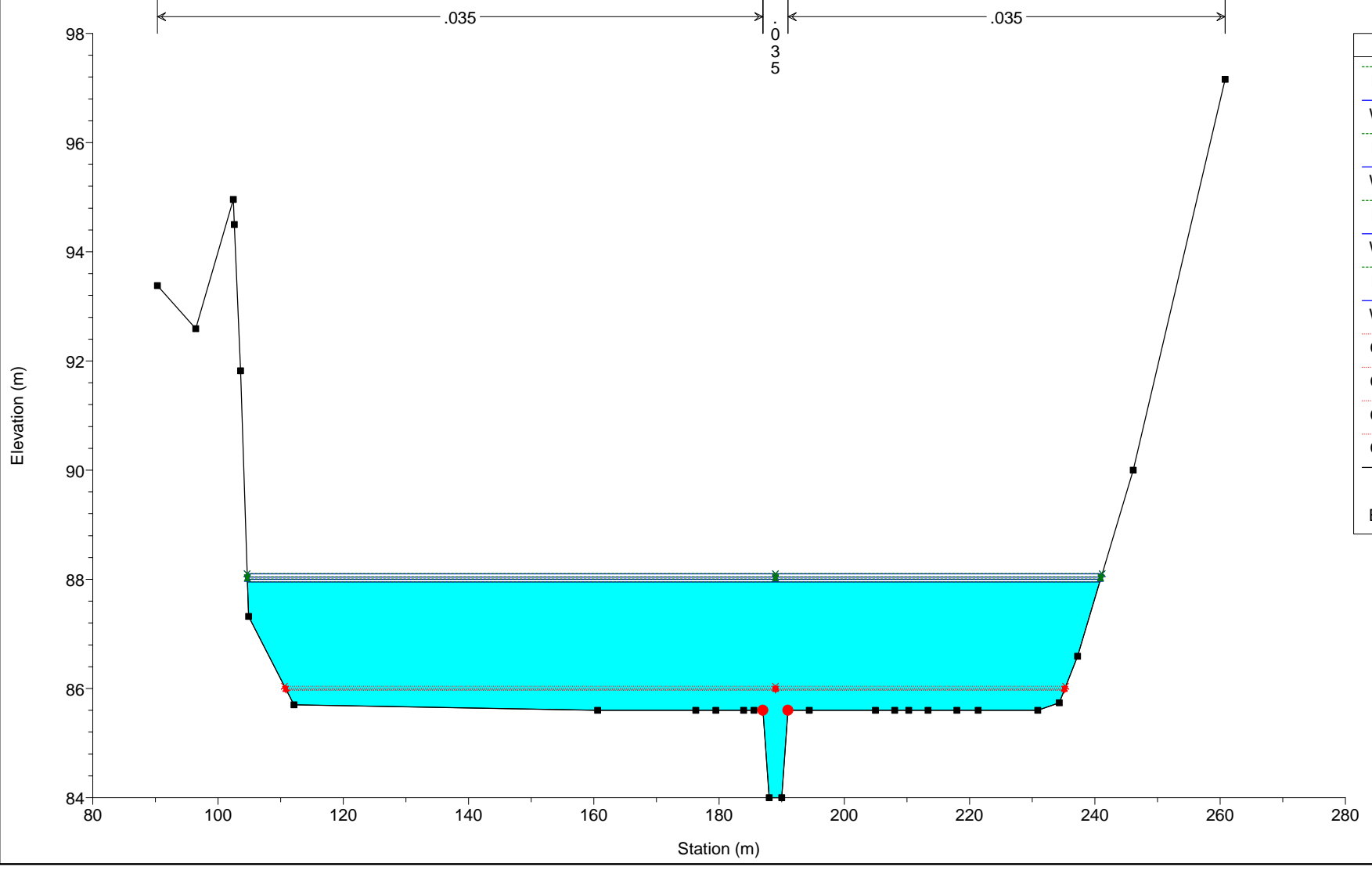
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 732.5272



Tissi

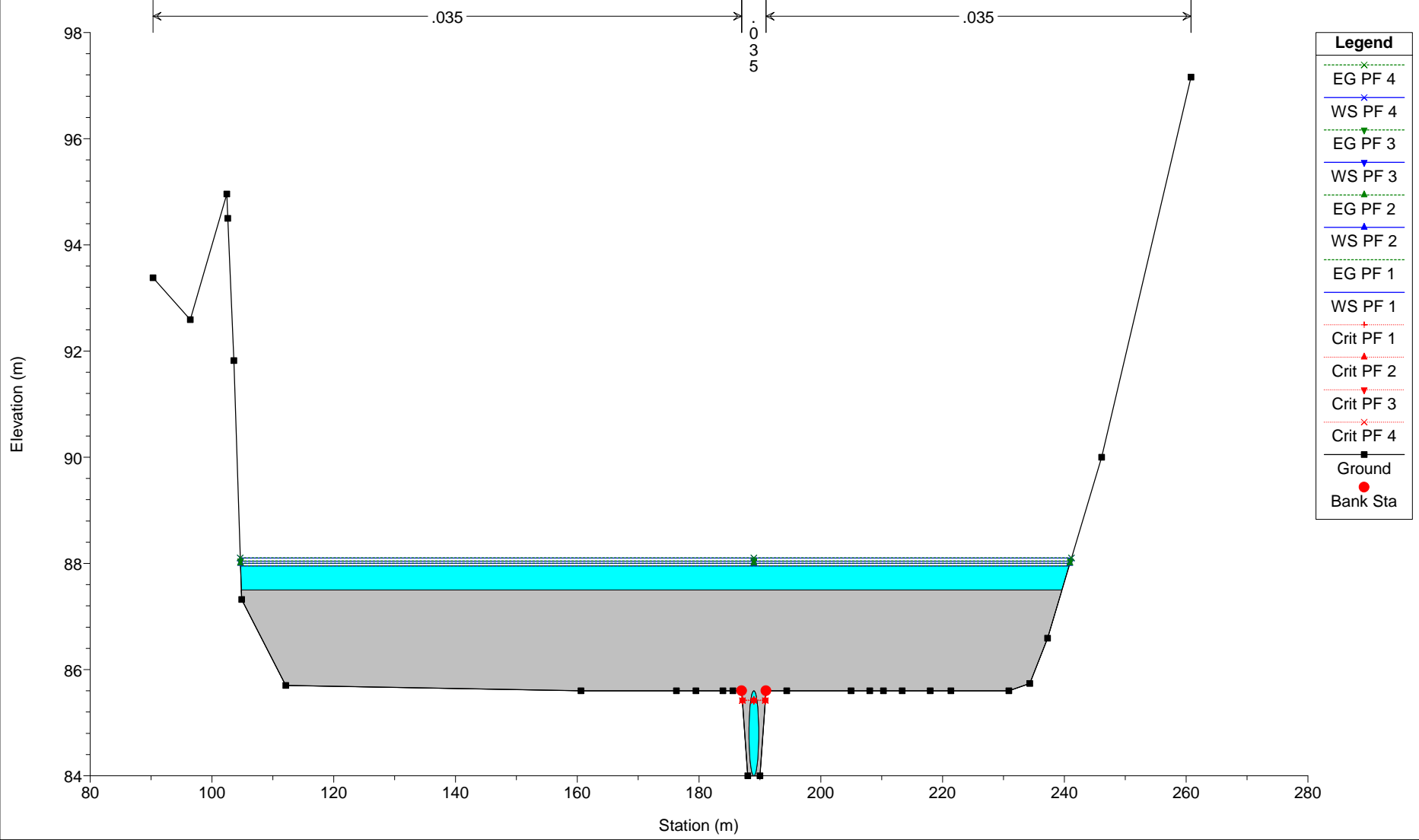
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 671.1826



- Legend**
- EG PF 4
  - WS PF 4
  - EG PF 3
  - WS PF 3
  - EG PF 2
  - WS PF 2
  - EG PF 1
  - WS PF 1
  - Crit PF 4
  - Crit PF 3
  - Crit PF 2
  - Crit PF 1
  - Ground
  - Bank Sta

### Tissi

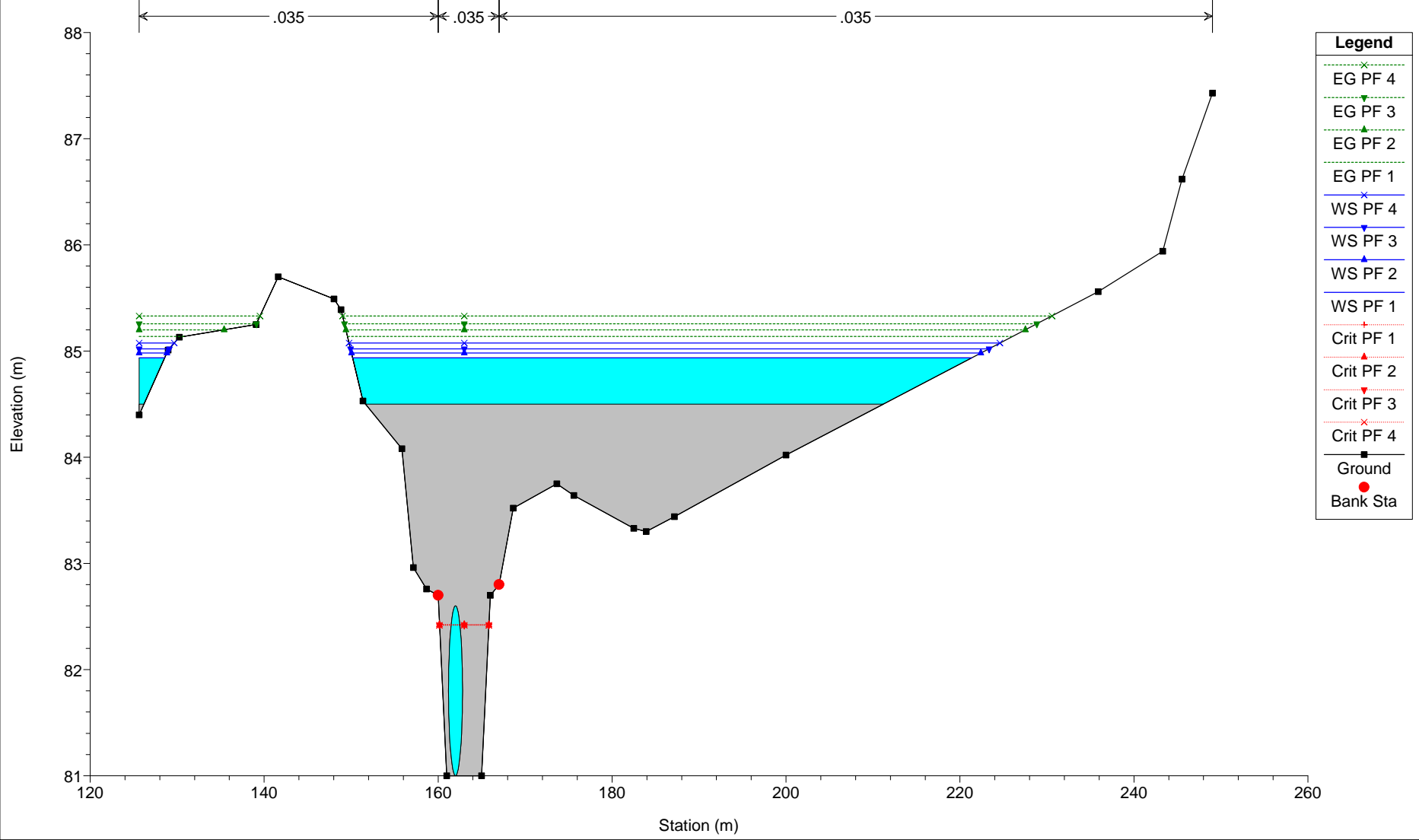
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
 River = Rio Badde S'Ena Reach = valle RS = 650 Culv



