

DOCUMENTO Nº 1: MEMORIA Y ANEJOS

ANEJO 06: ESTUDIO HIDROLÓGICO – HIDRÁULICO DE LA RAMBLA DEL RAMONETE

**PROYECTO DE LA ESTACIÓN DEPURADORA DE AGUAS
RESIDUALES DE RAMONETE, T.M. DE LORCA (MURCIA)**

CONSEJERÍA DE AGRICULTURA Y AGUA DE LA COMUNIDAD AUTÓNOMA DE LA
REGIÓN DE MURCIA
DIRECCIÓN GENERAL DEL AGUA





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1 OBJETO

El objeto del presente estudio es la determinación de los caudales de avenida y de los calados correspondientes, para los periodos de retorno considerados, en aquellos puntos de la red fluvial del sistema hídrico de la Rambla del Ramonete que resulten de interés por su posible afección a los terrenos donde se ubicará la futura Estación Depuradora de Aguas Residuales de Ramonete, T.M. de Lorca (Murcia).

Para la determinación del régimen de caudales en un cauce, el sistema más inmediato es la consulta de los datos de aforos disponibles. No obstante, en la mayoría de los casos, las series de datos de aforos se encuentran incompletas o no tienen una calidad suficiente, ya que no existe la capacidad real de recoger los datos de las avenidas de grandes periodos de retorno.

Por tanto, los cálculos se realizan mediante la aplicación de modelos matemáticos de simulación continua capaces de transformar los registros históricos de precipitación disponibles en una cuenca en caudales de escorrentía, con los que se trata de reproducir el comportamiento del sistema natural.

2 DESCRIPCIÓN DEL SISTEMA

El área de Cañada de Gallego-Ramonete es una de las pequeñas cuencas costeras originadas por fallas. Ésta se ubica entre la Sierra de la Moreras al Norte, del Almenara al Oeste y Lomo de Bas al Sur, y es atravesada por las ramblas de Villalta, Pastrana y Ramonete, las cuales drenan una superficie de 232.125 km².

La rambla objeto de estudio, Ramonete, cuenta con una superficie de 69,67 km² que se alarga en dirección Noroeste-Sureste siguiendo la disposición de arcos concéntricos que configuran los relieves de la Sierra de Almenara, al Norte, y del Lomo de Bas, al sur, de forma que, desde su extremo occidental, ésta se curva ligeramente hasta el litoral.

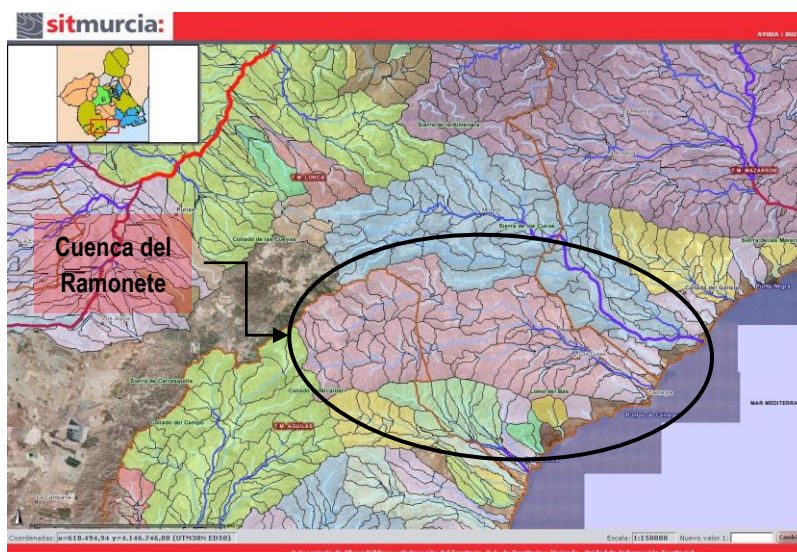


Figura 1. Ubicación de la cuenca de la Rambla del Ramonete. (Fuente: SITMurcia)

3 DATOS DE PARTIDA

Para el desarrollo del presente trabajo, se ha partido de la siguiente información:

- Determinación de la cuenca vertiente y cauce:
 - o Mapa topográfico Nacional E 1:25.000. Hojas 975-IV y Hoja 976-III.
 - o Aplicación SITMURCIA.
 - o Aplicación LIDARmur.
 - o Visor IDERM.
 - o Modelo Digital del Terreno del Instituto Geográfico Nacional.
- Determinación de las precipitaciones:
 - o Publicación del Ministerio de Fomento (1999): “Máximas lluvias diarias en la España Peninsular”.
- Cálculo de caudales:
 - o Instrucción 5.2-IC Drenaje Superficial. Ministerio de Obras Públicas y Urbanismo. 1990.

4 SITUACIÓN ACTUAL DEL CAUCE

Como puede apreciarse en la figura número 1, la zona de estudio se localiza en la cuenca de la rambla del Ramonete, según se ha extraído del Sistema de Información Territorial de la Región de Murcia (SITMURCIA) y del mapa topográfico nacional 975-IV y 976-III.

En lo relativo al cauce, éste se extiende entre los puntos de coordenadas UTM HUSO 30 (ETRS 89) 624.473,790 - 4.156.045,655 y 641.523,185 - 4.153.064,507. La cuenca está formada por numerosos cursos de agua desaguando finalmente en el cauce principal de la rambla del Ramonete. El punto de especial interés por el cual se realiza el presente anejo se sitúa en el tramo final de la rambla, a 3.800 m de su desembocadura en el mar, junto a los terrenos destinados a ubicar las instalaciones de la E.D.A.R.

En los planos que acompañan este anejo (Apéndice 2), se puede ver la situación de la zona de actuación con respecto a la cuenca del Ramonete.

5 METODOLOGÍA

Dado que la zona de estudio se encuentra relativamente cerca de la desembocadura de la rambla (a 3.800 m, siendo su longitud total de 22.813 m), de forma conservadora, se ha decidido realizar el estudio hidrológico en dicha zona (a efectos de cálculos de caudal) como si la fuera la cuenca completa la que generara escorrentía, sin descontar ese tramo final de 3.800 m hasta la llegada de la rambla al mar.

De este modo, el caudal obtenido (considerando que el 100% de la cuenca es generadora de escorrentía) será utilizado para establecer la cota a la cual debe situarse la E.D.A.R., con un margen de seguridad suficiente, de manera que se proteja a la planta frente a posibles avenidas con los periodos de retorno considerados.

Para ello se utilizará el método propuesto por la Instrucción 5.2 – IC de Drenaje Superficial de Carreteras (MOPU, 1990), la cual desarrolla el Método Racional.

A continuación, los posibles niveles de inundación serán obtenidos mediante la aplicación del programa HEC-RAS, el cual permite el cálculo de la lámina de agua en cauce abierto con régimen gradualmente variable.

6 ESTUDIO HIDROLÓGICO

6.1 PUNTOS ANALIZADOS

Un paso fundamental en el proceso de estimación de los recursos hídricos consiste en la selección de los puntos de cálculo de la red hidrográfica de la cuenca, en los que el modelo proporciona como resultado el caudal medio diario para el periodo de retorno considerado.

Se ha definido un único punto de cálculo, tratando de compaginar la información topográfica disponible (con un nivel de detalle suficiente a nivel espacial) con los cálculos de precipitaciones obtenidos.

Dicho punto se ubica en la desembocadura de la rambla, situada a 3.800 m del tramo de cauce anexo a la E.D.A.R. (en el que se hará el estudio hidráulico), por lo que los caudales obtenidos comprenden el 100% de la cuenca, aumentando el margen de seguridad de los cálculos.

PUNTO	COORDENADAS UTM 30 (ETRS 89)	DESCRIPCIÓN
S	X: 641.523,185 Y: 4.153.064,507	Punto de desagüe de la rambla del Ramonete

6.2 PERIODOS DE RETORNO CONSIDERADOS

La selección del caudal de referencia para el que debe proyectarse un elemento de drenaje superficial está relacionada con la frecuencia de su aparición, que se puede definir por su periodo de retorno: cuanto mayor sea éste, mayor será el caudal. Se dice que el periodo de retorno de un caudal es el intervalo medio de tiempo durante el cual existe la probabilidad de que se produzca una avenida con un caudal superior al prefijado.

Los periodos de retorno definidos para el siguiente estudio son de 100 y 500 años, los cuales corresponden a los usados para la definición de la zona de flujo preferente y zona inundable, respectivamente, por la Confederación Hidrográfica del Segura.

6.3 MODELIZACIÓN DE LA CUENCA

En la definición de los parámetros que definen la cuenca y tramos de rambla se ha utilizado como datos de partida la cartografía a escala 1:25.000 el Mapa Topográfico Nacional así como el visualizador gráfico del Sistema de Información Territorial de la Región de Murcia (SITMURCIA) y el LIDARmur.

6.3.1 CARACTERÍSTICAS FÍSICAS

La cuenca donde se ubicará la actuación es la cuenca de la rambla del Ramonete. La cual, y según la finalidad del presente estudio, es analizada íntegramente hasta su punto de desagüe.

Para la delimitación de la cuenca se ha utilizado como base el SITMURCIA ayudado de un estudio paralelo

de la topografía de la zona.

Las características básicas de la cuenca objeto de estudio son:

DENOMINACIÓN CUENCA	Área (Km ²)	Perímetro (Km)	Longitud hidráulica (Km)	Z _i (m)	Z _f (m)	Pendiente
R. del Ramonete	69,672	50,345	22,813	770,61	0,00	0,03378

6.3.2 PRECIPITACIONES MÁXIMAS DIARIAS

La determinación de los caudales máximos de avenida en el punto estudiado está asociada a la estimación de las precipitaciones máximas que se pueden producir en las cuencas vertientes a dicho punto para cada periodo de retorno considerado.

La Dirección General de Carreteras del Ministerio de Fomento publicó en 1999 el documento “Máximas lluvias diarias en la España peninsular”. Su objetivo fue el de presentar un método operativo que de una manera breve y fiable proporcionase un valor de las máximas lluvias diarias en la España peninsular, como de punto de partida para el cálculo de los caudales a desaguar mediante modelos hidrometeorológicos en cuencas en las que no se dispone de registros de aforos.

Mediante la publicación “Máximas Lluvias Diarias en la España Peninsular”, (Ministerio de Fomento) se han calculado precipitaciones en puntos representativos del ámbito del Estudio.

El mapa de Isolíneas de la citada publicación establece, para la zona de Ramonete un valor medio anual de la precipitación máxima diaria (P_m) igual a 51 mm/día, con un coeficiente de variación (C_v) igual a 0,52.

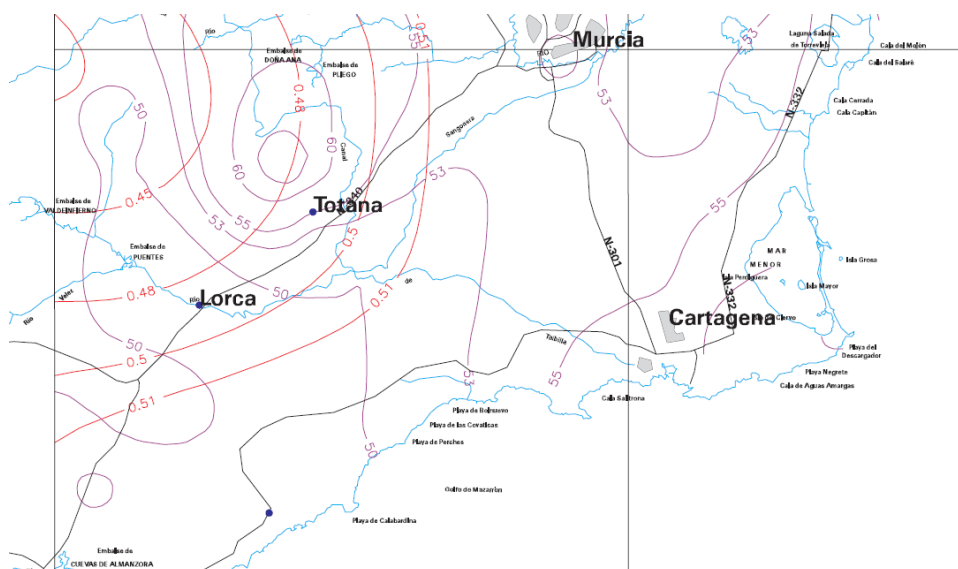


Figura 2. Mapa de Isolíneas.

De acuerdo con la tabla de doble entrada, de la citada Publicación del Ministerio de Fomento, los coeficientes de ampliación, K_T , correspondientes a los períodos de retorno estudiados son:

T (años)	100	500
K_T	2,861	3,860

El valor de la máxima precipitación probable diaria sería obtenido, por lo tanto, sustituyendo los valores anteriores en la expresión:

$$P_T = K_T * P_m$$

Con lo que se obtienen las precipitaciones máximas diarias sobre la cuenca para los distintos períodos de retorno considerados:

Periodo de retorno, T (años)	100	500
Precipitación, P_T (mm/día)	146	197

6.3.3 TIEMPO DE DESFASE

El tiempo de desfase, parámetro estudiado para las cuencas, representa el tiempo existente entre el centro de gravedad del hidrograma de escorrentía directo y el centro de gravedad del hietograma de precipitación neta. Corresponde a T_{Lag} del hidrograma donde:

$$T_{Lag} = T_p - D/2 = 0,35 T_c$$

Se utilizan las siguientes expresiones empíricas propuestas por Témez. T.R. (1987) "Cálculo hidrometeorológico de Pequeñas cuencas naturales".

$$T_{lag} = 0,35 T_c$$

$$T_c = 0,3 \frac{L^{0,76}}{J^{1/4}}$$

siendo:

T_{Lag} (h): Tiempo de desfase de la punta

T_c (h): Tiempo de concentración

L (Km): Longitud curso principal

J (m/m): Pendiente media

Para la cuenca objeto del estudio resulta:

Cuenca	T_c (h)	T_{lag} (h)
Rambla del Ramonete	6,15	2,153

6.4 CÁLCULO DE CAUDALES POR EL MÉTODO RACIONAL

Para la obtención de los caudales de avenida se ha utilizado el método racional modificado por Témez (1991), que plantea una formulación que modifica ligeramente la versión propuesta en la Instrucción 5.2 – IC, según presenta Ferrer Polo (1993), de forma que es aplicable a cuencas de hasta 3.000 km² y tiempos de concentración entre 0,25 h y 24 horas.

La fórmula que determina el caudal es la siguiente:

$$Q = \frac{C I A}{3.6} K$$

Siendo:

Q: caudal punta, m³/s

I: máxima intensidad media en el intervalo de duración t_c , mm/h. Siendo t_c , el tiempo de concentración de la cuenca estimado aplicando la formulación de Témez.

A: superficie de la cuenca, km²

C: coeficiente de escorrentía de la cuenca del intervalo donde se produce I.

K: coeficiente de uniformidad. Su valor medio en una cuenca concreta depende fundamentalmente del valor de su tiempo de concentración.

Debe señalarse que uno de los puntos conflictivos del Método Racional radica en la hipótesis restrictiva de lluvia neta constante a lo largo del intervalo de duración igual al tiempo de concentración de la cuenca, según destaca Ferrer Polo (1993). Este hecho intenta subsanarse con la aplicación de un factor de uniformidad.

6.4.1 ESTIMACIÓN DE K

A partir de comprobaciones empíricas se llega a la siguiente formulación:

$$K = 1 + \frac{t_c^{1.25}}{t_c^{1.25} + 14}$$

Formulación que arroja un valor de 1,409 para la cuenca.

6.4.2 ESTIMACIÓN DEL FACTOR REDUCTOR POR ÁREA (ARF)

El método además considera un factor reductor por área (ARF), que permite obtener valores de precipitación areal sobre la cuenca a partir de los valores puntuales previamente estimados. La estimación del factor de simultaneidad (K_A) se puede aplicar realizando la siguiente formulación:

$$K_A = 1 - \frac{\log A}{15}$$

Siendo A el área de la cuenca. Luego se puede obtener el valor de P finalmente utilizado, como:

$$P = K_A \cdot P_d$$

Siendo P_d el valor de la precipitación total diaria (mm) correspondiente al período de análisis.

Cuenca	A (km ²)	K _A	P (mm)	
Rambla del Ramonete	69,672	0,877	T=100 años	128
			T=500 años	173

6.4.3 ESTIMACIÓN DE LA INTENSIDAD MEDIA DE PRECIPITACIÓN (I_T)

La intensidad media I_t en mm/h de precipitación a emplear en la estimación de caudales de referencia por métodos hidrometeorológicos se podrá obtener por medio de la siguiente expresión:

$$I_t = I_d \cdot \frac{I_1}{I_d} \cdot \frac{28^{0,1-t^{0,1}}}{28^{0,1}-1}$$

I_t (mm/h): Intensidad media de precipitación a emplear en el cálculo del caudal de avenida.

I_d (mm/h): Intensidad media de precipitación correspondiente al período de retorno considerado. Es igual a P₂₄/24.

P_d (mm): Precipitación total en 24 horas (P₂₄), correspondiente al período de retorno considerado.

I₁ (mm/h): Intensidad horaria de precipitación correspondiente al período de retorno considerado. El valor de la razón I₁/I_d se obtiene de la figura 2.2 de la Instrucción de Carreteras 5.2 IC.

t (h): Duración del intervalo al que se refiere I, que se tomará igual al tiempo de concentración de la cuenca (t_c). Para la estimación del tiempo de concentración se aplica la fórmula de Témez, presentada a continuación:

$$t_c = 0,3 \cdot (L/J^{1/4})^{0,76}$$

siendo t_c: tiempo de concentración (h), L: longitud del cauce principal (km) y J pendiente media de cauce principal (m/m).



Figura 3. Estimación de I_t/I_d . (Fuente: Instrucción 5.2 –IC. Figura 2.2)

De la figura anterior se obtiene el valor de I_t/I_d de 11. De modo que los valores de I_t para los distintos periodos de retorno son:

Cuenca	I_t (mm/h)	
R. Cordonen	T=10 años	17,54
	T=25 años	23,67

6.4.4 ESTIMACIÓN DEL COEFICIENTE DE ESCORRENTÍA (C)

El coeficiente de escorrentía C, define la proporción de la componente superficial de la precipitación de intensidad I, y depende de la razón entre la precipitación diaria P_d correspondiente al período de retorno y el umbral de escorrentía P_0 , a partir del cual se inicia ésta. Se obtiene aplicando la siguiente formulación:

$$C = \frac{\frac{P}{P_0} - 1 * \frac{P}{P_0} + 23}{\frac{P}{P_0} + 11^2}$$

Si la razón P_d/P_0 es inferior a la unidad, el coeficiente C de escorrentía puede considerarse nulo. Las cuencas heterogéneas se dividen en áreas parciales cuyos coeficientes de escorrentía se calculan por separado para calcular posteriormente el valor medio de la cuenta considerando como coeficiente de ponderación el área de cada zona homogénea.

Para obtener el umbral de escorrentía se ha empleado la tabla 2.1 de la Instrucción 5.2-IC, multiplicando los valores en ella obtenidos por un coeficiente mayorador para la zona que nos ocupa, que refleja la variación regional de la humedad habitual en el suelo al comienzo de aguaceros significativos, el cual ha sido contrastado en distintos ambientes de la geografía española.

USO DE LA TIERRA	PENDIENTE %	CARACTERÍSTICAS HIDROLÓGICAS	GRUPO DE SUELO			
			A	B	C	D
BARBECHO	≥ 3	R N	15 17	8 11	6 8	4 6
	< 3	R/N	20	14	11	8
CULTIVOS EN FILERA	≥ 3	R N	23 25	13 16	8 11	6 8
	< 3	R/N	28	19	14	11
CEREALES DE INVIERNO	≥ 3	R N	29 32	17 19	10 12	8 10
	< 3	R/N	34	21	14	12
ROTACION DE CULTIVOS POBRES	≥ 3	R N	26 28	15 17	9 11	6 8
	< 3	R/N	30	19	13	10
ROTACION DE CULTIVOS DENSOS	≥ 3	R N	37 42	20 23	12 14	9 11
	< 3	R/N	47	25	18	13
PRADERAS	≥ 3	POBRE MEDIA BUENA MUY BUENA	24 53 70 80	14 23 33 41	8 14 18 22	6 9 13 15
	< 3	POBRE MEDIA BUENA MUY BUENA	58 80 120 250	25 35 55 100	12 17 22 25	7 10 14 16
PLANTACIONES REGULARES DE APROVECHAMIENTO FORESTAL	≥ 3	POBRE MEDIA BUENA	62 80 100	28 34 42	15 19 22	10 14 15
	< 3	POBRE MEDIA BUENA	75 95 150	34 42 80	19 22 25	14 15 16
MASAS FORESTALES (BOSQUES, MONTE BAJO, ETC.)		MUY CLARA	40	17	8	5
		CLARA	60	24	14	10
		MEDIA	75	34	22	16
		ESPESA	90	47	31	23
		MUY ESPESA	120	65	43	33
ROCAS PERMEABLES	≥ 3		3			
	< 3		5			
ROCAS IMPERMEABLES	≥ 3		2			
	< 3		4			

Valores medios del parámetro P_0 (mm)

TABLA 1. (Fuente: Instrucción 5.2 – IC. Tabla 2.1)

SIGNIFICADO DE LOS TÉRMINOS (Tabla 1)

VEGETACIÓN

Barbecho

Tierra de cultivo que no se siembra. El porcentaje de explotación agrícola que se suele encontrar en ese estado depende de la periodicidad de las siembras. Se denomina de "año y vez" o "al tercio" según se cultive uno de cada dos o tres años respectivamente. Las tierras que están en barbecho reciben generalmente algunas labores que contribuyen a reducir el grado de escorrentía, pero éste es siempre importante debido a la escasa entidad de la vegetación.

Cultivos en hilera

Tierras sembradas de cultivos plantados formando hileras, lo que permite realizar entre ellas determinadas labores agrícolas -destinadas a mullir el terreno, quitar las malas hierbas, etc.-mientras que las plantas se desarrollan. De este modo se cultiva la patata, el algodón, la remolacha, el maíz, el tomate, etc.

En general, las plantaciones de frutales, el olivar, los almendros y la viña pueden incluirse en este grupo. El efecto hidrológico de la mayor distancia entre plantas existente en estos casos se ve compensado por el vuelo del ramaje que protege al suelo del impacto de la lluvia, y por la presencia de su potente sistema radicular.

Cereales de invierno

Se incluyen en esta categoría las tierras dedicadas a cereales cuyo ciclo vegetativo puede desarrollarse durante el invierno, tales como el trigo, la cebada, la avena y el centeno.

Rotación de cultivos

Es la secuencia cíclica de cultivos en una determinada parcela de una explotación agrícola. La duración del ciclo, variable con el tipo de los cultivos, frecuentemente está comprendida entre dos y siete años.

Desde el punto de vista hidrológico conviene establecer la siguiente división:

Rotación pobre o con escasa densidad de la cobertura vegetal. Se refiere a las diversas combinaciones de cultivos en hilera, cereales de invierno y barbecho.

Rotación densa se denomina a la que, junto con cultivos en hilera o cereales de invierno, incluye una proporción importante de alfalfa, trébol, praderas polifitas u otras siembras de alta densidad de cobertura.

Praderas, prados y pastizales

Se agrupan en esta categoría el conjunto de cultivos cuyo aprovechamiento constituye la base de la alimentación del ganado.

A su vez se clasifican en:

Pobres	Bajo un intenso régimen de pastoreo o con cobertura vegetal en menos del 50% de la superficie, como son los pastizales y los eriales
Medias	Bajo un moderado régimen de pastoreo o con cobertura vegetal en un porcentaje de la superficie total comprendido entre el 50 y el 75%.
Buenas	Bajo un pastoreo ligero o con cobertura vegetal en más del 75% de la superficie total.

Muy buenas

Se consideran dentro de este grupo las praderas artificiales, las praderas naturales mixtas y los prados naturales, cuando no están explotados en régimen de pastoreo. La vegetación es densa, abundante, homogénea y de cierta altura.

Plantaciones regulares de aprovechamiento forestal

Comprende las plantaciones regulares de árboles, tales como los chopos, eucaliptos, etc.

Se han establecido grupos basándose en las características de la cobertura vegetal no arbórea:

Pobres

Prácticamente no existe otro tipo de vegetación que la propiamente arbórea; el matorral, las herbáceas espontáneas e incluso la materia vegetal no descompuesta son eliminadas, por ejemplo con el pastoreo.

Medias

Existe alguna vegetación además de la arbórea, o bien materia vegetal no descompuesta. Sin embargo, una parte importante del suelo carece de protección.

Buenas

La vegetación (matorral, herbáceas espontáneas, etc) y la materia vegetal no descompuesta cubren el terreno.

Masas forestales

Se denominan así las superficies de terreno en las cuales se desarrolla vegetación leñosa arbórea o arbustiva, tales como el monte bajo, el monte alto o los bosques.

De acuerdo con la densidad de dicha vegetación se dividen en a) muy espesas, b) espesas, c) medias, d) claras y e) muy claras (árboles o arbustos diseminados).

Dentro de la categoría "Masas Forestales" no se han establecido en la tabla diferencias en cuanto a pendiente, por considerar que no es frecuente que exista este tipo de aprovechamiento en terrenos llanos.

LABORES DE CULTIVO

En línea recta (símbolo R)

Cuando el laboreo del suelo, la siembra y las labores de cultivo se realizan en la dirección de la máxima pendiente o a media ladera.

En líneas de nivel (símbolo N)

Cuando el laboreo del suelo, la siembra y las labores de cultivo se realizan siguiendo las curvas de nivel del terreno. Evidentemente en terrenos llanos no resulta fácil, ni tiene mucho sentido, matizar las líneas de nivel, por lo que no se hace diferencia entre el laboreo en línea recta (R) y el laboreo en línea de nivel (N).

ROCAS

Son las superficies que más favorecen el fenómeno de la escorrentía. Se dividen en dos grupos:

Rocas impermeables (pizarras, cuarcitas, granitos, etc.)

Rocas permeables (calizas, dolomías, conglomerados, etc.)

SUELOS

Grupo A

En ellos el agua se infiltra rápidamente aun cuando estén muy húmedos. Profundos y de texturas gruesas (arenosas o areno-limosas), están excesivamente drenados.

Grupo B

Cuando están muy húmedos tienen una capacidad de infiltración moderada. La profundidad de suelo es de media a profunda, y su textura franco-arenosa, franca, franco-arcillo-arenosa o franco-limosa según terminología del U.S. Departament of Agriculture. Están bien o moderadamente drenados.

Grupo C

Cuando están muy húmedos la infiltración es lenta. La profundidad de suelo es inferior a la media y su textura es franco-arcillosa, franco-arcillo-limosa, limosa o arcillo-arenosa. Son suelos imperfectamente drenados.

Grupo D

Cuando están muy húmedos la infiltración es muy lenta. Tienen horizontes de arcilla en la superficie o próximos a ella y están pobremente o muy pobremente drenados. También se incluyen aquí los terrenos con nivel freático permanentemente alto y suelos de poco espesor (litosuelos).

En el caso de la cuenca objeto de estudio, se estima que el uso de los terrenos está dividido en dos tipos: uno de ellos corresponde a masa forestal (densidad clara), rayado en magenta en la siguiente figura, y el otro, en el extremo sureste de la cuenca, a cultivos en hilera en los que no se hace diferencia entre el laboreo en línea recta (R) y el laboreo en línea de nivel (N), por carecer de sentido al tratarse de terrenos con muy poca pendiente (2,2 %), rayado en verde.

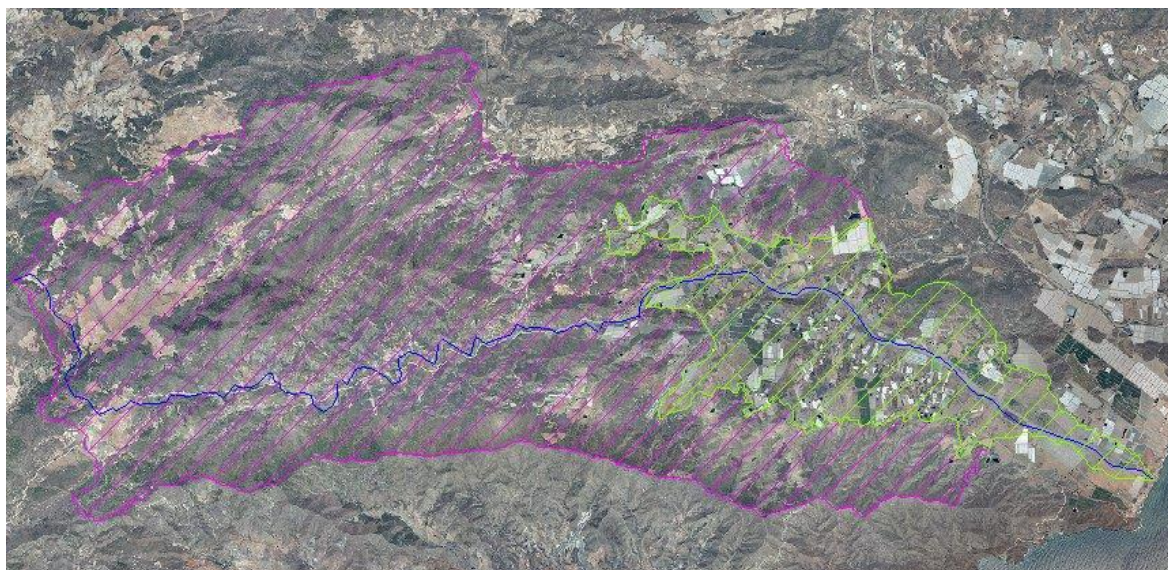


Figura 4. Usos del suelo de la cuenca.

Para la clasificación de los grupos hidrológicos del suelo (Grupo A, B, C o D) se ha empleado el Mapa Digital de Suelos de la Región de Murcia (Consejería de Agricultura y Agua de la Región de Murcia, 2000), donde además de la clasificación de suelos según la metodología FAO se proporcionan datos granulométricos de la capa arable (30 cm superficiales de suelo). Esta información permite obtener el grupo hidrológico del suelo en función de su porcentaje de arcilla, limo y arena, según la figura 2.6 de la Instrucción 5.2-IC:

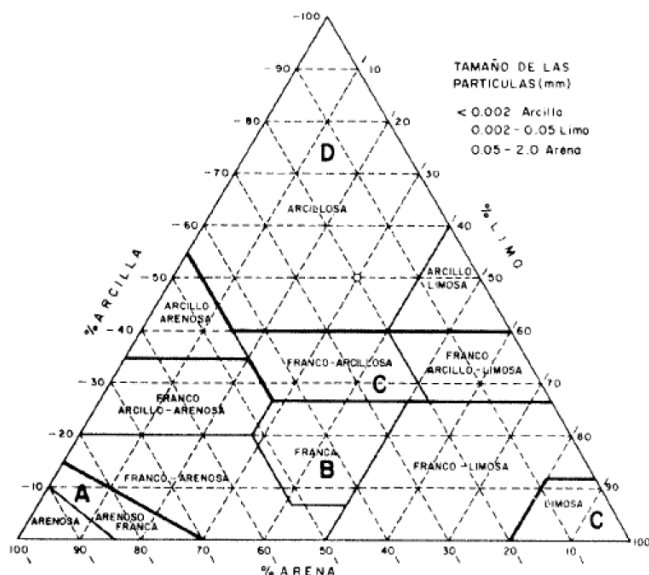


Figura 5. Diagrama triangular para la determinación de la textura. (Fuente: Instrucción 5.2-IC. Figura 2.6).

La clasificación de suelos obtenida de esta forma nos indica que la práctica totalidad de suelos de la zona de estudio pertenecen al grupo B (granulometría: arcilla 14,3 %, limo 40,8 % y arena 44,9 %).

Finalmente, al valor de P_0 se le aplica un factor corrector que considera la variación regional de la humedad del suelo al comienzo de aguaceros significativos. Este factor intenta evitar el sobredimensionamiento del caudal. (Corresponde a la Fig. 2.5 de la Instrucción 5.2 IC).



Figura 6. Mapa del coeficiente corrector del umbral de escorrentía. (Fuente: Instrucción 5.2 – IC. Figura 2.5)

El valor del coeficiente corrector para la zona de Murcia donde nos encontramos corresponde a 3,2.

En base a todos estos datos se obtiene el valor del umbral de escorrentía, que al tratarse de una cuenca heterogénea debe dividirse en áreas parciales cuyos coeficientes de escorrentía se calcularán por separado, reemplazando luego el término $C \cdot A$ de la fórmula de cálculo por $\sum(C \cdot A)$.

A continuación se incluye una tabla con los valores de los parámetros utilizados:

Zona	1	2
Uso de la tierra	Masas forestales (monte bajo)	Cultivos en hilera
Pendiente	-	< 3 %
Características hidrológicas	Clara	R/N
Grupo de suelo	B	B
Umbral de escorrentía, P_0 (mm)	24	19
Coeficiente corrector	3,2	3,2
Umbral de escorrentía corregido, P_0 corregido (mm)	76,8	60,8

Conocidos los valores del umbral de escorrentía corregido para cada zona, su área y la precipitación para cada uno de los

ZONA	Umbral de escorrentía, P_0 (corregido)	Área (km ²)	Coeficiente de escorrentía, C	
			T=100 años	T=500 años
1	76,8	56,389	0,103	0,180
2	60,8	13,283	0,162	0,248

periodos de retorno, se obtienen los valores del coeficiente de escorrentía:

6.4.5 CAUDALES DE AVENIDA

Los valores obtenidos siguiendo la metodología descrita en los apartados anteriores se han introducido en la hoja de cálculo que se adjunta a continuación, determinando el valor de los caudales de avenida para los períodos de retorno de 100 y 500 años en la cuenca de estudio.

En la tabla siguiente se resumen dichos caudales de avenida esperados para cada uno de los períodos de retorno considerados en el punto de desagüe de la cuenca:

Q (m³/s)		
T _R (años)	100	500
R. del Ramonete	54,46	124,46

Tabla 2. Caudales esperados en el punto de desagüe de la cuenca para los diferentes períodos de retorno.

CAUDAL DE AVENIDA PARA T = 100 AÑOS											
CUENCA	SUPERFICIE	L.CAUCE	COTAS EXTREMAS		J	T _c	T _{lag}	K	KA	P _d	P
	(km²)	(km)	Máxima	Mínima	(m/m)	(horas)	(horas)			(mm)	(mm)
R. Ramonete	69,672	22,813	770,61	0	0,0338	6,150	2,153	1,409	0,877	146	128

CUENCA	I1/Id	It	Po monte bajo	Po (corregido)	A monte bajo	C	Q
		(mm/h)	(mm)	(mm)	(km²)		(m³/s)
R. Ramonete	11	17,54	24	76,8	56,389	0,103	54,46
			Po cultivos	Po (corregido)	A cultivos	C	
			(mm)	(mm)	(km²)		
			19	60,8	13,283	0,162	

CAUDAL DE AVENIDA PARA T = 500 AÑOS											
CUENCA	SUPERFICIE	L.CAUCE	COTAS EXTREMAS		J	T _c	T _{lag}	K	KA	P _d	P
	(km²)	(km)	Máxima	Mínima	(m/m)	(horas)	(horas)			(mm)	(mm)
R. Ramonete	69,672	22,813	770,61	0	0,0338	6,150	2,153	1,409	0,877	197	173

CUENCA	I1/Id	It	Po monte bajo	Po (corregido)	A monte bajo	C	Q
		(mm/h)	(mm)	(mm)	(km²)		(m³/s)
R. Ramonete	11	23,67	24	76,8	56,389	0,180	124,46
			Po cultivos	Po (corregido)	A cultivos	C	
			(mm)	(mm)	(km²)		
			19	60,8	13,283	0,248	

7 NIVELES DE INUNDACIÓN

Para la determinación de los niveles de inundación se va a simular un modelo basado en el comportamiento hidráulico mediante el programa HEC-RAS desarrollado por el "Hydrologic Engineering Center" del cuerpo de Ingenieros del ejército de los Estados Unidos, el cual es una adaptación a Windows del conocido HEC-2. Dicho programa permite el cálculo de la lámina de agua en cauce abierto con régimen gradualmente variable. El estudio hidráulico se va a componer de una sola fase en la que se modelizará el cauce en las proximidades de la zona de implantación de la estación depuradora de aguas residuales. De este modo, el estudio de los niveles de inundación originados para una crecida de los periodos de retorno considerados, se basará en analizar si el cauce de la rambla del Ramonete es capaz de transportar la esorrentía originada en la cuenca y a qué cota es aconsejable, como mínimo situar, la planta.

Los datos geométricos a introducir en el modelo se han obtenido a partir de modelos digitales del terreno proporcionados por el Instituto Geográfico Nacional.

La simulación se ha apoyado en perfiles transversales y en los anexos correspondientes se adjuntan los resultados entregados por el programa de modelización hidráulica.

8 MODELO HIDRÁULICO

Con la información disponible se han obtenido los datos necesarios para establecer el modelo de cauce y así proceder al estudio de su capacidad.

Se define un tramo de estudio que comprende las proximidades de la zona de actuación de una longitud de 1.412,31 m, discurriendo desde la cota 93,78 hasta la 63,19. Sus coordenadas (HUSO30-ETRS89) son las siguientes:

Aguas arriba: X: 637.623,707 – Y: 4.155.096,734

Aguas abajo: X: 638.833,428 – Y: 4.154.448,729

El estudio se ha apoyado en el trazado de perfiles transversales cada 25 m y 150 m de anchura.

Para la simulación se ha considerado un coeficiente de Manning de valor 0,03, tanto para el cauce como para las márgenes, al tratarse de un cauce natural, limpio, recto en el tramo estudiado y sin remansos profundos. Este valor ha sido adoptado en base al manual de referencia del HEC-RAS, que a su vez fue tomado del libro "Open-Channel Hydraulics". Chow, 1959.

Como coeficiente de pérdidas de energía por contracción y expansión del flujo se han adoptado respectivamente valores de 0,1 y 0,3.

La pendiente media del cauce analizado resulta ser del 2,2 % con calados del orden de 0,80 m cuando sobreviene la avenida de 500 años de período de retorno, mientras que en el tramo anexo la parcela donde se ubicará la planta, los calados son del orden de 0,65 m.

Los resultados de la modelización hidráulica se recogen en el Apéndice nº 1.

Del análisis de las secciones transversales y perfil longitudinal con el nivel de la lámina de agua calculado por

el programa en el tramo de estudio se deduce lo siguiente:

- El cauce posee una pendiente descendente y constante en líneas generales a lo largo de su curso, con unos márgenes bien definidos aun siendo un cauce natural. En algunos puntos se observa la existencia de motas laterales.
- Las secciones transversales que influyen directamente en la zona de actuación corresponden al tramo comprendido entre los P.K. 700 a P.K. 575. En todas ellas se puede observar como existe una mota situada en el margen derecho aguas abajo, la cual protege los terrenos aledaños. No obstante, se constata la inundación de los mismos, para periodos de retorno de 100 y 500 años, a pesar de su existencia.

El ancho y calado del cauce varía mínimamente teniendo en cuenta la entidad del curso de agua, y sus valores oscilan entre 100 y 110 m para el ancho y entorno a los 0,60 – 0,75 m para el calado.

9 CONCLUSIONES

En base a las consideraciones anteriormente expuestas y como resultado del estudio hidráulico llevado a cabo mediante el programa REC-RAS, podemos realizar una comparativa entre la cota de la lámina de agua alcanzada para la avenida de Periodo de Retorno 500 años y el terreno existente en la parcela contigua a la mota de la margen derecha de la rambla del Ramonete (emplazamiento previsto para las obras), obteniendo los siguientes resultados:

P.K.	Cota lámina de agua T=500 años (m.s.n.m.)	Cota terreno (m.s.n.m.)	Observaciones
680	79,23	79,35	-
660	78,93	78,71	Zona inundada (0,23 m)
640	78,47	78,20	Zona inundada (0,28 m)
620	78,88	77,78	Zona inundada (0,10 m)
600	77,48	77,42	Zona inundada (0,06 m)
580	77,05	77,25	-

A la vista de los resultados se deduce la existencia de zonas inundables en la parcela para la avenida de T=500 años. Igualmente, como se comprueba en el anejo de cálculos, una parte de la parcela (de menor tamaño) se encontraría dentro de la zona de flujo preferente de la rambla.

Por tanto, se considera necesaria la elevación de la parcela para proteger las instalaciones frente a posibles crecidas de la rambla del Ramonete.

