Universidad Zaragoza
1542

Proyecto Fin de Carrera

Título del trabajo:

Simulación del cauce natural y posterior encauzamiento con Hec-Ras del Barranco de Campillo.

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2013

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INTRODUCCIÓN

1. INTRODUCCIÓN.

La transformación en regadío de zonas áridas, como puede ser la zona de Monegros, en la provincia de Huesca, implica un cambio en el régimen hidrológico de los cauces que discurren por dichas zonas.

Estos cauces, que de forma natural permanecen secos gran parte del año y en especial en verano, pasan a tener un caudal constante procedente de los retornos de riegos, funcionando como drenajes.

Este cambio de régimen hidrológico, implica la necesidad de fijar el trazado seguido por este nuevo flujo de agua y estabilizar el terreno, evitando la erosión que pudiera provocar este caudal.

Por otro lado el cambio de usos del terreno implica el paso de una zona de agricultura de secano con escaso rendimiento, a una agricultura de regadío con altas producciones y altamente tecnificada. Estos cambios implicaran un aumento en el tránsito de vehículos, la instalación de sistemas de riego a presión y la construcción de diversas estructuras auxiliares de las explotaciones agrícolas.

Este cambio de usos del terreno hace inaceptable el actual sistema de cruces de caminos sobre el cauce, que impide su utilización en caso de avenida, al no estar dimensionados para estos caudales.

Se hace recomendable la ejecución de las modificaciones necesarias en el cauce y obras de cruce para permitir el flujo de las avenidas previstas, sin que causen daños económicos o personales.

OBJETIVOS

2. OBJETIVOS.

El objetivo del presente proyecto será el estudio del barranco de Campillo, ubicado en el término municipal de Ballobar.

La zona en la que se ubica el barranco pertenece a la zona regable de Monegros II, dentro de la Comunidad General de Riegos del Alto Aragón.

Dicho barranco de Campillo es tributario del barranco de Chermanillo, que a su vez desemboca en el rio Alcanadre dentro del núcleo urbano de Ballobar.



Fig.1 Ubicación del barranco de Campillo.

Se realizara la modelización hidráulica del barranco de Campillo en su configuración actual, evaluando el efecto de los diversos caudales que se espera discurran por él, suma de los caudales aportados por los barrancos tributarios.

La zona en la que se encuentra el barranco objeto de estudio, tiene un clima árido con un régimen de pluviometrías típicamente mediterráneo, con grandes avenidas puntuales en otoño-invierno y ausencia casi total de precipitaciones en verano.



Fig.2 Zona de estudio y vegetación existente.

El estudio de caudales en el barranco de Campillo, objeto de este proyecto, está recogido en el Plan Coordinado de Obras. Monegros II – 3ª Parte – 1ª Fase, dentro del Plan de Riegos del Alto Aragón.

Se simularan las avenidas esperadas para un periodo de retorno de 25 y 100 años, así como el flujo de retorno de riegos esperado una vez ejecutada la puesta en riego de la cuenca de dicho barranco, tal y como se definen en el Plan Coordinado de Monegros II.

La simulación hidráulica del cauce con su configuración actual, permitirá evaluar si las obras de cruce y demás infraestructuras existentes en la zona están correctamente dimensionadas. Permitiendo detectar la necesidad de rectificar el cauce o las infraestructuras existentes para evitar daños en caso de avenida.

Por último, si se detectase situaciones que fuera necesario corregir, se diseñara el encauzamiento parcial o total del barranco objeto de estudio y el correcto dimensionado de las obras de cruce, de forma que el flujo de los caudales tanto de retorno de riegos como de avenidas extraordinarias no cause daños.

METODOLOGÍA

3. METODOLOGÍA.

Para la modelización hidráulica de flujos de agua en lamina libre, emplearemos el programa informático Hec-Ras, desarrollado por el *US Army Corps of Engineers* (Cuerpo de Ingenieros del Ejército de los Estados Unidos).

Dicho programa tiene una gran potencia de cálculo hidráulico, pero no es una herramienta práctica de diseño gráfico, por lo que la geometría para la modelización hidráulica en Hec-Ras se deberá realizar con otro programa.

Para la generación de archivos de geometría del terreno, compatibles con Hec-Ras, disponemos de la herramienta Geo-Ras que es una extensión del programa ArcMap. Extensión diseñada por los mismos desarrolladores de Hec-Ras.

ArcMap es un programa SIG (Sistema de Información Geográfica), que tampoco está preparado para servir como programa de diseño. Por lo tanto para crear los archivos de geometría del cauce será necesario otro paso previo, en el que generaremos la geometría en AutoCad.

Autocad es el programa de diseño más empleado en la actualidad, que nos permitirá realizar las modificaciones necesarias en la geometría para representar lo más fielmente la realidad del cauce y que dicha geometría sea compatible con los programas en los cuales será importada.

Por lo tanto el resumen de los pasos a seguir será:

1º Obtención de la geometría del terreno mediante levantamiento topográfico y tratamiento de la información en Autocad.
2º Generación de geometría compatible con Hec-Ras mediante Geo-Ras.
3º Importación de la geometría natural en Hec-Ras y modelización del cauce natural.
4º Modificación de la geometría natural del terreno mediante Hec-Ras (Encauzamiento) y modelización del cauce resultante.

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3.1 MODELIZACIÓN DEL CAUCE NATURAL.

3.1.1 RECOPILACIÓN DE INFORMACIÓN.

Para la modelización hidráulica de un cauce, son necesarios dos grandes bloques de información, la cartografía de la cuenca por la que discurrirá el flujo de agua y los caudales esperados en dicho cauce.

3.1.1.1 CARTOGRAFIA.

La geometría de la cuenca se ha obtenido mediante un levantamiento topográfico de la zona, encargado a un estudio de topografía.

Para la obtención de la topografía del cauce en el caso de cursos de agua permanentes, se debe recurrir a batimetrías en la zona inundada. En nuestro caso al tratarse de un cauce con flujo de agua estacional, se pudo realizar el levantamiento topográfico sin recurrir a dichas batimetrías.

3.1.1.2 CAUDALES.

El Barranco de Campillo, objeto de este proyecto, se encuentra en la confluencia de los sectores VII y XVIII de la zona regable de Monegros II.

Los caudales esperados en este cauce están recogidos en el Plan Coordinado de Obras. Monegros II – 3ª Parte – 1ª Fase, dentro del Plan de Riegos del Alto Aragón (Anexo 3).

3.1.2 TRATAMIENTO DE LA CARTOGRAFIA.

El levantamiento topográfico, será la información en la cual se basara la definición del cauce.

Dicho levantamiento topográfico, debe reflejar no solo el terreno natural, sino también las estructuras de origen antrópico que puedan influir en el flujo de agua, tanto en periodos de estiaje como en momentos de avenida.

Se pondrá especial atención a obras de cruce del cauce así como a estructuras lineales, como muros o terraplenes.

3.1.2.1 CREACIÓN *TIN*.

Para la generación de la geometría del cauce en un formato compatible con Hec-Ras, mediante el programa GeoRas, debemos disponer de la triangulación del terreno (*TIN* en sus siglas en Ingles). Por lo que el primer paso será crear el *TIN* del terreno.

3.1.2.1.1 OPERACIONES PREVIAS A LA CREACIÓN DEL *TIN*.

Será necesario el tratamiento previo de los archivos cartográficos existentes y la creación de nuevos archivos, a partir de los cuales se creara el *TIN*.

3.1.2.1.1.1 LIMPIEZA DE LA CARTOGRAFIA.

La cartografía obtenida del levantamiento topográfico, suele ser suministrada por los estudios de topografía en formato de archivo DWG.

Se debe proceder a eliminar del archivo DWG recibido toda la información innecesaria para la modelización, que si se mantuviera en el archivo, provocaría errores en el cálculo hidráulico.

Esta información innecesaria, que ha sido tomada de acuerdo a las buenas prácticas de los levantamientos topográficos, son lindes de parcelas, líneas eléctricas, caminos, etc. Información que siendo útil, no es de relevancia hidráulica.

Para el cálculo hidráulico el archivo solo debe contener curvas de nivel que reflejen el terreno natural, terraplenes y muros que puedan influir en el flujo.

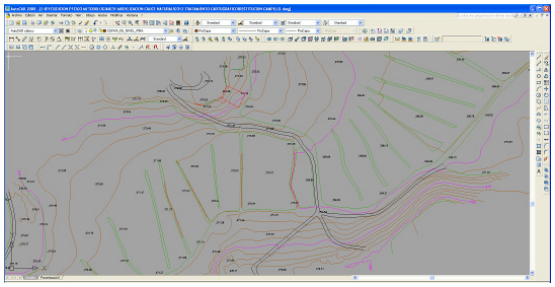


Fig.1 Topografía sin tratamiento.

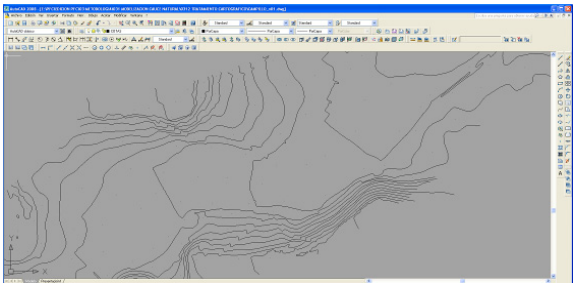


Fig.2 Topografía con tratamiento.

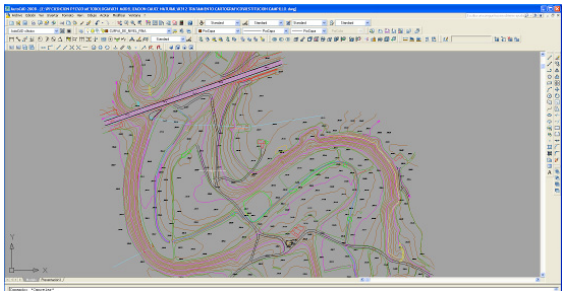


Fig.3 Topografía sin tratamiento.

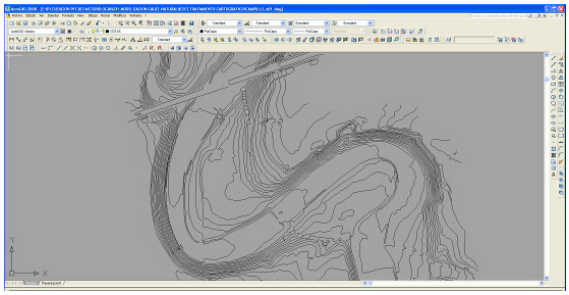


Fig.4 Topografía con tratamiento.

Las obras antrópicas que se prevea que sean susceptibles de ser eliminadas o modificadas durante la ejecución del proyecto, serán eliminadas de la cartografía. Los datos geométricos de dichas obras serán conservados para su posterior representación en el archivo en el que se realizara la simulación hidráulica en Hec-Ras.

3.1.2.1.1.2 TRANSFORMACIÓN DE LA CARTOGRAFIA A FORMATO GIS.

Para la creación del *TIN*, creamos un proyecto en *ArcMap*. En dicho proyecto cargamos las capas de polilineas y puntos del archivo CAD en el que se encuentra la cartografía.

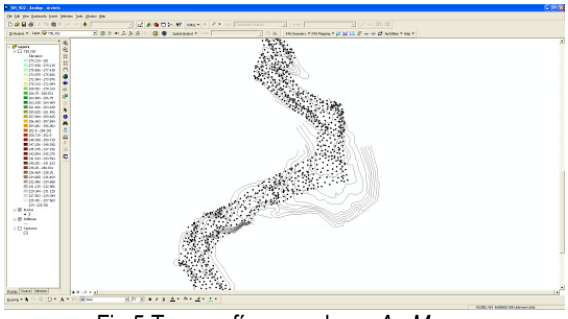


Fig.5 Topografía cargada en *ArcMap*.

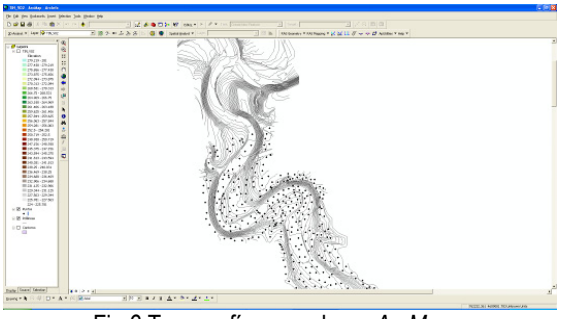


Fig.6 Topografía cargada en *ArcMap*.

Creamos dos archivos .SHP, uno para contener las polilineas y otro para contener los puntos con valor de elevación. Estos dos archivos .SHP deberán ser geo referenciados, para lo que seguiremos los siguientes pasos.

Una vez dentro de *ArcMap*, abriremos la aplicación *Arctoolbox*, encargada del proceso de datos espaciales.

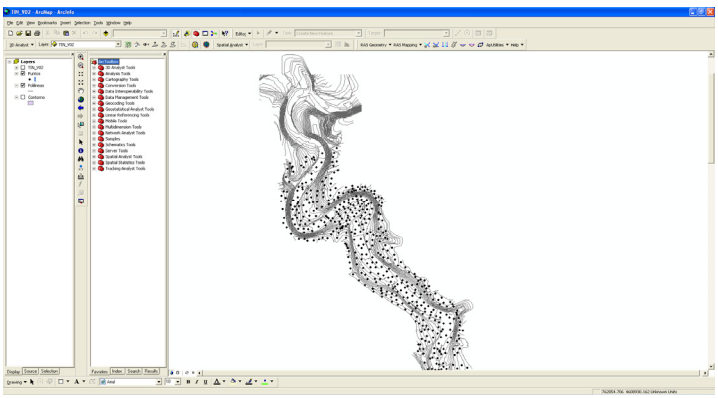


Fig.7 Menú de herramientas de *Arctoolbox*.

La herramienta a utilizar será *Project (Management)*. Crearemos dos archivos .SHP e introduciremos sistemas de coordenadas adecuados para cada uno de ellos (En nuestro caso *European Datum 1950 UTM Zone 30N*).

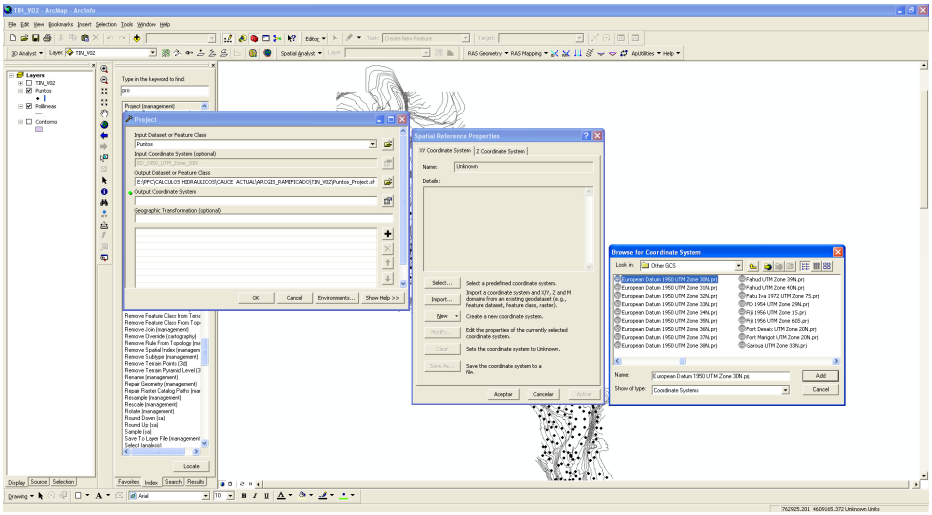


Fig.8 Georeferenciación de la topografía.

3.1.2.1.1.3 CREACIÓN ARCHIVO DE CONTORNO PARA LA TRIANGULACIÓN.

Observando el cauce vemos que su trazado realiza grandes cambios de dirección, para evitar que al realizar la triangulación que generara el *TIN* se triangule entre puntos alejados uno de otro, crearemos un polígono del contorno de curvas y puntos a triangular.

Para la generación de este contorno emplearemos la aplicación *ArcCatalog*, con la que generaremos un archivo .SHP vacío, al que asignaremos un sistema de coordenadas adecuado.

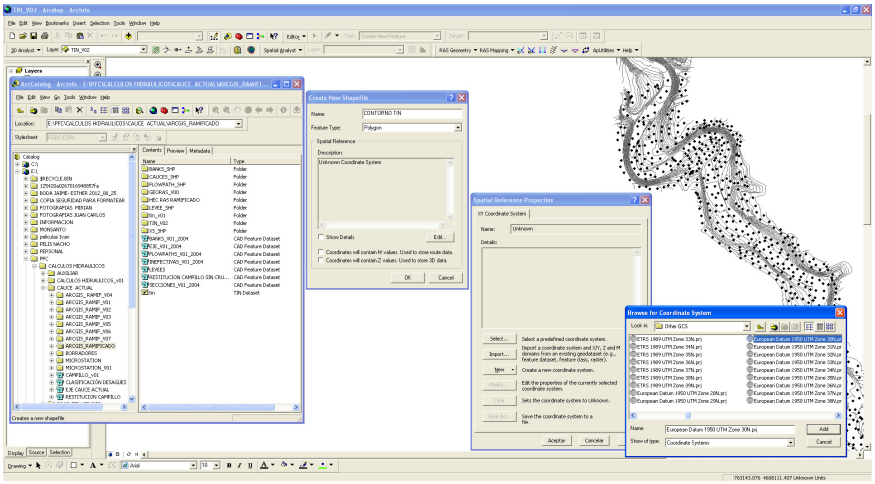


Fig.9 Generación de archivo y georeferenciación con *Arccatalog*.

Una vez generado el archivo .SHP vacío, cargamos en *ArcMap* los archivos .SHP generados con anterioridad, que contienen las curvas y puntos con cota, con el fin de trazar los límites del polígono que delimitara la zona a triangular.

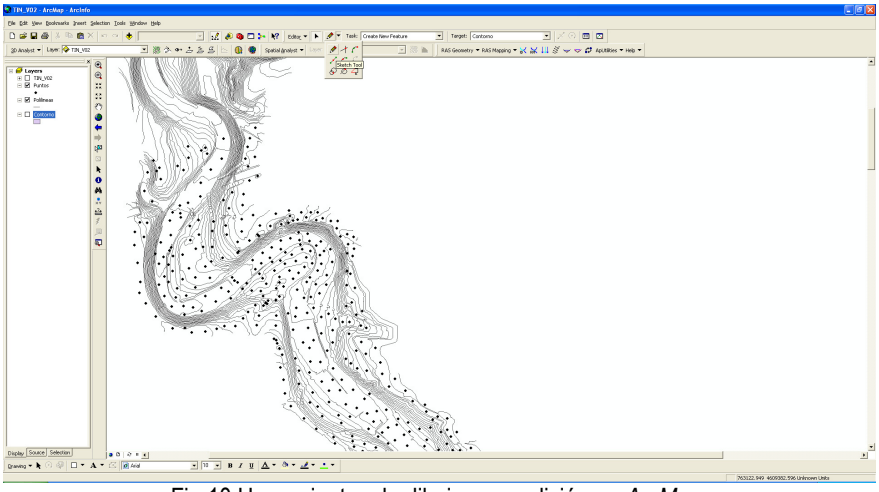


Fig.10 Herramientas de dibujo para edición en *ArcMap*.

Con la barra de herramientas *Editor* de *ArcMap*, seleccionamos *Start Editing* y la herramienta de dibujo, que nos permitirá definir el contorno.

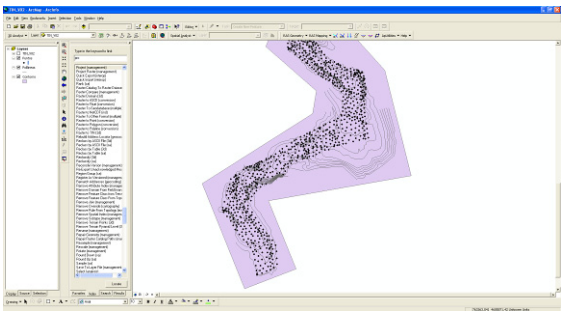


Fig.11 Contorno de zona a triangular.

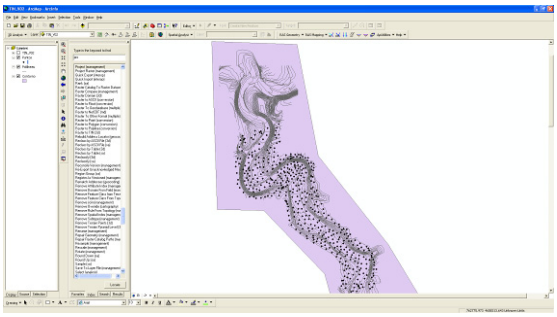


Fig.12 Contorno de zona a triangular.

3.1.2.1.2 TRIANGULACIÓN DEL TIN.

Para la creación del *TIN* del terreno, utilizaremos la extensión *3D Analyst* de *ArcMap*. Mediante la opción de crear *TIN* a partir de características del terreno.

Emplearemos como datos de partida los tres archivos .SHP que hemos creado en los aparatados anteriores (curvas de nivel, puntos y contorno de la zona a triangular).

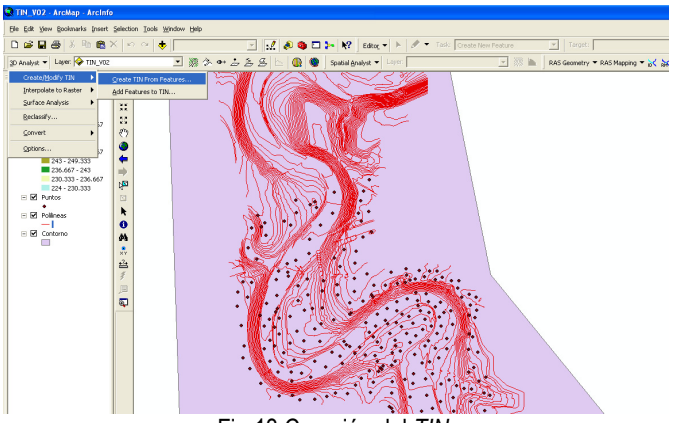


Fig.13 Creación del *TIN*.

En las curvas de nivel y puntos con cota, la fuente de alturas sera la capa *Elevation*. Triangulandose como *Hard Line* las curvas de nivel y como *Mass Points* los puntos con cota.

El perimetro que hemos delimitado para la triangulación no tendra alturas y se triangulara como *Soft Clip*.

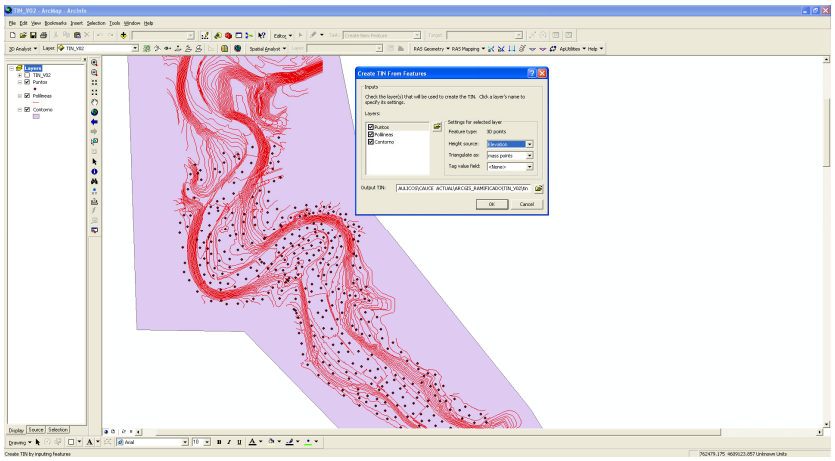


Fig.14 Asignación de origen de alturas a capas para generación de *TIN*

Con esta triangulación convertimos archivos en los que las caracteristicas del terreno estan contenidas en lineas y puntos con atributos de altura, representados sobre una superficie plana, en un relieve tridimensional.

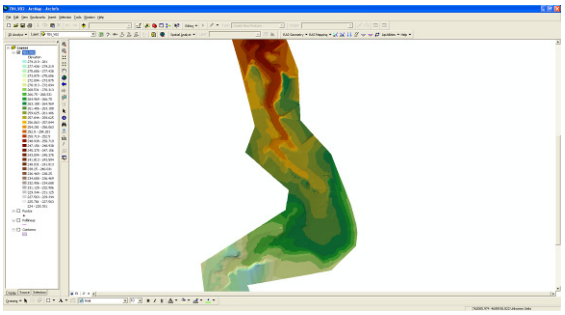


Fig.15 *TIN*.

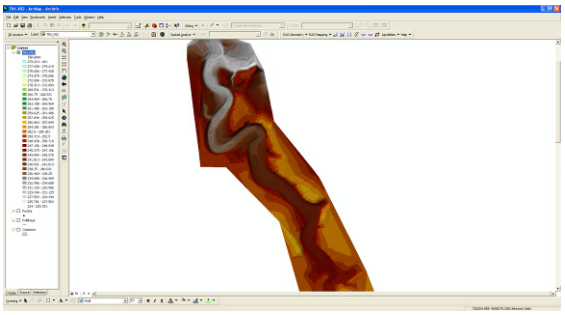


Fig.16 *TIN*.

3.1.2.2 DEFINICIÓN CAUCE.

Para realizar la modelización hidráulica en Hec-Ras, el programa nos solicita que definamos el eje del cauce, los márgenes del cauce y la zona inundable.

3.1.2.2.1 DEFINICIÓN EJE.

En nuestro caso, al ser un cauce de flujo estacional, dicho cauce esta roturado en gran parte de su trazado, siendo visible su trazado únicamente en momentos de avenida. Así pues el trazado del eje tendrá que ser definido por los indicadores de la cartografía, como puede ser la forma de las curvas de nivel o las obras de paso existentes.

El primer paso, será definir el eje en un archivo CAD.

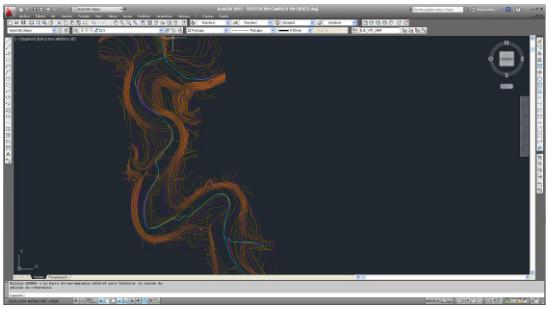


Fig.17 Eje del cauce y afluentes en .CAD

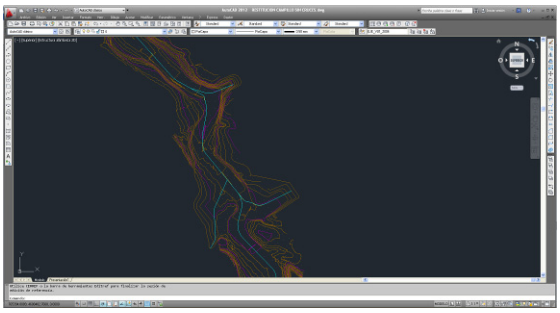


Fig.18 Eje del cauce y afluentes en .CAD

Una vez definido el eje en formato CAD, convertiremos este archivo a formato .SHP compatible con *ArcMap*.

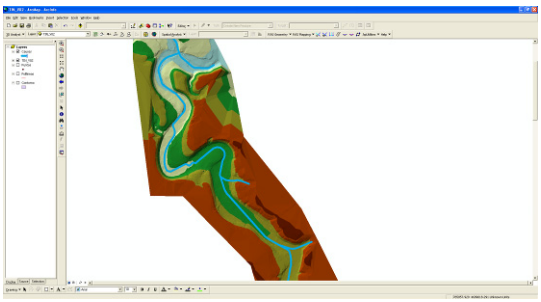


Fig.19 Eje del cauce y afluentes en .SHP

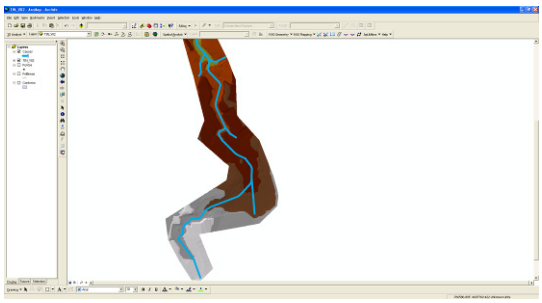


Fig.20 Eje del cauce y afluentes en .SHP

3.1.2.2.2 DEFINICIÓN *BANKS*.

El termino *Banks* en Hec-Ras define los márgenes del cauce, lo que en términos hidráulicos implica el cambio de sustrato, y por tanto del número de Manning (rozamiento).

En nuestro caso, como ya hemos indicado con anterioridad, no existe un cauce natural definido, ya que dicho cauce ha sido roturado.
En el barranco objeto de estudio, se observan dos tipos de cobertura del terreno bien definidos, el terreno laboreado que encontramos en el fondo de dicho barranco y la vegetación natural que encontramos en las laderas laterales.

Para la modelización hidráulica, consideraremos que el cauce del barranco delimitado por los *Banks*, se corresponde con la zona laboreada. De manera que tendremos una zona fácilmente inundable con un terreno muy uniforme, al cual le corresponderá un número de Manning concreto.

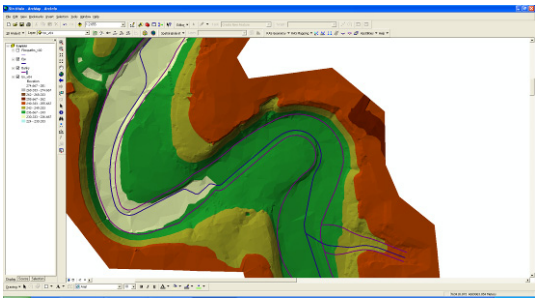


Fig.21 Definición del cauce en tramo final.

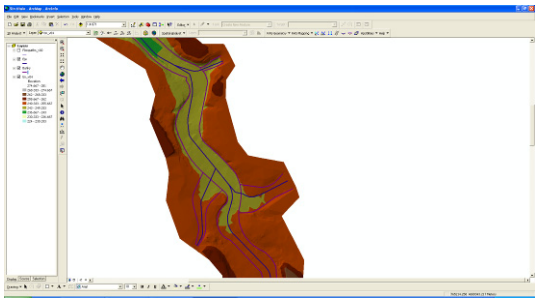


Fig.22 Definición del cauce en tramo medio.

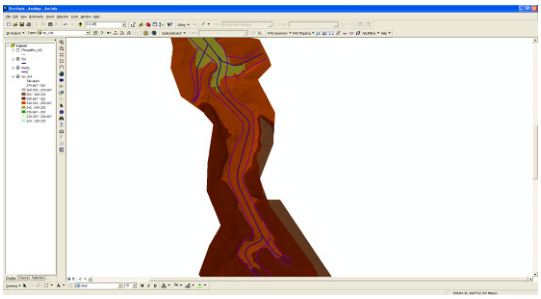


Fig.23 Definición del cauce en tramo medio.

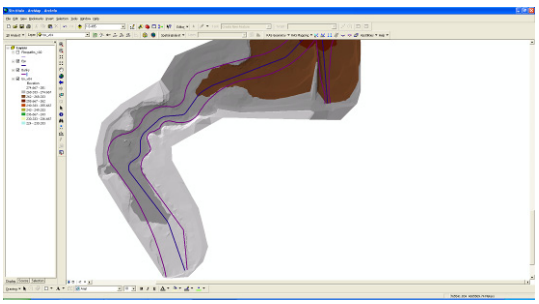


Fig.24 Definición del cauce en tramo inicial.

3.1.2.2.3 DEFINICIÓN FLOW PATHS.

El termino *Flow Path* (Dirección de flujo) en Hec-Ras corresponde a tres líneas que marcan la dirección de flujo y son empleadas por el programa para medir la distancia entre secciones.

El *FlowPath* central se hace coincidir con el eje del cauce. Los *FlowPaths* laterales deben ser exteriores a los *Banks* y coincidir aproximadamente con el centro de gravedad de las secciones exteriores a los *Banks*.

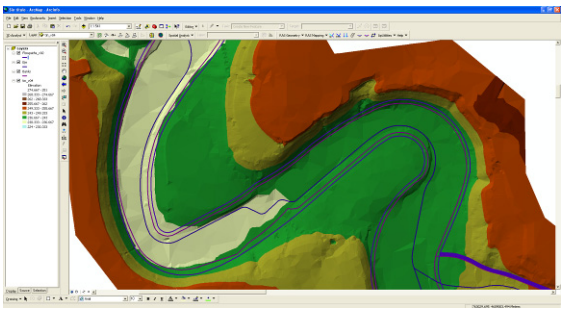


Fig.25 *FlowPaths* en tramo final.

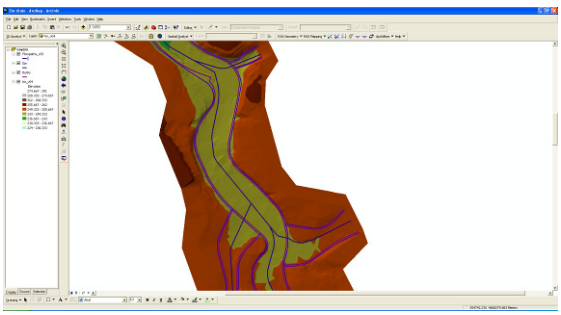


Fig.26 *FlowPaths* en tramo medio.

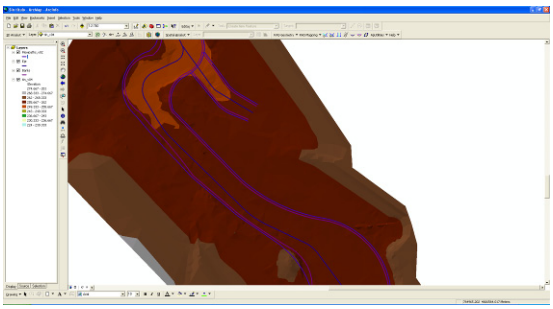


Fig.27 *FlowPaths* en tramo medio.

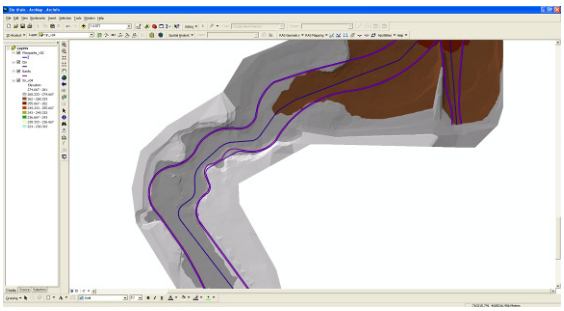


Fig.28 *FlowPaths* en tramo inicial.

3.1.2.2.4 DEFINICIÓN *CROSS SECTIONS*

Para definir el cauce son necesarias secciones transversales de dicho cauce, que se distribuyen a distancias uniformes a lo largo de todo el eje. Estas secciones equidistantes, serán definidas con el programa *GeoRas*.

Serán necesarias secciones adicionales en puntos singulares del trazado del cauce, como obras de cruce del cauce (caminos, carreteras, ferrocarriles, etc.), presas y saltos.

Se añadirán dos secciones por cruce, una aguas abajo y otra aguas arriba.

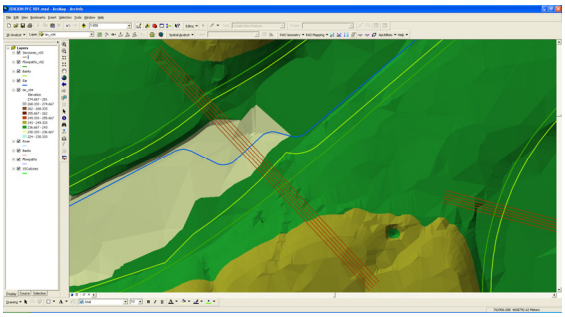


Fig.29 Topografía cargada en *ArcMap*.

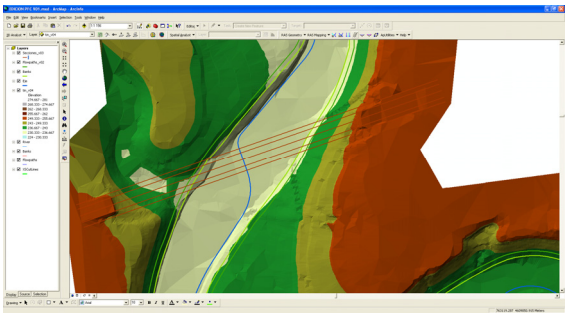


Fig.30 Topografía cargada en *ArcMap*.

Como en los casos anteriores, estas secciones se definen en CAD, para posteriormente ser convertidas a formato .SHP.

Más adelante, veremos que para la definición del encauzamiento, serán necesarias secciones adicionales para modelizar el cauce adecuadamente.

3.1.3 GENERACIÓN GEOMETRIA CON GEORAS.

El primer paso para la definición del cauce con *GeoRas*, será la creación de un proyecto. Para esto en el menú *Aputilities* seleccionamos *Add New Map*.

Necesitaremos las extensiones *3D Analyst* y *Spatial Analyst* para *ArcGIS*.

Además necesitaremos la barra de herramientas HEC-GeoRAS. Dentro de la cual encontraremos los menús RAS *Geometry* y RAS *Mapping*.

El menú RAS *Geometry*, contiene herramientas para el pre procesamiento de los datos de *ArcGIS* para exportarlos a HEC-RAS.

El menú RAS *Mapping* contiene funciones de post procesado de los resultados de HEC-RAS, que permiten producir un mapa de inundación en *ArcGIS*.

3.1.3.1 Carga del *TIN* del terreno.

El primer paso será cargar el *TIN* que hemos creado con los la información topográfica.

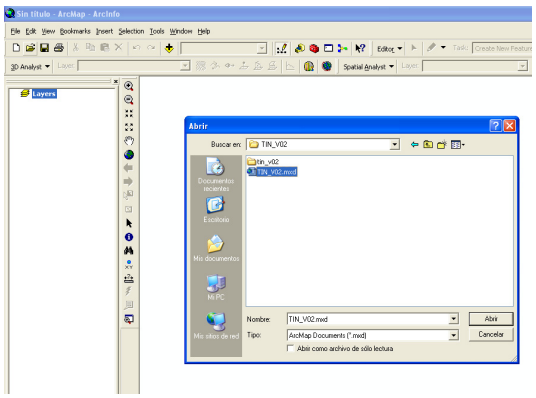


Fig.31 Proceso de carga del *TIN*.

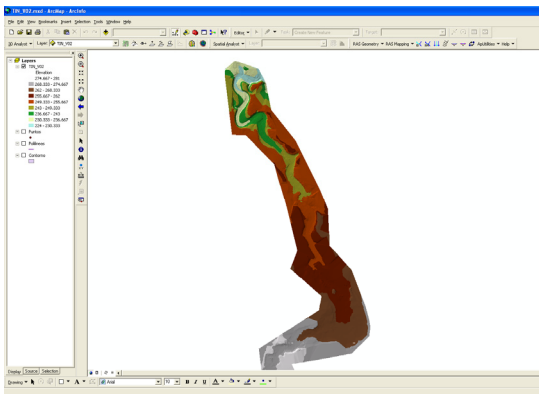


Fig.32 *TIN* cargado.

3.1.3.2 Creación de capas necesarias.

Procederemos a crear un nuevo mapa, para lo que en el menú *ApUtilities* seleccionamos *Add New Map*. Y le asignamos un nombre.

En la extensión HEC-GeoRAS utilizamos la opción *Create RAS Layers* y seleccionamos crear todas las capas.

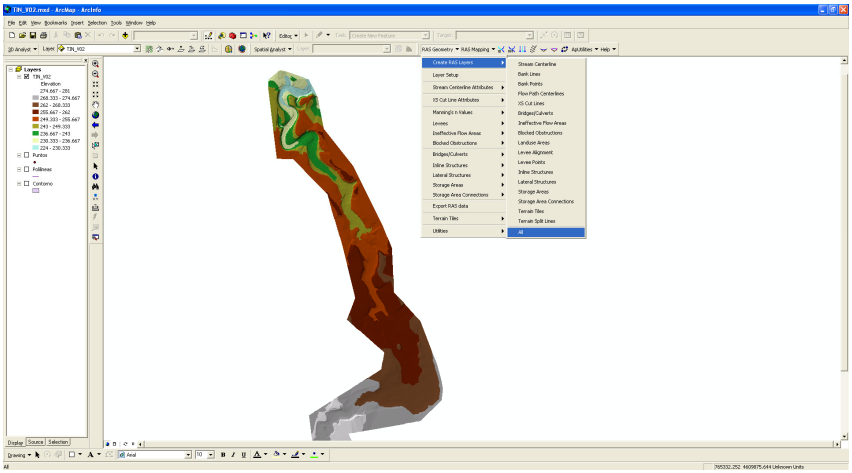


Fig.33 Creación de las capas necesarias para un proyecto de HecRas.

3.1.3.3 Definición del eje del cauce (*River Centerline*).

Procedemos a definir la geometria del eje del cauce en el proyecto de *GeoRas*.

El primer paso sera cargar el archivo .SHP creado con anterioridad, que define el trazado del eje.

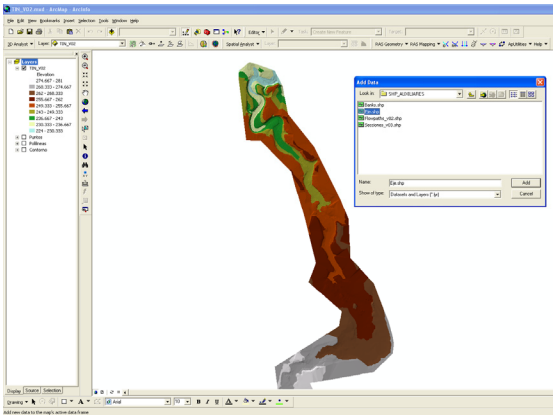


Fig.34 Carga del archivo .SHP del eje.

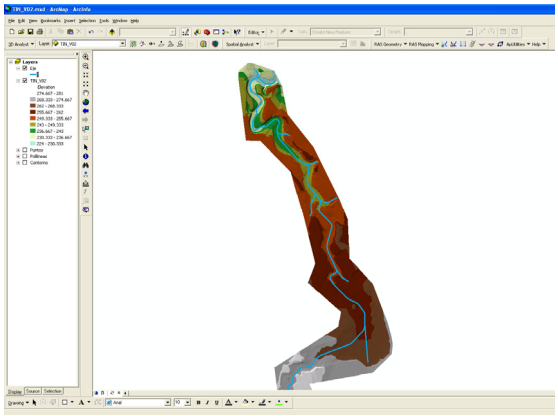


Fig.35 Eje del cauce en formato .SHP

Comenzaremos la edición de la capa *River* creada, mediante la barra de herramientas *Editor* y la opción *Start Editing*. Fijando como tarea *Create new feature* y como objetivo la capa *River*.

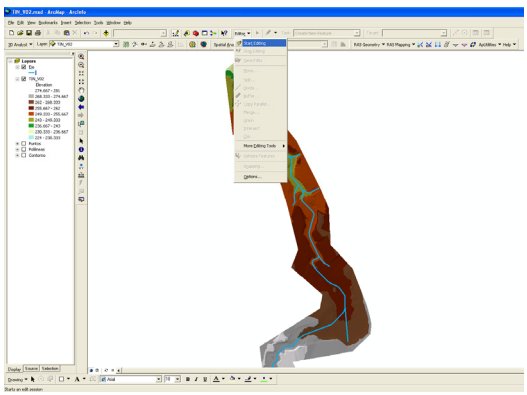


Fig.36 Inicio de edición.

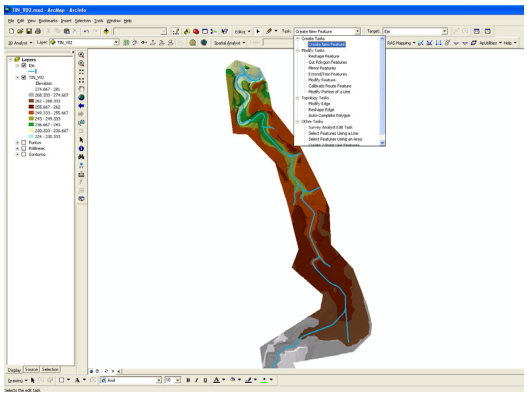


Fig.37 Selección de la opción de edición

En la barra de herramientas Editor seleccionamos la opción *Snnaping*, que resaltara los vertices de las lineas a digitalizar. En nuestro caso seleccionamos los puntos finales, tanto de las lineas de la capa *River* como del archivo .SHP que contiene la geometria de nuestro eje.

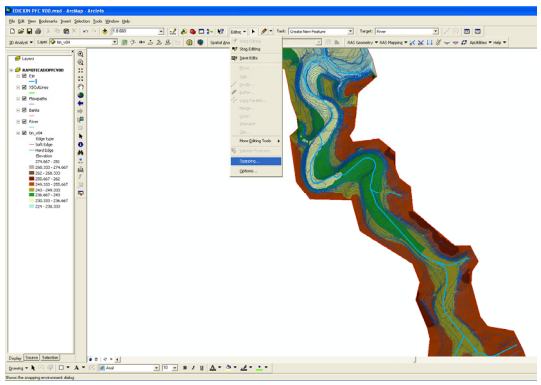


Fig.38 Opción *snnaping* nos permite digitalizar.

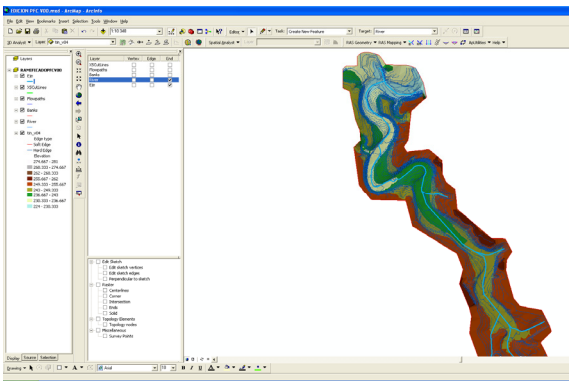


Fig.39 Resaltado vértices finales líneas *River* y Eje.

El siguiente paso es digitalizar cada tramo de la capa *River*, a partir del eje definido en el archivo .SHP.

Para su digitalización, seleccionaremos cada tramo del eje con la harramienta de edición (*Edit tool*) y arrastraremos del extremo aguas arriba al de aguas abajo con la herramienta de trazado (*Trace tool*).

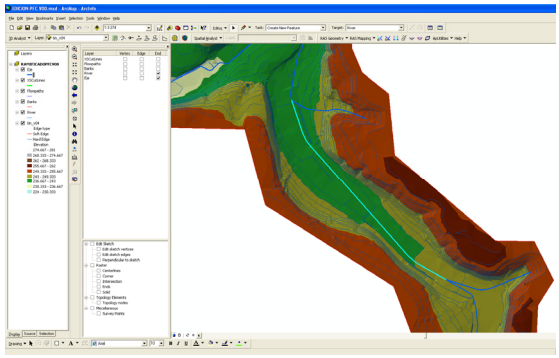


Fig.40 Selección del tramo a digitalizar.

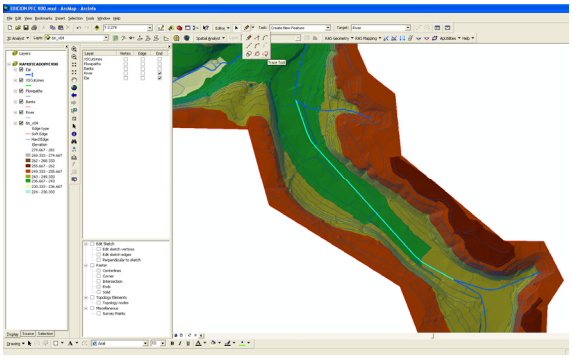


Fig.41Selección de *Trace Tool*

Repetiremos este procedimiento para cada uno de los tramos, tanto del eje principal como de los afluentes.

Una vez digitalizados los ejes del cauce principal y afluentes, debemos proceder a nombrarlos. Cada rio y tramo de rio deben tener un nombre unico en HEC-RAS. En nuestro caso consideraremos un rio al barranco de campillo y a cada uno de sus afluentes. Definiendo tramos del barranco principal entre cada uno de los puntos de desagüe de los tributarios.

La asignación de nombre a los rios y tramos se realizara con la herramienta *Assign RiverCode/ReachCode* de *HEC-GeoRAS*.

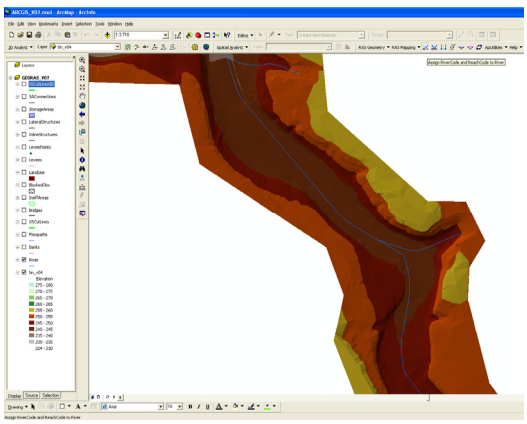


Fig.42 Herramienta definición de nombre de rio y tramo.

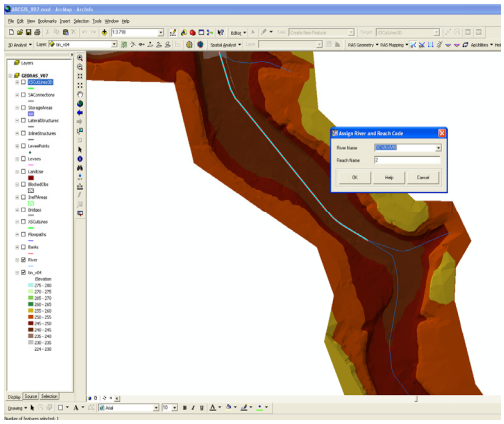


Fig.43 Asignación de nombre de rio y tramo.

Hasta este punto, hemos trazado los ejes de los cauces sobre un plano, no teniendo valores de desnivel a lo largo de su trazado ni conectado los diferentes tramos.

En el menú *RASGeometry* seleccionaremos la opción *Stream Centerline Attributes* y la herramienta *Topology*. Seleccionando la capa *River* como *Stream Centerline* y nuestro *TIN* como *Terrain TIN*.

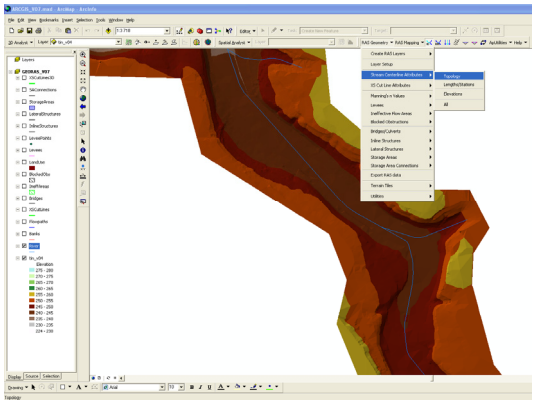


Fig.44 Opción de asignar topología al rio.

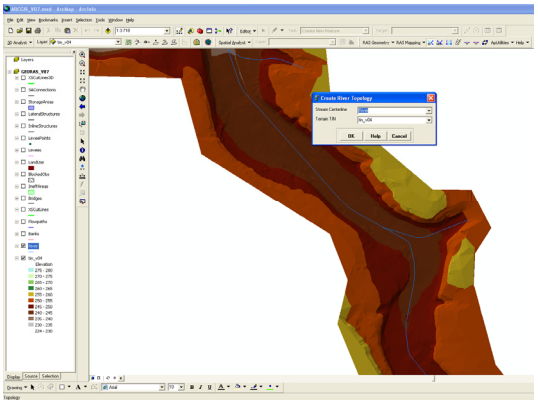


Fig.45 Elección de rio y terreno sobre el que discurre.

El siguiente paso sera dentro del menu *RASGeometry* y la opción *Stream Centerline Attributes*, usar la herramienta *Lengths/Stations*

Con estos pasos hemos conectado los diferentes tramos de eje y asignado longitudes a cada uno de ellos. Esto lo podemos comprobar en la tabla de atributos de la capa *River*.

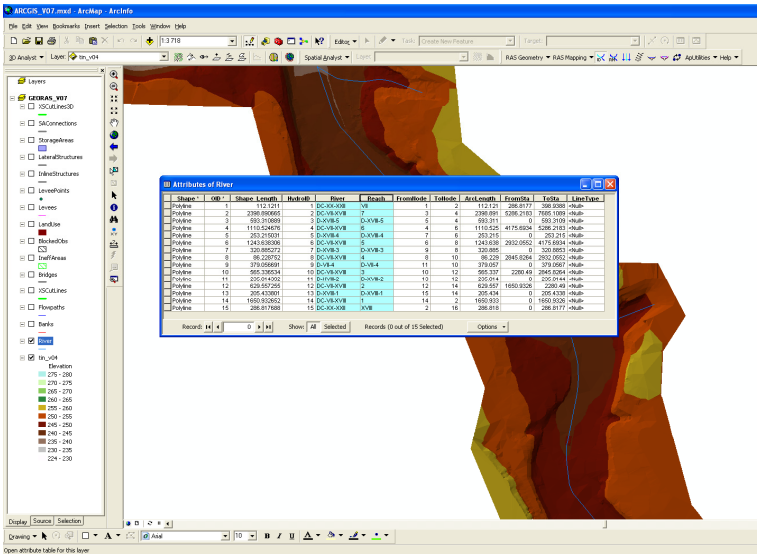


Fig.46 Tabla de atributos del rio.