- Legend**
- EG PF 4
  - WS PF 4
  - EG PF 3
  - WS PF 3
  - EG PF 2
  - WS PF 2
  - EG PF 1
  - WS PF 1
  - Crit PF 1
  - Crit PF 2
  - Crit PF 3
  - Crit PF 4
  - Ground
  - Bank Sta

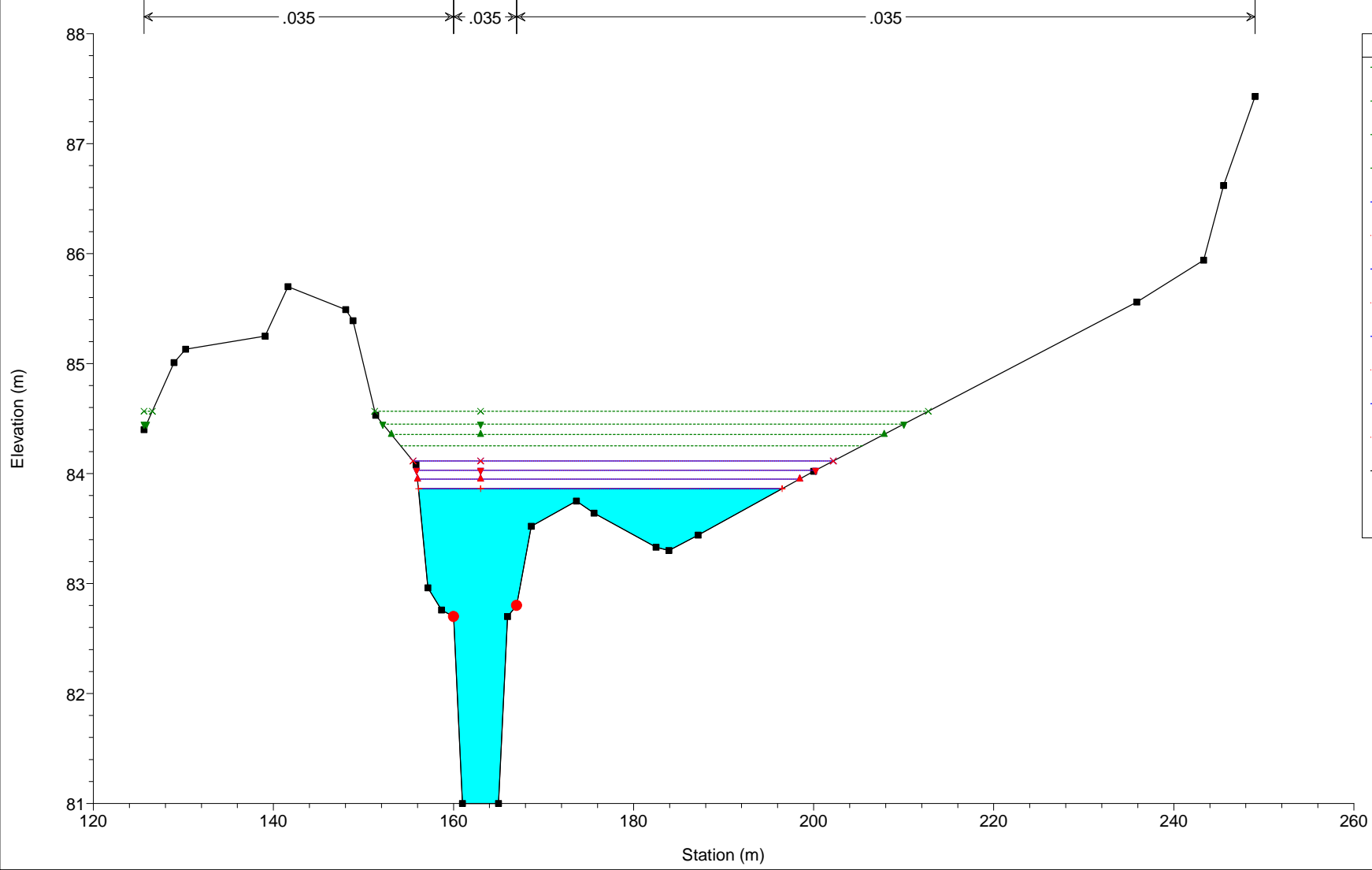
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 650 Culv



### Tissi

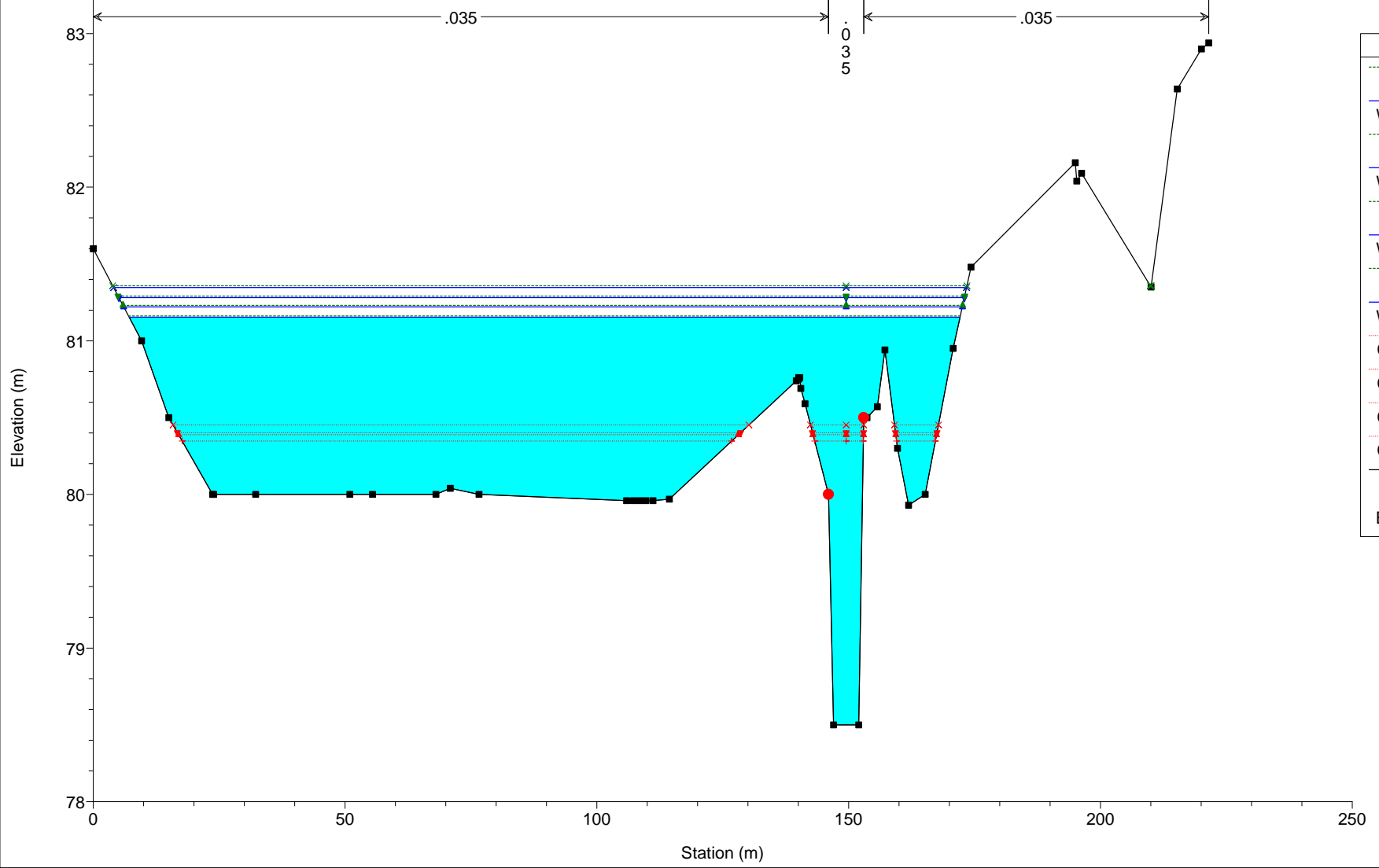
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 605.6137



- EG PF 4
- EG PF 3
- EG PF 2
- EG PF 1
- WS PF 4
- Crit PF 4
- WS PF 3
- Crit PF 3
- WS PF 2
- Crit PF 2
- WS PF 1
- Crit PF 1
- Ground
- Bank Sta

