EXCMO. AYUNTAMIENTO DE HOSPITAL DE ÓRBIGO

ESTUDIO HIDROLÓGICO-HIDRÁULICO DE AVENIDAS DEL RÍO ÓRBIGO PARA PLANEAMIENTO URBANÍSTICO DEL AYUNTAMIENTO DE HOSPITAL DE ÓRBIGO (LEÓN)

AUTOR:

ULISES LÓPEZ-PELÁEZ MANOJA

INGENIERO DE CAMINOS, CANALES Y PUERTOS

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Documento nº 1: **MEMORIA**

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Ulises López-Peláez Manoja - INGENIERO DE CAMINOS, CANALES Y PUERTOS – Colegiado nº 14120
"Edificio Europa", Avda. Reyes Leoneses 14, oficina 3-S – LEÓN
Tel. 987073163 / 607586210

1. Antecedentes y objeto del Estudio

Para proceder a la renovación del Planeamiento Urbanístico Municipal, el Ayuntamiento de Hospital de Órbigo precisa disponer de una herramienta que le permita ordenar los distintos usos de los terrenos de la totalidad del término municipal en función de la situación de éstos con respecto a posibles avenidas extraordinarias del río Órbigo, que lo atraviesa de norte a sur.

Considerando los distintos usos que podría tener el suelo, parece apropiado considerar al menos tres caudales máximos para las avenidas del río, la máxima crecida ordinaria (MCO) y los de período de retorno de 100 y 500 años (Q_{100} y Q_{500}, respectivamente).

Así pues el Excmo. Ayuntamiento de Hospital de Órbigo ha encargado al Ingeniero de Caminos, Canales y Puertos que suscribe, la redacción del ***"Estudio hidrológico-hidráulico de avenidas del río Órbigo para planeamiento urbanístico del Ayuntamiento de Hospital de Órbigo (León)"***.

2. Estudio hidrológico del río Órbigo

El objeto del estudio hidrológico es la obtención de los caudales máximos aportados por el río Órbigo para la *máxima crecida ordinaria* (MCO) y para períodos de retorno de 100 y 500 años (Q_{100} y Q_{500}) a su paso por los terrenos situados dentro del ámbito del presente estudio, que no son otros que la totalidad del término municipal atravesado por el río.

Para la realización de dicho estudio emplearemos un método de extrapolación estadística a partir de datos foronómicos.

Esta selección de método viene motivada por la situación próxima al punto de control de Hospital de Órbigo, de una de las estaciones de aforos de la Confederación Hidrográfica del Duero. Esta se ubica en Cebrones del Río, en el río Órbigo, y es la estación nº60. De esta forma, y en este lugar, se cuenta directamente con datos de caudales circulantes aforados en el río desde el año 1977-1978 hasta el año 2006-2007, es decir una serie caudales máximos de 30 años.

Año	Qmax (m3/s)
77-78	253,130
78-79	173,400
79-80	107,100
80-81	43,800
81-82	168,450
82-83	123,990
83-84	101,400
84-85	252,000
85-86	110,850
86-87	50,470
87-88	278,420
88-89	87,760
89-90	400,570
90-91	185,480
91-92	41,470
92-93	95,780
93-94	135,920
94-95	77,460
95-96	524,470
96-97	152,600
97-98	122,230
98-99	49,310
99-00	91,830
00-01	588,000
01-02	74,400
02-03	557,000
03-04	111,000
04-05	92,600
05-06	168,000
06-07	468,000

2.1. Obtención del caudal correspondiente a la Máxima Crecida Ordinaria (MCO)

Según establece el Reglamento del Dominio Público Hidráulico (RD 849/1986, de 11 de abril) en su Artículo 4.2.- *"Se considerará como caudal de la máxima crecida ordinaria la media de los máximos caudales anuales, en su régimen natural, producidos durante diez años consecutivos, que sean representativos del comportamiento hidráulico de la corriente."*

Año	Qmax (m3/s)	Caudal medio de cada serie de 10 años consecutivos
77-78	253,130	
78-79	173,400	
79-80	107,100	
80-81	43,800	
81-82	168,450	
82-83	123,990	
83-84	101,400	
84-85	252,000	
85-86	110,850	

Año	Qmax (m3/s)	Caudal medio de cada serie de 10 años consecutivos
86-87	50,470	138,46
87-88	278,420	140,99
88-89	87,760	132,42
89-90	400,570	161,77
90-91	185,480	175,94
91-92	41,470	163,24
92-93	95,780	160,42
93-94	135,920	163,87
94-95	77,460	146,42
95-96	524,470	187,78
96-97	152,600	197,99
97-98	122,230	182,37
98-99	49,310	178,53
99-00	91,830	147,66
00-01	588,000	187,91
01-02	74,400	191,20
02-03	557,000	237,32
03-04	111,000	234,83
04-05	92,600	236,34
05-06	168,000	200,70
06-07	468,000	232,24
Caudal medio de cada serie (m³/s)		180,88

A modo de contraste, calcularemos a qué período de retorno corresponde este dato de caudal obtenido. Para ello se ha empleado el método estadístico de la distribución de Gumbel, apropiada para valores extremos como éste.

$$Q_T = M + \left(y - \bar{y}_n \right) \cdot \frac{S_x}{S_n}$$

$$y = -Ln\left[-Ln\left(1 - \frac{1}{T} \right) \right]$$

- Q_T: Caudal máxima para el período de retorno considerado
- M: Valor medio de la serie
- S_x: Desviación típica de la serie
- T: Período de retorno considerado
- y_n: Tabulado en bibliografía especializada en función de n (número de datos de la serie)
- S_n: Tabulado en bibliografía especializada en función de n (número de datos de la serie)

Aplicando la formulación expuesta, los resultados son los siguientes:

Distribución Gumbel	
T (años)	2,1616
n	30
y	0,4763
yn	0,5388
Sx	156,11
Sn	1,1226
M	189,56
Q (m^3/s)	180,88

El periodo de retorno obtenido para la MCO (2,1616 años) se halla dentro del rango habitualmente aceptado (entre 2 y 7 años), por lo que lo consideramos válido.

2.2. Obtención de los caudales máximos de período de retorno 100 y 500 años (Q_{100} y Q_{500})

A partir de la serie de datos disponible y expuesta en el punto 2, se han obtenido los caudales máximos para períodos de retorno de 100 y 500 años. Para ello se ha empleado el método estadístico de la distribución de Gumbel, apropiada para valores extremos como éste.

$$Q_T = M + \left(y - \bar{y}_n \right) \cdot \frac{S_x}{S_n}$$

$$y = -Ln\left[-Ln\left(1 - \frac{1}{T} \right) \right]$$

- Q_T: Caudal máxima para el período de retorno considerado
- M: Valor medio de la serie
- S_x: Desviación típica de la serie
- T: Período de retorno considerado
- y_n: Tabulado en bibliografía especializada en función de n (número de datos de la serie)
- S_n: Tabulado en bibliografía especializada en función de n (número de datos de la serie)

Aplicando la formulación expuesta a la serie de caudales referidos en el punto 2, los resultados son los siguientes:

Distribución Gumbel	
T (años)	100
n	30
y	4,6001
yn	0,5388
Sx	156,11
Sn	1,1226
M	189,56
Q (m^3/s)	754,36

Distribución Gumbel	
T (años)	500
n	30
y	6,2136
yn	0,5388
Sx	156,11
Sn	1,1226
M	189,56
Q (m^3/s)	978,73

2.3. Extrapolación de los caudales obtenidos al punto de control de Hospital de Órbigo

Se ha delimitado la cuenca vertiente del río Órbigo en la estación de aforos de Cebrones del Río, resultando una superficie de 3.192 km^2. Los caudales obtenidos en los puntos precedentes en dicha estación de aforos son los siguientes:

Punto de control	Cebrones del Río
Río	Órbigo
Cuenca vertiente (km^2)	3.192
Caudal MCO (m^3/s)	180,88
Caudal T= 100 años (m^3/s)	754,36
Caudal T= 500 años (m^3/s)	978,73

Sin embargo, la superficie de la cuenca vertiente en el punto de control de Hospital de Órbigo y que es objeto del estudio, es sensiblemente menor que la de la estación de aforos de Cebrones del Río. Así, se ha calculado la superficie de la cuenca del río Órbigo en Hospital de Órbigo, obteniéndose un valor de 1.695 km^2.

Para poder obtener los caudales máximos en el punto de control de Hospital de Órbigo, se ha utilizado una extrapolación basada en la aceptada relación entre caudal y superficie vertiente, válida en condiciones similares a las presentes y para caudales máximos:

$$Q_i = k \cdot \sqrt{S_i}$$

Con la formulación expuesta se han obtenido los coeficientes k_{MCO}, k_{100} y k_{500}, y los caudales correspondientes extrapolados al punto de control de Hospital de Órbigo:

Punto de control	Cebrones del Río	Hospital de Órbigo
Superficie cuenca (km2)	3.192,00	1.695,00
k_{500}	17,32	
k_{100}	13,35	
k_{MCO}	3,20	
Caudal Q_{500} (m3/s)	978,73	713,21
Caudal Q_{100} (m3/s)	754,36	549,71
Caudal Q_{MCO} (m3/s)	180,88	131,81

En el plano nº2 del Estudio se adjunta el plano de cuencas del río Órbigo en escala 1/150.000.

3. Comprobación hidráulica del río Órbigo

El objeto del estudio hidráulico es la obtención del nivel de la lámina de agua circulante en el río Órbigo a lo largo del término municipal de Hospital de Órbigo para la máxima crecida ordinaria (MCO) y para los caudales máximos de períodos de retorno de 100 y 500 años (Q_{100} y Q_{500}) obtenidos en el estudio hidrológico precedente.

Para simular el flujo del río con estos caudales en los puntos de control se ha empleado el programa de simulación hidráulica Hydraulic Engineers Corp.- River Analisys System, (HEC-RAS). Este programa realiza un cálculo hidráulico en régimen permanente. Por ello es necesario considerar un tramo de río en lugar de una sola sección.

Sobre la cartografía disponible al efecto, se ha procedido a definir una serie de perfiles transversales al cauce (perfiles del 410 al 010) para representar fielmente el tramo de cauce sobre el que se realiza la simulación hidráulica.

Asimismo se han introducido al modelo cuatro puentes existentes en el tramo objeto del Estudio:

- Perfil 016: Puente autopista AP-71
- Perfil 126: Puente antiguo carretera nacional N-120
- Perfil 136: Puente nuevo carretera nacional N-120
- Perfil 244: Puente medieval peatonal

Los parámetros que definen la simulación se resumen a continuación:

- Número de perfiles empleados: 47
- Longitud total del tramo de río simulado: 1.908,27 m

- Distancia media aproximada entre perfiles: 41,48 m
- Coeficiente de rugosidad para el canal principal: 0,035
- Coeficiente de rugosidad para las llanuras de inundación: 0,065
- Condición de contorno: Pendiente de la línea de energía igual a la del cauce en el extremo de aguas abajo i = 0,227 %.
- Métodos de cálculo de pérdida de carga para pilas de puentes:
    - Puente perfil 016
        - Energía
        - Momento (C_d=1,2)
        - Yarnell (k=1,05)
    - Puente perfil 126
        - Energía
        - Momento (C_d=1,33
        - Yarnell (k=0,95)
    - Puente perfil 136
        - Energía
        - Momento (C_d=1,2)
        - Yarnell (k=1,05)
    - Puente perfil 244
        - Energía
        - Momento (C_d=1,39)
        - Yarnell (k=1,05)

- Método a emplear de los anteriores: el que ofrezca resultado pésimo

El resultado de la simulación puede consultarse tanto numéricamente como gráficamente en los anejos correspondientes del presente estudio. Además de lo anterior, se han trasladado las líneas de inundación a un plano de planta el cual puede consultarse en el documento nº2 de planos.

4. Relación de documentos que componen el presente Estudio Técnico

- DOCUMENTO Nº1: MEMORIA
  - Memoria.
  - Anejo nº1: Perfiles longitudinales (HEC-RAS)
  - Anejo nº2: Perfiles transversales MCO (HEC-RAS)
  - Anejo nº3: Perfiles transversales Q100 (HEC-RAS)
  - Anejo nº4: Perfiles transversales Q500 (HEC-RAS)
  - Anejo nº5: Vista en 3D (HEC-RAS)
  - Anejo nº6: Tablas de resultados de perfiles transversales (HEC-RAS)
  - Anejo nº7: Tablas de resultados de puentes (HEC-RAS)
  - Anejo nº8: Tabla resumen de resultados (HEC-RAS)
  - Anejo nº9: Archivos de entrada de datos de la simulación (HEC-RAS).

- DOCUMENTO Nº2: PLANOS
  - Plano nº1: *Situación*
  - Plano nº2*: Cuencas vertientes*
  - Plano nº3: *Planta inundación caudal máxima crecida ordinaria (MCO)*
  - Plano nº4: *Planta inundación caudal período de retorno T: 100 años (Q100)*
  - Plano nº5: *Planta inundación caudal período de retorno T: 500 años (Q500)*

León, octubre de 2010

El Ingeniero de Caminos, Canales y Puertos

Ulises López-Peláez Manoja

Anejo nº 1: PERFILES LONGITUDINALES (HEC-RAS)

Hidrológico Hospital Plan: Plan 01

Órbigo Tramo urbano

Legend

EG MCO

WS MCO

Crit MCO

Ground

Right Levee

Elevation (m)

824
822
820
818
816
814
812
810

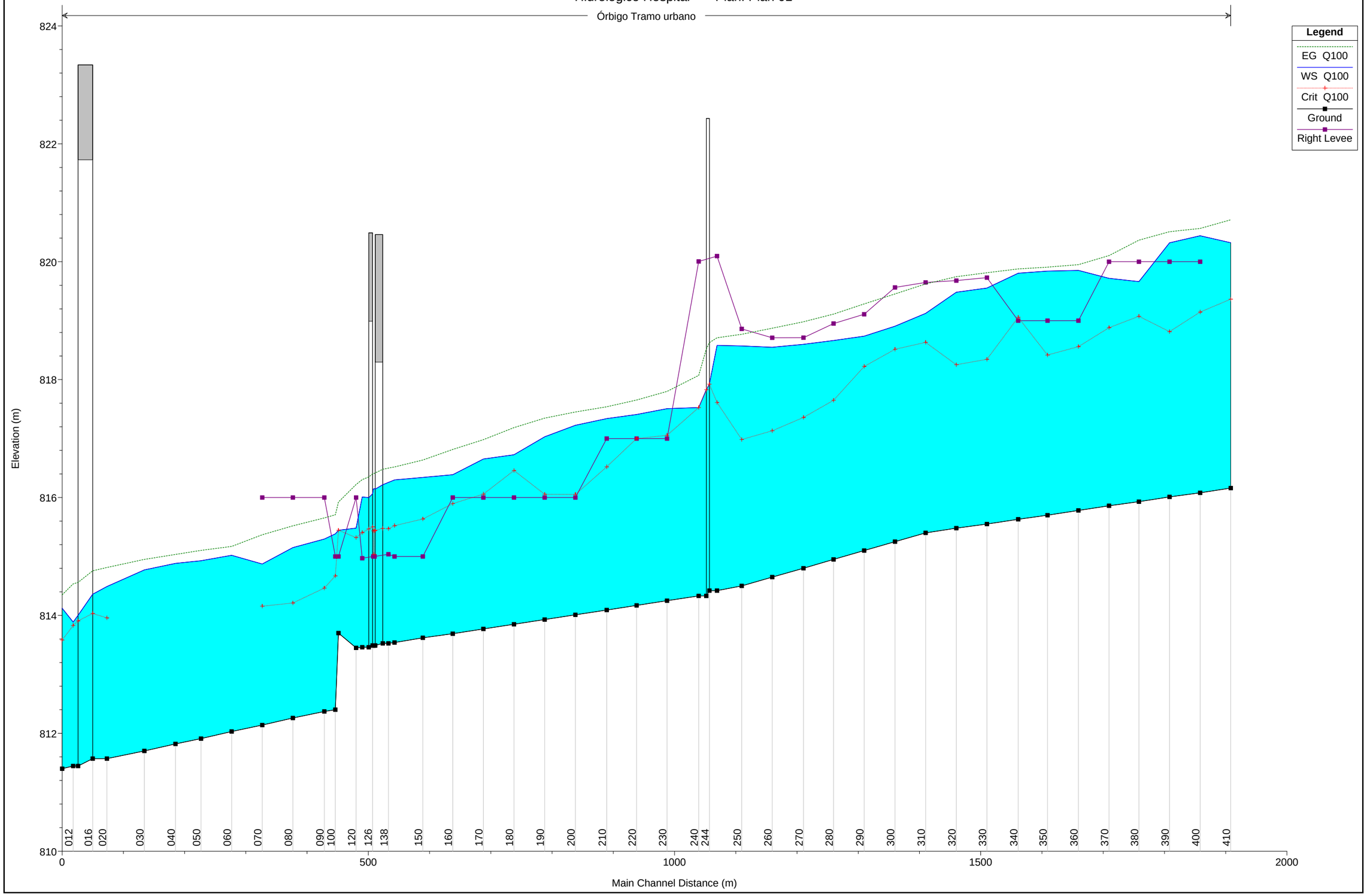
012 016 020 030 040 050 060 070 080 090 100 120 126 138 150 160 170 180 190 200 210 220 230 240 244 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410

0 500 1000 1500 2000

Main Channel Distance (m)

Hidrológico Hospital Plan: Plan 01

Órbigo Tramo urbano



Hidrológico Hospital Plan: Plan 01

Órbigo Tramo urbano

Legend

EG Q500

WS Q500

Crit Q500

Ground

Right Levee

Elevation (m)

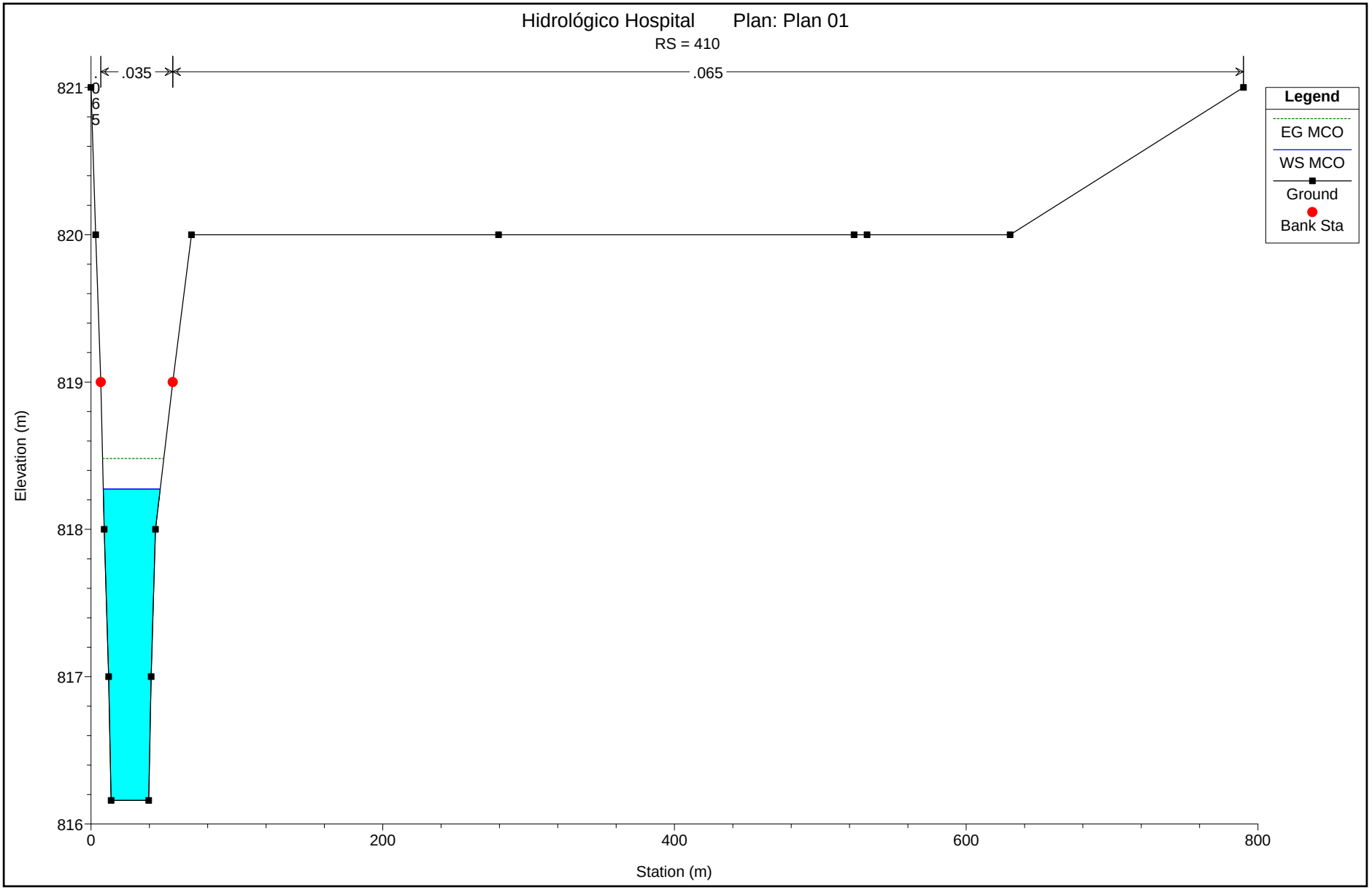
824
822
820
818
816
814
812
810

012 016 020 030 040 050 060 070 080 090 100 120 126 138 150 160 170 180 190 200 210 220 230 240 244 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410

0 500 1000 1500 2000

Main Channel Distance (m)

Anejo nº 2: PERFILES TRANSVERSALES MCO (HEC-RAS)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.065
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WS MCO
Ground
Bank Sta
Elevation (m)
Station (m)
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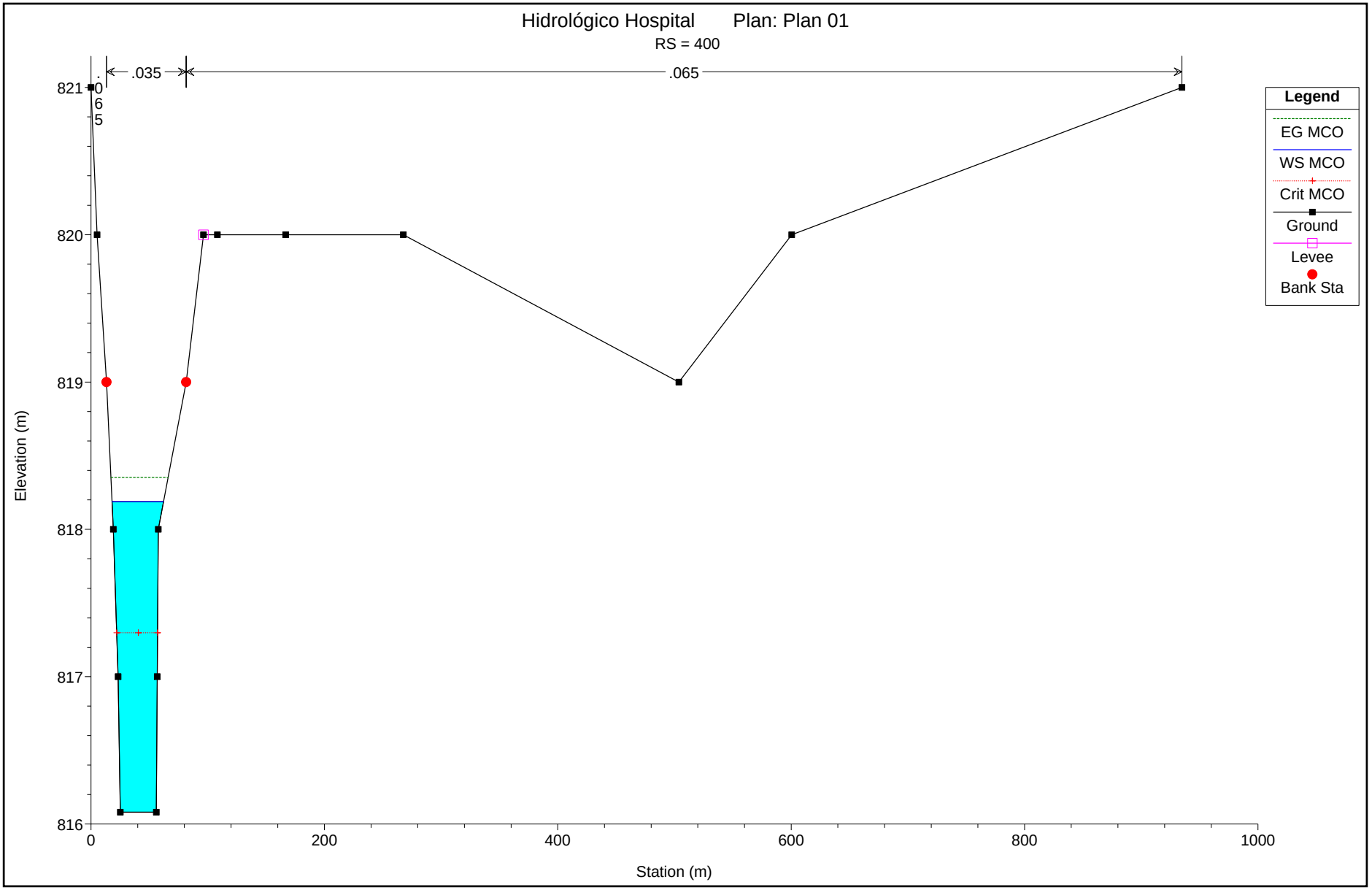
817
818
819
820
821
0
200
400
600
800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WS MCO
Crit MCO
Ground
Levee
Bank Sta
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Station (m)
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818
819
820
821
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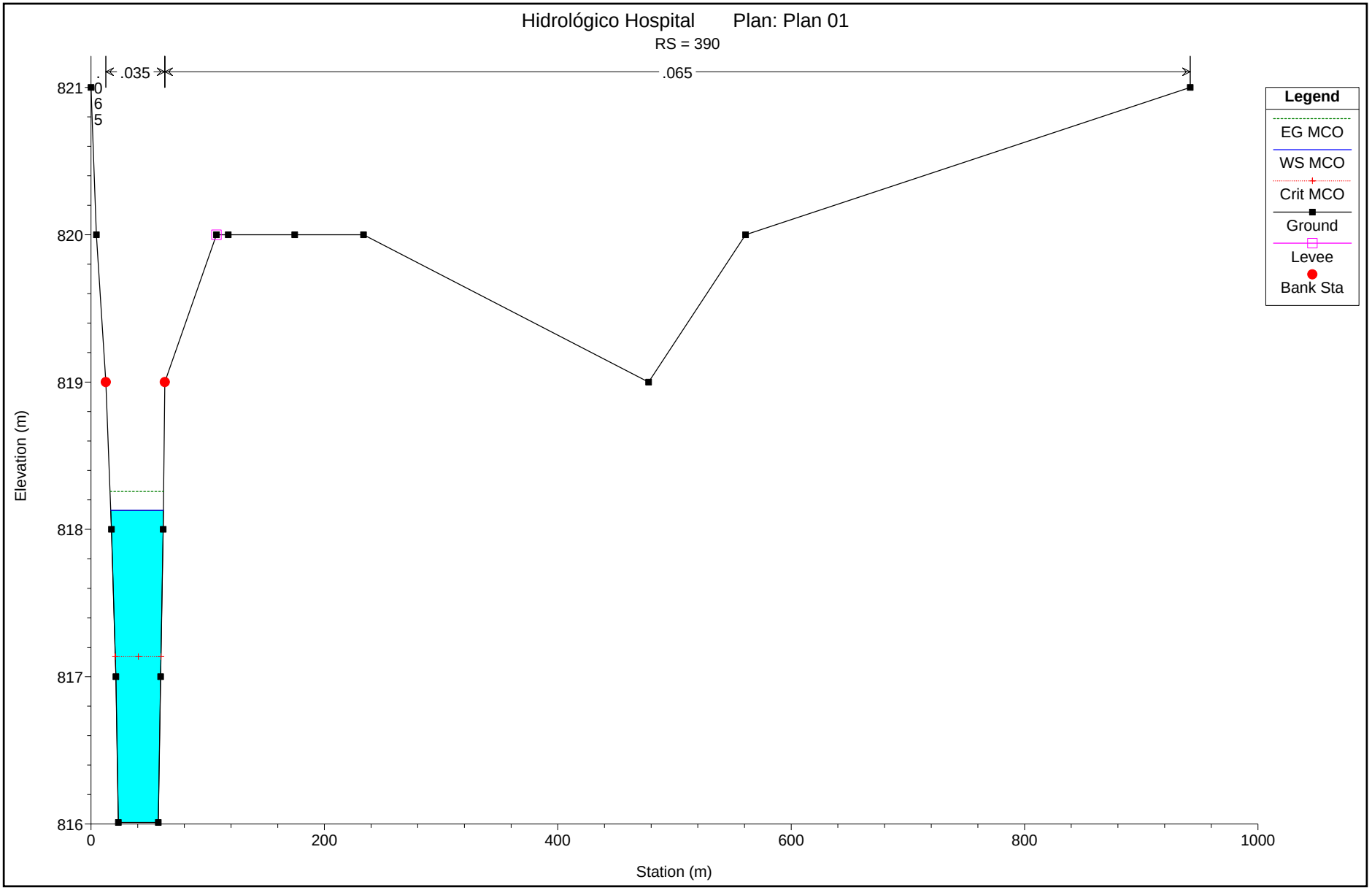
200
400
600
800
1000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WS MCO
Crit MCO
Ground
Levee
Bank Sta
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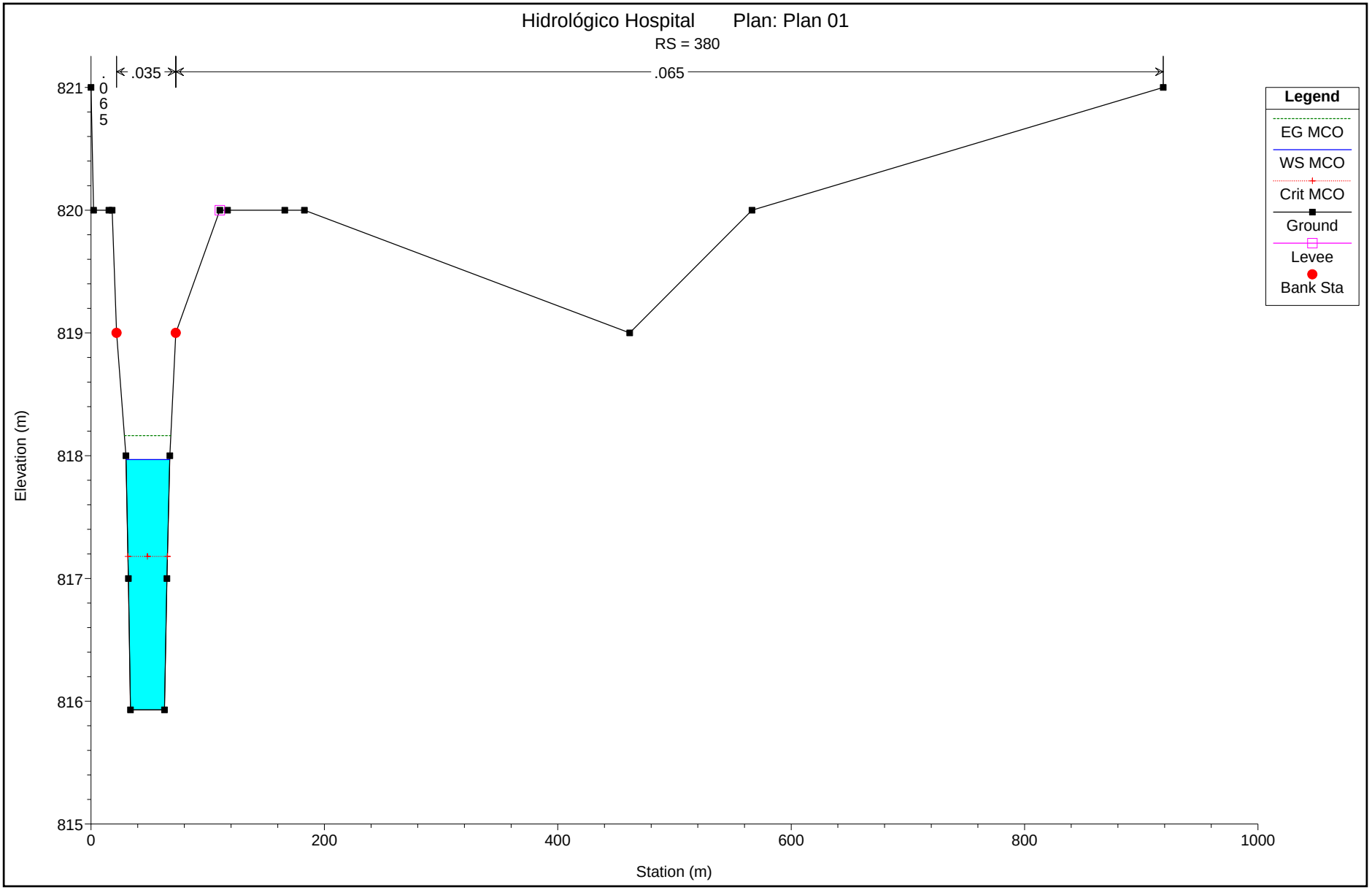
817
816
0
200
400
600
800
1000
Station (m)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WS MCO
Crit MCO
Ground
Levee
Bank Sta
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Station (m)
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819
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816
815
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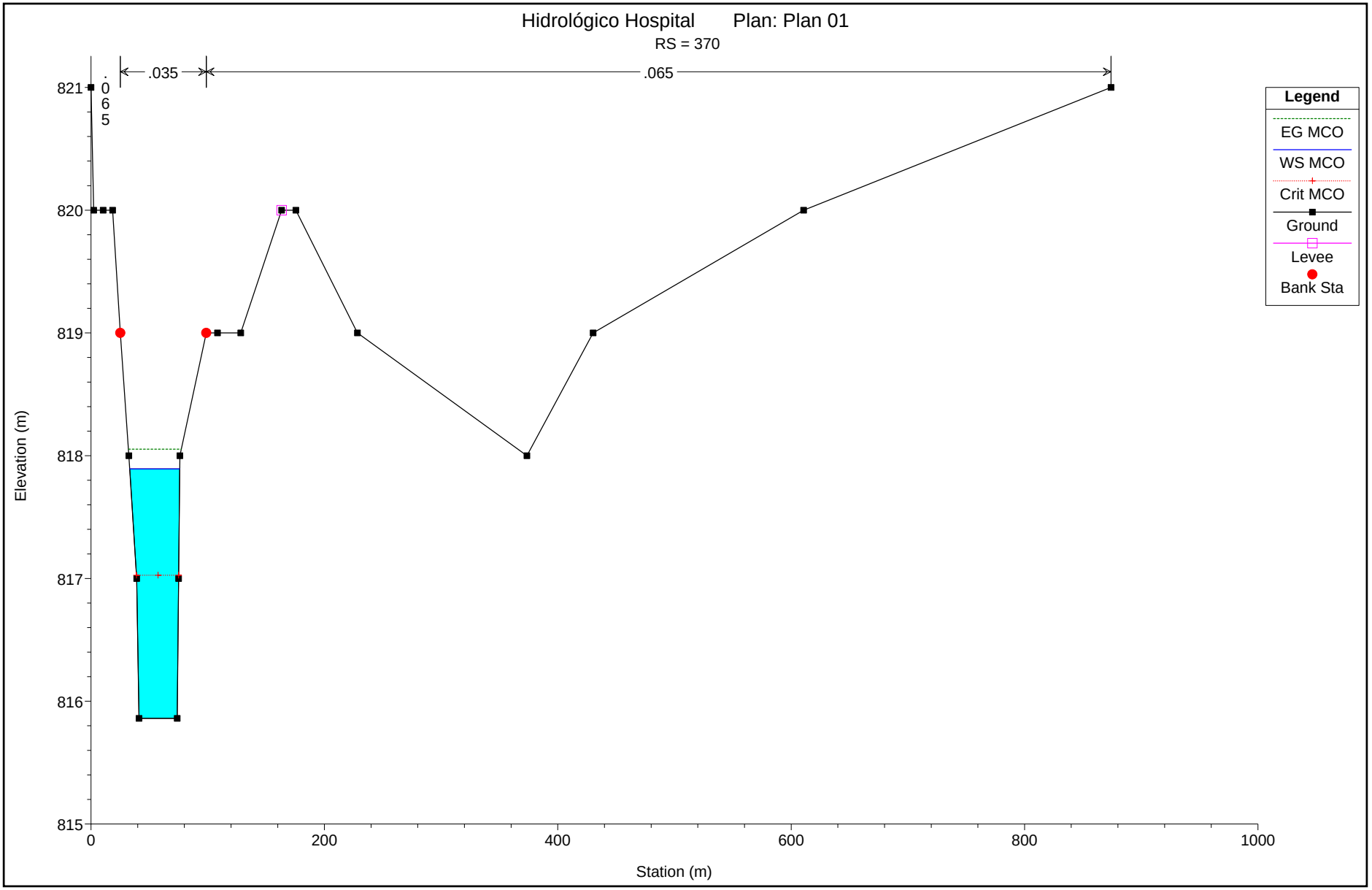
800
1000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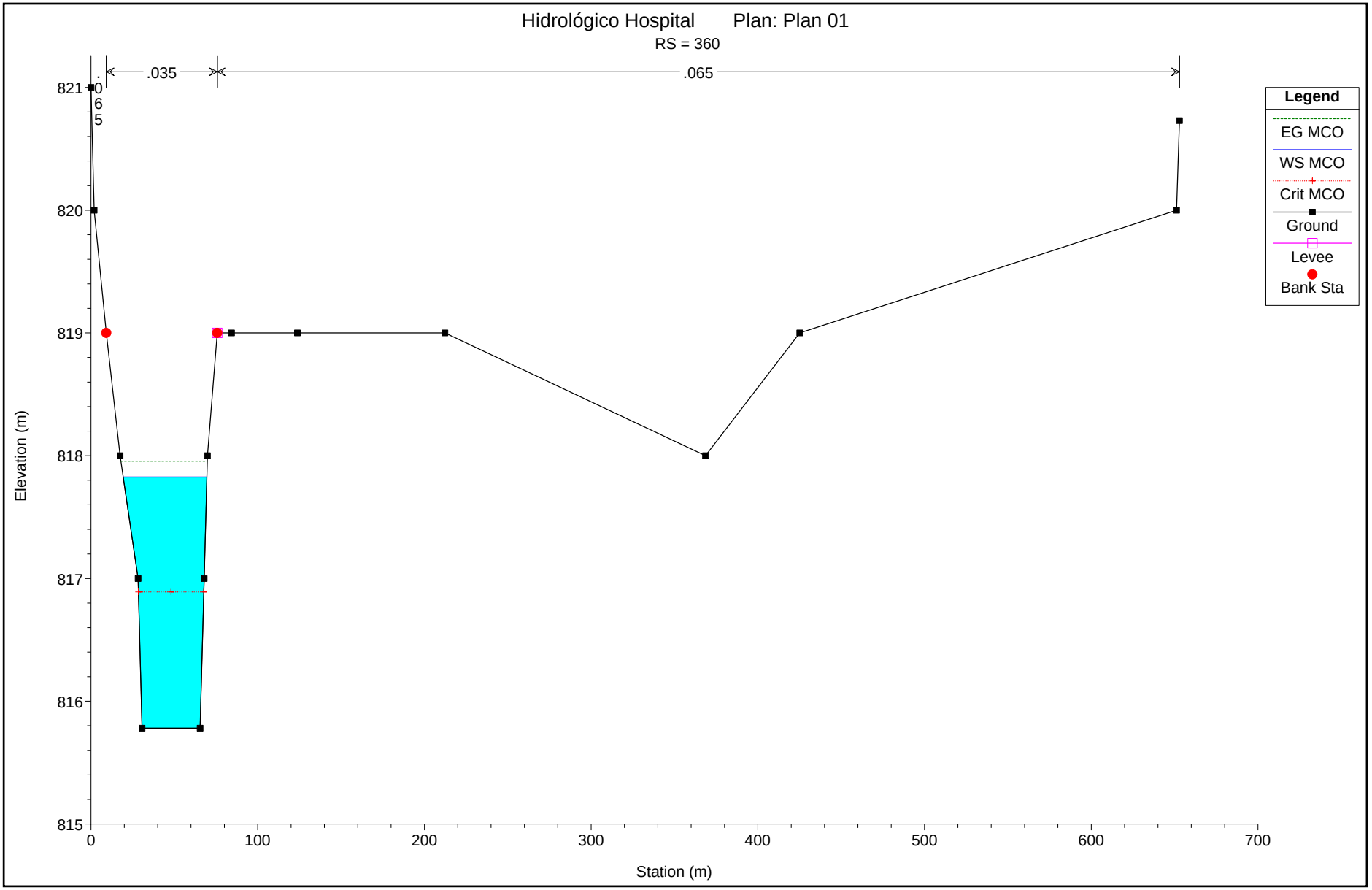
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
200
400
600
800
1000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.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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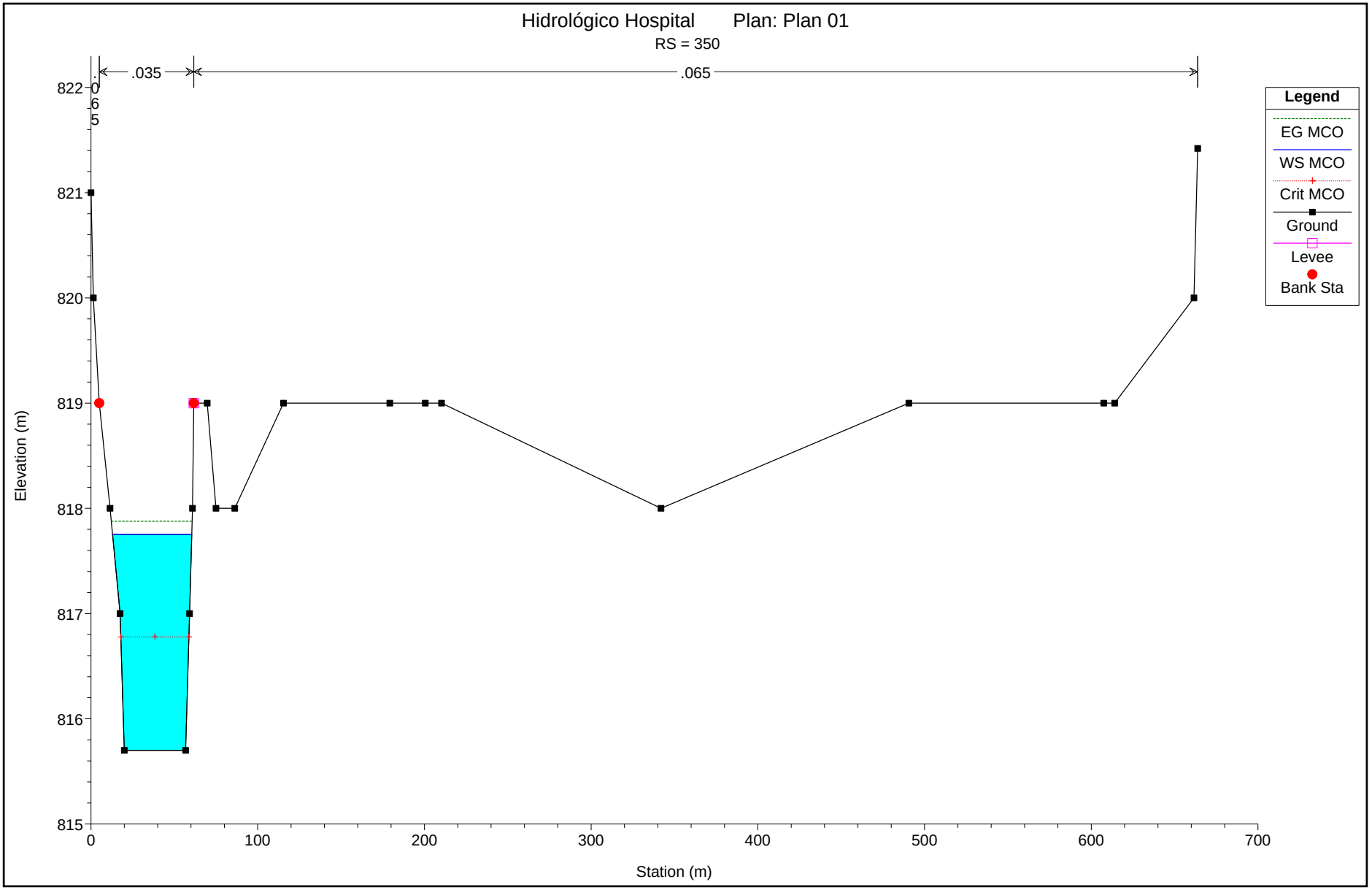
820
819
818
817
816
815
0
100
200
300
400
500
600
700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.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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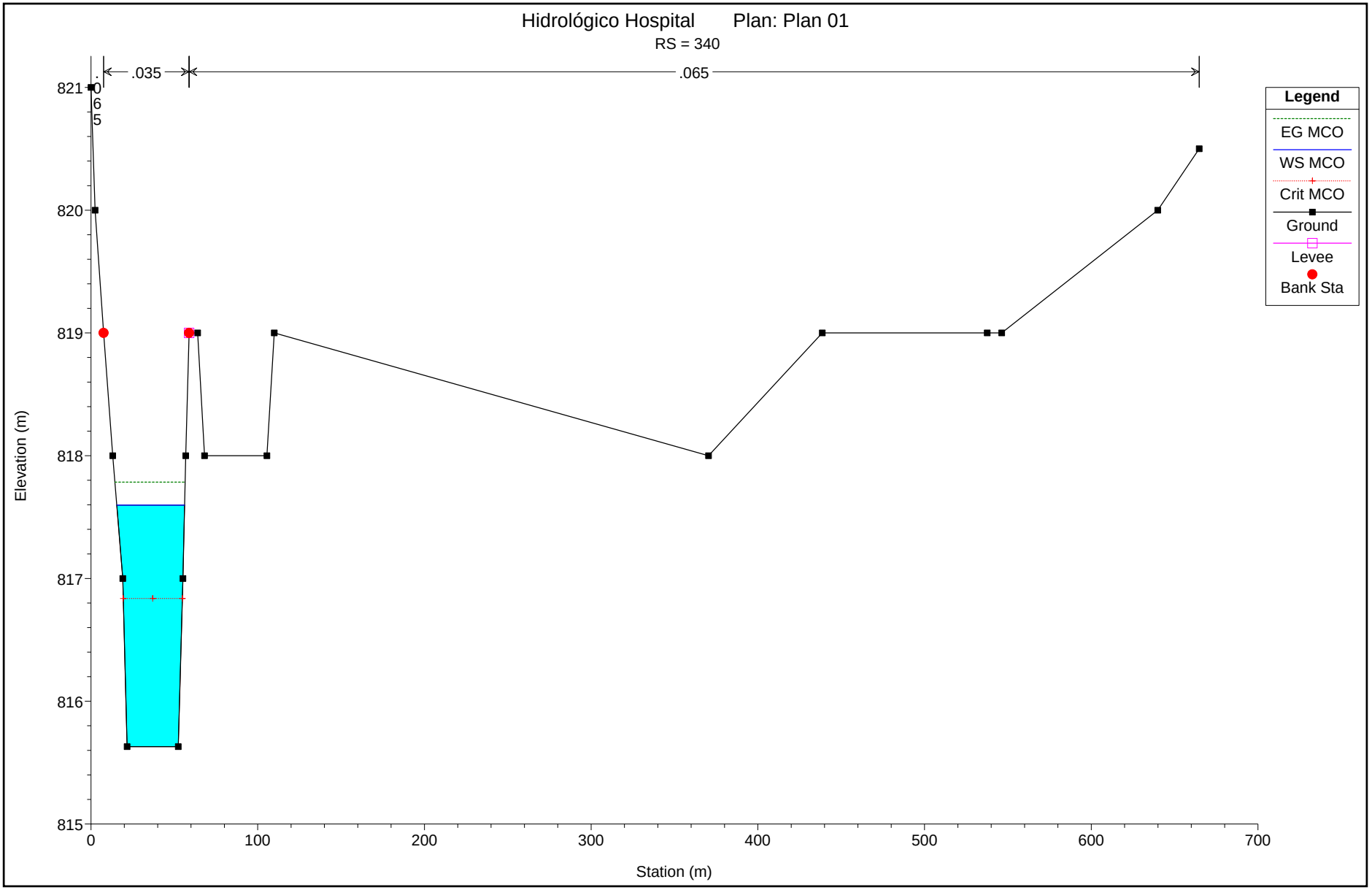
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700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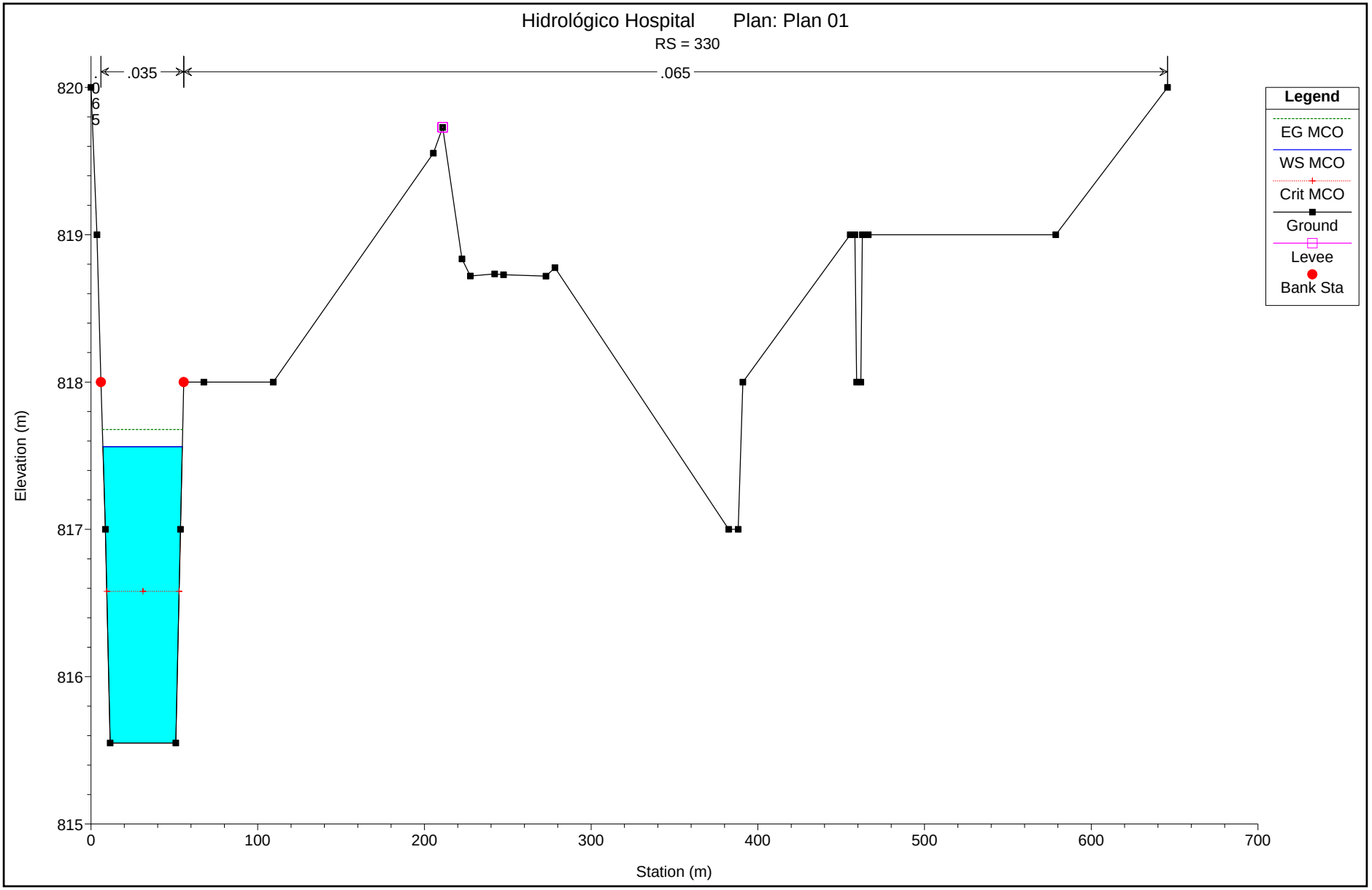
.065
.
0
6
5
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700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.065
.065
820
819
818
817
816
815
Elevation (m)
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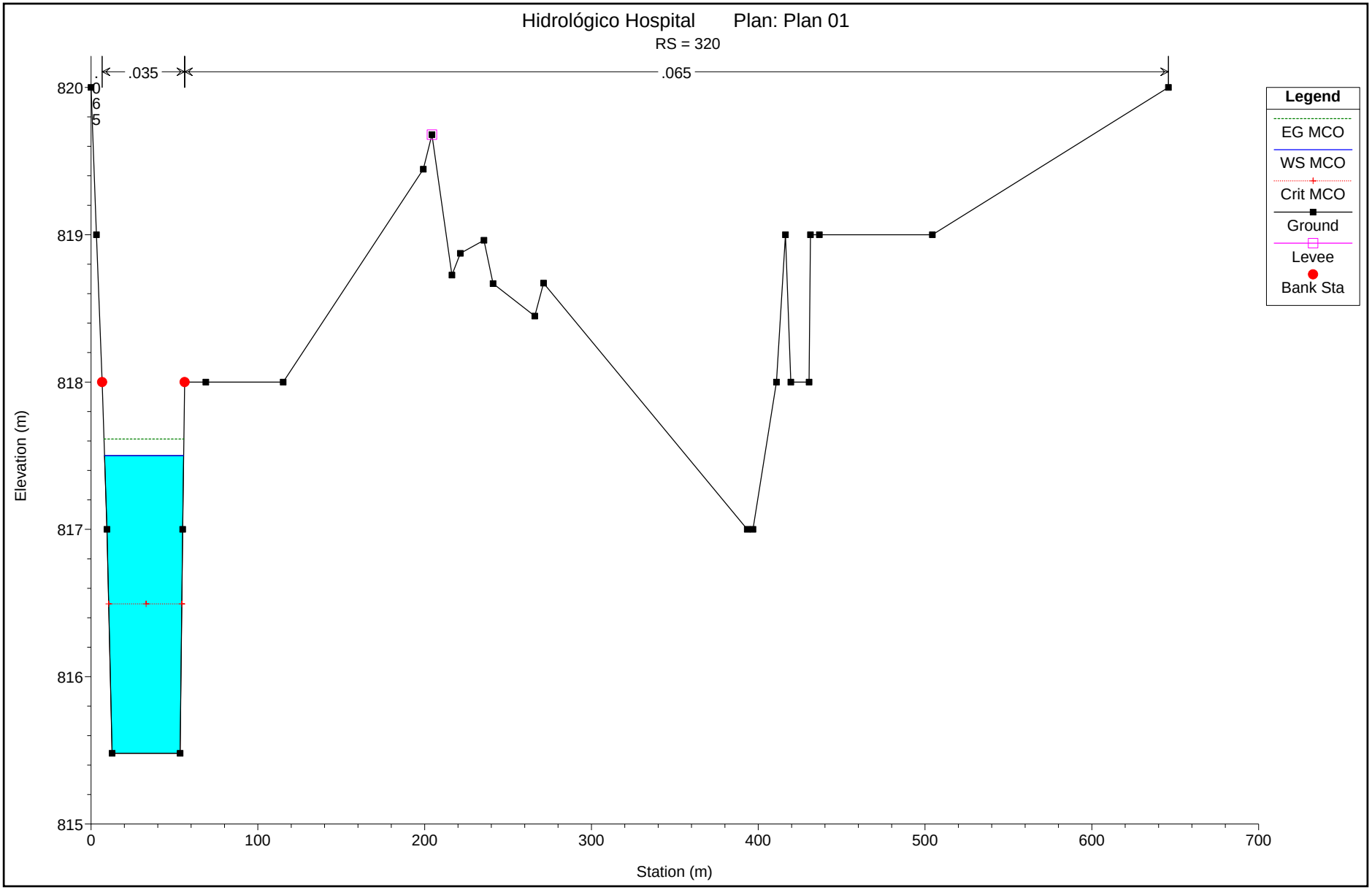
100
200
300
400
500
600
700
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
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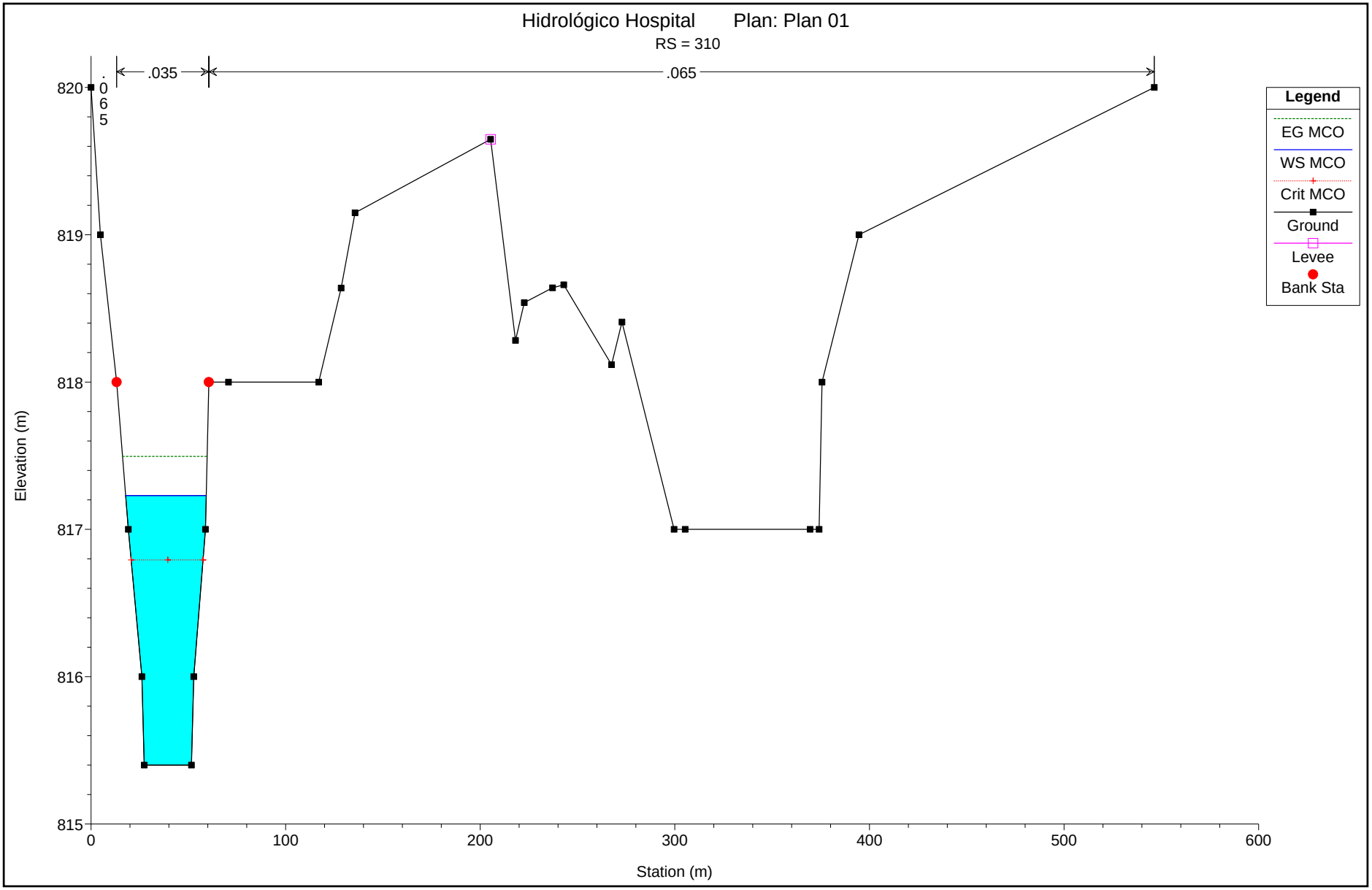
.035
.065
.065
820
819
818
817
816
815
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta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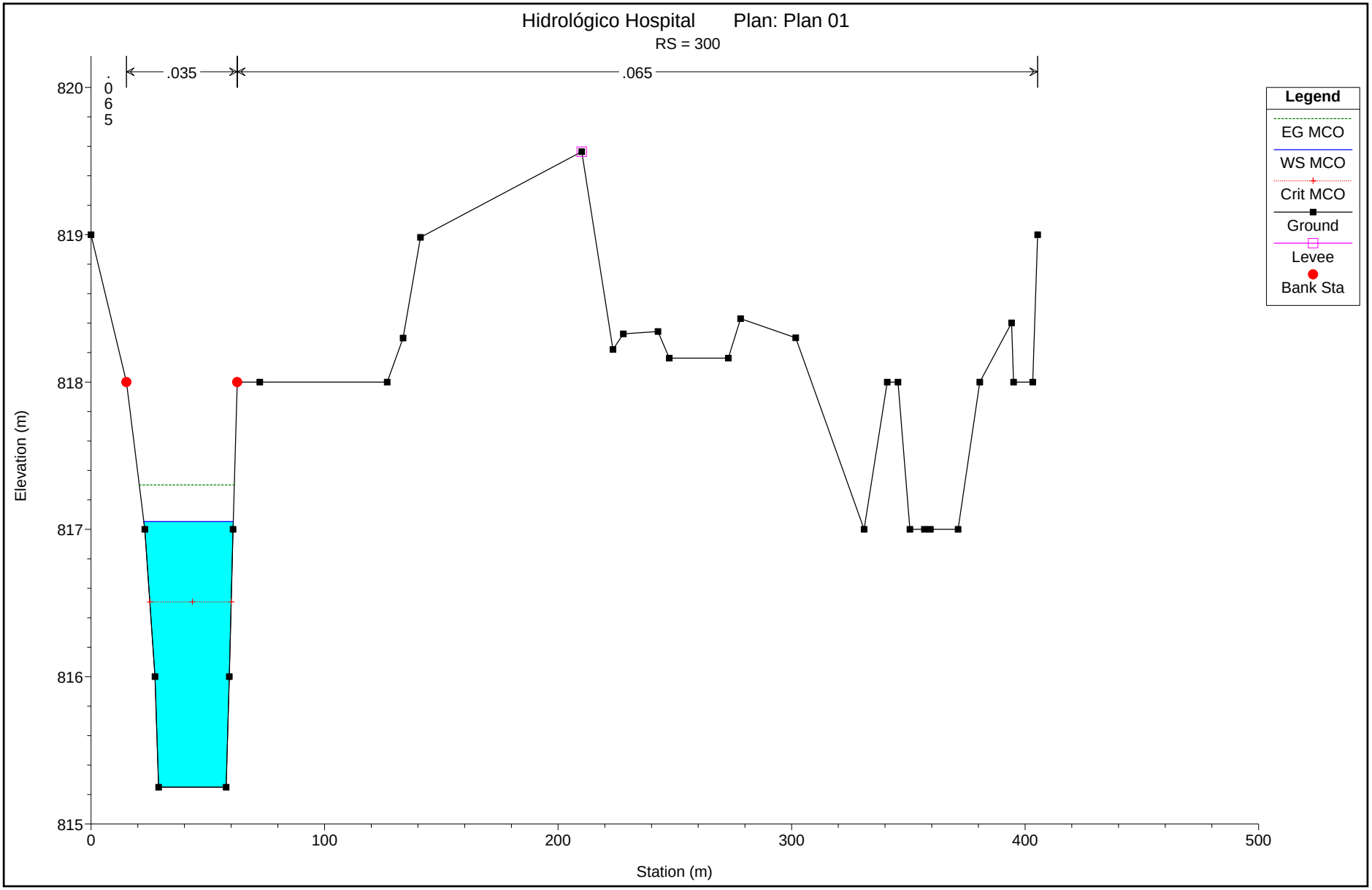
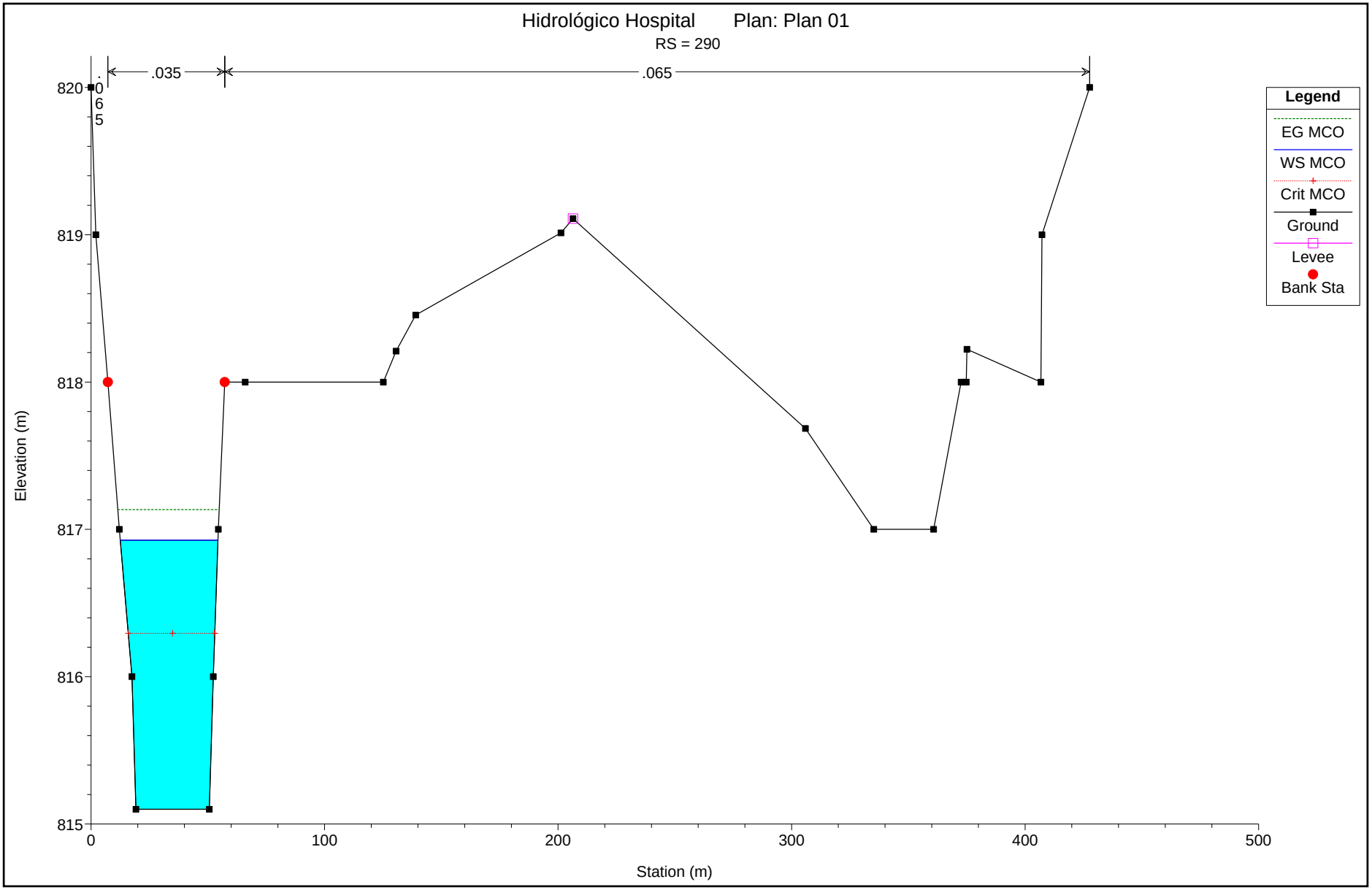
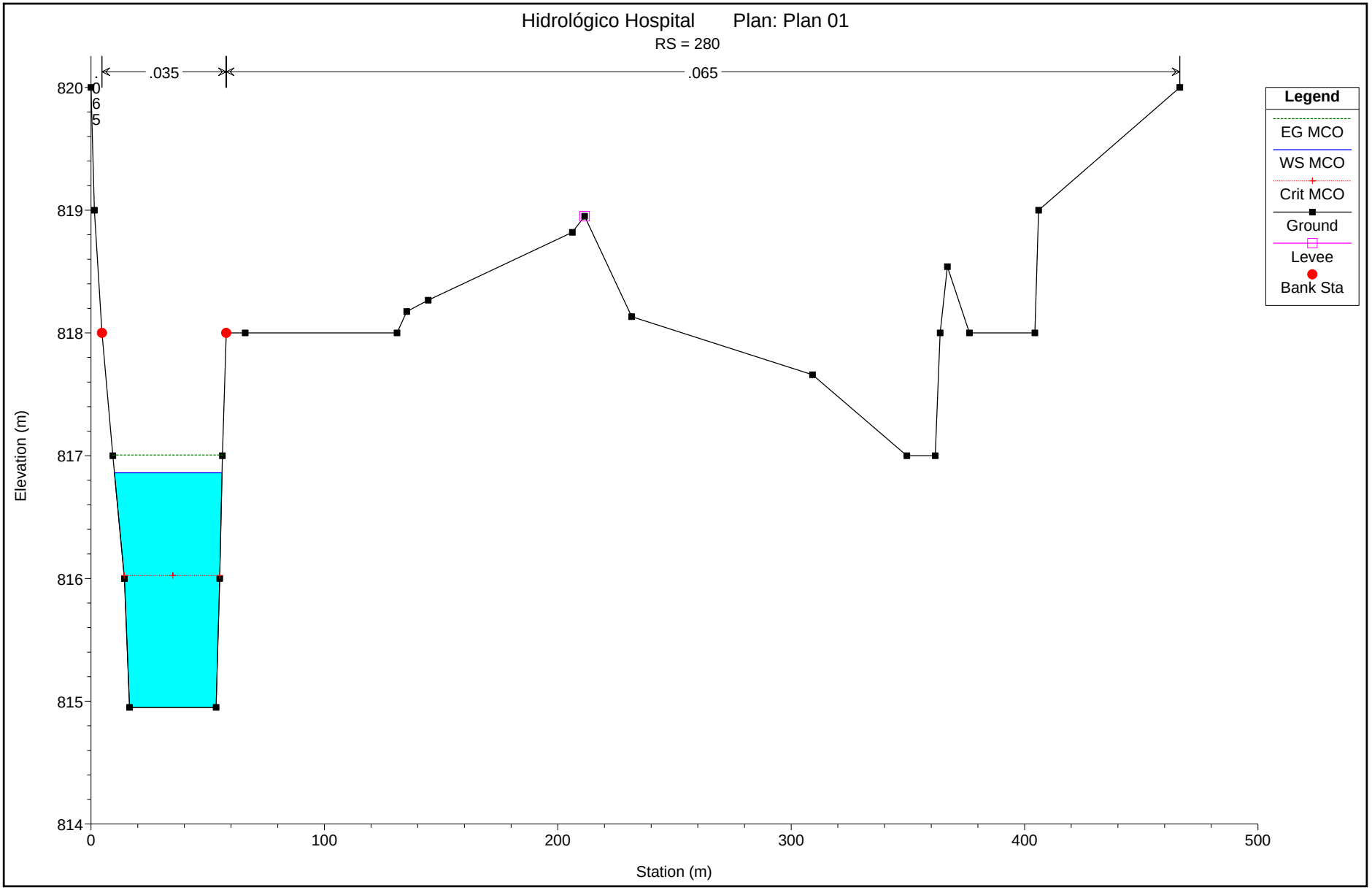
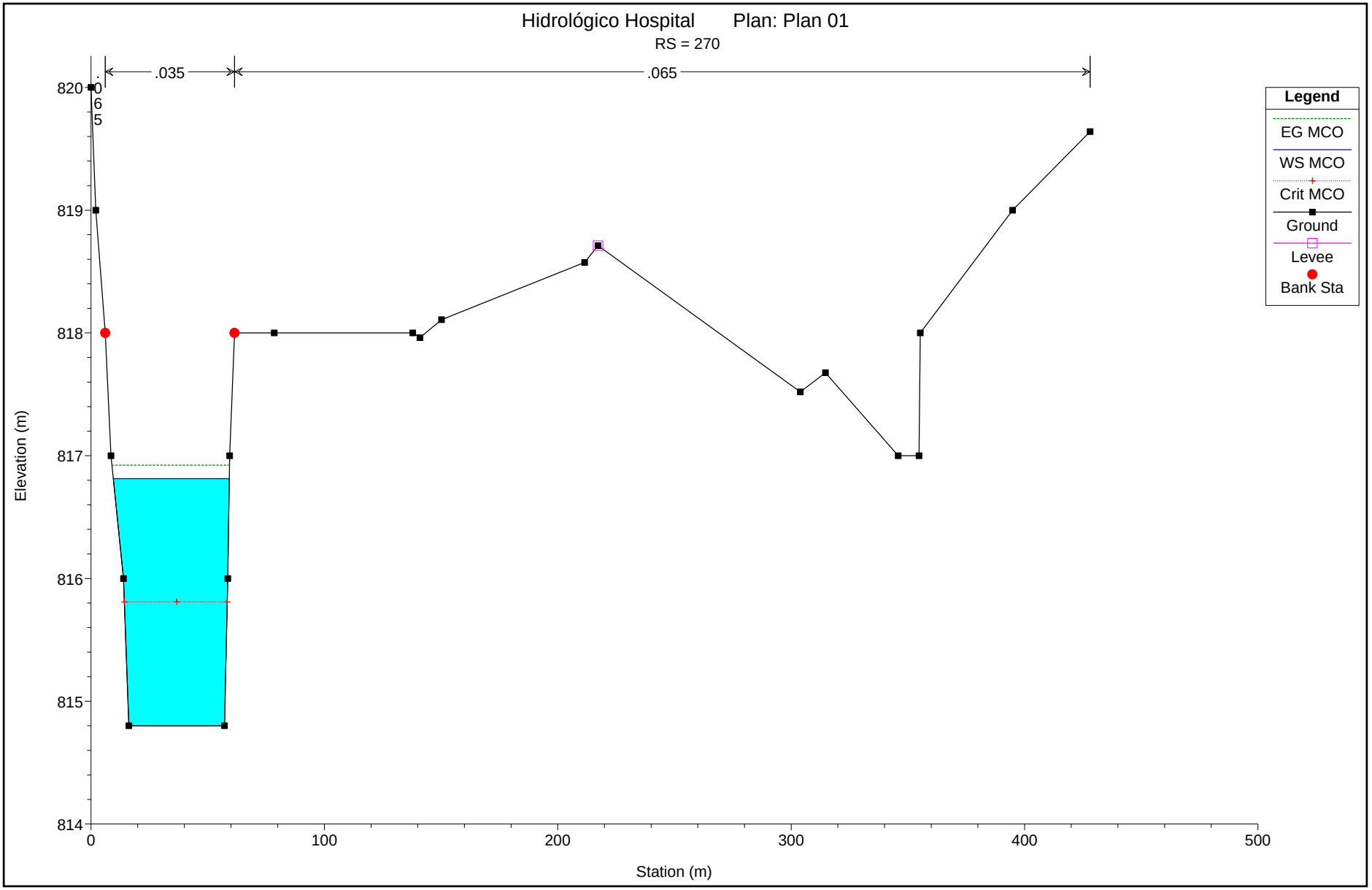
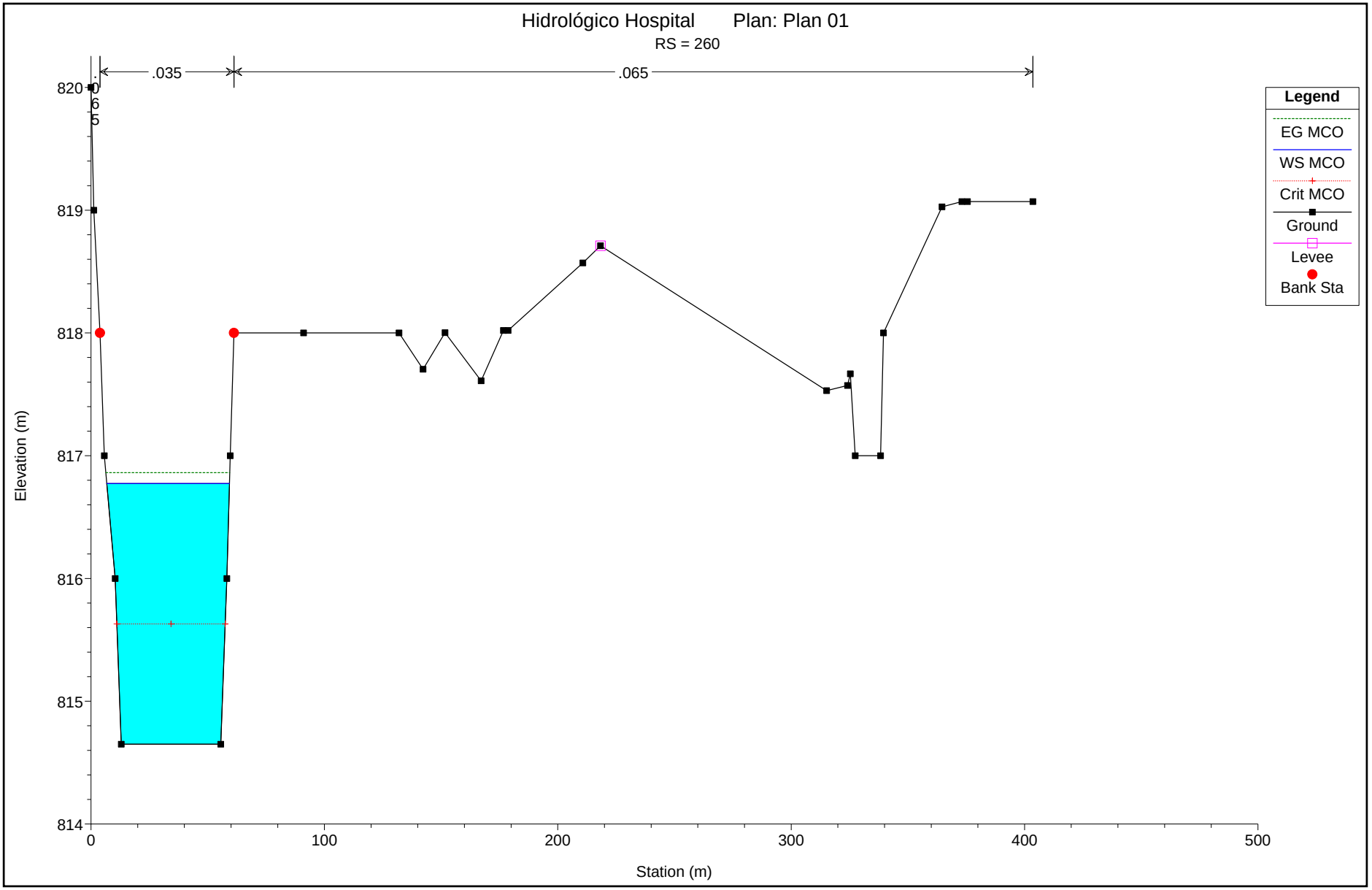
.035
.065
.065
Elevation (m)
820
819
818
817
816
815
0
100
200
300
400
500
600
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta

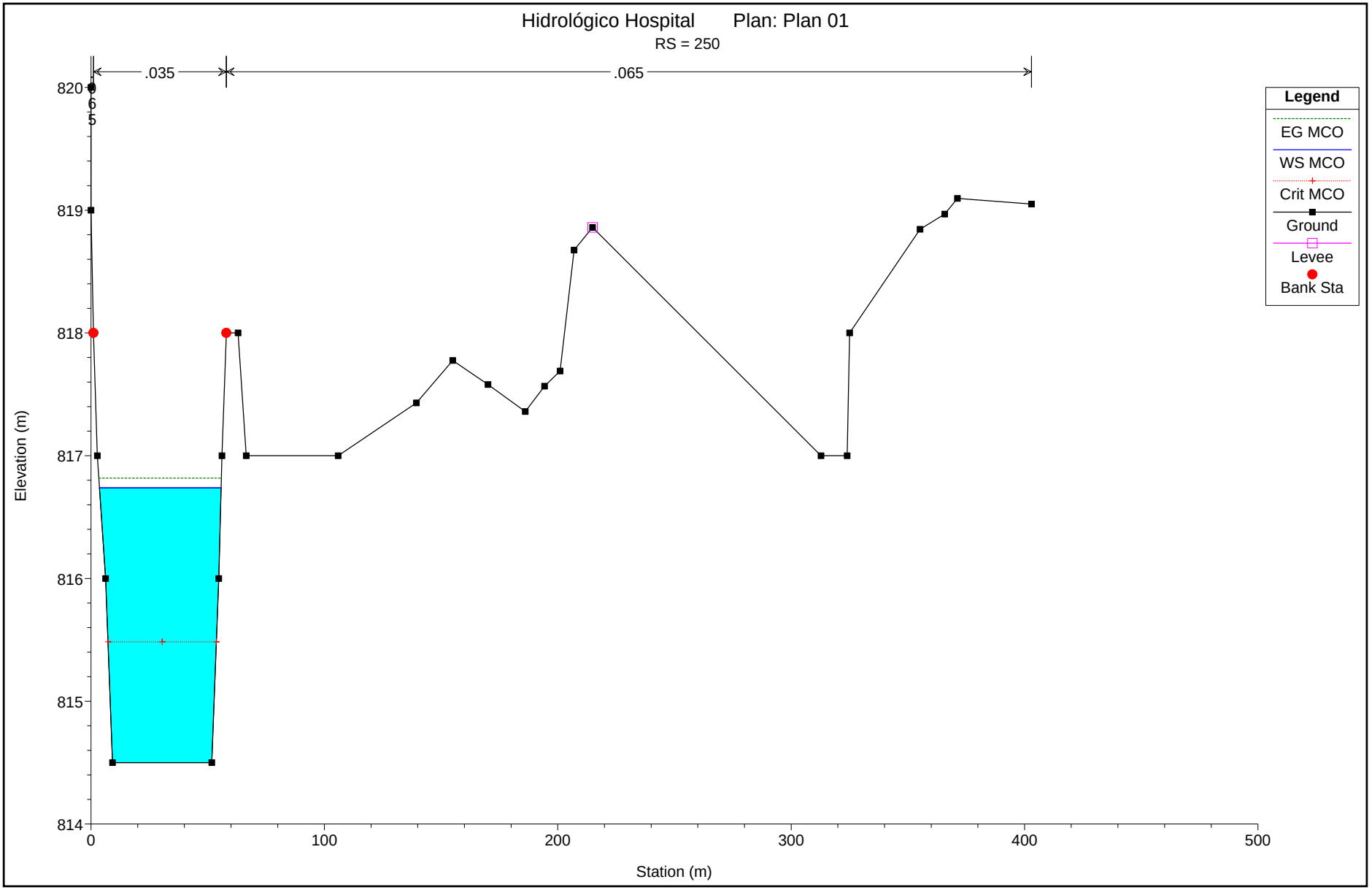

Hidrológico Hospital Plan: Plan 01
RS = 300
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
0
100
200
300
400
500
Station (m)

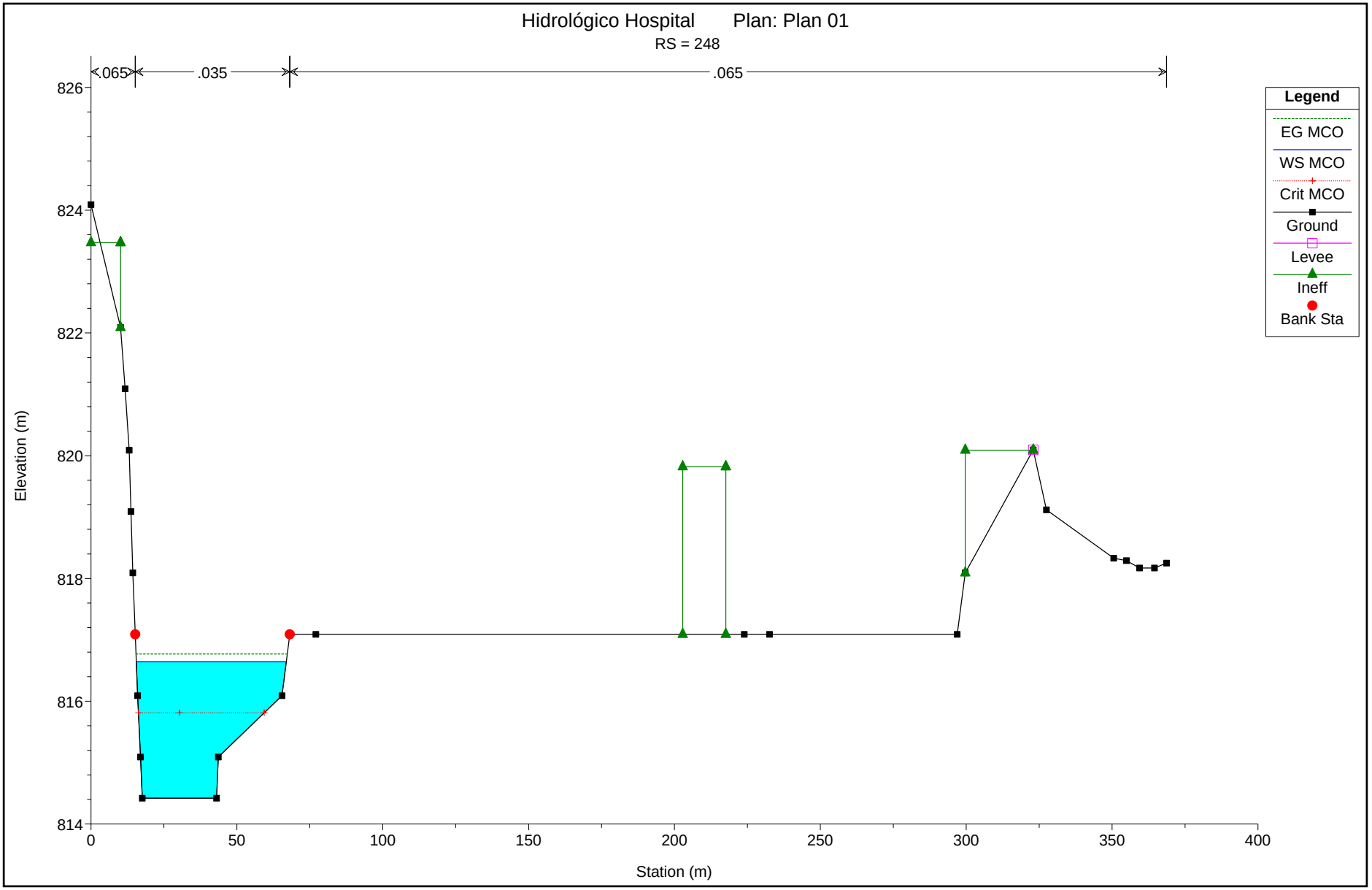

Hidrológico Hospital Plan: Plan 01
RS = 290
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
0
100
200
300
400
500
Station (m)

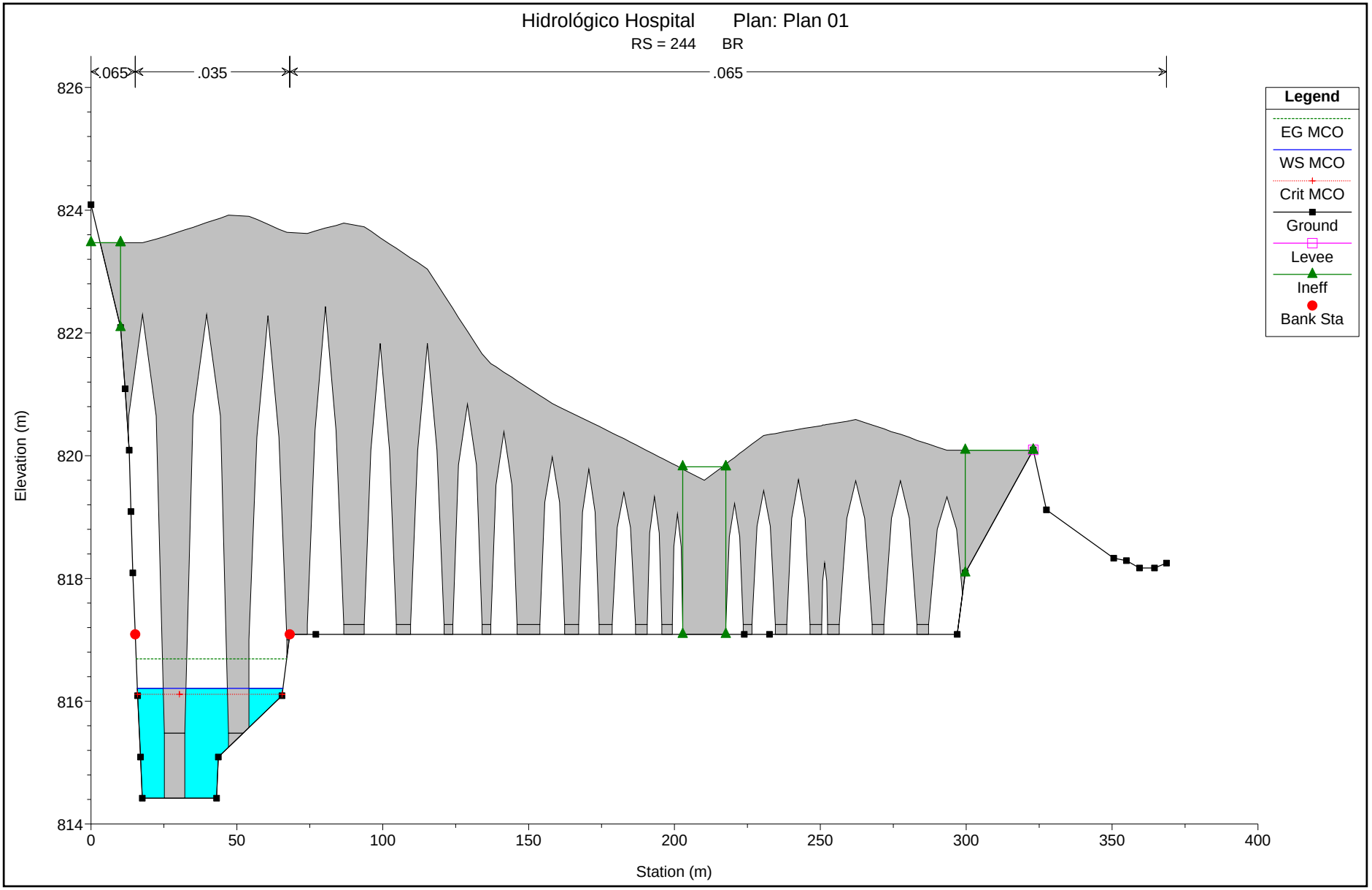

Hidrológico Hospital Plan: Plan 01
RS = 280
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
814
0
100
200
300
400
500
Station (m)

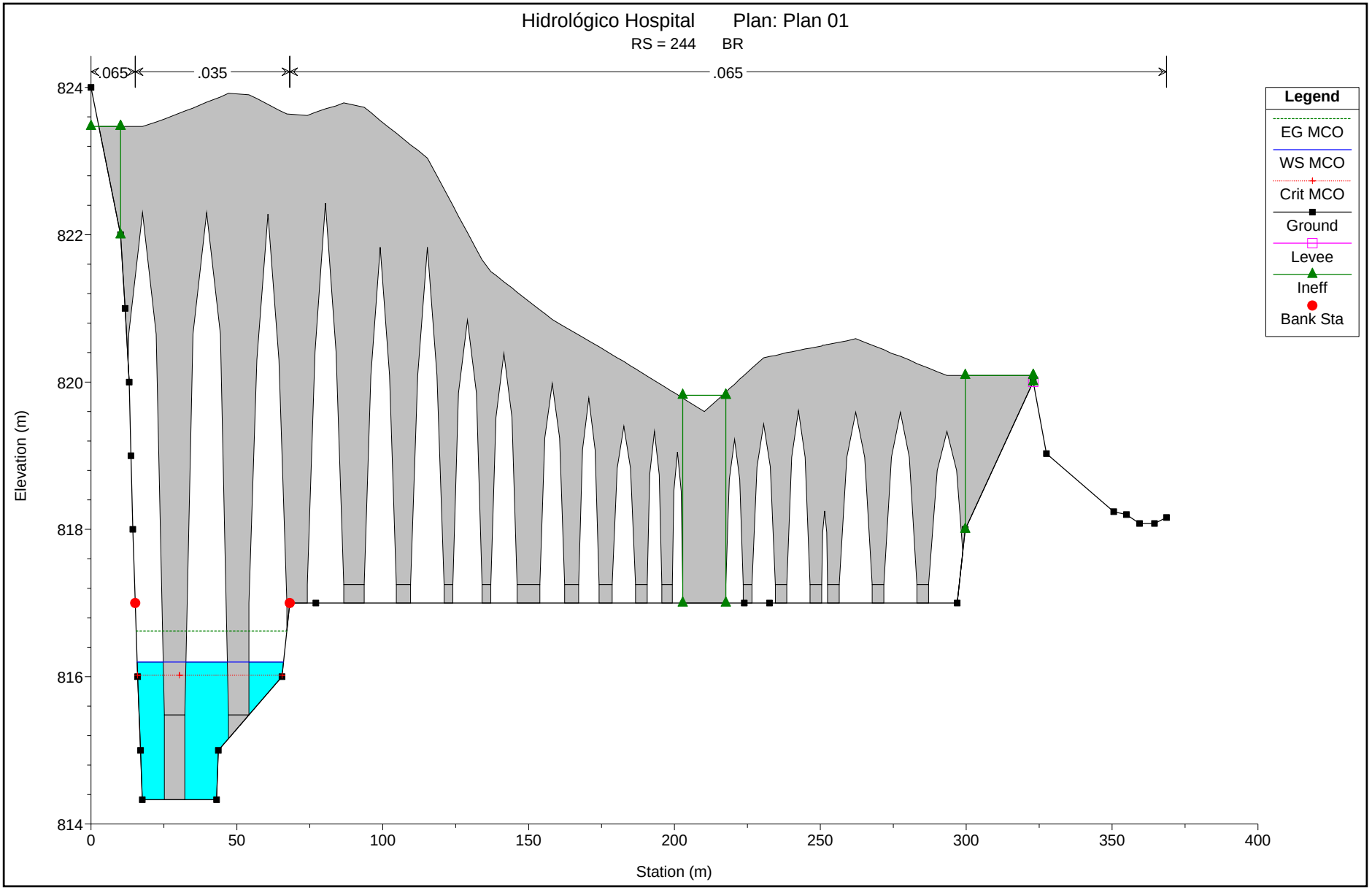

Hidrológico Hospital Plan: Plan 01
RS = 270
.035
.065
.
0
6
5
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta

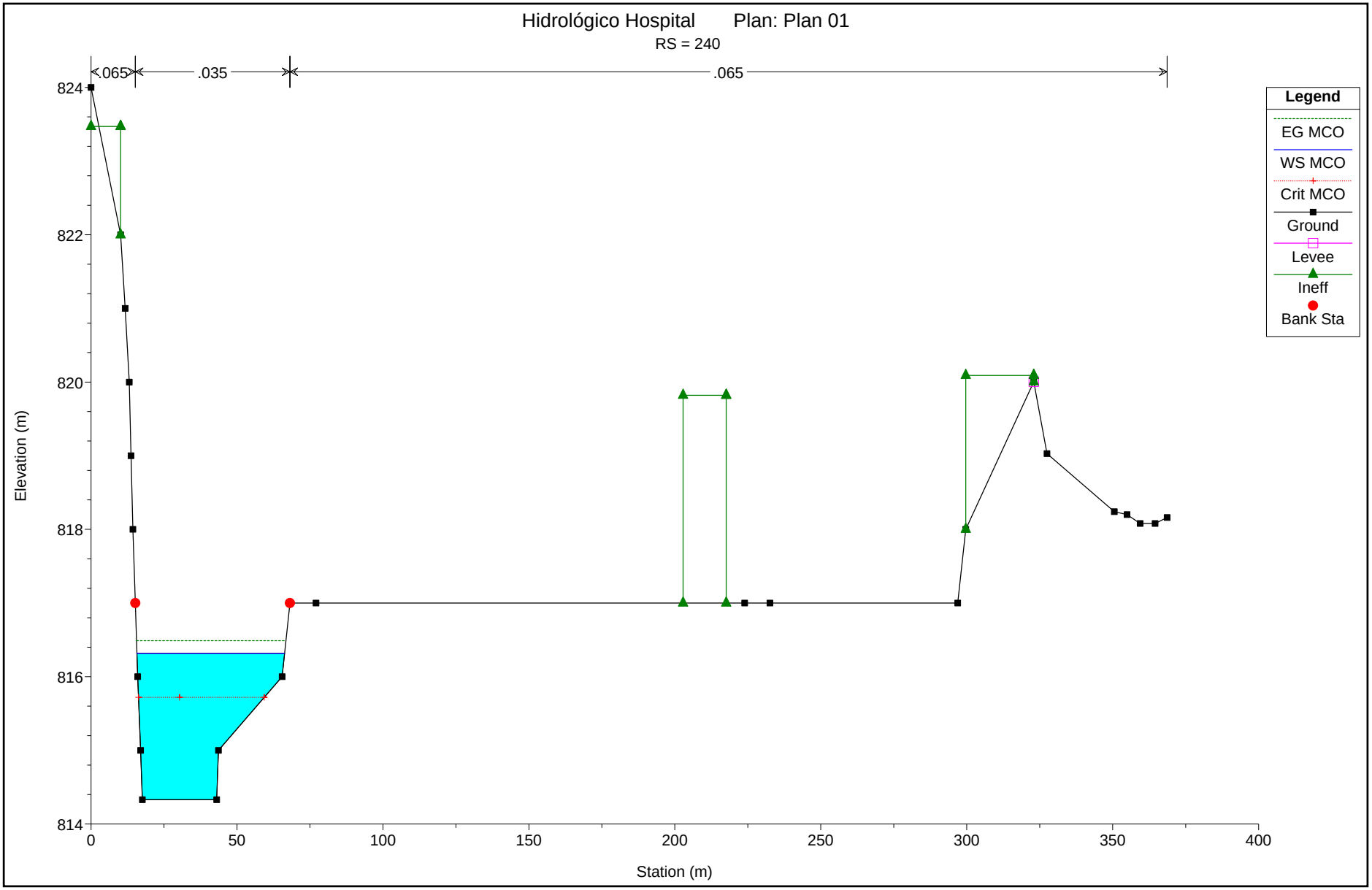

Hidrológico Hospital Plan: Plan 01
RS = 260
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
814
0
100
200
300
400
500
Station (m)

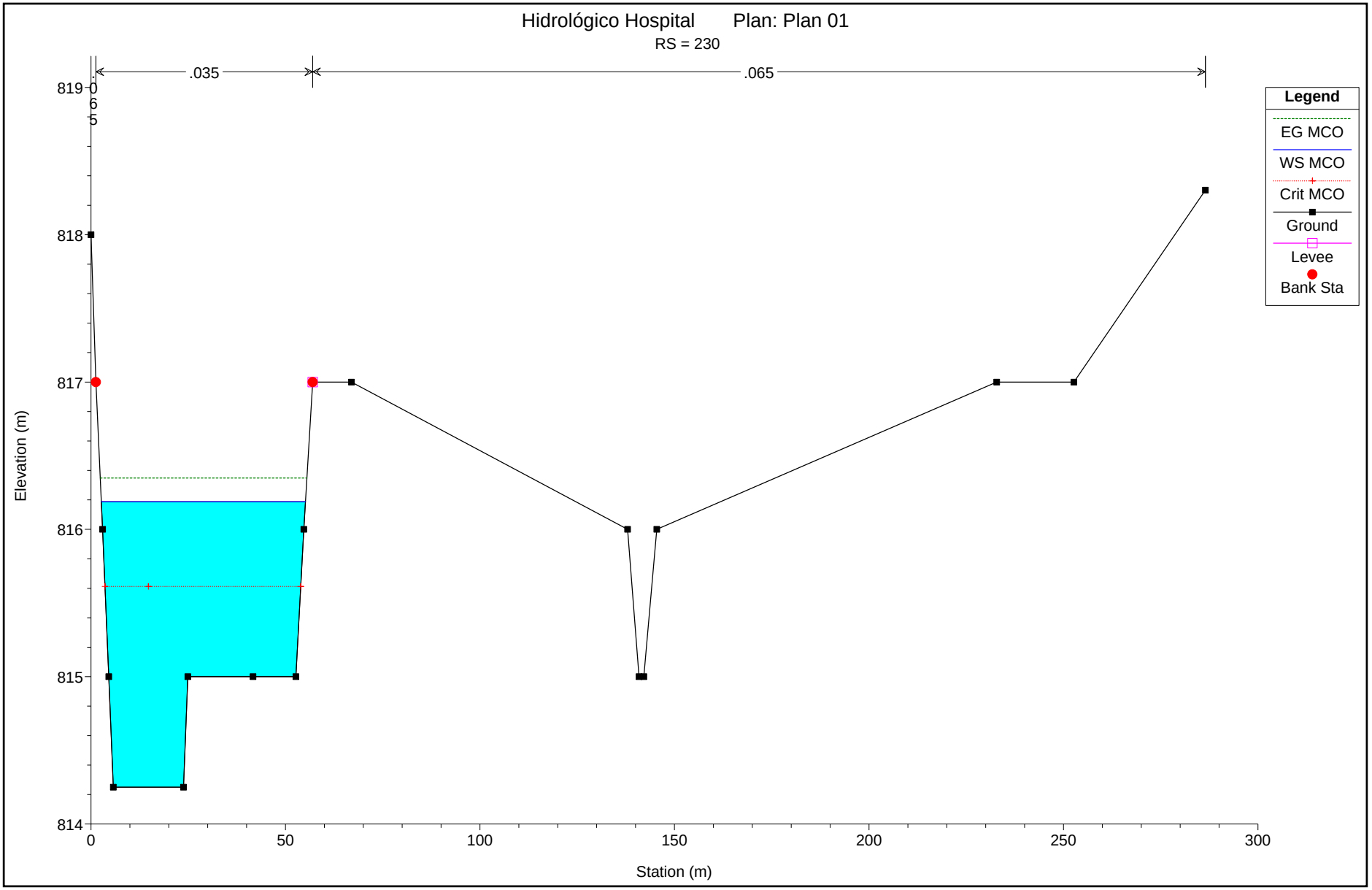

Hidrológico Hospital Plan: Plan 01
RS = 250
.035
.065
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta

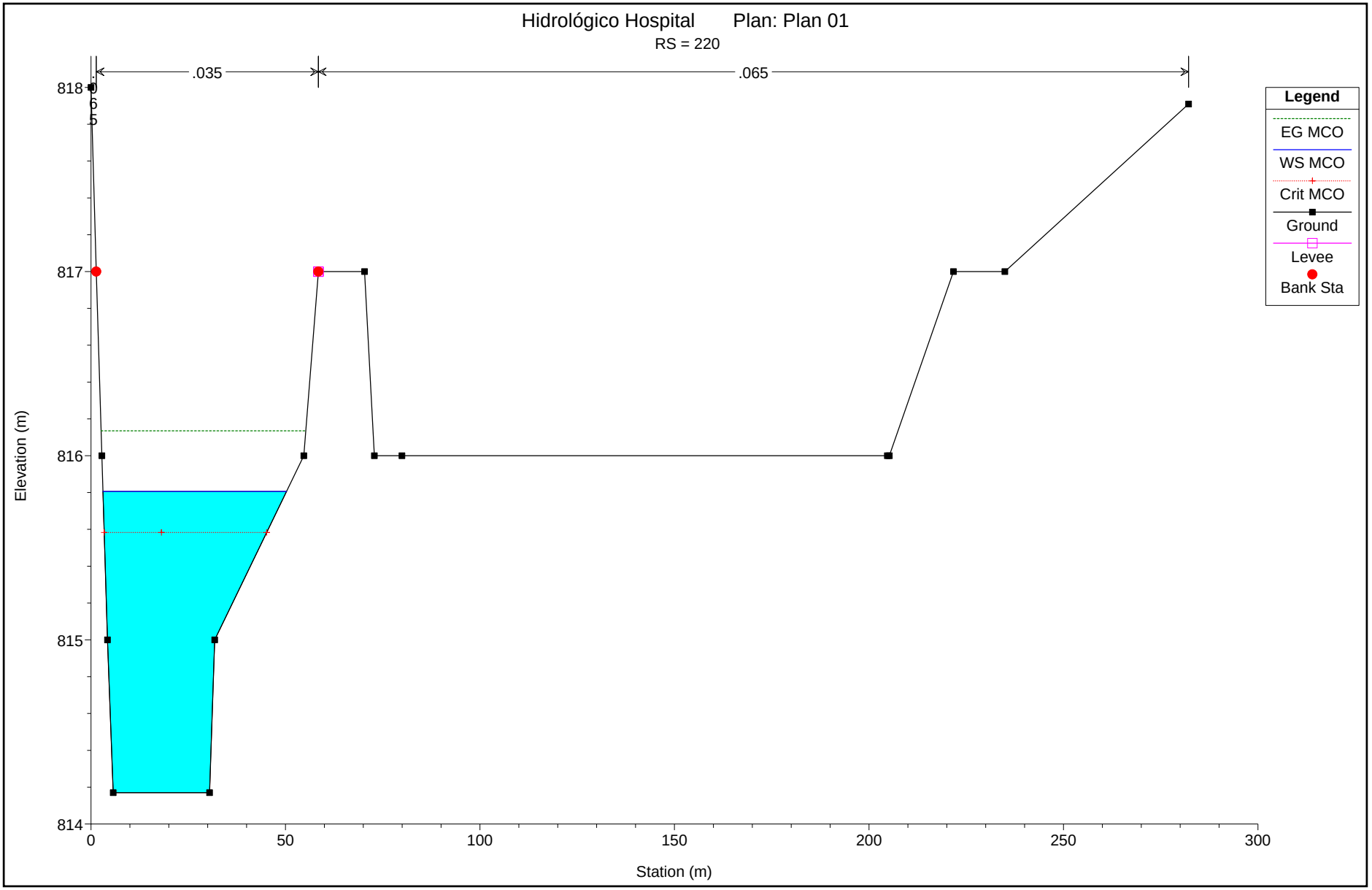

Hidrológico Hospital Plan: Plan 01
RS = 248
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