3.1.3.4 Definición de *Banks lines*.

Las lineas llamadas *Banks*, son empleadas para distinguir el canal principal de las llanuras de inundación.

Esta información es empleada por Hec-Ras para asignar diferentes propiedades a las secciones. Siendo, por lo general, mayor el valor del número de Manning en la llanura de inundación que en el canal principal. Lo que indica una mayor rugosidad, causada por la vegetación.

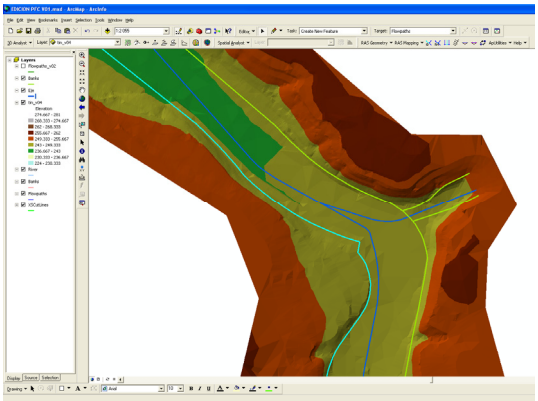


Fig.47 Definición de *Bank* en cauce principal.

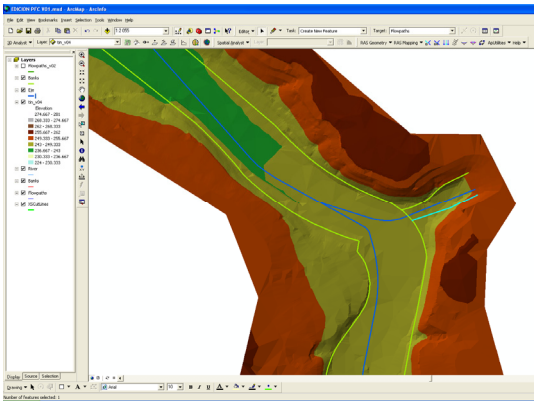


Fig.48 Definición de *Bank* en afluente.

3.1.3.5 Definición de Flow paths.

La capa *FlowPath*, se compone de tres líneas, un eje central que se hace coincidir con el eje del cauce, un *FlowPath* izquierdo y un *FlowPath* derecho.

Los *FlowPath* son empleados para determinar la longitud del tramo entre secciones tanto en el eje como en las zonas inundadas.

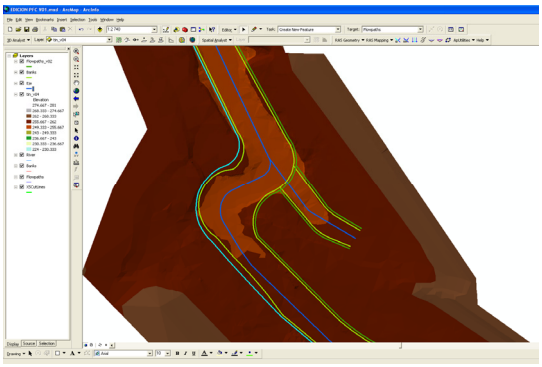


Fig.49 Definición de *FlowPath* en cauce principal.

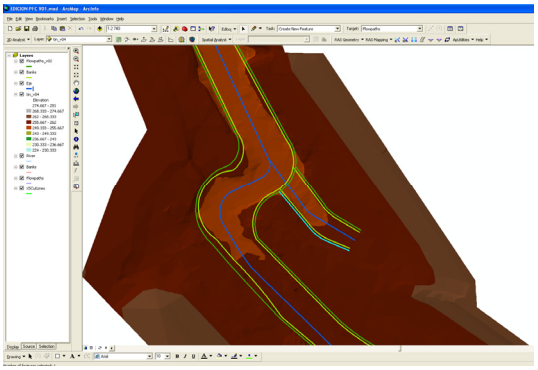


Fig.50 Definición de *FlowPath* en afluente.

Una vez digitalizados los *FlowPaths*, hay que asignar a cada uno de ellos si son el centro del cauce, el *FlowPath* derecho o el *FlowPath* izquierdo.

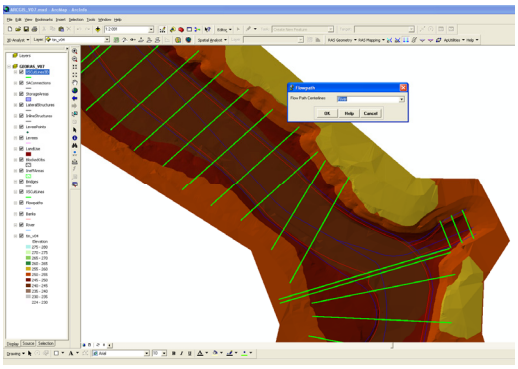


Fig.51 Definición del *FlowPath* central.

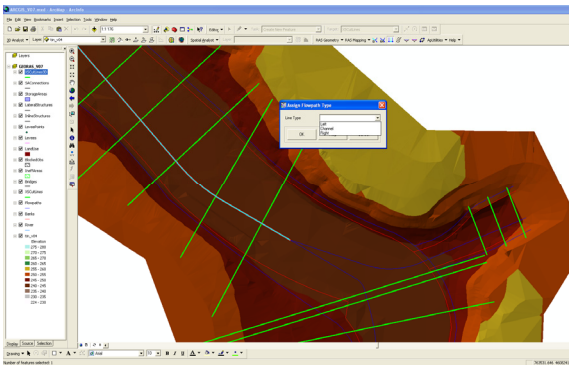


Fig.52 Definición del *FlowPath* central.

3.1.3.6 Definición de *Cross section cut lines*.

Las secciones son empleadas para extraer la información de cotas del terreno, para crear un archivo del terreno valido para Hec-Ras. La intersección de las secciones con otras capas como el eje del cauce, *Banks* y los *FlowPaths*, son empleados por el programa para calcular los puntos que separan el canal principal y la llanura de inundación, las distancias entre secciones y discernir zonas con diferentes valores de número de Manning.

Así pues crear un número adecuado de secciones es importante para hacer una buena representación del cauce y de la llanura de inundación. Las secciones deben ser perpendiculares al eje del cauce y cruzar por completo la zona inundable.

Como se dijo en el punto 3.1.2.2.4, las secciones pueden ser definidas automáticamente en *GeoRas*.

Empleando la herramienta *Construct XS Cut Lines* podemos especificar la distancia entre secciones y la longitud transversal al cauce de estas.

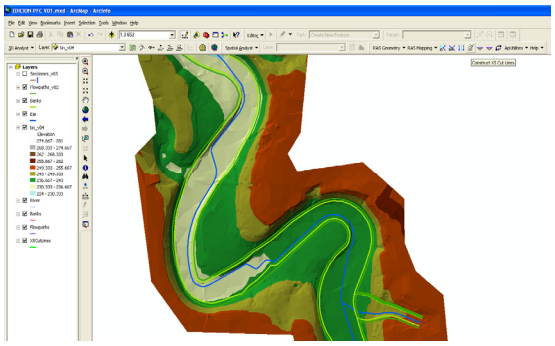


Fig.53 Herramienta generación automática de secciones.

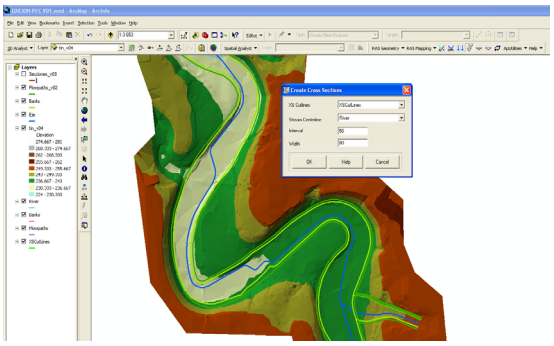


Fig.54 Definición distancia entre secciones y longitud.

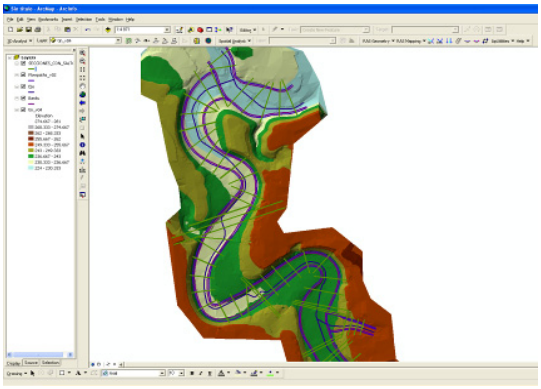


Fig.55 Secciones generadas automáticamente.

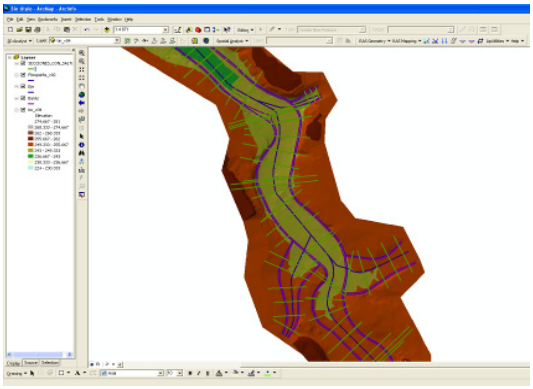


Fig.56 Secciones generadas automáticamente.

A estas secciones equidistantes a lo largo de todo el eje, deben sumarse las secciones definidas en puntos singulares, como cruces de caminos.

Procederemos a cargar el archivo .SHP de secciones necesarias aguas arriba y aguas abajo de cada cruce, que definimos en el punto 3.1.2.2.4

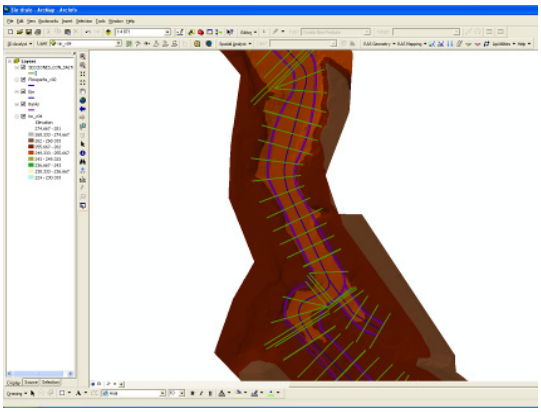


Fig.57 Secciones generadas automáticamente.

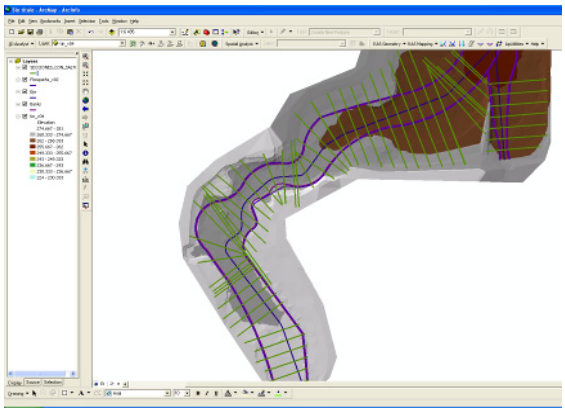


Fig.58 Secciones generadas automáticamente.

Para que *GeoRas* y posteriormente HecRas no produzcan errores, debemos cumplir ciertas condiciones con las secciones:

- En cada tramo de cauce, debe haber como mínimo dos secciones que lo definan.
- Las secciones no pueden cortarse entre ellas.
- Las secciones no pueden cortar más de un eje.
- Las secciones no pueden cortar más de dos *FlowPath*s.
- Las secciones no pueden cortar más de una vez el mismo *FlowPath*.
- Las secciones deben cortar un right *FlowPath* y un left *FlowPath*.

Por lo tanto procederemos a recortar o eliminar secciones, con el fin de cumplir estas condiciones, procurando no perder información de la topología del terreno.

Una vez obtenidas todas las secciones necesarias para representar el cauce y revisada su correcta distribución, procederemos a añadir los atributos que deben tener estas secciones para ser válidas para su uso en HEC-RAS. Para ello usaremos la opción de *XS Cut Line Attributes*, dentro del menú RAS *Geometry*.

Asignamos a cada sección el rio y tramo en el que se encuentra. Para ello usamos la herramienta *River/Reach Names*.

Asignamos a cada sección un *Station number*, que será la distancia a la que se encuentra la sección del punto final del cauce aguas abajo. Para este paso usaremos la herramienta *Stationing*.

Asignamos a cada sección la distancia dentro de su traza en la que corta al *Bank* izquierdo y *Bank* derecho. Para este paso usaremos la herramienta *Bank Stations*.

Para calcular la distancia a la siguiente sección aguas abajo en base a los *Flowpaths*, usaremos la herramienta *Downstream Reach Lengths*.

Por ultimo debemos tener en cuenta que las secciones hasta ahora son líneas con dos dimensiones, que no disponen de información de elevación. Podemos extraer las elevaciones del terreno y convertir nuestras secciones en líneas con tres dimensiones, con la herramienta *Elevation*. Herramienta que nos creara una nueva capa en nuestro proyecto de *ArcGIS* denominada *XSCutLines3D*.

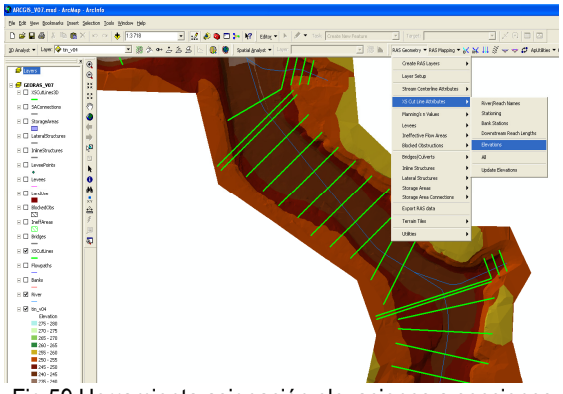


Fig.59 Herramienta asignación elevaciones a secciones.

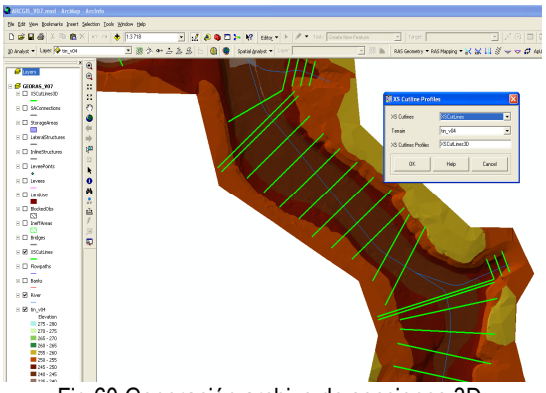


Fig.60 Generación archivo de secciones 3D.

Si abrimos la tabla de atributos de la nueva capa creada de *XSCutLines3D*, veremos como las secciones tienen toda la información a la que nos hemos referidos en los puntos anteriores, y se han convertido en polilineas Z, con cota.

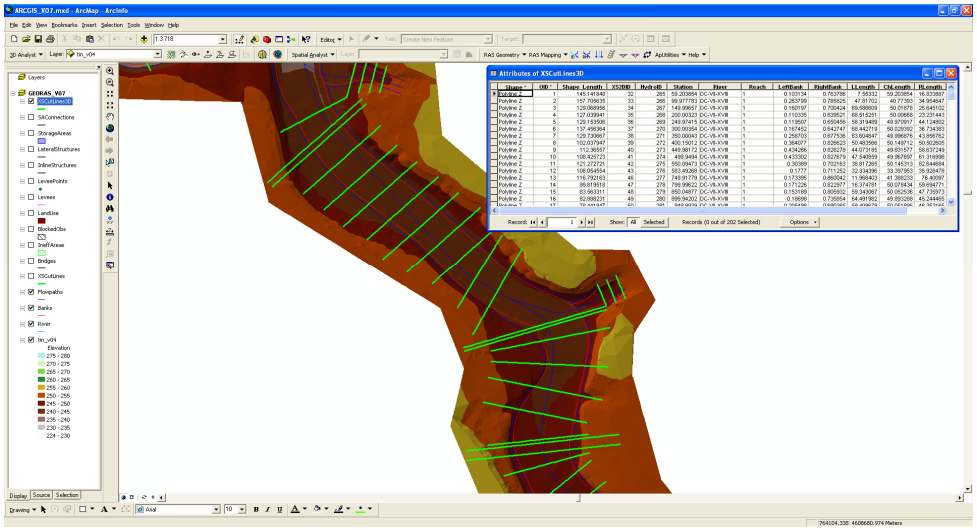


Fig.61 Tabla de atributos de secciones 3D.

3.1.3.7 Exportación a HEC-RAS.

Para poder modelizar hidráulicamente nuestro cauce, una vez obtenida la geometría de dicho cauce, debemos exportarla a HEC-Ras en un formato compatible con este último programa.

Para crear el archivo de exportación a HEC-Ras, debemos emplear la herramienta *Export GIS Data* del menú *RAS Geometry*.

Crearemos dos archivos, uno con extensión .xml y otro con extensión .sdf.

Con este último paso queda definida la geometría del cauce en un archivo compatible con el programa HEC-RAS.

3.1.4 SIMULACIÓN CAUCE NATURAL CON HECRAS.

3.1.4.1 Material y métodos.

Para la simulación hidráulica del cauce en su estado natural se empleara el programa informático HEC-RAS en su versión 4.1.0.

La geometría empleada ha sido creada con el programa *ArcGIS* y la extensión HEC-GeoRAS, mediante el proceso descrito en puntos anteriores.

3.1.4.2 Importación de geometría.

Para la importación de la geometría a HEC-RAS, debemos ir a la ventana de *Geometric Data* y allí en el menú *File*, en la opción de *Import Geometry Data* seleccionar *GIS Format*.

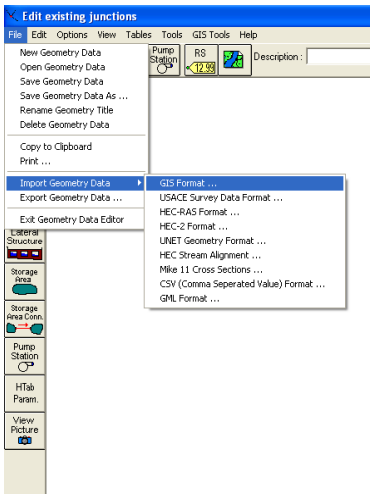


Fig.62 Importación de la geometría del cauce.

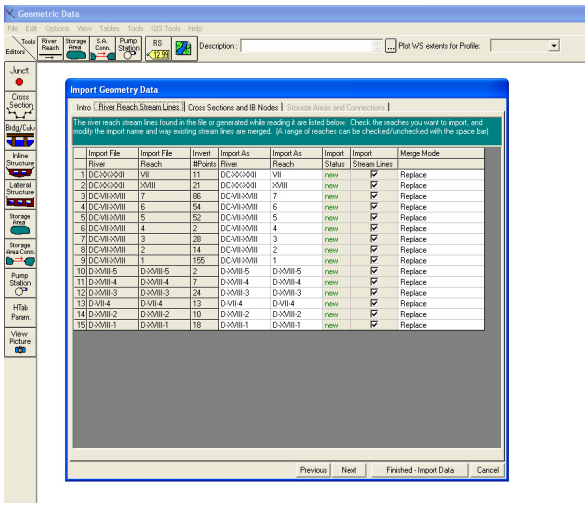


Fig.63 Comprobación de la no perdida de datos.

Debemos comprobar que hayamos importado todos los cauces y tramos de cauce, asi como todas las secciones.

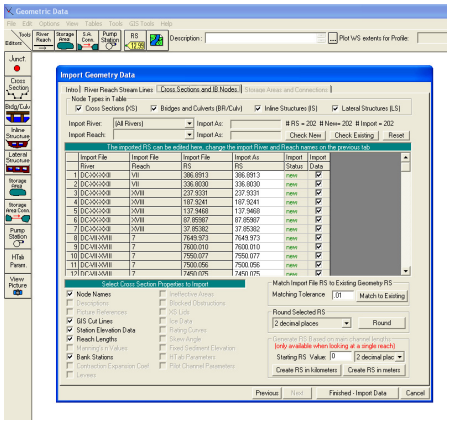


Fig.64 Comprobación de la no pérdida de datos.

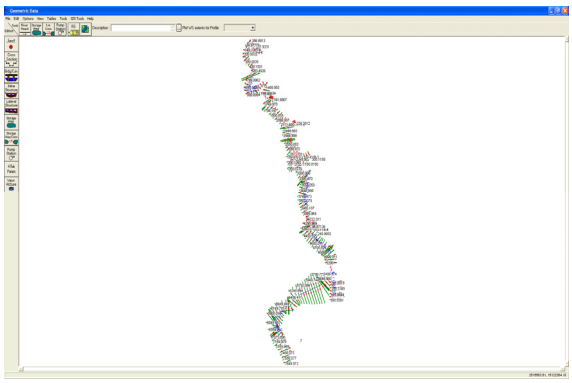


Fig.65 Vista general de la geometría importada.

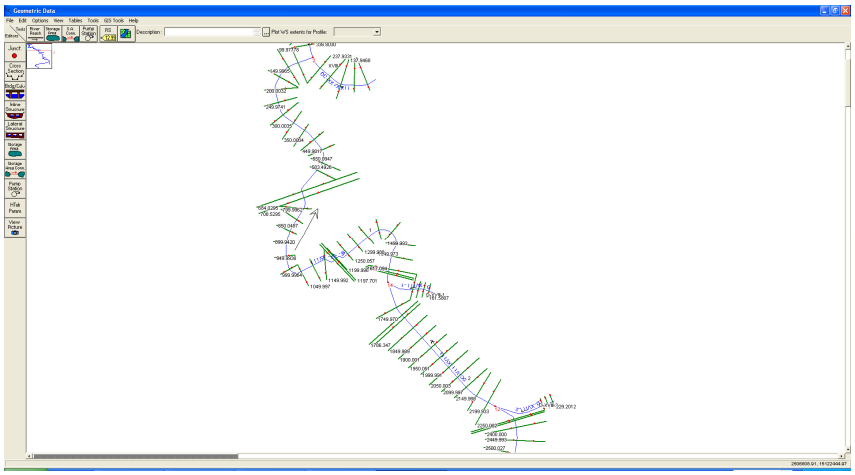


Fig.66 Detalle de la geometría importada.

3.1.4.3 Estructuras de cruce (*Bridges/Culverts*).

Para la correcta modelización del cauce, además de la geometría natural del cauce, debemos introducir las obras de origen antrópico que influyen en el flujo del agua.

Dichas estructuras serán taludes de obras de cruce de caminos, carreteras o vías férreas, puentes, presas y cualquier otra estructura que pueda encontrarse en el cauce.

3.1.4.3.1 Geometría estructuras.

Para la modelización de estas estructuras por HEC-RAS, será necesaria la introducción de sus dimensiones y tipología. La información necesaria se obtendrá del levantamiento topográfico y de medidas realizadas en visitas a campo.

3.1.4.3.1.1 Definición puentes.

Para la introducción de la geometría de un puente en Hec-Ras, el primer paso es crear un nuevo puente. En la ventana de geometría, en el icono de *Bridge Culvert Data*, seleccionaremos el menú *Options* y la herramienta de *Add Bridge and/or Culvert*.

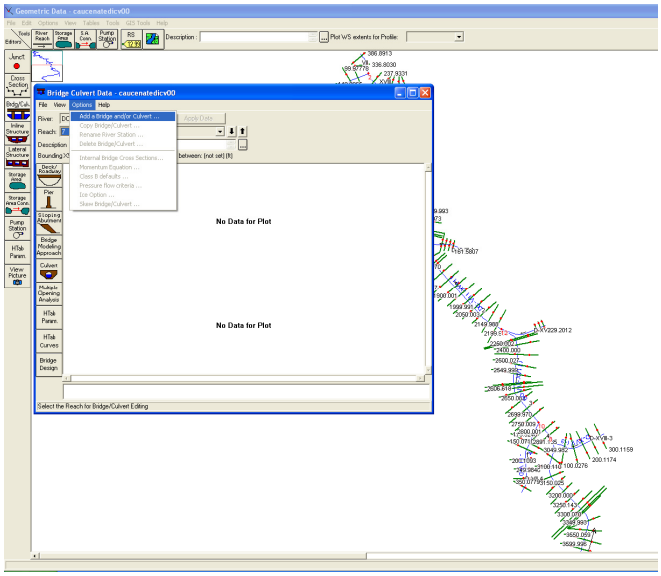


Fig.67 Generación de cruce.

El primer paso será la definición del tablero del puente con la herramienta *Deck/Roadway Data Editor*.

Para lo cual deberemos especificar la distancia del tablero a la sección inmediatamente superior a este, la anchura del tablero y el coeficiente de vertido de la presa en caso de ser superado dicho tablero por la lámina de agua.

El siguiente paso será definir la cota superior e inferior del tablero, tanto aguas arriba como aguas abajo. Y el punto inicial y final del tablero respecto a la sección transversal al cauce.

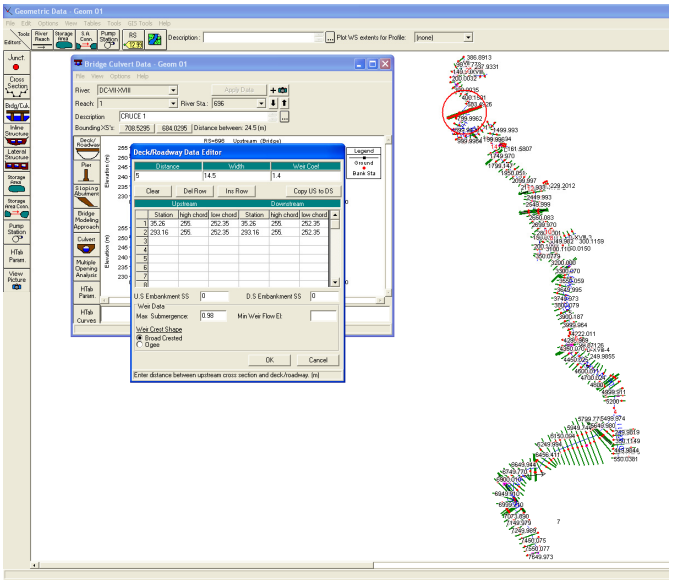


Fig.68 Definición de distancias y longitudes en tablero.

Una vez introducido el tablero, procederemos a definir las pilas del puente con la herramienta *Pier Data Editor*.

Debemos especificar para cada pila la distancia a la que se encuentra el eje central de la pila respecto a la sección transversal al cauce, la anchura y altura aguas arriba y aguas abajo.

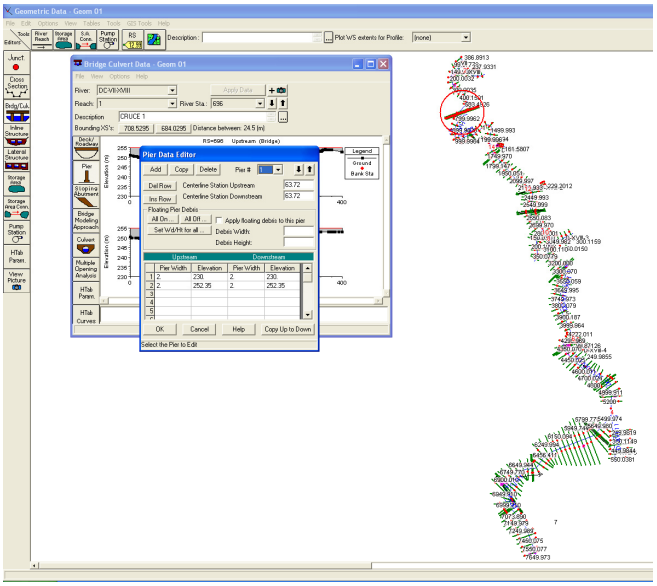


Fig.69 Definición de pilas de puente.

Por ultimo definiremos los estribos del puente con la herramienta *Stoping Abutment Data Editor*.

Se debe introducir para su definición, la cota superior del estribo en sus cuatro vértices, así como la distancia respecto a la sección transversal al cauce de estos.

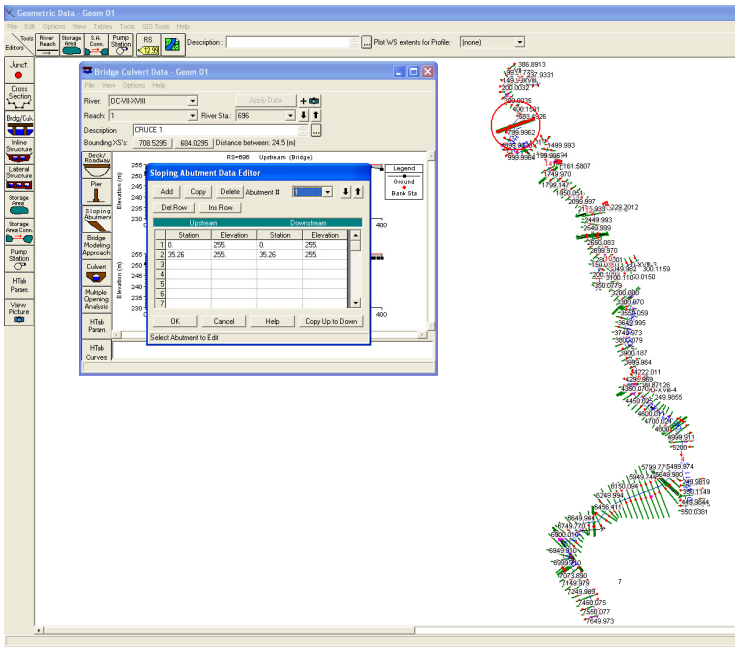


Fig.70 Definición de estribos del puente.

Para la definición del cálculo hidráulico del entorno de los puentes, emplearemos la herramienta *Bridge Modeling Approach Editor*.

Mantendremos el método de cálculo estándar, basado en los estados de energía que recomienda el manual de Hec-Ras. Ya que en nuestro caso no hay ningún puente en el que se pueda producir sumergencia.

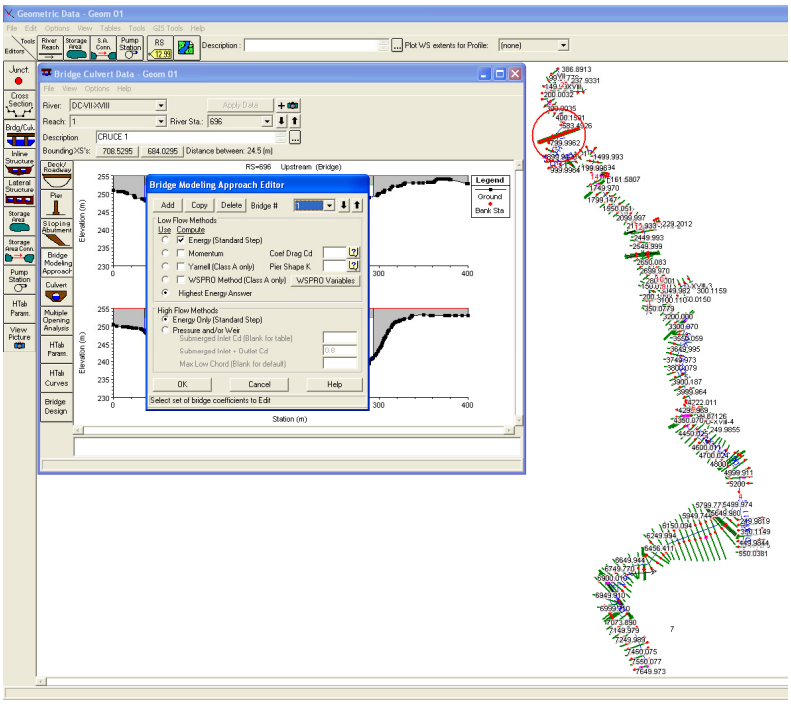


Fig.71 Selección método de cálculo.

Una vez realizados los pasos anteriores la modelización geométrica del puente está finalizada.

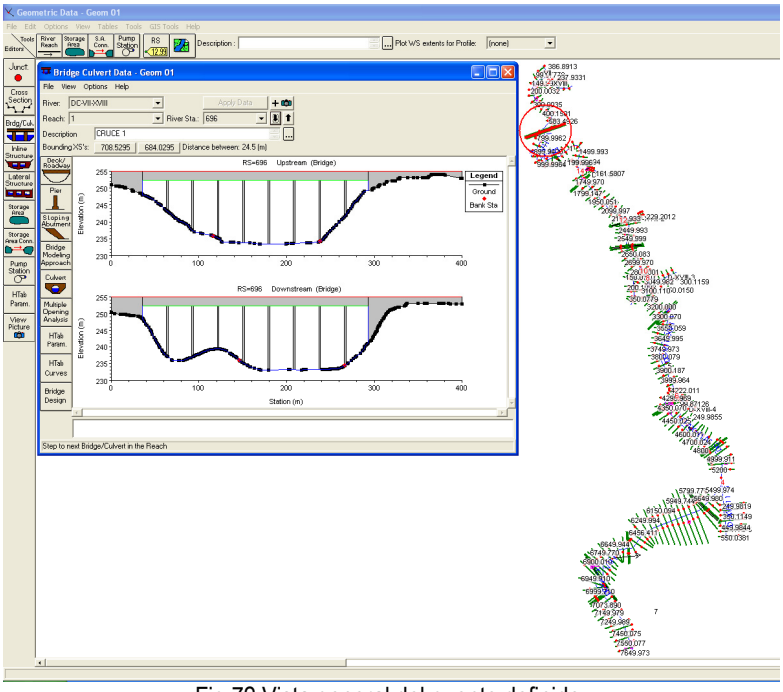


Fig.72 Vista general del puente definido.

3.1.4.3.1.2 Definición *culverts*.

3.1.4.3.1.2.1 Geometría *culverts*.

Para la definición geométrica de *Culverts*, el primer paso es la introducción de la geometría del talud sobre el que se apoya la vía transversal al cauce.

Con la herramienta *Deck/Roadway Data Editor*, fijamos la distancia del talud a la sección transversal inmediatamente superior al cruce, la anchura del talud y el coeficiente de descarga de presa (en caso de avenida que lo desborde).

Por otro lado definimos la cota superior del talud a lo largo de su eje y la pendiente de los taludes laterales (En nuestro caso la pendiente será 1:1).

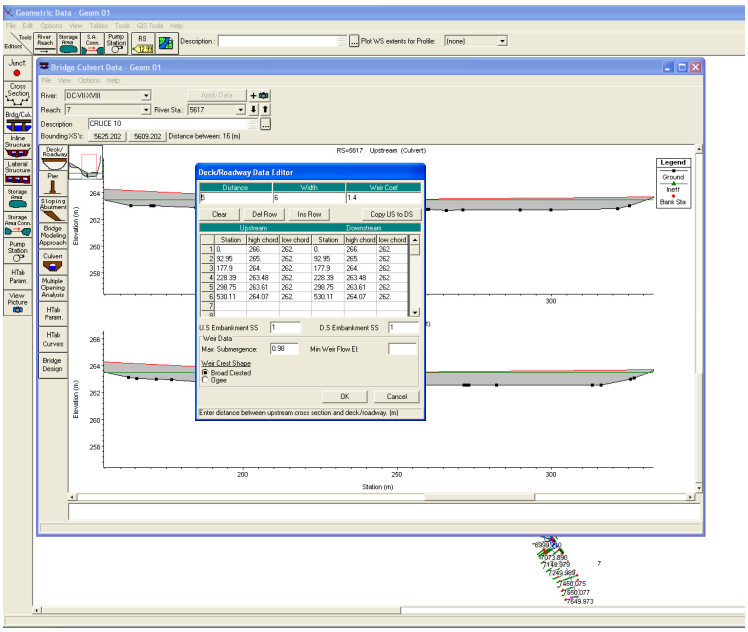


Fig.73 Definición del terraplén.

Con la herramienta de *Culvert Data Editor* definimos el tipo de conducto que hay en el cruce.

En la opción *Shape*, elegimos la forma del conducto. En nuestro caso la forma es circular, con distintos diámetros según el cruce en el que nos encontremos.

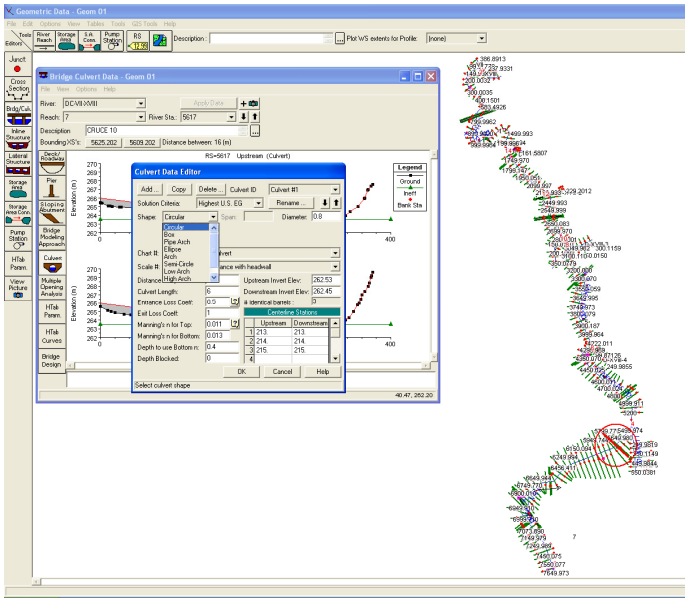


Fig.74 Definición del conducto del *culvert*.

El siguiente paso es definir el material del conducto en la opción *Chart*. En nuestro caso los conductos en todos los cruces están formados por tuberías de hormigón.

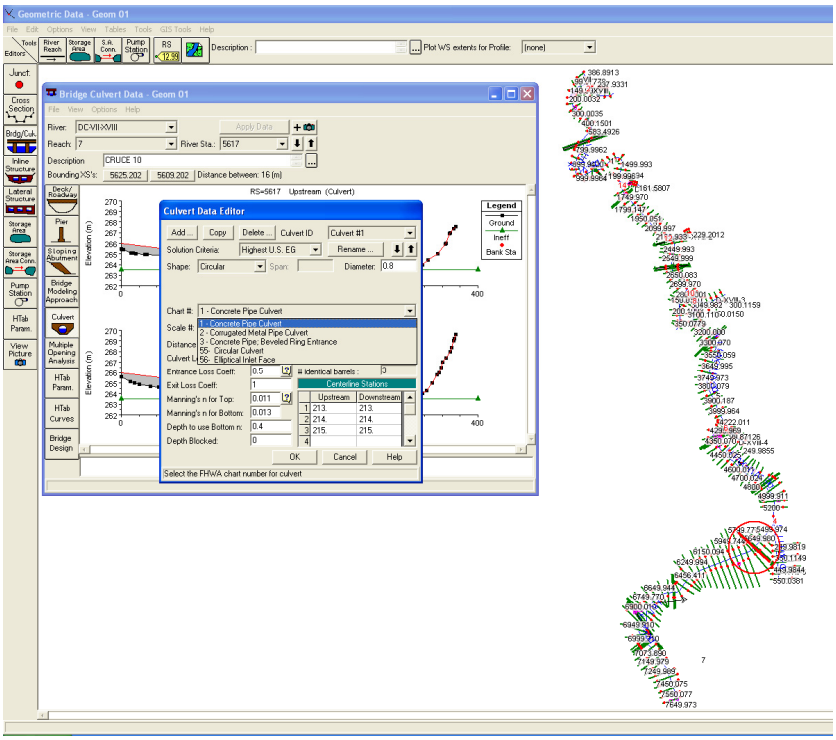


Fig.75 Definición material del conducto.

En la opción *Scale* se debe fijar al tipo de recibimiento del tubo en el talud. Definiremos, si el tubo está cortado de forma perpendicular al flujo o a bisel, si esta rematado con muro frontal o si sobresale del talud.

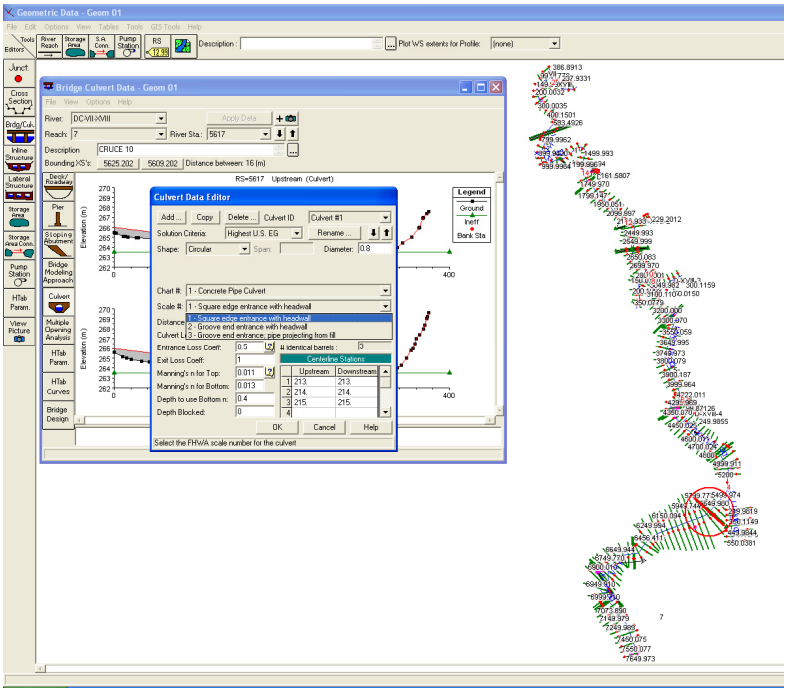


Fig.76 Definición de tubo cortado en ángulo recto y con muro de cabeza.

Definiremos la distancia del tubo a la sección transversal superior, la longitud del tubo y la cota inferior de este en el extremo aguas arriba y aguas abajo del cruce.

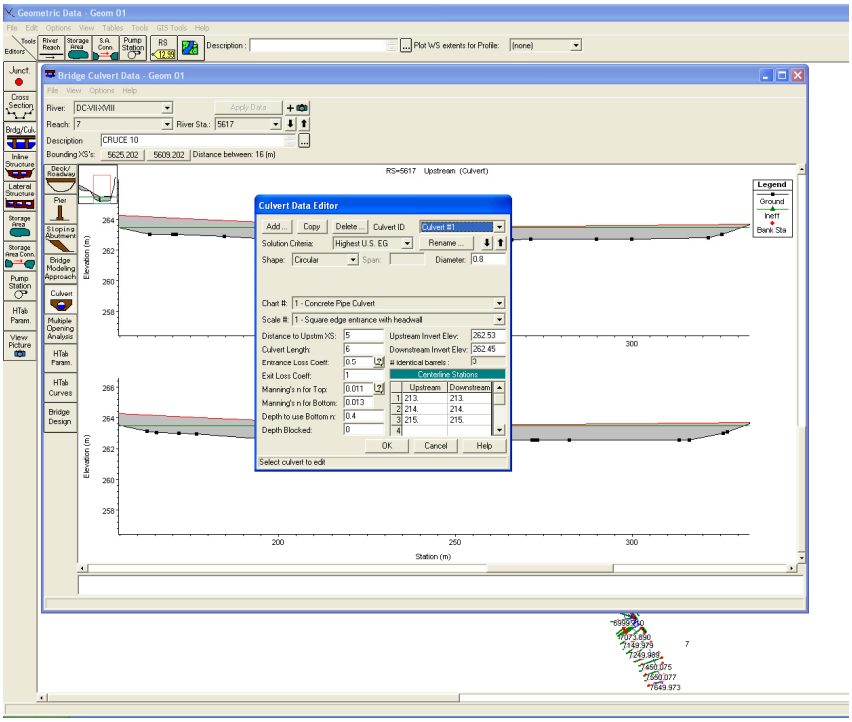


Fig.77 Medidas del conducto, n de Manning y elevaciones.

En la ventana de *Centerline Stations*, se define el eje de cada uno de los conductos presentes en el *Culvert*, respecto al eje de la sección transversal al cauce.

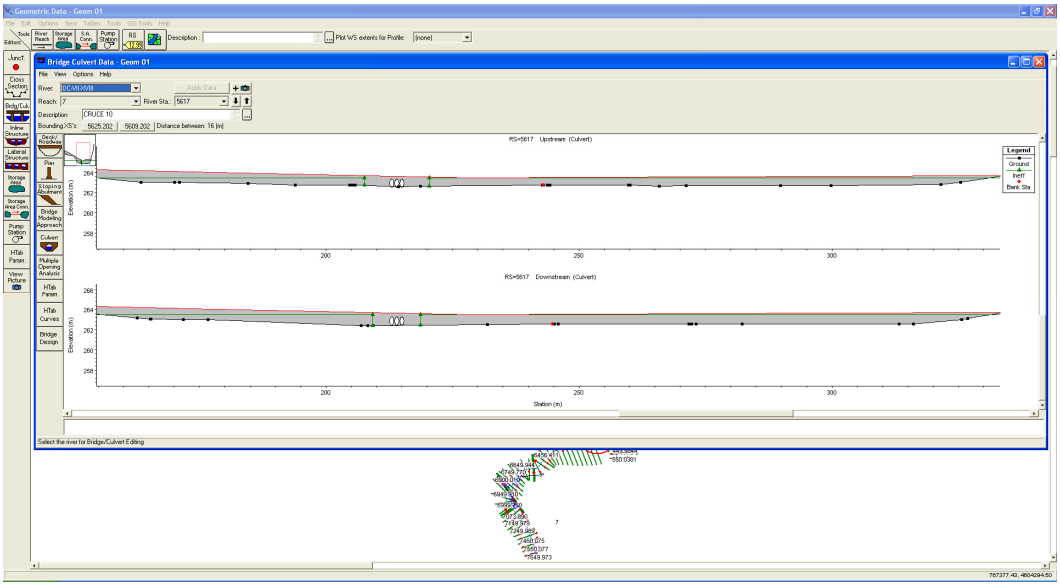


Fig.78 *Culvert* con tres conductos circulares.

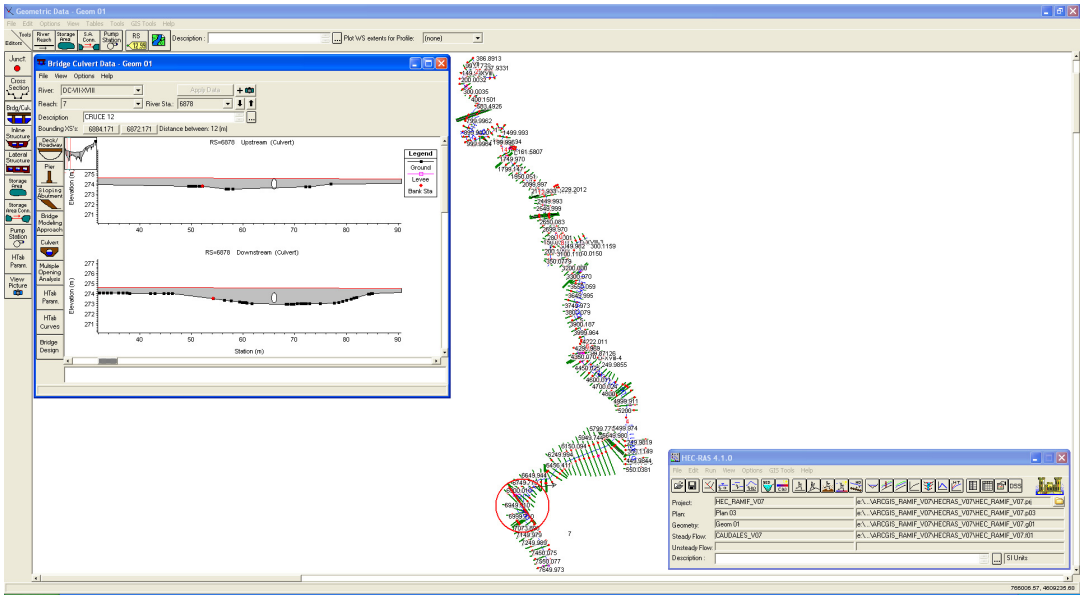


Fig.79 *Culvert* con un conducto circular.

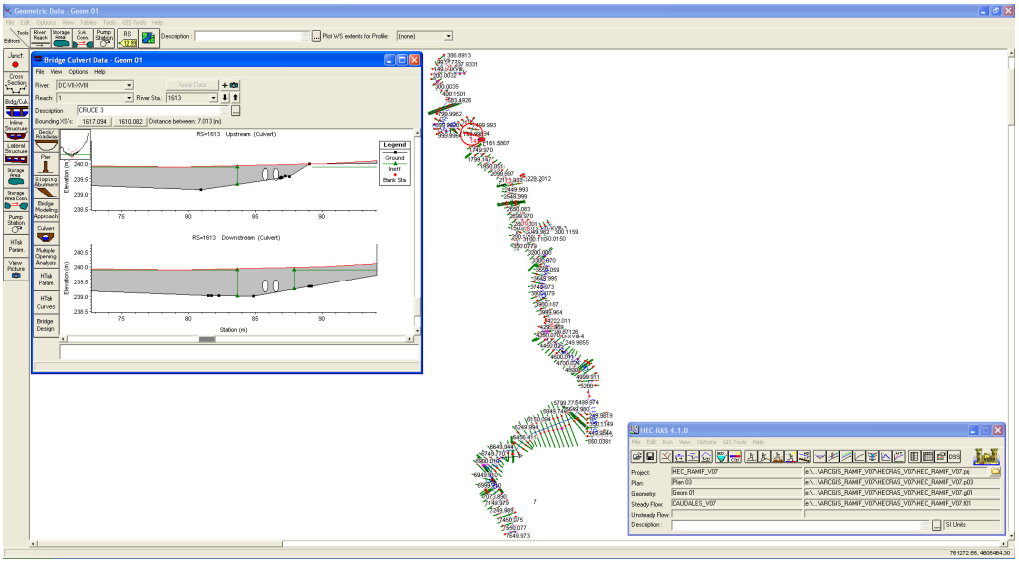


Fig.80 *Culvert* con dos conductos circulares.

3.1.4.3.1.2.2 Asignación Manning en ***culverts***.

El número de Manning es un coeficiente función de la rugosidad del material, que debe ser asignado tanto a las diferentes zonas del cauce, como a las estructuras que se haya en él.

El valor de Manning para los tubos de hormigón con los que se conforma el *culvert*, esta tabulado en el manual de HEC-RAS (Chow, 1959).

Table 6-1 Manning's "n" for Closed Conduits Flowing Partly Full

Type of Channel and Description	Minimum	Normal	Maximum
Brass, smooth:	0.009	0.010	0.013
Steel:			
Lockbar and welded	0.010	0.012	0.014
Riveted and spiral	0.013	0.016	0.017
Cast Iron:			
Coated	0.010	0.013	0.014
Uncoated	0.011	0.014	0.016
Wrought Iron:			
Black	0.012	0.014	
Galvanized	0.013	0.016	0.015
			0.017
Corrugated Metal:			
Subdrain	0.017	0.019	0.021
Storm Drain	0.021	0.024	0.030
Lucite:	0.008	0.009	0.010
Glass:	0.009	0.010	0.013
Cement:			
Neat, surface	0.010	0.011	0.013
Mortar	0.011	0.013	0.015
Concrete:			
Culvert, straight and free of debris	0.010	0.011	0.013
Culvert with bends, connections, and some debris	0.011	0.013	0.014
Finished	0.011	0.012	0.014
Sewer with manholes, inlet, etc., straight	0.013	0.015	0.017
Unfinished, steel form	0.012	0.013	0.014
Unfinished, smooth wood form	0.012	0.014	0.016
Unfinished, rough wood form	0.015	0.017	0.020
Wood:			
Stave	0.010	0.012	0.014
Laminated, treated	0.015	0.017	0.020
Clay:			
Common drainage tile	0.011	0.013	0.017
Vitrified sewer	0.011	0.014	0.017
Vitrified sewer with manholes, inlet, etc.	0.013	0.015	0.017
Vitrified Subdrain with open joint	0.014	0.016	0.018
Brickwork:			
Glazed	0.011	0.013	0.015
Lined with cement mortar	0.012	0.015	0.017
Sanitary sewers coated with sewage slime with bends and connections	0.012	0.013	0.016
Paved invert, sewer, smooth bottom	0.016	0.019	0.020
Rubble masonry, cemented	0.018	0.025	0.030

[Chow, 1959]

Fig.81 Valores de n de Manning tabulados en HecRAs.

El programa permite asignar un valor de Manning para la parte superior del tubo y otro diferente para la parte inferior. Esto ajusta la modelización a los valores reales, ya que la parte inferior del tubo suele tener mayor rugosidad debido a la deposición de

materiales provenientes del flujo de agua, mientras que la zona superior que no está en contacto permanente con el flujo, tendrá una rugosidad inferior.

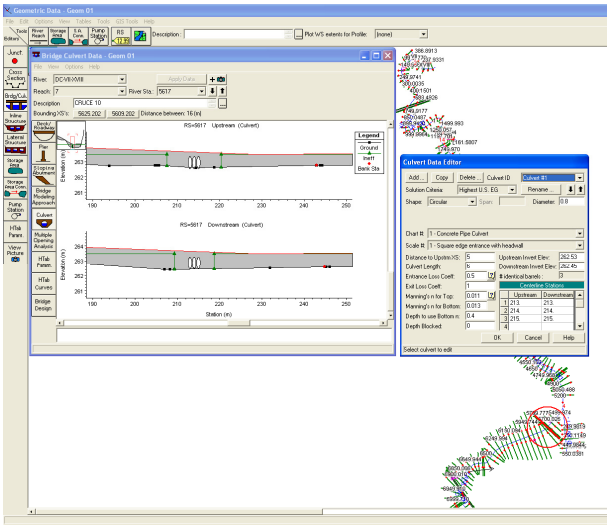


Fig.82

3.1.4.3.1.2.3 Coeficientes de pérdidas en *culverts*.

La contracción del flujo a la entrada aun *culvert*, provoca una pérdida de energía proporcional a la velocidad del flujo aguas arriba. Esta pérdida de energía es cuantificada por el programa HEC-RAS, multiplicando la velocidad aguas arriba por un coeficiente tabulado para cada tipología de *culvert*.