10 SOLUCIONES PROPUESTAS

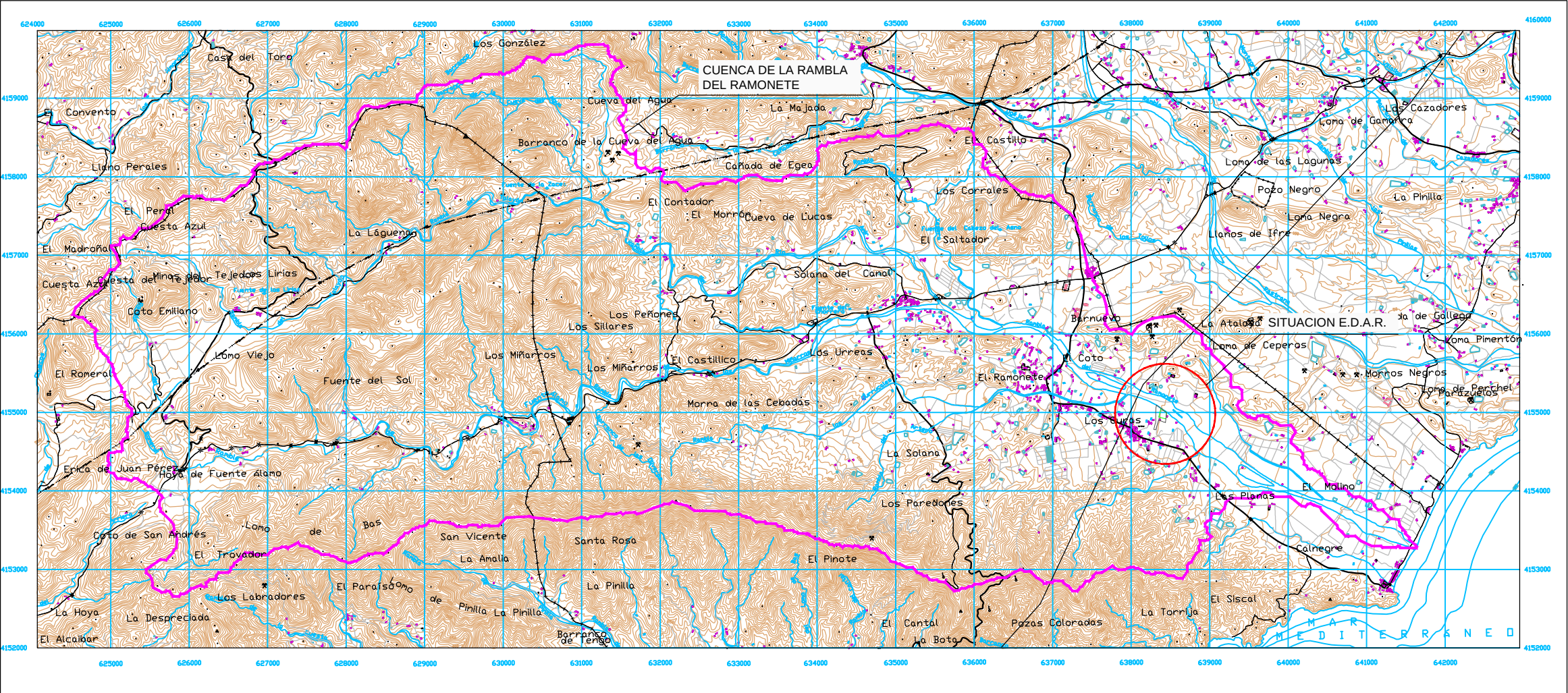
Morfológicamente la parcela es plana, con una pendiente similar a la de la rambla (2,2%) y con cotas que van desde la 81,35 en su punto más alto, hasta la 76,91 en el punto más bajo.

Por todo lo anterior y, dadas las dificultades existentes para conseguir un emplazamiento alternativo, se proyecta la elevación de la parcela, manteniendo la pendiente del terreno natural, hasta una cota tal que se garantice la seguridad de las instalaciones, mediante un terraplenado protegido con escollera cuyas características se definirán en el Anejo 03 del Proyecto Constructivo. Además, para facilitar el drenaje superficial, se proyecta la coronación del relleno con una pendiente aproximada del 1% en la dirección perpendicular al eje de la rambla.

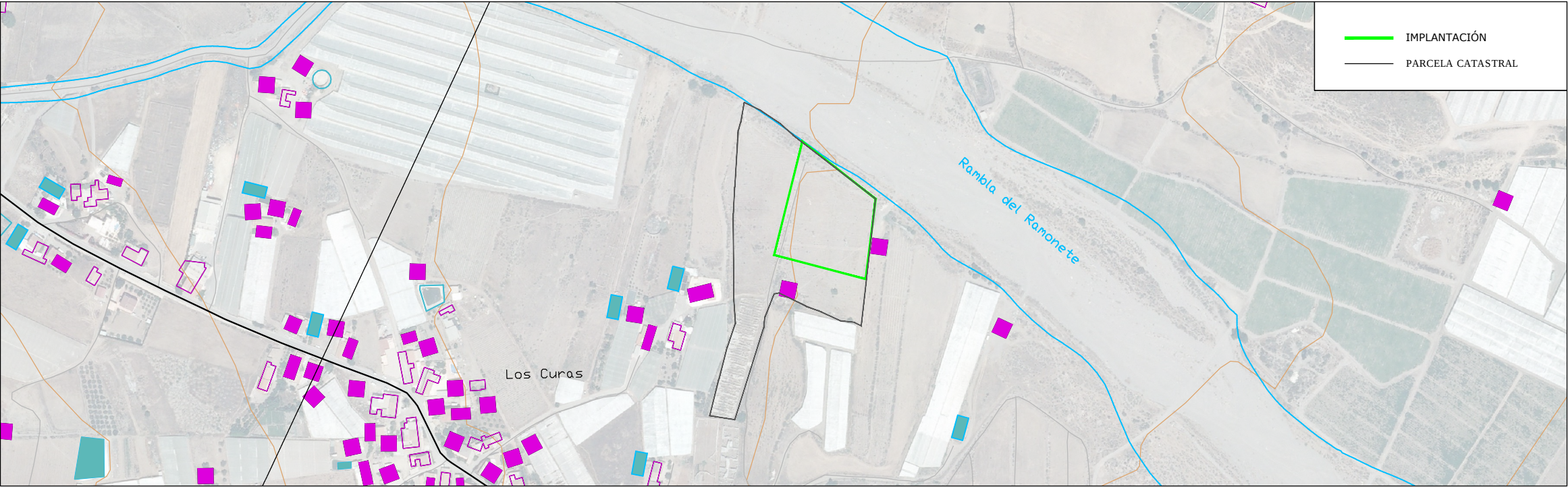
Como resultado, se obtiene un resguardo mínimo de seguridad, desde la coronación del terraplén, que oscila entre los **1,41 y 1,60 m** respecto al calado calculado para una avenida en la rambla con periodo de retorno **T=500 años**. Este resguardo se detalla en los planos del **Apéndice 1** que acompañan este anejo.

En el Apéndice 3 se recogen los resultados obtenidos tras la modelización realizada con el HEC-RAS para la solución propuesta mediante terraplenado. Dicha información ha sido utilizada para evaluar la llanura de inundación en una avenida con periodo de retorno de 500 años y su efecto sobre la parcela, una vez que se produce su elevación sobre el terreno natural actual. Según se observa en los planos del Apéndice, la afección de una hipotética avenida de esa magnitud quedaría completamente minimizada.

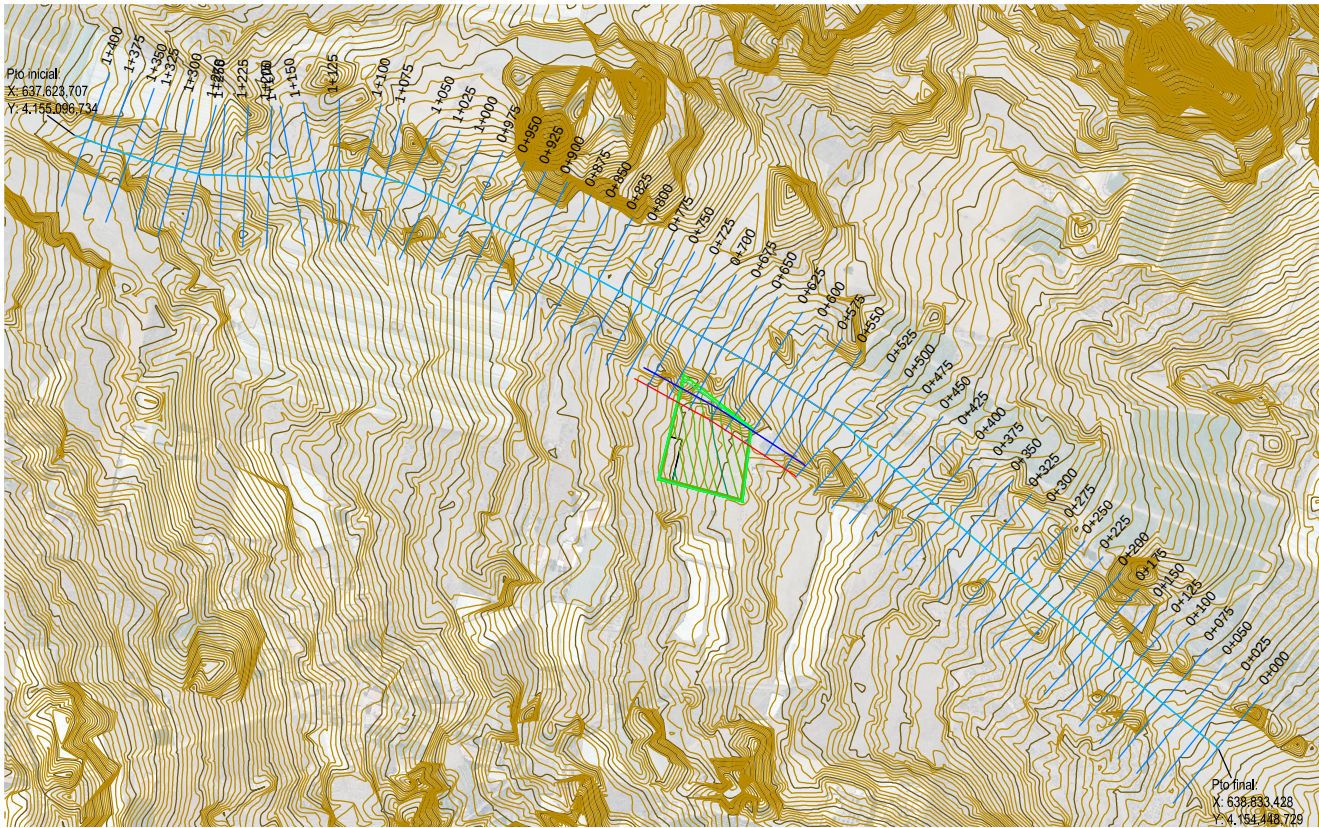
APÉNDICE 1: PLANOS



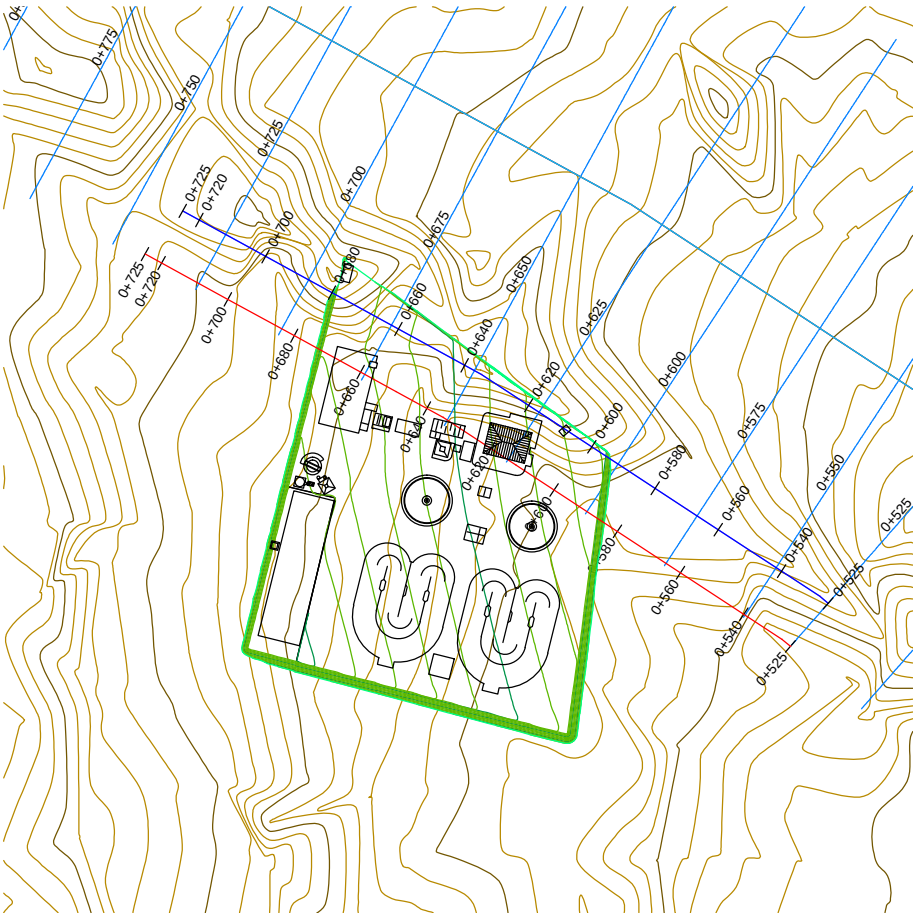
CUENCA DEL RAMONETE
ESCALA 1:65.000



EMPLAZAMIENTO
ESCALA 1:5.000

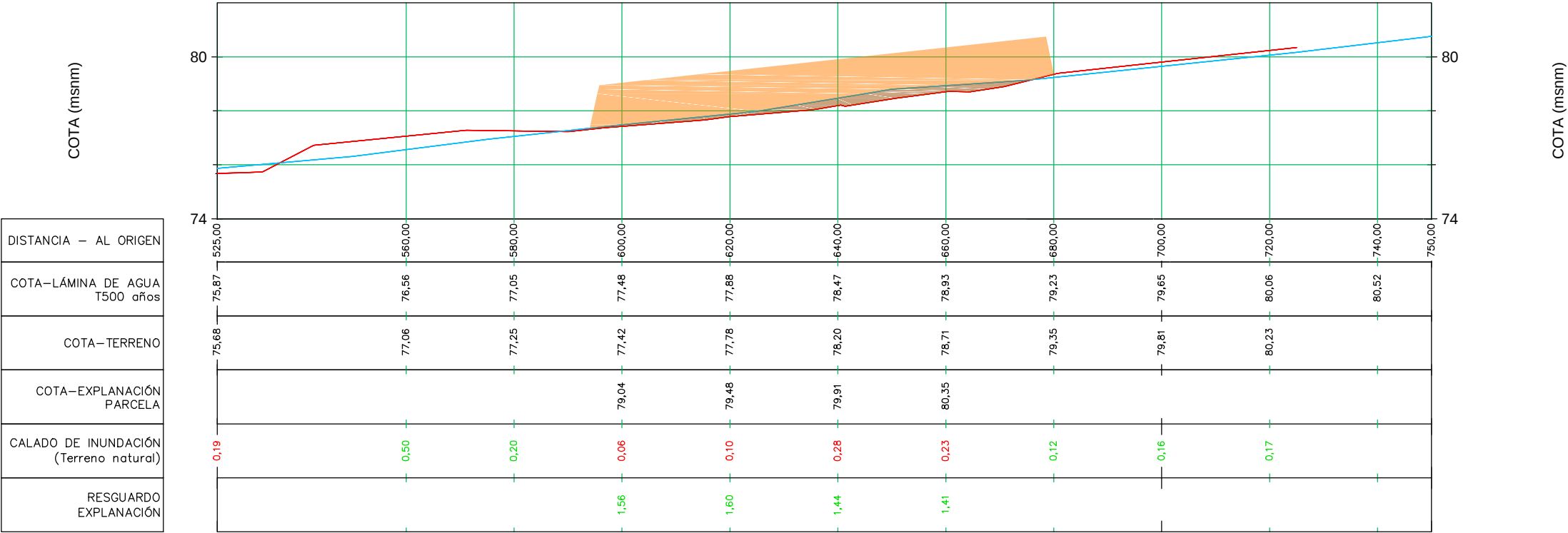


TRAMO DE CAUCE DE LA RAMBLA DEL RAMONETE ESTUDIADO
ESCALA 1:8.000



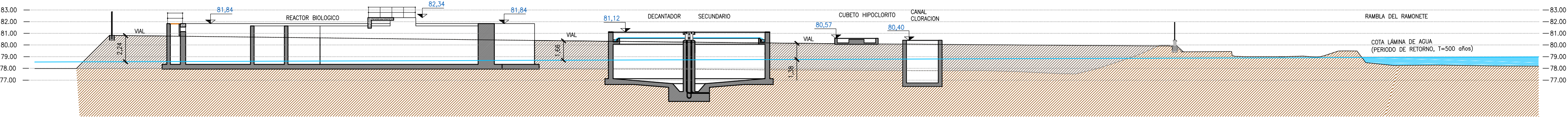
IMPLANTACIÓN RESPECTO AL CAUCE
ESCALA 1:2.000

Perfil Longitudinal: ZONA ACTUACIÓN
Escala - V: 200 H:1000

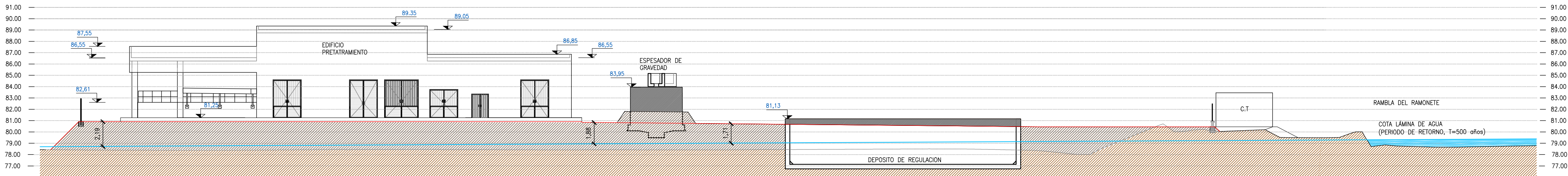


PERFIL LONGITUDINAL
ESCALA 1:1.000

- Explanación parcela por encima de la lámina de agua T=500 años
- Explanación parcela por debajo de la lámina de agua T=500 años
- Lámina de agua (T=500 años)
- Terreno original parcela



SECCION ALINEACION 2.
ESCALA 1:250



SECCION ALINEACION 1.
ESCALA 1:250



LEYENDA	
	TERRENO NATURAL
	MATERIAL SELECCIONADO COMPATADO AL 98% DEL P.M.

 Región de Murcia Consejería de Agricultura y Agua Dirección General del Agua		PROYECTO DE LA ESTACIÓN DEPURADORA DE AGUAS RESIDUALES DE RAMONETE, TM DE LORCA (MURCIA)			
ESCALA	1/ 250	PLANO	PERFILES TRANSVERSALES		
FECHA	FEBRERO 2014				
INGENIERO DIRECTOR DE PROYECTO	INGENIERO AUTOR DEL PROYECTO	ASISTENCIA TÉCNICA	PLANO Nº	ANEJO 06	
Fdo. Francisco Lucas Martínez	 Fdo. Miguel Ángel Gimeno Martínez		HOJA	03 DE 04	



 LLANURA DE INUNDACIÓN PARA T=500años

 PERFILES TRANSVERSALES HEC-RAS

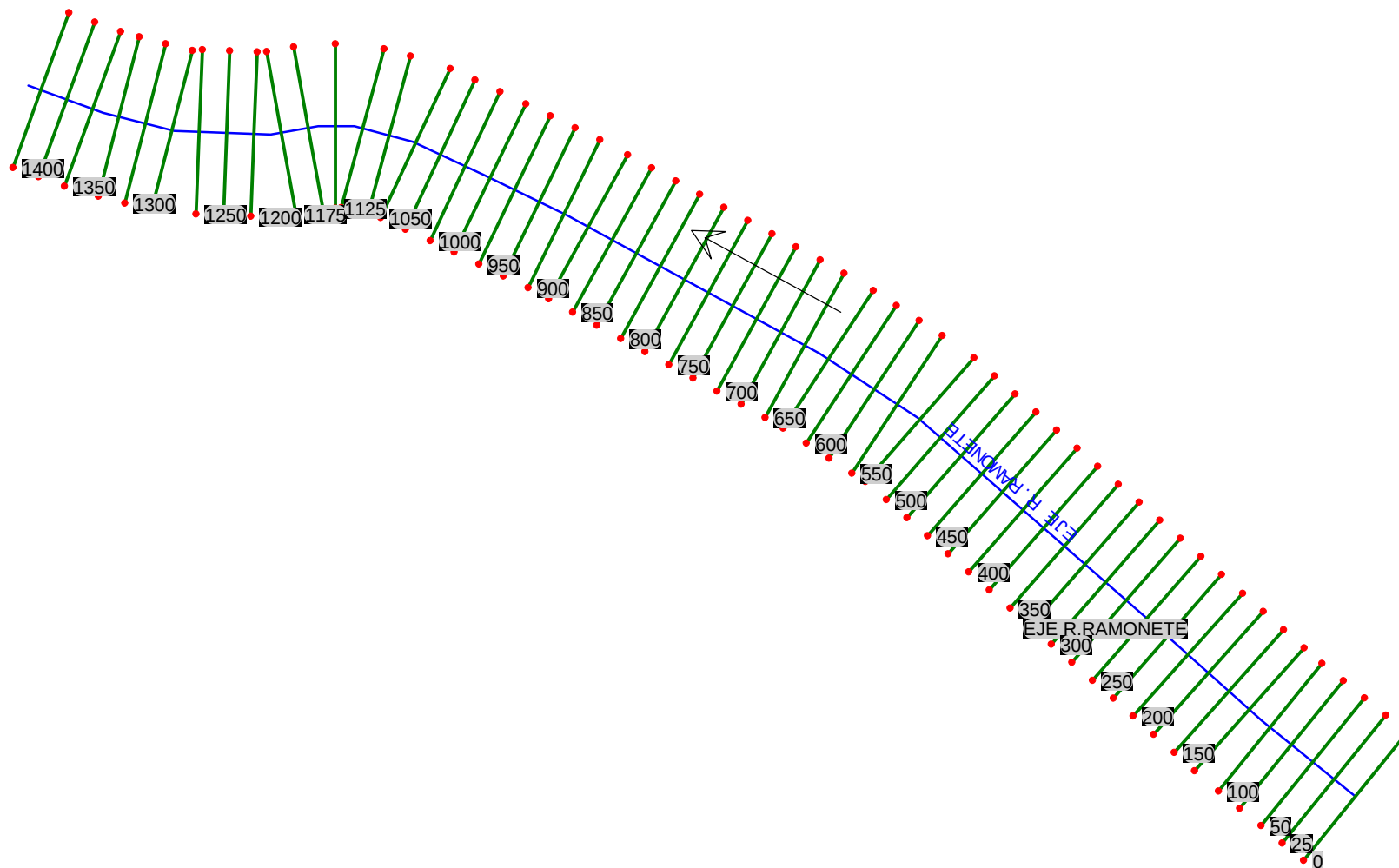
 PARCELA TERRAPLENADA

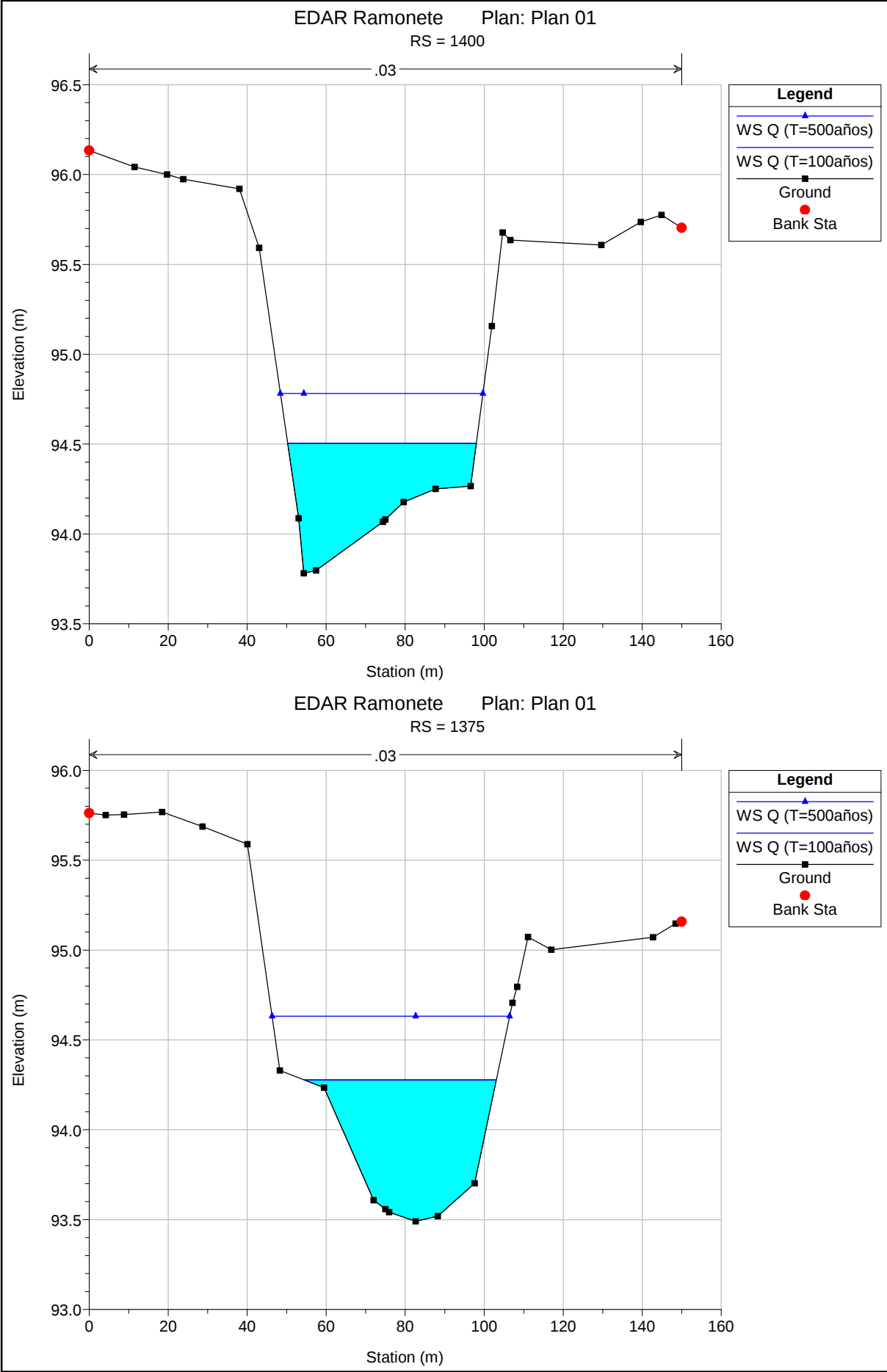
 Región de Murcia Consejería de Agricultura y Agua Dirección General del Agua	INGENIERO DIRECTOR DE PROYECTO	INGENIERO AUTOR DEL PROYECTO	ASISTENCIA TÉCNICA	ESCALA	1/3.500	TÍTULO	PROYECTO DE LA ESTACIÓN DEPURADORA DE AGUAS RESIDUALES DE RAMONETE, TM DE LORCA (MURCIA)	PLANO Nº	ANEJO 06
	Fdo. Francisco Lucas Martínez	 Fdo. Miguel Ángel Gimeno Martínez		FECHA	FEBRERO 2014	PLANO		HOJA	04 DE 04

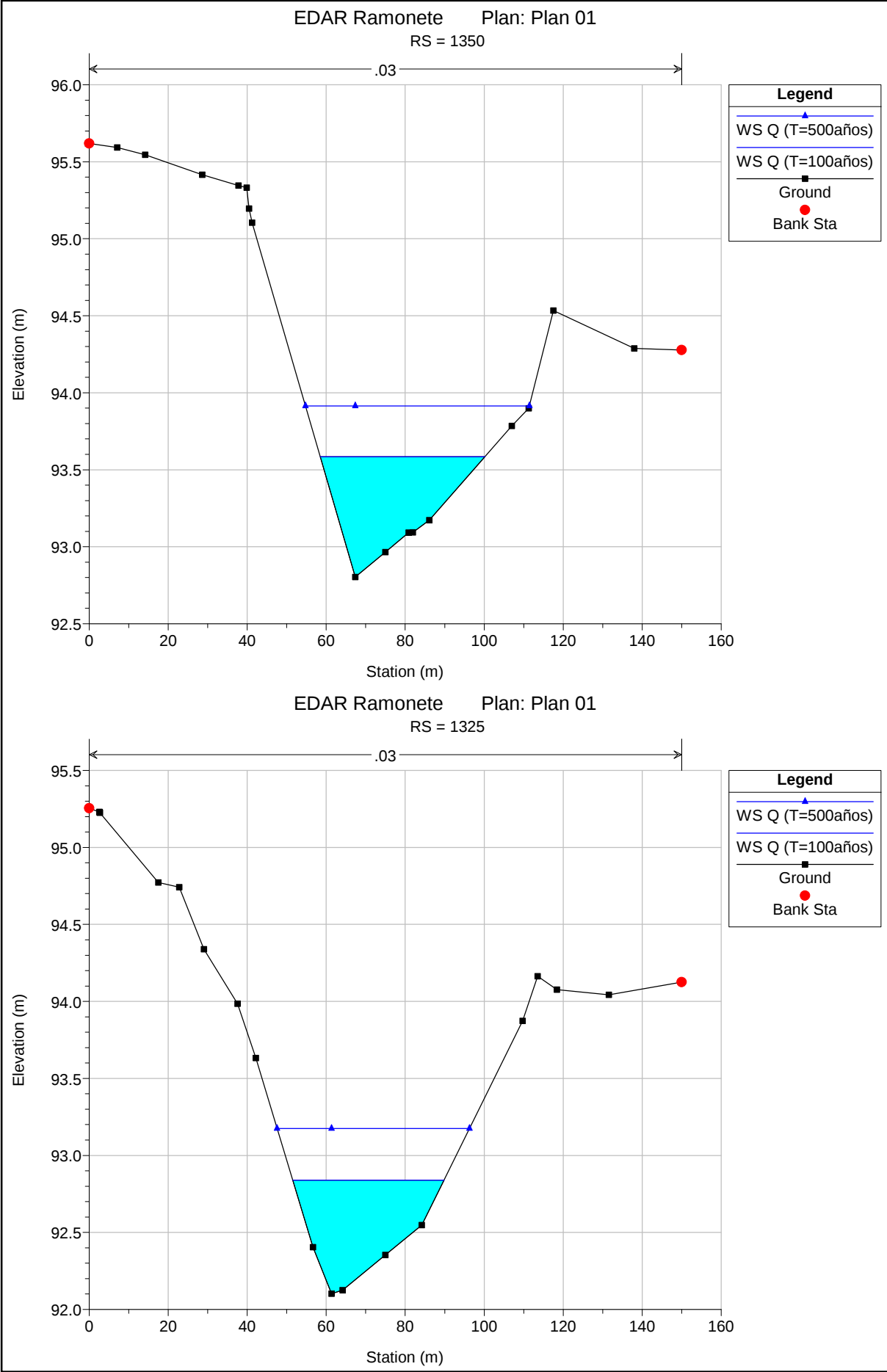


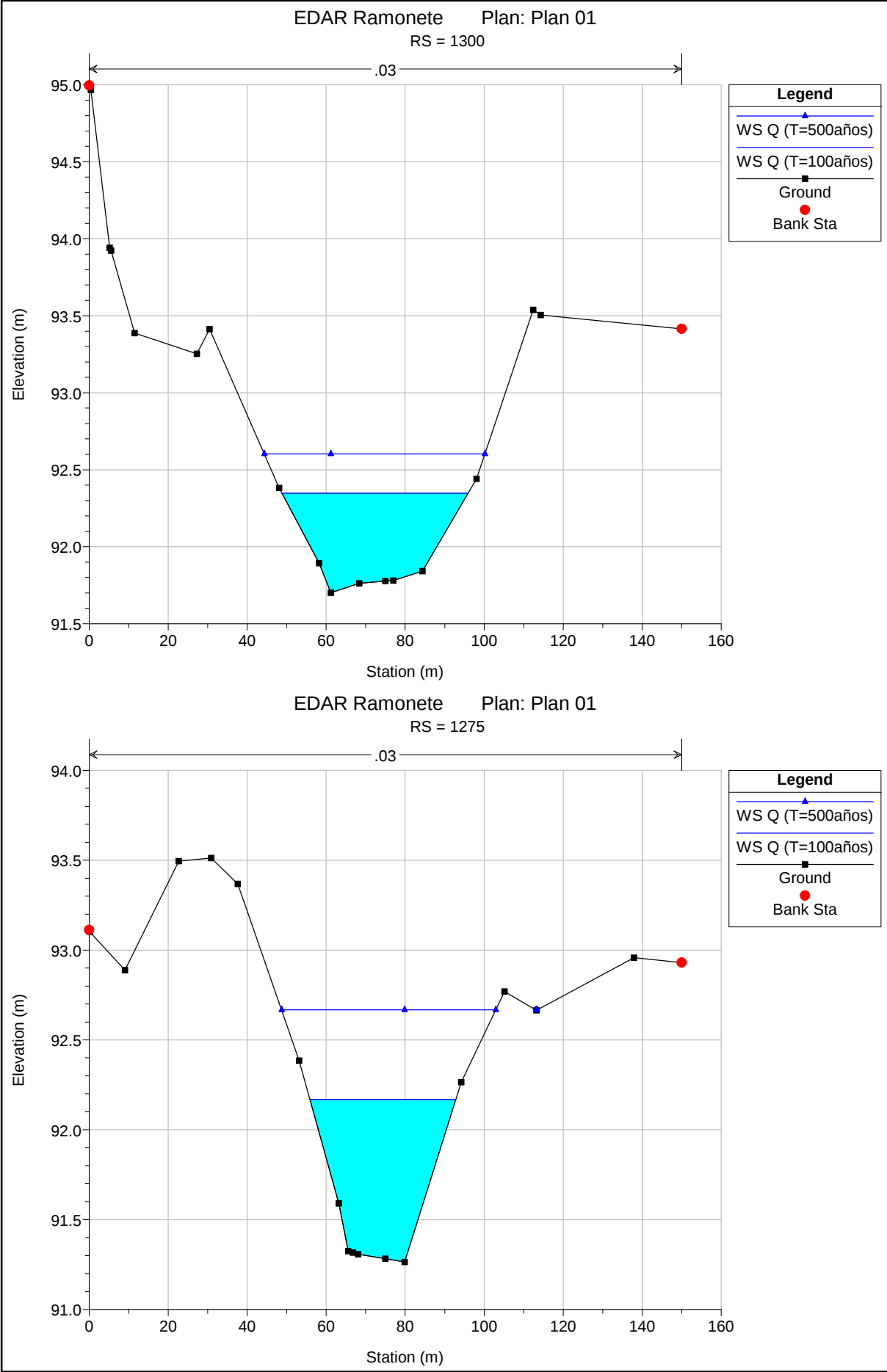
APÉNDICE 2:

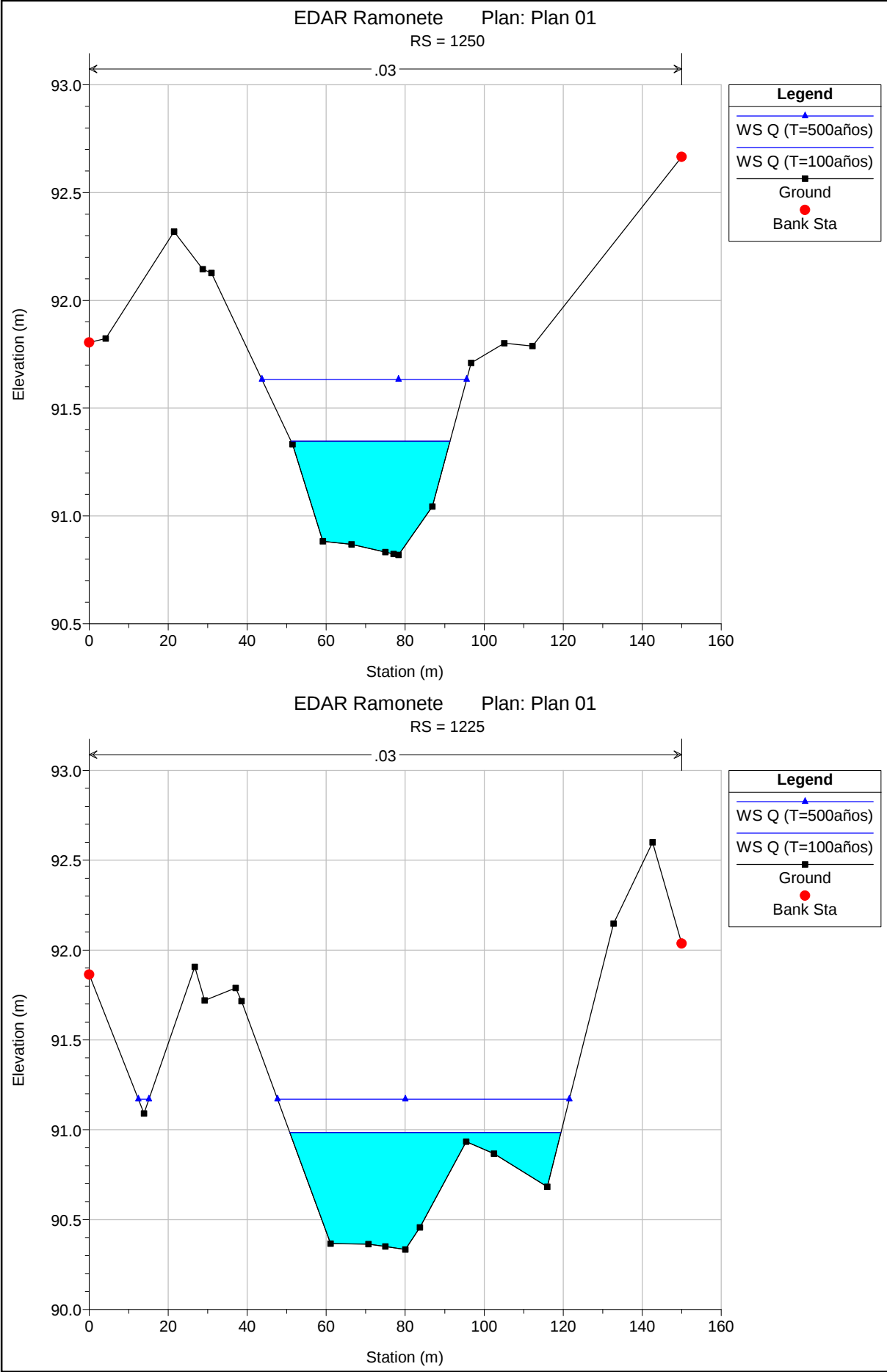
CÁLCULOS HEC-RAS SITUACIÓN INICIAL

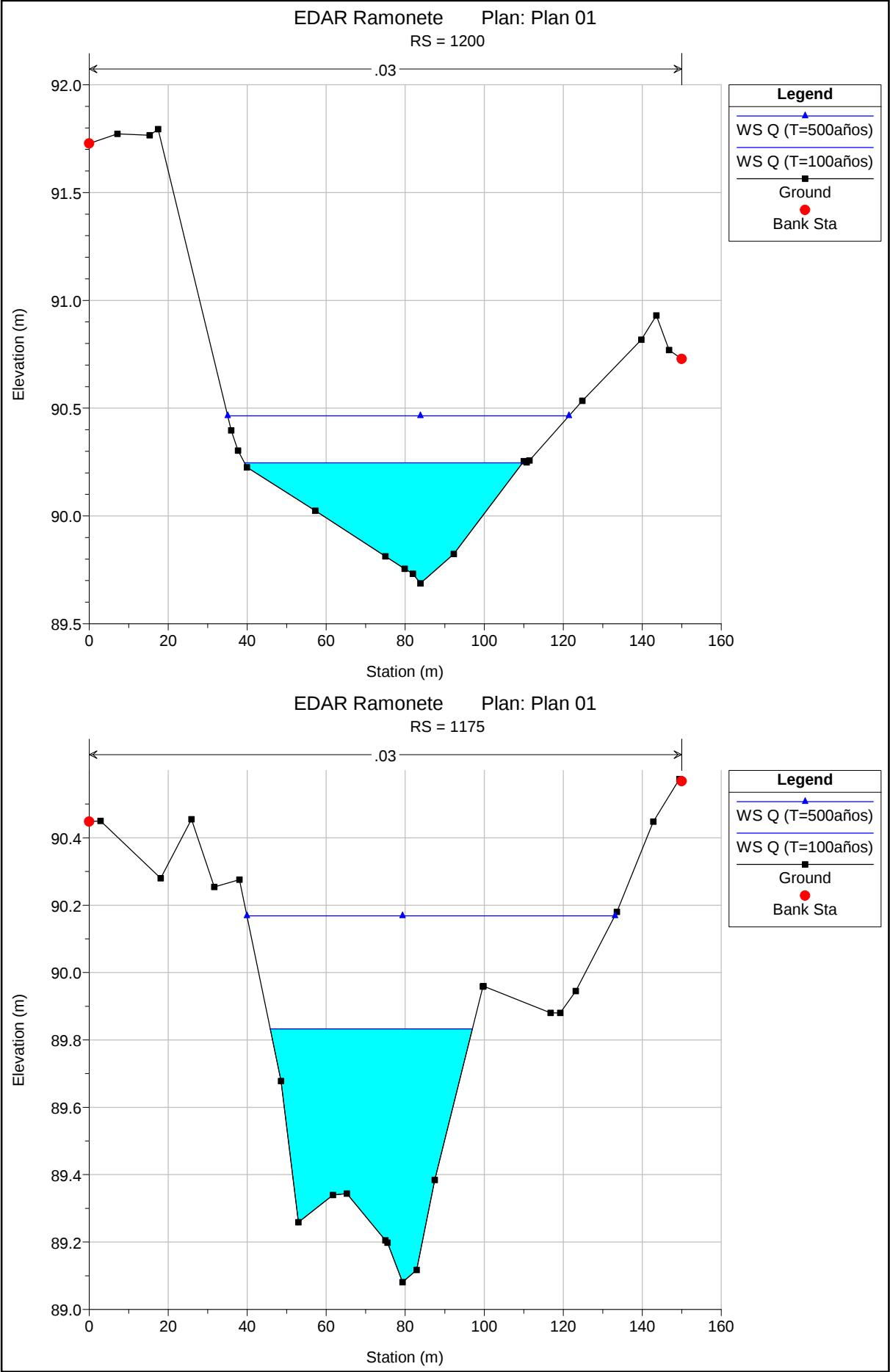


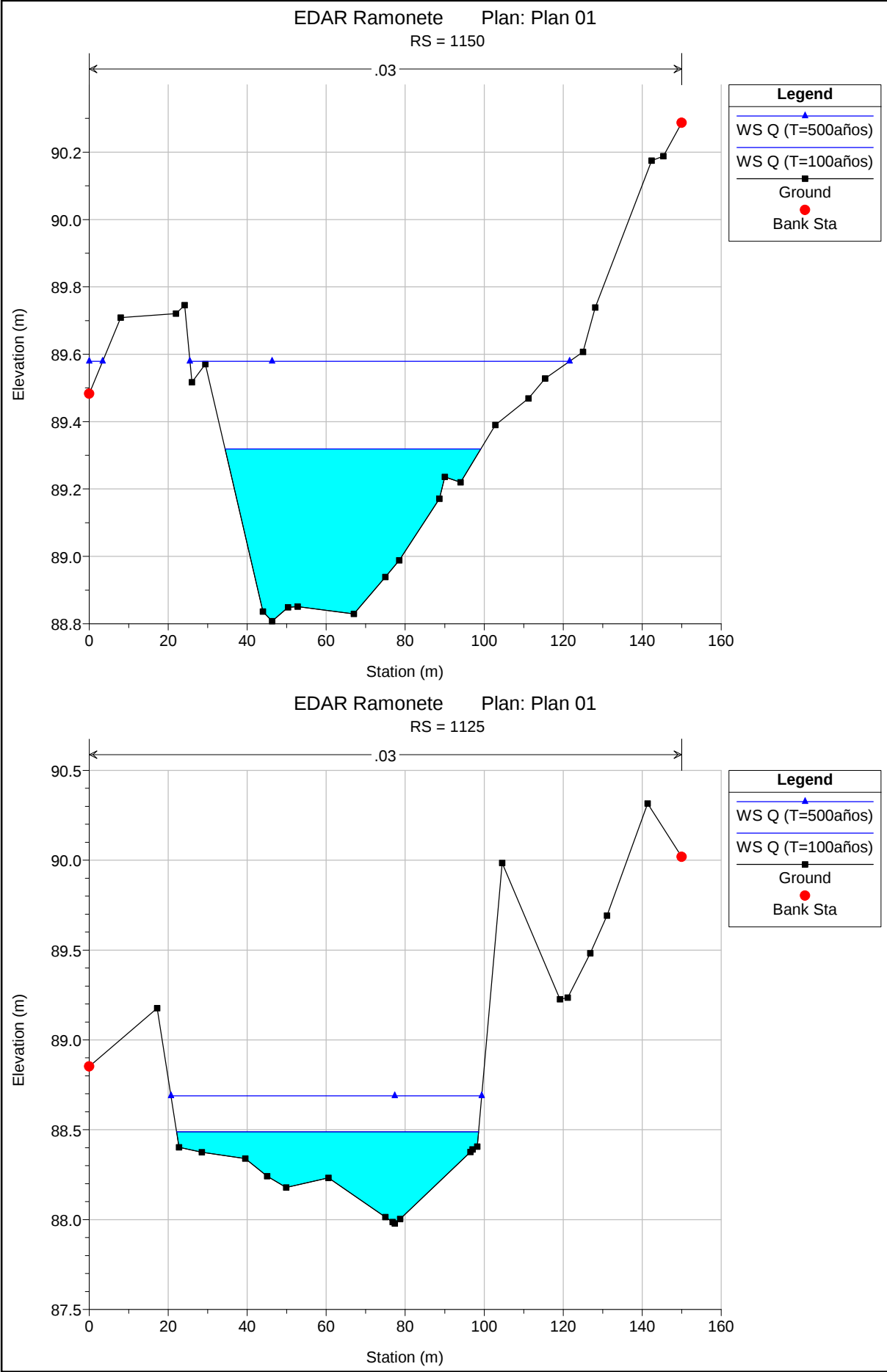


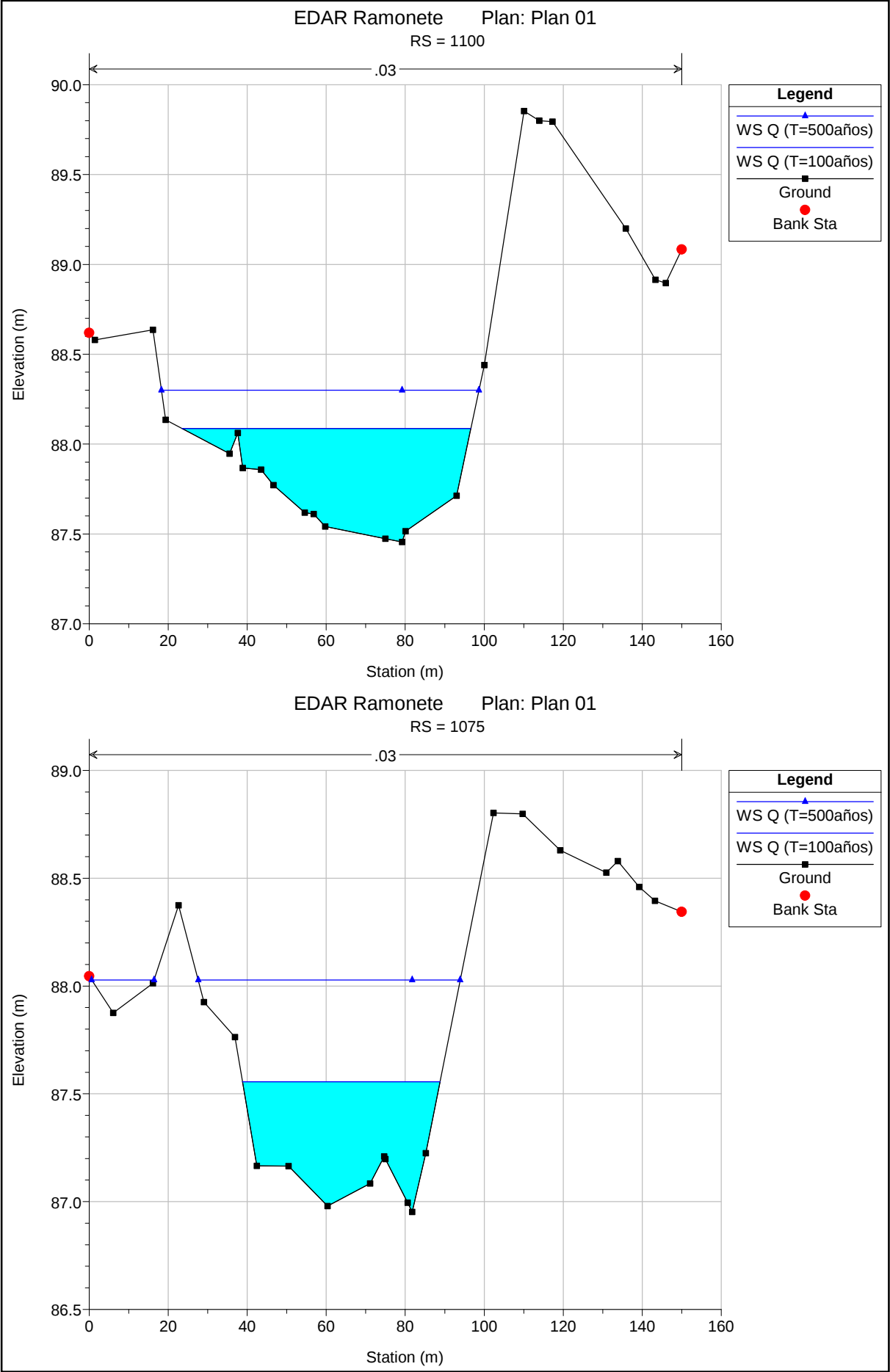


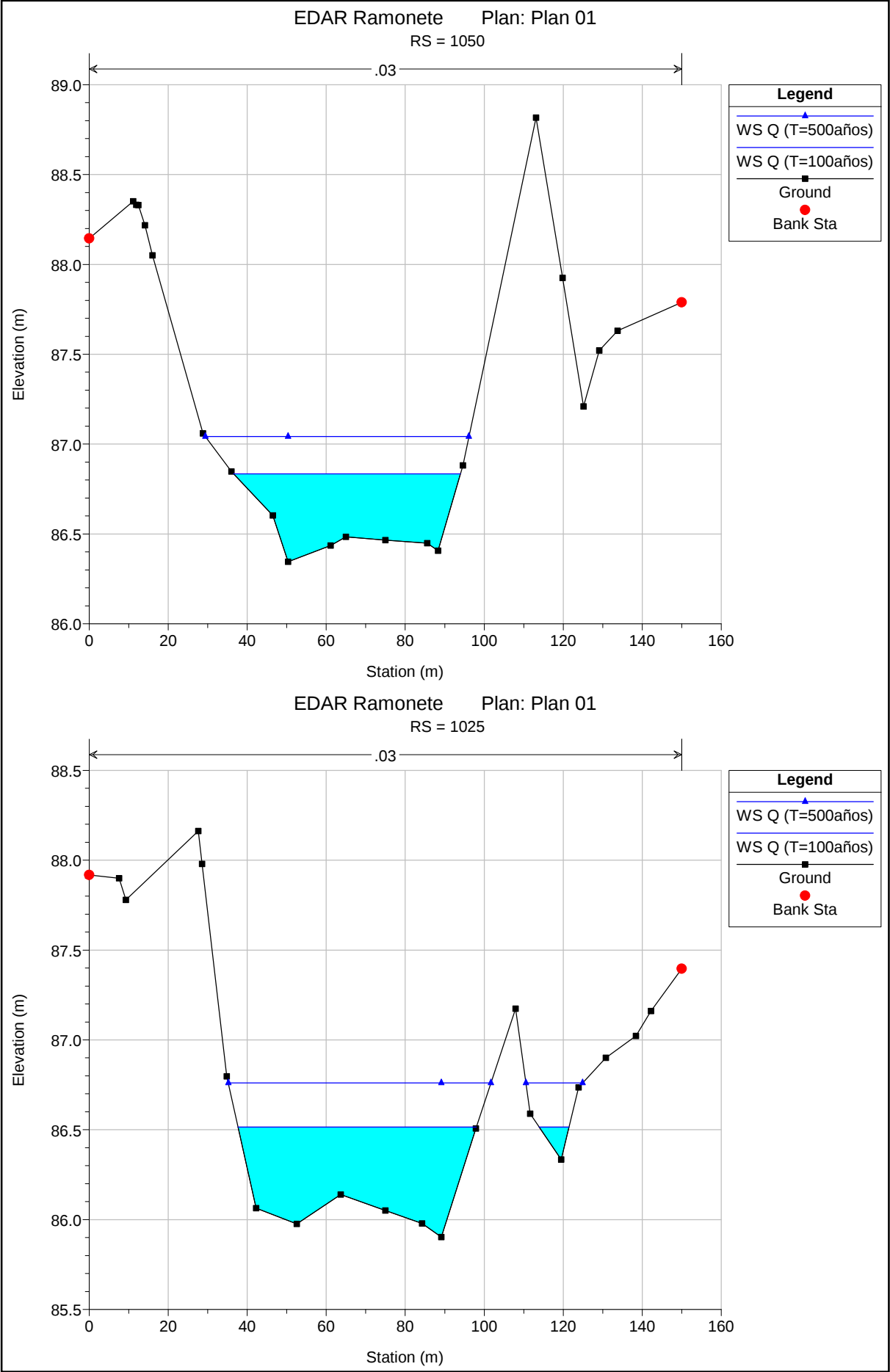


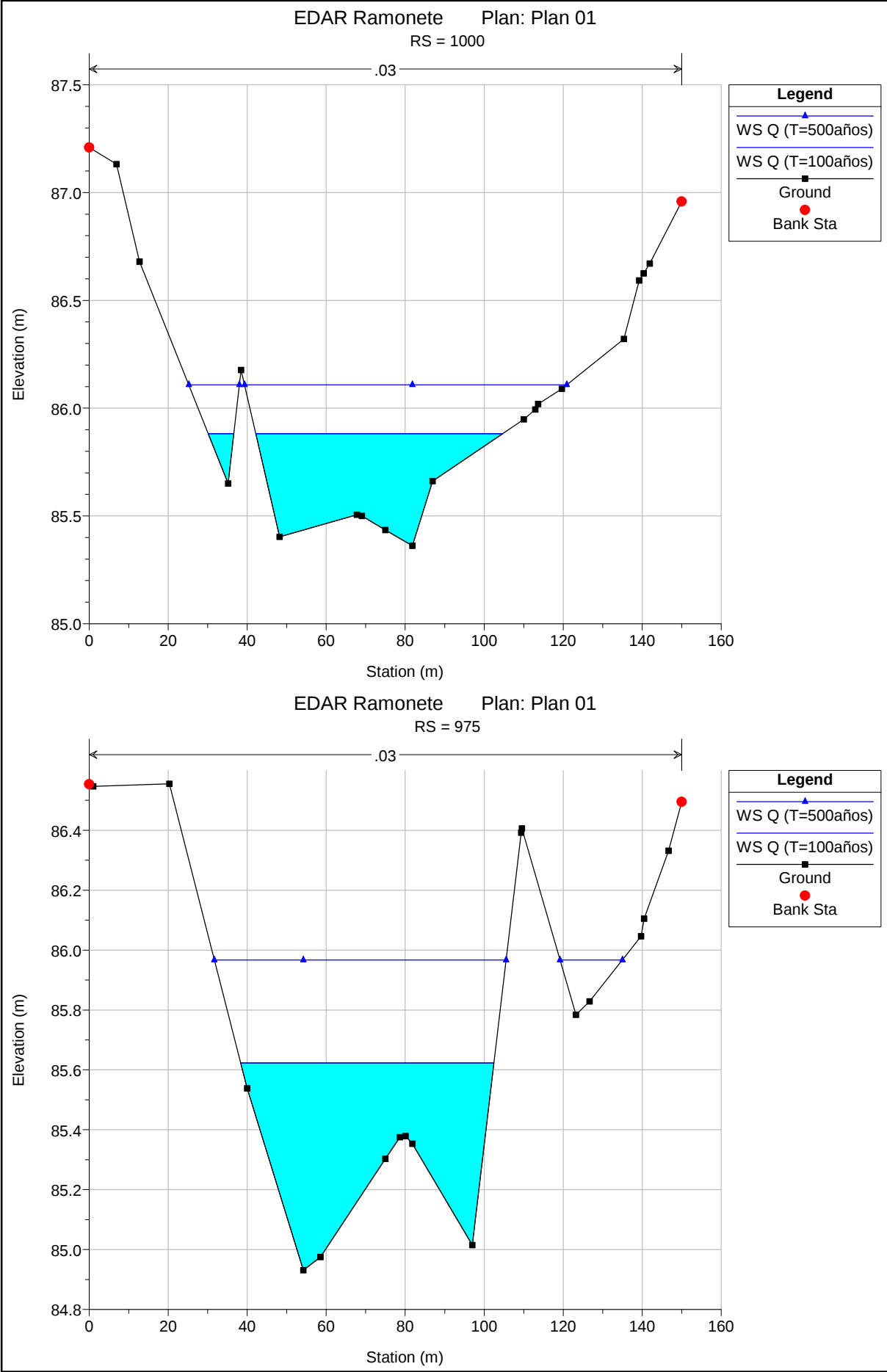


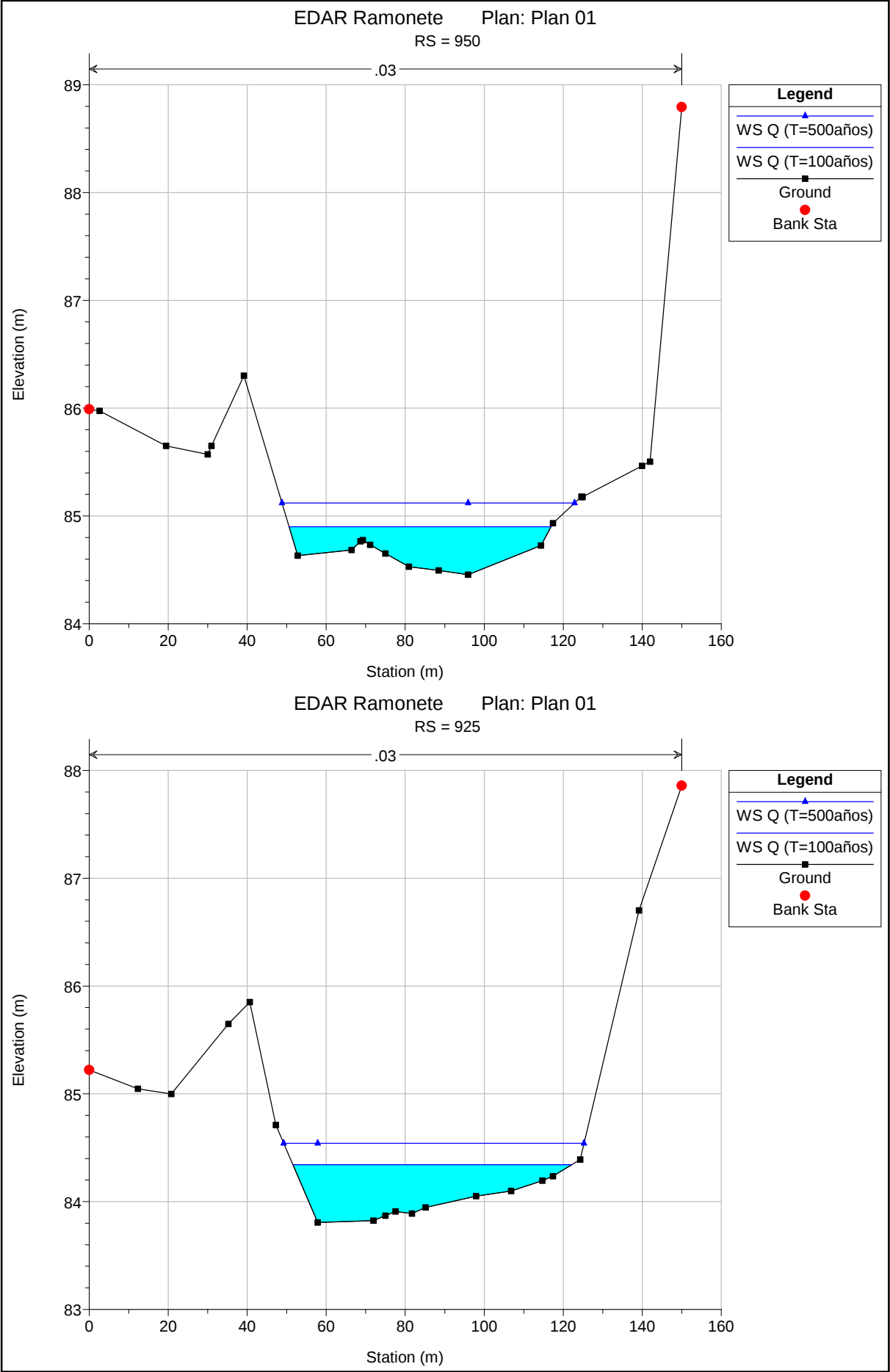


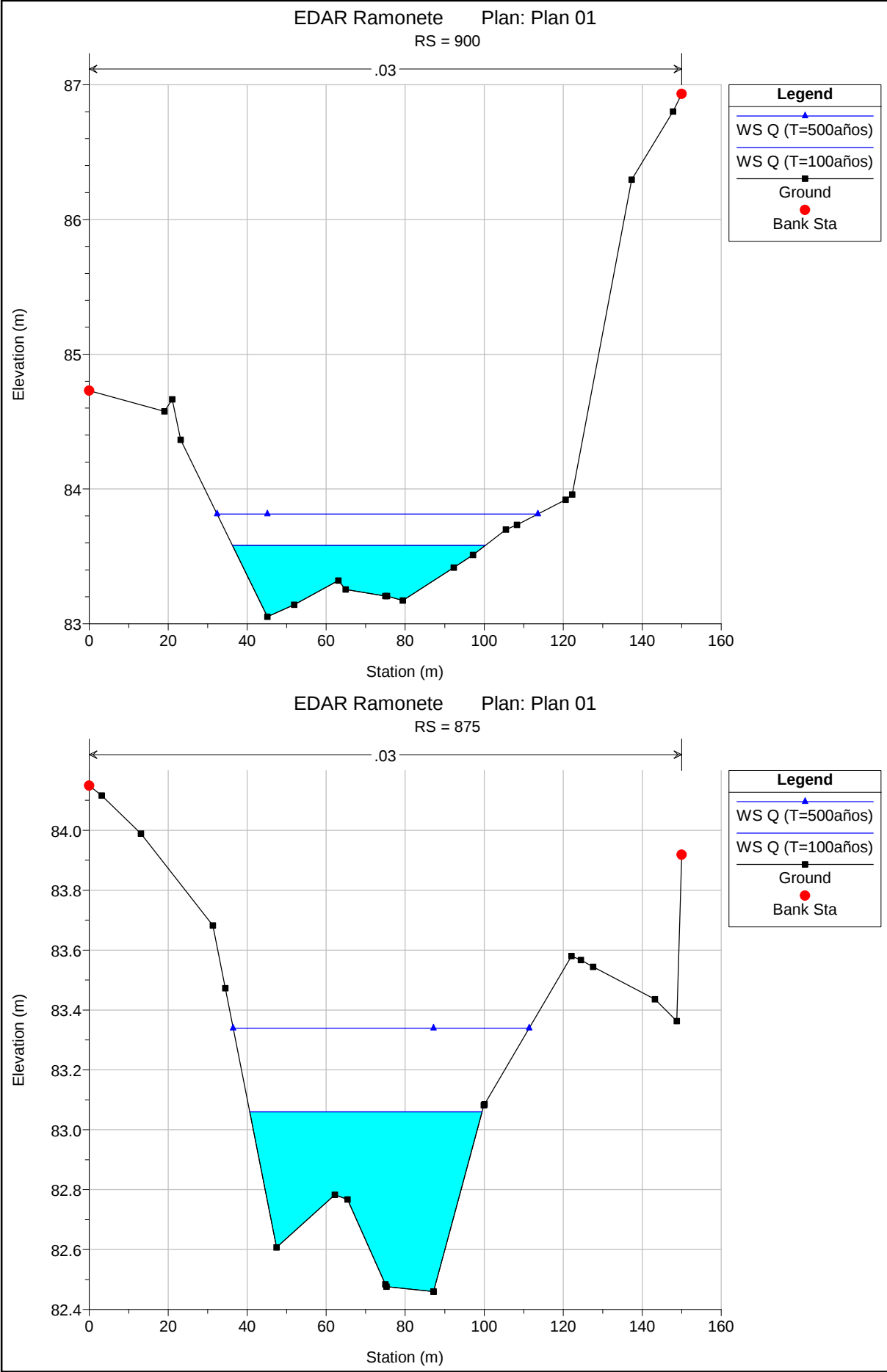


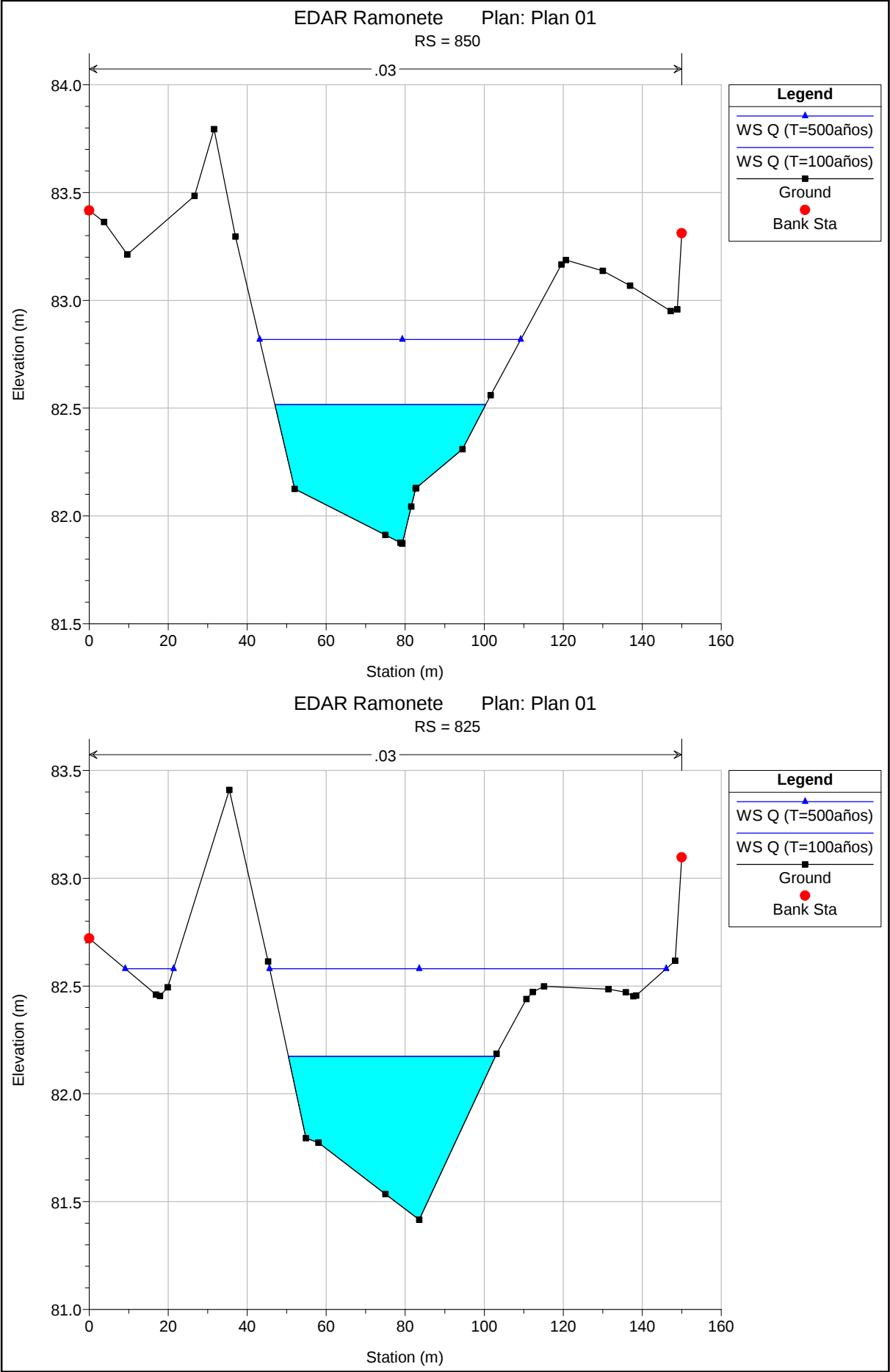


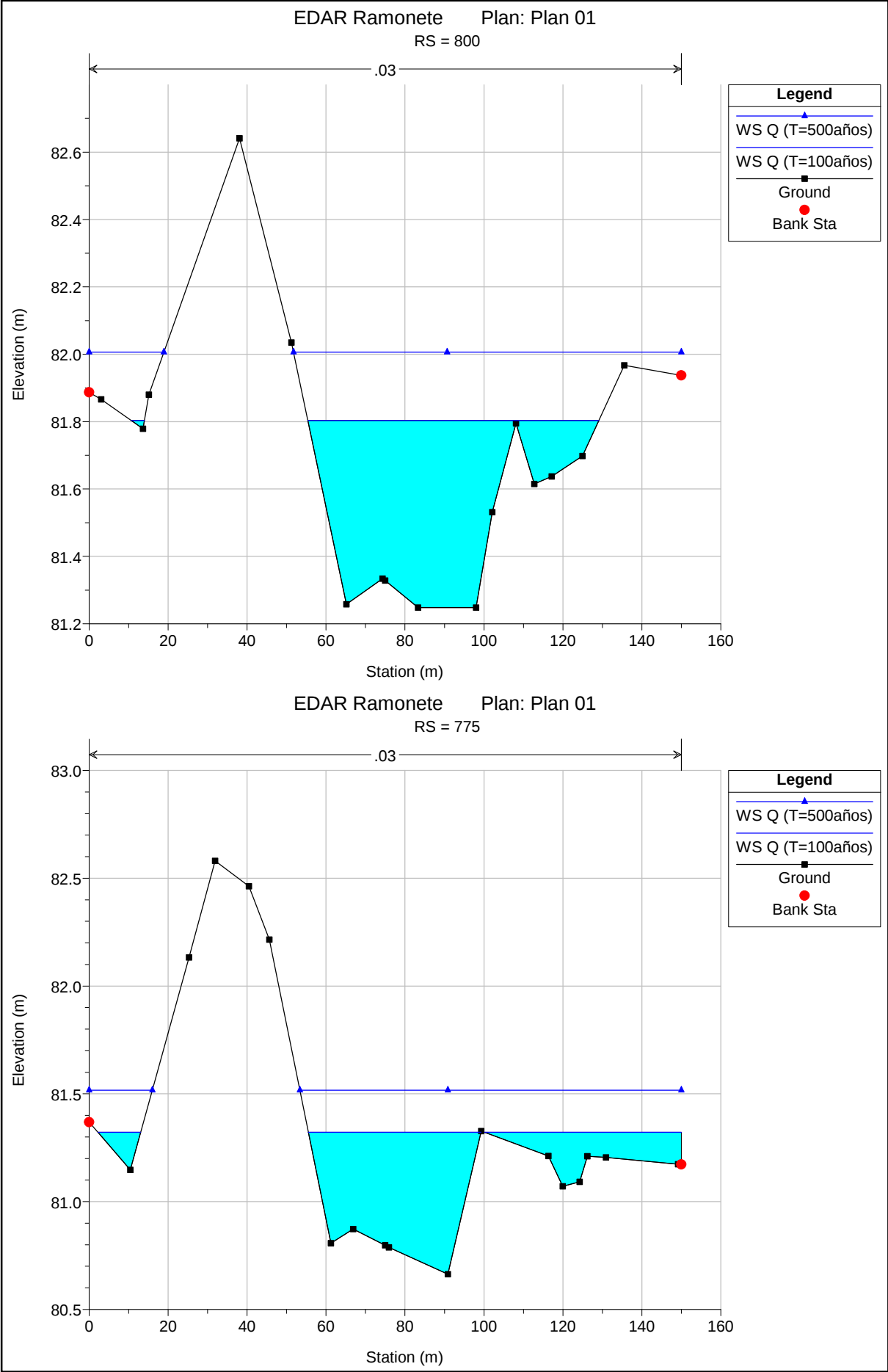


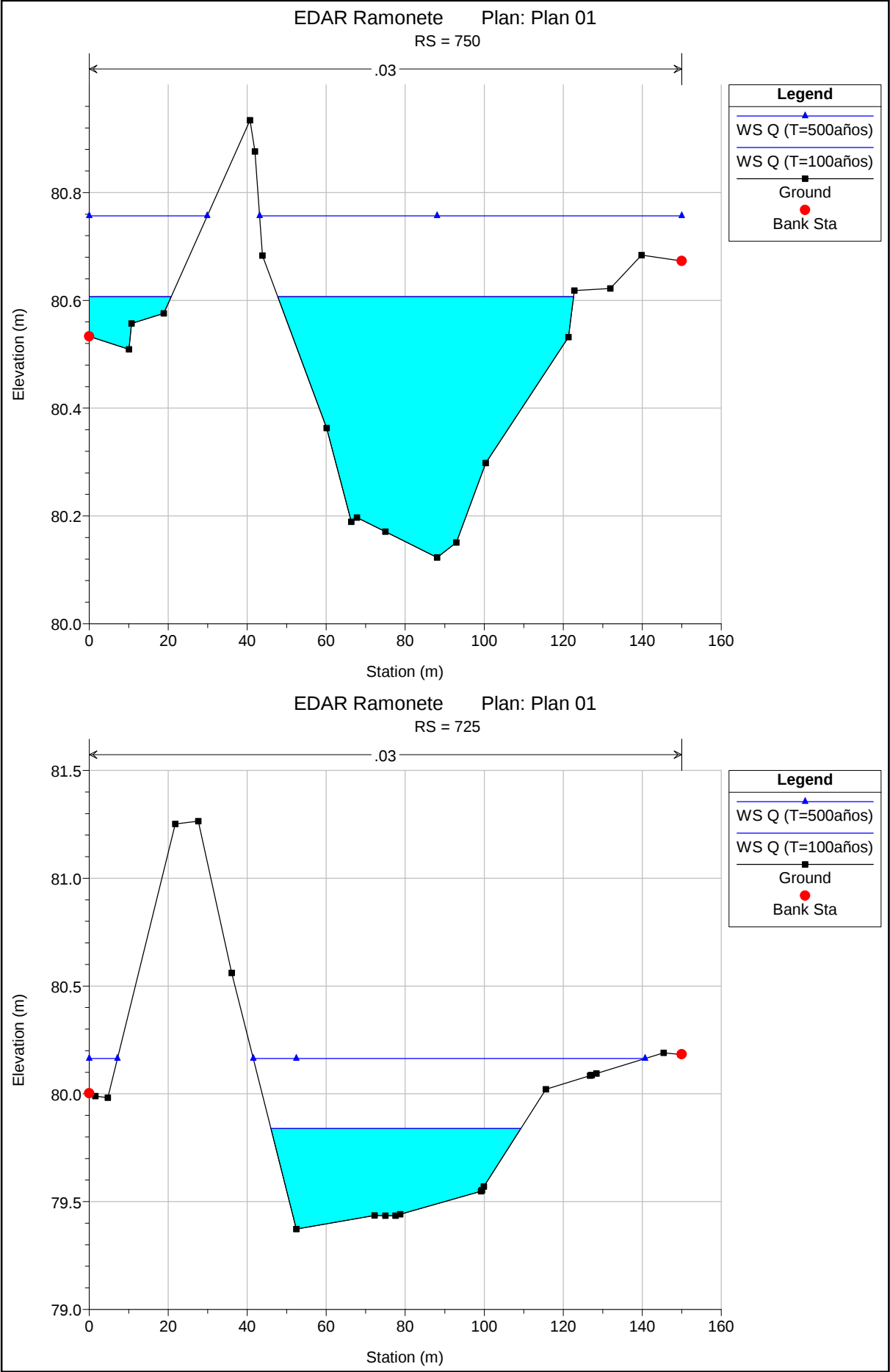


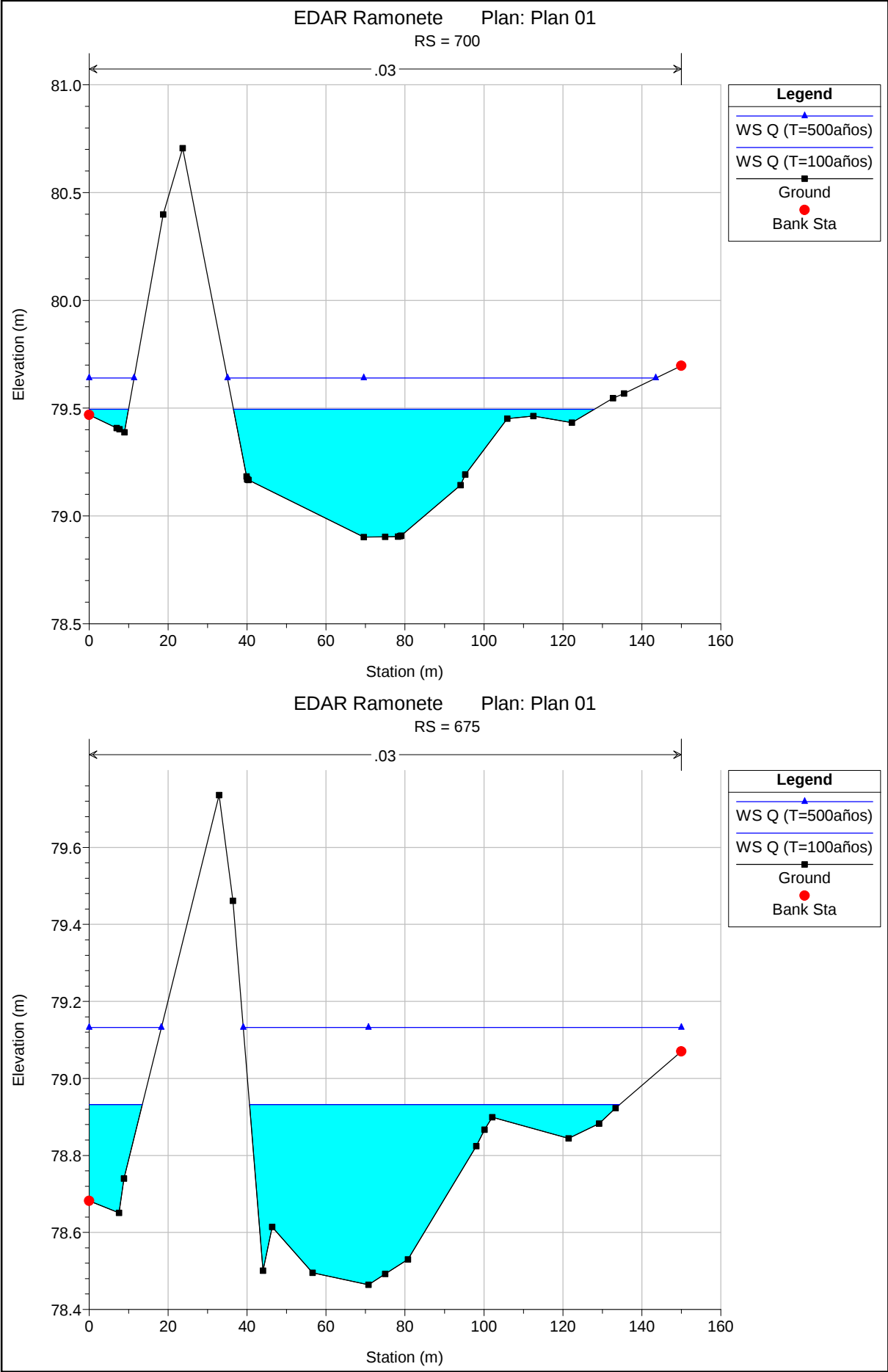


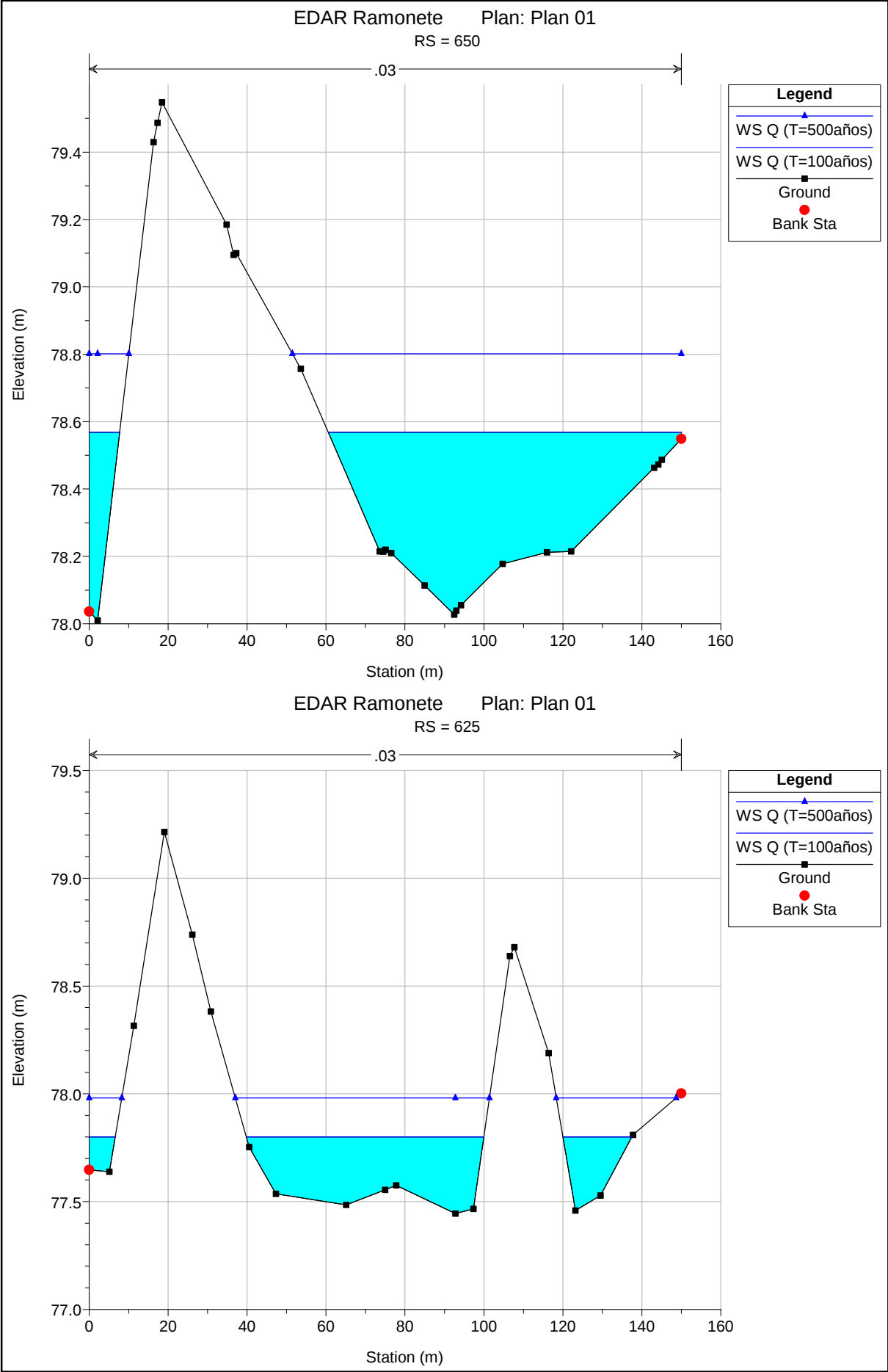


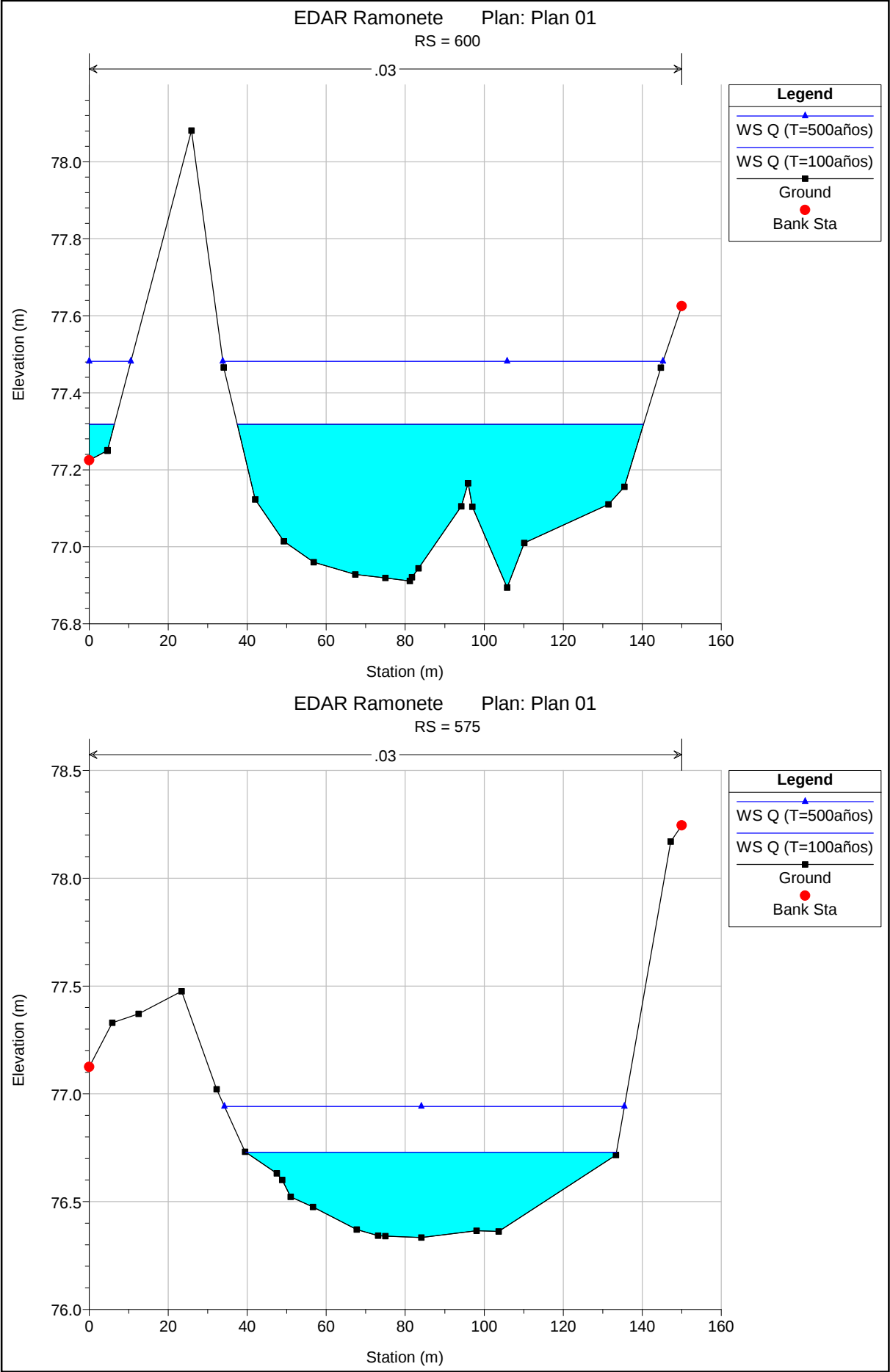


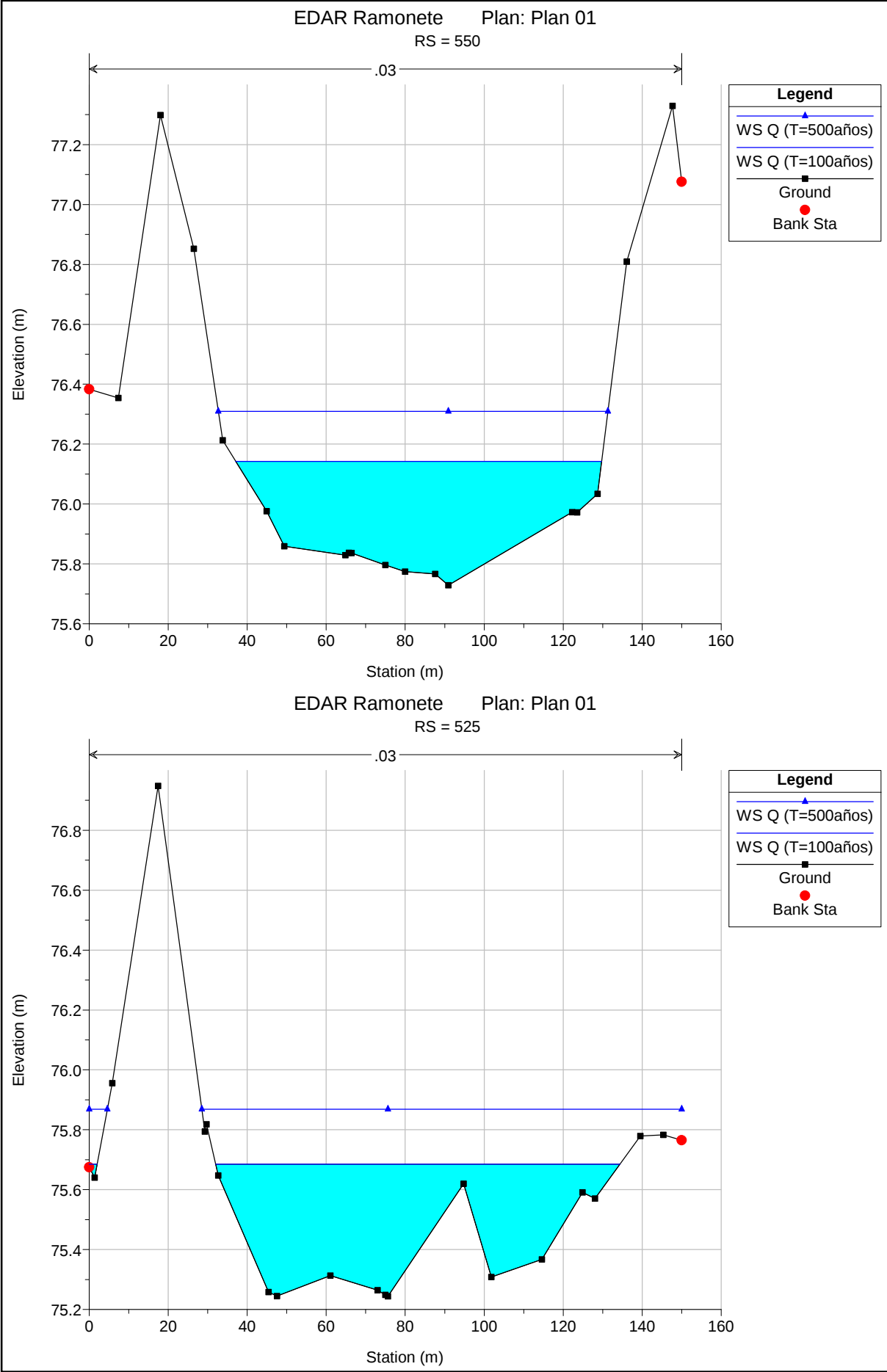


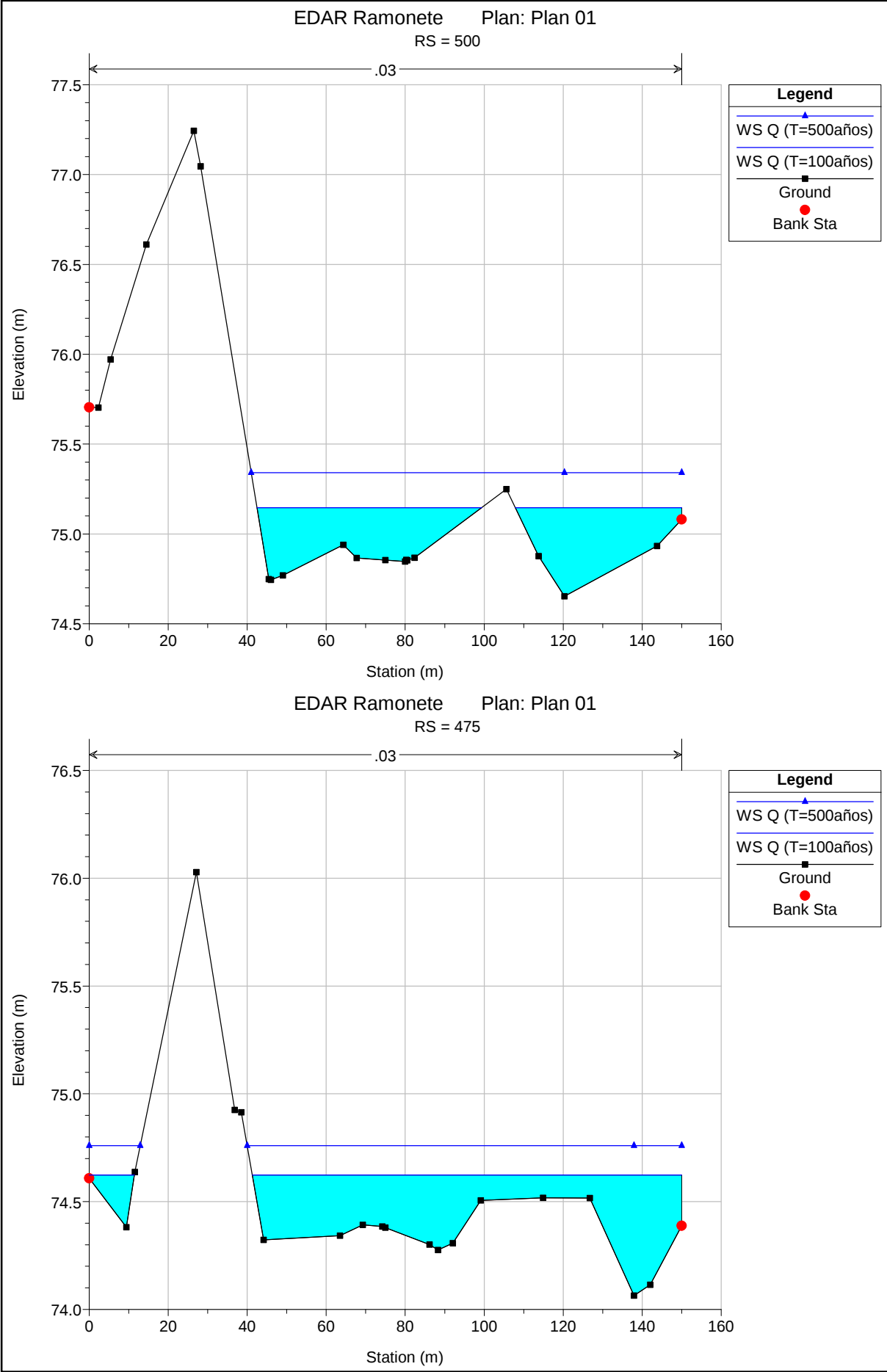


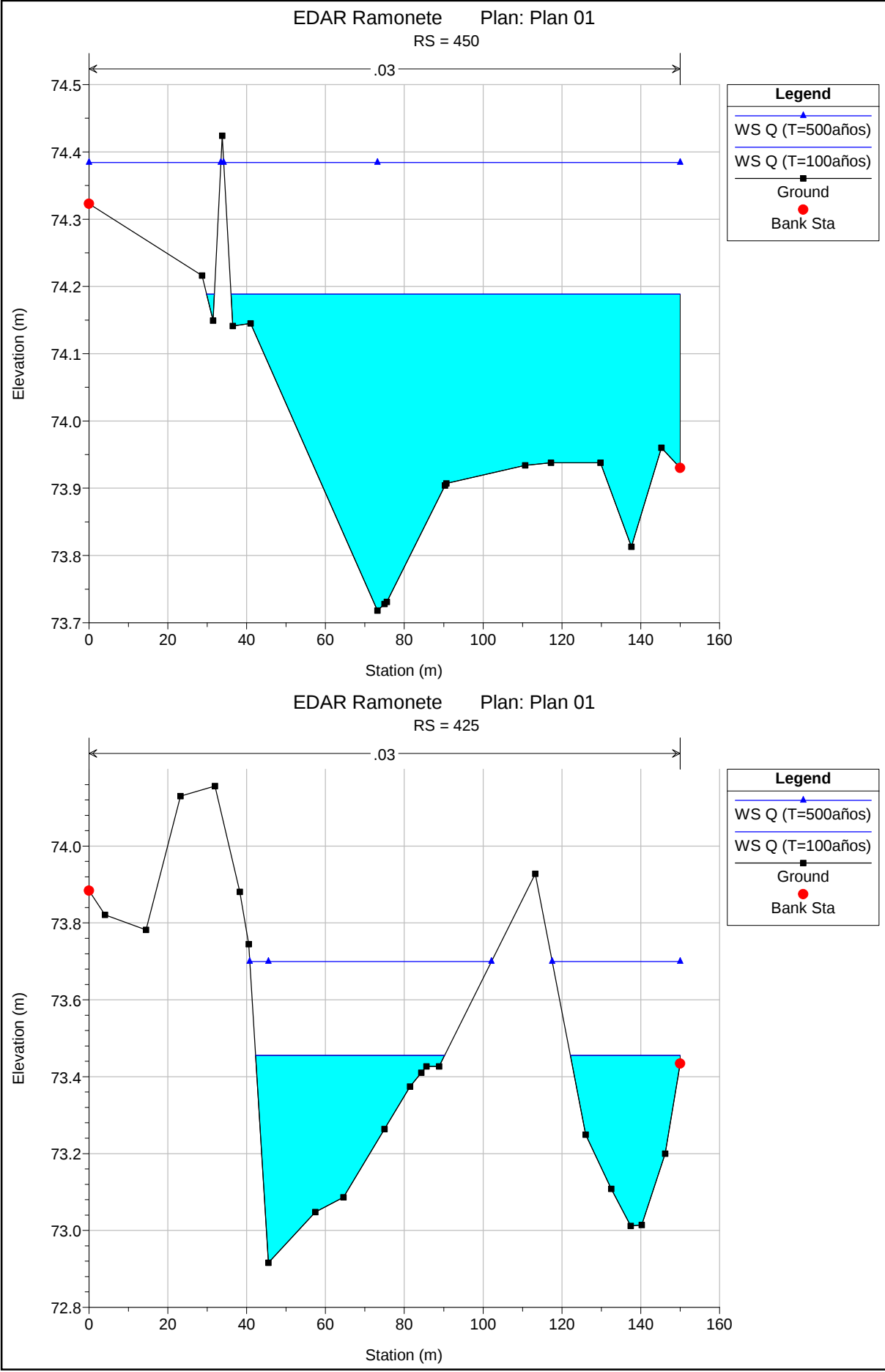


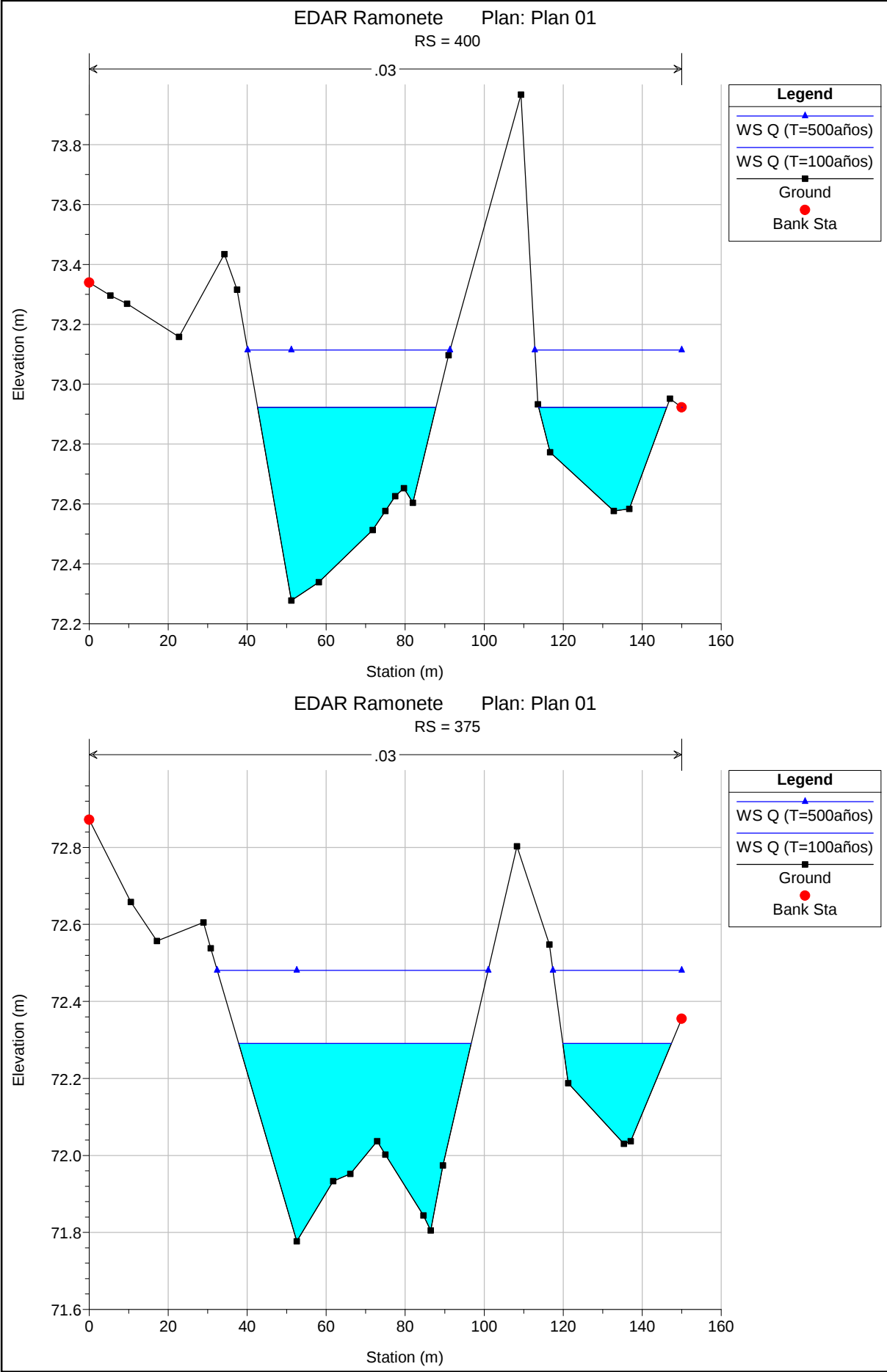


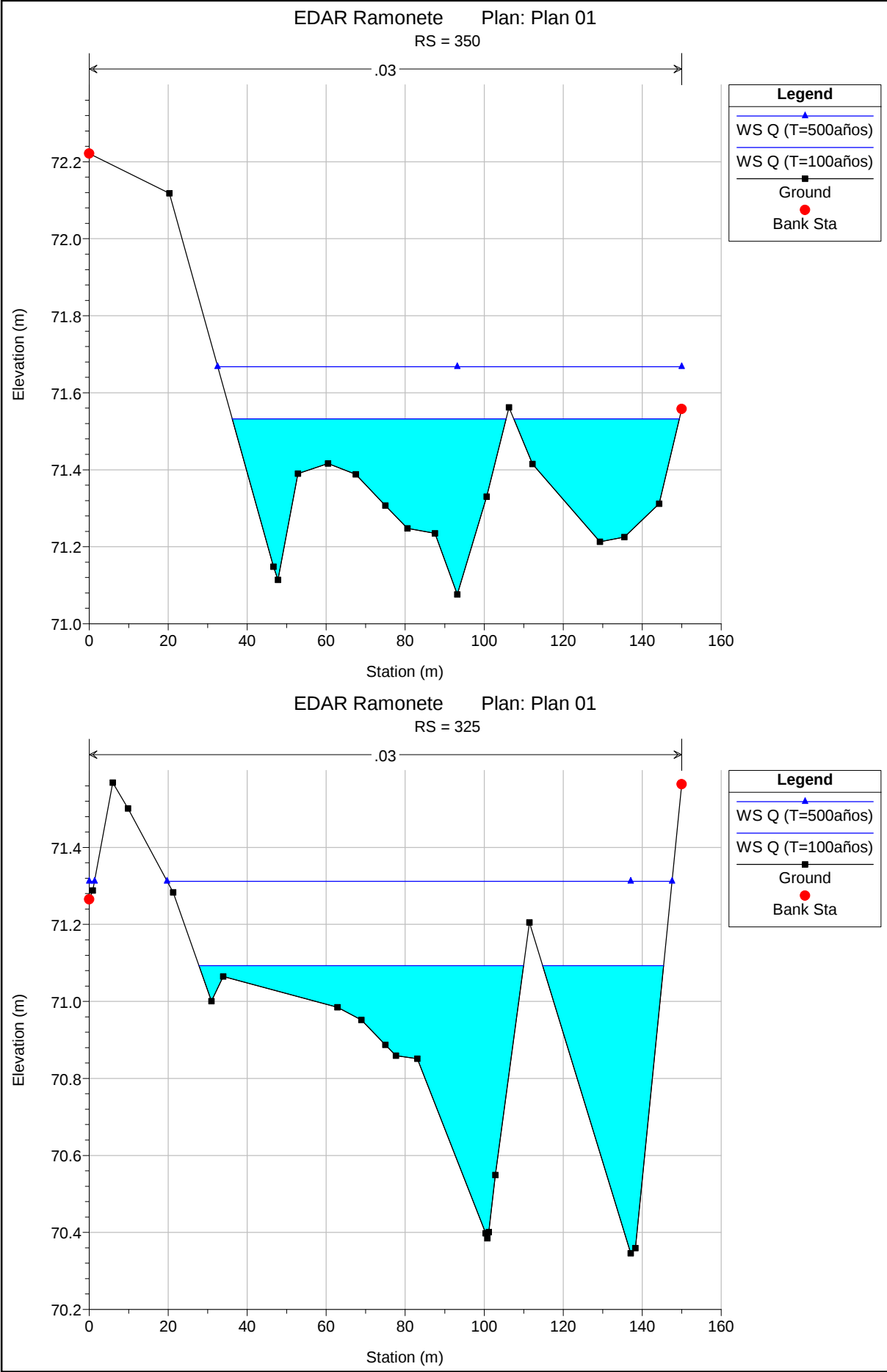


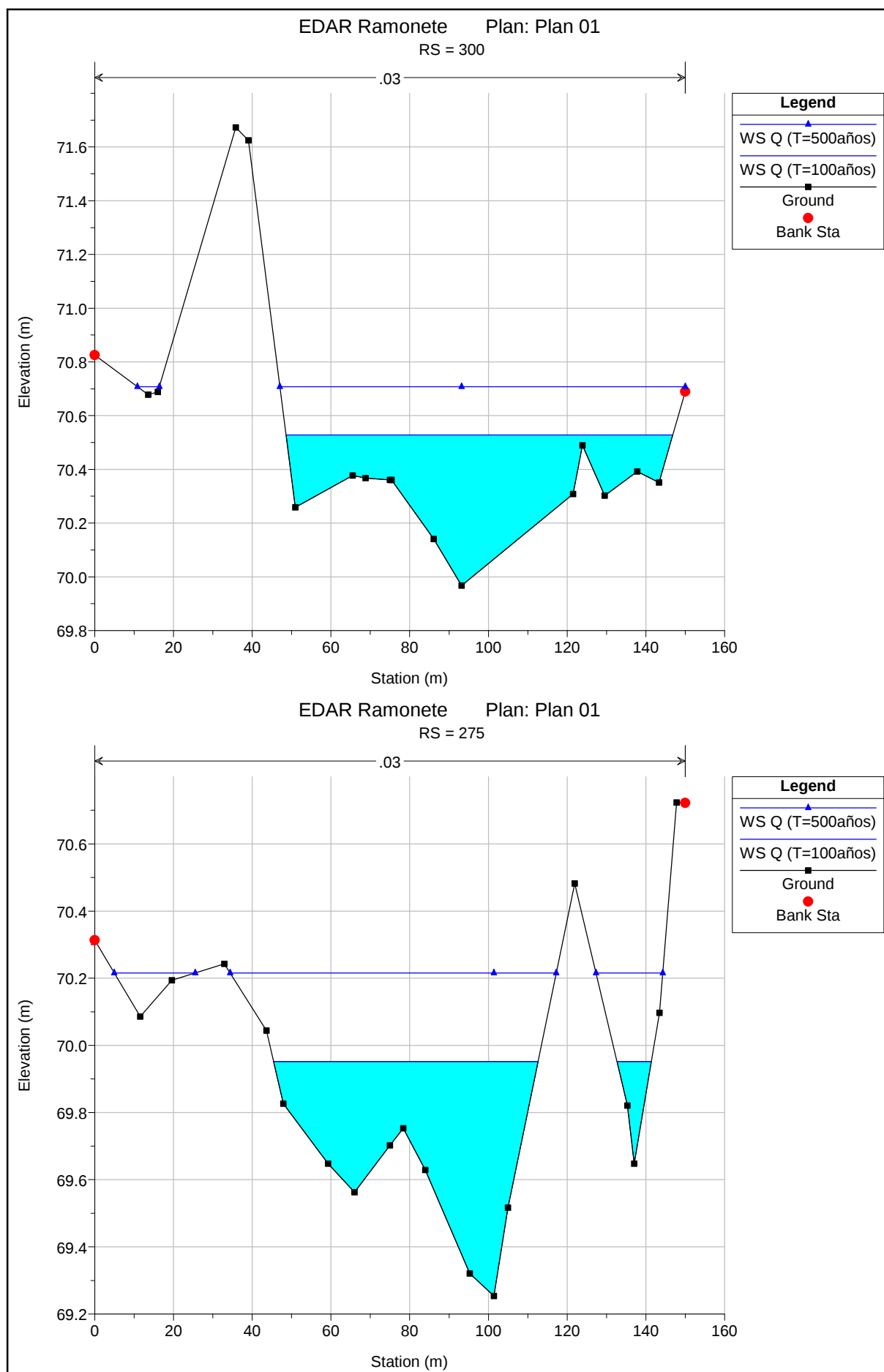


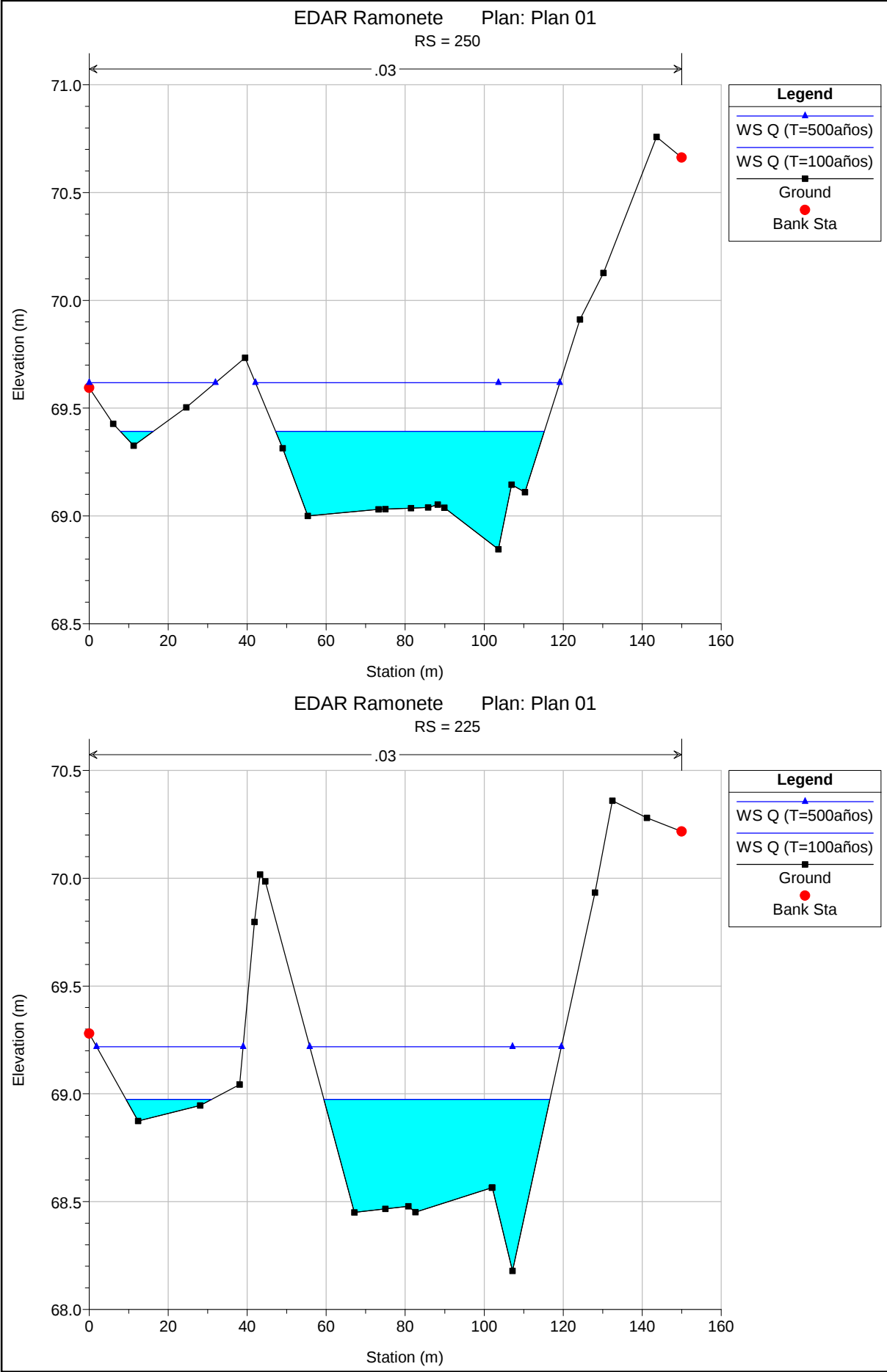


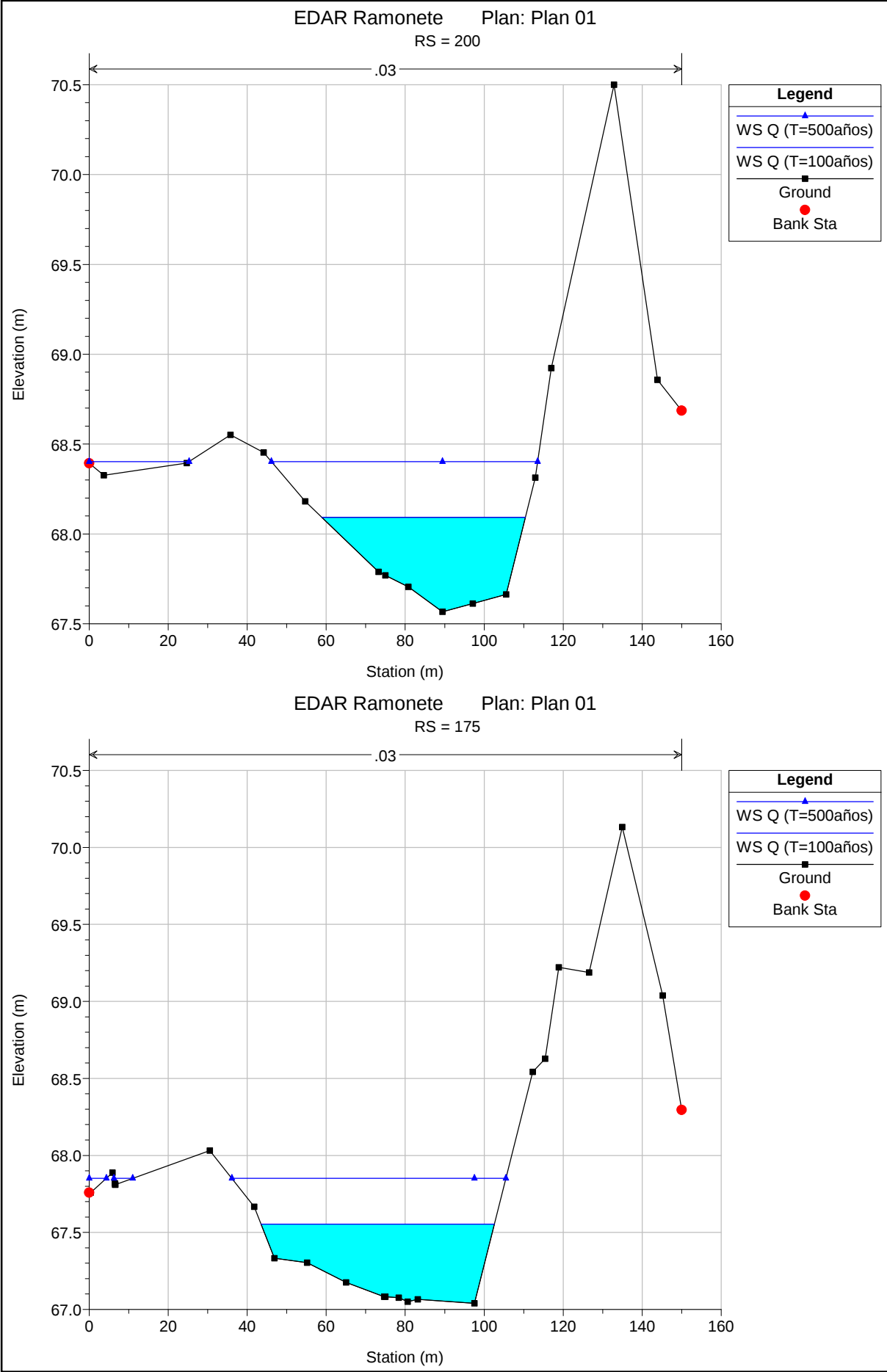


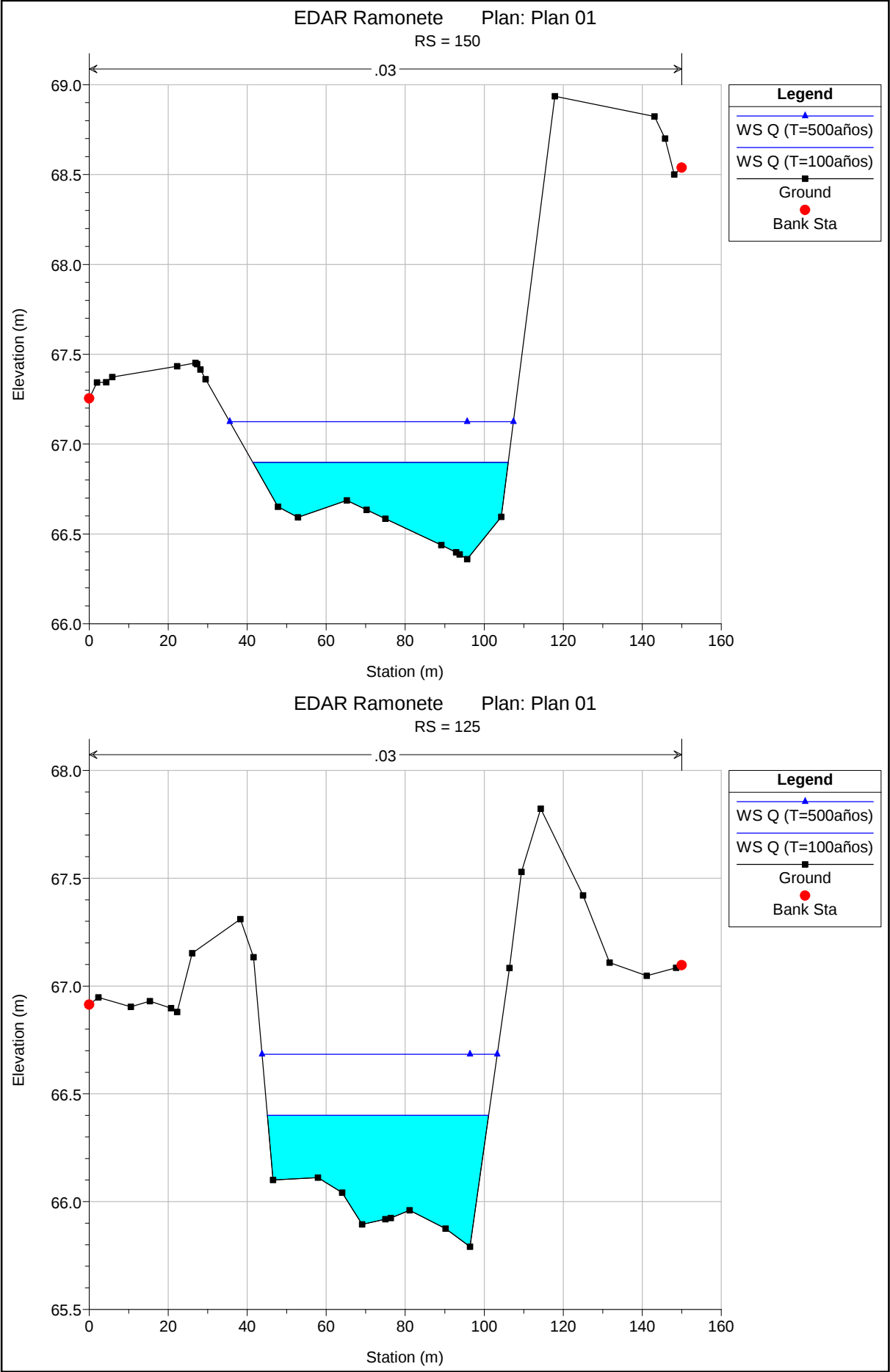


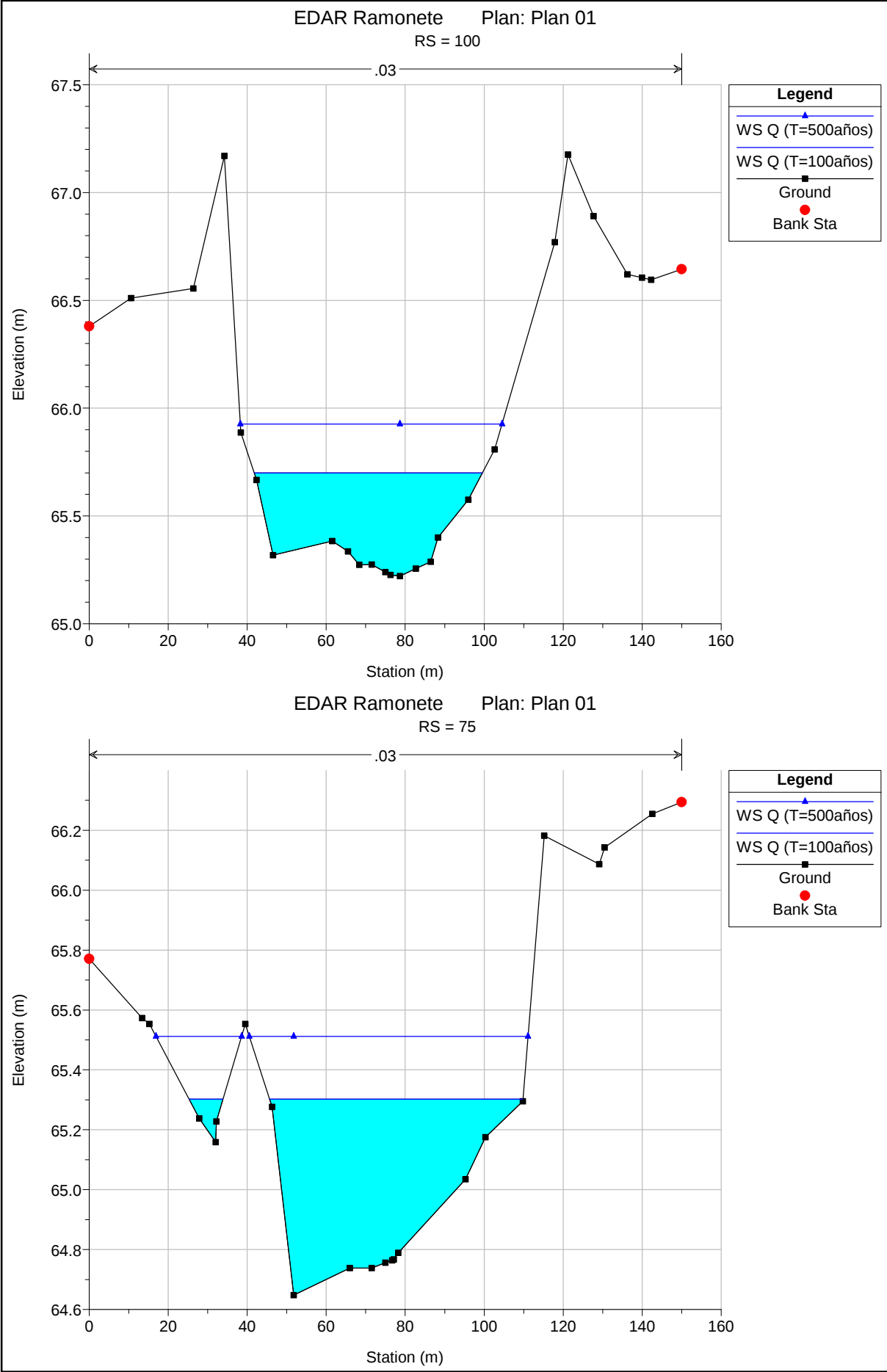


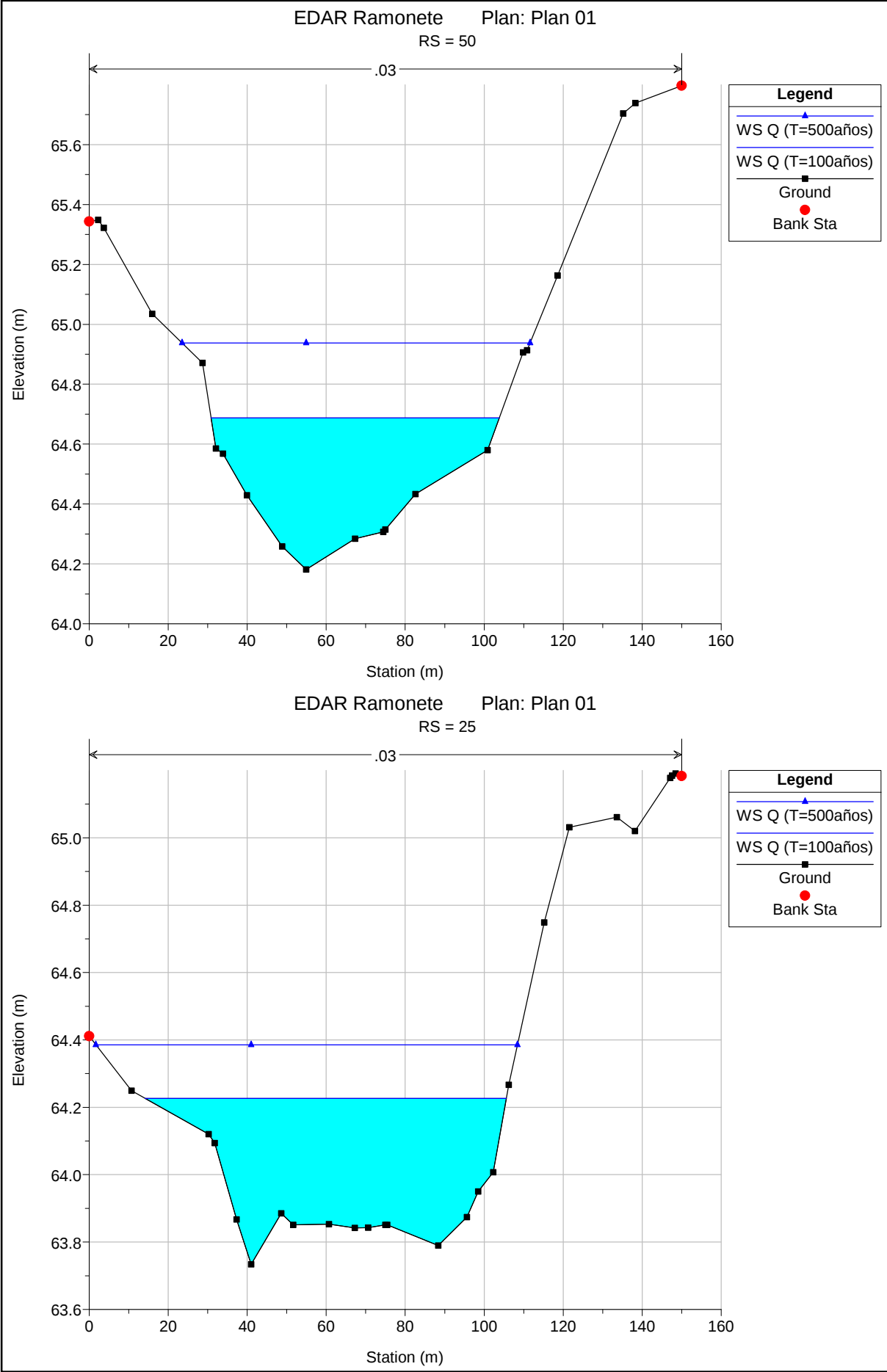






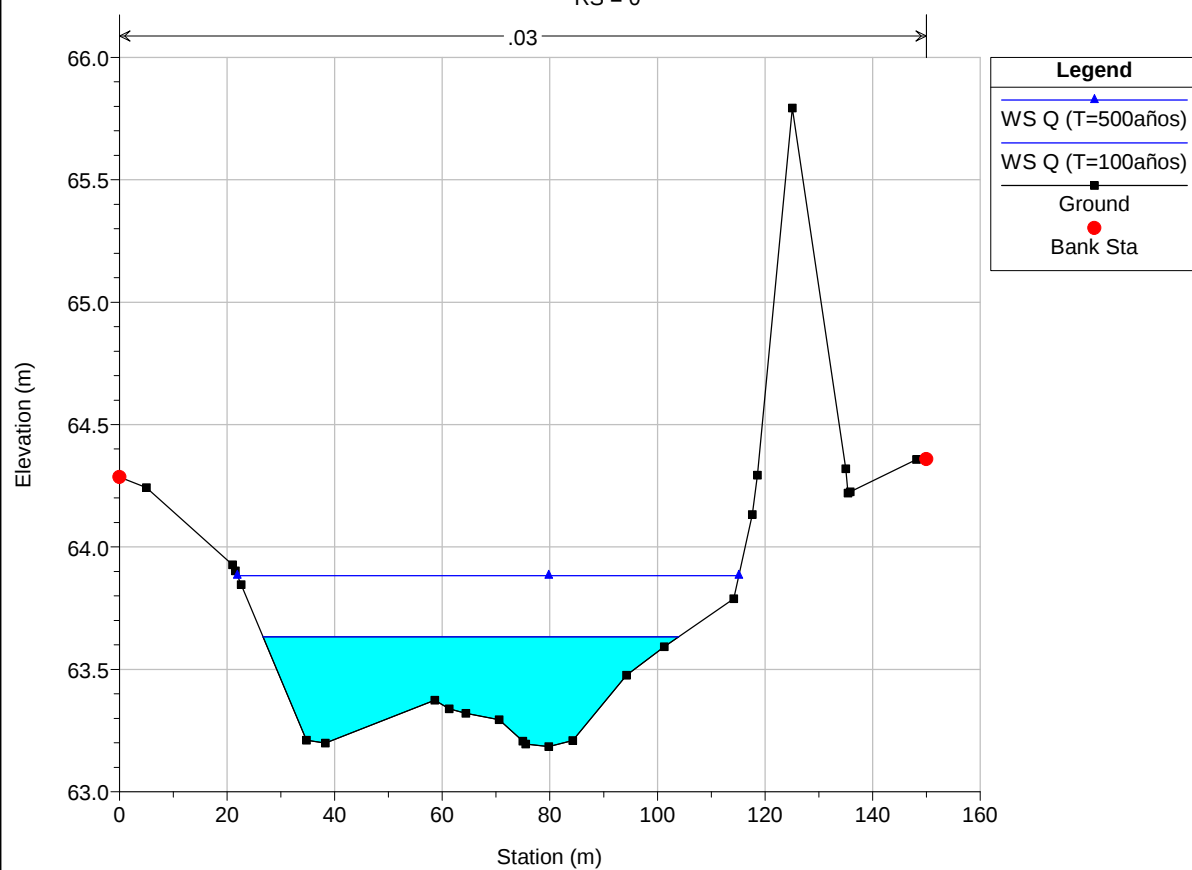


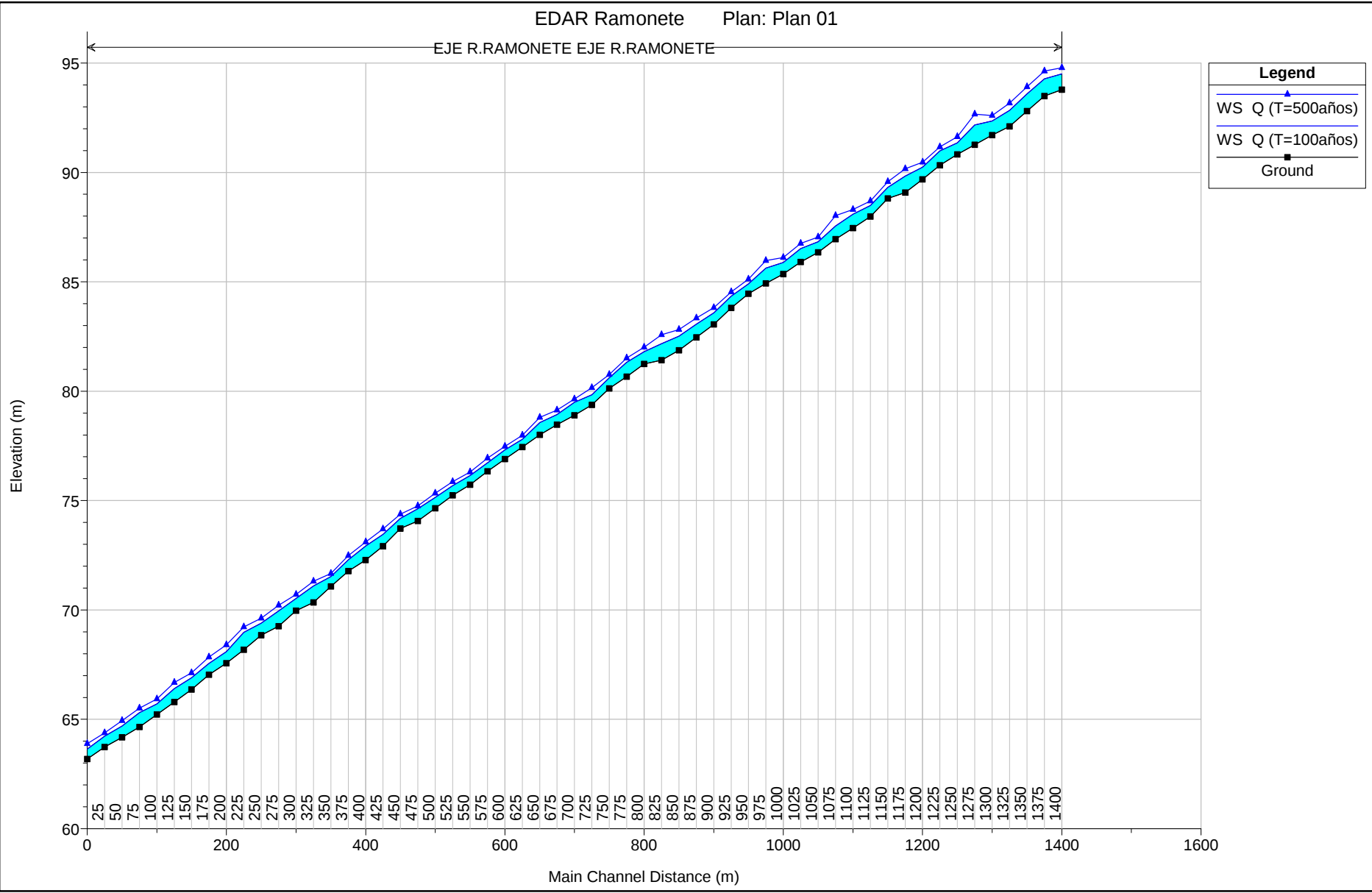




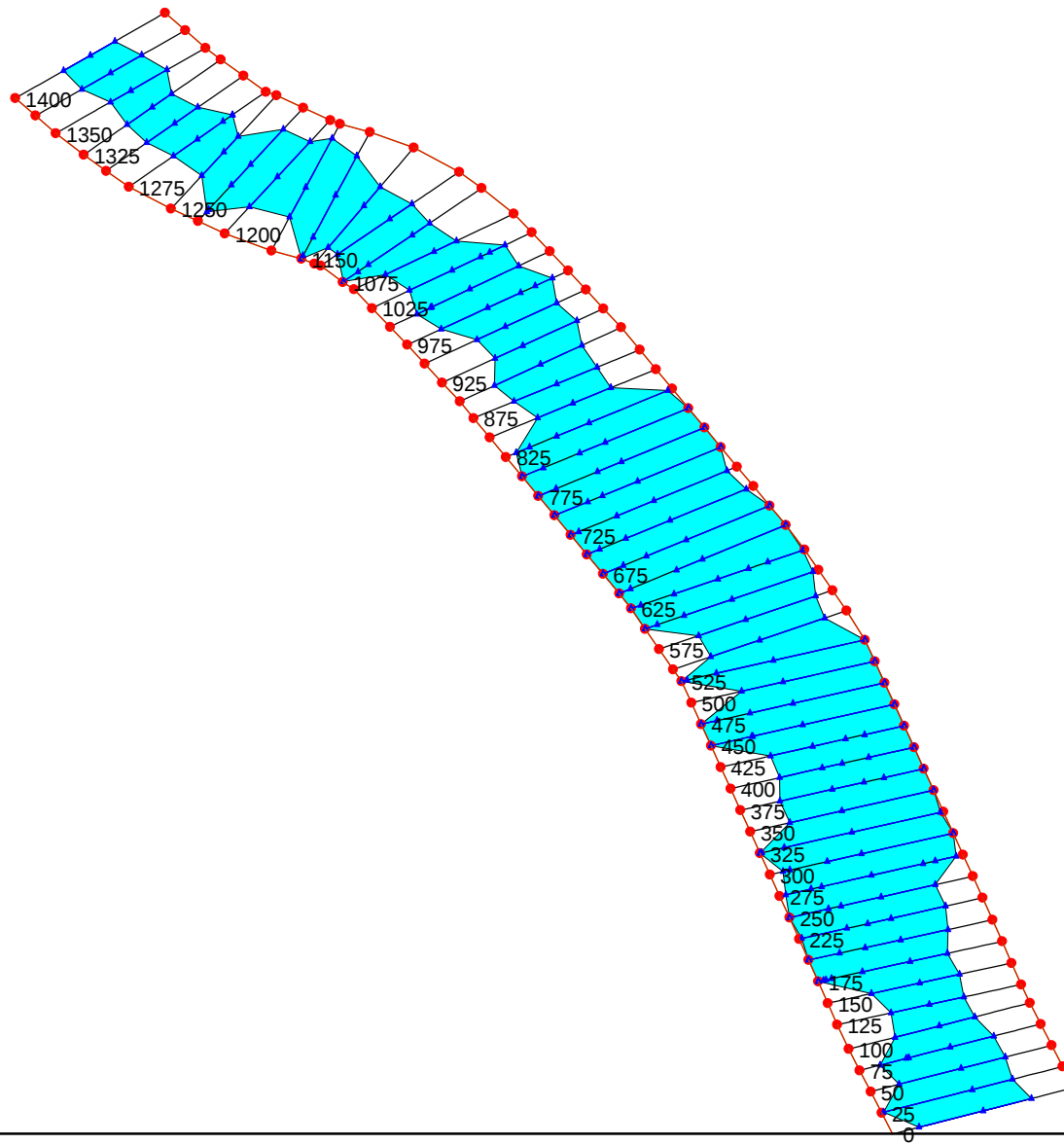
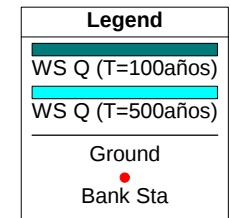
EDAR Ramonete Plan: Plan 01

RS = 0





EDAR Ramonete Plan: Plan 01



HEC-RAS Plan:

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
EJE R.RAMONETE	1400	54.46	93.78	94.50	94.60	94.88	0.021487	2.73	19.97	47.79	1.35
EJE R.RAMONETE	1400	124.46	93.78	94.78	94.98	95.48	0.021488	3.69	33.74	51.29	1.45
EJE R.RAMONETE	1375	54.46	93.49	94.28	94.28	94.53	0.011027	2.22	24.55	48.64	1.00
EJE R.RAMONETE	1375	124.46	93.49	94.63	94.64	95.03	0.010348	2.78	44.75	60.17	1.03
EJE R.RAMONETE	1350	54.46	92.80	93.58	93.74	94.09	0.028424	3.13	17.38	41.69	1.55
EJE R.RAMONETE	1350	124.46	92.80	93.91	94.12	94.61	0.024885	3.71	33.58	56.69	1.54
EJE R.RAMONETE	1325	54.46	92.10	92.84	93.00	93.37	0.028253	3.24	16.83	38.33	1.56
EJE R.RAMONETE	1325	124.46	92.10	93.18	93.42	93.97	0.025359	3.96	31.43	48.73	1.57
EJE R.RAMONETE	1300	54.46	91.70	92.35	92.44	92.72	0.020782	2.72	20.05	47.14	1.33
EJE R.RAMONETE	1300	124.46	91.70	92.60	92.82	93.32	0.025204	3.74	33.25	55.86	1.55
EJE R.RAMONETE	1275	54.46	91.26	92.17	92.17	92.48	0.010679	2.45	22.22	36.95	1.01
EJE R.RAMONETE	1275	124.46	91.26	92.67	92.67	93.06	0.009152	2.79	44.66	54.57	0.98
EJE R.RAMONETE	1250	54.46	90.82	91.35	91.55	91.98	0.039988	3.52	15.45	40.17	1.81
EJE R.RAMONETE	1250	124.46	90.82	91.63	91.97	92.60	0.037572	4.35	28.63	51.82	1.87
EJE R.RAMONETE	1225	54.46	90.33	90.98	91.03	91.23	0.017345	2.21	24.60	68.68	1.18
EJE R.RAMONETE	1225	124.46	90.33	91.17	91.34	91.72	0.024592	3.27	38.01	76.62	1.48
EJE R.RAMONETE	1200	54.46	89.69	90.25	90.36	90.62	0.035224	2.71	20.09	70.41	1.62
EJE R.RAMONETE	1200	124.46	89.69	90.46	90.64	91.03	0.030557	3.33	37.36	86.38	1.62
EJE R.RAMONETE	1175	54.46	89.08	89.83	89.84	90.09	0.012650	2.26	24.05	51.19	1.05
EJE R.RAMONETE	1175	124.46	89.08	90.17	90.20	90.48	0.012779	2.49	50.02	93.18	1.08
EJE R.RAMONETE	1150	54.46	88.81	89.32	89.42	89.65	0.025730	2.55	21.35	64.79	1.42
EJE R.RAMONETE	1150	124.46	88.81	89.58	89.73	90.03	0.025499	2.98	41.76	99.57	1.47
EJE R.RAMONETE	1125	54.46	87.98	88.49	88.60	88.86	0.039118	2.71	20.12	76.44	1.68
EJE R.RAMONETE	1125	124.46	87.98	88.69	88.87	89.31	0.031438	3.49	35.69	78.67	1.65
EJE R.RAMONETE	1100	54.46	87.46	88.09	88.09	88.29	0.013066	1.98	27.46	73.08	1.03
EJE R.RAMONETE	1100	124.46	87.46	88.30	88.37	88.70	0.015865	2.82	44.20	80.39	1.21
EJE R.RAMONETE	1075	54.46	86.95	87.56	87.62	87.89	0.018384	2.56	21.30	50.01	1.25
EJE R.RAMONETE	1075	124.46	86.95	88.03	88.04	88.35	0.011136	2.51	49.57	82.11	1.03
EJE R.RAMONETE	1050	54.46	86.34	86.83	86.96	87.27	0.034147	2.91	18.69	57.40	1.63
EJE R.RAMONETE	1050	124.46	86.34	87.04	87.29	87.83	0.037933	3.94	31.58	66.73	1.83
EJE R.RAMONETE	1025	54.46	85.90	86.52	86.52	86.73	0.012792	2.03	26.84	67.90	1.03
EJE R.RAMONETE	1025	124.46	85.90	86.76	86.83	87.15	0.014946	2.76	45.10	80.83	1.18
EJE R.RAMONETE	1000	54.46	85.36	85.88	85.99	86.24	0.031206	2.63	20.67	69.03	1.54
EJE R.RAMONETE	1000	124.46	85.36	86.11	86.27	86.62	0.029464	3.18	39.14	94.40	1.58
EJE R.RAMONETE	975	54.46	84.93	85.62	85.62	85.84	0.012192	2.05	26.61	64.11	1.01
EJE R.RAMONETE	975	124.46	84.93	85.97	85.97	86.26	0.010768	2.40	51.87	89.67	1.01
EJE R.RAMONETE	950	54.46	84.46	84.90	85.03	85.32	0.038932	2.86	19.04	66.36	1.70
EJE R.RAMONETE	950	124.46	84.46	85.12	85.33	85.79	0.032824	3.62	34.39	74.08	1.70
EJE R.RAMONETE	925	54.46	83.81	84.34	84.40	84.60	0.019497	2.27	24.01	70.57	1.24
EJE R.RAMONETE	925	124.46	83.81	84.54	84.68	85.07	0.022792	3.21	38.77	76.04	1.44
EJE R.RAMONETE	900	54.46	83.05	83.58	83.70	83.97	0.032800	2.76	19.76	64.06	1.58
EJE R.RAMONETE	900	124.46	83.05	83.81	83.99	84.41	0.030407	3.41	36.51	81.26	1.62
EJE R.RAMONETE	875	54.46	82.46	83.06	83.12	83.35	0.017881	2.38	22.92	58.84	1.22
EJE R.RAMONETE	875	124.46	82.46	83.34	83.48	83.80	0.017760	3.00	41.54	74.93	1.28
EJE R.RAMONETE	850	54.46	81.87	82.52	82.60	82.86	0.021036	2.59	21.00	53.43	1.32
EJE R.RAMONETE	850	124.46	81.87	82.82	82.96	83.34	0.018559	3.19	39.00	66.14	1.33
EJE R.RAMONETE	825	54.46	81.42	82.17	82.19	82.43	0.012835	2.25	24.17	52.43	1.06
EJE R.RAMONETE	825	124.46	81.42	82.58	82.61	82.87	0.013883	2.36	52.65	112.69	1.10
EJE R.RAMONETE	800	54.46	81.25	81.80	81.86	82.04	0.018759	2.16	25.16	77.01	1.21
EJE R.RAMONETE	800	124.46	81.25	82.01	82.11	82.40	0.025020	2.78	44.84	117.17	1.43
EJE R.RAMONETE	775	54.46	80.66	81.32	81.36	81.53	0.021780	2.00	27.18	104.32	1.25
EJE R.RAMONETE	775	124.46	80.66	81.52	81.58	81.85	0.018215	2.56	48.60	112.61	1.24
EJE R.RAMONETE	750	54.46	80.12	80.61	80.69	80.88	0.030617	2.30	23.69	95.65	1.47
EJE R.RAMONETE	750	124.46	80.12	80.76	80.89	81.20	0.038027	2.96	42.08	136.76	1.70
EJE R.RAMONETE	725	54.46	79.37	79.84	79.93	80.17	0.025393	2.56	21.23	63.27	1.41
EJE R.RAMONETE	725	124.46	79.37	80.16	80.25	80.52	0.019055	2.66	46.80	106.33	1.28

HEC-RAS Plan: (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
EJE R.RAMONETE	700	54.46	78.90	79.50	79.50	79.66	0.014174	1.78	30.55	101.38	1.04
EJE R.RAMONETE	700	124.46	78.90	79.64	79.74	80.00	0.022851	2.68	46.50	119.88	1.37
EJE R.RAMONETE	675	54.46	78.46	78.93	78.99	79.16	0.028040	2.14	25.47	107.14	1.40
EJE R.RAMONETE	675	124.46	78.46	79.13	79.20	79.45	0.020343	2.51	49.67	129.24	1.29
EJE R.RAMONETE	650	54.46	78.01	78.57	78.57	78.73	0.013525	1.78	30.52	97.17	1.02
EJE R.RAMONETE	650	124.46	78.01	78.80	78.81	79.07	0.011966	2.29	54.44	108.57	1.03
EJE R.RAMONETE	625	54.46	77.45	77.80	77.91	78.16	0.042044	2.66	20.48	84.22	1.72
EJE R.RAMONETE	625	124.46	77.45	77.98	78.15	78.54	0.038560	3.32	37.44	103.02	1.76
EJE R.RAMONETE	600	54.46	76.89	77.32	77.33	77.48	0.016282	1.80	30.19	109.17	1.10