Tissi

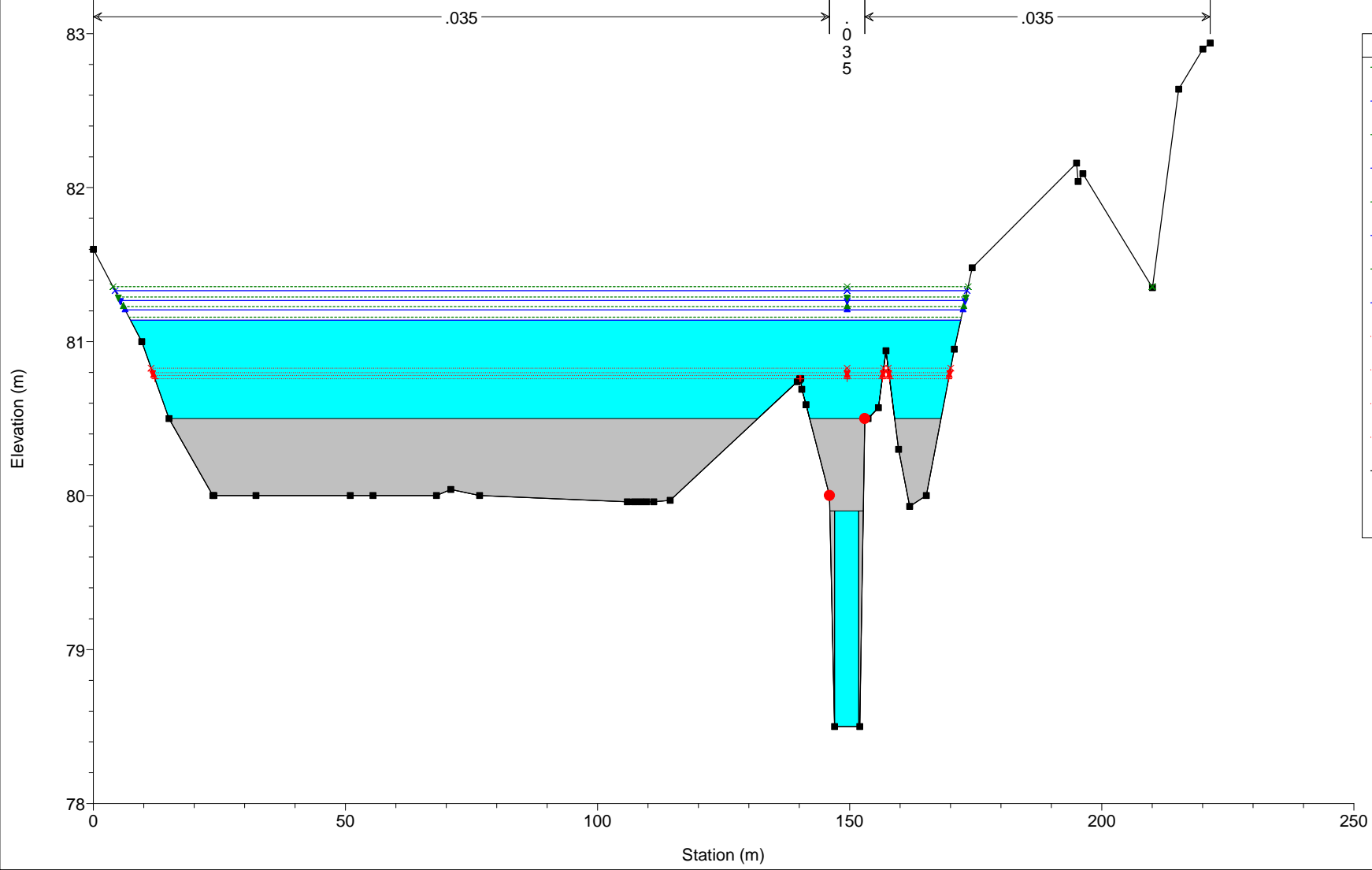
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 518.3431



Legend	
EG PF 4	x
WS PF 4	x
EG PF 3	v
WS PF 3	v
EG PF 2	^
WS PF 2	^
EG PF 1	x
WS PF 1	x
Crit PF 4	x
Crit PF 3	v
Crit PF 2	^
Crit PF 1	+
Ground	■
Bank Sta	●

### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 510 BR

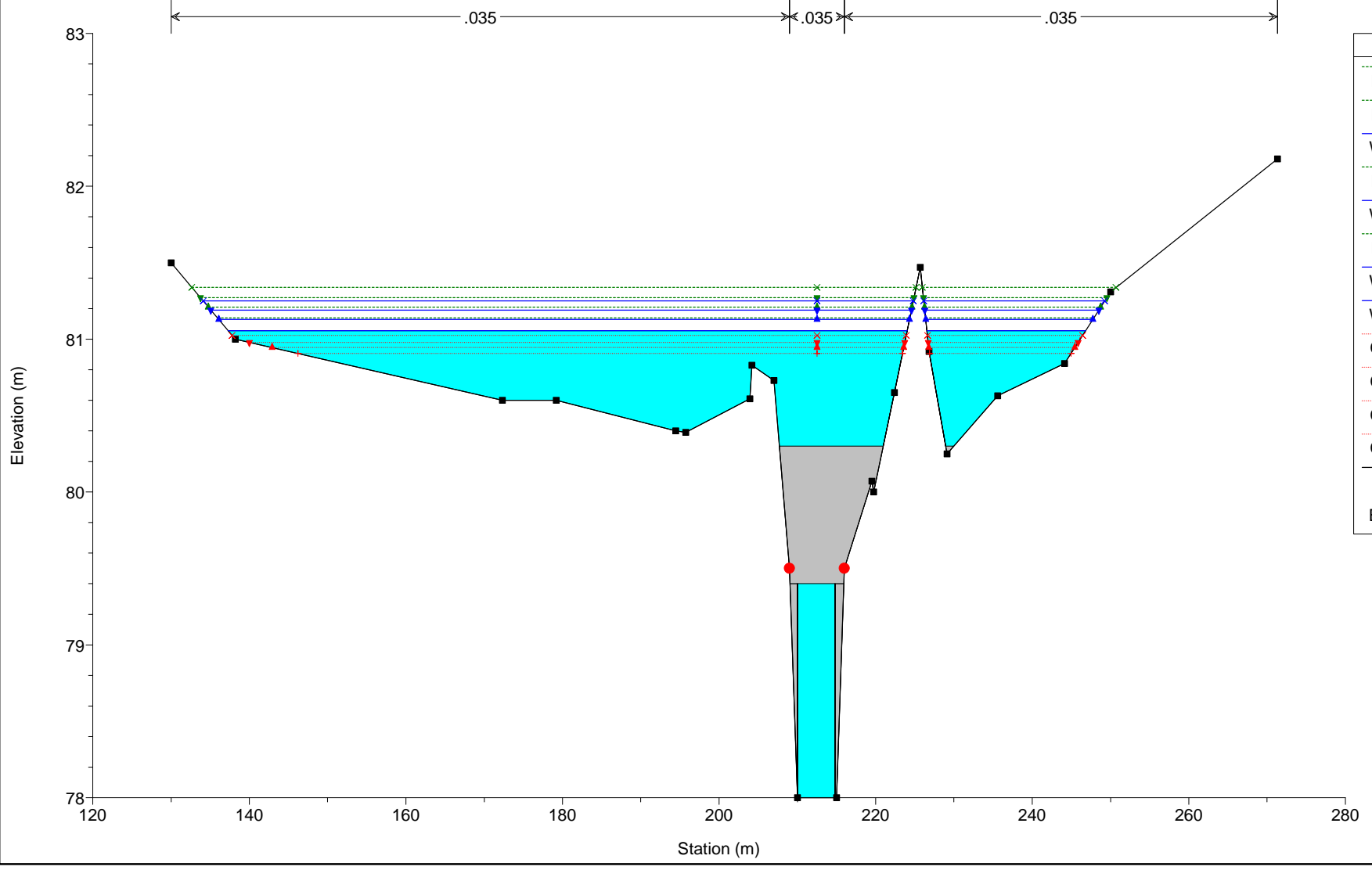


Legend	
EG PF 4	x
WS PF 4	x
EG PF 3	v
WS PF 3	v
EG PF 2	▲
WS PF 2	▲
EG PF 1	—
WS PF 1	—
Crit PF 4	x
Crit PF 3	v
Crit PF 2	▲
Crit PF 1	+
Ground	■
Bank Sta	●



Tissi

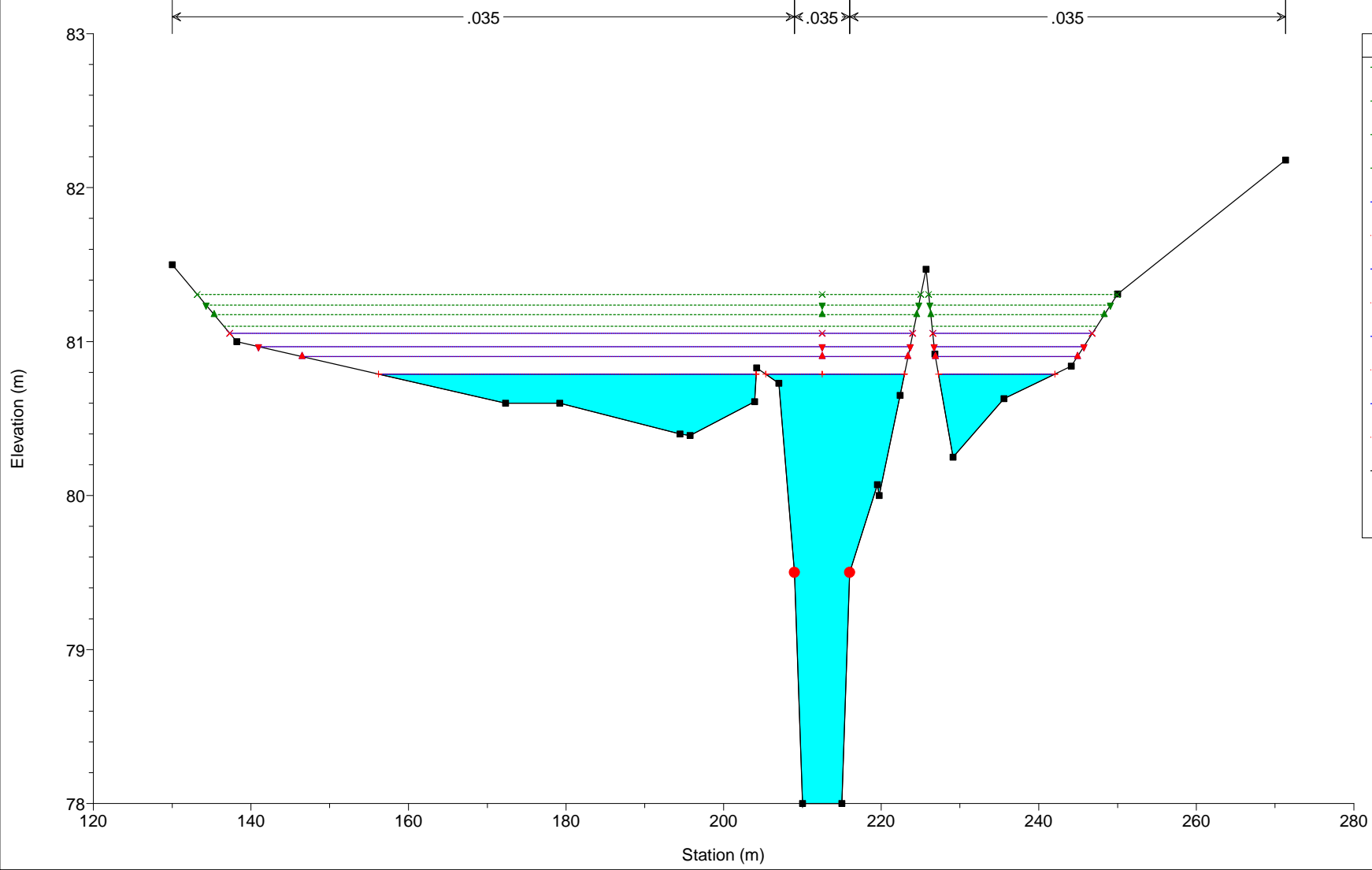
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 510 BR