En nuestro caso, todos los cruces de caminos sobre el cauce tienen una tipología muy similar, compuesta por tuberías de hormigón sin grandes obras que los reciban, como podrían ser aletas o muros perimetrales. Así pues adoptaremos un valor de coeficiente de pérdidas a la entrada de 0.5 para todos ellos.

Table 6-4 Entrance Loss Coefficient for Reinforced Concrete Box Culverts

Type of Structure and Design of Entrance	Coefficient, k_e
Headwall Parallel to Embankment (no wingwalls):	
Square-edged on three edges	0.5
Three edges rounded to radius of 1/12 barrel dimension	0.2
Wingwalls at 30 to 75 degrees to Barrel:	
Square-edge at crown	0.4
Top corner rounded to radius of 1/12 barrel dimension	0.2
Wingwalls at 10 to 25 degrees to Barrel:	
Square-edge at crown	0.5
Wingwalls parallel (extension of sides):	
Square-edge at crown	0.7
Side or slope tapered inlet	0.2

Fig.83 Coef. de pérdidas a entrada de *culvert* cuadrado.

Table 6-3 Entrance Loss Coefficient for Pipe Culverts

Type of Structure and Design of Entrance	Coefficient, k_e
Concrete Pipe Projecting from Fill (no headwall):	
Socket end of pipe	0.2
Square cut end of pipe	0.5
Concrete Pipe with Headwall or Headwall and Wingwalls:	
Socket end of pipe (grooved end)	0.2
Square cut end of pipe	0.5
Rounded entrance, with rounding radius = 1/12 of diameter	0.2
Concrete Pipe:	
Mitered to conform to fill slope	0.7
End section conformed to fill slope	0.5
Beveled edges, 33.7 or 45 degree bevels	0.2
Side slope tapered inlet	0.2
Corrugated Metal Pipe or Pipe-Arch:	
Projected from fill (no headwall)	0.9
Headwall or headwall and wingwalls square edge	0.5
Mitered to conform to fill slope	0.7
End section conformed to fill slope	0.5
Beveled edges, 33.7 or 45 degree bevels	0.2
Side slope tapered inlet	0.2

Fig.84 Coef. de pérdidas entrada de *culvert* circular.

Según el manual de HEC-RAS y basado en el criterio de la FHWA, los coeficientes de pérdidas a la salida de un *culvert*, oscilan entre 0.3 y 1. Siendo 1 el valor para un *culvert* en carga y menor este valor cuanto menos brusca sea la transición.

En nuestro caso, para la modelización del cauce actual, optaremos por aplicar un valor de 1 a este coeficiente. Este valor es el más probable en caso de avenida, dados los pequeños diámetros de los tubos empleados en los cruces del cauce objeto de estudio.

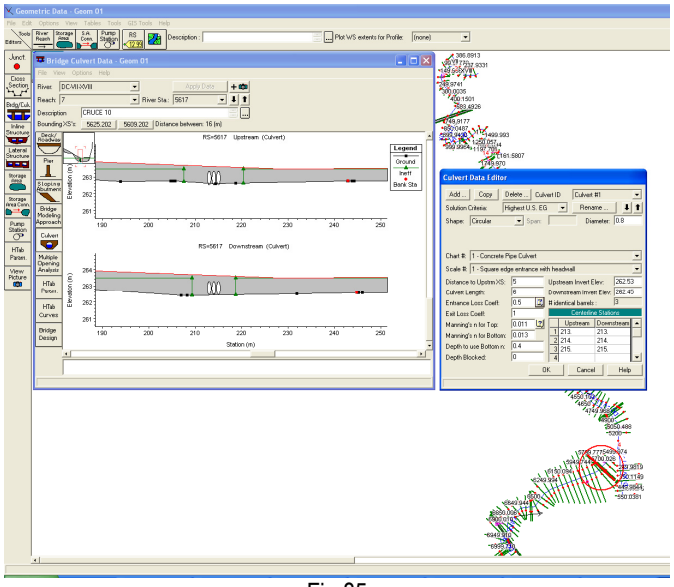


Fig.85

3.1.4.3.2 Áreas inefectivas.

Aguas arriba y aguas debajo de los estrechamientos del cauce, se producen zonas en las que el flujo es nulo. Es el caso de los pasos bajo caminos, mediante tubos.

Para representar esta situación HEC-RAS nos brinda la herramienta *Ineffective Areas*.

Mediante la herramienta de *Ineffective Areas*, asignamos dentro de las secciones aguas arriba y aguas abajo de nuestro cruce, distancias al origen de la sección y cota hasta la que el flujo es inexistente.

En cruces de caminos conformados por un talud y un paso de tubos de diámetro insuficiente, en caso de avenida, dichos taludes actúan como presas. Siendo el área efectiva de paso del flujo la comprendida entre la lámina superior del agua y la coronación del talud, multiplicada por la anchura del cauce en ese punto.

Para calcular el área inefectiva en las secciones aguas arriba y aguas abajo del cruce, debemos generar un archivo auxiliar en CAD. Delineando en planta dichas áreas inefectivas, con el fin de obtener el punto de corte de dichas áreas inefectivas con las secciones.

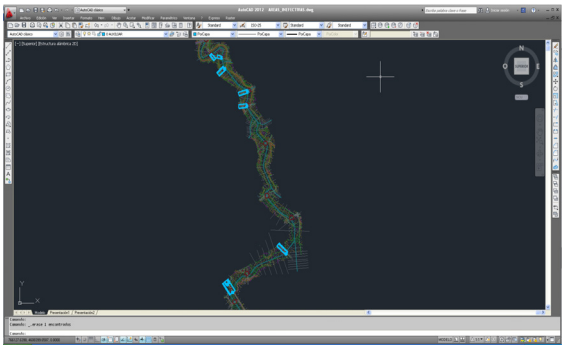


Fig.86 Situación de los cruces en el cauce.

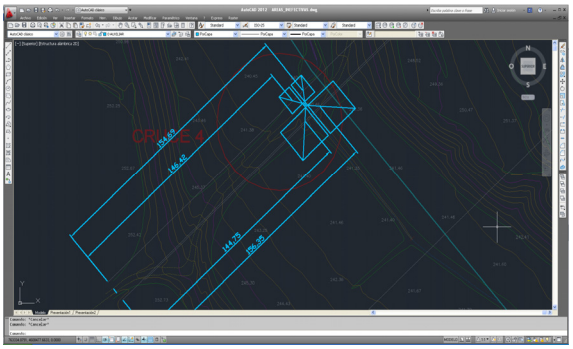


Fig.87 Definición de áreas inefectivas en Autocad.

En nuestro caso hemos establecido una proporción de contracción aguas arriba de 1:1 y una de expansión aguas abajo de 2:3 (Según se recomienda en el manual del usuario de HEC-RAS)

Una vez que disponemos de la distancia desde el comienzo de la sección al corte de las áreas inefectivas, podemos proceder a su introducción en HEC-RAS.

HEC-RAS solo permite dar una altura a las áreas inefectivas. En nuestro proyecto introduciremos como altura de las áreas inefectivas, el punto más bajo de los taludes de los cruces. Es decir el punto por el que el agua comenzara a desbordar el talud.

En caso de avenida, los taludes de los cruces de caminos pueden resistir el flujo de agua sobre ellos, actuando como presas con vertedero en su parte superior o degradarse por el efecto del flujo, desapareciendo.

En nuestro caso vamos a suponer que la situación es la primera, aguantando estas obras el efecto del flujo. Esto implica que las áreas inefectivas deben ser permanentes, siendo el flujo nulo antes y después de que el caudal sobrepase el límite superior del talud.

Para que un áreas inefectiva sea permanente, debemos especificarlo al introducirla, tal y como se aprecia en las siguientes figuras.

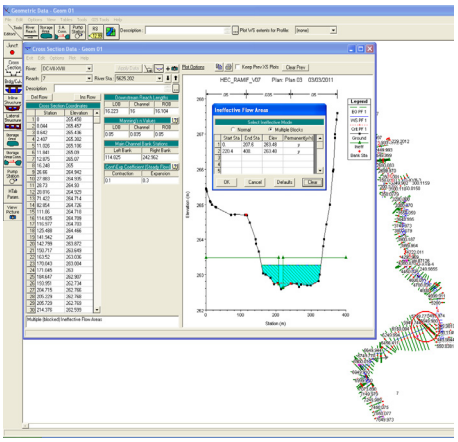


Fig.88 Definición áreas inefectivas.

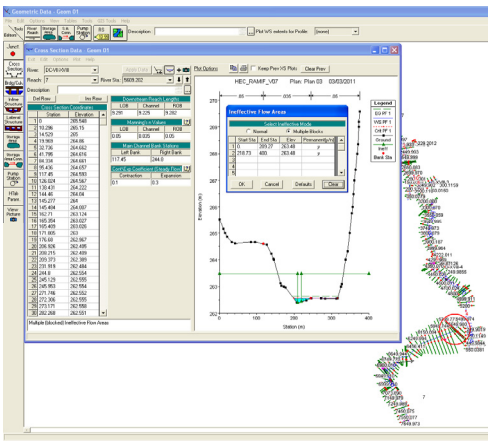


Fig.89 Definición áreas inefectivas.

También existe la posibilidad de fijar las áreas inefectivas de varias secciones como permanentes en el menú *Tools* de la ventana de geometría, seleccionando la opción *Ineffective Areas* y la herramienta *Set to permanent mode*.

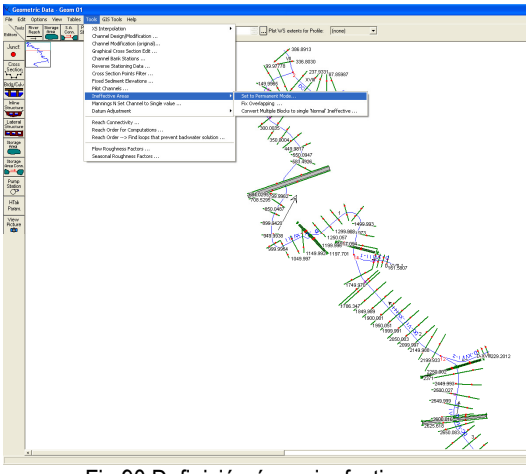


Fig.90 Definición áreas inefectivas.

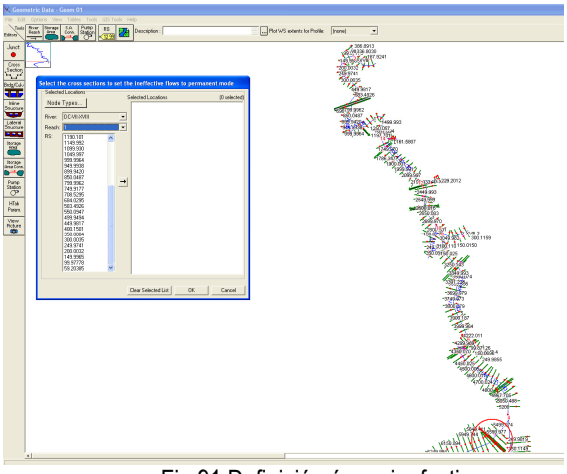


Fig.91 Definición áreas inefectivas.

3.1.4.4 Manning en cauce.

En el cauce, Hec-Ras nos permite asignar un valor de Manning al canal principal del cauce y a las zonas externas a los *Banks*.
En nuestro caso no disponemos de un cauce marcado, al estar roturado en su mayor parte.

Asignaremos un valor de Manning a la zona roturada, asumiendo que será la zona que se inundara en primer lugar en caso de avenida. Fijando otro valor de Manning para las laderas laterales del barranco, que se corresponden con zonas de monte bajo en mayor parte.

El valor de Manning que hemos considerado más apropiado para una superficie cultivada es de 0.035, mientras que para las laderas de monte bajo se ha considera apropiado un valor de 0.05.

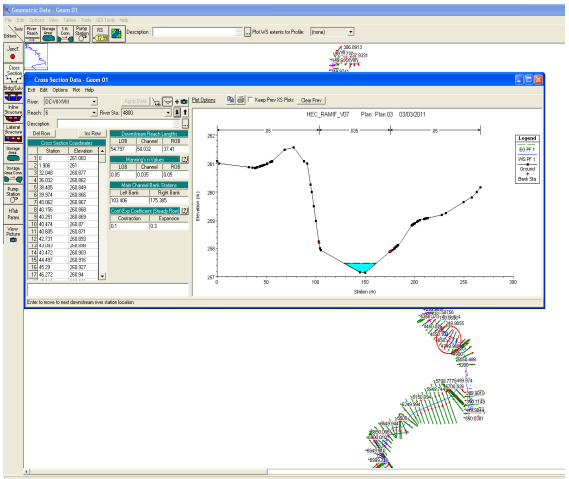


Fig.92 Valores de Manning en una sección.

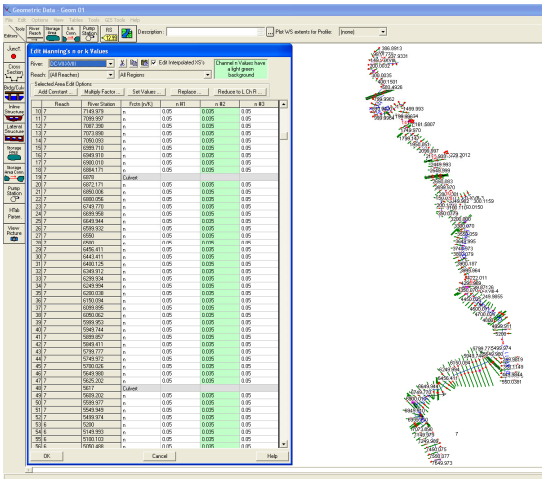


Fig.93 Manning asignados a todas las secciones.

Se puede asignar valores de Manning a multiples secciones en el menú *Tables* de la ventana grafica de Hec-Ras, seleccionando la opción de *Manning´s n or k values*.

3.1.4.5 Condiciones de contorno y caudales.

3.1.4.5.1 CAUDALES.

Los caudales empleados para la simulación hidráulica, como ya se explicó con anterioridad, son los recogidos en el Plan Coordinado de Obras. Monegros II - 3ª Parte – 1ª Fase. Estos datos pueden consultarse en el Anexo 3.

Los cauces principales se designan con números romanos. Cuando se unen dos cauces, el cauce resultante se designa con la unión de los nombres de los cauces que se han unido con anterioridad.

Dentro de un mismo cauce se diferencian distintos tramos, en función del caudal circulante por cada uno de ellos. Esto es debido a que cuando un afluente se une al cauce principal varía el caudal circulante por el cauce principal. Para nombrar a los tramos de cauce, se añade un número árabe al nombre del cauce.

A objeto de su simulación en Hec-Ras nombraremos al barranco de Campillo como DC-VII-XVIII, nombre que recibe en el Plan Coordinado.

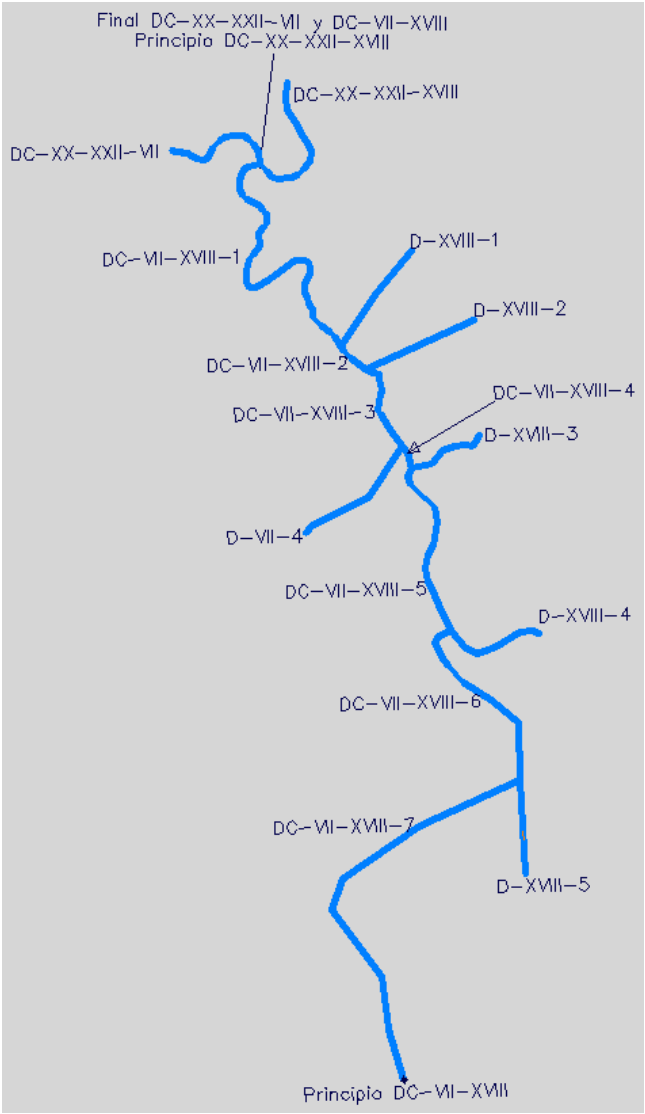


Fig.94 Barranco de Campillo con afluentes y vertido a Barranco de Chermanillo.

En el Plan Coordinado se encuentran los caudales esperados para avenidas con retornos de 25 y 100 años, así como los caudales esperados por retornos de riegos en la zona una vez transformada a regadío.

Para la simulación hidráulica del Barranco de Campillo, objeto de estudio de este proyecto, se dispone de los caudales circulantes por este barranco, además de los barrancos tributarios a él y el barranco al cual vierte.

		CAUDALES EN m3/s		
CAUCE	TRAMO	25 AÑOS	100 AÑOS	RIEGO
D-VII-4	D-VII-4	2.39	3.42	0.056
D-XVIII-1	D-XVIII-1	0.12	0.17	0.004
D-XVIII-2	D-XVIII-2	1.41	2.01	0.035
D-XVIII-3	D-XVIII-3	10.45	14.93	0.07
D-XVIII-4	D-XVIII-4	5.83	8.33	0.06
D-XVIII-5	D-XVIII-5	1.06	1.51	0.02
D-VII-XVIII	1	24.86	35.52	0.34
D-VII-XVIII	2	23.56	33.66	0.31
D-VII-XVIII	3	22.12	31.6	0.27
D-VII-XVIII	4	19.55	27.92	0.21
D-VII-XVIII	5	9.08	12.97	0.137
D-VII-XVIII	6	2.56	3.66	0.055
D-VII-XVIII	7	1.19	1.71	0.028
DC-XX-XXII	VII	17.71	25.68	0.25
DC-XX-XXII	XVIII	48.74	70.68	0.62

Fig.95 Caudales por tramos.

Se introducirán en HecRas los tres caudales, modelizandose el cauce para cada uno de ellos, tal y como se aprecia en la Fig.96.

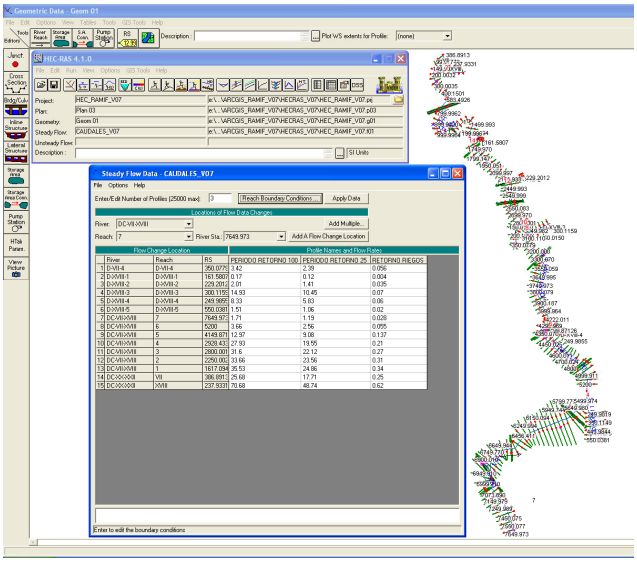


Fig.96 Asignación de caudales.

Para el cálculo hidráulico, debemos introducir las condiciones de contorno del cauce objeto de estudio.

En nuestro caso las condiciones de contorno que supondremos, aguas arriba y aguas abajo, de nuestro barranco de estudio asi como de los afluentes que a el vierten y el barranco al que desemboca, seran flujo normal.

La pendiente de cada uno de los cauces se se calcula sobre la topografia del terreno.

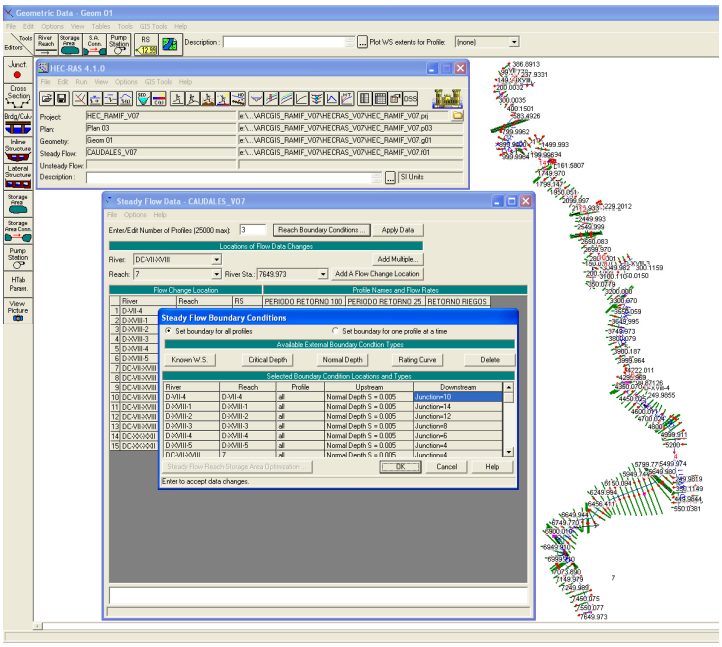


Fig.97 Asignación de condiciones de contorno.

Una vez introducida la geometría, caudales y condiciones de contorno, se procede al cálculo hidráulico, cuyos resultados se muestran en el apartado siguiente.

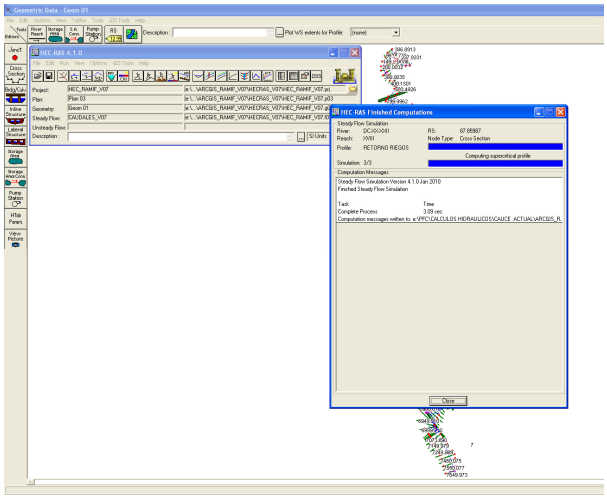


Fig.98 Calculo hidráulico con HecRas.

Los datos obtenidos del cálculo se encuentran recogidos en el apartado Resultados de este proyecto.

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3.2 MODELIZACIÓN DEL ENCAUZAMIENTO.

3.2.1 ENCAUZAMIENTO.

La modelización del cauce natural del barranco, ha permitido detectar situaciones que deben ser corregidas.

En la configuración natural del barranco, no hay un cauce definido para pequeños caudales. Esta situación una vez puesta en riego la zona, implicaría que los retornos de riegos no tuvieran una salida definida de la zona. Provocando zonas inundadas, deposición de materiales en suspensión y erosión incontrolada en puntos de alivio de estos flujos.

Por otro lado, en caso de avenida la superficie inundada seria elevada y los cruces de caminos quedarían inutilizados, al no estar dimensionados para los caudales esperados.

Ejemplos de estas situaciones desfavorables pueden verse en el reportaje fotográfico de la zona de estudio en el Anexo 1.

La función del encauzamiento será pues evitar:

- Erosión o colmatación del cauce.
- Inundación de zonas exteriores al cauce.
- Inutilización de las vías de comunicación en caso de avenida.

La configuración del encauzamiento será una sucesión de tramos con sección y pendiente constante, evitando los flujos supercríticos, que permitirán el cálculo de su calado Normal mediante la fórmula de Manning.

El encauzamiento, cuya pendiente en general será menor que la del terreno natural, se adaptara a la topología mediante saltos puntuales.

El flujo en los saltos se volverá turbulento (supercrítico), aumentando la erosión en estos puntos. Para evitar este efecto erosivo, se calculara el cuenco amortiguador necesario para cada tipo de salto.

3.2.1.1 RECOPILACIÓN DE INFORMACIÓN.

Para el diseño del encauzamiento debemos disponer de la información cartográfica de la zona y de la información geológica.

La información cartográfica del cauce ya ha sido utilizada en la modelización del cauce natural, por lo que no nos extenderemos en su explicación. Estando recogida en el Anexo 2.

La información geológica es necesaria, ya que el encauzamiento implica la excavación y definición de un nuevo trazado para el cauce, para lo que necesitamos conocer los materiales presentes en el terreno. Esta información es obtenida mediante catas a lo largo del eje del cauce.

Las catas realizadas en el barranco de Campillo se encuentran reflejadas en el Anexo 4. Mostrando un terreno mayoritariamente compuesto por arcillas compactadas.

3.2.1.2 DEFINICIÓN DEL ENCAUZAMIENTO.

3.2.1.2.1 VELOCIDADES DEL AGUA EN EL ENCAUZAMIENTO.

Cuando se diseña un encauzamiento, debe evitarse la sedimentación de los materiales en suspensión, lo cual obligaría a la limpieza frecuente del cauce.

En nuestro caso fijaremos una velocidad mínima de 0.11 m/s, ya que según las catas realizadas en el cauce, la arcilla es el material en el que se excavara el encauzamiento.

	En el fondo	Media
Para la arcilla.....	0.08 m/s	0.11 m/s
Para la arena fina (2mm).....	0.16 m/s	0.23 m/s
Para la arena gruesa (5mm).....	0.21 m/s	0.30 m/s
Para la gravilla (8mm).....	0.32 m/s	0.46 m/s
Para la grava (25mm).....	0.65 m/s	0.93 m/s

Fig.1 Velocidades mínimas. Apuntes de hidráulica 1º Ingeniero Agrónomo EPSH.

Al igual que fijamos una velocidad mínima para evitar la sedimentación de materiales, deberemos fijar una velocidad máxima, que evite la erosión del cauce. Lo cual arruinaría la obra realizada.

En el cauce objeto de estudio, el suelo está compuesto mayoritariamente por arcillas duras, por lo que fijaremos una velocidad máxima en el encauzamiento de 4 pies/s, que se corresponde a una velocidad de 1.32 m/s.

Material	n	Agua limpia		Agua que transporta limos coloidales	
		V, pies/s	τ_0, lb/pie²	V, pies/s	τ_0, lb/pie²
Arena fina coloidal	0.020	1.50	0.027	2.50	0.075
Marga arenosa no colodial	0.020	1.75	0.037	2.50	0.075
Marga limosa no coloidal	0.020	2.00	0.048	3.00	0.11
Limos aluviales no colidales	0.020	2.00	0.048	3.50	0.15
Marga firme ordinaria	0.020	2.50	0.075	3.50	0.15
Ceniza volcánica	0.020	2.50	0.075	3.50	0.15
Arcilla rígida muy coloidal	0.025	3.75	0.26	5.00	0.46
Limos aluviales colidales	0.025	3.75	0.26	5.00	0.46
Esquistos y subsuelos de arcilla dura	0.025	6.00	0.67	6.00	0.67
Grava fina	0.020	2.50	0.075	5.00	0.32
Marga gradada a cantos rodados, no coloidales	0.030	3.75	0.38	5.00	0.66
Limos gradados a cantos rodados coloidales	0.030	4.00	0.43	5.50	0.80
Grava gruesa no coloidal	0.025	4.00	0.30	6.00	0.67
Cantos rodados y ripios de cantera	0.035	5.00	0.91	5.50	1.10

Fig.2 Velocidades máximas. Apuntes de hidráulica 1º Ingeniero Agrónomo EPSH.

3.2.1.2.2 PENDIENTE LONGITUDINAL.

La pendiente longitudinal del encauzamiento deberá cumplir dos premisas.

No debe ser elevada, ya que aumentaría la velocidad del agua en exceso, con la consiguiente erosión. Por otro lado una pendiente mayor que la del terreno natural implica grandes volúmenes de excavación que elevarían el coste del encauzamiento.

Debe ser lo más aproximada al terreno natural que permitan los límites de velocidad mínima del agua, ya que una pendiente muy suave del encauzamiento obligaría a la ejecución de un número elevado de saltos, incrementando el coste de la obra.

Para el cálculo de las pendientes más apropiadas a cada tramo, procedemos a la definición de un perfil longitudinal del eje de nuestro barranco. Para lo cual emplearemos el programa Microstation y la extensión In Roads.

El perfil longitudinal del terreno natural se puede ver en el Anexo 7.

Las pendientes obtenidas del estudio del perfil longitudinal del eje del barranco, más apropiadas para el encauzamiento están comprendidas entre 1‰ y 7.5‰

Pendientes elevadas de hasta el 7.5‰, son aceptables en nuestro caso. Para pequeños caudales como los retornos de riegos, el rozamiento es alto y la velocidad del agua no excede los límites máximos. En el caso de caudales de avenida, las velocidades aunque están en el límite admisible, son aceptables ya que se darán con una frecuencia muy baja y permiten una reducción considerable de los costes de ejecución del encauzamiento.

TRAMO	PDTE
499-3100	0.001
3101-4249	0.002
4250-5549	0.0035
5550-6850	0.0075
6850-7300	0.0035
7300-7649	0.0075

Fig.3 Tramos y Pdte.

En la Fig.3 podemos ver un resumen de los tramos en que se ha dividido el encauzamiento y sus pendientes.

En los casos en que el inicio de un tramo no corresponde con el final del tramo anterior, esto se debe a que el cambio de pendiente coincide con un salto del encauzamiento.

3.2.1.2.3 SECCIONES TRANSVERSALES EN EL ENCAUZAMIENTO.

3.2.1.2.2.1 ELECCIÓN SECCIÓN TIPO.

Como hemos visto con anterioridad, uno de los objetivos del encauzamiento, es que sea capaz de transportar los caudales de retornos de riegos y de avenida sin desbordamientos.

Los caudales de retornos de riegos así como de avenida con periodo de retorno 25 y 100 años, son los que se muestran en la Fig.4.

		CAUDALES EN m3/s		
CAUCE	TRAMO	25 AÑOS	100 AÑOS	RIEGO
D-VII-4	D-VII-4	2.39	3.42	0.056
D-XVIII-1	D-XVIII-1	0.12	0.17	0.004
D-XVIII-2	D-XVIII-2	1.41	2.01	0.035
D-XVIII-3	D-XVIII-3	10.45	14.93	0.07
D-XVIII-4	D-XVIII-4	5.83	8.33	0.06
D-XVIII-5	D-XVIII-5	1.06	1.51	0.02
D-VII-XVIII	7	1.19	1.71	0.028
D-VII-XVIII	6	2.56	3.66	0.055
D-VII-XVIII	5	9.08	12.97	0.137
D-VII-XVIII	4	19.55	27.92	0.21
D-VII-XVIII	3	22.12	31.6	0.27
D-VII-XVIII	2	23.56	33.66	0.31
D-VII-XVIII	1	24.86	35.52	0.34
DC-XX-XXII	VII	17.71	25.68	0.25
DC-XX-XXII	XVIII	48.74	70.68	0.62

Fig.4 Caudales esperados por tramos.

Como podemos ver en la Fig.4, en el barranco objeto de estudio, se dan dos situaciones muy diferentes. Durante la mayor parte del año el caudal circulante correspondiente a los retornos de riegos será bajo, mientras que en cortos periodos de tiempo el caudal circulante podrá ser muy elevado debido a las avenidas.

Para optimizar la respuesta hidráulica de las secciones a los distintos caudales, se opta por el encauzamiento mediante una sección bitrapecial. Actuando el trapecio inferior como cauce de aguas bajas y el trapecio superior como cauce de avenida.

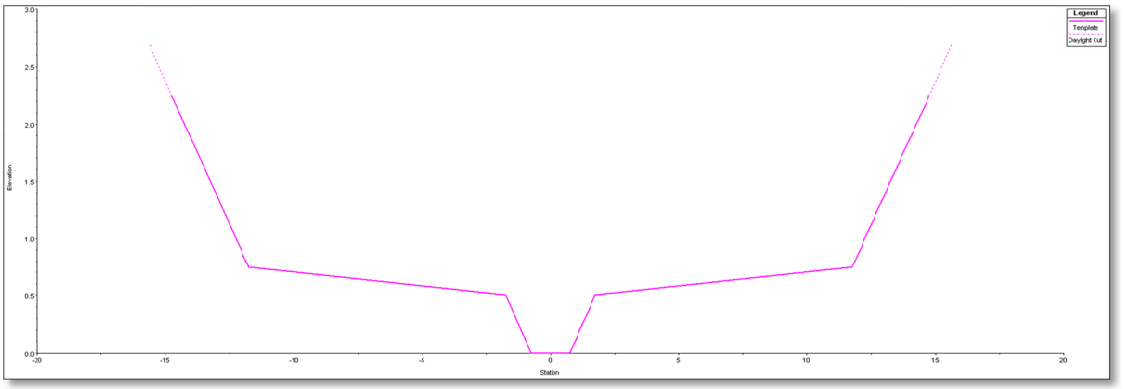


Fig.5 Sección bitrapecial.

Las ventajas de la sección bitrapecial se detallan a continuación:

Esta solución permite el flujo de caudales bajos por el cauce de aguas bajas, sin una disminución excesiva de la velocidad del agua, que provocaría la colmatación del desagüe.

El cauce de avenida, solo entrara en funcionamiento en momentos puntuales, lo cual permite mantenerlo seco la mayor parte del año. Evitando el crecimiento de vegetación que aumentaría el coste de mantenimiento y empeoraría su respuesta hidráulica en caso de avenida.

La base del cauce de avenida permite su utilización como camino de acceso para la limpieza del cauce de aguas bajas.

3.2.1.2.2.2 CRITERIOS DE DEFINICIÓN DE SECCIONES.

Una vez elegida la sección bitrapecial como sección para el encauzamiento, debemos proceder a definir las distintas partes de ella.

Anchura cauce de aguas bajas:

La base mínima del cauce de aguas bajas, se fija en un metro de anchura, con el objeto de facilitar su limpieza por medios mecánicos.

Evitando una anchura mayor, que implicaría velocidades muy bajas del agua, y la sedimentación de las partículas que transporte el agua.

Taludes laterales:

Según la bibliografía consultada, para una arcilla compactada como la que nos encontramos en nuestro cauce se deben construir con una relación 1½:1 de pendiente. En nuestro caso elegiremos una pendiente 2:1 en el cauce de aguas bajas

y 3:1 en el cauce de avenida, del lado de la seguridad. Evitando tanto deslizamientos de tierras, como el atrapamiento de personas o animales en el cauce.

Material	*Pendiente lateral* Z:1
Roca	Aproximadamente vertical
Estiércol y suelos de turba	1/4: 1
Arcilla rígida o tierra con recubrimiento de concreto	1/2: 1 a 1:1
Tierra con recubrimiento de piedras o tierra en canales grandes	1:1
Arcilla firme o tierra en canales pequeños	1 1/2:1
Tierra arenosa suelta	2:1
Marga arenosa o arcilla porosa	3:1

Fig.6 Pendiente lateral canales trapezoidales. Apuntes hidráulica 1º Ing. Agrónomo EPSH.

Anchura de la base del cauce de avenida:

Se fija una anchura mínima de la base del cauce de avenida de 2 metros, que permita la circulación de un vehículo por él, para su empleo como vía de acceso para la limpieza y mantenimiento del cauce de aguas bajas.

Pendiente de la base del cauce de avenida:

La base del cauce de avenida debe permanecer seca en los periodos entre avenidas, de forma que se evite el crecimiento de vegetación. Esta vegetación aumentaría la rugosidad del cauce desvirtuando los cálculos que se realicen en la modelización hidráulica.

Para evacuar las aguas que reciba esta superficie por lluvias o escorrentías de riegos colindantes, se realizara con una pendiente de 2.5% transversal al eje del barranco y hacia el cauce de aguas bajas.

Resguardo:

Al calado calculado para el transporte de los caudales de diseño, se añadirá un resguardo.

La fórmula empleada para el cálculo de los resguardos es la que aparece en la Fig.7 originalmente definida para una sección semicircular, pero semejable a una sección bitrapecial.

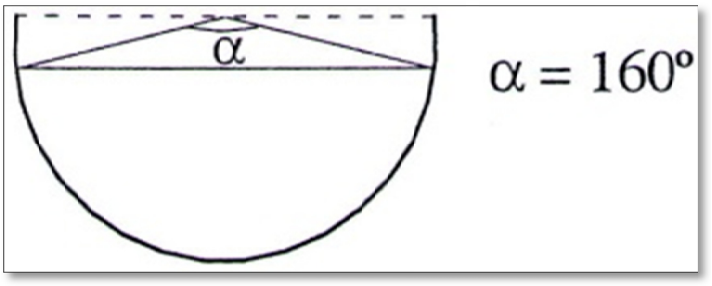


Fig.7 Formula de cálculo de resguardo.

Así pues las condiciones de diseño de las secciones tipo para cada tramo del encauzamiento pueden verse en la Fig.8

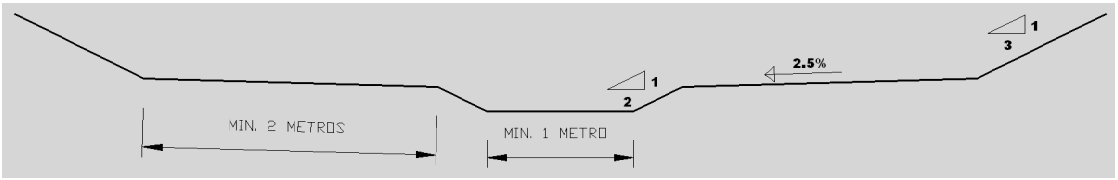


Fig.8 Condiciones de diseño de las secciones.

3.2.1.2.2.3 SECCIONES TIPO POR TRAMOS.

Para el cálculo de las dimensiones finales de las secciones de cada tramo de encauzamiento, se ha empleado la fórmula de Manning.

Se ha procedido al cálculo de la profundidad normal de las secciones, con las pendientes que se han fijado en base al perfil longitudinal del eje del barranco.

La condición a cumplir para que la sección sea adecuada, será que la velocidad del agua no supere los 1.32 m/s con el objetivo de evitar la erosión, ni este por debajo de los 0.11 m/s para evitar sedimentación.

Los datos calculados y las dimensiones de cada sección se detallan en el Anexo 5.

3.2.1.2.4 SALTOS.

Los saltos son utilizados para la disipación de energía. Cambiando la pendiente del canal de fuerte a suave, mediante la intercalación de estos saltos a intervalos a lo largo del cauce, pasando de una pendiente fuerte constante a una serie de tramos de pendiente suave y saltos verticales.

Así pues tenemos un canal con pendiente suave y velocidades bajas, en el que no se produce erosión, concentrándose las altas velocidades y efecto erosivo en los saltos.

Los saltos se protegen mediante su rigidización con estructuras de escollera u hormigón para evitar la erosión.

En nuestro cauce utilizaremos el diseño de saltos denominado Straight Drop Structure (Donelly y Blaisdell,1954).

Estos saltos requieren para su correcto funcionamiento, que la columna de agua en su caída, genere una zona aireada en su parte posterior (Aerated nappe) y que el flujo sea subcritico tanto aguas arriba como aguas abajo.

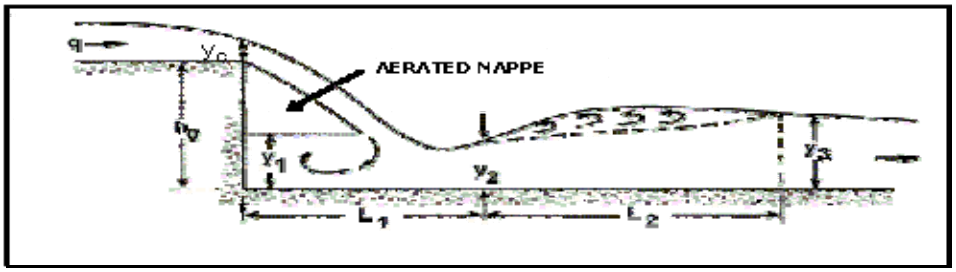


Fig.9

Las variables que se deben calcular para el correcto dimensionado del salto son las siguientes.

$$Nd = \frac{q^2}{g h_0^3} \qquad (1)$$

Siendo:

$Nd = N\acute{u}mero\ de\ salto\ (Drop\ Number), nos\ da\ una\ medida\ cuantitativa\ \ del\ salto.$

$q = \frac{\frac{m^3}{s}}{m} = caudal\ por\ metro\ de\ ancho\ del\ canal.$

$g = aceleración\ de\ la\ gravedad = 9.81 m/s^2$

$h_0 = altura\ del\ salto(m).$

$$L_1 = 4.30 h_0 N_d^{0.27} \qquad (2)$$

$$y_1 = 1.0 h_0 N_d^{0.22} \qquad (3)$$

$$y_2 = 0.54 h_0 N_d^{0.425} \qquad (4)$$

$$y_3 = 1.66 h_0 N_d^{0.27} \qquad (5)$$

Donde:

L_1=Longitud de salto. Distancia de muro de salto hasta el punto con profundidad y_2.

y_1=Calado bajo la cortina de agua del salto.

y_2=Calado en el punto en que comienza el resalto hidráulico.

y_3=Calado una vez superada la zona turbulenta del resalto.

Comparando el calado normal (y_0) aguas abajo del salto, con el calado aguas abajo de la zona turbulenta del resalto (y_3), se pueden dar tres situaciones, que determinaran las modificaciones necesarias en el diseño del salto.

$y_0 > y_3$ El resalto hidráulico es sumergido.

$y_0 = y_3$ El resalto hidráulico comienza en el punto de calado y_2. No existe flujo supercrítico más allá de la zona rigidizada y la distancia L1 tiene un valor mínimo. En este caso no es necesario modificar el diseño del salto.

$y_0 < y_3$ El resalto hidráulico se mueve aguas abajo y por lo tanto el diseño del salto no es adecuado.

En el caso de cumplirse $y_0 < y_3$ debe modificarse el diseño del salto, para mantener el resalto hidráulico en la zona rigidizada. Para lo cual se puede actuar de dos formas:

- Colocando un escalón al final de la base del salto y bloques en la zona de impacto del salto.
- Creando un cuenco amortiguador en la base del salto, de forma que se disminuya la cota superior de y_3 respecto a y_0.

En nuestro caso todos los saltos de los tramos 1,2,3 y 4 cumplen la condición $y_0 < y_3$ por lo que procederemos al cálculo de los cuencos amortiguadores, escalones y bloques disipadores necesarios en cada tipo de salto.

En los saltos de los tramos 5.6 y 7 no sería necesaria la ejecución de disipadores de energía y estabilizadores del resalto adicionales, pero se procederá a su cálculo e instalación del lado de la seguridad.

En la Fig.10 se puede observar un esquema de la construcción de un salto con elementos disipadores de energía y estabilizadores del resalto, así como la designación de cada una de las dimensiones a calcular.

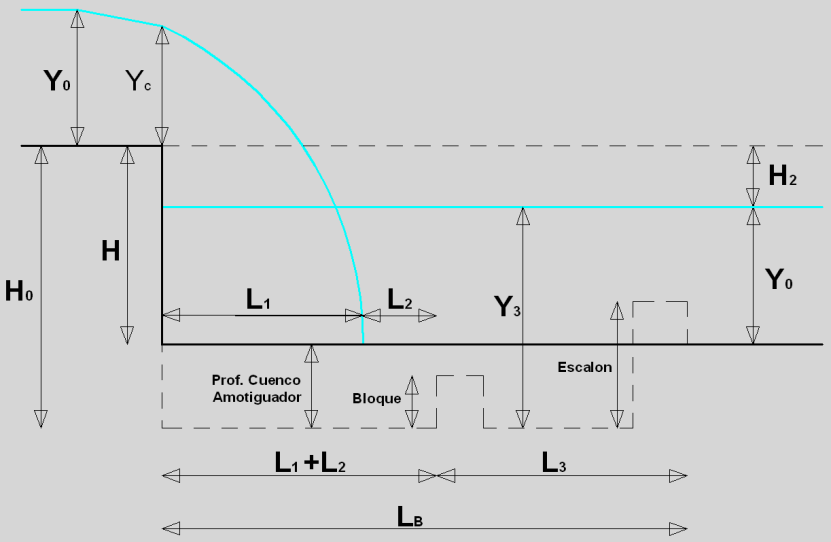


Fig.10 *Straight Drop Structure* (Donelly y Blaisdell,1954)

El primer paso será calcular la profundidad crítica (y_c) para cada tramo, en función de la pendiente, caudal y sección tipo.

La primera variable de nuestros saltos que calcularemos será la profundidad a la salida del salto (y_3):

$$y_3 = 2.15 y_c \qquad (6)$$

Para mantener aireada la zona posterior de la lámina de agua, en el salto debe cumplirse la condición siguiente:

$$h_2 = -(h - y_0) \qquad (7)$$

Siendo h_2 un número negativo, diferencia entre la altura de la base de la solera del canal en el punto de vertido (h) y la cota superior del flujo normal aguas abajo del salto (y_0).

Como hemos dicho con anterioridad, para mantener el resalto hidráulico en una posición estable y la aireación de la parte posterior de la lámina vertiente, puede ser necesario aumentar el salto, mediante la generación de un cuenco de amortiguación.

La altura del salto necesaria se calcula con la fórmula:

$$h_0 = h_2 - y_3 \qquad (8)$$

Siendo h_0 un número negativo, correspondiente a la altura del salto inicialmente buscado, más la profundidad del cuenco amortiguador.

Así pues la profundidad del cuenco amortiguador será:

$$Prof.Cuenco = h + h_0 \qquad (9)$$

Las dimensiones horizontales de la base del salto observadas en la Fig.10, mantienen la siguiente relación:

$$L_B = L_1 + L_2 + L_3 \qquad (10)$$

Siendo:

L_B=Longitud de la base del cuenco

L_1=Longitud desde salto hasta punto impacto de lámina vertiente en solera.

L_2 =Longitud desde punto de impacto de lámina vertiente hasta cara aguas arriba bloques.

L_3 = Longitud desde cara aguas arriba de bloques hasta final cuenco amortiguador.

Para el cálculo de la longitud L_1se recurre a la formula:

$$L_1 = \frac{L_f + L_s}{2} \qquad (11)$$

Dónde:

$$L_f = (-0.406 + \sqrt{3.195 - 4.368\frac{h_0}{y_0}})y_c \qquad (12)$$

$$L_s = \frac{(0.691+0.228\left(\frac{L_t}{y_c}\right)^2 - \left(\frac{h_0}{y_c}\right))y_c}{0.185+0.456\,(\frac{L_t}{y_c})} \qquad (13)$$

$$L_t = (-0.406 + \sqrt{3.195 - 4.368\frac{h_2}{y_c}})y_c \qquad (14)$$

Para el cálculo de las longitudes L_2 y L_3 Las formulas empleadas son:

$$L_2 = 0.8\,y_c \qquad (15)$$

$$L_3 = 1.75\,y_c \qquad (16)$$

La altura del escalón final del cuenco amortiguador será:

$$Altura\ de\ escalon\ final = 0.4\,y_c \qquad (17)$$

La altura del escalón final se mide desde el fondo del cuenco amortiguador, de forma que si esta altura es menor o igual a la profundidad del cuenco, no será necesario que este escalón supere la cota de la solera del canal aguas abajo del cuenco.

Finalmente las dimensiones de los bloques disipadores de energía deben ser:

$$Anchura = 0.4\, y_c \qquad (18)$$

$$Altura = 0.8\, y_c \qquad (19)$$

Llegados a este punto, nos encontramos con un problema. Las fórmulas de cálculo de saltos, están desarrolladas para secciones rectangulares o trapeciales, siendo nuestras secciones tipo bitrapeciales.

Para el cálculo de las dimensiones necesarias de los elementos del salto, se ha tomado la decisión de calcular una sección rectangular equivalente a nuestra sección bitrapecial, con la cual procederemos al cálculo de las dimensiones del salto.

Esta sección rectangular debe cumplir dos premisas para ser equivalente a nuestra sección bitrapecial:

$$R_h Sección\ Bitrapecial = R_h \text{Sección Rectangular} \qquad (20)$$

$$Tirante\ Sección\ Bitrapecial = Tirante\ Sección\ Rectangular \qquad (21)$$

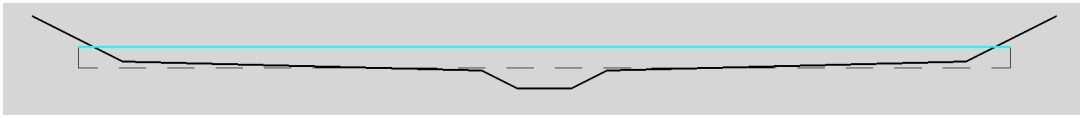


Fig.11 Secc. bitrapecial y sección rectangular equivalente para un salto de 1.5 metros en el Tramo1

Una vez calculadas las dimensiones de la sección rectangular equivalente, el siguiente paso es el cálculo del calado normal y crítico de esta sección rectangular.

Para el cálculo del salto con la sección rectangular equivalente, se mantiene la cota de la lámina superior del agua en el punto de vertido, que corresponderá a la cota de la lámina de agua con calado crítico. Manteniéndose de esta manera la energía potencial o de altura del flujo. Esta situación puede observarse en la Fig.11

También se mantiene fija la cota a la que se encuentra la solera del canal aguas abajo del salto, ya que es la cota que marca la perdida de energía de altura del flujo.

De esta forma, el primer paso es el cálculo de la altura del salto de la sección rectangular equivalente.

$$H_{Salto\ secc.bitrapecial} + Y_{Critico\ secc.bitrapecial} = H_{Salto\ secc.rectangular\ equivalente} + Y_{Critico\ secc.rectangular\ equivalente} \quad (22)$$

$$H_{Salto\ rectangular\ equivalente} = \frac{H_{Salto\ secc.bitrapecial} + Y_{Critico\ secc.bitrapecial}}{Y_{Critico\ secc.\ rectangular\ equivalente}} \quad (23)$$

De esta forma procederemos a calcular las dimensiones de los elementos del salto con las formulas 1 a 19. Empleando la nueva altura del salto calculada y la profundidad critica de la sección rectangular equivalente.

El cálculo de los saltos de cada uno de los tramos del barranco, está recogido en el Anexo 6.

3.2.1.2.5 CRUCES

Para el diseño de los cruces, se aprovecha la potencia de cálculo de Hec-Ras. El método será el de prueba y error, con diferente número de conductos, forma y diámetro, hasta encontrar una combinación que permita el flujo de los caudales esperados sin desbordamientos.

En nuestro caso se ha optado por conducciones circulares y marcos cuadrados, al ser las conducciones que más fácilmente se pueden adquirir en el mercado en variados tamaños.

En el Anexo 8 se recoge la tipología de los cruces de caminos existentes en el barranco antes y después del encauzamiento.

3.2.2 SIMULACIÓN DEL ENCAUZAMIENTO EN HEC-RAS.

Para la simulación hidráulica de nuestro barranco en Hec-Ras, el primer paso será crear un nuevo proyecto.

Los caudales y condiciones de contorno para la modelización del encauzamiento, serán los mismos que en la modelización del cauce natural.

Para iniciar la definición en Hec-Ras, partiremos de la geometría natural empleada en la simulación del cauce natural.

3.2.2.1 DISEÑO DEL CAUCE.

Para la definición del encauzamiento utilizaremos la herramienta de *Channel Design/Modification* en la ventana de *Geometric Data*.

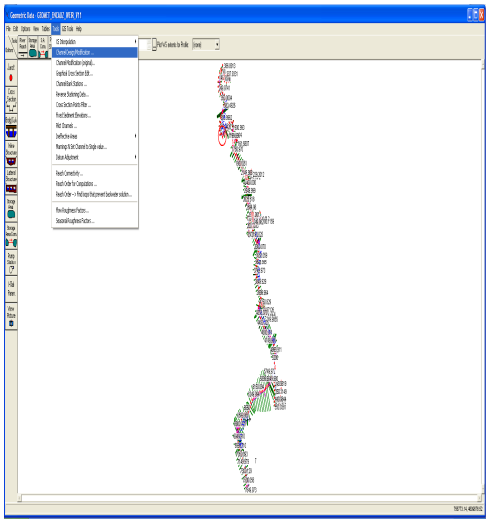


Fig.11 Herramienta de diseño de canales.