EJE R.RAMONETE	600	124.46	76.89	77.48	77.55	77.81	0.019497	2.53	49.12	121.99	1.27
EJE R.RAMONETE	575	54.46	76.33	76.73	76.79	76.97	0.025392	2.19	24.86	93.83	1.36
EJE R.RAMONETE	575	124.46	76.33	76.94	77.03	77.32	0.019331	2.73	45.67	101.26	1.30
EJE R.RAMONETE	550	54.46	75.73	76.14	76.19	76.37	0.022561	2.13	25.62	92.63	1.29
EJE R.RAMONETE	550	124.46	75.73	76.31	76.44	76.76	0.025238	2.98	41.72	98.63	1.46
EJE R.RAMONETE	525	54.46	75.24	75.69	75.71	75.87	0.017540	1.88	28.98	104.34	1.14
EJE R.RAMONETE	525	124.46	75.24	75.87	75.93	76.18	0.018804	2.47	50.32	126.09	1.25
EJE R.RAMONETE	500	54.46	74.65	75.15	75.19	75.36	0.022519	2.07	26.34	99.01	1.28
EJE R.RAMONETE	500	124.46	74.65	75.34	75.42	75.70	0.019441	2.65	47.00	108.98	1.29
EJE R.RAMONETE	475	54.46	74.06	74.62	74.66	74.80	0.021406	1.88	28.91	120.13	1.23
EJE R.RAMONETE	475	124.46	74.06	74.76	74.86	75.14	0.025498	2.74	45.50	122.93	1.44
EJE R.RAMONETE	450	54.46	73.72	74.19	74.20	74.34	0.015669	1.74	31.30	115.95	1.07
EJE R.RAMONETE	450	124.46	73.72	74.38	74.41	74.62	0.014872	2.15	57.79	149.28	1.11
EJE R.RAMONETE	425	54.46	72.92	73.46	73.55	73.78	0.031443	2.54	21.42	75.83	1.53
EJE R.RAMONETE	425	124.46	72.92	73.70	73.85	74.14	0.022937	2.95	42.14	93.82	1.41
EJE R.RAMONETE	400	54.46	72.28	72.92	72.97	73.16	0.018815	2.16	25.21	77.60	1.21
EJE R.RAMONETE	400	124.46	72.28	73.11	73.26	73.57	0.022491	3.01	41.38	88.40	1.40
EJE R.RAMONETE	375	54.46	71.78	72.29	72.37	72.58	0.029261	2.36	23.05	86.41	1.46
EJE R.RAMONETE	375	124.46	71.78	72.48	72.63	72.95	0.027705	3.03	41.02	101.24	1.52
EJE R.RAMONETE	350	54.46	71.08	71.53	71.60	71.78	0.033463	2.22	24.50	111.26	1.51
EJE R.RAMONETE	350	124.46	71.08	71.67	71.81	72.16	0.036191	3.10	40.17	117.49	1.69
EJE R.RAMONETE	325	54.46	70.35	71.09	71.12	71.27	0.018501	1.85	29.44	112.85	1.16
EJE R.RAMONETE	325	124.46	70.35	71.31	71.33	71.56	0.013541	2.22	56.04	129.19	1.08
EJE R.RAMONETE	300	54.46	69.97	70.53	70.57	70.75	0.023044	2.09	26.07	98.21	1.29
EJE R.RAMONETE	300	124.46	69.97	70.71	70.82	71.11	0.023532	2.81	44.27	108.53	1.40
EJE R.RAMONETE	275	54.46	69.25	69.95	70.01	70.21	0.020373	2.23	24.40	75.91	1.26
EJE R.RAMONETE	275	124.46	69.25	70.22	70.30	70.55	0.019987	2.57	48.47	120.42	1.29
EJE R.RAMONETE	250	54.46	68.84	69.39	69.47	69.66	0.022969	2.31	23.60	76.43	1.33
EJE R.RAMONETE	250	124.46	68.84	69.62	69.73	70.01	0.022833	2.78	44.76	109.07	1.39
EJE R.RAMONETE	225	54.46	68.18	68.97	69.00	69.18	0.015257	2.01	27.03	78.88	1.10
EJE R.RAMONETE	225	124.46	68.18	69.22	69.27	69.54	0.014621	2.51	49.60	100.84	1.14
EJE R.RAMONETE	200	54.46	67.57	68.09	68.25	68.59	0.036912	3.11	17.49	51.56	1.71
EJE R.RAMONETE	200	124.46	67.57	68.40	68.59	68.98	0.034508	3.36	37.05	92.68	1.70
EJE R.RAMONETE	175	54.46	67.04	67.55	67.62	67.86	0.020219	2.46	22.12	59.05	1.28
EJE R.RAMONETE	175	124.46	67.04	67.85	67.99	68.31	0.019160	3.01	41.39	78.52	1.32
EJE R.RAMONETE	150	54.46	66.36	66.90	67.00	67.26	0.029062	2.65	20.57	64.66	1.50
EJE R.RAMONETE	150	124.46	66.36	67.12	67.31	67.73	0.026971	3.45	36.03	71.81	1.56
EJE R.RAMONETE	125	54.46	65.79	66.40	66.45	66.69	0.016975	2.39	22.83	56.01	1.19
EJE R.RAMONETE	125	124.46	65.79	66.68	66.79	67.20	0.015915	3.18	39.18	59.56	1.25
EJE R.RAMONETE	100	54.46	65.22	65.70	65.82	66.11	0.031736	2.84	19.15	57.74	1.58
EJE R.RAMONETE	100	124.46	65.22	65.93	66.14	66.64	0.031312	3.73	33.36	66.27	1.68
EJE R.RAMONETE	75	54.46	64.65	65.30	65.33	65.52	0.015211	2.08	26.19	72.74	1.11
EJE R.RAMONETE	75	124.46	64.65	65.51	65.62	65.93	0.020166	2.86	43.45	92.24	1.33
EJE R.RAMONETE	50	54.46	64.18	64.69	64.77	65.01	0.028124	2.50	21.80	72.98	1.46
EJE R.RAMONETE	50	124.46	64.18	64.94	65.07	65.40	0.022177	3.00	41.46	88.12	1.40
EJE R.RAMONETE	25	54.46	63.73	64.23	64.26	64.43	0.017434	1.98	27.55	91.50	1.15

HEC-RAS Plan: (Continued)

Reach	River Sta	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)	
EJE R.RAMONETE	25	124.46	63.73	64.39	64.50	64.80	0.024504	2.86	43.44	106.76	1.43
EJE R.RAMONETE	0	54.46	63.19	63.63	63.71	63.91	0.024040	2.33	23.38	77.28	1.35
EJE R.RAMONETE	0	124.46	63.19	63.88	63.97	64.27	0.018084	2.76	45.08	93.22	1.27

Errors Warnings and Notes for Plan :

Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1375 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1375 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1350 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1350 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1325 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1325 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1300 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1300 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current

Errors Warnings and Notes for Plan : (Continued)

	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1275 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program used critical depth for the water
	surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Warning:	During the standard step iterations, when the assumed water surface
	was set equal to critical depth, the calculated water surface came
	back below critical depth. This indicates that there is not a valid
	subcritical answer. The program defaulted to critical depth.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1275 Profile: Q (T=500años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program used critical depth for the water
	surface and continued on with the calculations.
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1250 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1250 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1225 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.

Errors Warnings and Notes for Plan : (Continued)

Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1225 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1200 Profile: Q (T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1200 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1175 Profile: Q (T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1175 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1150 Profile: Q (T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1150 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.

Errors Warnings and Notes for Plan : (Continued)

	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1125 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1125 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1100 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1100 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1075 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1075 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1050 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1050 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1025 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified

Errors Warnings and Notes for Plan : (Continued)

	number of iterations. The program selected the water surface that
	had the least amount of error between computed and assumed
	values.
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1025 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1000 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 1000 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 975 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program used critical depth for the water
	surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Warning:	During the standard step iterations, when the assumed water surface
	was set equal to critical depth, the calculated water surface came
	back below critical depth. This indicates that there is not a valid
	subcritical answer. The program defaulted to critical depth.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 975 Profile: Q (T=500años)

Errors Warnings and Notes for Plan : (Continued)

Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program used critical depth for the water
	surface and continued on with the calculations.
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Warning:	During the standard step iterations, when the assumed water surface
	was set equal to critical depth, the calculated water surface came
	back below critical depth. This indicates that there is not a valid
	subcritical answer. The program defaulted to critical depth.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 950 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 950 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 925 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 925 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 900 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 900 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 875 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional

Errors Warnings and Notes for Plan : (Continued)

	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 875 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 850 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 850 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 825 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 825 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 800 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 800 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 775 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 775 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.

Errors Warnings and Notes for Plan : (Continued)

Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 750 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 750 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 725 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 725 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 700 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 700 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 675 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate

Errors Warnings and Notes for Plan : (Continued)

	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 675 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 650 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program used critical depth for the water
	surface and continued on with the calculations.
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 650 Profile: Q (T=500años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program selected the water surface that
	had the least amount of error between computed and assumed
	values.
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 625 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 625 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the

Errors Warnings and Notes for Plan : (Continued)

	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 600 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 600 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 575 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 575 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 550 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 550 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 525 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.

Errors Warnings and Notes for Plan : (Continued)

Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 525 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 500 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 500 Profile: Q (T=500años)
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 475 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 475 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 450 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 450 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional

Errors Warnings and Notes for Plan : (Continued)

	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 425 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 425 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 400 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 400 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 375 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 375 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 350 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional

Errors Warnings and Notes for Plan : (Continued)

	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 350 Profile: Q (T=500años)
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 325 Profile: Q (T=100años)
Warning:	The energy equation could not be balanced within the specified
	number of iterations. The program selected the water surface that
	had the least amount of error between computed and assumed
	values.
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 325 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 300 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 300 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 275 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 275 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 250 Profile: Q (T=100años)

Errors Warnings and Notes for Plan : (Continued)

Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 250 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 225 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 225 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 200 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 200 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 175 Profile: Q (T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 175 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.