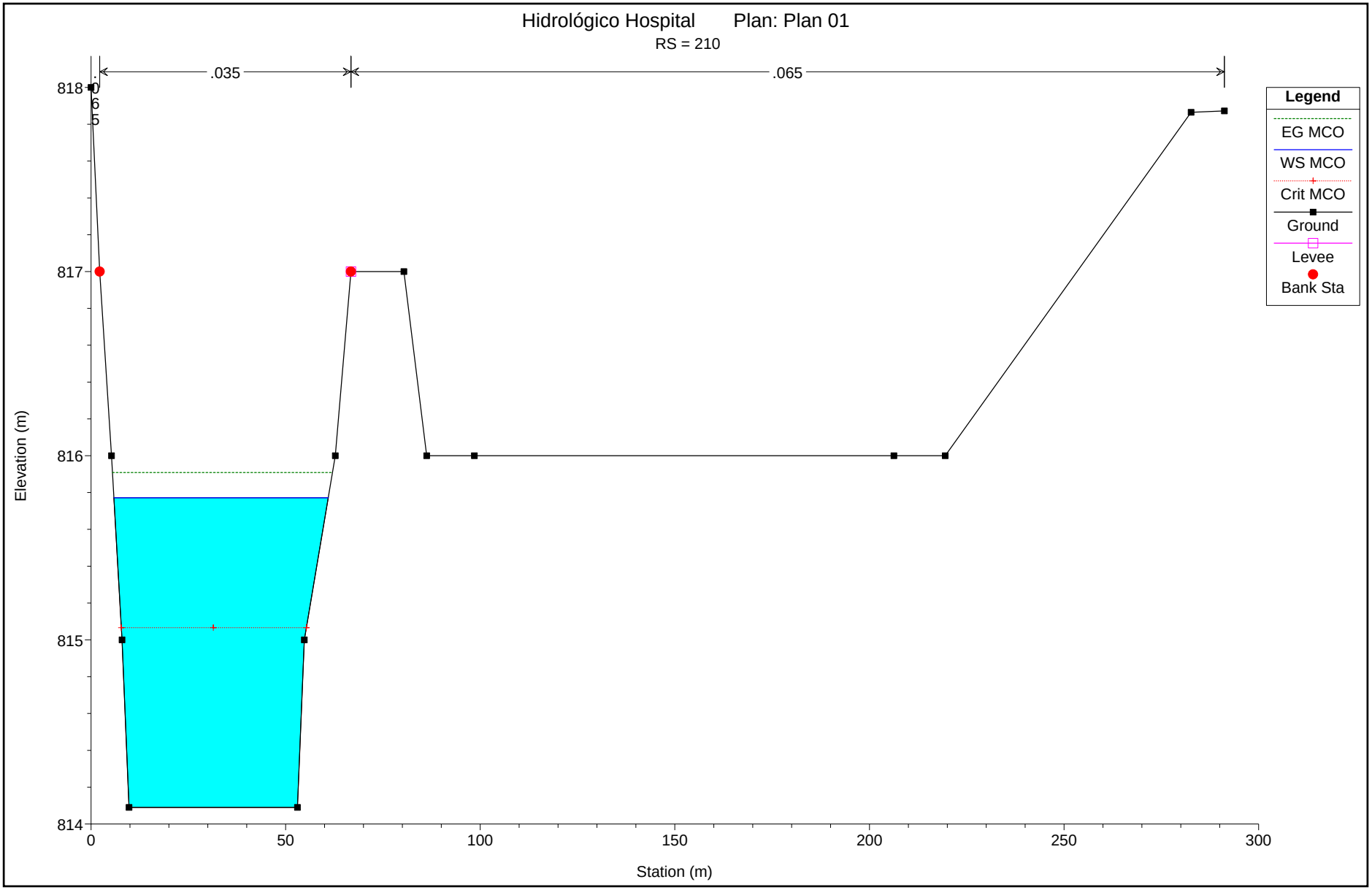

Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

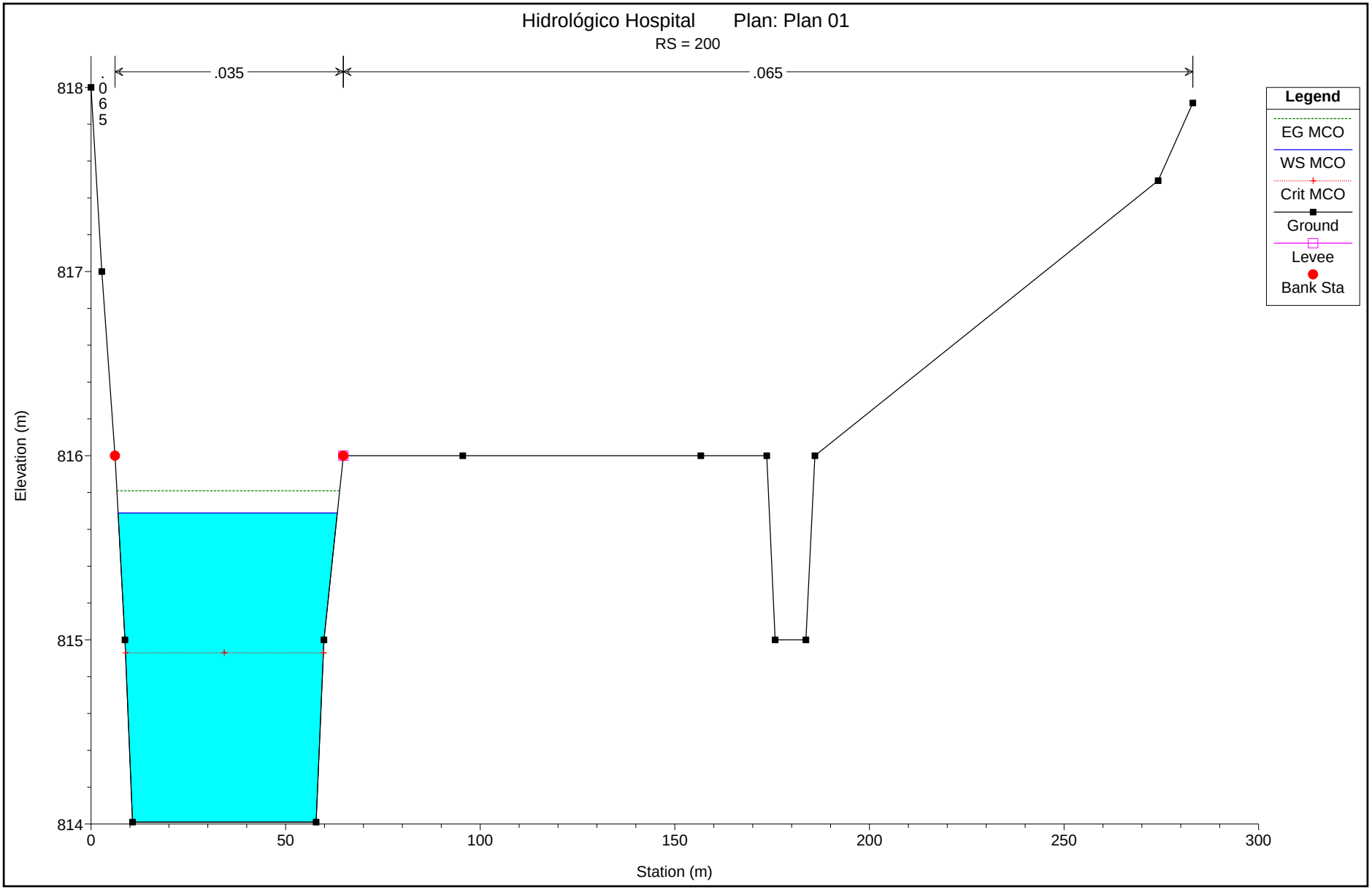

Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

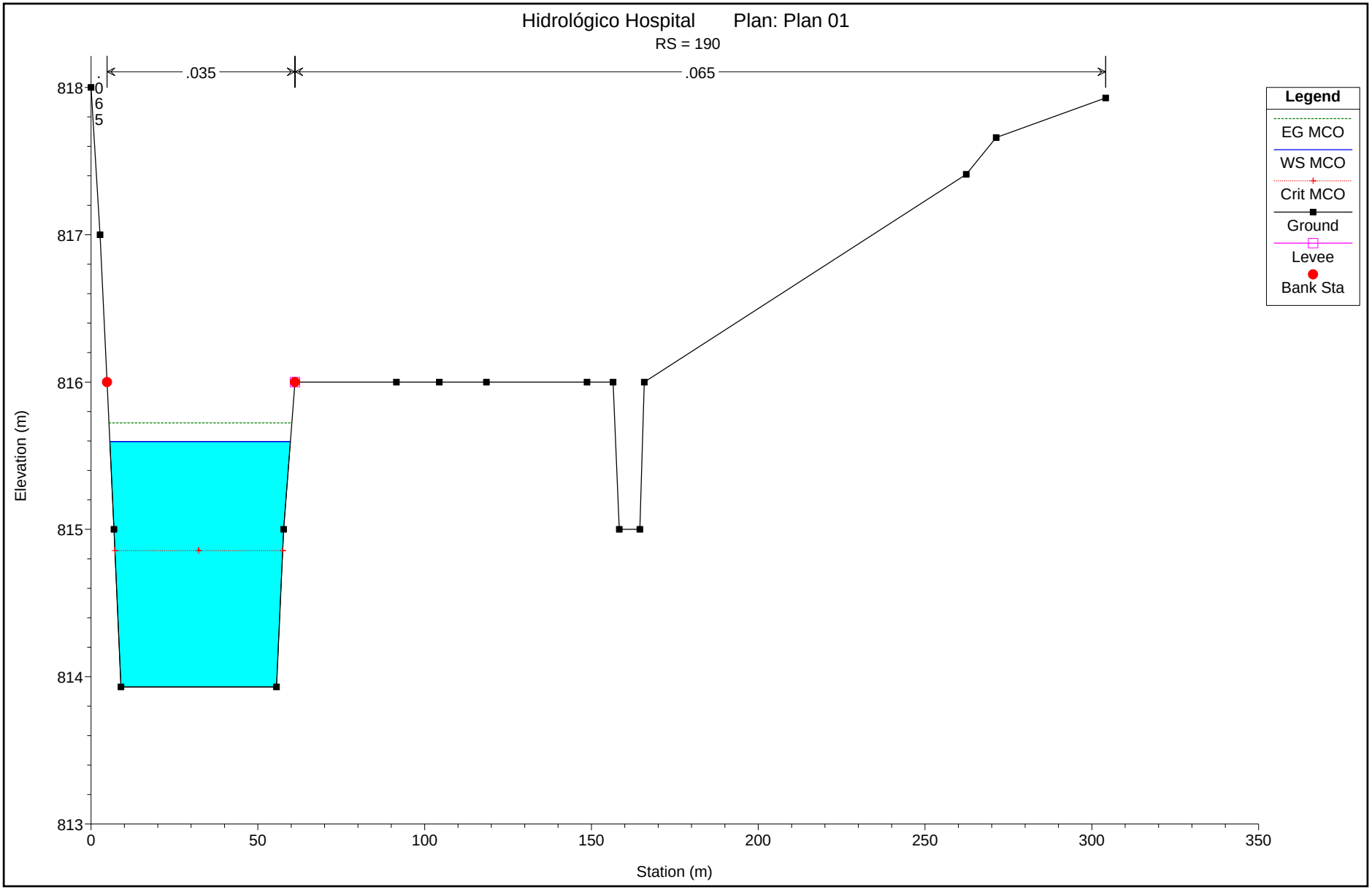

Hidrológico Hospital Plan: Plan 01
RS = 240
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

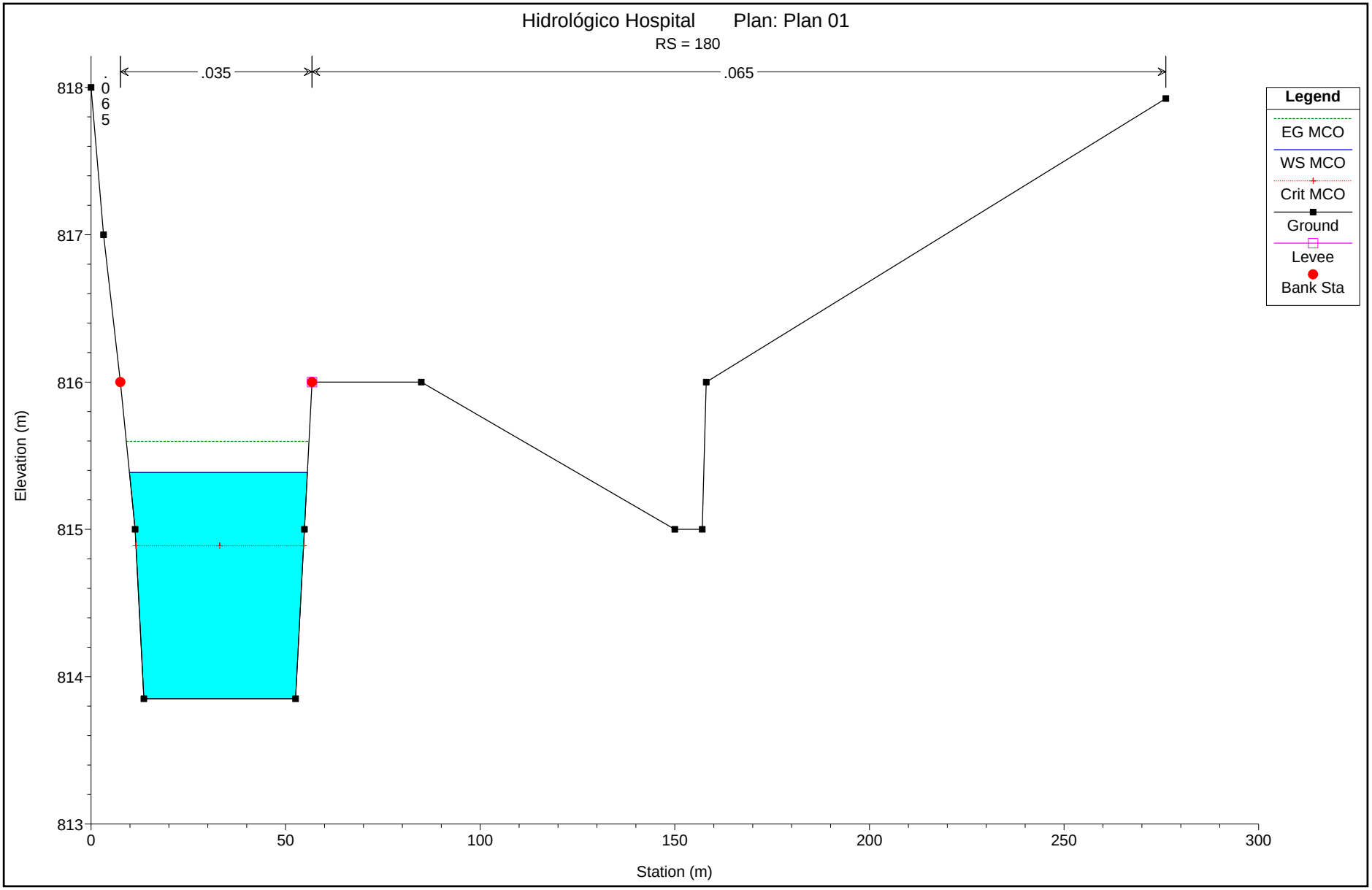

Hidrológico Hospital Plan: Plan 01
RS = 230
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
814
815
816
817
818
819
0
50
100
150
200
250
300

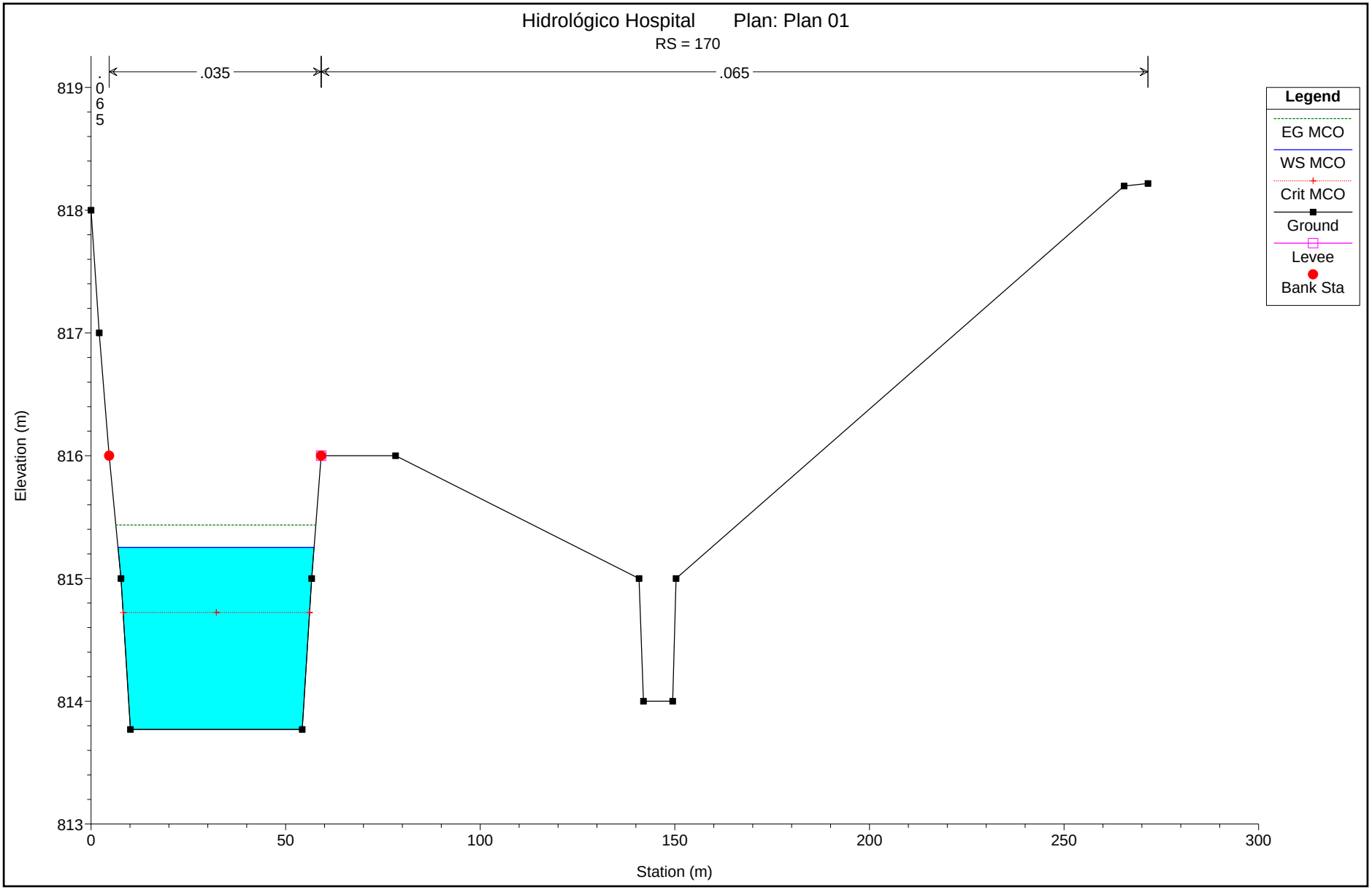

Hidrológico Hospital Plan: Plan 01
RS = 220
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
814
815
816
817
818
0
50
100
150
200
250
300

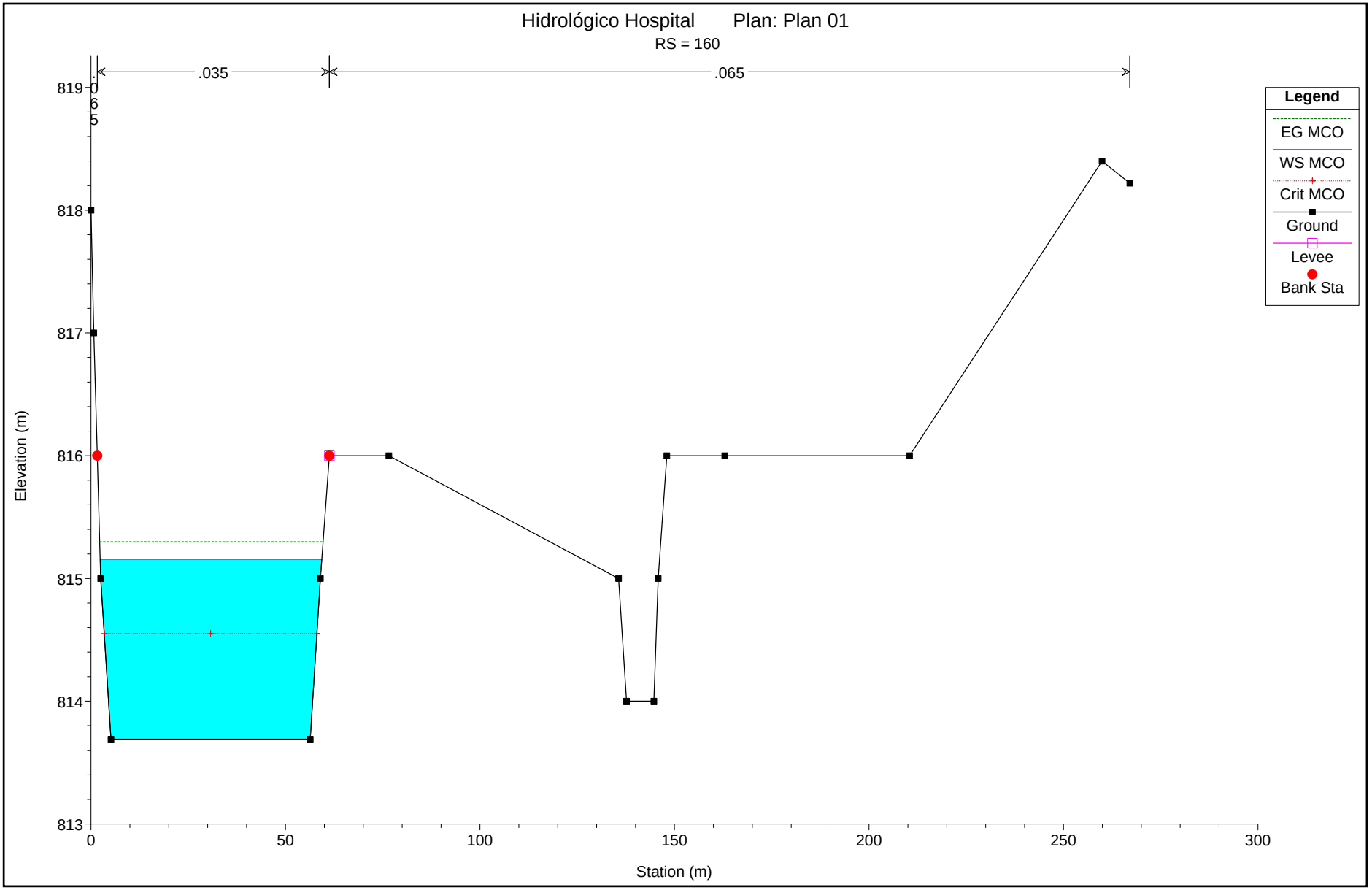

Hidrológico Hospital Plan: Plan 01
RS = 210
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
814
815
816
817
818
0
50
100
150
200
250
300

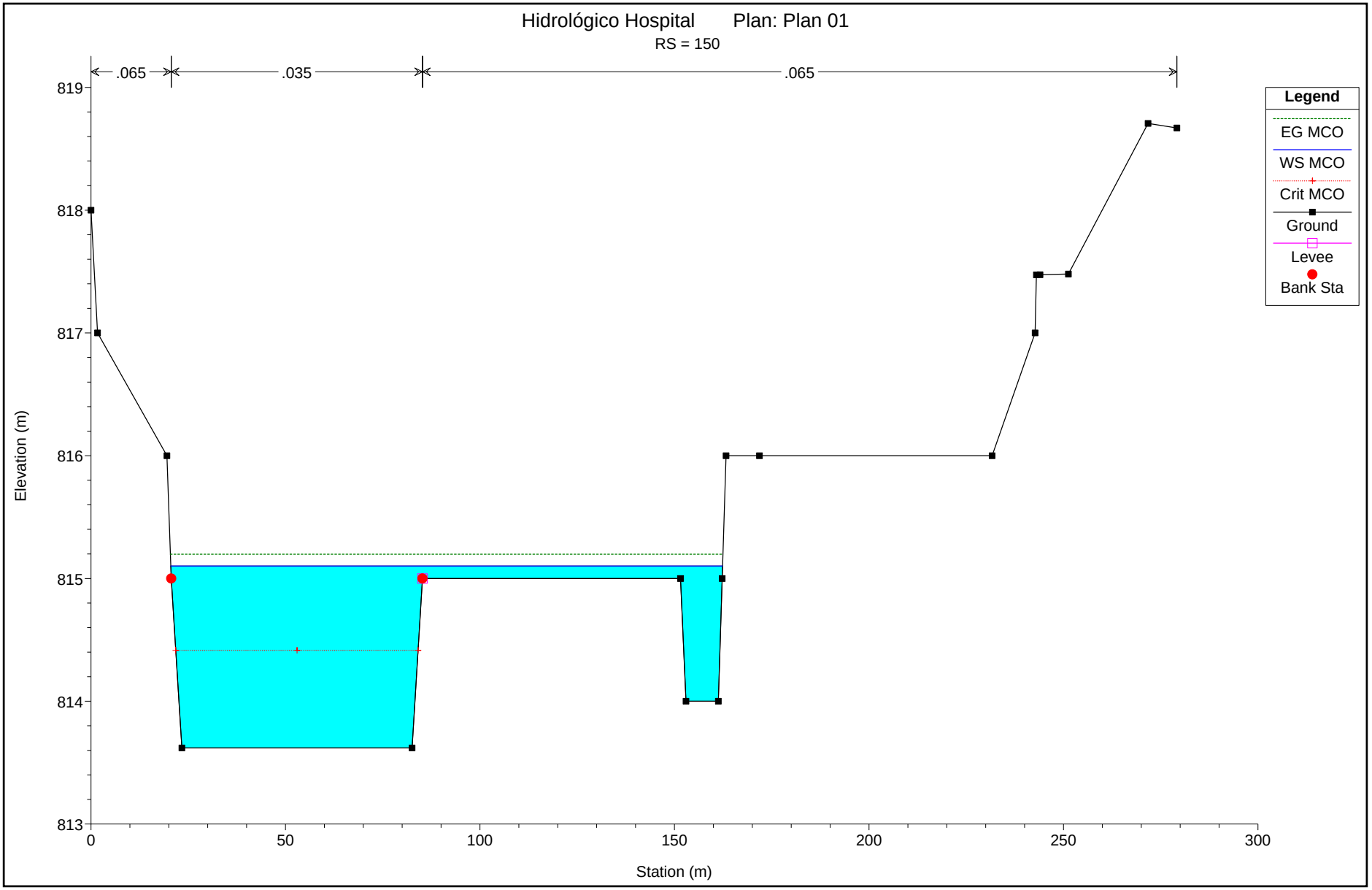

Hidrológico Hospital Plan: Plan 01
RS = 200
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
0
50
100
150
200
250
300

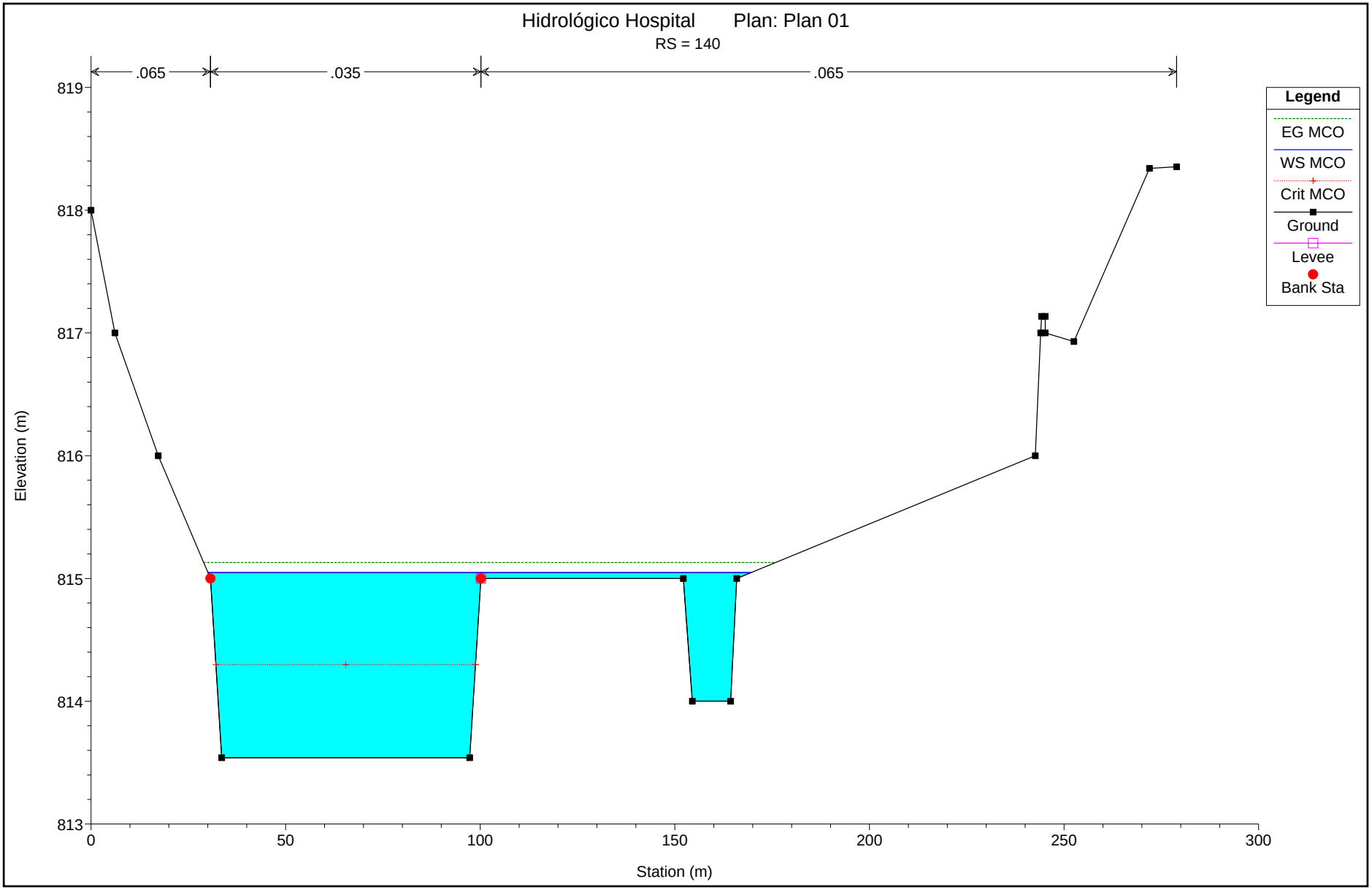

Hidrológico Hospital Plan: Plan 01
RS = 190
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
813
0
50
100
150
200
250
300
350

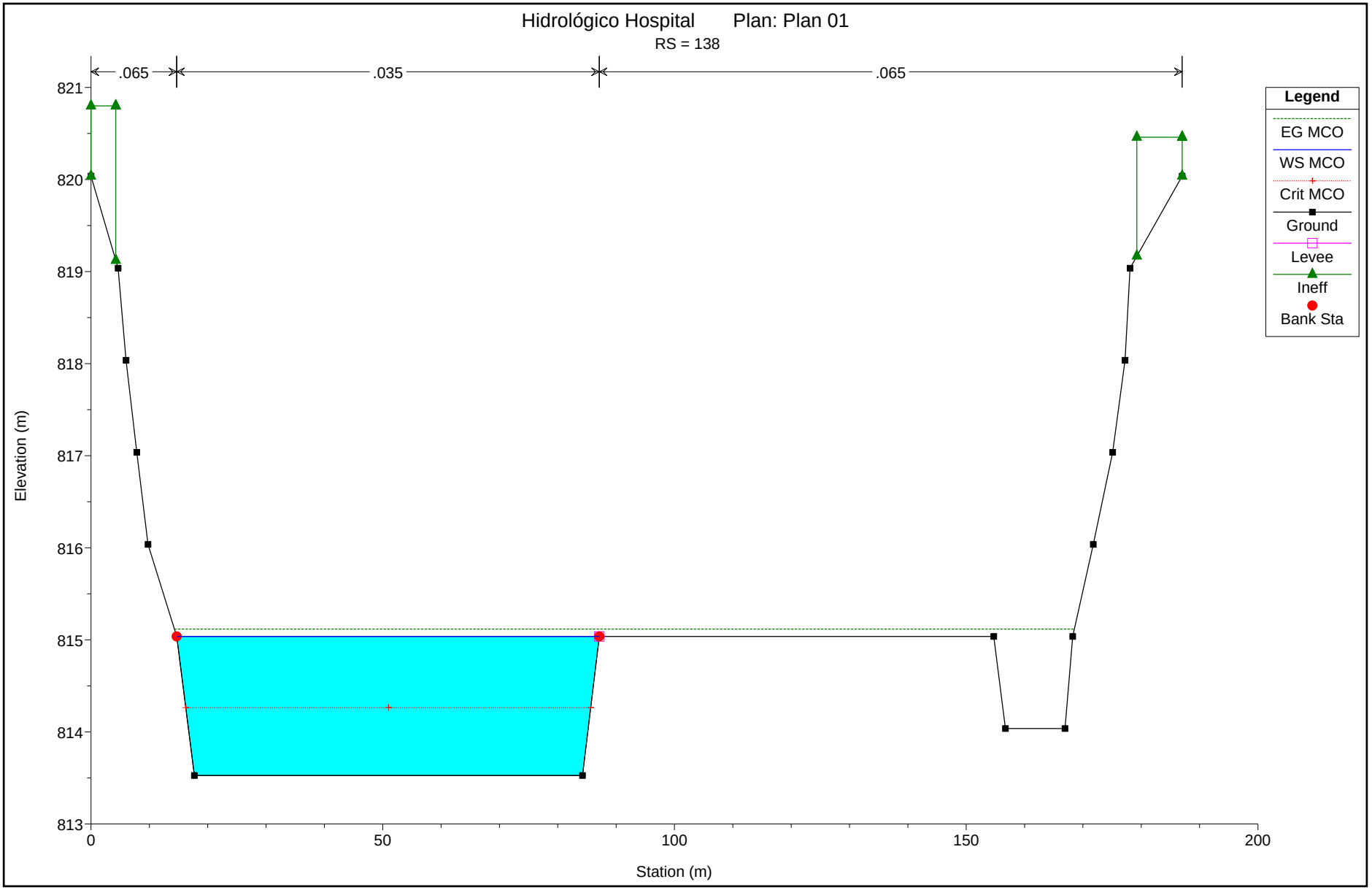

Hidrológico Hospital Plan: Plan 01
RS = 180
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
813
0
50
100
150
200
250
300

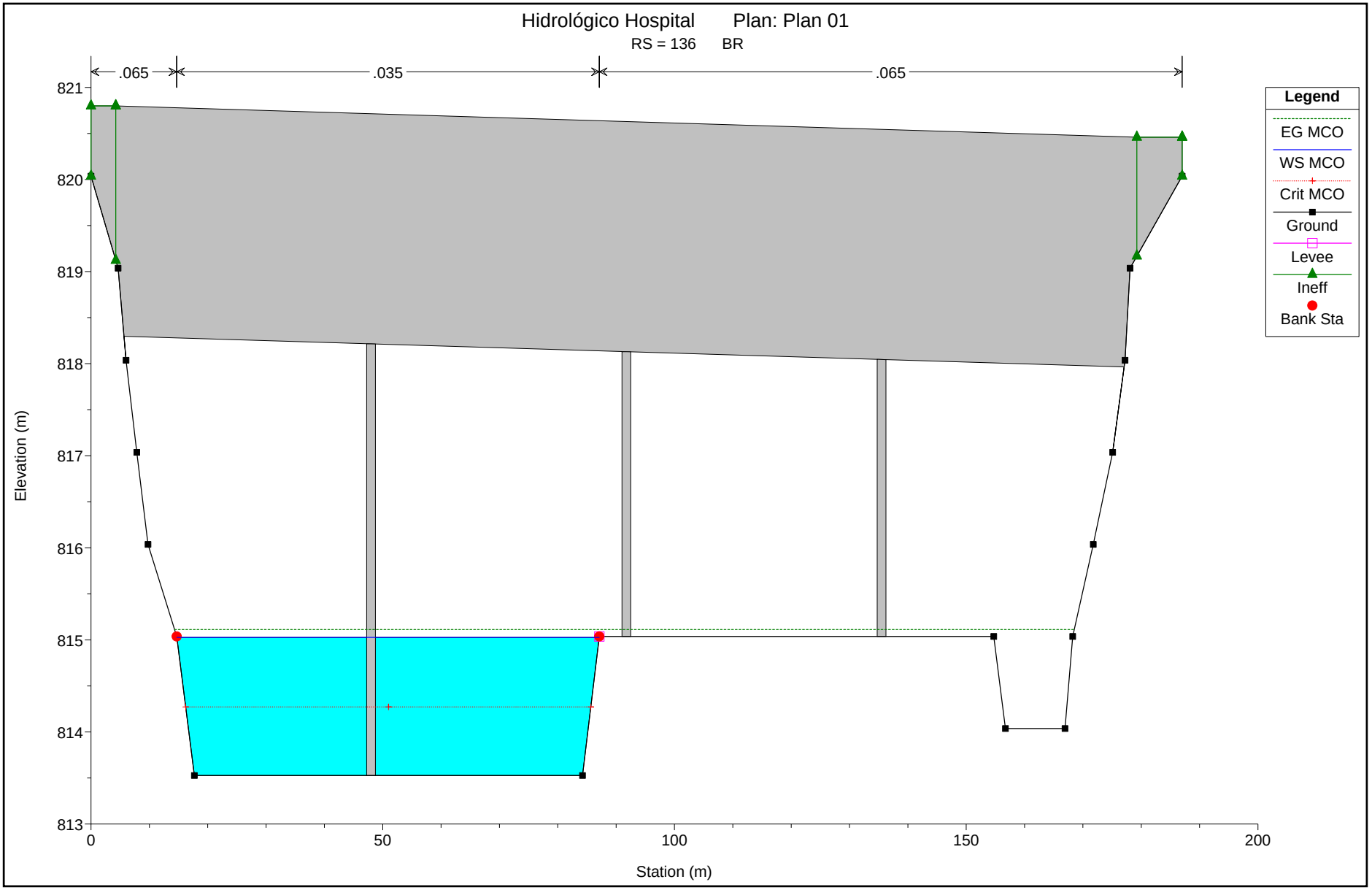

Hidrológico Hospital Plan: Plan 01
RS = 170
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
813
814
815
816
817
818
819
0
50
100
150
200
250
300

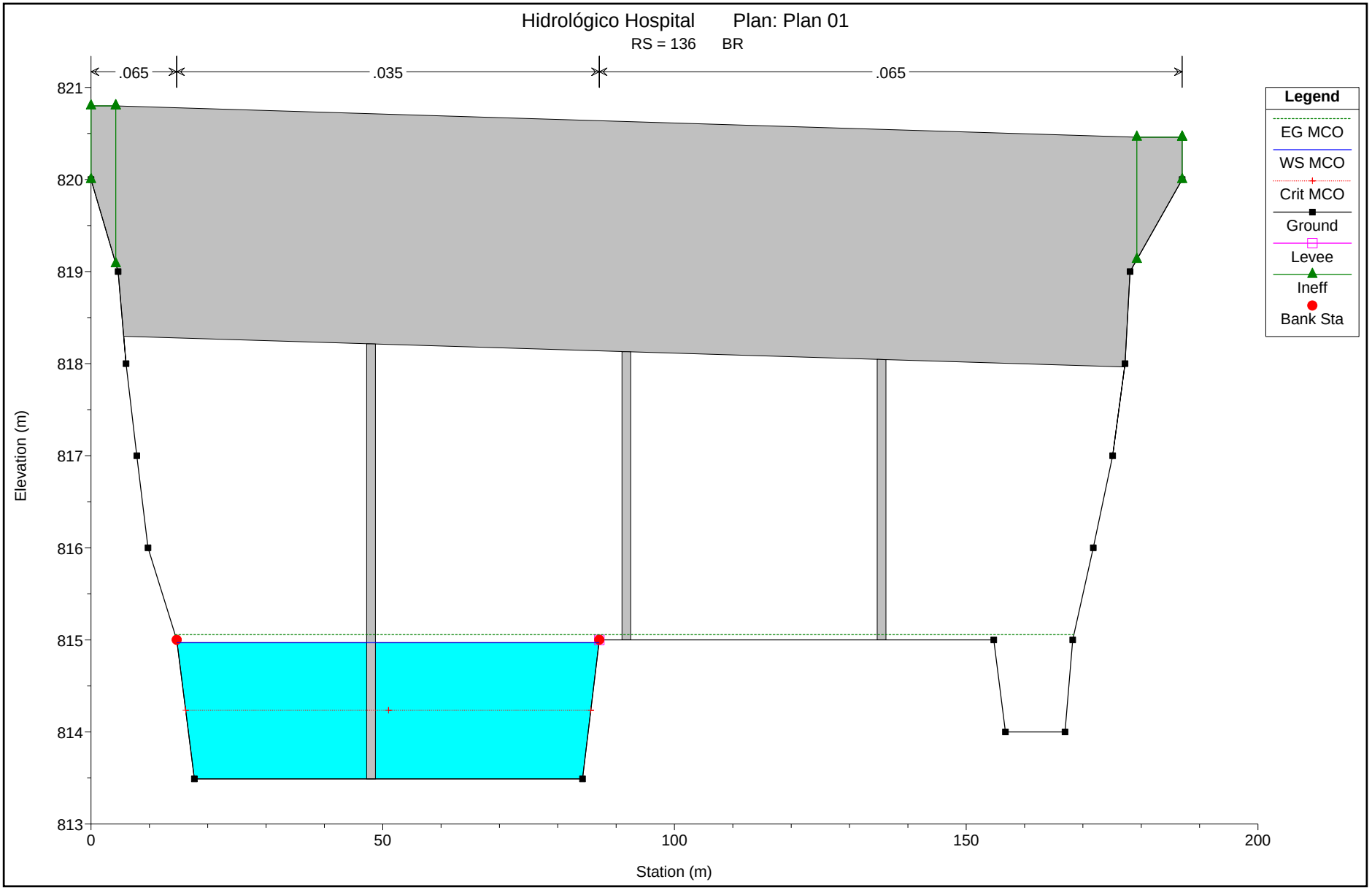

Hidrológico Hospital Plan: Plan 01
RS = 160
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300

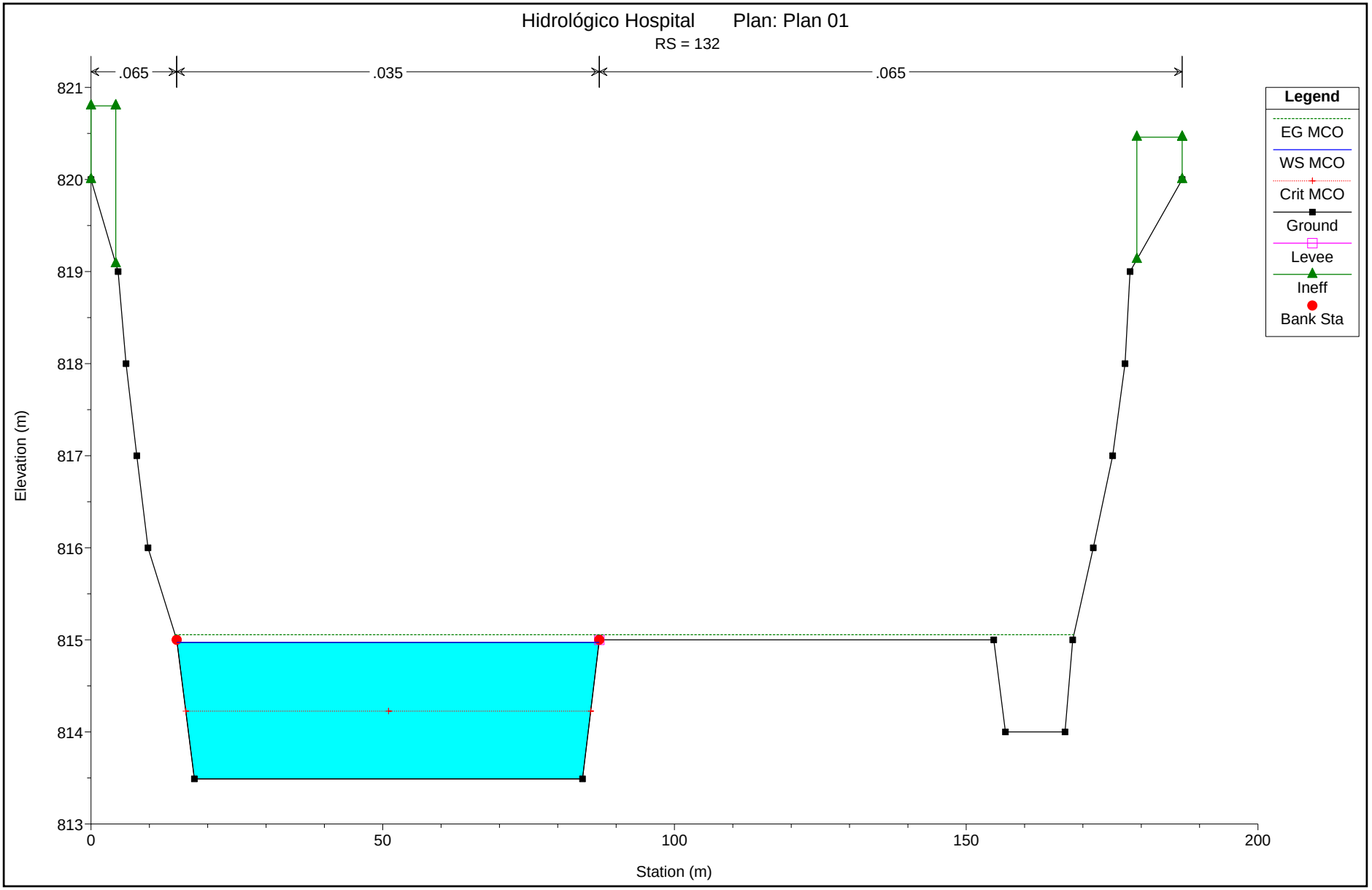

Hidrológico Hospital Plan: Plan 01
RS = 150
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300
Station (m)

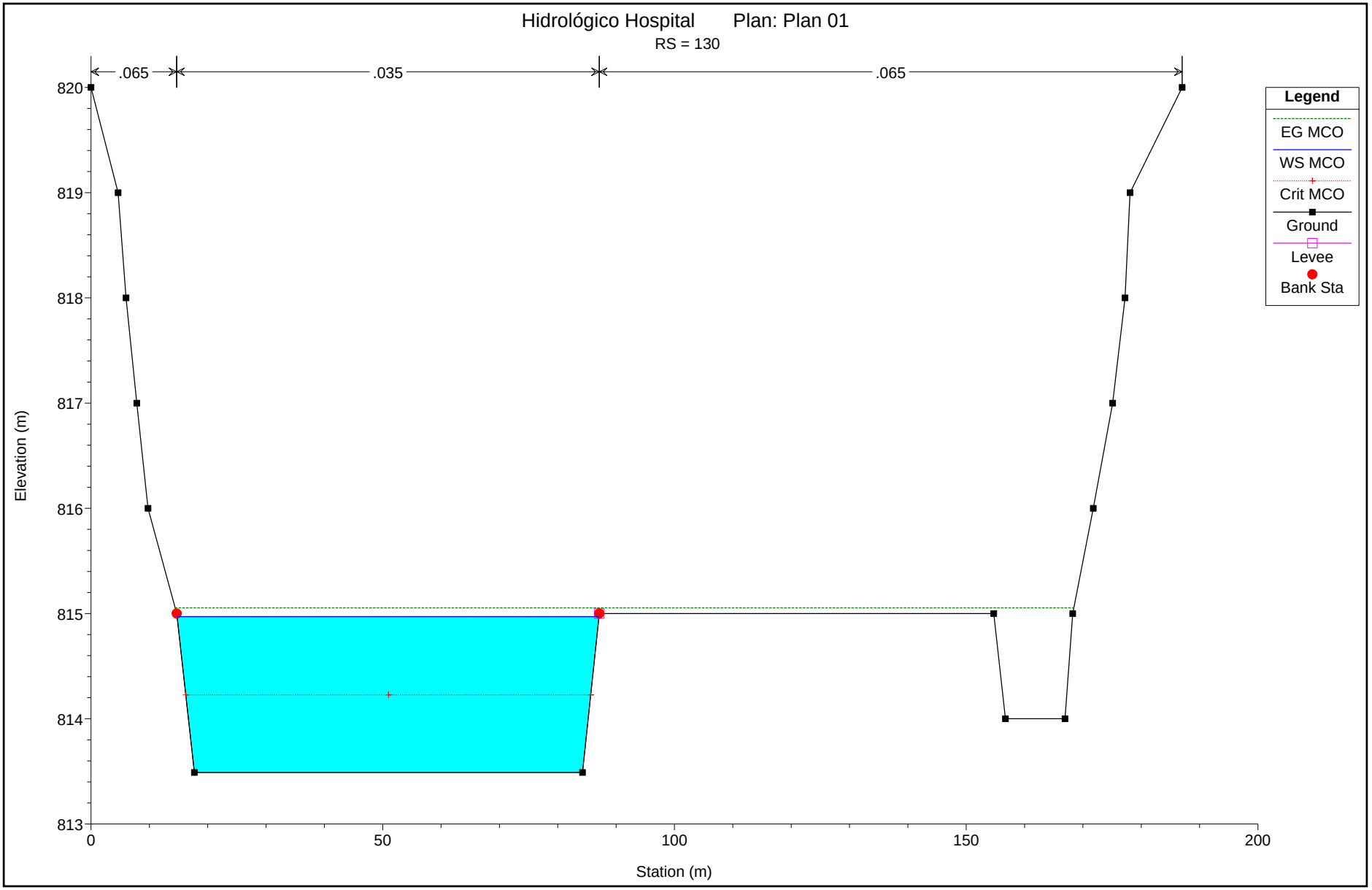

Hidrológico Hospital Plan: Plan 01
RS = 140
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300
Station (m)

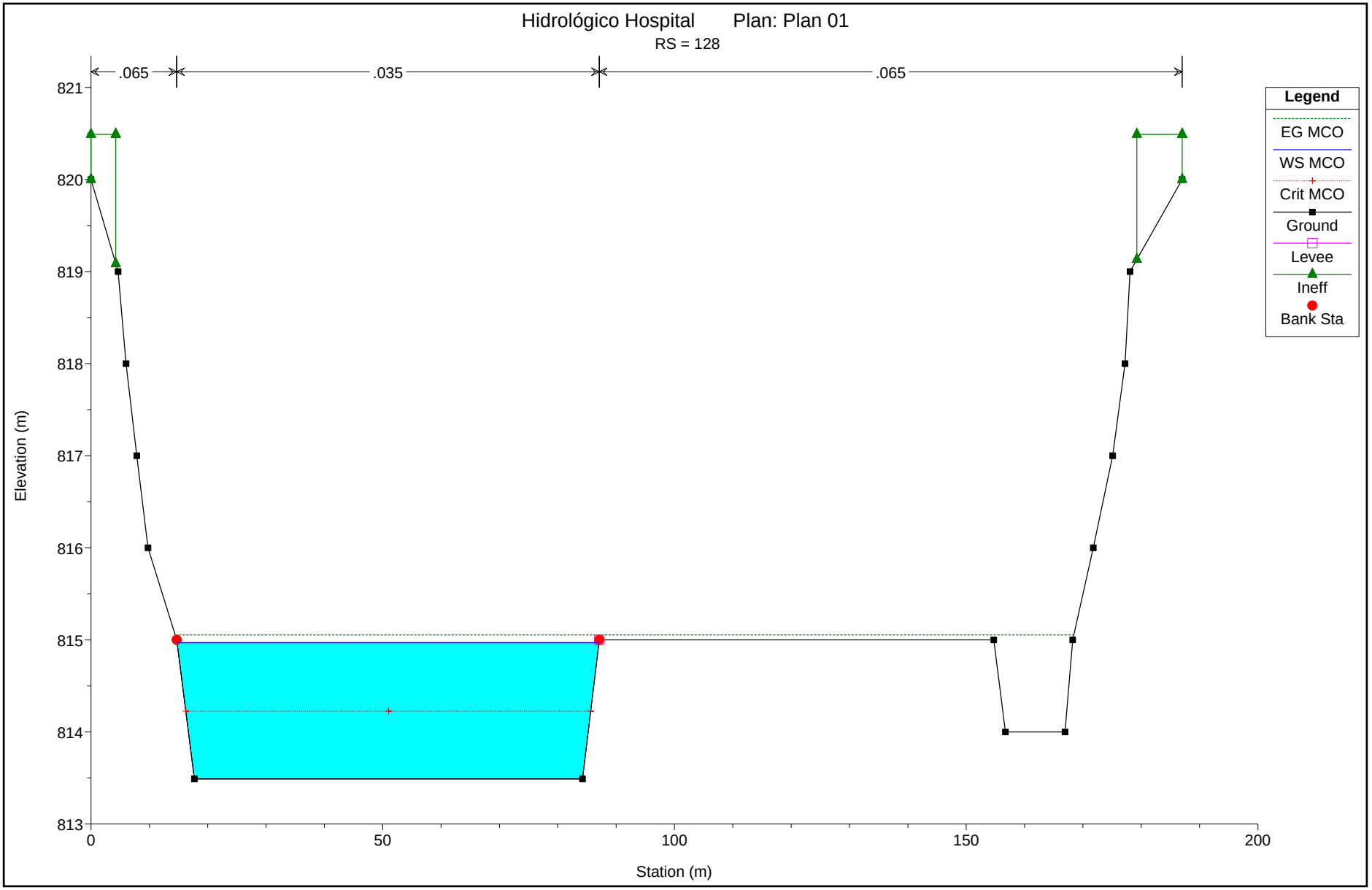

Hidrológico Hospital Plan: Plan 01
RS = 138
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)

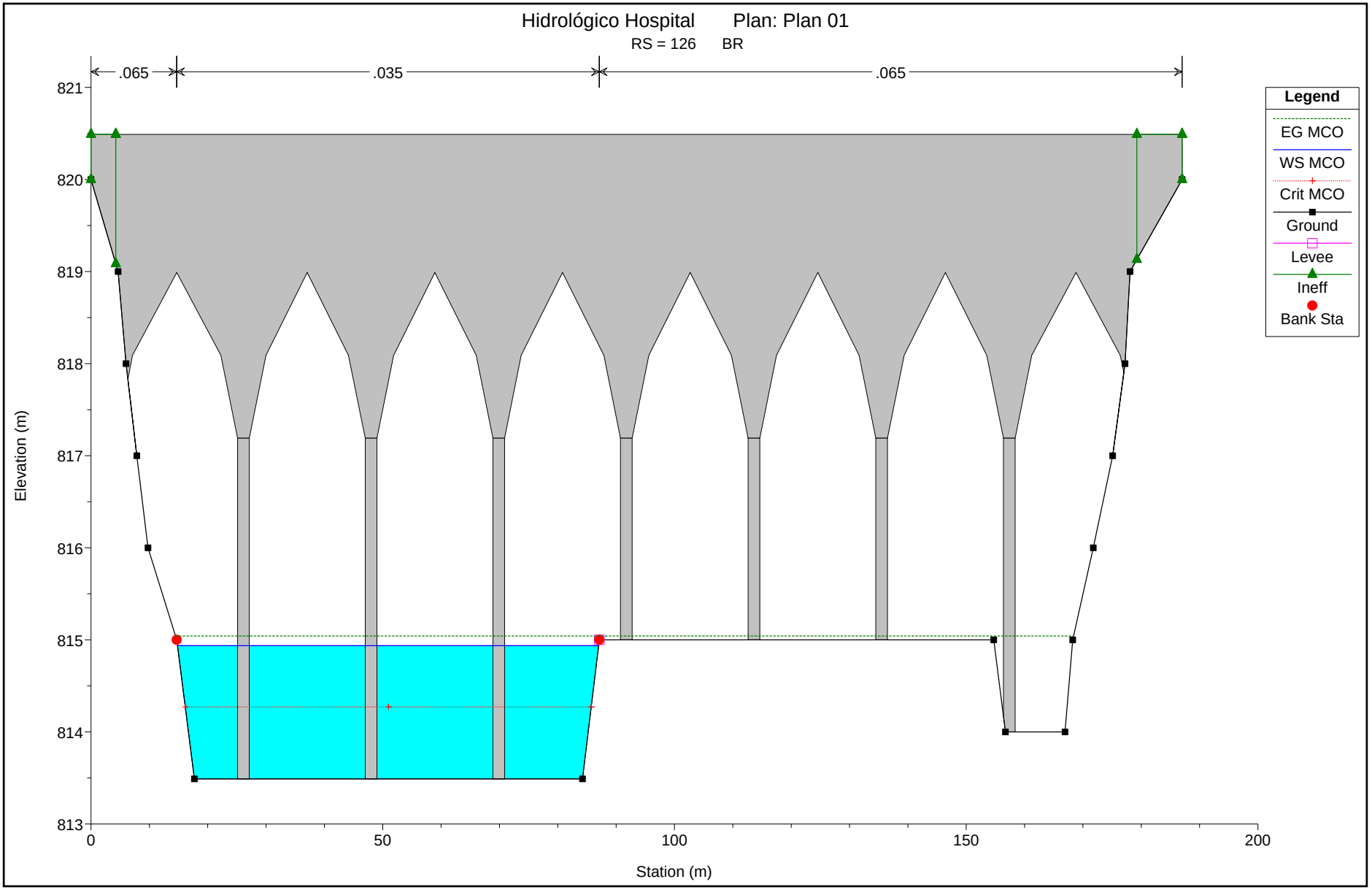

Hidrológico Hospital Plan: Plan 01
RS = 136 BR
.065
.035
.065
821
820
819
818
817
816
815
814
813
Elevation (m)
0
50
100
150
200
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

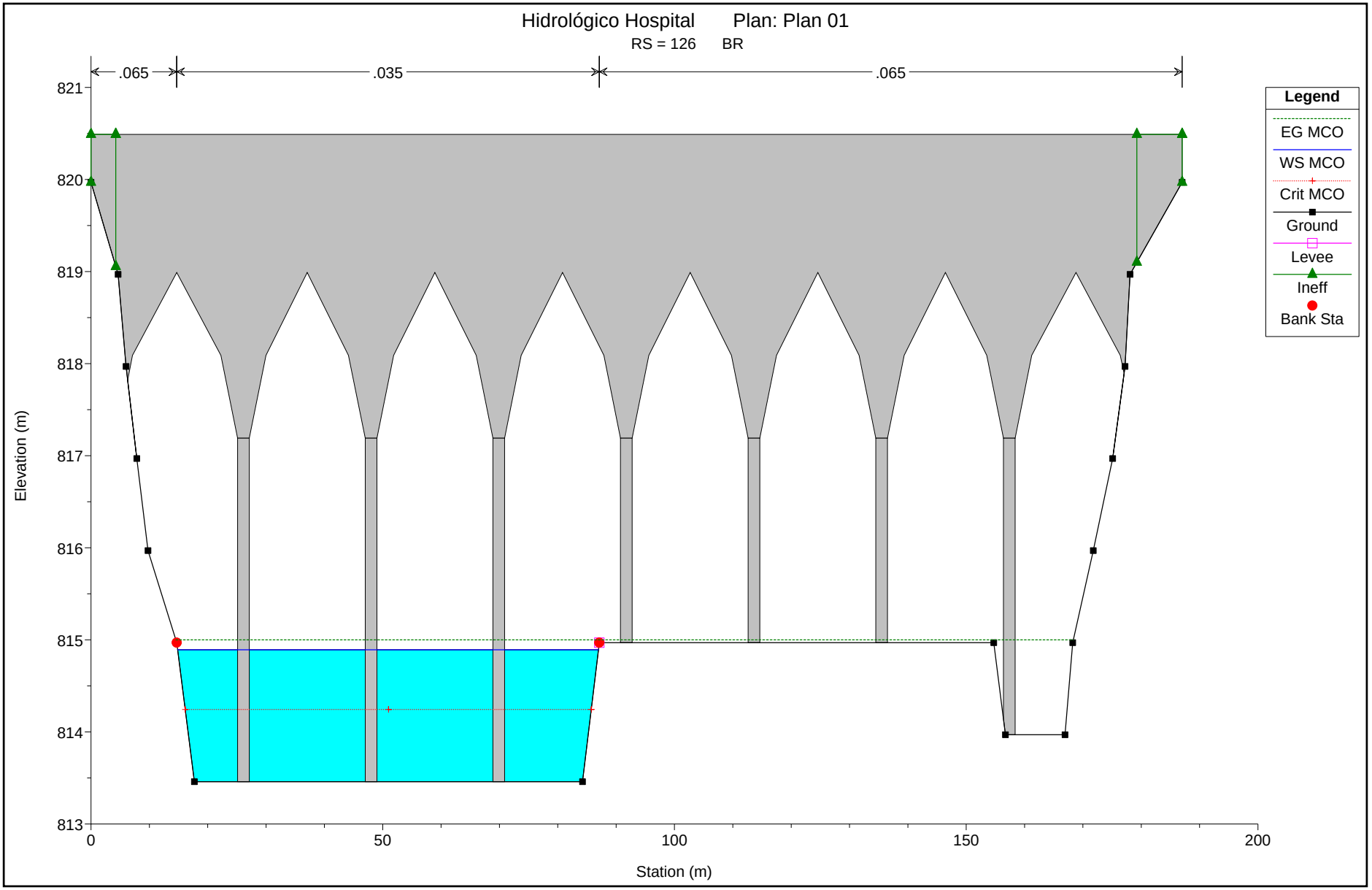

Hidrológico Hospital Plan: Plan 01
RS = 136 BR
.065
.035
.065
821
820
819
818
817
816
815
814
813
Elevation (m)
0
50
100
150
200
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta

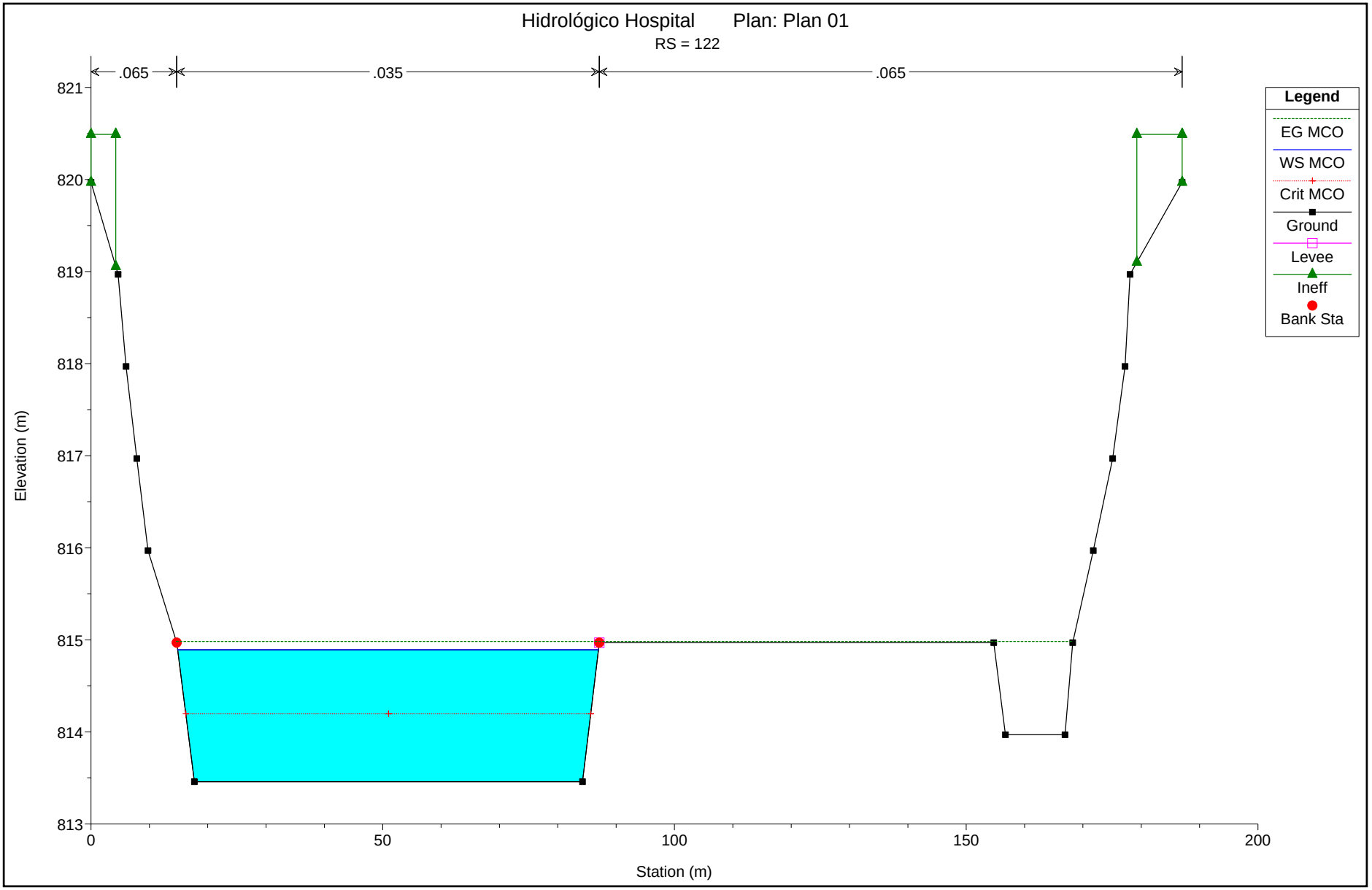

Hidrológico Hospital Plan: Plan 01
RS = 132
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)

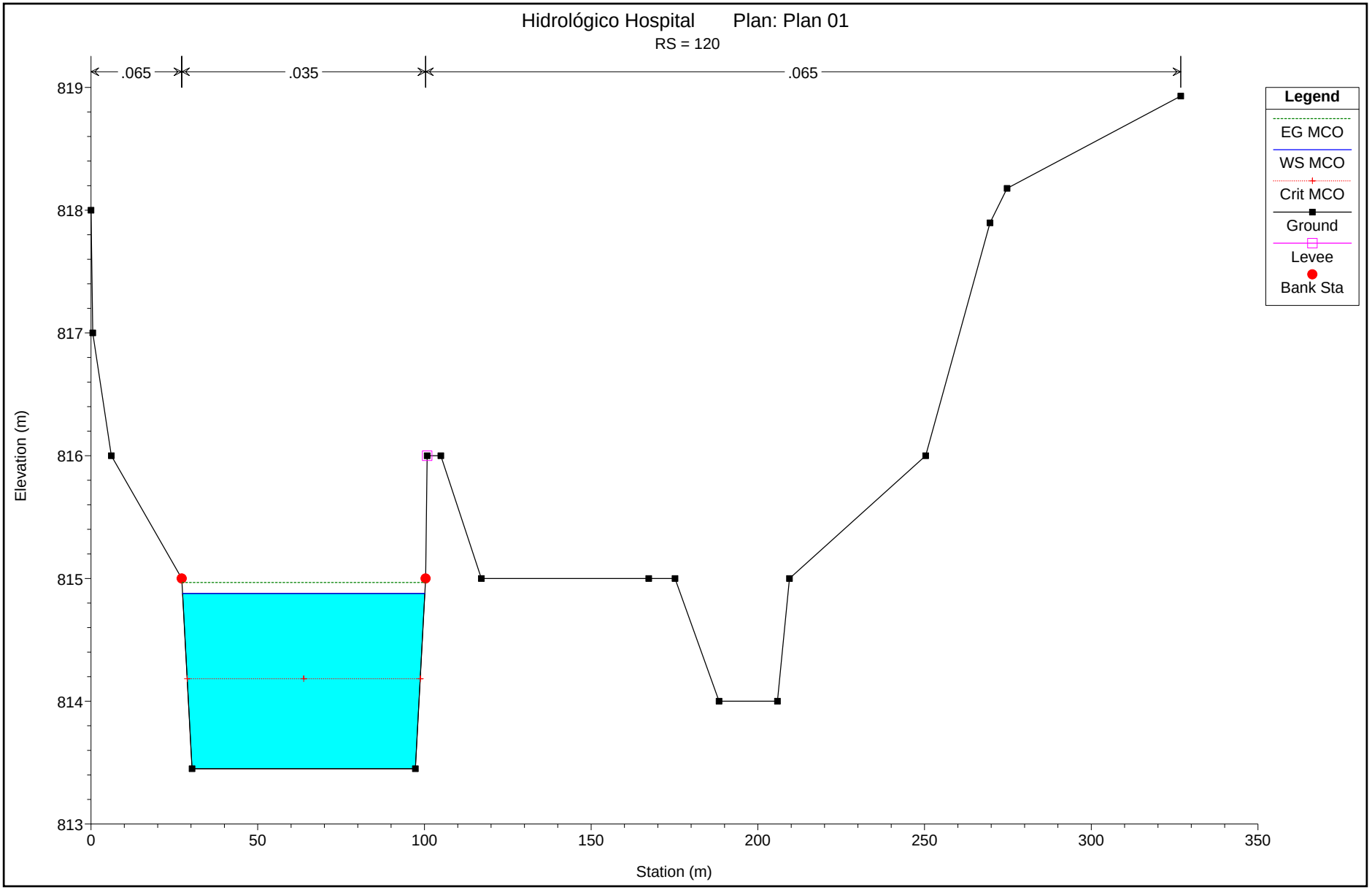

Hidrológico Hospital Plan: Plan 01
RS = 130
.065
.035
.065
820
819
818
817
816
815
814
813
Elevation (m)
0
50
100
150
200
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta

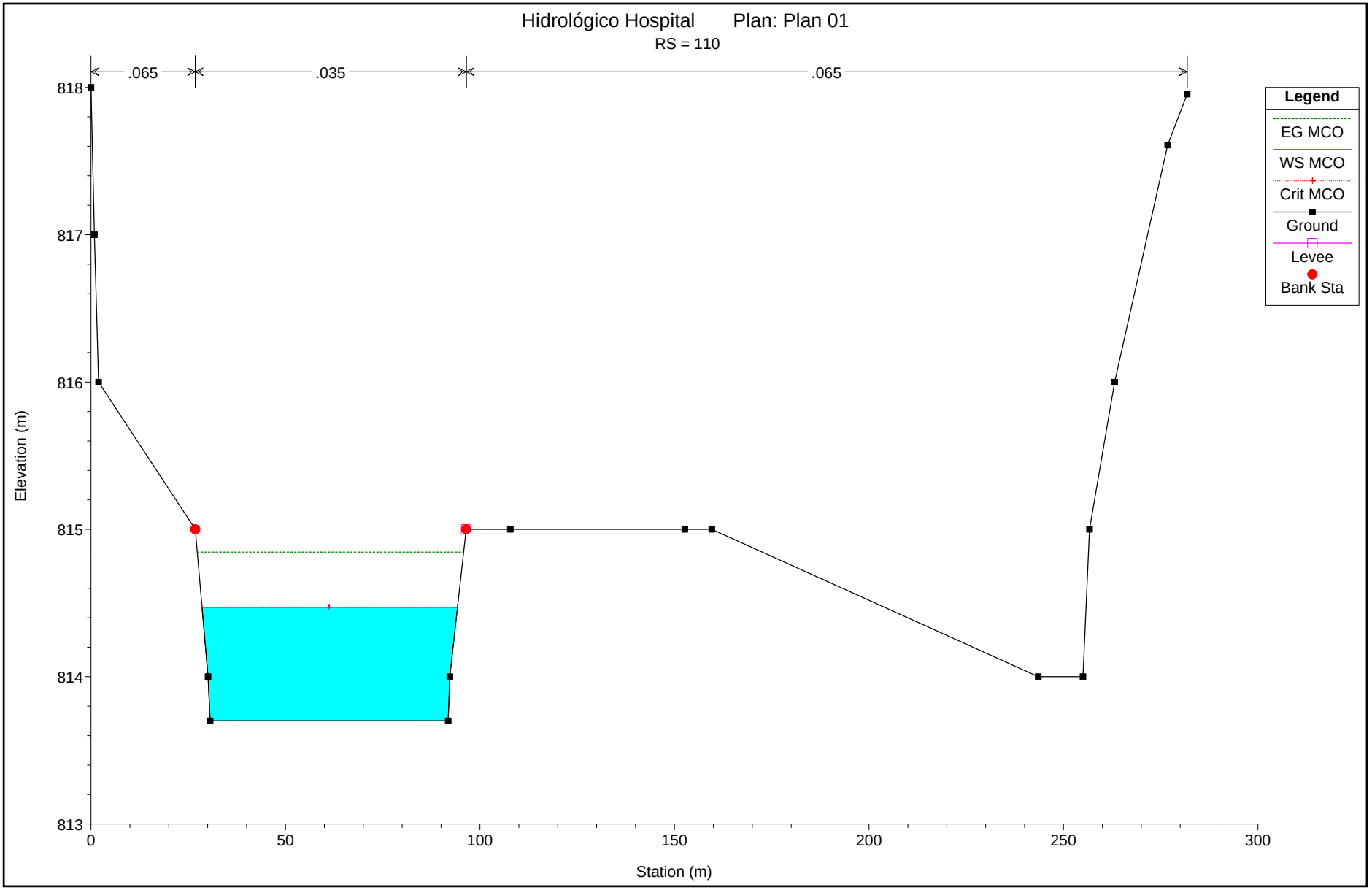

Hidrológico Hospital Plan: Plan 01
RS = 128
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)

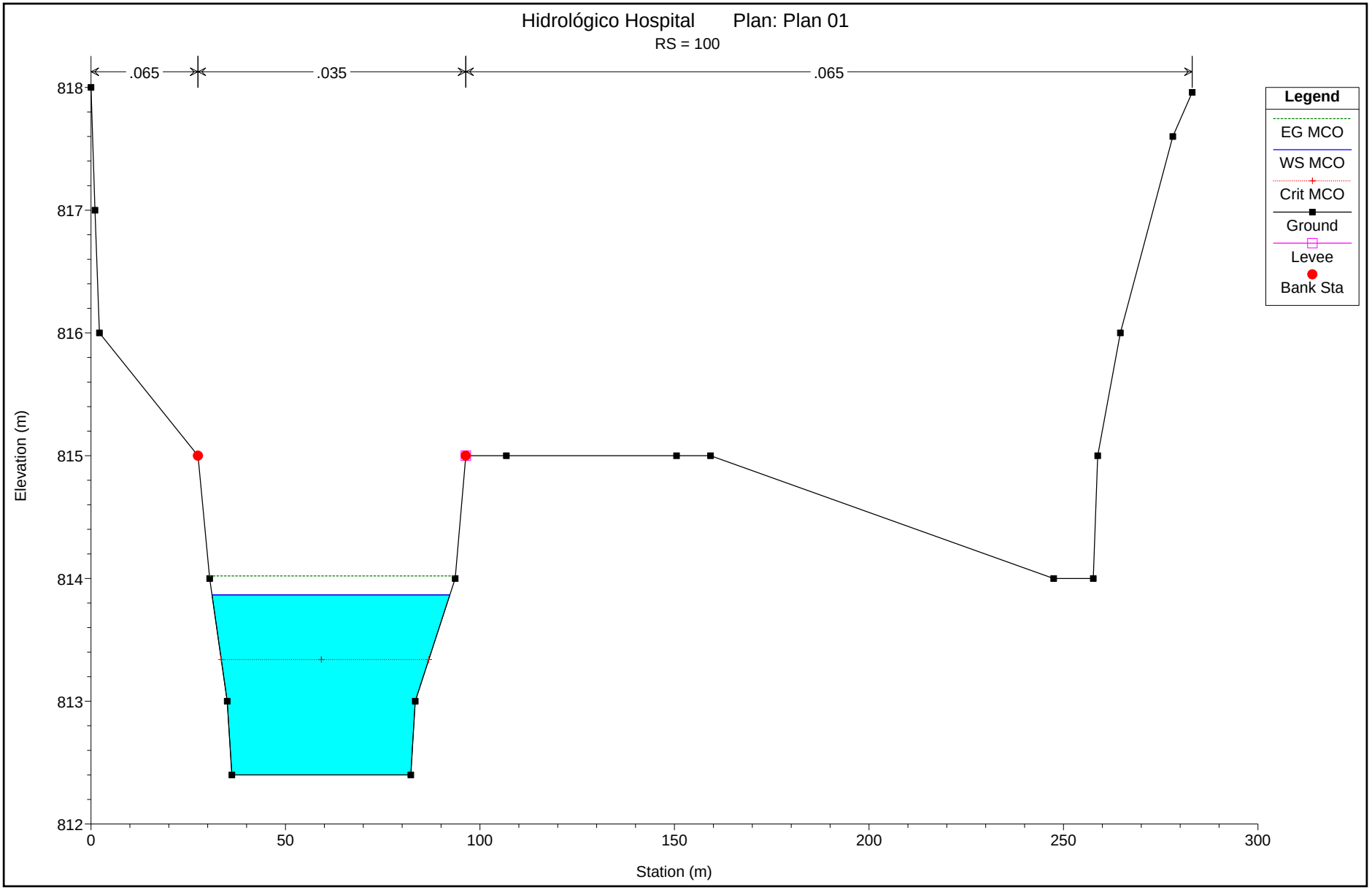

Hidrológico Hospital Plan: Plan 01
RS = 126 BR
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200


Hidrológico Hospital Plan: Plan 01
RS = 126 BR
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200


Hidrológico Hospital Plan: Plan 01
RS = 122
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 120
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300
350
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 110
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
818
817
816
815
814
813
0
50
100
150
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 100
.065
.035
.065
Elevation (m)
818
817
816
815
814
813
812
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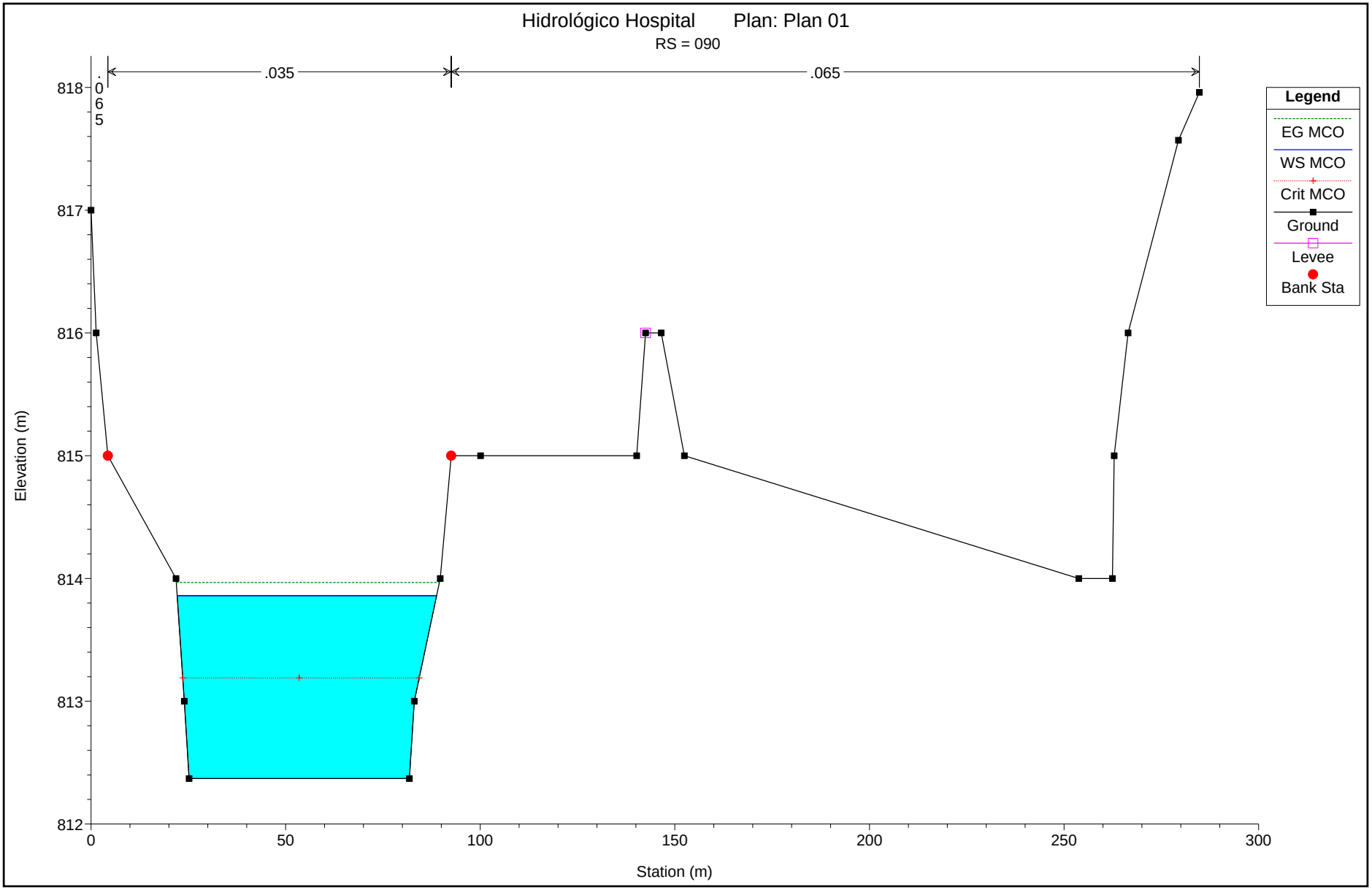
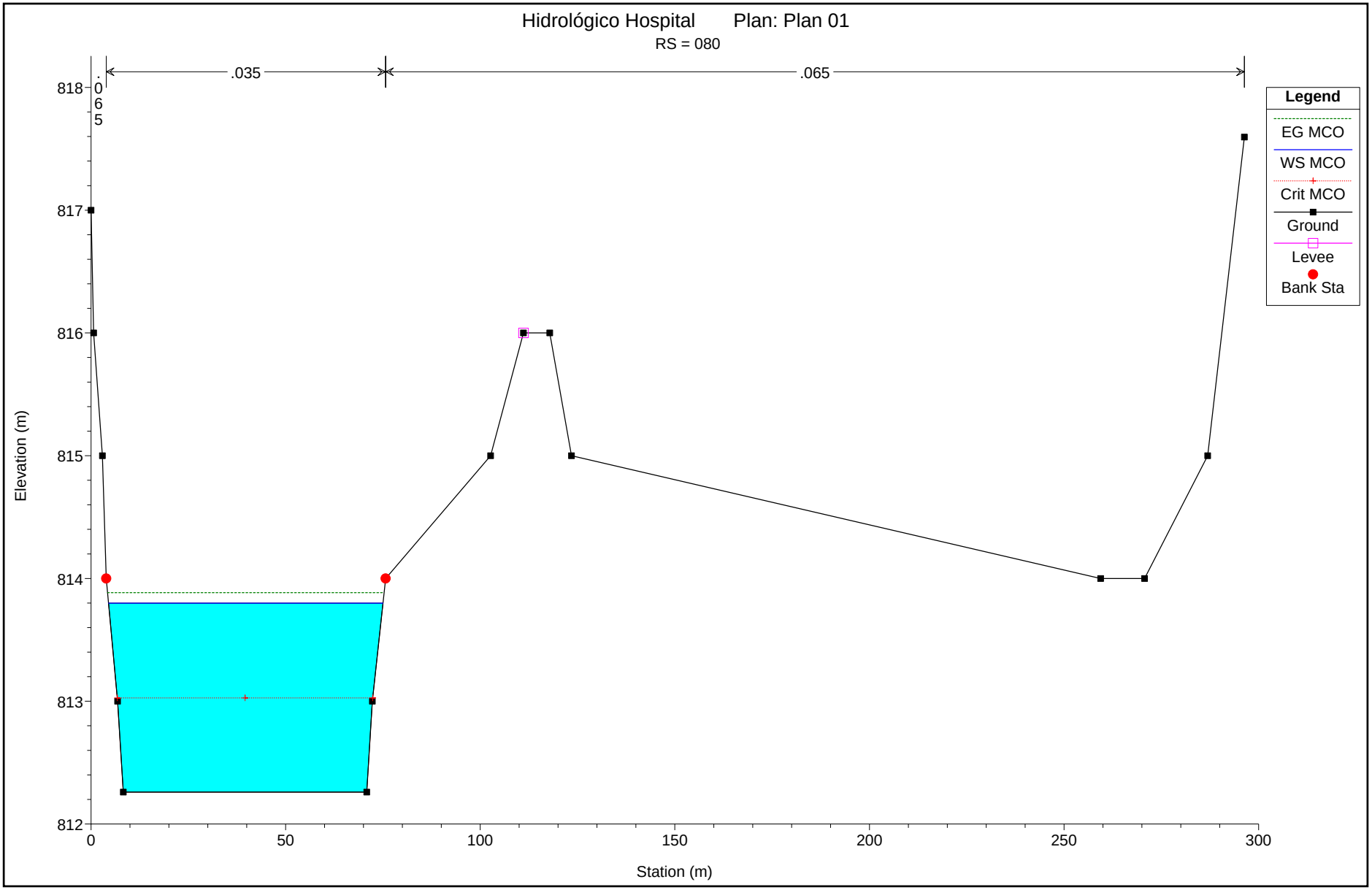
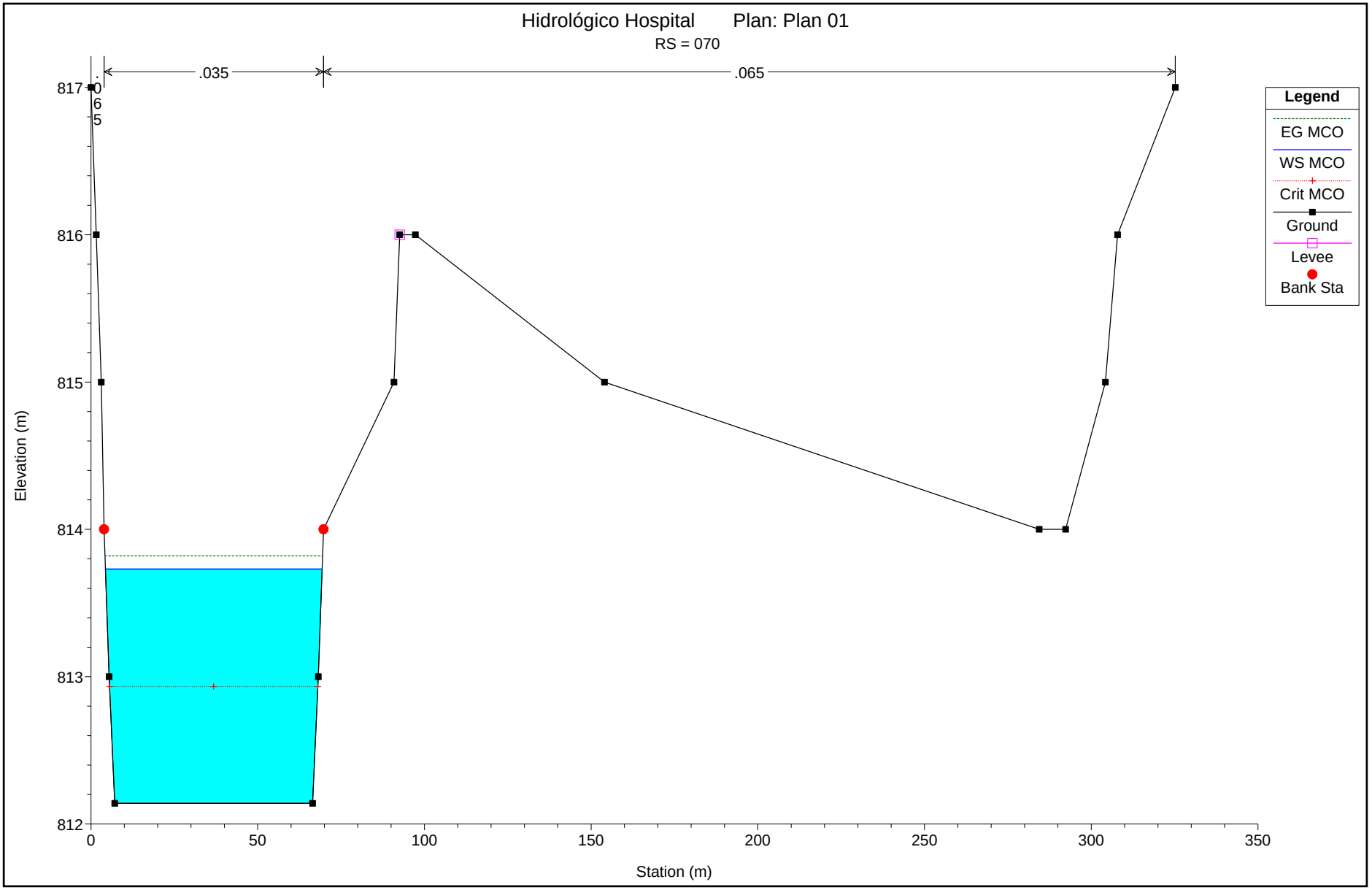
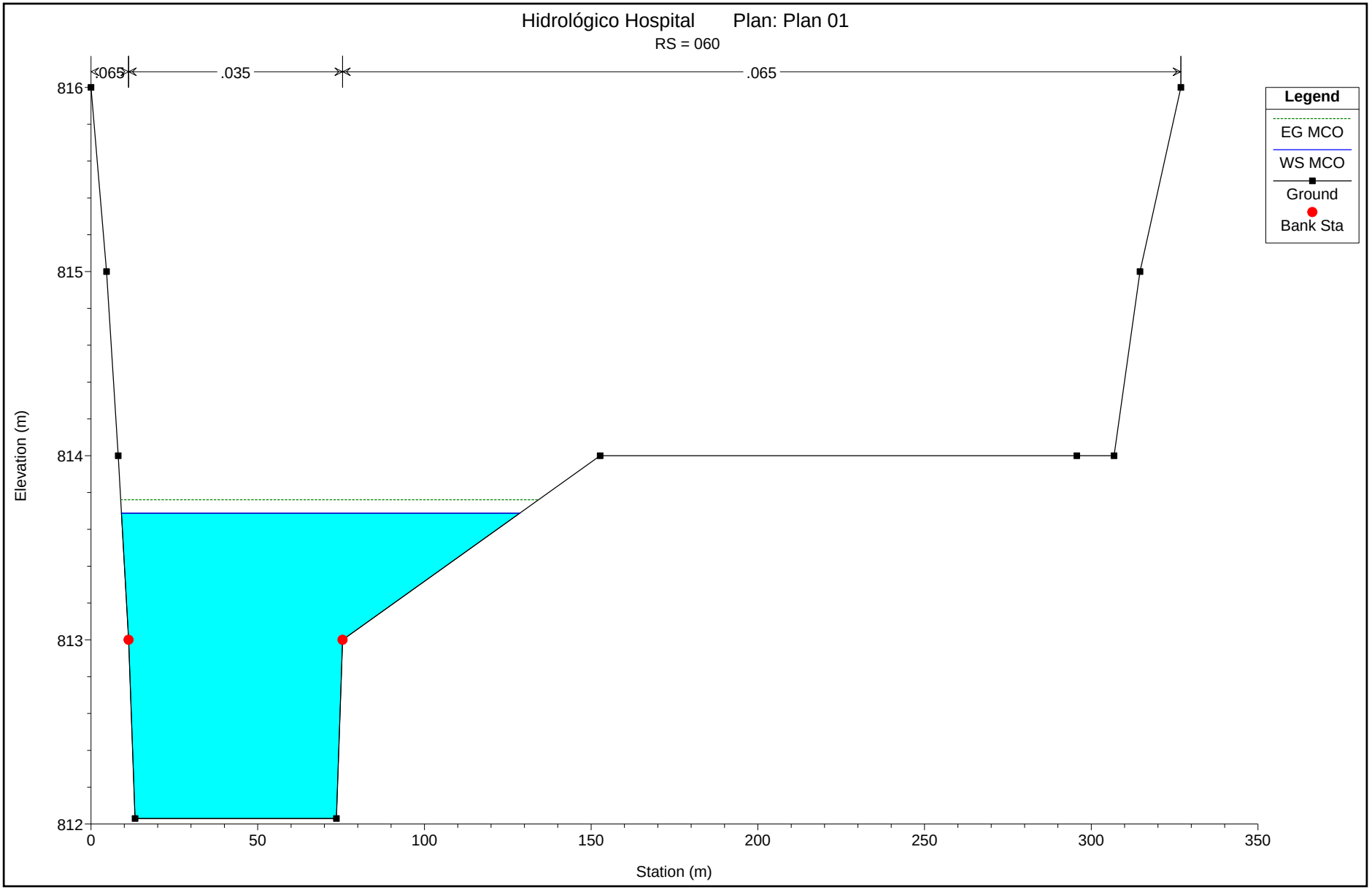
50
100
150
200
250
300
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 090
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
812
813
814
815
816
817
818
0
50
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 080
.035
.065
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
812
813
814
815
816
817
818
0
50
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 070
.035
.065
.
0
6
5
Legend
EG MCO
WS MCO
Crit MCO
Ground
Levee
Bank Sta
Elevation (m)
817
816
815
814
813
812
0
50
100
150
200
250
300
350
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 060
.065
.035
.065
816
815
814
813
812
Elevation (m)
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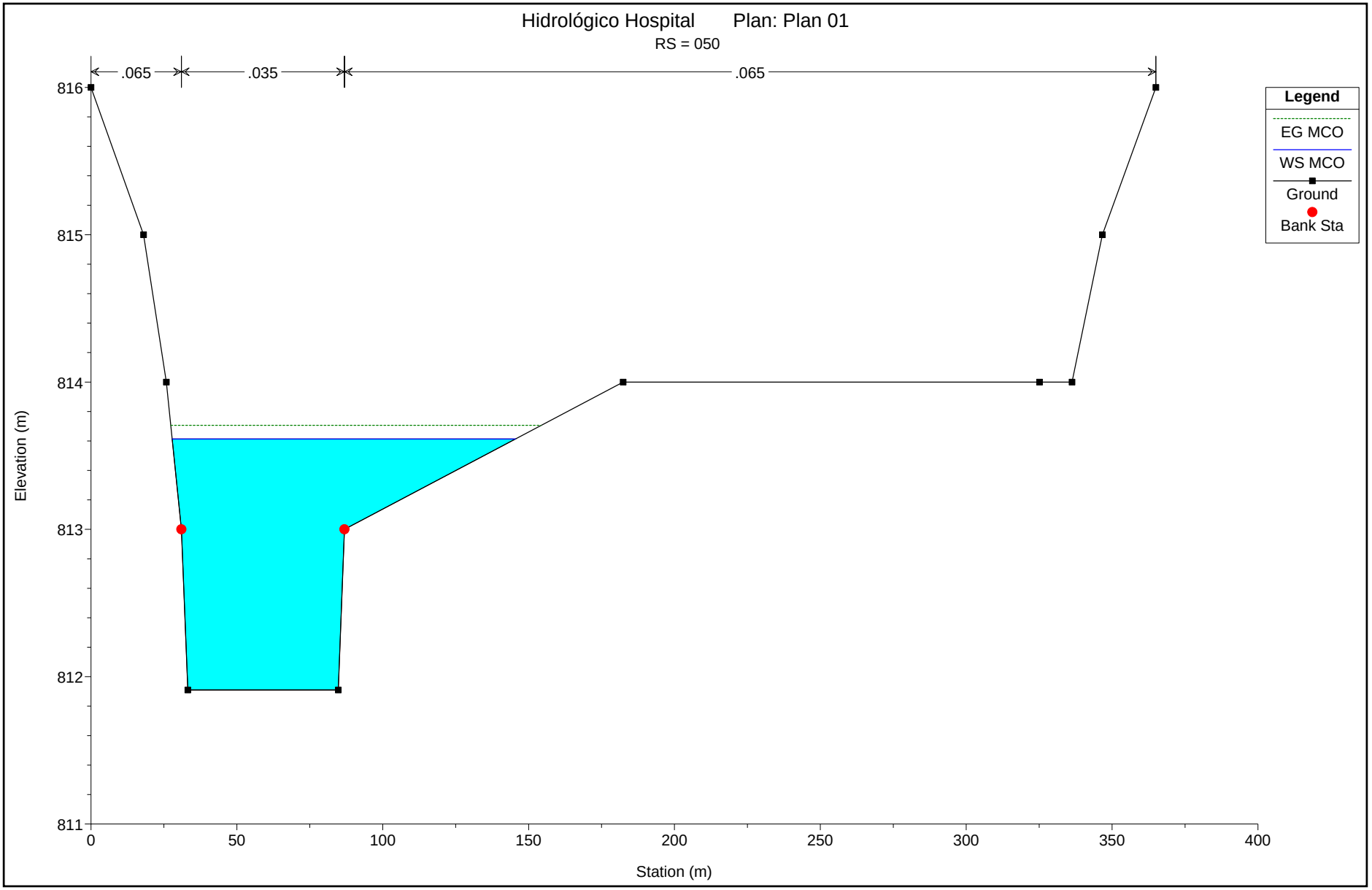
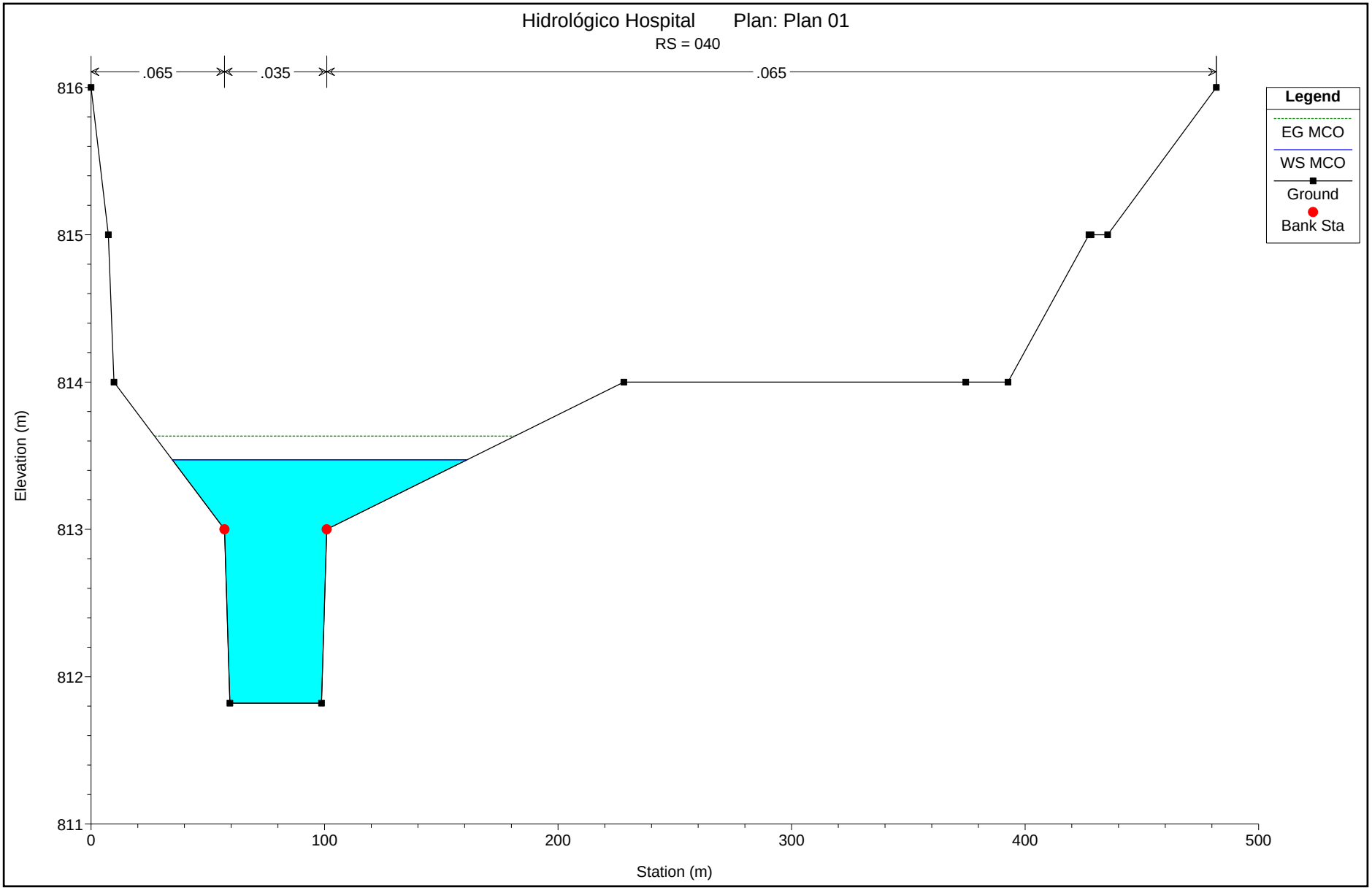
50
100
150
200
250
300
350
Station (m)
Legend
EG MCO
WS MCO
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 050
.065
.035
.065
816
815
814
813
812
811
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG MCO
WS MCO
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 040
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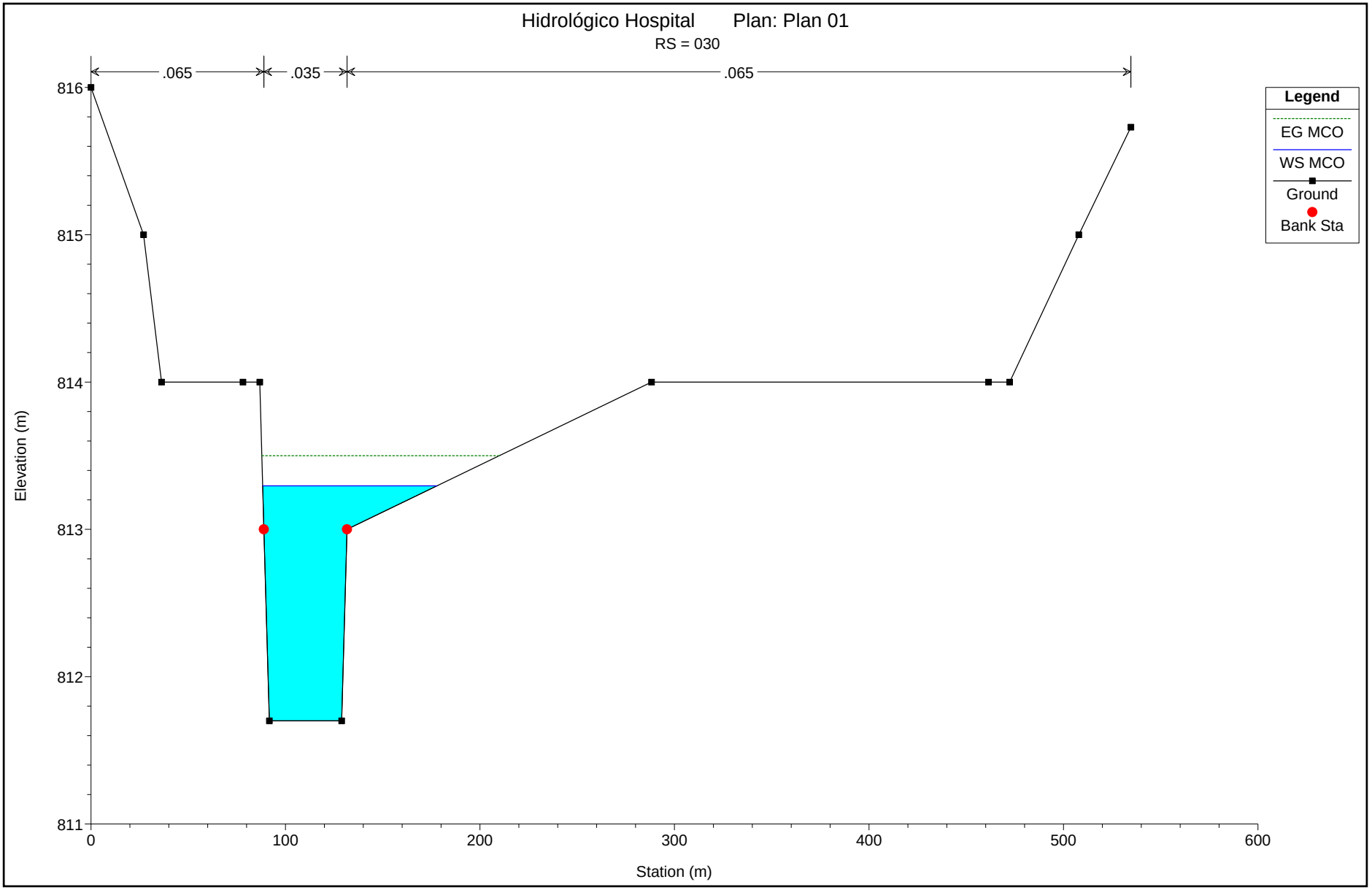
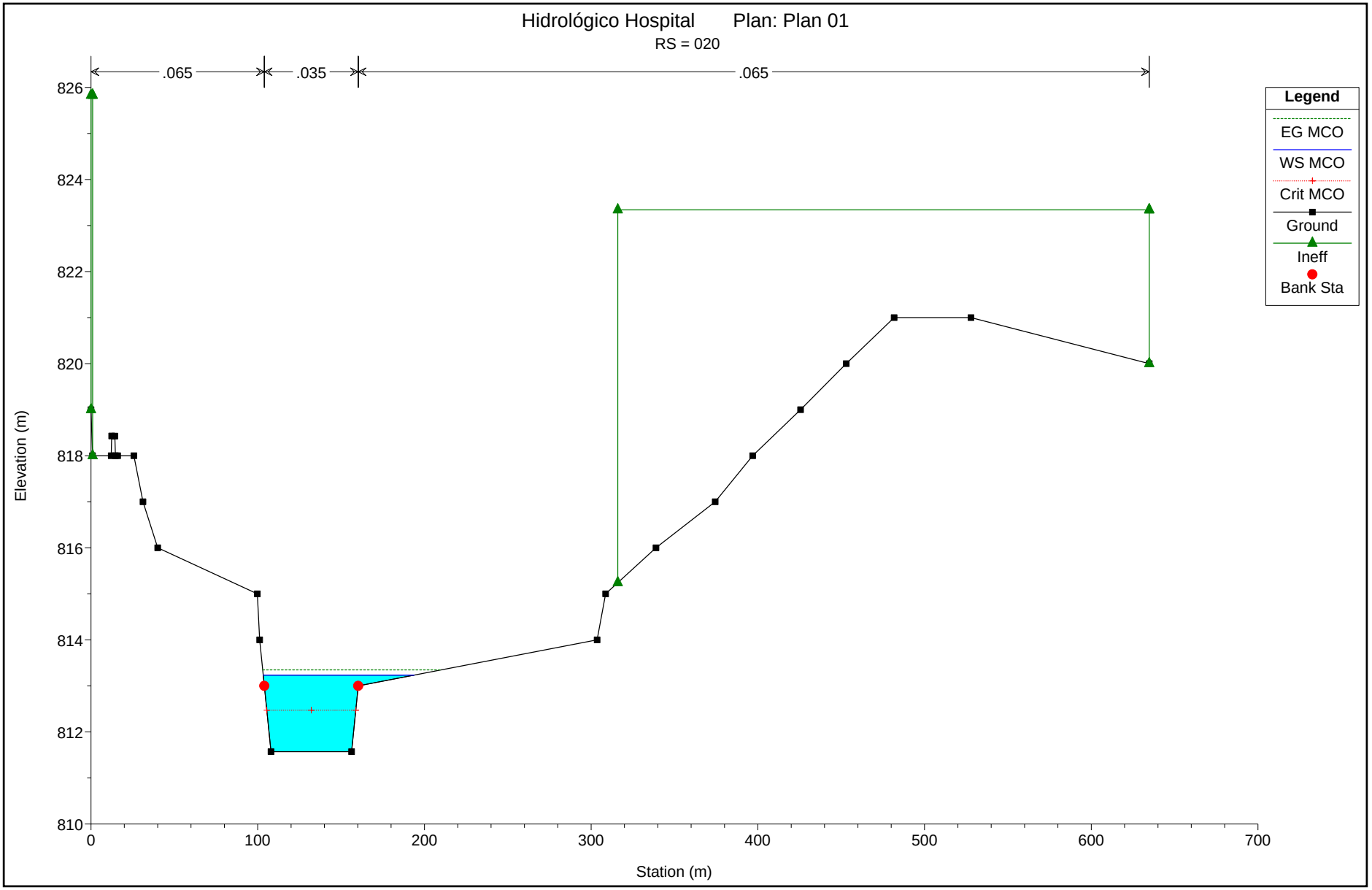
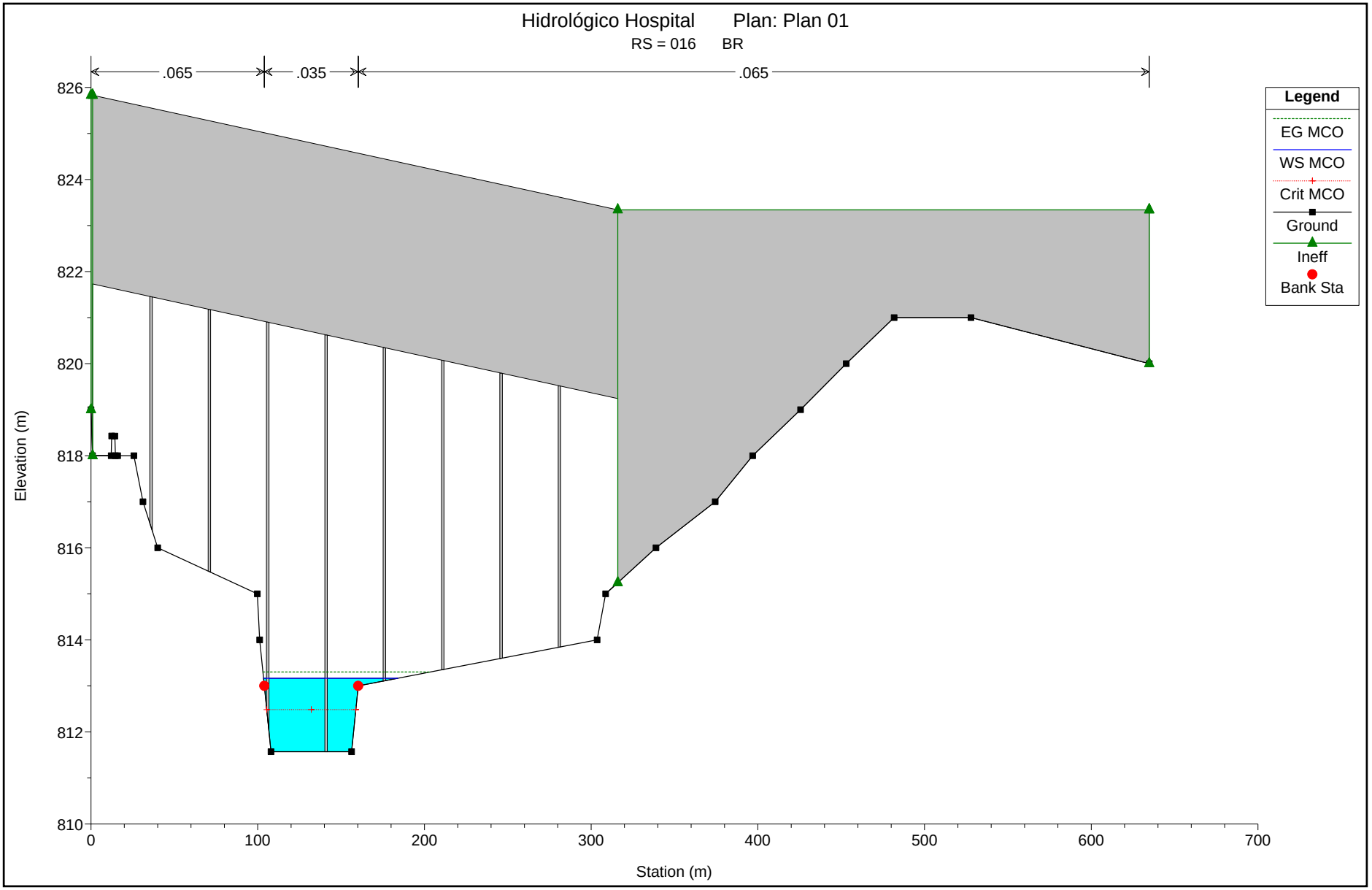
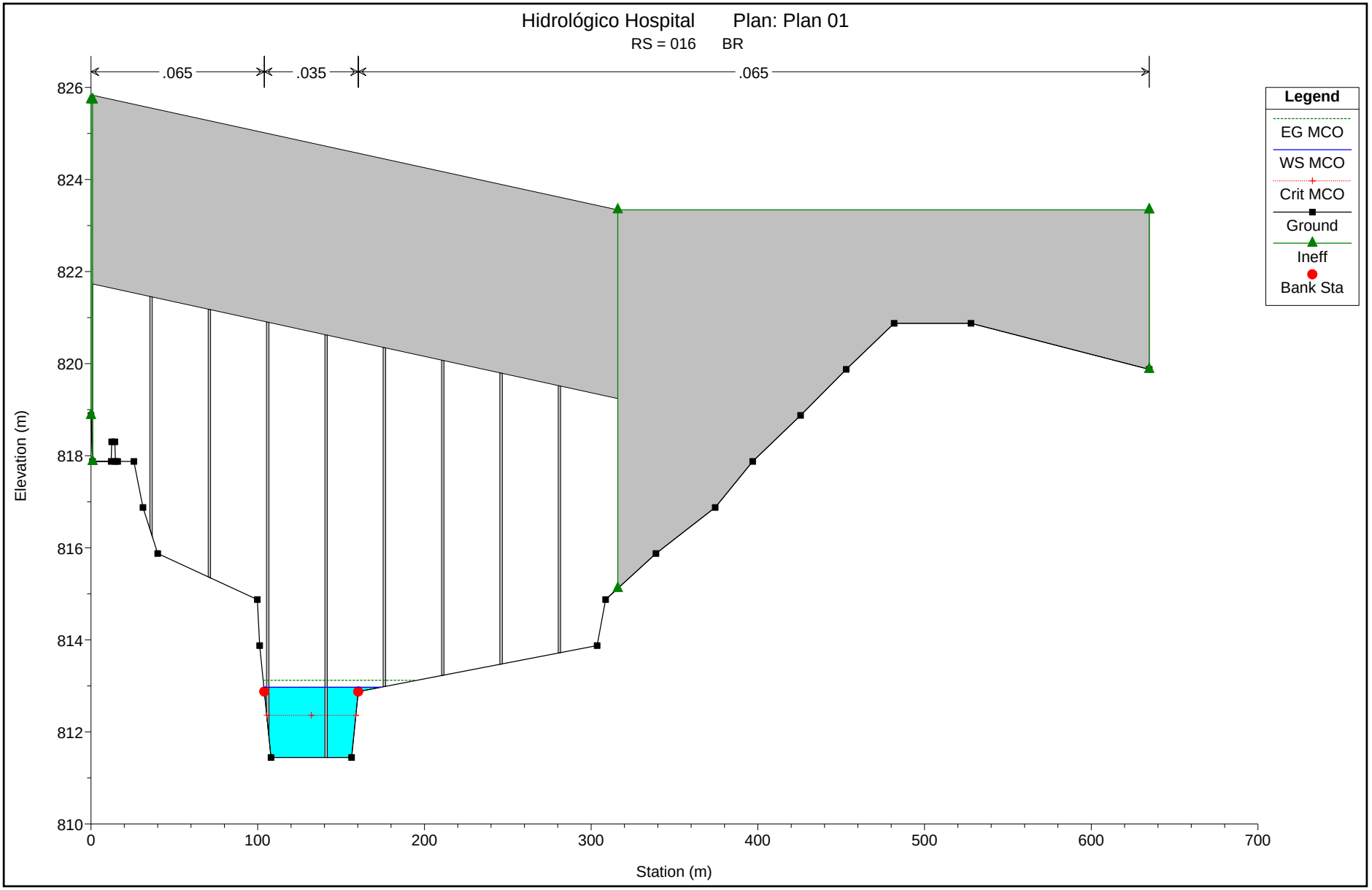
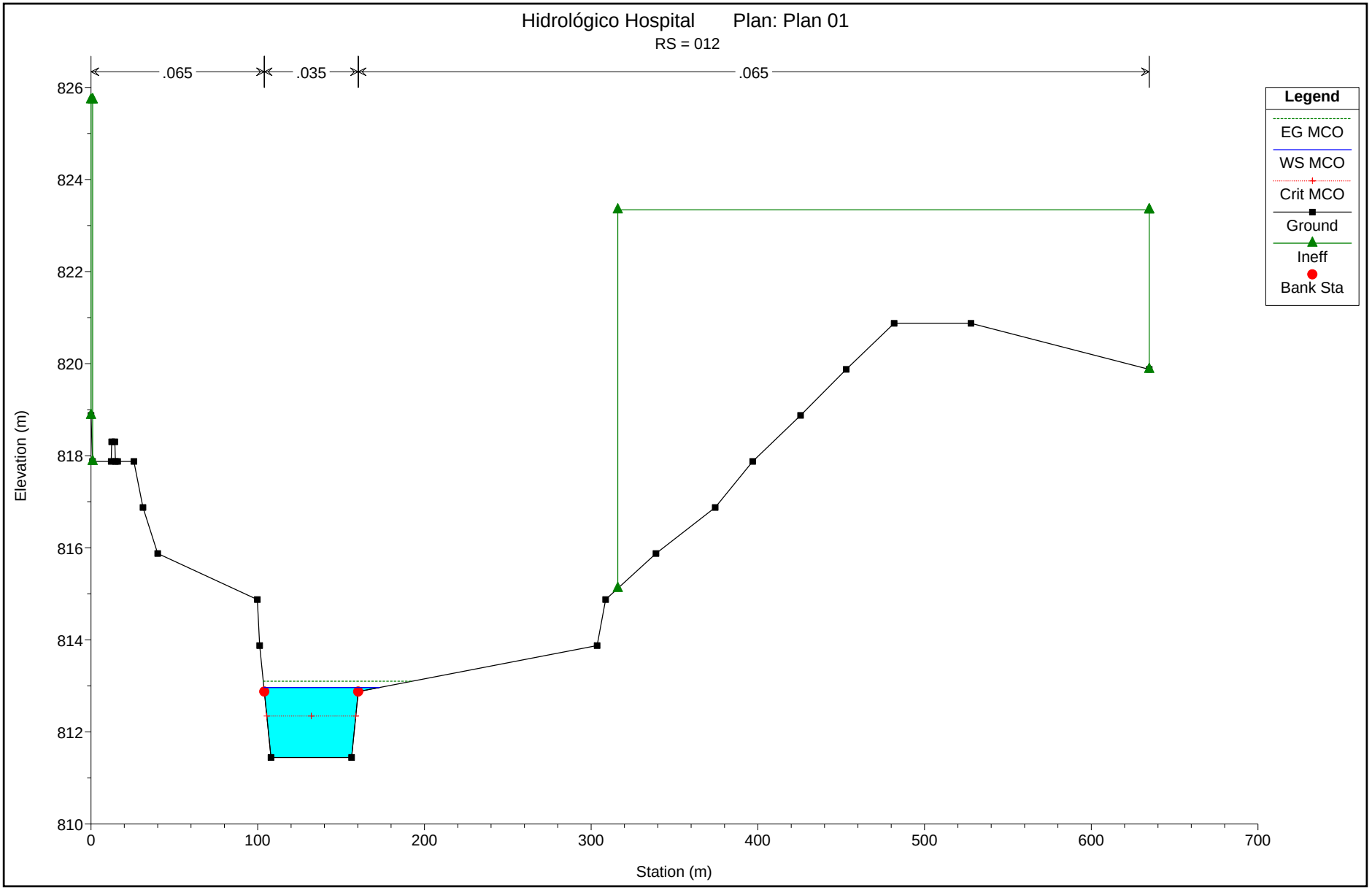
.035
.065
816
815
814
813
812
811
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG MCO
WS MCO
Ground
Bank Sta