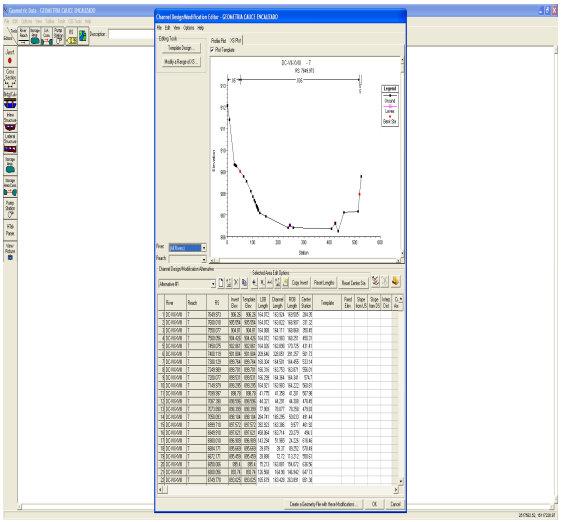


Fig.12 Ventana de edición.

El primer paso será la definición de las secciones tipo que vamos a emplear en cada tramo del encauzamiento. Estas secciones serán las calculadas en el punto 3.2.1.2.2.3.

Utilizaremos la opción crear un nuevo *Template*, con la tabla introducida por el usuario, que mediante la introducción de las coordenadas x,y de cada vértice de la sección, nos permite definir cualquier sección de geometría simple.

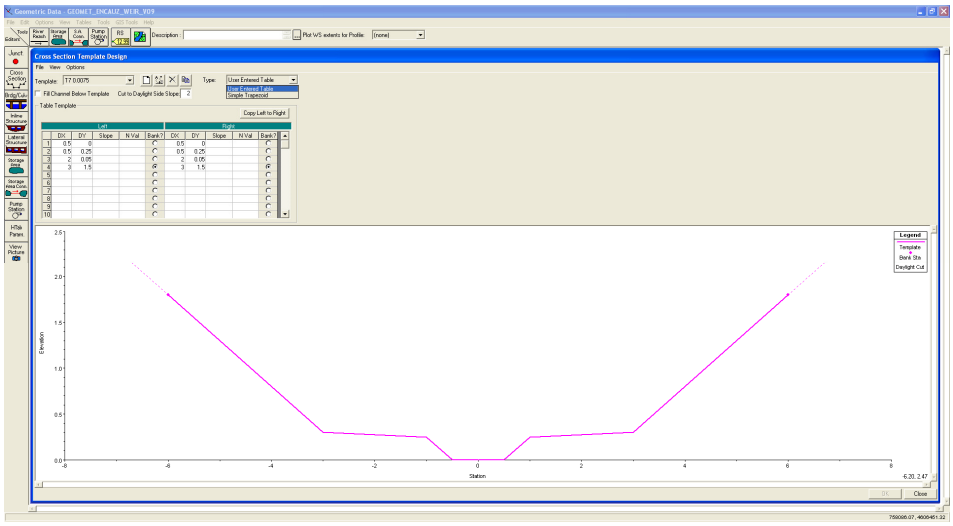


Fig.13 Definición de sección tipo.

Una vez definidas todas las secciones tipo, ya podemos proceder a adjudicar a cada sección transversal del cauce natural, la sección tipo del encauzamiento que se excavara en ese punto.

Para esto tal y como se aprecia en las figuras 14 y 15, elegiremos en el desplegable entre las secciones disponibles, que son las que hemos definido con anterioridad.

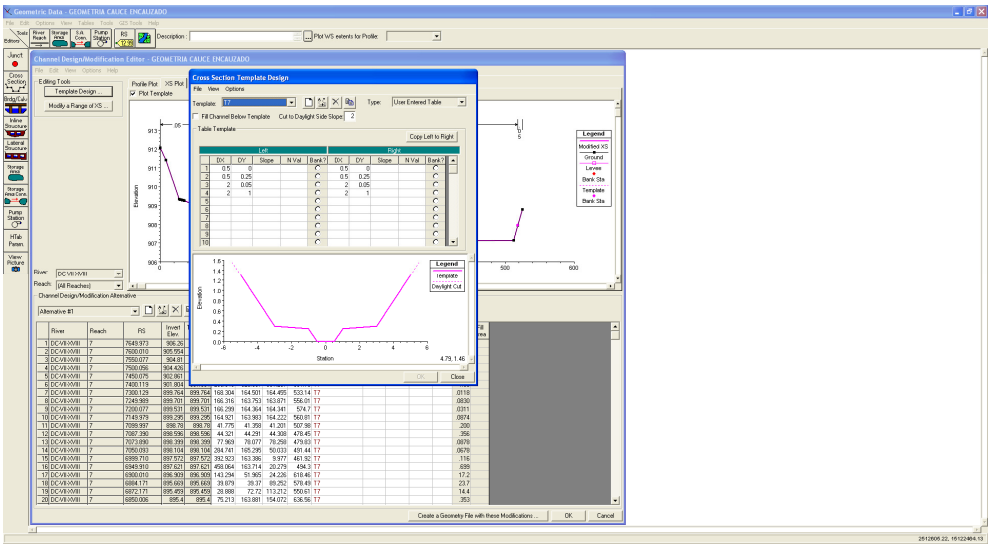


Fig.14 Definición secciones tipo para encauzamiento y secciones transversales asignadas.

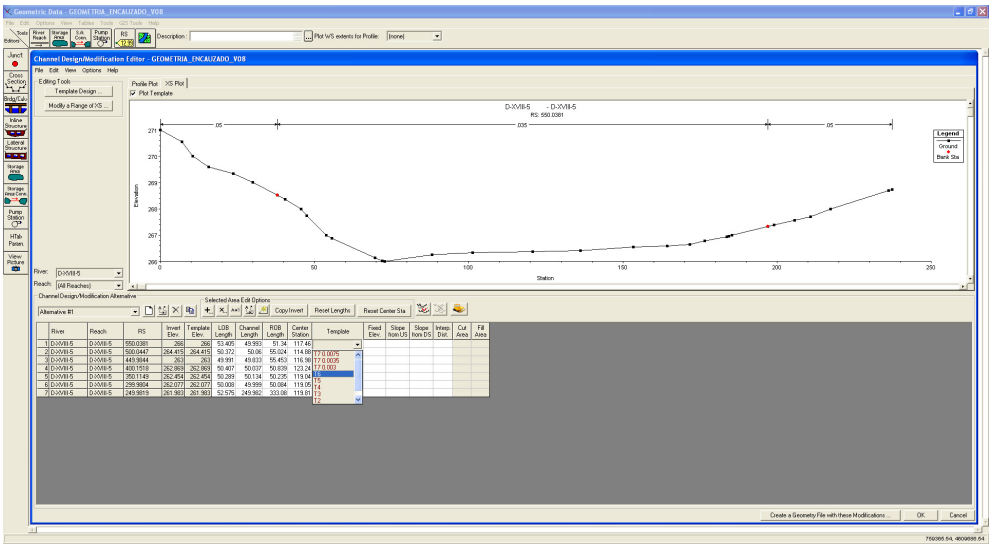


Fig.15 Selección de sección tipo de encauzamiento para una sección transversal.

Una vez asignada a cada sección transversal su sección tipo para el encauzamiento, debemos introducir la cota a la que debe situarse la sección del encauzamiento.

La cota a la que debe situarse cada sección, denominada como *Fixed Elevation* en Hec-Ras, se corresponde con la cota del punto más bajo de la sección.

Esta cota inferior de cada sección del encauzamiento, es la cota roja de excavación del perfil longitudinal, definido en el punto 3.2.1.2.2 y que puede consultarse en el Anexo 7.

No es necesario introducir las cotas de todas las secciones ya que, en los tramos con pendiente uniforme, introduciendo la cota de la sección inicial y final el programa nos permite interpolar la cota de las secciones intermedias.

Así pues, únicamente habrá que introducir las cotas de las secciones en las que haya un cambio de pendiente o un salto.

3.2.2.2 DEFINICIÓN DE SALTOS.

En los puntos en los que hay un salto vertical, se ha procedido a la generación de dos secciones separadas un metro a lo largo del eje del cauce, con una diferencia de cota equivalente al salto que se desea ubicar en ese punto.

Esta situación es interpretada por Hec-Ras como un simple tramo con pendiente mayor que el contorno aguas arriba y aguas abajo, tal y como se aprecia en la Fig.16.

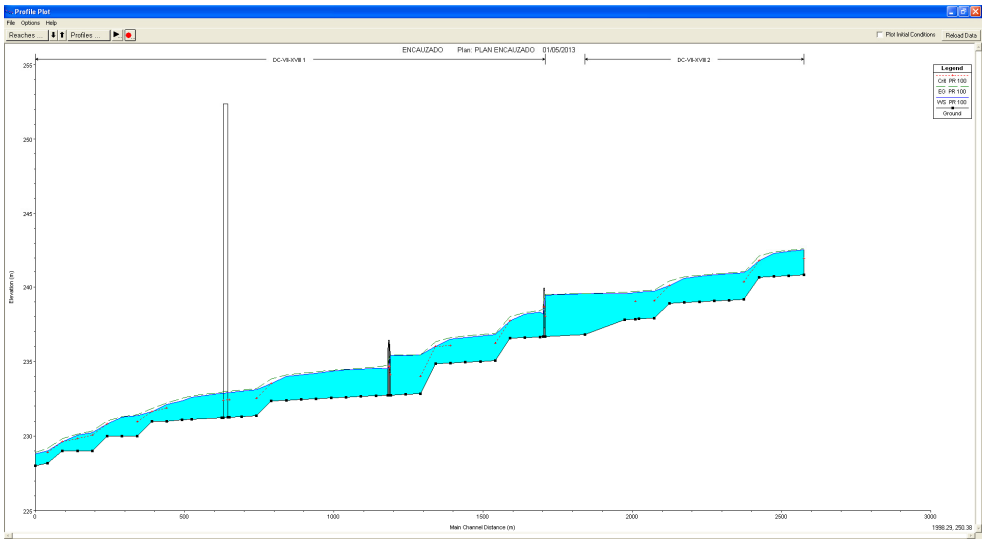


Fig.16 Perfil longitudinal con saltos definidos como tramos de elevada pendiente.

Para conseguir una modelización adecuada de los saltos, se procede a introducir una presa en el punto en el que se ubica el salto. Dicho punto deberá encontrarse entre las dos secciones equidistantes un metro que hemos ubicado en cada salto.

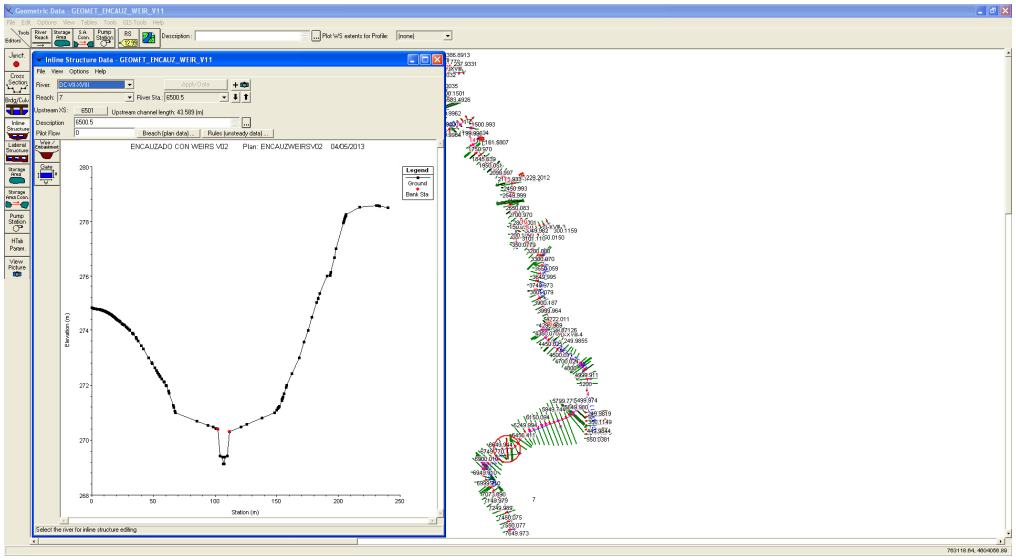


Fig.17 Definición de PK en el que insertar la presa.

Se define la presa con altura cero sobre el cauce y anchura la separación entre las dos secciones contiguas, de forma que se consigue una presa con vertido superior, sin altura sobre la rasante.

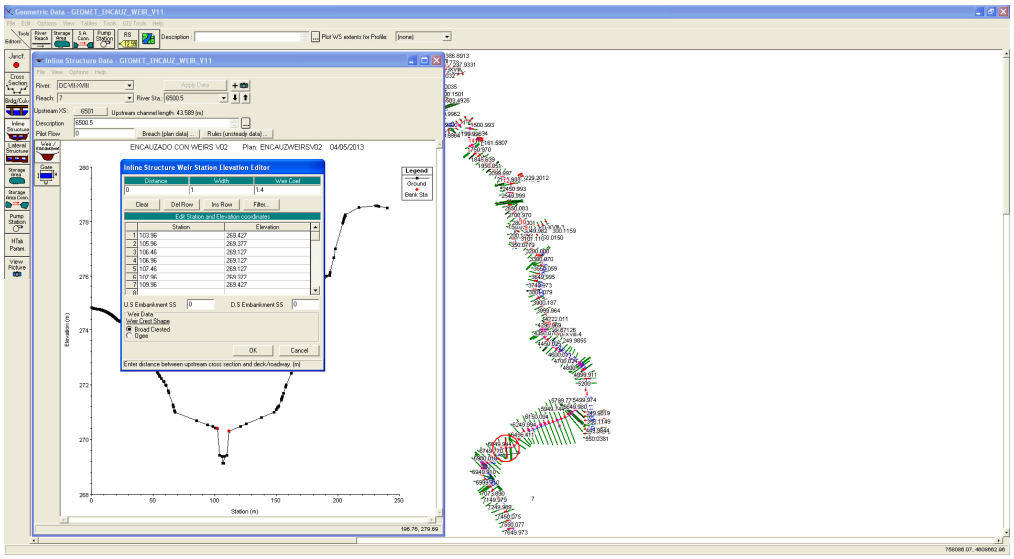


Fig.18 Definición de cotas y anchura de presa.

La estructura resultante que puede observarse en la Fig.19, funciona como un vertedero de cresta ancha.

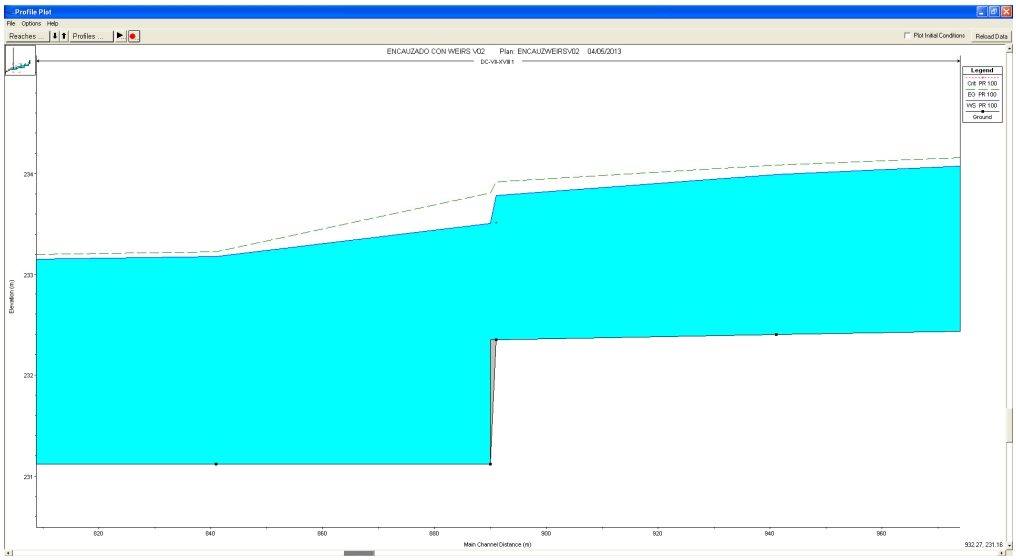


Fig.19 Salto definido mediante presa.

Para completar el salto, debemos definir el cuenco amortiguador, que evitara que el resalto hidráulico escape de la zona rigidizada.

Para definir el cuenco amortiguador, procederemos a generar dos secciones aguas abajo del salto.

La forma más rápida de generar estas secciones, será generando dos copias de la sección inferior de las dos que definen el salto. Esta operación la realizaremos con la herramienta de Copy Current Cross Section, tal y como se observa en la Fig.20

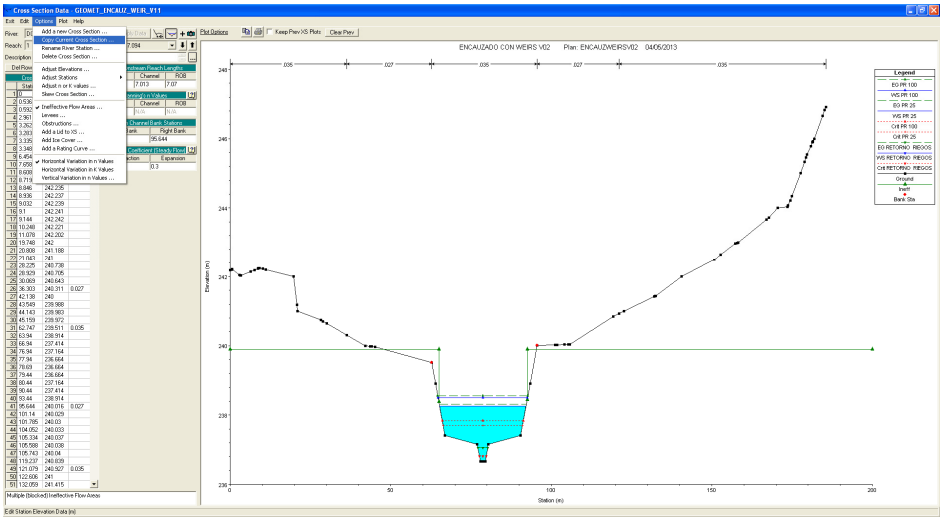


Fig.20 Selección de herramienta de copia de sección.

Estas secciones se generaran, una a la distancia a la cual debe encontrarse el Sill respecto de la pared del salto, y otra a un metro aguas abajo de dicho Sill.

Para ello una vez seleccionada la herramienta de Copy Current Cross Section, definiremos los River Stations en los que se van a ubicar estas dos secciones, tal y como se observa en la Fig.21

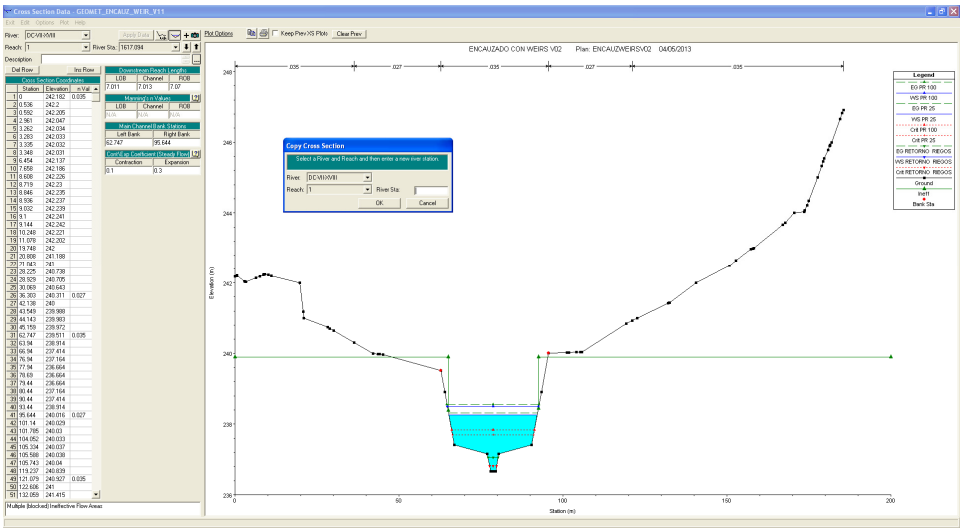


Fig.21 Definición de P.K. de sección copiada.

Una vez que tenemos tres secciones idénticas en la base del salto. Disponemos de una superficie horizontal de una longitud un metro superior a la que separa la pared del salto y el Sill del final del cuenco.

Debemos reducir la cota de las dos secciones que van a formar el cuenco amortiguador, que serán las dos secciones situadas más aguas arriba de las tres.

Para esto, estando en el visor de secciones (Cross Section Data), vamos a la sección que queremos mover de cota y en el menú Options, seleccionamos Adjust Elevations.

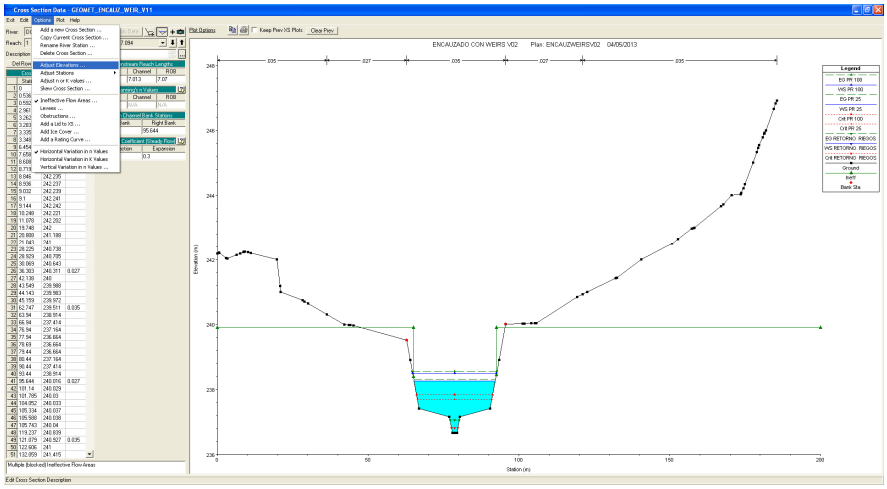


Fig.22 Selección de herramienta de ajuste de elevaciones en sección.

Indicaremos la profundidad del cuenco amortiguador con signo negativo en la ventana que nos aparece, tal y como se aprecia en la Fig.23

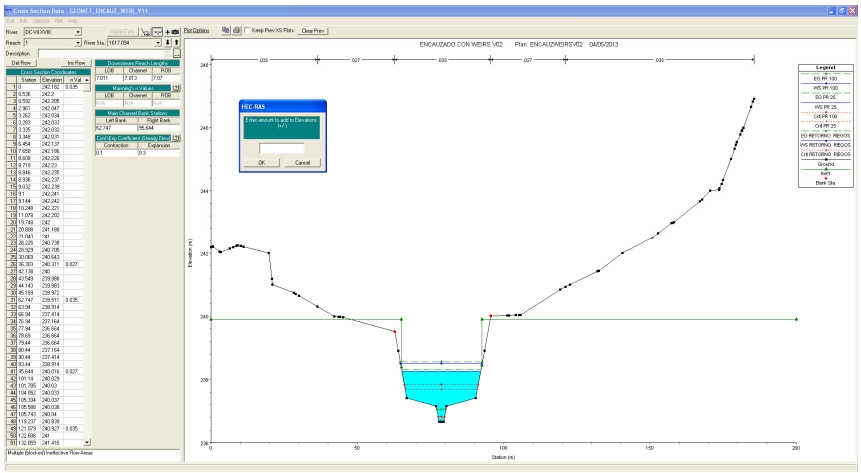


Fig.23 Ajuste de elevaciones de puntos de una sección transversal.

Procederemos a definir una presa entre las dos secciones inferiores creadas, a fin de que nuestro Sill, sea un escalón que funcione como vertedero y no simplemente como un tramo de canal de pendiente adversa.

Una vez realizados estos pasos, vemos la diferencia entre el salto definido como un simple tramo de pendiente pronunciada (Fig.24) y definido con cuenco amortiguador y presas para su cálculo como vertederos (Fig.25).

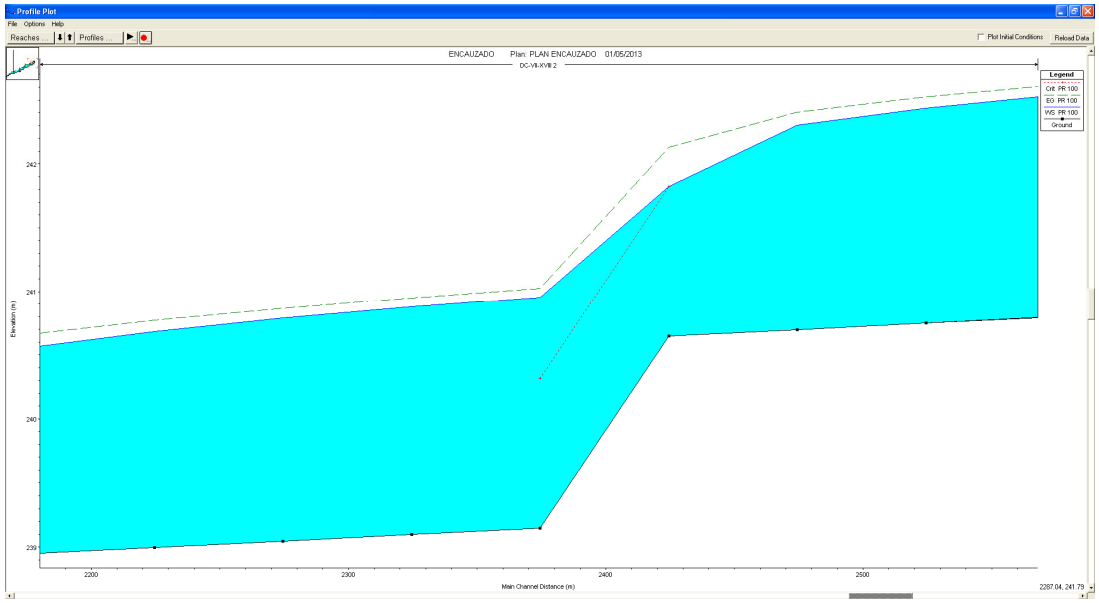


Fig.24 Salto definido como tramo de pendiente pronunciada.

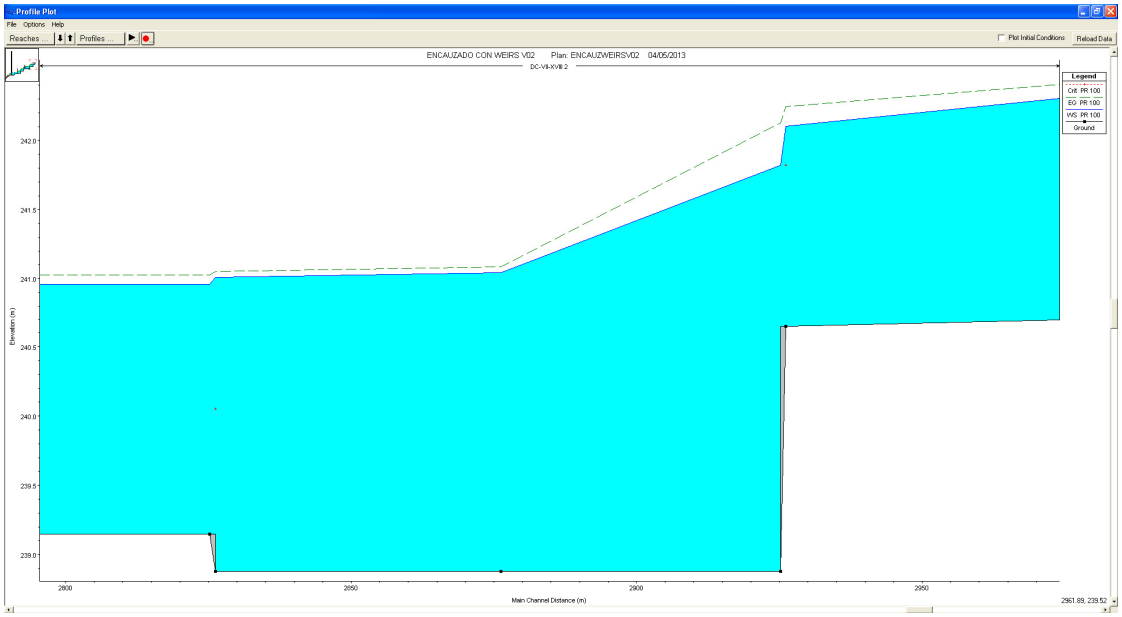


Fig.25 Salto y cuenco amortiguador definidos mediante presas.

Por ultimo si comparamos el perfil representado en la Fig.16 con el de la Fig.26, vemos que es mucho más realista. Representando los calados críticos concentrados en los puntos de vertido, tal y como era esperado.

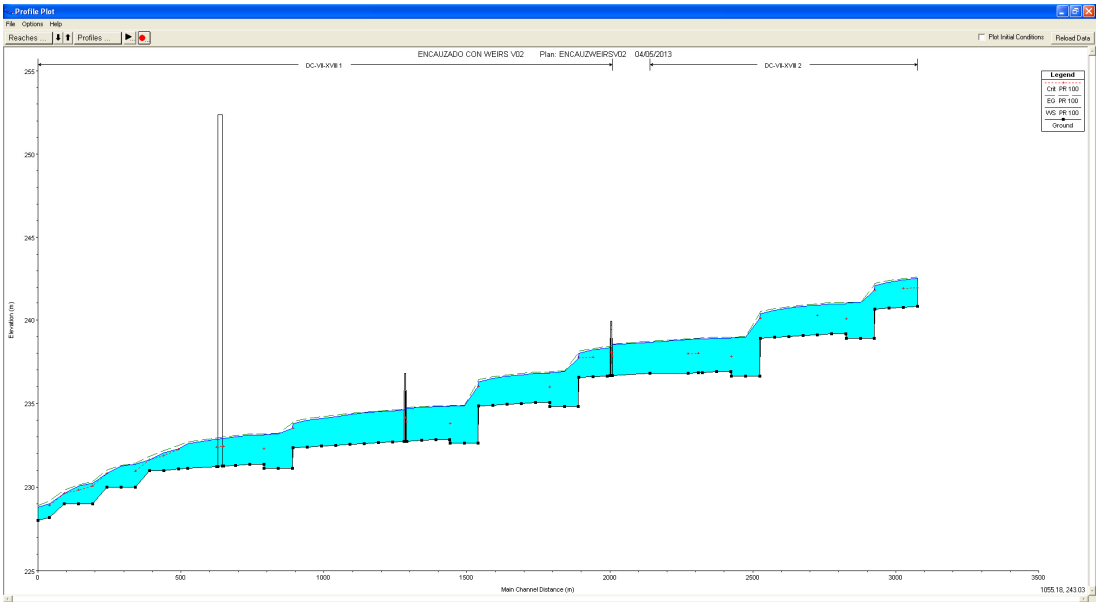


Fig.26 Perfil longitudinal con saltos y cuencos amortiguadores.

3.2.2.3 DEFINICIÓN DE COEFICIENTES DE RUGOSIDAD.

Al realizar la obra de encauzamiento, no solo se altera la topografía del cauce, sino que también se altera la naturaleza de las superficies por las que circulara el agua.

Así en la sección encauzada, se espera una rugosidad menor que en el terreno de cultivo colindante, por la ausencia de vegetación.

Otro efecto del encauzamiento será que el caudal de avenida no llegara a circular por las laderas laterales del barranco cubiertas por monte bajo, ya que en caso de avenida la mayoría del caudal circulara por el encauzamiento y en caso de desbordamiento del cauce, la superficie cultivada absorberá los caudales desbordados.

Así pues tendremos dos tipos de terreno por los que circulara agua, el cauce excavado y los cultivos del fondo del barranco.

Asignaremos un valor de n de Manning de 0.0027 al cauce excavado (Canal excavado en tierra recto y uniforme con pasto) y un valor de 0.035 a los cultivos de cereales de invierno en el fondo del barranco (Pasto alto sin matorrales).

Para asignar un valor de rugosidad a múltiples secciones transversales, dentro de la ventana de Geometric Data, en el menú Tables, elegiremos la herramienta Manning´s n or k values.

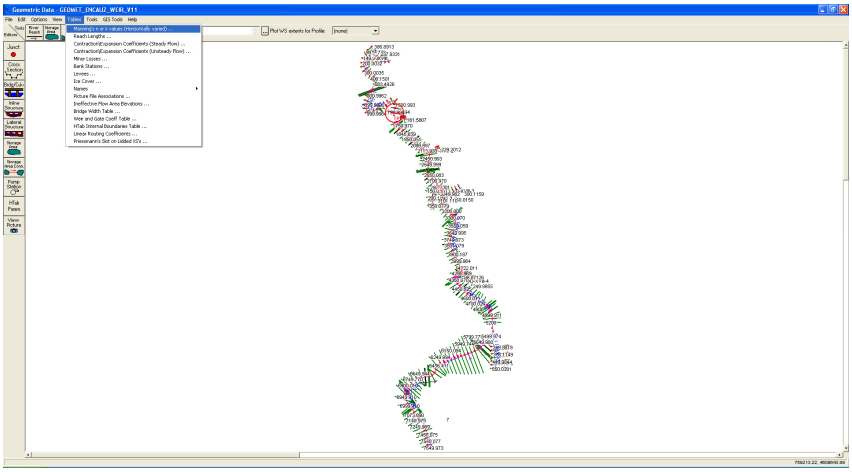


Fig.26 Selección de ventana de valores de rugosidad.

Para asignar valores a todas las celdas de una columna, seleccionaremos la columna pinchando en su encabezamiento y usaremos el botón Replace (Tal y como se observa en la Fig.27).

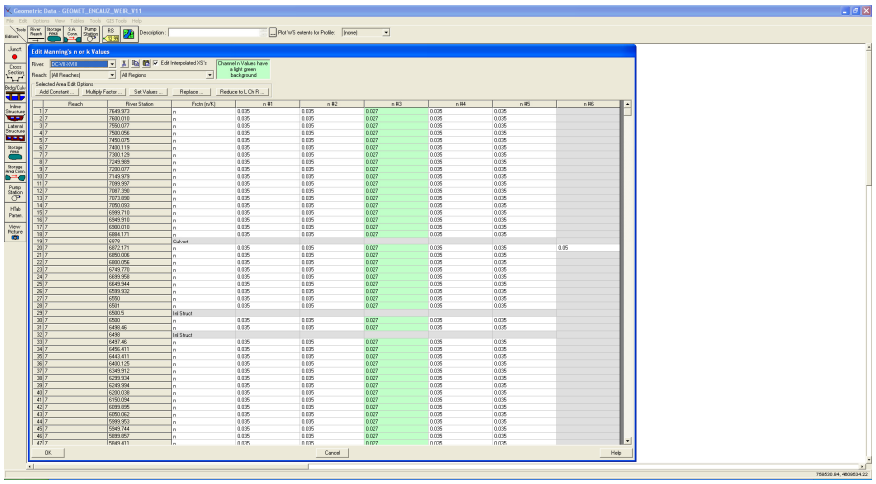


Fig.27 Modificación masiva de valores de rugosidad.

3.2.2.4 DEFINICIÓN DE CRUCES.

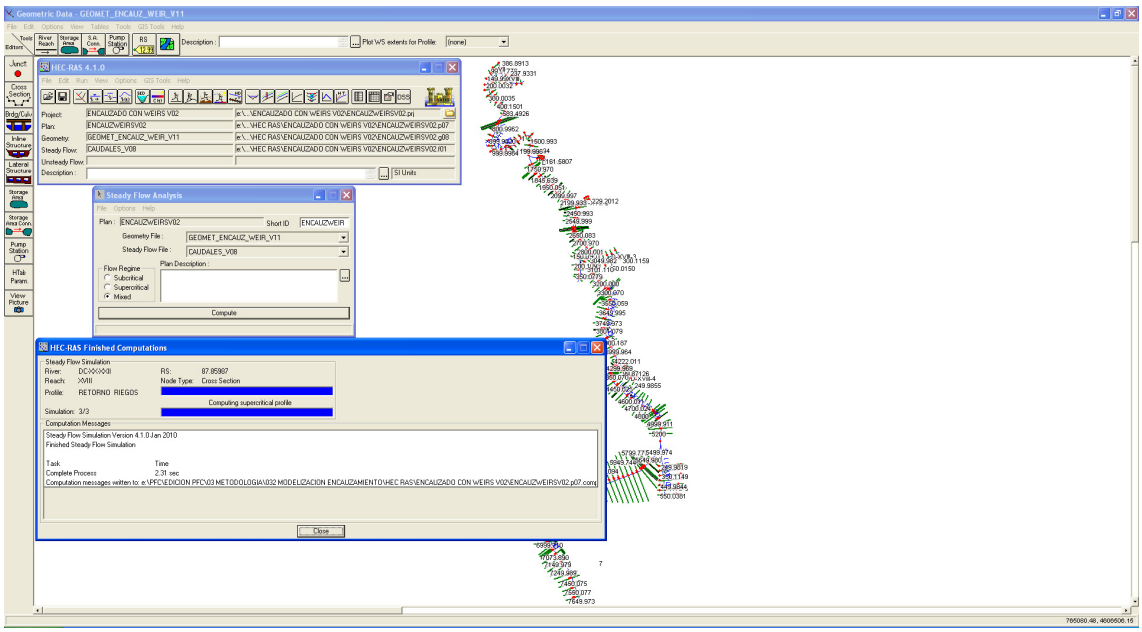
Tal y como se dijo en el punto 3.2.1.2.5, se aprovechara la potencia de cálculo de Hec-Ras para el diseño de los cruces, mediante el método de prueba y error con diferentes formas, diámetros y número de conductos.

Respecto a la introducción de los datos geométricos de los cruces, es de aplicación lo expuesto en el punto 3.1.4.

La tipología de los cruces en el encauzamiento se muestra en el Anexo 8.

3.2.2.5 CALCULO.

Una vez introducida la geometría del encauzamiento, se procede al cálculo hidráulico, el cual se realizara en condiciones mixtas de flujo subcritico y supercrítico.



Los resultados del cálculo se recogen en el apartado de Resultados de este proyecto.

Universidad Zaragoza
1542

Proyecto Fin de Carrera

Título del trabajo:

Simulación del cauce natural y posterior encauzamiento con Hec-Ras del Barranco de Campillo.

Autor/es

Juan Carlos Aliaga Gregorio

Director/es y/o ponente

César González Cebollada

Escuela Politécnica Superior de Huesca

2013

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5. DISCUSIÓN
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4.1.2.2 PERFIL LONGITUDINAL TRAMOS PR25

4.1.2.3 PERFIL LONG. EJE COMPLETO PR100

4.1.2.4 PERFIL LONGITUDINAL TRAMOS PR100

4.1.3 SECCIONES

4.1.3.1 SECCIONES PR25

4.1.3.2 SECCIONES PR100

4.1.4 TABLAS DE RESULTADOS

4.1.4.1 TABLA DE RESULTADOS PR25

4.1.4.2 TABLA DE RESULTADOS PR100

4.1.4.3 TABLA DE RESULTADOS RR

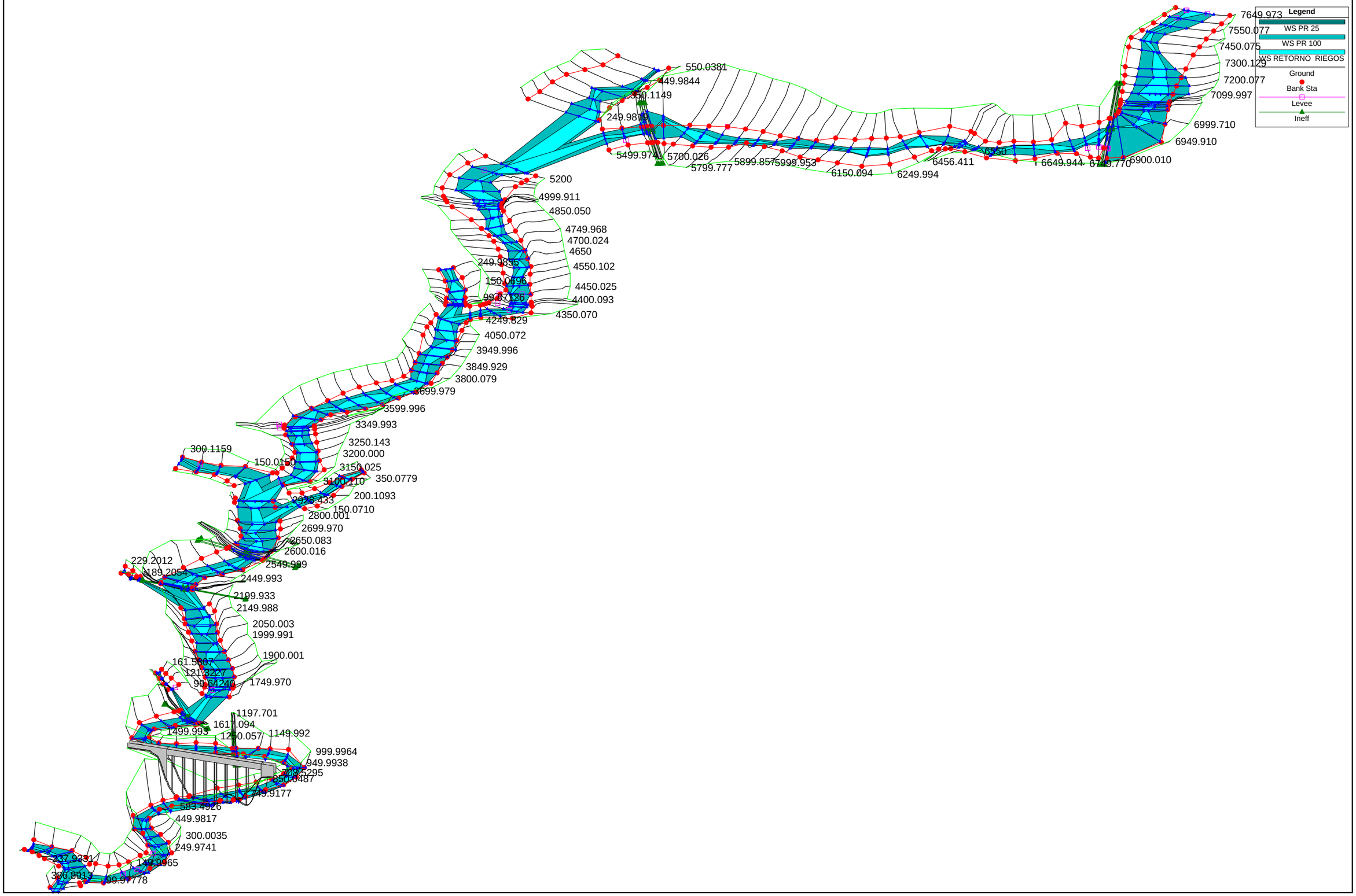
RESULTADOS

RESULTADOS MODELIZACIÓN

CAUCE NATURAL

PLANO DE PLANTA 3D

CAUCE_NATURAL Plan: Plan 03 06/05/2013



PERFILES LONGITUDINALES

PERFIL LONGITUDINAL EJE COMPLETO PR25

DC-VII-XVIII 1 | DC-VII-XVIII 2 | DC-VII-XVIII 3 | DC-VII-XVIII 4 | DC-VII-XVIII 5 | DC-VII-XVIII 6 | DC-VII-XVIII 7

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

Elevation (m)

280
270
260
250
240
230
220

0
2000
4000
6000
8000

Main Channel Distance (m)

149.9965 200.0032 249.9741 300.0035 350.0004 400.1501 449.9817 499.9494 550.0947 684.0295 749.9177 799.9962 850.0487 899.9420 949.9938 999.9964 1049.997 1099.930 1149.992 1199.996 1250.057 1299.988 1350.023 1400.000 1450.005 1499.993 1549.973 1599.992 1749.970 1799.147 1849.989 1900.001 1950.051 1999.991 2050.003 2099.997 2149.988 2199.933 2250.002 2367.905 2449.993 2500.027 2549.999 2600.016 2650.083 2699.970 2750.009 2800.001 2891.135 3049.982 3100.110 3150.025 3200.000 3250.143 3300.070 3349.993 3400 3450.041 3500.074 3550.059 3599.996 3649.995 3699.979 3749.973 3800.079 3849.929 3900.187 3949.996 3999.964 4050.072 4100.026 4149.871 4222.011 4299.969 4350.070 4400.093 4450.025 4500.008 4550.102 4600.011 4650 4700.024 4749.968 4800 4850.050 4900 4950.020 4999.911 5050.488 5100.103 5149.993 5200 5499.974 5549.949 5599.977 5649.980 5700.026 5749.972 5799.777 5849.411 5899.857 5949.744 5999.953 6050.062 6099.895 6150.094 6200.038 6249.994 6299.934 6349.912 6400.125 6456.411 6550 6599.932 6649.944 6699.998 6749.770 6800.056 6850.006 6900.010 6949.910 6999.710 7050.093 7099.997 7149.979 7200.077 7249.989 7300.129 7400.119 7450.075 7500.056 7550.077 7600.010 7649.973

PERFIL LONGITUDINAL POR TRAMOS
PR25

DC-VII-XVIII 1

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- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

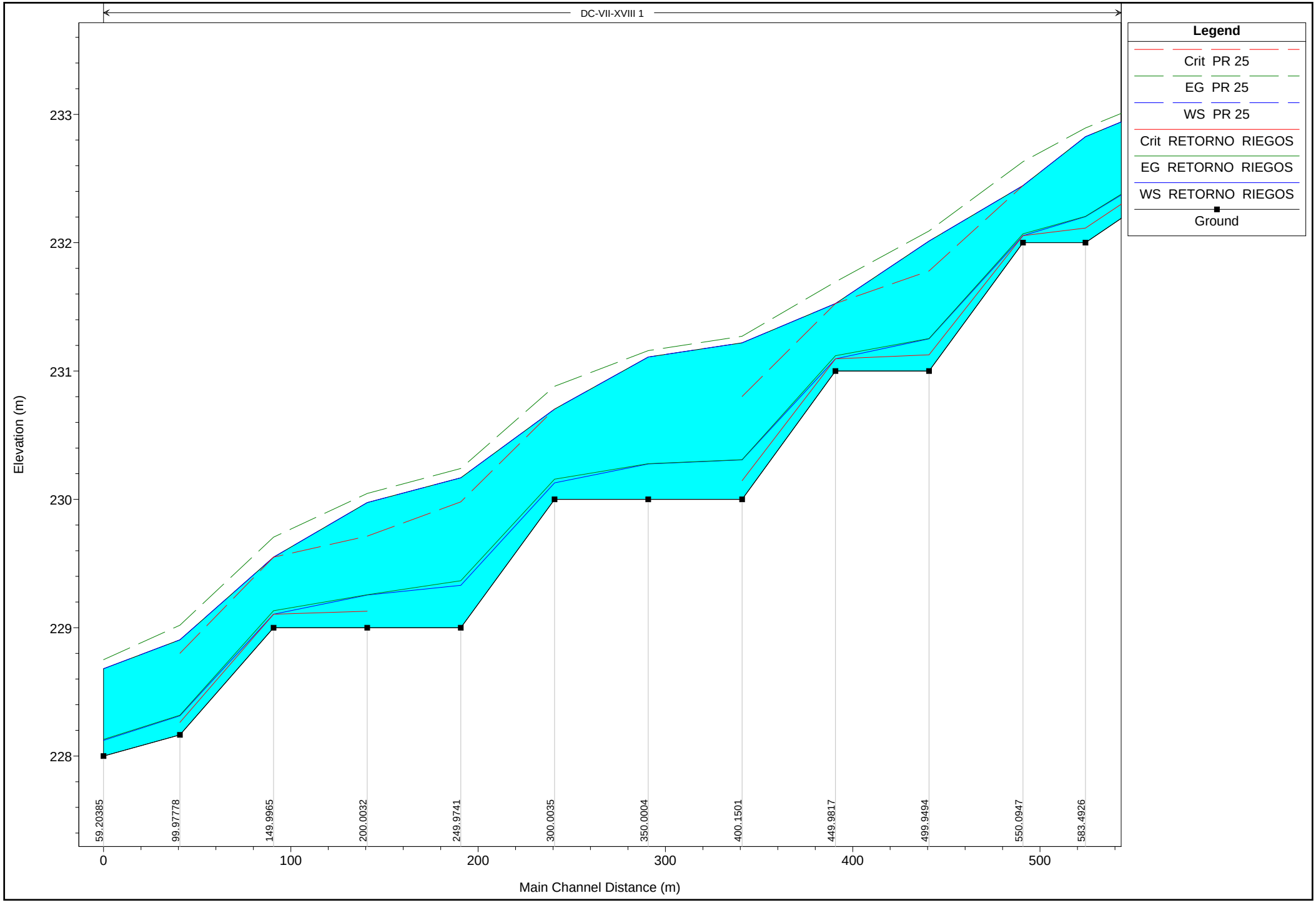
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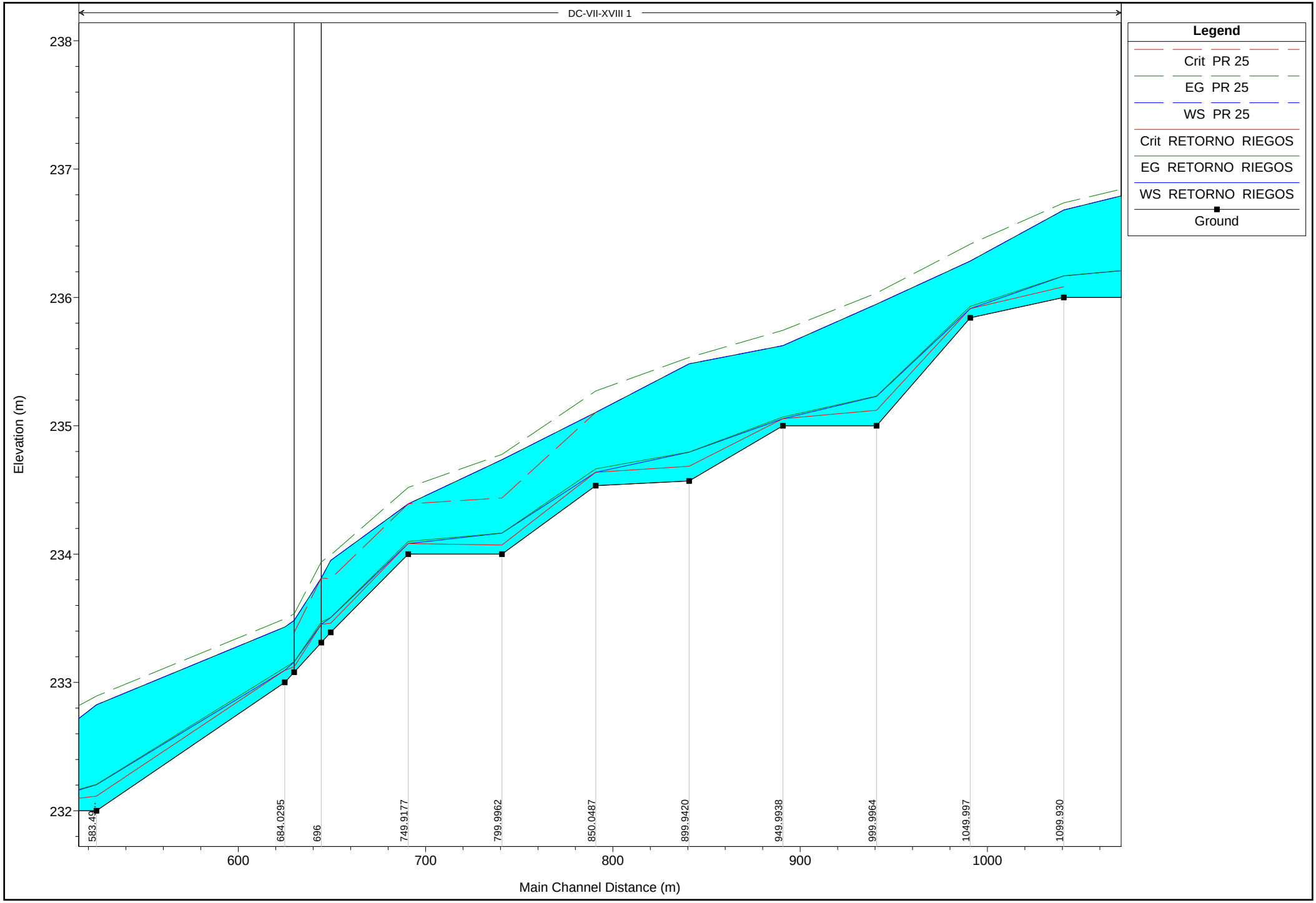
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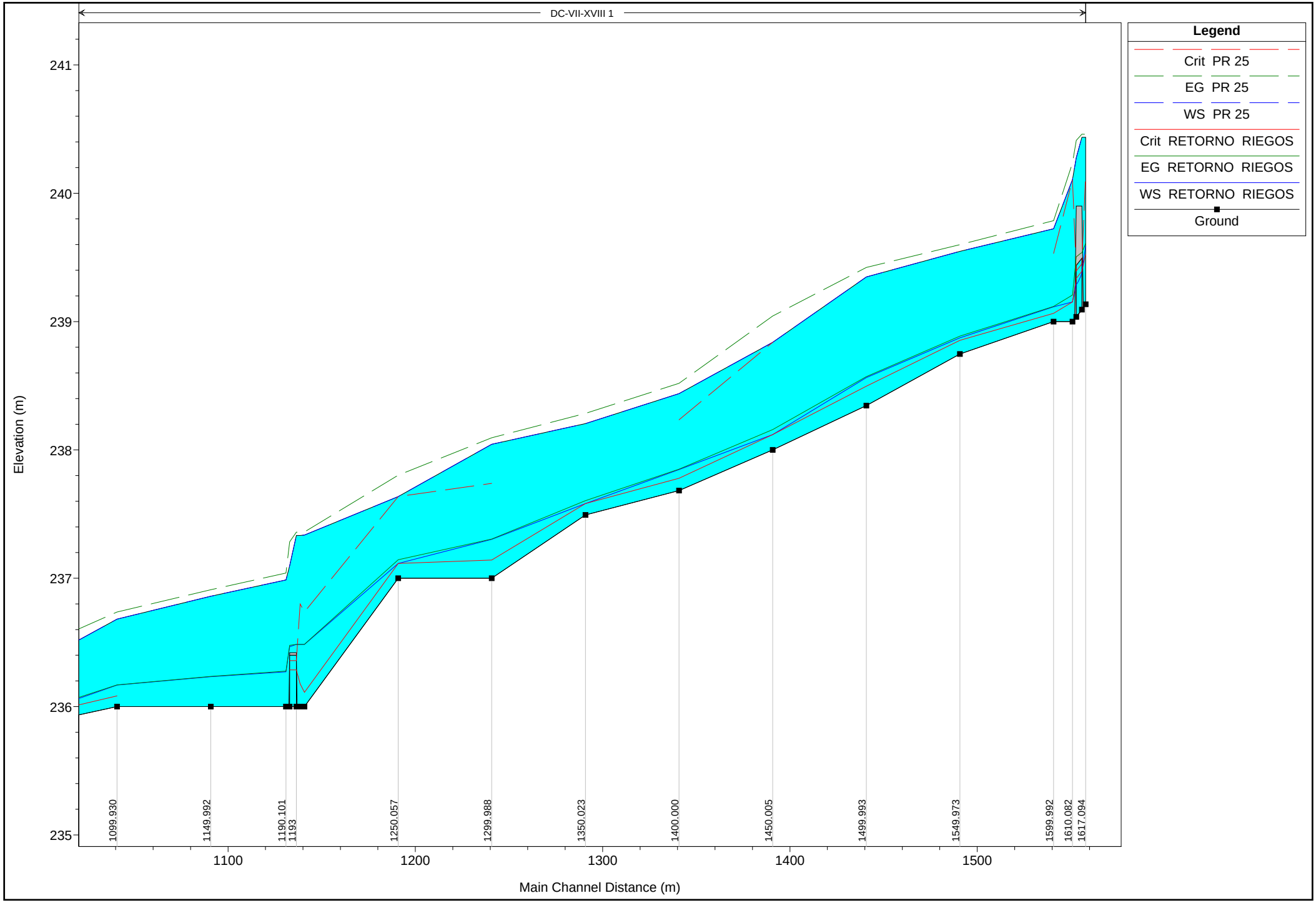
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1400.000
1450.005
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1599.992
1610.082