Legend	
EG PF 4	x
EG PF 3	▲
WS PF 4	▲
EG PF 2	▲
WS PF 3	▲
EG PF 1	▲
WS PF 2	▲
WS PF 1	▲
Crit PF 4	▲
Crit PF 3	▲
Crit PF 2	▲
Crit PF 1	▲
Ground	■
Bank Sta	●

### Tissi

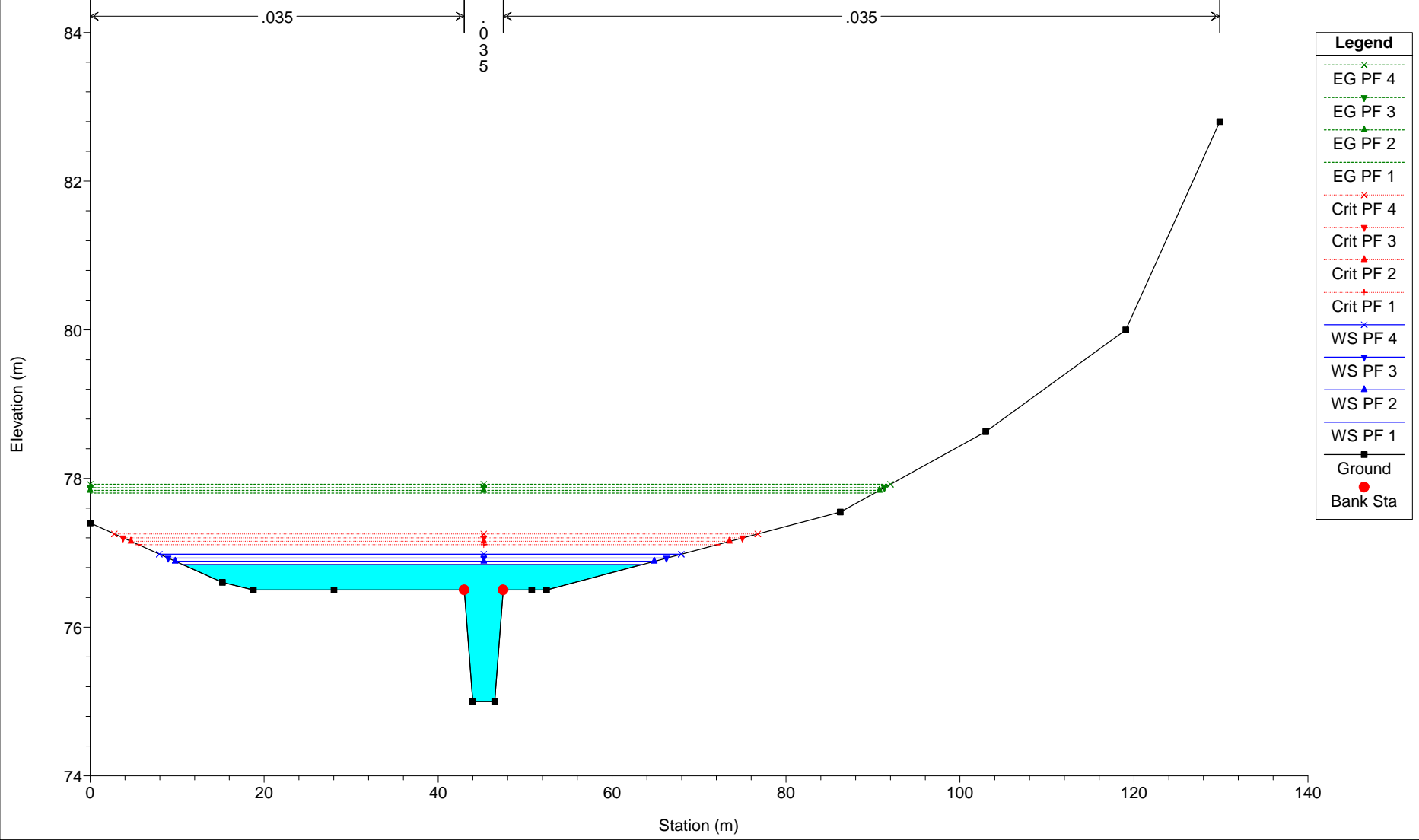
Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 503.6644



Legend	
EG PF 4	x
EG PF 3	▼
EG PF 2	▲
EG PF 1	x
WS PF 4	x
Crit PF 4	▼
WS PF 3	▲
Crit PF 3	x
WS PF 2	▼
Crit PF 2	▲
WS PF 1	x
Crit PF 1	▼
Ground	■
Bank Sta	●

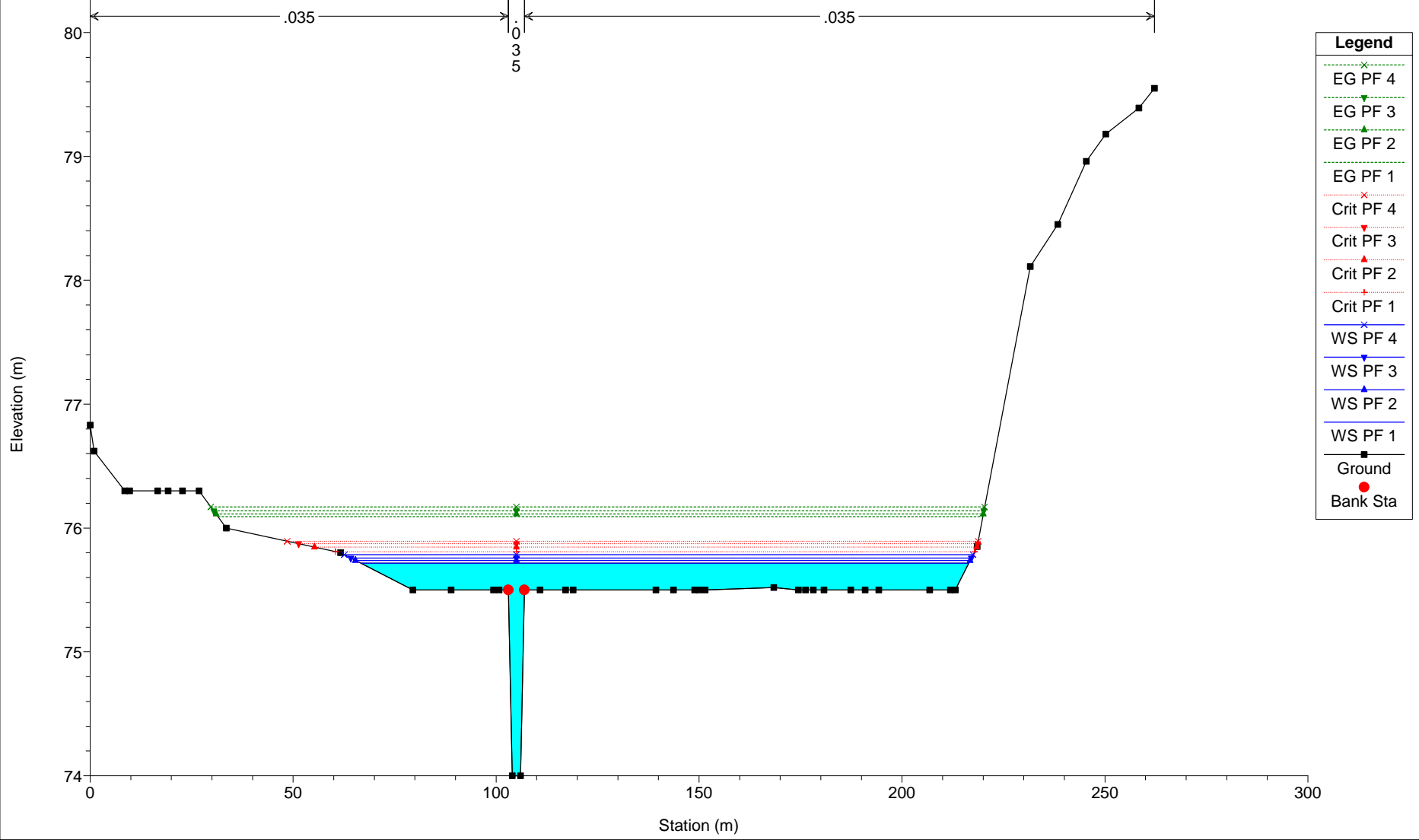
Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 357.4628



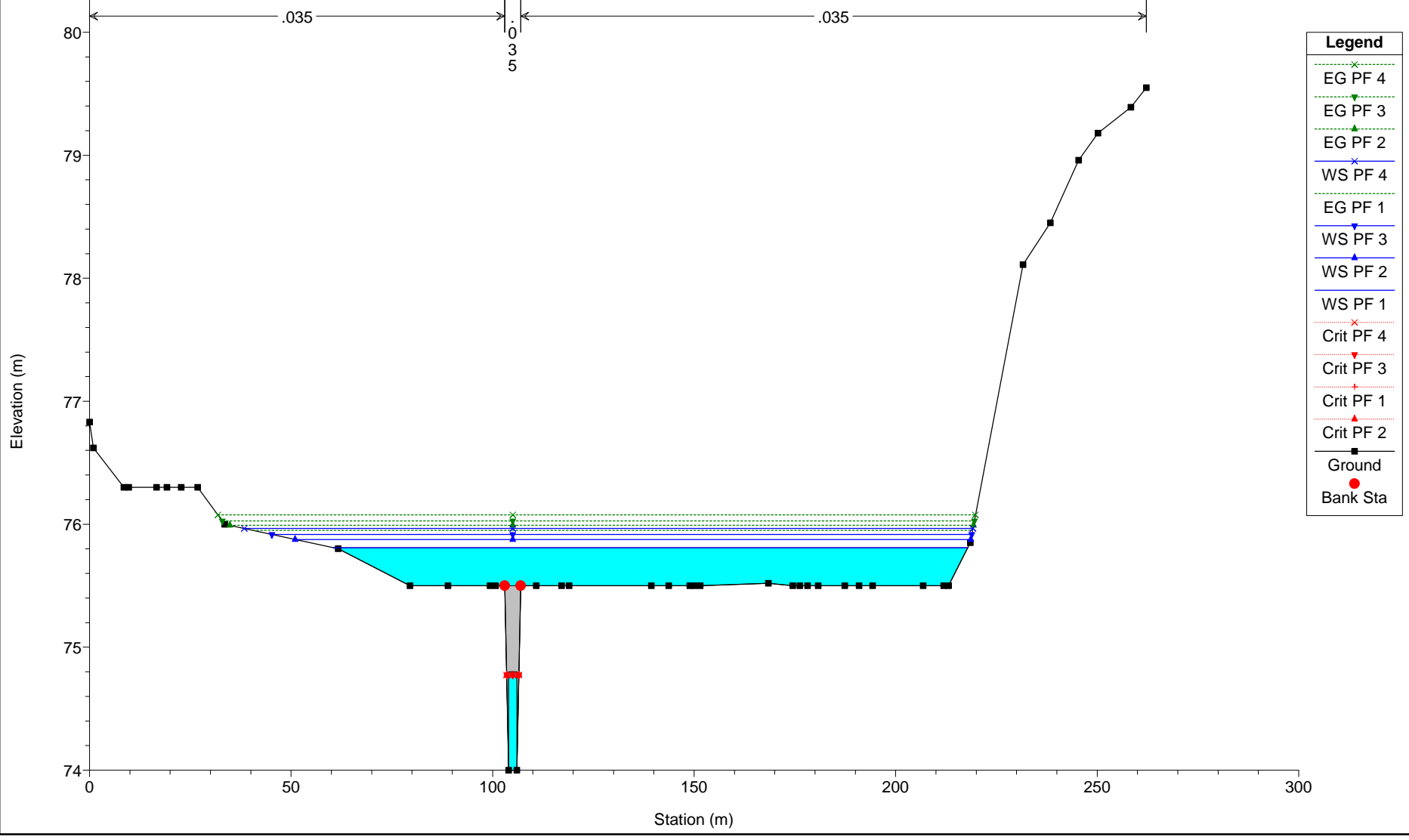
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 283.44