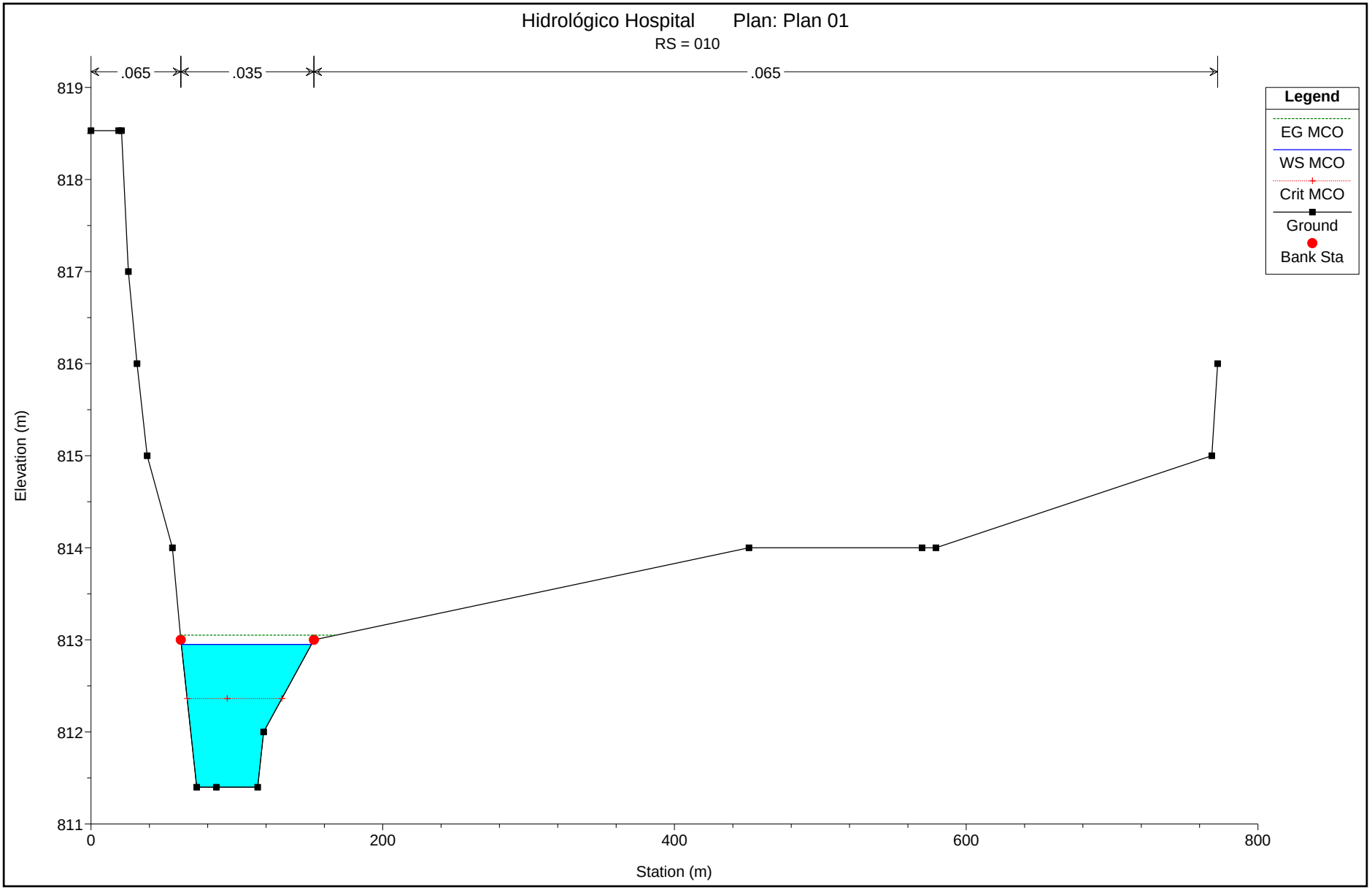

Hidrológico Hospital Plan: Plan 01
RS = 030
.065
.035
.065
816
815
814
813
812
811
Elevation (m)
0
100
200
300
400
500
600
Station (m)
Legend
EG MCO
WS MCO
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 020
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Ineff
Bank Sta

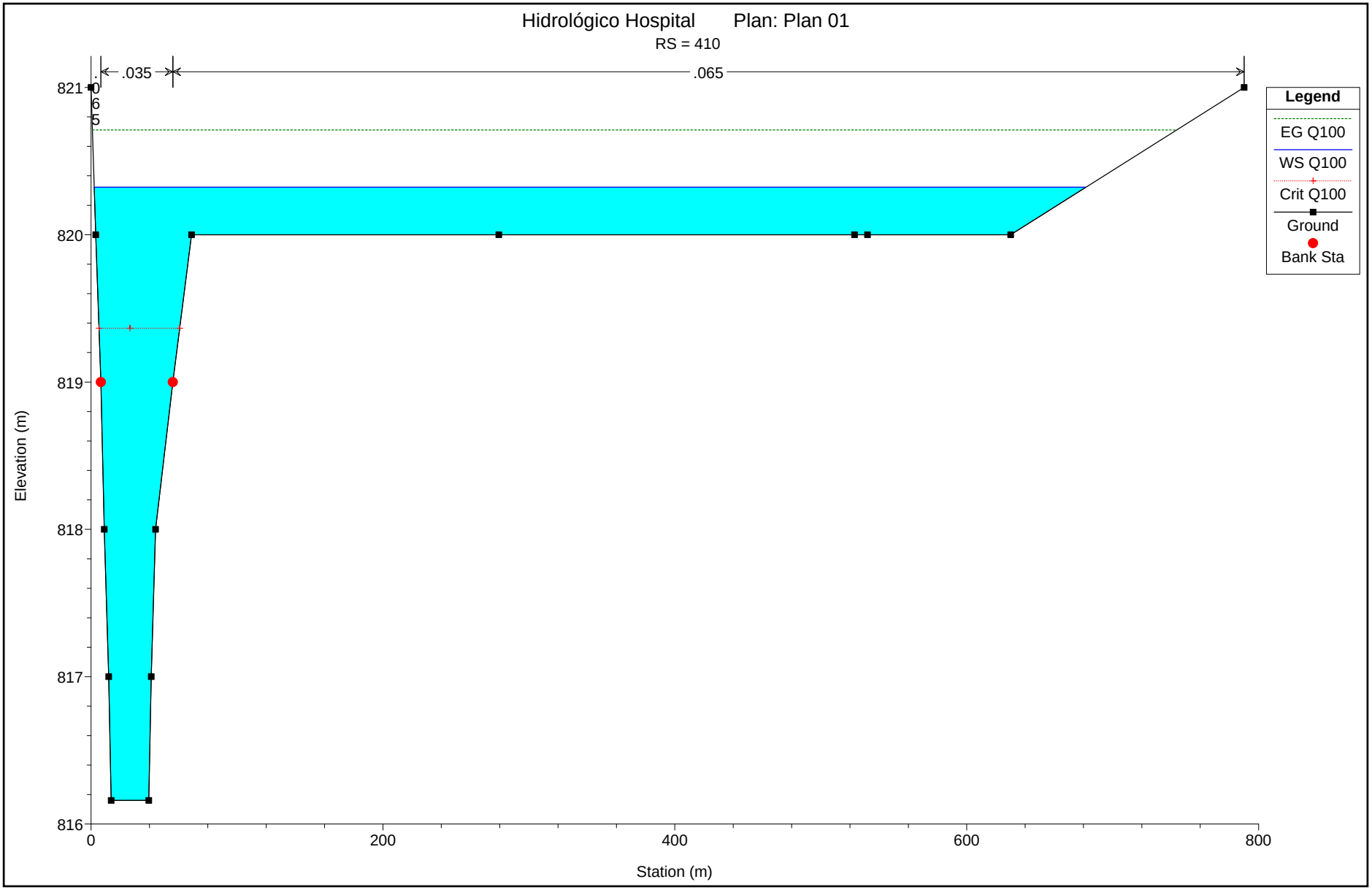

Hidrológico Hospital Plan: Plan 01
RS = 016 BR
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Ineff
Bank Sta

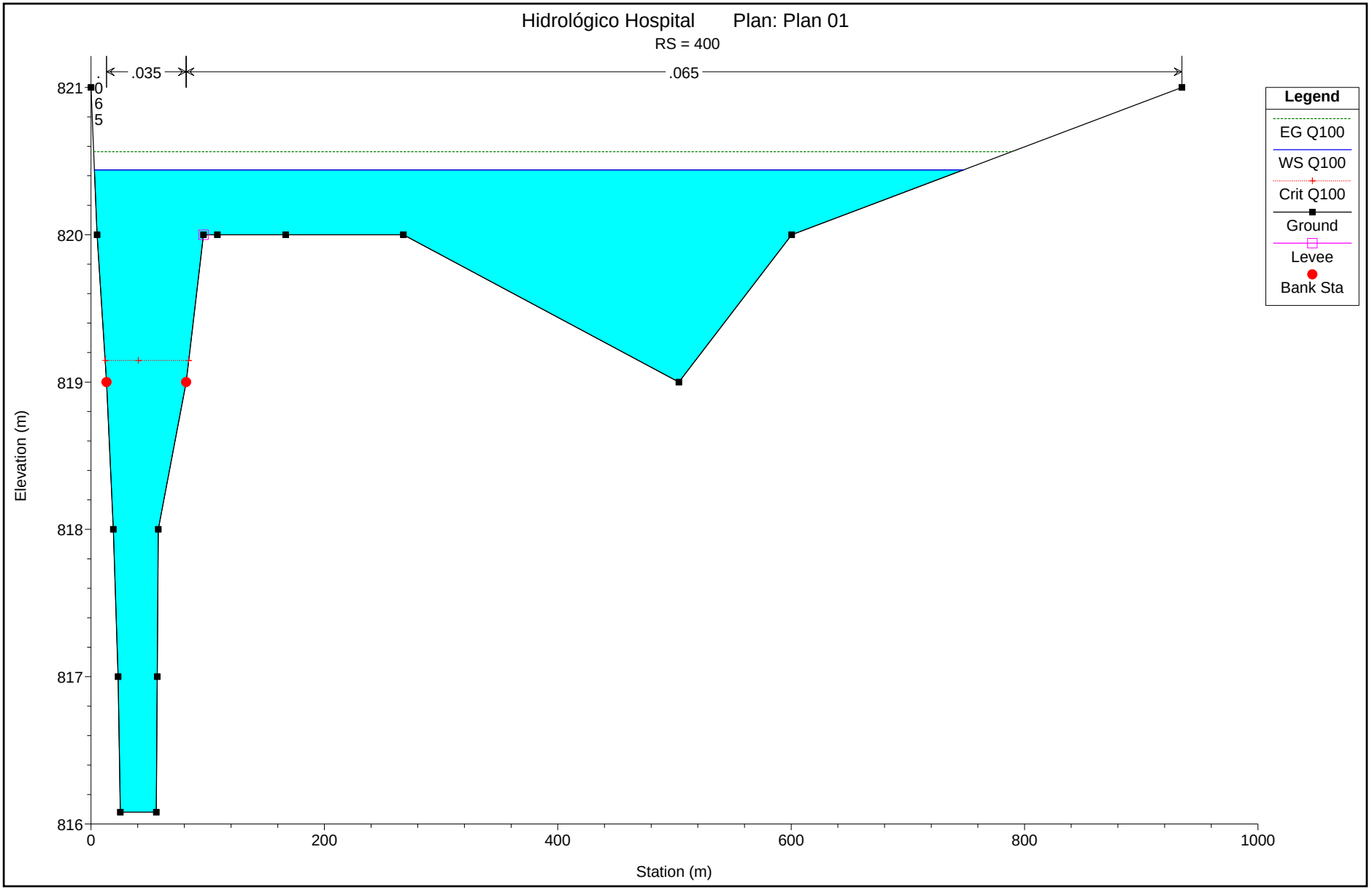

Hidrológico Hospital Plan: Plan 01
RS = 016 BR
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG MCO
WS MCO
Crit MCO
Ground
Ineff
Bank Sta

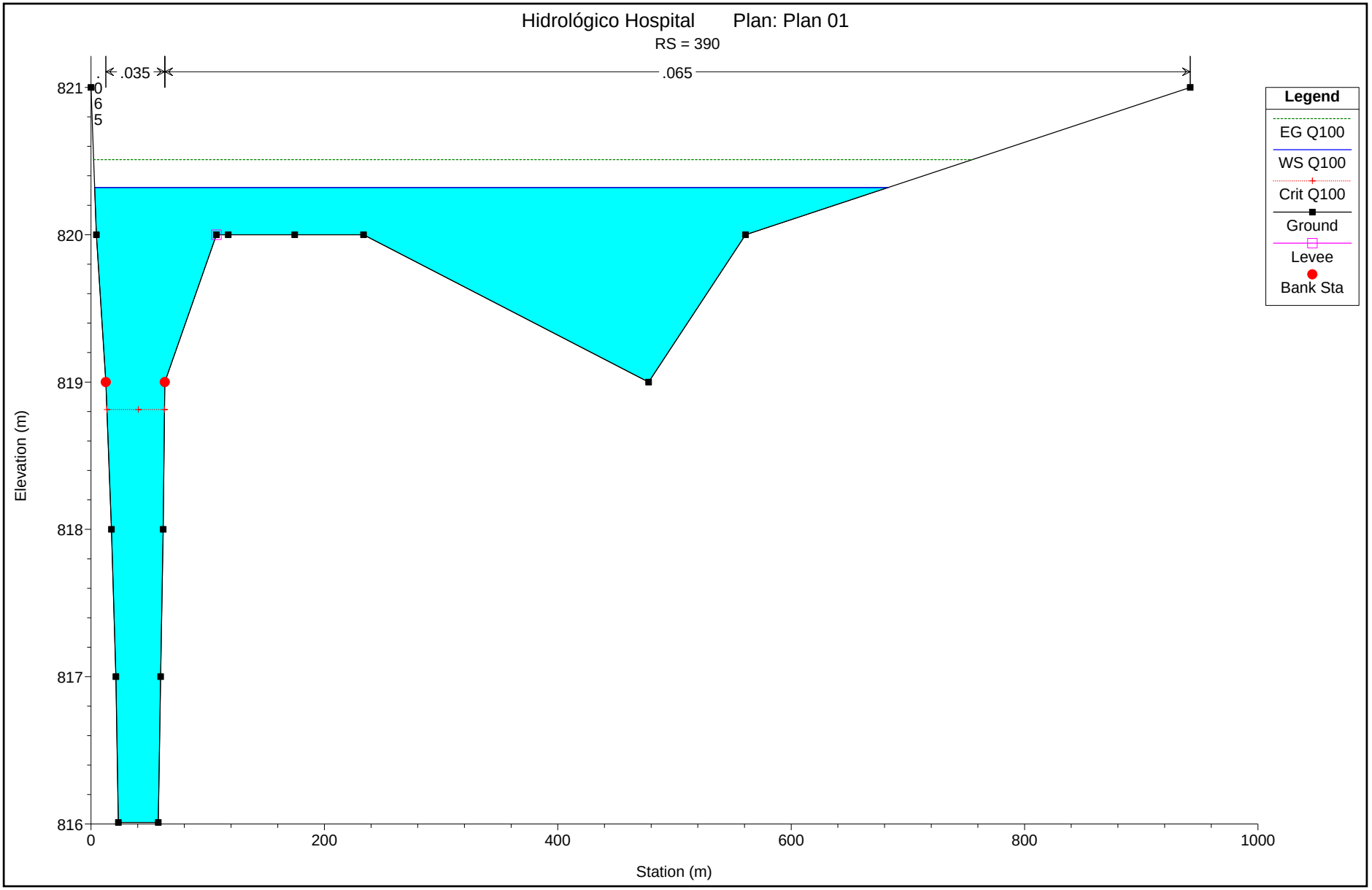

Hidrológico Hospital Plan: Plan 01
RS = 012
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Ineff
Bank Sta
Elevation (m)
826
824
822
820
818
816
814
812
810
0
100
200
300
400
500
600
700
Station (m)

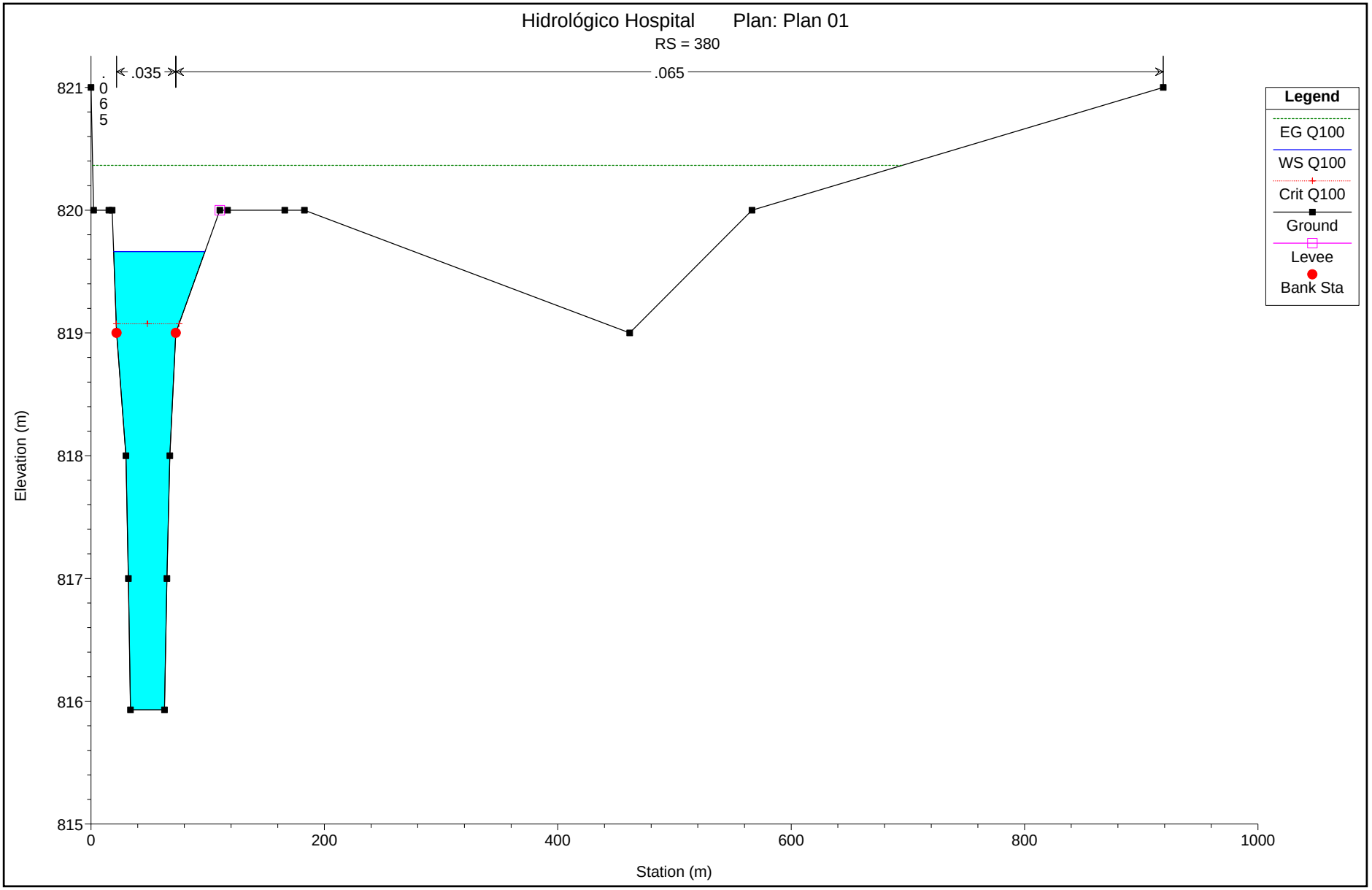

Hidrológico Hospital Plan: Plan 01
RS = 010
.065
.035
.065
Legend
EG MCO
WS MCO
Crit MCO
Ground
Bank Sta
Elevation (m)
819
818
817
816
815
814
813
812
811
0
200
400
600
800
Station (m)

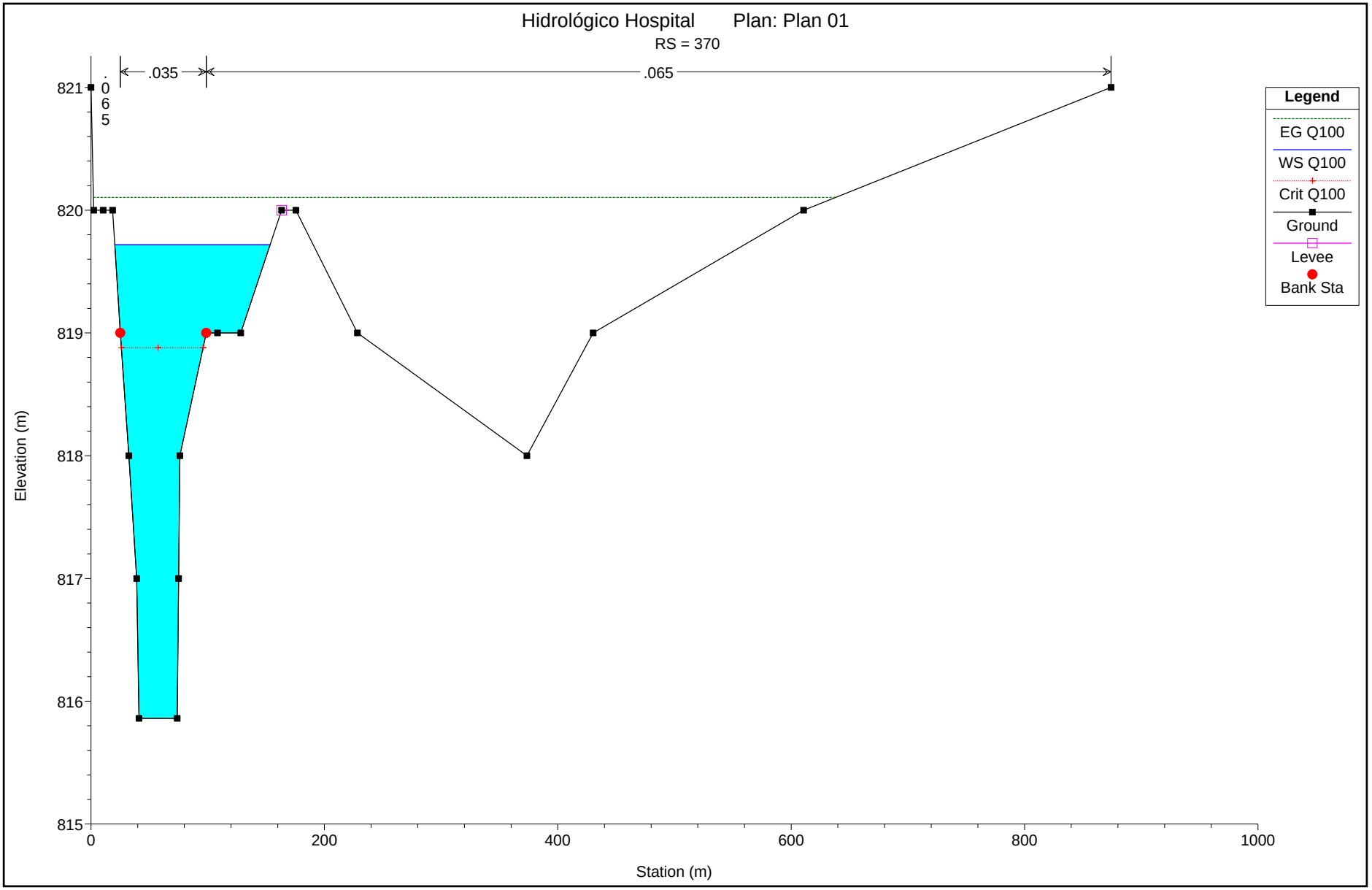
Anejo nº 3: PERFILES TRANSVERSALES Q100 (HEC-RAS)

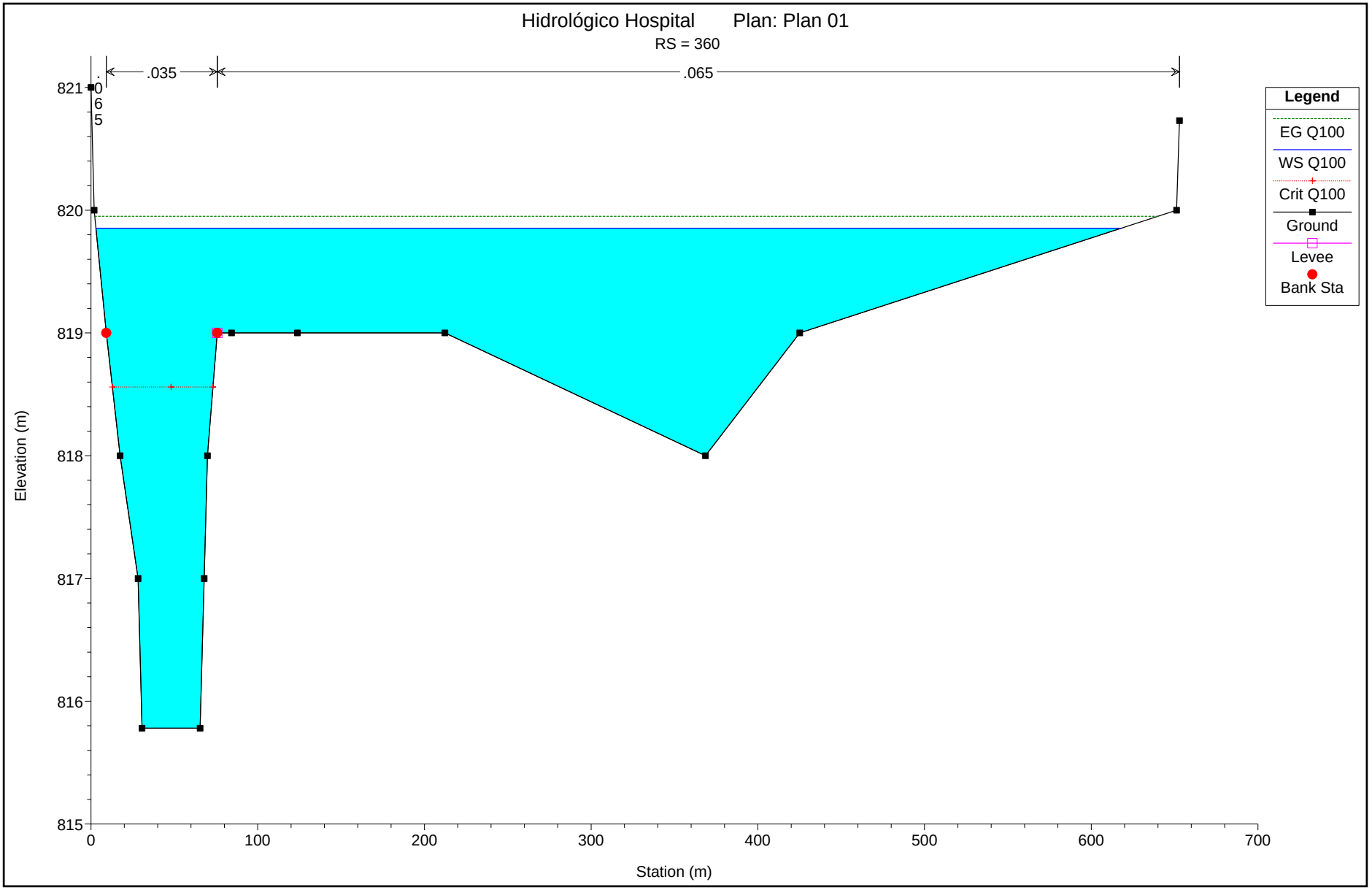

Hidrológico Hospital Plan: Plan 01
RS = 410
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Bank Sta
Elevation (m)
821
820
819
818
817
816
0
200
400
600
800
Station (m)

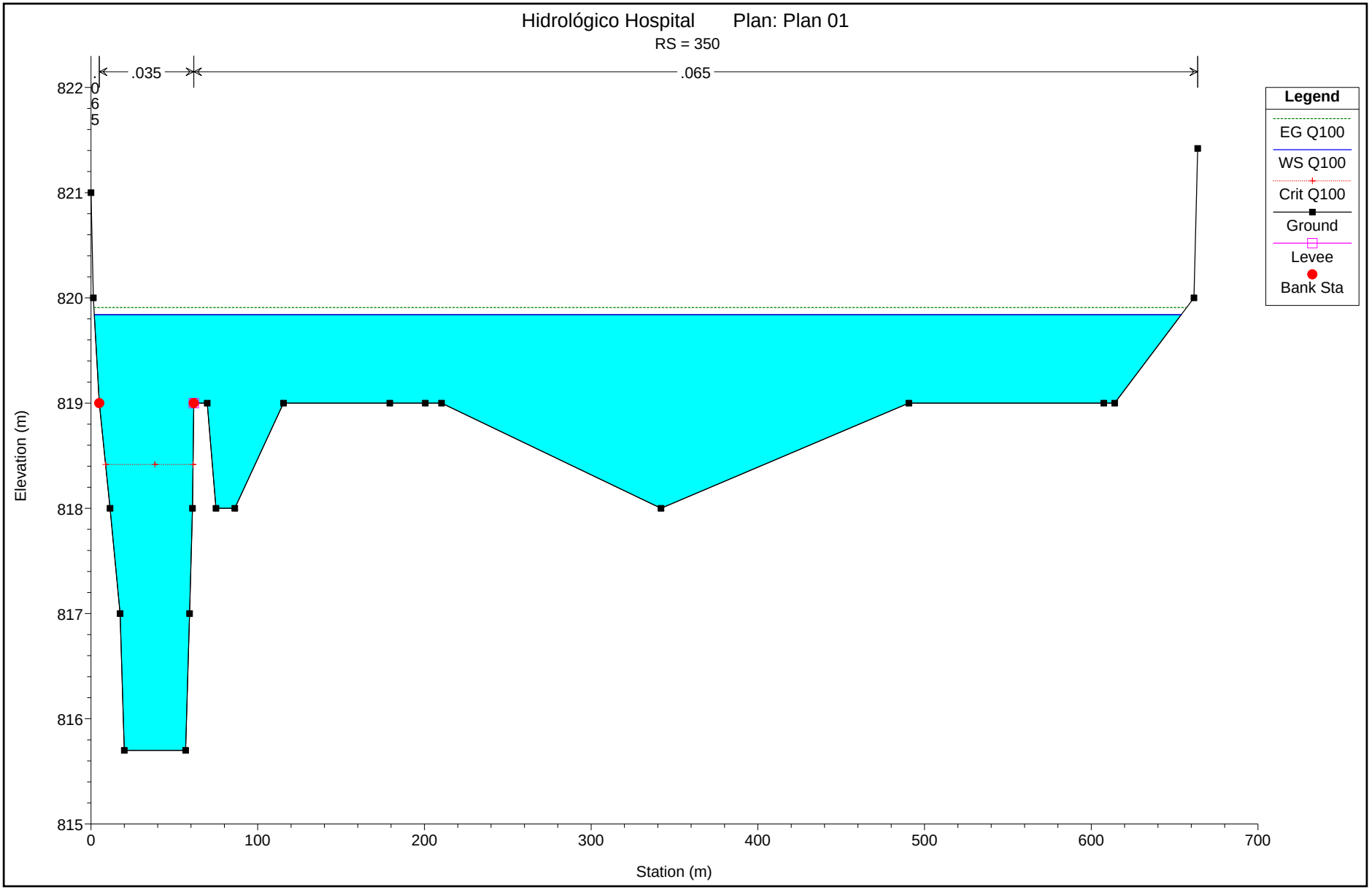

Hidrológico Hospital Plan: Plan 01
RS = 400
.035
.065
.
0
6
5
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
0
200
400
600
800
1000

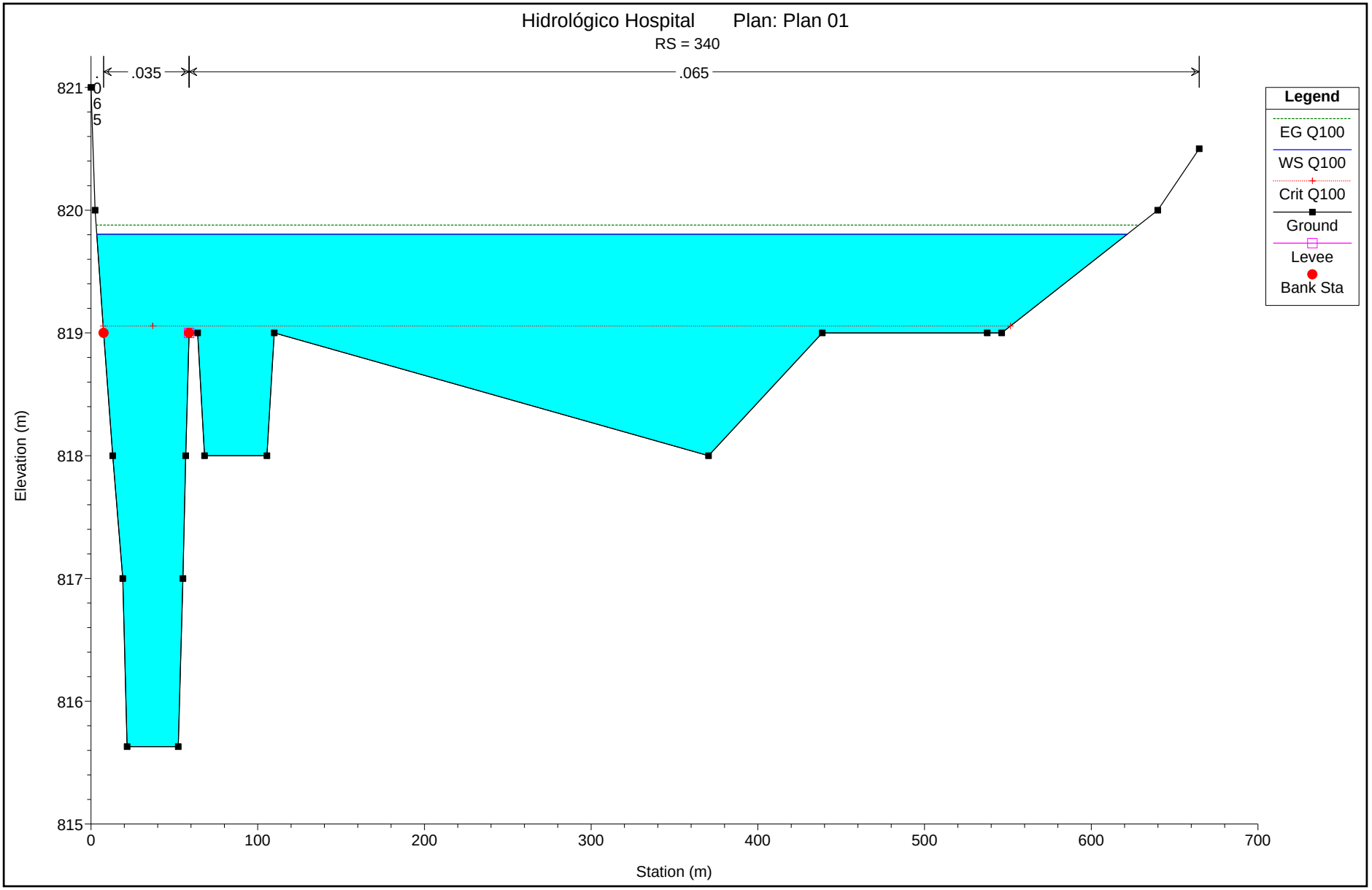

Hidrológico Hospital Plan: Plan 01
RS = 390
.035
.065
.0
6
5
821
820
819
818
817
816
Elevation (m)
0
200
400
600
800
1000
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta

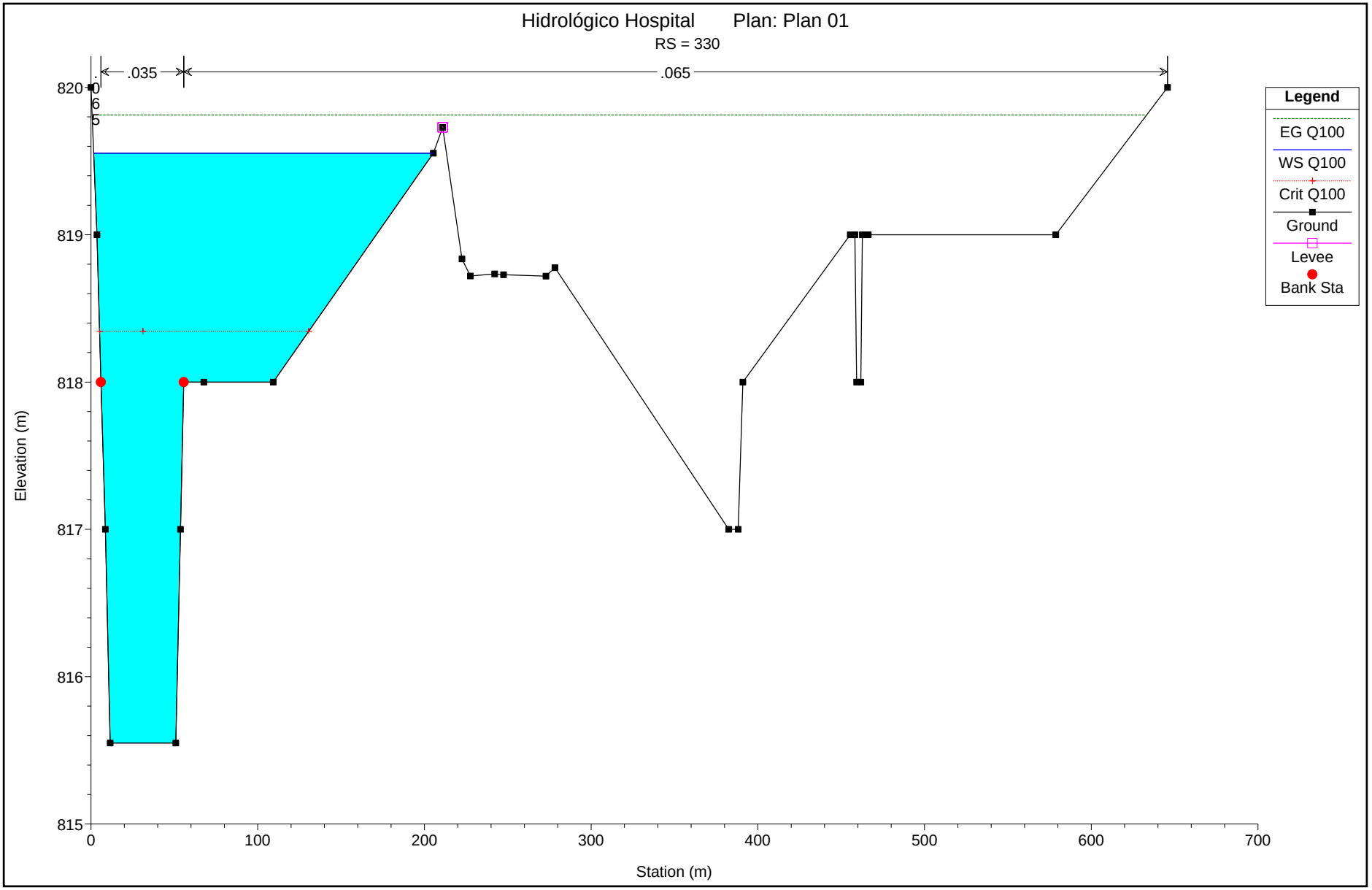

Hidrológico Hospital Plan: Plan 01
RS = 380
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
200
400
600
800
1000

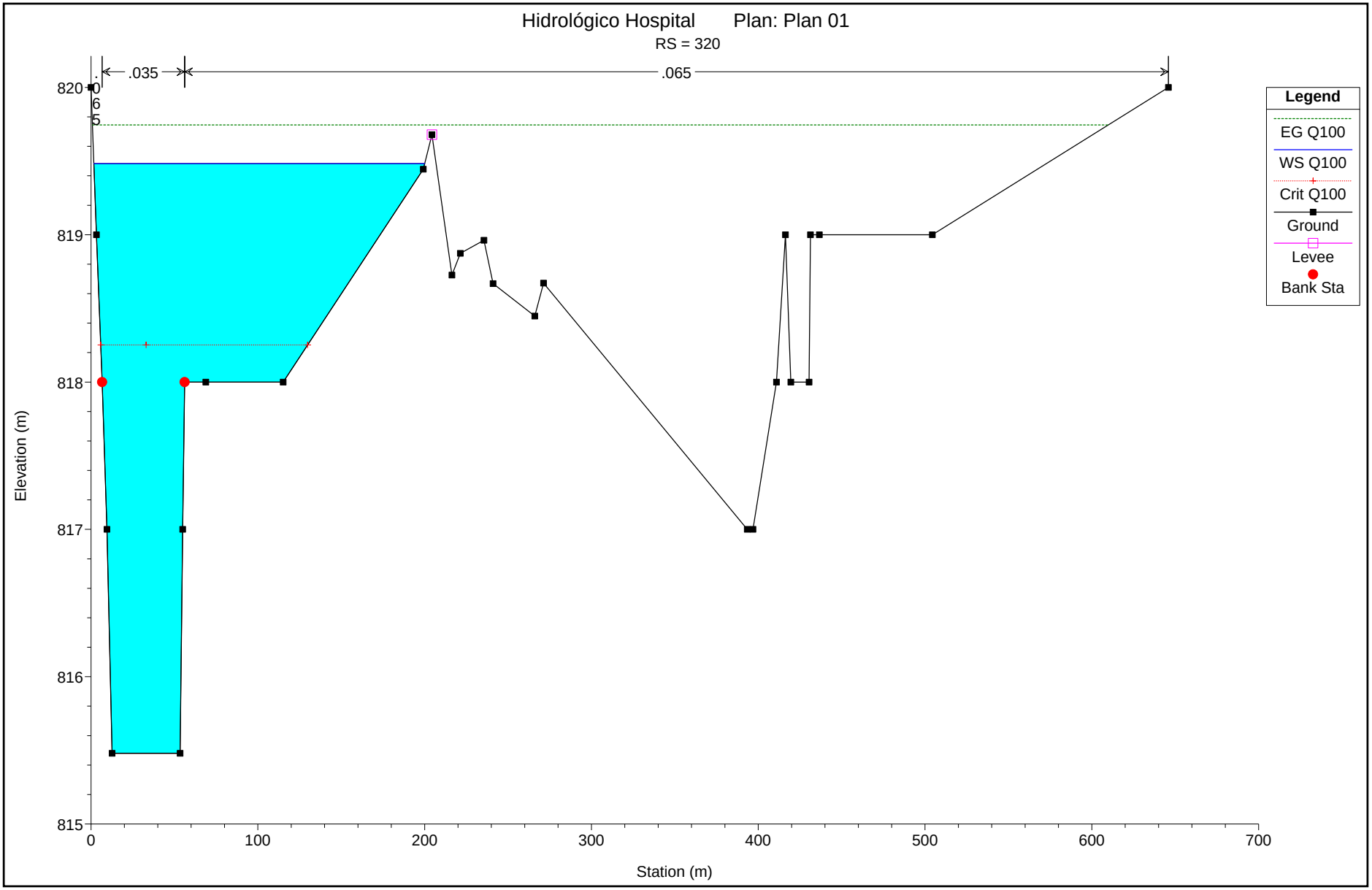

Hidrológico Hospital Plan: Plan 01
RS = 370
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
200
400
600
800
1000

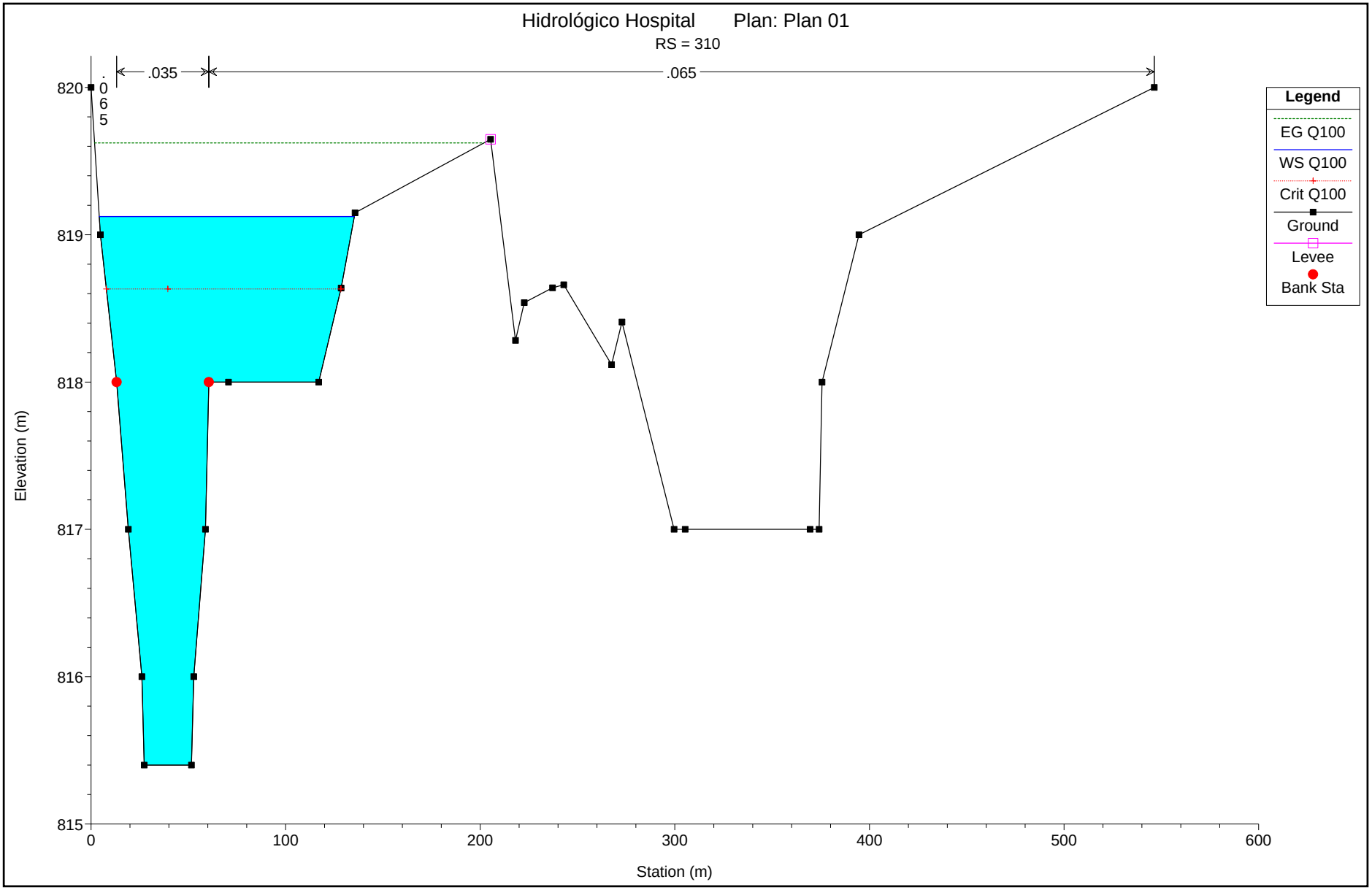

Hidrológico Hospital Plan: Plan 01
RS = 360
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700

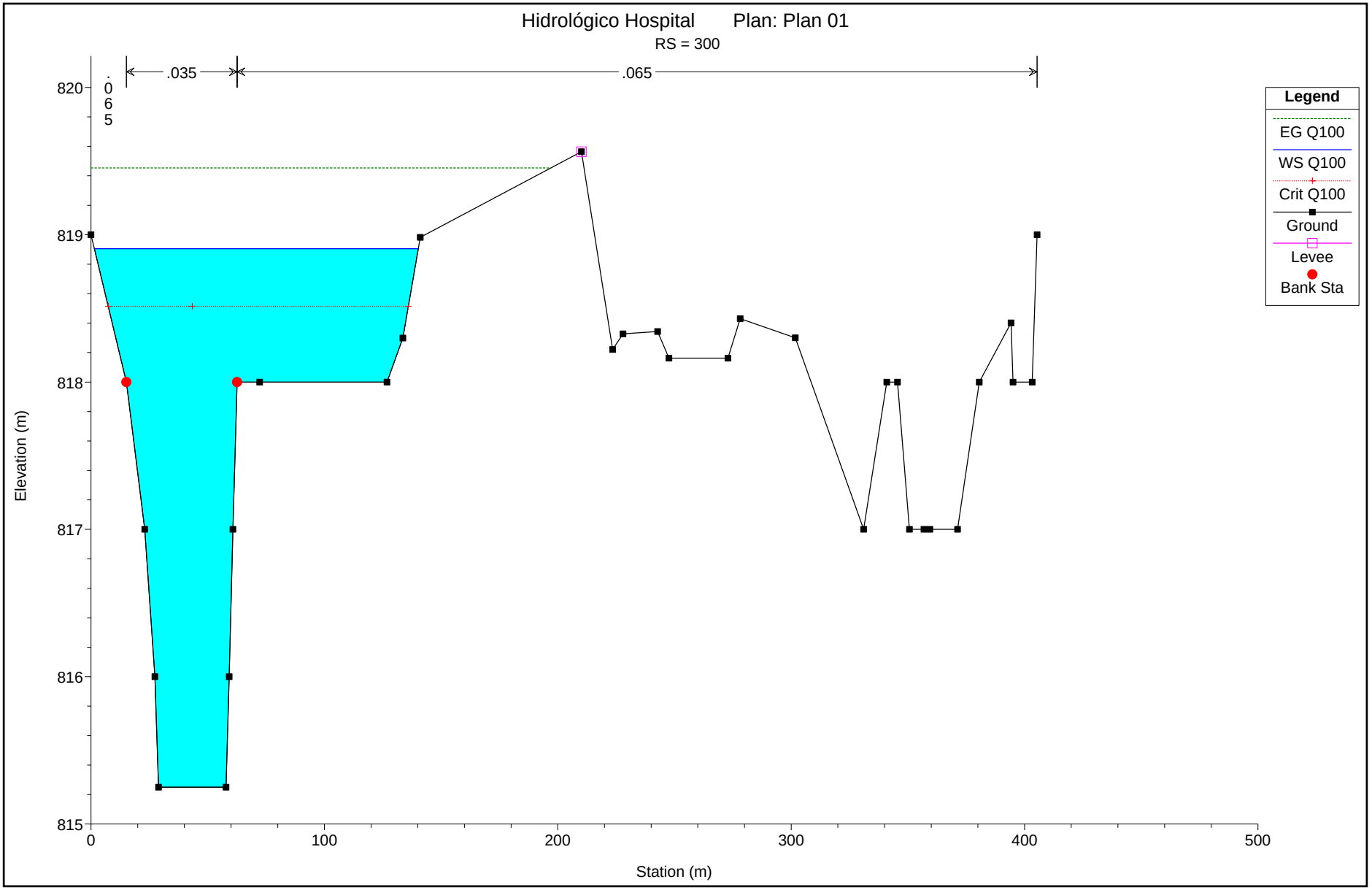

Hidrológico Hospital Plan: Plan 01
RS = 350
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
822
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 340
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 330
.035
.065
.0
6
5
820
819
818
817
816
815
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 320
.035
.065
.065
820
819
818
817
816
815
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 310
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
0
100
200
300
400
500
600
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 300
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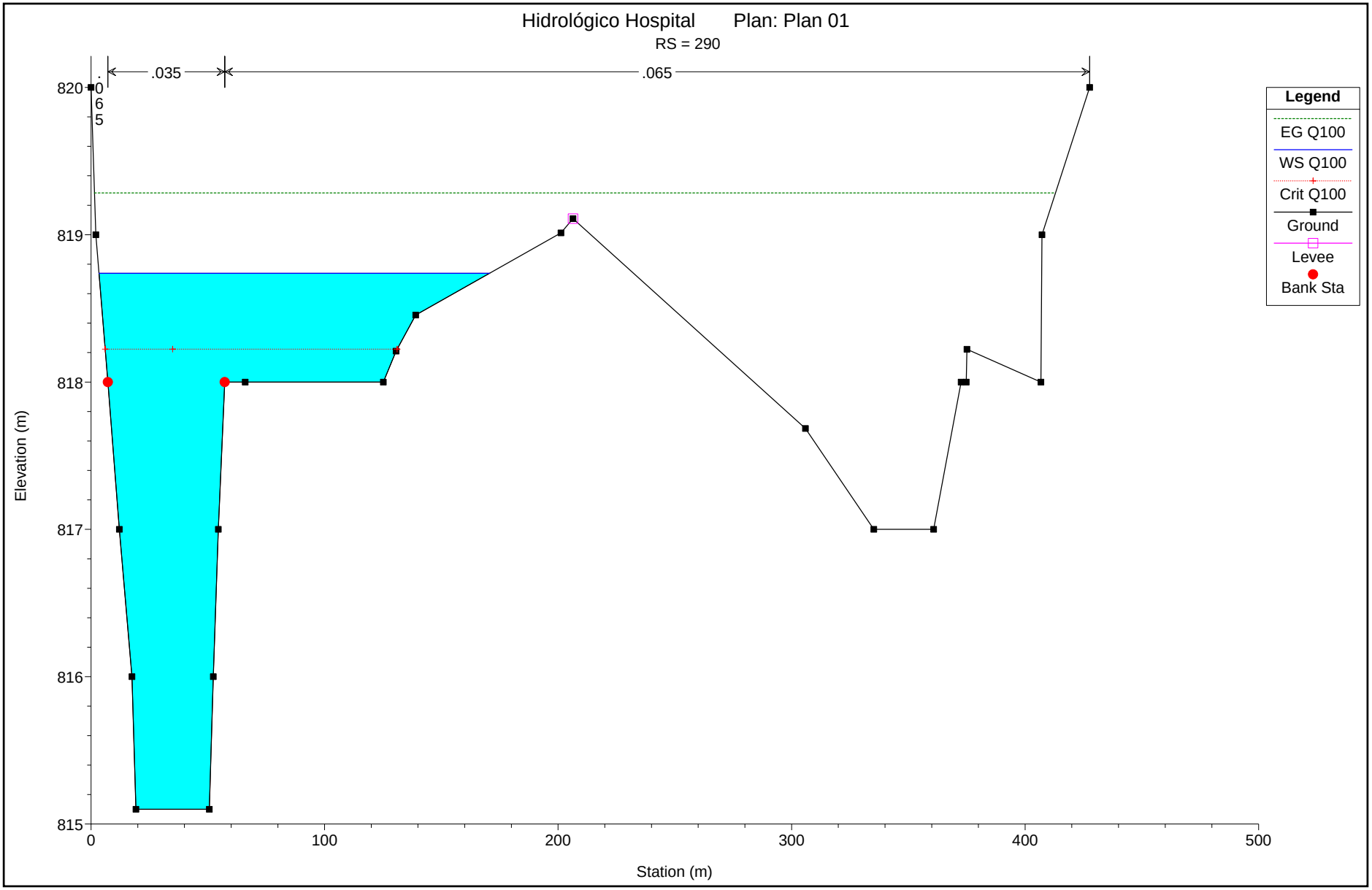
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
820
819
818
817
816
815
0
100
200
300
400
500


Hidrológico Hospital Plan: Plan 01
RS = 290
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.065
.065
820
819
818
817
816
815
Elevation (m)
0
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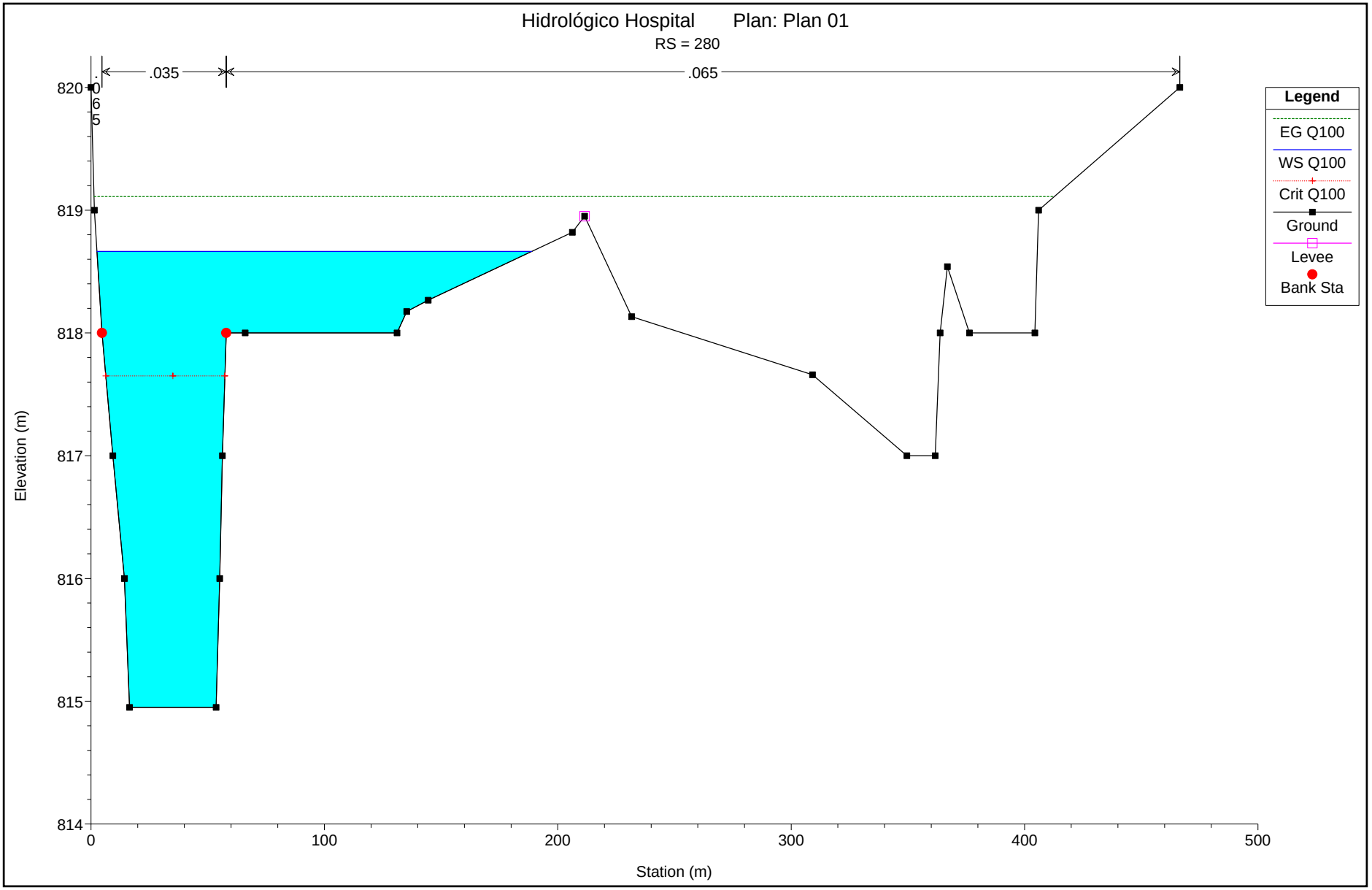
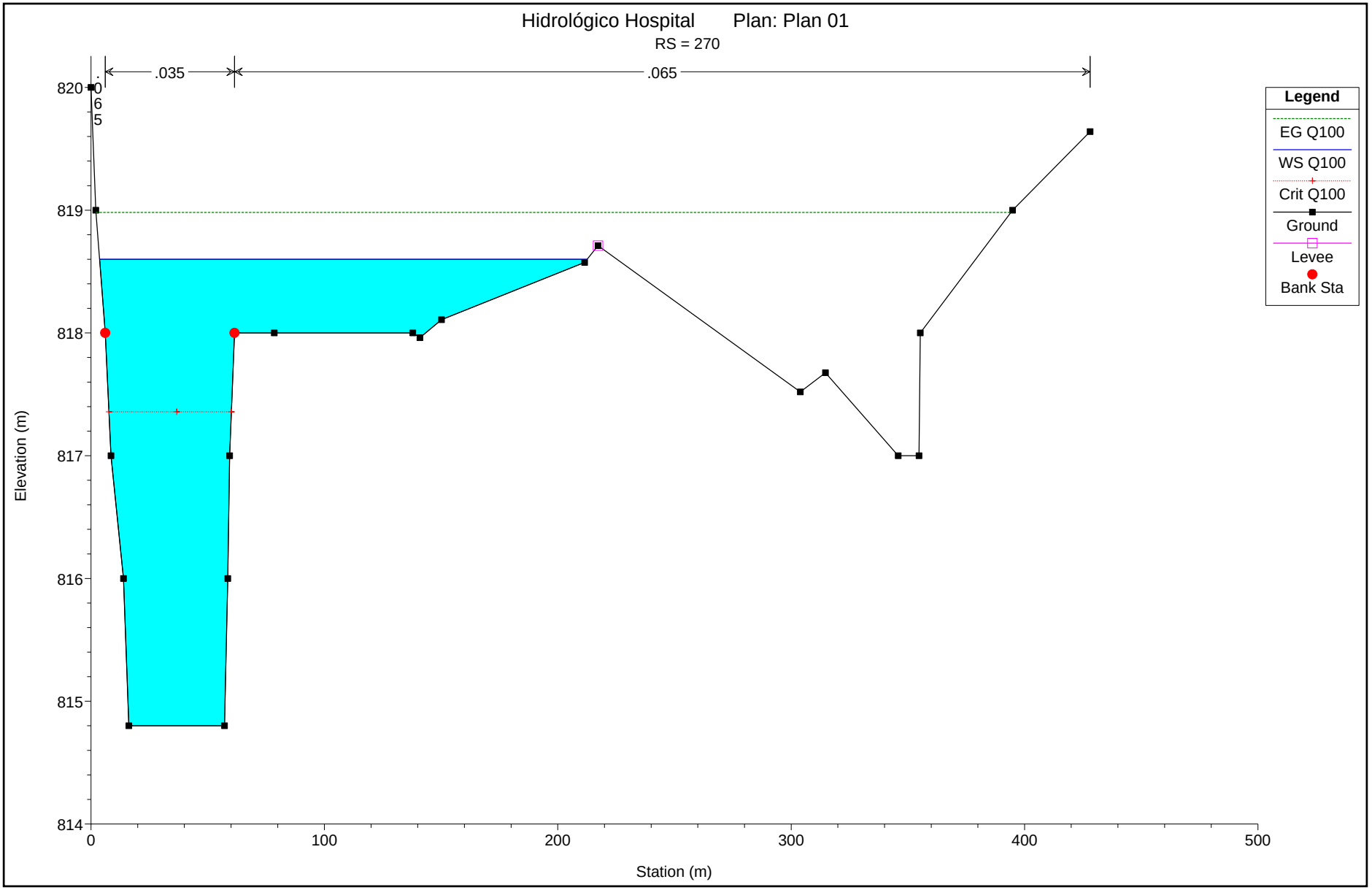
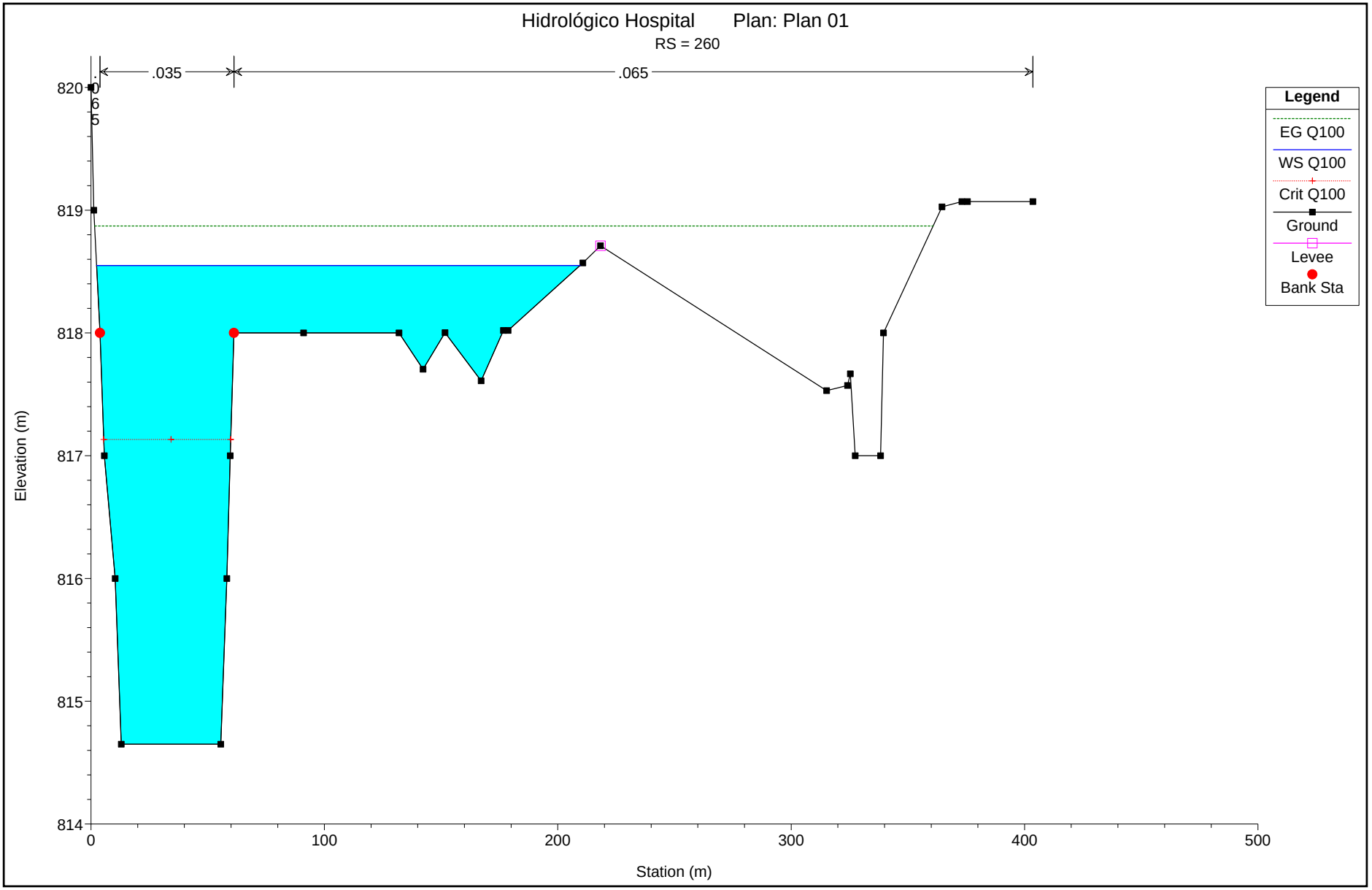
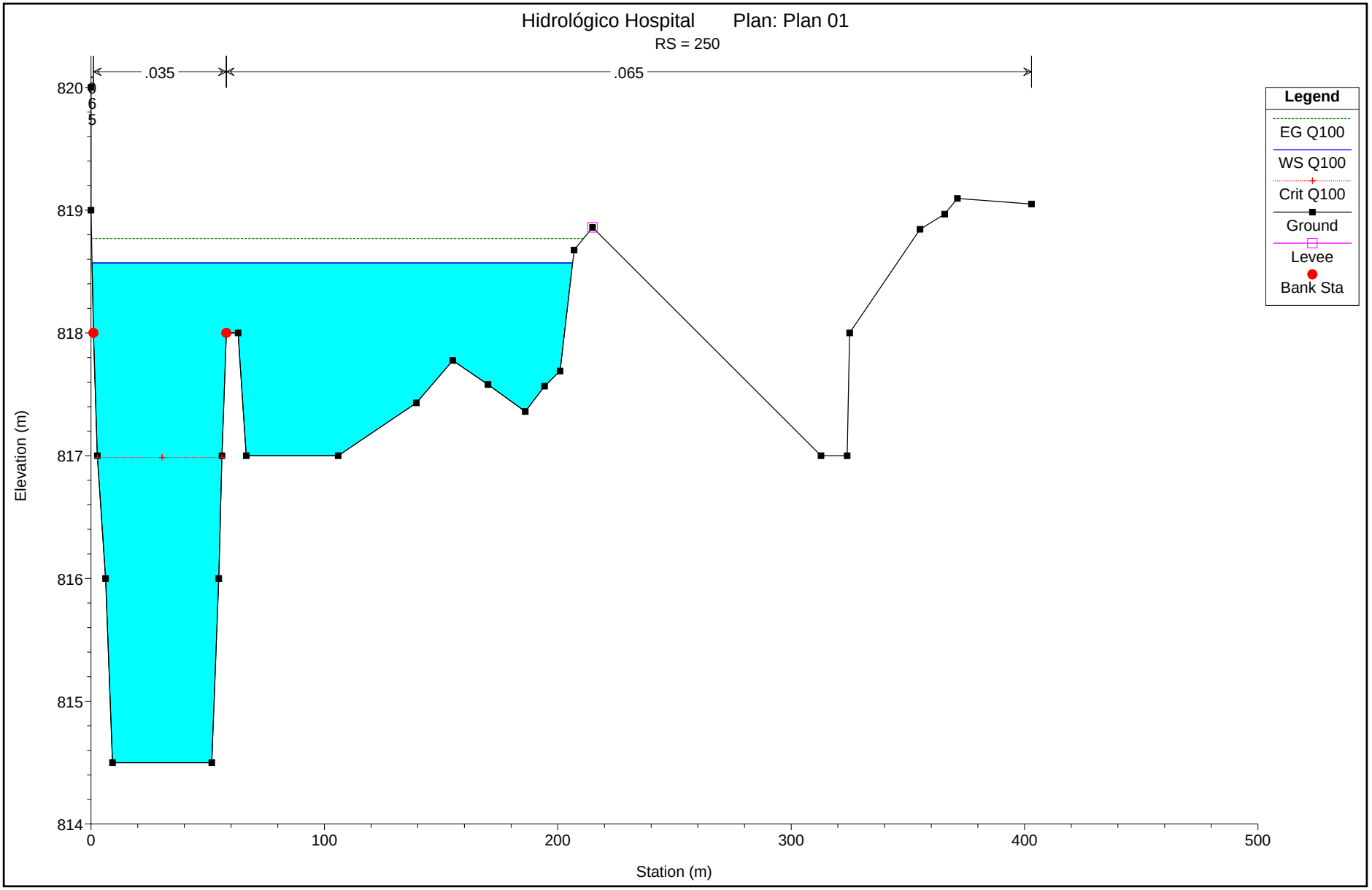
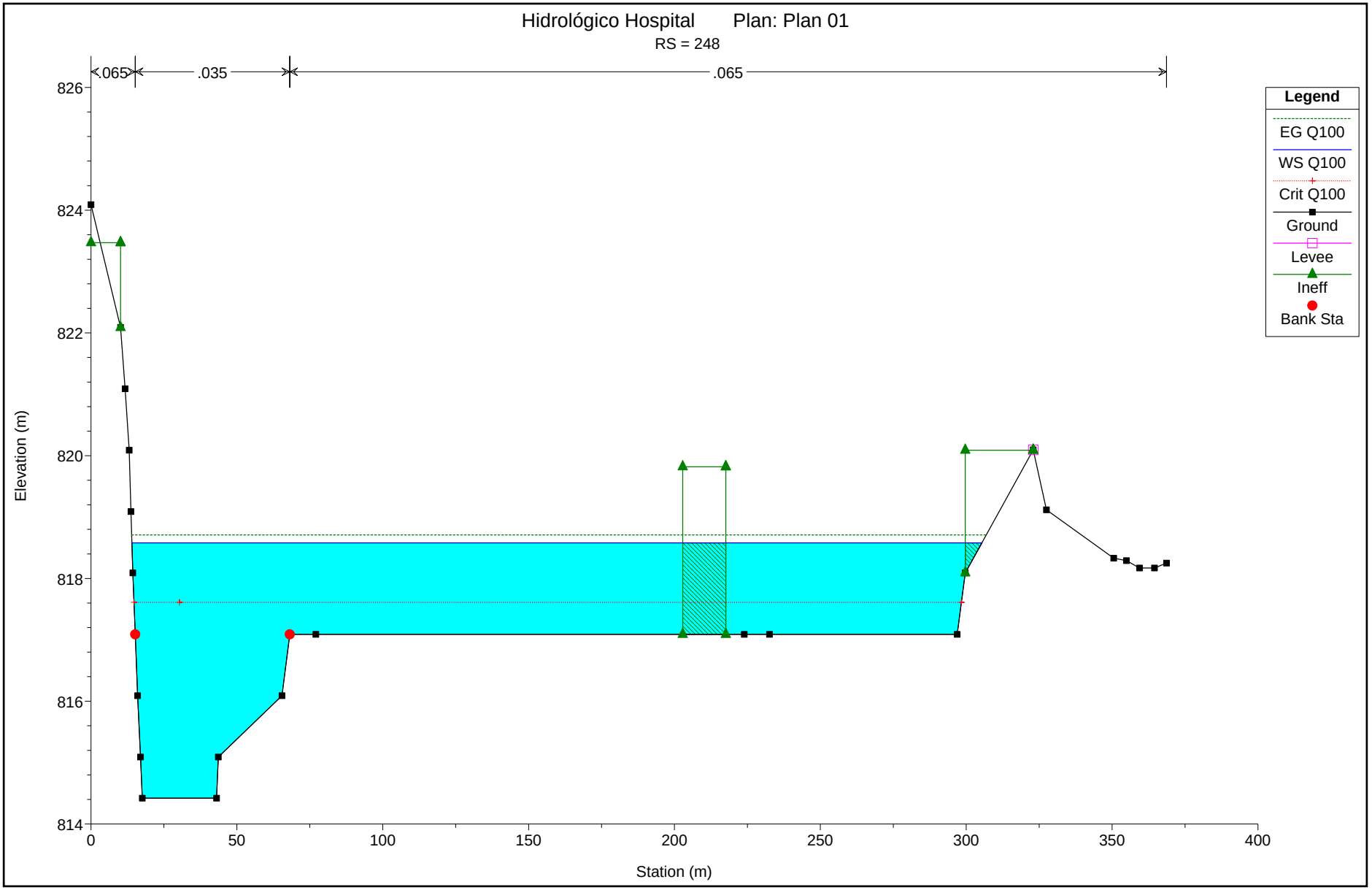
200
300
400
500
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta

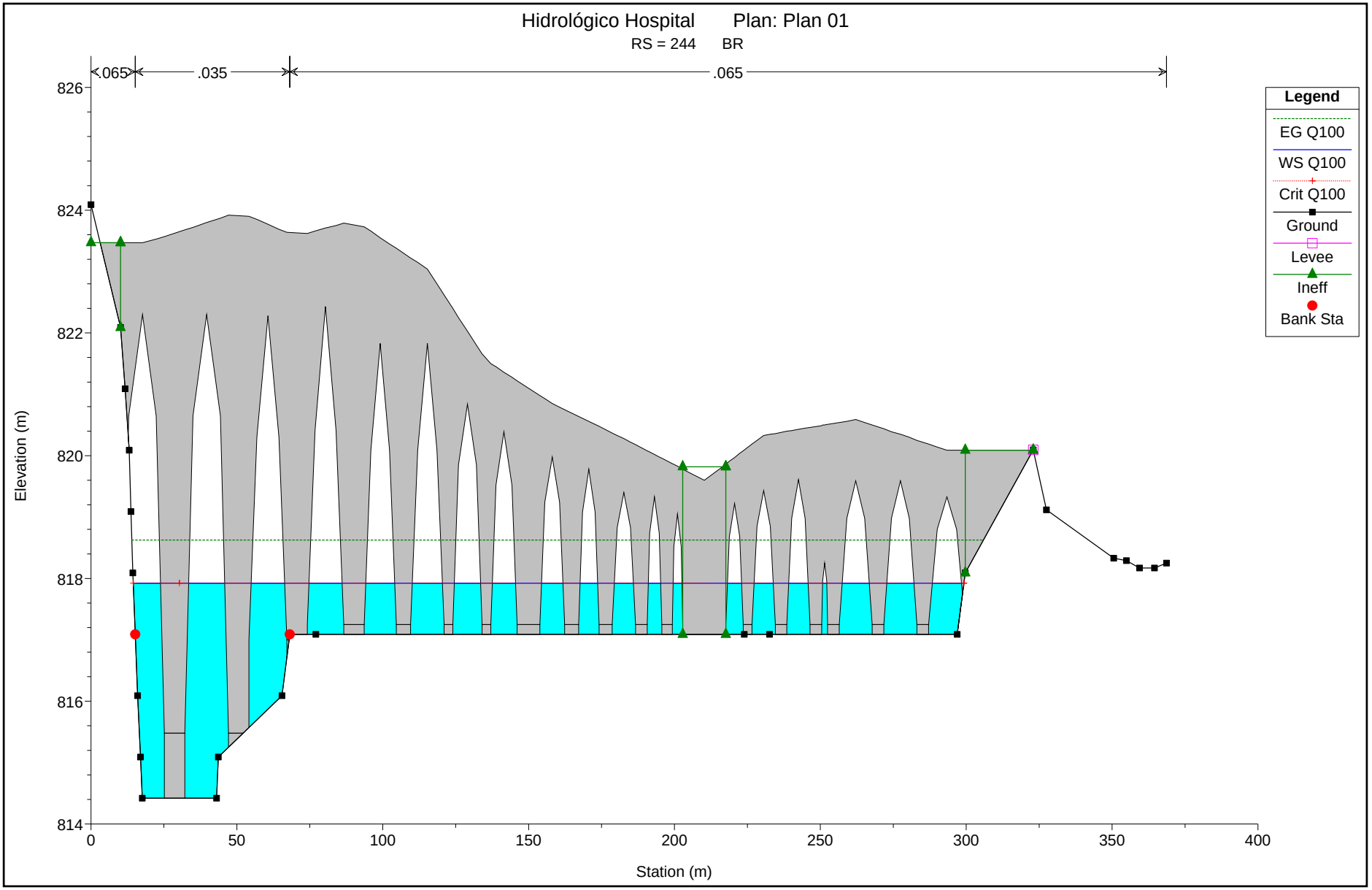

Hidrológico Hospital Plan: Plan 01
RS = 280
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
814
0
100
200
300
400
500
Station (m)

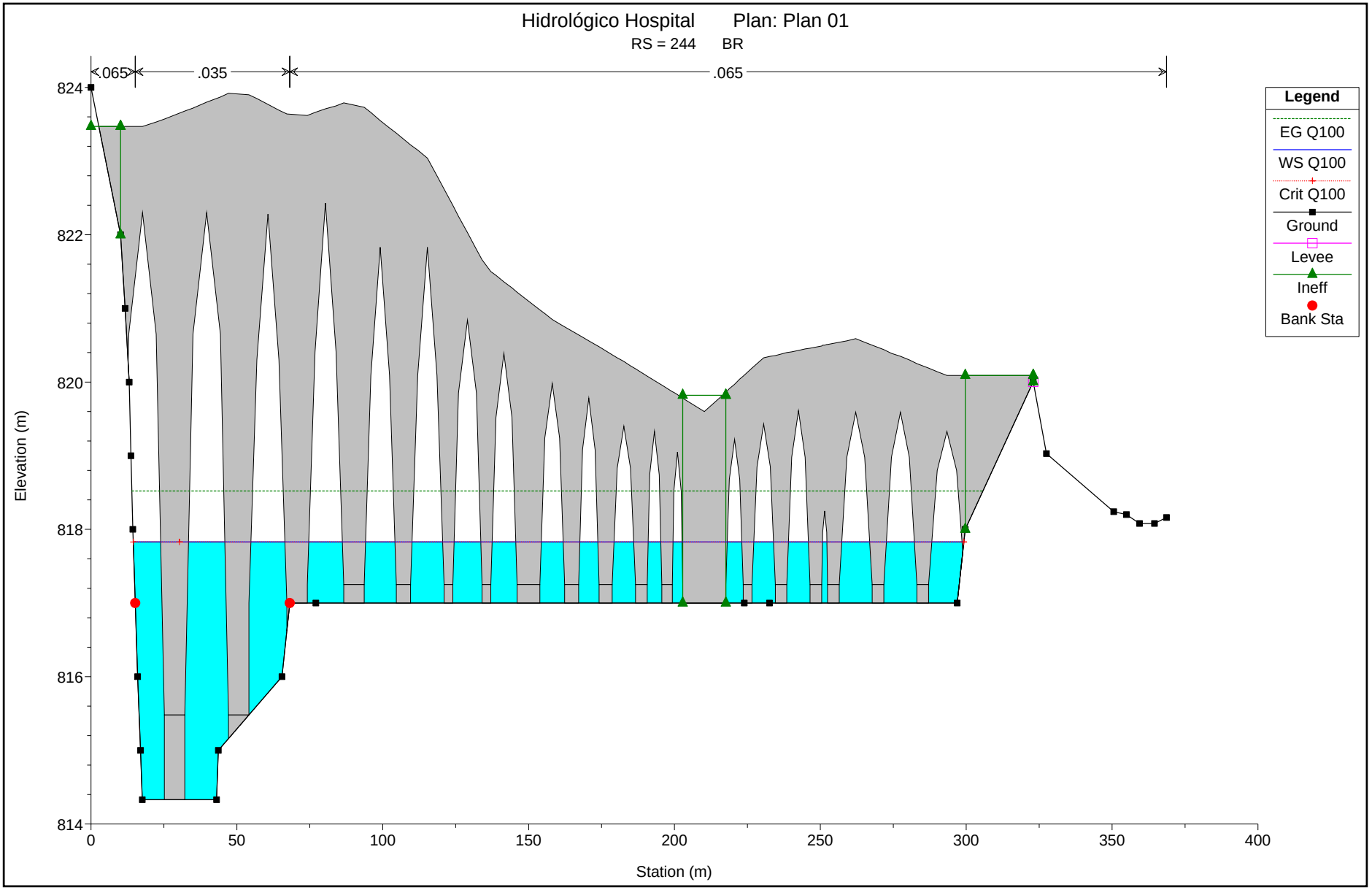

Hidrológico Hospital Plan: Plan 01
RS = 270
.035
.065
.
0
6
5
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta

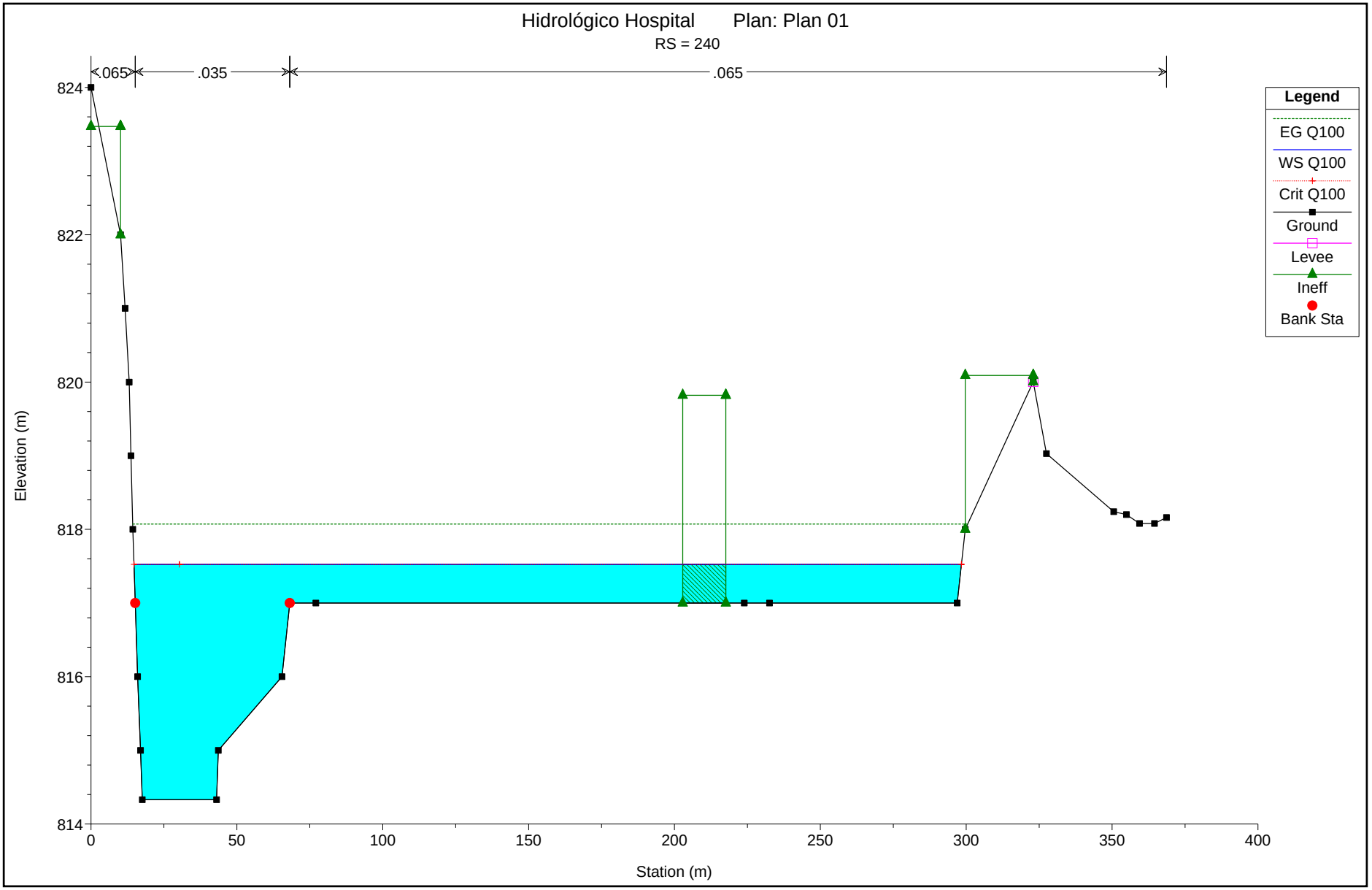

Hidrológico Hospital Plan: Plan 01
RS = 260
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
820
819
818
817
816
815
814
0
100
200
300
400
500
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 250
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
820
819
818
817
816
815
814
0
100
200
300
400
500


Hidrológico Hospital Plan: Plan 01
RS = 248
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 240
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
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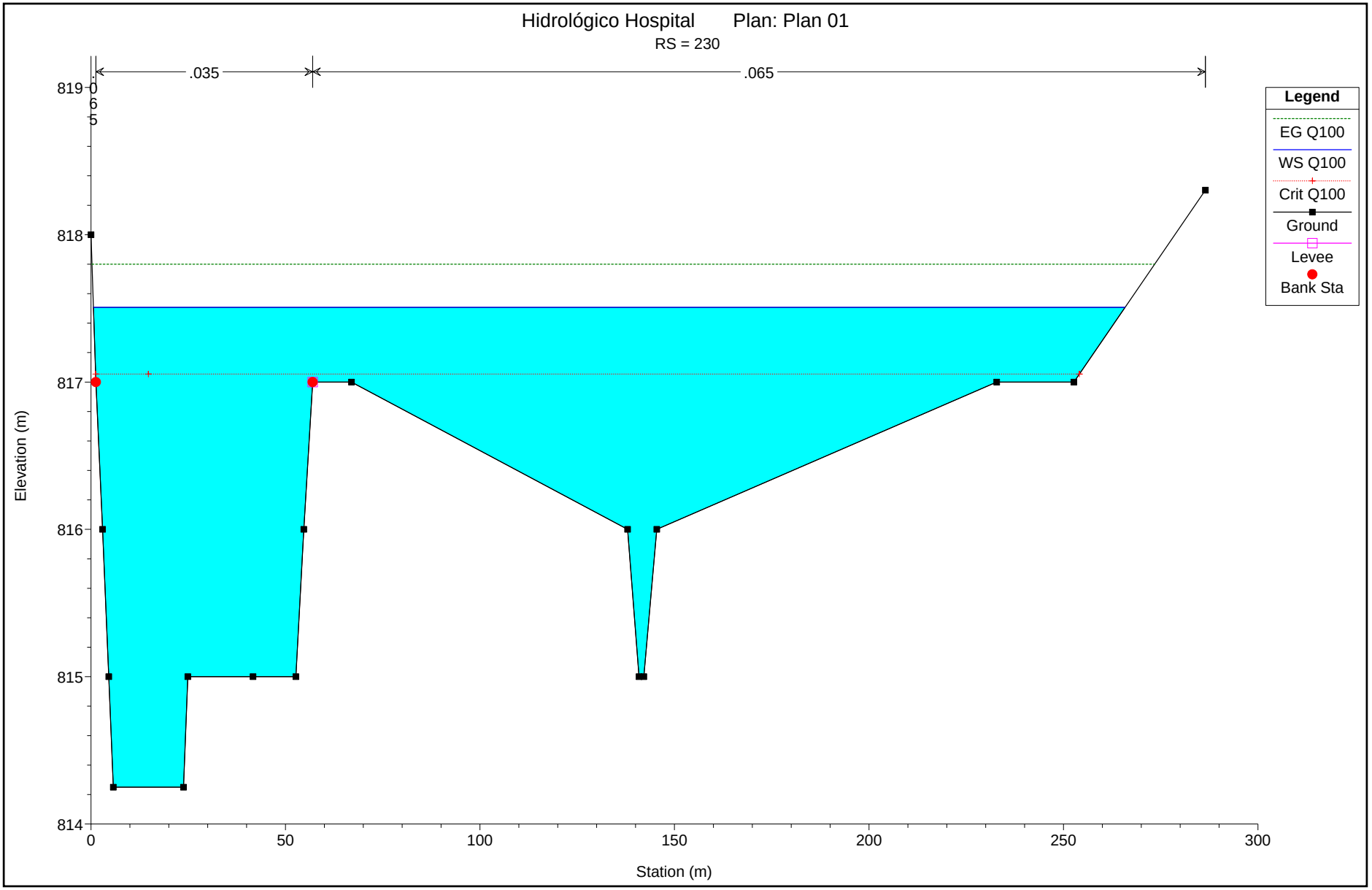
350
400
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 230
.035
.065
0
6
5
819
818
817
816
815
814
Elevation (m)
0
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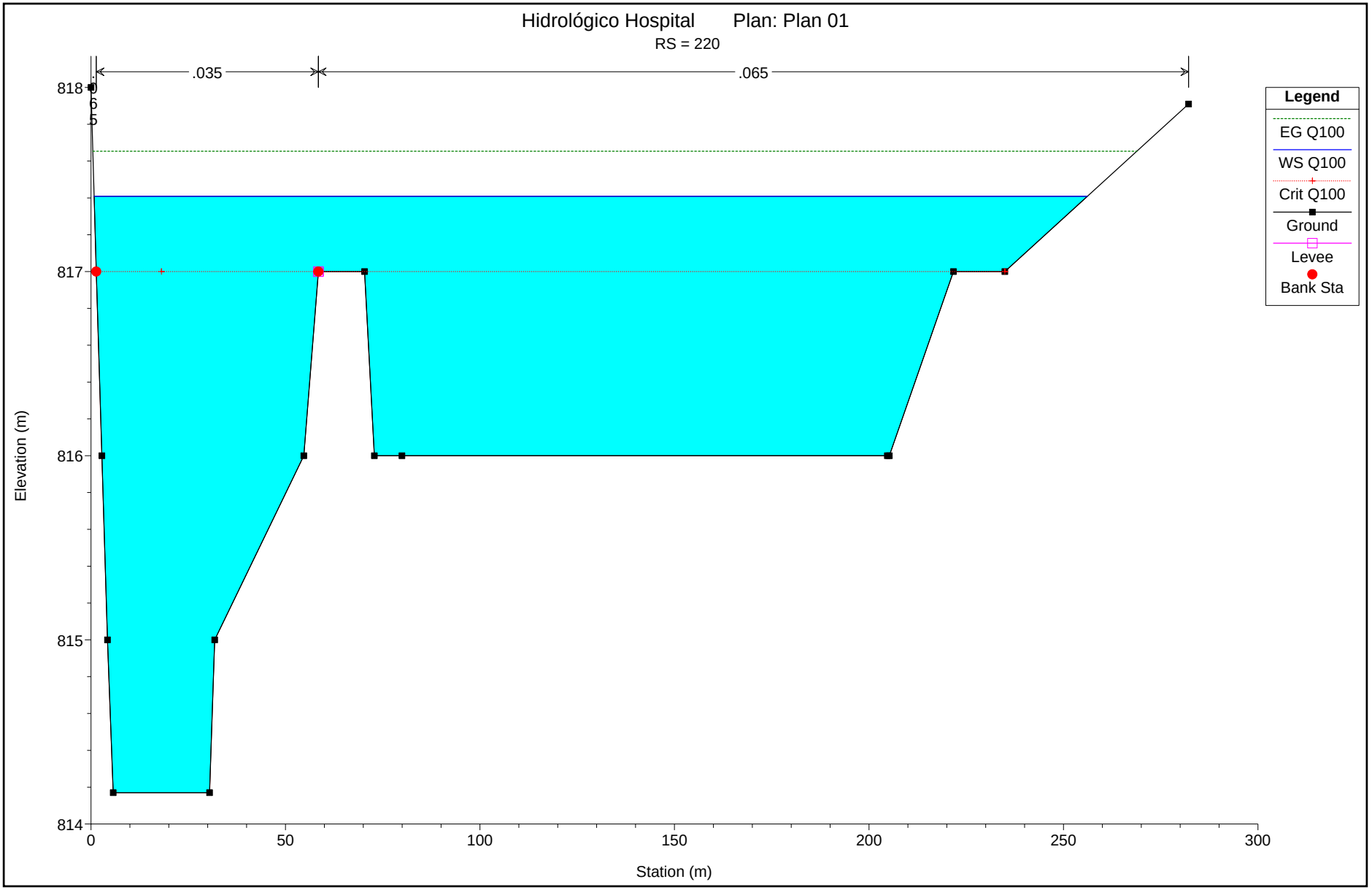
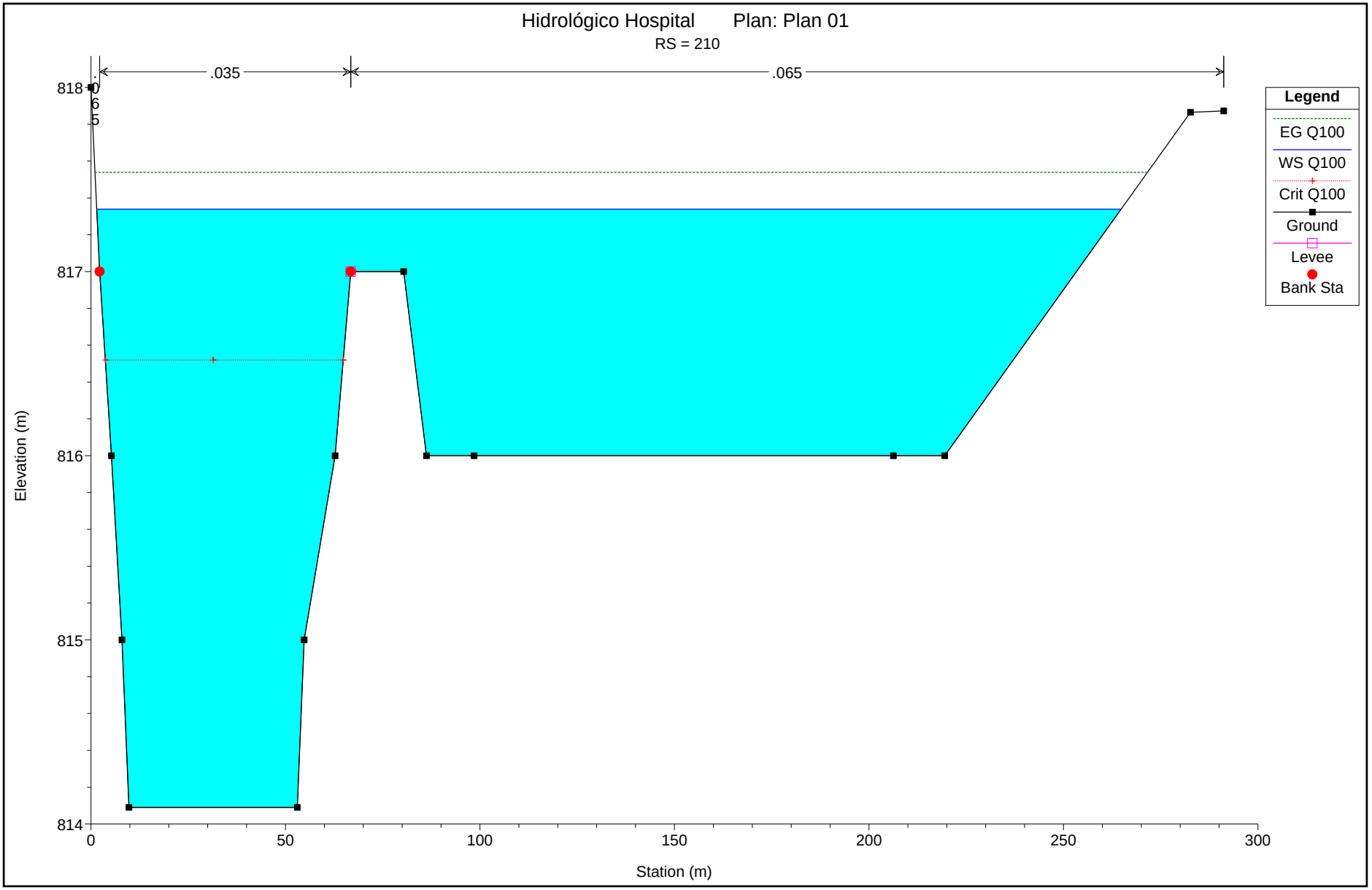
150
200
250
300
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 220
.035
.065
Elevation (m)
Station (m)
814
815
816
817
818
0
50
100
150
200
250
300
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 210
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
814
815
816
817
818
0
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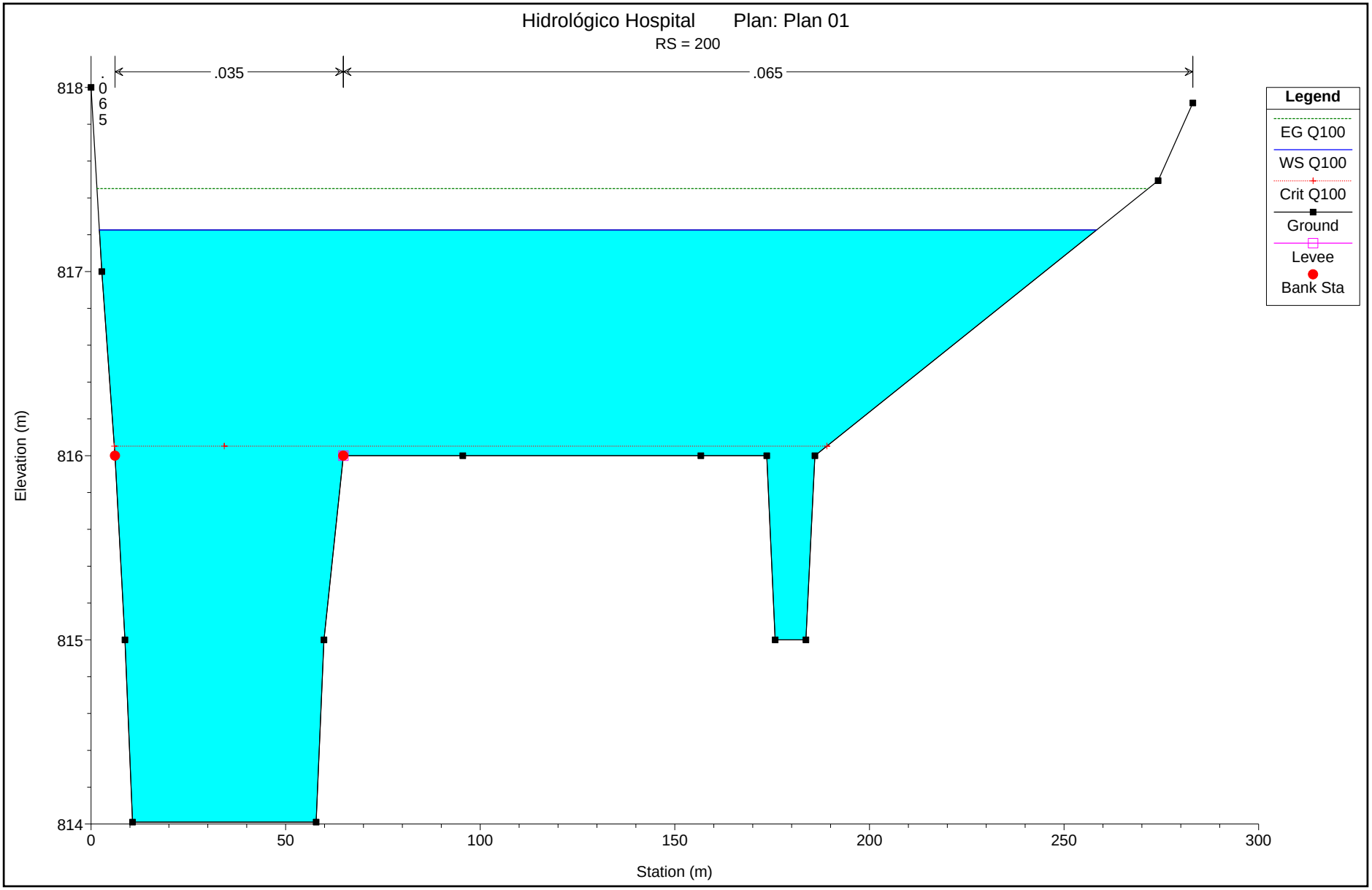
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 200
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
0
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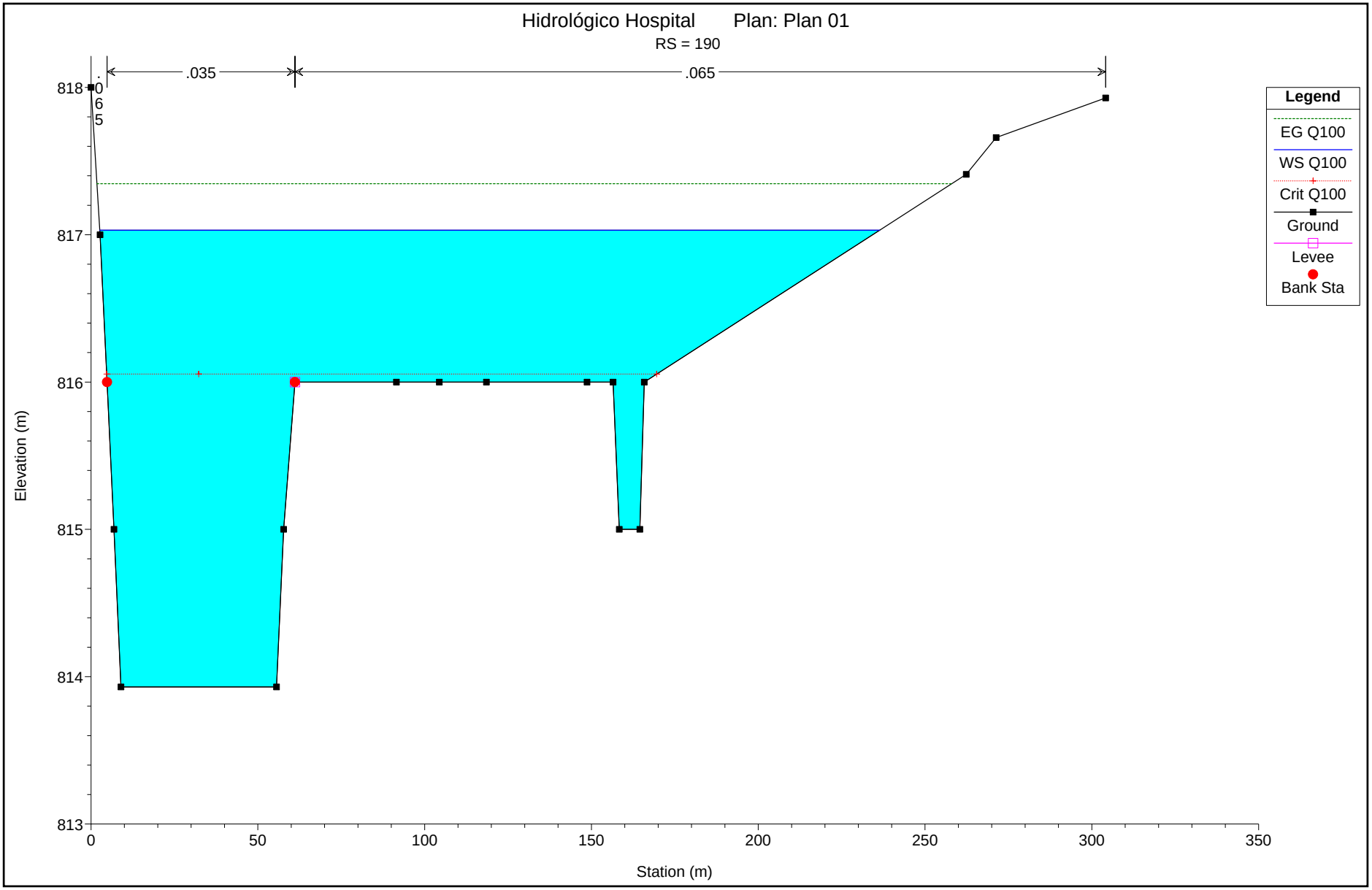
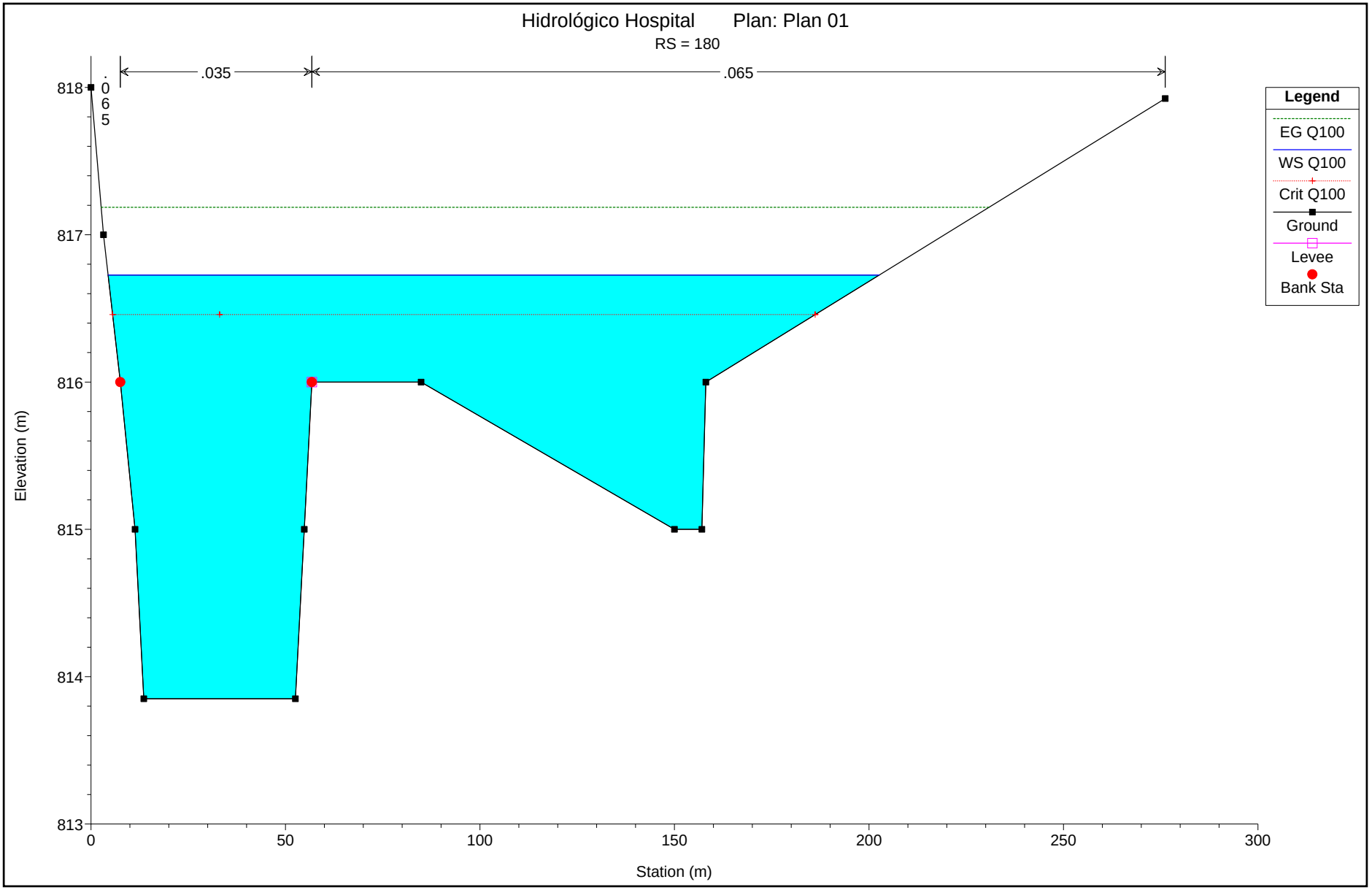
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 190
.035
.065
.
0
6
5
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
813
0
50
100
150
200
250
300
350