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400
600
800
1000
1200
1400

Main Channel Distance (m)


DC-VII-XVIII 1
Legend
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EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
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232
231
230
229
228
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200
300
400
500
Main Channel Distance (m)


DC-VII-XVIII 1
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Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
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236
235
234
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949.9938
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1049.997
1099.930
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800
900
1000
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
241
240
239
238
237
236
235
1099.930
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Main Channel Distance (m)

DC-VII-XVIII 2

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- Crit PR 25
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

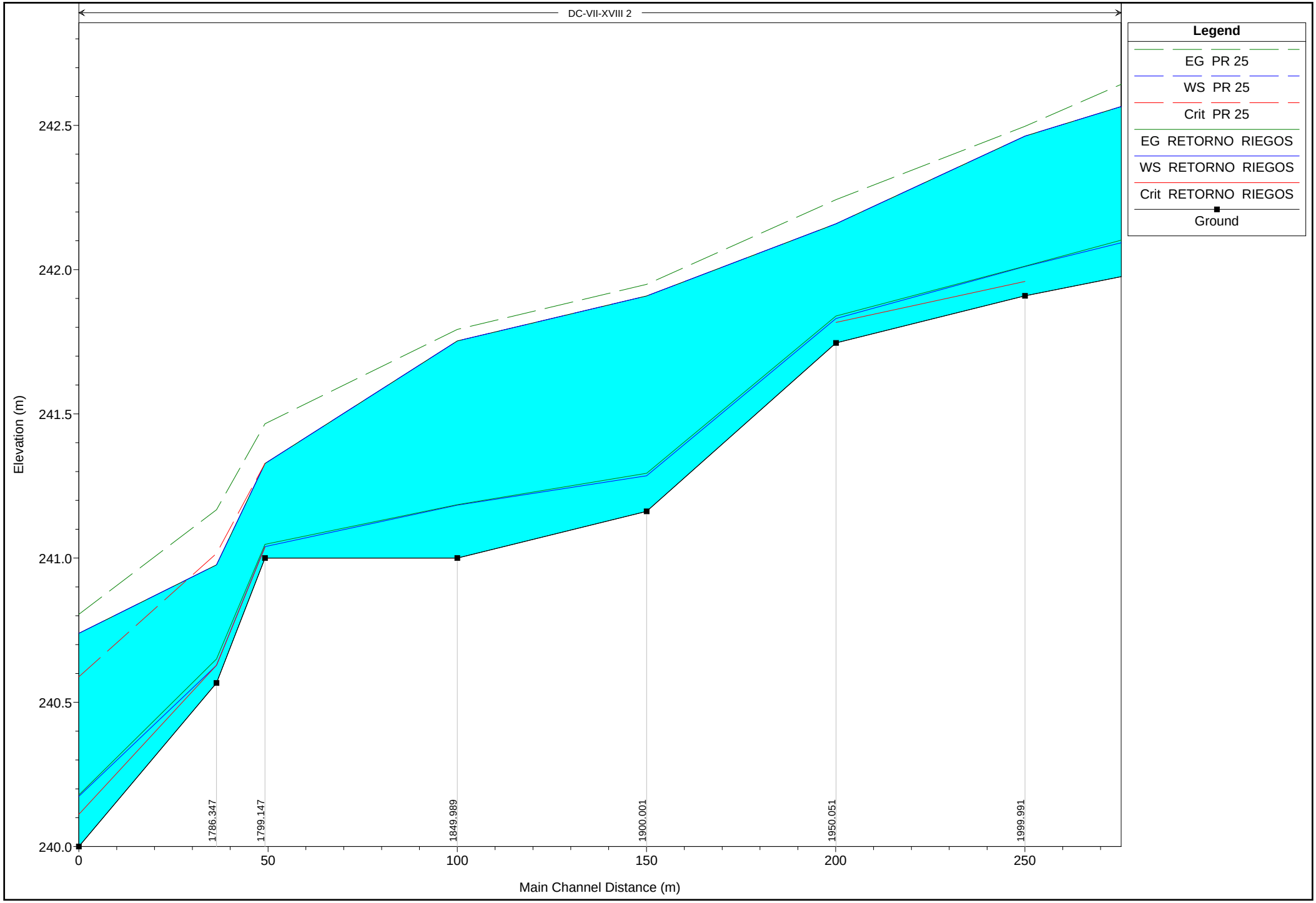
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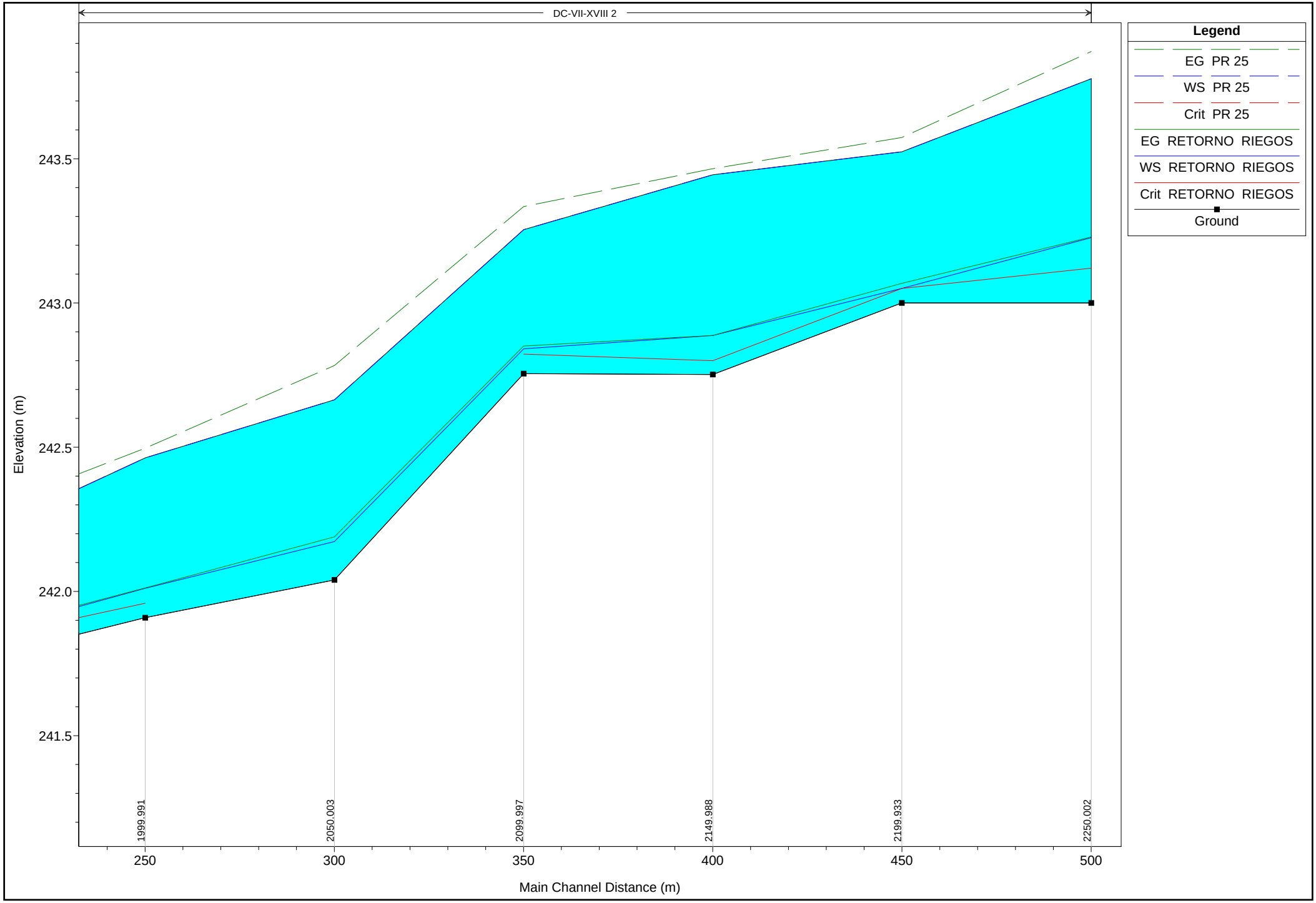
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2199.933
2250.002

0
100
200
300
400
500

Main Channel Distance (m)


DC-VII-XVIII 2
Legend
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WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
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200
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Main Channel Distance (m)
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1849.989
1900.001
1950.051
1999.991


DC-VII-XVIII 2
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Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
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242.5
242.0
241.5
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2050.003
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2149.988
2199.933
2250.002
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350
400
450
500
Main Channel Distance (m)

DC-VII-XVIII 3

Legend

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- Crit PR 25
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

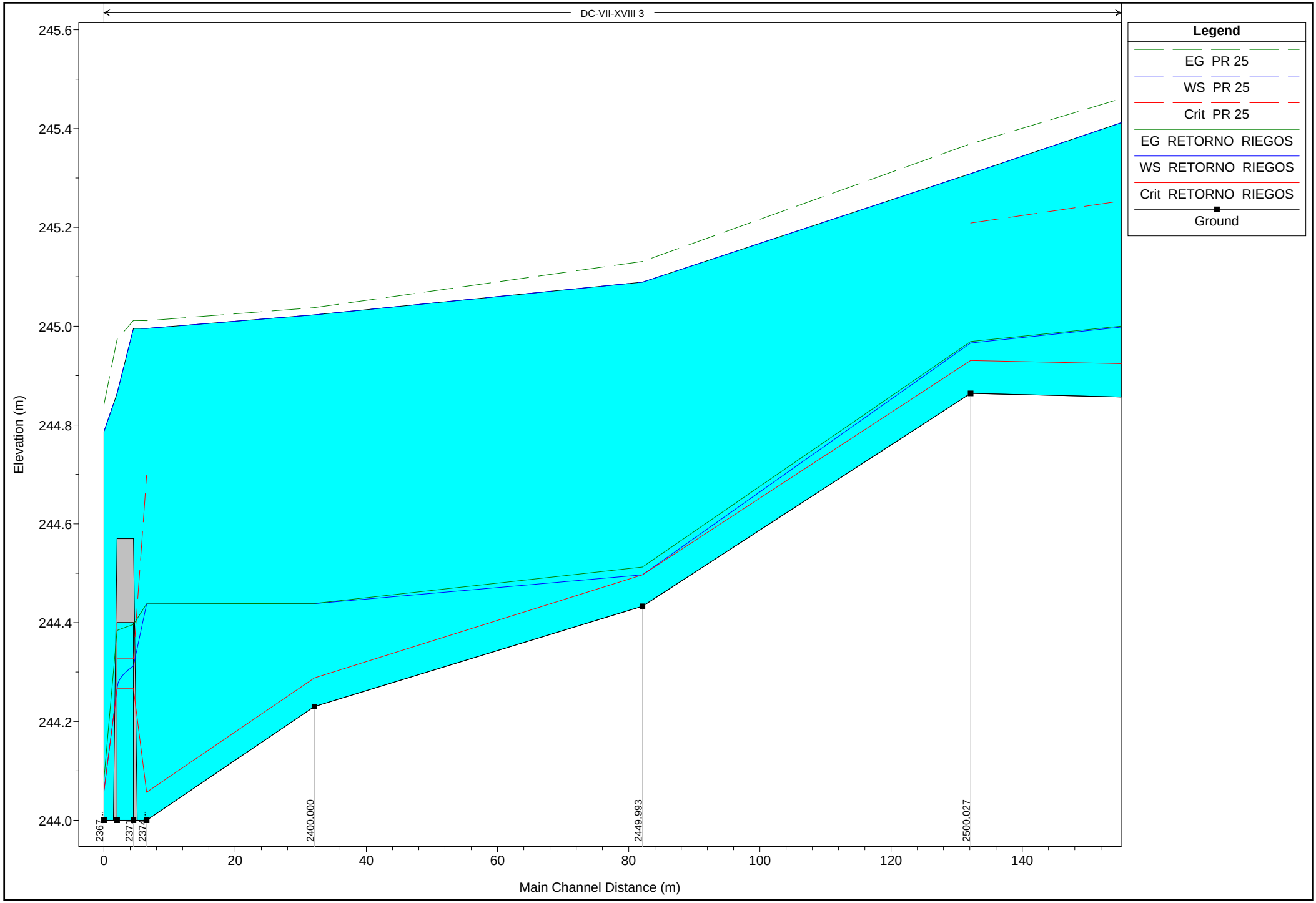
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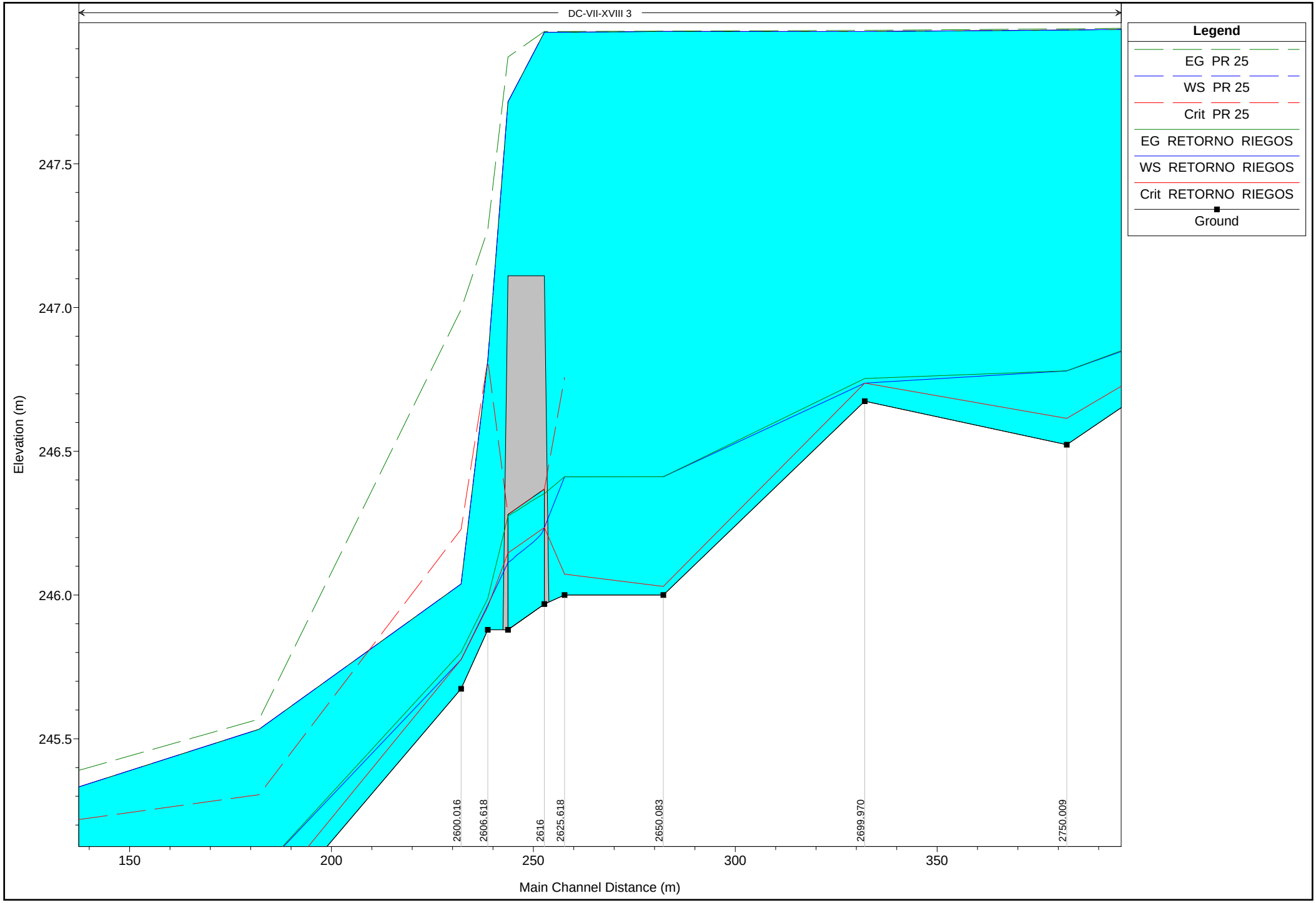
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2606.618
2616
2625.618
2650.083
2699.970
2750.009
2800.001

Main Channel Distance (m)


DC-VII-XVIII 3
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
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245.4
245.2
245.0
244.8
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244.2
244.0
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60
80
100
120
140
Main Channel Distance (m)
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2449.993
2500.027


DC-VII-XVIII 3
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Crit PR 25
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WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
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246.0
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200
250
300
350
Main Channel Distance (m)

DC-VII-XVIII 4

Legend

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- Ground

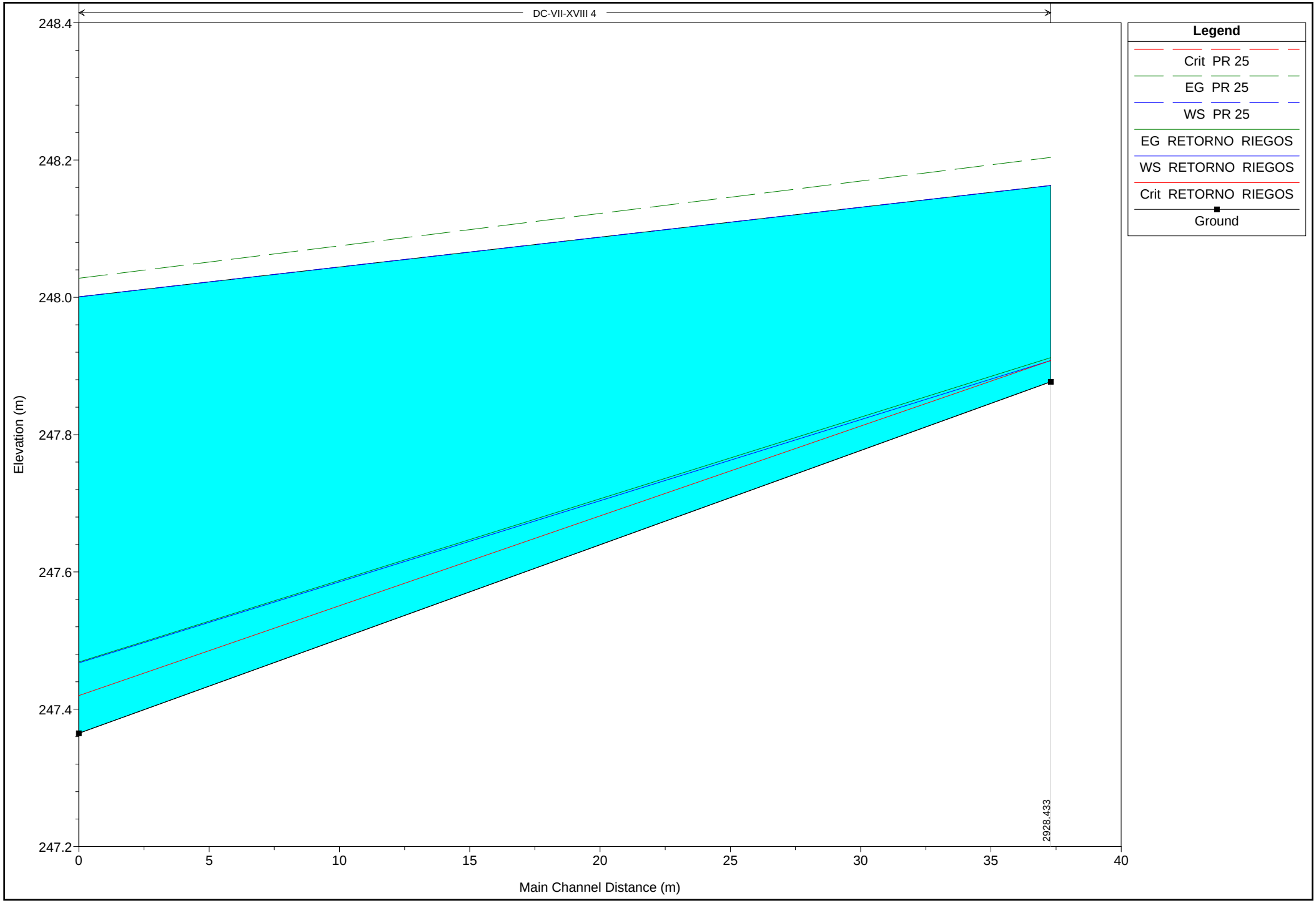
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247.2

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Main Channel Distance (m)

2928.433


DC-VII-XVIII 4
248.4
248.2
248.0
247.8
247.6
247.4
247.2
Elevation (m)
0
5
10
15
20
25
30
35
40
Main Channel Distance (m)
2928.433
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground

DC-VII-XVIII 5

Legend

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- Crit PR 25
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

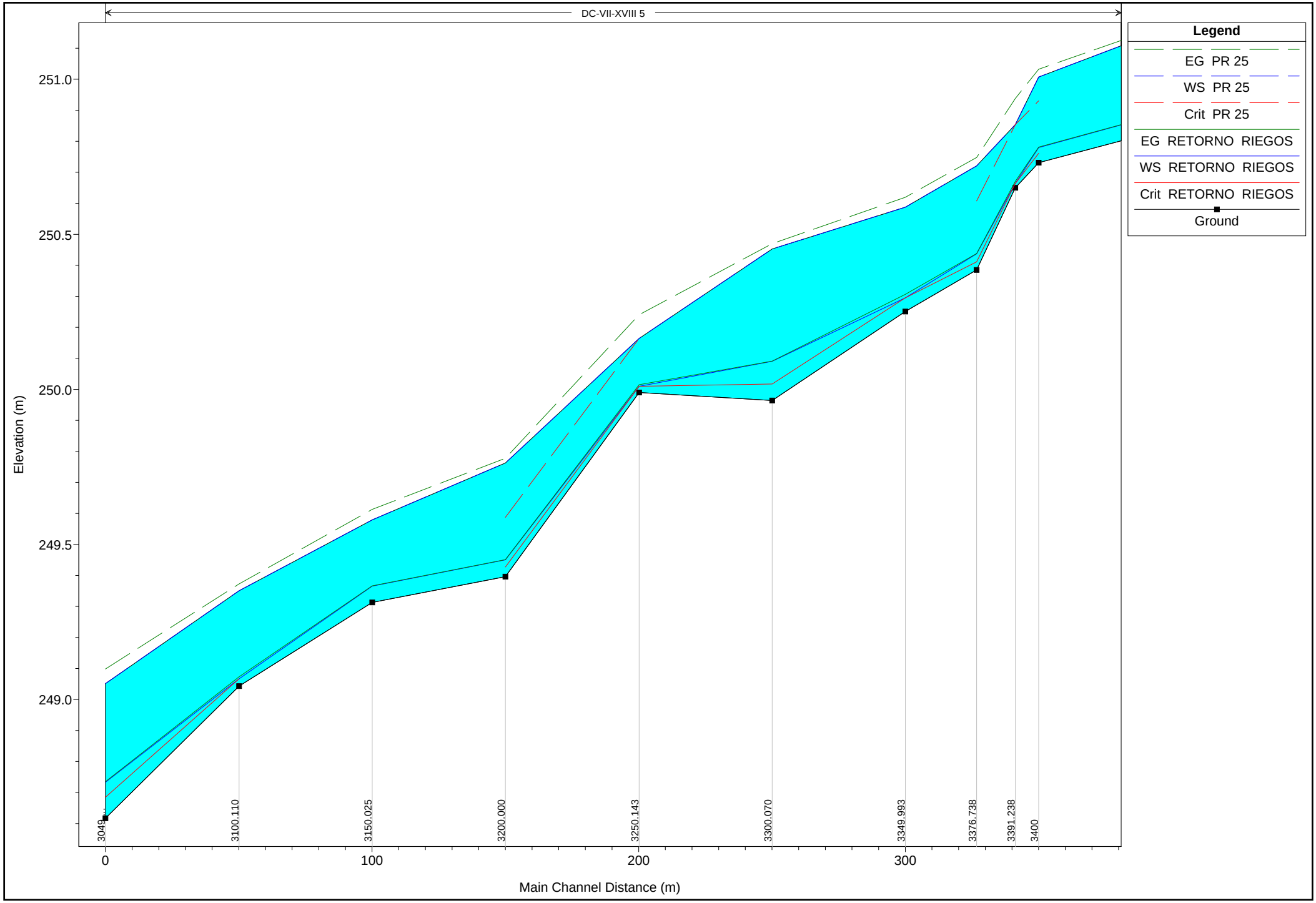
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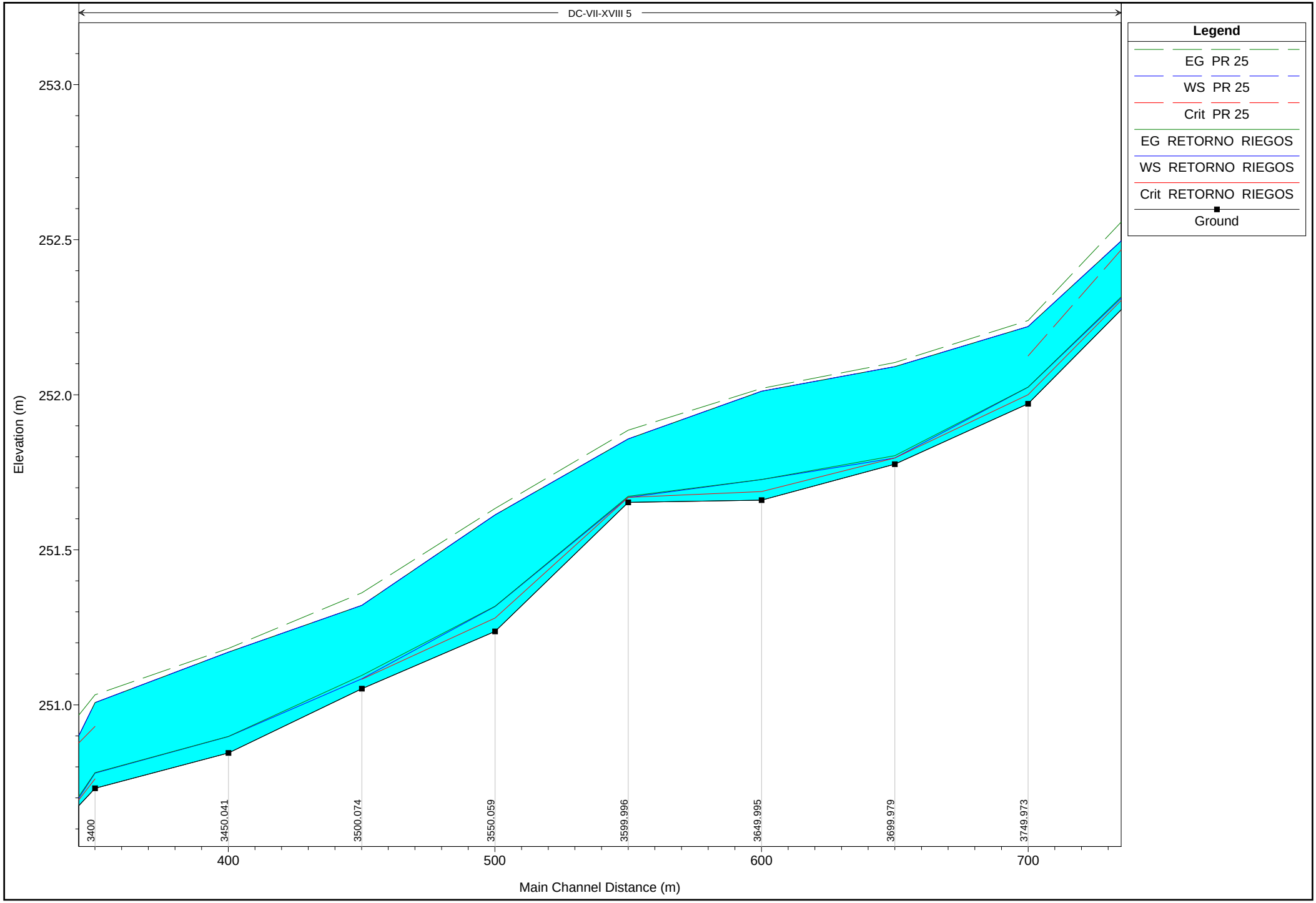
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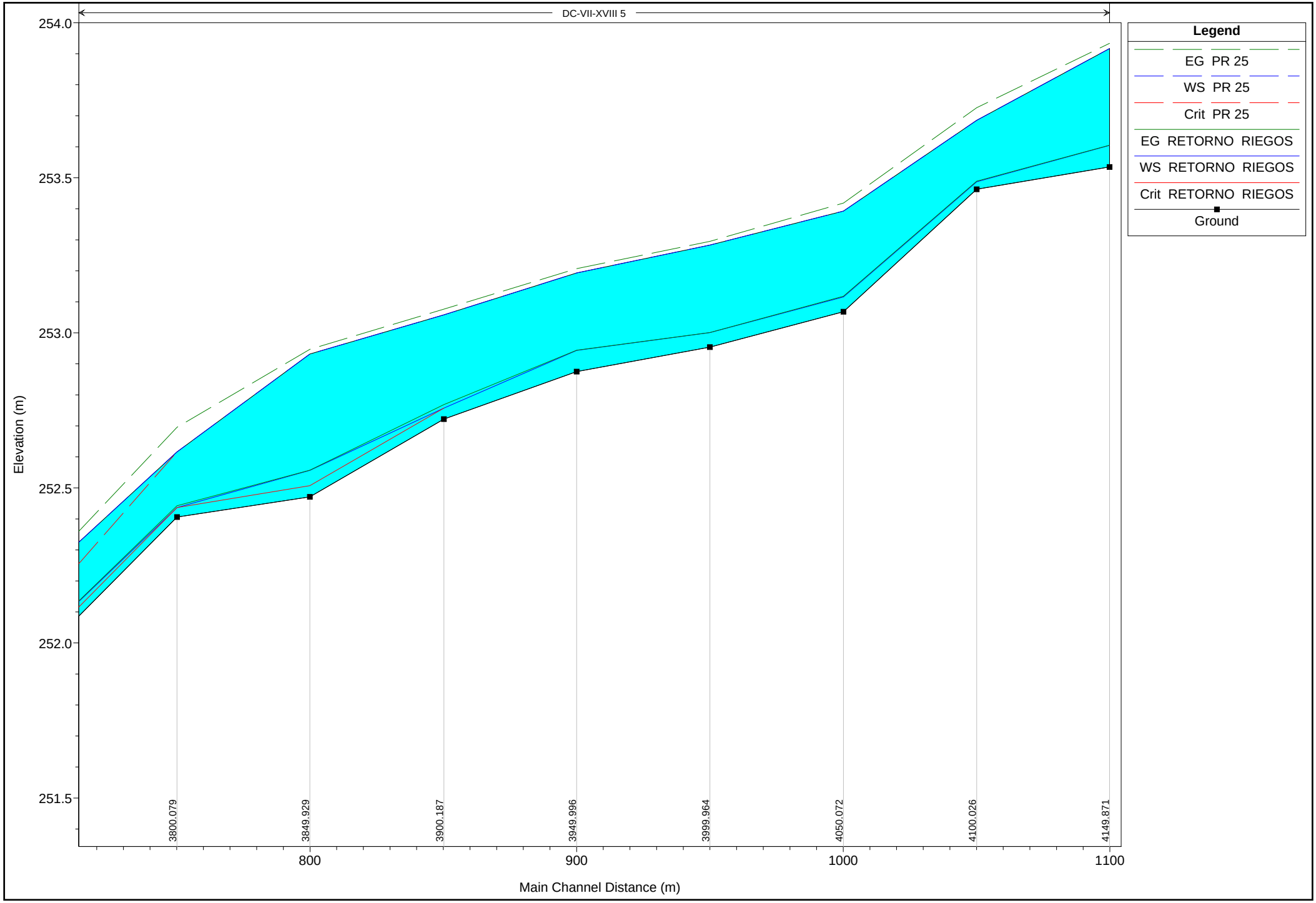
0
200
400
600
800
1000
1200

Main Channel Distance (m)

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3150.025
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3349.993
3376.738
3391.238
3400
3450.041
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
3800.079
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871


DC-VII-XVIII 5
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
251.0
250.5
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249.5
249.0
0
100
200
300
Main Channel Distance (m)
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3150.025
3200.000
3250.143
3300.070
3349.993
3376.738
3391.238
3400


DC-VII-XVIII 5
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
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252.0
251.5
251.0
Elevation (m)
3400
3450.041
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
400
500
600
700
Main Channel Distance (m)


DC-VII-XVIII 5
254.0
253.5
253.0
252.5
252.0
251.5
Elevation (m)
800
900
1000
1100
Main Channel Distance (m)
3800.079
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground

DC-VII-XVIII 6

Legend

- EG PR 25
- WS PR 25
- Crit PR 25
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

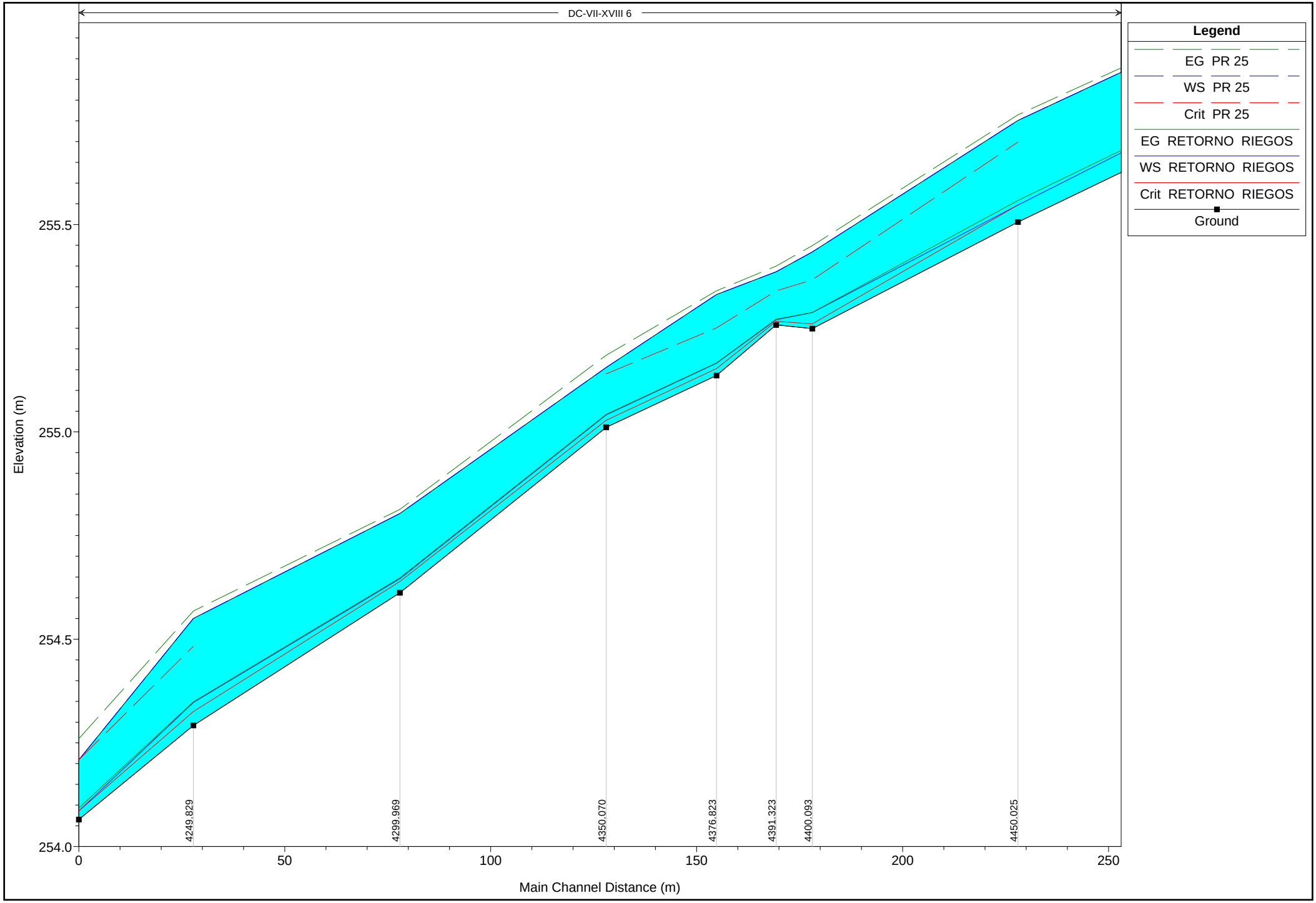
Elevation (m)

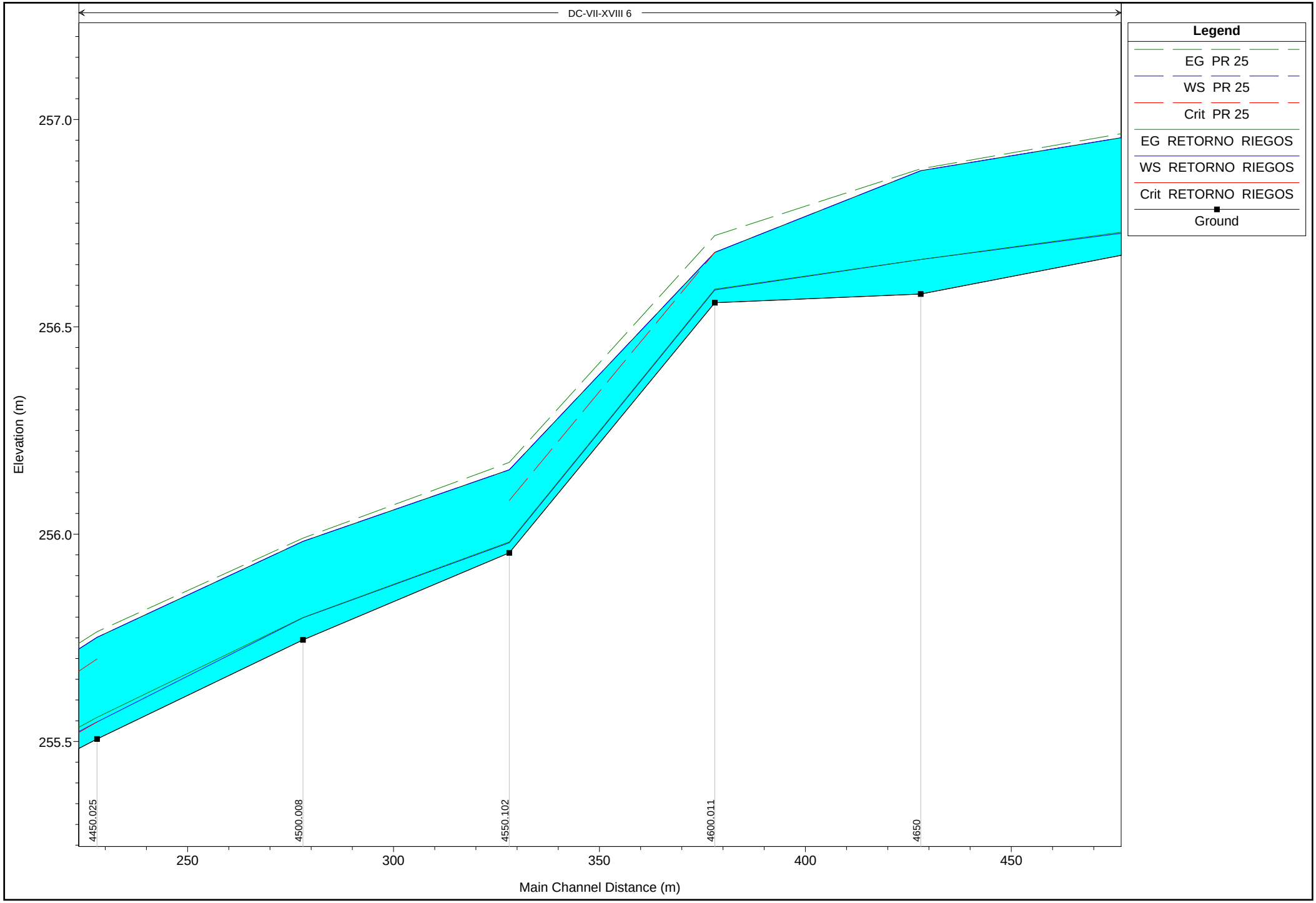
261
260
259
258
257
256
255
254

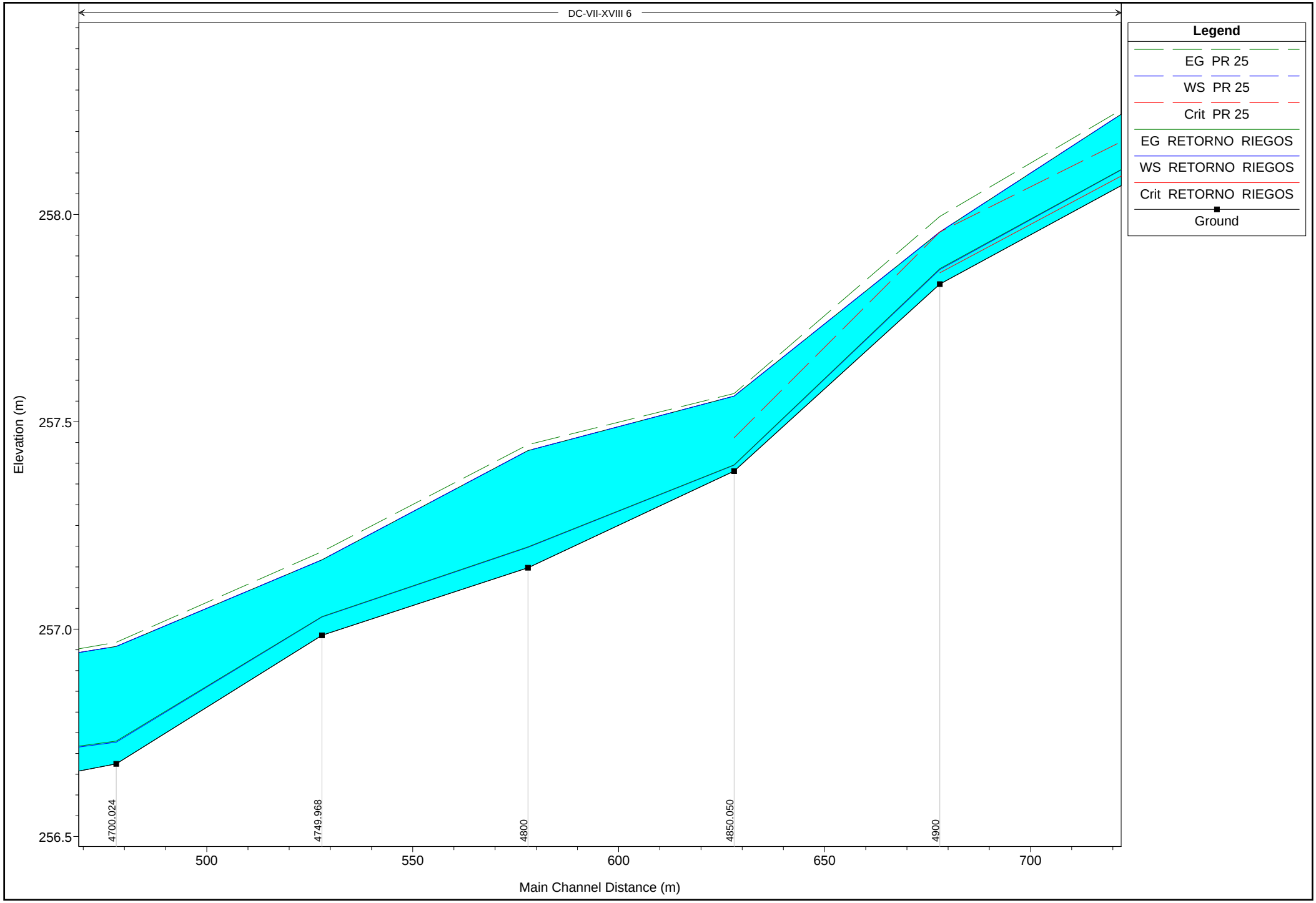
0
200
400
600
800
1000

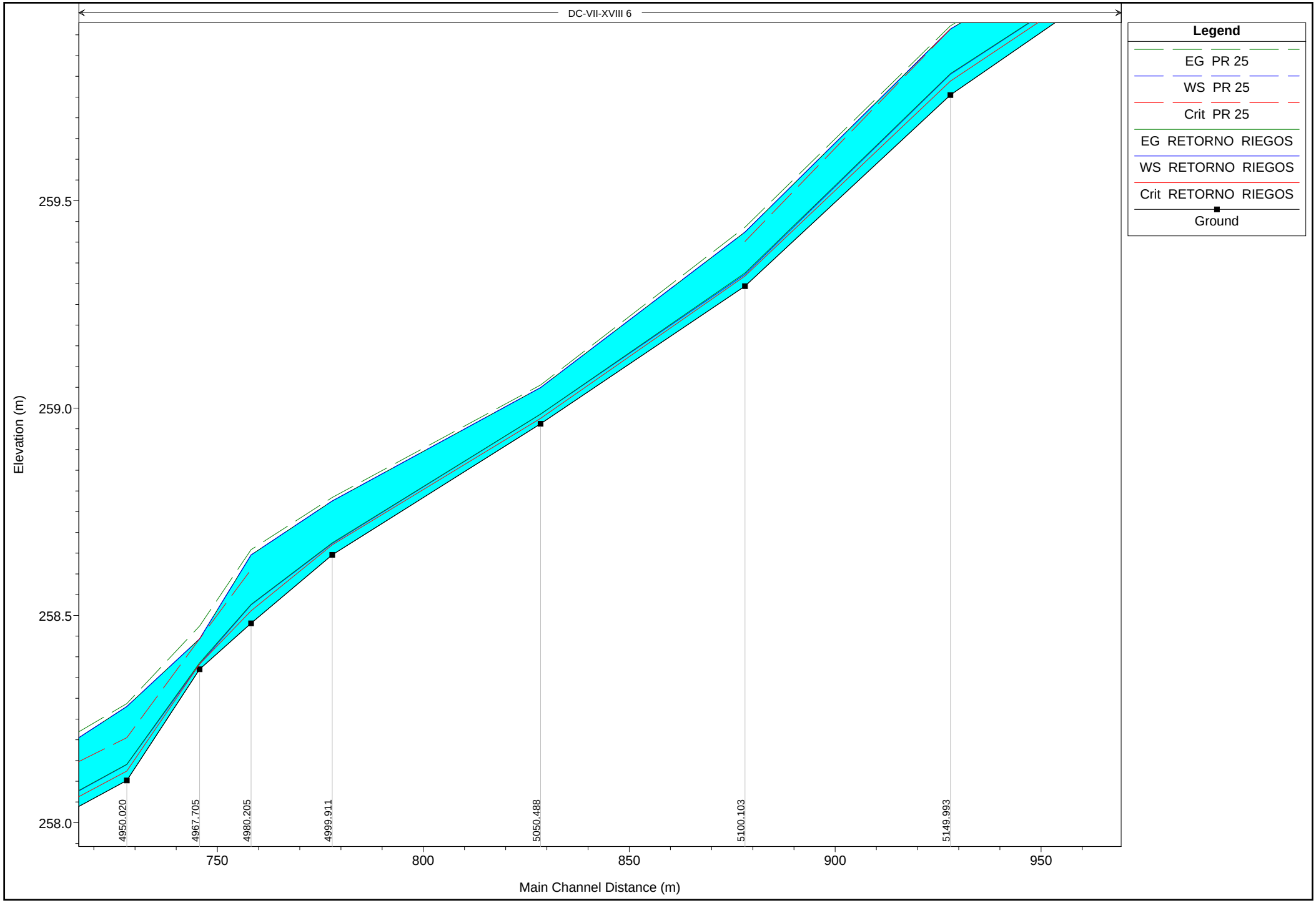
Main Channel Distance (m)

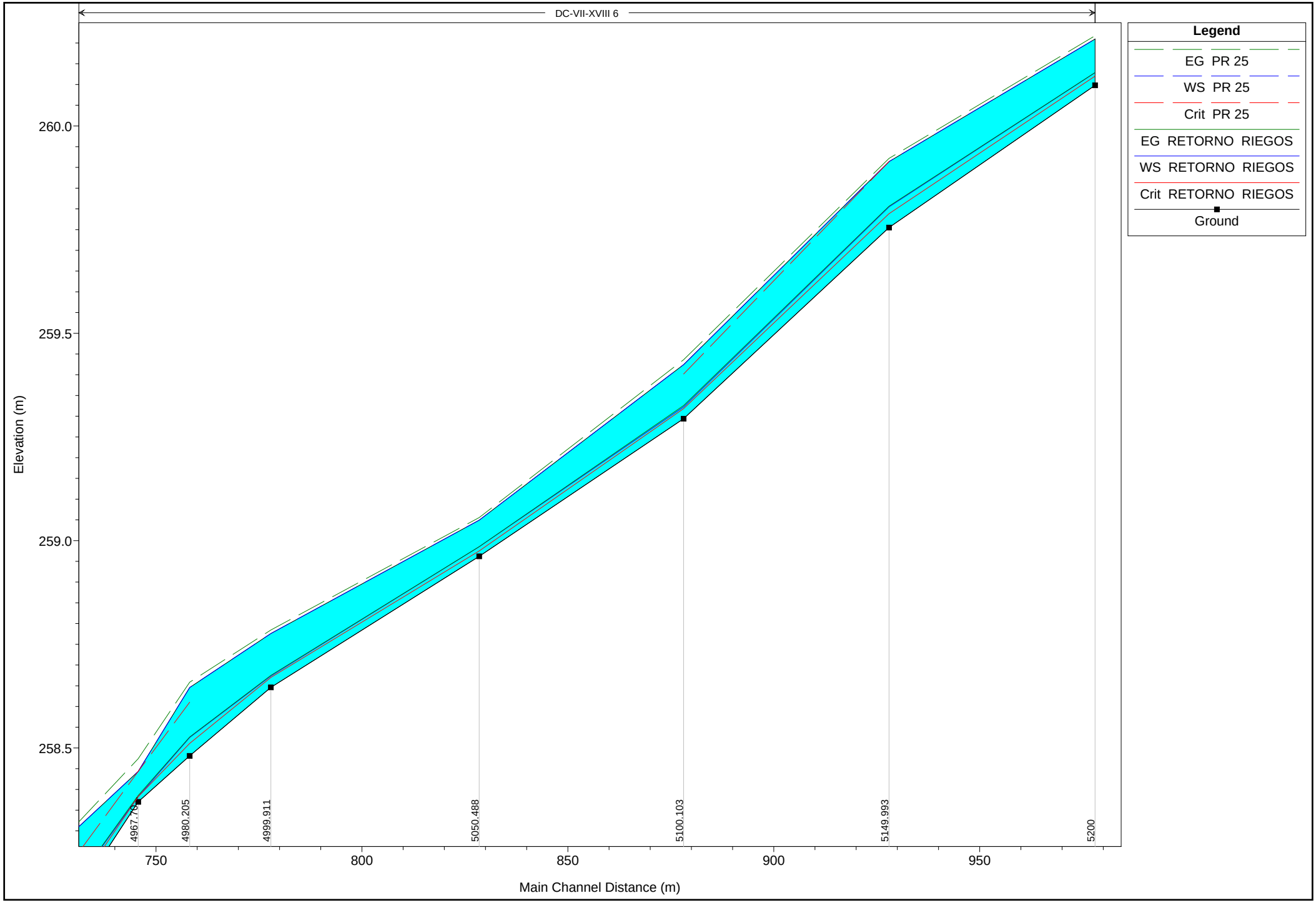
4249.829
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
4500.008
4550.102
4600.011
4650
4700.024
4749.968
4800
4850.050
4900
4950.020
4967.705
4980.205
4999.911
5050.488
5100.103
5149.993
5200