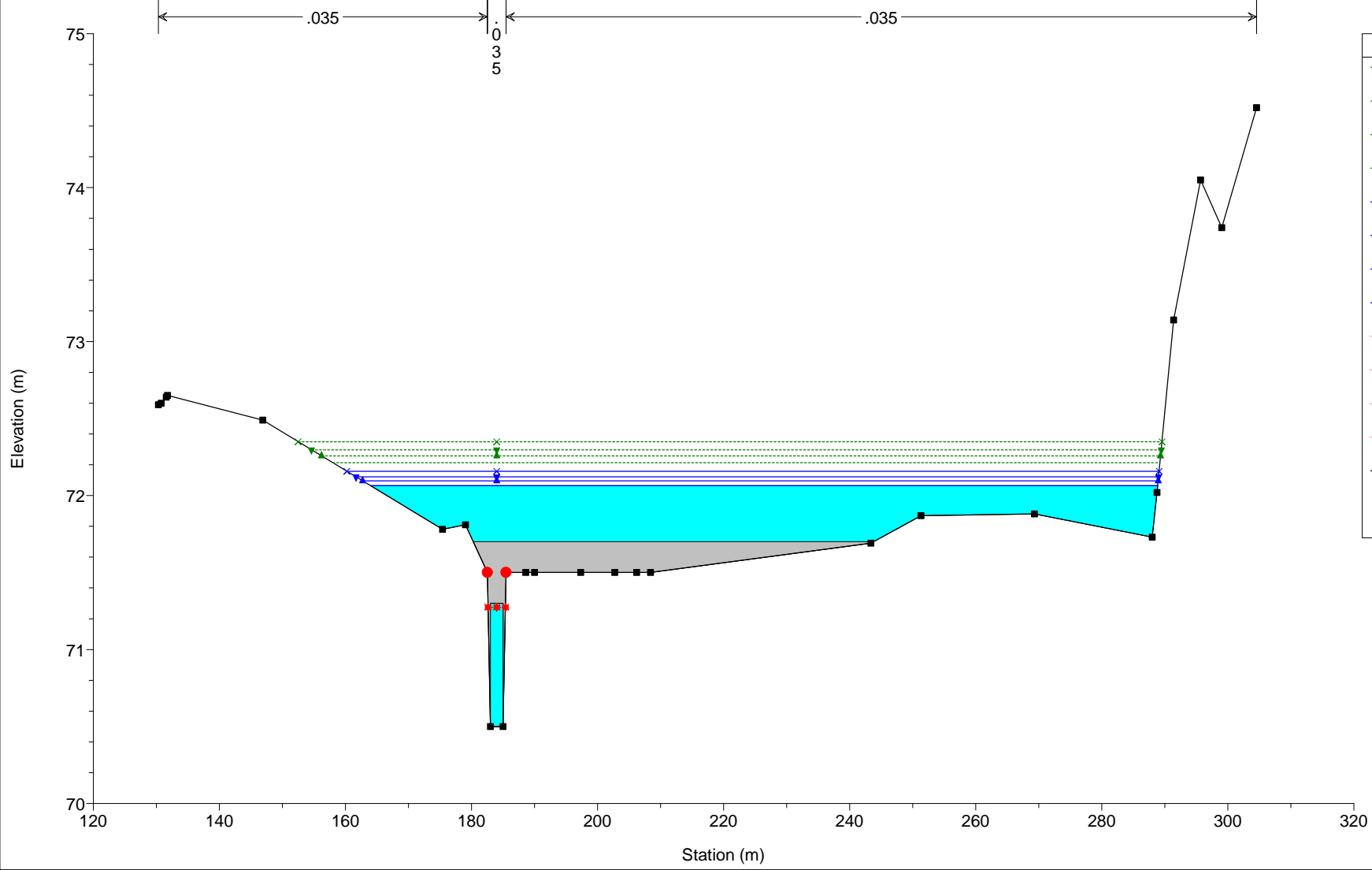
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
 River = Rio Badde S'Ena Reach = valle RS = 200 Culv



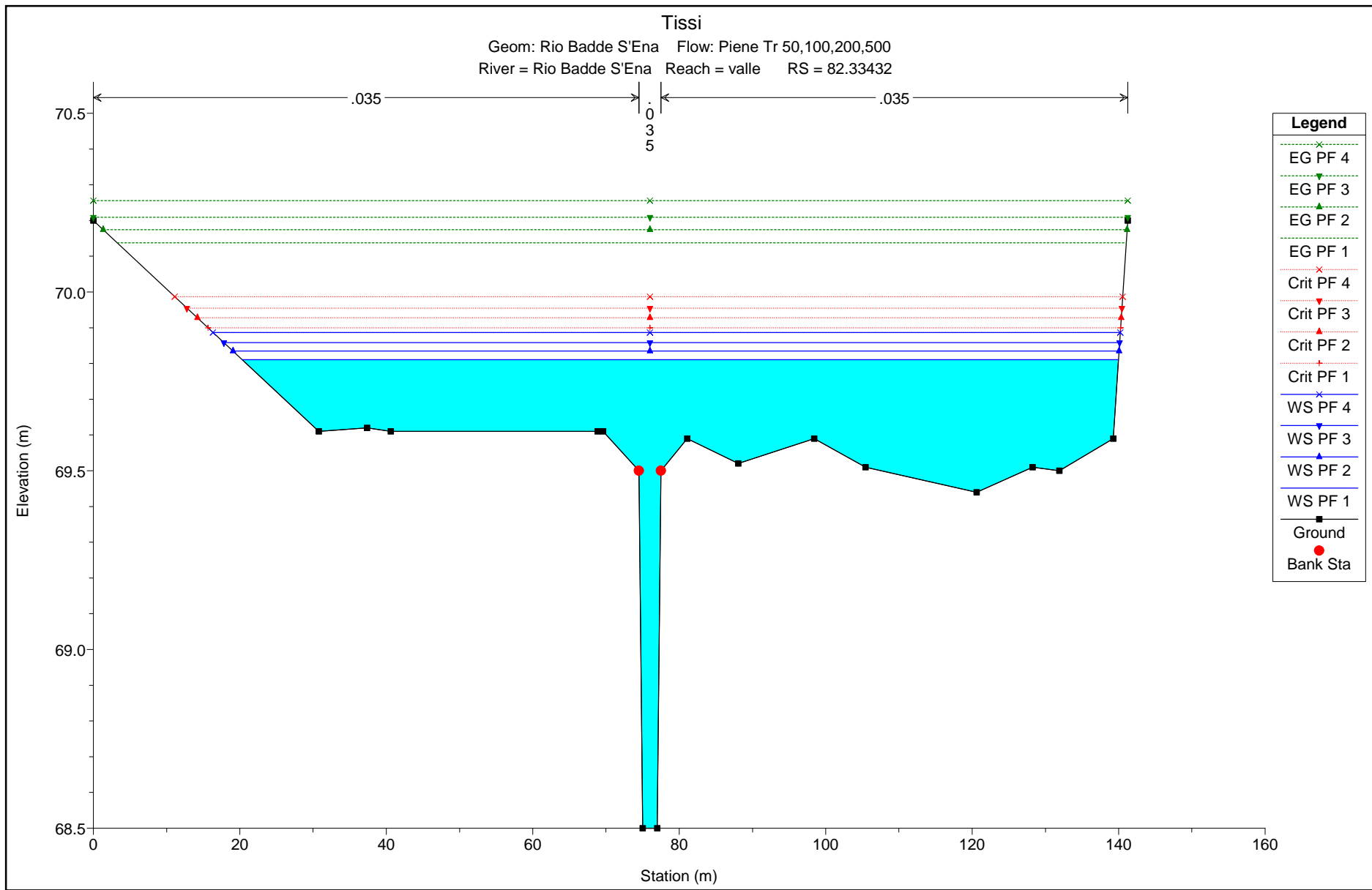
### Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 200 Culv



- EG PF 4
- EG PF 3
- EG PF 2
- EG PF 1
- WS PF 4
- WS PF 3
- WS PF 2
- WS PF 1
- Crit PF 4
- Crit PF 3
- Crit PF 1
- Crit PF 2
- Ground
- Bank Sta