Hidrológico Hospital Plan: Plan 01
RS = 180
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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817
816
815
814
813
0
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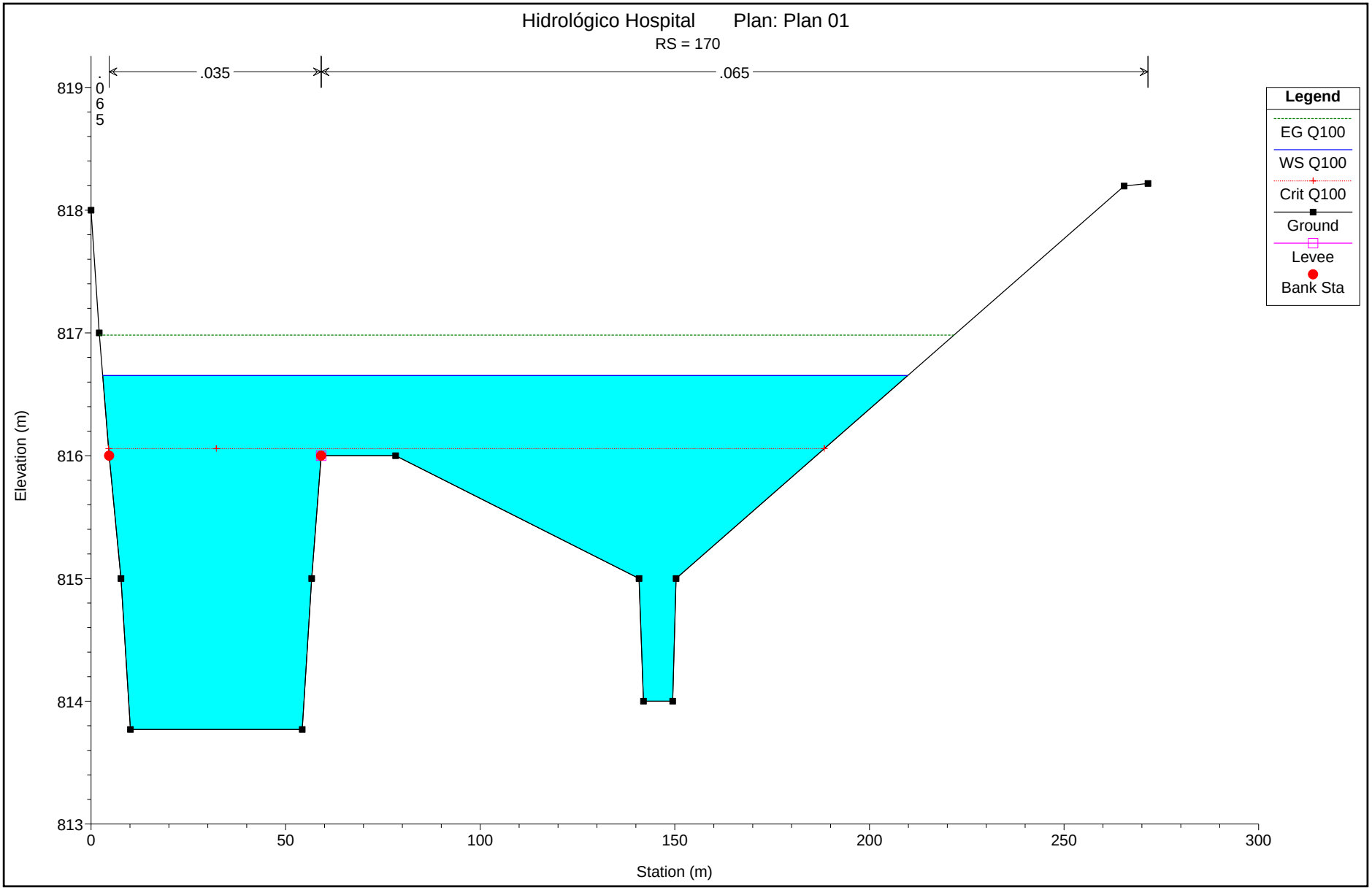
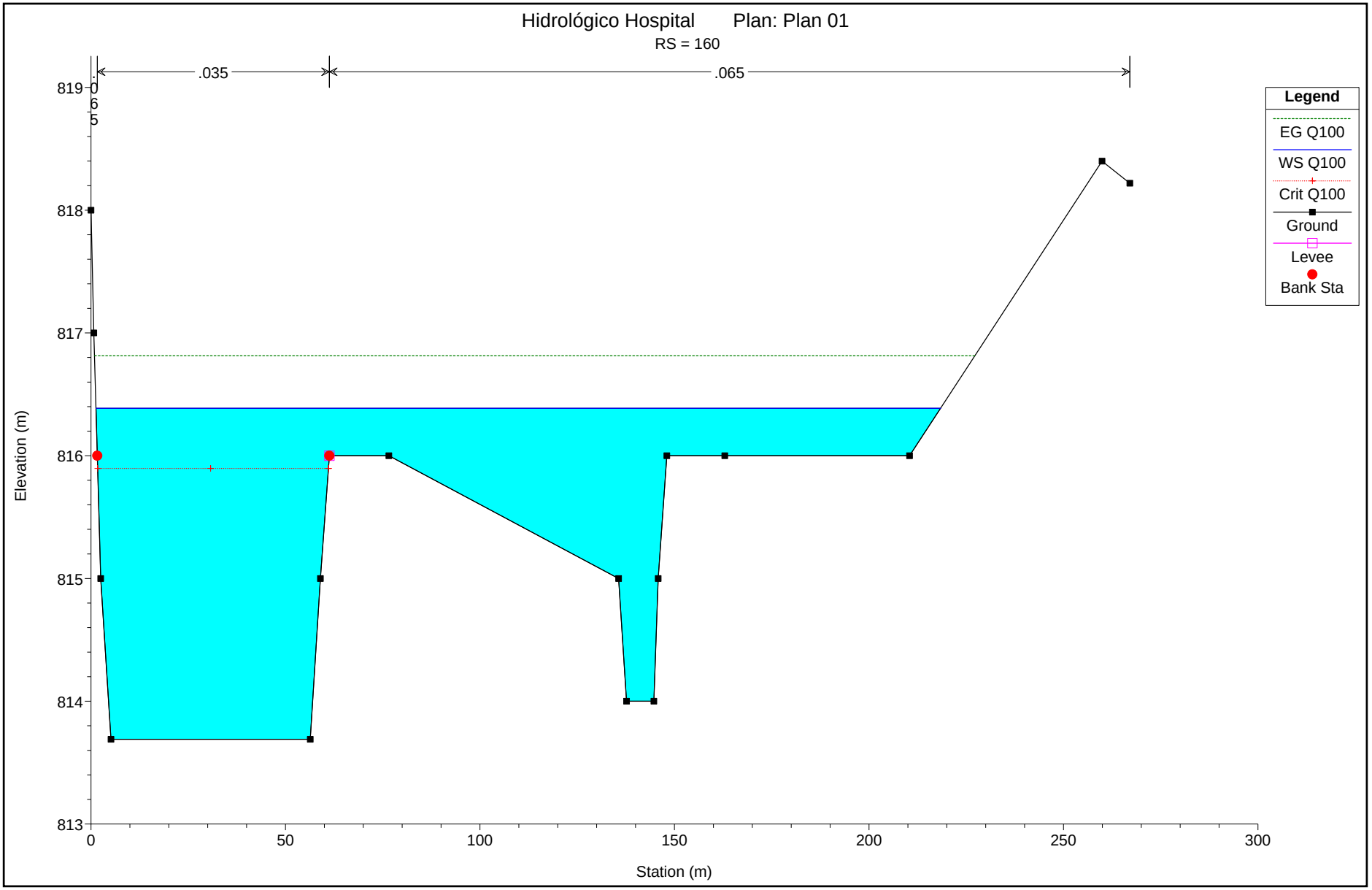
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 170
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 160
.035
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
813
814
815
816
817
818
819
0
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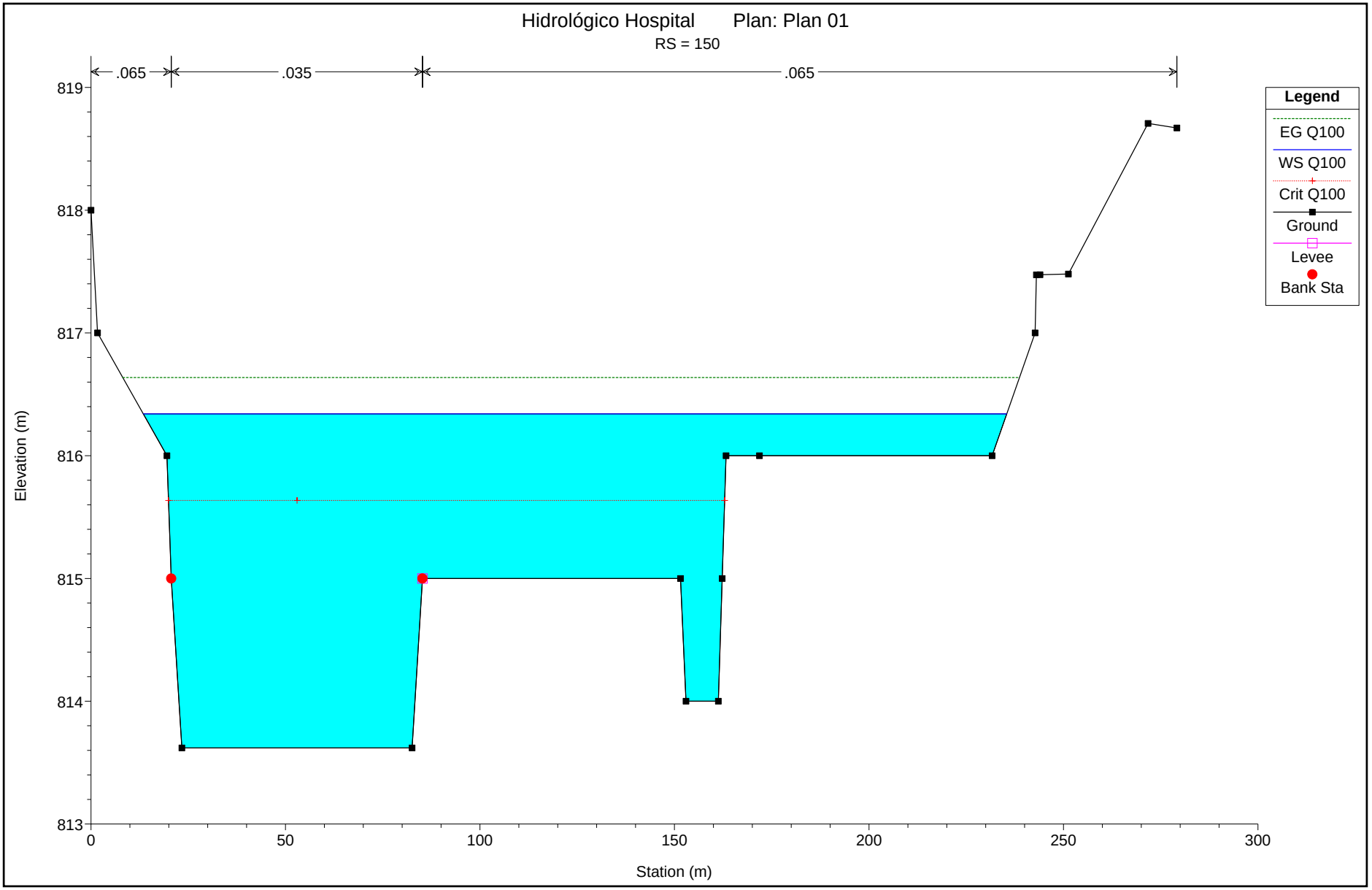
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 150
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
819
818
817
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815
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813
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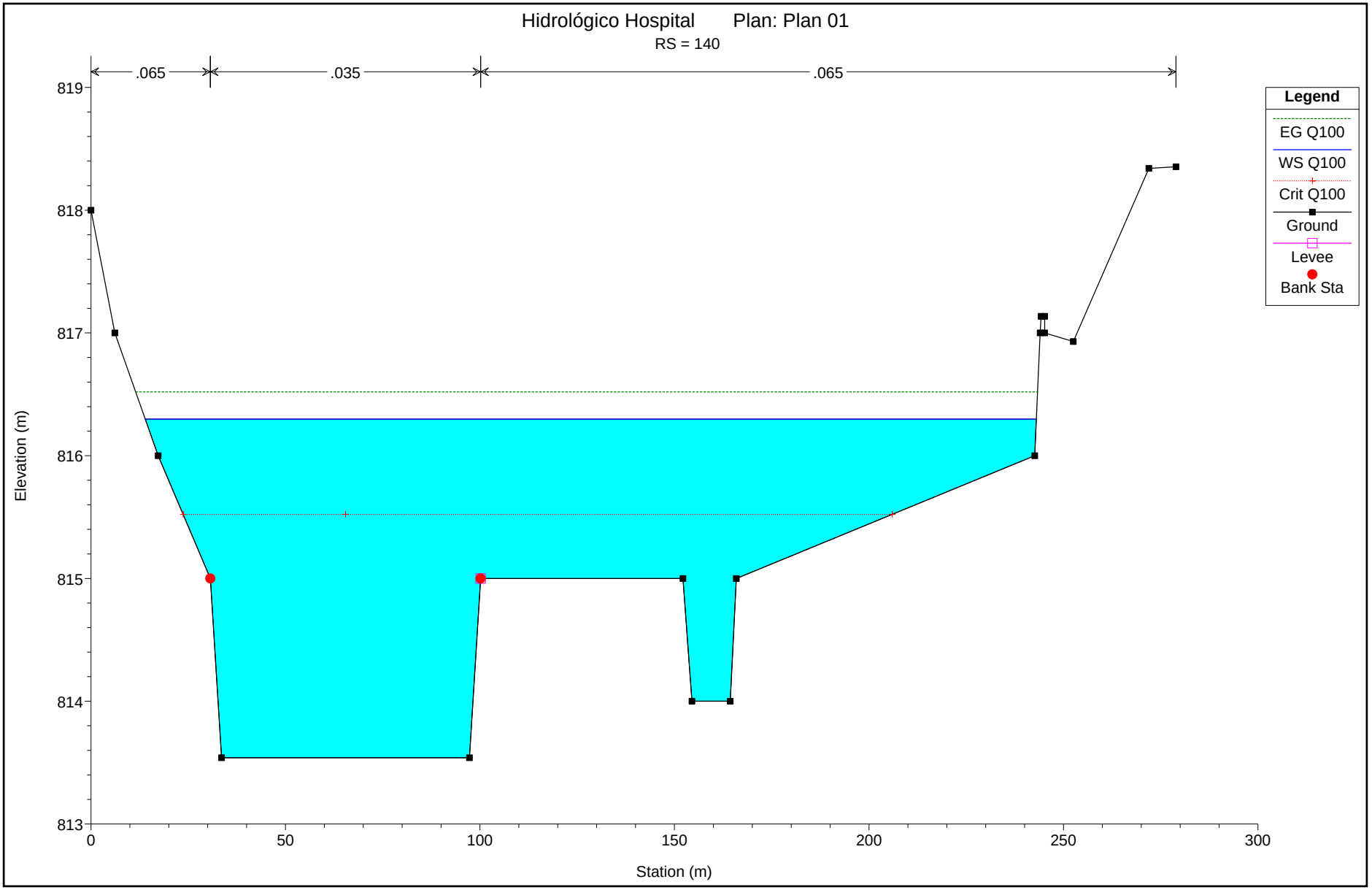
50
100
150
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 140
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
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818
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815
814
813
0
50
100
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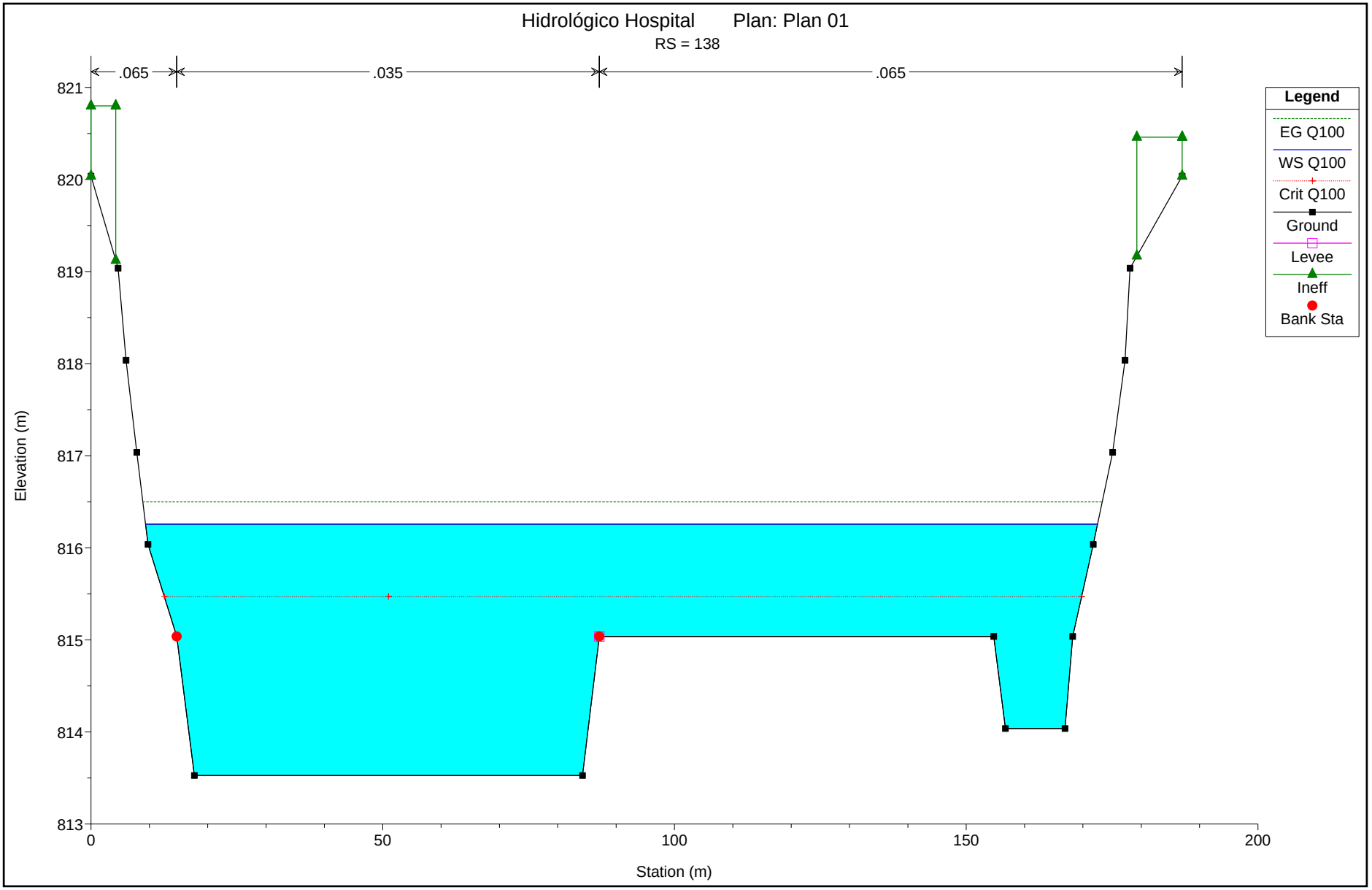
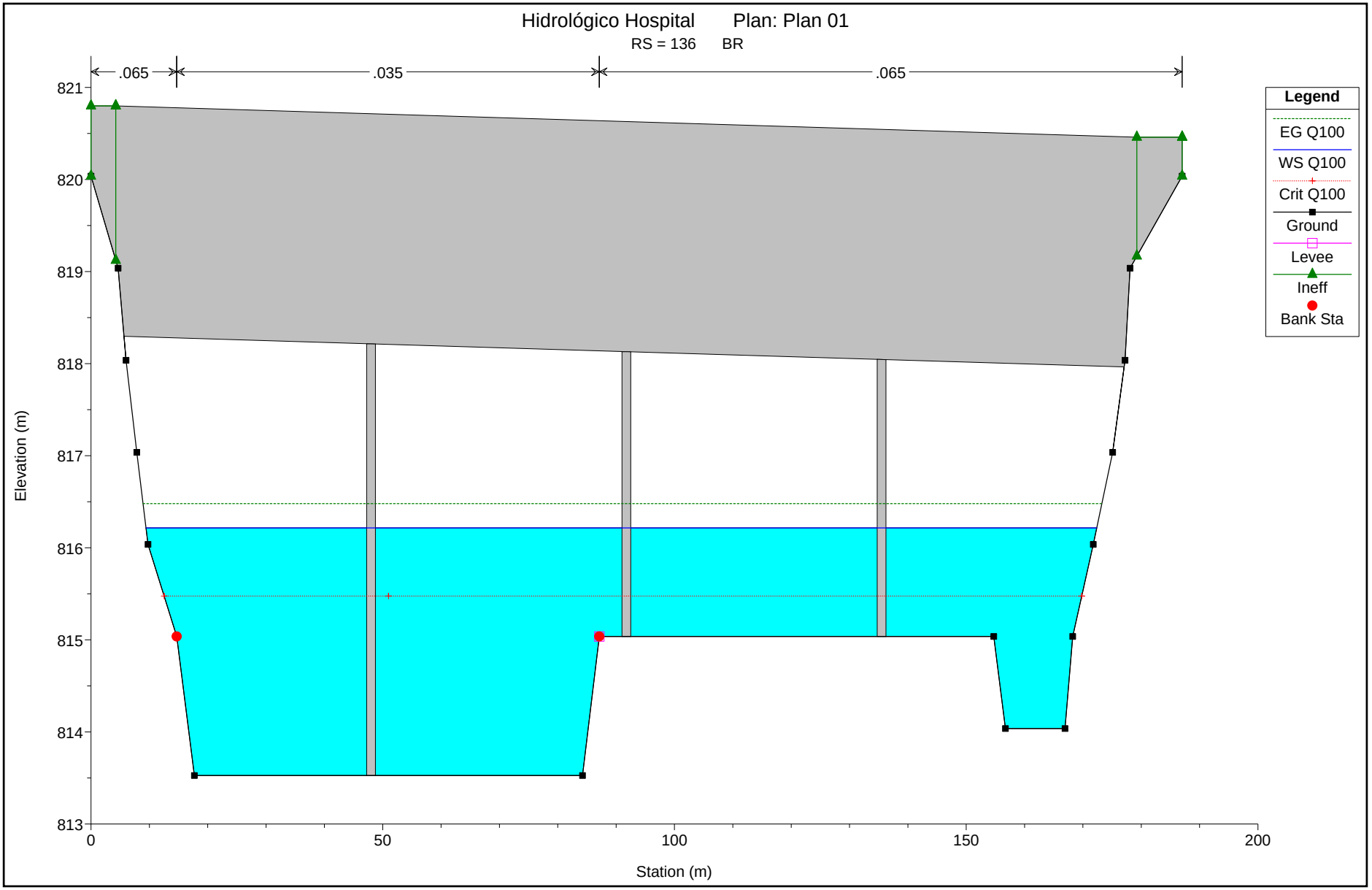
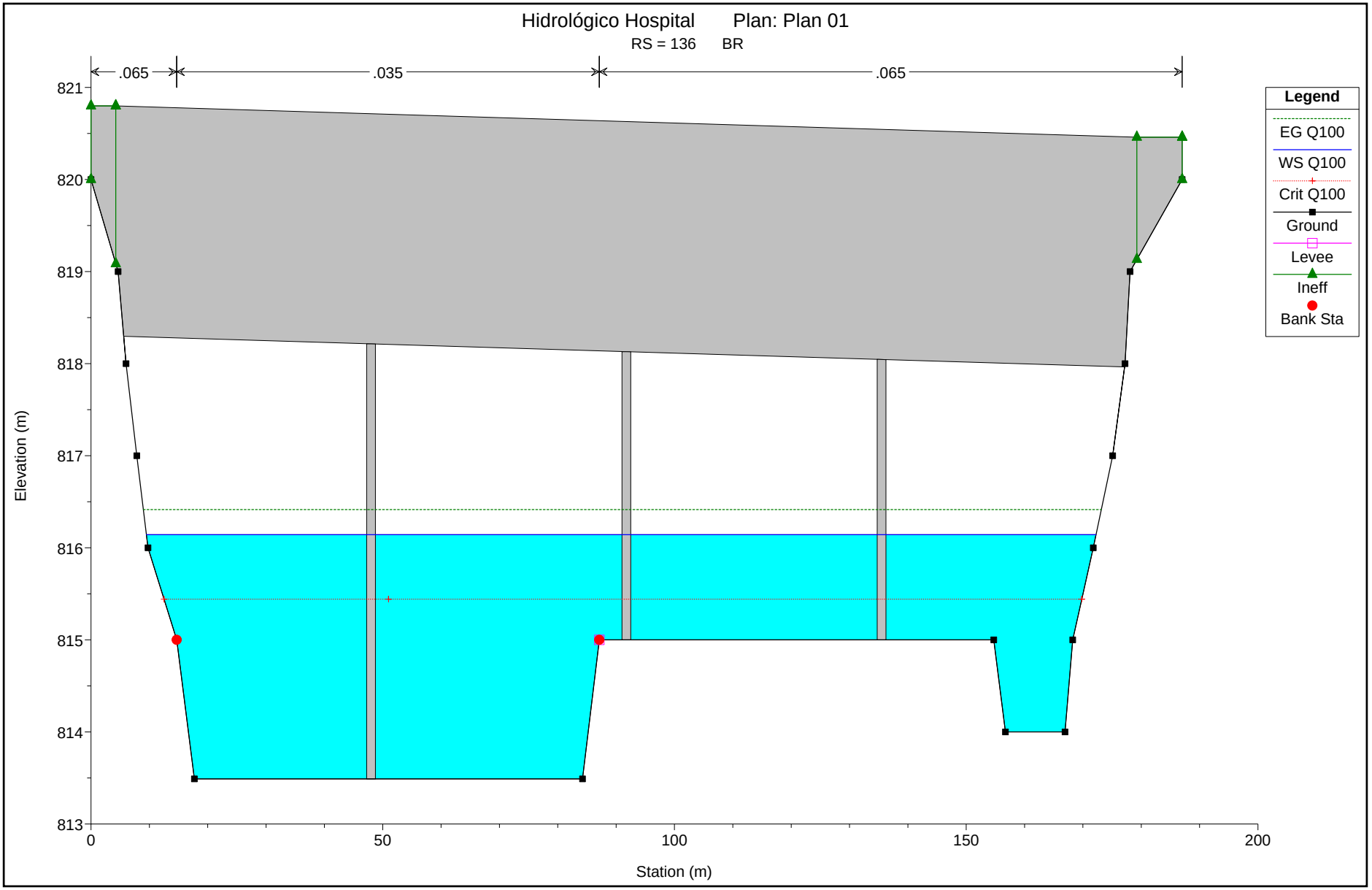
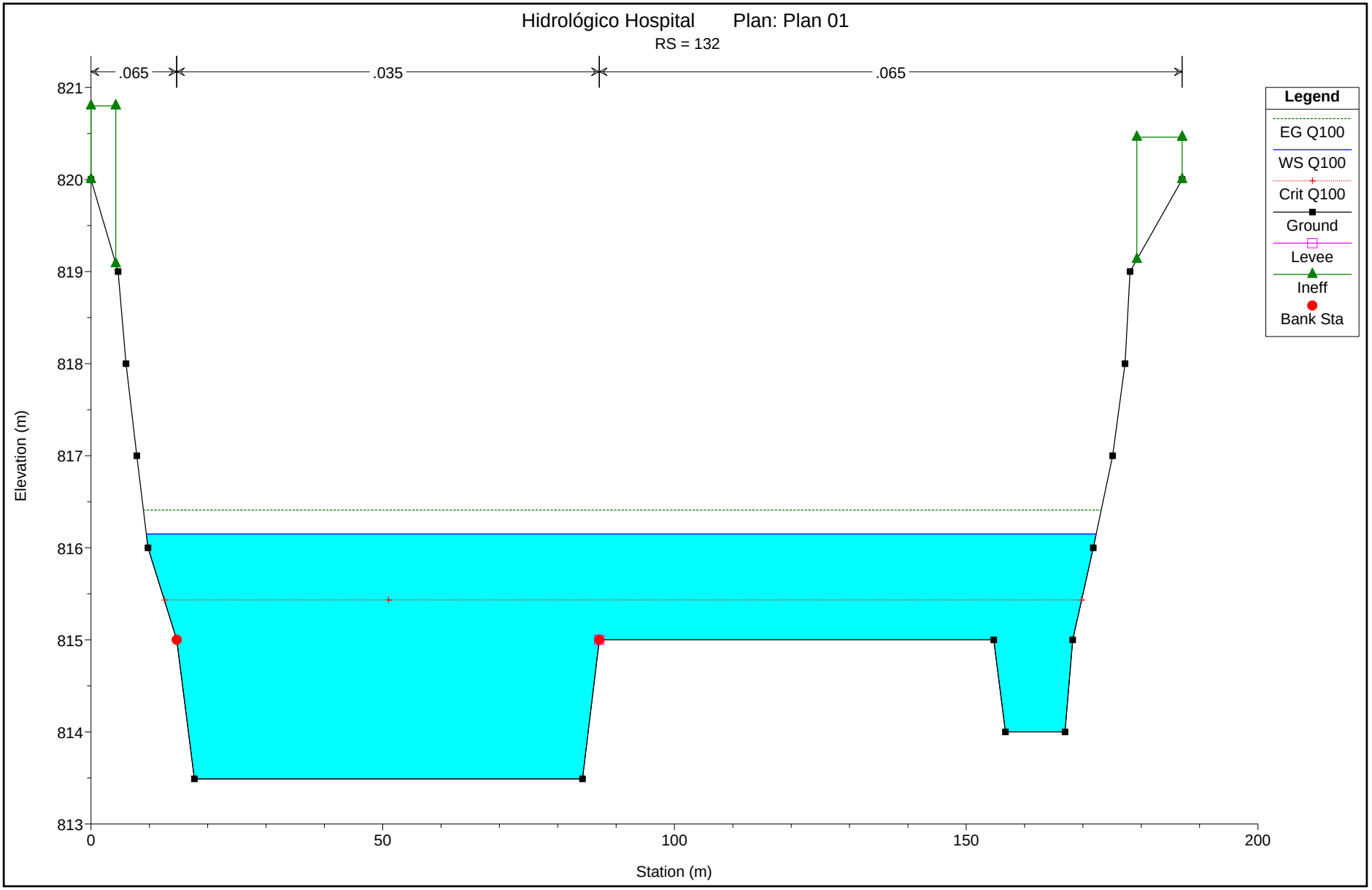
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 138
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 136 BR
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 136 BR
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200


Hidrológico Hospital Plan: Plan 01
RS = 132
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
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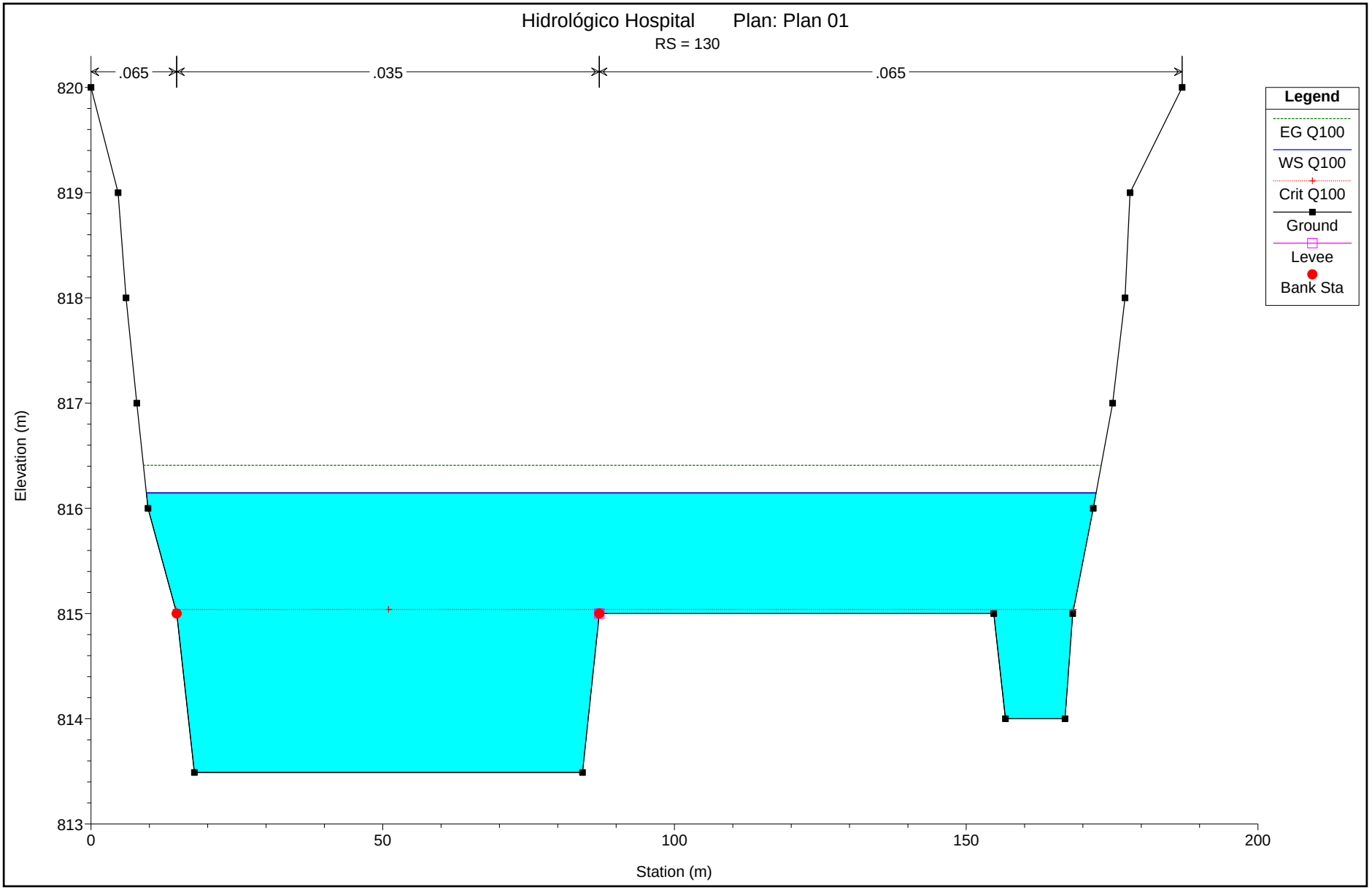
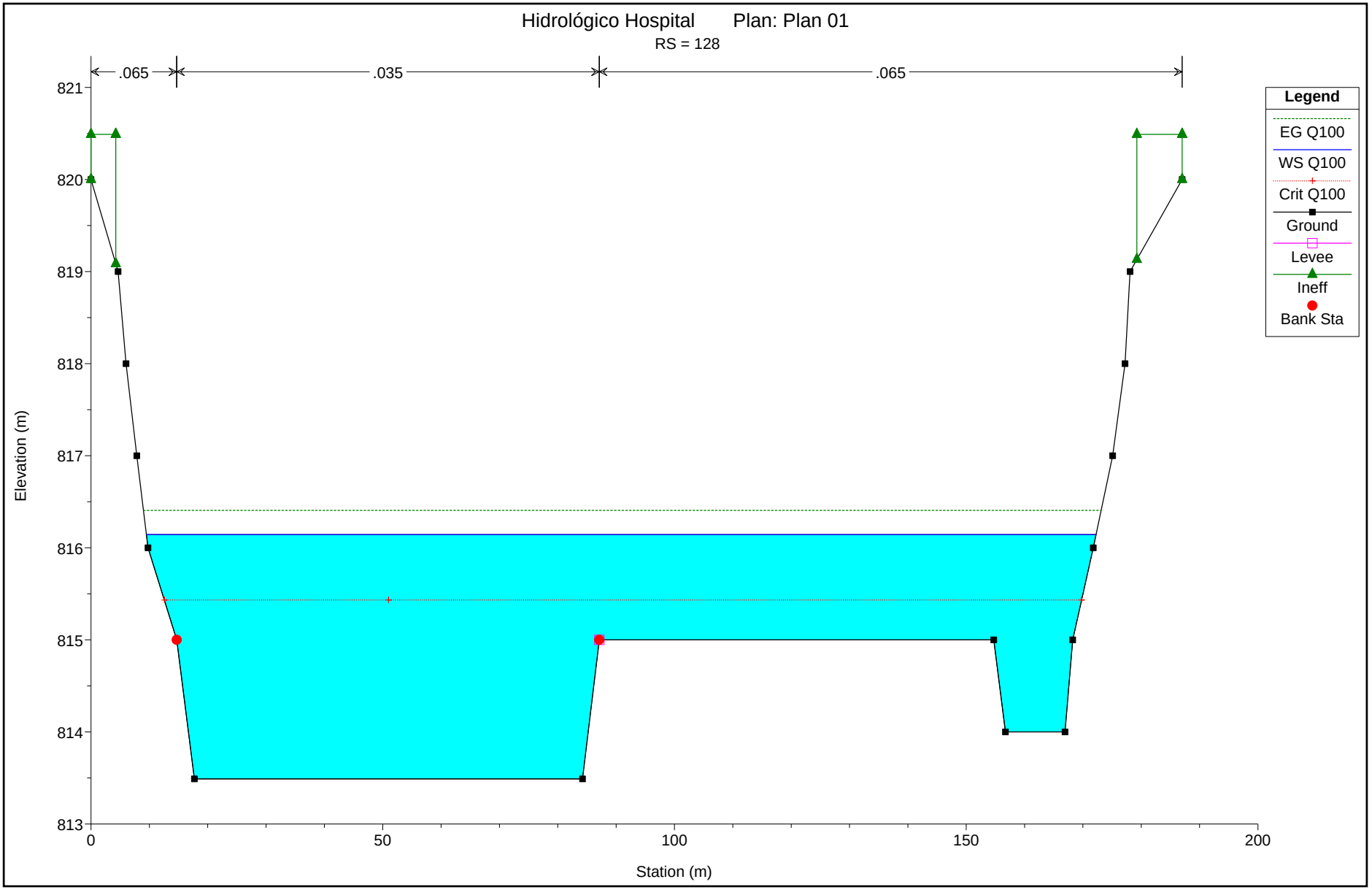
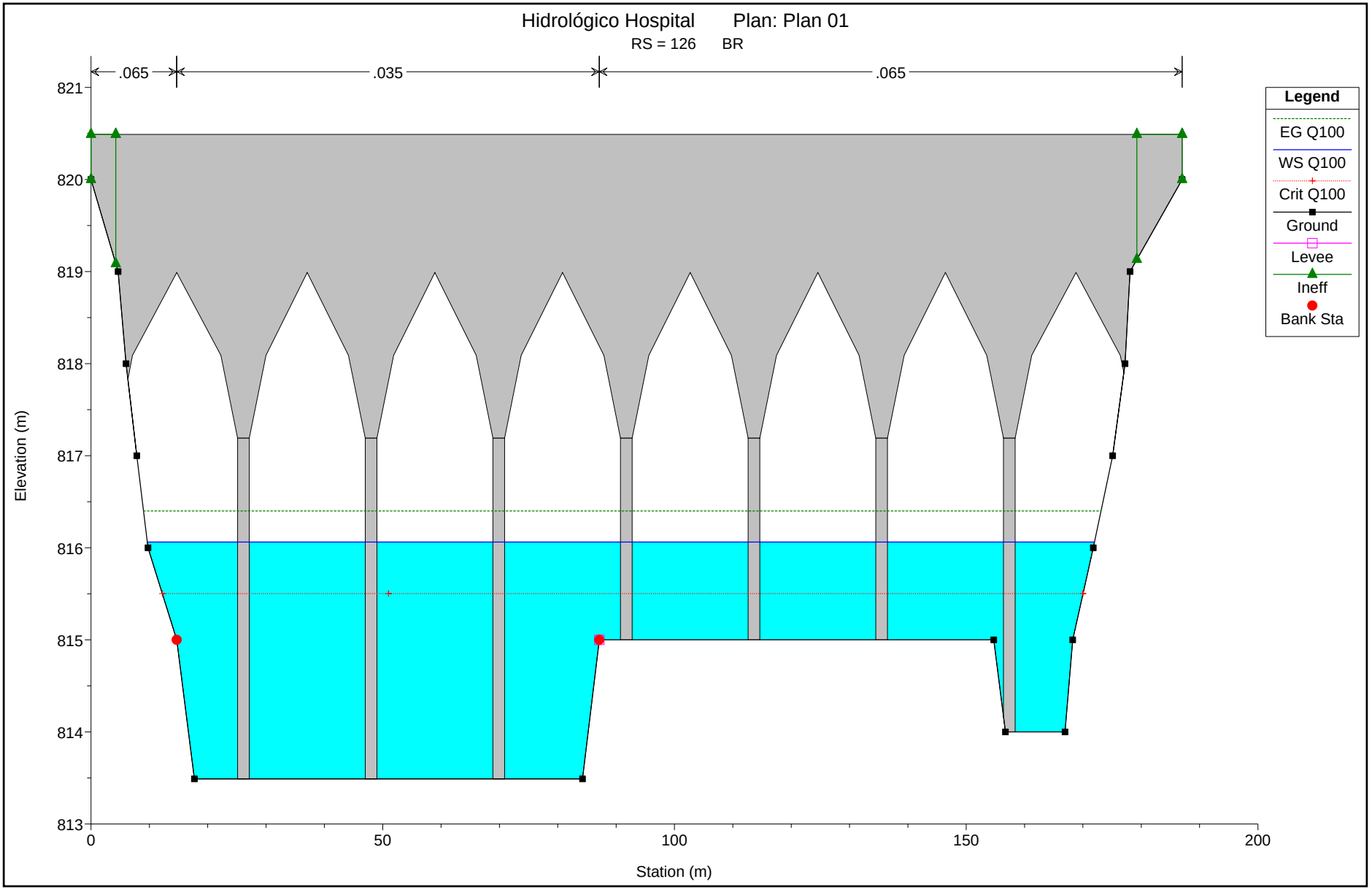
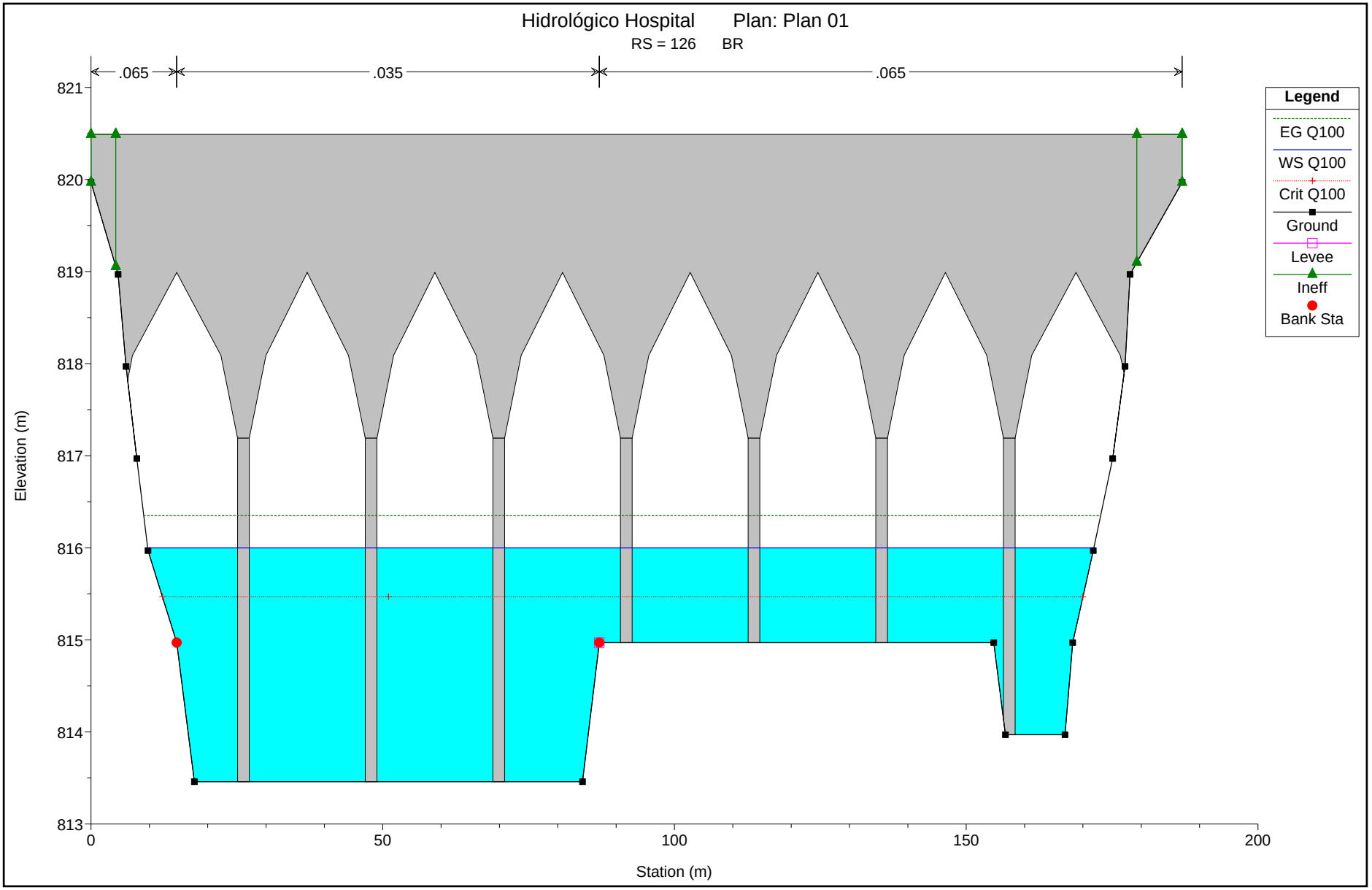
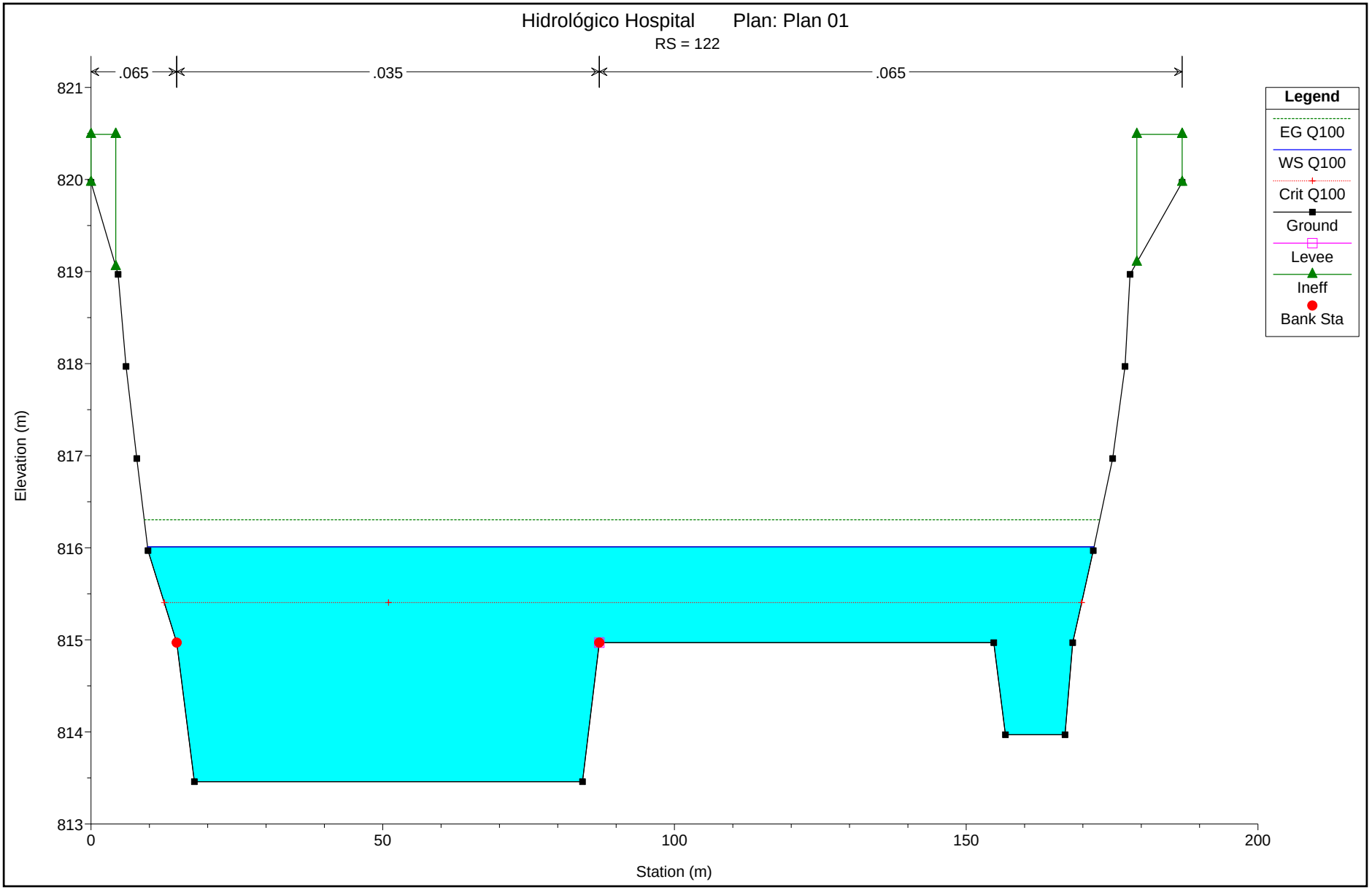
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)

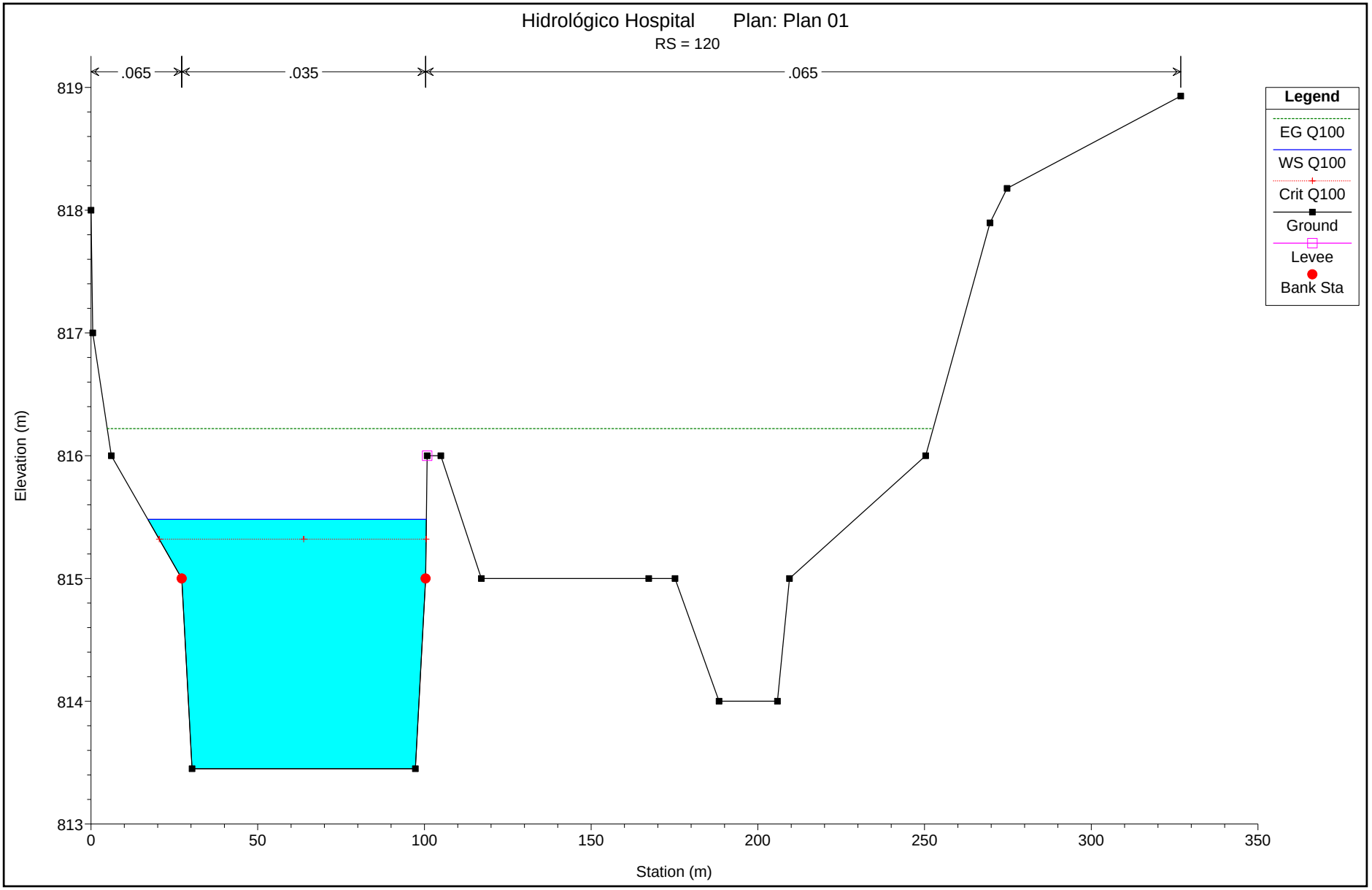

Hidrológico Hospital Plan: Plan 01
RS = 130
.065
.035
.065
820
819
818
817
816
815
814
813
Elevation (m)
0
50
100
150
200
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta

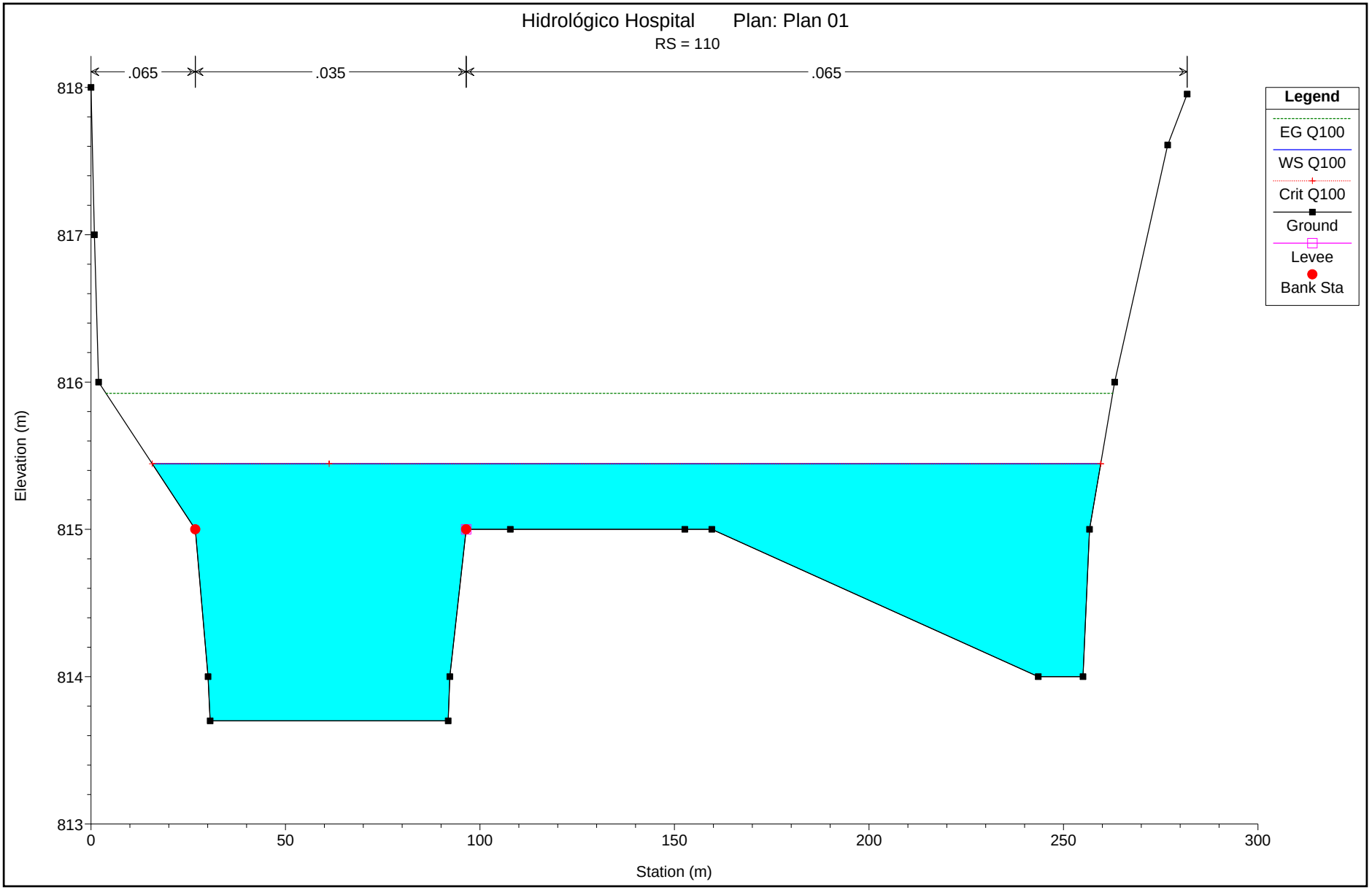

Hidrológico Hospital Plan: Plan 01
RS = 128
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)

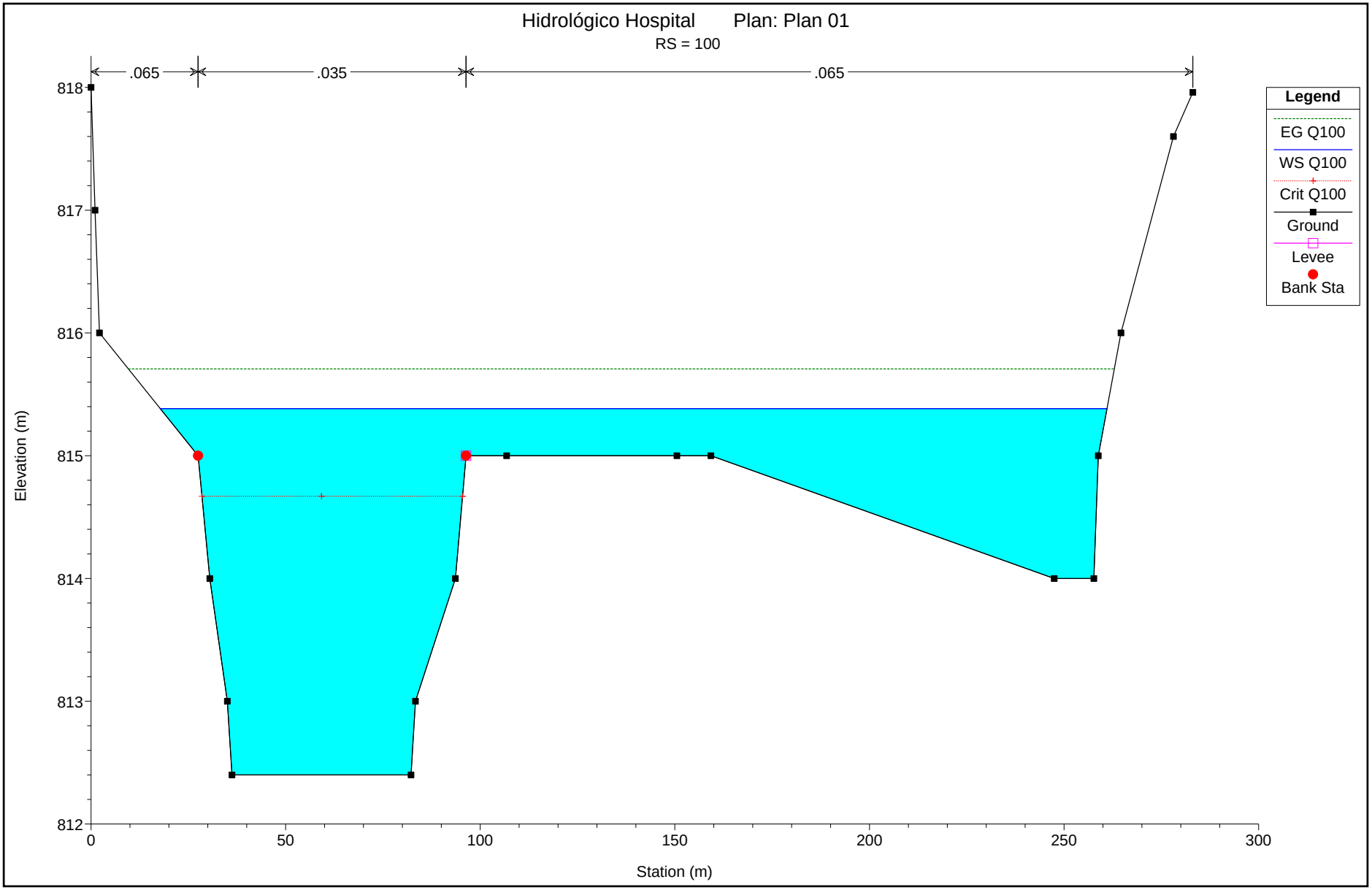

Hidrológico Hospital Plan: Plan 01
RS = 126 BR
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200

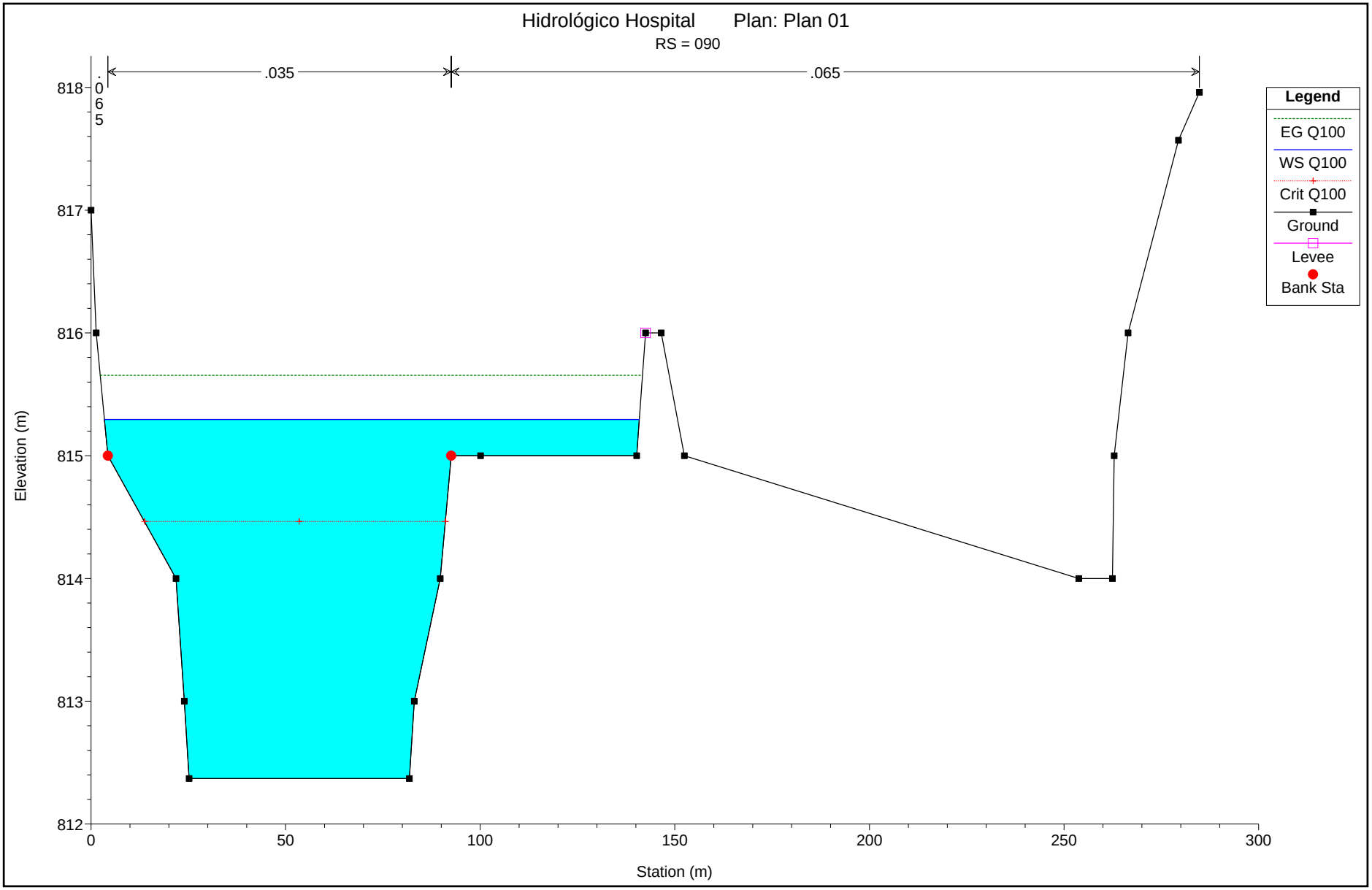

Hidrológico Hospital Plan: Plan 01
RS = 126 BR
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200


Hidrológico Hospital Plan: Plan 01
RS = 122
.065
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Ineff
Bank Sta
Elevation (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 120
.065
.035
.065
Elevation (m)
819
818
817
816
815
814
813
0
50
100
150
200
250
300
350
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 110
.065
.035
.065
818
817
816
815
814
813
Elevation (m)
0
50
100
150
200
250
300
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 100
.065
.035
.065
818
817
816
815
814
813
812
Elevation (m)
0
50
100
150
200
250
300
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 090
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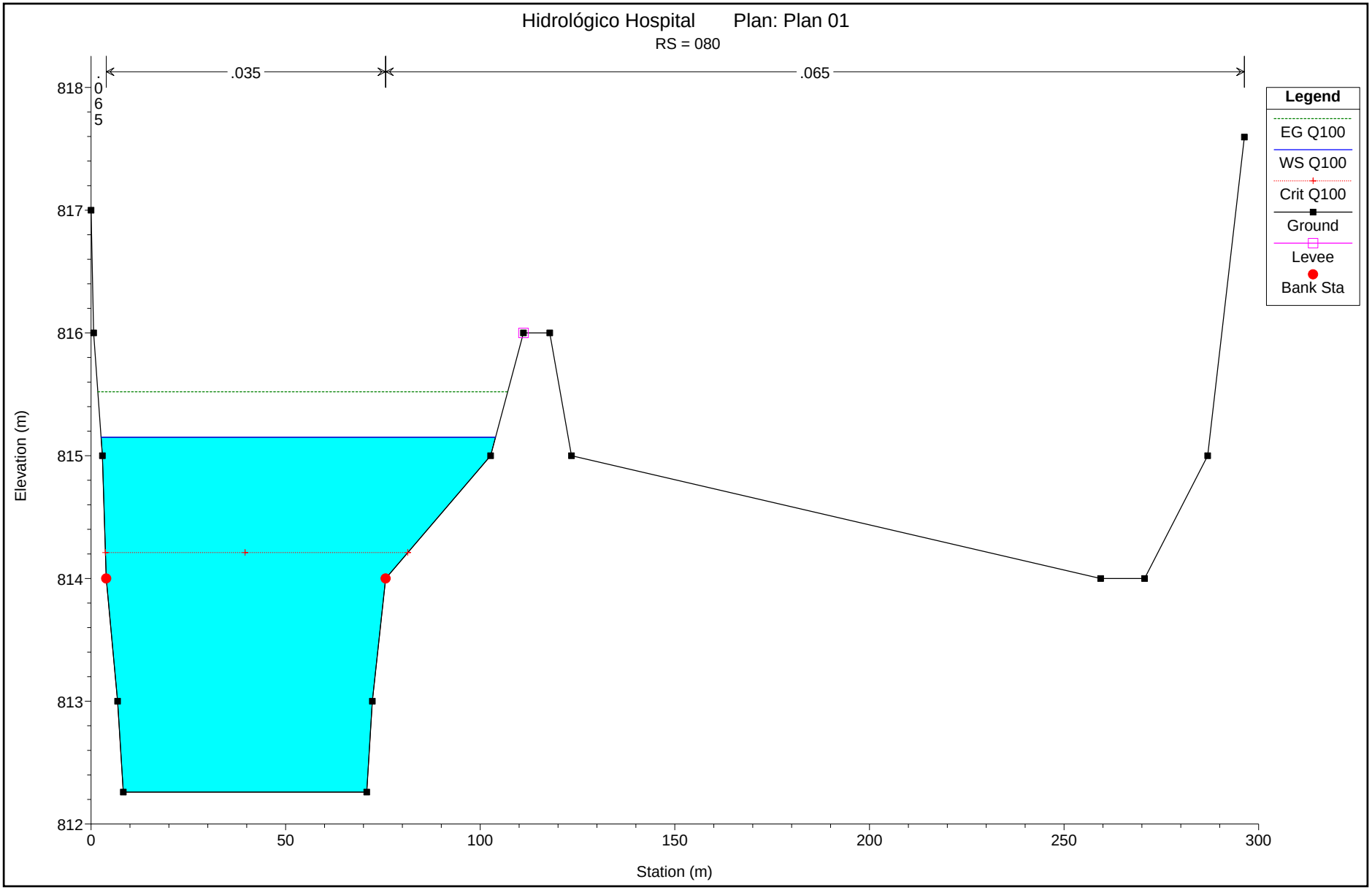
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
812
813
814
815
816
817
818
0
50
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 080
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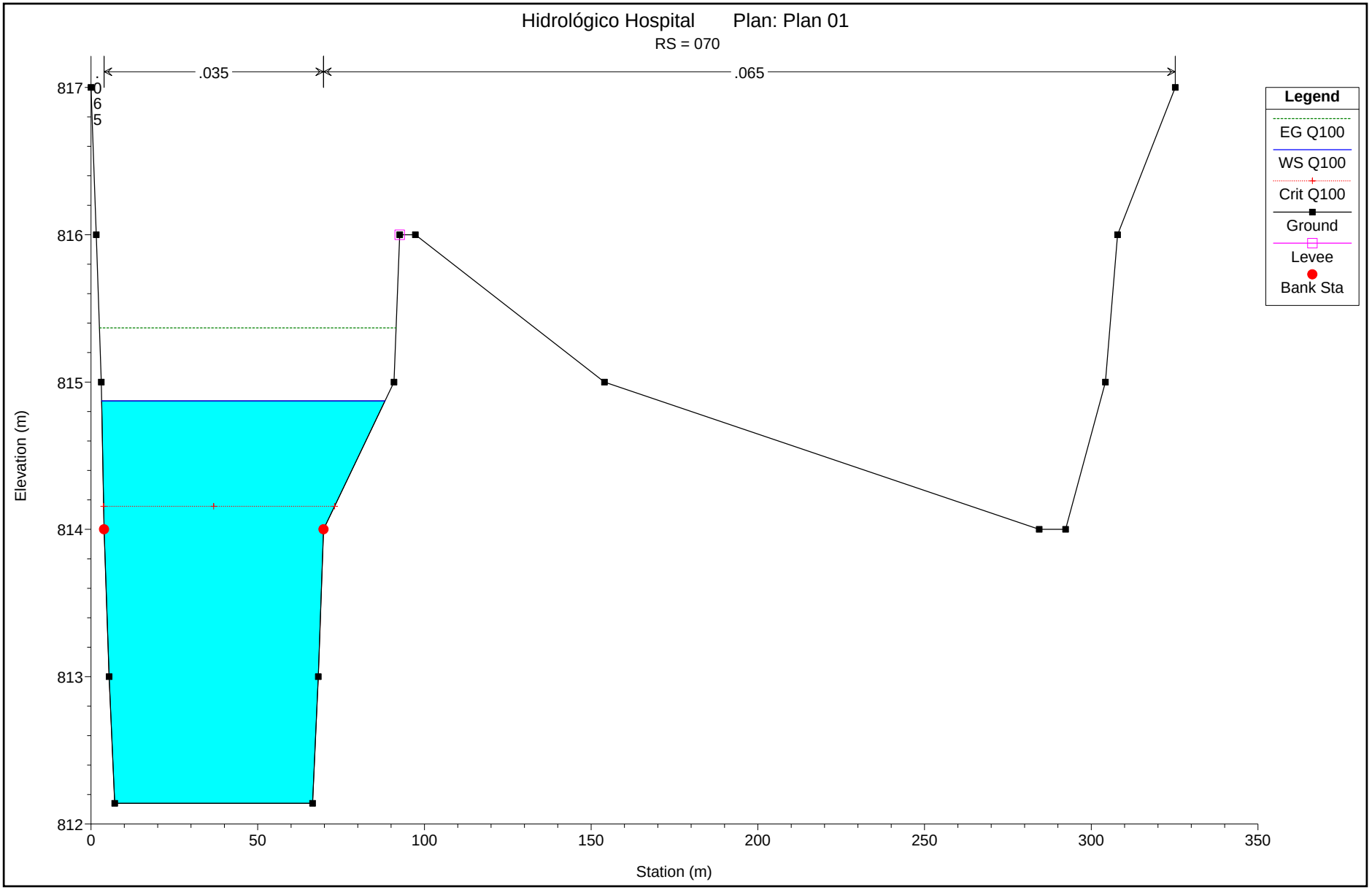
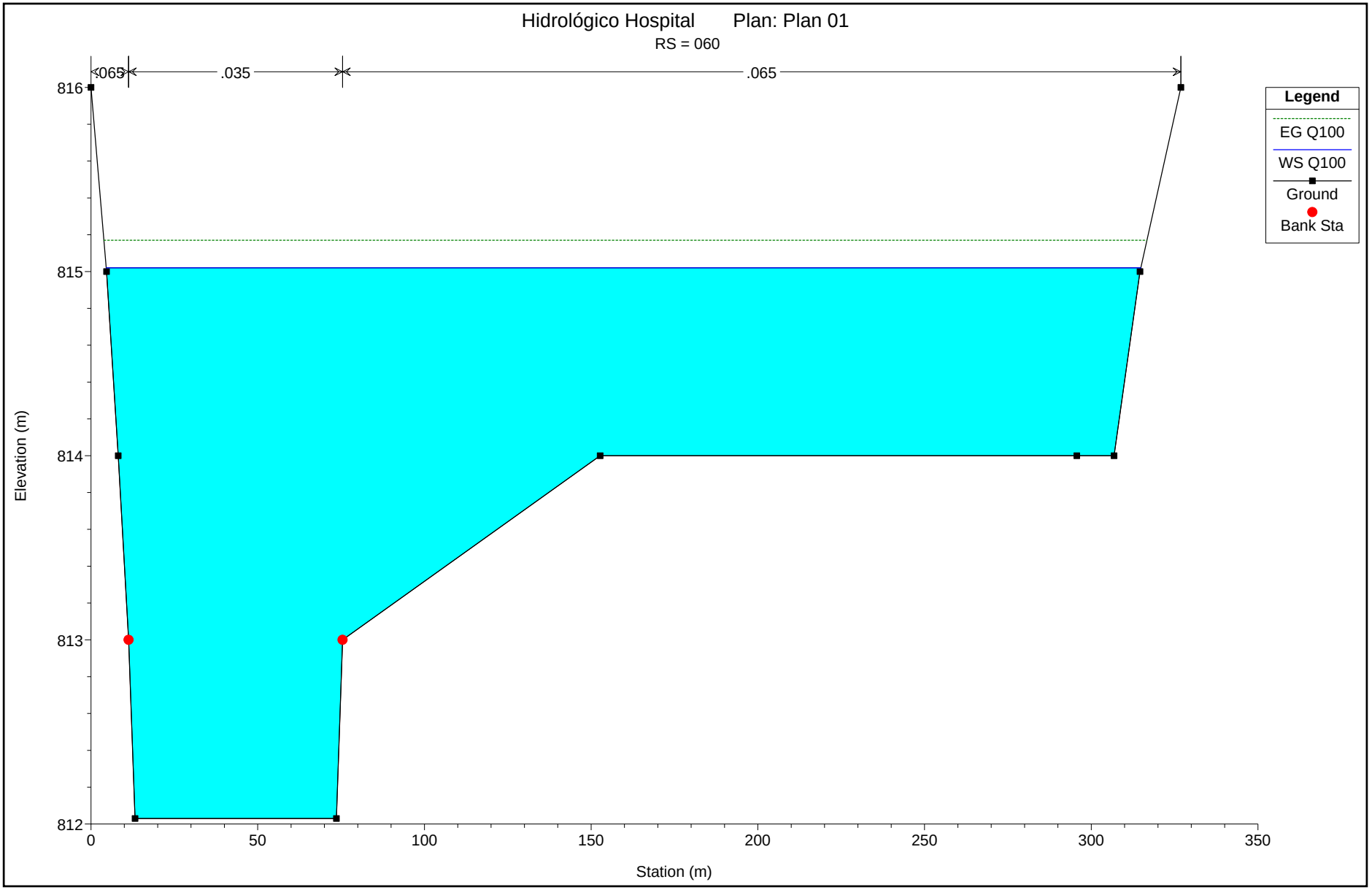
.065
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
812
813
814
815
816
817
818
0
50
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 070
.035
.065
.
0
6
5
Legend
EG Q100
WS Q100
Crit Q100
Ground
Levee
Bank Sta
Elevation (m)
817
816
815
814
813
812
0
50
100
150
200
250
300
350
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 060
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.035
.065
816
815
814
813
812
Elevation (m)
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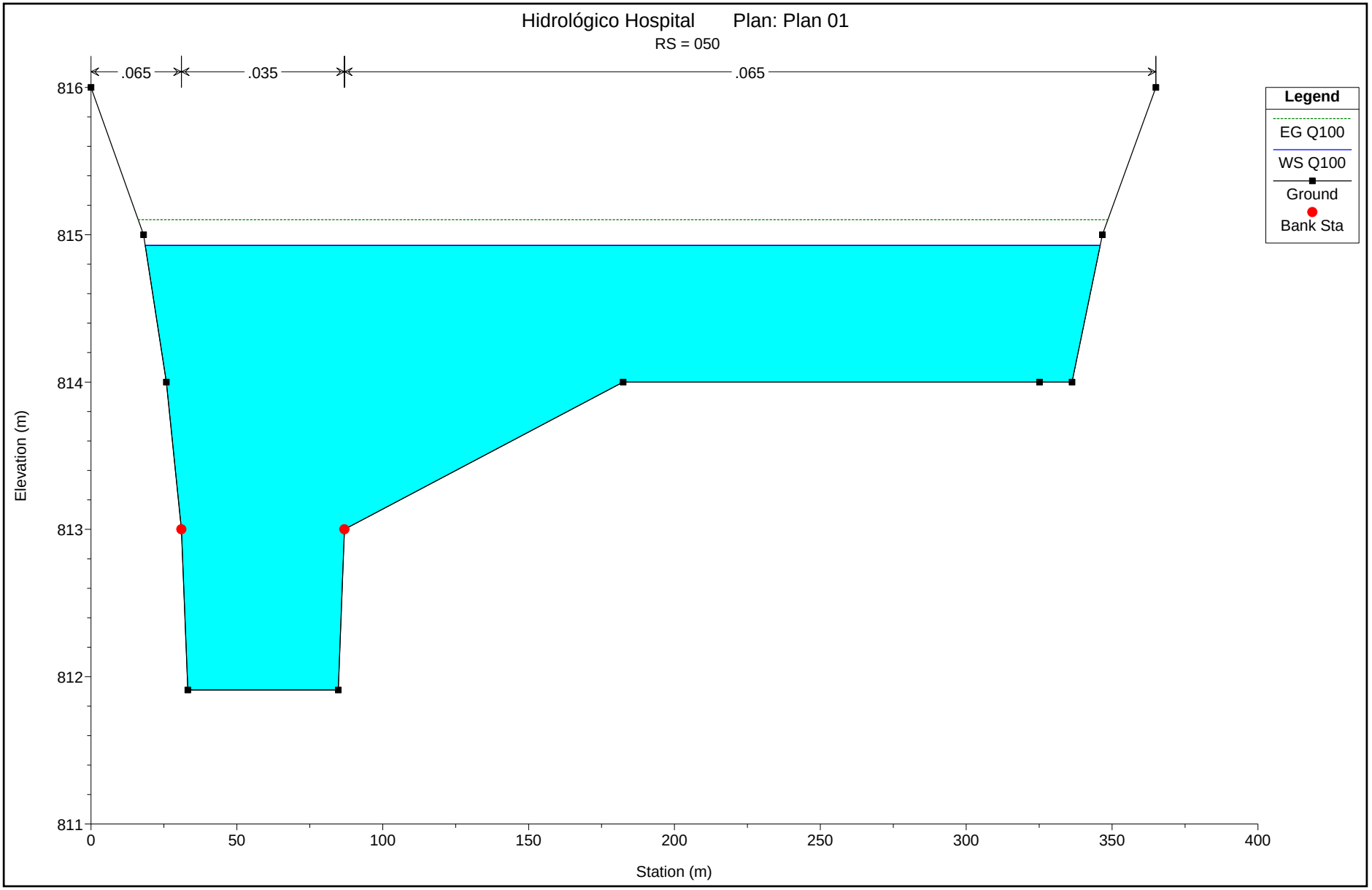
50
100
150
200
250
300
350
Station (m)
Legend
EG Q100
WS Q100
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 050
.065
.035
.065
816
815
814
813
812
811
Elevation (m)
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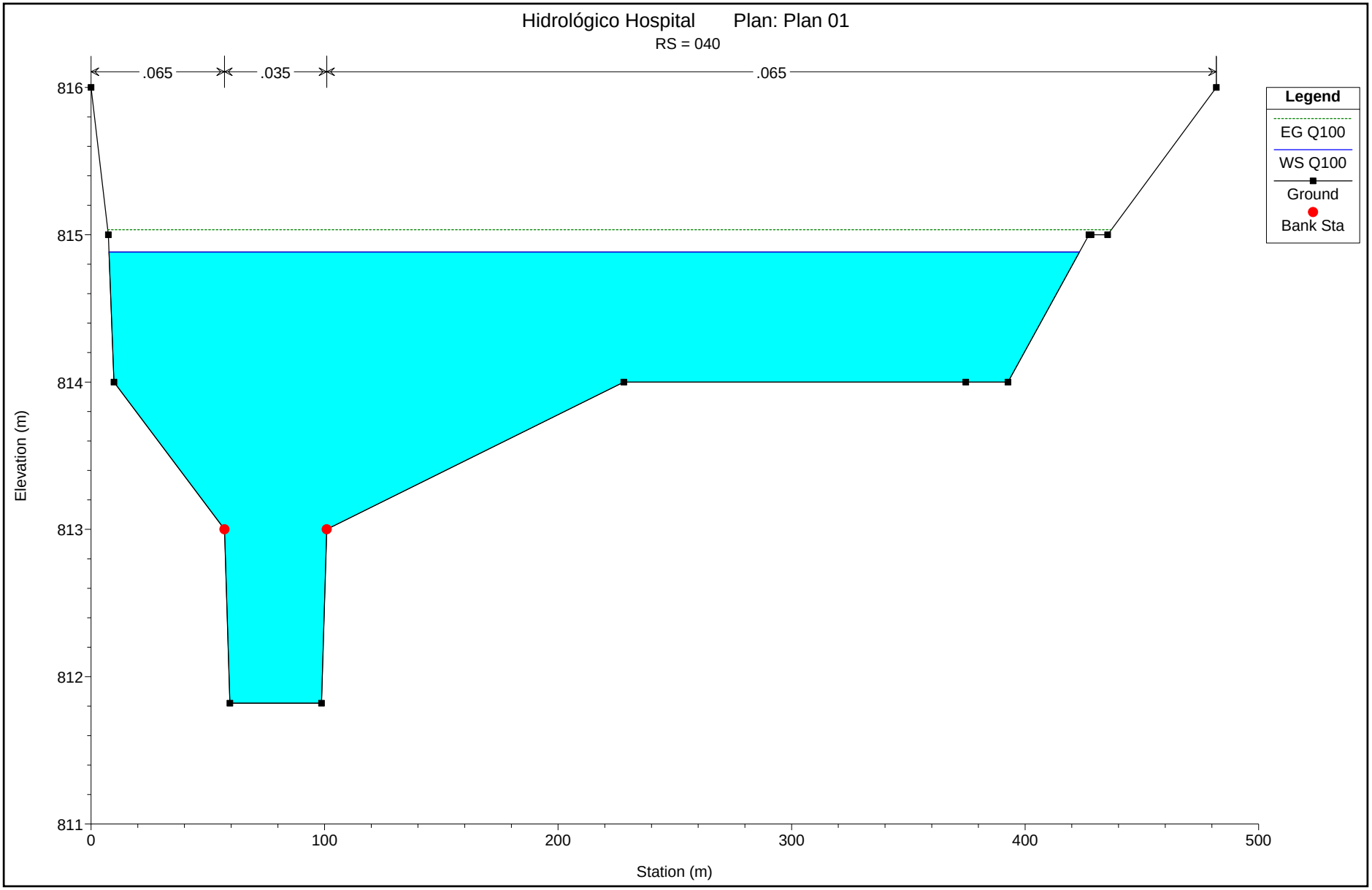
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q100
WS Q100
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 040
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.035
.065
816
815
814
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812
811
Elevation (m)
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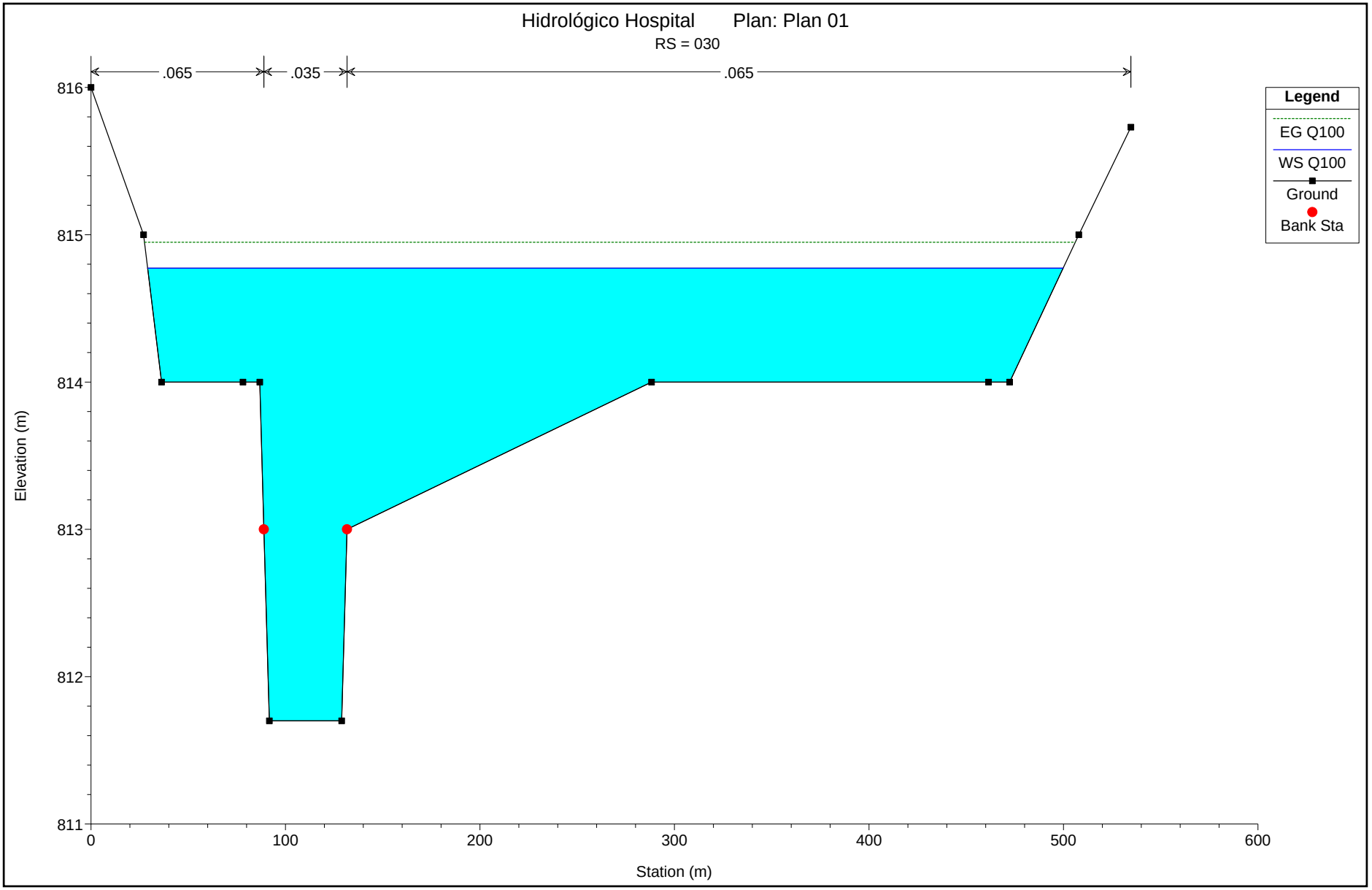
100
200
300
400
500
Station (m)
Legend
EG Q100
WS Q100
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 030
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.035
.065
816
815
814
813
812
811
Elevation (m)
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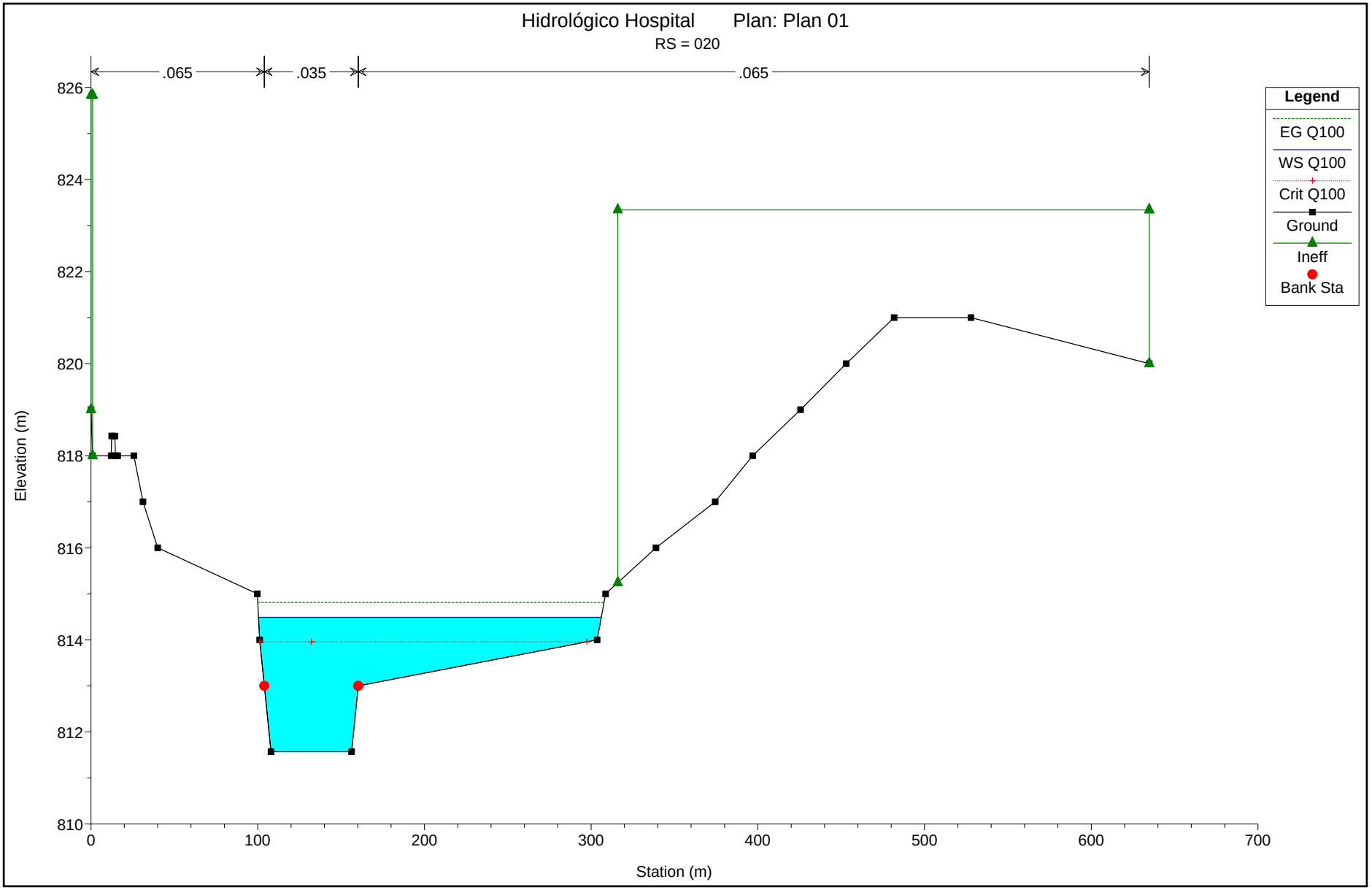
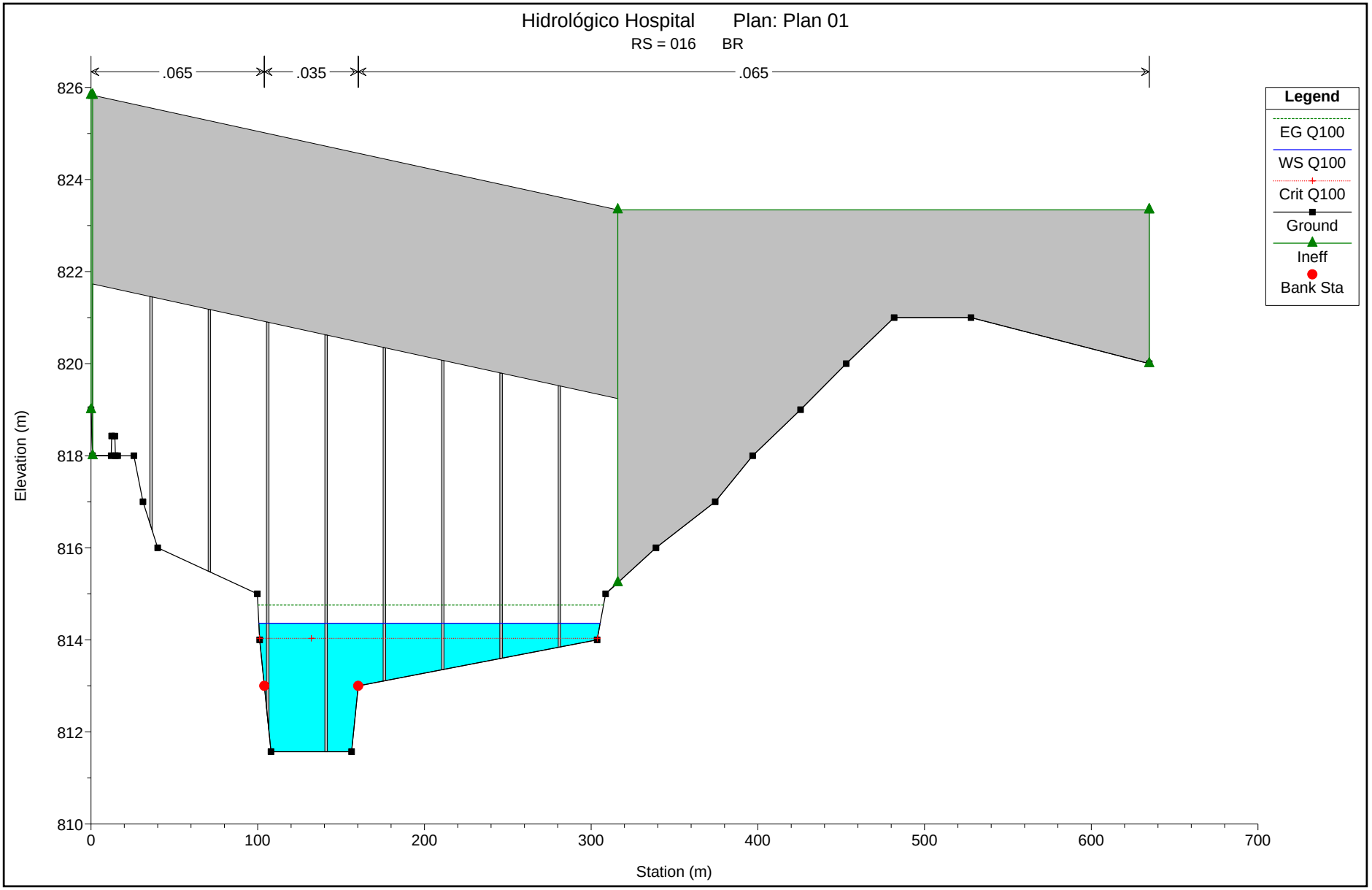
200
300
400
500
600
Station (m)
Legend
EG Q100
WS Q100
Ground
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 020
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 016 BR
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
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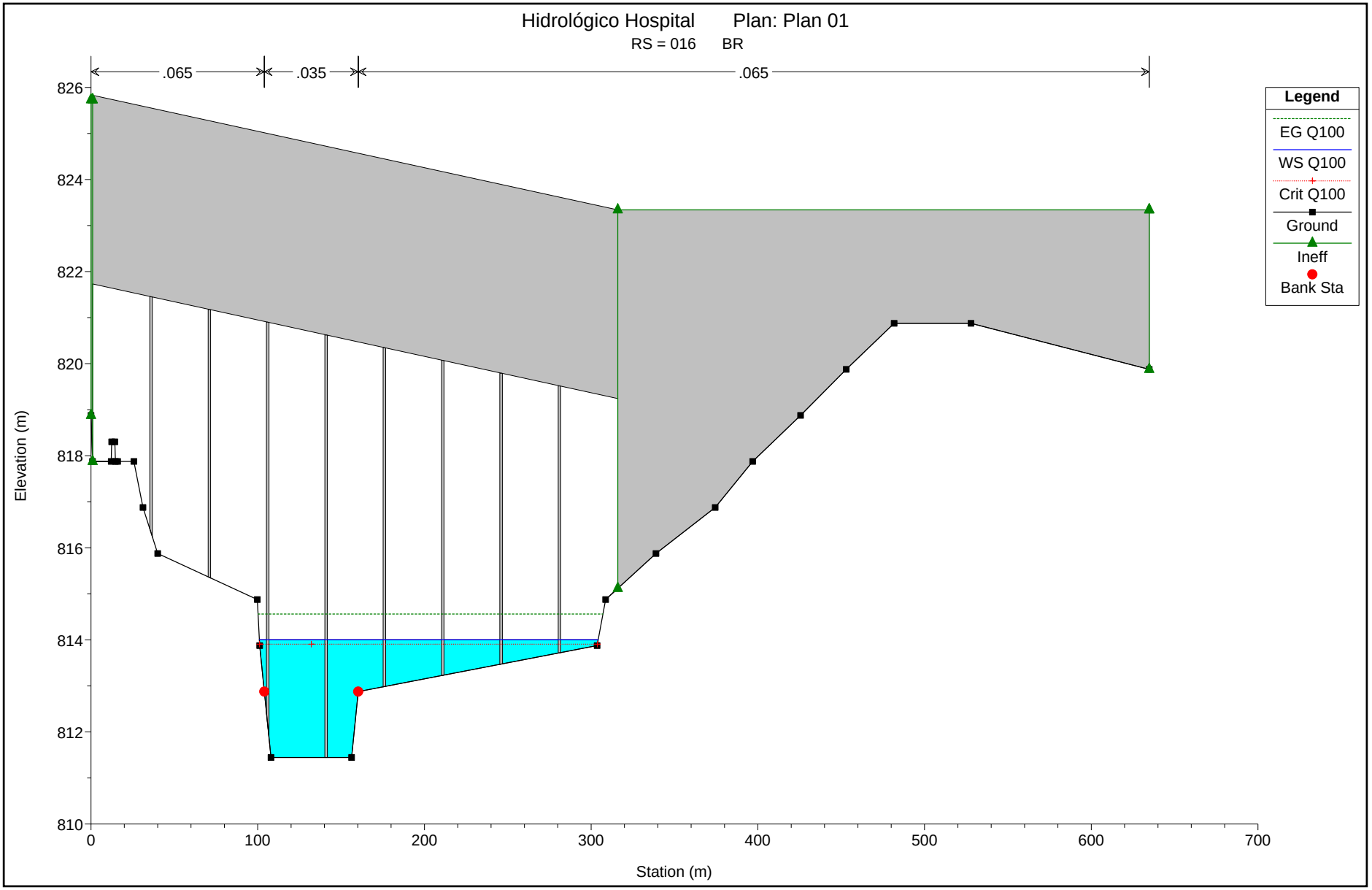
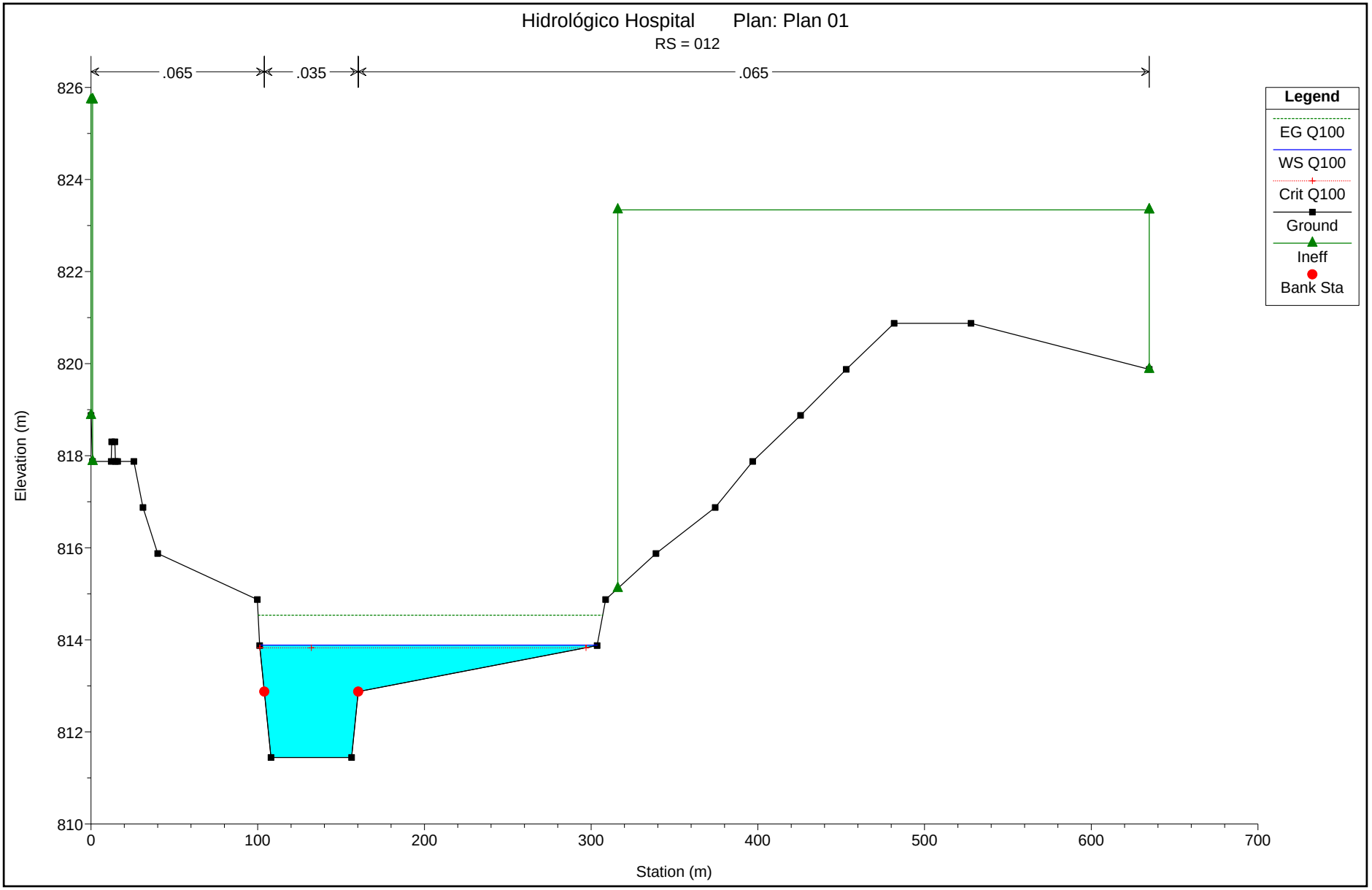
400
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 016 BR
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
0
100
200
300
400
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 012
.065
.035
.065
826
824
822
820
818
816
814
812
810
Elevation (m)
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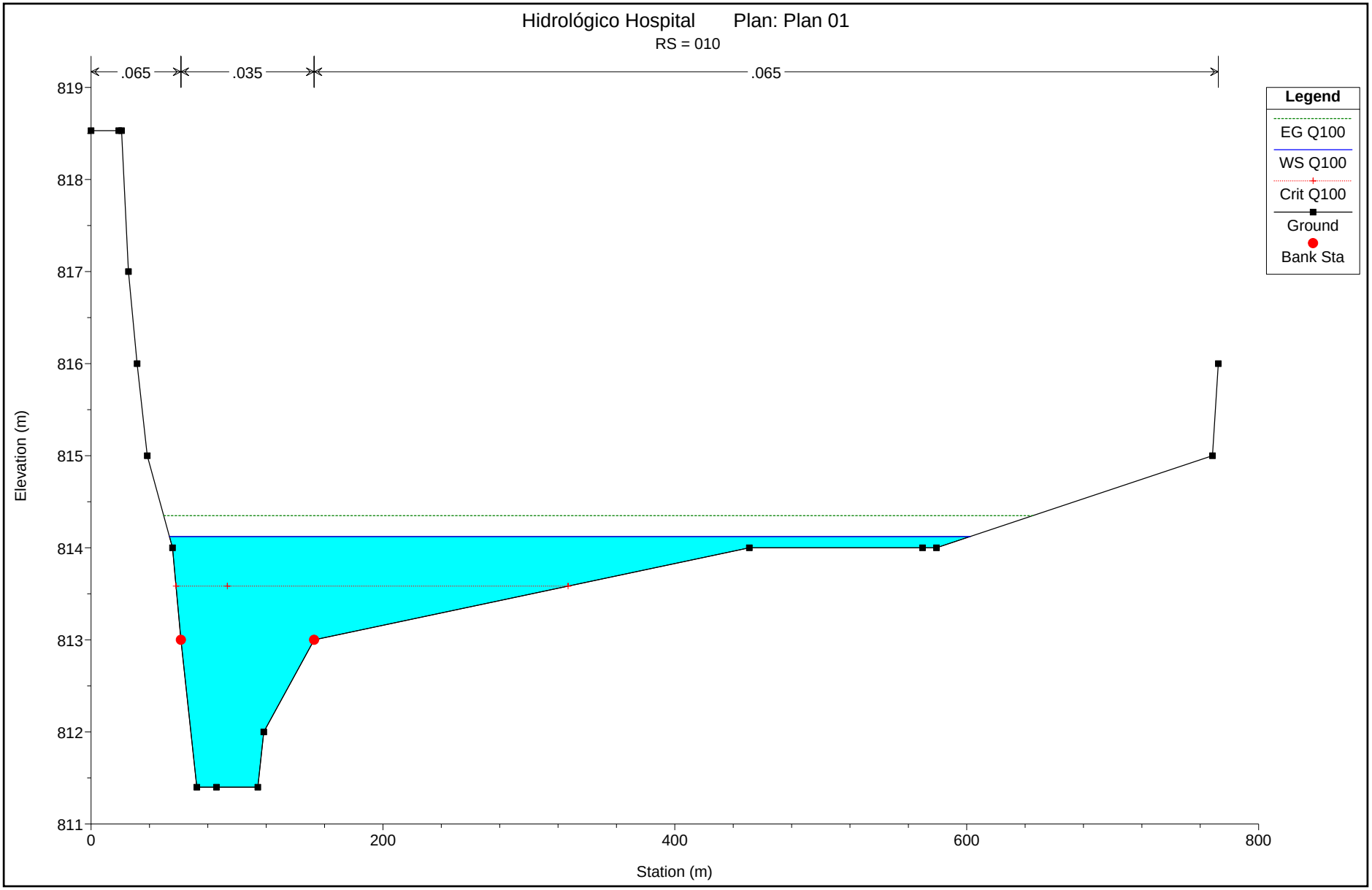
500
600
700
Station (m)
Legend
EG Q100
WS Q100
Crit Q100
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
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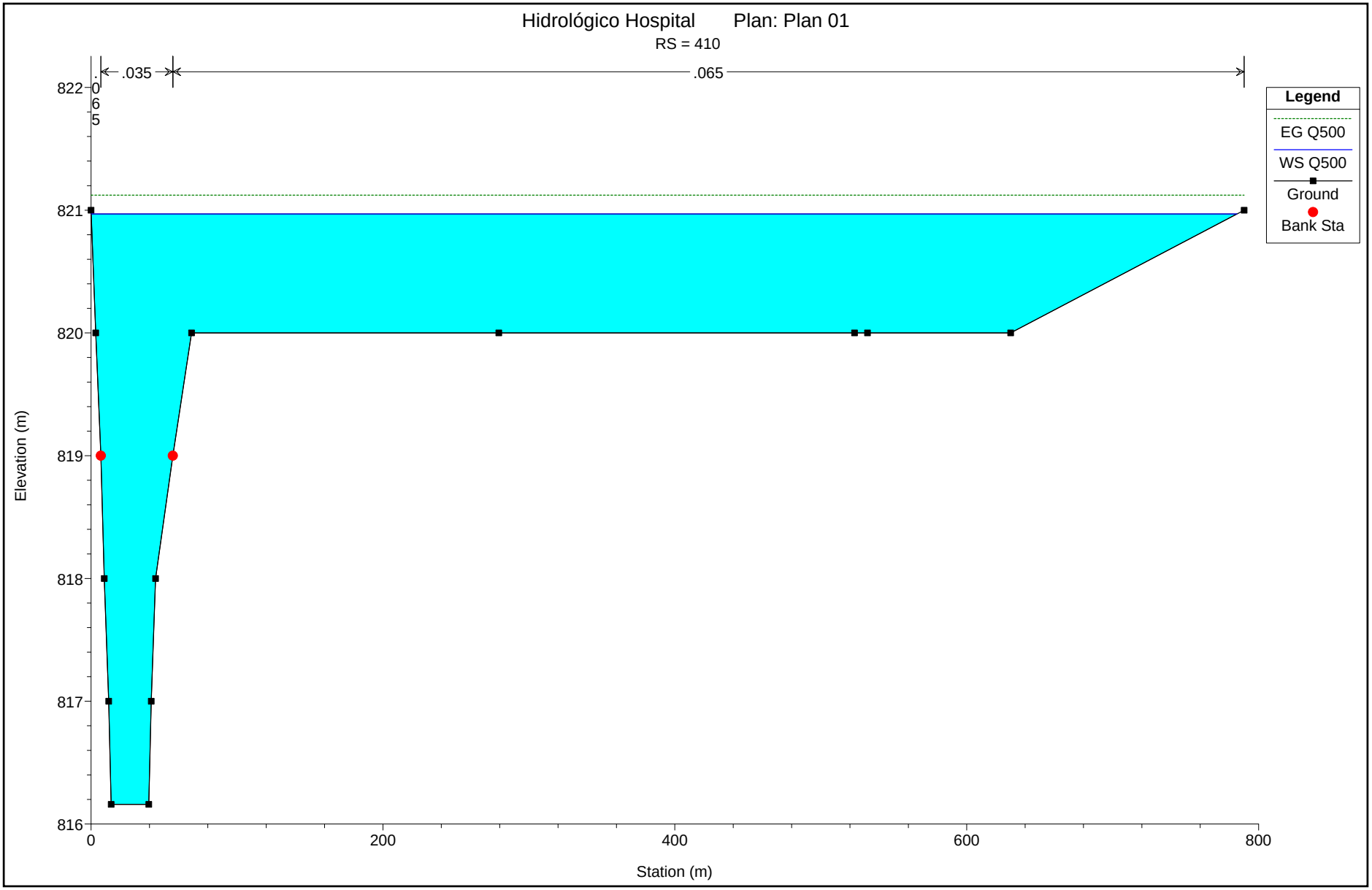
.035
.065
Legend
EG Q100
WS Q100
Crit Q100
Ground
Bank Sta
Elevation (m)
819
818
817
816
815
814
813
812
811
0
200
400
600
800
Station (m)