Errors Warnings and Notes for Plan : (Continued)

Warning:	The cross-section end points had to be extended vertically for the
	computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 150 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 150 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 125 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 125 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 100 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 100 Profile: Q (T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 75 Profile: Q (T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream
	conveyance) is less than 0.7 or greater than 1.4. This may indicate
	the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 75 Profile: Q (T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This
	may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional

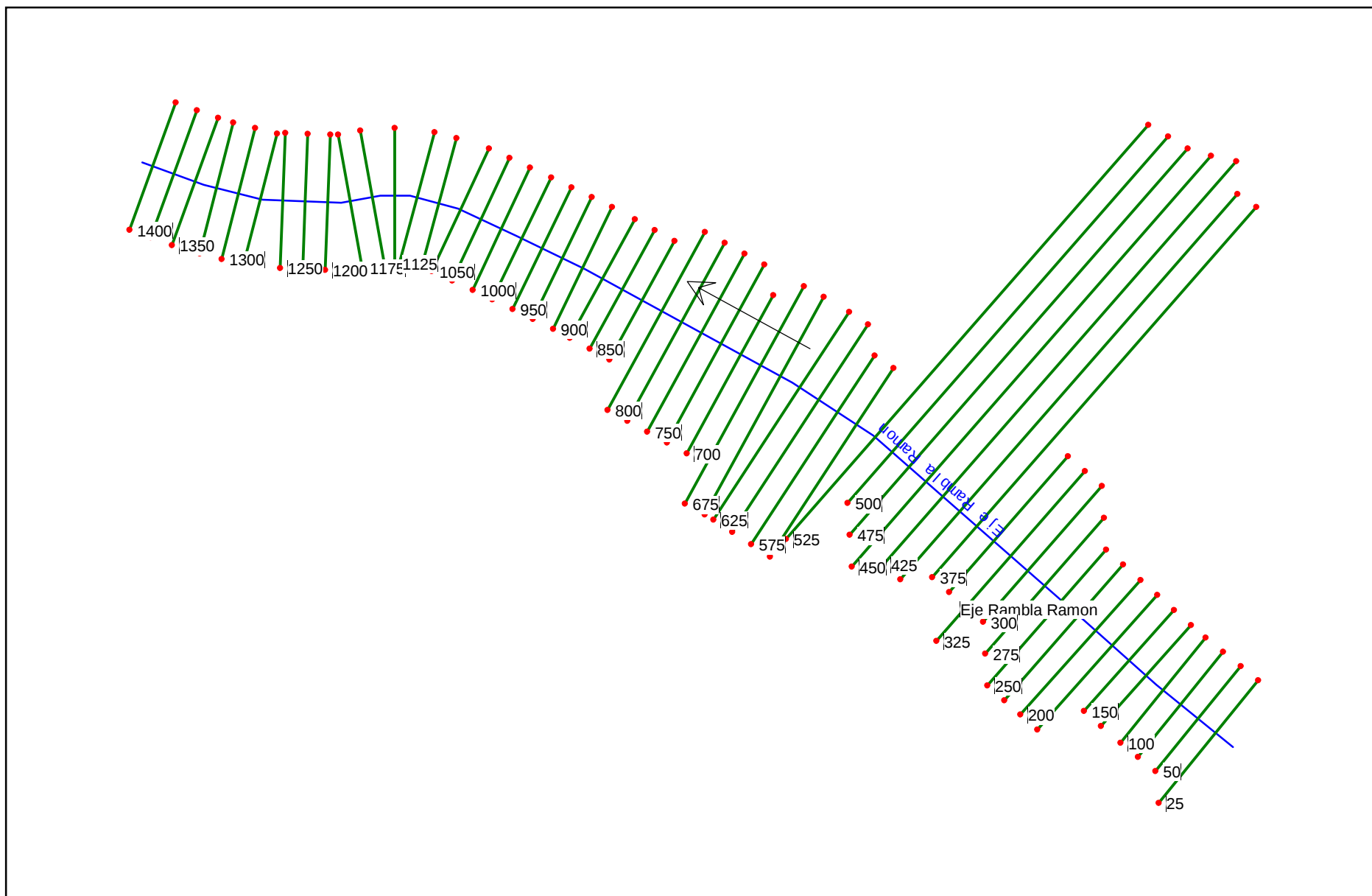
Errors Warnings and Notes for Plan : (Continued)

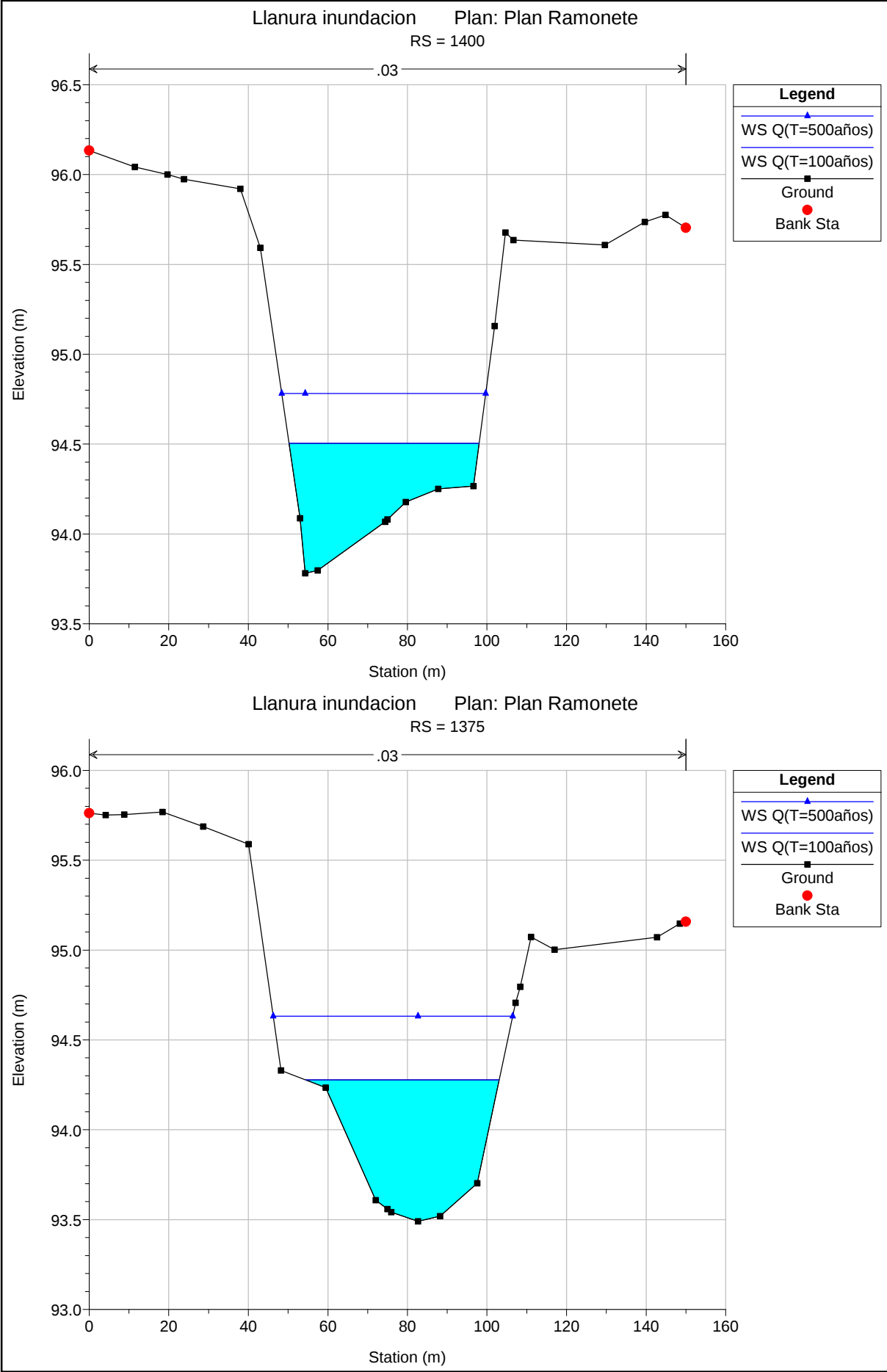
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 50 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 50 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 25 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 25 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 0 Profile: Q (T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.
Location:	River: EJE R.RAMONETE Reach: EJE R.RAMONETE RS: 0 Profile: Q (T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current
	and previous cross section. This may indicate the need for additional
	cross sections.

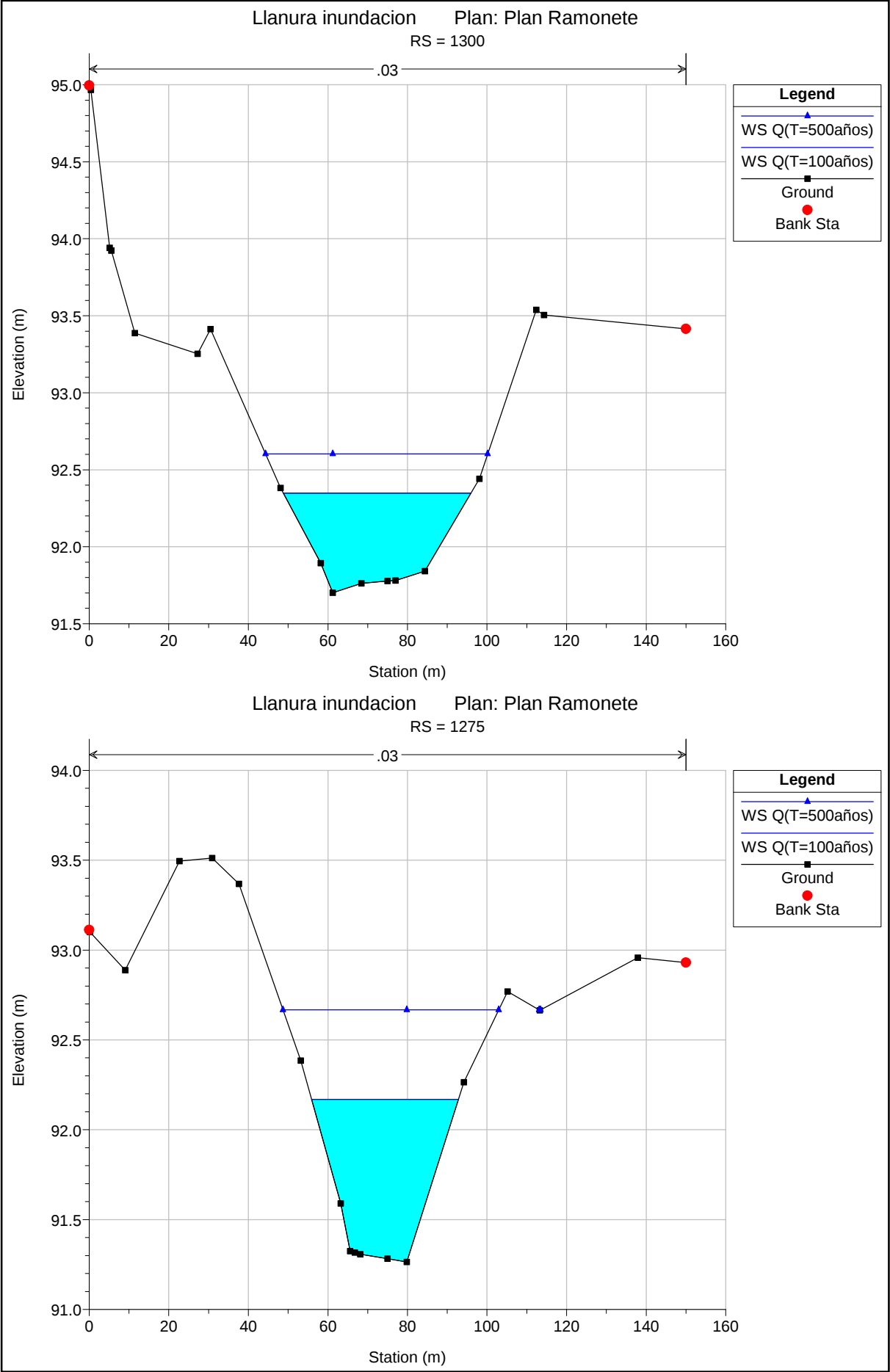


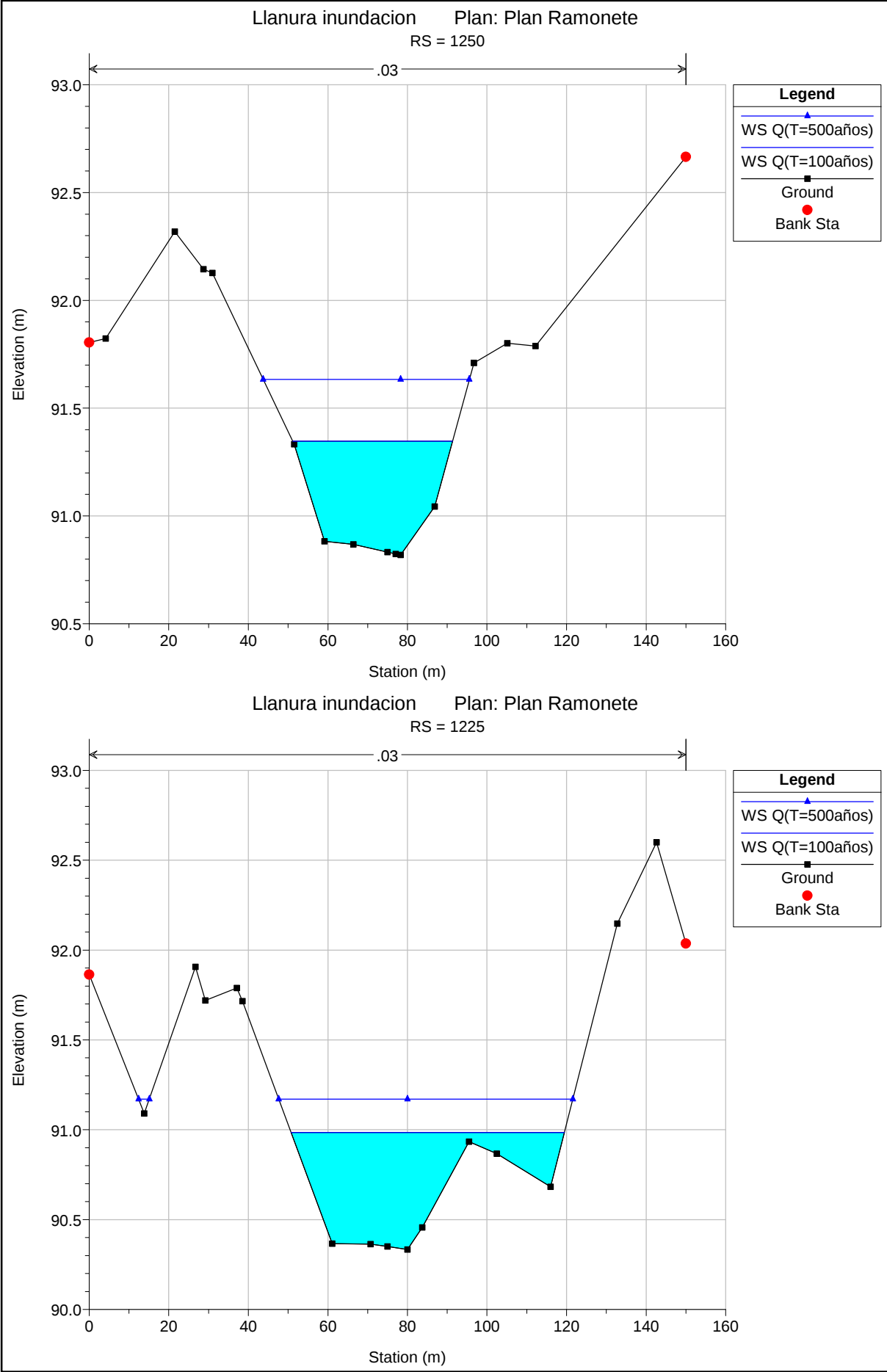
APÉNDICE 3:

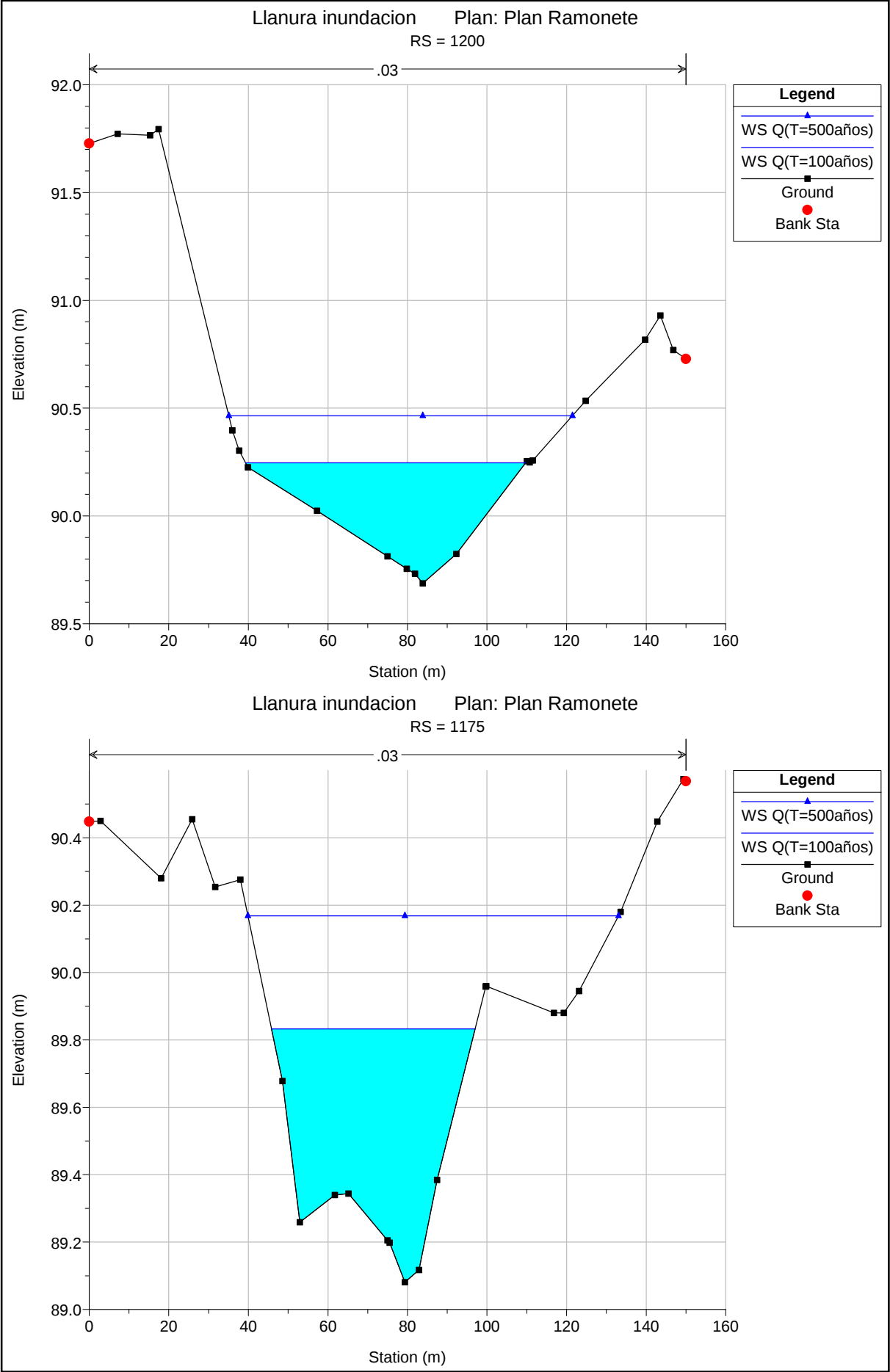
CÁLCULOS HEC-RAS SITUACIÓN TRAS TERRAPLENADO