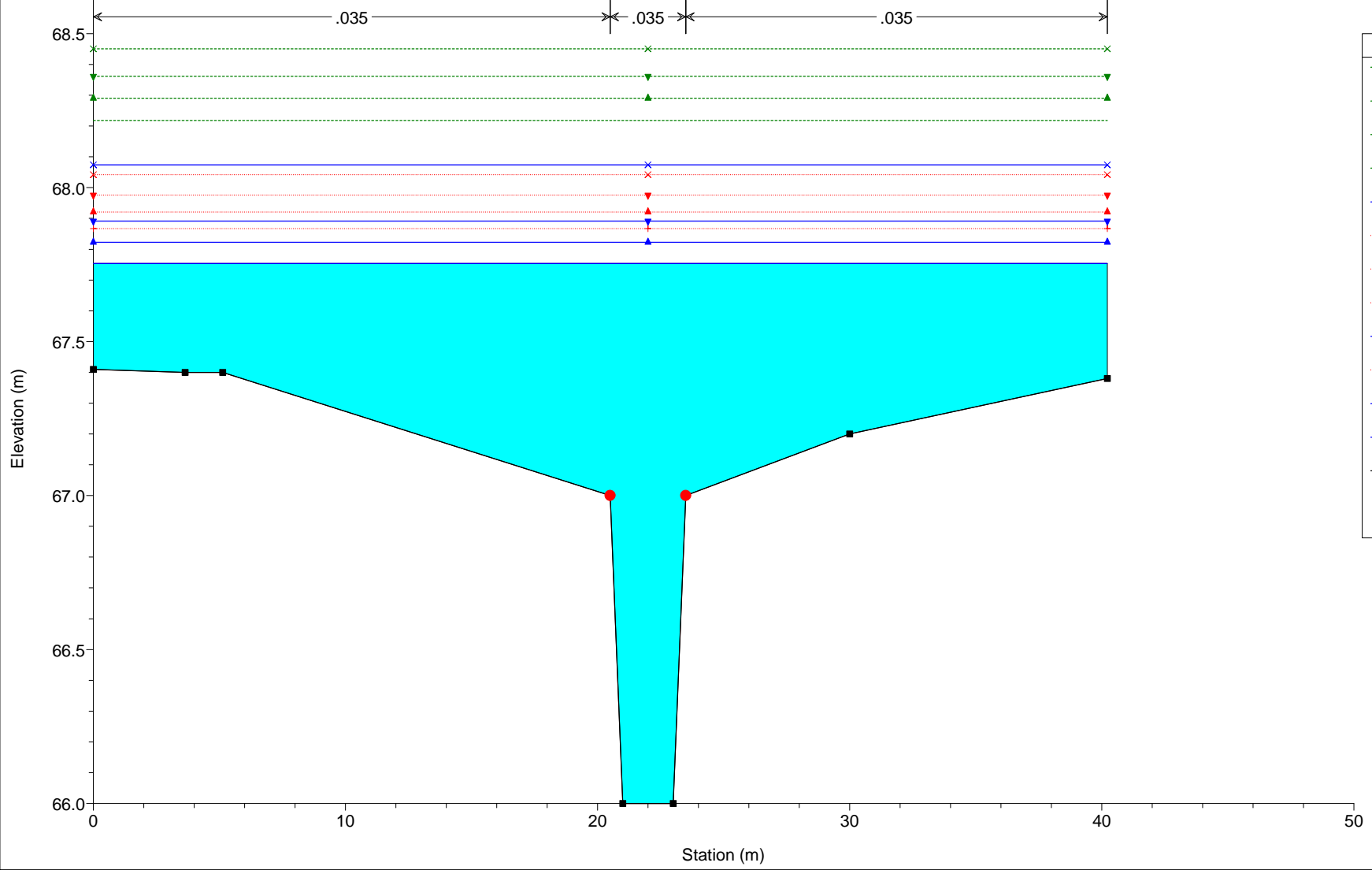




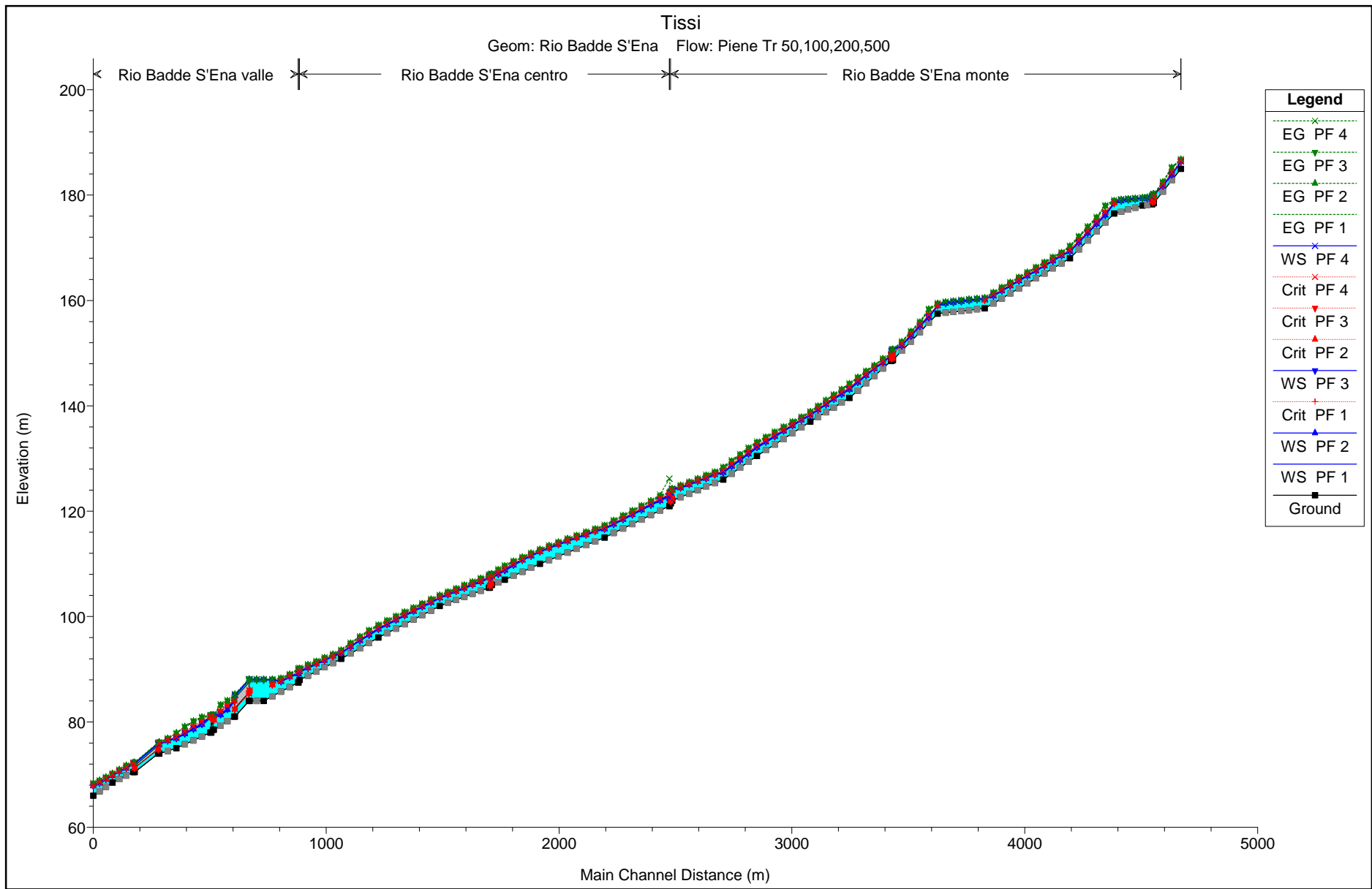


Tissi

Geom: Rio Badde S'Ena Flow: Piene Tr 50,100,200,500  
River = Rio Badde S'Ena Reach = valle RS = 24.66551



- Legend**
- EG PF 4
  - EG PF 3
  - EG PF 2
  - EG PF 1
  - WS PF 4
  - Crit PF 4
  - Crit PF 3
  - Crit PF 2
  - WS PF 3
  - Crit PF 1
  - WS PF 2
  - WS PF 1
  - Ground
  - Bank Sta