Anejo nº 4: PERFILES TRANSVERSALES Q500 (HEC-RAS)


Hidrológico Hospital Plan: Plan 01
RS = 410
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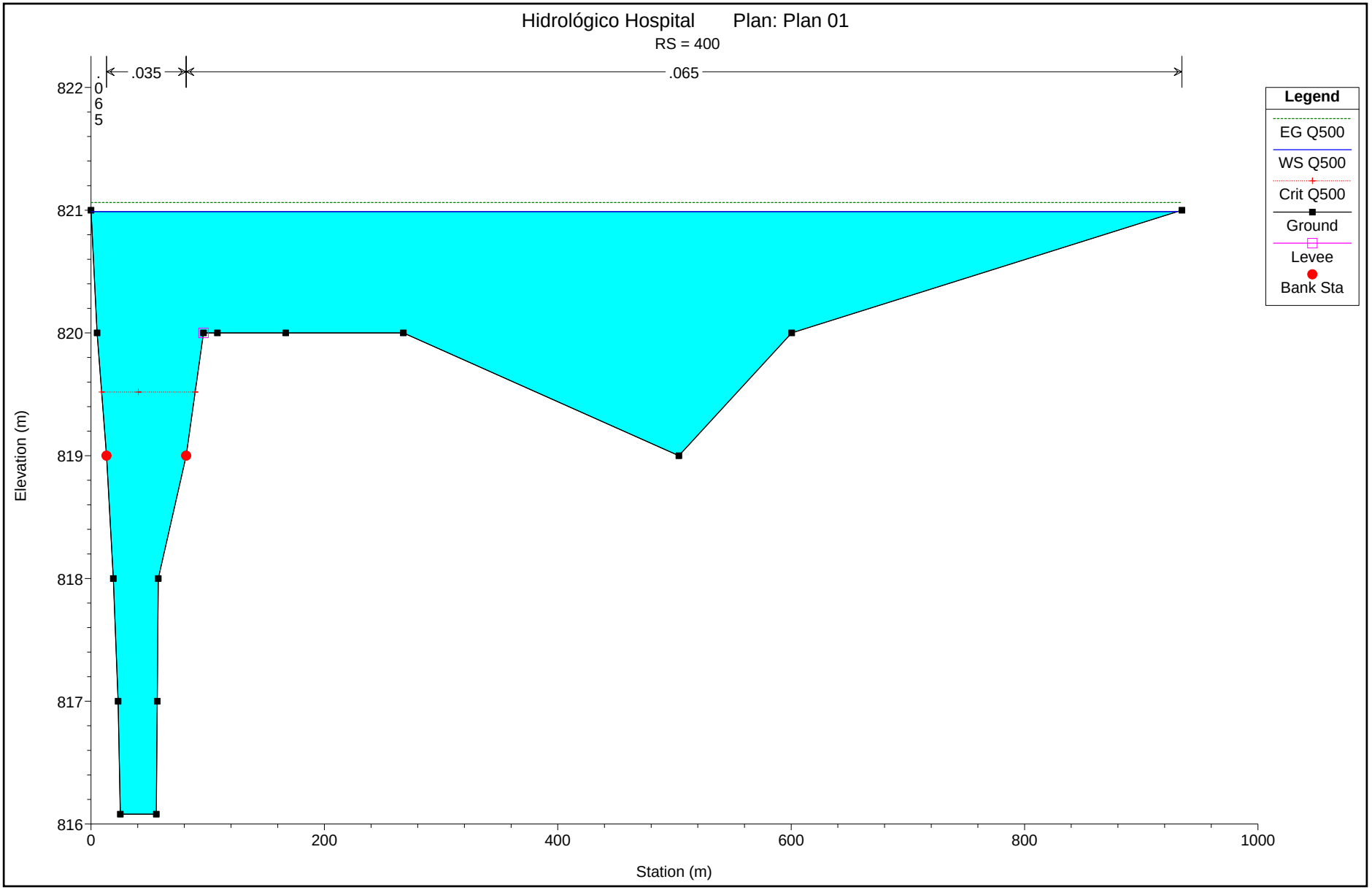
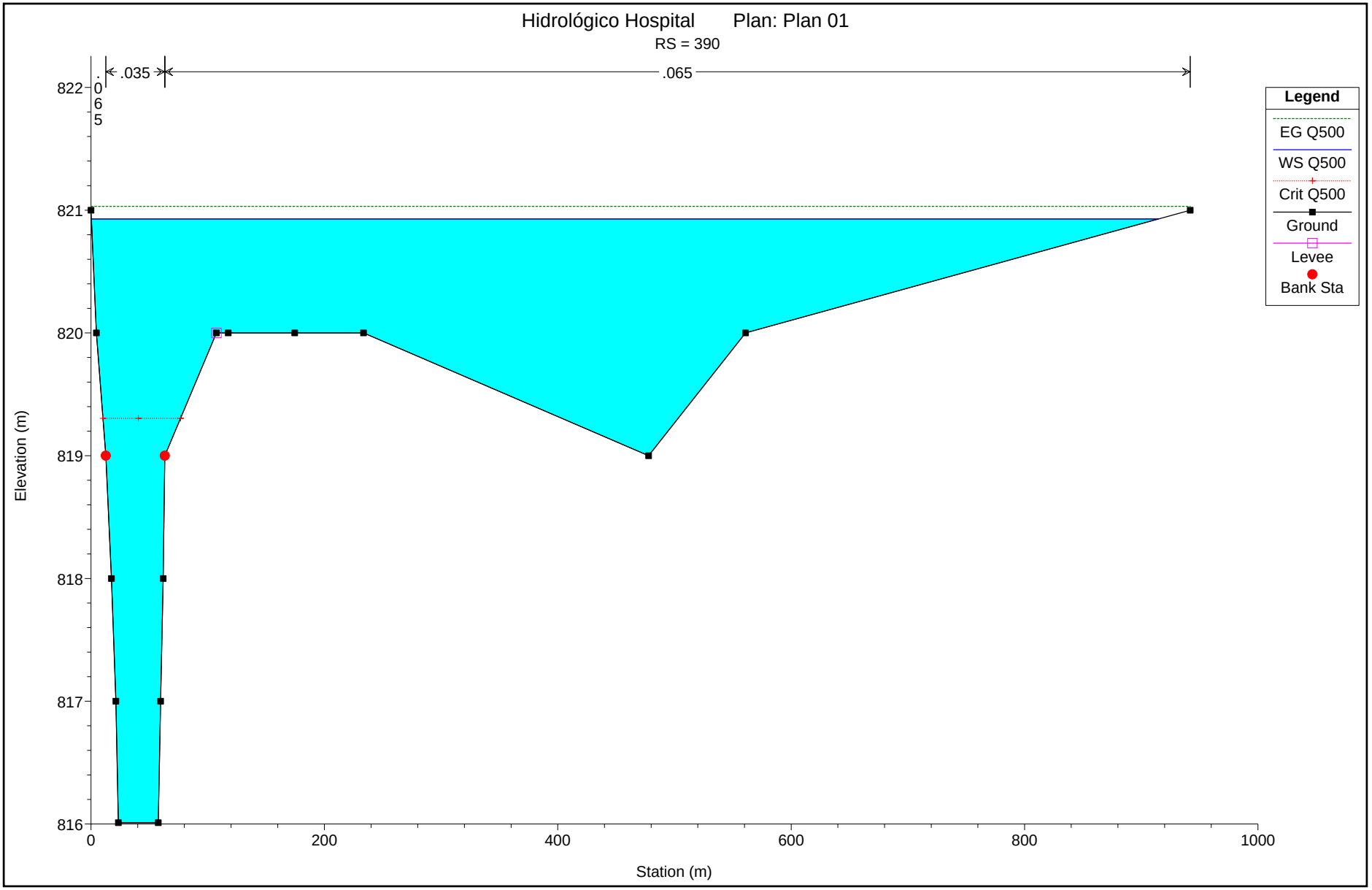
.065
.065
Legend
EG Q500
WS Q500
Ground
Bank Sta
Elevation (m)
822
821
820
819
818
817
816
0
200
400
600
800
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 400
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
822
821
820
819
818
817
816
0
200
400
600
800
1000


Hidrológico Hospital Plan: Plan 01
RS = 390
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Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
822
821
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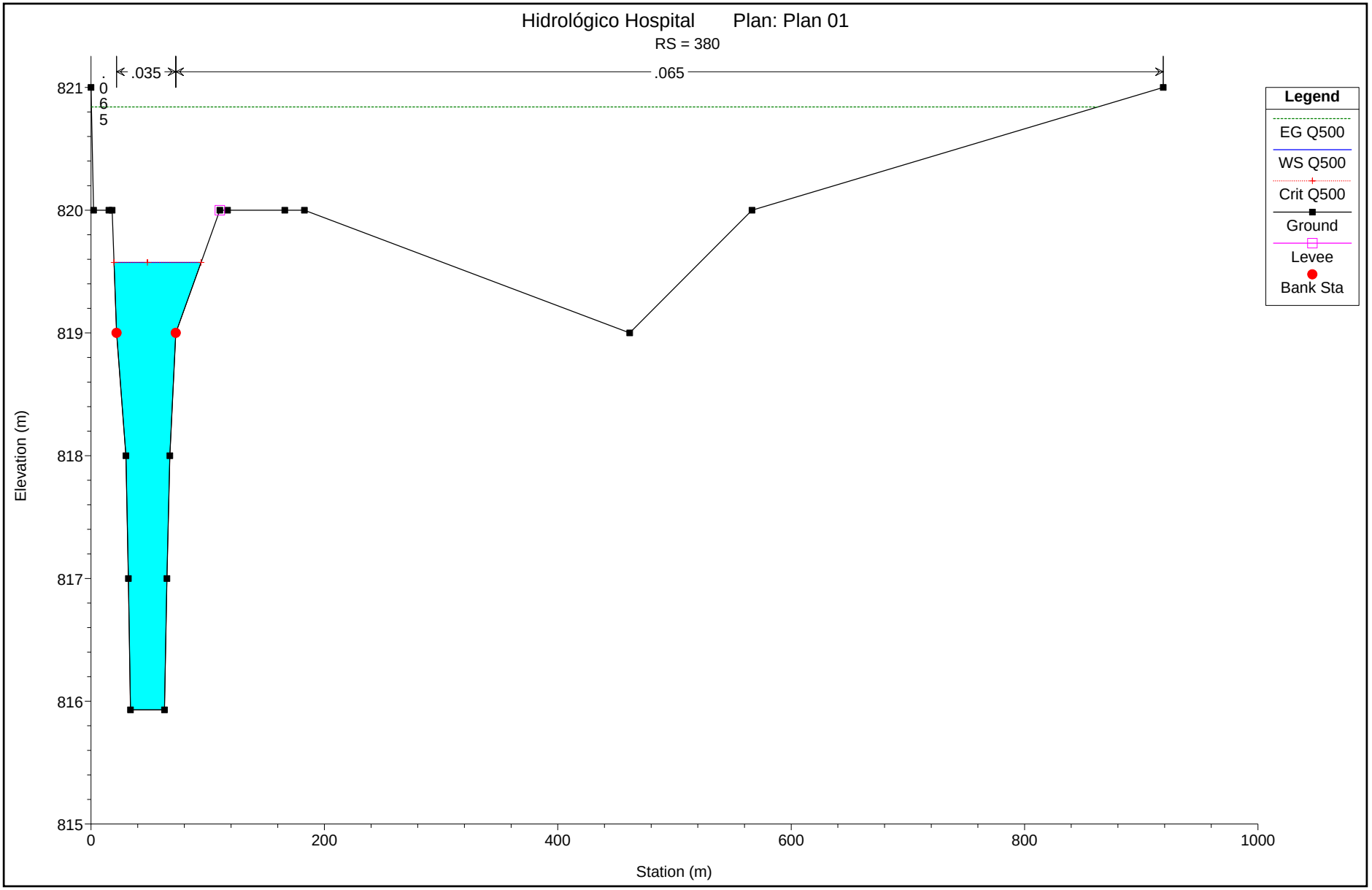
818
817
816
0
200
400
600
800
1000
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 380
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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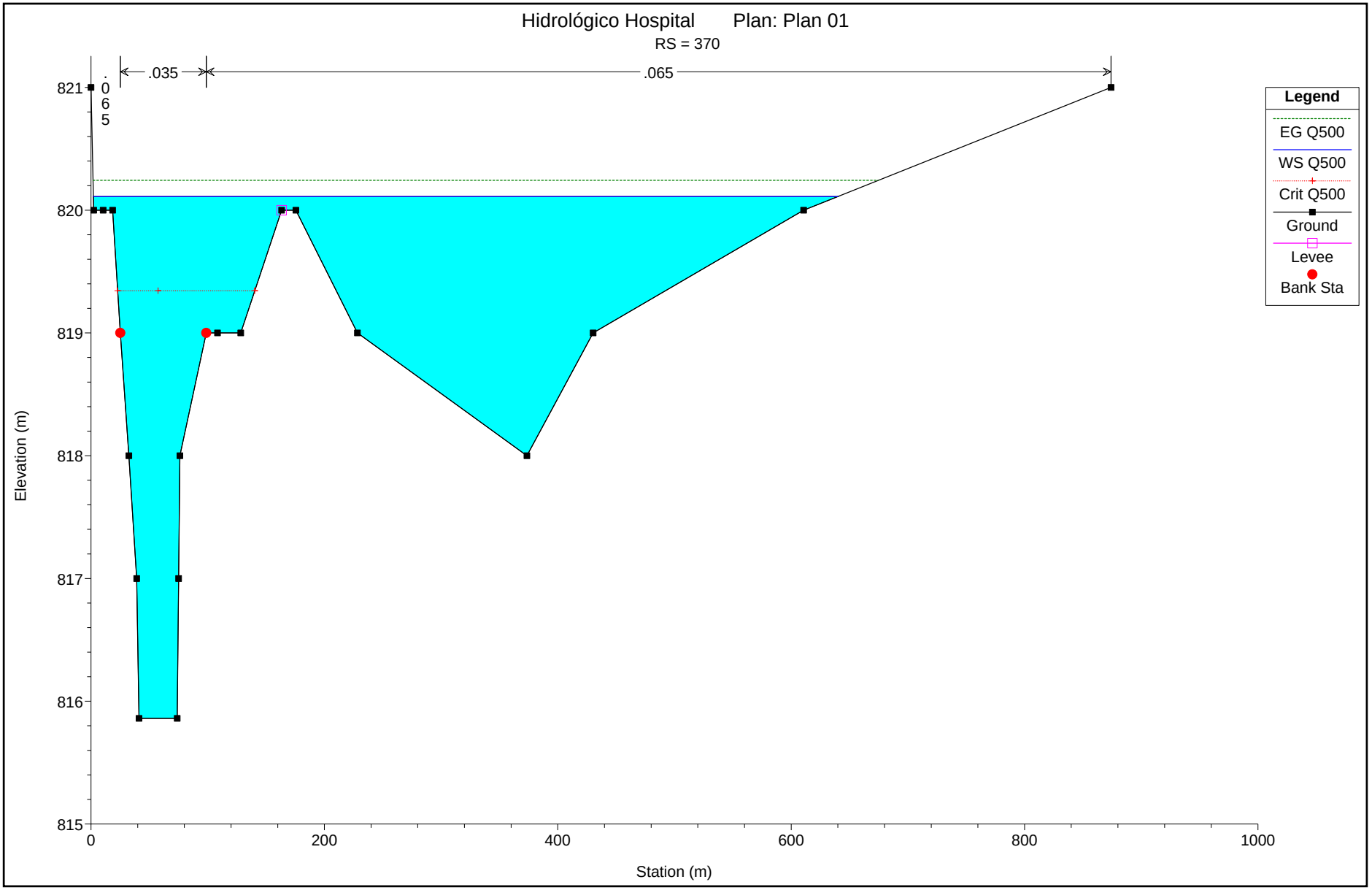
819
818
817
816
815
0
200
400
600
800
1000


Hidrológico Hospital Plan: Plan 01
RS = 370
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Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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816
815
0
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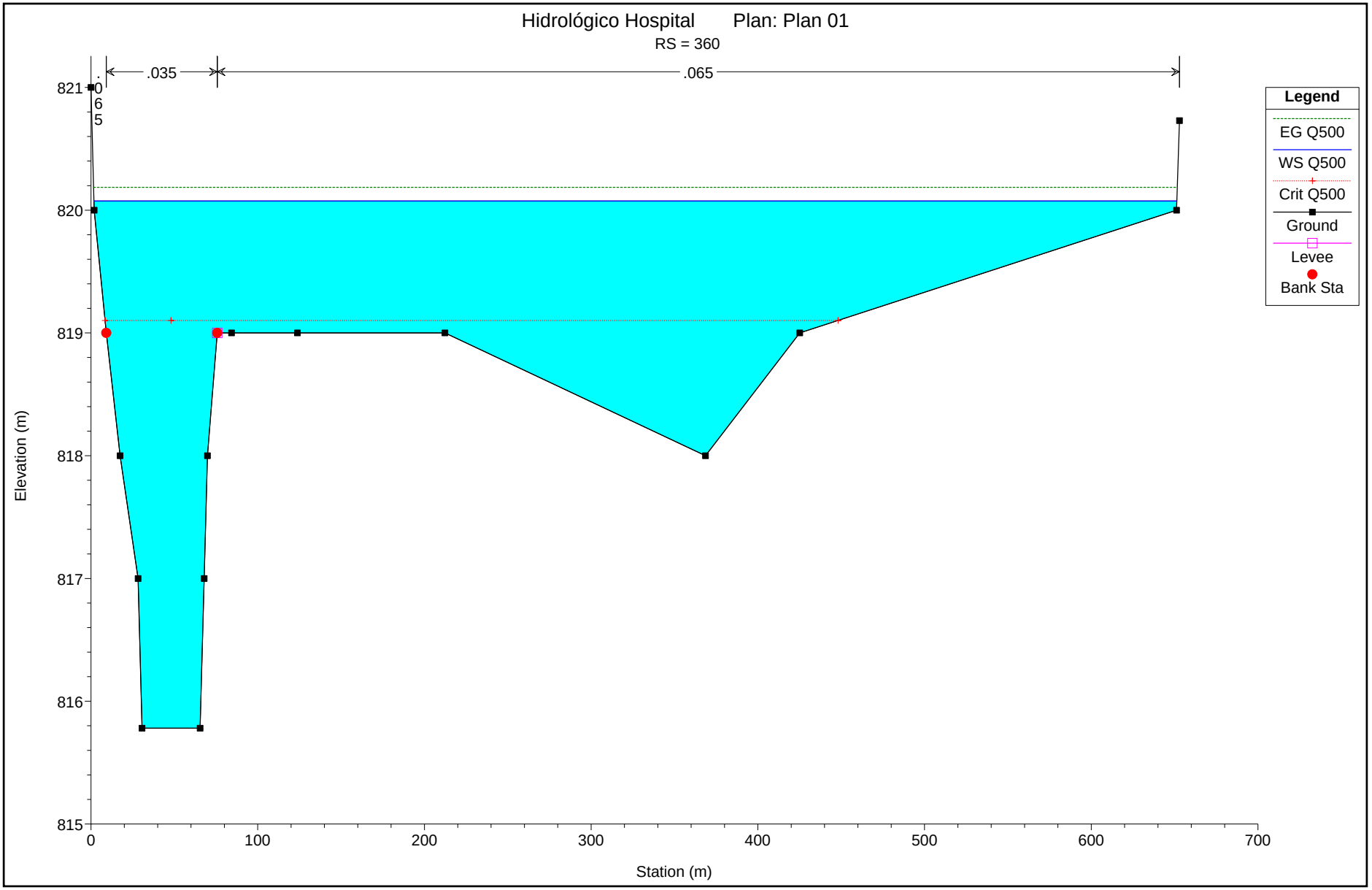
400
600
800
1000


Hidrológico Hospital Plan: Plan 01
RS = 360
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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820
819
818
817
816
815
0
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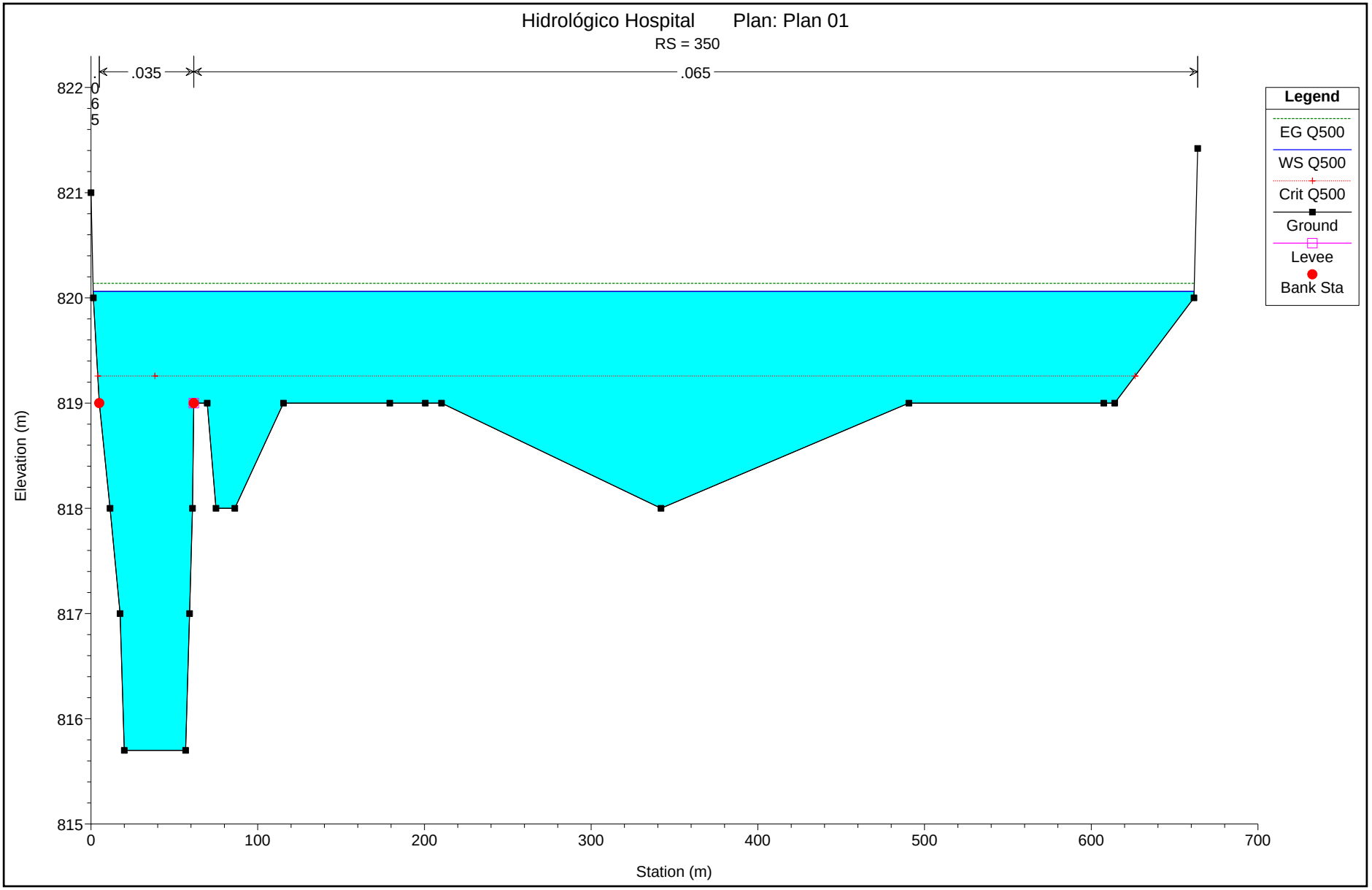
200
300
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 350
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.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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821
820
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818
817
816
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0
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600
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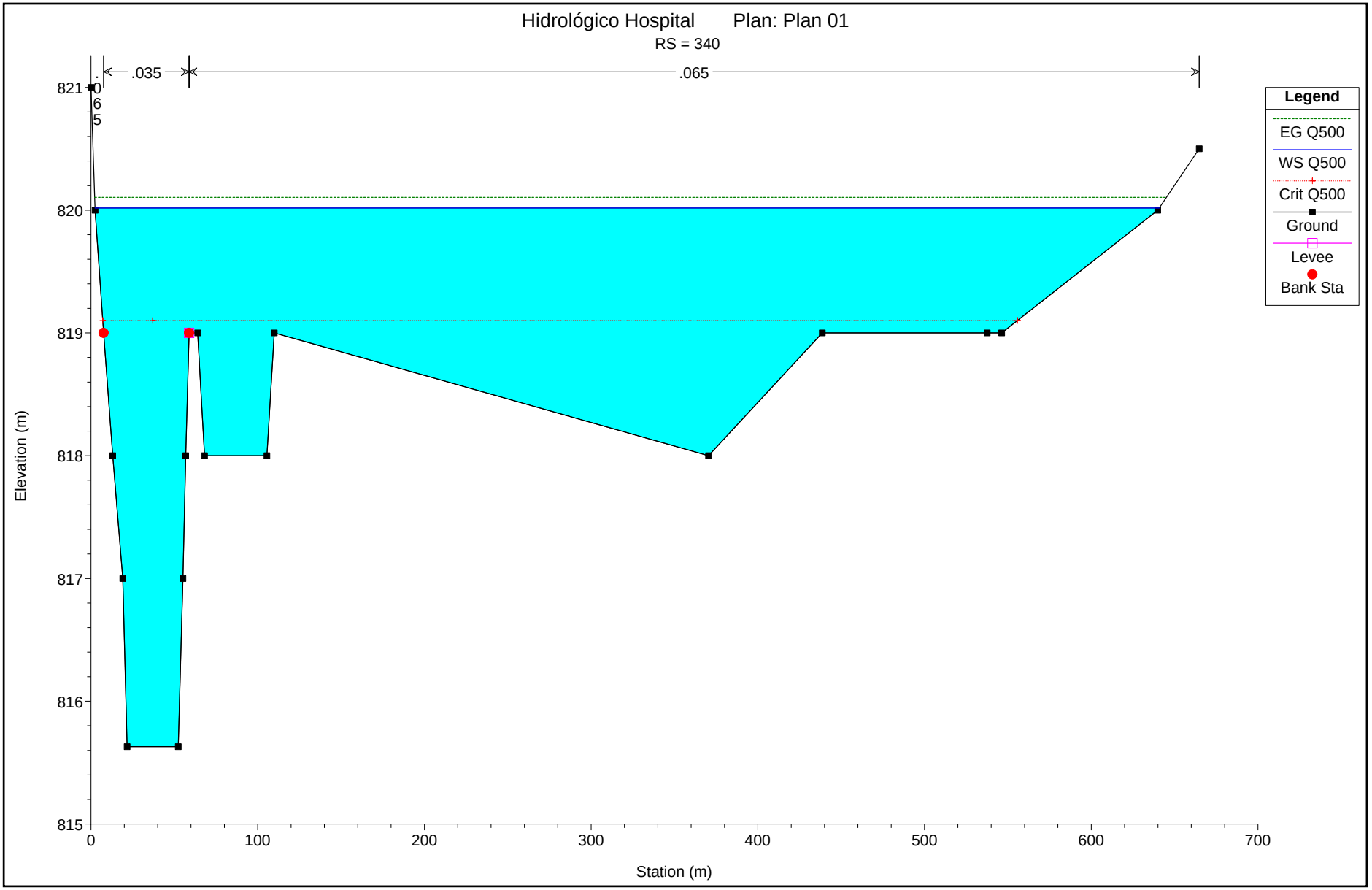
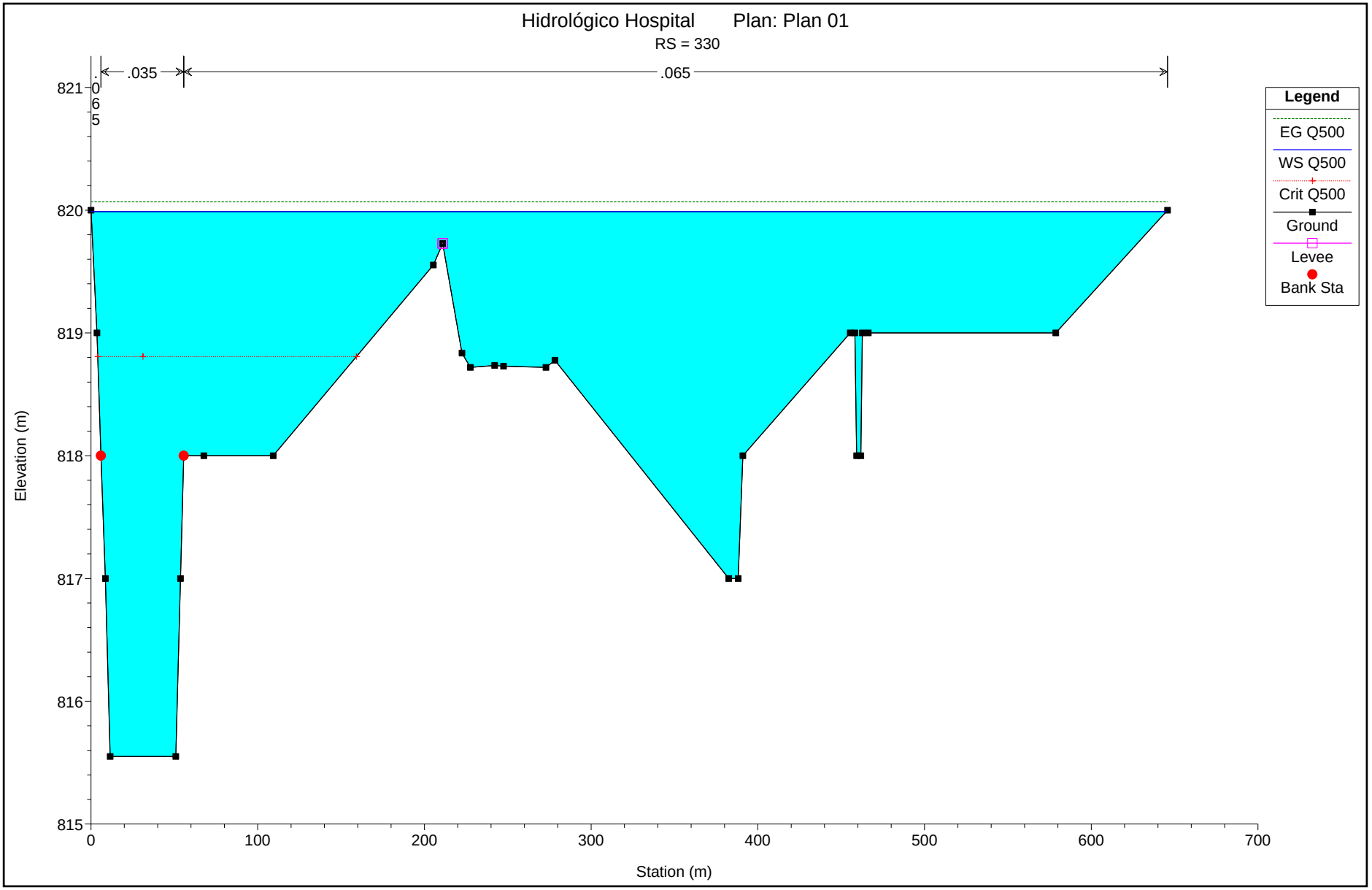

Hidrológico Hospital Plan: Plan 01
RS = 340
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
100
200
300
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 330
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
100
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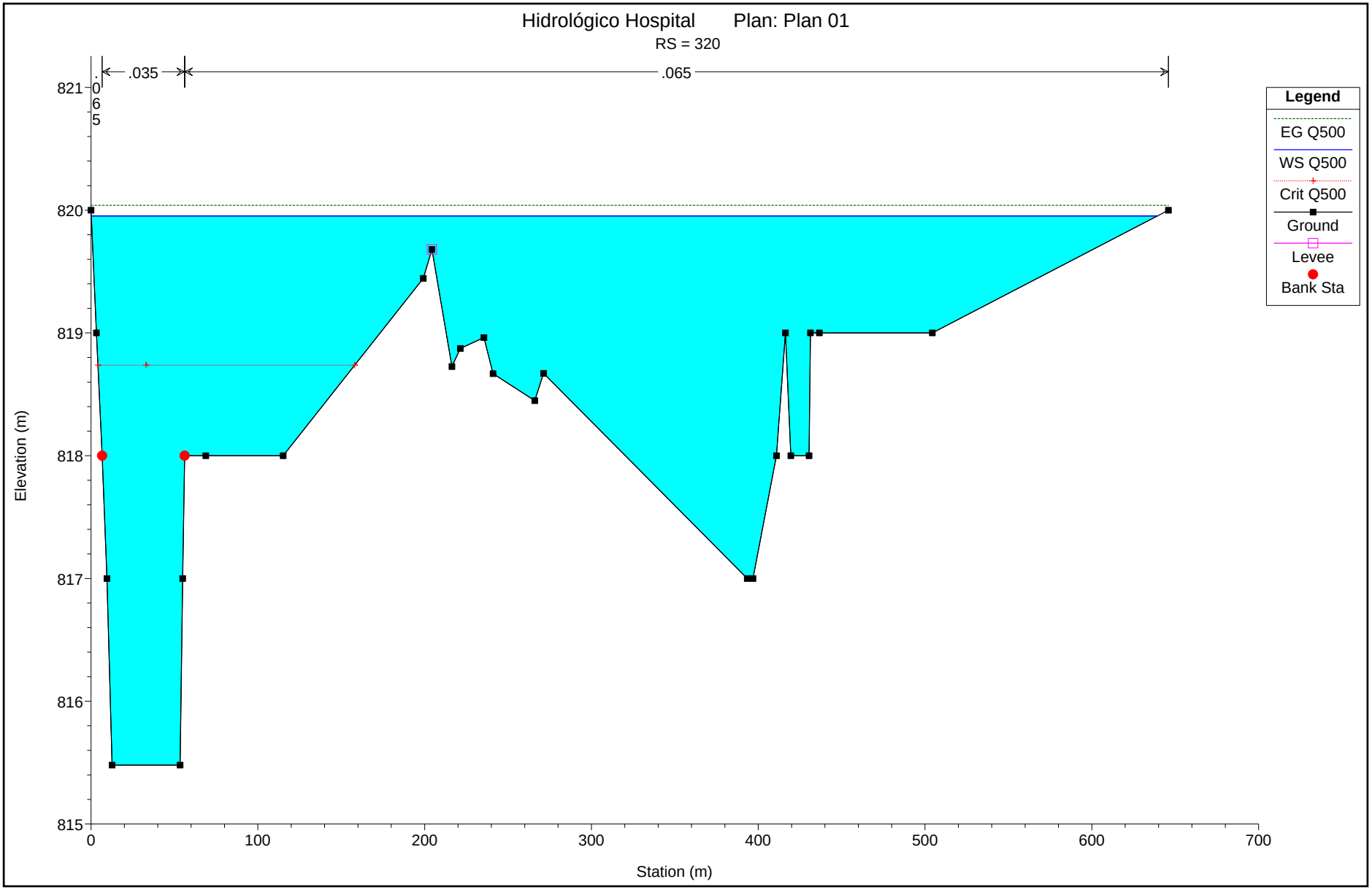
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 320
.035
.065
.
0
6
5
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
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816
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0
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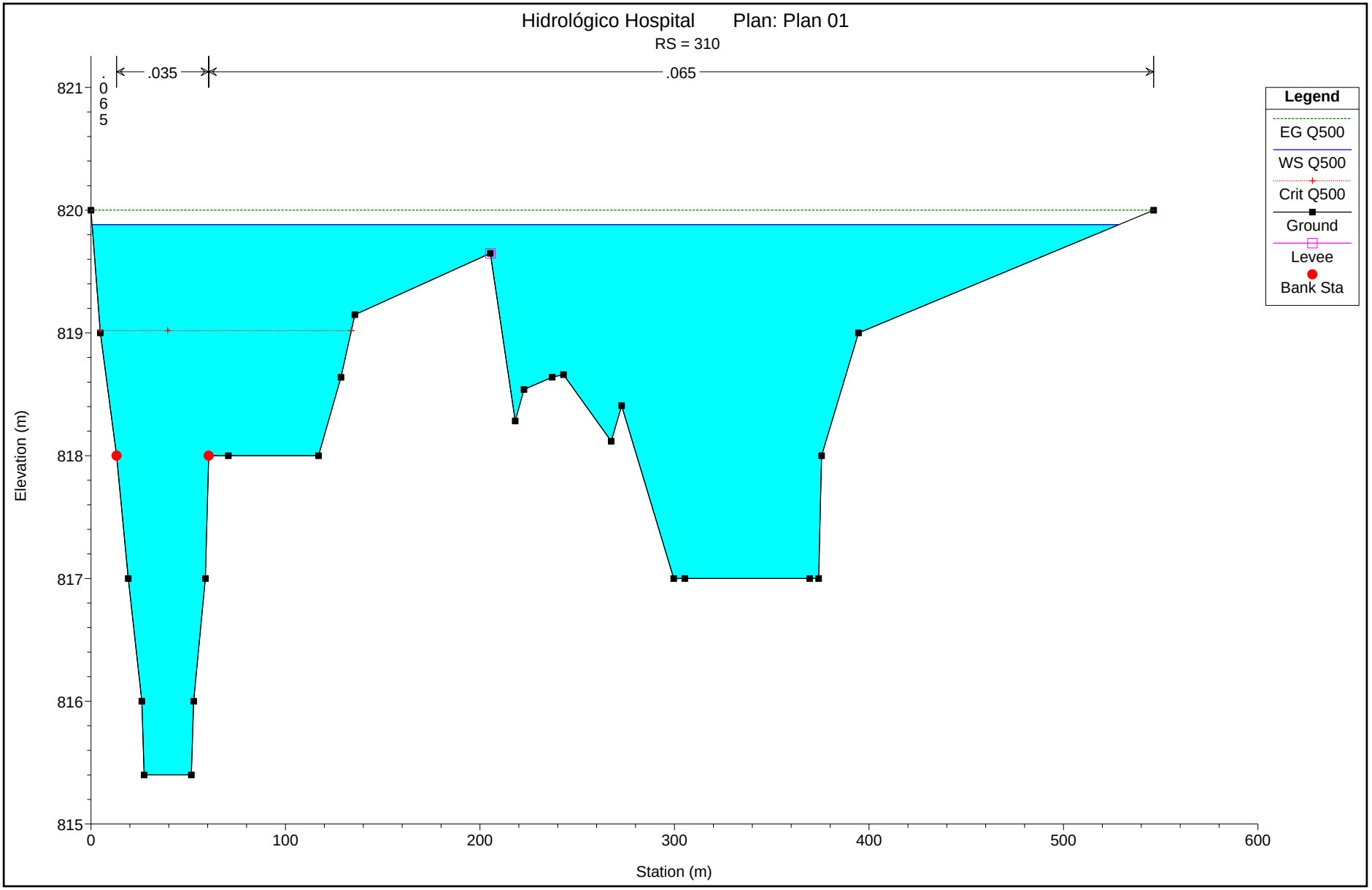
400
500
600
700


Hidrológico Hospital Plan: Plan 01
RS = 310
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
0
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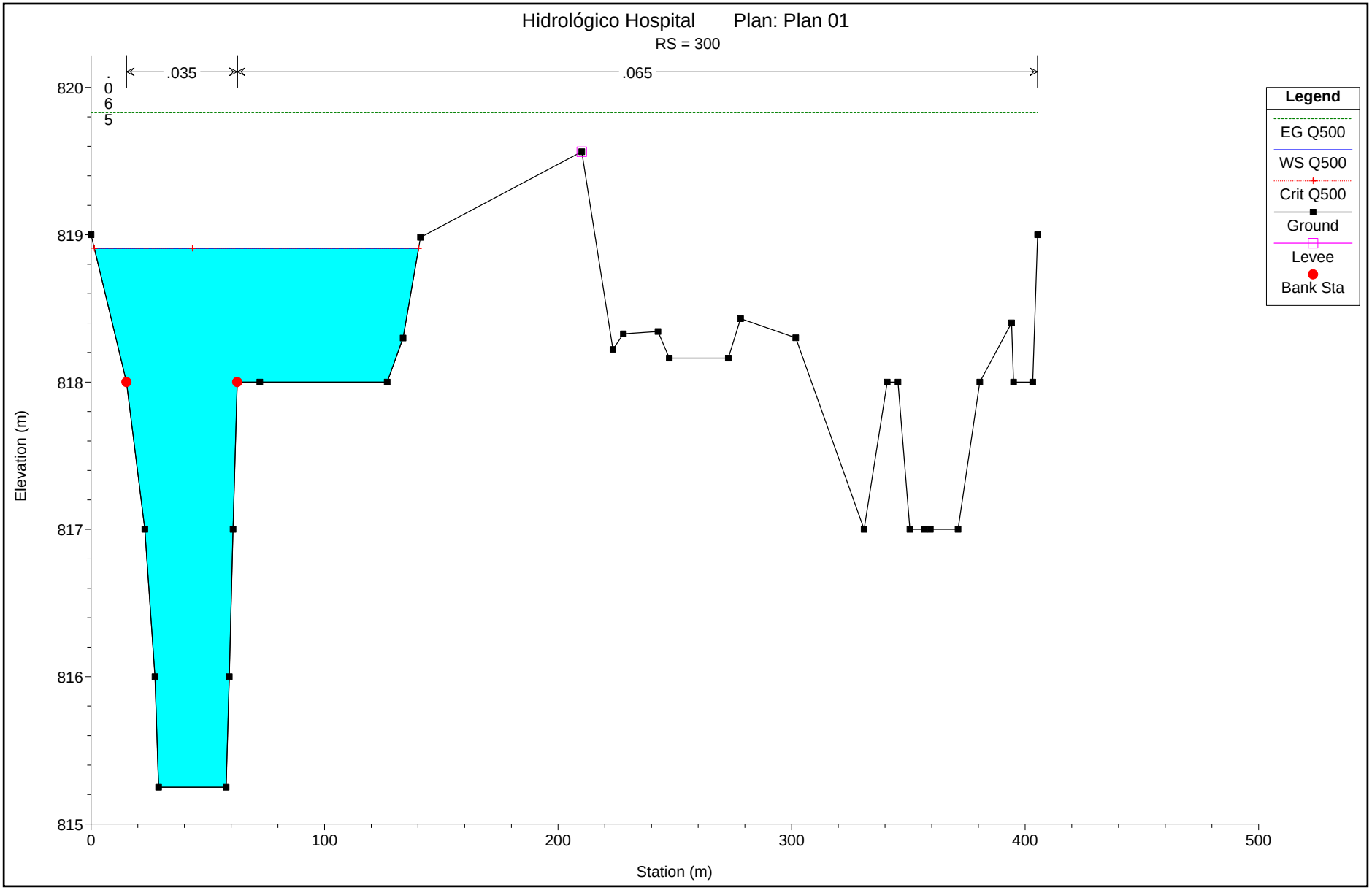
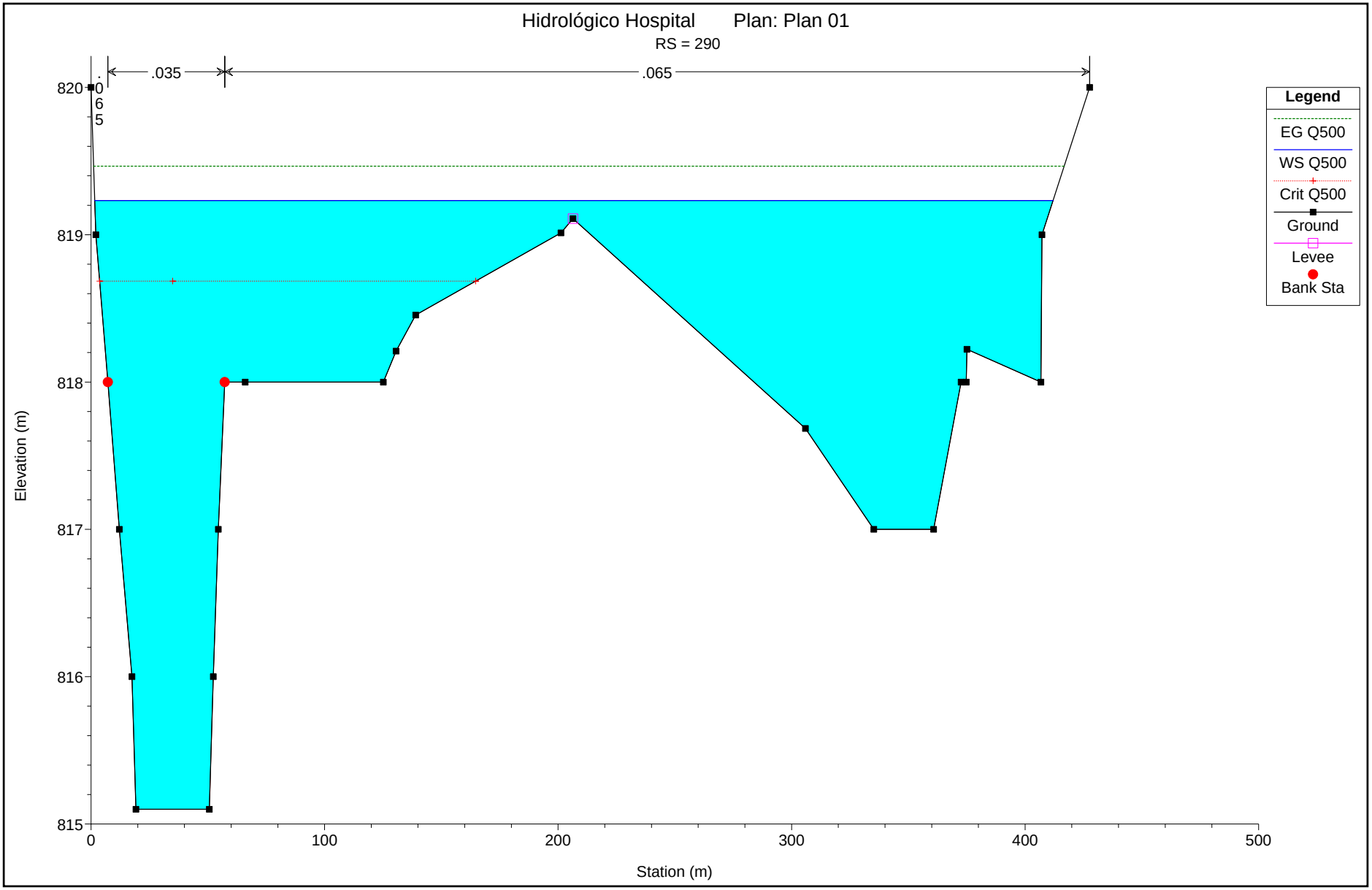
200
300
400
500
600


Hidrológico Hospital Plan: Plan 01
RS = 300
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
820
819
818
817
816
815
0
100
200
300
400
500


Hidrológico Hospital Plan: Plan 01
RS = 290
.035
.065
.065
820
819
818
817
816
815
Elevation (m)
0
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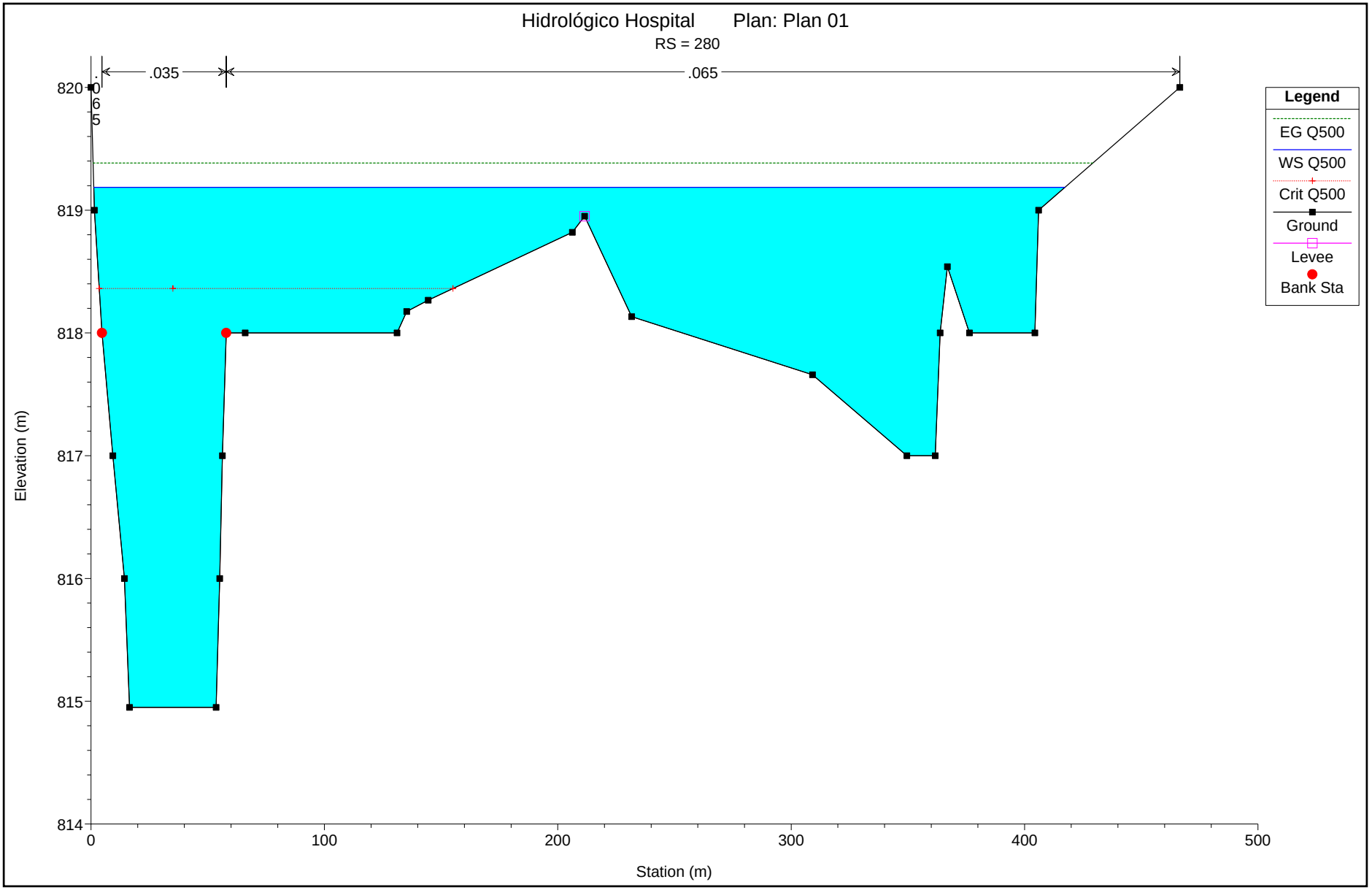
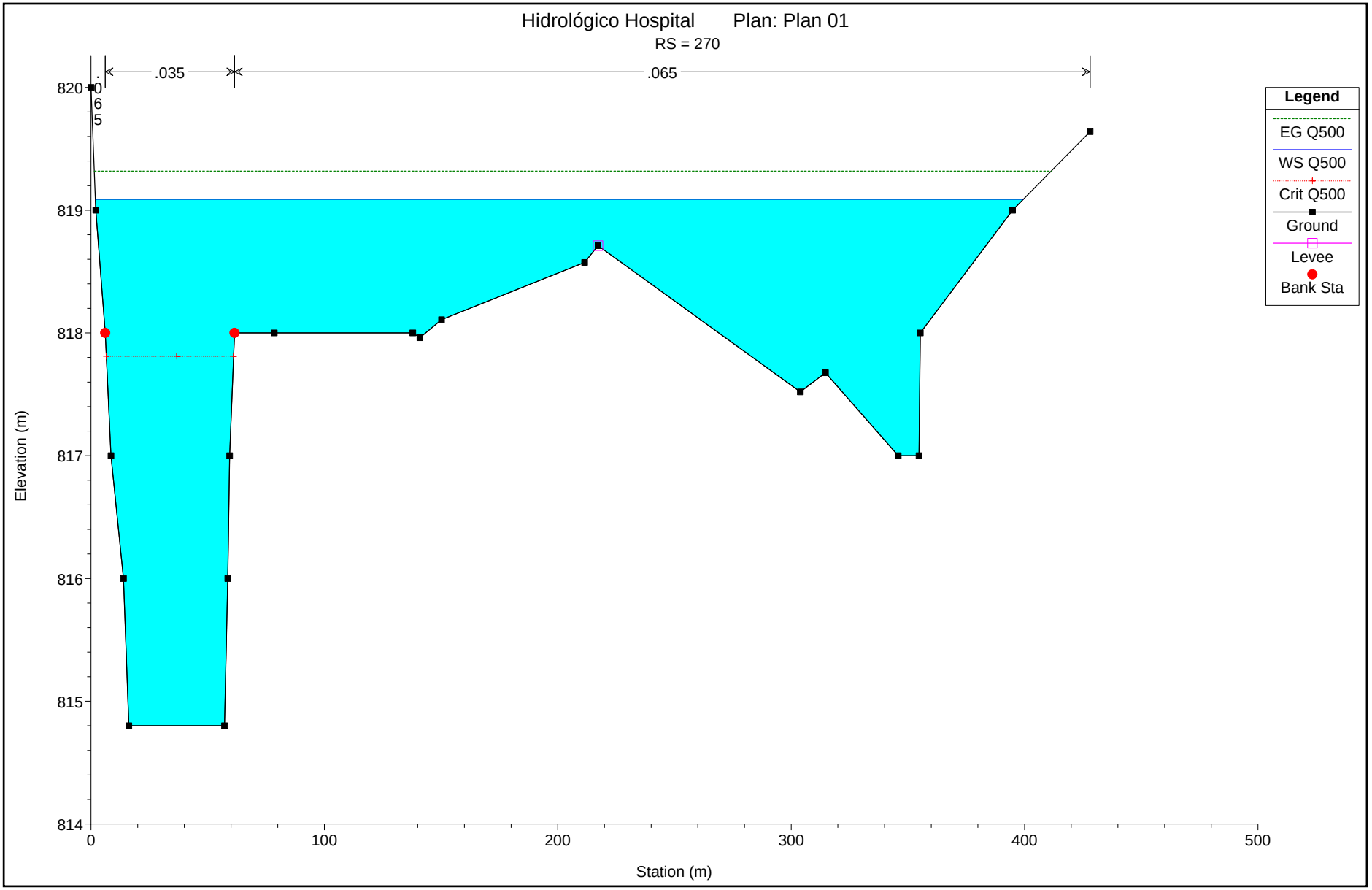
200
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 280
.035
.065
.065
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 270
.035
.065
.
0
6
5
820
819
818
817
816
815
814
Elevation (m)
0
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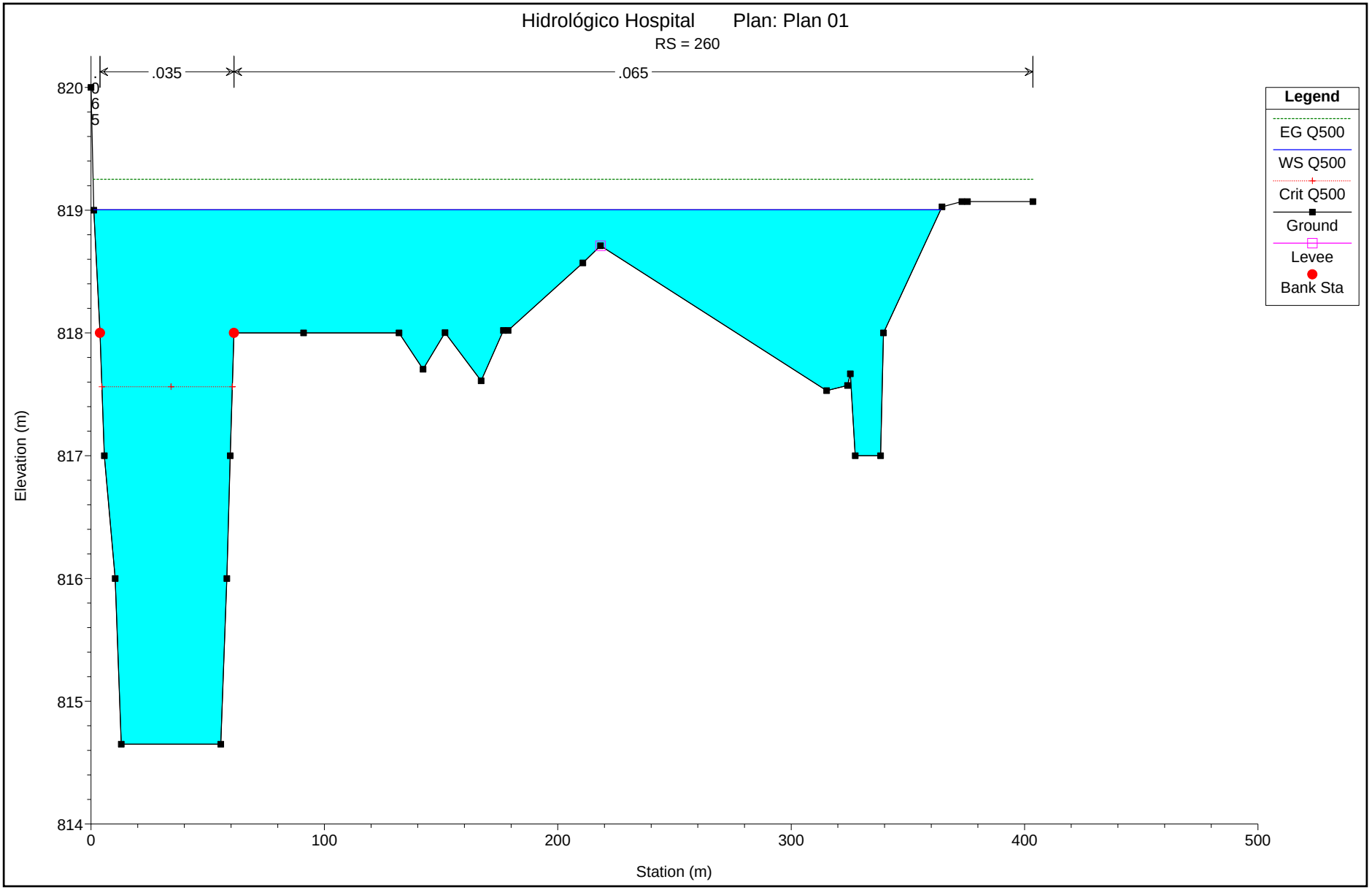
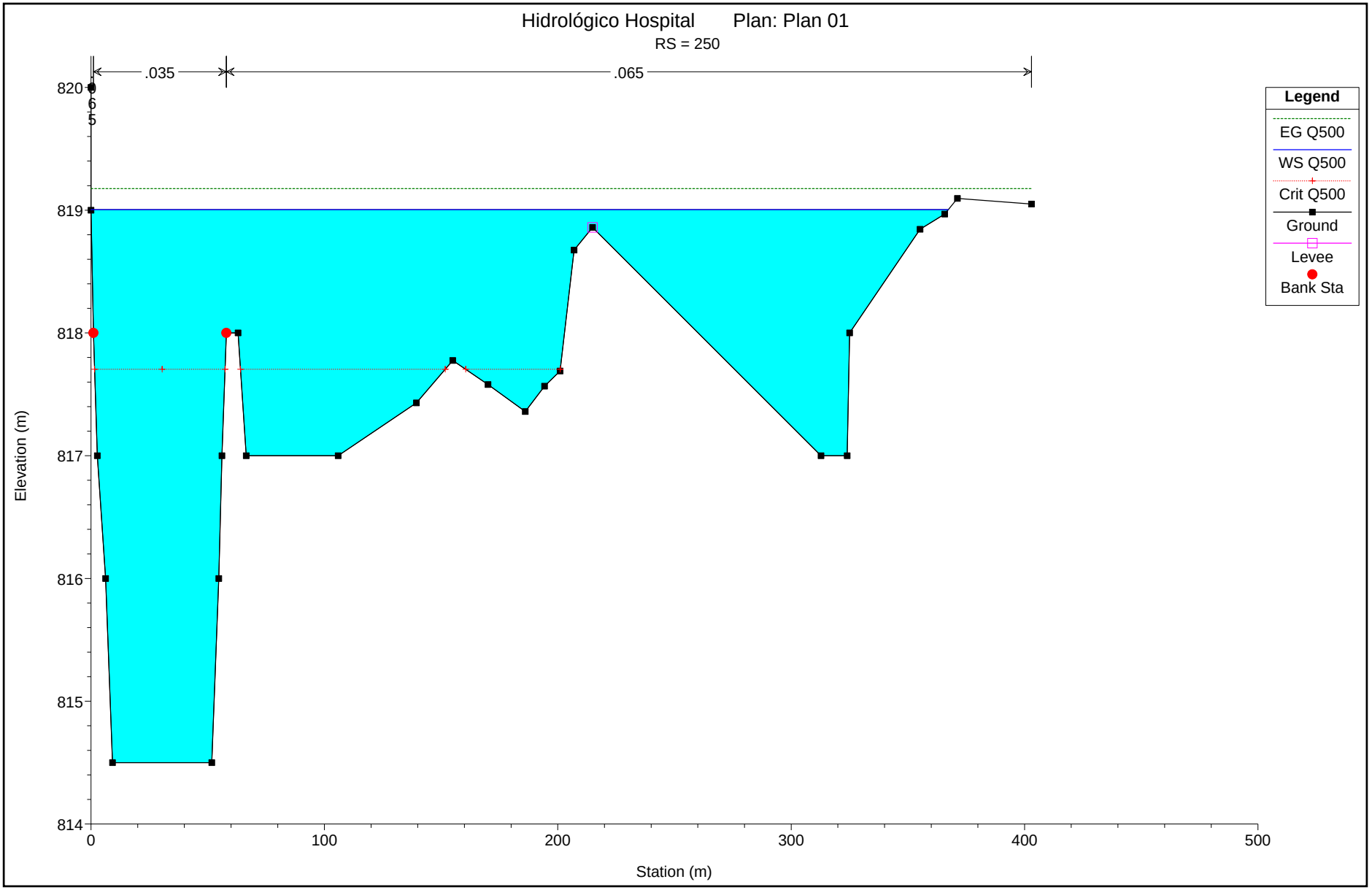
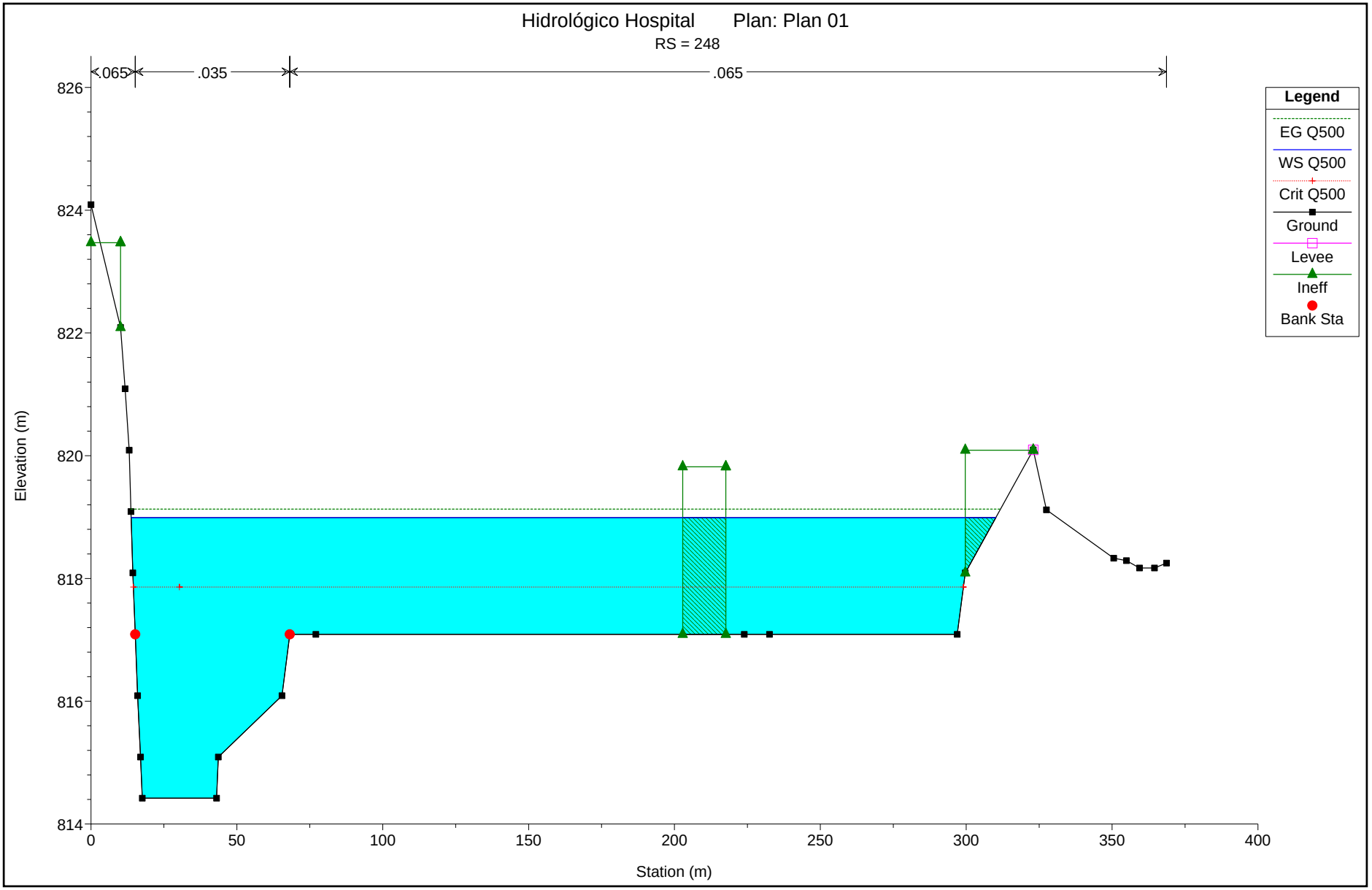
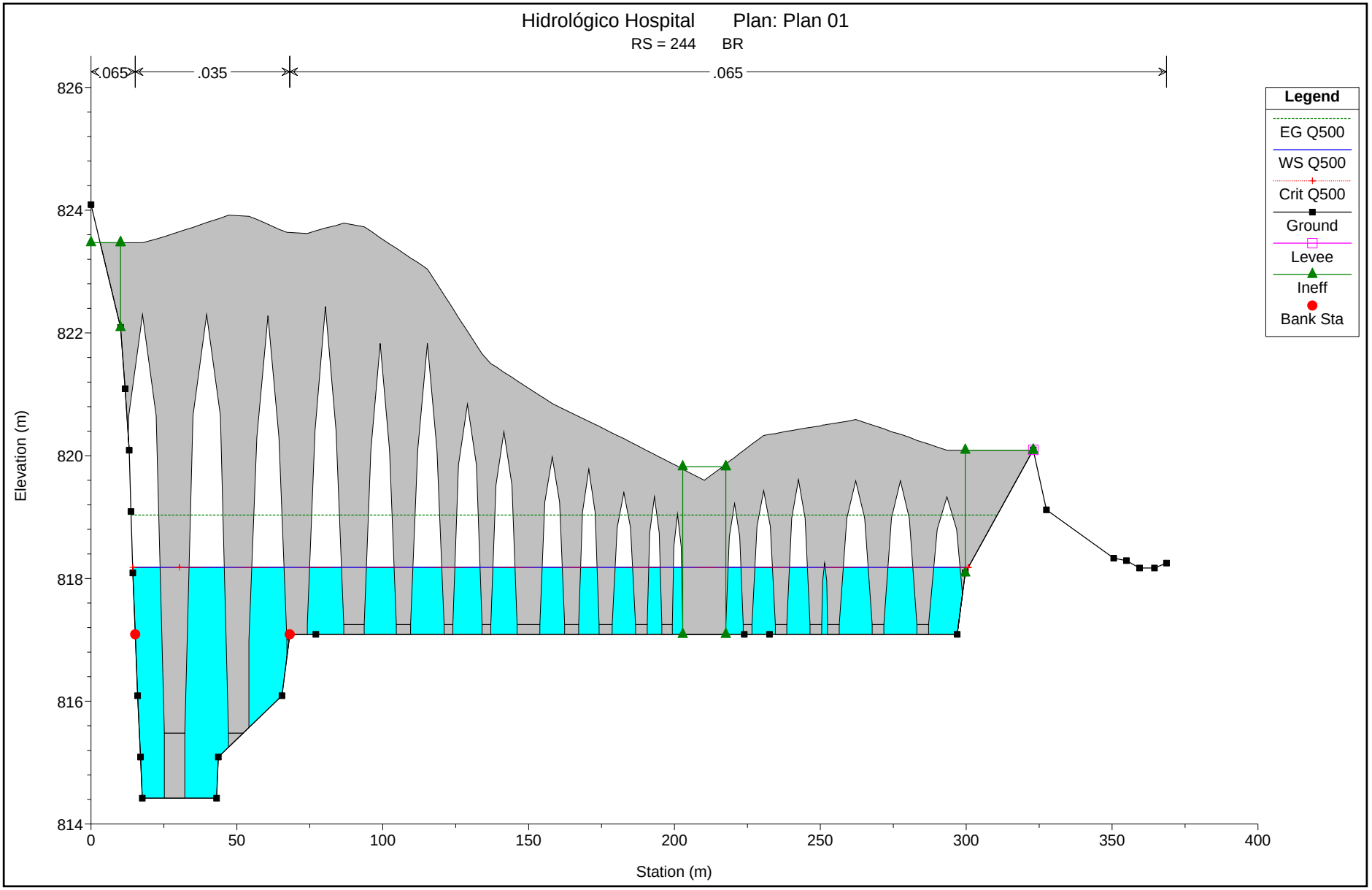
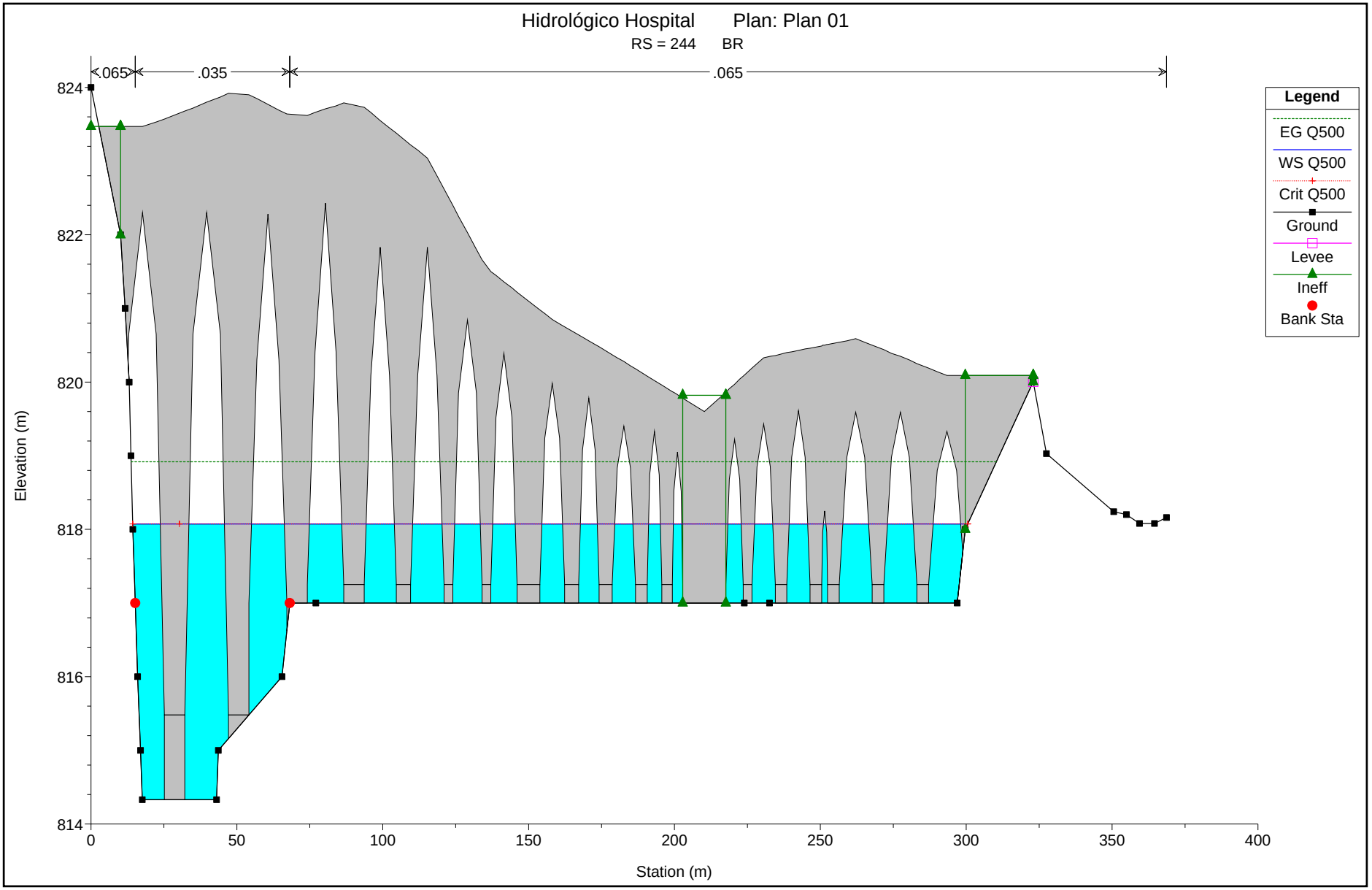
200
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 260
.035
.065
.065
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 250
.035
.065
820
819
818
817
816
815
814
Elevation (m)
0
100
200
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 248
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
826
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 244 BR
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
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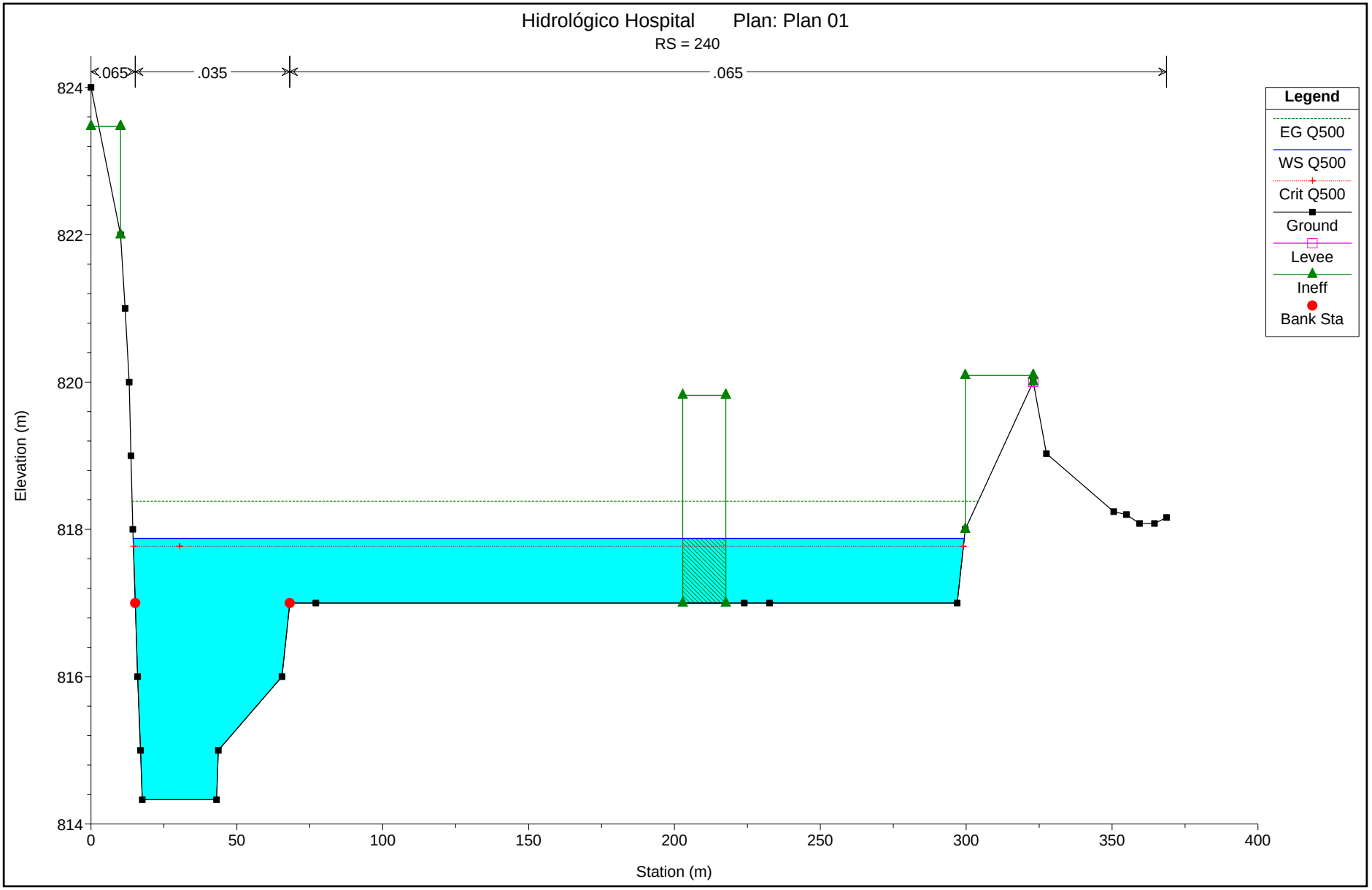
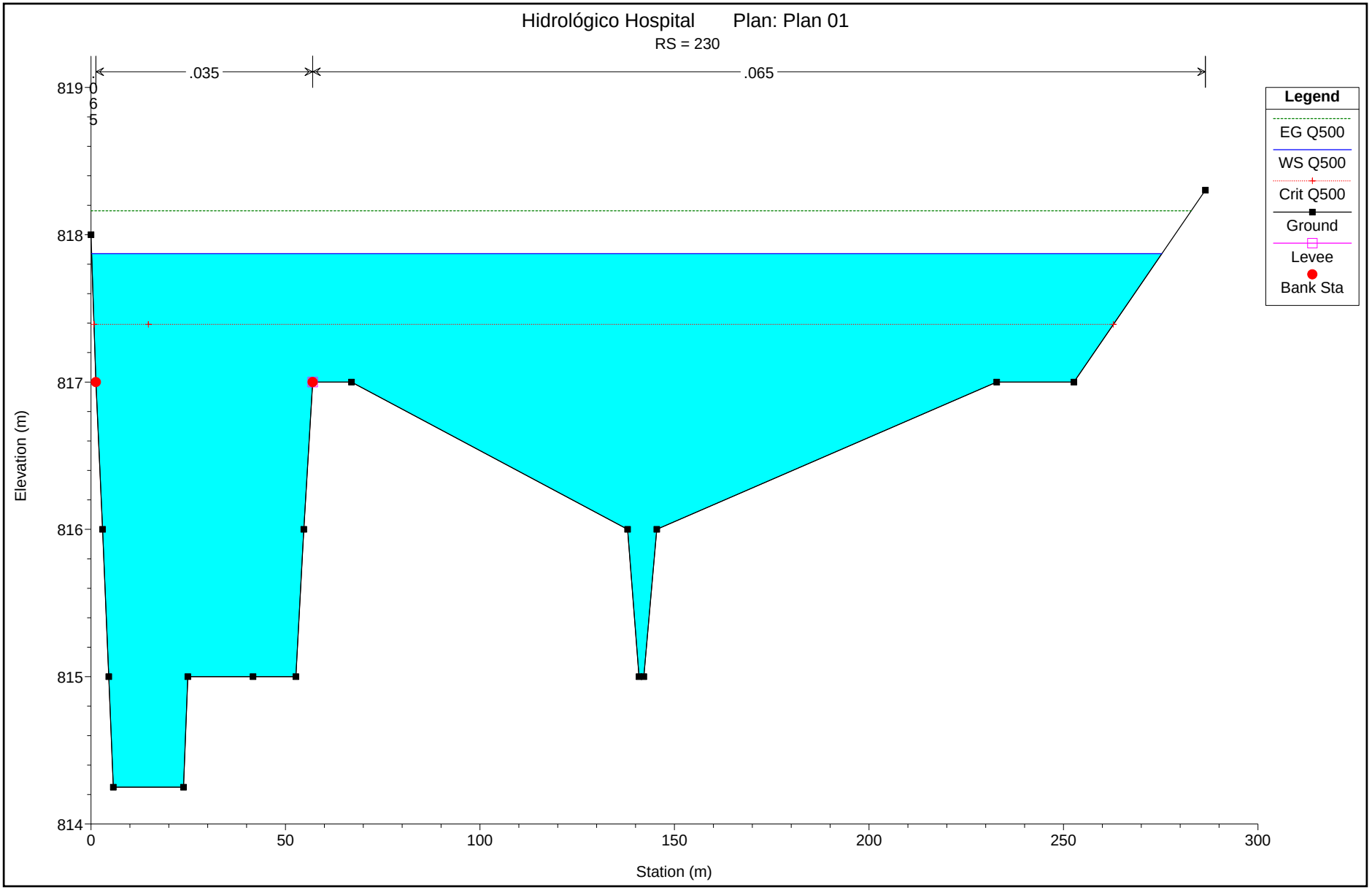
300
350
400
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 240
.065
.035
.065
824
822
820
818
816
814
Elevation (m)
0
50
100
150
200
250
300
350
400
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 230
.035
.065
0
6
5
819
818
817
816
815
814
Elevation (m)
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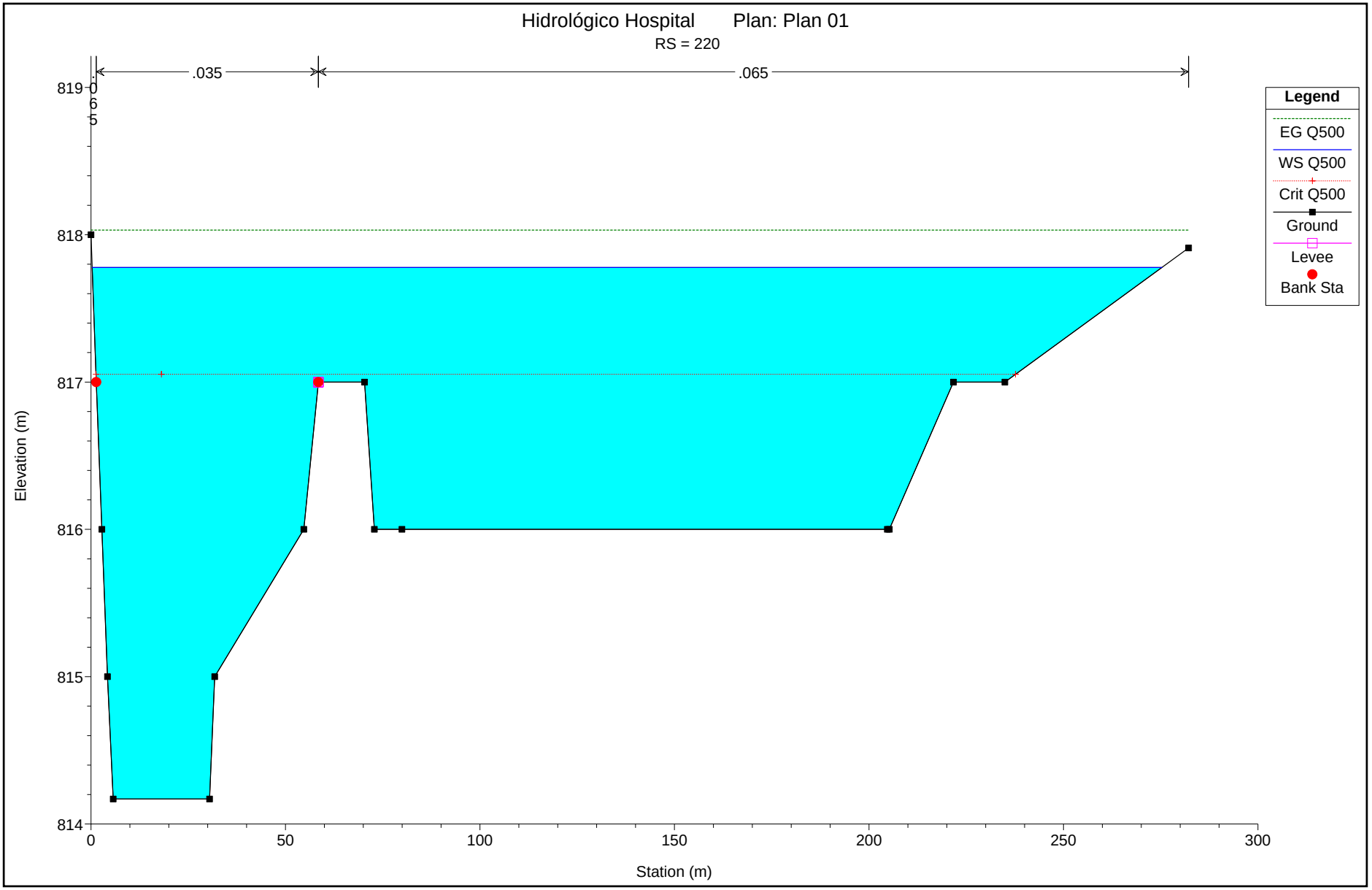
50
100
150
200
250
300
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 220
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.065
0
6
5
819
818
817
816
815
814
Elevation (m)
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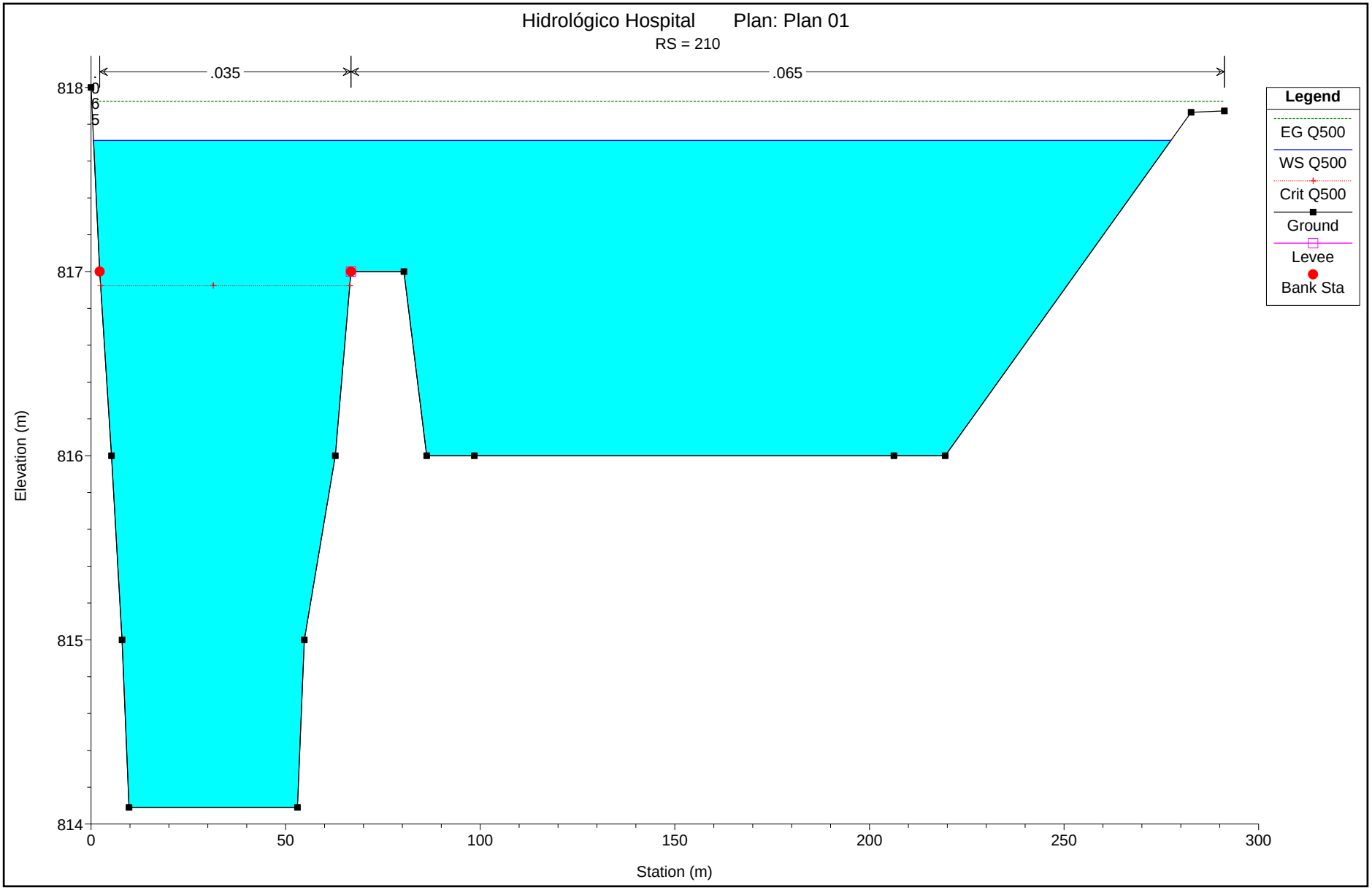
150
200
250
300
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 210
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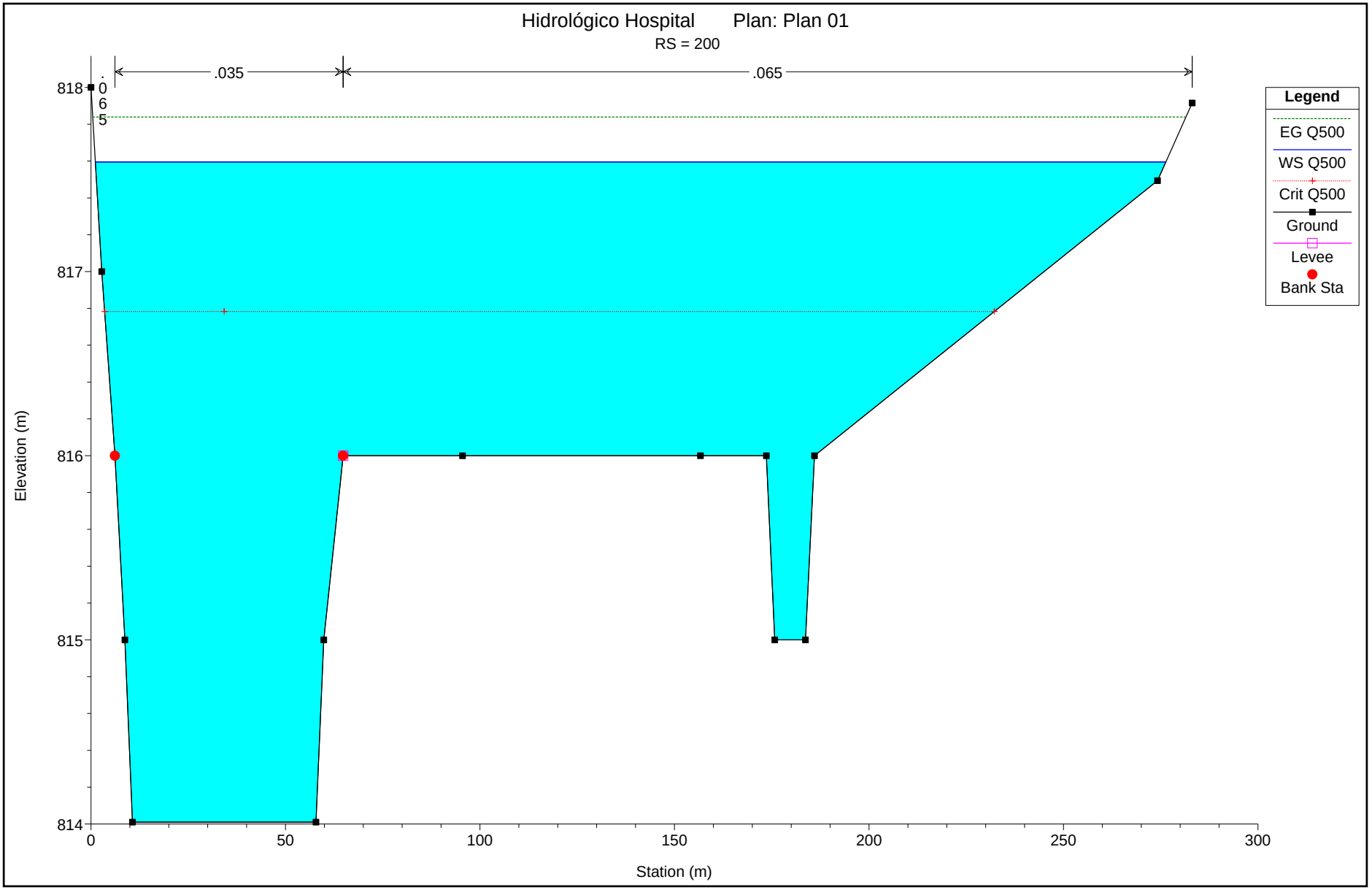
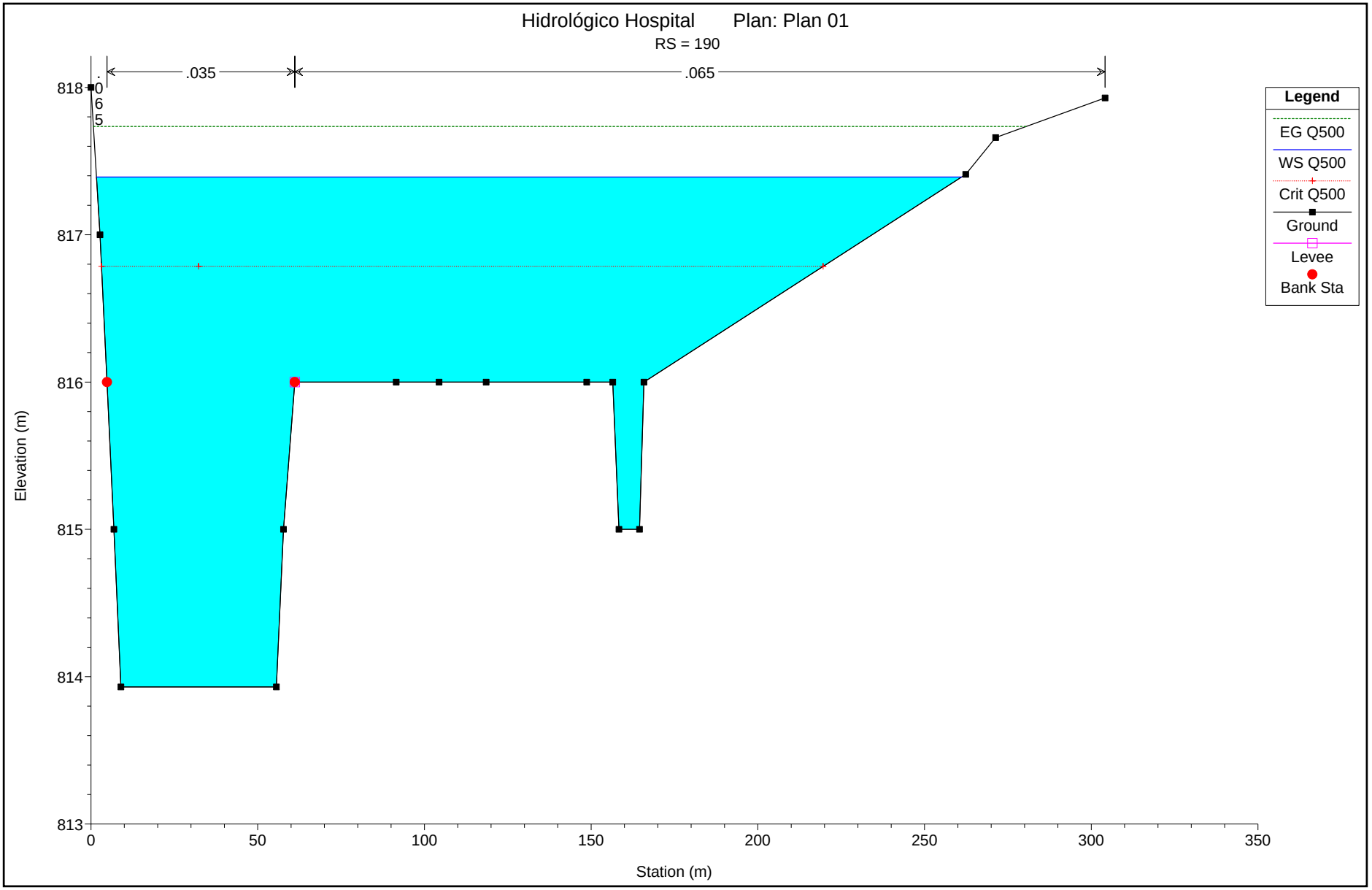
.065
.06
.06
.06
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
818
817
816
815
814
0
50
100
150
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 200
.035
.065
.
0
6
5
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
818
817
816
815
814
0
50
100
150
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 190
.035
.065
.
0
6
5
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
813
0
50
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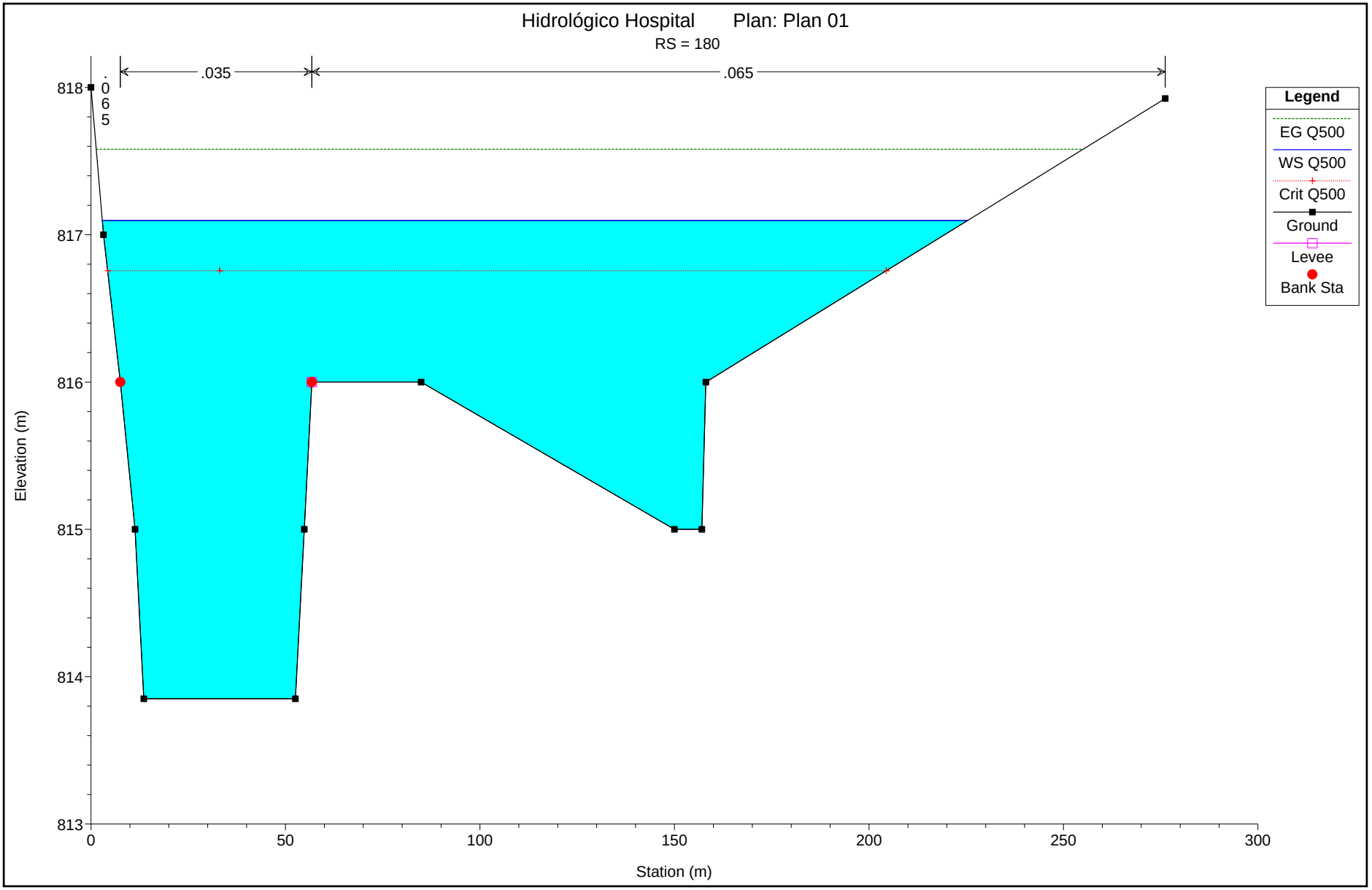
200
250
300
350


Hidrológico Hospital Plan: Plan 01
RS = 180
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
818
817
816
815
814
813
0
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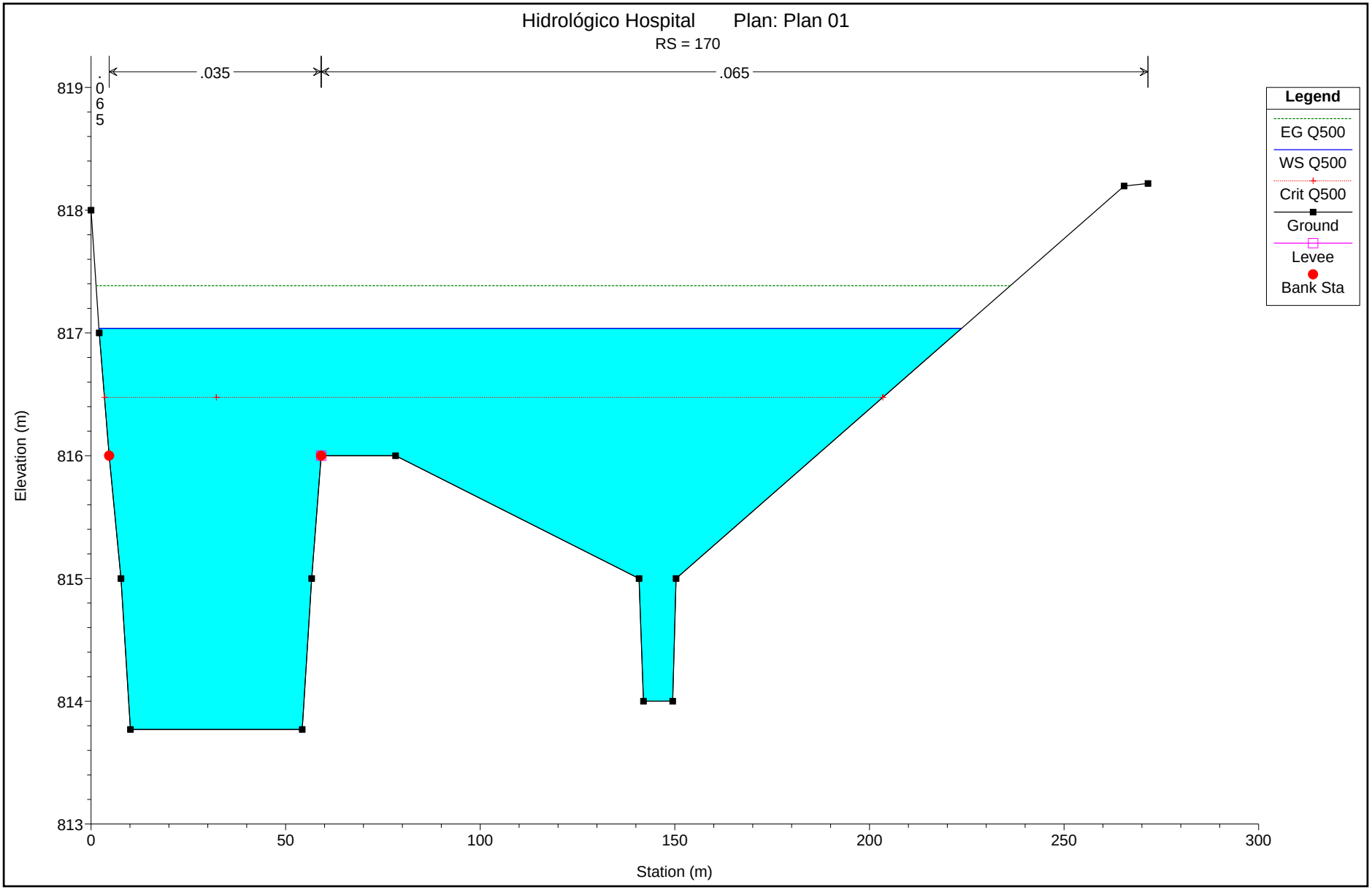
100
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 170
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
819
818
817
816
815
814
813
0
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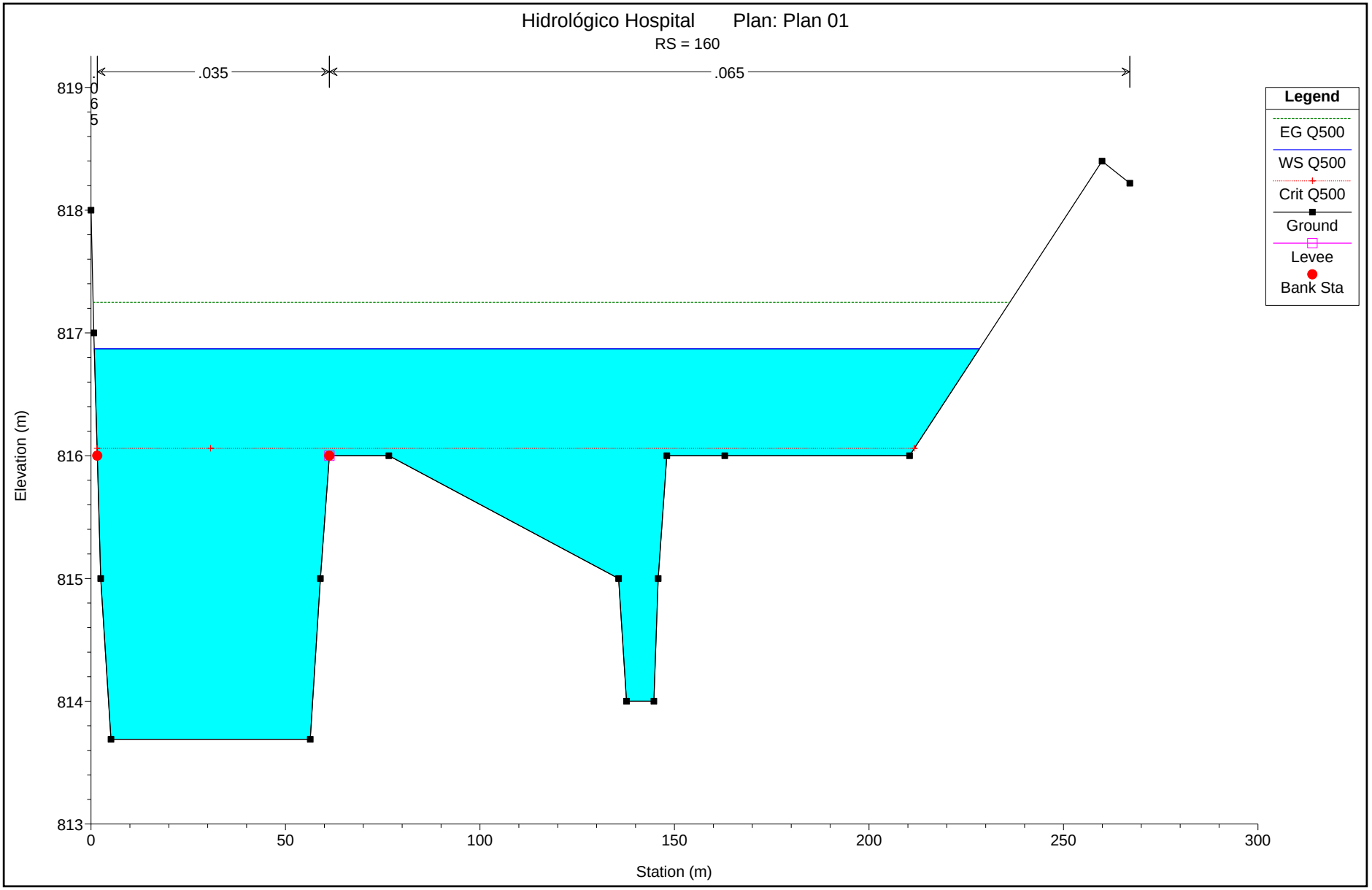
150
200
250
300