DC-VII-XVIII 6
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
255.5
255.0
254.5
254.0
0
50
100
150
200
250
Main Channel Distance (m)
4249.829
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025


DC-VII-XVIII 6
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
257.0
256.5
256.0
255.5
Elevation (m)
4450.025
4500.008
4550.102
4600.011
4650
250
300
350
400
450
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
258.0
257.5
257.0
256.5
500
550
600
650
700
Main Channel Distance (m)
4700.024
4749.968
4800
4850.050
4900


DC-VII-XVIII 6
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
259.5
259.0
258.5
258.0
4950.020
4967.705
4980.205
4999.911
5050.488
5100.103
5149.993
750
800
850
900
950
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
260.0
259.5
259.0
258.5
750
800
850
900
950
Main Channel Distance (m)
4967.78
4980.205
4999.911
5050.488
5100.103
5149.993
5200

DC-VII-XVIII 7

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

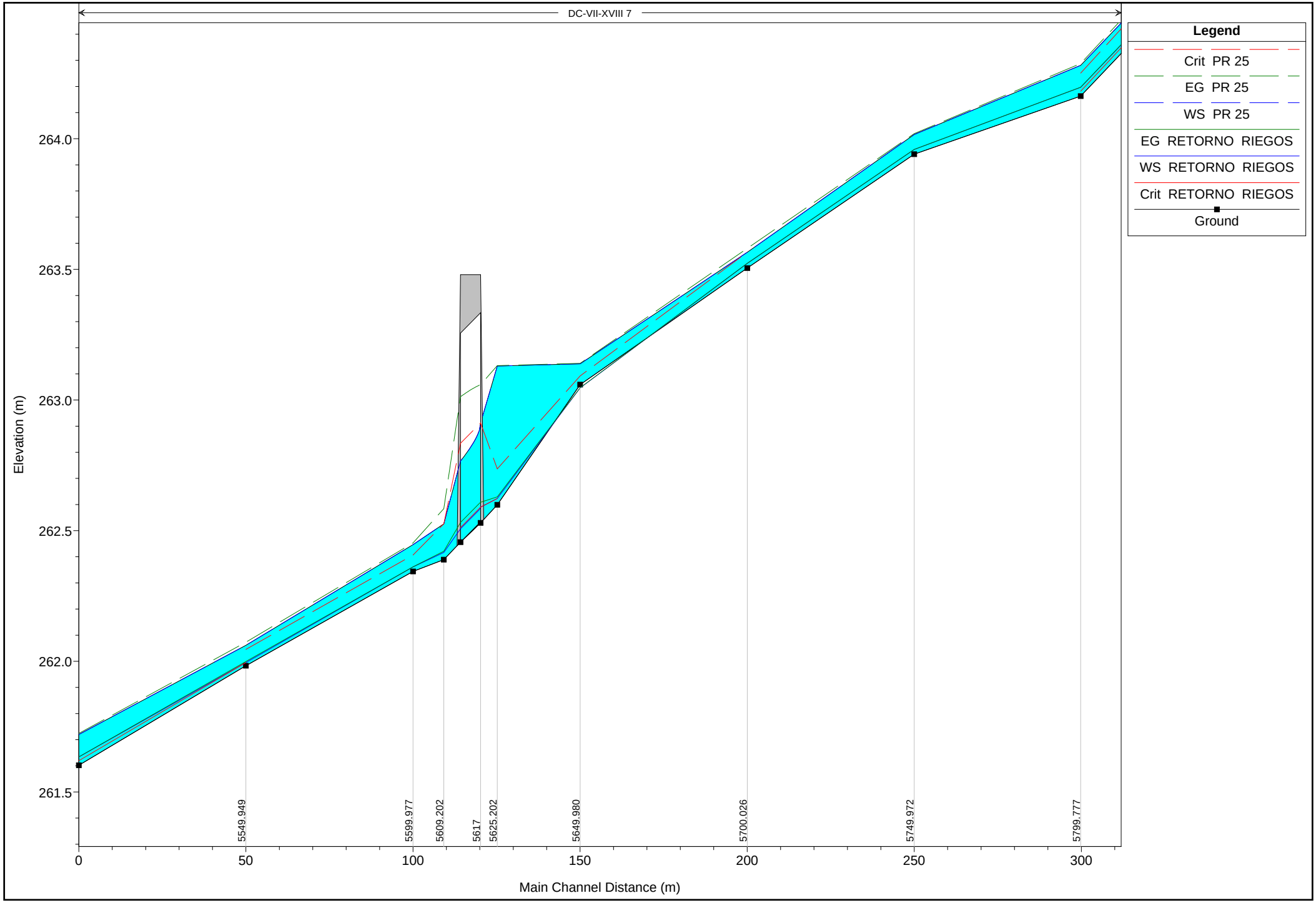
Elevation (m)

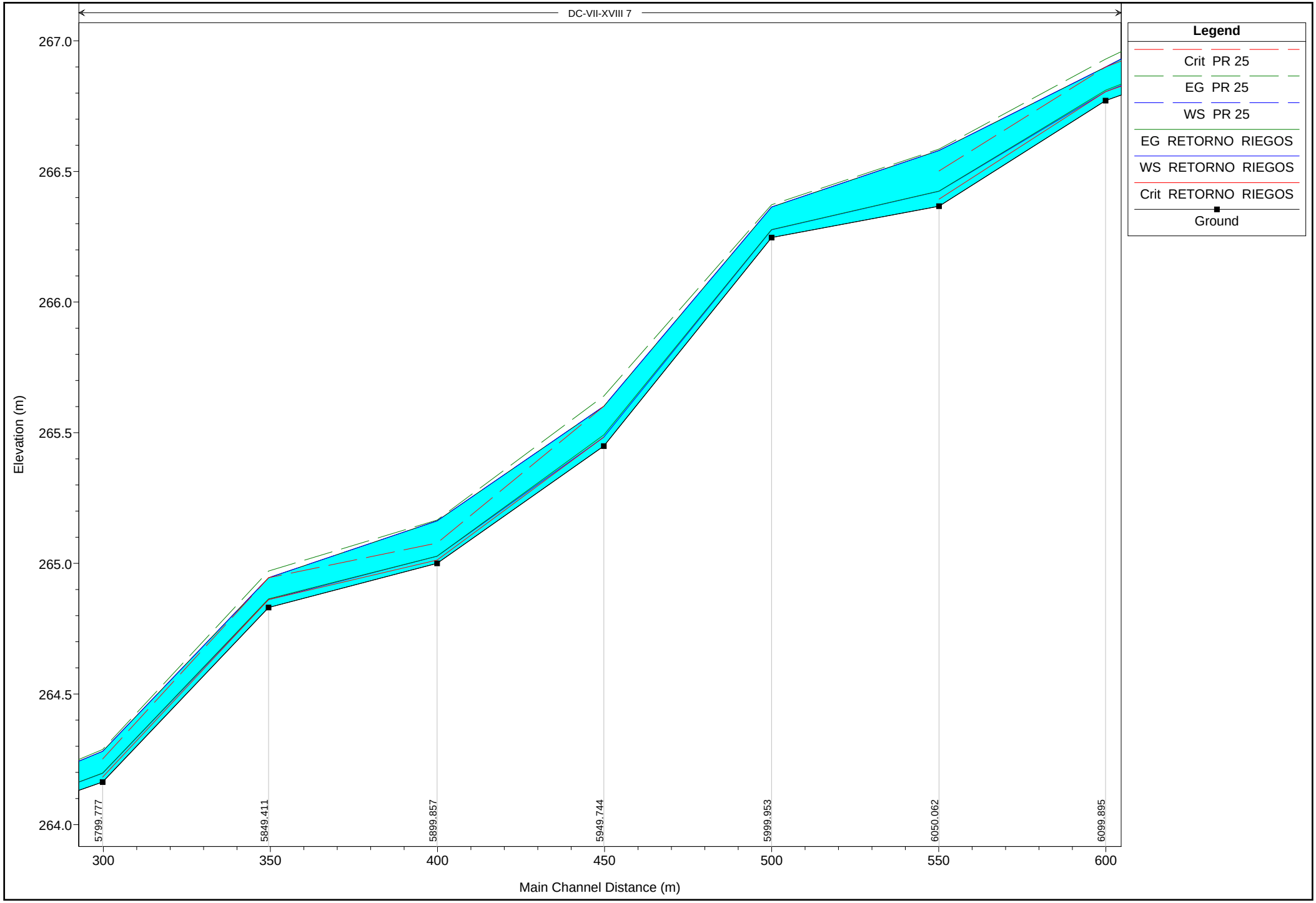
276
274
272
270
268
266
264
262

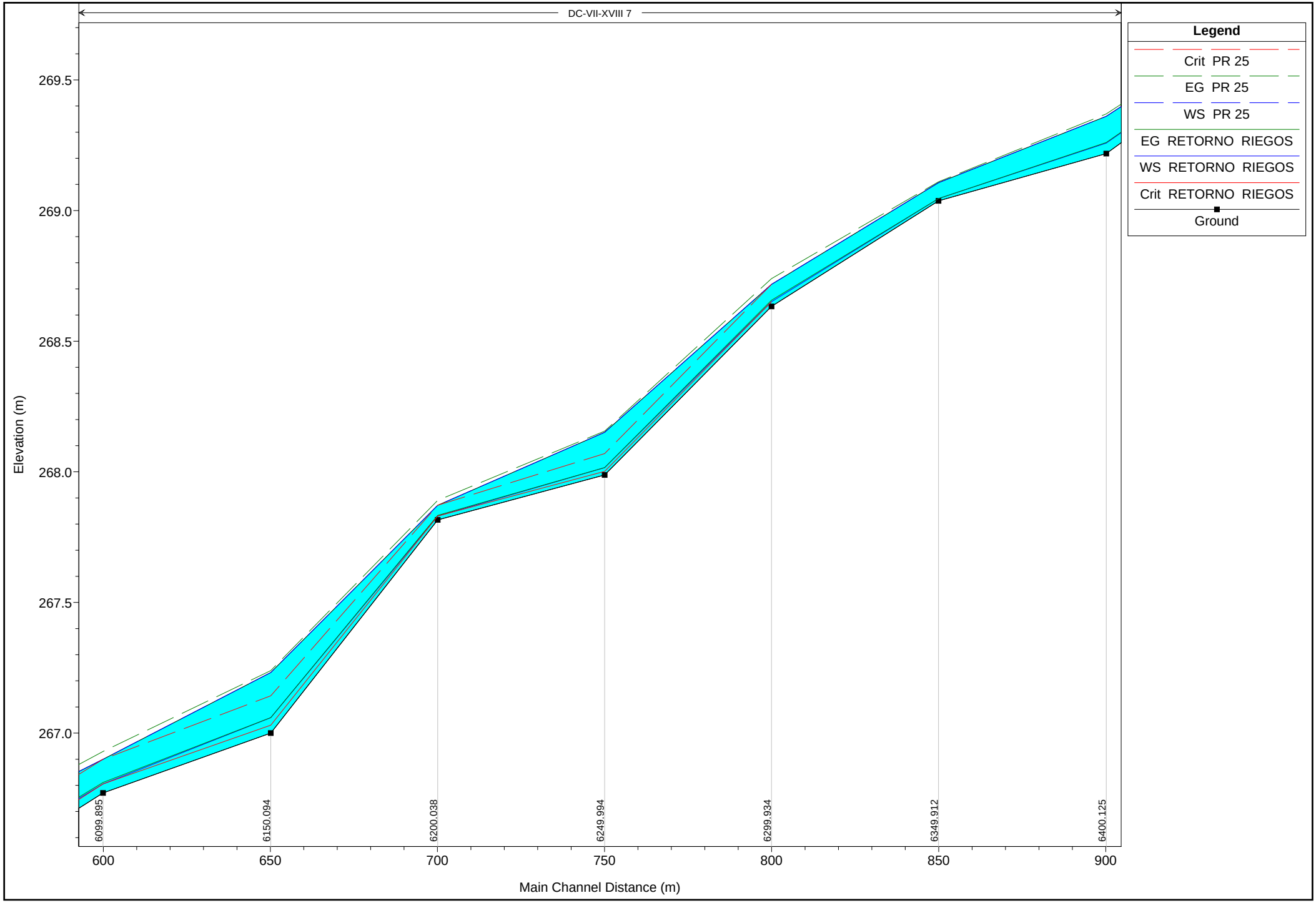
5499.97 5549.949 5599.977 5617 5649.980 5700.026 5749.972 5799.777 5849.411 5899.857 5949.744 5999.953 6050.062 6099.895 6150.094 6200.038 6249.994 6299.934 6349.912 6400.125 6443.411 6500 6550 6599.932 6649.944 6699.958 6749.770 6800.056 6850.006 6872.171 6900.010 6949.910 6999.710 7050.093 7073.890 7087.390 7149.979 7200.077 7249.989 7300.129 7400.119 7450.075 7500.056 7550.077 7600.010 7649.973

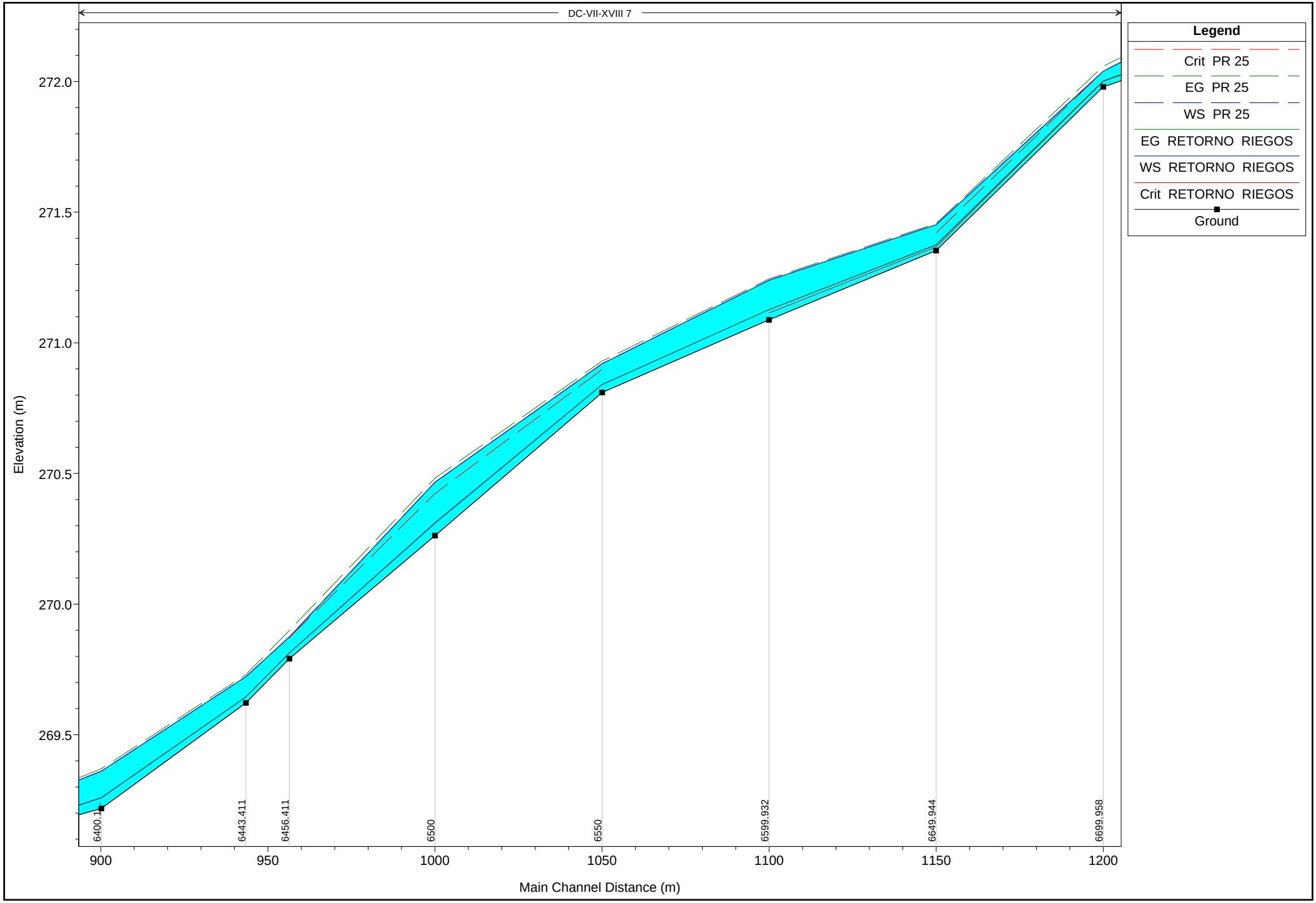
0 500 1000 1500 2000

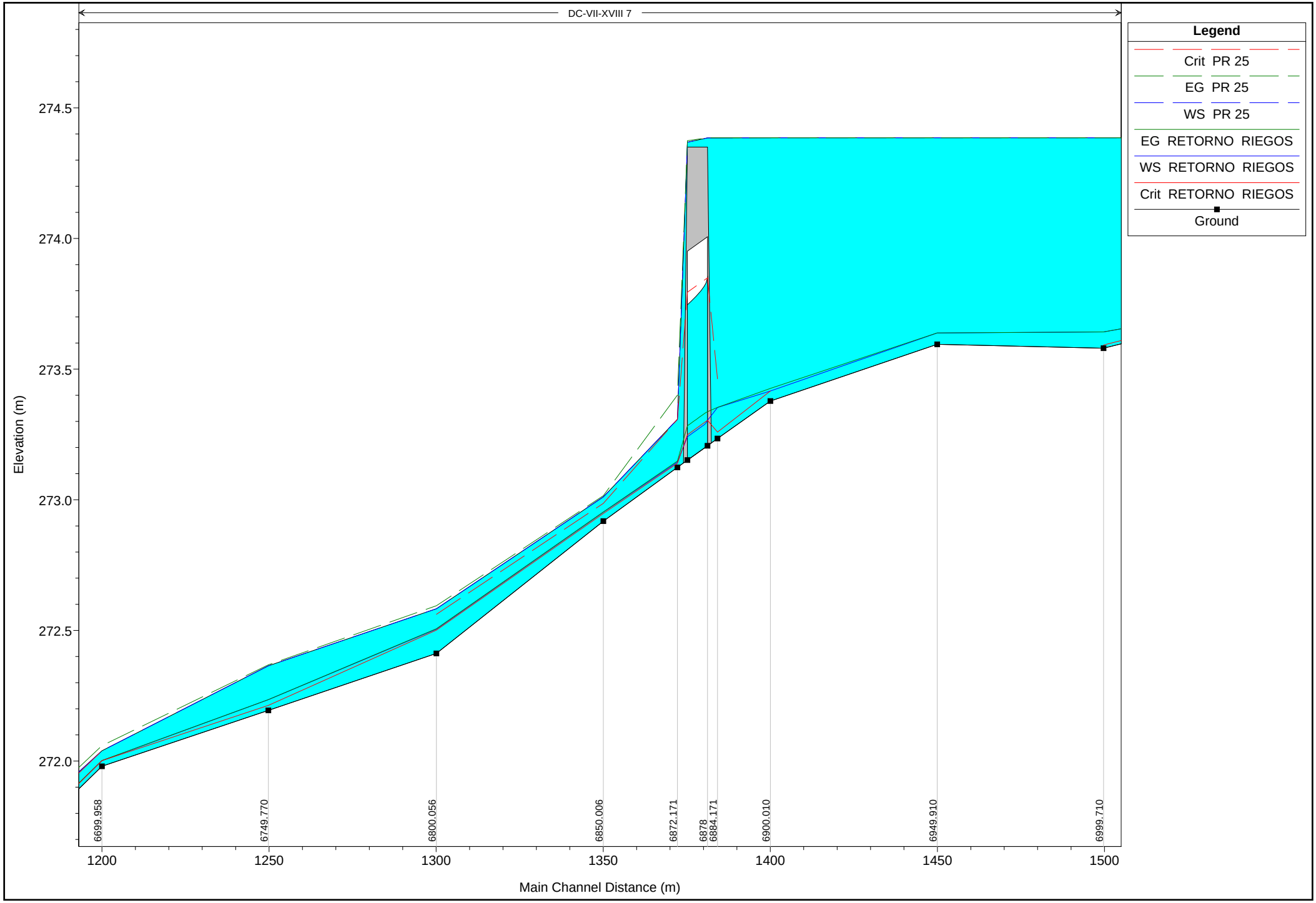
Main Channel Distance (m)

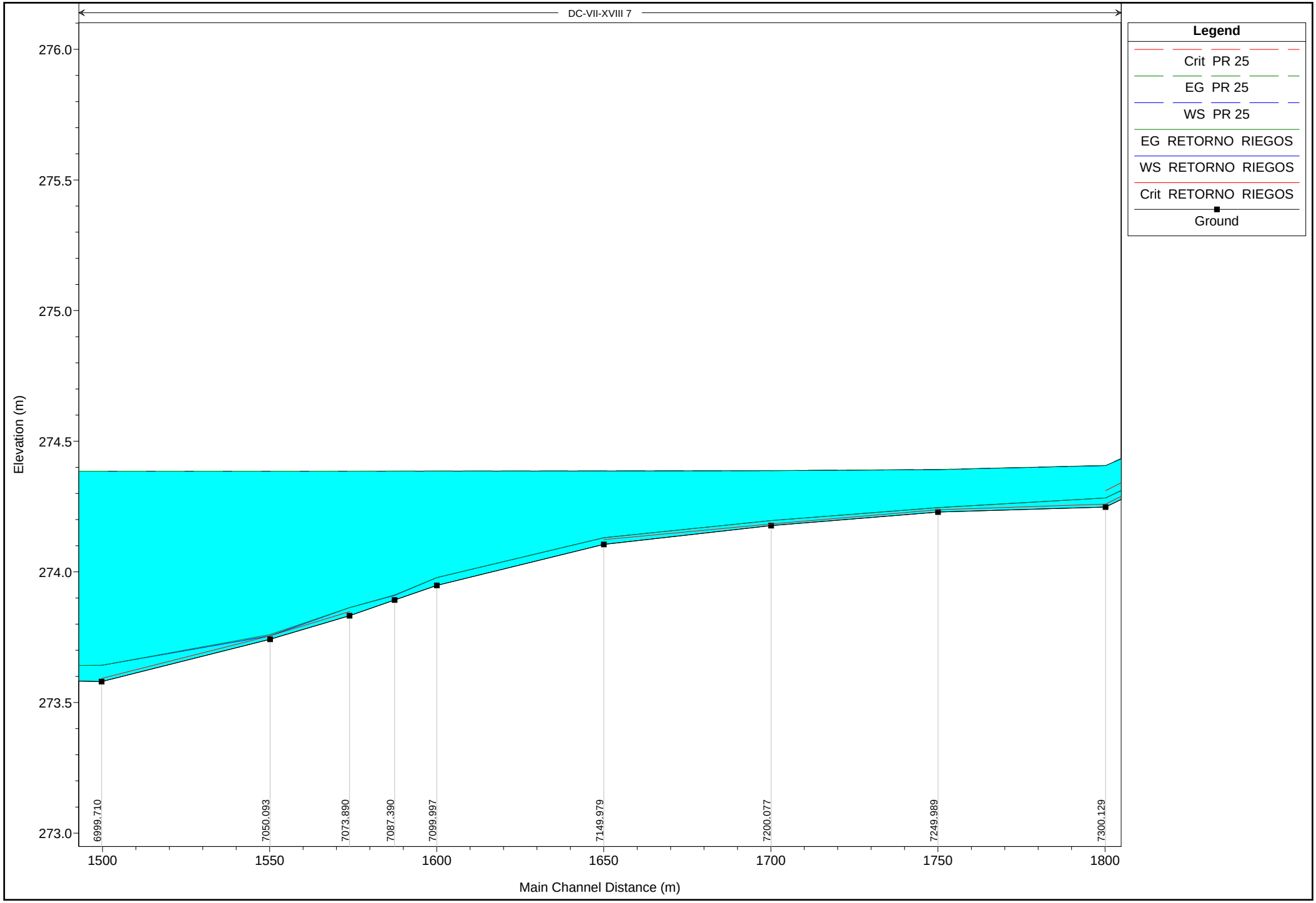

DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
264.0
263.5
263.0
262.5
262.0
261.5
0
50
100
150
200
250
300
Main Channel Distance (m)
5549.949
5599.977
5609.202
5617
5625.202
5649.980
5700.026
5749.972
5799.777

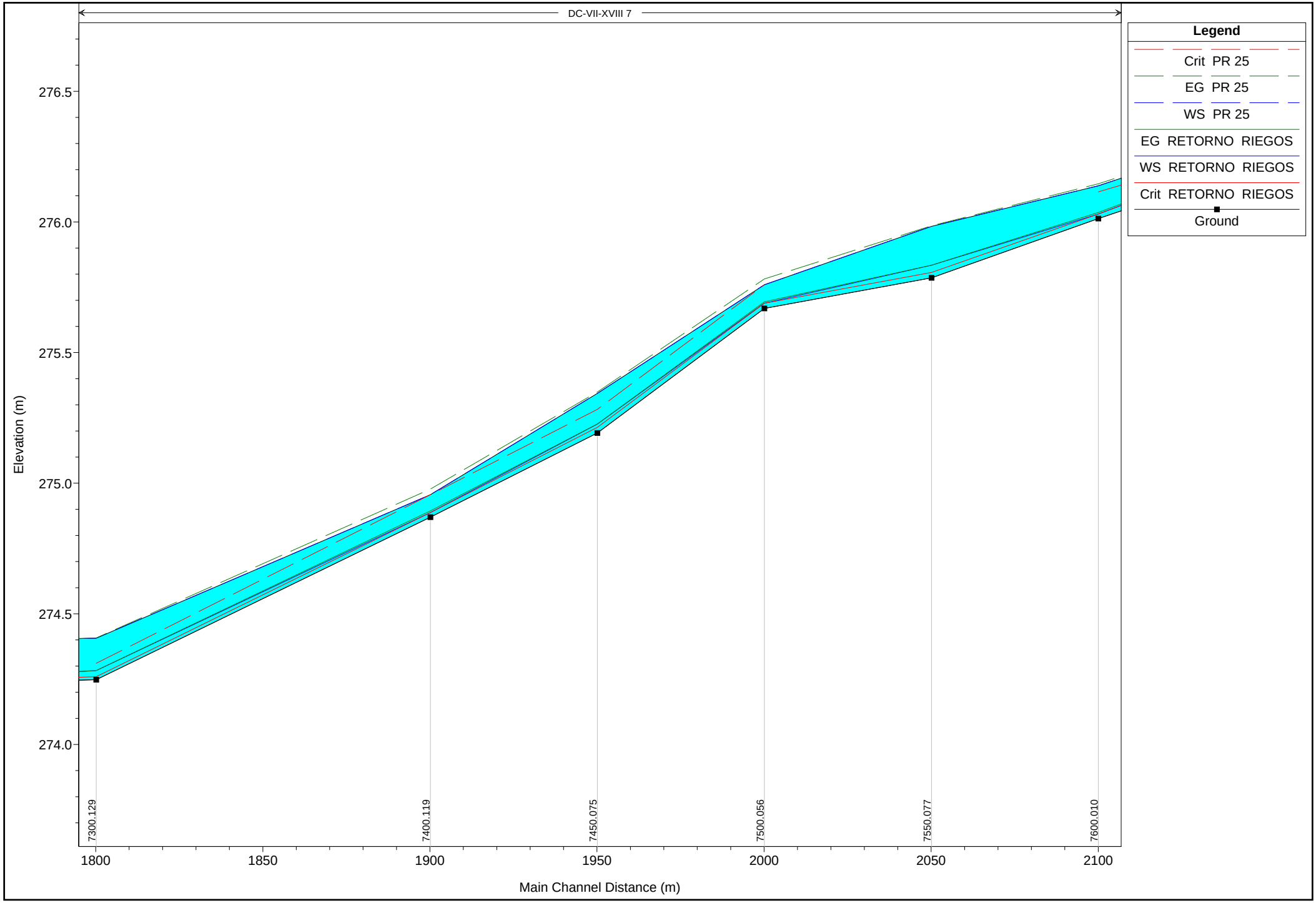

DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
267.0
266.5
266.0
265.5
265.0
264.5
264.0
5799.777
5849.411
5899.857
5949.744
5999.953
6050.062
6099.895
300
350
400
450
500
550
600
Main Channel Distance (m)

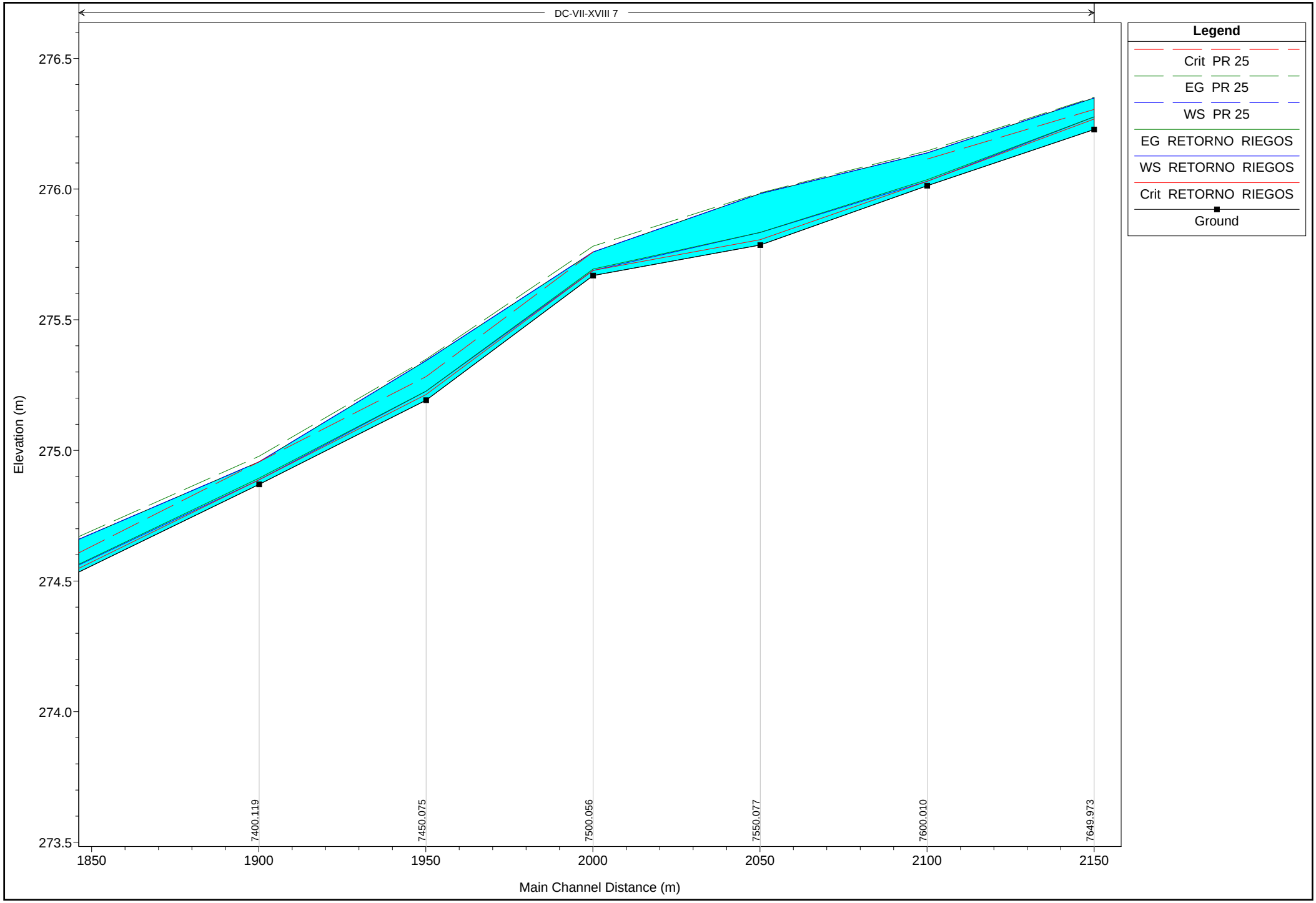

DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
269.5
269.0
268.5
268.0
267.5
267.0
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
6400.125
600
650
700
750
800
850
900
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
272.0
271.5
271.0
270.5
270.0
269.5
6400.1
6443.411
6456.411
6500
6550
6599.932
6649.944
6699.958
900
950
1000
1050
1100
1150
1200
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
274.5
274.0
273.5
273.0
272.5
272.0
6699.958
6749.770
6800.056
6850.006
6872.171
6878
6884.171
6900.010
6949.910
6999.710
1200
1250
1300
1350
1400
1450
1500
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.0
275.5
275.0
274.5
274.0
273.5
273.0
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
7200.077
7249.989
7300.129
1500
1550
1600
1650
1700
1750
1800
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.5
276.0
275.5
275.0
274.5
274.0
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
1800
1850
1900
1950
2000
2050
2100
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.5
276.0
275.5
275.0
274.5
274.0
273.5
1850
1900
1950
2000
2050
2100
2150
Main Channel Distance (m)
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973

PERFIL LONGITUDINAL EJE COMPLETO PR100

DC-VII-XVIII 1 | DC-VII-XVIII 2 | DC-VII-XVIII 3 | DC-VII-XVIII 4 | DC-VII-XVIII 5 | DC-VII-XVIII 6 | DC-VII-XVIII 7

Legend

- Crit PR 100
- EG PR 100
- WS PR 100
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

Elevation (m)

280
270
260
250
240
230
220

0
2000
4000
6000
8000

Main Channel Distance (m)

149.9965 200.0032 249.9741 300.0035 350.0004 400.1501 449.9817 499.9494 550.0947 684.0295 749.9177 799.9962 850.0487 899.9420 949.9938 999.9964 1049.997 1099.930 1149.992 1199.996 1250.057 1299.988 1350.023 1400.000 1450.005 1499.993 1549.973 1599.992 1749.970 1799.147 1849.989 1900.001 1950.051 1999.991 2050.003 2099.997 2149.988 2199.933 2250.002 2367.905 2449.993 2500.027 2549.999 2600.016 2650.083 2699.970 2750.009 2800.001 2891.135 3049.982 3100.110 3150.025 3200.000 3250.143 3300.070 3349.993 3400 3450.041 3500.074 3550.059 3599.996 3649.995 3699.979 3749.973 3800.079 3849.929 3900.187 3949.996 3999.964 4050.072 4100.026 4149.871 4222.011 4299.969 4350.070 4400.093 4450.025 4500.008 4550.102 4600.011 4650 4700.024 4749.968 4800 4850.050 4900 4950.020 4999.911 5050.488 5100.103 5149.993 5200 5499.974 5549.949 5599.977 5649.980 5700.026 5749.972 5799.777 5849.411 5899.857 5949.744 5999.953 6050.062 6099.895 6150.094 6200.038 6249.994 6299.934 6349.912 6400.125 6456.411 6550 6599.932 6649.944 6699.998 6749.770 6800.056 6850.006 6900.010 6949.910 6999.710 7050.093 7099.997 7149.979 7200.077 7249.989 7300.129 7400.119 7450.075 7500.056 7550.077 7600.010 7649.973

PERFIL LONGITUDINAL POR TRAMOS
PR100

DC-VII-XVIII 1

Legend

- Crit PR 100
- EG PR 100
- WS PR 100
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

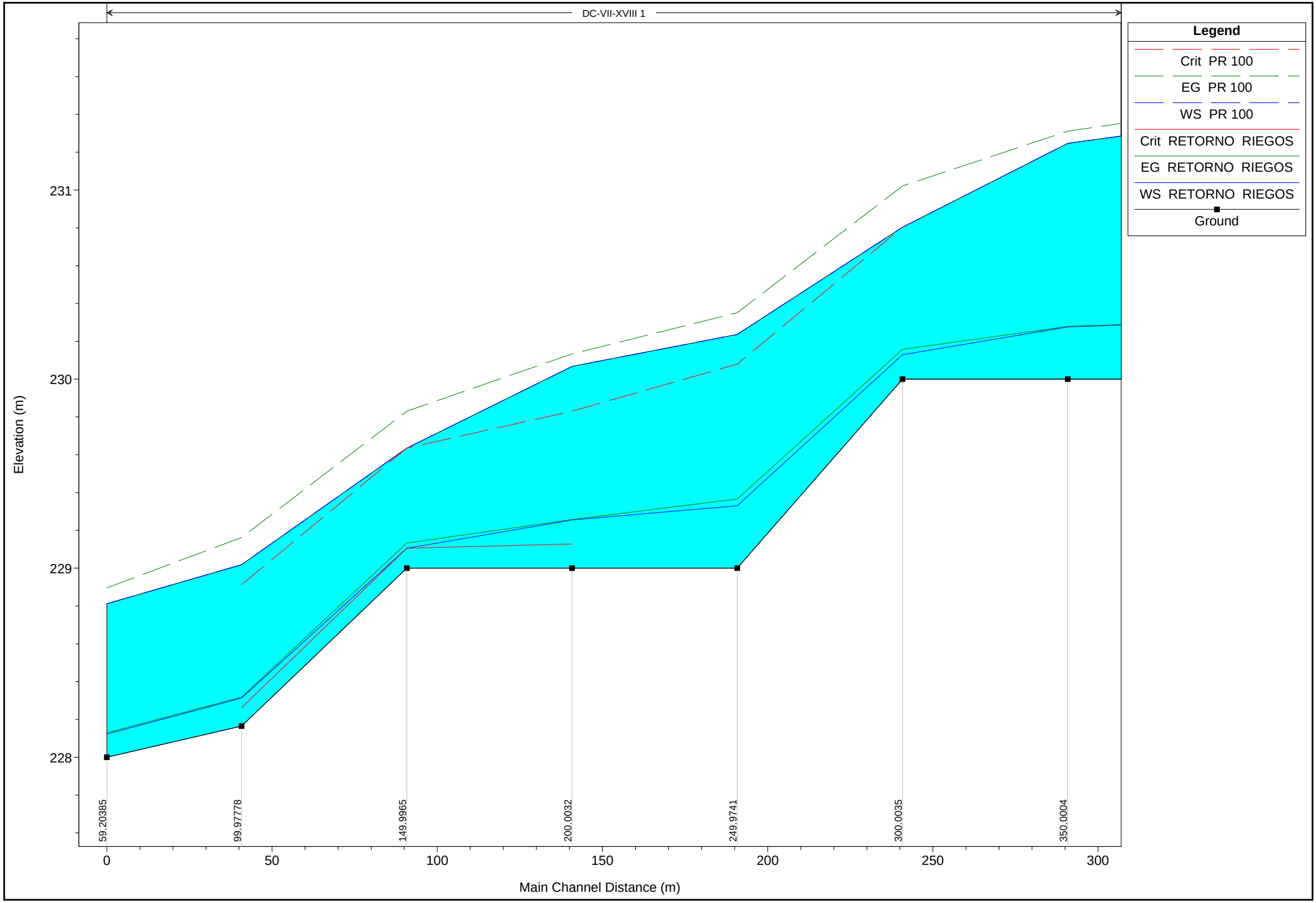
Elevation (m)

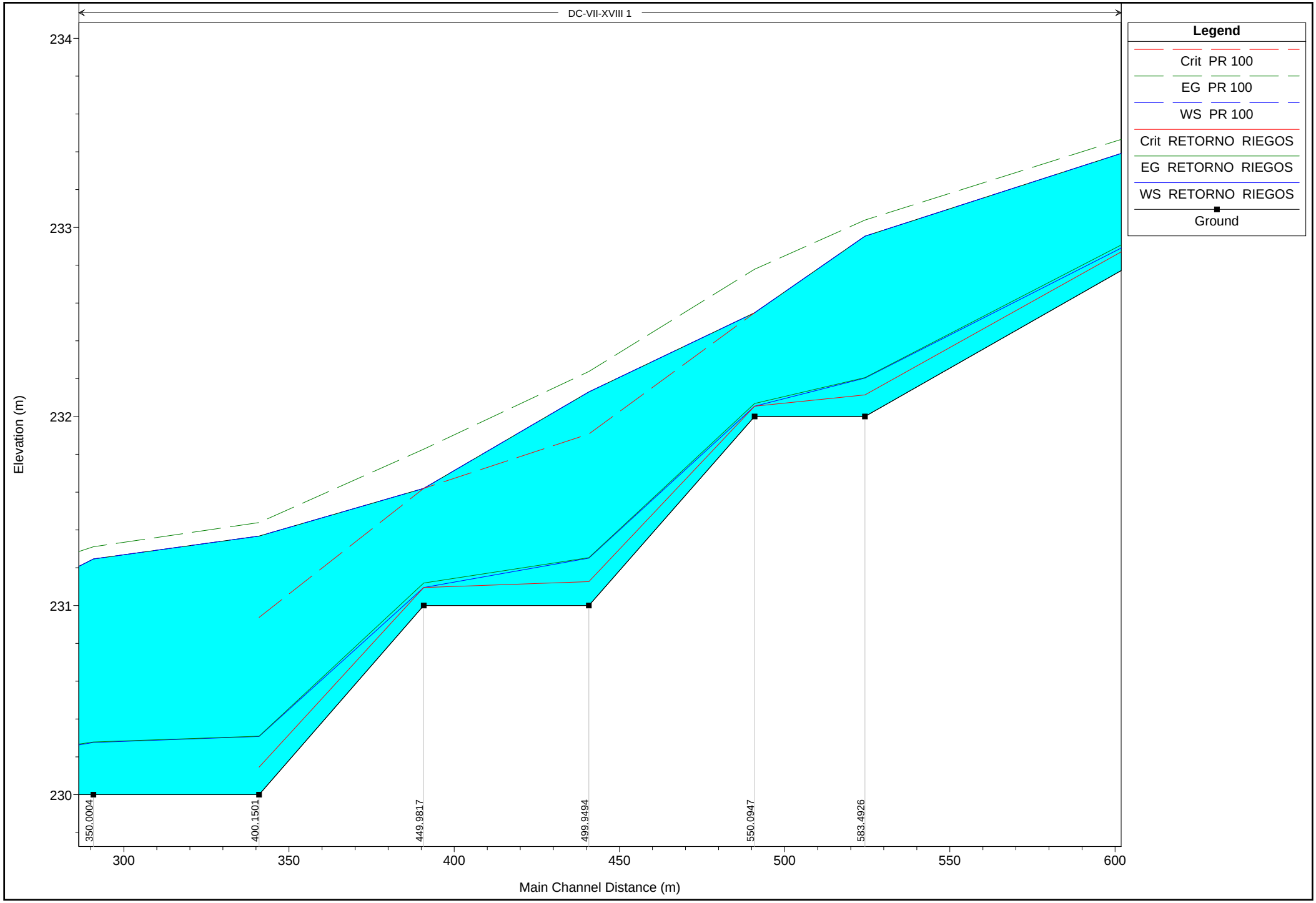
255
250
245
240
235
230
225

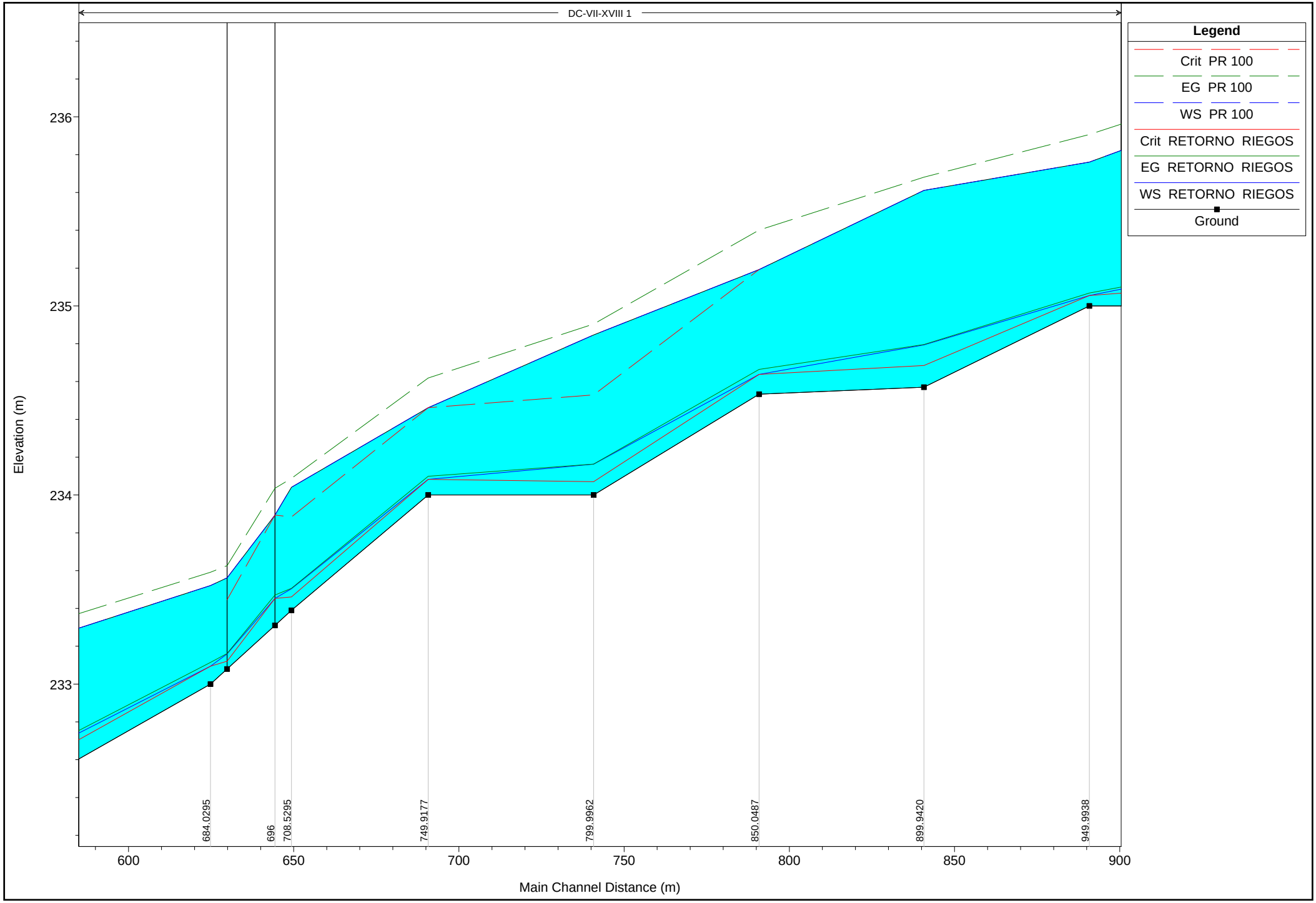
0
200
400
600
800
1000
1200
1400
1600

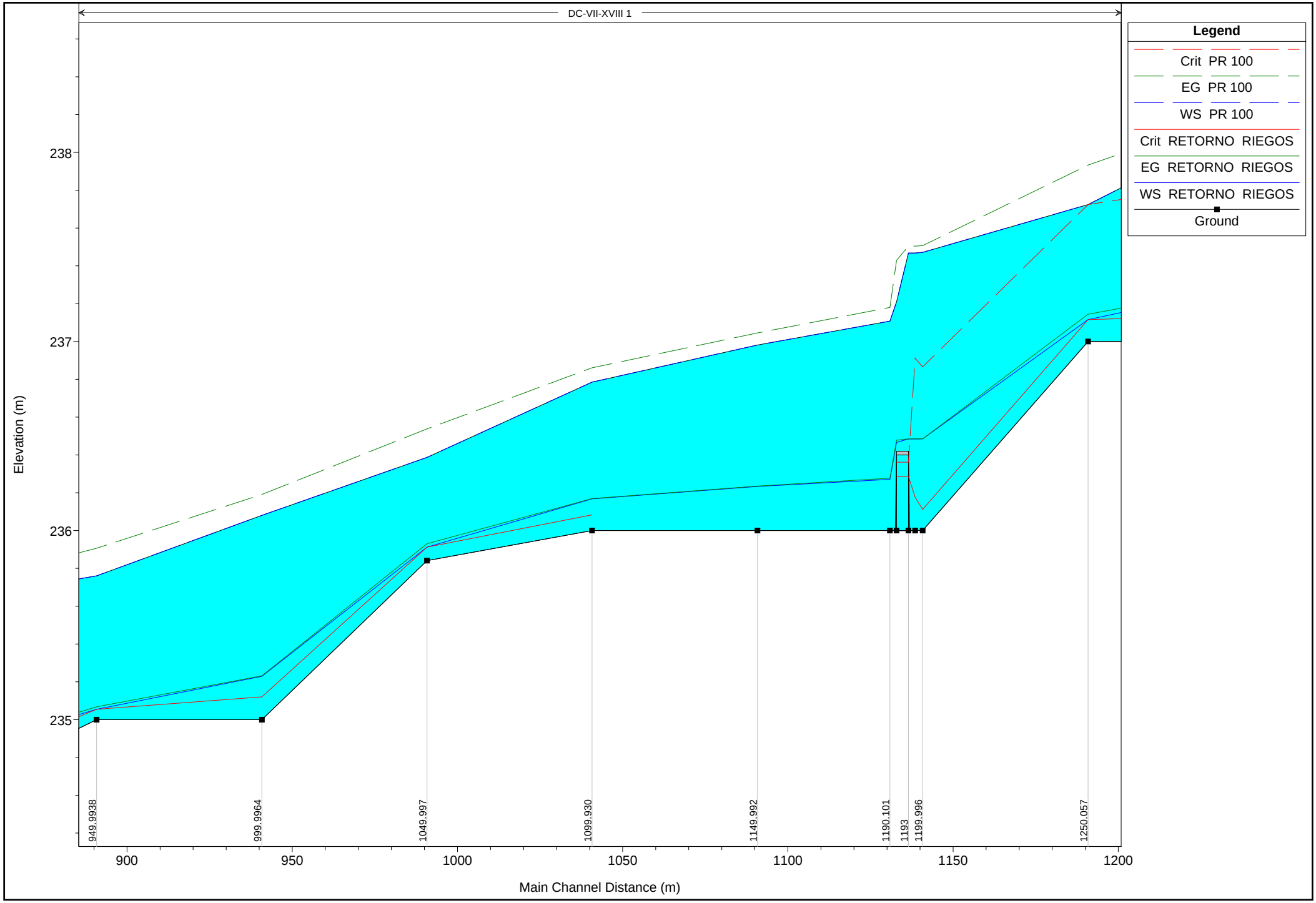
Main Channel Distance (m)

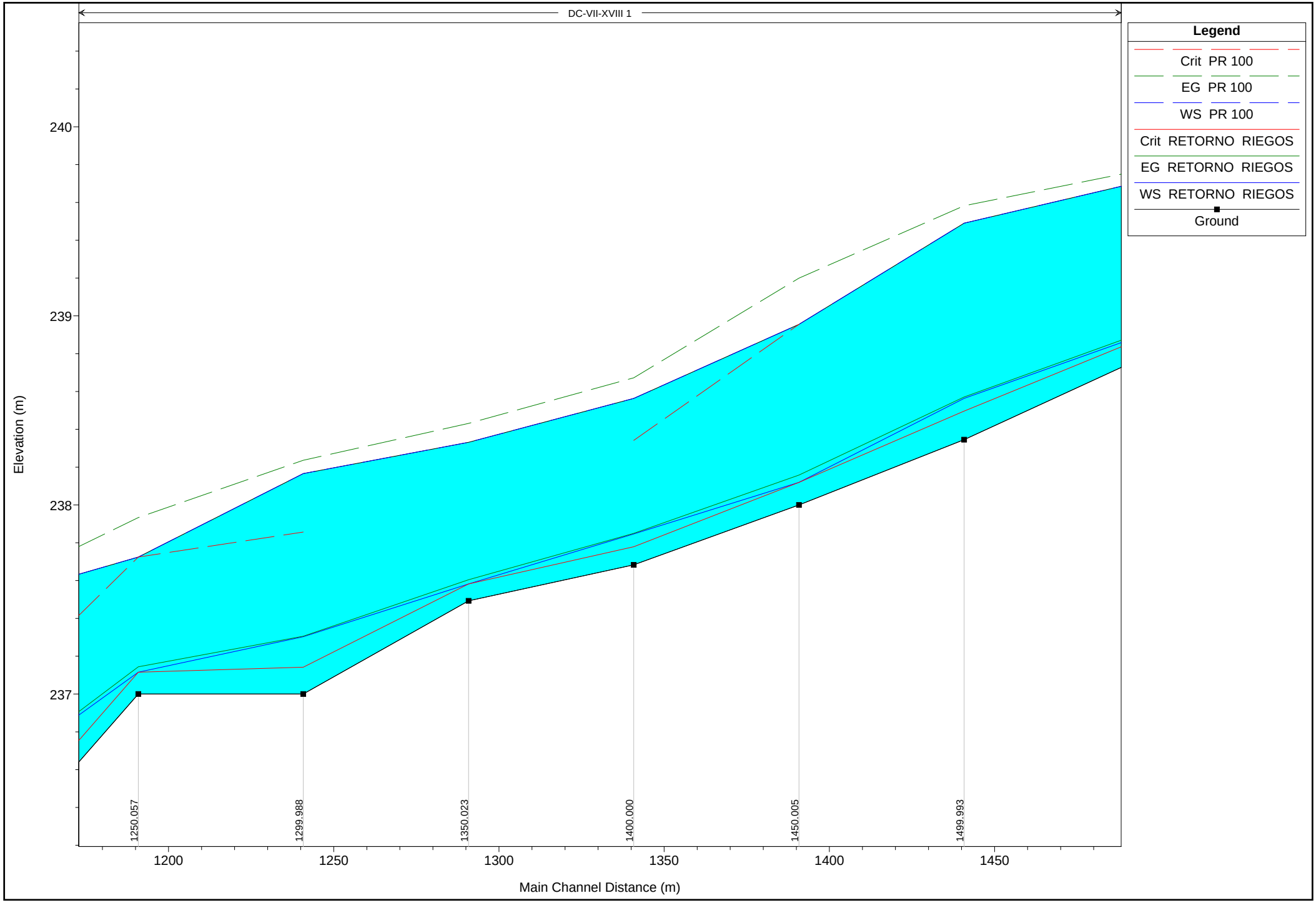
99.97778
149.9965
200.0032
249.9741
300.0035
350.0004
400.1501
449.9817
499.9494
550.0947
583.4926
684.0295
696
749.9177
799.9962
850.0487
899.9420
949.9938
999.9964
1049.997
1099.930
1149.992
1190.101
1199.996
1250.057
1299.988
1350.023
1400.000
1450.005
1499.993
1549.973
1599.992
1610.082