HEC-RAS Plan: Plan 01

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Rio Badde S'Ena	monte	4688.966	PF 1	51.35	185.00	186.27	186.37	186.65	0.020004	3.90	20.45	44.55	1.16
Rio Badde S'Ena	monte	4688.966	PF 2	58.67	185.00	186.32	186.43	186.72	0.020031	4.01	22.66	46.94	1.17
Rio Badde S'Ena	monte	4688.966	PF 3	66.00	185.00	186.36	186.48	186.78	0.019977	4.11	24.84	49.18	1.18
Rio Badde S'Ena	monte	4688.966	PF 4	75.68	185.00	186.42	186.54	186.86	0.019996	4.23	27.59	51.88	1.19
Rio Badde S'Ena	monte	4572.14	PF 1	51.35	178.50	180.06	179.64	180.09	0.001283	1.15	65.69	99.76	0.31
Rio Badde S'Ena	monte	4572.14	PF 2	58.67	178.50	180.10	179.68	180.14	0.001367	1.21	70.01	100.23	0.32
Rio Badde S'Ena	monte	4572.14	PF 3	66.00	178.50	180.15	179.72	180.19	0.001434	1.26	74.24	100.68	0.33
Rio Badde S'Ena	monte	4572.14	PF 4	75.68	178.50	180.20	179.76	180.25	0.001521	1.33	79.42	101.24	0.34
Rio Badde S'Ena	monte	4570											
Rio Badde S'Ena	monte	4564	PF 1	51.35	178.30	179.52		179.65	0.007628	2.34	34.77	79.60	0.71
Rio Badde S'Ena	monte	4564	PF 2	58.67	178.30	179.57		179.70	0.007599	2.40	38.54	83.77	0.72
Rio Badde S'Ena	monte	4564	PF 3	66.00	178.30	179.62		179.75	0.007455	2.44	42.45	87.89	0.72
Rio Badde S'Ena	monte	4564	PF 4	75.68	178.30	179.68		179.81	0.007005	2.45	47.92	91.80	0.70
Rio Badde S'Ena	monte	4523.031	PF 1	51.35	178.00	179.28		179.35	0.002947	1.50	45.76	76.84	0.45
Rio Badde S'Ena	monte	4523.031	PF 2	58.67	178.00	179.35		179.42	0.002819	1.53	51.11	80.19	0.44
Rio Badde S'Ena	monte	4523.031	PF 3	66.00	178.00	179.41		179.49	0.002679	1.54	56.62	83.50	0.43
Rio Badde S'Ena	monte	4523.031	PF 4	75.68	178.00	179.50		179.57	0.002510	1.56	63.94	87.70	0.42
Rio Badde S'Ena	monte	4402.578	PF 1	51.35	176.50	178.37	178.37	178.75	0.010251	3.70	20.28	25.77	0.89
Rio Badde S'Ena	monte	4402.578	PF 2	58.67	176.50	178.45	178.45	178.85	0.010429	3.84	22.27	26.93	0.91
Rio Badde S'Ena	monte	4402.578	PF 3	66.00	176.50	178.52	178.52	178.95	0.010558	3.96	24.21	28.02	0.92
Rio Badde S'Ena	monte	4402.578	PF 4	75.68	176.50	178.62	178.62	179.06	0.010258	4.04	27.13	29.57	0.91
Rio Badde S'Ena	monte	4212.742	PF 1	51.35	168.00	169.25	169.52	170.14	0.047099	5.90	13.45	29.58	1.78
Rio Badde S'Ena	monte	4212.742	PF 2	58.67	168.00	169.29	169.58	170.23	0.047222	6.07	14.84	30.81	1.79
Rio Badde S'Ena	monte	4212.742	PF 3	66.00	168.00	169.33	169.64	170.32	0.047297	6.22	16.19	31.96	1.81
Rio Badde S'Ena	monte	4212.742	PF 4	75.68	168.00	169.39	169.71	170.43	0.047332	6.40	17.92	33.38	1.82
Rio Badde S'Ena	monte	3846.623	PF 1	51.35	158.50	160.25	160.06	160.34	0.003508	2.06	39.41	59.90	0.52
Rio Badde S'Ena	monte	3846.623	PF 2	58.67	158.50	160.31	160.09	160.41	0.003464	2.10	43.06	60.25	0.52
Rio Badde S'Ena	monte	3846.623	PF 3	66.00	158.50	160.36	160.13	160.47	0.003492	2.15	46.27	60.55	0.52
Rio Badde S'Ena	monte	3846.623	PF 4	75.68	158.50	160.43	160.18	160.55	0.003477	2.20	50.51	60.95	0.52
Rio Badde S'Ena	monte	3644.158	PF 1	51.35	157.50	158.95	158.95	159.27	0.011893	3.32	21.59	33.38	0.92
Rio Badde S'Ena	monte	3644.158	PF 2	58.67	157.50	159.02	159.02	159.35	0.011750	3.40	23.80	34.51	0.92
Rio Badde S'Ena	monte	3644.158	PF 3	66.00	157.50	159.07	159.07	159.43	0.011761	3.50	25.85	35.52	0.93
Rio Badde S'Ena	monte	3644.158	PF 4	75.68	157.50	159.14	159.14	159.53	0.011871	3.63	28.37	36.73	0.94
Rio Badde S'Ena	monte	3452	PF 1	51.35	148.70	150.56	149.74	150.57	0.000340	0.67	94.42	89.68	0.16
Rio Badde S'Ena	monte	3452	PF 2	58.67	148.70	150.60	149.78	150.62	0.000391	0.73	98.18	90.00	0.18
Rio Badde S'Ena	monte	3452	PF 3	66.00	148.70	150.65	149.81	150.67	0.000431	0.78	102.55	90.36	0.18
Rio Badde S'Ena	monte	3452	PF 4	75.68	148.70	150.70	149.86	150.73	0.000486	0.85	107.62	90.79	0.20
Rio Badde S'Ena	monte	3450											
Rio Badde S'Ena	monte	3444.601	PF 1	51.35	148.50	149.54	149.54	149.73	0.013744	2.79	27.64	68.67	0.93
Rio Badde S'Ena	monte	3444.601	PF 2	58.67	148.50	149.58	149.58	149.79	0.013921	2.89	30.13	70.07	0.94
Rio Badde S'Ena	monte	3444.601	PF 3	66.00	148.50	149.61	149.61	149.84	0.014337	2.99	32.31	71.26	0.96
Rio Badde S'Ena	monte	3444.601	PF 4	75.68	148.50	149.66	149.66	149.90	0.013993	3.05	35.75	73.08	0.96
Rio Badde S'Ena	monte	3265.508	PF 1	51.35	141.50	143.08	143.36	144.02	0.034270	5.98	13.89	26.49	1.58
Rio Badde S'Ena	monte	3265.508	PF 2	58.67	141.50	143.13	143.43	144.10	0.034054	6.12	15.43	27.57	1.59
Rio Badde S'Ena	monte	3265.508	PF 3	66.00	141.50	143.19	143.50	144.18	0.033829	6.24	16.92	28.57	1.59
Rio Badde S'Ena	monte	3265.508	PF 4	75.68	141.50	143.25	143.58	144.28	0.033516	6.38	18.84	29.81	1.60
Rio Badde S'Ena	monte	3099.194	PF 1	51.35	137.00	138.18	138.35	138.72	0.030448	4.56	16.81	36.76	1.42
Rio Badde S'Ena	monte	3099.194	PF 2	58.67	137.00	138.23	138.42	138.80	0.030586	4.71	18.55	38.49	1.43
Rio Badde S'Ena	monte	3099.194	PF 3	66.00	137.00	138.27	138.47	138.88	0.030651	4.83	20.25	40.10	1.44
Rio Badde S'Ena	monte	3099.194	PF 4	75.68	137.00	138.33	138.53	138.96	0.030789	5.00	22.57	42.83	1.46
Rio Badde S'Ena	monte	2870.112	PF 1	51.35	130.50	132.02	132.27	132.84	0.025756	5.05	13.51	18.41	1.36
Rio Badde S'Ena	monte	2870.112	PF 2	58.67	130.50	132.10	132.36	132.96	0.025520	5.21	14.97	19.31	1.37
Rio Badde S'Ena	monte	2870.112	PF 3	66.00	130.50	132.17	132.44	133.08	0.025302	5.36	16.40	20.15	1.38
Rio Badde S'Ena	monte	2870.112	PF 4	75.68	130.50	132.26	132.56	133.22	0.025038	5.53	18.23	21.18	1.38
Rio Badde S'Ena	monte	2725.343	PF 1	51.35	126.00	127.28	127.54	128.09	0.032992	5.05	13.55	22.55	1.50
Rio Badde S'Ena	monte	2725.343	PF 2	58.67	126.00	127.34	127.62	128.21	0.033121	5.23	14.91	23.47	1.51
Rio Badde S'Ena	monte	2725.343	PF 3	66.00	126.00	127.40	127.69	128.32	0.033195	5.39	16.23	24.32	1.53
Rio Badde S'Ena	monte	2725.343	PF 4	75.68	126.00	127.47	127.78	128.45	0.033314	5.59	17.92	25.37	1.54
Rio Badde S'Ena	monte	2506.705	PF 1	51.35	122.00	124.00	123.88	124.13	0.005074	2.60	37.05	72.13	0.61
Rio Badde S'Ena	monte	2506.705	PF 2	58.67	122.00	124.06	123.96	124.19	0.004787	2.58	41.55	74.36	0.60
Rio Badde S'Ena	monte	2506.705	PF 3	66.00	122.00	124.12	124.00	124.25	0.004626	2.59	45.68	76.36	0.59
Rio Badde S'Ena	monte	2506.705	PF 4	75.68	122.00	124.18	124.04	124.32	0.004823	2.69	50.14	80.34	0.60
Rio Badde S'Ena	monte	2503											
Rio Badde S'Ena	monte	2500	PF 1	51.35	121.50	123.38	123.38	123.61	0.008597	3.24	28.66	63.63	0.79
Rio Badde S'Ena	monte	2500	PF 2	58.67	121.50	123.46	123.46	123.67	0.008525	3.32	33.88	70.52	0.79
Rio Badde S'Ena	monte	2500	PF 3	66.00	121.50	123.50	123.50	123.72	0.008412	3.35	37.00	72.11	0.79
Rio Badde S'Ena	monte	2500	PF 4	75.68	121.50	123.65		123.80	0.005370	2.81	47.72	77.34	0.64
Rio Badde S'Ena	centro	2482.154	PF 1	58.94	121.00	122.87	123.05	123.50	0.019044	4.79	18.07	25.00	1.17
Rio Badde S'Ena	centro	2482.154	PF 2	67.31	121.00	123.01	123.17	123.58	0.016006	4.64	22.05	29.96	1.09
Rio Badde S'Ena	centro	2482.154	PF 3	75.66	121.00	123.19	123.25	123.65	0.012092	4.28	27.94	37.91	0.96
Rio Badde S'Ena	centro	2482.154	PF 4	86.68	121.00	122.57	123.35	126.18	0.131837	11.11	11.45	19.65	2.98
Rio Badde S'Ena	centro	2203.168	PF 1	58.94	115.00	116.57	116.73	117.13	0.022432	4.58	18.73	30.54	1.23
Rio Badde S'Ena	centro	2203.168	PF 2	67.31	115.00	116.63	116.79	117.23	0.022333	4.70	20.72	32.01	1.23
Rio Badde S'Ena	centro	2203.168	PF 3	75.66	115.00	116.69	116.87	117.32	0.022268	4.82	22.64	33.36	1.24