Hidrológico Hospital Plan: Plan 01
RS = 160
.035
.065
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
813
814
815
816
817
818
819
0
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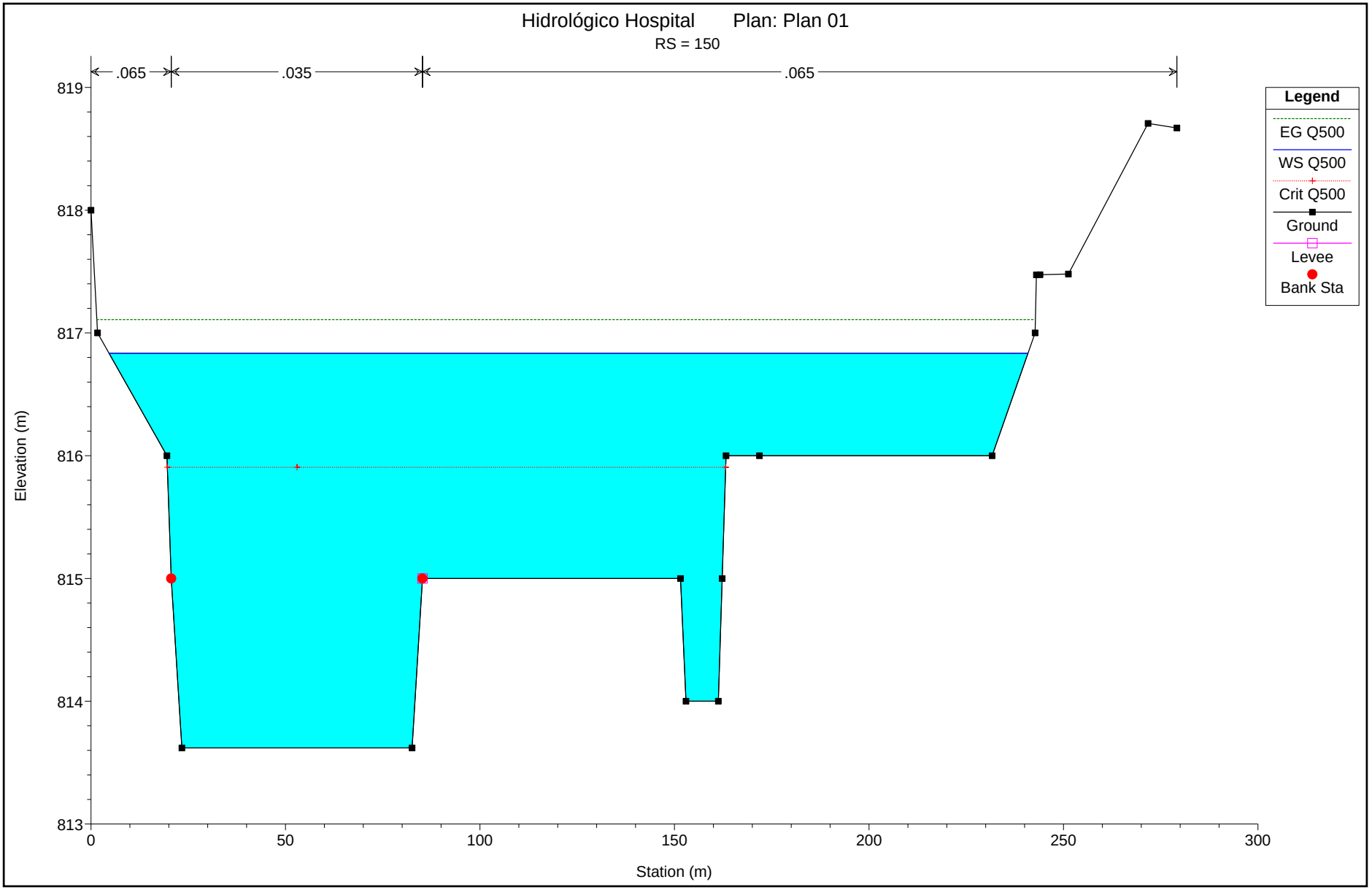
250
300


Hidrológico Hospital Plan: Plan 01
RS = 150
.065
.035
.065
819
818
817
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815
814
813
Elevation (m)
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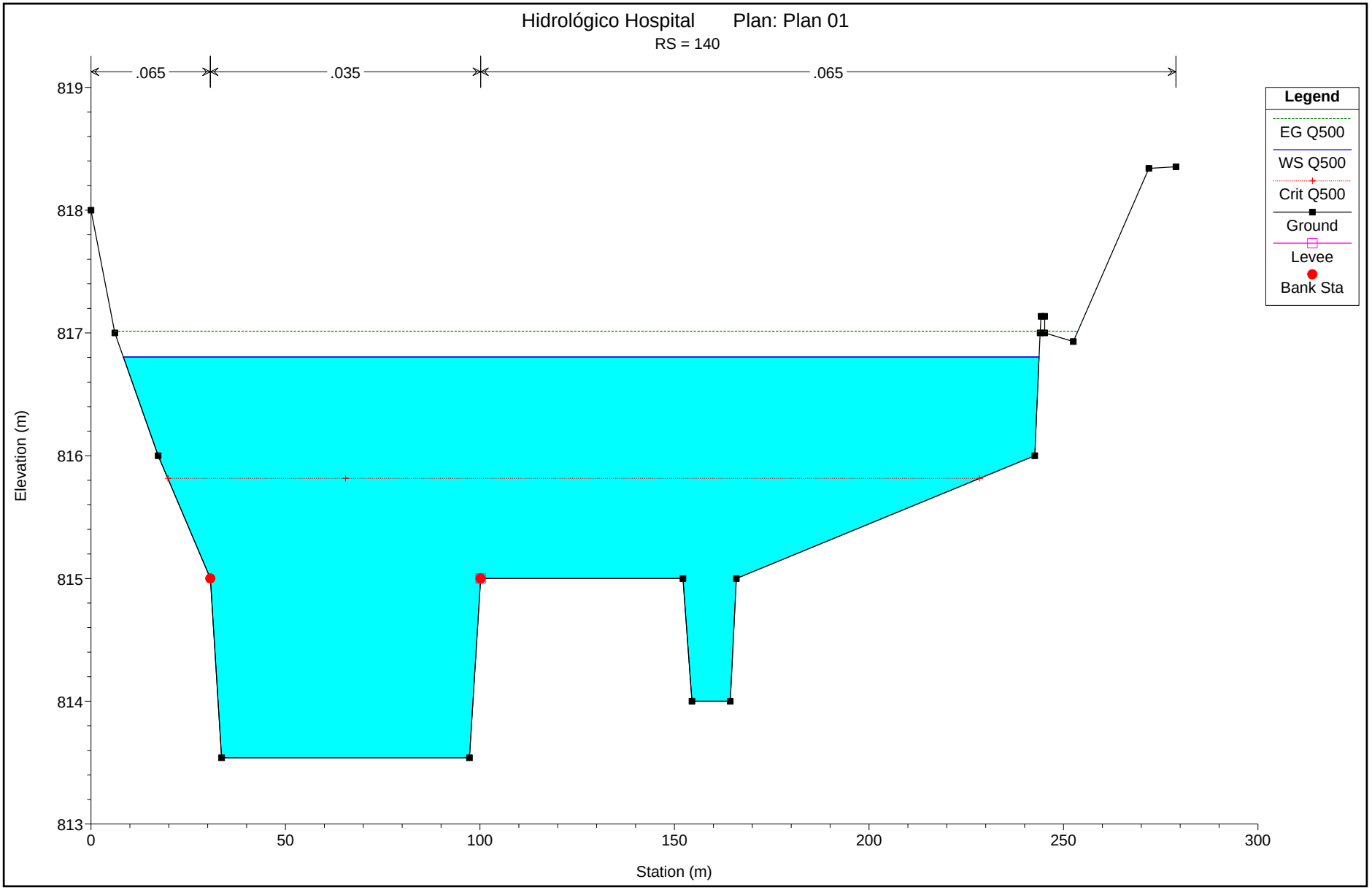
200
250
300
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 140
.065
.035
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
819
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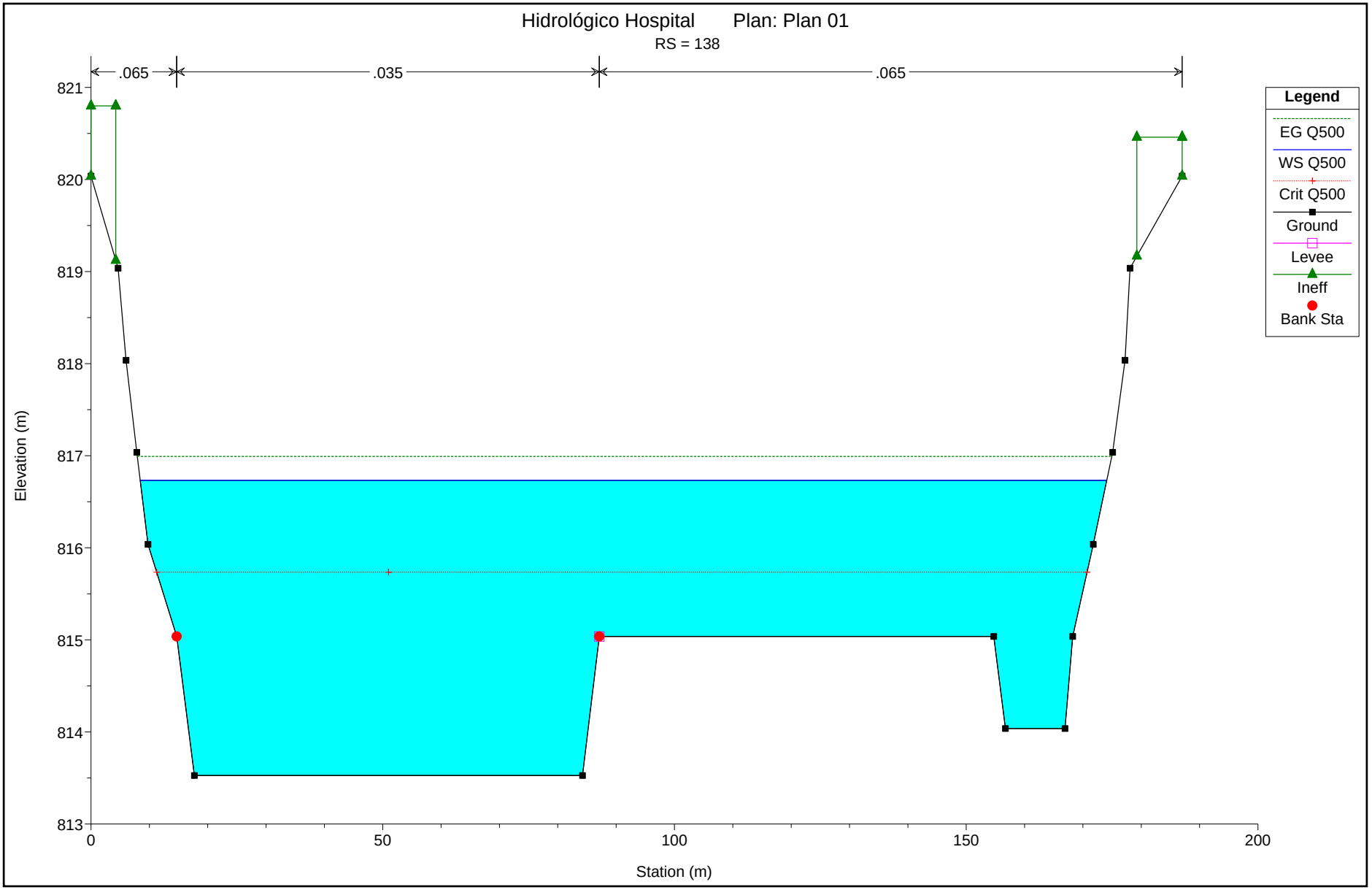
817
816
815
814
813
0
50
100
150
200
250
300
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 138
.065
.035
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
Elevation (m)
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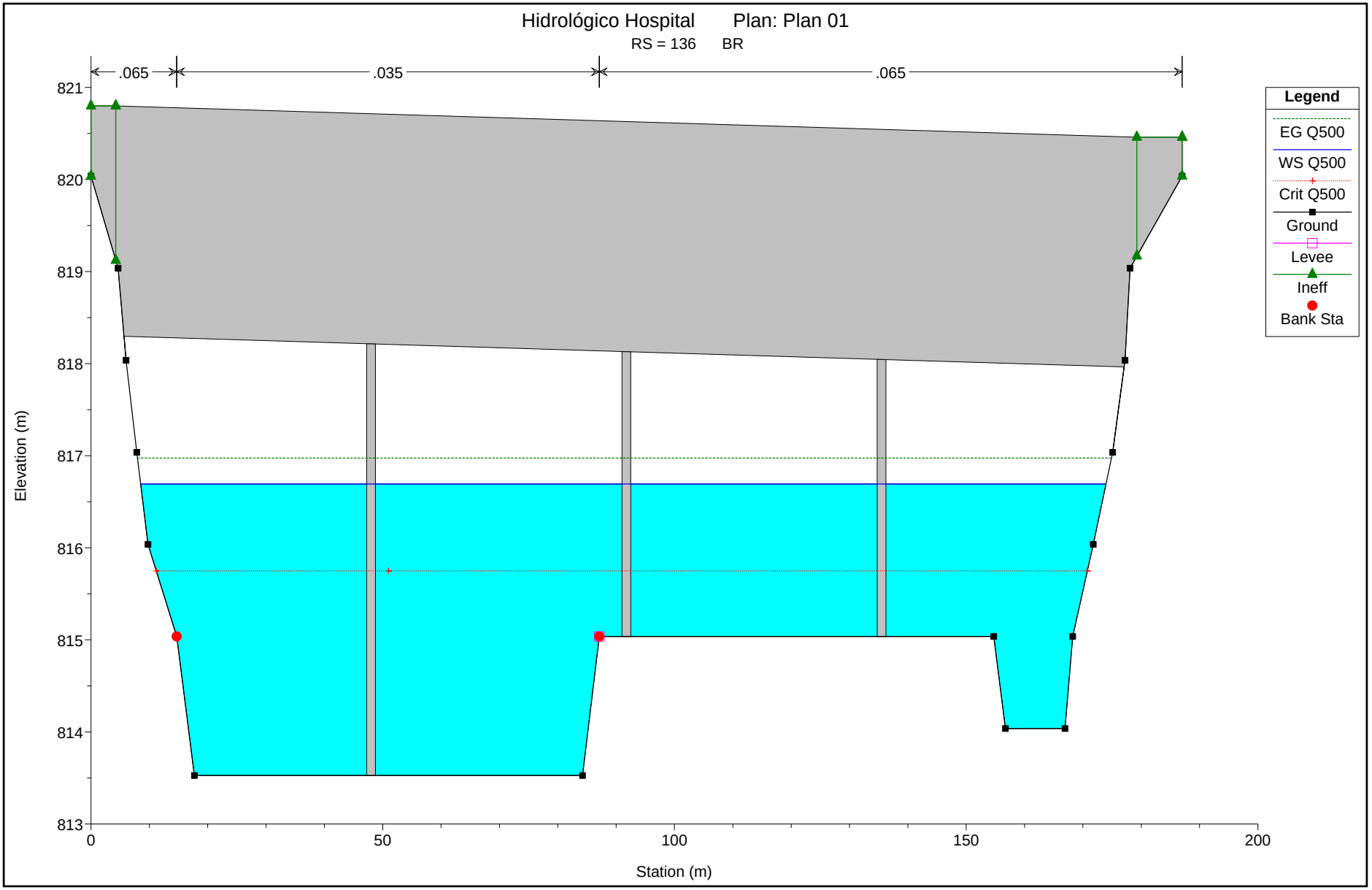
819
818
817
816
815
814
813
0
50
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 136 BR
.065
.035
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
Elevation (m)
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819
818
817
816
815
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813
0
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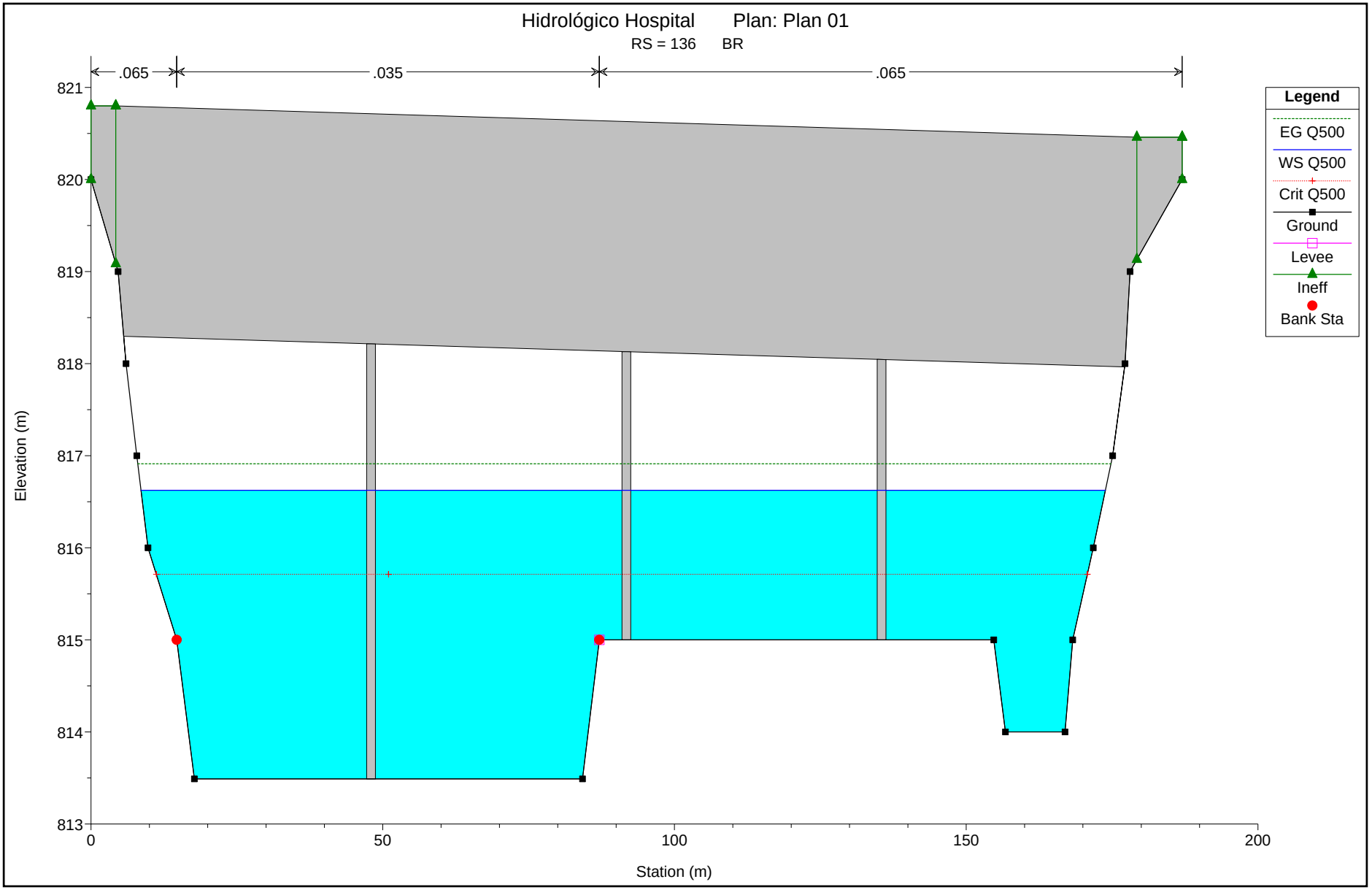
100
150
200
Station (m)


Hidrológico Hospital Plan: Plan 01
RS = 136 BR
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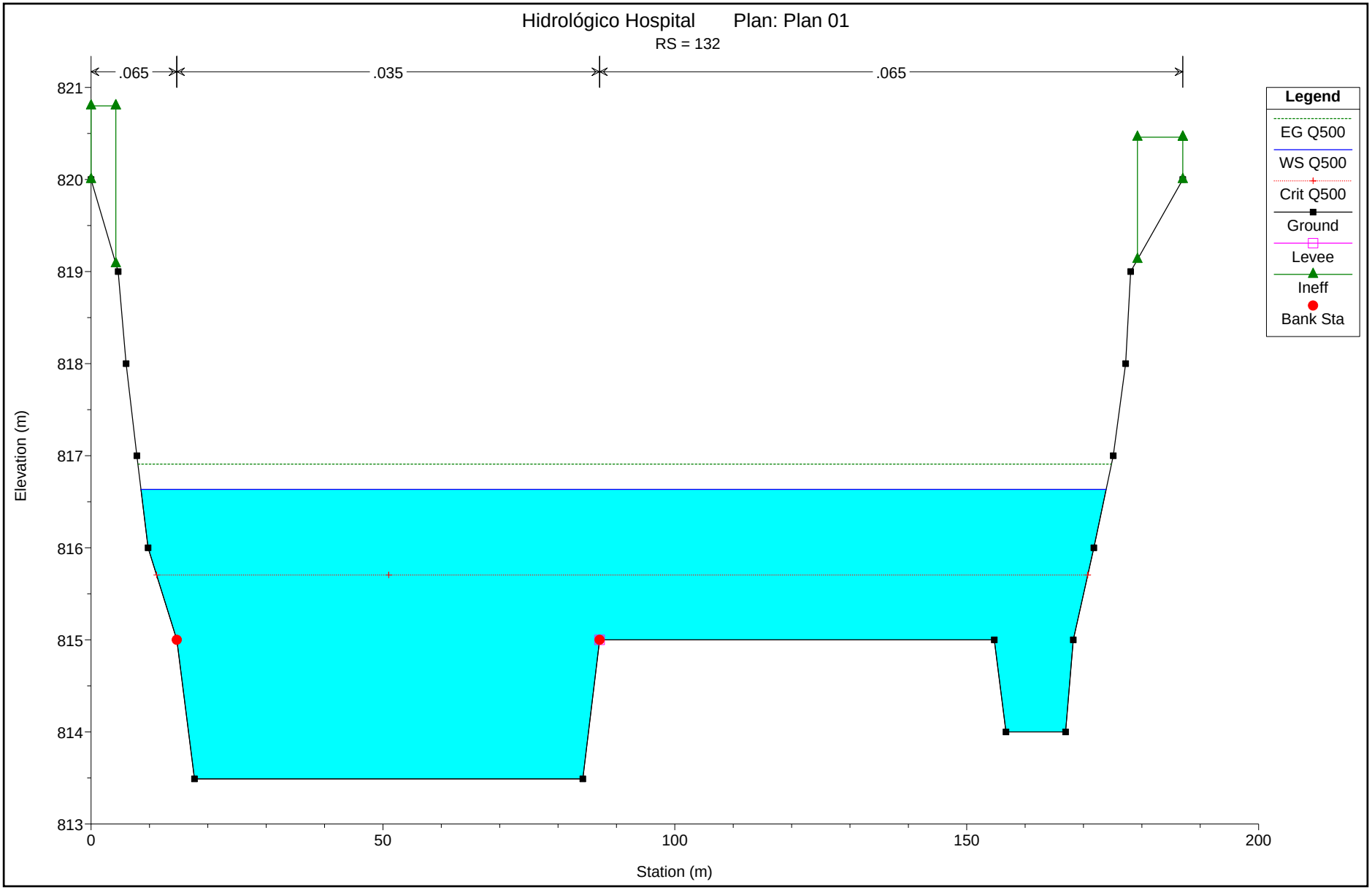
.035
.065
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
821
820
819
818
817
816
815
814
813
0
50
100
150
200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Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
Elevation (m)
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815
814
813
0
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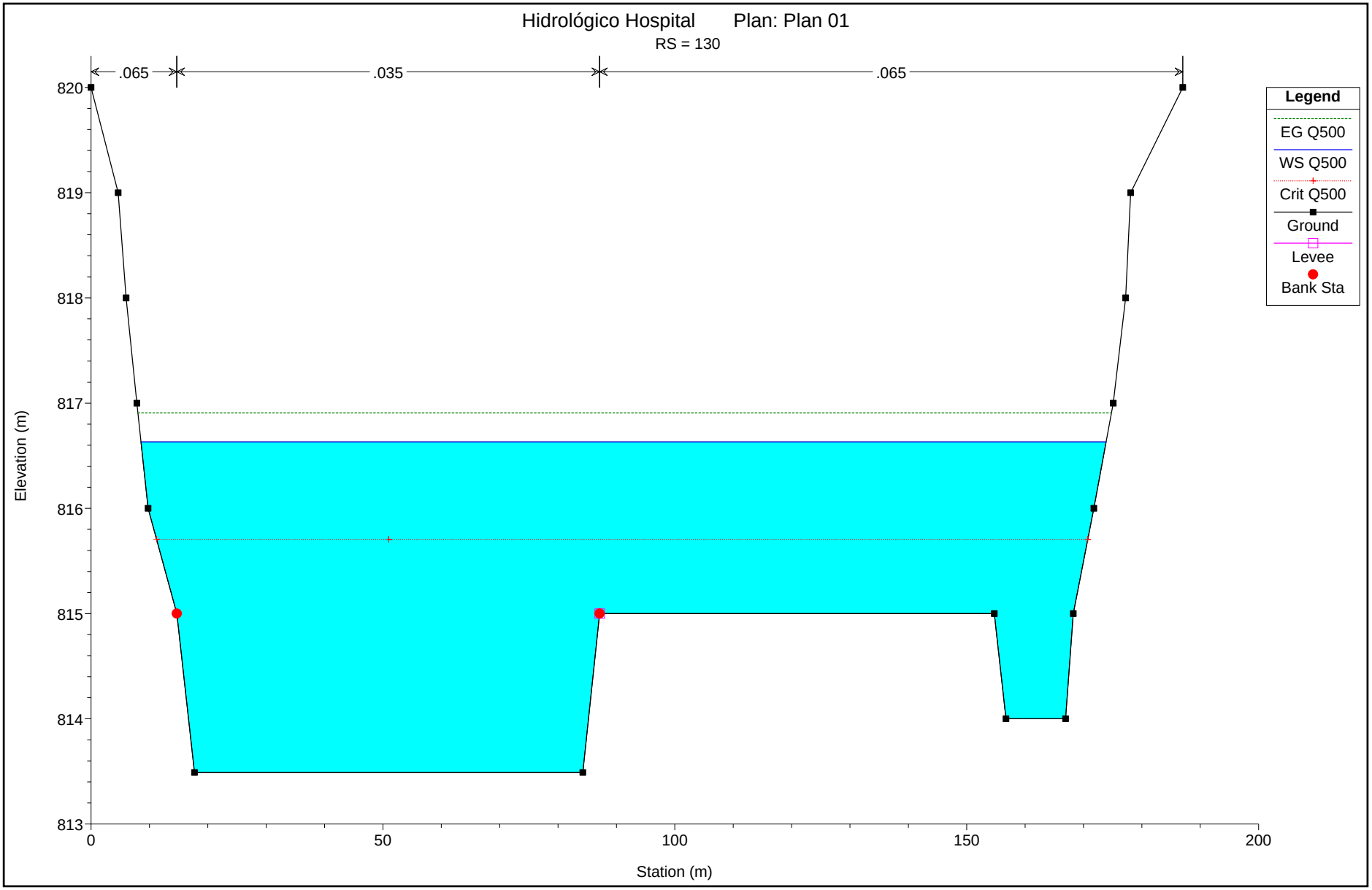
100
150
200
Station (m)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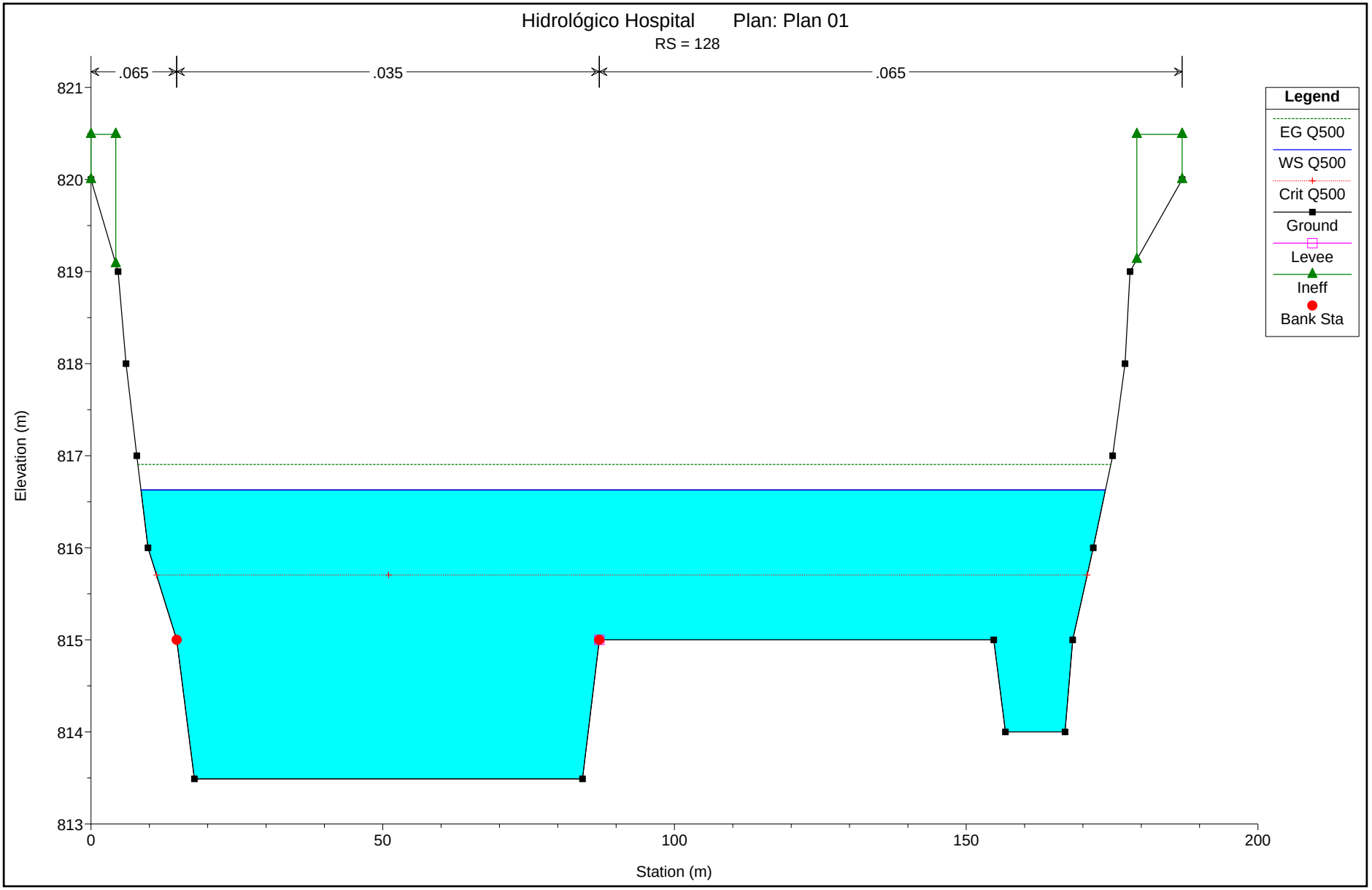
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta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Ground
Levee
Ineff
Bank Sta
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150
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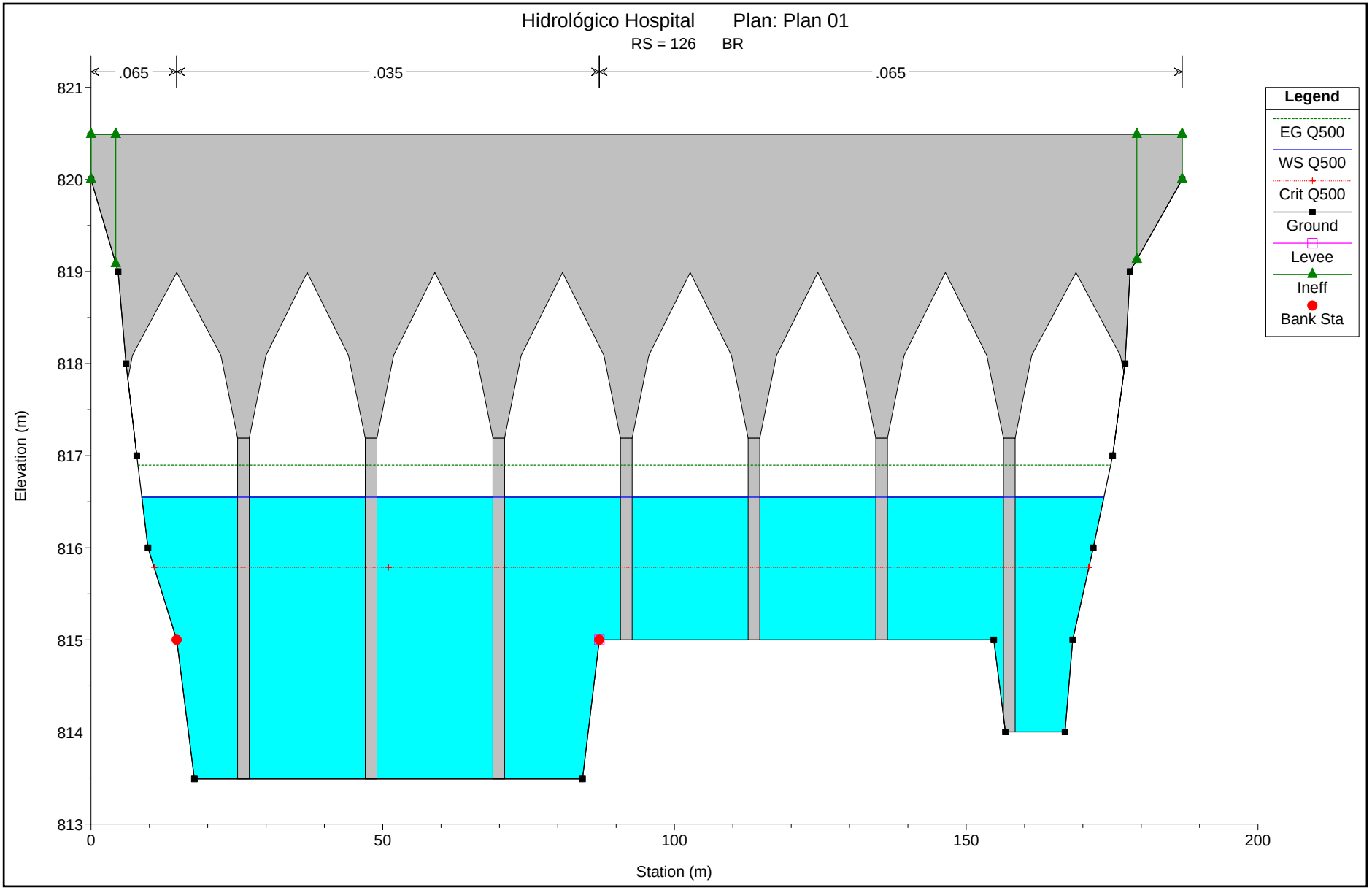
Station (m)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Crit Q500
Ground
Levee
Ineff
Bank Sta
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817
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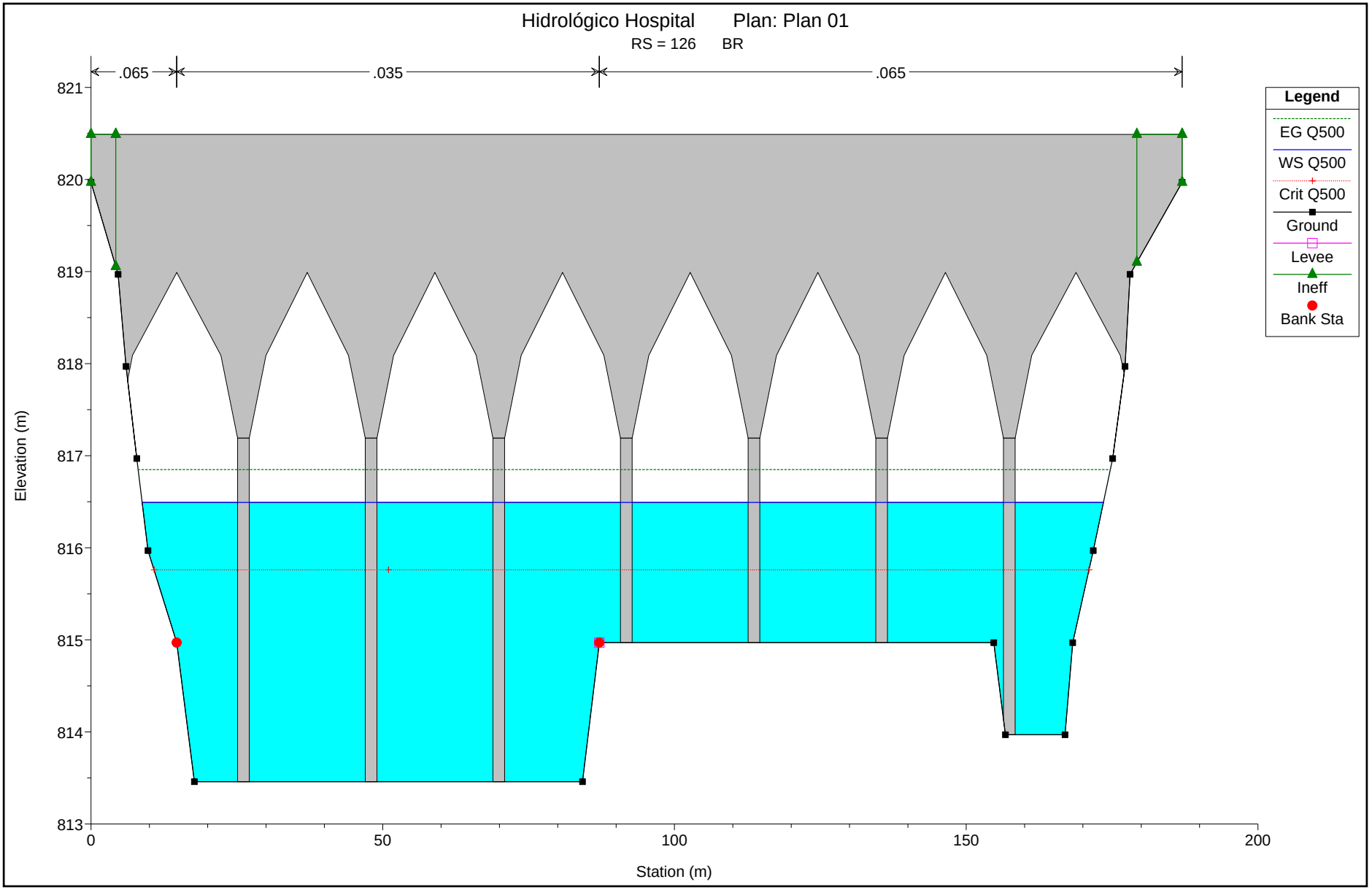
Station (m)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Legend
EG Q500
WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)
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150
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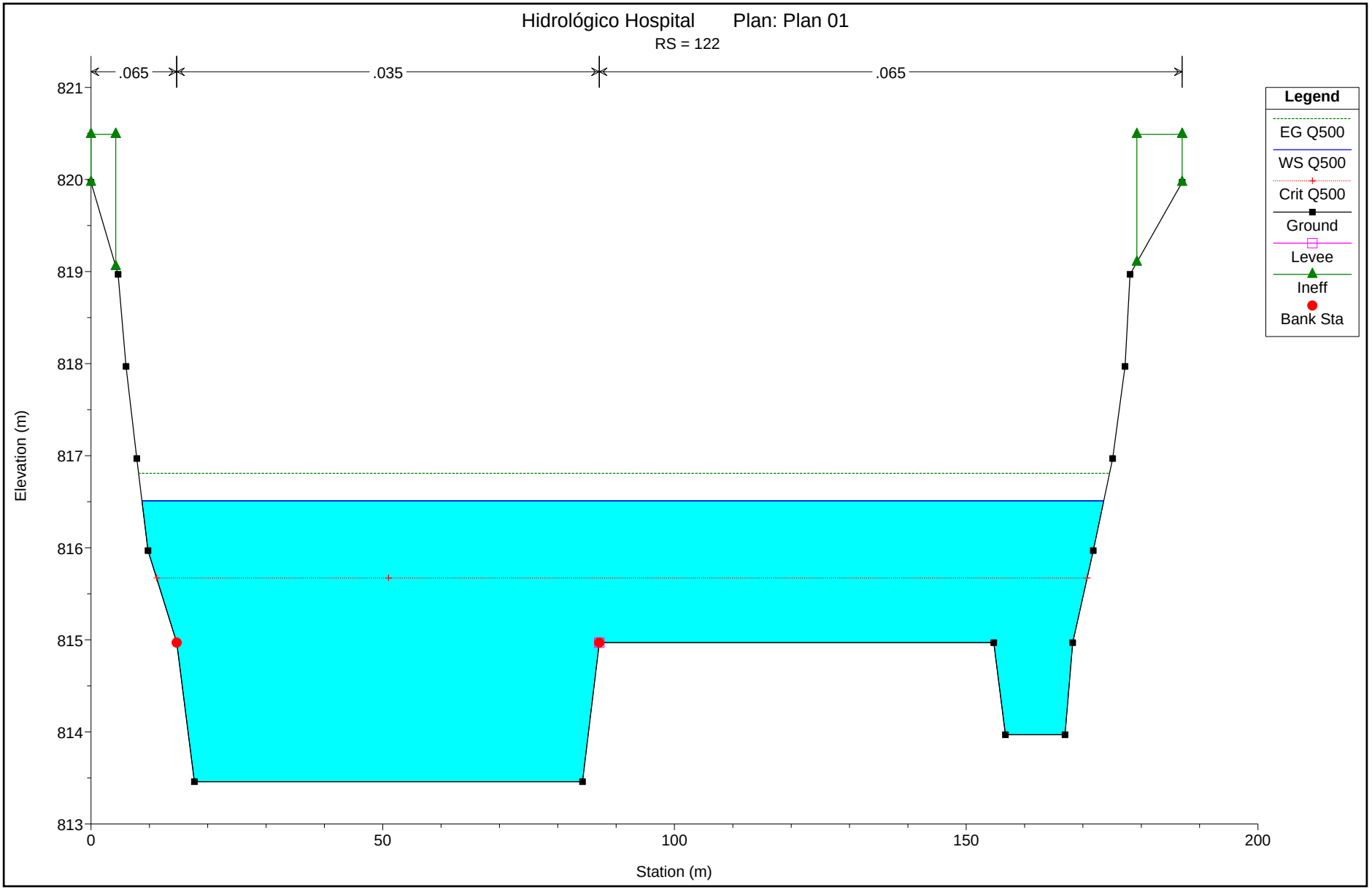
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WS Q500
Crit Q500
Ground
Levee
Ineff
Bank Sta
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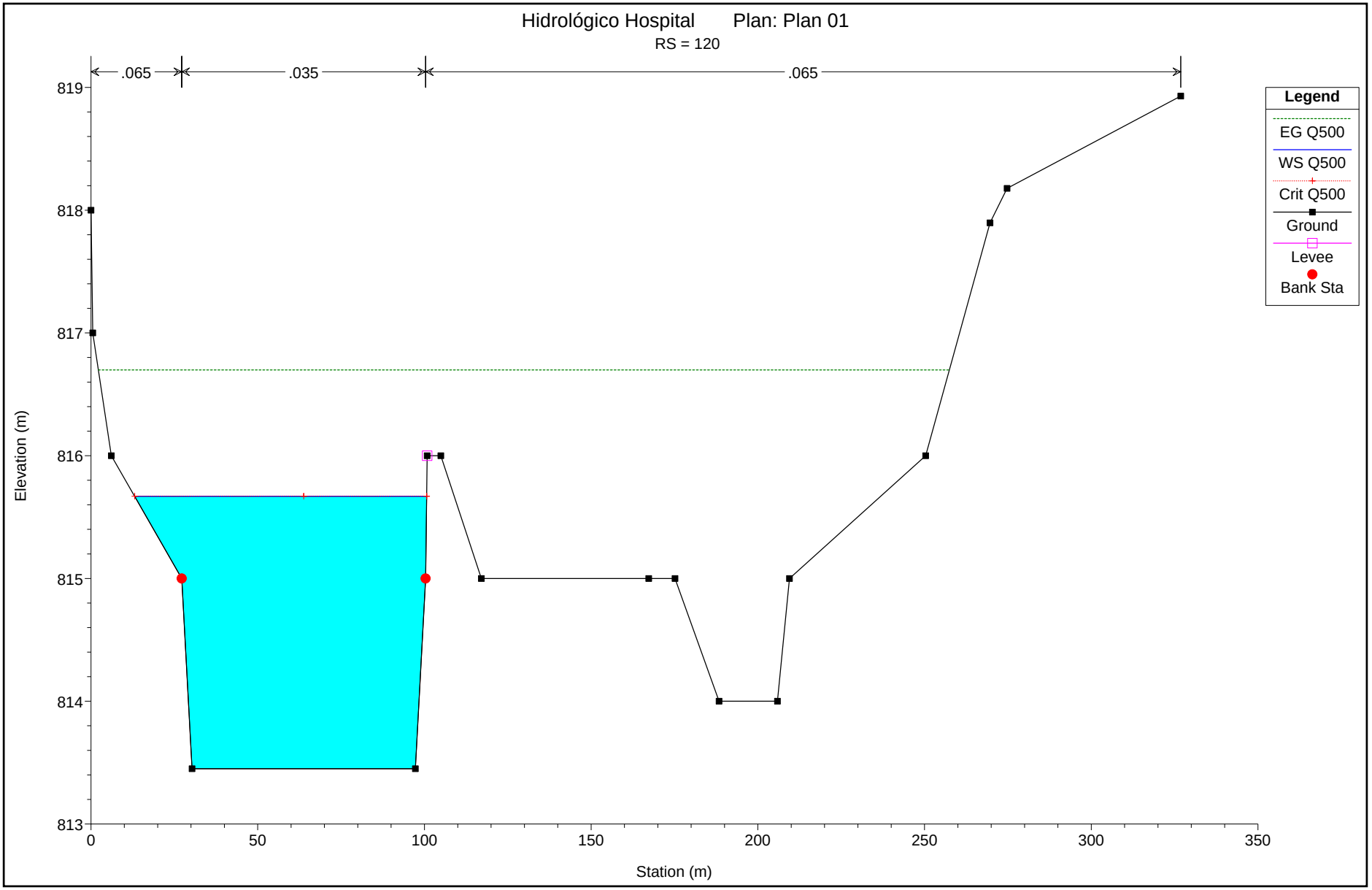
Station (m)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WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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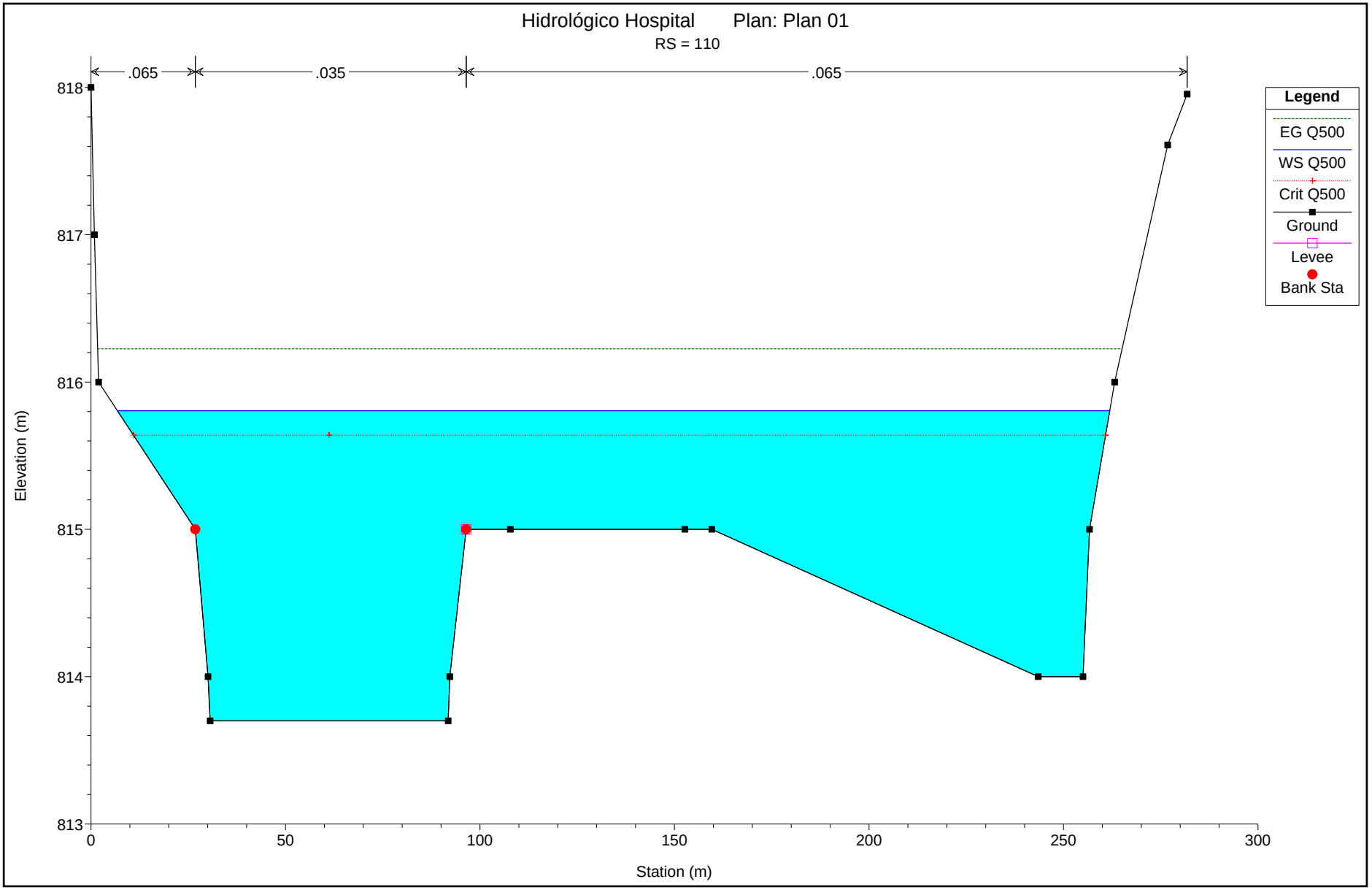
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Station (m)
Legend
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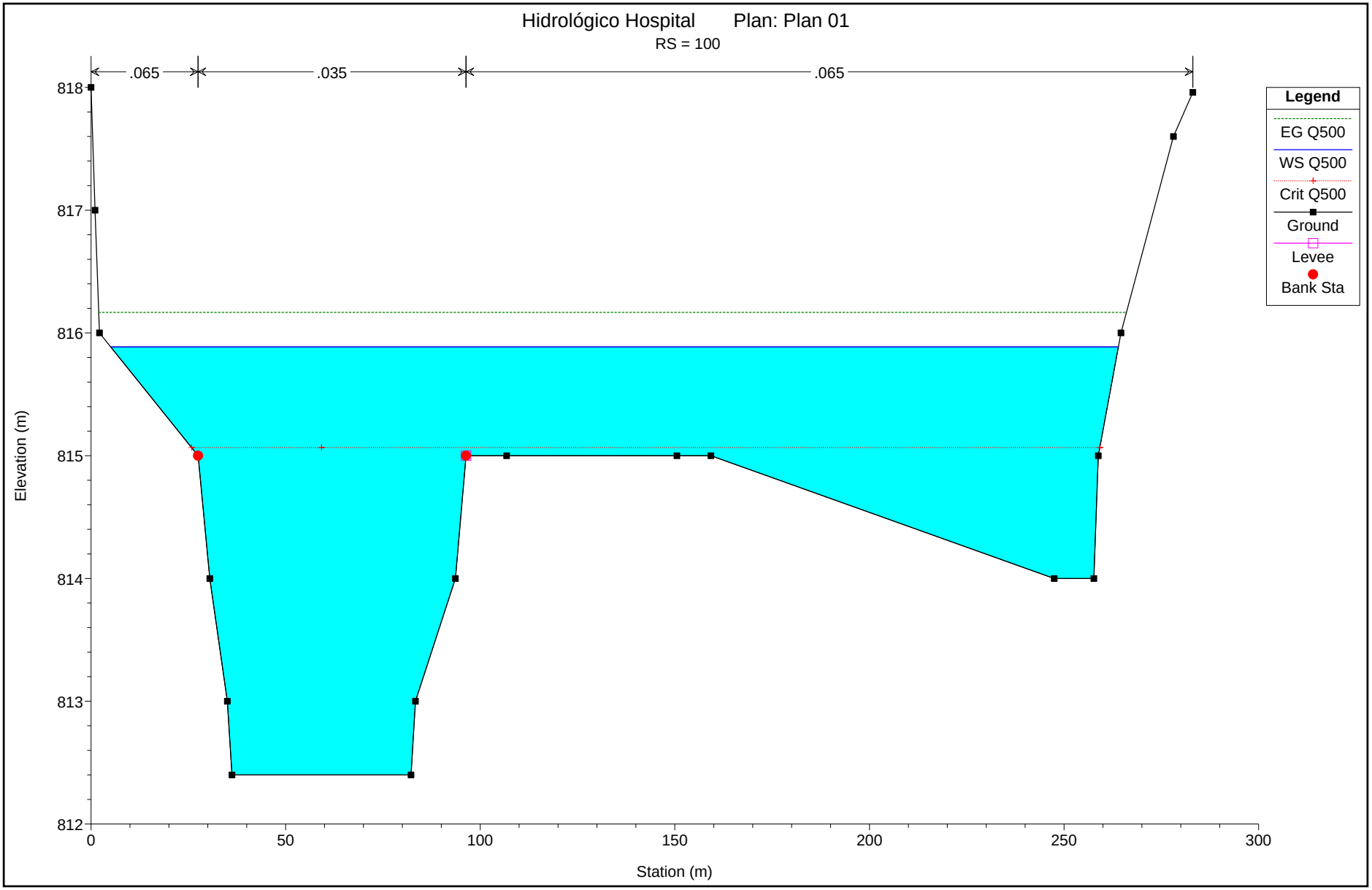
WS Q500
Crit Q500
Ground
Levee
Bank Sta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WS Q500
Crit Q500
Ground
Levee
Bank Sta
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Station (m)
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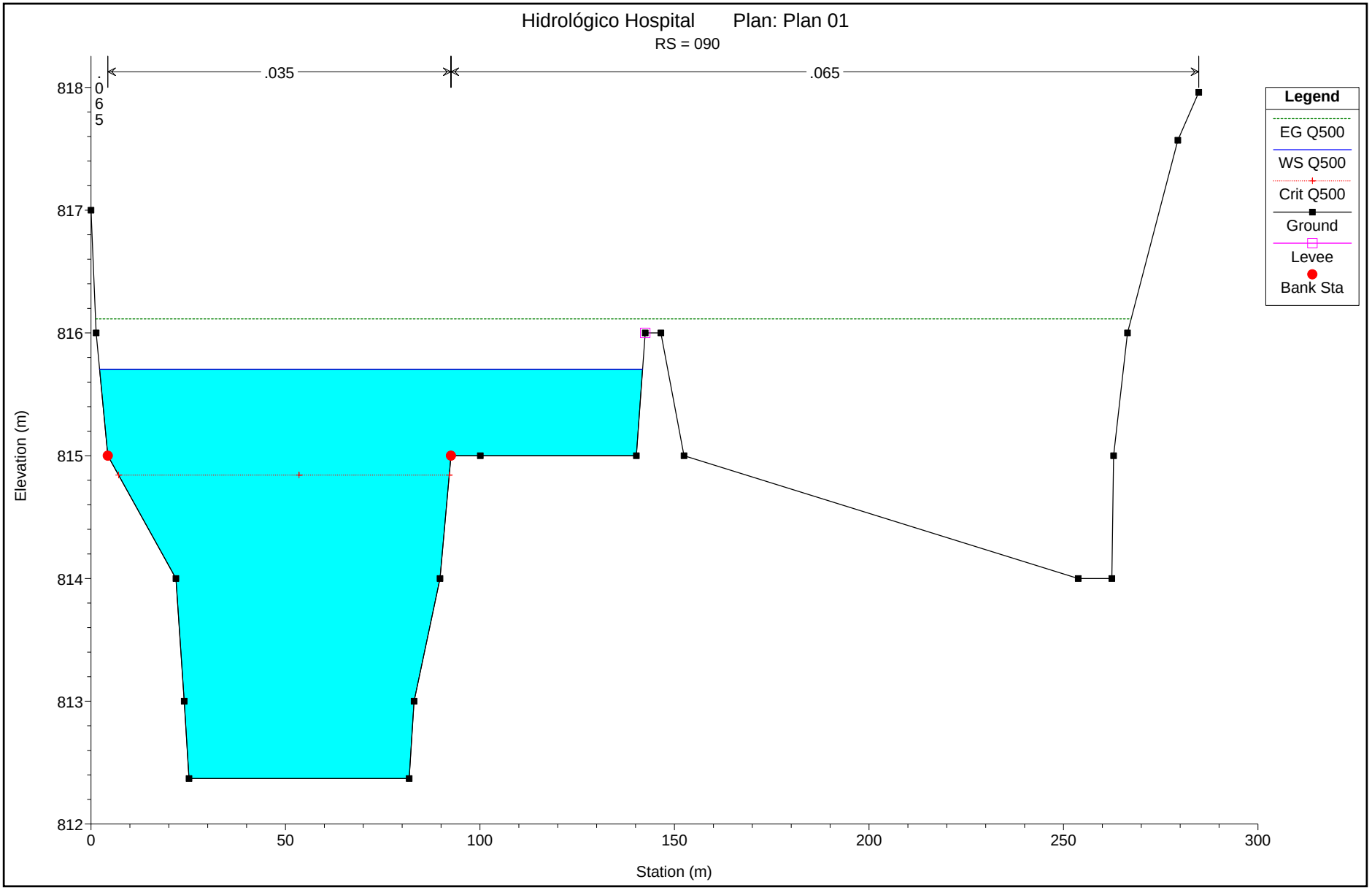
300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WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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814
815
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818
0
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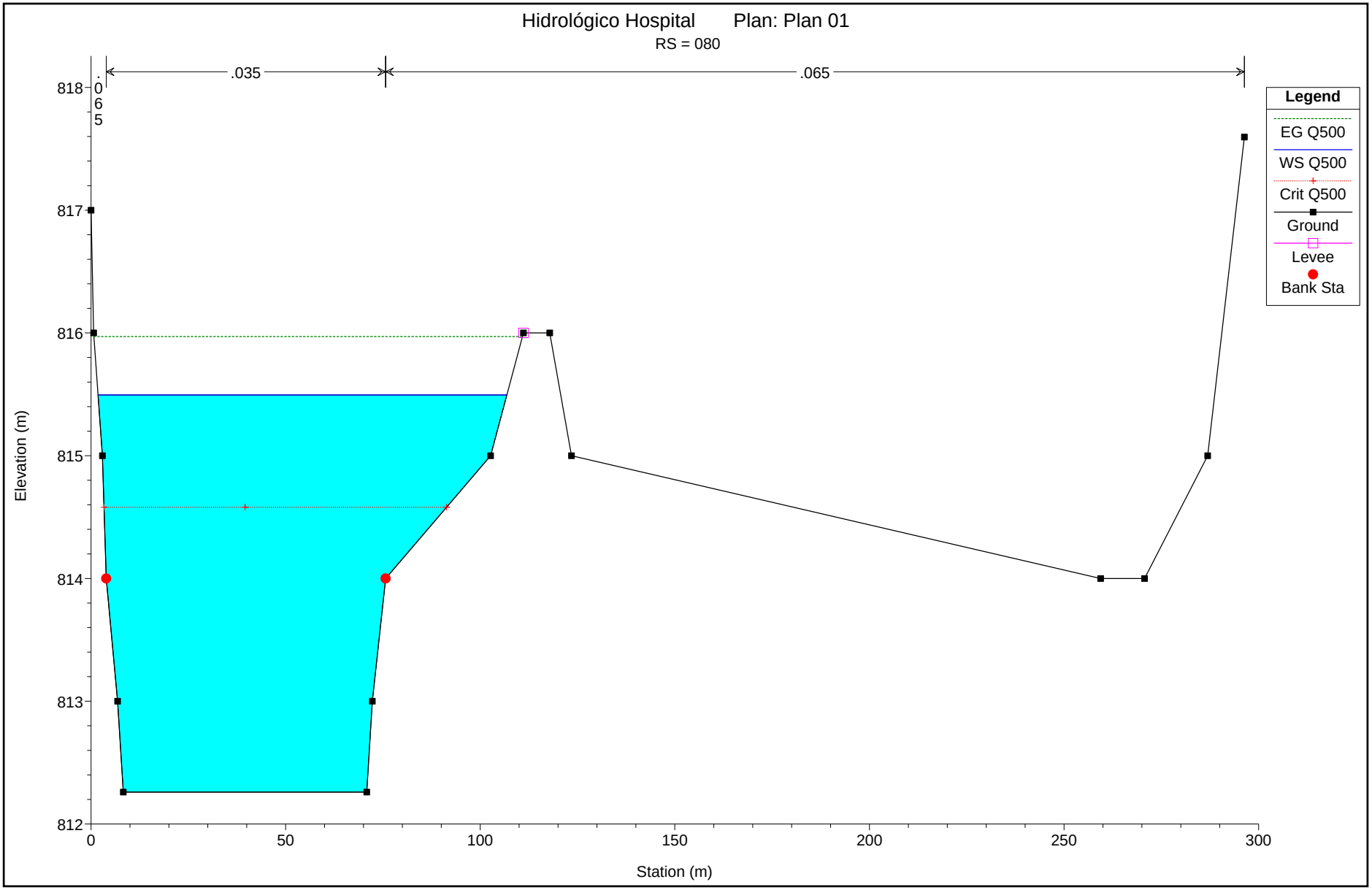
250
300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EG Q500
WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
Station (m)
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814
815
816
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818
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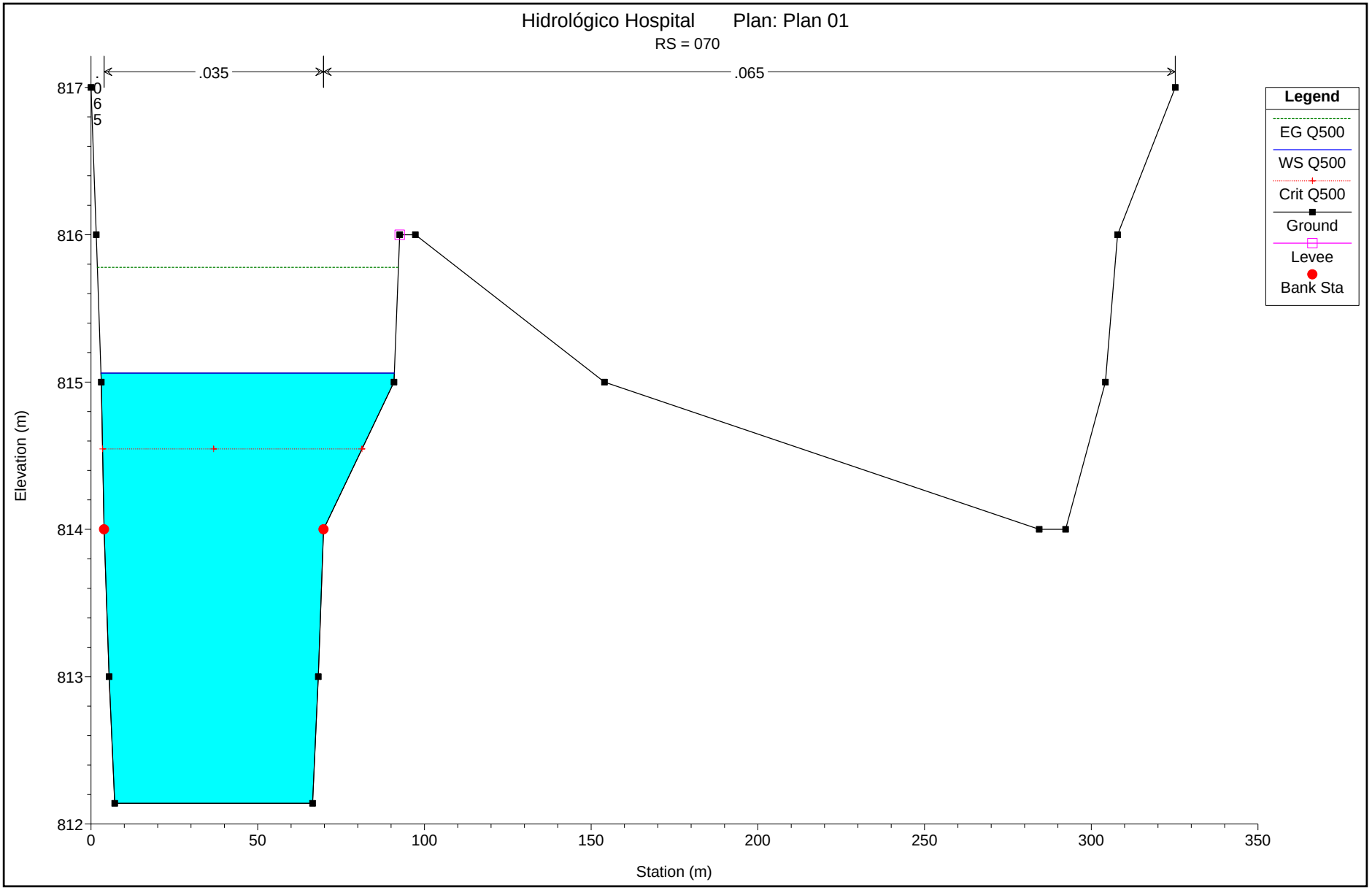
250
300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0
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5
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WS Q500
Crit Q500
Ground
Levee
Bank Sta
Elevation (m)
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814
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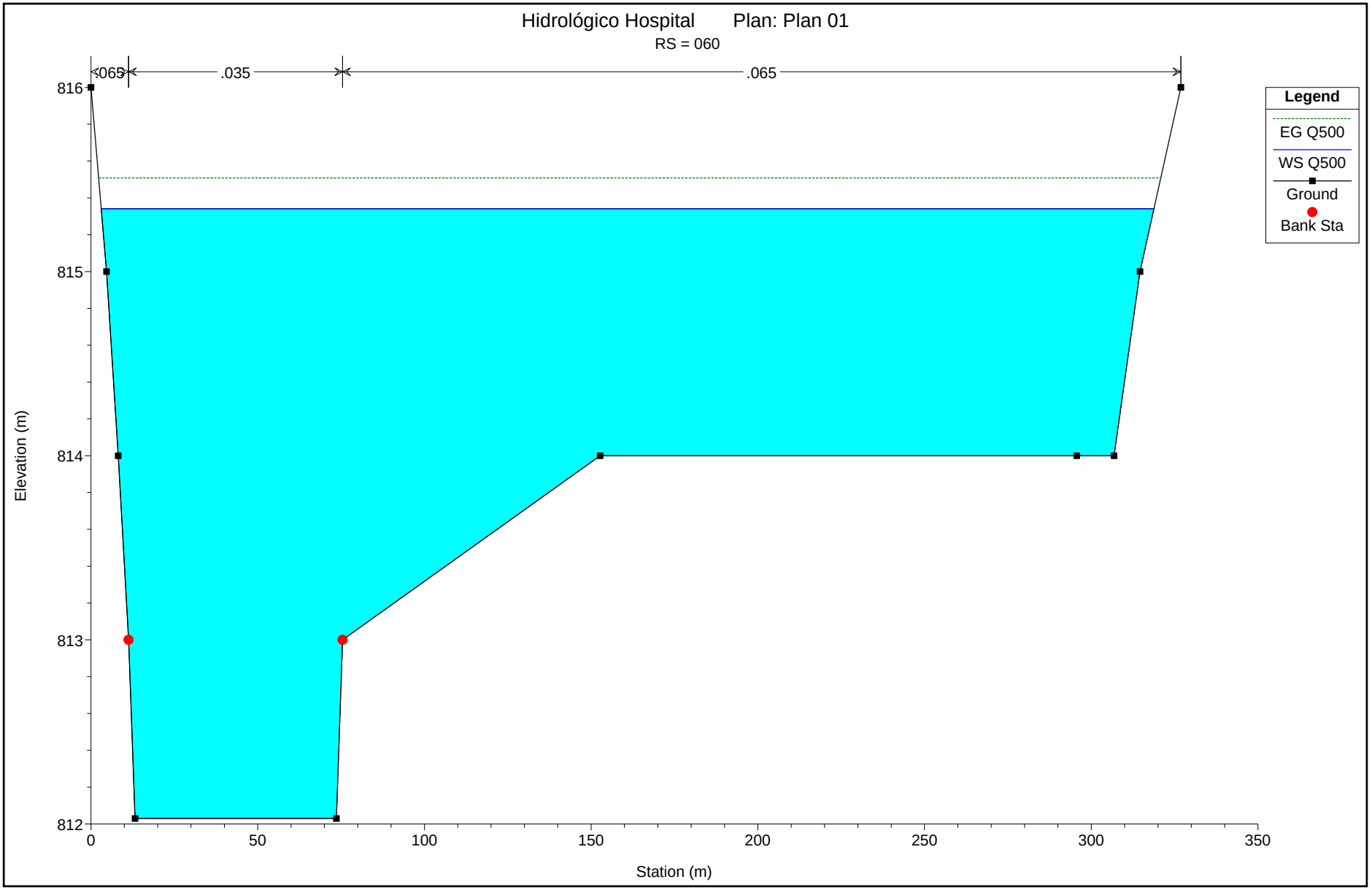
100
150
200
250
300
350
Station (m)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816
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813
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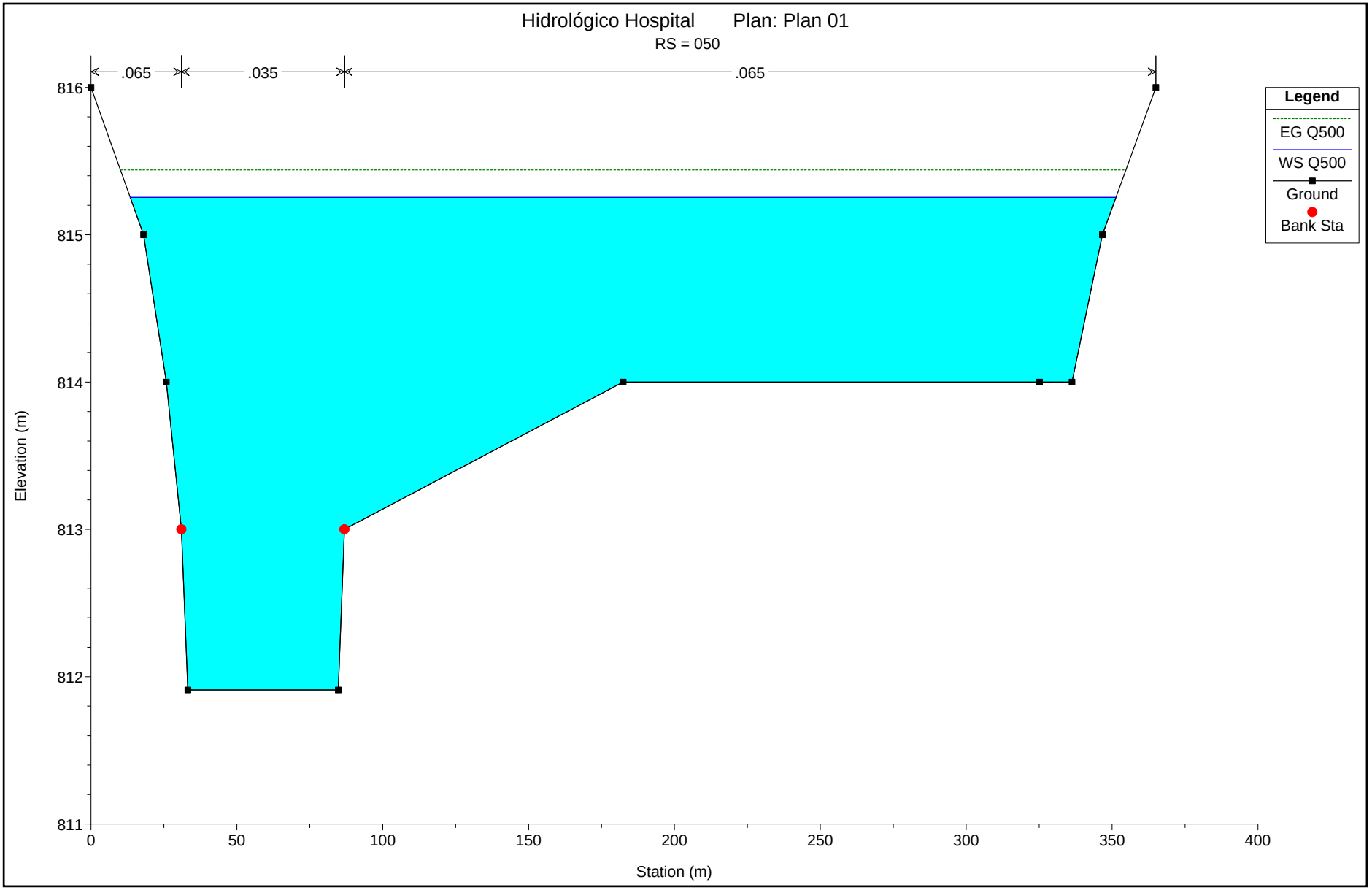
Station (m)
Legend
EG Q500
WS Q500
Ground
Bank Sta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811
Elevation (m)
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300
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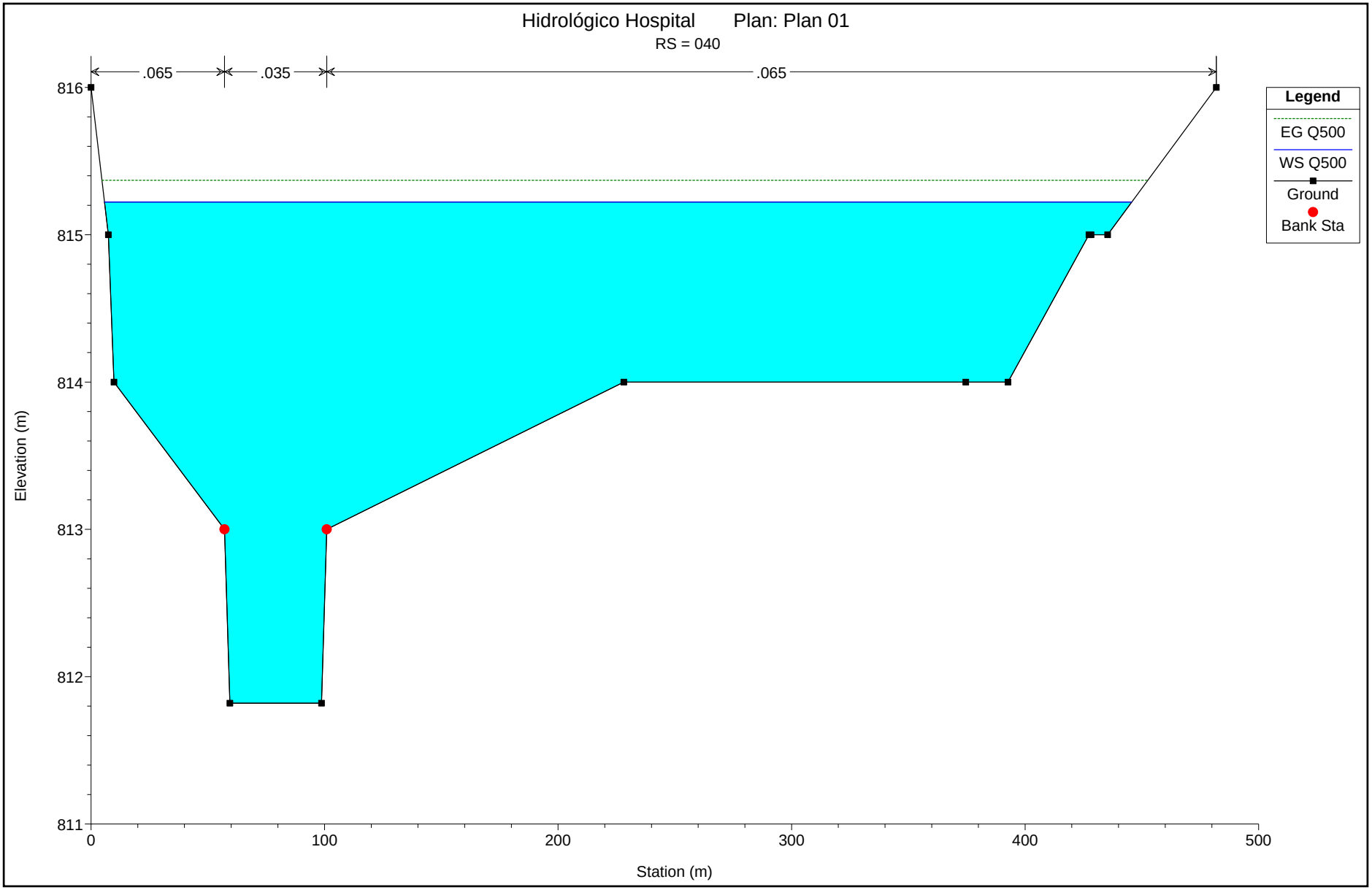
400
Station (m)
Legend
EG Q500
WS Q500
Ground
Bank Sta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816
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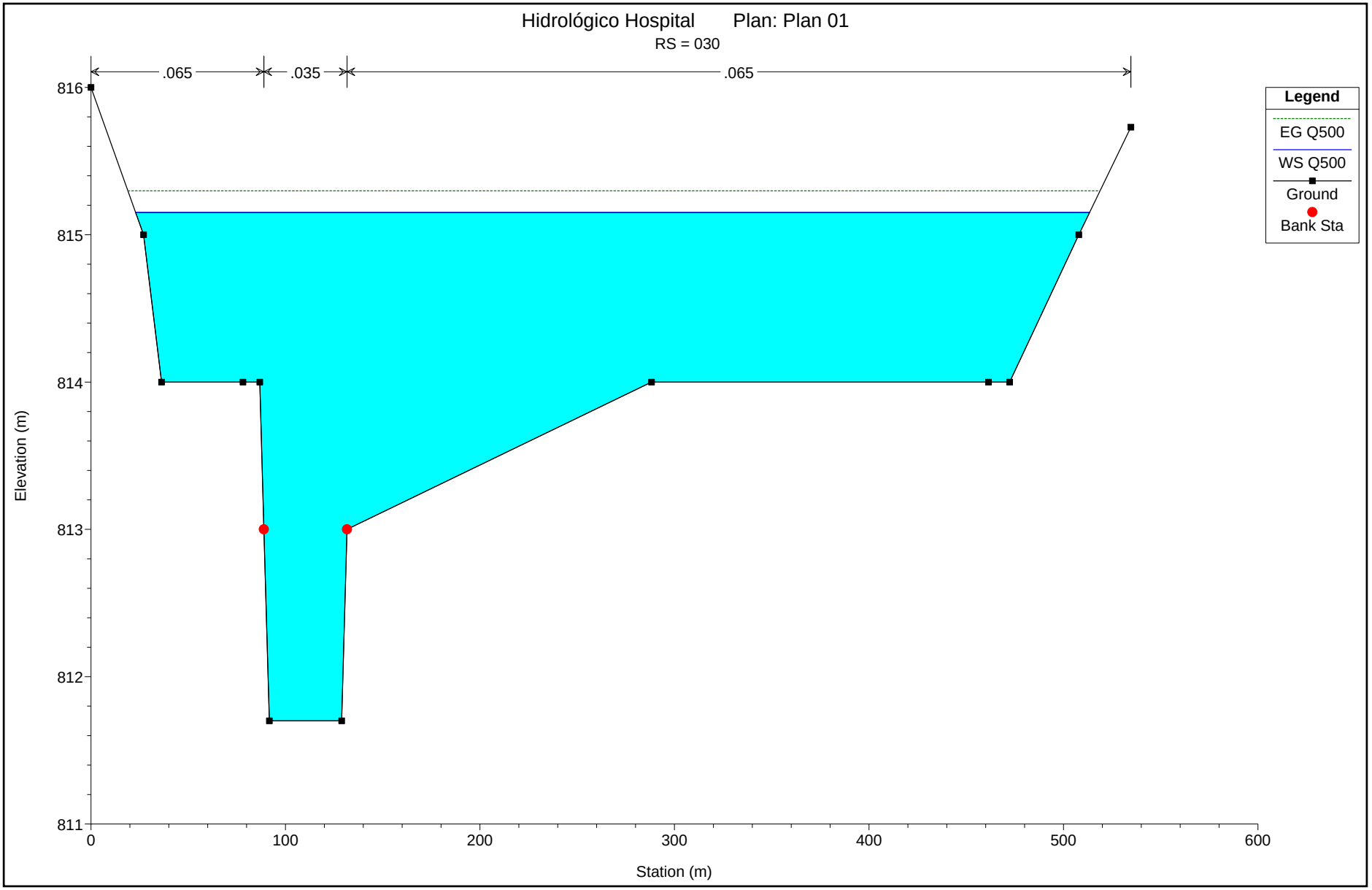
300
400
500
Station (m)
Legend
EG Q500
WS Q500
Ground
Bank Sta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Elevation (m)
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400
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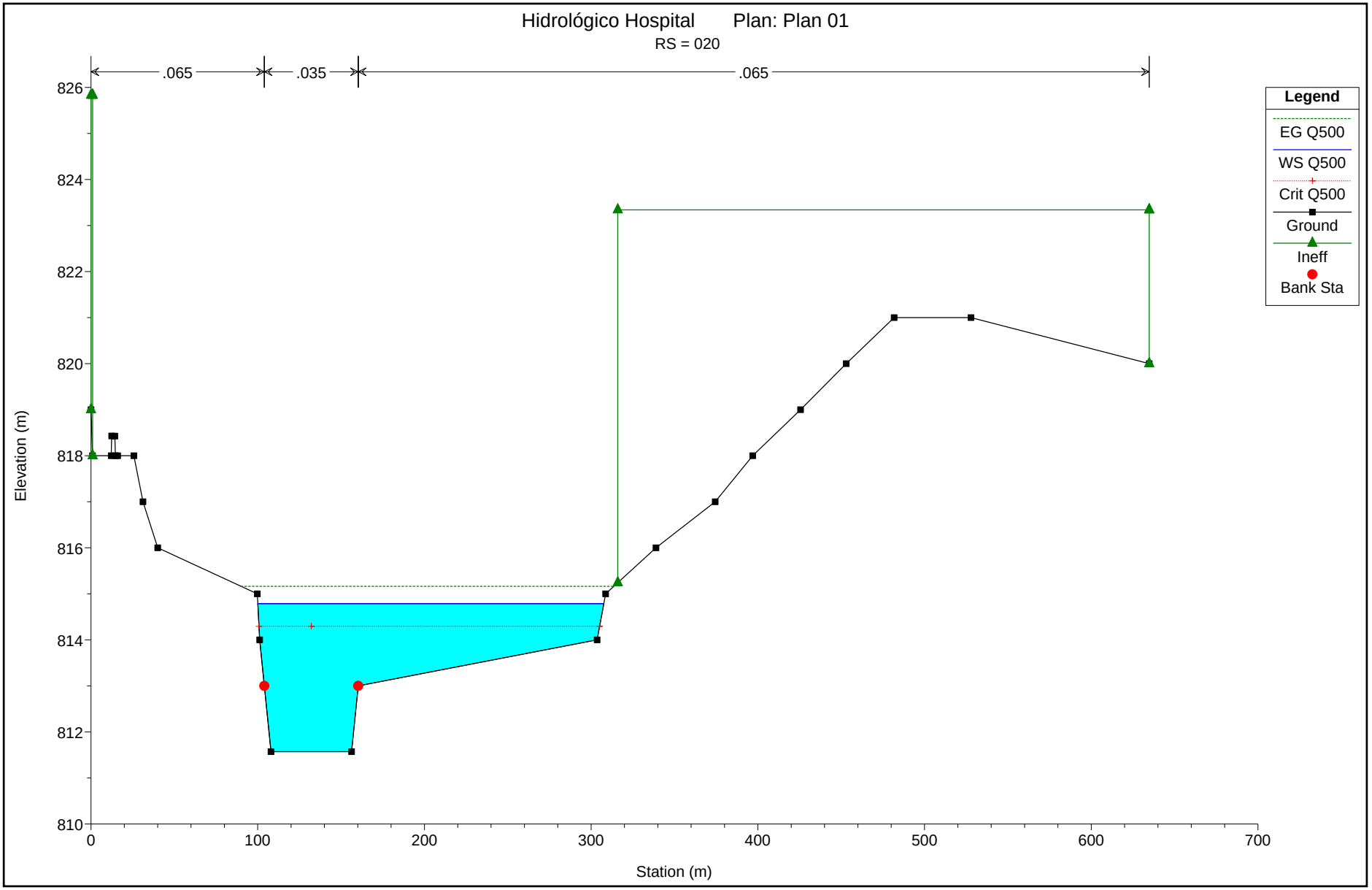
Station (m)
Legend
EG Q500
WS Q500
Ground
Bank Sta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826
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816
814
812
810
Elevation (m)
0
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200
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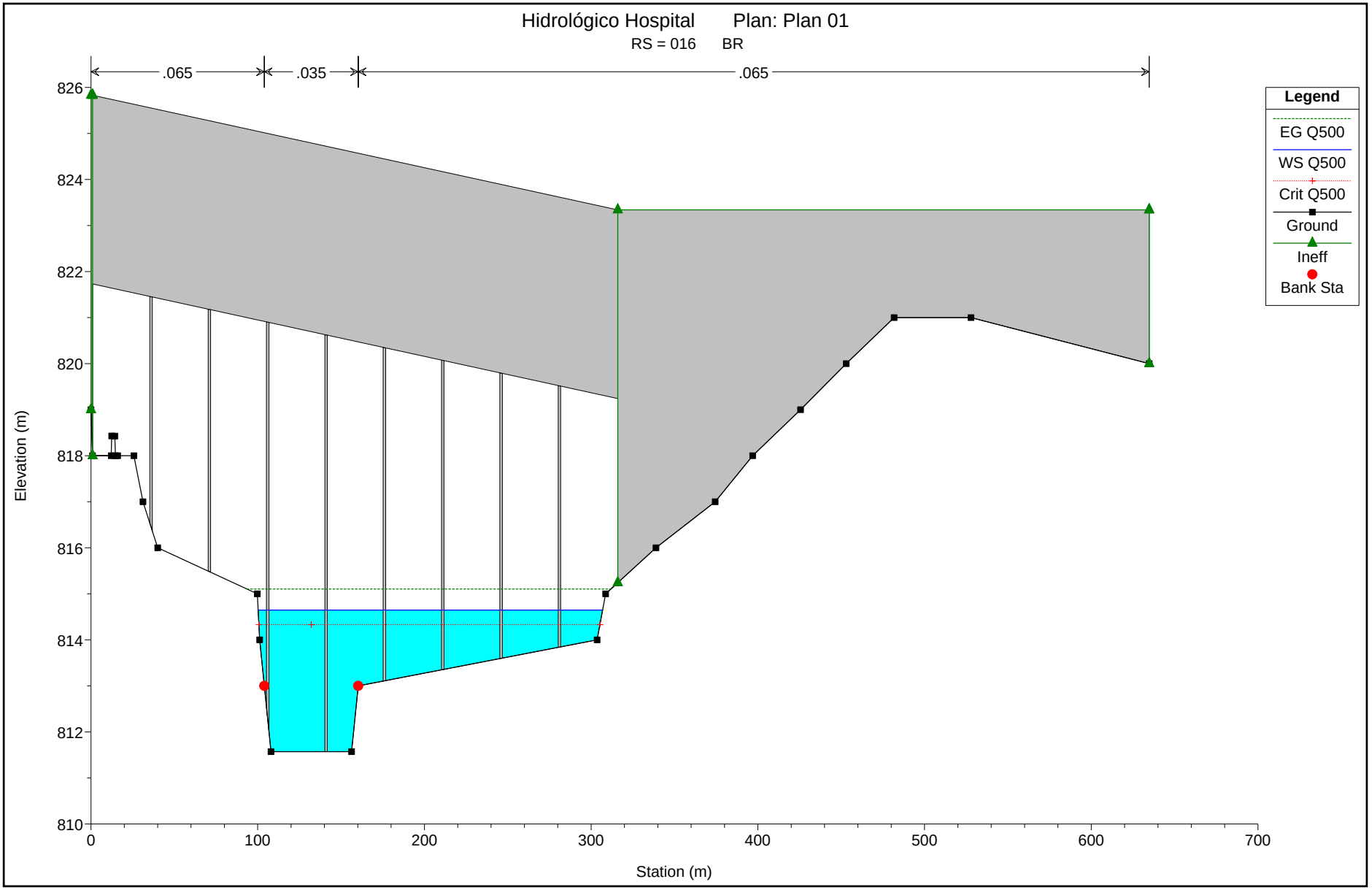
500
600
700
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Ineff
Bank Sta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812
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Elevation (m)
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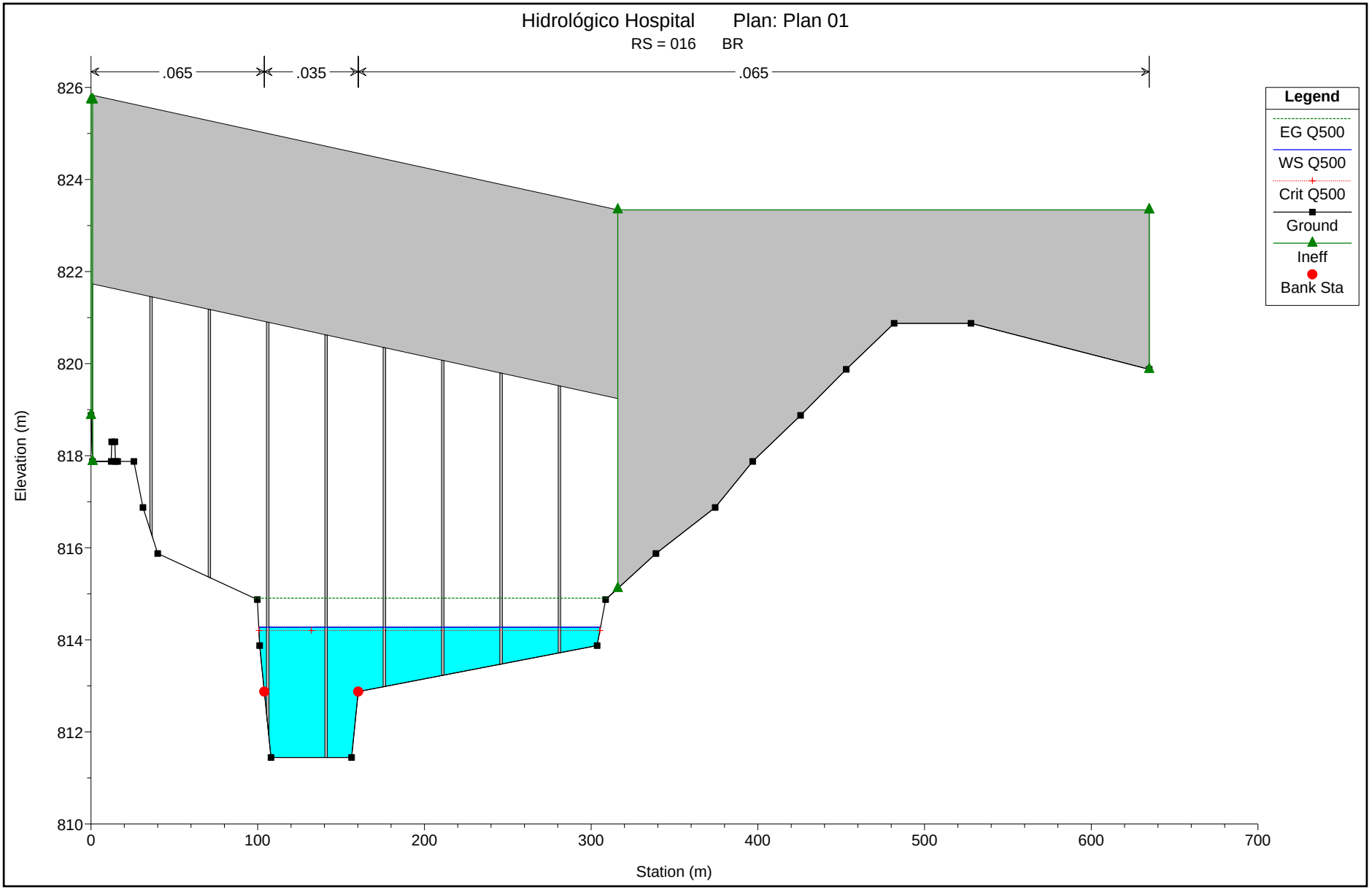
300
400
500
600
700
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
RS = 016 BR
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826
824
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820
818
816
814
812
810
Elevation (m)
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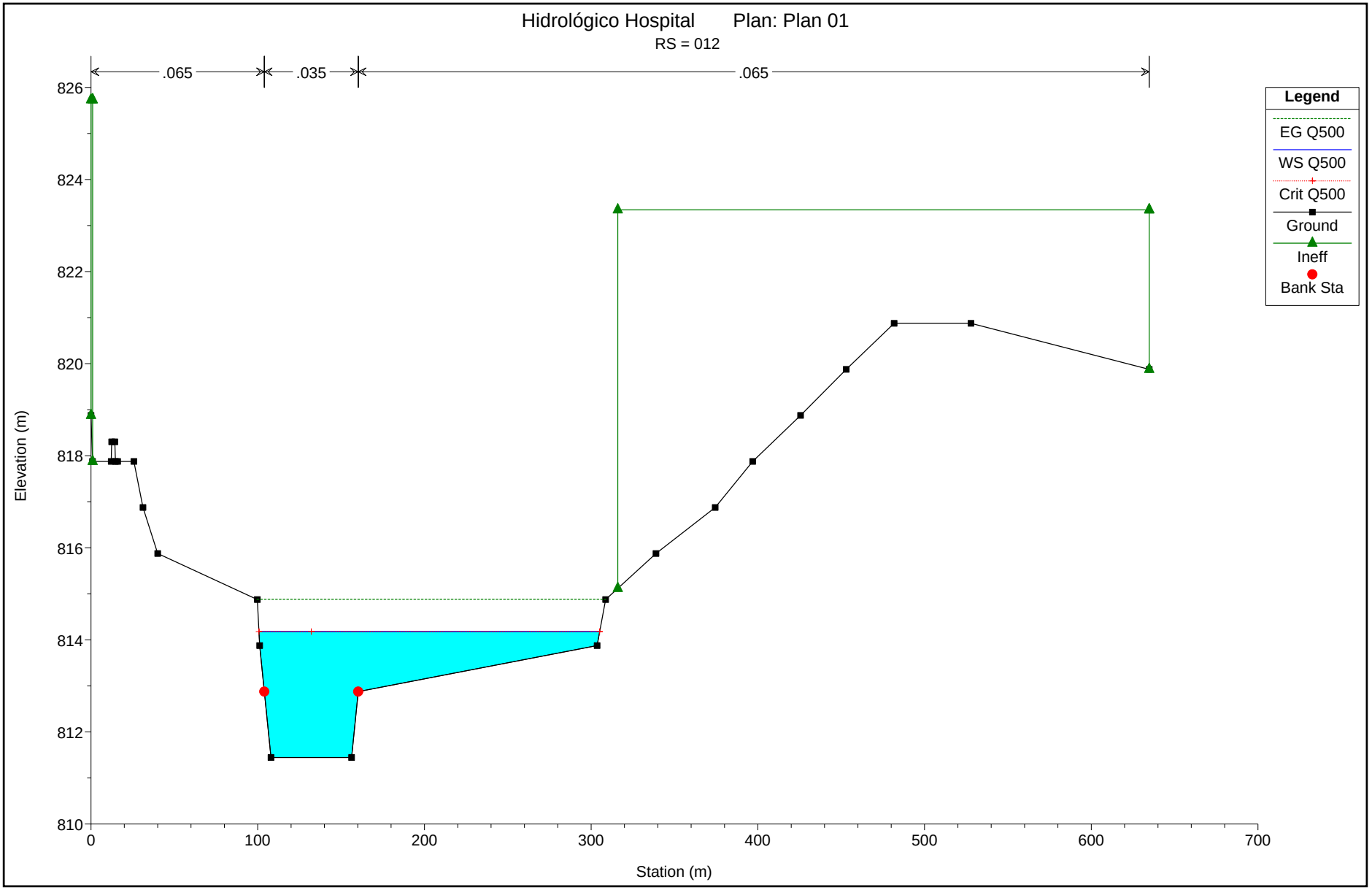
600
700
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Ineff
Bank Sta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812
810
Elevation (m)
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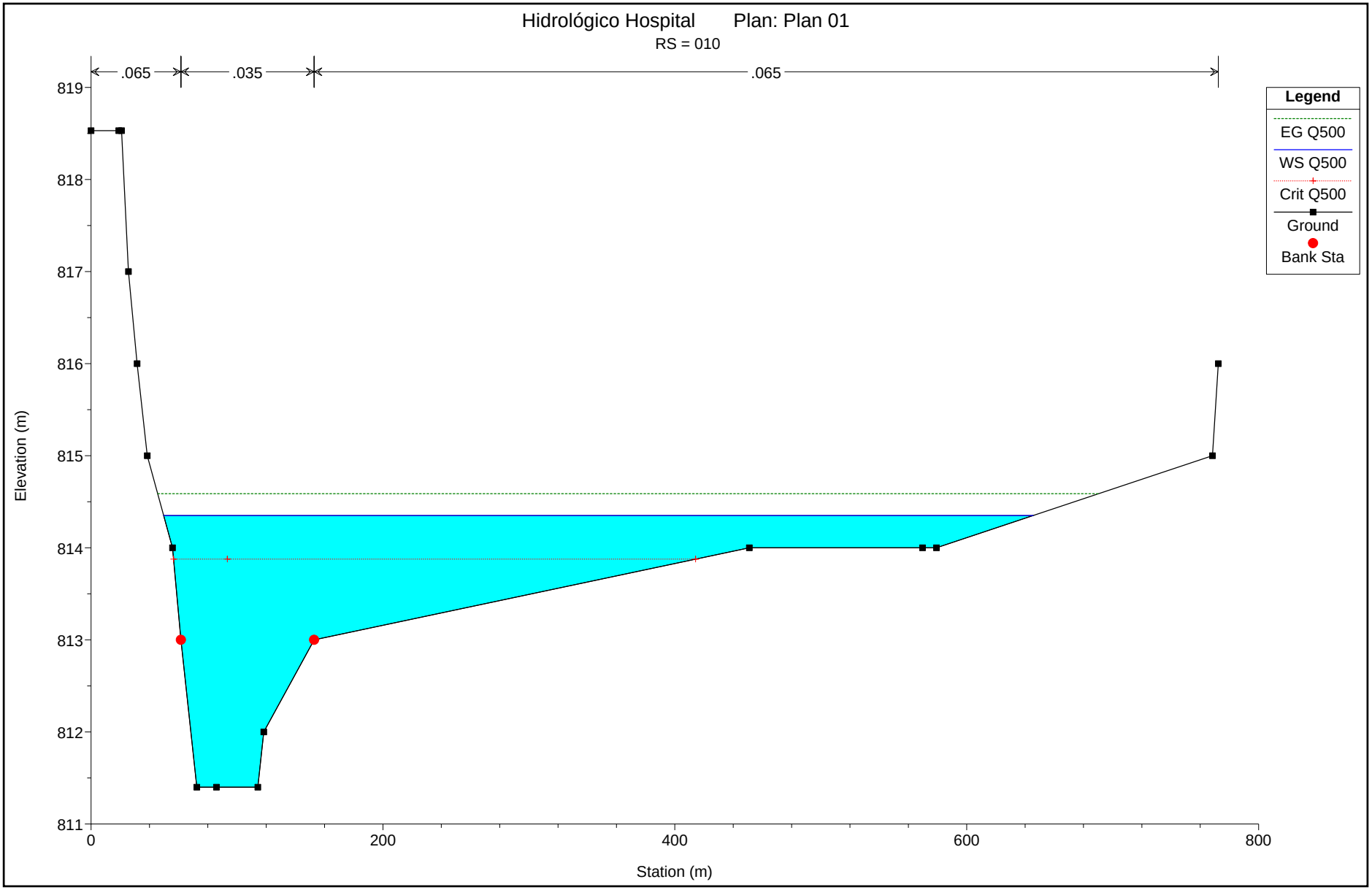
500
600
700
Station (m)
Legend
EG Q500
WS Q500
Crit Q500
Ground
Ineff
Bank Sta


Hidrológico Hospital Plan: Plan 01
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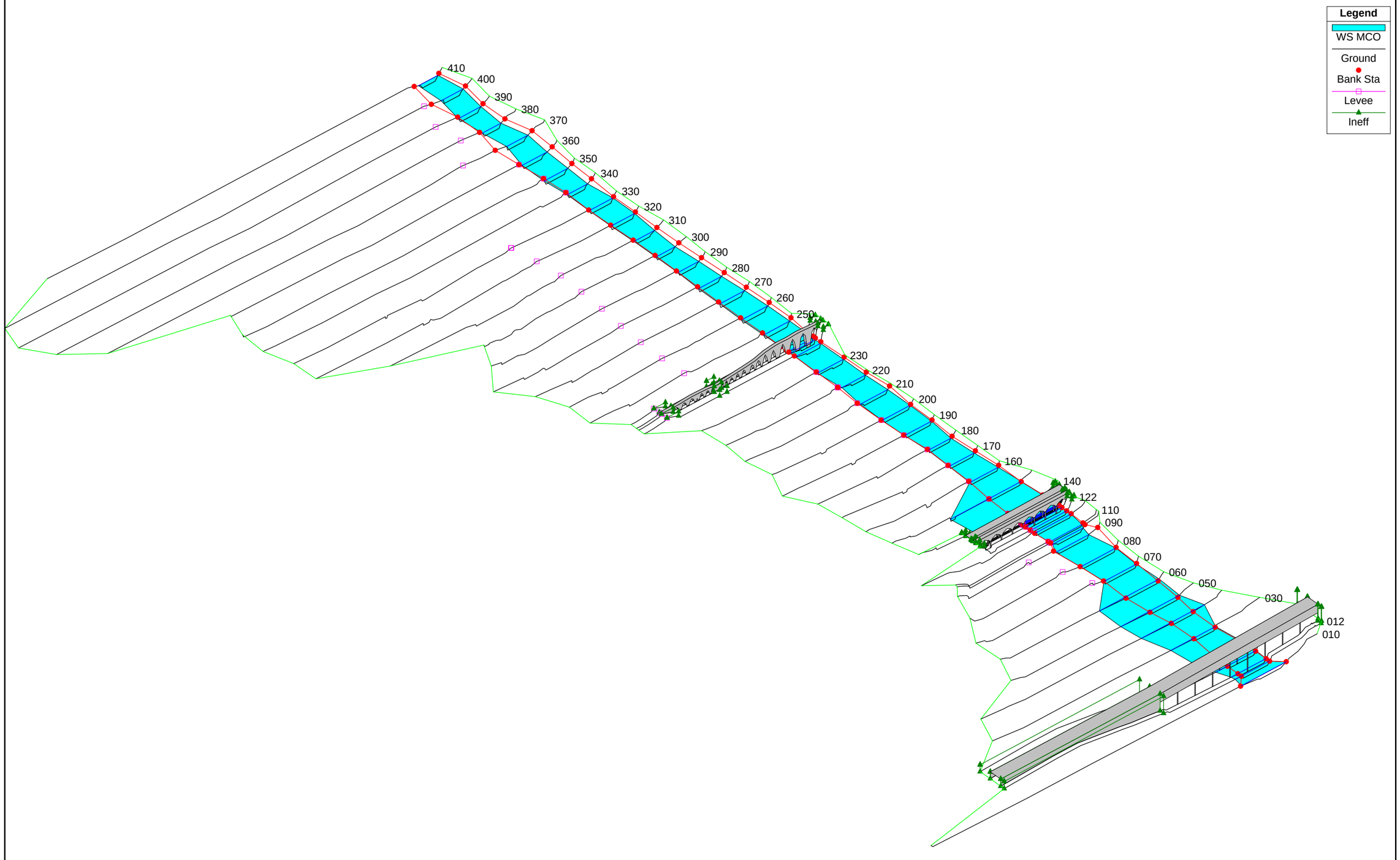
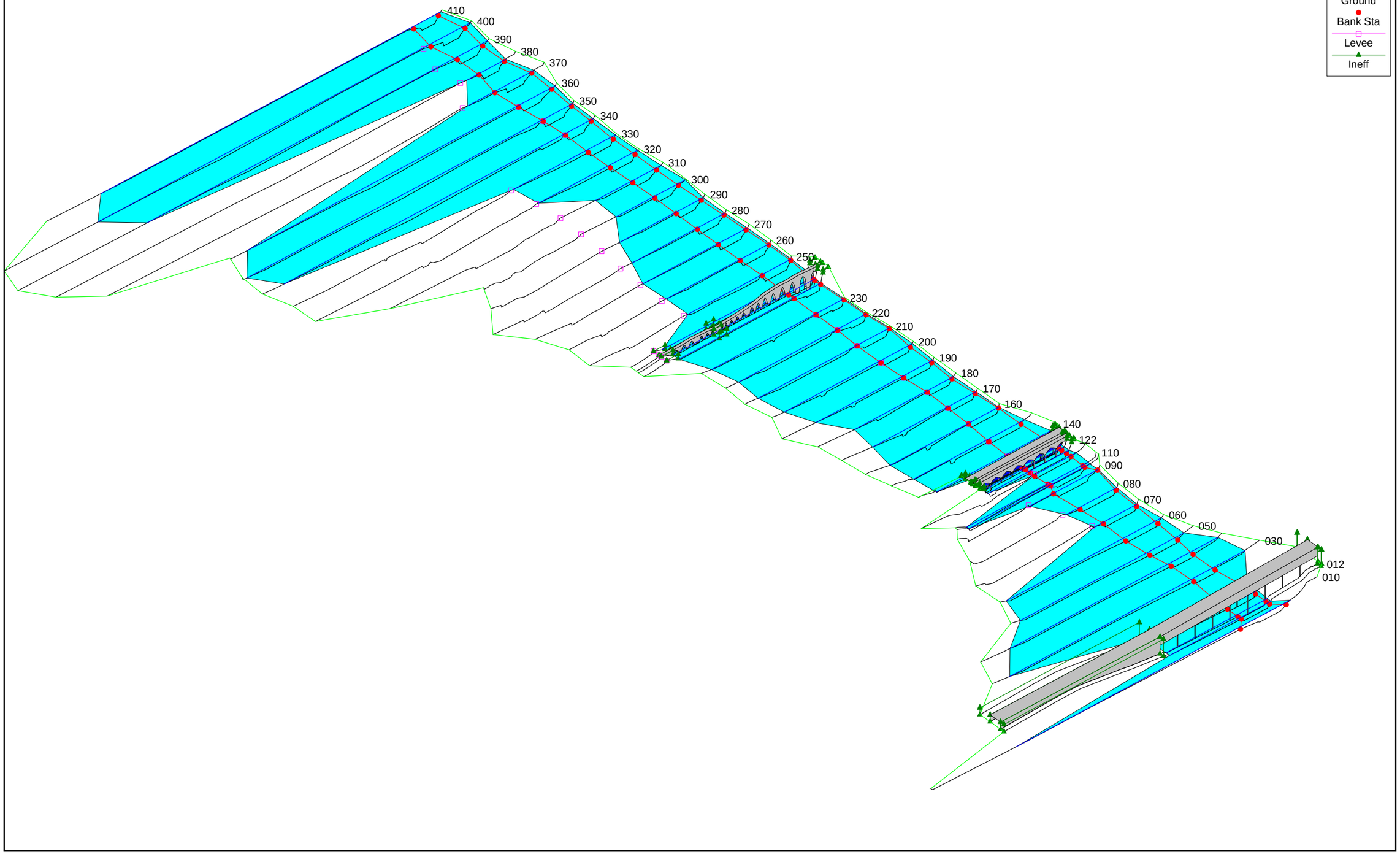
Legend
EG Q500
WS Q500
Crit Q500
Ground
Bank Sta
Elevation (m)
Station (m)
819
818
817
816
815
814
813
812
811
0
200
400
600
800

Anejo nº 5: VISTAS EN 3D (HEC-RAS)

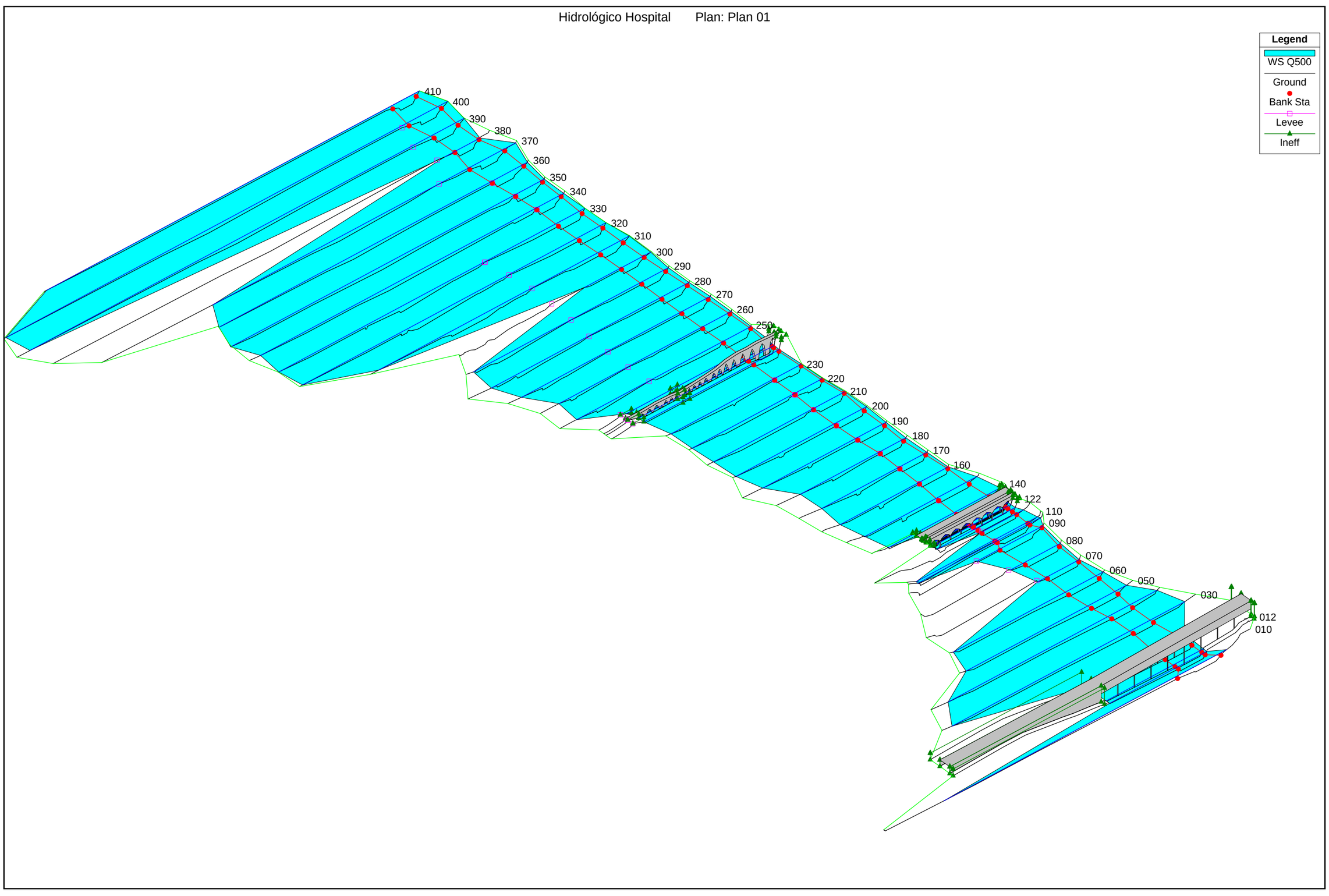
Hidrológico Hospital Plan: Plan 01



Hidrológico Hospital Plan: Plan 01



Hidrológico Hospital Plan: Plan 01



Anejo nº 6: TABLAS DE RESULTADOS DE PERFILES TRANSVERSALES (HEC-RAS)