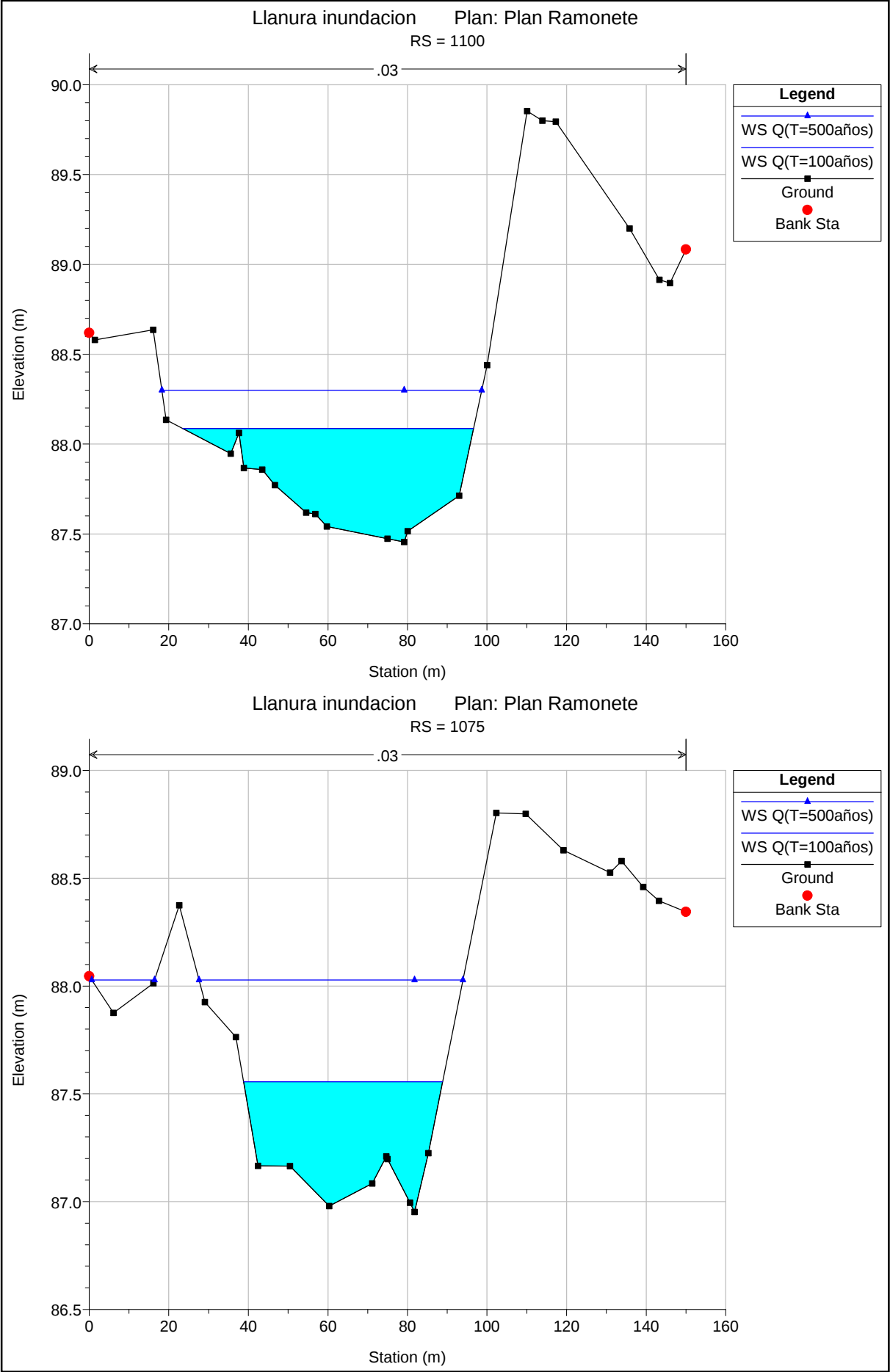


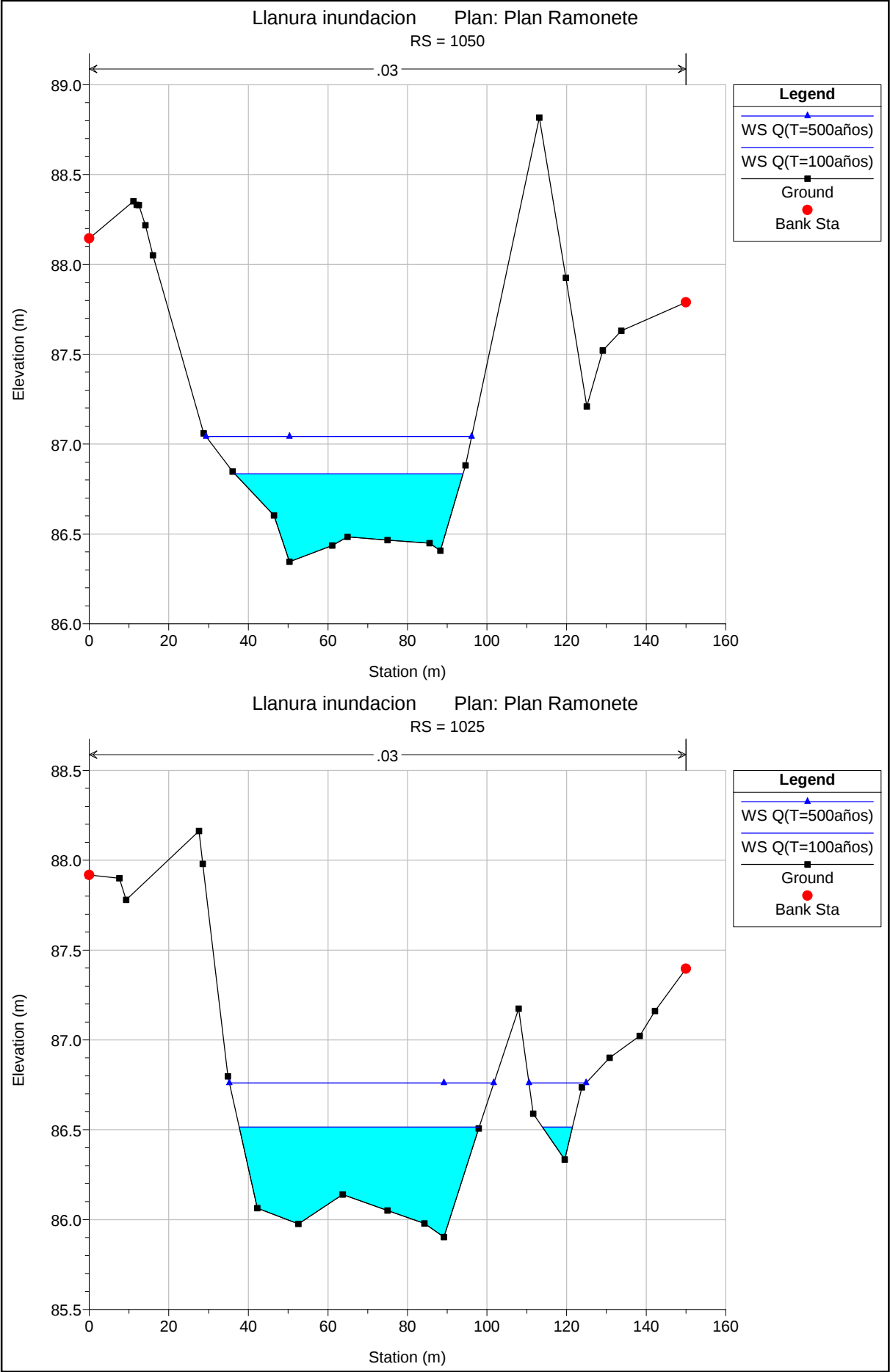


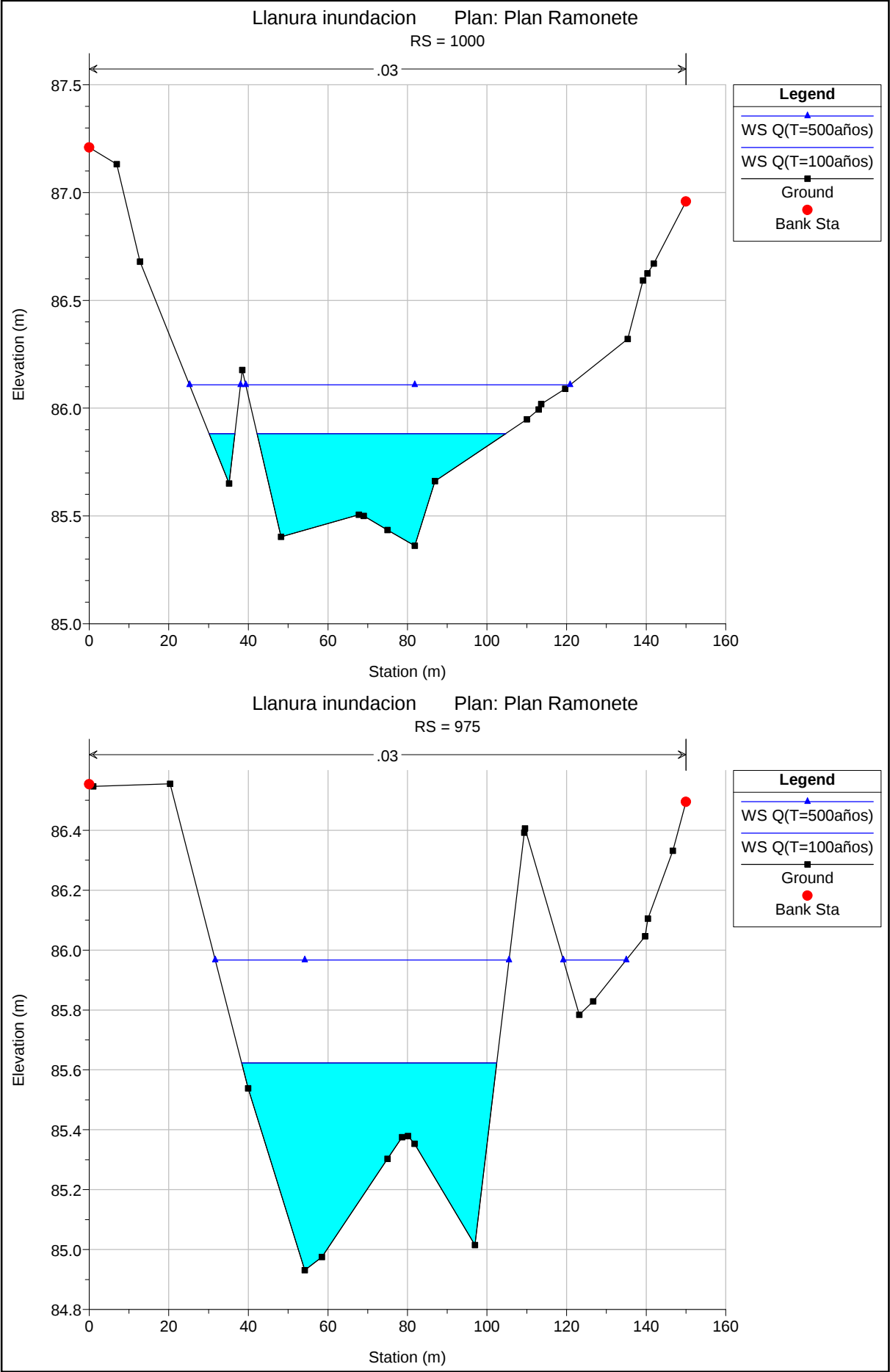


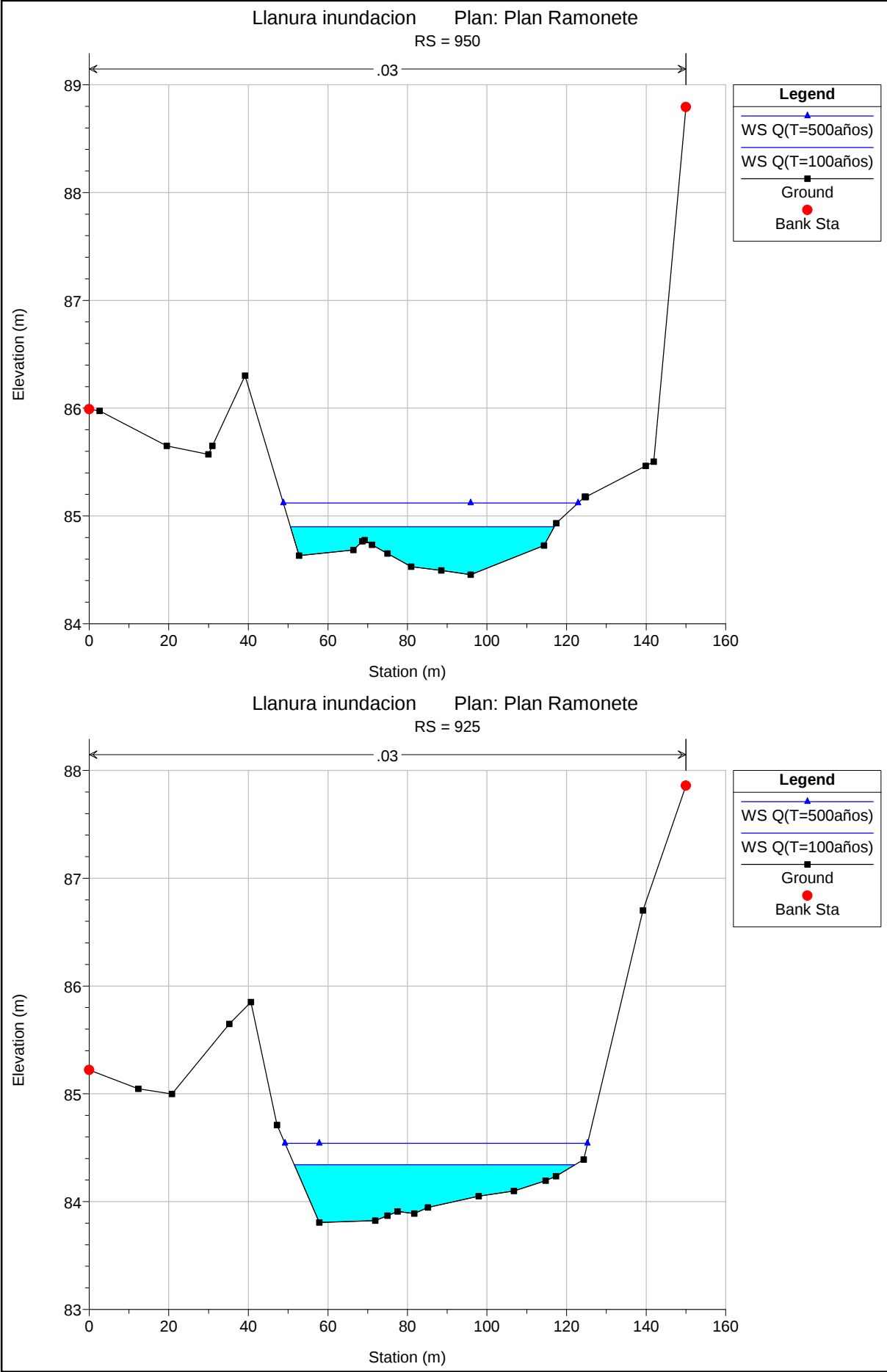


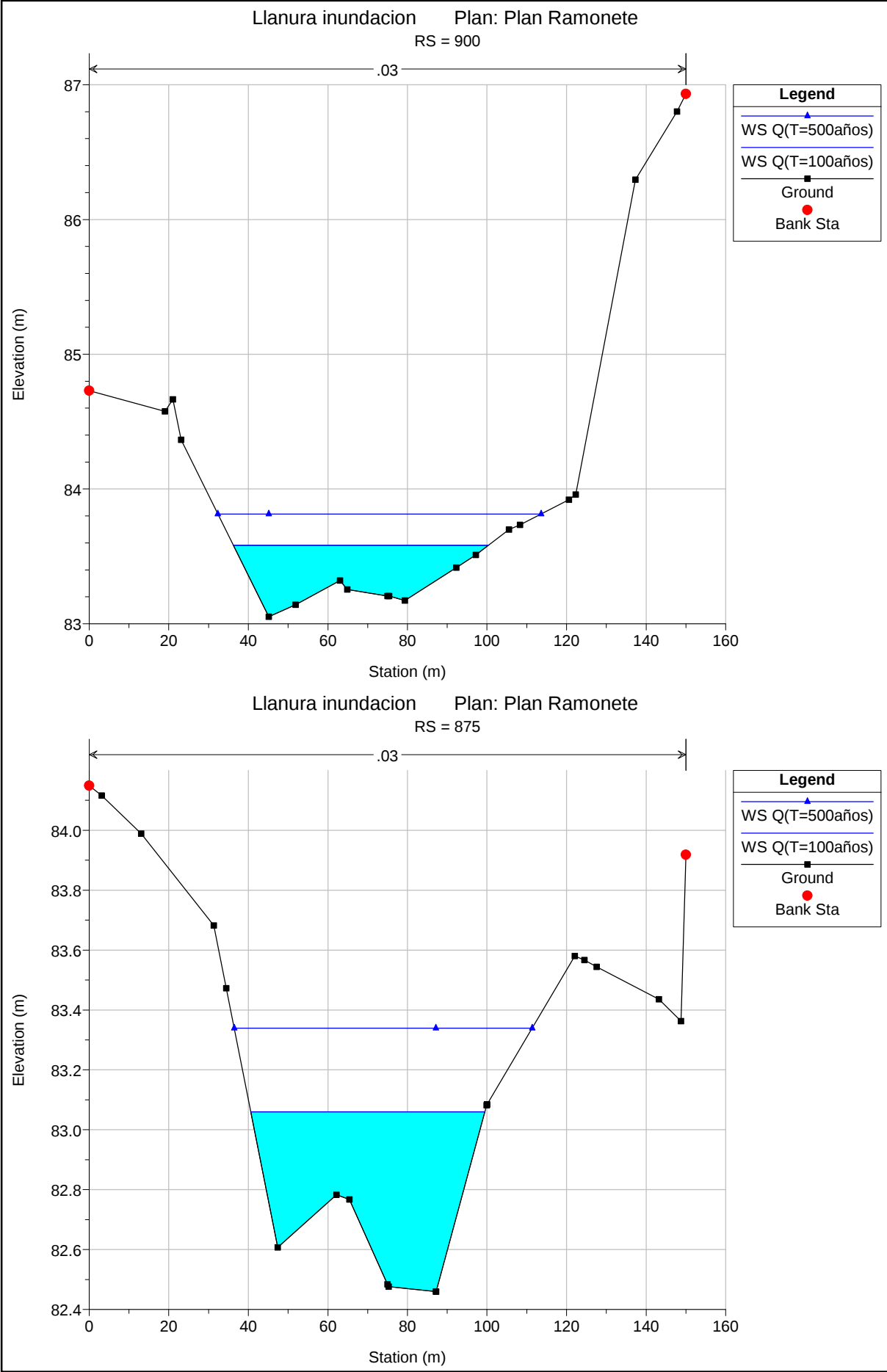


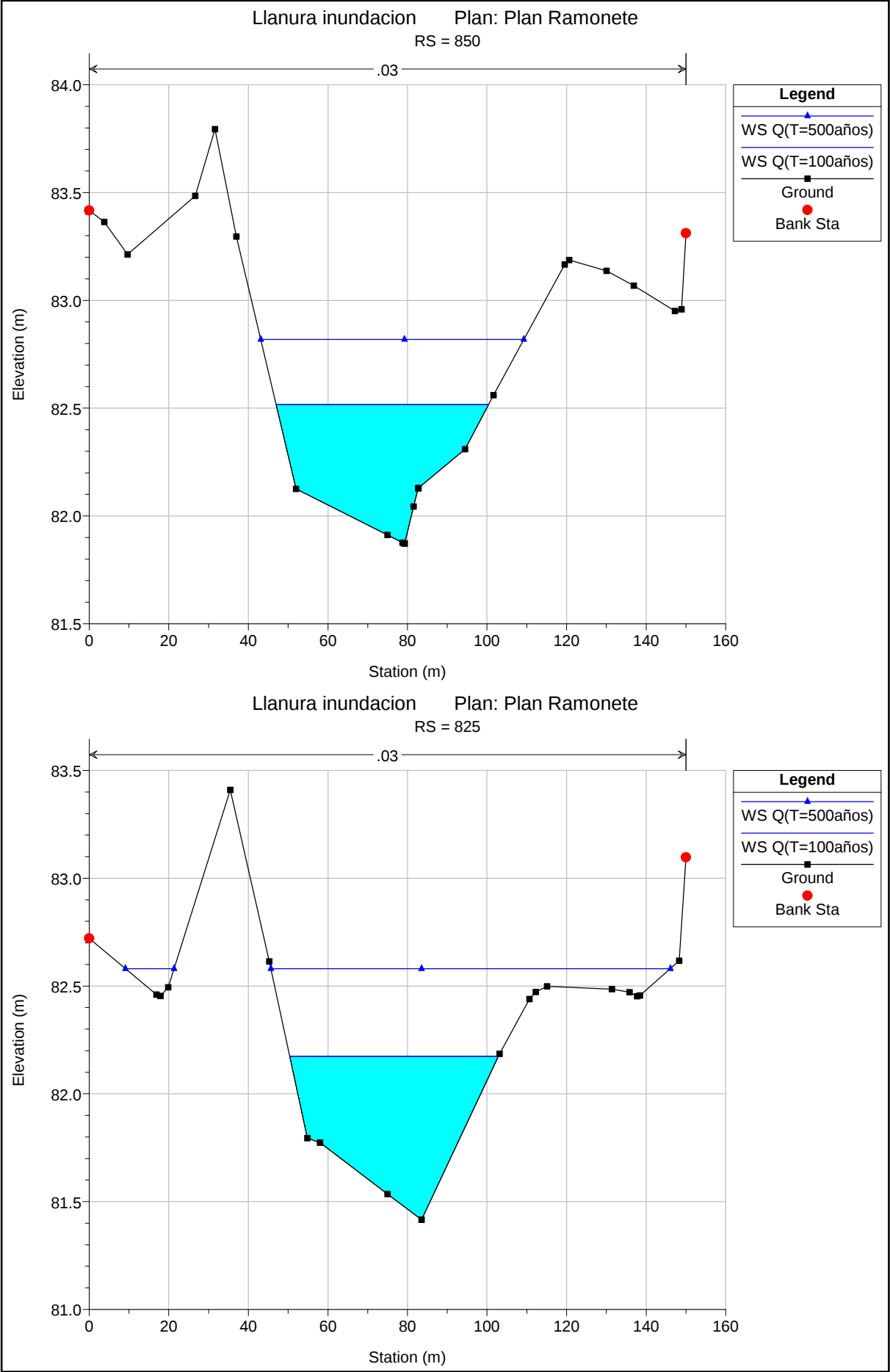


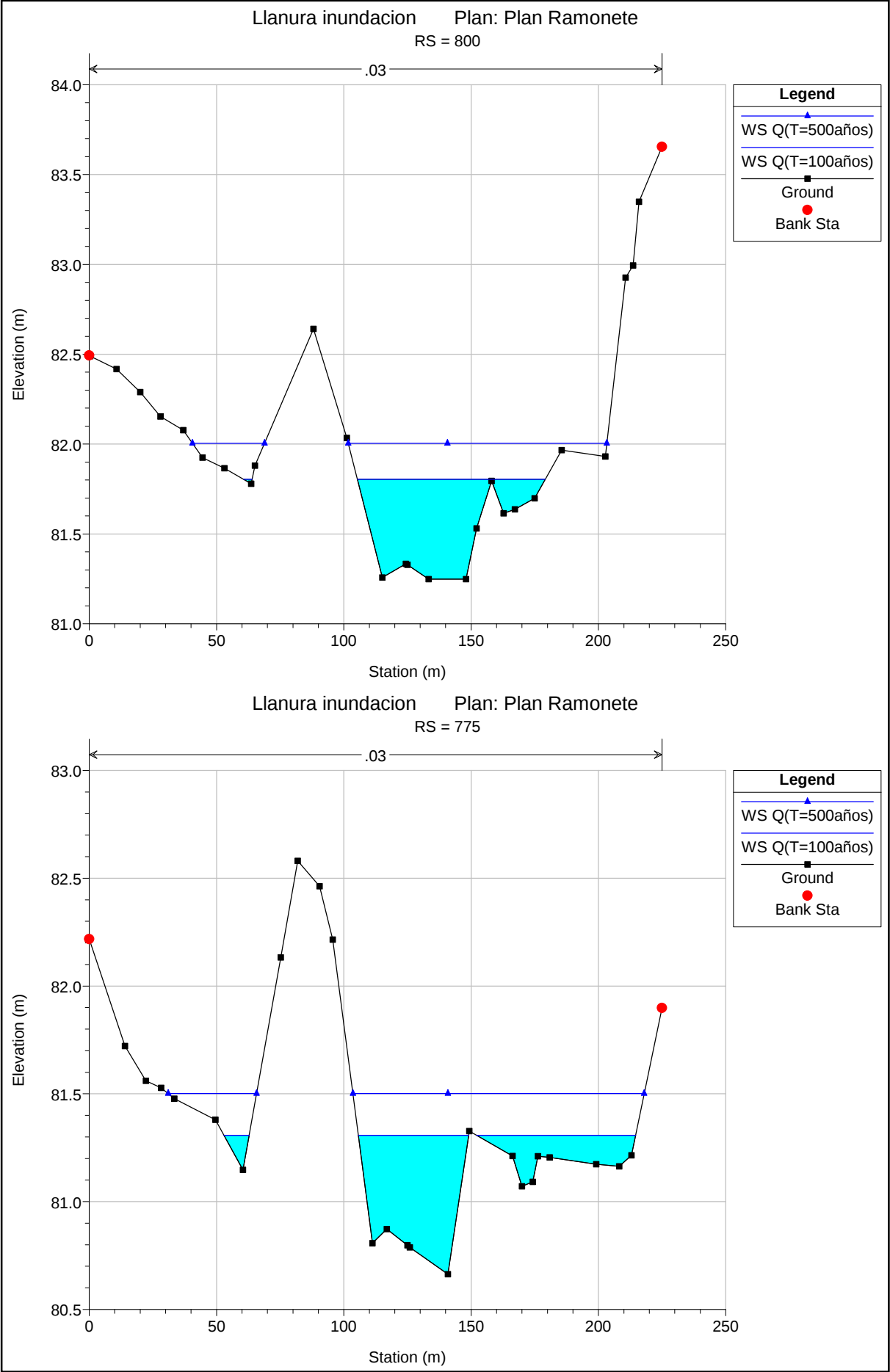


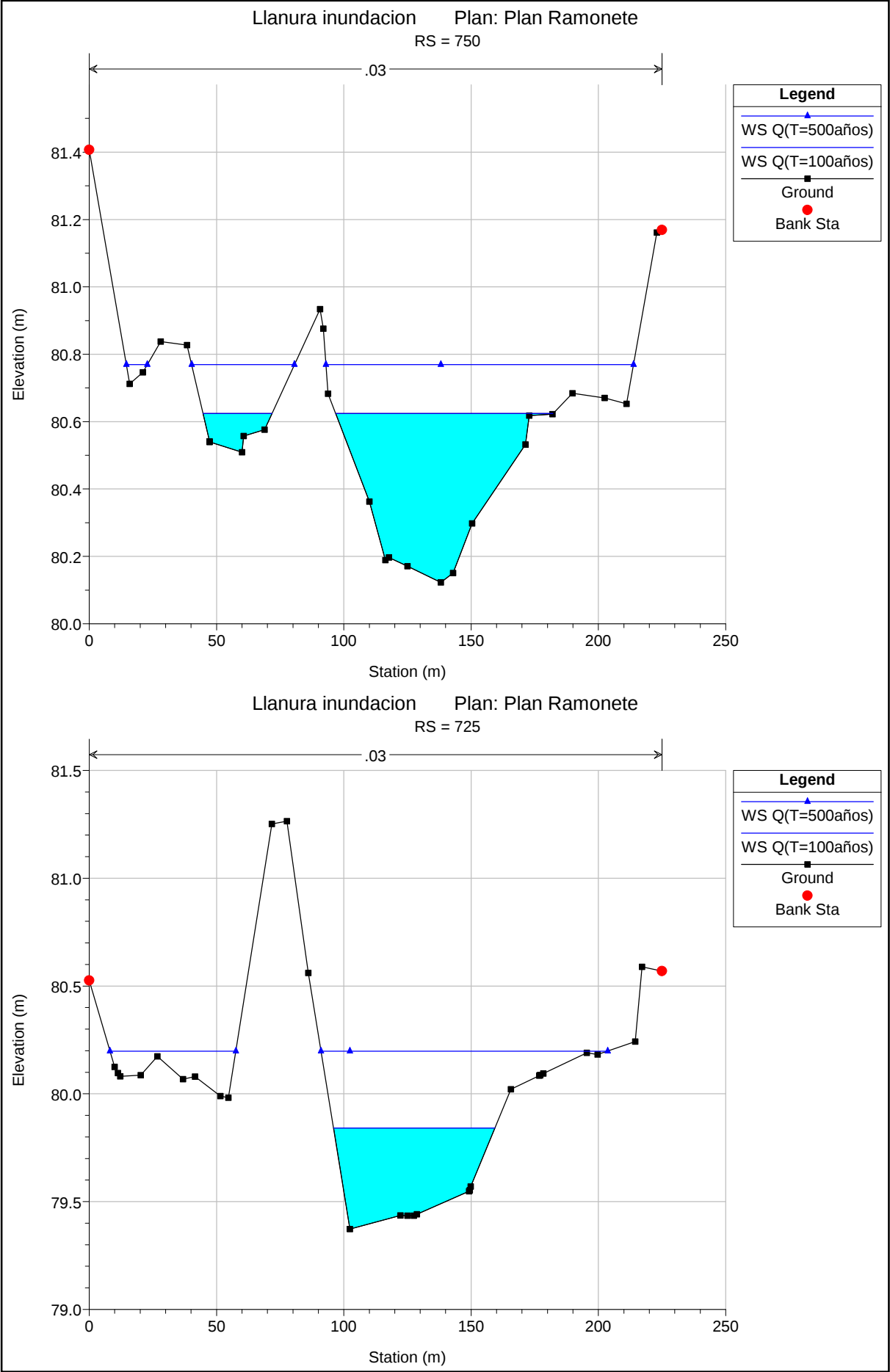


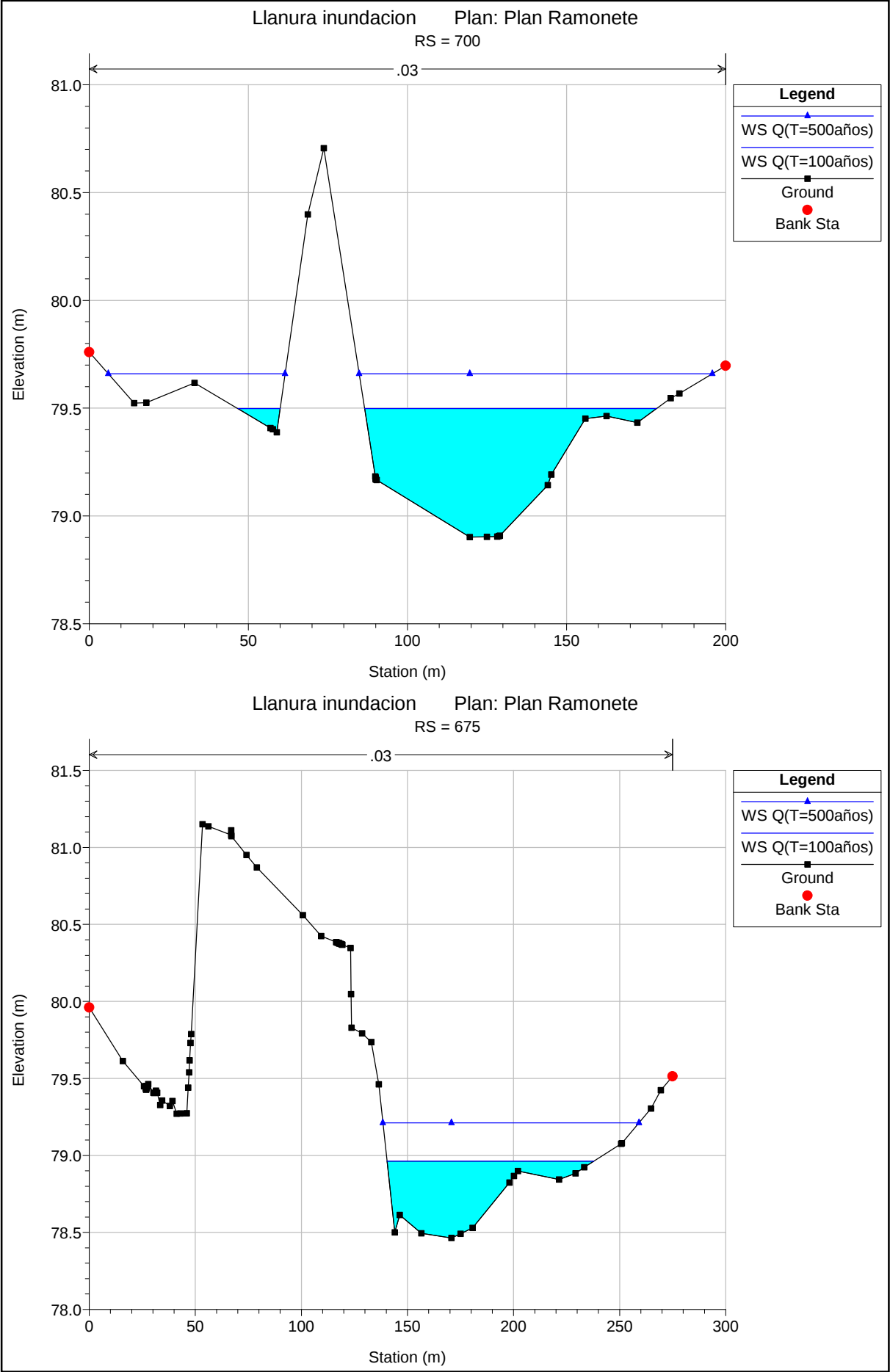


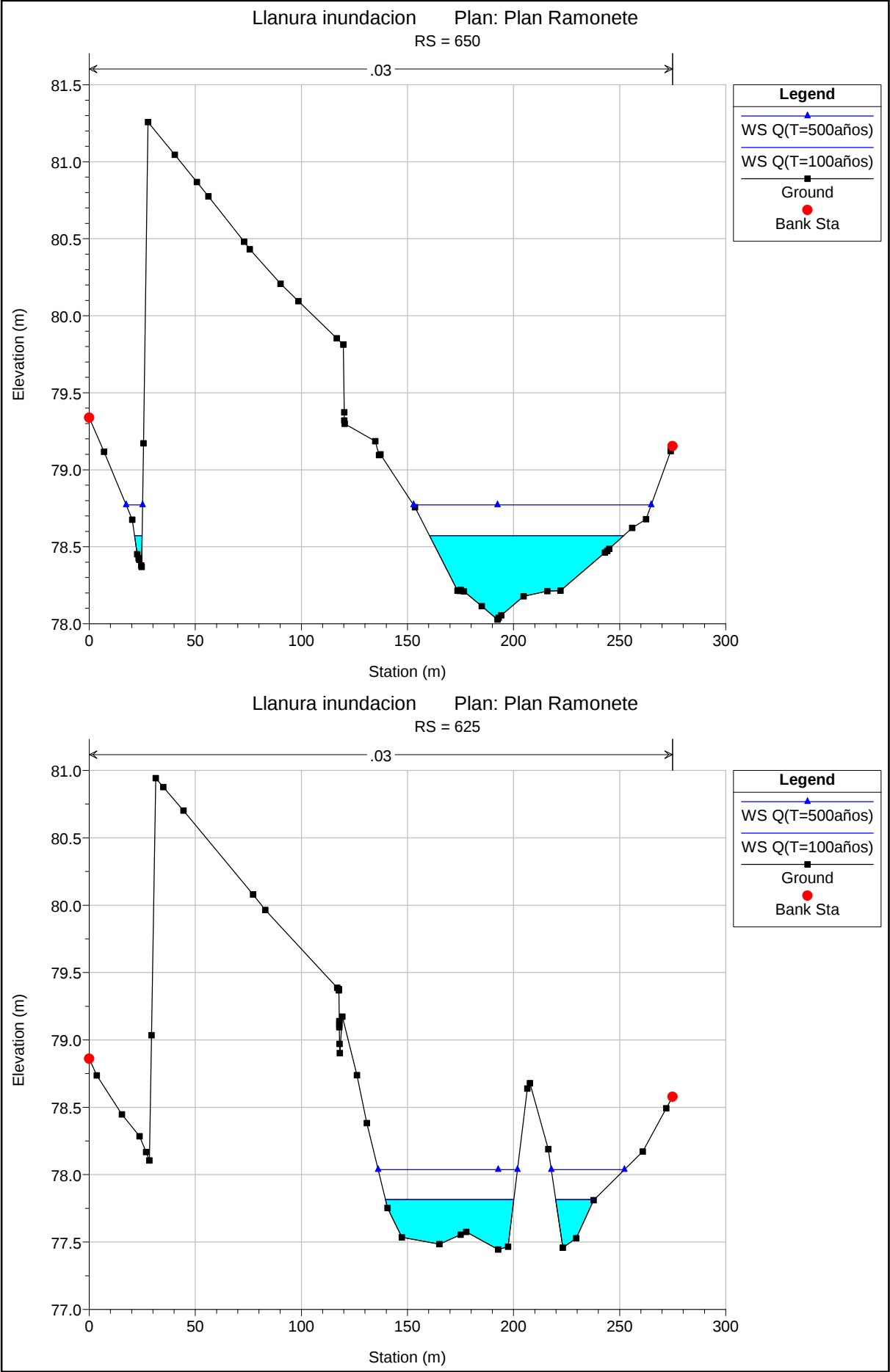


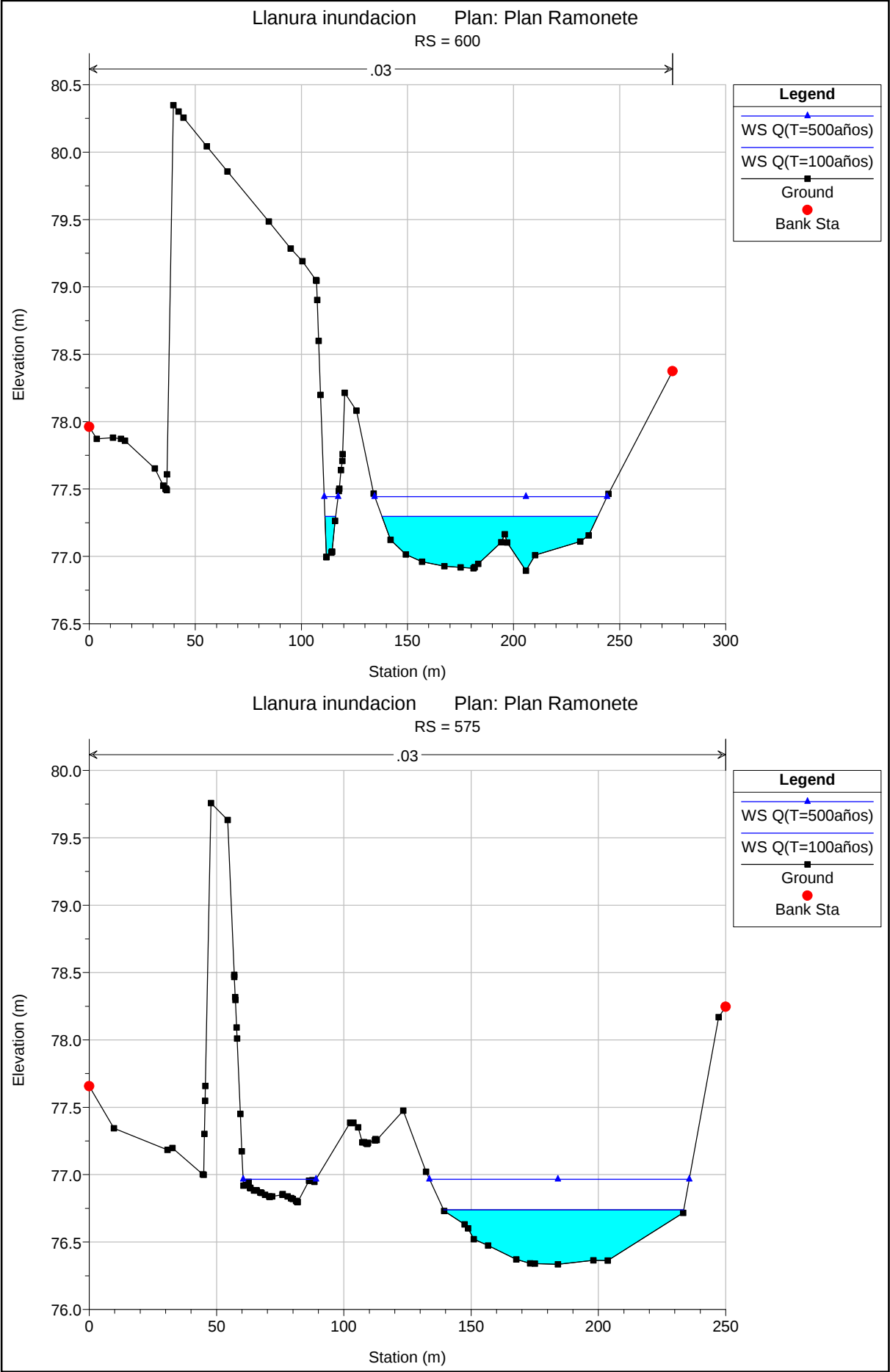












Llanura inundacion

Plan: Plan Ramonete

RS = 575

Elevation (m)

Station (m)

Legend

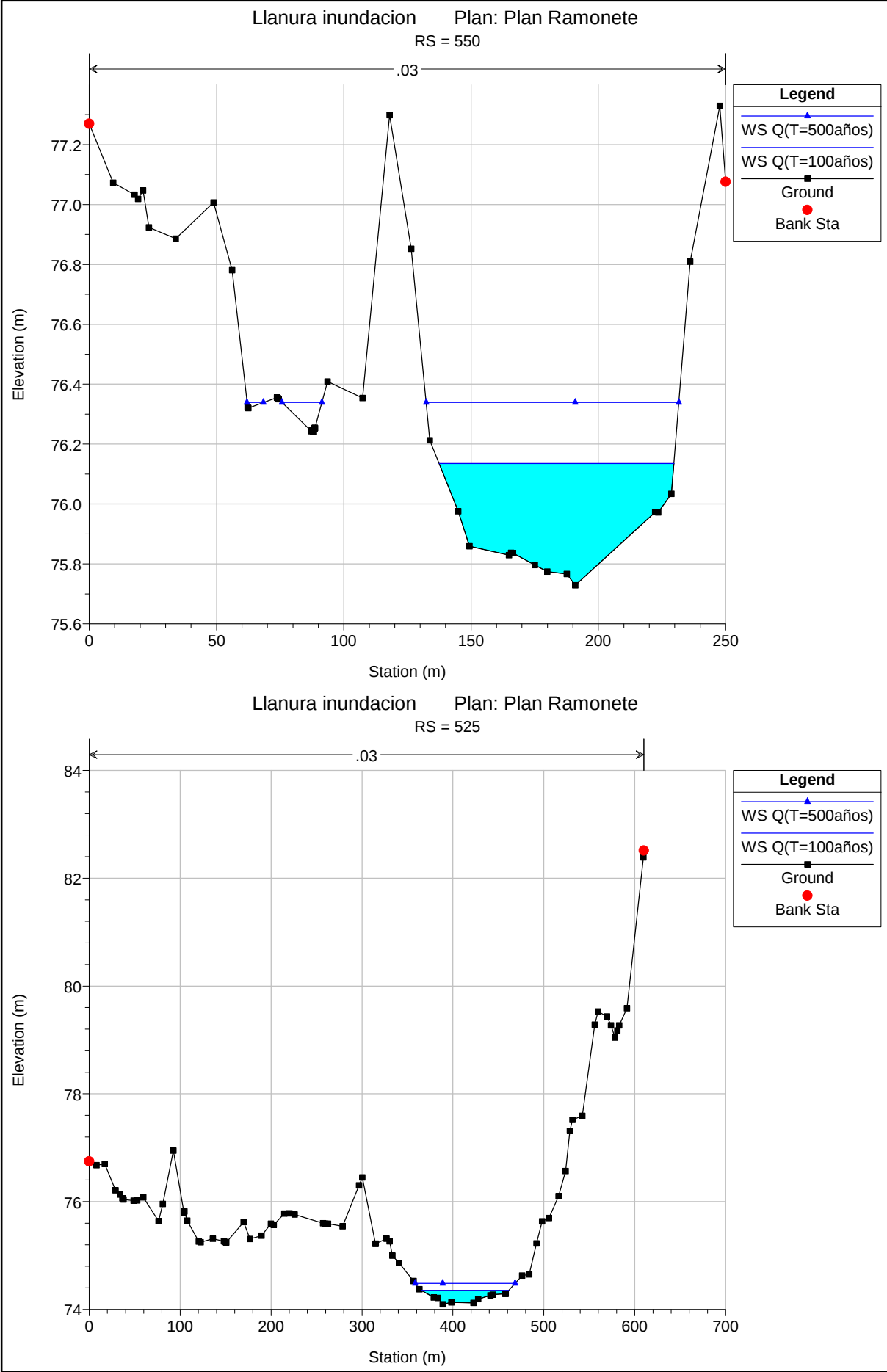
WS Q(T=500años)

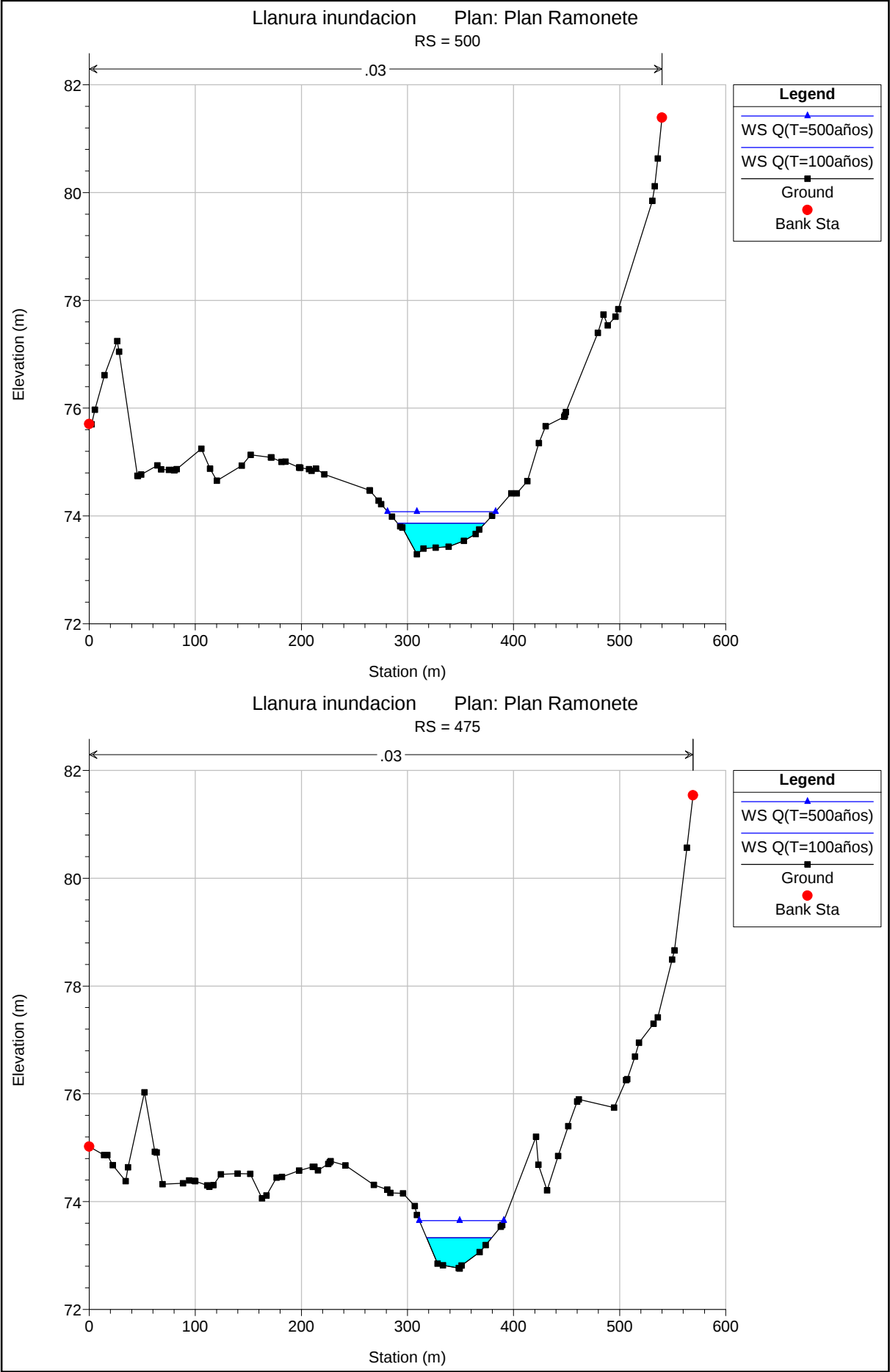
WS Q(T=100años)