HEC-RAS Plan: Plan 01 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Rio Badde S'Ena	centro	2203.168	PF 4	86.68	115.00	116.76	116.95	117.43	0.022158	4.96	25.12	35.03	1.25
Rio Badde S'Ena	centro	1926.574	PF 1	58.94	110.00	112.29	112.34	112.60	0.016971	3.52	25.75	54.64	0.81
Rio Badde S'Ena	centro	1926.574	PF 2	67.31	110.00	112.33	112.40	112.66	0.016988	3.57	28.23	55.81	0.82
Rio Badde S'Ena	centro	1926.574	PF 3	75.66	110.00	112.38	112.42	112.72	0.016817	3.61	30.71	56.95	0.81
Rio Badde S'Ena	centro	1926.574	PF 4	86.68	110.00	112.42	112.48	112.80	0.017100	3.70	33.53	58.22	0.82
Rio Badde S'Ena	centro	1775.189	PF 1	58.94	107.00	108.69	108.90	109.43	0.023970	5.25	16.76	24.83	1.34
Rio Badde S'Ena	centro	1775.189	PF 2	67.31	107.00	108.76	109.02	109.55	0.024138	5.42	18.52	26.12	1.36
Rio Badde S'Ena	centro	1775.189	PF 3	75.66	107.00	108.82	109.12	109.65	0.024004	5.56	20.31	27.37	1.36
Rio Badde S'Ena	centro	1775.189	PF 4	86.68	107.00	108.93	109.23	109.76	0.023153	5.68	23.43	31.62	1.35
Rio Badde S'Ena	centro	1720.669	PF 1	58.94	106.00	107.80	107.47	107.91	0.003197	2.01	41.73	53.13	0.50
Rio Badde S'Ena	centro	1720.669	PF 2	67.31	106.00	107.87	107.52	107.99	0.003268	2.09	45.61	55.23	0.50
Rio Badde S'Ena	centro	1720.669	PF 3	75.66	106.00	107.94	107.59	108.07	0.003303	2.15	49.39	56.87	0.51
Rio Badde S'Ena	centro	1720.669	PF 4	86.68	106.00	108.02	107.66	108.16	0.003320	2.23	54.24	58.58	0.52
Rio Badde S'Ena	centro	1715		Culvert									
Rio Badde S'Ena	centro	1707.533	PF 1	58.94	105.50	107.28	107.28	107.63	0.011946	3.38	23.74	34.79	0.86
Rio Badde S'Ena	centro	1707.533	PF 2	67.31	105.50	107.36	107.36	107.72	0.011635	3.45	26.57	36.93	0.85
Rio Badde S'Ena	centro	1707.533	PF 3	75.66	105.50	107.44	107.44	107.80	0.011279	3.50	29.44	38.97	0.84
Rio Badde S'Ena	centro	1707.533	PF 4	86.68	105.50	107.50	107.50	107.90	0.011847	3.67	32.07	40.75	0.87
Rio Badde S'Ena	centro	1496.875	PF 1	58.94	102.00	103.48	103.57	103.88	0.017547	4.08	22.76	42.79	1.12
Rio Badde S'Ena	centro	1496.875	PF 2	67.31	102.00	103.53	103.63	103.96	0.017598	4.20	25.18	44.94	1.13
Rio Badde S'Ena	centro	1496.875	PF 3	75.66	102.00	103.58	103.69	104.03	0.017642	4.30	27.52	46.91	1.14
Rio Badde S'Ena	centro	1496.875	PF 4	86.68	102.00	103.64	103.76	104.11	0.017752	4.44	30.47	49.29	1.15
Rio Badde S'Ena	centro	1232.082	PF 1	58.94	96.00	97.53	97.73	98.19	0.021974	4.68	17.14	24.29	1.26
Rio Badde S'Ena	centro	1232.082	PF 2	67.31	96.00	97.61	97.81	98.30	0.021962	4.86	19.27	26.56	1.27
Rio Badde S'Ena	centro	1232.082	PF 3	75.66	96.00	97.68	97.89	98.40	0.021852	5.00	21.20	28.13	1.28
Rio Badde S'Ena	centro	1232.082	PF 4	86.68	96.00	97.76	97.99	98.52	0.021711	5.16	23.65	29.93	1.29
Rio Badde S'Ena	centro	1073.66	PF 1	58.94	92.00	93.00	93.14	93.46	0.032485	4.14	20.35	50.51	1.42
Rio Badde S'Ena	centro	1073.66	PF 2	67.31	92.00	93.03	93.18	93.54	0.032529	4.27	22.34	52.22	1.43
Rio Badde S'Ena	centro	1073.66	PF 3	75.66	92.00	93.07	93.23	93.61	0.032560	4.38	24.26	53.83	1.44
Rio Badde S'Ena	centro	1073.66	PF 4	86.68	92.00	93.11	93.29	93.69	0.032743	4.53	26.67	55.78	1.45
Rio Badde S'Ena	centro	894.3327	PF 1	58.94	88.00	89.43	89.55	89.97	0.018730	4.12	18.72	26.10	1.15
Rio Badde S'Ena	centro	894.3327	PF 2	67.31	88.00	89.51	89.63	90.07	0.018419	4.24	20.72	27.20	1.15
Rio Badde S'Ena	centro	894.3327	PF 3	75.66	88.00	89.58	89.71	90.17	0.018154	4.35	22.66	28.22	1.15
Rio Badde S'Ena	centro	894.3327	PF 4	86.68	88.00	89.66	89.80	90.30	0.017810	4.48	25.18	29.50	1.15
Rio Badde S'Ena	valle	881.6205	PF 1	66.31	87.50	89.14	89.36	89.83	0.033842	5.26	19.79	40.72	1.40
Rio Badde S'Ena	valle	881.6205	PF 2	75.71	87.50	89.18	89.41	89.93	0.035683	5.50	21.42	42.11	1.44
Rio Badde S'Ena	valle	881.6205	PF 3	85.09	87.50	89.22	89.48	90.02	0.036939	5.69	23.07	43.46	1.47
Rio Badde S'Ena	valle	881.6205	PF 4	97.47	87.50	89.27	89.54	90.15	0.038748	5.94	25.08	45.06	1.51
Rio Badde S'Ena	valle	732.5272	PF 1	66.31	84.00	87.95	87.96	88.00	0.000086	0.48	174.62	100.56	0.08
Rio Badde S'Ena	valle	732.5272	PF 2	75.71	84.00	88.00	88.01	88.01	0.000103	0.53	179.40	101.13	0.09
Rio Badde S'Ena	valle	732.5272	PF 3	85.09	84.00	88.04	88.05	88.05	0.000121	0.58	183.81	101.66	0.10
Rio Badde S'Ena	valle	732.5272	PF 4	97.47	84.00	88.10	88.11	88.11	0.000145	0.64	189.57	102.34	0.11
Rio Badde S'Ena	valle	671.1826	PF 1	66.31	84.00	87.95	85.97	87.95	0.000020	0.23	307.68	136.08	0.04
Rio Badde S'Ena	valle	671.1826	PF 2	75.71	84.00	88.00	85.98	88.00	0.000024	0.26	314.16	136.22	0.04
Rio Badde S'Ena	valle	671.1826	PF 3	85.09	84.00	88.04	86.01	88.05	0.000029	0.28	320.12	136.34	0.05
Rio Badde S'Ena	valle	671.1826	PF 4	97.47	84.00	88.10	86.04	88.10	0.000035	0.31	327.88	136.51	0.05
Rio Badde S'Ena	valle	650		Culvert									
Rio Badde S'Ena	valle	605.6137	PF 1	66.31	81.00	83.86	83.86	84.25	0.005076	3.07	29.63	40.39	0.64
Rio Badde S'Ena	valle	605.6137	PF 2	75.71	81.00	83.95	83.95	84.36	0.005236	3.20	33.29	42.45	0.65
Rio Badde S'Ena	valle	605.6137	PF 3	85.09	81.00	84.03	84.03	84.45	0.005381	3.31	36.73	44.31	0.66
Rio Badde S'Ena	valle	605.6137	PF 4	97.47	81.00	84.11	84.11	84.57	0.005739	3.49	40.56	46.68	0.69
Rio Badde S'Ena	valle	518.3431	PF 1	66.31	78.50	81.15	80.35	81.16	0.000170	0.56	171.09	165.00	0.12
Rio Badde S'Ena	valle	518.3431	PF 2	75.71	78.50	81.22	80.39	81.23	0.000183	0.60	182.26	166.52	0.12
Rio Badde S'Ena	valle	518.3431	PF 3	85.09	78.50	81.28	80.40	81.29	0.000196	0.63	192.36	167.89	0.13
Rio Badde S'Ena	valle	518.3431	PF 4	97.47	78.50	81.35	80.45	81.36	0.000216	0.67	203.39	169.38	0.13
Rio Badde S'Ena	valle	510		Bridge									
Rio Badde S'Ena	valle	503.6644	PF 1	66.31	78.00	80.79	80.79	81.10	0.003563	2.79	37.78	80.34	0.56
Rio Badde S'Ena	valle	503.6644	PF 2	75.71	78.00	80.90	80.90	81.17	0.003231	2.74	47.81	94.92	0.53
Rio Badde S'Ena	valle	503.6644	PF 3	85.09	78.00	80.97	80.97	81.24	0.003281	2.80	54.20	101.69	0.54
Rio Badde S'Ena	valle	503.6644	PF 4	97.47	78.00	81.05	81.05	81.31	0.003185	2.82	63.19	106.92	0.53
Rio Badde S'Ena	valle	357.4628	PF 1	66.31	75.00	76.84	77.11	77.80	0.031940	5.47	20.12	52.73	1.42
Rio Badde S'Ena	valle	357.4628	PF 2	75.71	75.00	76.89	77.15	77.84	0.031857	5.58	22.59	55.08	1.43
Rio Badde S'Ena	valle	357.4628	PF 3	85.09	75.00	76.93	77.20	77.88	0.031620	5.66	25.01	57.28	1.43
Rio Badde S'Ena	valle	357.4628	PF 4	97.47	75.00	76.98	77.25	77.92	0.031136	5.74	28.15	60.02	1.43
Rio Badde S'Ena	valle	283.44	PF 1	66.31	74.00	75.72	75.81	76.09	0.022643	4.18	34.89	149.75	1.15
Rio Badde S'Ena	valle	283.44	PF 2	75.71	74.00	75.74	75.85	76.11	0.023057	4.26	38.28	151.43	1.16
Rio Badde S'Ena	valle	283.44	PF 3	85.09	74.00	75.76	75.87	76.14	0.023664	4.36	41.31	152.91	1.18
Rio Badde S'Ena	valle	283.44	PF 4	97.47	74.00	75.78	75.89	76.17	0.024036	4.45	45.30	154.84	1.20
Rio Badde S'Ena	valle	200		Culvert									
Rio Badde S'Ena	valle	172.2598	PF 1	66.31	70.50	72.02	72.02	72.18	0.010898	2.90	42.53	122.97	0.80
Rio Badde S'Ena	valle	172.2598	PF 2	75.71	70.50	72.06	72.06	72.22	0.009973	2.83	47.84	124.80	0.76
Rio Badde S'Ena	valle	172.2598	PF 3	85.09	70.50	72.08	72.08	72.26	0.011151	3.01	49.81	125.46	0.81
Rio Badde S'Ena	valle	172.2598	PF 4	97.47	70.50	72.11	72.11	72.31	0.011488	3.11	53.95	126.86	0.83

HEC-RAS Plan: Plan 01 (Continued)

River	Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Rio Badde S'Ena	valle	82.33432	PF 1	66.31	68.50	69.81	69.90	70.14	0.027118	4.09	31.47	119.66	1.22
Rio Badde S'Ena	valle	82.33432	PF 2	75.71	68.50	69.83	69.93	70.17	0.027405	4.17	34.38	121.00	1.23
Rio Badde S'Ena	valle	82.33432	PF 3	85.09	68.50	69.86	69.95	70.21	0.027413	4.22	37.25	122.31	1.24
Rio Badde S'Ena	valle	82.33432	PF 4	97.47	68.50	69.89	69.99	70.26	0.027563	4.30	40.78	123.90	1.24
Rio Badde S'Ena	valle	24.66551	PF 1	66.31	66.00	67.75	67.87	68.22	0.017698	4.11	24.06	40.22	1.04
Rio Badde S'Ena	valle	24.66551	PF 2	75.71	66.00	67.82	67.92	68.29	0.016494	4.08	26.83	40.22	1.01
Rio Badde S'Ena	valle	24.66551	PF 3	85.09	66.00	67.89	67.98	68.36	0.015358	4.05	29.59	40.22	0.98
Rio Badde S'Ena	valle	24.66551	PF 4	97.47	66.00	68.07	68.04	68.45	0.010006	3.49	36.94	40.22	0.81
Affluente1	Affluente1	276.7336	PF 1	25.06	100.00	101.34	101.46	101.77	0.020005	3.69	9.80	21.31	1.08
Affluente1	Affluente1	276.7336	PF 2	28.60	100.00	101.39	101.51	101.83	0.020005	3.78	10.78	21.75	1.09
Affluente1	Affluente1	276.7336	PF 3	31.53	100.00	101.42	101.54	101.88	0.020004	3.85	11.55	22.08	1.10
Affluente1	Affluente1	276.7336	PF 4	35.82	100.00	101.47	101.60	101.96	0.020003	3.95	12.63	22.55	1.10
Affluente1	Affluente1	135.7637	PF 1	25.06	92.00	93.21	93.49	94.35	0.056779	5.74	6.54	19.62	1.79
Affluente1	Affluente1	135.7637	PF 2	28.60	92.00	93.25	93.54	94.41	0.056990	5.89	7.36	21.09	1.80
Affluente1	Affluente1	135.7637	PF 3	31.53	92.00	93.28	93.57	94.45	0.057170	6.01	8.01	22.20	1.81
Affluente1	Affluente1	135.7637	PF 4	35.82	92.00	93.32	93.62	94.51	0.057307	6.16	8.94	23.70	1.83
Affluente1	Affluente1	3.39368	PF 1	25.06	88.00	89.39	89.70	90.30	0.027204	4.54	6.95	14.11	1.36
Affluente1	Affluente1	3.39368	PF 2	28.60	88.00	89.46	89.77	90.38	0.026546	4.66	7.94	15.50	1.35
Affluente1	Affluente1	3.39368	PF 3	31.53	88.00	89.51	89.83	90.44	0.026110	4.75	8.75	16.54	1.35
Affluente1	Affluente1	3.39368	PF 4	35.82	88.00	89.58	89.90	90.52	0.025575	4.87	9.91	17.93	1.35