Plan: Plan 01 Órbigo Tramo urbano RS: 410 Profile: MCO

E.G. Elev (m)	818.48	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.		0.035	
W.S. Elev (m)	818.27	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)		Flow Area (m2)		65.32	
E.G. Slope (m/m)	0.002580	Area (m2)		65.32	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	39.04	Top Width (m)		39.04	
Vel Total (m/s)	2.02	Avg. Vel. (m/s)		2.02	
Max Chl Dpth (m)	2.11	Hydr. Depth (m)		1.67	
Conv. Total (m3/s)	2595.2	Conv. (m3/s)		2595.2	
Length Wtd. (m)	50.00	Wetted Per. (m)		39.83	
Min Ch El (m)	816.16	Shear (N/m2)		41.48	
Alpha	1.00	Stream Power (N/m s)	37826.54	0.00	0.00
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	0.32	153.44	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	98.75	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 410 Profile: Q100

E.G. Elev (m)	820.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.39	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.32	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	819.37	Flow Area (m2)	3.05	162.63	199.83
E.G. Slope (m/m)	0.002233	Area (m2)	3.05	162.63	199.83
Q Total (m3/s)	549.71	Flow (m3/s)	1.66	480.18	67.88
Top Width (m)	679.48	Top Width (m)	4.54	49.32	625.62
Vel Total (m/s)	1.50	Avg. Vel. (m/s)	0.54	2.95	0.34
Max Chl Dpth (m)	4.16	Hydr. Depth (m)	0.67	3.30	0.32
Conv. Total (m3/s)	11633.0	Conv. (m3/s)	35.0	10161.6	1436.4
Length Wtd. (m)	50.00	Wetted Per. (m)	4.73	50.29	625.66
Min Ch El (m)	816.16	Shear (N/m2)	14.12	70.82	6.99
Alpha	3.37	Stream Power (N/m s)	37826.54	0.00	0.00
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	9.77	321.87	362.08
C & E Loss (m)	0.08	Cum SA (1000 m2)	13.36	109.93	414.39

Plan: Plan 01 Órbigo Tramo urbano RS: 410 Profile: Q500

E.G. Elev (m)	821.12	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.97	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)		Flow Area (m2)	6.66	194.52	637.84
E.G. Slope (m/m)	0.000981	Area (m2)	6.66	194.52	637.84
Q Total (m3/s)	713.21	Flow (m3/s)	3.13	428.95	281.13
Top Width (m)	785.01	Top Width (m)	6.62	49.32	729.07
Vel Total (m/s)	0.85	Avg. Vel. (m/s)	0.47	2.21	0.44
Max Chl Dpth (m)	4.81	Hydr. Depth (m)	1.01	3.94	0.87
Conv. Total (m3/s)	22771.3	Conv. (m3/s)	100.0	13695.5	8975.8
Length Wtd. (m)	50.00	Wetted Per. (m)	6.91	50.29	729.11
Min Ch El (m)	816.16	Shear (N/m2)	9.27	37.21	8.42
Alpha	4.15	Stream Power (N/m s)	37826.54	0.00	0.00
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	15.66	363.42	692.51
C & E Loss (m)	0.02	Cum SA (1000 m2)	17.61	109.92	589.10

Plan: Plan 01 Órbigo Tramo urbano RS: 400 Profile: MCO

E.G. Elev (m)	818.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.035	
W.S. Elev (m)	818.19	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	817.30	Flow Area (m2)		73.36	
E.G. Slope (m/m)	0.002080	Area (m2)		73.36	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	

Plan: Plan 01 Órbigo Tramo urbano RS: 400 Profile: MCO (Continued)

Top Width (m)	44.09	Top Width (m)		44.09	
Vel Total (m/s)	1.80	Avg. Vel. (m/s)		1.80	
Max Chl Dpth (m)	2.11	Hydr. Depth (m)		1.66	
Conv. Total (m3/s)	2890.4	Conv. (m3/s)		2890.4	
Length Wtd. (m)	50.00	Wetted Per. (m)		45.30	
Min Ch El (m)	816.08	Shear (N/m2)		33.02	
Alpha	1.00	Stream Power (N/m s)	44758.16	0.00	4613.60
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	0.32	149.97	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	96.67	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 400 Profile: Q100

E.G. Elev (m)	820.56	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.44	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	819.15	Flow Area (m2)	8.05	217.28	434.53
E.G. Slope (m/m)	0.000893	Area (m2)	8.05	217.28	434.53
Q Total (m3/s)	549.71	Flow (m3/s)	3.11	396.34	150.26
Top Width (m)	744.65	Top Width (m)	10.34	68.27	666.04
Vel Total (m/s)	0.83	Avg. Vel. (m/s)	0.39	1.82	0.35
Max Chl Dpth (m)	4.36	Hydr. Depth (m)	0.78	3.18	0.65
Conv. Total (m3/s)	18396.4	Conv. (m3/s)	104.2	13263.7	5028.5
Length Wtd. (m)	50.00	Wetted Per. (m)	10.44	69.57	666.08
Min Ch El (m)	816.08	Shear (N/m2)	6.76	27.35	5.71
Alpha	3.51	Stream Power (N/m s)	44758.16	0.00	4613.60
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	9.49	312.37	346.22
C & E Loss (m)	0.01	Cum SA (1000 m2)	12.99	106.99	382.10

Plan: Plan 01 Órbigo Tramo urbano RS: 400 Profile: Q500

E.G. Elev (m)	821.06	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.99	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	819.52	Flow Area (m2)	14.50	254.68	849.53
E.G. Slope (m/m)	0.000544	Area (m2)	14.50	254.68	849.53
Q Total (m3/s)	713.21	Flow (m3/s)	5.49	402.94	304.78
Top Width (m)	930.70	Top Width (m)	13.21	68.27	849.21
Vel Total (m/s)	0.64	Avg. Vel. (m/s)	0.38	1.58	0.36
Max Chl Dpth (m)	4.91	Hydr. Depth (m)	1.10	3.73	1.00
Conv. Total (m3/s)	30591.0	Conv. (m3/s)	235.6	17283.0	13072.4
Length Wtd. (m)	50.00	Wetted Per. (m)	13.37	69.57	849.25
Min Ch El (m)	816.08	Shear (N/m2)	5.78	19.51	5.33
Alpha	3.62	Stream Power (N/m s)	44758.16	0.00	4613.60
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	15.13	352.19	655.33
C & E Loss (m)	0.00	Cum SA (1000 m2)	17.11	106.98	549.64

Plan: Plan 01 Órbigo Tramo urbano RS: 390 Profile: MCO

E.G. Elev (m)	818.26	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.		0.035	
W.S. Elev (m)	818.13	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	817.14	Flow Area (m2)		83.01	
E.G. Slope (m/m)	0.001405	Area (m2)		83.01	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	45.13	Top Width (m)		45.13	
Vel Total (m/s)	1.59	Avg. Vel. (m/s)		1.59	
Max Chl Dpth (m)	2.12	Hydr. Depth (m)		1.84	
Conv. Total (m3/s)	3515.9	Conv. (m3/s)		3515.9	
Length Wtd. (m)	50.00	Wetted Per. (m)		45.99	
Min Ch El (m)	816.01	Shear (N/m2)		24.88	

Plan: Plan 01 Órbigo Tramo urbano RS: 390 Profile: MCO (Continued)

Alpha	1.00	Stream Power (N/m s)	45098.08	0.00	5145.92
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	146.06	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	94.44	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 390 Profile: Q100

E.G. Elev (m)	820.51	Element	Left OB	Channel	Right OB
Vel Head (m)	0.19	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.32	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	818.81	Flow Area (m2)	6.91	191.48	364.76
E.G. Slope (m/m)	0.001033	Area (m2)	6.91	191.48	364.76
Q Total (m3/s)	549.71	Flow (m3/s)	2.73	420.32	126.66
Top Width (m)	679.86	Top Width (m)	9.60	50.58	619.68
Vel Total (m/s)	0.98	Avg. Vel. (m/s)	0.39	2.20	0.35
Max Chl Dpth (m)	4.31	Hydr. Depth (m)	0.72	3.79	0.59
Conv. Total (m3/s)	17104.7	Conv. (m3/s)	84.9	13078.5	3941.3
Length Wtd. (m)	50.00	Wetted Per. (m)	9.70	51.81	619.70
Min Ch El (m)	816.01	Shear (N/m2)	7.22	37.44	5.96
Alpha	3.90	Stream Power (N/m s)	45098.08	0.00	5145.92
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	9.12	302.15	326.24
C & E Loss (m)	0.05	Cum SA (1000 m2)	12.49	104.02	349.96

Plan: Plan 01 Órbigo Tramo urbano RS: 390 Profile: Q500

E.G. Elev (m)	821.03	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.93	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	819.30	Flow Area (m2)	13.59	222.22	811.59
E.G. Slope (m/m)	0.000602	Area (m2)	13.59	222.22	811.59
Q Total (m3/s)	713.21	Flow (m3/s)	5.41	411.11	296.68
Top Width (m)	914.14	Top Width (m)	12.38	50.58	851.18
Vel Total (m/s)	0.68	Avg. Vel. (m/s)	0.40	1.85	0.37
Max Chl Dpth (m)	4.92	Hydr. Depth (m)	1.10	4.39	0.95
Conv. Total (m3/s)	29077.4	Conv. (m3/s)	220.6	16761.1	12095.7
Length Wtd. (m)	50.00	Wetted Per. (m)	12.54	51.81	851.20
Min Ch El (m)	816.01	Shear (N/m2)	6.40	25.31	5.63
Alpha	4.38	Stream Power (N/m s)	45098.08	0.00	5145.92
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	14.42	340.27	613.80
C & E Loss (m)	0.12	Cum SA (1000 m2)	16.47	104.01	507.13

Plan: Plan 01 Órbigo Tramo urbano RS: 380 Profile: MCO

E.G. Elev (m)	818.16	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.		0.035	
W.S. Elev (m)	817.97	Reach Len. (m)	47.05	48.70	50.35
Crit W.S. (m)	817.18	Flow Area (m2)		67.37	
E.G. Slope (m/m)	0.002214	Area (m2)		67.37	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	37.41	Top Width (m)		37.41	
Vel Total (m/s)	1.96	Avg. Vel. (m/s)		1.96	
Max Chl Dpth (m)	2.04	Hydr. Depth (m)		1.80	
Conv. Total (m3/s)	2801.5	Conv. (m3/s)		2801.5	
Length Wtd. (m)	48.70	Wetted Per. (m)		38.37	
Min Ch El (m)	815.93	Shear (N/m2)		38.12	
Alpha	1.00	Stream Power (N/m s)	43989.76	0.00	5283.33
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	0.32	142.30	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	92.38	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 380 Profile: Q100

E.G. Elev (m)	820.37	Element	Left OB	Channel	Right OB
Vel Head (m)	0.70	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.66	Reach Len. (m)	47.05	48.70	50.35
Crit W.S. (m)	819.07	Flow Area (m2)	0.84	146.28	8.28
E.G. Slope (m/m)	0.004271	Area (m2)	0.84	146.28	8.28
Q Total (m3/s)	549.71	Flow (m3/s)	0.39	545.33	3.98
Top Width (m)	78.23	Top Width (m)	2.52	50.72	24.98
Vel Total (m/s)	3.54	Avg. Vel. (m/s)	0.47	3.73	0.48
Max Chl Dpth (m)	3.73	Hydr. Depth (m)	0.33	2.88	0.33
Conv. Total (m3/s)	8411.6	Conv. (m3/s)	6.0	8344.6	60.9
Length Wtd. (m)	48.73	Wetted Per. (m)	2.61	51.85	24.99
Min Ch El (m)	815.93	Shear (N/m2)	13.42	118.15	13.87
Alpha	1.10	Stream Power (N/m s)	43989.76	0.00	5283.33
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	8.93	293.70	316.92
C & E Loss (m)	0.09	Cum SA (1000 m2)	12.18	101.49	333.84

Plan: Plan 01 Órbigo Tramo urbano RS: 380 Profile: Q500

E.G. Elev (m)	820.84	Element	Left OB	Channel	Right OB
Vel Head (m)	1.27	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.57	Reach Len. (m)	47.05	48.70	50.35
Crit W.S. (m)	819.57	Flow Area (m2)	0.63	141.81	6.22
E.G. Slope (m/m)	0.008008	Area (m2)	0.63	141.81	6.22
Q Total (m3/s)	713.21	Flow (m3/s)	0.37	709.11	3.73
Top Width (m)	74.57	Top Width (m)	2.19	50.72	21.66
Vel Total (m/s)	4.80	Avg. Vel. (m/s)	0.59	5.00	0.60
Max Chl Dpth (m)	3.64	Hydr. Depth (m)	0.29	2.80	0.29
Conv. Total (m3/s)	7969.8	Conv. (m3/s)	4.1	7924.0	41.7
Length Wtd. (m)	49.02	Wetted Per. (m)	2.26	51.85	21.67
Min Ch El (m)	815.93	Shear (N/m2)	21.82	214.78	22.55
Alpha	1.08	Stream Power (N/m s)	43989.76	0.00	5283.33
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	14.07	331.17	593.35
C & E Loss (m)	0.34	Cum SA (1000 m2)	16.11	101.47	485.31

Plan: Plan 01 Órbigo Tramo urbano RS: 370 Profile: MCO

E.G. Elev (m)	818.05	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.035	
W.S. Elev (m)	817.89	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	817.03	Flow Area (m2)		74.30	
E.G. Slope (m/m)	0.001917	Area (m2)		74.30	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	42.81	Top Width (m)		42.81	
Vel Total (m/s)	1.77	Avg. Vel. (m/s)		1.77	
Max Chl Dpth (m)	2.03	Hydr. Depth (m)		1.74	
Conv. Total (m3/s)	3010.5	Conv. (m3/s)		3010.5	
Length Wtd. (m)	50.00	Wetted Per. (m)		43.99	
Min Ch El (m)	815.86	Shear (N/m2)		31.75	
Alpha	1.00	Stream Power (N/m s)	41849.48	0.00	7818.37
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	138.85	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	90.42	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 370 Profile: Q100

E.G. Elev (m)	820.10	Element	Left OB	Channel	Right OB
Vel Head (m)	0.39	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.72	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	818.88	Flow Area (m2)	1.68	190.52	30.24
E.G. Slope (m/m)	0.002761	Area (m2)	1.68	190.52	30.24
Q Total (m3/s)	549.71	Flow (m3/s)	0.68	532.56	16.47

Plan: Plan 01 Órbigo Tramo urbano RS: 370 Profile: Q100 (Continued)

Top Width (m)	133.04	Top Width (m)	4.69	73.69	54.66
Vel Total (m/s)	2.47	Avg. Vel. (m/s)	0.41	2.80	0.54
Max Chl Dpth (m)	3.86	Hydr. Depth (m)	0.36	2.59	0.55
Conv. Total (m3/s)	10461.0	Conv. (m3/s)	13.0	10134.6	313.4
Length Wtd. (m)	50.00	Wetted Per. (m)	4.75	75.00	54.68
Min Ch El (m)	815.86	Shear (N/m2)	9.61	68.79	14.98
Alpha	1.24	Stream Power (N/m s)	41849.48	0.00	7818.37
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	8.87	285.50	315.95
C & E Loss (m)	0.09	Cum SA (1000 m2)	12.02	98.46	331.84

Plan: Plan 01 Órbigo Tramo urbano RS: 370 Profile: Q500

E.G. Elev (m)	820.24	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.11	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	819.34	Flow Area (m2)	5.82	219.48	525.16
E.G. Slope (m/m)	0.001178	Area (m2)	5.82	219.48	525.16
Q Total (m3/s)	713.21	Flow (m3/s)	1.22	440.26	271.73
Top Width (m)	637.98	Top Width (m)	23.07	73.69	541.22
Vel Total (m/s)	0.95	Avg. Vel. (m/s)	0.21	2.01	0.52
Max Chl Dpth (m)	4.25	Hydr. Depth (m)	0.25	2.98	0.97
Conv. Total (m3/s)	20783.8	Conv. (m3/s)	35.6	12829.7	7918.5
Length Wtd. (m)	50.00	Wetted Per. (m)	23.17	75.00	541.26
Min Ch El (m)	815.86	Shear (N/m2)	2.90	33.79	11.20
Alpha	2.86	Stream Power (N/m s)	41849.48	0.00	7818.37
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	13.92	322.37	579.98
C & E Loss (m)	0.01	Cum SA (1000 m2)	15.52	98.44	471.14

Plan: Plan 01 Órbigo Tramo urbano RS: 360 Profile: MCO

E.G. Elev (m)	817.96	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.		0.035	
W.S. Elev (m)	817.83	Reach Len. (m)	50.26	50.45	50.64
Crit W.S. (m)	816.89	Flow Area (m2)		82.52	
E.G. Slope (m/m)	0.001647	Area (m2)		82.52	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	50.23	Top Width (m)		50.23	
Vel Total (m/s)	1.60	Avg. Vel. (m/s)		1.60	
Max Chl Dpth (m)	2.05	Hydr. Depth (m)		1.64	
Conv. Total (m3/s)	3247.9	Conv. (m3/s)		3247.9	
Length Wtd. (m)	50.45	Wetted Per. (m)		51.04	
Min Ch El (m)	815.78	Shear (N/m2)		26.11	
Alpha	1.00	Stream Power (N/m s)	31260.42	0.00	3625.84
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	0.32	134.93	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	88.10	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 360 Profile: Q100

E.G. Elev (m)	819.95	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.85	Reach Len. (m)	50.26	50.45	50.64
Crit W.S. (m)	818.56	Flow Area (m2)	2.64	207.80	486.58
E.G. Slope (m/m)	0.000791	Area (m2)	2.64	207.80	486.58
Q Total (m3/s)	549.71	Flow (m3/s)	0.64	353.12	195.94
Top Width (m)	614.90	Top Width (m)	6.19	66.59	542.12
Vel Total (m/s)	0.79	Avg. Vel. (m/s)	0.24	1.70	0.40
Max Chl Dpth (m)	4.07	Hydr. Depth (m)	0.43	3.12	0.90
Conv. Total (m3/s)	19541.0	Conv. (m3/s)	22.8	12552.8	6965.4
Length Wtd. (m)	50.53	Wetted Per. (m)	6.24	67.59	542.14
Min Ch El (m)	815.78	Shear (N/m2)	3.28	23.86	6.97

Plan: Plan 01 Órbigo Tramo urbano RS: 360 Profile: Q100 (Continued)

Alpha	3.08	Stream Power (N/m s)	31260.42	0.00	3625.84
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	8.76	275.55	303.03
C & E Loss (m)	0.01	Cum SA (1000 m2)	11.74	94.95	316.92

Plan: Plan 01 Órbigo Tramo urbano RS: 360 Profile: Q500

E.G. Elev (m)	820.19	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.07	Reach Len. (m)	50.26	50.45	50.64
Crit W.S. (m)	819.10	Flow Area (m2)	4.17	222.58	611.87
E.G. Slope (m/m)	0.000889	Area (m2)	4.17	222.58	611.87
Q Total (m3/s)	713.21	Flow (m3/s)	1.30	419.63	292.29
Top Width (m)	649.58	Top Width (m)	7.40	66.59	575.60
Vel Total (m/s)	0.85	Avg. Vel. (m/s)	0.31	1.89	0.48
Max Chl Dpth (m)	4.29	Hydr. Depth (m)	0.56	3.34	1.06
Conv. Total (m3/s)	23923.9	Conv. (m3/s)	43.5	14075.9	9804.4
Length Wtd. (m)	50.54	Wetted Per. (m)	7.48	67.59	575.63
Min Ch El (m)	815.78	Shear (N/m2)	4.86	28.70	9.26
Alpha	3.02	Stream Power (N/m s)	31260.42	0.00	3625.84
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	13.67	311.32	551.55
C & E Loss (m)	0.01	Cum SA (1000 m2)	14.75	94.94	443.22

Plan: Plan 01 Órbigo Tramo urbano RS: 350 Profile: MCO

E.G. Elev (m)	817.88	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.		0.035	
W.S. Elev (m)	817.75	Reach Len. (m)	47.34	47.88	48.42
Crit W.S. (m)	816.78	Flow Area (m2)		84.56	
E.G. Slope (m/m)	0.001417	Area (m2)		84.56	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	47.54	Top Width (m)		47.54	
Vel Total (m/s)	1.56	Avg. Vel. (m/s)		1.56	
Max Chl Dpth (m)	2.05	Hydr. Depth (m)		1.78	
Conv. Total (m3/s)	3502.0	Conv. (m3/s)		3502.0	
Length Wtd. (m)	47.88	Wetted Per. (m)		48.45	
Min Ch El (m)	815.70	Shear (N/m2)		24.25	
Alpha	1.00	Stream Power (N/m s)	31784.20	0.00	2951.19
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	130.72	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	85.63	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 350 Profile: Q100

E.G. Elev (m)	819.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.84	Reach Len. (m)	47.34	47.88	48.42
Crit W.S. (m)	818.42	Flow Area (m2)	1.24	197.30	649.87
E.G. Slope (m/m)	0.000554	Area (m2)	1.24	197.30	649.87
Q Total (m3/s)	549.71	Flow (m3/s)	0.25	299.18	250.29
Top Width (m)	652.01	Top Width (m)	2.96	56.69	592.36
Vel Total (m/s)	0.65	Avg. Vel. (m/s)	0.20	1.52	0.39
Max Chl Dpth (m)	4.14	Hydr. Depth (m)	0.42	3.48	1.10
Conv. Total (m3/s)	23354.5	Conv. (m3/s)	10.5	12710.5	10633.5
Length Wtd. (m)	48.13	Wetted Per. (m)	3.07	58.27	592.49
Min Ch El (m)	815.70	Shear (N/m2)	2.20	18.40	5.96
Alpha	3.14	Stream Power (N/m s)	31784.20	0.00	2951.19
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	8.66	265.33	274.25
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.51	91.84	288.19

Plan: Plan 01 Órbigo Tramo urbano RS: 350 Profile: Q500

E.G. Elev (m)	820.14	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.06	Reach Len. (m)	47.34	47.88	48.42
Crit W.S. (m)	819.26	Flow Area (m2)	1.98	209.80	781.64
E.G. Slope (m/m)	0.000629	Area (m2)	1.98	209.80	781.64
Q Total (m3/s)	713.21	Flow (m3/s)	0.50	353.11	359.60
Top Width (m)	660.34	Top Width (m)	3.61	56.69	600.04
Vel Total (m/s)	0.72	Avg. Vel. (m/s)	0.25	1.68	0.46
Max Chl Dpth (m)	4.36	Hydr. Depth (m)	0.55	3.70	1.30
Conv. Total (m3/s)	28442.3	Conv. (m3/s)	19.8	14081.8	14340.8
Length Wtd. (m)	48.16	Wetted Per. (m)	3.76	58.27	600.19
Min Ch El (m)	815.70	Shear (N/m2)	3.24	22.20	8.03
Alpha	2.93	Stream Power (N/m s)	31784.20	0.00	2951.19
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	13.51	300.42	516.27
C & E Loss (m)	0.00	Cum SA (1000 m2)	14.48	91.83	413.45

Plan: Plan 01 Órbigo Tramo urbano RS: 340 Profile: MCO

E.G. Elev (m)	817.78	Element	Left OB	Channel	Right OB
Vel Head (m)	0.19	Wt. n-Val.		0.035	
W.S. Elev (m)	817.60	Reach Len. (m)	47.79	51.11	54.43
Crit W.S. (m)	816.84	Flow Area (m2)		68.67	
E.G. Slope (m/m)	0.002310	Area (m2)		68.67	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	40.67	Top Width (m)		40.67	
Vel Total (m/s)	1.92	Avg. Vel. (m/s)		1.92	
Max Chl Dpth (m)	1.97	Hydr. Depth (m)		1.69	
Conv. Total (m3/s)	2742.8	Conv. (m3/s)		2742.8	
Length Wtd. (m)	51.11	Wetted Per. (m)		41.55	
Min Ch El (m)	815.63	Shear (N/m2)		37.43	
Alpha	1.00	Stream Power (N/m s)	31826.35	0.00	2817.37
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	127.05	4.35
C & E Loss (m)	0.02	Cum SA (1000 m2)	1.33	83.52	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 340 Profile: Q100

E.G. Elev (m)	819.88	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.80	Reach Len. (m)	47.79	51.11	54.43
Crit W.S. (m)	819.06	Flow Area (m2)	1.66	174.43	628.58
E.G. Slope (m/m)	0.000653	Area (m2)	1.66	174.43	628.58
Q Total (m3/s)	549.71	Flow (m3/s)	0.35	283.33	266.03
Top Width (m)	618.15	Top Width (m)	4.13	51.25	562.77
Vel Total (m/s)	0.68	Avg. Vel. (m/s)	0.21	1.62	0.42
Max Chl Dpth (m)	4.17	Hydr. Depth (m)	0.40	3.40	1.12
Conv. Total (m3/s)	21505.4	Conv. (m3/s)	13.8	11084.3	10407.4
Length Wtd. (m)	52.18	Wetted Per. (m)	4.21	52.59	563.01
Min Ch El (m)	815.63	Shear (N/m2)	2.53	21.25	7.15
Alpha	3.10	Stream Power (N/m s)	31826.35	0.00	2817.37
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	8.59	256.43	243.30
C & E Loss (m)	0.02	Cum SA (1000 m2)	11.35	89.26	260.22

Plan: Plan 01 Órbigo Tramo urbano RS: 340 Profile: Q500

E.G. Elev (m)	820.10	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	820.02	Reach Len. (m)	47.79	51.11	54.43
Crit W.S. (m)	819.10	Flow Area (m2)	2.66	185.37	750.81
E.G. Slope (m/m)	0.000754	Area (m2)	2.66	185.37	750.81
Q Total (m3/s)	713.21	Flow (m3/s)	0.71	336.78	375.72

Plan: Plan 01 Órbigo Tramo urbano RS: 340 Profile: Q500 (Continued)

Top Width (m)	638.38	Top Width (m)	5.18	51.25	581.95
Vel Total (m/s)	0.76	Avg. Vel. (m/s)	0.27	1.82	0.50
Max Chl Dpth (m)	4.39	Hydr. Depth (m)	0.51	3.62	1.29
Conv. Total (m3/s)	25977.9	Conv. (m3/s)	25.9	12266.7	13685.3
Length Wtd. (m)	52.81	Wetted Per. (m)	5.28	52.59	582.20
Min Ch El (m)	815.63	Shear (N/m2)	3.72	26.05	9.53
Alpha	2.93	Stream Power (N/m s)	31826.35	0.00	2817.37
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	13.40	290.96	479.17
C & E Loss (m)	0.00	Cum SA (1000 m2)	14.27	89.24	384.84

Plan: Plan 01 Órbigo Tramo urbano RS: 330 Profile: MCO

E.G. Elev (m)	817.68	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.		0.035	
W.S. Elev (m)	817.56	Reach Len. (m)	48.51	50.05	51.59
Crit W.S. (m)	816.58	Flow Area (m2)		87.18	
E.G. Slope (m/m)	0.001284	Area (m2)		87.18	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	47.64	Top Width (m)		47.64	
Vel Total (m/s)	1.51	Avg. Vel. (m/s)		1.51	
Max Chl Dpth (m)	2.01	Hydr. Depth (m)		1.83	
Conv. Total (m3/s)	3678.9	Conv. (m3/s)		3678.9	
Length Wtd. (m)	50.05	Wetted Per. (m)		48.57	
Min Ch El (m)	815.55	Shear (N/m2)		22.60	
Alpha	1.00	Stream Power (N/m s)	30919.81	0.00	10098.68
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.32	123.07	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	81.26	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 330 Profile: Q100

E.G. Elev (m)	819.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.55	Reach Len. (m)	48.51	50.05	51.59
Crit W.S. (m)	818.34	Flow Area (m2)	3.08	185.67	157.89
E.G. Slope (m/m)	0.001318	Area (m2)	3.08	185.67	157.89
Q Total (m3/s)	549.71	Flow (m3/s)	1.31	457.04	91.37
Top Width (m)	203.71	Top Width (m)	4.39	49.66	149.66
Vel Total (m/s)	1.59	Avg. Vel. (m/s)	0.42	2.46	0.58
Max Chl Dpth (m)	4.00	Hydr. Depth (m)	0.70	3.74	1.05
Conv. Total (m3/s)	15144.5	Conv. (m3/s)	36.0	12591.3	2517.2
Length Wtd. (m)	50.30	Wetted Per. (m)	4.66	50.78	149.67
Min Ch El (m)	815.55	Shear (N/m2)	8.54	47.24	13.63
Alpha	2.03	Stream Power (N/m s)	30919.81	0.00	10098.68
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	8.48	247.23	221.90
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.14	86.68	240.84

Plan: Plan 01 Órbigo Tramo urbano RS: 330 Profile: Q500

E.G. Elev (m)	820.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.99	Reach Len. (m)	48.51	50.05	51.59
Crit W.S. (m)	818.81	Flow Area (m2)	5.33	207.29	800.09
E.G. Slope (m/m)	0.000555	Area (m2)	5.33	207.29	800.09
Q Total (m3/s)	713.21	Flow (m3/s)	1.73	356.39	355.09
Top Width (m)	644.97	Top Width (m)	5.95	49.66	589.36
Vel Total (m/s)	0.70	Avg. Vel. (m/s)	0.32	1.72	0.44
Max Chl Dpth (m)	4.44	Hydr. Depth (m)	0.90	4.17	1.36
Conv. Total (m3/s)	30273.5	Conv. (m3/s)	73.5	15127.5	15072.5
Length Wtd. (m)	50.80	Wetted Per. (m)	6.28	50.78	590.47
Min Ch El (m)	815.55	Shear (N/m2)	4.62	22.22	7.38

Plan: Plan 01 Órbigo Tramo urbano RS: 330 Profile: Q500 (Continued)

Alpha	3.18	Stream Power (N/m s)	30919.81	0.00	10098.68
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	13.21	280.92	436.96
C & E Loss (m)	0.00	Cum SA (1000 m2)	14.00	86.67	352.96

Plan: Plan 01 Órbigo Tramo urbano RS: 320 Profile: MCO

E.G. Elev (m)	817.61	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.035	
W.S. Elev (m)	817.50	Reach Len. (m)	47.83	50.10	52.37
Crit W.S. (m)	816.49	Flow Area (m2)		88.73	
E.G. Slope (m/m)	0.001214	Area (m2)		88.73	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	47.44	Top Width (m)		47.44	
Vel Total (m/s)	1.49	Avg. Vel. (m/s)		1.49	
Max Chl Dpth (m)	2.02	Hydr. Depth (m)		1.87	
Conv. Total (m3/s)	3782.9	Conv. (m3/s)		3782.9	
Length Wtd. (m)	50.10	Wetted Per. (m)		48.68	
Min Ch El (m)	815.48	Shear (N/m2)		21.70	
Alpha	1.00	Stream Power (N/m s)	30923.93	0.00	9783.66
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	0.32	118.66	4.35
C & E Loss (m)	0.02	Cum SA (1000 m2)	1.33	78.88	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 320 Profile: Q100

E.G. Elev (m)	819.75	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.48	Reach Len. (m)	47.83	50.10	52.37
Crit W.S. (m)	818.25	Flow Area (m2)	3.73	186.29	151.46
E.G. Slope (m/m)	0.001329	Area (m2)	3.73	186.29	151.46
Q Total (m3/s)	549.71	Flow (m3/s)	1.68	460.15	87.88
Top Width (m)	198.34	Top Width (m)	4.97	49.49	143.88
Vel Total (m/s)	1.61	Avg. Vel. (m/s)	0.45	2.47	0.58
Max Chl Dpth (m)	4.00	Hydr. Depth (m)	0.75	3.76	1.05
Conv. Total (m3/s)	15081.2	Conv. (m3/s)	46.0	12624.2	2411.0
Length Wtd. (m)	50.40	Wetted Per. (m)	5.19	51.00	143.90
Min Ch El (m)	815.48	Shear (N/m2)	9.36	47.59	13.71
Alpha	1.99	Stream Power (N/m s)	30923.93	0.00	9783.66
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	8.31	237.92	213.92
C & E Loss (m)	0.02	Cum SA (1000 m2)	10.92	84.20	233.26

Plan: Plan 01 Órbigo Tramo urbano RS: 320 Profile: Q500

E.G. Elev (m)	820.04	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.95	Reach Len. (m)	47.83	50.10	52.37
Crit W.S. (m)	818.74	Flow Area (m2)	6.42	209.56	770.90
E.G. Slope (m/m)	0.000576	Area (m2)	6.42	209.56	770.90
Q Total (m3/s)	713.21	Flow (m3/s)	2.29	368.52	342.41
Top Width (m)	639.07	Top Width (m)	6.49	49.49	583.10
Vel Total (m/s)	0.72	Avg. Vel. (m/s)	0.36	1.76	0.44
Max Chl Dpth (m)	4.47	Hydr. Depth (m)	0.99	4.23	1.32
Conv. Total (m3/s)	29728.7	Conv. (m3/s)	95.3	15360.9	14272.5
Length Wtd. (m)	51.17	Wetted Per. (m)	6.78	51.00	583.95
Min Ch El (m)	815.48	Shear (N/m2)	5.35	23.19	7.45
Alpha	3.24	Stream Power (N/m s)	30923.93	0.00	9783.66
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	12.93	270.49	396.44
C & E Loss (m)	0.00	Cum SA (1000 m2)	13.70	84.18	322.71

Plan: Plan 01 Órbigo Tramo urbano RS: 310 Profile: MCO

E.G. Elev (m)	817.50	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.		0.035	
W.S. Elev (m)	817.23	Reach Len. (m)	47.88	50.02	52.16
Crit W.S. (m)	816.79	Flow Area (m2)		57.71	
E.G. Slope (m/m)	0.004176	Area (m2)		57.71	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	41.42	Top Width (m)		41.42	
Vel Total (m/s)	2.28	Avg. Vel. (m/s)		2.28	
Max Chl Dpth (m)	1.83	Hydr. Depth (m)		1.39	
Conv. Total (m3/s)	2039.6	Conv. (m3/s)		2039.6	
Length Wtd. (m)	50.02	Wetted Per. (m)		41.94	
Min Ch El (m)	815.40	Shear (N/m2)		56.35	
Alpha	1.00	Stream Power (N/m s)	26158.41	0.00	9831.06
Frctn Loss (m)	0.19	Cum Volume (1000 m3)	0.32	114.99	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	76.66	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 310 Profile: Q100

E.G. Elev (m)	819.62	Element	Left OB	Channel	Right OB
Vel Head (m)	0.50	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.12	Reach Len. (m)	47.88	50.02	52.16
Crit W.S. (m)	818.63	Flow Area (m2)	5.25	145.14	74.33
E.G. Slope (m/m)	0.003117	Area (m2)	5.25	145.14	74.33
Q Total (m3/s)	549.71	Flow (m3/s)	3.14	482.98	63.59
Top Width (m)	131.09	Top Width (m)	8.96	47.38	74.75
Vel Total (m/s)	2.45	Avg. Vel. (m/s)	0.60	3.33	0.86
Max Chl Dpth (m)	3.72	Hydr. Depth (m)	0.59	3.06	0.99
Conv. Total (m3/s)	9845.5	Conv. (m3/s)	56.3	8650.3	1138.9
Length Wtd. (m)	50.23	Wetted Per. (m)	9.03	48.18	74.79
Min Ch El (m)	815.40	Shear (N/m2)	17.78	92.10	30.38
Alpha	1.64	Stream Power (N/m s)	26158.41	0.00	9831.06
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	8.10	229.61	208.00
C & E Loss (m)	0.00	Cum SA (1000 m2)	10.58	81.77	227.54

Plan: Plan 01 Órbigo Tramo urbano RS: 310 Profile: Q500

E.G. Elev (m)	820.00	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.88	Reach Len. (m)	47.88	50.02	52.16
Crit W.S. (m)	819.02	Flow Area (m2)	13.43	181.12	616.93
E.G. Slope (m/m)	0.000874	Area (m2)	13.43	181.12	616.93
Q Total (m3/s)	713.21	Flow (m3/s)	6.33	369.85	337.03
Top Width (m)	528.00	Top Width (m)	12.59	47.38	468.03
Vel Total (m/s)	0.88	Avg. Vel. (m/s)	0.47	2.04	0.55
Max Chl Dpth (m)	4.48	Hydr. Depth (m)	1.07	3.82	1.32
Conv. Total (m3/s)	24128.8	Conv. (m3/s)	214.1	12512.4	11402.2
Length Wtd. (m)	50.61	Wetted Per. (m)	12.74	48.18	468.53
Min Ch El (m)	815.40	Shear (N/m2)	9.04	32.21	11.28
Alpha	2.98	Stream Power (N/m s)	26158.41	0.00	9831.06
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	12.45	260.70	360.10
C & E Loss (m)	0.08	Cum SA (1000 m2)	13.25	81.76	295.19

Plan: Plan 01 Órbigo Tramo urbano RS: 300 Profile: MCO

E.G. Elev (m)	817.30	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.		0.035	
W.S. Elev (m)	817.05	Reach Len. (m)	49.10	50.18	51.26
Crit W.S. (m)	816.51	Flow Area (m2)		59.55	
E.G. Slope (m/m)	0.003423	Area (m2)		59.55	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	

Plan: Plan 01 Órbigo Tramo urbano RS: 300 Profile: MCO (Continued)

Top Width (m)	38.30	Top Width (m)		38.30	
Vel Total (m/s)	2.21	Avg. Vel. (m/s)		2.21	
Max Chl Dpth (m)	1.80	Hydr. Depth (m)		1.55	
Conv. Total (m3/s)	2252.9	Conv. (m3/s)		2252.9	
Length Wtd. (m)	50.18	Wetted Per. (m)		39.08	
Min Ch El (m)	815.25	Shear (N/m2)		51.15	
Alpha	1.00	Stream Power (N/m s)	19408.82	0.00	10060.92
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	0.32	112.06	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	74.66	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 300 Profile: Q100

E.G. Elev (m)	819.45	Element	Left OB	Channel	Right OB
Vel Head (m)	0.55	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.91	Reach Len. (m)	49.10	50.18	51.26
Crit W.S. (m)	818.51	Flow Area (m2)	6.23	143.13	65.31
E.G. Slope (m/m)	0.003447	Area (m2)	6.23	143.13	65.31
Q Total (m3/s)	549.71	Flow (m3/s)	3.31	493.83	52.56
Top Width (m)	138.79	Top Width (m)	13.75	47.43	77.61
Vel Total (m/s)	2.56	Avg. Vel. (m/s)	0.53	3.45	0.80
Max Chl Dpth (m)	3.66	Hydr. Depth (m)	0.45	3.02	0.84
Conv. Total (m3/s)	9363.0	Conv. (m3/s)	56.4	8411.2	895.3
Length Wtd. (m)	50.26	Wetted Per. (m)	13.78	48.52	77.65
Min Ch El (m)	815.25	Shear (N/m2)	15.28	99.71	28.43
Alpha	1.64	Stream Power (N/m s)	19408.82	0.00	10060.92
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	7.82	222.41	204.36
C & E Loss (m)	0.00	Cum SA (1000 m2)	10.04	79.40	223.57

Plan: Plan 01 Órbigo Tramo urbano RS: 300 Profile: Q500

E.G. Elev (m)	819.83	Element	Left OB	Channel	Right OB
Vel Head (m)	0.92	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.91	Reach Len. (m)	49.10	50.18	51.26
Crit W.S. (m)	818.91	Flow Area (m2)	6.26	143.26	65.52
E.G. Slope (m/m)	0.005781	Area (m2)	6.26	143.26	65.52
Q Total (m3/s)	713.21	Flow (m3/s)	4.32	640.47	68.42
Top Width (m)	138.86	Top Width (m)	13.79	47.43	77.64
Vel Total (m/s)	3.32	Avg. Vel. (m/s)	0.69	4.47	1.04
Max Chl Dpth (m)	3.66	Hydr. Depth (m)	0.45	3.02	0.84
Conv. Total (m3/s)	9380.4	Conv. (m3/s)	56.9	8423.7	899.8
Length Wtd. (m)	50.42	Wetted Per. (m)	13.82	48.52	77.68
Min Ch El (m)	815.25	Shear (N/m2)	25.69	167.38	47.82
Alpha	1.64	Stream Power (N/m s)	19408.82	0.00	10060.92
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	11.98	252.59	342.30
C & E Loss (m)	0.21	Cum SA (1000 m2)	12.61	79.39	280.96

Plan: Plan 01 Órbigo Tramo urbano RS: 290 Profile: MCO

E.G. Elev (m)	817.13	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.		0.035	
W.S. Elev (m)	816.93	Reach Len. (m)	50.18	50.03	49.88
Crit W.S. (m)	816.29	Flow Area (m2)		65.35	
E.G. Slope (m/m)	0.002813	Area (m2)		65.35	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	41.83	Top Width (m)		41.83	
Vel Total (m/s)	2.02	Avg. Vel. (m/s)		2.02	
Max Chl Dpth (m)	1.83	Hydr. Depth (m)		1.56	
Conv. Total (m3/s)	2485.1	Conv. (m3/s)		2485.1	
Length Wtd. (m)	50.03	Wetted Per. (m)		42.56	
Min Ch El (m)	815.10	Shear (N/m2)		42.36	

Plan: Plan 01 Órbigo Tramo urbano RS: 290 Profile: MCO (Continued)

Alpha	1.00	Stream Power (N/m s)	20474.02	0.00	9882.28
Frctn Loss (m)	0.11	Cum Volume (1000 m3)	0.32	108.93	4.35
C & E Loss (m)	0.02	Cum SA (1000 m2)	1.33	72.65	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 290 Profile: Q100

E.G. Elev (m)	819.28	Element	Left OB	Channel	Right OB
Vel Head (m)	0.55	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.74	Reach Len. (m)	50.18	50.03	49.88
Crit W.S. (m)	818.22	Flow Area (m2)	1.41	151.53	61.44
E.G. Slope (m/m)	0.003291	Area (m2)	1.41	151.53	61.44
Q Total (m3/s)	549.71	Flow (m3/s)	0.63	513.03	36.05
Top Width (m)	167.19	Top Width (m)	3.82	50.01	113.36
Vel Total (m/s)	2.56	Avg. Vel. (m/s)	0.45	3.39	0.59
Max Chl Dpth (m)	3.64	Hydr. Depth (m)	0.37	3.03	0.54
Conv. Total (m3/s)	9581.7	Conv. (m3/s)	11.0	8942.3	628.4
Length Wtd. (m)	50.02	Wetted Per. (m)	3.89	51.05	113.37
Min Ch El (m)	815.10	Shear (N/m2)	11.69	95.82	17.49
Alpha	1.63	Stream Power (N/m s)	20474.02	0.00	9882.28
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	7.64	215.01	201.11
C & E Loss (m)	0.03	Cum SA (1000 m2)	9.61	76.96	218.67

Plan: Plan 01 Órbigo Tramo urbano RS: 290 Profile: Q500

E.G. Elev (m)	819.47	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.23	Reach Len. (m)	50.18	50.03	49.88
Crit W.S. (m)	818.69	Flow Area (m2)	3.85	176.24	384.70
E.G. Slope (m/m)	0.001608	Area (m2)	3.85	176.24	384.70
Q Total (m3/s)	713.21	Flow (m3/s)	1.80	461.26	250.15
Top Width (m)	410.39	Top Width (m)	5.65	50.01	354.72
Vel Total (m/s)	1.26	Avg. Vel. (m/s)	0.47	2.62	0.65
Max Chl Dpth (m)	4.13	Hydr. Depth (m)	0.68	3.52	1.08
Conv. Total (m3/s)	17785.6	Conv. (m3/s)	45.0	11502.6	6238.1
Length Wtd. (m)	49.98	Wetted Per. (m)	5.80	51.05	355.52
Min Ch El (m)	815.10	Shear (N/m2)	10.45	54.44	17.06
Alpha	2.87	Stream Power (N/m s)	20474.02	0.00	9882.28
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	11.73	244.57	330.76
C & E Loss (m)	0.01	Cum SA (1000 m2)	12.14	76.94	269.88

Plan: Plan 01 Órbigo Tramo urbano RS: 280 Profile: MCO

E.G. Elev (m)	817.01	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.		0.035	
W.S. Elev (m)	816.86	Reach Len. (m)	49.91	49.15	48.39
Crit W.S. (m)	816.02	Flow Area (m2)		78.37	
E.G. Slope (m/m)	0.001756	Area (m2)		78.37	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	46.10	Top Width (m)		46.10	
Vel Total (m/s)	1.68	Avg. Vel. (m/s)		1.68	
Max Chl Dpth (m)	1.91	Hydr. Depth (m)		1.70	
Conv. Total (m3/s)	3145.0	Conv. (m3/s)		3145.0	
Length Wtd. (m)	49.15	Wetted Per. (m)		47.08	
Min Ch El (m)	814.95	Shear (N/m2)		28.67	
Alpha	1.00	Stream Power (N/m s)	22335.51	0.00	10125.07
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	0.32	105.33	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	70.46	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 280 Profile: Q100

E.G. Elev (m)	819.11	Element	Left OB	Channel	Right OB
Vel Head (m)	0.45	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.66	Reach Len. (m)	49.91	49.15	48.39
Crit W.S. (m)	817.65	Flow Area (m2)	0.71	170.26	63.85
E.G. Slope (m/m)	0.002503	Area (m2)	0.71	170.26	63.85
Q Total (m3/s)	549.71	Flow (m3/s)	0.26	518.99	30.46
Top Width (m)	186.23	Top Width (m)	2.15	53.24	130.84
Vel Total (m/s)	2.34	Avg. Vel. (m/s)	0.36	3.05	0.48
Max Chl Dpth (m)	3.71	Hydr. Depth (m)	0.33	3.20	0.49
Conv. Total (m3/s)	10988.6	Conv. (m3/s)	5.1	10374.5	608.9
Length Wtd. (m)	49.11	Wetted Per. (m)	2.25	54.67	130.85
Min Ch El (m)	814.95	Shear (N/m2)	7.78	76.43	11.98
Alpha	1.60	Stream Power (N/m s)	22335.51	0.00	10125.07
Frctn Loss (m)	0.11	Cum Volume (1000 m3)	7.58	206.96	197.99
C & E Loss (m)	0.02	Cum SA (1000 m2)	9.46	74.37	212.58

Plan: Plan 01 Órbigo Tramo urbano RS: 280 Profile: Q500

E.G. Elev (m)	819.38	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.19	Reach Len. (m)	49.91	49.15	48.39
Crit W.S. (m)	818.36	Flow Area (m2)	2.25	198.05	406.48
E.G. Slope (m/m)	0.001252	Area (m2)	2.25	198.05	406.48
Q Total (m3/s)	713.21	Flow (m3/s)	0.87	472.34	239.99
Top Width (m)	416.07	Top Width (m)	3.51	53.24	359.32
Vel Total (m/s)	1.18	Avg. Vel. (m/s)	0.39	2.38	0.59
Max Chl Dpth (m)	4.24	Hydr. Depth (m)	0.64	3.72	1.13
Conv. Total (m3/s)	20154.3	Conv. (m3/s)	24.7	13347.8	6781.8
Length Wtd. (m)	48.92	Wetted Per. (m)	3.72	54.67	359.93
Min Ch El (m)	814.95	Shear (N/m2)	7.42	44.49	13.87
Alpha	2.81	Stream Power (N/m s)	22335.51	0.00	10125.07
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	11.58	235.21	311.03
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.91	74.36	252.07

Plan: Plan 01 Órbigo Tramo urbano RS: 270 Profile: MCO

E.G. Elev (m)	816.92	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.035	
W.S. Elev (m)	816.81	Reach Len. (m)	51.22	51.07	50.92
Crit W.S. (m)	815.81	Flow Area (m2)		89.77	
E.G. Slope (m/m)	0.001239	Area (m2)		89.77	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	49.67	Top Width (m)		49.67	
Vel Total (m/s)	1.47	Avg. Vel. (m/s)		1.47	
Max Chl Dpth (m)	2.01	Hydr. Depth (m)		1.81	
Conv. Total (m3/s)	3745.1	Conv. (m3/s)		3745.1	
Length Wtd. (m)	51.07	Wetted Per. (m)		50.88	
Min Ch El (m)	814.80	Shear (N/m2)		21.43	
Alpha	1.00	Stream Power (N/m s)	20495.08	0.00	10400.37
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.32	101.20	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	68.10	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 270 Profile: Q100

E.G. Elev (m)	818.98	Element	Left OB	Channel	Right OB
Vel Head (m)	0.38	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.60	Reach Len. (m)	51.22	51.07	50.92
Crit W.S. (m)	817.36	Flow Area (m2)	0.73	185.47	68.79
E.G. Slope (m/m)	0.002013	Area (m2)	0.73	185.47	68.79
Q Total (m3/s)	549.71	Flow (m3/s)	0.22	521.38	28.11

Plan: Plan 01 Órbigo Tramo urbano RS: 270 Profile: Q100 (Continued)

Top Width (m)	208.87	Top Width (m)	2.42	55.39	151.06
Vel Total (m/s)	2.16	Avg. Vel. (m/s)	0.30	2.81	0.41
Max Chl Dpth (m)	3.80	Hydr. Depth (m)	0.30	3.35	0.46
Conv. Total (m3/s)	12251.0	Conv. (m3/s)	4.9	11619.7	626.4
Length Wtd. (m)	51.06	Wetted Per. (m)	2.49	57.12	151.06
Min Ch El (m)	814.80	Shear (N/m2)	5.75	64.11	8.99
Alpha	1.61	Stream Power (N/m s)	20495.08	0.00	10400.37
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	7.55	198.22	194.78
C & E Loss (m)	0.02	Cum SA (1000 m2)	9.34	71.70	205.76

Plan: Plan 01 Órbigo Tramo urbano RS: 270 Profile: Q500

E.G. Elev (m)	819.32	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.09	Reach Len. (m)	51.22	51.07	50.92
Crit W.S. (m)	817.81	Flow Area (m2)	2.39	212.62	343.07
E.G. Slope (m/m)	0.001279	Area (m2)	2.39	212.62	343.07
Q Total (m3/s)	713.21	Flow (m3/s)	0.88	521.91	190.42
Top Width (m)	397.64	Top Width (m)	4.22	55.39	338.03
Vel Total (m/s)	1.28	Avg. Vel. (m/s)	0.37	2.45	0.56
Max Chl Dpth (m)	4.29	Hydr. Depth (m)	0.57	3.84	1.01
Conv. Total (m3/s)	19939.3	Conv. (m3/s)	24.6	14591.1	5323.6
Length Wtd. (m)	51.03	Wetted Per. (m)	4.37	57.12	338.67
Min Ch El (m)	814.80	Shear (N/m2)	6.87	46.70	12.71
Alpha	2.75	Stream Power (N/m s)	20495.08	0.00	10400.37
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	11.46	225.12	292.89
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.71	71.69	235.20

Plan: Plan 01 Órbigo Tramo urbano RS: 260 Profile: MCO

E.G. Elev (m)	816.86	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	816.77	Reach Len. (m)	51.86	49.82	47.78
Crit W.S. (m)	815.63	Flow Area (m2)		99.95	
E.G. Slope (m/m)	0.000927	Area (m2)		99.95	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	52.56	Top Width (m)		52.56	
Vel Total (m/s)	1.32	Avg. Vel. (m/s)		1.32	
Max Chl Dpth (m)	2.12	Hydr. Depth (m)		1.90	
Conv. Total (m3/s)	4329.1	Conv. (m3/s)		4329.1	
Length Wtd. (m)	49.82	Wetted Per. (m)		53.55	
Min Ch El (m)	814.65	Shear (N/m2)		16.97	
Alpha	1.00	Stream Power (N/m s)	19321.12	0.00	10450.64
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	0.32	96.36	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	65.49	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 260 Profile: Q100

E.G. Elev (m)	818.87	Element	Left OB	Channel	Right OB
Vel Head (m)	0.32	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.55	Reach Len. (m)	51.86	49.82	47.78
Crit W.S. (m)	817.13	Flow Area (m2)	0.40	199.20	80.30
E.G. Slope (m/m)	0.001627	Area (m2)	0.40	199.20	80.30
Q Total (m3/s)	549.71	Flow (m3/s)	0.10	516.51	33.10
Top Width (m)	207.14	Top Width (m)	1.45	57.40	148.29
Vel Total (m/s)	1.96	Avg. Vel. (m/s)	0.25	2.59	0.41
Max Chl Dpth (m)	3.90	Hydr. Depth (m)	0.27	3.47	0.54
Conv. Total (m3/s)	13629.4	Conv. (m3/s)	2.5	12806.4	820.6
Length Wtd. (m)	49.57	Wetted Per. (m)	1.55	59.02	148.32
Min Ch El (m)	814.65	Shear (N/m2)	4.10	53.84	8.64

Plan: Plan 01 Órbigo Tramo urbano RS: 260 Profile: Q100 (Continued)

Alpha	1.64	Stream Power (N/m s)	19321.12	0.00	10450.64
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	7.52	188.40	190.98
C & E Loss (m)	0.04	Cum SA (1000 m2)	9.24	68.82	198.14

Plan: Plan 01 Órbigo Tramo urbano RS: 260 Profile: Q500

E.G. Elev (m)	819.25	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.00	Reach Len. (m)	51.86	49.82	47.78
Crit W.S. (m)	817.56	Flow Area (m2)	1.33	225.28	290.69
E.G. Slope (m/m)	0.001261	Area (m2)	1.33	225.28	290.69
Q Total (m3/s)	713.21	Flow (m3/s)	0.44	558.37	154.40
Top Width (m)	362.85	Top Width (m)	2.64	57.40	302.81
Vel Total (m/s)	1.38	Avg. Vel. (m/s)	0.33	2.48	0.53
Max Chl Dpth (m)	4.35	Hydr. Depth (m)	0.50	3.92	0.96
Conv. Total (m3/s)	20080.6	Conv. (m3/s)	12.3	15721.1	4347.1
Length Wtd. (m)	49.29	Wetted Per. (m)	2.83	59.02	303.33
Min Ch El (m)	814.65	Shear (N/m2)	5.81	47.22	11.86
Alpha	2.56	Stream Power (N/m s)	19321.12	0.00	10450.64
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	11.37	213.94	276.76
C & E Loss (m)	0.02	Cum SA (1000 m2)	11.54	68.81	218.88

Plan: Plan 01 Órbigo Tramo urbano RS: 250 Profile: MCO

E.G. Elev (m)	816.82	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.035	
W.S. Elev (m)	816.74	Reach Len. (m)	40.61	40.30	39.99
Crit W.S. (m)	815.48	Flow Area (m2)		105.38	
E.G. Slope (m/m)	0.000770	Area (m2)		105.38	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	52.14	Top Width (m)		52.14	
Vel Total (m/s)	1.25	Avg. Vel. (m/s)		1.25	
Max Chl Dpth (m)	2.24	Hydr. Depth (m)		2.02	
Conv. Total (m3/s)	4749.2	Conv. (m3/s)		4749.2	
Length Wtd. (m)	40.30	Wetted Per. (m)		53.19	
Min Ch El (m)	814.50	Shear (N/m2)		14.96	
Alpha	1.00	Stream Power (N/m s)	19292.87	0.00	10288.00
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	0.32	91.24	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	62.88	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 250 Profile: Q100

E.G. Elev (m)	818.77	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.57	Reach Len. (m)	40.61	40.30	39.99
Crit W.S. (m)	816.98	Flow Area (m2)	0.17	206.92	177.86
E.G. Slope (m/m)	0.001072	Area (m2)	0.17	206.92	177.86
Q Total (m3/s)	549.71	Flow (m3/s)	0.03	448.66	101.02
Top Width (m)	205.92	Top Width (m)	0.59	56.95	148.38
Vel Total (m/s)	1.43	Avg. Vel. (m/s)	0.17	2.17	0.57
Max Chl Dpth (m)	4.07	Hydr. Depth (m)	0.29	3.63	1.20
Conv. Total (m3/s)	16785.6	Conv. (m3/s)	0.9	13700.1	3084.6
Length Wtd. (m)	40.22	Wetted Per. (m)	0.82	58.66	148.60
Min Ch El (m)	814.50	Shear (N/m2)	2.15	37.10	12.59
Alpha	1.91	Stream Power (N/m s)	19292.87	0.00	10288.00
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	7.50	178.28	184.82
C & E Loss (m)	0.02	Cum SA (1000 m2)	9.19	65.98	191.05

Plan: Plan 01 Órbigo Tramo urbano RS: 250 Profile: Q500

E.G. Elev (m)	819.18	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	819.00	Reach Len. (m)	40.61	40.30	39.99
Crit W.S. (m)	817.70	Flow Area (m2)	0.52	231.63	392.22
E.G. Slope (m/m)	0.000914	Area (m2)	0.52	231.63	392.22
Q Total (m3/s)	713.21	Flow (m3/s)	0.12	499.74	213.34
Top Width (m)	367.33	Top Width (m)	1.03	56.95	309.36
Vel Total (m/s)	1.14	Avg. Vel. (m/s)	0.24	2.16	0.54
Max Chl Dpth (m)	4.50	Hydr. Depth (m)	0.50	4.07	1.27
Conv. Total (m3/s)	23596.1	Conv. (m3/s)	4.0	16533.7	7058.3
Length Wtd. (m)	40.19	Wetted Per. (m)	1.44	58.66	310.02
Min Ch El (m)	814.50	Shear (N/m2)	3.23	35.38	11.33
Alpha	2.57	Stream Power (N/m s)	19292.87	0.00	10288.00
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	11.32	202.56	260.44
C & E Loss (m)	0.01	Cum SA (1000 m2)	11.44	65.96	204.26

Plan: Plan 01 Órbigo Tramo urbano RS: 248 Profile: MCO

E.G. Elev (m)	816.77	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.		0.035	
W.S. Elev (m)	816.64	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	815.81	Flow Area (m2)		83.37	
E.G. Slope (m/m)	0.001666	Area (m2)		83.37	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	51.43	Top Width (m)		51.43	
Vel Total (m/s)	1.58	Avg. Vel. (m/s)		1.58	
Max Chl Dpth (m)	2.22	Hydr. Depth (m)		1.62	
Conv. Total (m3/s)	3228.9	Conv. (m3/s)		3228.9	
Length Wtd. (m)	12.50	Wetted Per. (m)		52.82	
Min Ch El (m)	814.42	Shear (N/m2)		25.79	
Alpha	1.00	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	0.32	87.44	4.35
C & E Loss (m)	0.04	Cum SA (1000 m2)	1.33	60.80	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 248 Profile: Q100

E.G. Elev (m)	818.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.58	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	817.61	Flow Area (m2)	0.89	185.77	321.70
E.G. Slope (m/m)	0.000889	Area (m2)	0.89	185.77	345.06
Q Total (m3/s)	549.71	Flow (m3/s)	0.25	357.59	191.87
Top Width (m)	291.36	Top Width (m)	1.14	53.00	237.22
Vel Total (m/s)	1.08	Avg. Vel. (m/s)	0.28	1.92	0.60
Max Chl Dpth (m)	4.16	Hydr. Depth (m)	0.78	3.50	1.48
Conv. Total (m3/s)	18437.8	Conv. (m3/s)	8.3	11994.0	6435.5
Length Wtd. (m)	12.50	Wetted Per. (m)	1.88	54.69	216.96
Min Ch El (m)	814.42	Shear (N/m2)	4.13	29.61	12.93
Alpha	2.17	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	7.48	170.37	174.36
C & E Loss (m)	0.06	Cum SA (1000 m2)	9.16	63.76	183.34

Plan: Plan 01 Órbigo Tramo urbano RS: 248 Profile: Q500

E.G. Elev (m)	819.13	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.99	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	817.86	Flow Area (m2)	1.41	207.55	410.76
E.G. Slope (m/m)	0.000875	Area (m2)	1.41	207.55	443.50
Q Total (m3/s)	713.21	Flow (m3/s)	0.45	426.72	286.04

Plan: Plan 01 Órbigo Tramo urbano RS: 248 Profile: Q500 (Continued)

Top Width (m)	296.40	Top Width (m)	1.40	53.00	242.00
Vel Total (m/s)	1.15	Avg. Vel. (m/s)	0.32	2.06	0.70
Max Chl Dpth (m)	4.57	Hydr. Depth (m)	1.01	3.92	1.89
Conv. Total (m3/s)	24114.3	Conv. (m3/s)	15.4	14427.6	9671.3
Length Wtd. (m)	12.50	Wetted Per. (m)	2.37	54.69	216.96
Min Ch El (m)	814.42	Shear (N/m2)	5.11	32.55	16.24
Alpha	2.06	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	11.28	193.71	243.73
C & E Loss (m)	0.07	Cum SA (1000 m2)	11.39	63.75	193.23

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR U Profile: MCO

E.G. Elev (m)	816.69	Element	Left OB	Channel	Right OB
Vel Head (m)	0.48	Wt. n-Val.		0.035	
W.S. Elev (m)	816.21	Reach Len. (m)	5.00	5.00	5.00
Crit W.S. (m)	816.11	Flow Area (m2)		42.96	
E.G. Slope (m/m)	0.011363	Area (m2)		42.96	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	34.73	Top Width (m)		34.73	
Vel Total (m/s)	3.07	Avg. Vel. (m/s)		3.07	
Max Chl Dpth (m)	1.79	Hydr. Depth (m)		1.24	
Conv. Total (m3/s)	1236.5	Conv. (m3/s)		1236.5	
Length Wtd. (m)	5.00	Wetted Per. (m)		42.50	
Min Ch El (m)	814.42	Shear (N/m2)		112.66	
Alpha	1.00	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.32	86.65	4.35
C & E Loss (m)	0.02	Cum SA (1000 m2)	1.33	60.26	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR U Profile: Q100

E.G. Elev (m)	818.63	Element	Left OB	Channel	Right OB
Vel Head (m)	0.70	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.92	Reach Len. (m)	5.00	5.00	5.00
Crit W.S. (m)	817.92	Flow Area (m2)	0.28	102.24	112.88
E.G. Slope (m/m)	0.009205	Area (m2)	0.28	102.24	112.88
Q Total (m3/s)	549.71	Flow (m3/s)	0.17	426.90	122.63
Top Width (m)	157.02	Top Width (m)	0.68	32.49	123.85
Vel Total (m/s)	2.55	Avg. Vel. (m/s)	0.61	4.18	1.09
Max Chl Dpth (m)	3.50	Hydr. Depth (m)	0.42	3.15	0.91
Conv. Total (m3/s)	5729.5	Conv. (m3/s)	1.8	4449.5	1278.2
Length Wtd. (m)	5.00	Wetted Per. (m)	1.08	54.39	179.81
Min Ch El (m)	814.42	Shear (N/m2)	23.83	169.69	56.67
Alpha	2.12	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	7.48	168.57	171.50
C & E Loss (m)	0.00	Cum SA (1000 m2)	9.15	63.23	181.08

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR U Profile: Q500

E.G. Elev (m)	819.03	Element	Left OB	Channel	Right OB
Vel Head (m)	0.85	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.18	Reach Len. (m)	5.00	5.00	5.00
Crit W.S. (m)	818.18	Flow Area (m2)	0.49	110.50	143.61
E.G. Slope (m/m)	0.010983	Area (m2)	0.49	110.50	143.61
Q Total (m3/s)	713.21	Flow (m3/s)	0.39	520.94	191.89
Top Width (m)	147.27	Top Width (m)	0.88	31.65	114.74
Vel Total (m/s)	2.80	Avg. Vel. (m/s)	0.80	4.71	1.34
Max Chl Dpth (m)	3.76	Hydr. Depth (m)	0.55	3.49	1.25
Conv. Total (m3/s)	6805.3	Conv. (m3/s)	3.7	4970.7	1830.9
Length Wtd. (m)	5.00	Wetted Per. (m)	1.40	55.94	192.72
Min Ch El (m)	814.42	Shear (N/m2)	37.41	212.78	80.26

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR U Profile: Q500 (Continued)

Alpha	2.13	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	11.27	191.72	240.06
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.38	63.22	191.00

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR D Profile: MCO

E.G. Elev (m)	816.62	Element	Left OB	Channel	Right OB
Vel Head (m)	0.42	Wt. n-Val.		0.035	
W.S. Elev (m)	816.20	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	816.02	Flow Area (m2)		45.77	
E.G. Slope (m/m)	0.009385	Area (m2)		45.77	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	35.02	Top Width (m)		35.02	
Vel Total (m/s)	2.88	Avg. Vel. (m/s)		2.88	
Max Chl Dpth (m)	1.87	Hydr. Depth (m)		1.31	
Conv. Total (m3/s)	1360.6	Conv. (m3/s)		1360.6	
Length Wtd. (m)	12.50	Wetted Per. (m)		43.13	
Min Ch El (m)	814.33	Shear (N/m2)		97.68	
Alpha	1.00	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.32	86.43	4.35
C & E Loss (m)	0.07	Cum SA (1000 m2)	1.33	60.08	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR D Profile: Q100

E.G. Elev (m)	818.52	Element	Left OB	Channel	Right OB
Vel Head (m)	0.69	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.83	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	817.83	Flow Area (m2)	0.28	102.60	114.11
E.G. Slope (m/m)	0.009005	Area (m2)	0.28	102.60	114.11
Q Total (m3/s)	549.71	Flow (m3/s)	0.17	425.29	124.25
Top Width (m)	160.31	Top Width (m)	0.68	32.80	126.84
Vel Total (m/s)	2.53	Avg. Vel. (m/s)	0.60	4.15	1.09
Max Chl Dpth (m)	3.50	Hydr. Depth (m)	0.41	3.13	0.90
Conv. Total (m3/s)	5792.7	Conv. (m3/s)	1.8	4481.6	1309.3
Length Wtd. (m)	12.50	Wetted Per. (m)	1.07	54.28	178.11
Min Ch El (m)	814.33	Shear (N/m2)	23.21	166.93	56.58
Alpha	2.11	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	7.47	168.06	170.93
C & E Loss (m)	0.04	Cum SA (1000 m2)	9.14	63.06	180.46

Plan: Plan 01 Órbigo Tramo urbano RS: 244 BR D Profile: Q500

E.G. Elev (m)	818.92	Element	Left OB	Channel	Right OB
Vel Head (m)	0.84	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	818.07	Reach Len. (m)	12.50	12.50	12.50
Crit W.S. (m)	818.07	Flow Area (m2)	0.47	110.52	144.15
E.G. Slope (m/m)	0.010862	Area (m2)	0.47	110.52	144.15
Q Total (m3/s)	713.21	Flow (m3/s)	0.37	519.39	193.45
Top Width (m)	151.45	Top Width (m)	0.87	32.00	118.58
Vel Total (m/s)	2.80	Avg. Vel. (m/s)	0.78	4.70	1.34
Max Chl Dpth (m)	3.74	Hydr. Depth (m)	0.54	3.45	1.22
Conv. Total (m3/s)	6843.3	Conv. (m3/s)	3.5	4983.6	1856.1
Length Wtd. (m)	12.50	Wetted Per. (m)	1.38	55.75	190.06
Min Ch El (m)	814.33	Shear (N/m2)	36.40	211.18	80.78
Alpha	2.12	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	11.27	191.17	239.34
C & E Loss (m)	0.10	Cum SA (1000 m2)	11.38	63.06	190.42

Plan: Plan 01 Órbigo Tramo urbano RS: 240 Profile: MCO

E.G. Elev (m)	816.49	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.		0.035	
W.S. Elev (m)	816.31	Reach Len. (m)	52.15	51.60	51.05
Crit W.S. (m)	815.72	Flow Area (m2)		71.24	
E.G. Slope (m/m)	0.002744	Area (m2)		71.24	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	50.59	Top Width (m)		50.59	
Vel Total (m/s)	1.85	Avg. Vel. (m/s)		1.85	
Max Chl Dpth (m)	1.98	Hydr. Depth (m)		1.41	
Conv. Total (m3/s)	2516.2	Conv. (m3/s)		2516.2	
Length Wtd. (m)	51.60	Wetted Per. (m)		51.83	
Min Ch El (m)	814.33	Shear (N/m2)		36.99	
Alpha	1.00	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	0.32	85.70	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	59.55	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 240 Profile: Q100

E.G. Elev (m)	818.07	Element	Left OB	Channel	Right OB
Vel Head (m)	0.55	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.53	Reach Len. (m)	52.15	51.60	51.05
Crit W.S. (m)	817.53	Flow Area (m2)	0.11	134.63	112.83
E.G. Slope (m/m)	0.004559	Area (m2)	0.11	134.63	120.58
Q Total (m3/s)	549.71	Flow (m3/s)	0.04	473.55	76.13
Top Width (m)	283.64	Top Width (m)	0.43	53.00	230.21
Vel Total (m/s)	2.22	Avg. Vel. (m/s)	0.31	3.52	0.67
Max Chl Dpth (m)	3.20	Hydr. Depth (m)	0.26	2.54	0.52
Conv. Total (m3/s)	8141.0	Conv. (m3/s)	0.5	7013.0	1127.5
Length Wtd. (m)	51.49	Wetted Per. (m)	0.68	54.69	215.56
Min Ch El (m)	814.33	Shear (N/m2)	7.44	110.07	23.40
Alpha	2.17	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.18	Cum Volume (1000 m3)	7.47	166.57	169.46
C & E Loss (m)	0.08	Cum SA (1000 m2)	9.13	62.53	178.23

Plan: Plan 01 Órbigo Tramo urbano RS: 240 Profile: Q500

E.G. Elev (m)	818.38	Element	Left OB	Channel	Right OB
Vel Head (m)	0.51	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.88	Reach Len. (m)	52.15	51.60	51.05
Crit W.S. (m)	817.77	Flow Area (m2)	0.31	153.27	188.75
E.G. Slope (m/m)	0.003945	Area (m2)	0.31	153.27	201.67
Q Total (m3/s)	713.21	Flow (m3/s)	0.13	546.69	166.39
Top Width (m)	284.90	Top Width (m)	0.72	53.00	231.18
Vel Total (m/s)	2.08	Avg. Vel. (m/s)	0.41	3.57	0.88
Max Chl Dpth (m)	3.55	Hydr. Depth (m)	0.44	2.89	0.87
Conv. Total (m3/s)	11355.5	Conv. (m3/s)	2.1	8704.2	2649.2
Length Wtd. (m)	51.44	Wetted Per. (m)	1.13	54.69	216.59
Min Ch El (m)	814.33	Shear (N/m2)	10.75	108.41	33.71
Alpha	2.29	Stream Power (N/m s)	17649.41	0.00	15464.02
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	11.26	189.52	237.18
C & E Loss (m)	0.06	Cum SA (1000 m2)	11.37	62.53	188.23

Plan: Plan 01 Órbigo Tramo urbano RS: 230 Profile: MCO

E.G. Elev (m)	816.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.		0.035	
W.S. Elev (m)	816.19	Reach Len. (m)	50.17	49.68	49.19
Crit W.S. (m)	815.61	Flow Area (m2)		74.06	
E.G. Slope (m/m)	0.002517	Area (m2)		74.06	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	

Plan: Plan 01 Órbigo Tramo urbano RS: 230 Profile: MCO (Continued)

Top Width (m)	52.48	Top Width (m)		52.48	
Vel Total (m/s)	1.78	Avg. Vel. (m/s)		1.78	
Max Chl Dpth (m)	1.94	Hydr. Depth (m)		1.41	
Conv. Total (m3/s)	2627.0	Conv. (m3/s)		2627.0	
Length Wtd. (m)	49.68	Wetted Per. (m)		53.54	
Min Ch El (m)	814.25	Shear (N/m2)		34.15	
Alpha	1.00	Stream Power (N/m s)	13717.02	0.00	2728.27
Frctn Loss (m)	0.20	Cum Volume (1000 m3)	0.32	81.95	4.35
C & E Loss (m)	0.02	Cum SA (1000 m2)	1.33	56.89	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 230 Profile: Q100

E.G. Elev (m)	817.80	Element	Left OB	Channel	Right OB
Vel Head (m)	0.29	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.51	Reach Len. (m)	50.17	49.68	49.19
Crit W.S. (m)	817.05	Flow Area (m2)	0.16	146.29	193.69
E.G. Slope (m/m)	0.002663	Area (m2)	0.16	146.29	193.69
Q Total (m3/s)	549.71	Flow (m3/s)	0.04	403.58	146.09
Top Width (m)	265.22	Top Width (m)	0.64	55.72	208.86
Vel Total (m/s)	1.62	Avg. Vel. (m/s)	0.27	2.76	0.75
Max Chl Dpth (m)	3.26	Hydr. Depth (m)	0.25	2.63	0.93
Conv. Total (m3/s)	10651.7	Conv. (m3/s)	0.9	7820.1	2830.7
Length Wtd. (m)	49.53	Wetted Per. (m)	0.82	57.17	209.20
Min Ch El (m)	814.25	Shear (N/m2)	5.20	66.84	24.18
Alpha	2.20	Stream Power (N/m s)	13717.02	0.00	2728.27
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	7.46	159.33	161.44
C & E Loss (m)	0.01	Cum SA (1000 m2)	9.11	59.72	167.02

Plan: Plan 01 Órbigo Tramo urbano RS: 230 Profile: Q500

E.G. Elev (m)	818.16	Element	Left OB	Channel	Right OB
Vel Head (m)	0.29	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.87	Reach Len. (m)	50.17	49.68	49.19
Crit W.S. (m)	817.39	Flow Area (m2)	0.48	166.55	271.35
E.G. Slope (m/m)	0.002409	Area (m2)	0.48	166.55	271.35
Q Total (m3/s)	713.21	Flow (m3/s)	0.18	476.42	236.62
Top Width (m)	275.12	Top Width (m)	1.11	55.72	218.30
Vel Total (m/s)	1.63	Avg. Vel. (m/s)	0.37	2.86	0.87
Max Chl Dpth (m)	3.62	Hydr. Depth (m)	0.44	2.99	1.24
Conv. Total (m3/s)	14531.5	Conv. (m3/s)	3.6	9706.9	4821.0
Length Wtd. (m)	49.51	Wetted Per. (m)	1.41	57.17	218.64
Min Ch El (m)	814.25	Shear (N/m2)	8.08	68.82	29.32
Alpha	2.16	Stream Power (N/m s)	13717.02	0.00	2728.27
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	11.24	181.27	225.11
C & E Loss (m)	0.01	Cum SA (1000 m2)	11.32	59.72	176.76

Plan: Plan 01 Órbigo Tramo urbano RS: 220 Profile: MCO

E.G. Elev (m)	816.14	Element	Left OB	Channel	Right OB
Vel Head (m)	0.33	Wt. n-Val.		0.035	
W.S. Elev (m)	815.81	Reach Len. (m)	50.53	48.89	47.25
Crit W.S. (m)	815.58	Flow Area (m2)		51.84	
E.G. Slope (m/m)	0.007128	Area (m2)		51.84	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	47.19	Top Width (m)		47.19	
Vel Total (m/s)	2.54	Avg. Vel. (m/s)		2.54	
Max Chl Dpth (m)	1.64	Hydr. Depth (m)		1.10	
Conv. Total (m3/s)	1561.2	Conv. (m3/s)		1561.2	
Length Wtd. (m)	48.89	Wetted Per. (m)		47.91	
Min Ch El (m)	814.17	Shear (N/m2)		75.64	

Plan: Plan 01 Órbigo Tramo urbano RS: 220 Profile: MCO (Continued)

Alpha	1.00	Stream Power (N/m s)	13509.98	0.00	2798.46
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	0.32	78.82	4.35
C & E Loss (m)	0.06	Cum SA (1000 m2)	1.33	54.41	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 220 Profile: Q100

E.G. Elev (m)	817.65	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.41	Reach Len. (m)	50.53	48.89	47.25
Crit W.S. (m)	817.00	Flow Area (m2)	0.11	139.30	218.36
E.G. Slope (m/m)	0.002640	Area (m2)	0.11	139.30	218.36
Q Total (m3/s)	549.71	Flow (m3/s)	0.03	365.39	184.29
Top Width (m)	255.35	Top Width (m)	0.56	57.09	197.70
Vel Total (m/s)	1.54	Avg. Vel. (m/s)	0.24	2.62	0.84
Max Chl Dpth (m)	3.24	Hydr. Depth (m)	0.20	2.44	1.10
Conv. Total (m3/s)	10698.5	Conv. (m3/s)	0.5	7111.3	3586.7
Length Wtd. (m)	48.39	Wetted Per. (m)	0.69	58.33	197.92
Min Ch El (m)	814.17	Shear (N/m2)	4.26	61.83	28.56
Alpha	2.04	Stream Power (N/m s)	13509.98	0.00	2798.46
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	7.46	152.23	151.31
C & E Loss (m)	0.01	Cum SA (1000 m2)	9.08	56.92	157.02

Plan: Plan 01 Órbigo Tramo urbano RS: 220 Profile: Q500

E.G. Elev (m)	818.03	Element	Left OB	Channel	Right OB
Vel Head (m)	0.25	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.78	Reach Len. (m)	50.53	48.89	47.25
Crit W.S. (m)	817.05	Flow Area (m2)	0.41	160.37	294.85
E.G. Slope (m/m)	0.002400	Area (m2)	0.41	160.37	294.85
Q Total (m3/s)	713.21	Flow (m3/s)	0.14	440.54	272.53
Top Width (m)	275.01	Top Width (m)	1.06	57.09	216.85
Vel Total (m/s)	1.57	Avg. Vel. (m/s)	0.35	2.75	0.92
Max Chl Dpth (m)	3.61	Hydr. Depth (m)	0.39	2.81	1.36
Conv. Total (m3/s)	14558.9	Conv. (m3/s)	2.9	8992.7	5563.2
Length Wtd. (m)	48.31	Wetted Per. (m)	1.31	58.33	217.08
Min Ch El (m)	814.17	Shear (N/m2)	7.37	64.70	31.96
Alpha	2.04	Stream Power (N/m s)	13509.98	0.00	2798.46
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	11.22	173.14	211.18
C & E Loss (m)	0.01	Cum SA (1000 m2)	11.26	56.92	166.06

Plan: Plan 01 Órbigo Tramo urbano RS: 210 Profile: MCO

E.G. Elev (m)	815.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.		0.035	
W.S. Elev (m)	815.77	Reach Len. (m)	51.43	51.19	50.95
Crit W.S. (m)	815.07	Flow Area (m2)		80.32	
E.G. Slope (m/m)	0.002025	Area (m2)		80.32	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	55.09	Top Width (m)		55.09	
Vel Total (m/s)	1.64	Avg. Vel. (m/s)		1.64	
Max Chl Dpth (m)	1.68	Hydr. Depth (m)		1.46	
Conv. Total (m3/s)	2928.9	Conv. (m3/s)		2928.9	
Length Wtd. (m)	51.19	Wetted Per. (m)		55.71	
Min Ch El (m)	814.09	Shear (N/m2)		28.64	
Alpha	1.00	Stream Power (N/m s)	13941.56	0.00	3197.04
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	75.59	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	51.91	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 210 Profile: Q100

E.G. Elev (m)	817.54	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.34	Reach Len. (m)	51.43	51.19	50.95
Crit W.S. (m)	816.52	Flow Area (m2)	0.13	176.09	218.24
E.G. Slope (m/m)	0.001706	Area (m2)	0.13	176.09	218.24
Q Total (m3/s)	549.71	Flow (m3/s)	0.02	401.76	147.92
Top Width (m)	263.36	Top Width (m)	0.75	64.56	198.05
Vel Total (m/s)	1.39	Avg. Vel. (m/s)	0.18	2.28	0.68
Max Chl Dpth (m)	3.25	Hydr. Depth (m)	0.17	2.73	1.10
Conv. Total (m3/s)	13307.2	Conv. (m3/s)	0.6	9725.7	3580.9
Length Wtd. (m)	51.13	Wetted Per. (m)	0.82	65.52	198.15
Min Ch El (m)	814.09	Shear (N/m2)	2.58	44.98	18.43
Alpha	2.02	Stream Power (N/m s)	13941.56	0.00	3197.04
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	7.45	144.52	140.99
C & E Loss (m)	0.00	Cum SA (1000 m2)	9.04	53.94	147.67

Plan: Plan 01 Órbigo Tramo urbano RS: 210 Profile: Q500

E.G. Elev (m)	817.93	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.71	Reach Len. (m)	51.43	51.19	50.95
Crit W.S. (m)	816.92	Flow Area (m2)	0.56	200.20	294.54
E.G. Slope (m/m)	0.001621	Area (m2)	0.56	200.20	294.54
Q Total (m3/s)	713.21	Flow (m3/s)	0.16	484.99	228.05
Top Width (m)	276.83	Top Width (m)	1.58	64.56	210.69
Vel Total (m/s)	1.44	Avg. Vel. (m/s)	0.29	2.42	0.77
Max Chl Dpth (m)	3.62	Hydr. Depth (m)	0.36	3.10	1.40
Conv. Total (m3/s)	17711.7	Conv. (m3/s)	4.1	12044.2	5663.4
Length Wtd. (m)	51.12	Wetted Per. (m)	1.73	65.52	210.80
Min Ch El (m)	814.09	Shear (N/m2)	5.16	48.59	22.22
Alpha	2.02	Stream Power (N/m s)	13941.56	0.00	3197.04
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	11.19	164.33	197.26
C & E Loss (m)	0.00	Cum SA (1000 m2)	11.20	53.94	155.96

Plan: Plan 01 Órbigo Tramo urbano RS: 200 Profile: MCO

E.G. Elev (m)	815.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.12	Wt. n-Val.		0.035	
W.S. Elev (m)	815.69	Reach Len. (m)	51.07	50.14	49.21
Crit W.S. (m)	814.93	Flow Area (m2)		85.68	
E.G. Slope (m/m)	0.001683	Area (m2)		85.68	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	56.32	Top Width (m)		56.32	
Vel Total (m/s)	1.54	Avg. Vel. (m/s)		1.54	
Max Chl Dpth (m)	1.68	Hydr. Depth (m)		1.52	
Conv. Total (m3/s)	3212.8	Conv. (m3/s)		3212.8	
Length Wtd. (m)	50.14	Wetted Per. (m)		56.99	
Min Ch El (m)	814.01	Shear (N/m2)		24.82	
Alpha	1.00	Stream Power (N/m s)	13553.79	0.00	3103.30
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	71.34	4.35
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	49.06	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 200 Profile: Q100

E.G. Elev (m)	817.45	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.23	Reach Len. (m)	51.07	50.14	49.21
Crit W.S. (m)	816.05	Flow Area (m2)	2.54	175.47	203.01
E.G. Slope (m/m)	0.001642	Area (m2)	2.54	175.47	203.01
Q Total (m3/s)	549.71	Flow (m3/s)	1.13	418.13	130.45

Plan: Plan 01 Órbigo Tramo urbano RS: 200 Profile: Q100 (Continued)

Top Width (m)	256.22	Top Width (m)	4.02	58.67	193.54
Vel Total (m/s)	1.44	Avg. Vel. (m/s)	0.45	2.38	0.64
Max Chl Dpth (m)	3.22	Hydr. Depth (m)	0.63	2.99	1.05
Conv. Total (m3/s)	13566.7	Conv. (m3/s)	27.9	10319.4	3219.4
Length Wtd. (m)	49.95	Wetted Per. (m)	4.21	59.42	193.97
Min Ch El (m)	814.01	Shear (N/m2)	9.72	47.54	16.85
Alpha	2.12	Stream Power (N/m s)	13553.79	0.00	3103.30
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	7.38	135.52	130.26
C & E Loss (m)	0.01	Cum SA (1000 m2)	8.92	50.79	137.69

Plan: Plan 01 Órbigo Tramo urbano RS: 200 Profile: Q500

E.G. Elev (m)	817.84	Element	Left OB	Channel	Right OB
Vel Head (m)	0.24	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.60	Reach Len. (m)	51.07	50.14	49.21
Crit W.S. (m)	816.78	Flow Area (m2)	4.21	197.16	278.38
E.G. Slope (m/m)	0.001619	Area (m2)	4.21	197.16	278.38
Q Total (m3/s)	713.21	Flow (m3/s)	2.24	504.27	206.70
Top Width (m)	275.21	Top Width (m)	5.04	58.67	211.50
Vel Total (m/s)	1.49	Avg. Vel. (m/s)	0.53	2.56	0.74
Max Chl Dpth (m)	3.59	Hydr. Depth (m)	0.84	3.36	1.32
Conv. Total (m3/s)	17723.2	Conv. (m3/s)	55.7	12531.1	5136.4
Length Wtd. (m)	49.90	Wetted Per. (m)	5.29	59.42	211.95
Min Ch El (m)	814.01	Shear (N/m2)	12.66	52.69	20.86
Alpha	2.17	Stream Power (N/m s)	13553.79	0.00	3103.30
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	11.07	154.16	182.66
C & E Loss (m)	0.01	Cum SA (1000 m2)	11.03	50.79	145.20

Plan: Plan 01 Órbigo Tramo urbano RS: 190 Profile: MCO

E.G. Elev (m)	815.72	Element	Left OB	Channel	Right OB
Vel Head (m)	0.13	Wt. n-Val.		0.035	
W.S. Elev (m)	815.60	Reach Len. (m)	50.29	50.03	49.77
Crit W.S. (m)	814.86	Flow Area (m2)		83.43	
E.G. Slope (m/m)	0.001748	Area (m2)		83.43	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	54.13	Top Width (m)		54.13	
Vel Total (m/s)	1.58	Avg. Vel. (m/s)		1.58	
Max Chl Dpth (m)	1.67	Hydr. Depth (m)		1.54	
Conv. Total (m3/s)	3152.3	Conv. (m3/s)		3152.3	
Length Wtd. (m)	50.03	Wetted Per. (m)		54.86	
Min Ch El (m)	813.93	Shear (N/m2)		26.08	
Alpha	1.00	Stream Power (N/m s)	14562.15	0.00	2927.16
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	0.32	67.10	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	46.29	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 190 Profile: Q100

E.G. Elev (m)	817.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.32	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.03	Reach Len. (m)	50.29	50.03	49.77
Crit W.S. (m)	816.05	Flow Area (m2)	1.12	163.84	152.05
E.G. Slope (m/m)	0.002256	Area (m2)	1.12	163.84	152.05
Q Total (m3/s)	549.71	Flow (m3/s)	0.49	448.36	100.86
Top Width (m)	233.77	Top Width (m)	2.19	56.34	175.24
Vel Total (m/s)	1.73	Avg. Vel. (m/s)	0.44	2.74	0.66
Max Chl Dpth (m)	3.10	Hydr. Depth (m)	0.51	2.91	0.87
Conv. Total (m3/s)	11572.4	Conv. (m3/s)	10.3	9438.9	2123.2
Length Wtd. (m)	49.98	Wetted Per. (m)	2.42	57.22	175.83
Min Ch El (m)	813.93	Shear (N/m2)	10.24	63.36	19.13

Plan: Plan 01 Órbigo Tramo urbano RS: 190 Profile: Q100 (Continued)

Alpha	2.06	Stream Power (N/m s)	14562.15	0.00	2927.16
Frctn Loss (m)	0.15	Cum Volume (1000 m3)	7.29	127.02	121.53
C & E Loss (m)	0.01	Cum SA (1000 m2)	8.76	47.91	128.62

Plan: Plan 01 Órbigo Tramo urbano RS: 190 Profile: Q500

E.G. Elev (m)	817.73	Element	Left OB	Channel	Right OB
Vel Head (m)	0.34	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.39	Reach Len. (m)	50.29	50.03	49.77
Crit W.S. (m)	816.79	Flow Area (m2)	2.09	184.18	219.78
E.G. Slope (m/m)	0.002234	Area (m2)	2.09	184.18	219.78
Q Total (m3/s)	713.21	Flow (m3/s)	1.08	542.24	169.89
Top Width (m)	259.45	Top Width (m)	3.16	56.34	199.95
Vel Total (m/s)	1.76	Avg. Vel. (m/s)	0.52	2.94	0.77
Max Chl Dpth (m)	3.46	Hydr. Depth (m)	0.66	3.27	1.10
Conv. Total (m3/s)	15088.9	Conv. (m3/s)	23.0	11471.7	3594.2
Length Wtd. (m)	49.97	Wetted Per. (m)	3.46	57.22	200.54
Min Ch El (m)	813.93	Shear (N/m2)	13.23	70.52	24.01
Alpha	2.18	Stream Power (N/m s)	14562.15	0.00	2927.16
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	10.91	144.60	170.40
C & E Loss (m)	0.01	Cum SA (1000 m2)	10.82	47.91	135.08

Plan: Plan 01 Órbigo Tramo urbano RS: 180 Profile: MCO

E.G. Elev (m)	815.60	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.		0.035	
W.S. Elev (m)	815.39	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.89	Flow Area (m2)		64.62	
E.G. Slope (m/m)	0.003278	Area (m2)		64.62	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	45.72	Top Width (m)		45.72	
Vel Total (m/s)	2.04	Avg. Vel. (m/s)		2.04	
Max Chl Dpth (m)	1.54	Hydr. Depth (m)		1.41	
Conv. Total (m3/s)	2302.2	Conv. (m3/s)		2302.2	
Length Wtd. (m)	50.00	Wetted Per. (m)		46.41	
Min Ch El (m)	813.85	Shear (N/m2)		44.76	
Alpha	1.00	Stream Power (N/m s)	13222.34	0.00	2718.50
Frctn Loss (m)	0.15	Cum Volume (1000 m3)	0.32	63.40	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	43.79	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 180 Profile: Q100

E.G. Elev (m)	817.19	Element	Left OB	Channel	Right OB
Vel Head (m)	0.46	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.73	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	816.46	Flow Area (m2)	1.14	129.56	129.90
E.G. Slope (m/m)	0.003881	Area (m2)	1.14	129.56	129.90
Q Total (m3/s)	549.71	Flow (m3/s)	0.55	434.14	115.02
Top Width (m)	198.24	Top Width (m)	3.15	49.24	145.86
Vel Total (m/s)	2.11	Avg. Vel. (m/s)	0.48	3.35	0.89
Max Chl Dpth (m)	2.88	Hydr. Depth (m)	0.36	2.63	0.89
Conv. Total (m3/s)	8823.7	Conv. (m3/s)	8.8	6968.6	1846.3
Length Wtd. (m)	50.00	Wetted Per. (m)	3.23	50.16	146.28
Min Ch El (m)	813.85	Shear (N/m2)	13.47	98.31	33.80
Alpha	2.03	Stream Power (N/m s)	13222.34	0.00	2718.50
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	7.23	119.68	114.51
C & E Loss (m)	0.04	Cum SA (1000 m2)	8.63	45.27	120.63

Plan: Plan 01 Órbigo Tramo urbano RS: 180 Profile: Q500

E.G. Elev (m)	817.58	Element	Left OB	Channel	Right OB
Vel Head (m)	0.48	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.10	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	816.76	Flow Area (m2)	2.60	147.78	188.10
E.G. Slope (m/m)	0.003645	Area (m2)	2.60	147.78	188.10
Q Total (m3/s)	713.21	Flow (m3/s)	1.61	523.95	187.65
Top Width (m)	222.45	Top Width (m)	4.65	49.24	168.57
Vel Total (m/s)	2.11	Avg. Vel. (m/s)	0.62	3.55	1.00
Max Chl Dpth (m)	3.25	Hydr. Depth (m)	0.56	3.00	1.12
Conv. Total (m3/s)	11812.9	Conv. (m3/s)	26.7	8678.1	3108.0
Length Wtd. (m)	50.00	Wetted Per. (m)	4.77	50.16	168.99
Min Ch El (m)	813.85	Shear (N/m2)	19.48	105.33	39.79
Alpha	2.14	Stream Power (N/m s)	13222.34	0.00	2718.50
Frctn Loss (m)	0.15	Cum Volume (1000 m3)	10.79	136.30	160.25
C & E Loss (m)	0.04	Cum SA (1000 m2)	10.62	45.27	125.91

Plan: Plan 01 Órbigo Tramo urbano RS: 170 Profile: MCO

E.G. Elev (m)	815.44	Element	Left OB	Channel	Right OB
Vel Head (m)	0.18	Wt. n-Val.		0.035	
W.S. Elev (m)	815.25	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.72	Flow Area (m2)		69.92	
E.G. Slope (m/m)	0.002863	Area (m2)		69.92	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	50.38	Top Width (m)		50.38	
Vel Total (m/s)	1.89	Avg. Vel. (m/s)		1.89	
Max Chl Dpth (m)	1.48	Hydr. Depth (m)		1.39	
Conv. Total (m3/s)	2463.4	Conv. (m3/s)		2463.4	
Length Wtd. (m)	50.00	Wetted Per. (m)		51.06	
Min Ch El (m)	813.77	Shear (N/m2)		38.45	
Alpha	1.00	Stream Power (N/m s)	13001.62	0.00	2830.39
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	0.32	60.03	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	41.39	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 170 Profile: Q100

E.G. Elev (m)	816.98	Element	Left OB	Channel	Right OB
Vel Head (m)	0.33	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.65	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	816.06	Flow Area (m2)	0.54	144.57	158.01
E.G. Slope (m/m)	0.002831	Area (m2)	0.54	144.57	158.01
Q Total (m3/s)	549.71	Flow (m3/s)	0.20	416.53	132.97
Top Width (m)	206.85	Top Width (m)	1.67	54.46	150.72
Vel Total (m/s)	1.81	Avg. Vel. (m/s)	0.37	2.88	0.84
Max Chl Dpth (m)	2.88	Hydr. Depth (m)	0.33	2.65	1.05
Conv. Total (m3/s)	10331.3	Conv. (m3/s)	3.8	7828.4	2499.1
Length Wtd. (m)	50.00	Wetted Per. (m)	1.79	55.41	151.59
Min Ch El (m)	813.77	Shear (N/m2)	8.44	72.44	28.94
Alpha	1.96	Stream Power (N/m s)	13001.62	0.00	2830.39
Frctn Loss (m)	0.16	Cum Volume (1000 m3)	7.19	112.82	107.31
C & E Loss (m)	0.01	Cum SA (1000 m2)	8.51	42.67	113.22

Plan: Plan 01 Órbigo Tramo urbano RS: 170 Profile: Q500

E.G. Elev (m)	817.39	Element	Left OB	Channel	Right OB
Vel Head (m)	0.35	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	817.04	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	816.47	Flow Area (m2)	1.37	165.49	218.56
E.G. Slope (m/m)	0.002645	Area (m2)	1.37	165.49	218.56
Q Total (m3/s)	713.21	Flow (m3/s)	0.67	504.32	208.22

Plan: Plan 01 Órbigo Tramo urbano RS: 170 Profile: Q500 (Continued)

Top Width (m)	221.65	Top Width (m)	2.63	54.46	164.56
Vel Total (m/s)	1.85	Avg. Vel. (m/s)	0.49	3.05	0.95
Max Chl Dpth (m)	3.27	Hydr. Depth (m)	0.52	3.04	1.33
Conv. Total (m3/s)	13867.8	Conv. (m3/s)	13.0	9806.1	4048.7
Length Wtd. (m)	50.00	Wetted Per. (m)	2.83	55.41	165.43
Min Ch El (m)	813.77	Shear (N/m2)	12.59	77.47	34.27
Alpha	2.00	Stream Power (N/m s)	13001.62	0.00	2830.39
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	10.69	128.46	150.09
C & E Loss (m)	0.00	Cum SA (1000 m2)	10.44	42.67	117.58

Plan: Plan 01 Órbigo Tramo urbano RS: 160 Profile: MCO

E.G. Elev (m)	815.30	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.		0.035	
W.S. Elev (m)	815.16	Reach Len. (m)	48.72	48.84	48.96
Crit W.S. (m)	814.55	Flow Area (m2)		79.54	
E.G. Slope (m/m)	0.002193	Area (m2)		79.54	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	56.99	Top Width (m)		56.99	
Vel Total (m/s)	1.66	Avg. Vel. (m/s)		1.66	
Max Chl Dpth (m)	1.47	Hydr. Depth (m)		1.40	
Conv. Total (m3/s)	2814.6	Conv. (m3/s)		2814.6	
Length Wtd. (m)	48.84	Wetted Per. (m)		57.71	
Min Ch El (m)	813.69	Shear (N/m2)		29.64	
Alpha	1.00	Stream Power (N/m s)	12786.07	0.00	2934.63
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	56.30	4.35
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.33	38.71	19.05

Plan: Plan 01 Órbigo Tramo urbano RS: 160 Profile: Q100

E.G. Elev (m)	816.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.43	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.39	Reach Len. (m)	48.72	48.84	48.96
Crit W.S. (m)	815.90	Flow Area (m2)	0.07	151.70	108.68
E.G. Slope (m/m)	0.003521	Area (m2)	0.07	151.70	108.68
Q Total (m3/s)	549.71	Flow (m3/s)	0.02	472.37	77.32
Top Width (m)	217.14	Top Width (m)	0.34	59.67	157.12
Vel Total (m/s)	2.11	Avg. Vel. (m/s)	0.23	3.11	0.71
Max Chl Dpth (m)	2.70	Hydr. Depth (m)	0.19	2.54	0.69
Conv. Total (m3/s)	9263.8	Conv. (m3/s)	0.3	7960.5	1303.0
Length Wtd. (m)	48.86	Wetted Per. (m)	0.52	60.95	157.97
Min Ch El (m)	813.69	Shear (N/m2)	4.43	85.94	23.76
Alpha	1.89	Stream Power (N/m s)	12786.07	0.00	2934.63
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	7.18	105.42	100.64
C & E Loss (m)	0.04	Cum SA (1000 m2)	8.46	39.82	105.52

Plan: Plan 01 Órbigo Tramo urbano RS: 160 Profile: Q500

E.G. Elev (m)	817.25	Element	Left OB	Channel	Right OB
Vel Head (m)	0.38	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.87	Reach Len. (m)	48.72	48.84	48.96
Crit W.S. (m)	816.06	Flow Area (m2)	0.34	180.57	187.09
E.G. Slope (m/m)	0.002696	Area (m2)	0.34	180.57	187.09
Q Total (m3/s)	713.21	Flow (m3/s)	0.12	552.51	160.59
Top Width (m)	227.54	Top Width (m)	0.77	59.67	167.10
Vel Total (m/s)	1.94	Avg. Vel. (m/s)	0.35	3.06	0.86
Max Chl Dpth (m)	3.18	Hydr. Depth (m)	0.44	3.03	1.12
Conv. Total (m3/s)	13737.0	Conv. (m3/s)	2.3	10641.7	3093.0
Length Wtd. (m)	48.87	Wetted Per. (m)	1.16	60.95	167.95
Min Ch El (m)	813.69	Shear (N/m2)	7.64	78.31	29.45

Plan: Plan 01 Órbigo Tramo urbano RS: 160 Profile: Q500 (Continued)

Alpha	1.98	Stream Power (N/m s)	12786.07	0.00	2934.63
Frctn Loss (m)	0.11	Cum Volume (1000 m3)	10.65	119.81	139.95
C & E Loss (m)	0.03	Cum SA (1000 m2)	10.35	39.82	109.29

Plan: Plan 01 Órbigo Tramo urbano RS: 150 Profile: MCO

E.G. Elev (m)	815.20	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.10	Reach Len. (m)	44.31	46.27	48.23
Crit W.S. (m)	814.41	Flow Area (m2)	0.01	91.94	17.32
E.G. Slope (m/m)	0.001503	Area (m2)	0.01	91.94	17.32
Q Total (m3/s)	131.81	Flow (m3/s)	0.00	128.02	3.79
Top Width (m)	141.87	Top Width (m)	0.11	64.59	77.17
Vel Total (m/s)	1.21	Avg. Vel. (m/s)	0.07	1.39	0.22
Max Chl Dpth (m)	1.48	Hydr. Depth (m)	0.05	1.42	0.22
Conv. Total (m3/s)	3399.4	Conv. (m3/s)	0.0	3301.7	97.8
Length Wtd. (m)	46.32	Wetted Per. (m)	0.15	65.25	77.94
Min Ch El (m)	813.62	Shear (N/m2)	0.55	20.77	3.28
Alpha	1.29	Stream Power (N/m s)	13365.25	0.00	4079.39
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.32	52.11	3.93
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.33	35.74	17.16

Plan: Plan 01 Órbigo Tramo urbano RS: 150 Profile: Q100

E.G. Elev (m)	816.64	Element	Left OB	Channel	Right OB
Vel Head (m)	0.30	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.34	Reach Len. (m)	44.31	46.27	48.23
Crit W.S. (m)	815.64	Flow Area (m2)	1.96	171.98	137.57
E.G. Slope (m/m)	0.002336	Area (m2)	1.96	171.98	137.57
Q Total (m3/s)	549.71	Flow (m3/s)	0.59	453.14	95.98
Top Width (m)	221.98	Top Width (m)	7.18	64.59	150.21
Vel Total (m/s)	1.76	Avg. Vel. (m/s)	0.30	2.63	0.70
Max Chl Dpth (m)	2.72	Hydr. Depth (m)	0.27	2.66	0.92
Conv. Total (m3/s)	11373.6	Conv. (m3/s)	12.2	9375.5	1985.8
Length Wtd. (m)	46.63	Wetted Per. (m)	7.57	65.25	151.38
Min Ch El (m)	813.62	Shear (N/m2)	5.93	60.38	20.82
Alpha	1.87	Stream Power (N/m s)	13365.25	0.00	4079.39
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	7.13	97.51	94.62
C & E Loss (m)	0.02	Cum SA (1000 m2)	8.27	36.79	98.00

Plan: Plan 01 Órbigo Tramo urbano RS: 150 Profile: Q500

E.G. Elev (m)	817.11	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.84	Reach Len. (m)	44.31	46.27	48.23
Crit W.S. (m)	815.91	Flow Area (m2)	7.69	203.92	213.20
E.G. Slope (m/m)	0.001857	Area (m2)	7.69	203.92	213.20
Q Total (m3/s)	713.21	Flow (m3/s)	3.08	536.69	173.44
Top Width (m)	236.26	Top Width (m)	16.00	64.59	155.68
Vel Total (m/s)	1.68	Avg. Vel. (m/s)	0.40	2.63	0.81
Max Chl Dpth (m)	3.21	Hydr. Depth (m)	0.48	3.16	1.37
Conv. Total (m3/s)	16549.6	Conv. (m3/s)	71.4	12453.6	4024.7
Length Wtd. (m)	46.74	Wetted Per. (m)	16.41	65.25	156.86
Min Ch El (m)	813.62	Shear (N/m2)	8.53	56.92	24.75
Alpha	1.91	Stream Power (N/m s)	13365.25	0.00	4079.39
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	10.46	110.42	130.15
C & E Loss (m)	0.02	Cum SA (1000 m2)	9.95	36.79	101.39

Plan: Plan 01 Órbigo Tramo urbano RS: 140 Profile: MCO

E.G. Elev (m)	815.13	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.05	Reach Len. (m)	8.45	10.00	11.55
Crit W.S. (m)	814.30	Flow Area (m2)	0.02	100.59	15.01
E.G. Slope (m/m)	0.001244	Area (m2)	0.02	100.59	15.01
Q Total (m3/s)	131.81	Flow (m3/s)	0.00	128.89	2.92
Top Width (m)	139.54	Top Width (m)	0.64	69.48	69.42
Vel Total (m/s)	1.14	Avg. Vel. (m/s)	0.05	1.28	0.19
Max Chl Dpth (m)	1.51	Hydr. Depth (m)	0.02	1.45	0.22
Conv. Total (m3/s)	3736.7	Conv. (m3/s)	0.0	3653.9	82.8
Length Wtd. (m)	10.02	Wetted Per. (m)	0.64	70.18	69.92
Min Ch El (m)	813.54	Shear (N/m2)	0.29	17.49	2.62
Alpha	1.24	Stream Power (N/m s)	13353.81	0.00	4795.49
Frctn Loss (m)	0.01	Cum Volume (1000 m3)	0.32	47.66	3.15
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.31	32.64	13.63

Plan: Plan 01 Órbigo Tramo urbano RS: 140 Profile: Q100

E.G. Elev (m)	816.52	Element	Left OB	Channel	Right OB
Vel Head (m)	0.22	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.30	Reach Len. (m)	8.45	10.00	11.55
Crit W.S. (m)	815.52	Flow Area (m2)	11.20	187.45	158.39
E.G. Slope (m/m)	0.001776	Area (m2)	11.20	187.45	158.39
Q Total (m3/s)	549.71	Flow (m3/s)	5.55	434.47	109.70
Top Width (m)	229.07	Top Width (m)	16.73	69.48	142.86
Vel Total (m/s)	1.54	Avg. Vel. (m/s)	0.50	2.32	0.69
Max Chl Dpth (m)	2.76	Hydr. Depth (m)	0.67	2.70	1.11
Conv. Total (m3/s)	13044.7	Conv. (m3/s)	131.6	10310.0	2603.1
Length Wtd. (m)	10.27	Wetted Per. (m)	16.78	70.18	143.46
Min Ch El (m)	813.54	Shear (N/m2)	11.62	46.51	19.23
Alpha	1.83	Stream Power (N/m s)	13353.81	0.00	4795.49
Frctn Loss (m)	0.02	Cum Volume (1000 m3)	6.83	89.20	87.48
C & E Loss (m)	0.00	Cum SA (1000 m2)	7.74	33.68	90.93

Plan: Plan 01 Órbigo Tramo urbano RS: 140 Profile: Q500

E.G. Elev (m)	817.01	Element	Left OB	Channel	Right OB
Vel Head (m)	0.21	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.80	Reach Len. (m)	8.45	10.00	11.55
Crit W.S. (m)	815.81	Flow Area (m2)	21.10	222.64	230.93
E.G. Slope (m/m)	0.001423	Area (m2)	21.10	222.64	230.93
Q Total (m3/s)	713.21	Flow (m3/s)	11.76	518.10	183.35
Top Width (m)	235.40	Top Width (m)	22.37	69.48	143.56
Vel Total (m/s)	1.50	Avg. Vel. (m/s)	0.56	2.33	0.79
Max Chl Dpth (m)	3.26	Hydr. Depth (m)	0.94	3.20	1.61
Conv. Total (m3/s)	18906.2	Conv. (m3/s)	311.6	13734.1	4860.5
Length Wtd. (m)	10.34	Wetted Per. (m)	22.44	70.18	144.32
Min Ch El (m)	813.54	Shear (N/m2)	13.12	44.27	22.33
Alpha	1.82	Stream Power (N/m s)	13353.81	0.00	4795.49
Frctn Loss (m)	0.02	Cum Volume (1000 m3)	9.82	100.56	119.44
C & E Loss (m)	0.01	Cum SA (1000 m2)	9.10	33.68	94.17

Plan: Plan 01 Órbigo Tramo urbano RS: 138 Profile: MCO

E.G. Elev (m)	815.12	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.035	
W.S. Elev (m)	815.04	Reach Len. (m)	9.21	9.21	9.21
Crit W.S. (m)	814.26	Flow Area (m2)		104.86	
E.G. Slope (m/m)	0.001197	Area (m2)		104.86	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	

Plan: Plan 01 Órbigo Tramo urbano RS: 138 Profile: MCO (Continued)

Top Width (m)	72.42	Top Width (m)		72.42	
Vel Total (m/s)	1.26	Avg. Vel. (m/s)		1.26	
Max Chl Dpth (m)	1.51	Hydr. Depth (m)		1.45	
Conv. Total (m3/s)	3809.3	Conv. (m3/s)		3809.3	
Length Wtd. (m)	9.21	Wetted Per. (m)		73.15	
Min Ch El (m)	813.53	Shear (N/m2)		16.83	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	46.63	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	31.93	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 138 Profile: Q100

E.G. Elev (m)	816.50	Element	Left OB	Channel	Right OB
Vel Head (m)	0.24	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.26	Reach Len. (m)	9.21	9.21	9.21
Crit W.S. (m)	815.47	Flow Area (m2)	3.59	193.17	113.35
E.G. Slope (m/m)	0.001879	Area (m2)	3.59	193.17	113.35
Q Total (m3/s)	549.71	Flow (m3/s)	1.80	457.12	90.79
Top Width (m)	163.15	Top Width (m)	5.35	72.42	85.38
Vel Total (m/s)	1.77	Avg. Vel. (m/s)	0.50	2.37	0.80
Max Chl Dpth (m)	2.73	Hydr. Depth (m)	0.67	2.67	1.33
Conv. Total (m3/s)	12680.4	Conv. (m3/s)	41.5	10544.5	2094.3
Length Wtd. (m)	9.21	Wetted Per. (m)	5.51	73.15	86.12
Min Ch El (m)	813.53	Shear (N/m2)	12.02	48.67	24.26
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.77	87.29	85.91
C & E Loss (m)		Cum SA (1000 m2)	7.65	32.98	89.61

Plan: Plan 01 Órbigo Tramo urbano RS: 138 Profile: Q500

E.G. Elev (m)	816.99	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.73	Reach Len. (m)	9.21	9.21	9.21
Crit W.S. (m)	815.73	Flow Area (m2)	6.35	227.63	154.35
E.G. Slope (m/m)	0.001677	Area (m2)	6.35	227.63	154.35
Q Total (m3/s)	713.21	Flow (m3/s)	3.93	567.62	141.66
Top Width (m)	165.66	Top Width (m)	6.27	72.42	86.97
Vel Total (m/s)	1.84	Avg. Vel. (m/s)	0.62	2.49	0.92
Max Chl Dpth (m)	3.20	Hydr. Depth (m)	1.01	3.14	1.77
Conv. Total (m3/s)	17417.8	Conv. (m3/s)	95.9	13862.4	3459.5
Length Wtd. (m)	9.21	Wetted Per. (m)	6.54	73.15	87.78
Min Ch El (m)	813.53	Shear (N/m2)	15.98	51.17	28.91
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.70	98.30	117.21
C & E Loss (m)		Cum SA (1000 m2)	8.97	32.98	92.84

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR U Profile: MCO

E.G. Elev (m)	815.11	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	815.03	Reach Len. (m)	12.30	12.30	12.30
Crit W.S. (m)	814.27	Flow Area (m2)		101.87	
E.G. Slope (m/m)	0.001354	Area (m2)		101.87	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	70.88	Top Width (m)		70.88	
Vel Total (m/s)	1.29	Avg. Vel. (m/s)		1.29	
Max Chl Dpth (m)	1.50	Hydr. Depth (m)		1.44	
Conv. Total (m3/s)	3582.5	Conv. (m3/s)		3582.5	
Length Wtd. (m)	12.30	Wetted Per. (m)		74.60	
Min Ch El (m)	813.53	Shear (N/m2)		18.13	

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR U Profile: MCO (Continued)

Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	45.68	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	31.27	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR U Profile: Q100

E.G. Elev (m)	816.48	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.22	Reach Len. (m)	12.30	12.30	12.30
Crit W.S. (m)	815.48	Flow Area (m2)	3.38	186.27	106.44
E.G. Slope (m/m)	0.002283	Area (m2)	3.38	186.27	106.44
Q Total (m3/s)	549.71	Flow (m3/s)	1.81	458.17	89.72
Top Width (m)	158.45	Top Width (m)	5.28	70.92	82.25
Vel Total (m/s)	1.86	Avg. Vel. (m/s)	0.54	2.46	0.84
Max Chl Dpth (m)	2.69	Hydr. Depth (m)	0.64	2.63	1.29
Conv. Total (m3/s)	11503.8	Conv. (m3/s)	38.0	9588.2	1877.6
Length Wtd. (m)	12.30	Wetted Per. (m)	5.42	77.03	87.70
Min Ch El (m)	813.53	Shear (N/m2)	13.96	54.15	27.18
Alpha	1.50	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.74	85.55	84.90
C & E Loss (m)		Cum SA (1000 m2)	7.60	32.32	88.84