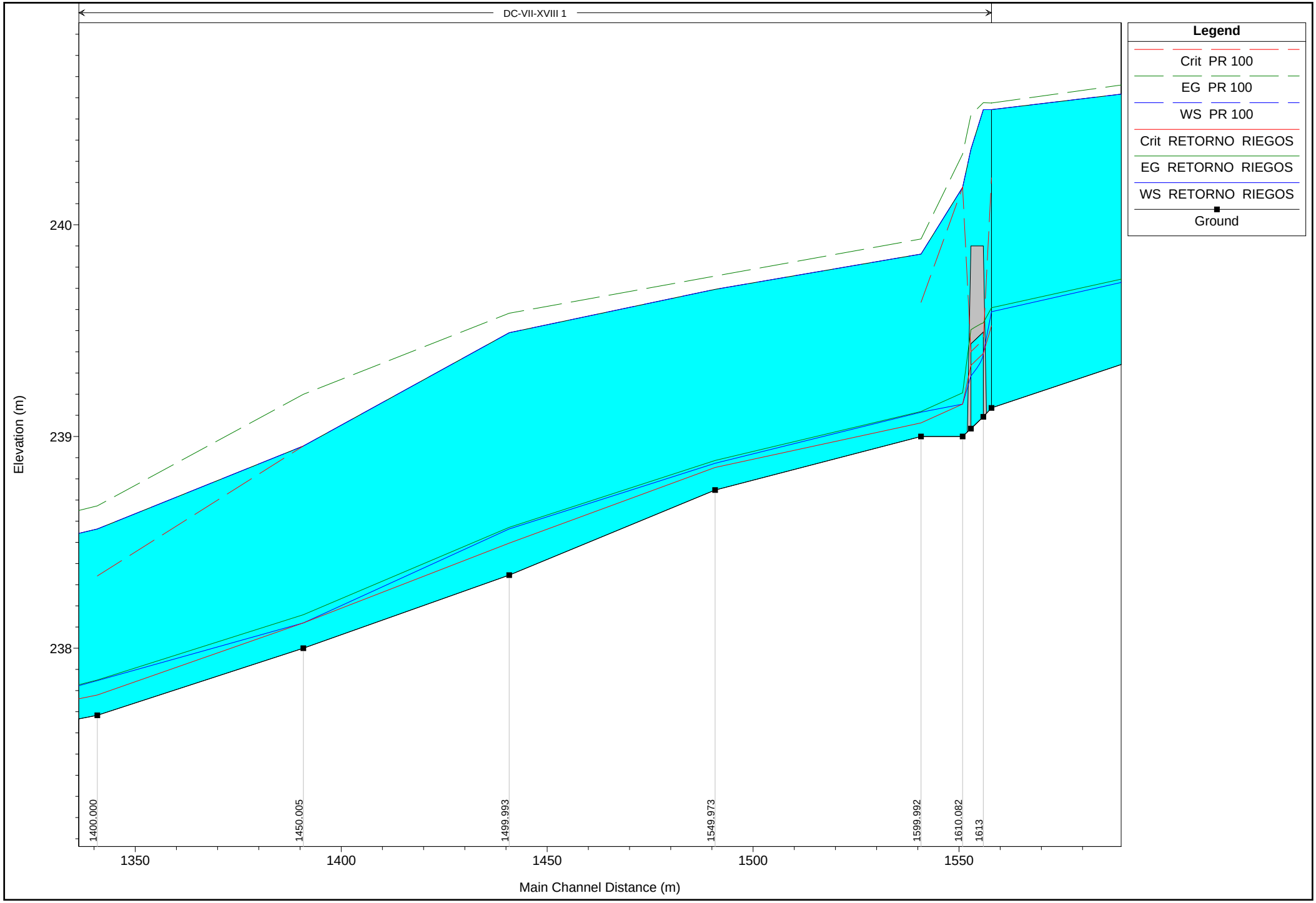

DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
231
230
229
228
59.20385
99.97778
149.9965
200.0032
249.9741
300.0035
350.0004
0
50
100
150
200
250
300
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
234
233
232
231
230
350.0004
400.1501
449.9817
499.9494
550.0947
583.4926
300
350
400
450
500
550
600
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
236
235
234
233
684.0295
696
708.5295
749.9177
799.9962
850.0487
899.9420
949.9938
600
650
700
750
800
850
900
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
238
237
236
235
949.9938
999.9964
1049.997
1099.930
1149.992
1190.101
1193
1199.996
1250.057
900
950
1000
1050
1100
1150
1200
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
240
239
238
237
1250.057
1299.988
1350.023
1400.000
1450.005
1499.993
1200
1250
1300
1350
1400
1450
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
240
239
238
1400.000
1450.005
1499.993
1549.973
1599.992
1610.082
1613
1350
1400
1450
1500
1550
Main Channel Distance (m)

DC-VII-XVIII 2

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

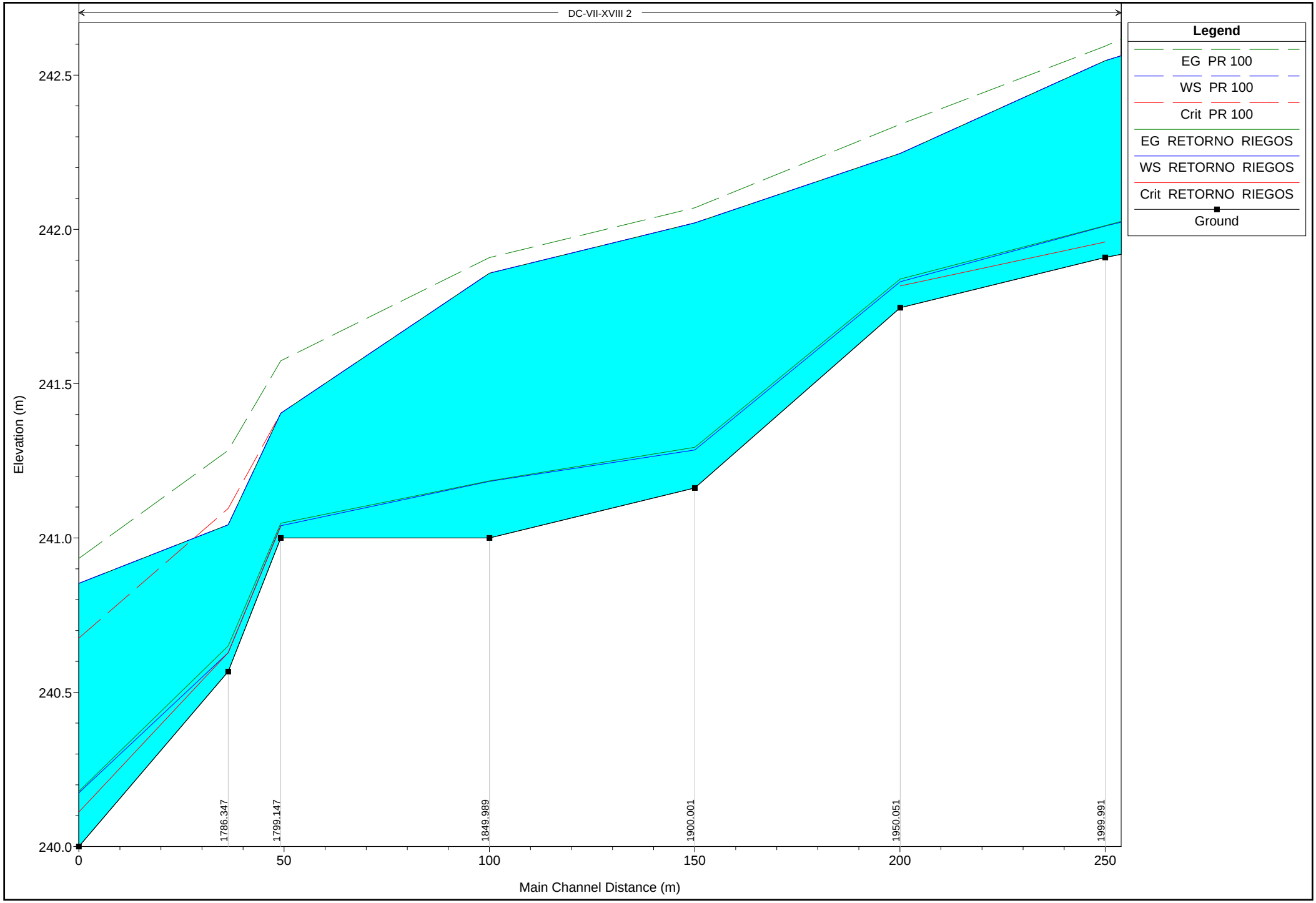
Elevation (m)

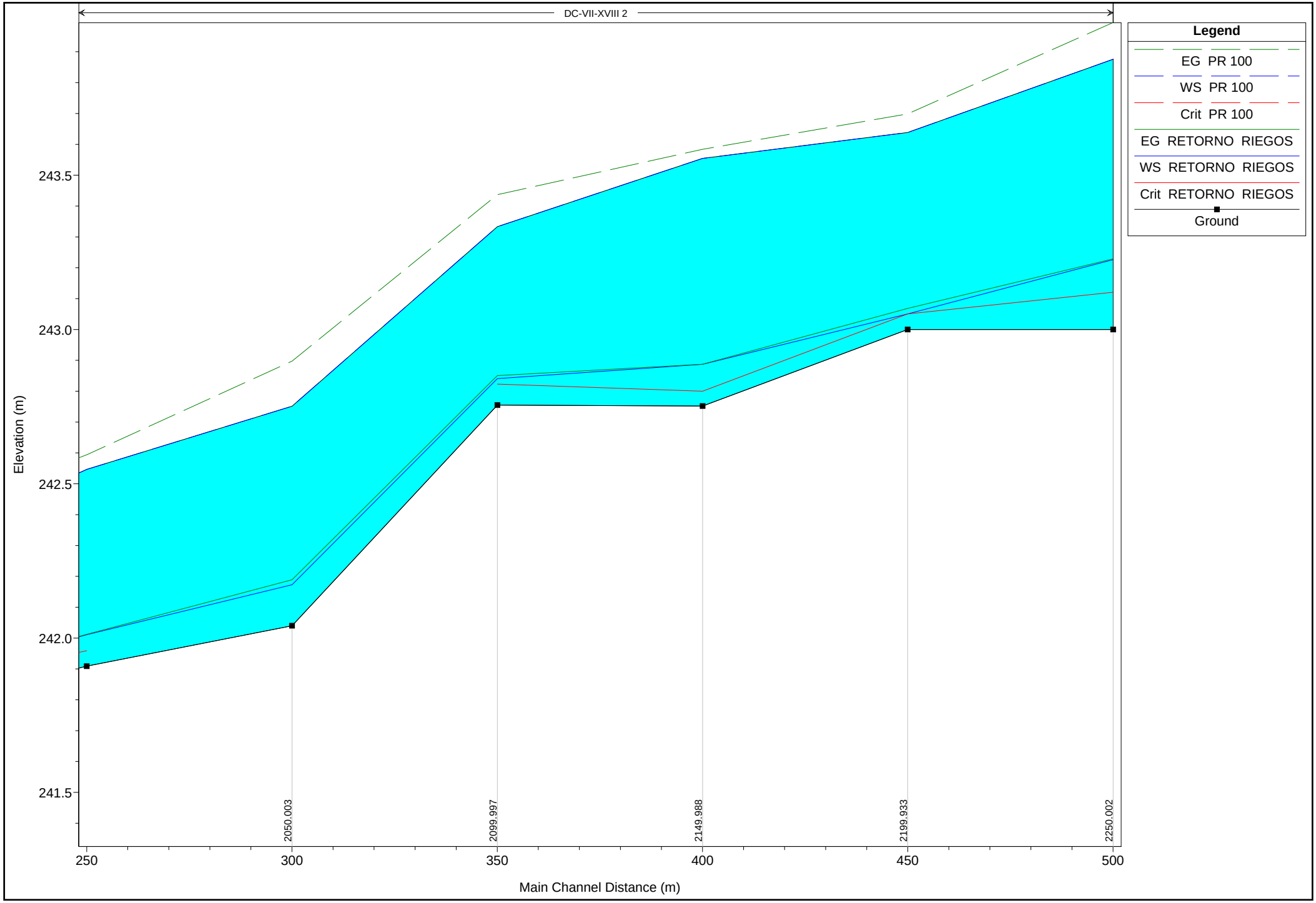
244
243
242
241
240

0
100
200
300
400
500
600

Main Channel Distance (m)

1786.347
1799.147
1849.989
1900.001
1950.051
1999.991
2050.003
2099.997
2149.988
2199.933
2250.002


DC-VII-XVIII 2
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
242.5
242.0
241.5
241.0
240.5
240.0
0
50
100
150
200
250
Main Channel Distance (m)
1786.347
1799.147
1849.989
1900.001
1950.051
1999.991


DC-VII-XVIII 2
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
243.5
243.0
242.5
242.0
241.5
2050.003
2099.997
2149.988
2199.933
2250.002
250
300
350
400
450
500
Main Channel Distance (m)

DC-VII-XVIII 3

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

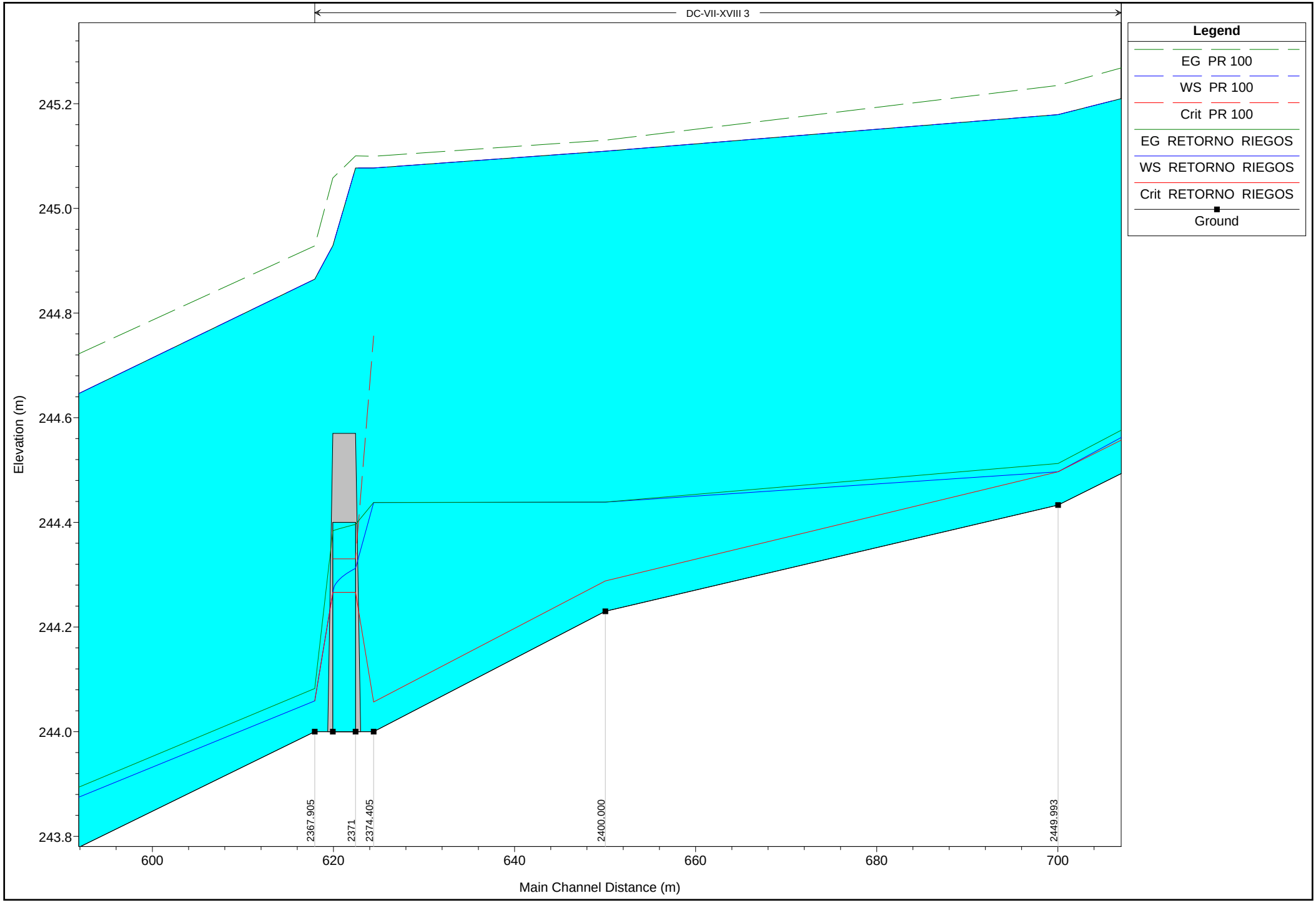
Elevation (m)

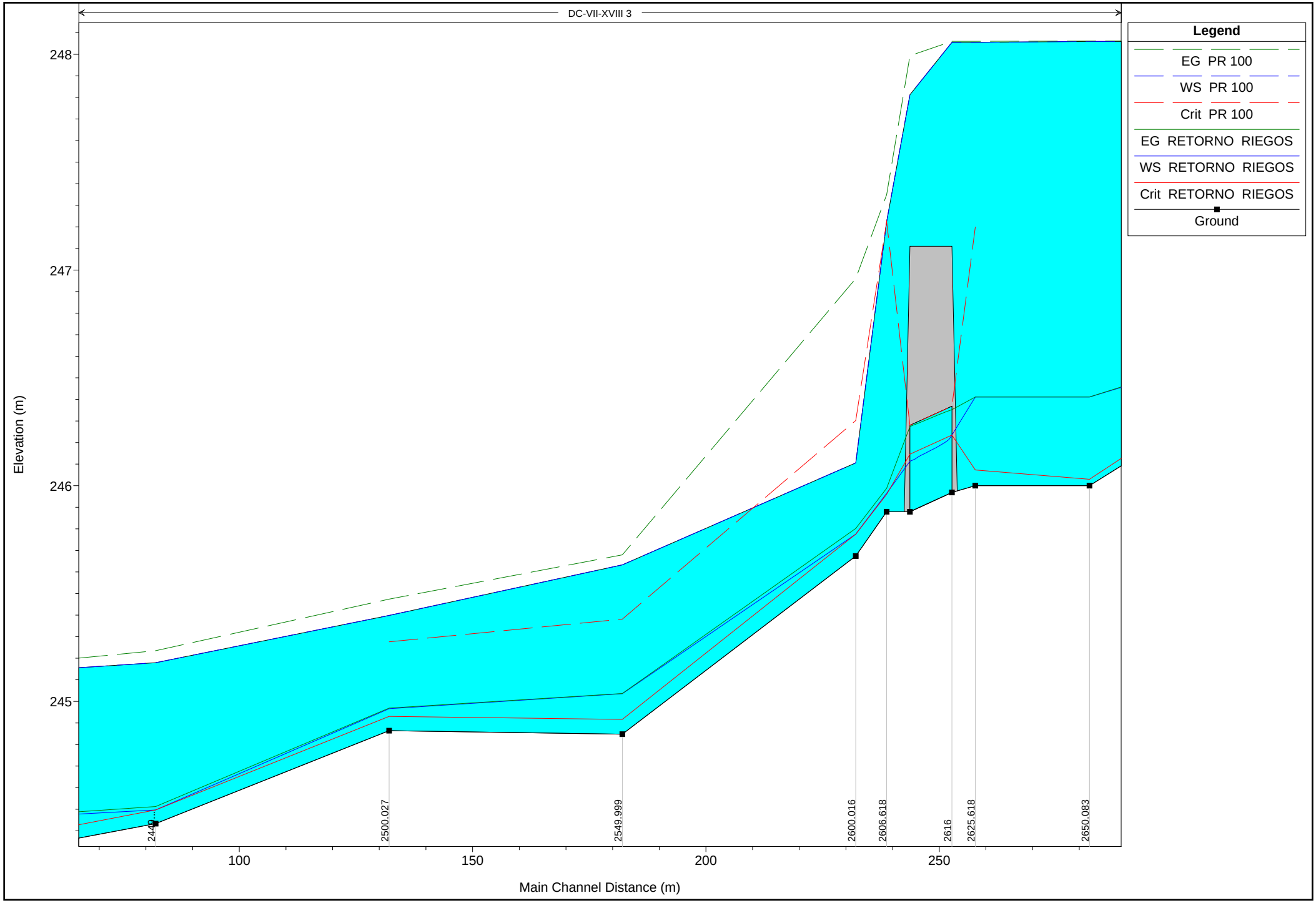
249
248
247
246
245
244

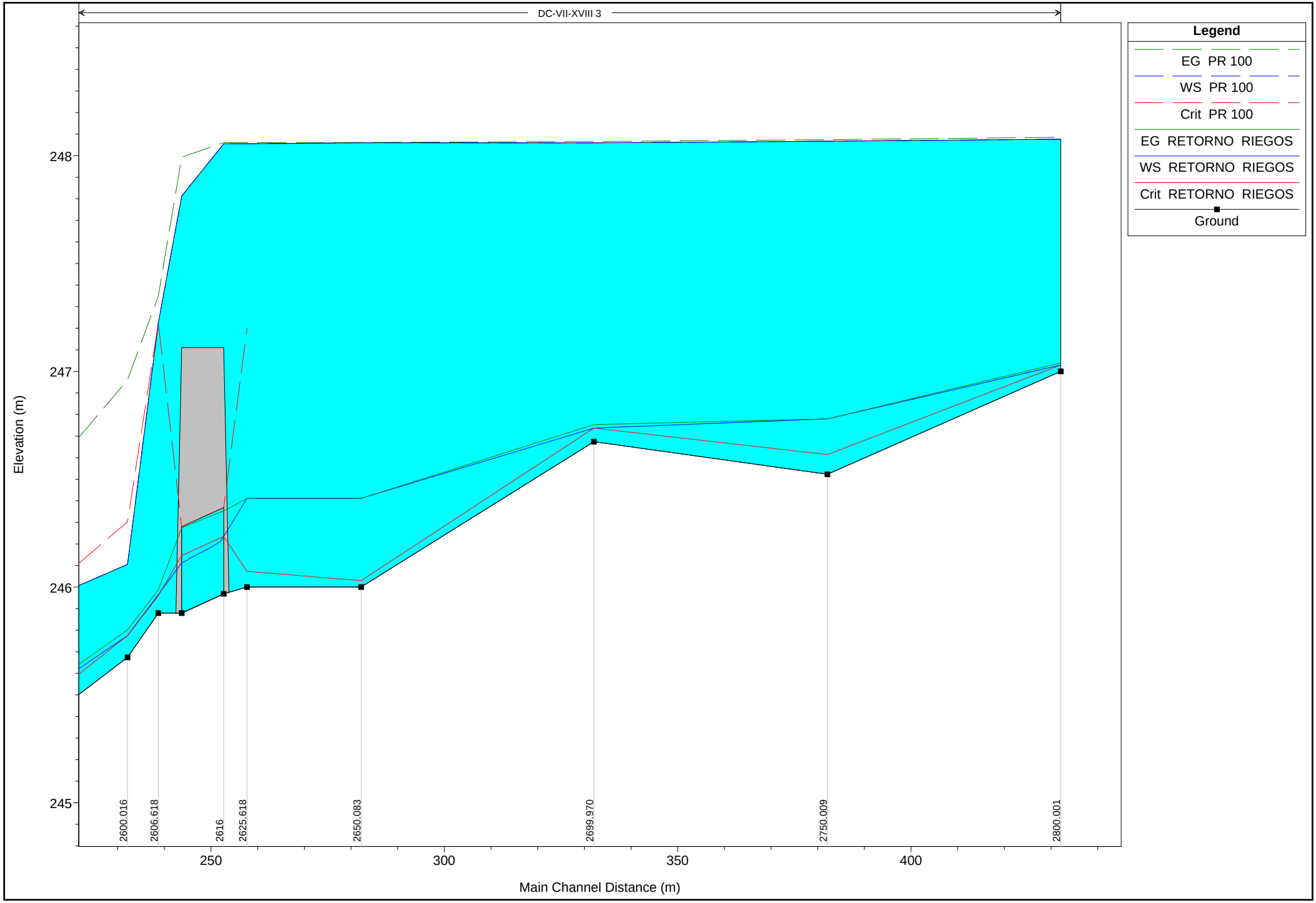
0
100
200
300
400
500

Main Channel Distance (m)

2400.000
2449.993
2500.027
2549.999
2600.016
2606.618
2616
2625.618
2650.083
2699.970
2750.009
2800.001


DC-VII-XVIII 3
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
245.2
245.0
244.8
244.6
244.4
244.2
244.0
243.8
600
620
640
660
680
700
Main Channel Distance (m)
2367.905
2371
2374.405
2400.000
2449.993


DC-VII-XVIII 3
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
248
247
246
245
100
150
200
250
Main Channel Distance (m)
2500.027
2549.999
2600.016
2606.618
2616
2625.618
2650.083


DC-VII-XVIII 3
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
248
247
246
245
2600.016
2606.618
2616
2625.618
2650.083
2699.970
2750.009
2800.001
250
300
350
400
Main Channel Distance (m)

DC-VII-XVIII 4

Legend

- EG PR 100
- Crit PR 100
- WS PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

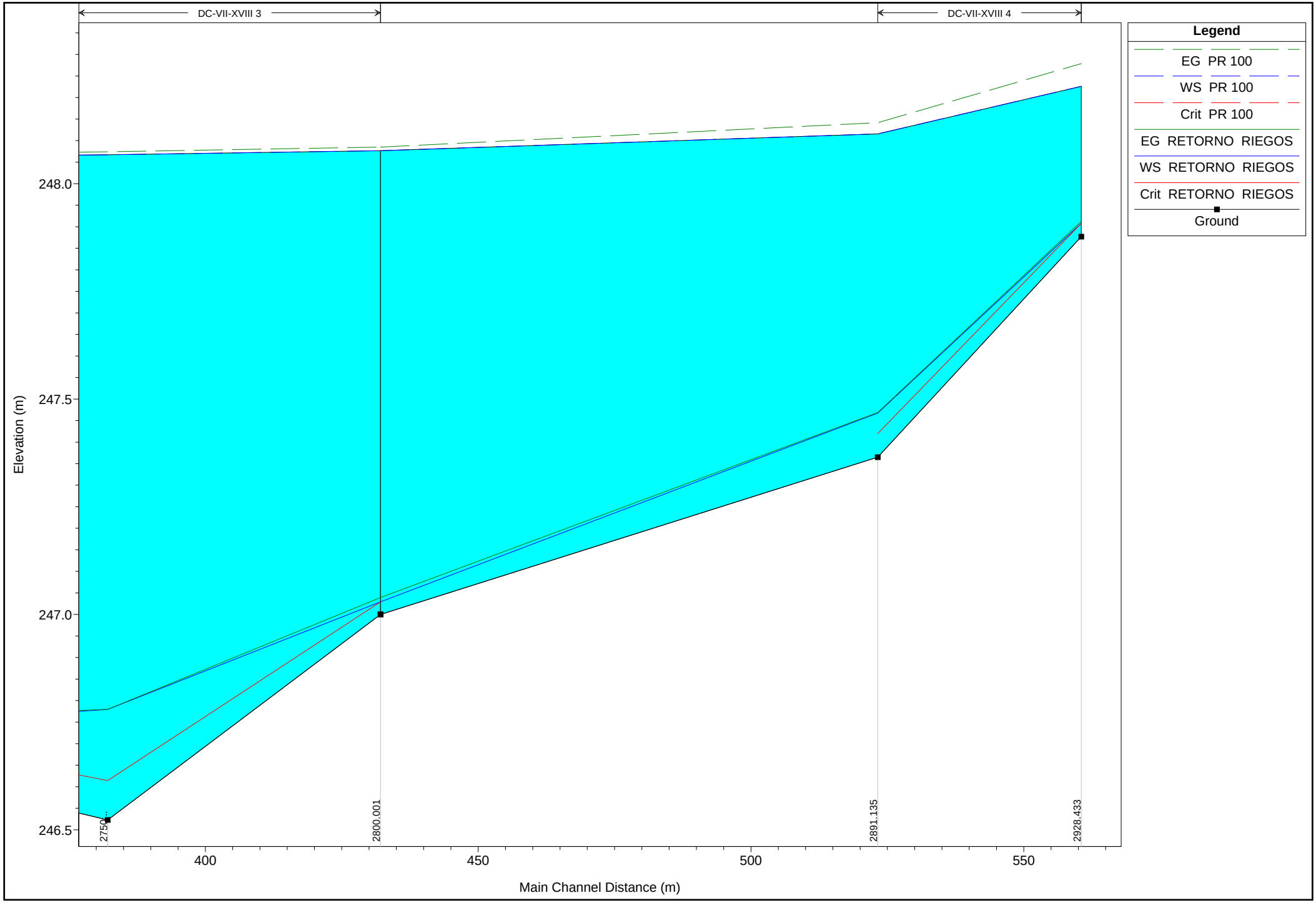
Elevation (m)

248.4
248.2
248.0
247.8
247.6
247.4
247.2

0 5 10 15 20 25 30 35 40

Main Channel Distance (m)

2928.433


DC-VII-XVIII 3
DC-VII-XVIII 4
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
248.0
247.5
247.0
246.5
Elevation (m)
2750.
2800.001
2891.135
2928.433
400
450
500
550
Main Channel Distance (m)

DC-VII-XVIII 5

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

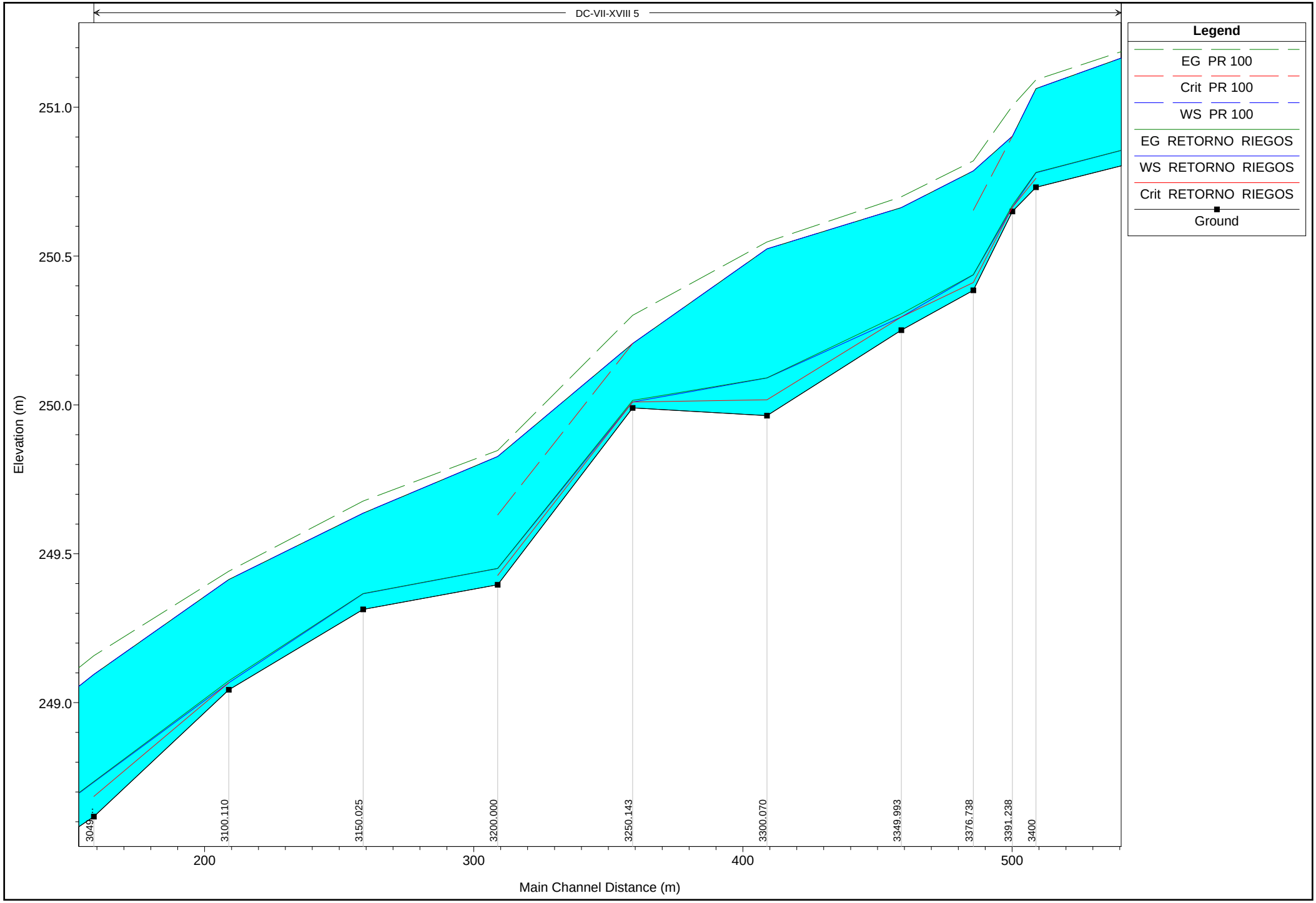
Elevation (m)

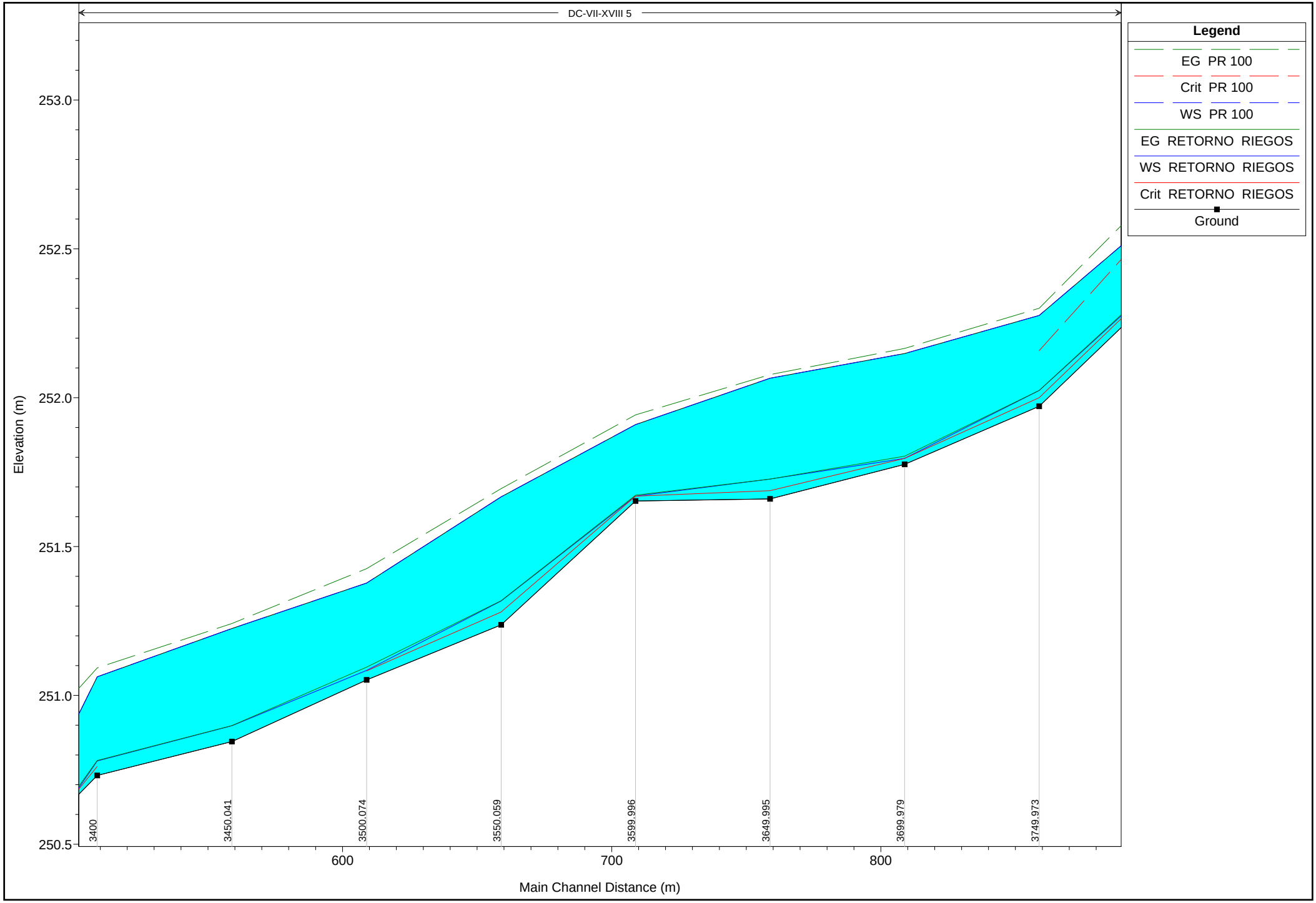
255
254
253
252
251
250
249
248

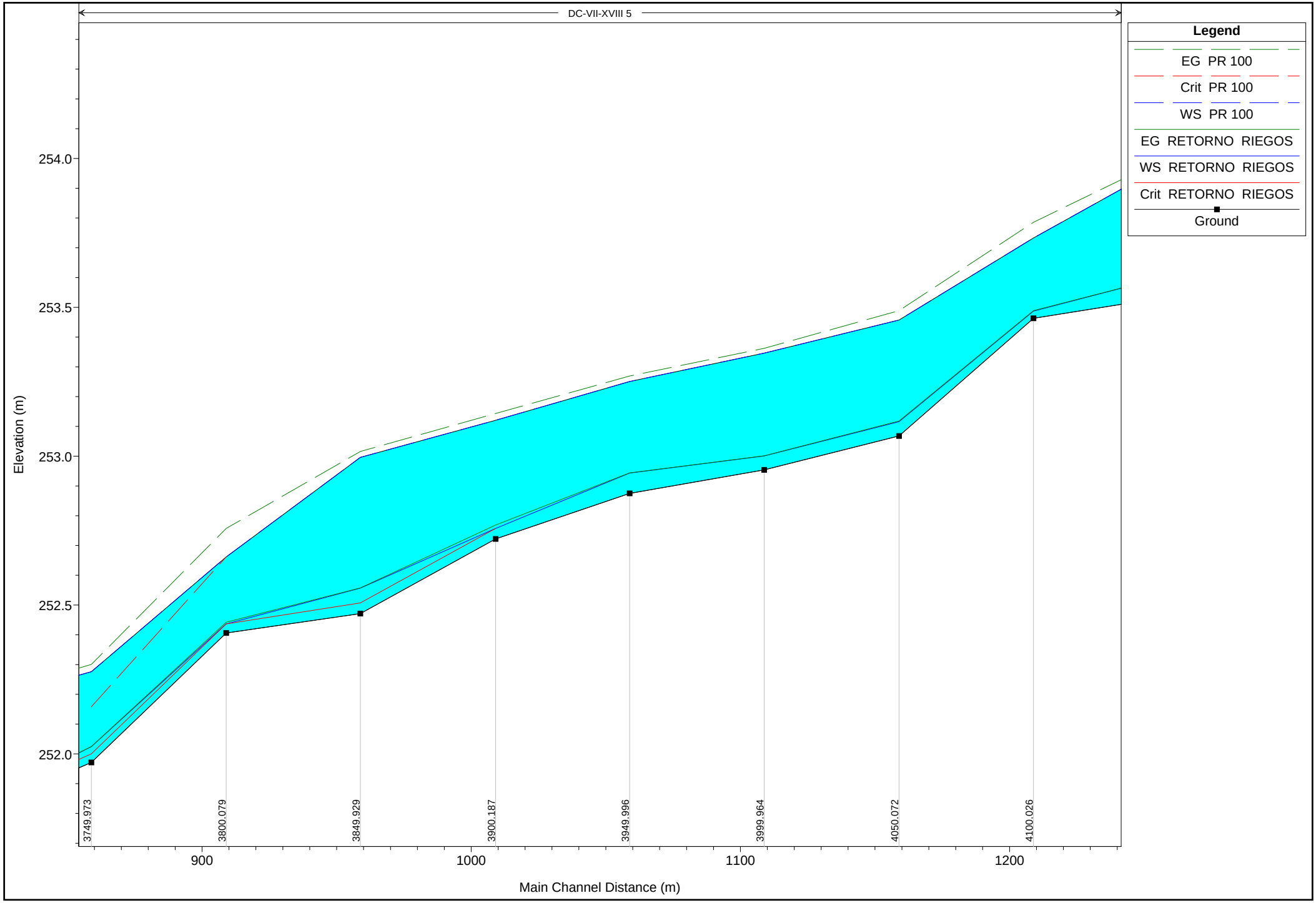
0
200
400
600
800
1000
1200

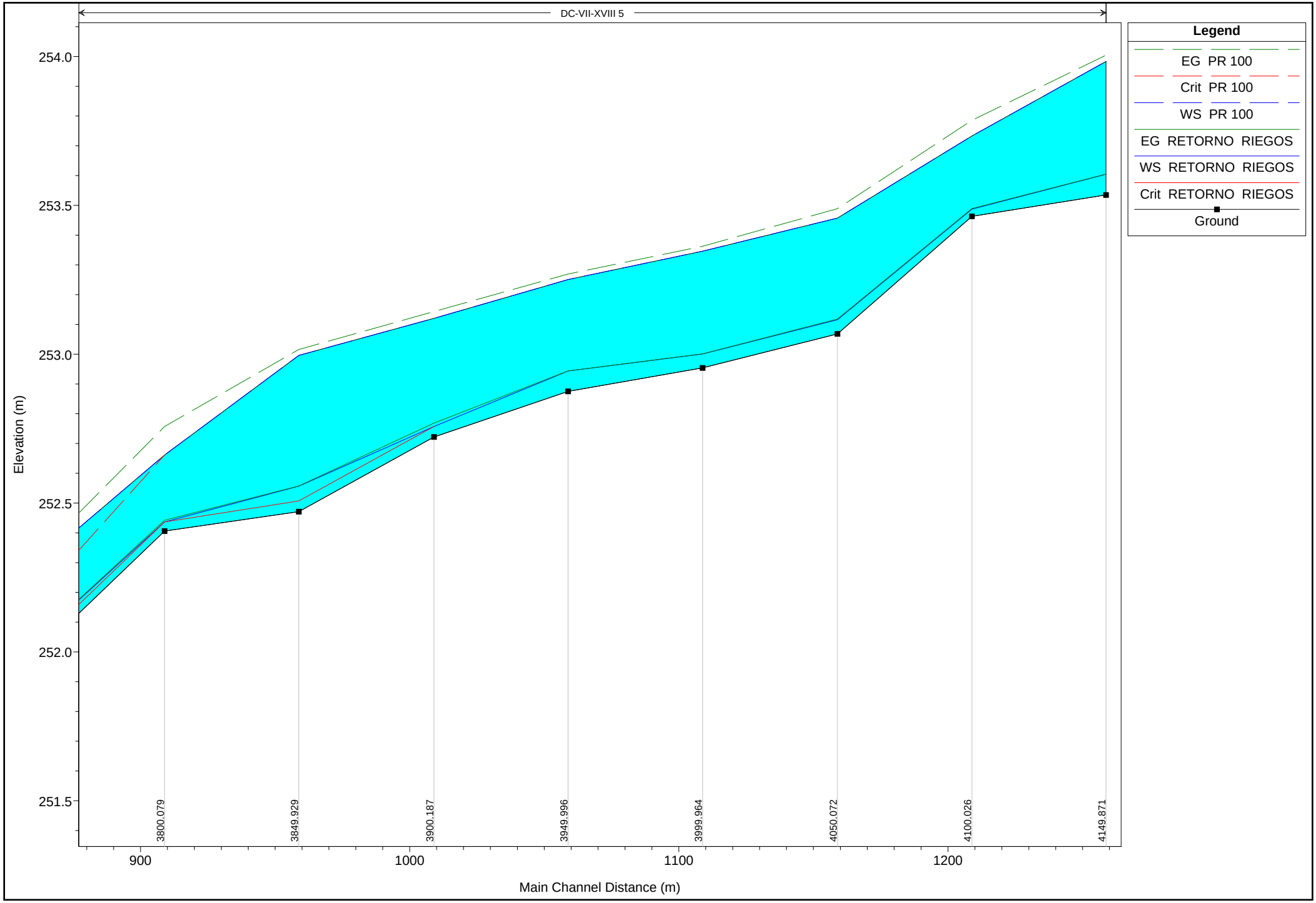
Main Channel Distance (m)

3100.110
3150.025
3200.000
3250.143
3300.070
3349.993
3376.738
3391.238
3400
3450.041
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
3800.079
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871


DC-VII-XVIII 5
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
251.0
250.5
250.0
249.5
249.0
200
300
400
500
Main Channel Distance (m)
3049
3100.110
3150.025
3200.000
3250.143
3300.070
3349.993
3376.738
3391.238
3400


DC-VII-XVIII 5
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
253.0
252.5
252.0
251.5
251.0
250.5
3400
3450.041
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
600
700
800
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
254.0
253.5
253.0
252.5
252.0
3749.973
3800.079
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
900
1000
1100
1200
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
254.0
253.5
253.0
252.5
252.0
251.5
3800.079
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871
900
1000
1100
1200
Main Channel Distance (m)

DC-VII-XVIII 6

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

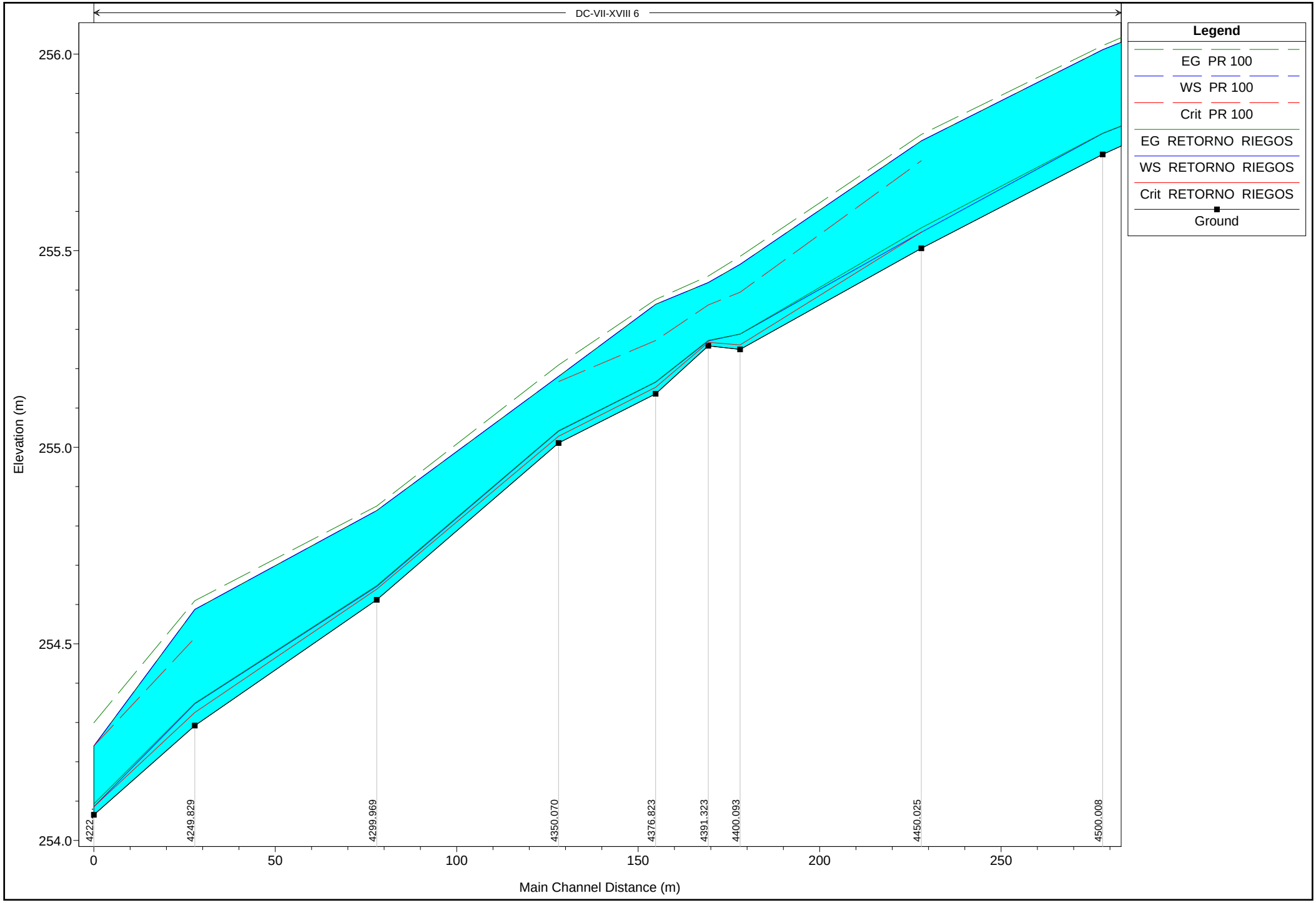
Elevation (m)