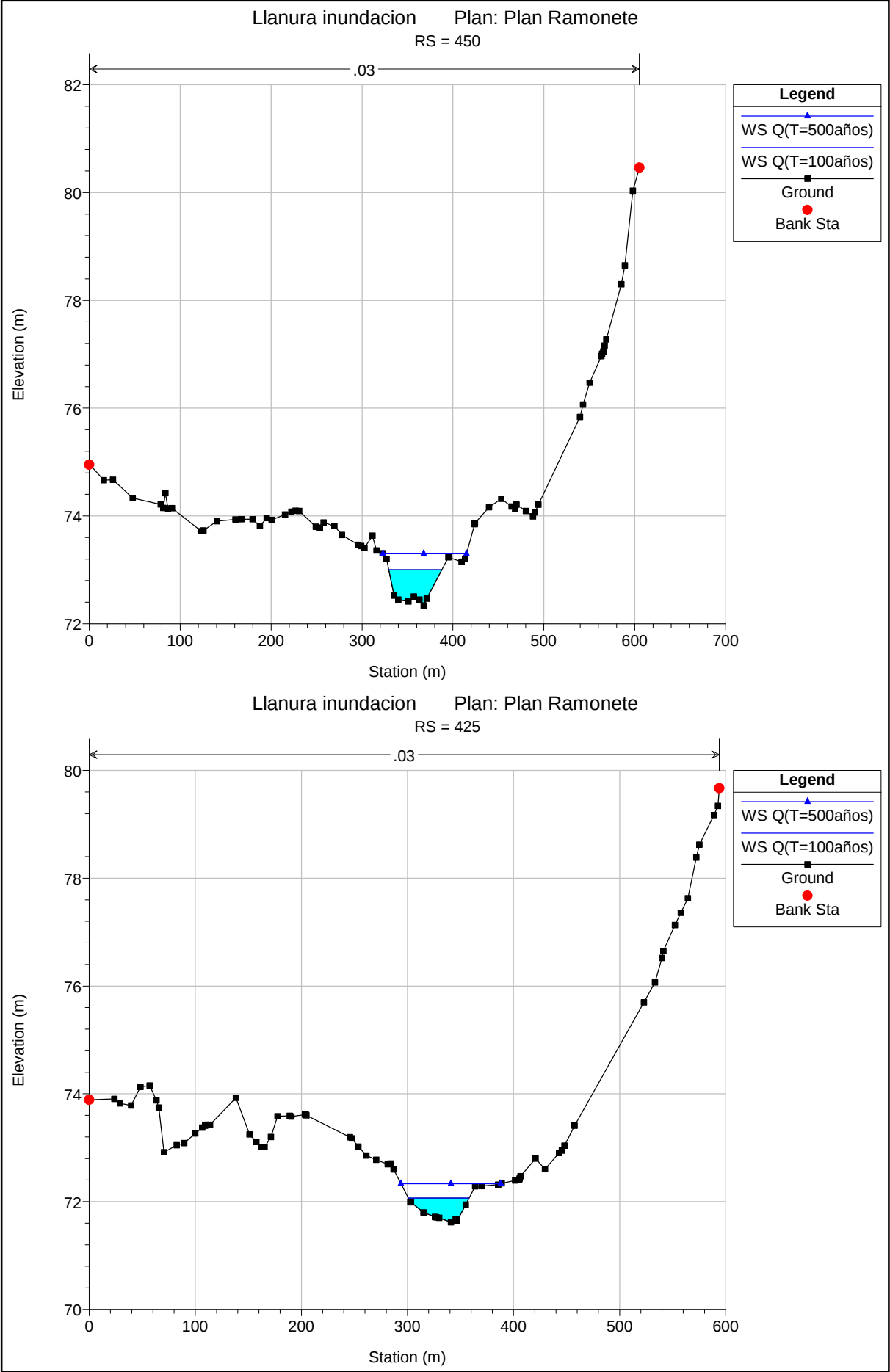
Ground

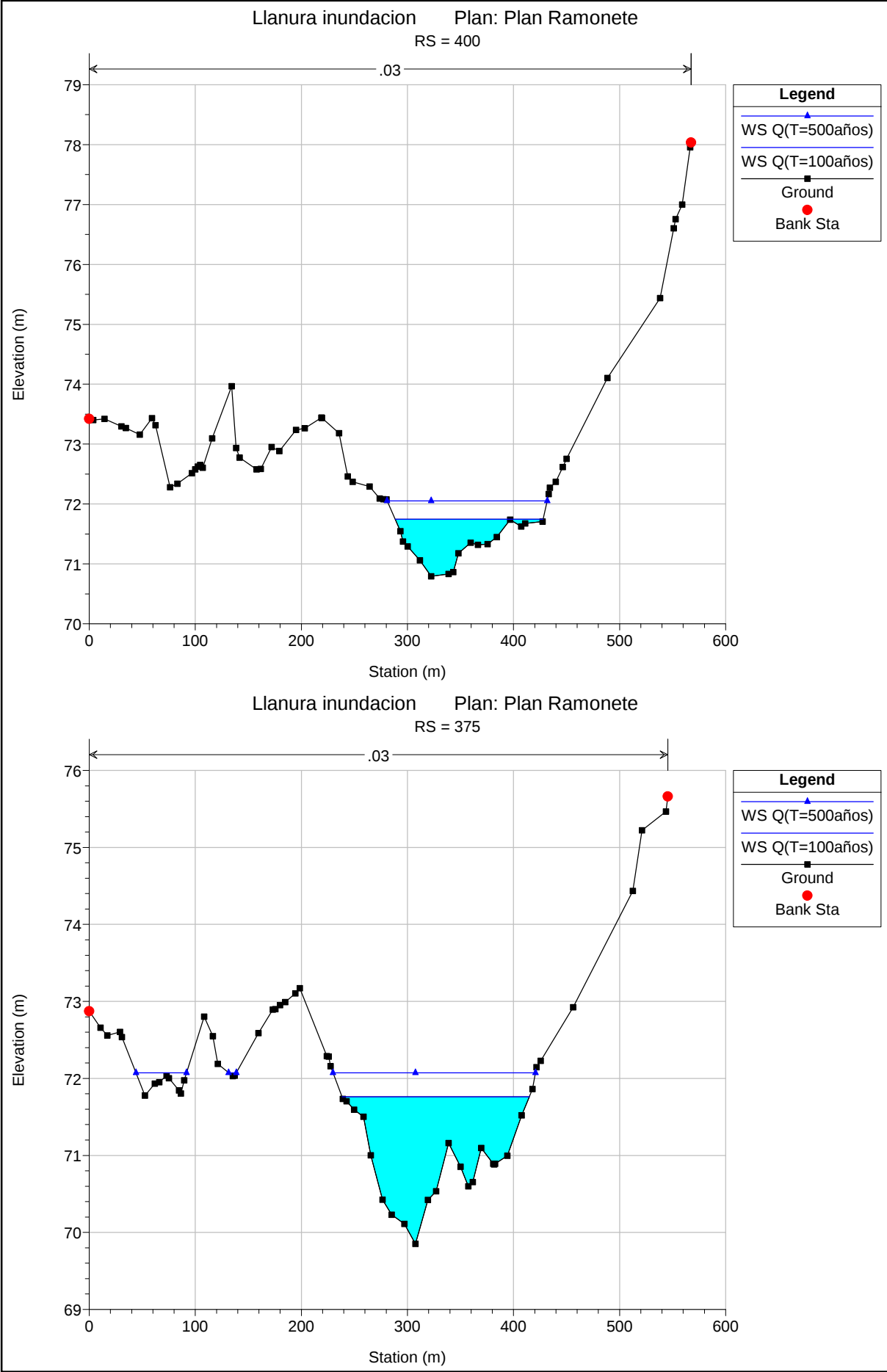
Bank Sta

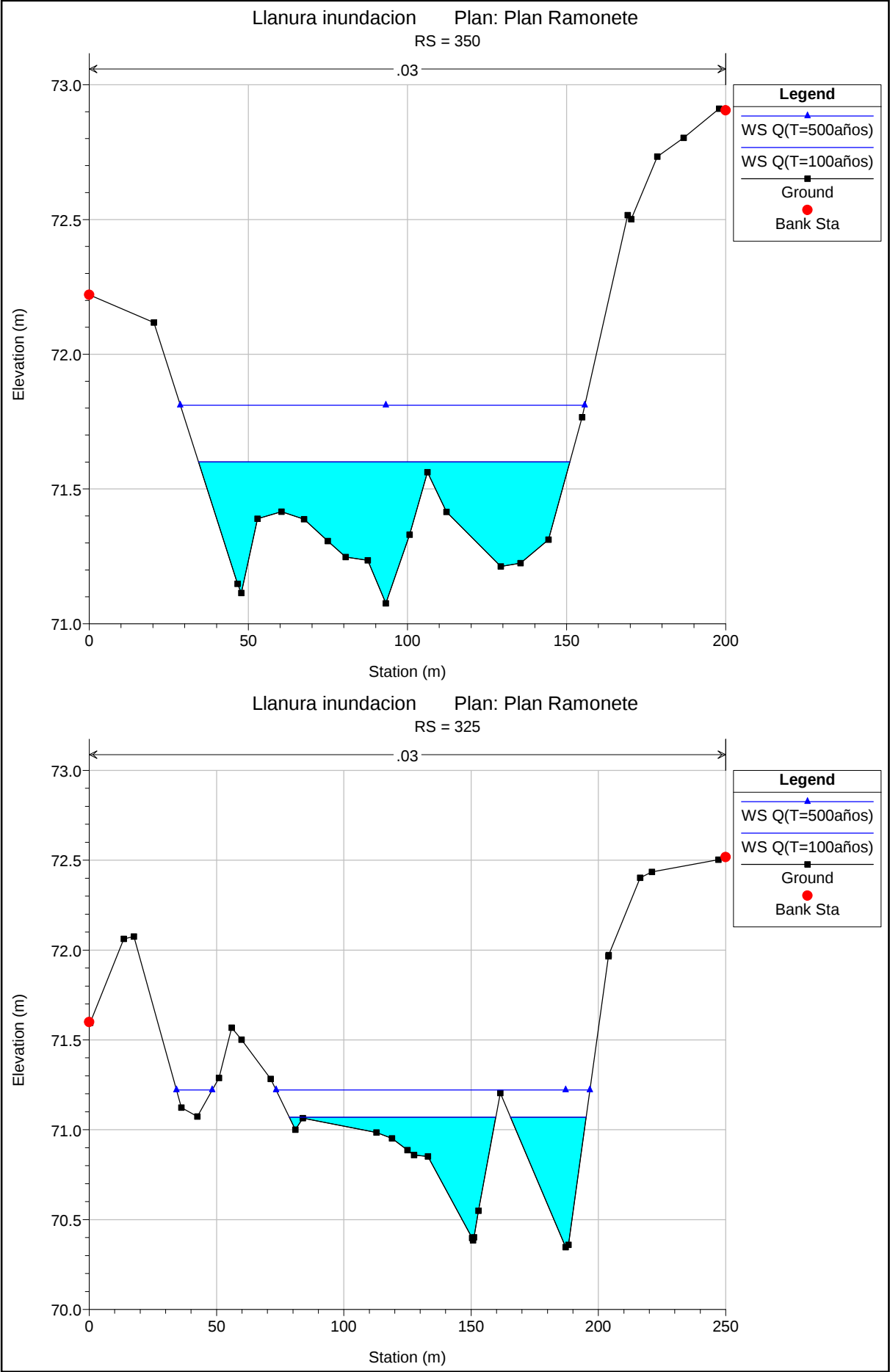
← .03 →

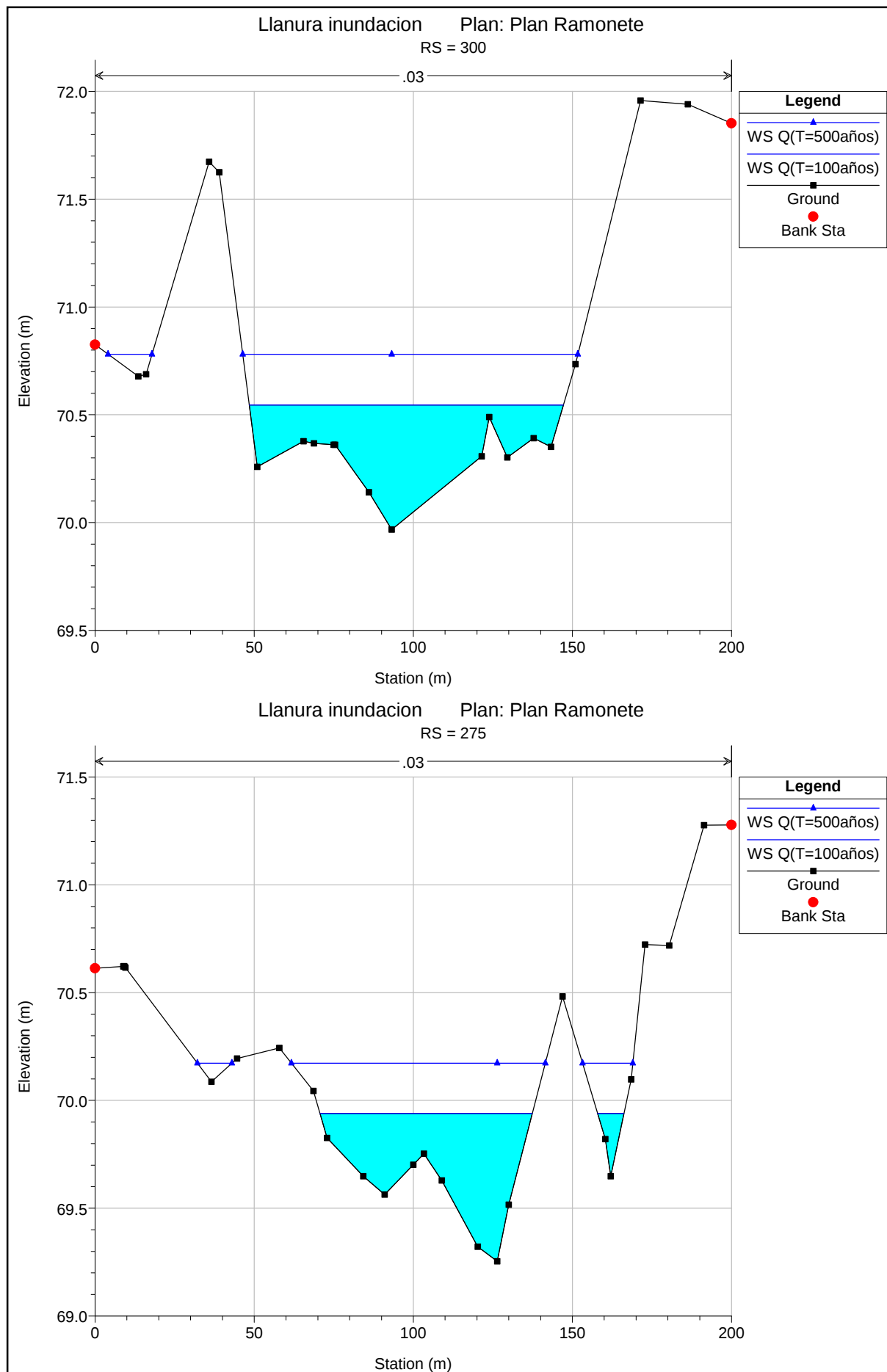


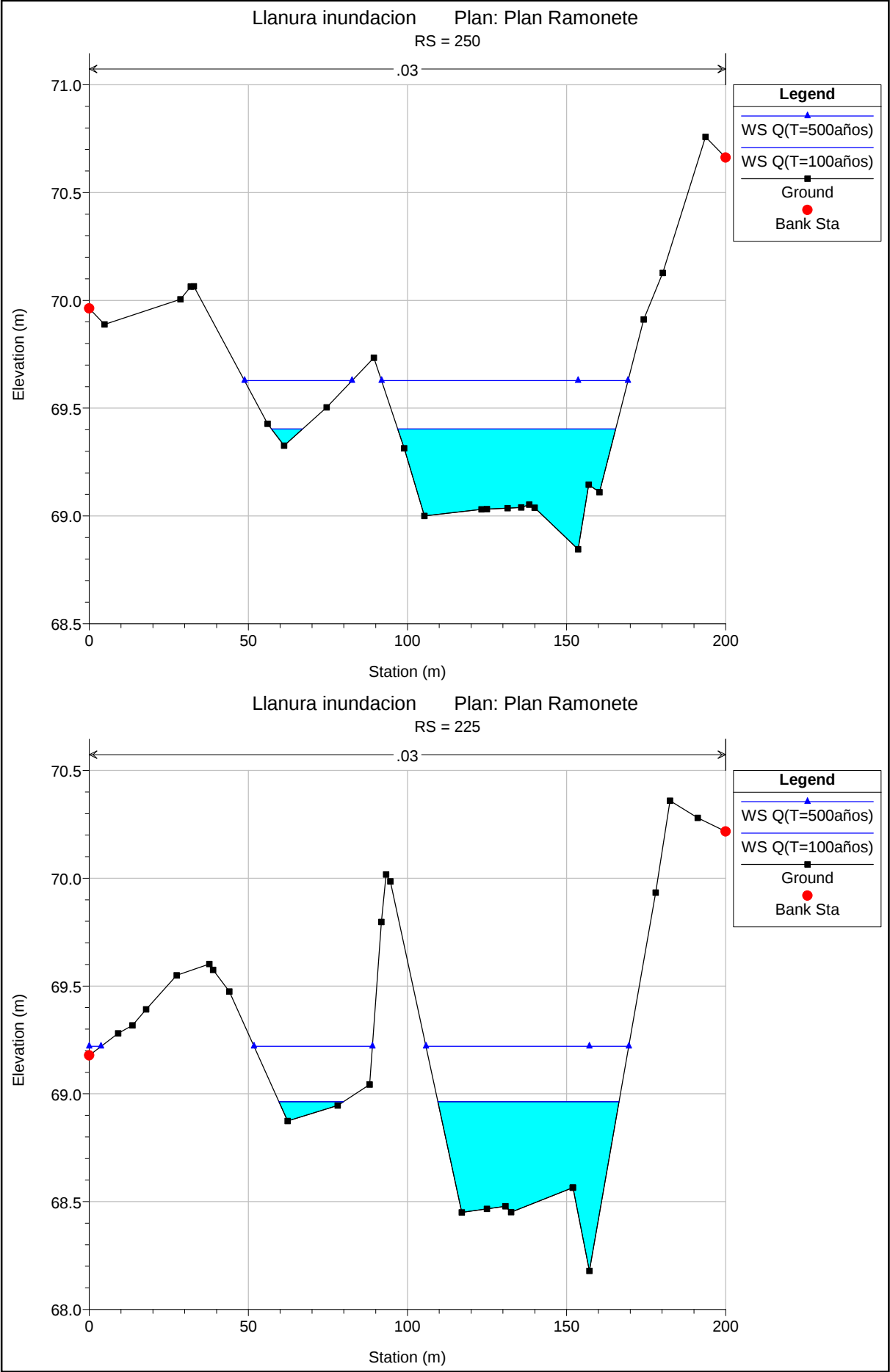


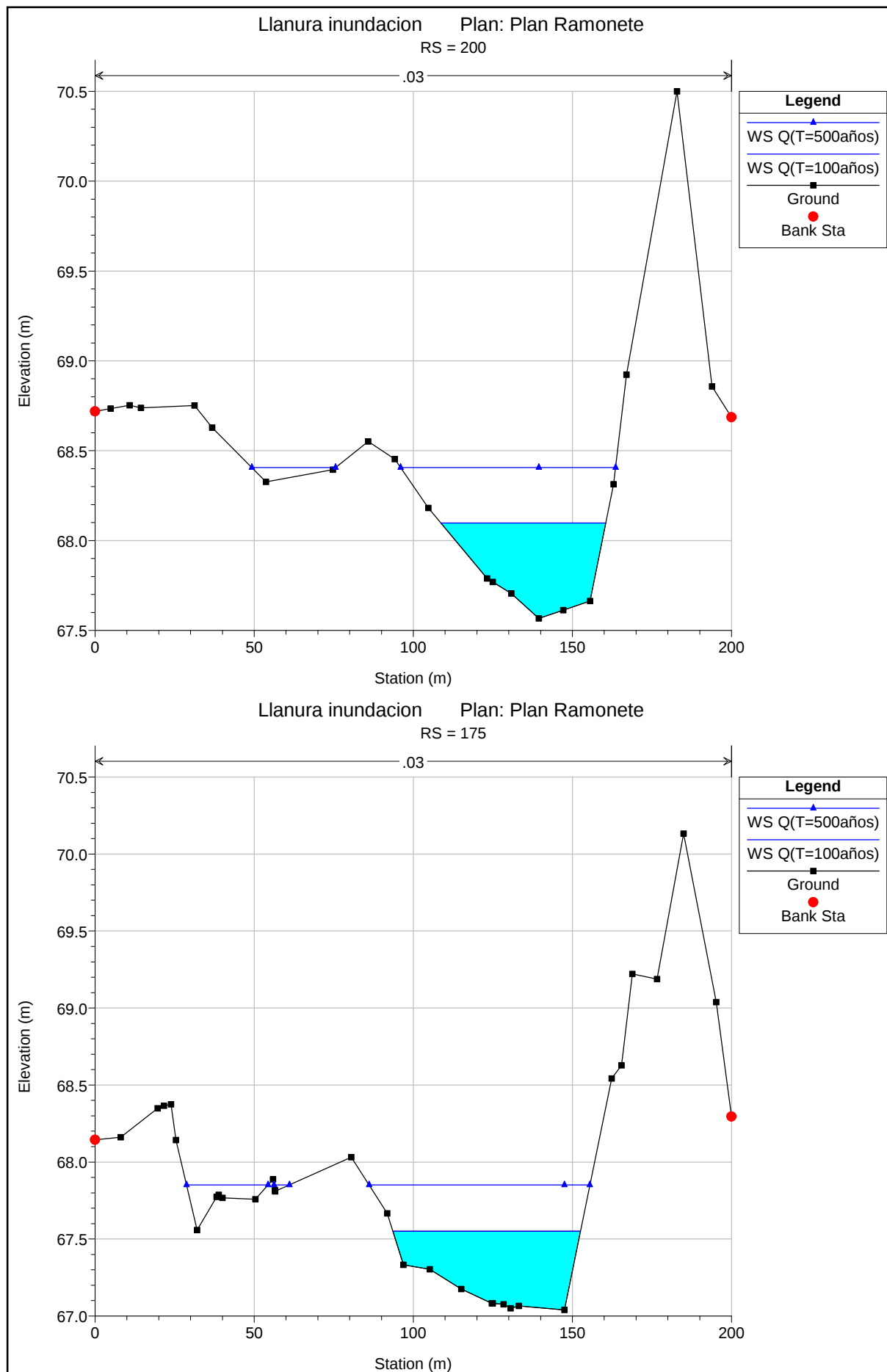


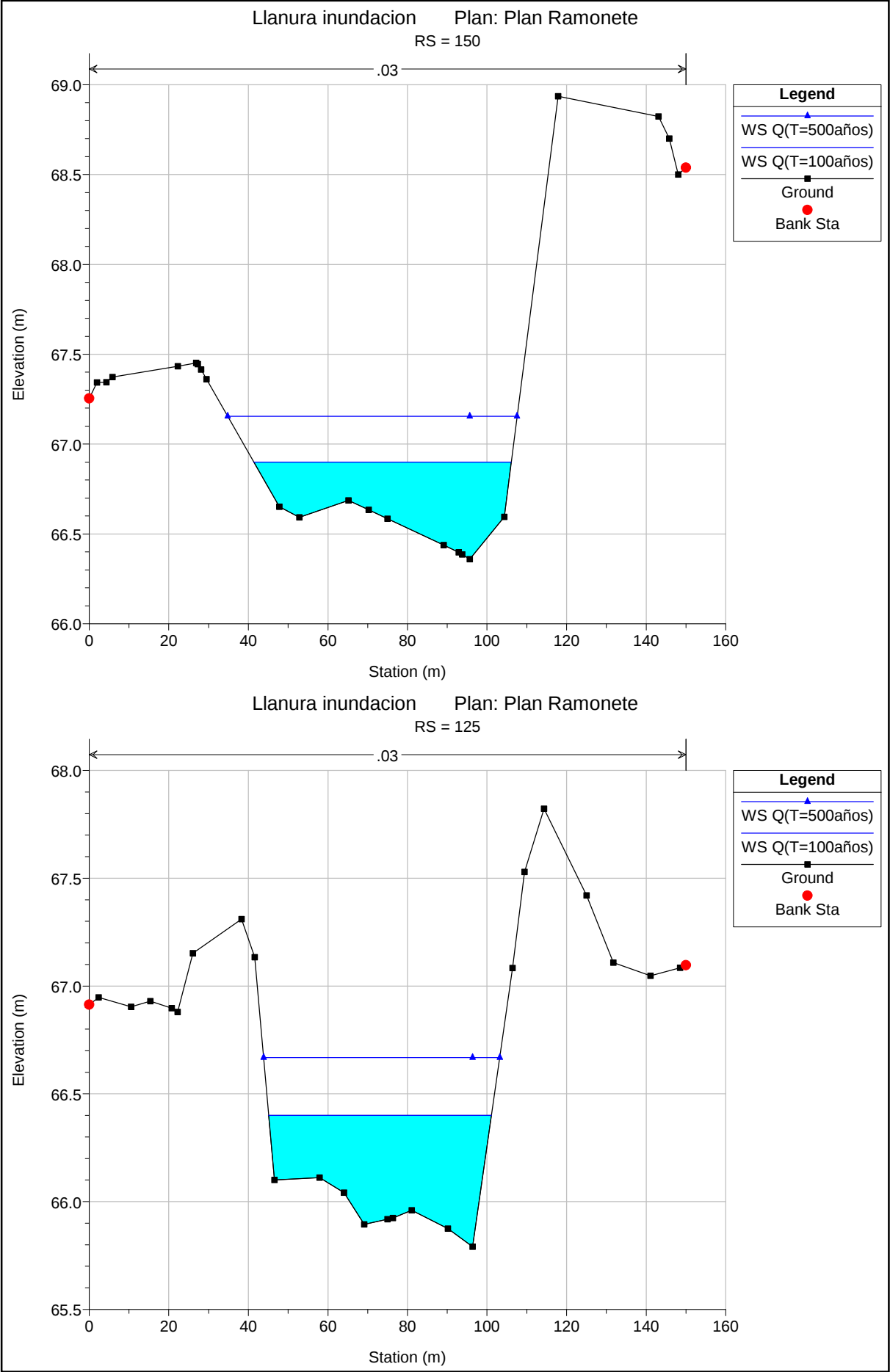


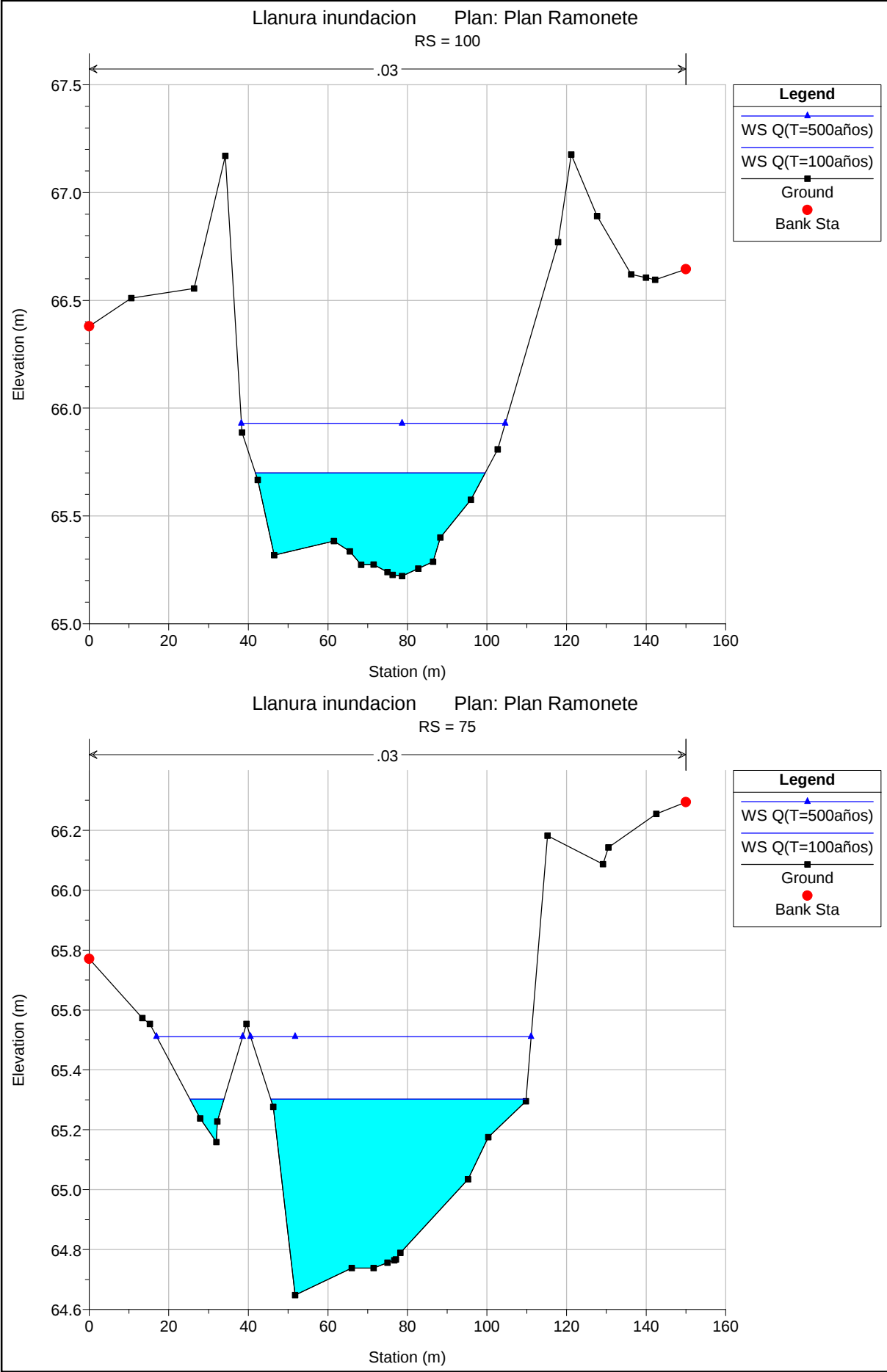


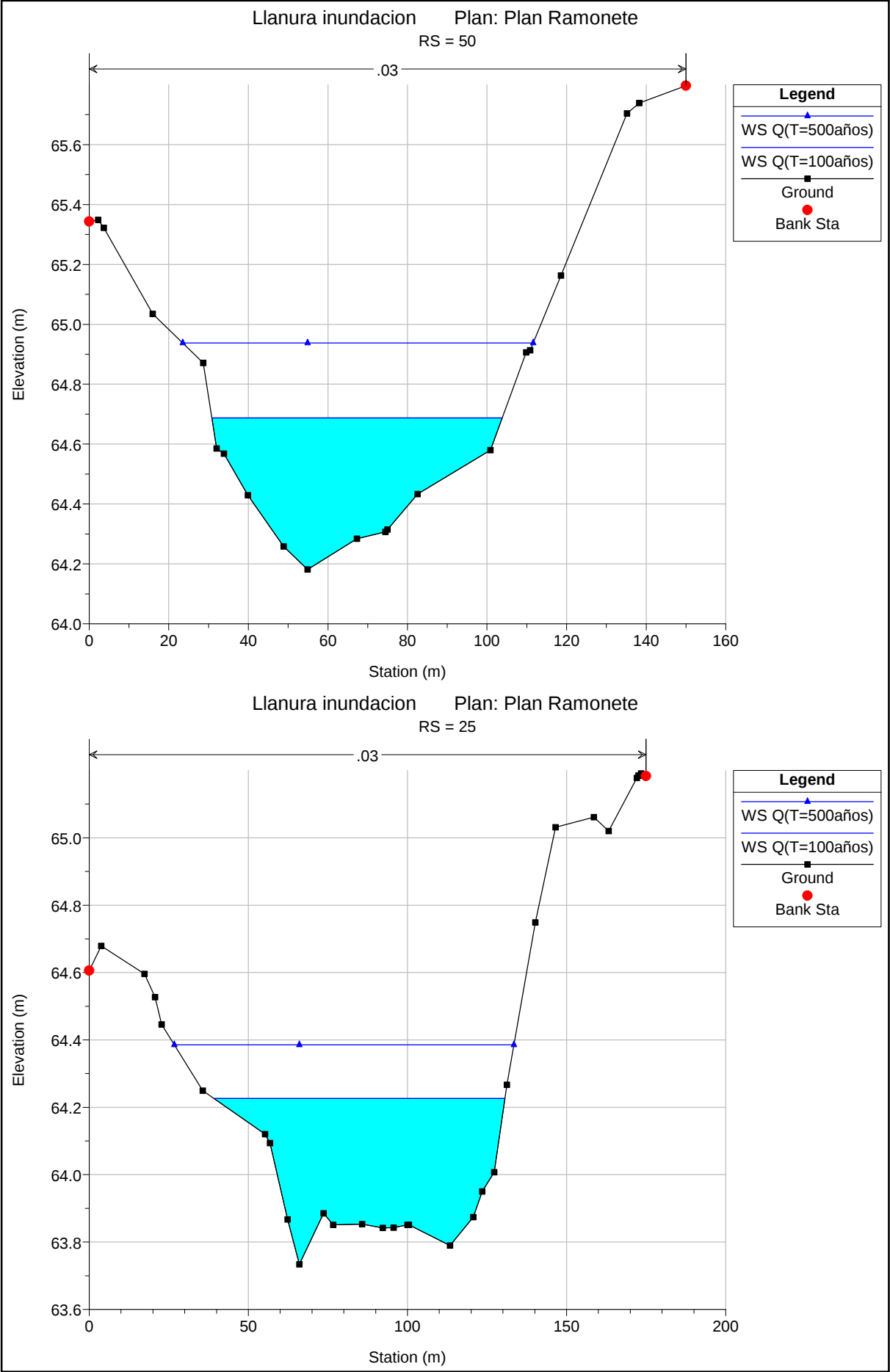


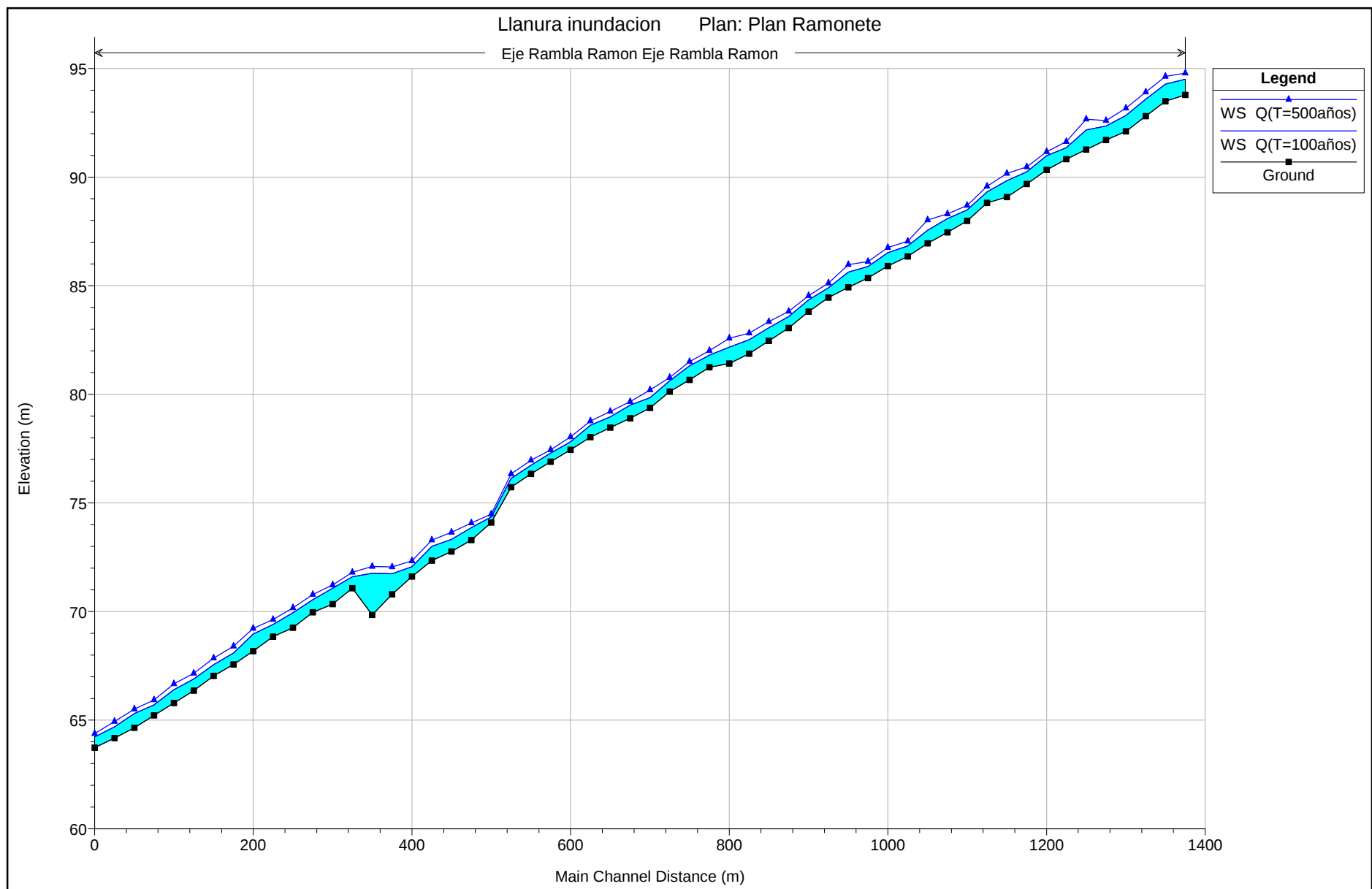












HEC-RAS Plan: PlanRamonete River: Eje Rambla Ramon Reach: Eje Rambla Ramon

Reach	River Sta	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)	
Eje Rambla Ramon	1400	54.46	93.78	94.50	94.60	94.88	0.021487	2.73	19.97	47.79	1.35
Eje Rambla Ramon	1400	124.46	93.78	94.78	94.98	95.48	0.021488	3.69	33.74	51.29	1.45
Eje Rambla Ramon	1375	54.46	93.49	94.28	94.28	94.53	0.011027	2.22	24.55	48.64	1.00
Eje Rambla Ramon	1375	124.46	93.49	94.63	94.64	95.03	0.010348	2.78	44.75	60.17	1.03
Eje Rambla Ramon	1350	54.46	92.80	93.58	93.74	94.09	0.028424	3.13	17.38	41.69	1.55
Eje Rambla Ramon	1350	124.46	92.80	93.91	94.12	94.61	0.024885	3.71	33.58	56.69	1.54
Eje Rambla Ramon	1325	54.46	92.10	92.84	93.00	93.37	0.028253	3.24	16.83	38.33	1.56
Eje Rambla Ramon	1325	124.46	92.10	93.18	93.42	93.97	0.025359	3.96	31.43	48.73	1.57
Eje Rambla Ramon	1300	54.46	91.70	92.35	92.44	92.72	0.020782	2.72	20.05	47.14	1.33
Eje Rambla Ramon	1300	124.46	91.70	92.60	92.82	93.32	0.025204	3.74	33.25	55.86	1.55
Eje Rambla Ramon	1275	54.46	91.26	92.17	92.17	92.48	0.010679	2.45	22.22	36.95	1.01
Eje Rambla Ramon	1275	124.46	91.26	92.67	92.67	93.06	0.009152	2.79	44.66	54.57	0.98
Eje Rambla Ramon	1250	54.46	90.82	91.35	91.55	91.98	0.039988	3.52	15.45	40.17	1.81
Eje Rambla Ramon	1250	124.46	90.82	91.63	91.97	92.60	0.037572	4.35	28.63	51.82	1.87
Eje Rambla Ramon	1225	54.46	90.33	90.98	91.03	91.23	0.017345	2.21	24.60	68.68	1.18
Eje Rambla Ramon	1225	124.46	90.33	91.17	91.34	91.72	0.024592	3.27	38.01	76.62	1.48
Eje Rambla Ramon	1200	54.46	89.69	90.25	90.36	90.62	0.035224	2.71	20.09	70.41	1.62
Eje Rambla Ramon	1200	124.46	89.69	90.46	90.64	91.03	0.030557	3.33	37.36	86.38	1.62
Eje Rambla Ramon	1175	54.46	89.08	89.83	89.84	90.09	0.012650	2.26	24.05	51.19	1.05
Eje Rambla Ramon	1175	124.46	89.08	90.17	90.20	90.48	0.012779	2.49	50.02	93.18	1.08
Eje Rambla Ramon	1150	54.46	88.81	89.32	89.42	89.65	0.025730	2.55	21.35	64.79	1.42
Eje Rambla Ramon	1150	124.46	88.81	89.58	89.73	90.03	0.025499	2.98	41.76	99.57	1.47
Eje Rambla Ramon	1125	54.46	87.98	88.49	88.60	88.86	0.039118	2.71	20.12	76.44	1.68
Eje Rambla Ramon	1125	124.46	87.98	88.69	88.87	89.31	0.031438	3.49	35.69	78.67	1.65
Eje Rambla Ramon	1100	54.46	87.46	88.09	88.09	88.29	0.013066	1.98	27.46	73.08	1.03
Eje Rambla Ramon	1100	124.46	87.46	88.30	88.37	88.70	0.015865	2.82	44.20	80.39	1.21
Eje Rambla Ramon	1075	54.46	86.95	87.56	87.62	87.89	0.018384	2.56	21.30	50.01	1.25
Eje Rambla Ramon	1075	124.46	86.95	88.03	88.04	88.35	0.011136	2.51	49.57	82.11	1.03
Eje Rambla Ramon	1050	54.46	86.34	86.83	86.96	87.27	0.034147	2.91	18.69	57.40	1.63
Eje Rambla Ramon	1050	124.46	86.34	87.04	87.29	87.83	0.037933	3.94	31.58	66.73	1.83
Eje Rambla Ramon	1025	54.46	85.90	86.52	86.52	86.73	0.012792	2.03	26.84	67.90	1.03
Eje Rambla Ramon	1025	124.46	85.90	86.76	86.83	87.15	0.014946	2.76	45.10	80.83	1.18
Eje Rambla Ramon	1000	54.46	85.36	85.88	85.99	86.24	0.031206	2.63	20.67	69.03	1.54
Eje Rambla Ramon	1000	124.46	85.36	86.11	86.27	86.62	0.029464	3.18	39.14	94.40	1.58
Eje Rambla Ramon	975	54.46	84.93	85.62	85.62	85.84	0.012190	2.05	26.61	64.11	1.01
Eje Rambla Ramon	975	124.46	84.93	85.97	85.97	86.26	0.010768	2.40	51.87	89.67	1.01
Eje Rambla Ramon	950	54.46	84.46	84.90	85.03	85.32	0.038932	2.86	19.04	66.36	1.70
Eje Rambla Ramon	950	124.46	84.46	85.12	85.33	85.79	0.032824	3.62	34.39	74.08	1.70
Eje Rambla Ramon	925	54.46	83.81	84.34	84.40	84.60	0.019497	2.27	24.01	70.57	1.24
Eje Rambla Ramon	925	124.46	83.81	84.54	84.68	85.07	0.022792	3.21	38.77	76.04	1.44
Eje Rambla Ramon	900	54.46	83.05	83.58	83.70	83.97	0.032800	2.76	19.76	64.06	1.58
Eje Rambla Ramon	900	124.46	83.05	83.81	83.99	84.41	0.030407	3.41	36.51	81.26	1.62
Eje Rambla Ramon	875	54.46	82.46	83.06	83.12	83.35	0.017881	2.38	22.92	58.84	1.22
Eje Rambla Ramon	875	124.46	82.46	83.34	83.48	83.80	0.017760	3.00	41.54	74.93	1.28
Eje Rambla Ramon	850	54.46	81.87	82.52	82.60	82.86	0.021036	2.59	21.00	53.43	1.32
Eje Rambla Ramon	850	124.46	81.87	82.82	82.96	83.34	0.018559	3.19	39.00	66.14	1.33
Eje Rambla Ramon	825	54.46	81.42	82.17	82.19	82.43	0.012835	2.25	24.17	52.43	1.06
Eje Rambla Ramon	825	124.46	81.42	82.58	82.61	82.87	0.013883	2.36	52.65	112.69	1.10
Eje Rambla Ramon	800	54.46	81.25	81.80	81.86	82.04	0.018710	2.16	25.19	77.09	1.21
Eje Rambla Ramon	800	124.46	81.25	82.00	82.11	82.38	0.027069	2.73	45.61	129.88	1.47
Eje Rambla Ramon	775	54.46	80.66	81.31	81.35	81.51	0.023723	1.97	27.61	115.83	1.29
Eje Rambla Ramon	775	124.46	80.66	81.50	81.57	81.78	0.019642	2.34	53.08	149.21	1.25
Eje Rambla Ramon	750	54.46	80.12	80.62	80.70	80.85	0.028747	2.11	25.75	112.47	1.41
Eje Rambla Ramon	750	124.46	80.12	80.77	80.88	81.13	0.035375	2.66	46.81	169.43	1.61
Eje Rambla Ramon	725	54.46	79.37	79.84	79.94	80.17	0.024989	2.55	21.35	63.36	1.40
Eje Rambla Ramon	725	124.46	79.37	80.20	80.25	80.46	0.019452	2.26	55.02	162.07	1.24
Eje Rambla Ramon	700	54.46	78.90	79.50	79.50	79.66	0.014329	1.76	30.87	104.96	1.04

HEC-RAS Plan: PlanRamonete River: Eje Rambla Ramon Reach: Eje Rambla Ramon (Continued)

Reach	River Sta	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
Eje Rambla Ramon	700	124.46	78.90	79.66	79.72	79.94	0.022414	2.33	53.31	166.57	1.32
Eje Rambla Ramon	675	54.46	78.46	78.96	79.02	79.19	0.023946	2.12	25.69	97.47	1.32
Eje Rambla Ramon	675	124.46	78.46	79.21	79.25	79.49	0.014690	2.34	53.20	120.67	1.12
Eje Rambla Ramon	650	54.46	78.03	78.57	78.59	78.76	0.016145	1.90	28.64	95.08	1.11
Eje Rambla Ramon	650	124.46	78.03	78.77	78.83	79.08	0.017695	2.48	50.17	119.72	1.22
Eje Rambla Ramon	625	54.46	77.45	77.82	77.92	78.16	0.036019	2.61	20.89	78.91	1.62
Eje Rambla Ramon	625	124.46	77.45	78.04	78.18	78.52	0.028291	3.07	40.57	100.15	1.54
Eje Rambla Ramon	600	54.46	76.89	77.30	77.33	77.48	0.018870	1.90	28.62	106.74	1.17
Eje Rambla Ramon	600	124.46	76.89	77.44	77.55	77.83	0.024251	2.76	45.09	116.12	1.41
Eje Rambla Ramon	575	54.46	76.33	76.74	76.79	76.97	0.022315	2.10	25.90	94.33	1.28
Eje Rambla Ramon	575	124.46	76.33	76.97	77.03	77.27	0.019014	2.45	50.83	130.71	1.25
Eje Rambla Ramon	550	54.46	75.73	76.14	76.19	76.38	0.024561	2.18	24.93	92.21	1.34
Eje Rambla Ramon	550	124.46	75.73	76.34	76.45	76.72	0.024916	2.74	45.50	121.37	1.43
Eje Rambla Ramon	525	54.46	74.10	74.35	74.52	75.07	0.156763	3.75	14.53	96.01	3.08
Eje Rambla Ramon	525	124.46	74.10	74.48	74.74	75.50	0.112543	4.48	27.79	109.68	2.84
Eje Rambla Ramon	500	54.46	73.29	73.87	73.88	74.06	0.014500	1.95	27.95	82.59	1.07
Eje Rambla Ramon	500	124.46	73.29	74.08	74.15	74.43	0.016836	2.61	47.69	101.72	1.22
Eje Rambla Ramon	475	54.46	72.76	73.33	73.40	73.63	0.019932	2.42	22.53	61.22	1.27
Eje Rambla Ramon	475	124.46	72.76	73.65	73.71	74.03	0.014450	2.75	45.29	79.73	1.16
Eje Rambla Ramon	450	54.46	72.34	73.00	73.00	73.23	0.011897	2.11	25.79	58.23	1.01
Eje Rambla Ramon	450	124.46	72.34	73.30	73.37	73.65	0.015346	2.64	47.06	91.75	1.18
Eje Rambla Ramon	425	54.46	71.62	72.07	72.24	72.64	0.054548	3.36	16.22	57.22	2.01
Eje Rambla Ramon	425	124.46	71.62	72.33	72.54	73.01	0.045746	3.63	34.25	94.13	1.92
Eje Rambla Ramon	400	54.46	70.79	71.74	71.46	71.79	0.002269	0.91	60.12	139.46	0.44
Eje Rambla Ramon	400	124.46	70.79	72.05	71.75	72.12	0.002089	1.19	104.46	150.99	0.46
Eje Rambla Ramon	375	54.46	69.85	71.76		71.77	0.000112	0.33	163.17	176.61	0.11
Eje Rambla Ramon	375	124.46	69.85	72.07		72.09	0.000297	0.55	227.93	245.83	0.18
Eje Rambla Ramon	350	54.46	71.08	71.60	71.60	71.74	0.014066	1.68	32.38	116.68	1.02
Eje Rambla Ramon	350	124.46	71.08	71.81	71.81	72.05	0.011777	2.14	58.04	127.11	1.01
Eje Rambla Ramon	325	54.46	70.35	71.07	71.12	71.28	0.024614	2.03	26.82	110.82	1.32
Eje Rambla Ramon	325	124.46	70.35	71.22	71.33	71.60	0.028640	2.71	45.86	137.30	1.50
Eje Rambla Ramon	300	54.46	69.97	70.54	70.57	70.74	0.018852	1.96	27.74	98.70	1.18
Eje Rambla Ramon	300	124.46	69.97	70.78	70.82	71.07	0.014942	2.36	52.66	119.13	1.13
Eje Rambla Ramon	275	54.46	69.25	69.94	70.01	70.21	0.022925	2.32	23.44	75.00	1.33
Eje Rambla Ramon	275	124.46	69.25	70.17	70.30	70.59	0.024073	2.85	43.64	106.48	1.42
Eje Rambla Ramon	250	54.46	68.84	69.40	69.47	69.66	0.021034	2.23	24.47	78.29	1.27
Eje Rambla Ramon	250	124.46	68.84	69.63	69.73	70.00	0.021734	2.72	45.79	111.25	1.35
Eje Rambla Ramon	225	54.46	68.18	68.96	69.00	69.18	0.016437	2.08	26.20	77.18	1.14
Eje Rambla Ramon	225	124.46	68.18	69.22	69.28	69.54	0.015111	2.50	49.85	104.68	1.15
Eje Rambla Ramon	200	54.46	67.57	68.10	68.25	68.58	0.035311	3.07	17.77	51.88	1.67
Eje Rambla Ramon	200	124.46	67.57	68.41	68.59	68.97	0.033929	3.32	37.44	93.92	1.68
Eje Rambla Ramon	175	54.46	67.04	67.55	67.63	67.86	0.020652	2.48	21.97	58.98	1.30
Eje Rambla Ramon	175	124.46	67.04	67.85	67.97	68.26	0.021372	2.82	44.09	99.92	1.36
Eje Rambla Ramon	150	54.46	66.36	66.90	67.00	67.25	0.028736	2.64	20.65	64.69	1.49
Eje Rambla Ramon	150	124.46	66.36	67.16	67.31	67.70	0.022540	3.26	38.22	72.76	1.43
Eje Rambla Ramon	125	54.46	65.79	66.40	66.45	66.69	0.017084	2.39	22.78	56.00	1.20
Eje Rambla Ramon	125	124.46	65.79	66.67	66.79	67.21	0.017165	3.25	38.25	59.36	1.29
Eje Rambla Ramon	100	54.46	65.22	65.70	65.82	66.11	0.031618	2.84	19.17	57.76	1.57
Eje Rambla Ramon	100	124.46	65.22	65.93	66.14	66.63	0.030629	3.70	33.59	66.34	1.66
Eje Rambla Ramon	75	54.46	64.65	65.30	65.33	65.52	0.015234	2.08	26.17	72.72	1.11
Eje Rambla Ramon	75	124.46	64.65	65.51	65.62	65.93	0.020214	2.87	43.42	92.20	1.33
Eje Rambla Ramon	50	54.46	64.18	64.69	64.77	65.01	0.028097	2.50	21.81	72.99	1.46
Eje Rambla Ramon	50	124.46	64.18	64.94	65.07	65.40	0.022165	3.00	41.47	88.13	1.40
Eje Rambla Ramon	25	54.46	63.73	64.23	64.26	64.43	0.017446	1.98	27.54	91.49	1.15
Eje Rambla Ramon	25	124.46	63.73	64.39	64.50	64.80	0.024541	2.87	43.42	106.72	1.43

Errors Warnings and Notes for Plan : PlanRamonete

Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1375 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1375 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1350 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1350 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1325 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1325 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1300 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1300 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1275 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1275 Profile: Q(T=500años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

	program used critical depth for the water surface and continued on with the calculations.
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1250 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1250 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1225 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1225 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1200 Profile: Q(T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1200 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1175 Profile: Q(T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1175 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

	than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1150 Profile: Q(T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1150 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1125 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1125 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1100 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1100 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1075 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1075 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1050 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1050 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1025 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1025 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1000 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 1000 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 975 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 975 Profile: Q(T=500años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 950 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 950 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 925 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 925 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 900 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 900 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 875 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 875 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 850 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 850 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 825 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 825 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 800 Profile: Q(T=100años)

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 800 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 775 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 775 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 750 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 750 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 725 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 725 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 700 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 700 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 675 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 675 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 650 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program selected the water surface that had the least amount of error between computed and assumed values.

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 650 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 625 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 625 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 600 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 600 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 575 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 575 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 550 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 550 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 525 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 525 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 500 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 500 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 475 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 475 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 450 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 450 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 425 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 425 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 400 Profile: Q(T=100años)

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note:	Hydraulic jump has occurred between this cross section and the previous upstream section.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 400 Profile: Q(T=500años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Note:	Hydraulic jump has occurred between this cross section and the previous upstream section.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 375 Profile: Q(T=100años)
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 375 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 350 Profile: Q(T=100años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 350 Profile: Q(T=500años)
Warning:	The energy equation could not be balanced within the specified number of iterations. The program used critical depth for the water surface and continued on with the calculations.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Warning:	During the standard step iterations, when the assumed water surface was set equal to critical depth, the calculated water surface came back below critical depth. This indicates that there is not a valid subcritical answer. The program defaulted to critical depth.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 325 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note:	Program found supercritical flow starting at this cross section.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 325 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Note:	Program found supercritical flow starting at this cross section.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 300 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 300 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 275 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 275 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 250 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 250 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 225 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 225 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The cross-section end points had to be extended vertically for the computed water surface.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 200 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
	additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
	than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 200 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
	additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less
	than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 175 Profile: Q(T=100años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
	additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross
	section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 175 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for
	additional cross sections.

Errors Warnings and Notes for Plan : PlanRamonete (Continued)

Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 150 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 150 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 125 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 125 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 100 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 100 Profile: Q(T=500años)
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 75 Profile: Q(T=100años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The conveyance ratio (upstream conveyance divided by downstream conveyance) is less than 0.7 or greater than 1.4. This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 75 Profile: Q(T=500años)
Warning:	Divided flow computed for this cross-section.
Warning:	The velocity head has changed by more than 0.5 ft (0.15 m). This may indicate the need for additional cross sections.
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 50 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 50 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 25 Profile: Q(T=100años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.
Location:	River: Eje Rambla Ramon Reach: Eje Rambla Ramon RS: 25 Profile: Q(T=500años)
Warning:	The energy loss was greater than 1.0 ft (0.3 m). between the current and previous cross section. This may indicate the need for additional cross sections.