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR U Profile: Q500

E.G. Elev (m)	816.97	Element	Left OB	Channel	Right OB
Vel Head (m)	0.28	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.69	Reach Len. (m)	12.30	12.30	12.30
Crit W.S. (m)	815.75	Flow Area (m2)	6.11	220.07	146.02
E.G. Slope (m/m)	0.002054	Area (m2)	6.11	220.07	146.02
Q Total (m3/s)	713.21	Flow (m3/s)	4.11	569.15	139.94
Top Width (m)	160.95	Top Width (m)	6.19	70.92	83.84
Vel Total (m/s)	1.92	Avg. Vel. (m/s)	0.67	2.59	0.96
Max Chl Dpth (m)	3.17	Hydr. Depth (m)	0.99	3.10	1.74
Conv. Total (m3/s)	15735.1	Conv. (m3/s)	90.7	12556.9	3087.5
Length Wtd. (m)	12.30	Wetted Per. (m)	6.45	77.98	91.27
Min Ch El (m)	813.53	Shear (N/m2)	19.08	56.86	32.23
Alpha	1.50	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.64	96.24	115.83
C & E Loss (m)		Cum SA (1000 m2)	8.92	32.32	92.05

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR D Profile: MCO

E.G. Elev (m)	815.06	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	814.97	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	814.23	Flow Area (m2)		100.51	
E.G. Slope (m/m)	0.001413	Area (m2)		100.51	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	70.80	Top Width (m)		70.80	
Vel Total (m/s)	1.31	Avg. Vel. (m/s)		1.31	
Max Chl Dpth (m)	1.48	Hydr. Depth (m)		1.42	
Conv. Total (m3/s)	3507.0	Conv. (m3/s)		3507.0	
Length Wtd. (m)	1.13	Wetted Per. (m)		74.48	
Min Ch El (m)	813.49	Shear (N/m2)		18.70	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	44.43	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	30.40	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR D Profile: Q100

E.G. Elev (m)	816.42	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.14	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	815.44	Flow Area (m2)	3.19	183.64	103.37
E.G. Slope (m/m)	0.002410	Area (m2)	3.19	183.64	103.37
Q Total (m3/s)	549.71	Flow (m3/s)	1.70	459.99	88.02
Top Width (m)	158.25	Top Width (m)	5.20	70.92	82.12
Vel Total (m/s)	1.89	Avg. Vel. (m/s)	0.54	2.50	0.85
Max Chl Dpth (m)	2.65	Hydr. Depth (m)	0.61	2.59	1.26
Conv. Total (m3/s)	11197.3	Conv. (m3/s)	34.7	9369.7	1792.8
Length Wtd. (m)	1.13	Wetted Per. (m)	5.34	76.95	87.43
Min Ch El (m)	813.49	Shear (N/m2)	14.10	56.40	27.94
Alpha	1.50	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.70	83.27	83.61
C & E Loss (m)		Cum SA (1000 m2)	7.54	31.44	87.83

Plan: Plan 01 Órbigo Tramo urbano RS: 136 BR D Profile: Q500

E.G. Elev (m)	816.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.29	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.62	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	815.71	Flow Area (m2)	5.92	217.81	143.32
E.G. Slope (m/m)	0.002135	Area (m2)	5.92	217.81	143.32
Q Total (m3/s)	713.21	Flow (m3/s)	4.00	570.65	138.56
Top Width (m)	160.78	Top Width (m)	6.13	70.92	83.73
Vel Total (m/s)	1.94	Avg. Vel. (m/s)	0.68	2.62	0.97
Max Chl Dpth (m)	3.13	Hydr. Depth (m)	0.96	3.07	1.71
Conv. Total (m3/s)	15434.0	Conv. (m3/s)	86.5	12349.0	2998.5
Length Wtd. (m)	1.13	Wetted Per. (m)	6.38	77.92	91.03
Min Ch El (m)	813.49	Shear (N/m2)	19.40	58.54	32.97
Alpha	1.50	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.57	93.55	114.05
C & E Loss (m)		Cum SA (1000 m2)	8.84	31.44	91.02

Plan: Plan 01 Órbigo Tramo urbano RS: 132 Profile: MCO

E.G. Elev (m)	815.06	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.035	
W.S. Elev (m)	814.97	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	814.23	Flow Area (m2)		102.91	
E.G. Slope (m/m)	0.001272	Area (m2)		102.91	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	72.31	Top Width (m)		72.31	
Vel Total (m/s)	1.28	Avg. Vel. (m/s)		1.28	
Max Chl Dpth (m)	1.48	Hydr. Depth (m)		1.42	
Conv. Total (m3/s)	3695.9	Conv. (m3/s)		3695.9	
Length Wtd. (m)	1.05	Wetted Per. (m)		73.03	
Min Ch El (m)	813.49	Shear (N/m2)		17.58	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	0.32	44.32	3.06
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.31	30.32	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 132 Profile: Q100

E.G. Elev (m)	816.41	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.15	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	815.43	Flow Area (m2)	3.22	188.15	107.41
E.G. Slope (m/m)	0.002083	Area (m2)	3.22	188.15	107.41
Q Total (m3/s)	549.71	Flow (m3/s)	1.61	460.55	87.55

Plan: Plan 01 Órbigo Tramo urbano RS: 132 Profile: Q100 (Continued)

Top Width (m)	162.79	Top Width (m)	5.22	72.42	85.15
Vel Total (m/s)	1.84	Avg. Vel. (m/s)	0.50	2.45	0.82
Max Chl Dpth (m)	2.66	Hydr. Depth (m)	0.62	2.60	1.26
Conv. Total (m3/s)	12045.1	Conv. (m3/s)	35.3	10091.4	1918.3
Length Wtd. (m)	1.05	Wetted Per. (m)	5.36	73.15	85.88
Min Ch El (m)	813.49	Shear (N/m2)	12.29	52.53	25.55
Alpha	1.51	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	6.70	83.06	83.49
C & E Loss (m)	0.00	Cum SA (1000 m2)	7.53	31.36	87.73

Plan: Plan 01 Órbigo Tramo urbano RS: 132 Profile: Q500

E.G. Elev (m)	816.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.27	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.63	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	815.70	Flow Area (m2)	5.97	223.20	149.02
E.G. Slope (m/m)	0.001808	Area (m2)	5.97	223.20	149.02
Q Total (m3/s)	713.21	Flow (m3/s)	3.73	570.52	138.96
Top Width (m)	165.33	Top Width (m)	6.15	72.42	86.76
Vel Total (m/s)	1.89	Avg. Vel. (m/s)	0.62	2.56	0.93
Max Chl Dpth (m)	3.14	Hydr. Depth (m)	0.97	3.08	1.72
Conv. Total (m3/s)	16771.0	Conv. (m3/s)	87.7	13415.6	3267.7
Length Wtd. (m)	1.05	Wetted Per. (m)	6.40	73.15	87.57
Min Ch El (m)	813.49	Shear (N/m2)	16.54	54.11	30.18
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	9.56	93.30	113.88
C & E Loss (m)	0.00	Cum SA (1000 m2)	8.83	31.36	90.93

Plan: Plan 01 Órbigo Tramo urbano RS: 130 Profile: MCO

E.G. Elev (m)	815.05	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.035	
W.S. Elev (m)	814.97	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	814.23	Flow Area (m2)		102.81	
E.G. Slope (m/m)	0.001276	Area (m2)		102.81	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	72.31	Top Width (m)		72.31	
Vel Total (m/s)	1.28	Avg. Vel. (m/s)		1.28	
Max Chl Dpth (m)	1.48	Hydr. Depth (m)		1.42	
Conv. Total (m3/s)	3689.7	Conv. (m3/s)		3689.7	
Length Wtd. (m)	1.05	Wetted Per. (m)		73.02	
Min Ch El (m)	813.49	Shear (N/m2)		17.62	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	0.32	44.21	3.06
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.31	30.24	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 130 Profile: Q100

E.G. Elev (m)	816.41	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.15	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	815.04	Flow Area (m2)	3.21	187.94	107.17
E.G. Slope (m/m)	0.002092	Area (m2)	3.21	187.94	107.17
Q Total (m3/s)	549.71	Flow (m3/s)	1.61	460.69	87.41
Top Width (m)	162.77	Top Width (m)	5.21	72.42	85.14
Vel Total (m/s)	1.84	Avg. Vel. (m/s)	0.50	2.45	0.82
Max Chl Dpth (m)	2.66	Hydr. Depth (m)	0.62	2.60	1.26
Conv. Total (m3/s)	12019.5	Conv. (m3/s)	35.1	10073.1	1911.3
Length Wtd. (m)	1.05	Wetted Per. (m)	5.35	73.15	85.87
Min Ch El (m)	813.49	Shear (N/m2)	12.30	52.70	25.60

Plan: Plan 01 Órbigo Tramo urbano RS: 130 Profile: Q100 (Continued)

Alpha	1.51	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	6.69	82.87	83.38
C & E Loss (m)	0.00	Cum SA (1000 m2)	7.53	31.29	87.64

Plan: Plan 01 Órbigo Tramo urbano RS: 130 Profile: Q500

E.G. Elev (m)	816.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.28	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.63	Reach Len. (m)	1.05	1.05	1.05
Crit W.S. (m)	815.70	Flow Area (m2)	5.96	223.03	148.81
E.G. Slope (m/m)	0.001814	Area (m2)	5.96	223.03	148.81
Q Total (m3/s)	713.21	Flow (m3/s)	3.72	570.63	138.86
Top Width (m)	165.32	Top Width (m)	6.15	72.42	86.75
Vel Total (m/s)	1.89	Avg. Vel. (m/s)	0.62	2.56	0.93
Max Chl Dpth (m)	3.14	Hydr. Depth (m)	0.97	3.08	1.72
Conv. Total (m3/s)	16746.1	Conv. (m3/s)	87.4	13398.3	3260.4
Length Wtd. (m)	1.05	Wetted Per. (m)	6.40	73.15	87.56
Min Ch El (m)	813.49	Shear (N/m2)	16.56	54.23	30.23
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.00	Cum Volume (1000 m3)	9.56	93.07	113.73
C & E Loss (m)	0.00	Cum SA (1000 m2)	8.83	31.29	90.83

Plan: Plan 01 Órbigo Tramo urbano RS: 128 Profile: MCO

E.G. Elev (m)	815.05	Element	Left OB	Channel	Right OB
Vel Head (m)	0.08	Wt. n-Val.		0.035	
W.S. Elev (m)	814.97	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	814.23	Flow Area (m2)		102.69	
E.G. Slope (m/m)	0.001281	Area (m2)		102.69	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	72.30	Top Width (m)		72.30	
Vel Total (m/s)	1.28	Avg. Vel. (m/s)		1.28	
Max Chl Dpth (m)	1.48	Hydr. Depth (m)		1.42	
Conv. Total (m3/s)	3683.2	Conv. (m3/s)		3683.2	
Length Wtd. (m)	1.13	Wetted Per. (m)		73.02	
Min Ch El (m)	813.49	Shear (N/m2)		17.66	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	44.10	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	30.16	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 128 Profile: Q100

E.G. Elev (m)	816.41	Element	Left OB	Channel	Right OB
Vel Head (m)	0.26	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.14	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	815.43	Flow Area (m2)	3.19	187.72	106.91
E.G. Slope (m/m)	0.002102	Area (m2)	3.19	187.72	106.91
Q Total (m3/s)	549.71	Flow (m3/s)	1.60	460.85	87.26
Top Width (m)	162.76	Top Width (m)	5.21	72.42	85.13
Vel Total (m/s)	1.85	Avg. Vel. (m/s)	0.50	2.46	0.82
Max Chl Dpth (m)	2.65	Hydr. Depth (m)	0.61	2.59	1.26
Conv. Total (m3/s)	11991.3	Conv. (m3/s)	34.8	10052.9	1903.5
Length Wtd. (m)	1.13	Wetted Per. (m)	5.34	73.15	85.86
Min Ch El (m)	813.49	Shear (N/m2)	12.31	52.89	25.66
Alpha	1.51	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.69	82.67	83.26
C & E Loss (m)		Cum SA (1000 m2)	7.52	31.21	87.55

Plan: Plan 01 Órbigo Tramo urbano RS: 128 Profile: Q500

E.G. Elev (m)	816.90	Element	Left OB	Channel	Right OB
Vel Head (m)	0.28	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.63	Reach Len. (m)	1.13	1.13	1.13
Crit W.S. (m)	815.70	Flow Area (m2)	5.94	222.84	148.59
E.G. Slope (m/m)	0.001820	Area (m2)	5.94	222.84	148.59
Q Total (m3/s)	713.21	Flow (m3/s)	3.72	570.75	138.75
Top Width (m)	165.31	Top Width (m)	6.14	72.42	86.75
Vel Total (m/s)	1.89	Avg. Vel. (m/s)	0.63	2.56	0.93
Max Chl Dpth (m)	3.14	Hydr. Depth (m)	0.97	3.08	1.71
Conv. Total (m3/s)	16719.6	Conv. (m3/s)	87.1	13380.0	3252.6
Length Wtd. (m)	1.13	Wetted Per. (m)	6.39	73.15	87.55
Min Ch El (m)	813.49	Shear (N/m2)	16.59	54.36	30.28
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.55	92.83	113.57
C & E Loss (m)		Cum SA (1000 m2)	8.82	31.21	90.74

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR U Profile: MCO

E.G. Elev (m)	815.04	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.035	
W.S. Elev (m)	814.94	Reach Len. (m)	6.15	6.15	6.15
Crit W.S. (m)	814.27	Flow Area (m2)		91.67	
E.G. Slope (m/m)	0.001957	Area (m2)		91.67	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	66.17	Top Width (m)		66.17	
Vel Total (m/s)	1.44	Avg. Vel. (m/s)		1.44	
Max Chl Dpth (m)	1.45	Hydr. Depth (m)		1.39	
Conv. Total (m3/s)	2979.5	Conv. (m3/s)		2979.5	
Length Wtd. (m)	6.15	Wetted Per. (m)		75.56	
Min Ch El (m)	813.49	Shear (N/m2)		23.29	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	43.99	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	30.09	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR U Profile: Q100

E.G. Elev (m)	816.40	Element	Left OB	Channel	Right OB
Vel Head (m)	0.34	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.06	Reach Len. (m)	6.15	6.15	6.15
Crit W.S. (m)	815.50	Flow Area (m2)	2.78	166.41	89.55
E.G. Slope (m/m)	0.003709	Area (m2)	2.78	166.41	89.55
Q Total (m3/s)	549.71	Flow (m3/s)	1.72	461.94	86.06
Top Width (m)	148.33	Top Width (m)	5.05	66.42	76.86
Vel Total (m/s)	2.12	Avg. Vel. (m/s)	0.62	2.78	0.96
Max Chl Dpth (m)	2.57	Hydr. Depth (m)	0.55	2.51	1.17
Conv. Total (m3/s)	9026.2	Conv. (m3/s)	28.2	7584.9	1413.0
Length Wtd. (m)	6.15	Wetted Per. (m)	5.17	82.58	87.86
Min Ch El (m)	813.49	Shear (N/m2)	19.54	73.29	37.07
Alpha	1.47	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.69	82.47	83.15
C & E Loss (m)		Cum SA (1000 m2)	7.51	31.13	87.46

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR U Profile: Q500

E.G. Elev (m)	816.90	Element	Left OB	Channel	Right OB
Vel Head (m)	0.35	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.55	Reach Len. (m)	6.15	6.15	6.15
Crit W.S. (m)	815.79	Flow Area (m2)	5.47	198.80	127.42
E.G. Slope (m/m)	0.003274	Area (m2)	5.47	198.80	127.42
Q Total (m3/s)	713.21	Flow (m3/s)	4.42	570.34	138.46

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR U Profile: Q500 (Continued)

Top Width (m)	150.89	Top Width (m)	5.99	66.42	78.48
Vel Total (m/s)	2.15	Avg. Vel. (m/s)	0.81	2.87	1.09
Max Chl Dpth (m)	3.06	Hydr. Depth (m)	0.91	2.99	1.62
Conv. Total (m3/s)	12464.9	Conv. (m3/s)	77.2	9967.8	2419.8
Length Wtd. (m)	6.15	Wetted Per. (m)	6.22	85.51	93.46
Min Ch El (m)	813.49	Shear (N/m2)	28.21	74.64	43.77
Alpha	1.47	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.54	92.59	113.42
C & E Loss (m)		Cum SA (1000 m2)	8.81	31.13	90.65

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR D Profile: MCO

E.G. Elev (m)	815.00	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.035	
W.S. Elev (m)	814.89	Reach Len. (m)	10.72	10.72	10.72
Crit W.S. (m)	814.24	Flow Area (m2)		90.70	
E.G. Slope (m/m)	0.002022	Area (m2)		90.70	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	66.12	Top Width (m)		66.12	
Vel Total (m/s)	1.45	Avg. Vel. (m/s)		1.45	
Max Chl Dpth (m)	1.43	Hydr. Depth (m)		1.37	
Conv. Total (m3/s)	2931.1	Conv. (m3/s)		2931.1	
Length Wtd. (m)	10.72	Wetted Per. (m)		75.40	
Min Ch El (m)	813.46	Shear (N/m2)		23.85	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	0.32	43.43	3.06
C & E Loss (m)		Cum SA (1000 m2)	1.31	29.68	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR D Profile: Q100

E.G. Elev (m)	816.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.35	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.00	Reach Len. (m)	10.72	10.72	10.72
Crit W.S. (m)	815.47	Flow Area (m2)	2.61	164.15	86.96
E.G. Slope (m/m)	0.003899	Area (m2)	2.61	164.15	86.96
Q Total (m3/s)	549.71	Flow (m3/s)	1.60	463.73	84.38
Top Width (m)	148.15	Top Width (m)	4.99	66.42	76.75
Vel Total (m/s)	2.17	Avg. Vel. (m/s)	0.61	2.83	0.97
Max Chl Dpth (m)	2.54	Hydr. Depth (m)	0.52	2.47	1.13
Conv. Total (m3/s)	8803.5	Conv. (m3/s)	25.7	7426.5	1351.4
Length Wtd. (m)	10.72	Wetted Per. (m)	5.09	82.38	87.47
Min Ch El (m)	813.46	Shear (N/m2)	19.57	76.19	38.01
Alpha	1.47	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	6.67	81.45	82.61
C & E Loss (m)		Cum SA (1000 m2)	7.48	30.72	86.99

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR D Profile: Q500

E.G. Elev (m)	816.85	Element	Left OB	Channel	Right OB
Vel Head (m)	0.36	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.49	Reach Len. (m)	10.72	10.72	10.72
Crit W.S. (m)	815.76	Flow Area (m2)	5.30	196.97	125.29
E.G. Slope (m/m)	0.003384	Area (m2)	5.30	196.97	125.29
Q Total (m3/s)	713.21	Flow (m3/s)	4.30	571.72	137.20
Top Width (m)	150.75	Top Width (m)	5.94	66.42	78.39
Vel Total (m/s)	2.18	Avg. Vel. (m/s)	0.81	2.90	1.10
Max Chl Dpth (m)	3.03	Hydr. Depth (m)	0.89	2.97	1.60
Conv. Total (m3/s)	12260.7	Conv. (m3/s)	73.8	9828.3	2358.5
Length Wtd. (m)	10.72	Wetted Per. (m)	6.16	85.34	93.15
Min Ch El (m)	813.46	Shear (N/m2)	28.56	76.58	44.63

Plan: Plan 01 Órbigo Tramo urbano RS: 126 BR D Profile: Q500 (Continued)

Alpha	1.47	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)		Cum Volume (1000 m3)	9.51	91.38	112.64
C & E Loss (m)		Cum SA (1000 m2)	8.78	30.72	90.17

Plan: Plan 01 Órbigo Tramo urbano RS: 122 Profile: MCO

E.G. Elev (m)	814.98	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	814.89	Reach Len. (m)	10.00	10.00	10.00
Crit W.S. (m)	814.20	Flow Area (m2)		99.25	
E.G. Slope (m/m)	0.001429	Area (m2)		99.25	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	72.12	Top Width (m)		72.12	
Vel Total (m/s)	1.33	Avg. Vel. (m/s)		1.33	
Max Chl Dpth (m)	1.43	Hydr. Depth (m)		1.38	
Conv. Total (m3/s)	3486.6	Conv. (m3/s)		3486.6	
Length Wtd. (m)	10.00	Wetted Per. (m)		72.81	
Min Ch El (m)	813.46	Shear (N/m2)		19.11	
Alpha	1.00	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.01	Cum Volume (1000 m3)	0.32	42.41	3.06
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.31	28.94	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 122 Profile: Q100

E.G. Elev (m)	816.30	Element	Left OB	Channel	Right OB
Vel Head (m)	0.29	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.01	Reach Len. (m)	10.00	10.00	10.00
Crit W.S. (m)	815.40	Flow Area (m2)	2.66	180.21	98.12
E.G. Slope (m/m)	0.002465	Area (m2)	2.66	180.21	98.12
Q Total (m3/s)	549.71	Flow (m3/s)	1.32	466.24	82.15
Top Width (m)	162.21	Top Width (m)	5.01	72.42	84.78
Vel Total (m/s)	1.96	Avg. Vel. (m/s)	0.49	2.59	0.84
Max Chl Dpth (m)	2.55	Hydr. Depth (m)	0.53	2.49	1.16
Conv. Total (m3/s)	11072.8	Conv. (m3/s)	26.5	9391.5	1654.8
Length Wtd. (m)	10.00	Wetted Per. (m)	5.12	73.15	85.50
Min Ch El (m)	813.46	Shear (N/m2)	12.58	59.54	27.74
Alpha	1.51	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	6.64	79.61	81.62
C & E Loss (m)	0.04	Cum SA (1000 m2)	7.43	29.98	86.12

Plan: Plan 01 Órbigo Tramo urbano RS: 122 Profile: Q500

E.G. Elev (m)	816.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.30	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	816.51	Reach Len. (m)	10.00	10.00	10.00
Crit W.S. (m)	815.67	Flow Area (m2)	5.41	216.39	140.91
E.G. Slope (m/m)	0.002037	Area (m2)	5.41	216.39	140.91
Q Total (m3/s)	713.21	Flow (m3/s)	3.43	575.09	134.70
Top Width (m)	164.84	Top Width (m)	5.97	72.42	86.45
Vel Total (m/s)	1.97	Avg. Vel. (m/s)	0.63	2.66	0.96
Max Chl Dpth (m)	3.05	Hydr. Depth (m)	0.91	2.99	1.63
Conv. Total (m3/s)	15800.9	Conv. (m3/s)	75.9	12740.8	2984.2
Length Wtd. (m)	10.00	Wetted Per. (m)	6.20	73.15	87.24
Min Ch El (m)	813.46	Shear (N/m2)	17.42	59.10	32.27
Alpha	1.52	Stream Power (N/m s)	8953.45	0.00	4171.12
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	9.45	89.16	111.21
C & E Loss (m)	0.07	Cum SA (1000 m2)	8.71	29.98	89.28

Plan: Plan 01 Órbigo Tramo urbano RS: 120 Profile: MCO

E.G. Elev (m)	814.97	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	814.88	Reach Len. (m)	27.49	28.84	30.19
Crit W.S. (m)	814.18	Flow Area (m2)		99.70	
E.G. Slope (m/m)	0.001422	Area (m2)		99.70	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	72.66	Top Width (m)		72.66	
Vel Total (m/s)	1.32	Avg. Vel. (m/s)		1.32	
Max Chl Dpth (m)	1.43	Hydr. Depth (m)		1.37	
Conv. Total (m3/s)	3496.0	Conv. (m3/s)		3496.0	
Length Wtd. (m)	28.84	Wetted Per. (m)		73.34	
Min Ch El (m)	813.45	Shear (N/m2)		18.95	
Alpha	1.00	Stream Power (N/m s)	15649.21	0.00	4827.00
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	0.32	41.42	3.06
C & E Loss (m)	0.03	Cum SA (1000 m2)	1.31	28.21	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 120 Profile: Q100

E.G. Elev (m)	816.22	Element	Left OB	Channel	Right OB
Vel Head (m)	0.74	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.48	Reach Len. (m)	27.49	28.84	30.19
Crit W.S. (m)	815.32	Flow Area (m2)	2.44	143.77	0.05
E.G. Slope (m/m)	0.007338	Area (m2)	2.44	143.77	0.05
Q Total (m3/s)	549.71	Flow (m3/s)	1.24	548.45	0.01
Top Width (m)	83.52	Top Width (m)	10.15	73.15	0.22
Vel Total (m/s)	3.76	Avg. Vel. (m/s)	0.51	3.81	0.28
Max Chl Dpth (m)	2.03	Hydr. Depth (m)	0.24	1.97	0.24
Conv. Total (m3/s)	6417.3	Conv. (m3/s)	14.5	6402.6	0.2
Length Wtd. (m)	29.01	Wetted Per. (m)	10.17	73.88	0.53
Min Ch El (m)	813.45	Shear (N/m2)	17.28	140.03	7.06
Alpha	1.03	Stream Power (N/m s)	15649.21	0.00	4827.00
Frctn Loss (m)	0.22	Cum Volume (1000 m3)	6.62	77.99	81.13
C & E Loss (m)	0.08	Cum SA (1000 m2)	7.35	29.25	85.70

Plan: Plan 01 Órbigo Tramo urbano RS: 120 Profile: Q500

E.G. Elev (m)	816.70	Element	Left OB	Channel	Right OB
Vel Head (m)	1.03	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.67	Reach Len. (m)	27.49	28.84	30.19
Crit W.S. (m)	815.67	Flow Area (m2)	4.73	157.55	0.10
E.G. Slope (m/m)	0.009059	Area (m2)	4.73	157.55	0.10
Q Total (m3/s)	713.21	Flow (m3/s)	3.34	709.84	0.04
Top Width (m)	87.58	Top Width (m)	14.13	73.15	0.30
Vel Total (m/s)	4.39	Avg. Vel. (m/s)	0.71	4.51	0.39
Max Chl Dpth (m)	2.22	Hydr. Depth (m)	0.33	2.15	0.33
Conv. Total (m3/s)	7493.4	Conv. (m3/s)	35.0	7457.9	0.4
Length Wtd. (m)	29.05	Wetted Per. (m)	14.15	73.88	0.73
Min Ch El (m)	813.45	Shear (N/m2)	29.70	189.44	12.14
Alpha	1.05	Stream Power (N/m s)	15649.21	0.00	4827.00
Frctn Loss (m)	0.20	Cum Volume (1000 m3)	9.40	87.29	110.51
C & E Loss (m)	0.18	Cum SA (1000 m2)	8.61	29.25	88.85

Plan: Plan 01 Órbigo Tramo urbano RS: 110 Profile: MCO

E.G. Elev (m)	814.85	Element	Left OB	Channel	Right OB
Vel Head (m)	0.37	Wt. n-Val.		0.035	
W.S. Elev (m)	814.47	Reach Len. (m)	5.05	5.05	5.05
Crit W.S. (m)	814.47	Flow Area (m2)		48.69	
E.G. Slope (m/m)	0.013463	Area (m2)		48.69	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	

Plan: Plan 01 Órbigo Tramo urbano RS: 110 Profile: MCO (Continued)

Top Width (m)	65.69	Top Width (m)		65.69	
Vel Total (m/s)	2.71	Avg. Vel. (m/s)		2.71	
Max Chl Dpth (m)	0.77	Hydr. Depth (m)		0.74	
Conv. Total (m3/s)	1136.0	Conv. (m3/s)		1136.0	
Length Wtd. (m)	5.05	Wetted Per. (m)		65.99	
Min Ch El (m)	813.70	Shear (N/m2)		97.42	
Alpha	1.00	Stream Power (N/m s)	13492.56	0.00	4617.34
Frctn Loss (m)	0.03	Cum Volume (1000 m3)	0.32	39.28	3.06
C & E Loss (m)	0.07	Cum SA (1000 m2)	1.31	26.22	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 110 Profile: Q100

E.G. Elev (m)	815.92	Element	Left OB	Channel	Right OB
Vel Head (m)	0.48	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.45	Reach Len. (m)	5.05	5.05	5.05
Crit W.S. (m)	815.45	Flow Area (m2)	2.46	115.40	126.23
E.G. Slope (m/m)	0.007744	Area (m2)	2.46	115.40	126.23
Q Total (m3/s)	549.71	Flow (m3/s)	1.22	404.64	143.85
Top Width (m)	243.83	Top Width (m)	11.06	69.64	163.13
Vel Total (m/s)	2.25	Avg. Vel. (m/s)	0.50	3.51	1.14
Max Chl Dpth (m)	1.75	Hydr. Depth (m)	0.22	1.66	0.77
Conv. Total (m3/s)	6246.6	Conv. (m3/s)	13.9	4598.2	1634.6
Length Wtd. (m)	5.05	Wetted Per. (m)	11.07	70.08	163.45
Min Ch El (m)	813.70	Shear (N/m2)	16.88	125.06	58.65
Alpha	1.85	Stream Power (N/m s)	13492.56	0.00	4617.34
Frctn Loss (m)	0.02	Cum Volume (1000 m3)	6.55	74.25	79.22
C & E Loss (m)	0.05	Cum SA (1000 m2)	7.06	27.19	83.23

Plan: Plan 01 Órbigo Tramo urbano RS: 110 Profile: Q500

E.G. Elev (m)	816.23	Element	Left OB	Channel	Right OB
Vel Head (m)	0.42	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.81	Reach Len. (m)	5.05	5.05	5.05
Crit W.S. (m)	815.64	Flow Area (m2)	8.06	140.49	185.40
E.G. Slope (m/m)	0.005610	Area (m2)	8.06	140.49	185.40
Q Total (m3/s)	713.21	Flow (m3/s)	5.06	477.99	230.16
Top Width (m)	255.11	Top Width (m)	20.02	69.64	165.46
Vel Total (m/s)	2.14	Avg. Vel. (m/s)	0.63	3.40	1.24
Max Chl Dpth (m)	2.11	Hydr. Depth (m)	0.40	2.02	1.12
Conv. Total (m3/s)	9521.9	Conv. (m3/s)	67.5	6381.6	3072.8
Length Wtd. (m)	5.05	Wetted Per. (m)	20.03	70.08	165.80
Min Ch El (m)	813.70	Shear (N/m2)	22.13	110.29	61.52
Alpha	1.81	Stream Power (N/m s)	13492.56	0.00	4617.34
Frctn Loss (m)	0.02	Cum Volume (1000 m3)	9.23	82.99	107.71
C & E Loss (m)	0.04	Cum SA (1000 m2)	8.14	27.19	86.35

Plan: Plan 01 Órbigo Tramo urbano RS: 100 Profile: MCO

E.G. Elev (m)	814.02	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.		0.035	
W.S. Elev (m)	813.87	Reach Len. (m)	18.83	18.01	17.19
Crit W.S. (m)	813.34	Flow Area (m2)		75.74	
E.G. Slope (m/m)	0.002814	Area (m2)		75.74	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	61.14	Top Width (m)		61.14	
Vel Total (m/s)	1.74	Avg. Vel. (m/s)		1.74	
Max Chl Dpth (m)	1.47	Hydr. Depth (m)		1.24	
Conv. Total (m3/s)	2484.6	Conv. (m3/s)		2484.6	
Length Wtd. (m)	18.01	Wetted Per. (m)		61.57	
Min Ch El (m)	812.40	Shear (N/m2)		33.95	

Plan: Plan 01 Órbigo Tramo urbano RS: 100 Profile: MCO (Continued)

Alpha	1.00	Stream Power (N/m s)	13553.51	0.00	4613.71
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	0.32	38.96	3.06
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.31	25.90	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 100 Profile: Q100

E.G. Elev (m)	815.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.32	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.38	Reach Len. (m)	18.83	18.01	17.19
Crit W.S. (m)	814.67	Flow Area (m2)	1.87	176.44	117.62
E.G. Slope (m/m)	0.002580	Area (m2)	1.87	176.44	117.62
Q Total (m3/s)	549.71	Flow (m3/s)	0.49	475.91	73.32
Top Width (m)	243.27	Top Width (m)	9.73	68.85	164.68
Vel Total (m/s)	1.86	Avg. Vel. (m/s)	0.26	2.70	0.62
Max Chl Dpth (m)	2.98	Hydr. Depth (m)	0.19	2.56	0.71
Conv. Total (m3/s)	10822.6	Conv. (m3/s)	9.6	9369.6	1443.5
Length Wtd. (m)	17.95	Wetted Per. (m)	9.74	69.64	165.09
Min Ch El (m)	812.40	Shear (N/m2)	4.85	64.10	18.03
Alpha	1.84	Stream Power (N/m s)	13553.51	0.00	4613.71
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	6.54	73.51	78.60
C & E Loss (m)	0.00	Cum SA (1000 m2)	7.01	26.84	82.41

Plan: Plan 01 Órbigo Tramo urbano RS: 100 Profile: Q500

E.G. Elev (m)	816.17	Element	Left OB	Channel	Right OB
Vel Head (m)	0.28	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.89	Reach Len. (m)	18.83	18.01	17.19
Crit W.S. (m)	815.07	Flow Area (m2)	9.95	211.02	201.05
E.G. Slope (m/m)	0.001938	Area (m2)	9.95	211.02	201.05
Q Total (m3/s)	713.21	Flow (m3/s)	3.92	555.84	153.46
Top Width (m)	258.94	Top Width (m)	22.47	68.85	167.61
Vel Total (m/s)	1.69	Avg. Vel. (m/s)	0.39	2.63	0.76
Max Chl Dpth (m)	3.49	Hydr. Depth (m)	0.44	3.06	1.20
Conv. Total (m3/s)	16199.7	Conv. (m3/s)	88.9	12625.1	3485.6
Length Wtd. (m)	17.91	Wetted Per. (m)	22.49	69.64	168.07
Min Ch El (m)	812.40	Shear (N/m2)	8.41	57.60	22.74
Alpha	1.94	Stream Power (N/m s)	13553.51	0.00	4613.71
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	9.18	82.11	106.73
C & E Loss (m)	0.01	Cum SA (1000 m2)	8.04	26.84	85.51

Plan: Plan 01 Órbigo Tramo urbano RS: 090 Profile: MCO

E.G. Elev (m)	813.97	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.		0.035	
W.S. Elev (m)	813.86	Reach Len. (m)	51.77	51.36	50.95
Crit W.S. (m)	813.19	Flow Area (m2)		90.48	
E.G. Slope (m/m)	0.001749	Area (m2)		90.48	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	66.65	Top Width (m)		66.65	
Vel Total (m/s)	1.46	Avg. Vel. (m/s)		1.46	
Max Chl Dpth (m)	1.49	Hydr. Depth (m)		1.36	
Conv. Total (m3/s)	3152.0	Conv. (m3/s)		3152.0	
Length Wtd. (m)	51.36	Wetted Per. (m)		67.20	
Min Ch El (m)	812.37	Shear (N/m2)		23.09	
Alpha	1.00	Stream Power (N/m s)	13633.94	0.00	6821.07
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	0.32	37.47	3.06
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.31	24.75	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 090 Profile: Q100

E.G. Elev (m)	815.65	Element	Left OB	Channel	Right OB
Vel Head (m)	0.36	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.30	Reach Len. (m)	51.77	51.36	50.95
Crit W.S. (m)	814.46	Flow Area (m2)	0.13	204.03	14.15
E.G. Slope (m/m)	0.002888	Area (m2)	0.13	204.03	14.15
Q Total (m3/s)	549.71	Flow (m3/s)	0.03	544.53	5.16
Top Width (m)	137.43	Top Width (m)	0.89	88.24	48.30
Vel Total (m/s)	2.52	Avg. Vel. (m/s)	0.22	2.67	0.36
Max Chl Dpth (m)	2.93	Hydr. Depth (m)	0.15	2.31	0.29
Conv. Total (m3/s)	10229.1	Conv. (m3/s)	0.5	10132.7	95.9
Length Wtd. (m)	51.35	Wetted Per. (m)	0.93	89.04	48.37
Min Ch El (m)	812.37	Shear (N/m2)	3.96	64.90	8.29
Alpha	1.11	Stream Power (N/m s)	13633.94	0.00	6821.07
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	6.52	70.09	77.47
C & E Loss (m)	0.00	Cum SA (1000 m2)	6.91	25.43	80.58

Plan: Plan 01 Órbigo Tramo urbano RS: 090 Profile: Q500

E.G. Elev (m)	816.11	Element	Left OB	Channel	Right OB
Vel Head (m)	0.41	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.70	Reach Len. (m)	51.77	51.36	50.95
Crit W.S. (m)	814.84	Flow Area (m2)	0.74	240.08	34.07
E.G. Slope (m/m)	0.002709	Area (m2)	0.74	240.08	34.07
Q Total (m3/s)	713.21	Flow (m3/s)	0.29	691.62	21.30
Top Width (m)	139.59	Top Width (m)	2.12	88.24	49.24
Vel Total (m/s)	2.59	Avg. Vel. (m/s)	0.39	2.88	0.63
Max Chl Dpth (m)	3.33	Hydr. Depth (m)	0.35	2.72	0.69
Conv. Total (m3/s)	13703.6	Conv. (m3/s)	5.5	13288.7	409.3
Length Wtd. (m)	51.35	Wetted Per. (m)	2.23	89.04	49.38
Min Ch El (m)	812.37	Shear (N/m2)	8.87	71.63	18.33
Alpha	1.20	Stream Power (N/m s)	13633.94	0.00	6821.07
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	9.08	78.04	104.71
C & E Loss (m)	0.01	Cum SA (1000 m2)	7.81	25.43	83.64

Plan: Plan 01 Órbigo Tramo urbano RS: 080 Profile: MCO

E.G. Elev (m)	813.88	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	813.80	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	813.03	Flow Area (m2)		101.65	
E.G. Slope (m/m)	0.001279	Area (m2)		101.65	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	70.51	Top Width (m)		70.51	
Vel Total (m/s)	1.30	Avg. Vel. (m/s)		1.30	
Max Chl Dpth (m)	1.54	Hydr. Depth (m)		1.44	
Conv. Total (m3/s)	3685.2	Conv. (m3/s)		3685.2	
Length Wtd. (m)	50.00	Wetted Per. (m)		71.11	
Min Ch El (m)	812.26	Shear (N/m2)		17.93	
Alpha	1.00	Stream Power (N/m s)	14188.57	0.00	5318.62
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.32	32.53	3.06
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.31	21.23	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 080 Profile: Q100

E.G. Elev (m)	815.52	Element	Left OB	Channel	Right OB
Vel Head (m)	0.37	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.15	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.21	Flow Area (m2)	0.66	198.53	17.63
E.G. Slope (m/m)	0.002362	Area (m2)	0.66	198.53	17.63
Q Total (m3/s)	549.71	Flow (m3/s)	0.26	539.83	9.62

Plan: Plan 01 Órbigo Tramo urbano RS: 080 Profile: Q100 (Continued)

Top Width (m)	101.35	Top Width (m)	1.31	71.79	28.25
Vel Total (m/s)	2.54	Avg. Vel. (m/s)	0.39	2.72	0.55
Max Chl Dpth (m)	2.89	Hydr. Depth (m)	0.50	2.77	0.62
Conv. Total (m3/s)	11310.7	Conv. (m3/s)	5.3	11107.4	198.0
Length Wtd. (m)	50.00	Wetted Per. (m)	1.77	72.45	28.27
Min Ch El (m)	812.26	Shear (N/m2)	8.64	63.47	14.45
Alpha	1.13	Stream Power (N/m s)	14188.57	0.00	5318.62
Frctn Loss (m)	0.14	Cum Volume (1000 m3)	6.50	59.75	76.66
C & E Loss (m)	0.01	Cum SA (1000 m2)	6.85	21.32	78.63

Plan: Plan 01 Órbigo Tramo urbano RS: 080 Profile: Q500

E.G. Elev (m)	815.97	Element	Left OB	Channel	Right OB
Vel Head (m)	0.48	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.49	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.58	Flow Area (m2)	1.25	223.26	27.86
E.G. Slope (m/m)	0.002626	Area (m2)	1.25	223.26	27.86
Q Total (m3/s)	713.21	Flow (m3/s)	0.60	692.24	20.37
Top Width (m)	105.03	Top Width (m)	2.10	71.79	31.14
Vel Total (m/s)	2.83	Avg. Vel. (m/s)	0.48	3.10	0.73
Max Chl Dpth (m)	3.23	Hydr. Depth (m)	0.59	3.11	0.89
Conv. Total (m3/s)	13917.0	Conv. (m3/s)	11.7	13507.8	397.6
Length Wtd. (m)	50.00	Wetted Per. (m)	2.62	72.45	31.19
Min Ch El (m)	812.26	Shear (N/m2)	12.25	79.36	23.01
Alpha	1.17	Stream Power (N/m s)	14188.57	0.00	5318.62
Frctn Loss (m)	0.17	Cum Volume (1000 m3)	9.03	66.15	103.13
C & E Loss (m)	0.02	Cum SA (1000 m2)	7.70	21.32	81.60

Plan: Plan 01 Órbigo Tramo urbano RS: 070 Profile: MCO

E.G. Elev (m)	813.82	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.		0.035	
W.S. Elev (m)	813.73	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	812.93	Flow Area (m2)		99.17	
E.G. Slope (m/m)	0.001254	Area (m2)		99.17	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	65.01	Top Width (m)		65.01	
Vel Total (m/s)	1.33	Avg. Vel. (m/s)		1.33	
Max Chl Dpth (m)	1.59	Hydr. Depth (m)		1.53	
Conv. Total (m3/s)	3722.6	Conv. (m3/s)		3722.6	
Length Wtd. (m)	50.00	Wetted Per. (m)		65.85	
Min Ch El (m)	812.14	Shear (N/m2)		18.52	
Alpha	1.00	Stream Power (N/m s)	15570.22	0.00	4432.24
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.32	27.51	3.06
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.31	17.84	13.23

Plan: Plan 01 Órbigo Tramo urbano RS: 070 Profile: Q100

E.G. Elev (m)	815.37	Element	Left OB	Channel	Right OB
Vel Head (m)	0.50	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.87	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.16	Flow Area (m2)	0.31	174.21	8.02
E.G. Slope (m/m)	0.003349	Area (m2)	0.31	174.21	8.02
Q Total (m3/s)	549.71	Flow (m3/s)	0.12	545.49	4.10
Top Width (m)	84.98	Top Width (m)	0.72	65.85	18.41
Vel Total (m/s)	3.01	Avg. Vel. (m/s)	0.38	3.13	0.51
Max Chl Dpth (m)	2.73	Hydr. Depth (m)	0.44	2.65	0.44
Conv. Total (m3/s)	9499.0	Conv. (m3/s)	2.1	9426.0	70.9
Length Wtd. (m)	50.00	Wetted Per. (m)	1.13	66.85	18.43
Min Ch El (m)	812.14	Shear (N/m2)	9.13	85.59	14.30

Plan: Plan 01 Órbigo Tramo urbano RS: 070 Profile: Q100 (Continued)

Alpha	1.07	Stream Power (N/m s)	15570.22	0.00	4432.24
Frctn Loss (m)	0.09	Cum Volume (1000 m3)	6.47	50.43	76.02
C & E Loss (m)	0.10	Cum SA (1000 m2)	6.80	17.88	77.46

Plan: Plan 01 Órbigo Tramo urbano RS: 070 Profile: Q500

E.G. Elev (m)	815.78	Element	Left OB	Channel	Right OB
Vel Head (m)	0.72	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.06	Reach Len. (m)	50.00	50.00	50.00
Crit W.S. (m)	814.55	Flow Area (m2)	0.47	186.62	11.83
E.G. Slope (m/m)	0.004444	Area (m2)	0.47	186.62	11.83
Q Total (m3/s)	713.21	Flow (m3/s)	0.23	704.77	8.21
Top Width (m)	87.98	Top Width (m)	0.92	65.85	21.21
Vel Total (m/s)	3.59	Avg. Vel. (m/s)	0.49	3.78	0.69
Max Chl Dpth (m)	2.92	Hydr. Depth (m)	0.51	2.83	0.56
Conv. Total (m3/s)	10698.8	Conv. (m3/s)	3.4	10572.2	123.2
Length Wtd. (m)	50.00	Wetted Per. (m)	1.41	66.85	21.25
Min Ch El (m)	812.14	Shear (N/m2)	14.44	121.67	24.26
Alpha	1.10	Stream Power (N/m s)	15570.22	0.00	4432.24
Frctn Loss (m)	0.10	Cum Volume (1000 m3)	8.99	55.90	102.14
C & E Loss (m)	0.17	Cum SA (1000 m2)	7.62	17.88	80.29

Plan: Plan 01 Órbigo Tramo urbano RS: 060 Profile: MCO

E.G. Elev (m)	813.76	Element	Left OB	Channel	Right OB
Vel Head (m)	0.07	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.69	Reach Len. (m)	49.37	50.00	50.63
Crit W.S. (m)		Flow Area (m2)	0.74	104.54	18.27
E.G. Slope (m/m)	0.000958	Area (m2)	0.74	104.54	18.27
Q Total (m3/s)	131.81	Flow (m3/s)	0.17	127.37	4.27
Top Width (m)	119.46	Top Width (m)	2.16	64.17	53.14
Vel Total (m/s)	1.07	Avg. Vel. (m/s)	0.23	1.22	0.23
Max Chl Dpth (m)	1.66	Hydr. Depth (m)	0.34	1.63	0.34
Conv. Total (m3/s)	4258.6	Conv. (m3/s)	5.4	4115.2	138.0
Length Wtd. (m)	50.02	Wetted Per. (m)	2.27	64.64	53.14
Min Ch El (m)	812.03	Shear (N/m2)	3.08	15.19	3.23
Alpha	1.26	Stream Power (N/m s)	15650.95	0.00	0.00
Frctn Loss (m)	0.05	Cum Volume (1000 m3)	0.30	22.42	2.61
C & E Loss (m)	0.00	Cum SA (1000 m2)	1.26	14.61	11.90

Plan: Plan 01 Órbigo Tramo urbano RS: 060 Profile: Q100

E.G. Elev (m)	815.17	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.02	Reach Len. (m)	49.37	50.00	50.63
Crit W.S. (m)		Flow Area (m2)	6.59	190.05	278.78
E.G. Slope (m/m)	0.001182	Area (m2)	6.59	190.05	278.78
Q Total (m3/s)	549.71	Flow (m3/s)	3.34	383.18	163.19
Top Width (m)	310.30	Top Width (m)	6.73	64.17	239.40
Vel Total (m/s)	1.16	Avg. Vel. (m/s)	0.51	2.02	0.59
Max Chl Dpth (m)	2.99	Hydr. Depth (m)	0.98	2.96	1.16
Conv. Total (m3/s)	15987.6	Conv. (m3/s)	97.2	11144.2	4746.3
Length Wtd. (m)	50.19	Wetted Per. (m)	7.03	64.64	239.48
Min Ch El (m)	812.03	Shear (N/m2)	10.87	34.09	13.50
Alpha	2.20	Stream Power (N/m s)	15650.95	0.00	0.00
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	6.30	41.32	68.85
C & E Loss (m)	0.00	Cum SA (1000 m2)	6.62	14.63	71.01

Plan: Plan 01 Órbigo Tramo urbano RS: 060 Profile: Q500

E.G. Elev (m)	815.51	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.34	Reach Len. (m)	49.37	50.00	50.63
Crit W.S. (m)		Flow Area (m2)	8.99	210.63	356.20
E.G. Slope (m/m)	0.001218	Area (m2)	8.99	210.63	356.20
Q Total (m3/s)	713.21	Flow (m3/s)	4.99	461.69	246.53
Top Width (m)	315.74	Top Width (m)	8.22	64.17	243.35
Vel Total (m/s)	1.24	Avg. Vel. (m/s)	0.56	2.19	0.69
Max Chl Dpth (m)	3.31	Hydr. Depth (m)	1.09	3.28	1.46
Conv. Total (m3/s)	20433.2	Conv. (m3/s)	143.0	13227.3	7063.0
Length Wtd. (m)	50.22	Wetted Per. (m)	8.55	64.64	243.43
Min Ch El (m)	812.03	Shear (N/m2)	12.56	38.93	17.48
Alpha	2.14	Stream Power (N/m s)	15650.95	0.00	0.00
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	8.75	45.97	92.94
C & E Loss (m)	0.00	Cum SA (1000 m2)	7.39	14.63	73.67

Plan: Plan 01 Órbigo Tramo urbano RS: 050 Profile: MCO

E.G. Elev (m)	813.71	Element	Left OB	Channel	Right OB
Vel Head (m)	0.09	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.61	Reach Len. (m)	39.58	41.63	43.68
Crit W.S. (m)		Flow Area (m2)	0.98	92.85	17.97
E.G. Slope (m/m)	0.001184	Area (m2)	0.98	92.85	17.97
Q Total (m3/s)	131.81	Flow (m3/s)	0.23	127.25	4.33
Top Width (m)	117.65	Top Width (m)	3.18	55.89	58.58
Vel Total (m/s)	1.18	Avg. Vel. (m/s)	0.24	1.37	0.24
Max Chl Dpth (m)	1.70	Hydr. Depth (m)	0.31	1.66	0.31
Conv. Total (m3/s)	3830.7	Conv. (m3/s)	6.7	3698.3	125.7
Length Wtd. (m)	41.68	Wetted Per. (m)	3.24	56.41	58.58
Min Ch El (m)	811.91	Shear (N/m2)	3.50	19.11	3.56
Alpha	1.31	Stream Power (N/m s)	17476.63	0.00	0.00
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	0.26	17.48	1.69
C & E Loss (m)	0.01	Cum SA (1000 m2)	1.12	11.61	9.07

Plan: Plan 01 Órbigo Tramo urbano RS: 050 Profile: Q100

E.G. Elev (m)	815.10	Element	Left OB	Channel	Right OB
Vel Head (m)	0.17	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.93	Reach Len. (m)	39.58	41.63	43.68
Crit W.S. (m)		Flow Area (m2)	10.77	166.31	283.57
E.G. Slope (m/m)	0.001427	Area (m2)	10.77	166.31	283.57
Q Total (m3/s)	549.71	Flow (m3/s)	5.64	369.05	175.02
Top Width (m)	327.35	Top Width (m)	12.43	55.89	259.04
Vel Total (m/s)	1.19	Avg. Vel. (m/s)	0.52	2.22	0.62
Max Chl Dpth (m)	3.02	Hydr. Depth (m)	0.87	2.98	1.09
Conv. Total (m3/s)	14552.6	Conv. (m3/s)	149.3	9769.8	4633.4
Length Wtd. (m)	42.24	Wetted Per. (m)	12.58	56.41	259.09
Min Ch El (m)	811.91	Shear (N/m2)	11.97	41.25	15.32
Alpha	2.41	Stream Power (N/m s)	17476.63	0.00	0.00
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	5.87	32.41	54.61
C & E Loss (m)	0.01	Cum SA (1000 m2)	6.14	11.63	58.40

Plan: Plan 01 Órbigo Tramo urbano RS: 050 Profile: Q500

E.G. Elev (m)	815.44	Element	Left OB	Channel	Right OB
Vel Head (m)	0.19	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.25	Reach Len. (m)	39.58	41.63	43.68
Crit W.S. (m)		Flow Area (m2)	15.56	184.53	368.85
E.G. Slope (m/m)	0.001421	Area (m2)	15.56	184.53	368.85
Q Total (m3/s)	713.21	Flow (m3/s)	8.27	437.95	266.99

Plan: Plan 01 Órbigo Tramo urbano RS: 050 Profile: Q500 (Continued)

Top Width (m)	337.90	Top Width (m)	17.56	55.89	264.45
Vel Total (m/s)	1.25	Avg. Vel. (m/s)	0.53	2.37	0.72
Max Chl Dpth (m)	3.34	Hydr. Depth (m)	0.89	3.30	1.39
Conv. Total (m3/s)	18921.0	Conv. (m3/s)	219.5	11618.5	7083.0
Length Wtd. (m)	42.34	Wetted Per. (m)	17.73	56.41	264.51
Min Ch El (m)	811.91	Shear (N/m2)	12.23	45.58	19.43
Alpha	2.33	Stream Power (N/m s)	17476.63	0.00	0.00
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	8.14	36.09	74.58
C & E Loss (m)	0.01	Cum SA (1000 m2)	6.76	11.63	60.82

Plan: Plan 01 Órbigo Tramo urbano RS: 040 Profile: MCO

E.G. Elev (m)	813.63	Element	Left OB	Channel	Right OB
Vel Head (m)	0.16	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.47	Reach Len. (m)	48.07	50.91	53.75
Crit W.S. (m)		Flow Area (m2)	5.28	69.72	14.19
E.G. Slope (m/m)	0.002207	Area (m2)	5.28	69.72	14.19
Q Total (m3/s)	131.81	Flow (m3/s)	1.46	126.43	3.92
Top Width (m)	126.26	Top Width (m)	22.36	43.83	60.07
Vel Total (m/s)	1.48	Avg. Vel. (m/s)	0.28	1.81	0.28
Max Chl Dpth (m)	1.65	Hydr. Depth (m)	0.24	1.59	0.24
Conv. Total (m3/s)	2805.5	Conv. (m3/s)	31.0	2691.0	83.4
Length Wtd. (m)	50.95	Wetted Per. (m)	22.36	44.40	60.08
Min Ch El (m)	811.82	Shear (N/m2)	5.11	33.99	5.11
Alpha	1.45	Stream Power (N/m s)	23072.02	0.00	0.00
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	0.14	14.10	0.99
C & E Loss (m)	0.00	Cum SA (1000 m2)	0.62	9.53	6.48

Plan: Plan 01 Órbigo Tramo urbano RS: 040 Profile: Q100

E.G. Elev (m)	815.03	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.88	Reach Len. (m)	48.07	50.91	53.75
Crit W.S. (m)		Flow Area (m2)	66.36	131.51	334.40
E.G. Slope (m/m)	0.001486	Area (m2)	66.36	131.51	334.40
Q Total (m3/s)	549.71	Flow (m3/s)	47.75	298.72	203.24
Top Width (m)	415.59	Top Width (m)	49.47	43.83	322.30
Vel Total (m/s)	1.03	Avg. Vel. (m/s)	0.72	2.27	0.61
Max Chl Dpth (m)	3.06	Hydr. Depth (m)	1.34	3.00	1.04
Conv. Total (m3/s)	14260.1	Conv. (m3/s)	1238.6	7749.2	5272.3
Length Wtd. (m)	51.81	Wetted Per. (m)	49.65	44.40	322.32
Min Ch El (m)	811.82	Shear (N/m2)	19.48	43.16	15.12
Alpha	2.80	Stream Power (N/m s)	23072.02	0.00	0.00
Frctn Loss (m)	0.08	Cum Volume (1000 m3)	4.35	26.21	41.12
C & E Loss (m)	0.00	Cum SA (1000 m2)	4.92	9.55	45.70

Plan: Plan 01 Órbigo Tramo urbano RS: 040 Profile: Q500

E.G. Elev (m)	815.37	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.22	Reach Len. (m)	48.07	50.91	53.75
Crit W.S. (m)		Flow Area (m2)	83.41	146.38	447.84
E.G. Slope (m/m)	0.001375	Area (m2)	83.41	146.38	447.84
Q Total (m3/s)	713.21	Flow (m3/s)	65.52	343.52	304.17
Top Width (m)	439.89	Top Width (m)	51.39	43.83	344.67
Vel Total (m/s)	1.05	Avg. Vel. (m/s)	0.79	2.35	0.68
Max Chl Dpth (m)	3.40	Hydr. Depth (m)	1.62	3.34	1.30
Conv. Total (m3/s)	19235.2	Conv. (m3/s)	1767.1	9264.6	8203.5
Length Wtd. (m)	51.97	Wetted Per. (m)	51.61	44.40	344.69
Min Ch El (m)	811.82	Shear (N/m2)	21.79	44.45	17.52

Plan: Plan 01 Órbigo Tramo urbano RS: 040 Profile: Q500 (Continued)

Alpha	2.62	Stream Power (N/m s)	23072.02	0.00	0.00
Frctn Loss (m)	0.07	Cum Volume (1000 m3)	6.19	29.20	56.75
C & E Loss (m)	0.00	Cum SA (1000 m2)	5.39	9.55	47.51

Plan: Plan 01 Órbigo Tramo urbano RS: 030 Profile: MCO

E.G. Elev (m)	813.50	Element	Left OB	Channel	Right OB
Vel Head (m)	0.20	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.30	Reach Len. (m)	63.26	61.19	59.12
Crit W.S. (m)		Flow Area (m2)	0.09	64.55	6.81
E.G. Slope (m/m)	0.002930	Area (m2)	0.09	64.55	6.81
Q Total (m3/s)	131.81	Flow (m3/s)	0.02	130.21	1.58
Top Width (m)	89.57	Top Width (m)	0.63	42.76	46.18
Vel Total (m/s)	1.84	Avg. Vel. (m/s)	0.22	2.02	0.23
Max Chl Dpth (m)	1.59	Hydr. Depth (m)	0.15	1.51	0.15
Conv. Total (m3/s)	2434.9	Conv. (m3/s)	0.4	2405.3	29.3
Length Wtd. (m)	61.17	Wetted Per. (m)	0.70	43.33	46.18
Min Ch El (m)	811.70	Shear (N/m2)	3.84	42.81	4.24
Alpha	1.18	Stream Power (N/m s)	25598.34	0.00	0.00
Frctn Loss (m)	0.13	Cum Volume (1000 m3)	0.01	10.68	0.42
C & E Loss (m)	0.03	Cum SA (1000 m2)	0.07	7.33	3.62

Plan: Plan 01 Órbigo Tramo urbano RS: 030 Profile: Q100

E.G. Elev (m)	814.95	Element	Left OB	Channel	Right OB
Vel Head (m)	0.18	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.77	Reach Len. (m)	63.26	61.19	59.12
Crit W.S. (m)		Flow Area (m2)	44.49	127.73	352.05
E.G. Slope (m/m)	0.001703	Area (m2)	44.49	127.73	352.05
Q Total (m3/s)	549.71	Flow (m3/s)	23.13	309.62	216.96
Top Width (m)	470.67	Top Width (m)	59.78	42.76	368.13
Vel Total (m/s)	1.05	Avg. Vel. (m/s)	0.52	2.42	0.62
Max Chl Dpth (m)	3.07	Hydr. Depth (m)	0.74	2.99	0.96
Conv. Total (m3/s)	13319.8	Conv. (m3/s)	560.4	7502.3	5257.1
Length Wtd. (m)	60.63	Wetted Per. (m)	60.05	43.33	368.14
Min Ch El (m)	811.70	Shear (N/m2)	12.38	49.23	15.97
Alpha	3.16	Stream Power (N/m s)	25598.34	0.00	0.00
Frctn Loss (m)	0.12	Cum Volume (1000 m3)	1.68	19.62	22.67
C & E Loss (m)	0.01	Cum SA (1000 m2)	2.29	7.35	27.14

Plan: Plan 01 Órbigo Tramo urbano RS: 030 Profile: Q500

E.G. Elev (m)	815.30	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	815.15	Reach Len. (m)	63.26	61.19	59.12
Crit W.S. (m)		Flow Area (m2)	67.99	143.92	493.99
E.G. Slope (m/m)	0.001374	Area (m2)	67.99	143.92	493.99
Q Total (m3/s)	713.21	Flow (m3/s)	39.45	339.28	334.49
Top Width (m)	490.50	Top Width (m)	65.97	42.76	381.76
Vel Total (m/s)	1.01	Avg. Vel. (m/s)	0.58	2.36	0.68
Max Chl Dpth (m)	3.45	Hydr. Depth (m)	1.03	3.37	1.29
Conv. Total (m3/s)	19241.6	Conv. (m3/s)	1064.2	9153.3	9024.1
Length Wtd. (m)	60.52	Wetted Per. (m)	66.25	43.33	381.78
Min Ch El (m)	811.70	Shear (N/m2)	13.83	44.75	17.43
Alpha	2.82	Stream Power (N/m s)	25598.34	0.00	0.00
Frctn Loss (m)	0.11	Cum Volume (1000 m3)	2.55	21.81	31.44
C & E Loss (m)	0.02	Cum SA (1000 m2)	2.57	7.35	27.99

Plan: Plan 01 Órbigo Tramo urbano RS: 020 Profile: MCO

E.G. Elev (m)	813.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.11	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.23	Reach Len. (m)	23.16	23.16	23.16
Crit W.S. (m)	812.47	Flow Area (m2)	0.08	88.02	3.91
E.G. Slope (m/m)	0.001521	Area (m2)	0.08	88.02	3.91
Q Total (m3/s)	131.81	Flow (m3/s)	0.01	131.24	0.56
Top Width (m)	90.50	Top Width (m)	0.65	56.36	33.49
Vel Total (m/s)	1.43	Avg. Vel. (m/s)	0.14	1.49	0.14
Max Chl Dpth (m)	1.66	Hydr. Depth (m)	0.12	1.56	0.12
Conv. Total (m3/s)	3380.1	Conv. (m3/s)	0.3	3365.4	14.4
Length Wtd. (m)	23.16	Wetted Per. (m)	0.69	56.85	33.49
Min Ch El (m)	811.57	Shear (N/m2)	1.64	23.09	1.74
Alpha	1.08	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.00	6.02	0.11
C & E Loss (m)		Cum SA (1000 m2)	0.03	4.29	1.27

Plan: Plan 01 Órbigo Tramo urbano RS: 020 Profile: Q100

E.G. Elev (m)	814.81	Element	Left OB	Channel	Right OB
Vel Head (m)	0.32	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.49	Reach Len. (m)	23.16	23.16	23.16
Crit W.S. (m)	813.96	Flow Area (m2)	2.93	158.80	142.41
E.G. Slope (m/m)	0.002412	Area (m2)	2.93	158.80	142.41
Q Total (m3/s)	549.71	Flow (m3/s)	1.86	441.94	105.91
Top Width (m)	205.62	Top Width (m)	3.47	56.36	145.79
Vel Total (m/s)	1.81	Avg. Vel. (m/s)	0.64	2.78	0.74
Max Chl Dpth (m)	2.92	Hydr. Depth (m)	0.84	2.82	0.98
Conv. Total (m3/s)	11193.1	Conv. (m3/s)	37.9	8998.8	2156.4
Length Wtd. (m)	23.16	Wetted Per. (m)	3.80	56.85	145.84
Min Ch El (m)	811.57	Shear (N/m2)	18.23	66.07	23.10
Alpha	1.94	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.18	10.85	8.05
C & E Loss (m)		Cum SA (1000 m2)	0.29	4.31	11.95

Plan: Plan 01 Órbigo Tramo urbano RS: 020 Profile: Q500

E.G. Elev (m)	815.16	Element	Left OB	Channel	Right OB
Vel Head (m)	0.38	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.79	Reach Len. (m)	23.16	23.16	23.16
Crit W.S. (m)	814.29	Flow Area (m2)	4.03	175.58	186.04
E.G. Slope (m/m)	0.002580	Area (m2)	4.03	175.58	186.04
Q Total (m3/s)	713.21	Flow (m3/s)	3.01	540.40	169.80
Top Width (m)	207.56	Top Width (m)	3.89	56.36	147.32
Vel Total (m/s)	1.95	Avg. Vel. (m/s)	0.75	3.08	0.91
Max Chl Dpth (m)	3.22	Hydr. Depth (m)	1.04	3.12	1.26
Conv. Total (m3/s)	14040.8	Conv. (m3/s)	59.2	10638.7	3342.9
Length Wtd. (m)	23.16	Wetted Per. (m)	4.31	56.85	147.40
Min Ch El (m)	811.57	Shear (N/m2)	23.63	78.14	31.94
Alpha	1.94	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.27	12.04	11.33
C & E Loss (m)		Cum SA (1000 m2)	0.36	4.31	12.35

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR U Profile: MCO

E.G. Elev (m)	813.30	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.17	Reach Len. (m)	23.84	23.84	23.84
Crit W.S. (m)	812.49	Flow Area (m2)	0.04	80.45	1.88
E.G. Slope (m/m)	0.002153	Area (m2)	0.04	80.45	1.88
Q Total (m3/s)	131.81	Flow (m3/s)	0.01	131.51	0.29

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR U Profile: MCO (Continued)

Top Width (m)	76.08	Top Width (m)	0.46	53.36	22.26
Vel Total (m/s)	1.60	Avg. Vel. (m/s)	0.13	1.63	0.16
Max Chl Dpth (m)	1.60	Hydr. Depth (m)	0.08	1.51	0.08
Conv. Total (m3/s)	2840.9	Conv. (m3/s)	0.1	2834.4	6.4
Length Wtd. (m)	23.84	Wetted Per. (m)	0.49	58.74	22.37
Min Ch El (m)	811.57	Shear (N/m2)	1.65	28.91	1.78
Alpha	1.04	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.00	4.06	0.04
C & E Loss (m)		Cum SA (1000 m2)	0.01	3.02	0.62

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR U Profile: Q100

E.G. Elev (m)	814.76	Element	Left OB	Channel	Right OB
Vel Head (m)	0.40	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.36	Reach Len. (m)	23.84	23.84	23.84
Crit W.S. (m)	814.03	Flow Area (m2)	2.49	144.13	118.15
E.G. Slope (m/m)	0.003892	Area (m2)	2.49	144.13	118.15
Q Total (m3/s)	549.71	Flow (m3/s)	1.88	443.66	104.17
Top Width (m)	195.77	Top Width (m)	3.29	53.36	139.12
Vel Total (m/s)	2.08	Avg. Vel. (m/s)	0.75	3.08	0.88
Max Chl Dpth (m)	2.79	Hydr. Depth (m)	0.76	2.70	0.85
Conv. Total (m3/s)	8811.0	Conv. (m3/s)	30.1	7111.2	1669.7
Length Wtd. (m)	23.84	Wetted Per. (m)	3.58	63.52	146.23
Min Ch El (m)	811.57	Shear (N/m2)	26.54	86.62	30.84
Alpha	1.81	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.12	7.34	5.04
C & E Loss (m)		Cum SA (1000 m2)	0.21	3.04	8.65

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR U Profile: Q500

E.G. Elev (m)	815.10	Element	Left OB	Channel	Right OB
Vel Head (m)	0.46	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.65	Reach Len. (m)	23.84	23.84	23.84
Crit W.S. (m)	814.33	Flow Area (m2)	3.49	159.44	158.27
E.G. Slope (m/m)	0.004225	Area (m2)	3.49	159.44	158.27
Q Total (m3/s)	713.21	Flow (m3/s)	3.15	540.40	169.66
Top Width (m)	197.64	Top Width (m)	3.69	53.36	140.59
Vel Total (m/s)	2.22	Avg. Vel. (m/s)	0.90	3.39	1.07
Max Chl Dpth (m)	3.08	Hydr. Depth (m)	0.95	2.99	1.13
Conv. Total (m3/s)	10972.8	Conv. (m3/s)	48.5	8314.1	2610.2
Length Wtd. (m)	23.84	Wetted Per. (m)	4.07	64.66	150.02
Min Ch El (m)	811.57	Shear (N/m2)	35.53	102.15	43.71
Alpha	1.82	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.18	8.16	7.35
C & E Loss (m)		Cum SA (1000 m2)	0.27	3.04	9.02

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR D Profile: MCO

E.G. Elev (m)	813.12	Element	Left OB	Channel	Right OB
Vel Head (m)	0.15	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	812.97	Reach Len. (m)	8.00	8.00	8.00
Crit W.S. (m)	812.36	Flow Area (m2)	0.01	76.69	0.65
E.G. Slope (m/m)	0.002517	Area (m2)	0.01	76.69	0.65
Q Total (m3/s)	131.81	Flow (m3/s)	0.00	131.74	0.07
Top Width (m)	67.30	Top Width (m)	0.27	53.36	13.67
Vel Total (m/s)	1.70	Avg. Vel. (m/s)	0.10	1.72	0.10
Max Chl Dpth (m)	1.53	Hydr. Depth (m)	0.05	1.44	0.05
Conv. Total (m3/s)	2627.3	Conv. (m3/s)	0.0	2625.9	1.3
Length Wtd. (m)	8.00	Wetted Per. (m)	0.28	58.46	13.67
Min Ch El (m)	811.44	Shear (N/m2)	1.11	32.38	1.18

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR D Profile: MCO (Continued)

Alpha	1.02	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.00	2.19	0.01
C & E Loss (m)		Cum SA (1000 m2)	0.00	1.75	0.20

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR D Profile: Q100

E.G. Elev (m)	814.56	Element	Left OB	Channel	Right OB
Vel Head (m)	0.56	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.00	Reach Len. (m)	8.00	8.00	8.00
Crit W.S. (m)	813.91	Flow Area (m2)	1.76	131.76	86.01
E.G. Slope (m/m)	0.005754	Area (m2)	1.76	131.76	86.01
Q Total (m3/s)	549.71	Flow (m3/s)	1.39	469.04	79.28
Top Width (m)	194.26	Top Width (m)	2.97	53.36	137.93
Vel Total (m/s)	2.50	Avg. Vel. (m/s)	0.79	3.56	0.92
Max Chl Dpth (m)	2.56	Hydr. Depth (m)	0.59	2.47	0.62
Conv. Total (m3/s)	7247.1	Conv. (m3/s)	18.3	6183.6	1045.2
Length Wtd. (m)	8.00	Wetted Per. (m)	3.19	62.59	143.16
Min Ch El (m)	811.44	Shear (N/m2)	31.25	118.78	33.90
Alpha	1.74	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.07	4.05	2.60
C & E Loss (m)		Cum SA (1000 m2)	0.14	1.77	5.35

Plan: Plan 01 Órbigo Tramo urbano RS: 016 BR D Profile: Q500

E.G. Elev (m)	814.91	Element	Left OB	Channel	Right OB
Vel Head (m)	0.63	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.27	Reach Len. (m)	8.00	8.00	8.00
Crit W.S. (m)	814.20	Flow Area (m2)	2.62	146.24	123.65
E.G. Slope (m/m)	0.006150	Area (m2)	2.62	146.24	123.65
Q Total (m3/s)	713.21	Flow (m3/s)	2.54	570.41	140.27
Top Width (m)	196.03	Top Width (m)	3.35	53.36	139.32
Vel Total (m/s)	2.62	Avg. Vel. (m/s)	0.97	3.90	1.13
Max Chl Dpth (m)	2.83	Hydr. Depth (m)	0.78	2.74	0.89
Conv. Total (m3/s)	9094.7	Conv. (m3/s)	32.4	7273.7	1788.6
Length Wtd. (m)	8.00	Wetted Per. (m)	3.65	63.67	146.75
Min Ch El (m)	811.44	Shear (N/m2)	43.33	138.51	50.81
Alpha	1.81	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)	0.11	4.51	3.99
C & E Loss (m)		Cum SA (1000 m2)	0.19	1.77	5.68

Plan: Plan 01 Órbigo Tramo urbano RS: 012 Profile: MCO

E.G. Elev (m)	813.10	Element	Left OB	Channel	Right OB
Vel Head (m)	0.14	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	812.96	Reach Len. (m)	21.82	18.04	14.26
Crit W.S. (m)	812.35	Flow Area (m2)	0.01	79.83	0.56
E.G. Slope (m/m)	0.002122	Area (m2)	0.01	79.83	0.56
Q Total (m3/s)	131.81	Flow (m3/s)	0.00	131.76	0.05
Top Width (m)	69.28	Top Width (m)	0.25	56.36	12.68
Vel Total (m/s)	1.64	Avg. Vel. (m/s)	0.09	1.65	0.09
Max Chl Dpth (m)	1.52	Hydr. Depth (m)	0.04	1.42	0.04
Conv. Total (m3/s)	2861.4	Conv. (m3/s)	0.0	2860.3	1.1
Length Wtd. (m)	18.04	Wetted Per. (m)	0.26	56.85	12.68
Min Ch El (m)	811.44	Shear (N/m2)	0.87	29.22	0.92
Alpha	1.01	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)	0.04	Cum Volume (1000 m3)	0.00	1.57	0.00
C & E Loss (m)	0.01	Cum SA (1000 m2)	0.00	1.31	0.09

Plan: Plan 01 Órbigo Tramo urbano RS: 012 Profile: Q100

E.G. Elev (m)	814.53	Element	Left OB	Channel	Right OB
Vel Head (m)	0.65	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	813.89	Reach Len. (m)	21.82	18.04	14.26
Crit W.S. (m)	813.83	Flow Area (m2)	1.43	131.87	73.34
E.G. Slope (m/m)	0.005612	Area (m2)	1.43	131.87	73.34
Q Total (m3/s)	549.71	Flow (m3/s)	1.01	494.63	54.07
Top Width (m)	202.50	Top Width (m)	2.81	56.36	143.34
Vel Total (m/s)	2.66	Avg. Vel. (m/s)	0.71	3.75	0.74
Max Chl Dpth (m)	2.44	Hydr. Depth (m)	0.51	2.34	0.51
Conv. Total (m3/s)	7337.7	Conv. (m3/s)	13.5	6602.5	721.7
Length Wtd. (m)	17.56	Wetted Per. (m)	2.99	56.85	143.34
Min Ch El (m)	811.44	Shear (N/m2)	26.35	127.67	28.16
Alpha	1.80	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.06	3.00	1.97
C & E Loss (m)	0.13	Cum SA (1000 m2)	0.12	1.33	4.23

Plan: Plan 01 Órbigo Tramo urbano RS: 012 Profile: Q500

E.G. Elev (m)	814.88	Element	Left OB	Channel	Right OB
Vel Head (m)	0.70	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.18	Reach Len. (m)	21.82	18.04	14.26
Crit W.S. (m)	814.18	Flow Area (m2)	2.30	148.23	115.15
E.G. Slope (m/m)	0.005554	Area (m2)	2.30	148.23	115.15
Q Total (m3/s)	713.21	Flow (m3/s)	2.01	597.91	113.29
Top Width (m)	204.40	Top Width (m)	3.21	56.36	144.83
Vel Total (m/s)	2.68	Avg. Vel. (m/s)	0.87	4.03	0.98
Max Chl Dpth (m)	2.73	Hydr. Depth (m)	0.72	2.63	0.80
Conv. Total (m3/s)	9570.1	Conv. (m3/s)	26.9	8022.9	1520.2
Length Wtd. (m)	17.31	Wetted Per. (m)	3.48	56.85	144.86
Min Ch El (m)	811.44	Shear (N/m2)	36.03	142.01	43.30
Alpha	1.91	Stream Power (N/m s)	30392.39	0.00	0.00
Frctn Loss (m)	0.06	Cum Volume (1000 m3)	0.09	3.33	3.03
C & E Loss (m)	0.14	Cum SA (1000 m2)	0.16	1.33	4.55

Plan: Plan 01 Órbigo Tramo urbano RS: 010 Profile: MCO

E.G. Elev (m)	813.05	Element	Left OB	Channel	Right OB
Vel Head (m)	0.10	Wt. n-Val.		0.035	
W.S. Elev (m)	812.95	Reach Len. (m)			
Crit W.S. (m)	812.36	Flow Area (m2)		93.75	
E.G. Slope (m/m)	0.002273	Area (m2)		93.75	
Q Total (m3/s)	131.81	Flow (m3/s)		131.81	
Top Width (m)	89.25	Top Width (m)		89.25	
Vel Total (m/s)	1.41	Avg. Vel. (m/s)		1.41	
Max Chl Dpth (m)	1.55	Hydr. Depth (m)		1.05	
Conv. Total (m3/s)	2764.5	Conv. (m3/s)		2764.5	
Length Wtd. (m)		Wetted Per. (m)		89.42	
Min Ch El (m)	811.40	Shear (N/m2)		23.37	
Alpha	1.00	Stream Power (N/m s)	36978.67	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

Plan: Plan 01 Órbigo Tramo urbano RS: 010 Profile: Q100

E.G. Elev (m)	814.35	Element	Left OB	Channel	Right OB
Vel Head (m)	0.23	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.12	Reach Len. (m)			
Crit W.S. (m)	813.58	Flow Area (m2)	3.67	200.59	202.34
E.G. Slope (m/m)	0.002270	Area (m2)	3.67	200.59	202.34
Q Total (m3/s)	549.71	Flow (m3/s)	1.61	460.97	87.13

Plan: Plan 01 Órbigo Tramo urbano RS: 010 Profile: Q100 (Continued)

Top Width (m)	548.47	Top Width (m)	7.81	91.28	449.37
Vel Total (m/s)	1.35	Avg. Vel. (m/s)	0.44	2.30	0.43
Max Chl Dpth (m)	2.72	Hydr. Depth (m)	0.47	2.20	0.45
Conv. Total (m3/s)	11537.4	Conv. (m3/s)	33.9	9674.8	1828.7
Length Wtd. (m)		Wetted Per. (m)	7.90	91.46	449.37
Min Ch El (m)	811.40	Shear (N/m2)	10.34	48.83	10.02
Alpha	2.44	Stream Power (N/m s)	36978.67	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

Plan: Plan 01 Órbigo Tramo urbano RS: 010 Profile: Q500

E.G. Elev (m)	814.59	Element	Left OB	Channel	Right OB
Vel Head (m)	0.24	Wt. n-Val.	0.065	0.035	0.065
W.S. Elev (m)	814.35	Reach Len. (m)			
Crit W.S. (m)	813.88	Flow Area (m2)	5.91	221.46	310.01
E.G. Slope (m/m)	0.002270	Area (m2)	5.91	221.46	310.01
Q Total (m3/s)	713.21	Flow (m3/s)	2.72	543.62	166.87
Top Width (m)	595.68	Top Width (m)	11.78	91.28	492.62
Vel Total (m/s)	1.33	Avg. Vel. (m/s)	0.46	2.45	0.54
Max Chl Dpth (m)	2.95	Hydr. Depth (m)	0.50	2.43	0.63
Conv. Total (m3/s)	14969.3	Conv. (m3/s)	57.1	11409.8	3502.4
Length Wtd. (m)		Wetted Per. (m)	11.87	91.46	492.62
Min Ch El (m)	811.40	Shear (N/m2)	11.08	53.90	14.01
Alpha	2.65	Stream Power (N/m s)	36978.67	0.00	0.00
Frctn Loss (m)		Cum Volume (1000 m3)			
C & E Loss (m)		Cum SA (1000 m2)			

Anejo nº 7: TABLAS DE RESULTADOS DE PUENTES (HEC-RAS)

Plan: Plan 01 Órbigo Tramo urbano RS: 244 Profile: MCO

E.G. US. (m)	816.77	Element	Inside BR US	Inside BR DS
W.S. US. (m)	816.64	E.G. Elev (m)	816.69	816.62
Q Total (m3/s)	131.81	W.S. Elev (m)	816.21	816.20
Q Bridge (m3/s)	131.81	Crit W.S. (m)	816.11	816.02
Q Weir (m3/s)		Max Chl Dpth (m)	1.79	1.87
Weir Sta Lft (m)		Vel Total (m/s)	3.07	2.88
Weir Sta Rgt (m)		Flow Area (m2)	42.96	45.77
Weir Submerg		Froude # Chl	0.73	0.67
Weir Max Depth (m)		Specif Force (m3)	75.07	76.01
Min El Weir Flow (m)	819.78	Hydr Depth (m)	1.24	1.31
Min El Prs (m)	822.43	W.P. Total (m)	42.50	43.13
Delta EG (m)	0.28	Conv. Total (m3/s)	1236.5	1360.6
Delta WS (m)	0.33	Top Width (m)	34.73	35.02
BR Open Area (m2)	502.70	Frctn Loss (m)	0.05	0.06
BR Open Vel (m/s)	3.07	C & E Loss (m)	0.02	0.07
Coef of Q		Shear Total (N/m2)	112.66	97.68
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 244 Profile: Q100

E.G. US. (m)	818.71	Element	Inside BR US	Inside BR DS
W.S. US. (m)	818.58	E.G. Elev (m)	818.63	818.52
Q Total (m3/s)	549.71	W.S. Elev (m)	817.92	817.83
Q Bridge (m3/s)	549.71	Crit W.S. (m)	817.92	817.83
Q Weir (m3/s)		Max Chl Dpth (m)	3.50	3.50
Weir Sta Lft (m)		Vel Total (m/s)	2.55	2.53
Weir Sta Rgt (m)		Flow Area (m2)	215.41	216.99
Weir Submerg		Froude # Chl	0.63	0.63
Weir Max Depth (m)		Specif Force (m3)	402.37	400.77
Min El Weir Flow (m)	819.78	Hydr Depth (m)	1.37	1.35
Min El Prs (m)	822.43	W.P. Total (m)	235.28	233.46
Delta EG (m)	0.64	Conv. Total (m3/s)	5729.5	5792.7
Delta WS (m)	1.05	Top Width (m)	157.02	160.31
BR Open Area (m2)	502.70	Frctn Loss (m)	0.05	0.08
BR Open Vel (m/s)	2.55	C & E Loss (m)	0.00	0.04
Coef of Q		Shear Total (N/m2)	82.65	82.08
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 244 Profile: Q500

E.G. US. (m)	819.13	Element	Inside BR US	Inside BR DS
W.S. US. (m)	818.99	E.G. Elev (m)	819.03	818.92
Q Total (m3/s)	713.21	W.S. Elev (m)	818.18	818.07
Q Bridge (m3/s)	713.21	Crit W.S. (m)	818.18	818.07
Q Weir (m3/s)		Max Chl Dpth (m)	3.76	3.74
Weir Sta Lft (m)		Vel Total (m/s)	2.80	2.80
Weir Sta Rgt (m)		Flow Area (m2)	254.60	255.14
Weir Submerg		Froude # Chl	0.67	0.67
Weir Max Depth (m)		Specif Force (m3)	544.12	540.30
Min El Weir Flow (m)	819.78	Hydr Depth (m)	1.73	1.68
Min El Prs (m)	822.43	W.P. Total (m)	250.06	247.19
Delta EG (m)	0.75	Conv. Total (m3/s)	6805.3	6843.3
Delta WS (m)	1.11	Top Width (m)	147.27	151.45
BR Open Area (m2)	502.70	Frctn Loss (m)	0.05	0.08
BR Open Vel (m/s)	2.80	C & E Loss (m)	0.00	0.10
Coef of Q		Shear Total (N/m2)	109.67	109.94
Br Sel Method	Energy only	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 136 Profile: MCO

E.G. US. (m)	815.12	Element	Inside BR US	Inside BR DS
W.S. US. (m)	815.04	E.G. Elev (m)	815.11	815.06
Q Total (m3/s)	131.81	W.S. Elev (m)	815.03	814.97
Q Bridge (m3/s)	131.81	Crit W.S. (m)	814.27	814.23
Q Weir (m3/s)		Max Chl Dpth (m)	1.50	1.48
Weir Sta Lft (m)		Vel Total (m/s)	1.29	1.31
Weir Sta Rgt (m)		Flow Area (m2)	101.87	100.51
Weir Submerg		Froude # Chl	0.34	0.35
Weir Max Depth (m)		Specif Force (m3)	92.64	90.94
Min El Weir Flow (m)	820.46	Hydr Depth (m)	1.44	1.42
Min El Prs (m)	818.30	W.P. Total (m)	74.60	74.48
Delta EG (m)	0.06	Conv. Total (m3/s)	3582.5	3507.0
Delta WS (m)	0.06	Top Width (m)	70.88	70.80
BR Open Area (m2)	608.23	Frctn Loss (m)		
BR Open Vel (m/s)	1.31	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	18.13	18.70
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 136 Profile: Q100

E.G. US. (m)	816.50	Element	Inside BR US	Inside BR DS
W.S. US. (m)	816.26	E.G. Elev (m)	816.48	816.42
Q Total (m3/s)	549.71	W.S. Elev (m)	816.22	816.14
Q Bridge (m3/s)	549.71	Crit W.S. (m)	815.48	815.44
Q Weir (m3/s)		Max Chl Dpth (m)	2.69	2.65
Weir Sta Lft (m)		Vel Total (m/s)	1.86	1.89
Weir Sta Rgt (m)		Flow Area (m2)	296.09	290.19
Weir Submerg		Froude # Chl	0.48	0.50
Weir Max Depth (m)		Specif Force (m3)	445.62	437.21
Min El Weir Flow (m)	820.46	Hydr Depth (m)	1.87	1.83
Min El Prs (m)	818.30	W.P. Total (m)	170.15	169.72
Delta EG (m)	0.09	Conv. Total (m3/s)	11503.8	11197.3
Delta WS (m)	0.11	Top Width (m)	158.45	158.25
BR Open Area (m2)	608.23	Frctn Loss (m)		
BR Open Vel (m/s)	1.89	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	38.97	40.41
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 136 Profile: Q500

E.G. US. (m)	816.99	Element	Inside BR US	Inside BR DS
W.S. US. (m)	816.73	E.G. Elev (m)	816.97	816.91
Q Total (m3/s)	713.21	W.S. Elev (m)	816.69	816.62
Q Bridge (m3/s)	713.21	Crit W.S. (m)	815.75	815.71
Q Weir (m3/s)		Max Chl Dpth (m)	3.17	3.13
Weir Sta Lft (m)		Vel Total (m/s)	1.92	1.94
Weir Sta Rgt (m)		Flow Area (m2)	372.20	367.04
Weir Submerg		Froude # Chl	0.47	0.48
Weir Max Depth (m)		Specif Force (m3)	646.12	636.61
Min El Weir Flow (m)	820.46	Hydr Depth (m)	2.31	2.28
Min El Prs (m)	818.30	W.P. Total (m)	175.70	175.33
Delta EG (m)	0.08	Conv. Total (m3/s)	15735.1	15434.0
Delta WS (m)	0.10	Top Width (m)	160.95	160.78
BR Open Area (m2)	608.23	Frctn Loss (m)		
BR Open Vel (m/s)	1.94	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	42.68	43.84
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 126 Profile: MCO

E.G. US. (m)	815.05	Element	Inside BR US	Inside BR DS
W.S. US. (m)	814.97	E.G. Elev (m)	815.04	815.00
Q Total (m3/s)	131.81	W.S. Elev (m)	814.94	814.89
Q Bridge (m3/s)	131.81	Crit W.S. (m)	814.27	814.24
Q Weir (m3/s)		Max Chl Dpth (m)	1.45	1.43
Weir Sta Lft (m)		Vel Total (m/s)	1.44	1.45
Weir Sta Rgt (m)		Flow Area (m2)	91.67	90.70
Weir Submerg		Froude # Chl	0.39	0.40
Weir Max Depth (m)		Specif Force (m3)	84.65	83.52
Min El Weir Flow (m)	820.49	Hydr Depth (m)	1.39	1.37
Min El Prs (m)	818.99	W.P. Total (m)	75.56	75.40
Delta EG (m)	0.07	Conv. Total (m3/s)	2979.5	2931.1
Delta WS (m)	0.08	Top Width (m)	66.17	66.12
BR Open Area (m2)	603.13	Frctn Loss (m)		
BR Open Vel (m/s)	1.45	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	23.29	23.85
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 126 Profile: Q100

E.G. US. (m)	816.41	Element	Inside BR US	Inside BR DS
W.S. US. (m)	816.14	E.G. Elev (m)	816.40	816.35
Q Total (m3/s)	549.71	W.S. Elev (m)	816.06	816.00
Q Bridge (m3/s)	549.71	Crit W.S. (m)	815.50	815.47
Q Weir (m3/s)		Max Chl Dpth (m)	2.57	2.54
Weir Sta Lft (m)		Vel Total (m/s)	2.12	2.17
Weir Sta Rgt (m)		Flow Area (m2)	258.73	253.72
Weir Submerg		Froude # Chl	0.56	0.57
Weir Max Depth (m)		Specif Force (m3)	407.86	401.91
Min El Weir Flow (m)	820.49	Hydr Depth (m)	1.74	1.71
Min El Prs (m)	818.99	W.P. Total (m)	175.61	174.95
Delta EG (m)	0.10	Conv. Total (m3/s)	9026.2	8803.5
Delta WS (m)	0.13	Top Width (m)	148.33	148.15
BR Open Area (m2)	603.13	Frctn Loss (m)		
BR Open Vel (m/s)	2.17	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	53.59	55.45
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 126 Profile: Q500

E.G. US. (m)	816.90	Element	Inside BR US	Inside BR DS
W.S. US. (m)	816.63	E.G. Elev (m)	816.90	816.85
Q Total (m3/s)	713.21	W.S. Elev (m)	816.55	816.49
Q Bridge (m3/s)	713.21	Crit W.S. (m)	815.79	815.76
Q Weir (m3/s)		Max Chl Dpth (m)	3.06	3.03
Weir Sta Lft (m)		Vel Total (m/s)	2.15	2.18
Weir Sta Rgt (m)		Flow Area (m2)	331.69	327.56
Weir Submerg		Froude # Chl	0.53	0.54
Weir Max Depth (m)		Specif Force (m3)	594.98	588.29
Min El Weir Flow (m)	820.49	Hydr Depth (m)	2.20	2.17
Min El Prs (m)	818.99	W.P. Total (m)	185.19	184.66
Delta EG (m)	0.10	Conv. Total (m3/s)	12464.9	12260.7
Delta WS (m)	0.12	Top Width (m)	150.89	150.75
BR Open Area (m2)	603.13	Frctn Loss (m)		
BR Open Vel (m/s)	2.18	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	57.50	58.86
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 016 Profile: MCO

E.G. US. (m)	813.35	Element	Inside BR US	Inside BR DS
W.S. US. (m)	813.23	E.G. Elev (m)	813.30	813.12
Q Total (m3/s)	131.81	W.S. Elev (m)	813.17	812.97
Q Bridge (m3/s)	131.81	Crit W.S. (m)	812.49	812.36
Q Weir (m3/s)		Max Chl Dpth (m)	1.60	1.53
Weir Sta Lft (m)		Vel Total (m/s)	1.60	1.70
Weir Sta Rgt (m)		Flow Area (m2)	82.37	77.36
Weir Submerg		Froude # Chl	0.42	0.46
Weir Max Depth (m)		Specif Force (m3)	84.81	80.35
Min El Weir Flow (m)	823.34	Hydr Depth (m)	1.08	1.15
Min El Prs (m)	821.73	W.P. Total (m)	81.60	72.42
Delta EG (m)	0.24	Conv. Total (m3/s)	2840.9	2627.3
Delta WS (m)	0.27	Top Width (m)	76.08	67.30
BR Open Area (m2)	1923.70	Frctn Loss (m)		
BR Open Vel (m/s)	1.70	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	21.31	26.37
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 016 Profile: Q100

E.G. US. (m)	814.81	Element	Inside BR US	Inside BR DS
W.S. US. (m)	814.49	E.G. Elev (m)	814.76	814.56
Q Total (m3/s)	549.71	W.S. Elev (m)	814.36	814.00
Q Bridge (m3/s)	549.71	Crit W.S. (m)	814.03	813.91
Q Weir (m3/s)		Max Chl Dpth (m)	2.79	2.56
Weir Sta Lft (m)		Vel Total (m/s)	2.08	2.50
Weir Sta Rgt (m)		Flow Area (m2)	264.77	219.54
Weir Submerg		Froude # Chl	0.60	0.72
Weir Max Depth (m)		Specif Force (m3)	402.97	375.85
Min El Weir Flow (m)	823.34	Hydr Depth (m)	1.35	1.13
Min El Prs (m)	821.73	W.P. Total (m)	213.32	208.93
Delta EG (m)	0.28	Conv. Total (m3/s)	8811.0	7247.1
Delta WS (m)	0.60	Top Width (m)	195.77	194.26
BR Open Area (m2)	1923.70	Frctn Loss (m)		
BR Open Vel (m/s)	2.50	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	47.38	59.29
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Plan: Plan 01 Órbigo Tramo urbano RS: 016 Profile: Q500

E.G. US. (m)	815.16	Element	Inside BR US	Inside BR DS
W.S. US. (m)	814.79	E.G. Elev (m)	815.10	814.91
Q Total (m3/s)	713.21	W.S. Elev (m)	814.65	814.27
Q Bridge (m3/s)	713.21	Crit W.S. (m)	814.33	814.20
Q Weir (m3/s)		Max Chl Dpth (m)	3.08	2.83
Weir Sta Lft (m)		Vel Total (m/s)	2.22	2.62
Weir Sta Rgt (m)		Flow Area (m2)	321.20	272.51
Weir Submerg		Froude # Chl	0.63	0.75
Weir Max Depth (m)		Specif Force (m3)	543.80	508.09
Min El Weir Flow (m)	823.34	Hydr Depth (m)	1.63	1.39
Min El Prs (m)	821.73	W.P. Total (m)	218.76	214.07
Delta EG (m)	0.28	Conv. Total (m3/s)	10972.8	9094.7
Delta WS (m)	0.61	Top Width (m)	197.64	196.03
BR Open Area (m2)	1923.70	Frctn Loss (m)		
BR Open Vel (m/s)	2.62	C & E Loss (m)		
Coef of Q		Shear Total (N/m2)	60.83	76.77
Br Sel Method	Momentum	Power Total (N/m s)	0.00	0.00

Anejo nº 8: TABLA RESUMEN DE RESULTADOS (HEC-RAS)

HEC-RAS Plan: Plan 01 River: Órbigo Reach: Tramo urbano

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Tramo urbano	410	MCO	131.81	816.16	818.27		818.48	0.002580	2.02	65.32	39.04	0.50
Tramo urbano	410	Q100	549.71	816.16	820.32	819.37	820.71	0.002233	2.95	365.50	679.48	0.52
Tramo urbano	410	Q500	713.21	816.16	820.97		821.12	0.000981	2.21	839.02	785.01	0.35
Tramo urbano	400	MCO	131.81	816.08	818.19	817.30	818.35	0.002080	1.80	73.36	44.09	0.44
Tramo urbano	400	Q100	549.71	816.08	820.44	819.15	820.56	0.000893	1.82	659.86	744.65	0.33
Tramo urbano	400	Q500	713.21	816.08	820.99	819.52	821.06	0.000544	1.58	1118.70	930.70	0.26
Tramo urbano	390	MCO	131.81	816.01	818.13	817.14	818.26	0.001405	1.59	83.01	45.13	0.37
Tramo urbano	390	Q100	549.71	816.01	820.32	818.81	820.51	0.001033	2.20	563.15	679.86	0.36
Tramo urbano	390	Q500	713.21	816.01	820.93	819.30	821.03	0.000602	1.85	1047.40	914.14	0.28
Tramo urbano	380	MCO	131.81	815.93	817.97	817.18	818.16	0.002214	1.96	67.37	37.41	0.47
Tramo urbano	380	Q100	549.71	815.93	819.66	819.07	820.37	0.004271	3.73	155.40	78.23	0.70
Tramo urbano	380	Q500	713.21	815.93	819.57	819.57	820.84	0.008008	5.00	148.66	74.57	0.95
Tramo urbano	370	MCO	131.81	815.86	817.89	817.03	818.05	0.001917	1.77	74.30	42.81	0.43
Tramo urbano	370	Q100	549.71	815.86	819.72	818.88	820.10	0.002761	2.80	222.45	133.04	0.55
Tramo urbano	370	Q500	713.21	815.86	820.11	819.34	820.24	0.001178	2.01	750.46	637.98	0.37
Tramo urbano	360	MCO	131.81	815.78	817.83	816.89	817.96	0.001647	1.60	82.52	50.23	0.40
Tramo urbano	360	Q100	549.71	815.78	819.85	818.56	819.95	0.000791	1.70	697.02	614.90	0.31
Tramo urbano	360	Q500	713.21	815.78	820.07	819.10	820.19	0.000889	1.89	838.62	649.58	0.33
Tramo urbano	350	MCO	131.81	815.70	817.75	816.78	817.88	0.001417	1.56	84.56	47.54	0.37
Tramo urbano	350	Q100	549.71	815.70	819.84	818.42	819.91	0.000554	1.52	848.41	652.01	0.26
Tramo urbano	350	Q500	713.21	815.70	820.06	819.26	820.14	0.000629	1.68	993.42	660.34	0.28
Tramo urbano	340	MCO	131.81	815.63	817.60	816.84	817.78	0.002310	1.92	68.67	40.67	0.47
Tramo urbano	340	Q100	549.71	815.63	819.80	819.06	819.88	0.000653	1.62	804.67	618.15	0.28
Tramo urbano	340	Q500	713.21	815.63	820.02	819.10	820.10	0.000754	1.82	938.84	638.38	0.30
Tramo urbano	330	MCO	131.81	815.55	817.56	816.58	817.68	0.001284	1.51	87.18	47.64	0.36
Tramo urbano	330	Q100	549.71	815.55	819.55	818.34	819.81	0.001318	2.46	346.65	203.71	0.41
Tramo urbano	330	Q500	713.21	815.55	819.99	818.81	820.07	0.000555	1.72	1012.70	644.97	0.27
Tramo urbano	320	MCO	131.81	815.48	817.50	816.49	817.61	0.001214	1.49	88.73	47.44	0.35
Tramo urbano	320	Q100	549.71	815.48	819.48	818.25	819.75	0.001329	2.47	341.47	198.34	0.41
Tramo urbano	320	Q500	713.21	815.48	819.95	818.74	820.04	0.000576	1.76	986.88	639.07	0.27
Tramo urbano	310	MCO	131.81	815.40	817.23	816.79	817.50	0.004176	2.28	57.71	41.42	0.62
Tramo urbano	310	Q100	549.71	815.40	819.12	818.63	819.62	0.003117	3.33	224.72	131.09	0.61
Tramo urbano	310	Q500	713.21	815.40	819.88	819.02	820.00	0.000874	2.04	811.49	528.00	0.33
Tramo urbano	300	MCO	131.81	815.25	817.05	816.51	817.30	0.003423	2.21	59.55	38.30	0.57
Tramo urbano	300	Q100	549.71	815.25	818.91	818.51	819.45	0.003447	3.45	214.67	138.79	0.63
Tramo urbano	300	Q500	713.21	815.25	818.91	818.91	819.83	0.005781	4.47	215.04	138.86	0.82
Tramo urbano	290	MCO	131.81	815.10	816.93	816.29	817.13	0.002813	2.02	65.35	41.83	0.52
Tramo urbano	290	Q100	549.71	815.10	818.74	818.22	819.28	0.003291	3.39	214.38	167.19	0.62
Tramo urbano	290	Q500	713.21	815.10	819.23	818.69	819.47	0.001608	2.62	564.78	410.39	0.45
Tramo urbano	280	MCO	131.81	814.95	816.86	816.02	817.01	0.001756	1.68	78.37	46.10	0.41
Tramo urbano	280	Q100	549.71	814.95	818.66	817.65	819.11	0.002503	3.05	234.83	186.23	0.54
Tramo urbano	280	Q500	713.21	814.95	819.19	818.36	819.38	0.001252	2.38	606.78	416.07	0.39
Tramo urbano	270	MCO	131.81	814.80	816.81	815.81	816.92	0.001239	1.47	89.77	49.67	0.35
Tramo urbano	270	Q100	549.71	814.80	818.60	817.36	818.98	0.002013	2.81	254.98	208.87	0.49
Tramo urbano	270	Q500	713.21	814.80	819.09	817.81	819.32	0.001279	2.45	558.08	397.64	0.40
Tramo urbano	260	MCO	131.81	814.65	816.77	815.63	816.86	0.000927	1.32	99.95	52.56	0.31
Tramo urbano	260	Q100	549.71	814.65	818.55	817.13	818.87	0.001627	2.59	279.89	207.14	0.44
Tramo urbano	260	Q500	713.21	814.65	819.00	817.56	819.25	0.001261	2.48	517.30	362.85	0.40
Tramo urbano	250	MCO	131.81	814.50	816.74	815.48	816.82	0.000770	1.25	105.38	52.14	0.28
Tramo urbano	250	Q100	549.71	814.50	818.57	816.98	818.77	0.001072	2.17	384.95	205.92	0.36
Tramo urbano	250	Q500	713.21	814.50	819.00	817.70	819.18	0.000914	2.16	624.37	367.33	0.34
Tramo urbano	248	MCO	131.81	814.42	816.64	815.81	816.77	0.001666	1.58	83.37	51.43	0.40
Tramo urbano	248	Q100	549.71	814.42	818.58	817.61	818.71	0.000889	1.92	508.36	291.36	0.33
Tramo urbano	248	Q500	713.21	814.42	818.99	817.86	819.13	0.000875	2.06	619.72	296.40	0.33
Tramo urbano	244		Bridge									
Tramo urbano	240	MCO	131.81	814.33	816.31	815.72	816.49	0.002744	1.85	71.24	50.59	0.50
Tramo urbano	240	Q100	549.71	814.33	817.53	817.53	818.07	0.004559	3.52	247.58	283.64	0.70
Tramo urbano	240	Q500	713.21	814.33	817.88	817.77	818.38	0.003945	3.57	342.33	284.90	0.67
Tramo urbano	230	MCO	131.81	814.25	816.19	815.61	816.35	0.002517	1.78	74.06	52.48	0.48
Tramo urbano	230	Q100	549.71	814.25	817.51	817.05	817.80	0.002663	2.76	340.15	265.22	0.54
Tramo urbano	230	Q500	713.21	814.25	817.87	817.39	818.16	0.002409	2.86	438.38	275.12	0.53
Tramo urbano	220	MCO	131.81	814.17	815.81	815.58	816.14	0.007128	2.54	51.84	47.19	0.77
Tramo urbano	220	Q100	549.71	814.17	817.41	817.00	817.65	0.002640	2.62	357.77	255.35	0.54
Tramo urbano	220	Q500	713.21	814.17	817.78	817.05	818.03	0.002400	2.75	455.63	275.01	0.52
Tramo urbano	210	MCO	131.81	814.09	815.77	815.07	815.91	0.002025	1.64	80.32	55.09	0.43
Tramo urbano	210	Q100	549.71	814.09	817.34	816.52	817.54	0.001706	2.28	394.46	263.36	0.44
Tramo urbano	210	Q500	713.21	814.09	817.71	816.92	817.93	0.001621	2.42	495.30	276.83	0.44

HEC-RAS Plan: Plan 01 River: Órbigo Reach: Tramo urbano (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Tramo urbano	200	MCO	131.81	814.01	815.69	814.93	815.81	0.001683	1.54	85.68	56.32	0.40
Tramo urbano	200	Q100	549.71	814.01	817.23	816.05	817.45	0.001642	2.38	381.02	256.22	0.44
Tramo urbano	200	Q500	713.21	814.01	817.60	816.78	817.84	0.001619	2.56	479.75	275.21	0.45
Tramo urbano	190	MCO	131.81	813.93	815.60	814.86	815.72	0.001748	1.58	83.43	54.13	0.41
Tramo urbano	190	Q100	549.71	813.93	817.03	816.05	817.35	0.002256	2.74	317.01	233.77	0.51
Tramo urbano	190	Q500	713.21	813.93	817.39	816.79	817.73	0.002234	2.94	406.05	259.45	0.52
Tramo urbano	180	MCO	131.81	813.85	815.39	814.89	815.60	0.003278	2.04	64.62	45.72	0.55
Tramo urbano	180	Q100	549.71	813.85	816.73	816.46	817.19	0.003881	3.35	260.60	198.24	0.66
Tramo urbano	180	Q500	713.21	813.85	817.10	816.76	817.58	0.003645	3.55	338.48	222.45	0.65
Tramo urbano	170	MCO	131.81	813.77	815.25	814.72	815.44	0.002863	1.89	69.92	50.38	0.51
Tramo urbano	170	Q100	549.71	813.77	816.65	816.06	816.98	0.002831	2.88	303.13	206.85	0.56
Tramo urbano	170	Q500	713.21	813.77	817.04	816.47	817.39	0.002645	3.05	385.43	221.65	0.56
Tramo urbano	160	MCO	131.81	813.69	815.16	814.55	815.30	0.002193	1.66	79.54	56.99	0.45
Tramo urbano	160	Q100	549.71	813.69	816.39	815.90	816.81	0.003521	3.11	260.45	217.14	0.62
Tramo urbano	160	Q500	713.21	813.69	816.87	816.06	817.25	0.002696	3.06	367.99	227.54	0.56
Tramo urbano	150	MCO	131.81	813.62	815.10	814.41	815.20	0.001503	1.39	109.27	141.87	0.37
Tramo urbano	150	Q100	549.71	813.62	816.34	815.64	816.64	0.002336	2.63	311.51	221.98	0.52
Tramo urbano	150	Q500	713.21	813.62	816.84	815.91	817.11	0.001857	2.63	424.81	236.26	0.47
Tramo urbano	140	MCO	131.81	813.54	815.05	814.30	815.13	0.001244	1.28	115.62	139.54	0.34
Tramo urbano	140	Q100	549.71	813.54	816.30	815.52	816.52	0.001776	2.32	357.04	229.07	0.45
Tramo urbano	140	Q500	713.21	813.54	816.80	815.81	817.01	0.001423	2.33	474.68	235.40	0.41
Tramo urbano	138	MCO	131.81	813.53	815.04	814.26	815.12	0.001197	1.26	104.86	72.42	0.33
Tramo urbano	138	Q100	549.71	813.53	816.26	815.47	816.50	0.001879	2.37	310.11	163.15	0.46
Tramo urbano	138	Q500	713.21	813.53	816.73	815.73	816.99	0.001677	2.49	388.34	165.66	0.45
Tramo urbano	136		Bridge									
Tramo urbano	132	MCO	131.81	813.49	814.97	814.23	815.06	0.001272	1.28	102.91	72.31	0.34
Tramo urbano	132	Q100	549.71	813.49	816.15	815.43	816.41	0.002083	2.45	298.78	162.79	0.48
Tramo urbano	132	Q500	713.21	813.49	816.63	815.70	816.91	0.001808	2.56	378.19	165.33	0.46
Tramo urbano	130	MCO	131.81	813.49	814.97	814.23	815.05	0.001276	1.28	102.81	72.31	0.34
Tramo urbano	130	Q100	549.71	813.49	816.15	815.04	816.41	0.002092	2.45	298.32	162.77	0.49
Tramo urbano	130	Q500	713.21	813.49	816.63	815.70	816.91	0.001814	2.56	377.79	165.32	0.47
Tramo urbano	128	MCO	131.81	813.49	814.97	814.23	815.05	0.001281	1.28	102.69	72.30	0.34
Tramo urbano	128	Q100	549.71	813.49	816.14	815.43	816.41	0.002102	2.46	297.82	162.76	0.49
Tramo urbano	128	Q500	713.21	813.49	816.63	815.70	816.90	0.001820	2.56	377.38	165.31	0.47
Tramo urbano	126		Bridge									
Tramo urbano	122	MCO	131.81	813.46	814.89	814.20	814.98	0.001429	1.33	99.25	72.12	0.36
Tramo urbano	122	Q100	549.71	813.46	816.01	815.40	816.30	0.002465	2.59	280.99	162.21	0.52
Tramo urbano	122	Q500	713.21	813.46	816.51	815.67	816.81	0.002037	2.66	362.71	164.84	0.49
Tramo urbano	120	MCO	131.81	813.45	814.88	814.18	814.97	0.001422	1.32	99.70	72.66	0.36
Tramo urbano	120	Q100	549.71	813.45	815.48	815.32	816.22	0.007338	3.81	146.26	83.52	0.87
Tramo urbano	120	Q500	713.21	813.45	815.67	815.67	816.70	0.009059	4.51	162.38	87.58	0.98
Tramo urbano	110	MCO	131.81	813.70	814.47	814.47	814.85	0.013463	2.71	48.69	65.69	1.00
Tramo urbano	110	Q100	549.71	813.70	815.45	815.45	815.92	0.007744	3.51	244.09	243.83	0.87
Tramo urbano	110	Q500	713.21	813.70	815.81	815.64	816.23	0.005610	3.40	333.94	255.11	0.76
Tramo urbano	100	MCO	131.81	812.40	813.87	813.34	814.02	0.002814	1.74	75.74	61.14	0.50
Tramo urbano	100	Q100	549.71	812.40	815.38	814.67	815.71	0.002580	2.70	295.93	243.27	0.54
Tramo urbano	100	Q500	713.21	812.40	815.89	815.07	816.17	0.001938	2.63	422.02	258.94	0.48
Tramo urbano	090	MCO	131.81	812.37	813.86	813.19	813.97	0.001749	1.46	90.48	66.65	0.40
Tramo urbano	090	Q100	549.71	812.37	815.30	814.46	815.65	0.002888	2.67	218.31	137.43	0.56
Tramo urbano	090	Q500	713.21	812.37	815.70	814.84	816.11	0.002709	2.88	274.90	139.59	0.56
Tramo urbano	080	MCO	131.81	812.26	813.80	813.03	813.88	0.001279	1.30	101.65	70.51	0.34
Tramo urbano	080	Q100	549.71	812.26	815.15	814.21	815.52	0.002362	2.72	216.82	101.35	0.52
Tramo urbano	080	Q500	713.21	812.26	815.49	814.58	815.97	0.002626	3.10	252.37	105.03	0.56
Tramo urbano	070	MCO	131.81	812.14	813.73	812.93	813.82	0.001254	1.33	99.17	65.01	0.34
Tramo urbano	070	Q100	549.71	812.14	814.87	814.16	815.37	0.003349	3.13	182.55	84.98	0.61
Tramo urbano	070	Q500	713.21	812.14	815.06	814.55	815.78	0.004444	3.78	198.92	87.98	0.72
Tramo urbano	060	MCO	131.81	812.03	813.69		813.76	0.000958	1.22	123.55	119.46	0.30
Tramo urbano	060	Q100	549.71	812.03	815.02		815.17	0.001182	2.02	475.42	310.30	0.37
Tramo urbano	060	Q500	713.21	812.03	815.34		815.51	0.001218	2.19	575.82	315.74	0.39
Tramo urbano	050	MCO	131.81	811.91	813.61		813.71	0.001184	1.37	111.79	117.65	0.34
Tramo urbano	050	Q100	549.71	811.91	814.93		815.10	0.001427	2.22	460.65	327.35	0.41
Tramo urbano	050	Q500	713.21	811.91	815.25		815.44	0.001421	2.37	568.95	337.90	0.42
Tramo urbano	040	MCO	131.81	811.82	813.47		813.63	0.002207	1.81	89.19	126.26	0.46
Tramo urbano	040	Q100	549.71	811.82	814.88		815.03	0.001486	2.27	532.26	415.59	0.42
Tramo urbano	040	Q500	713.21	811.82	815.22		815.37	0.001375	2.35	677.63	439.89	0.41
Tramo urbano	030	MCO	131.81	811.70	813.30		813.50	0.002930	2.02	71.45	89.57	0.52
Tramo urbano	030	Q100	549.71	811.70	814.77		814.95	0.001703	2.42	524.26	470.67	0.45

HEC-RAS Plan: Plan 01 River: Órbigo Reach: Tramo urbano (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
Tramo urbano	030	Q500	713.21	811.70	815.15		815.30	0.001374	2.36	705.89	490.50	0.41
Tramo urbano	020	MCO	131.81	811.57	813.23	812.47	813.35	0.001521	1.49	92.01	90.50	0.38
Tramo urbano	020	Q100	549.71	811.57	814.49	813.96	814.81	0.002412	2.78	304.14	205.62	0.53
Tramo urbano	020	Q500	713.21	811.57	814.79	814.29	815.16	0.002580	3.08	365.65	207.56	0.56
Tramo urbano	016		Bridge									
Tramo urbano	012	MCO	131.81	811.44	812.96	812.35	813.10	0.002122	1.65	80.40	69.28	0.44
Tramo urbano	012	Q100	549.71	811.44	813.89	813.83	814.53	0.005612	3.75	206.64	202.50	0.78
Tramo urbano	012	Q500	713.21	811.44	814.18	814.18	814.88	0.005554	4.03	265.69	204.40	0.79
Tramo urbano	010	MCO	131.81	811.40	812.95	812.36	813.05	0.002273	1.41	93.75	89.25	0.44
Tramo urbano	010	Q100	549.71	811.40	814.12	813.58	814.35	0.002270	2.30	406.60	548.47	0.49
Tramo urbano	010	Q500	713.21	811.40	814.35	813.88	814.59	0.002270	2.45	537.38	595.68	0.50

Anejo nº 9: ARCHIVOS DE ENTRADA DE DATOS DE LA SIMULACIÓN (HEC-RAS)

Documento nº 2: **PLANOS**