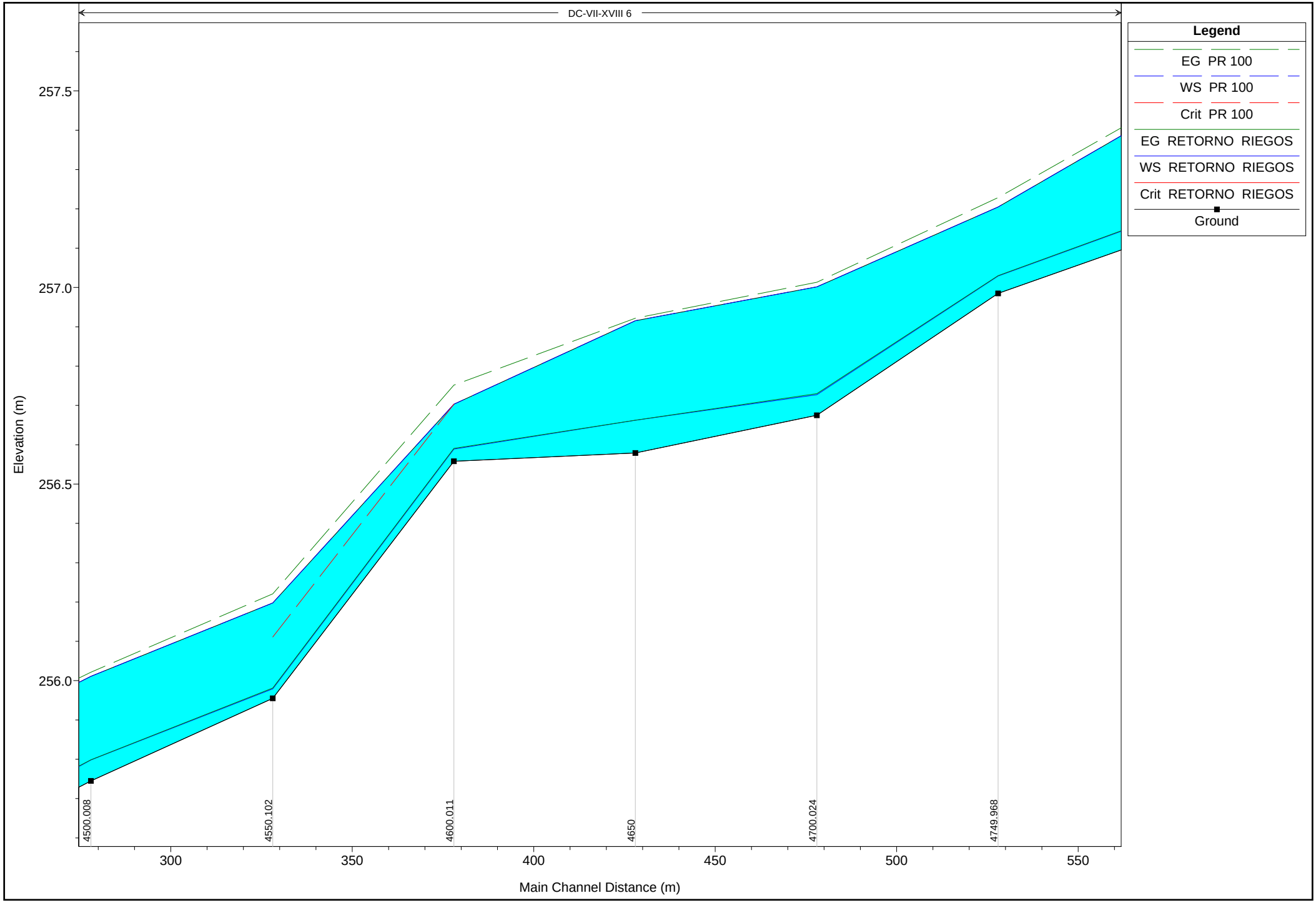
261
260
259
258
257
256
255
254

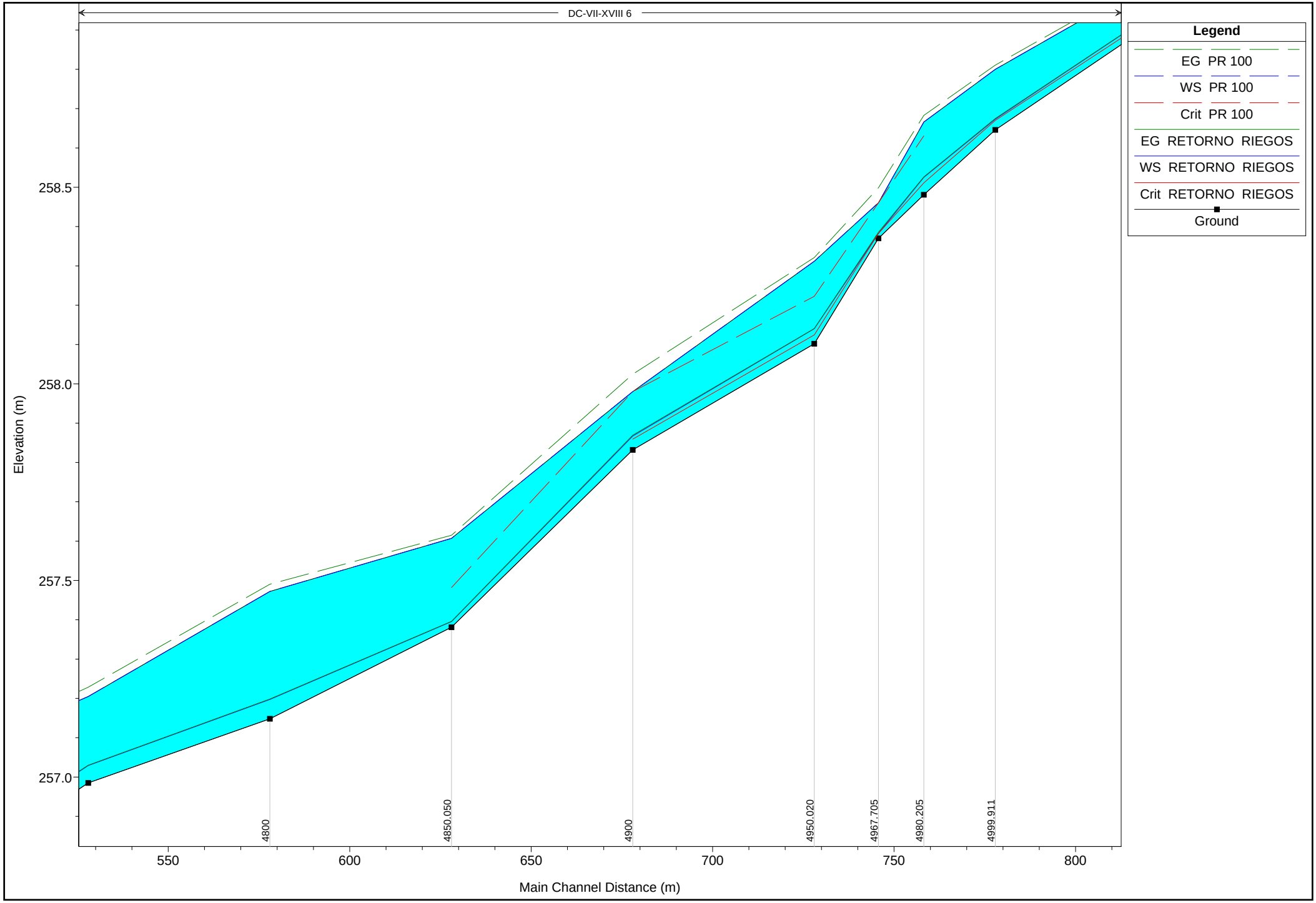
0
200
400
600
800
1000

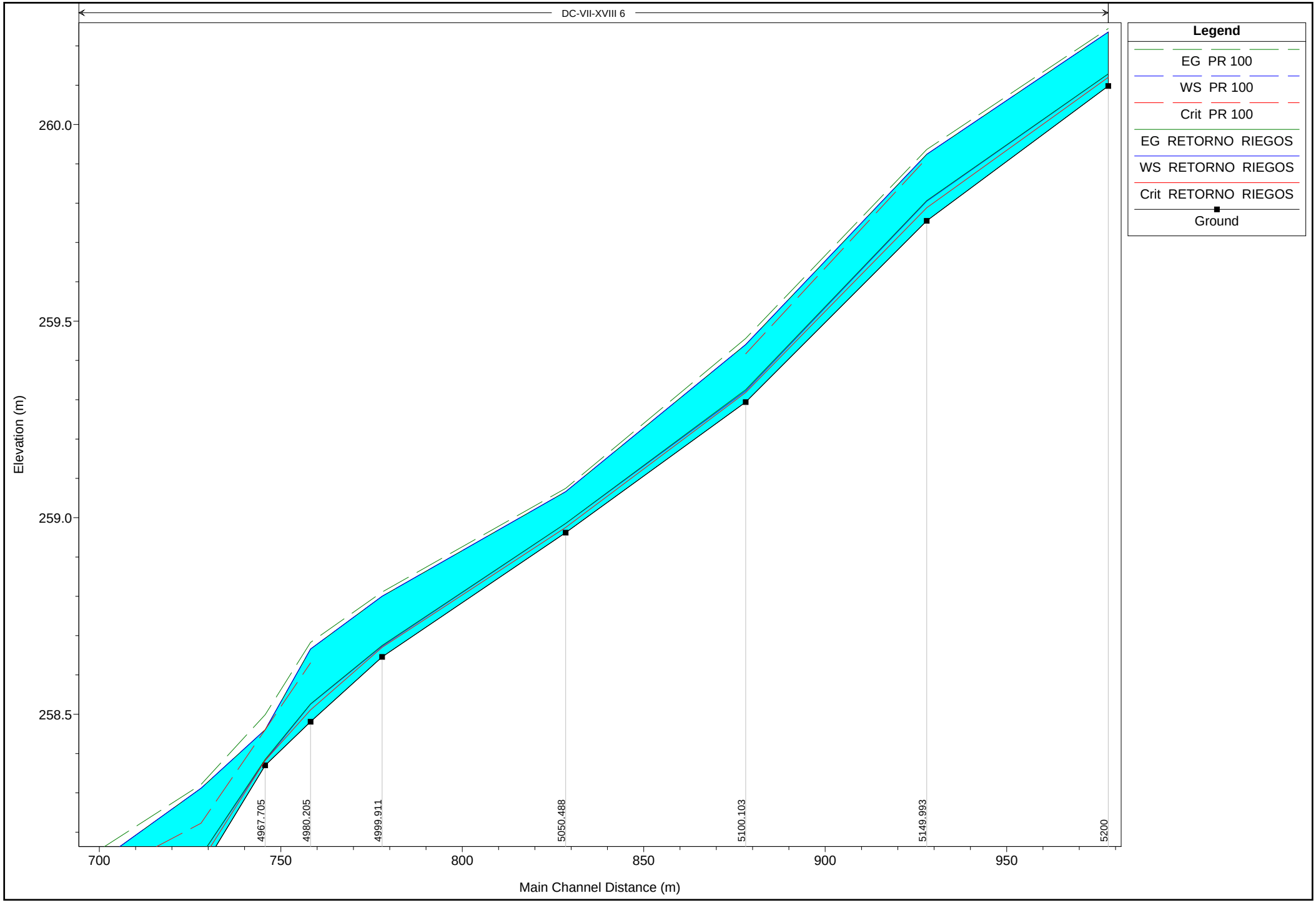
Main Channel Distance (m)

4249.829
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
4500.008
4550.102
4600.011
4650
4700.024
4749.968
4800
4850.050
4900
4950.020
4967.705
4980.205
4999.911
5050.488
5100.103
5149.993
5200


DC-VII-XVIII 6
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
256.0
255.5
255.0
254.5
254.0
0
50
100
150
200
250
Main Channel Distance (m)
4222
4249.829
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
4500.008


DC-VII-XVIII 6
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
257.5
257.0
256.5
256.0
Elevation (m)
4500.008
4550.102
4600.011
4650
4700.024
4749.968
300
350
400
450
500
550
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
258.5
258.0
257.5
257.0
4800
4850.050
4900
4950.020
4967.705
4980.205
4999.911
550
600
650
700
750
800
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
260.0
259.5
259.0
258.5
700
750
800
850
900
950
Main Channel Distance (m)
4967.705
4980.205
4999.911
5050.488
5100.103
5149.993
5200

DC-VII-XVIII 7

Legend

- Crit PR 100
- EG PR 100
- WS PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

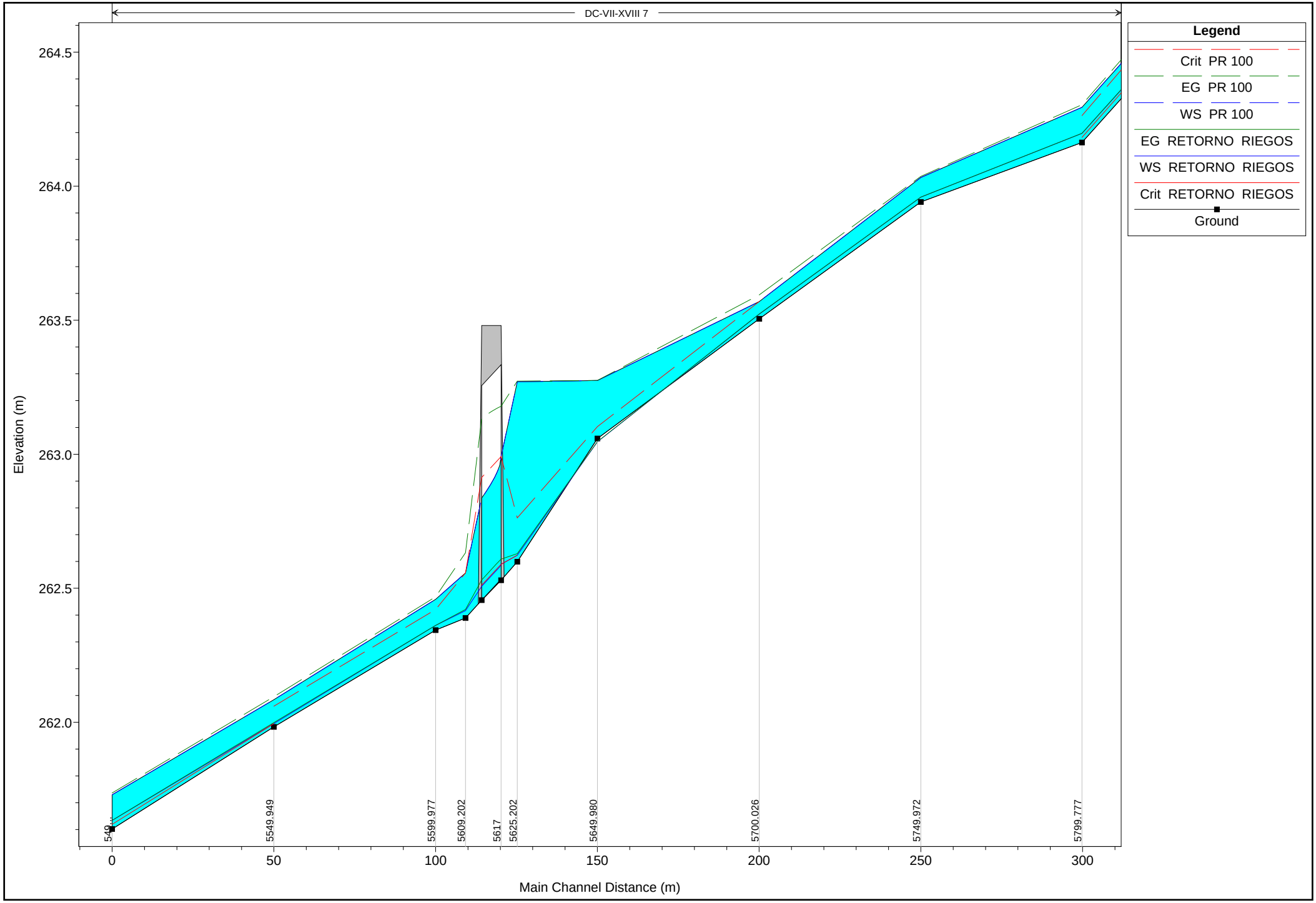
Elevation (m)

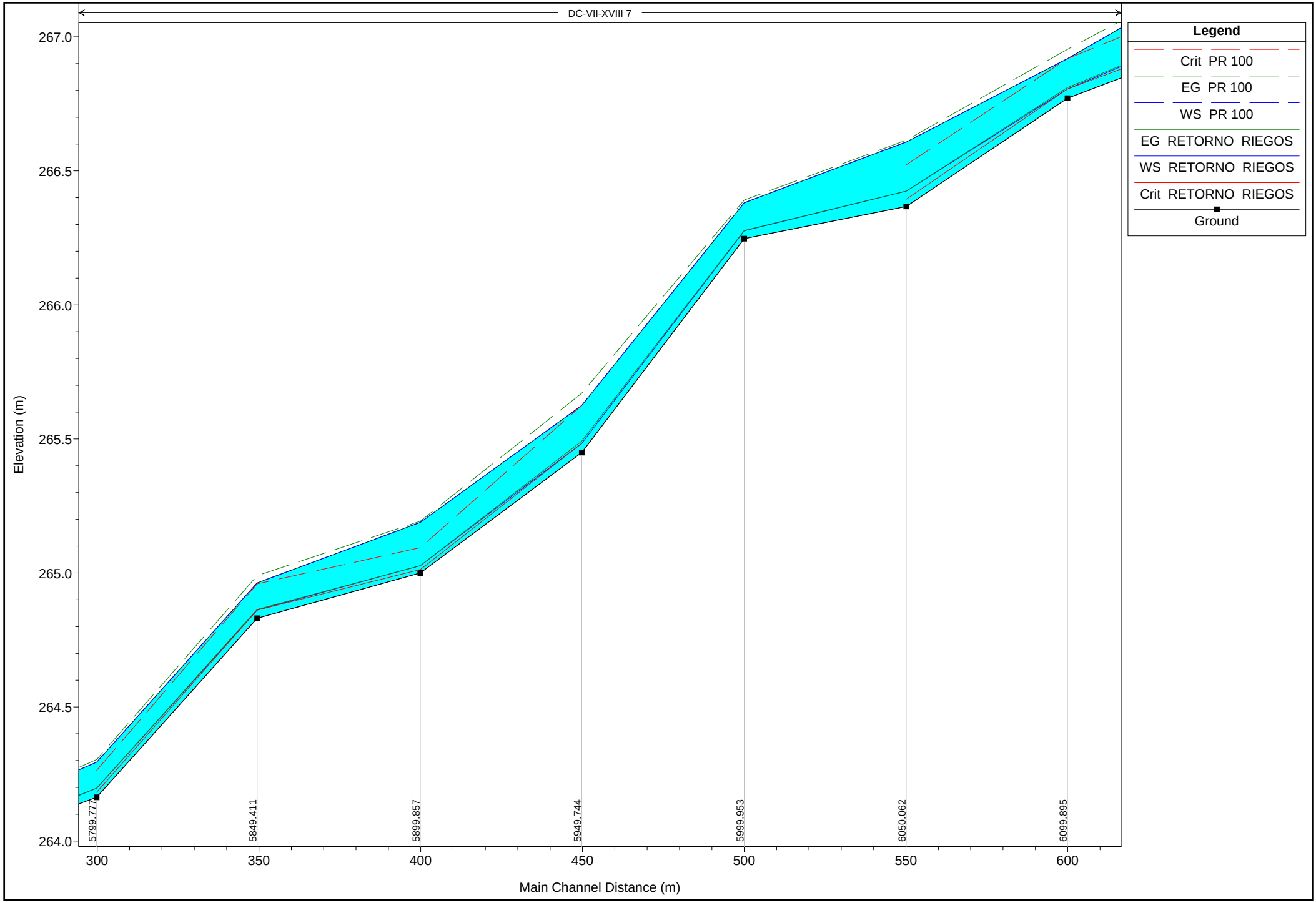
278
276
274
272
270
268
266
264
262
260

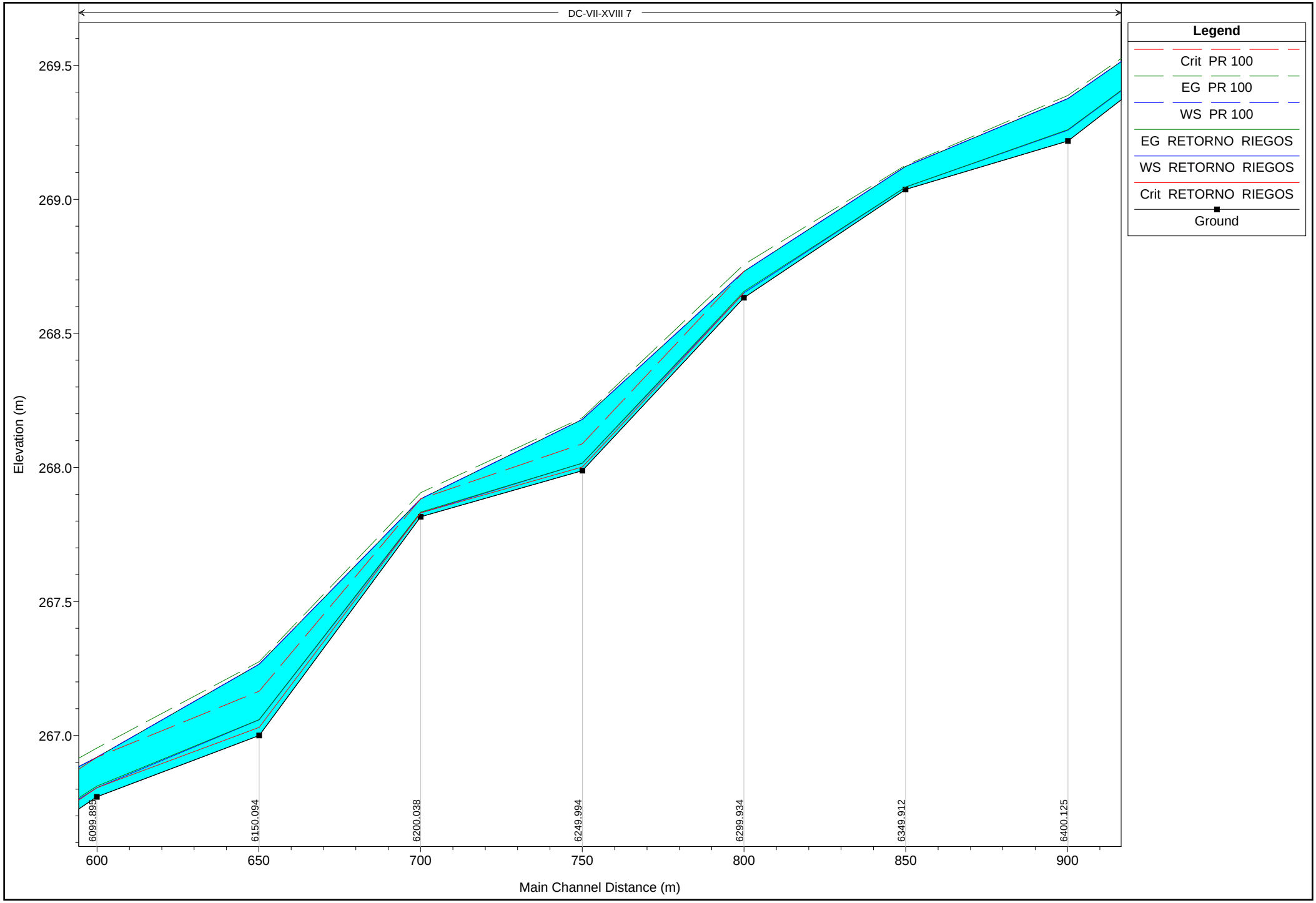
0
500
1000
1500
2000
2500

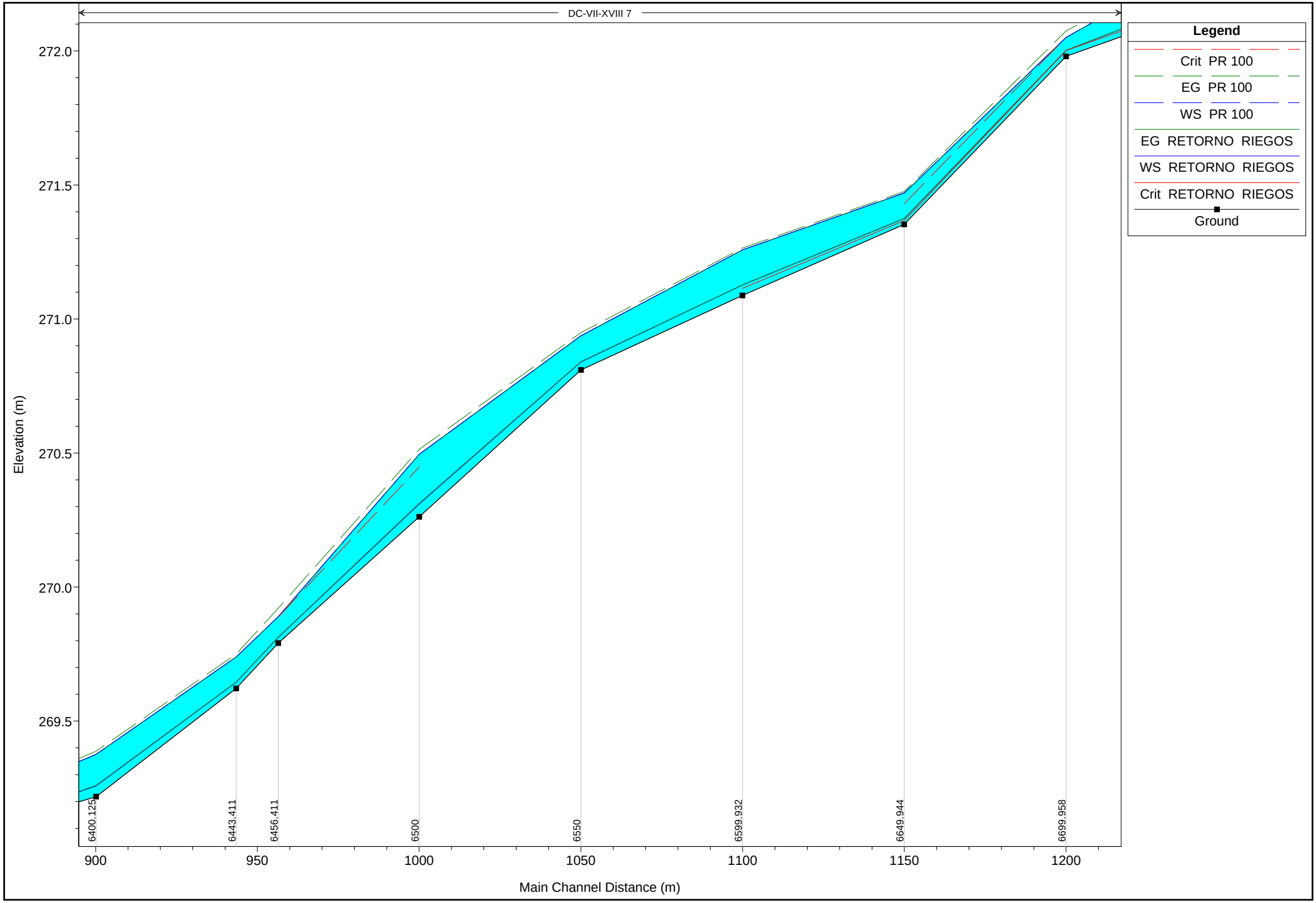
Main Channel Distance (m)

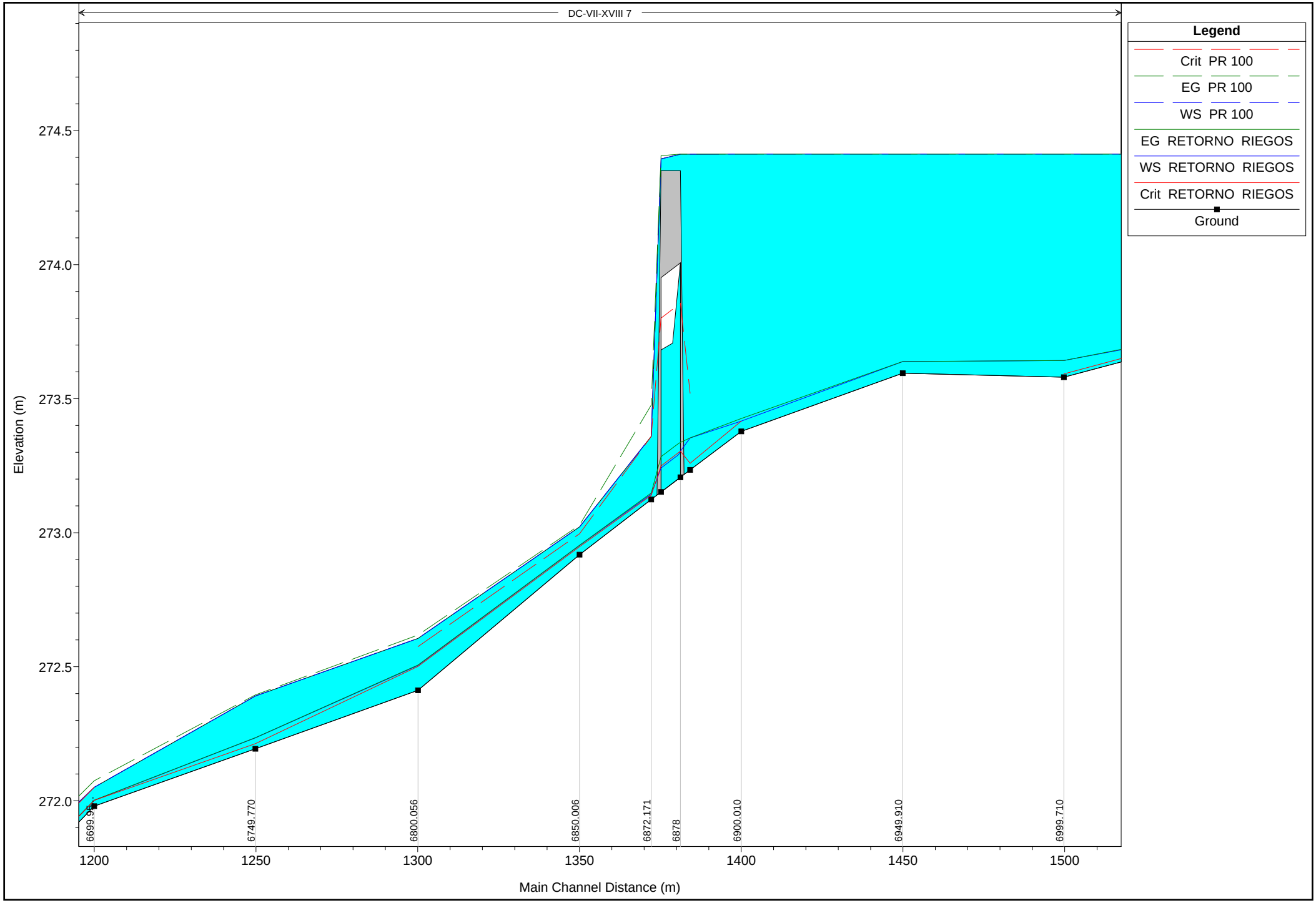
5549.949
5599.977
5617
5649.980
5700.026
5749.972
5799.777
5849.411
5899.857
5949.744
5999.953
6050.062
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
6400.125
6443.411
6500
6550
6599.932
6649.944
6699.958
6749.770
6800.056
6850.006
6872.171
6900.010
6949.910
6999.710
7050.093
7073.890
7099.997
7149.979
7200.077
7249.989
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973

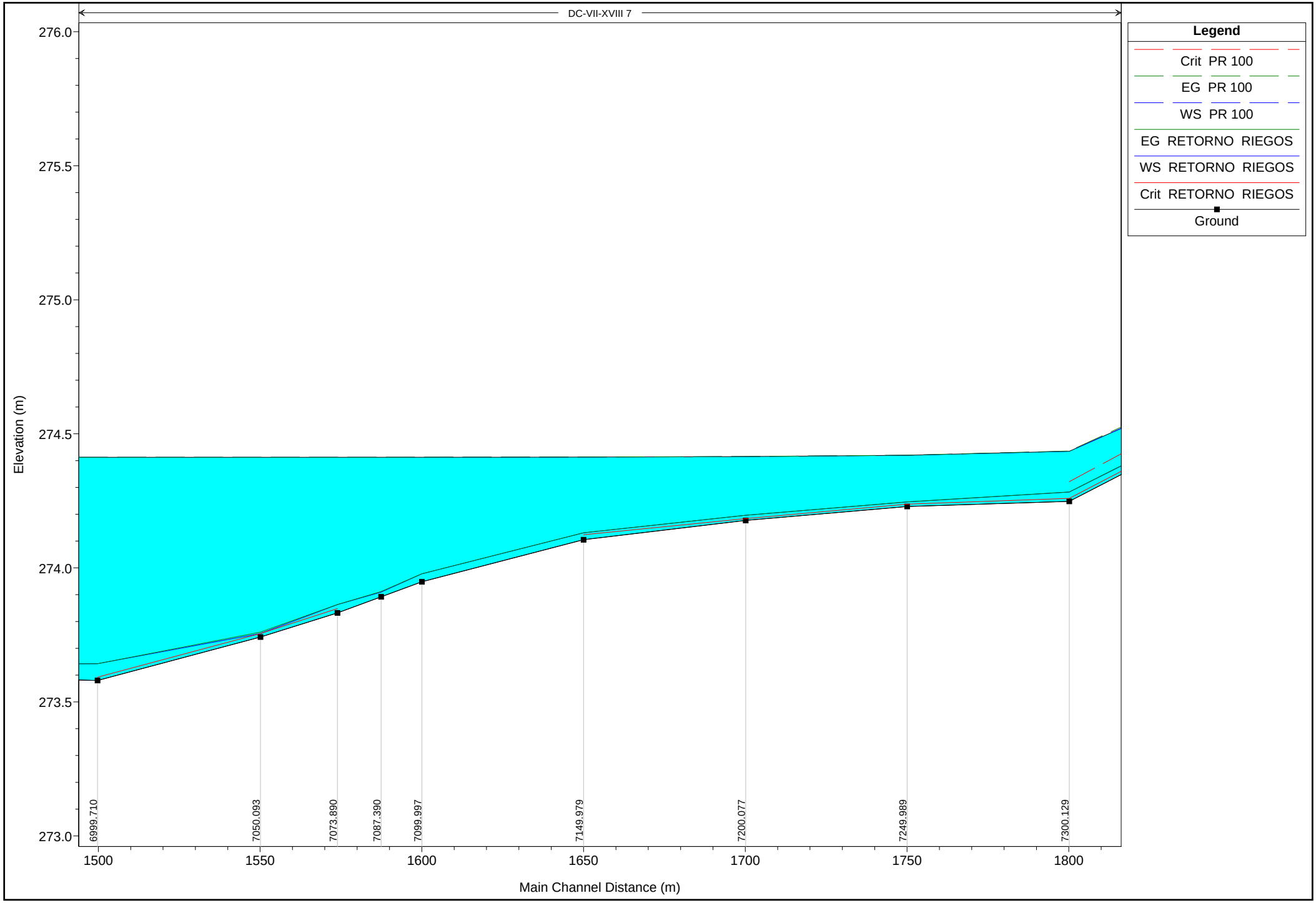

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
264.5
264.0
263.5
263.0
262.5
262.0
0
50
100
150
200
250
300
Main Channel Distance (m)
5549.949
5599.977
5609.202
5617
5625.202
5649.980
5700.026
5749.972
5799.777

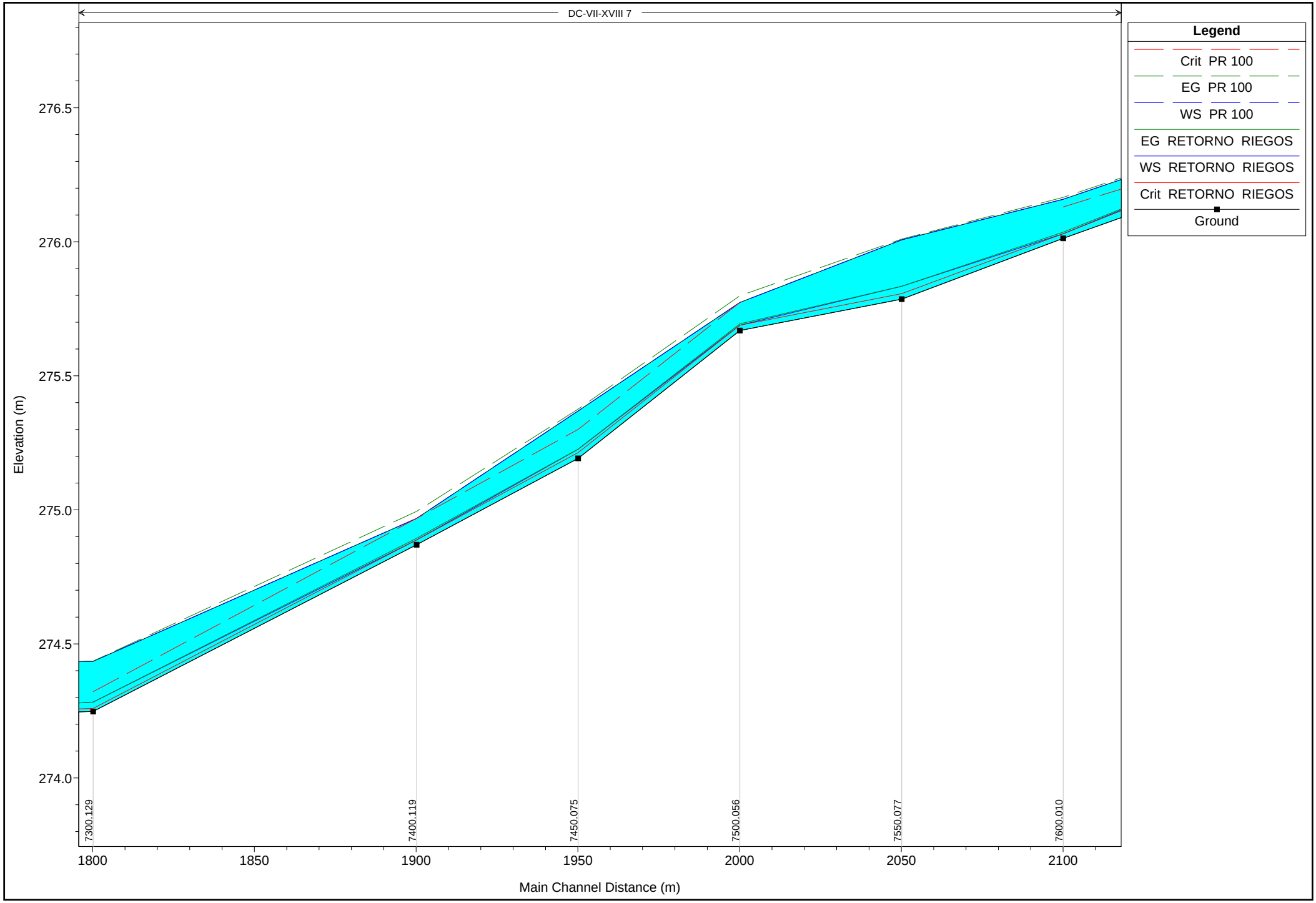

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
267.0
266.5
266.0
265.5
265.0
264.5
264.0
300
350
400
450
500
550
600
Main Channel Distance (m)
5799.777
5849.411
5899.857
5949.744
5999.953
6050.062
6099.895

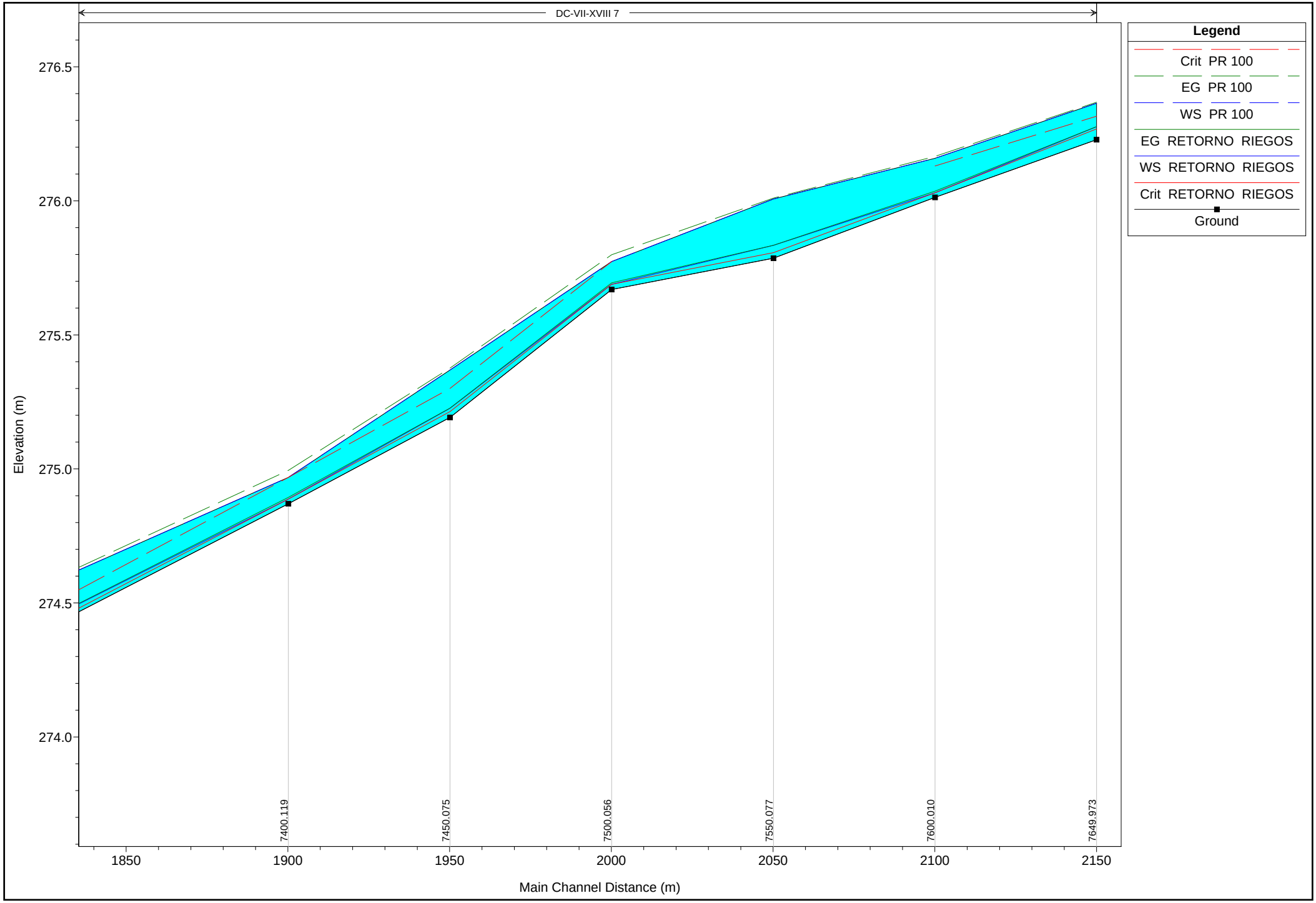

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
269.5
269.0
268.5
268.0
267.5
267.0
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
6400.125
600
650
700
750
800
850
900
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
272.0
271.5
271.0
270.5
270.0
269.5
6400.125
6443.411
6456.411
6500
6550
6599.932
6649.944
6699.958
900
950
1000
1050
1100
1150
1200
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
274.5
274.0
273.5
273.0
272.5
272.0
6699.9
6749.770
6800.056
6850.006
6872.171
6878
6900.010
6949.910
6999.710
1200
1250
1300
1350
1400
1450
1500
Main Channel Distance (m)

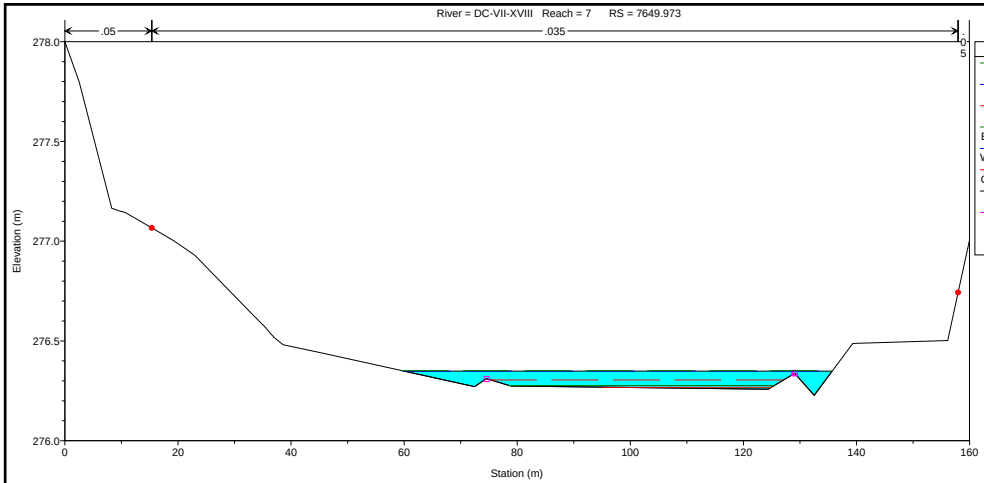

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.0
275.5
275.0
274.5
274.0
273.5
273.0
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
7200.077
7249.989
7300.129
1500
1550
1600
1650
1700
1750
1800
Main Channel Distance (m)

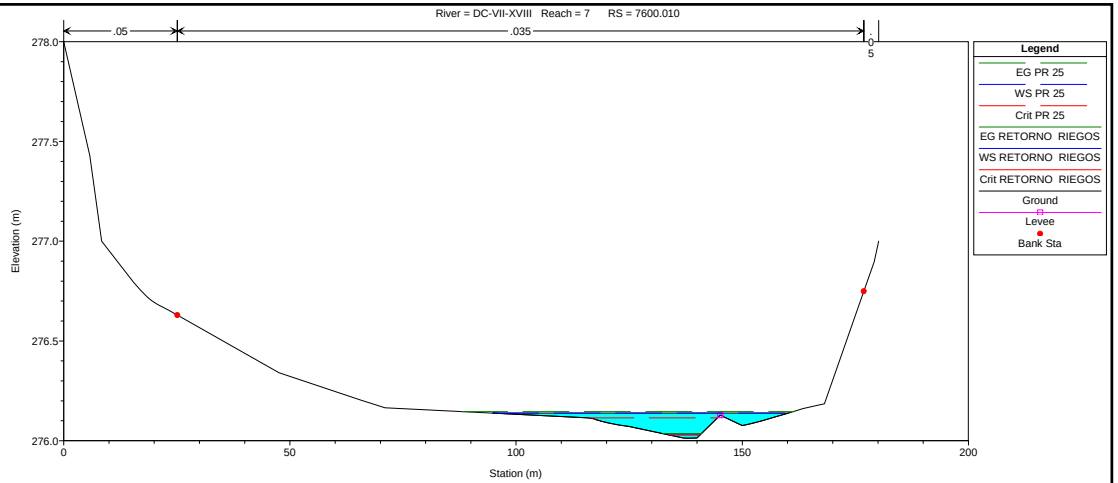

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.5
276.0
275.5
275.0
274.5
274.0
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
1800
1850
1900
1950
2000
2050
2100
Main Channel Distance (m)

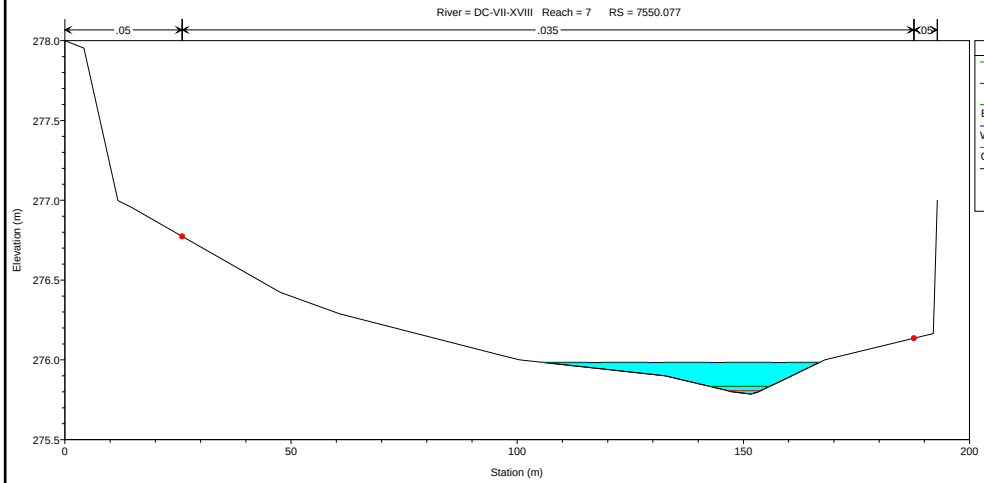

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Elevation (m)
276.5
276.0
275.5
275.0
274.5
274.0
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973
1850
1900
1950
2000
2050
2100
2150
Main Channel Distance (m)

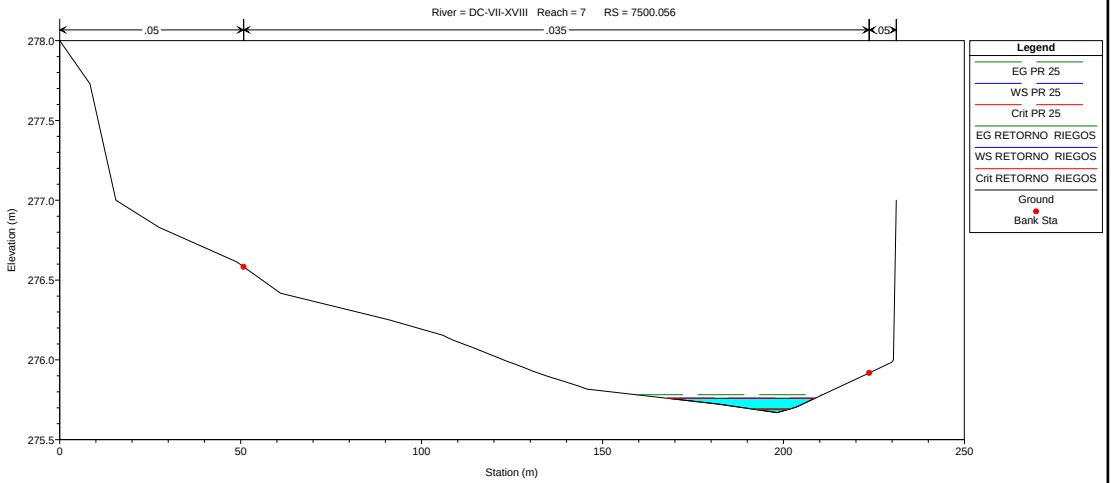
SECCIONES

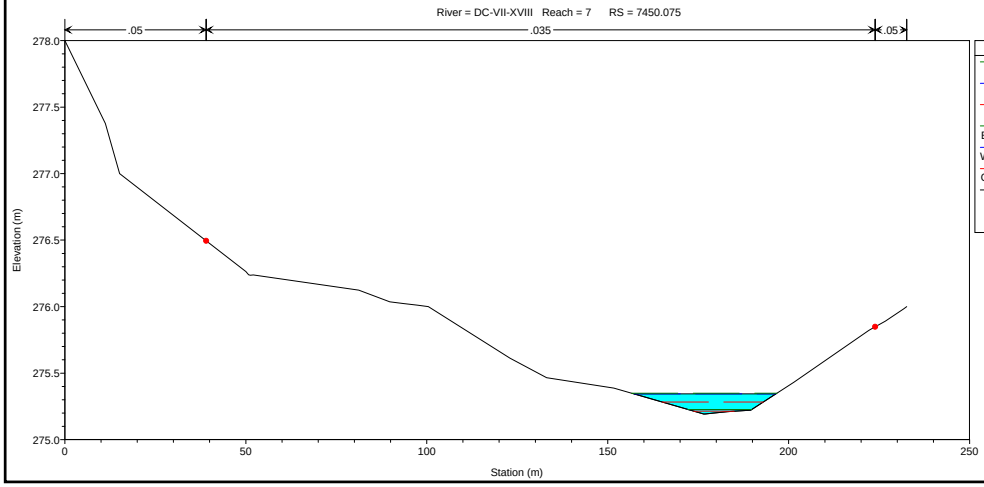
SECCIONES PR25

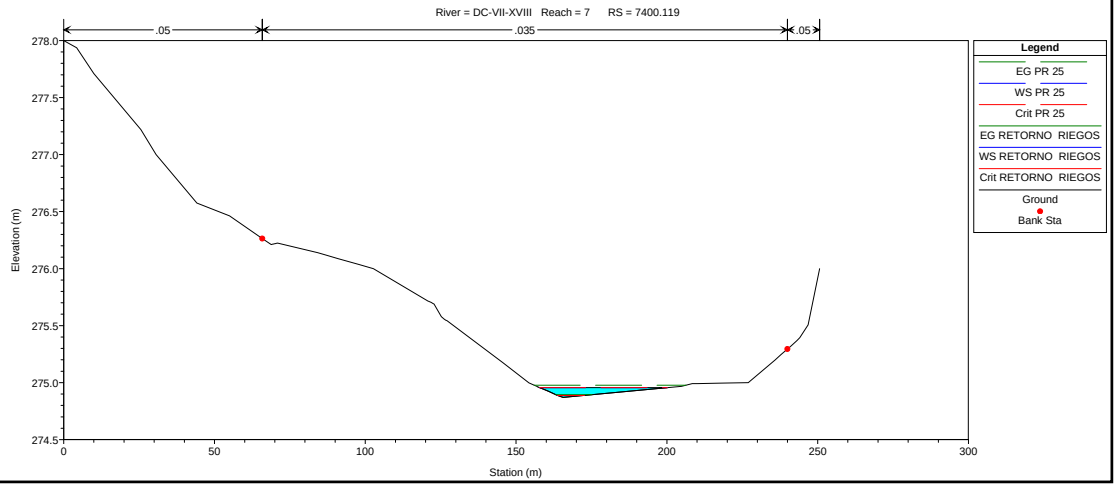

River = DC-VII-XVIII Reach = 7 RS = 7649.973
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

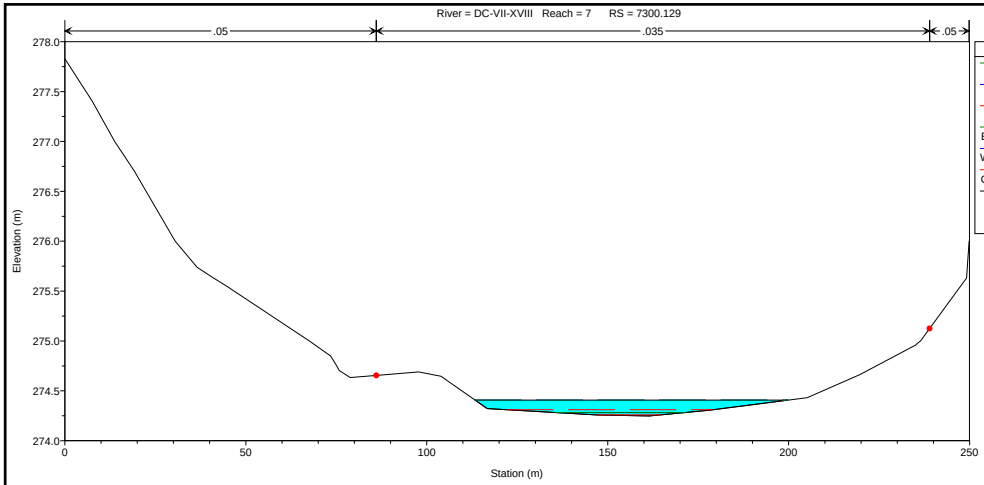

River = DC-VII-XVIII Reach = 7 RS = 7600.010
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

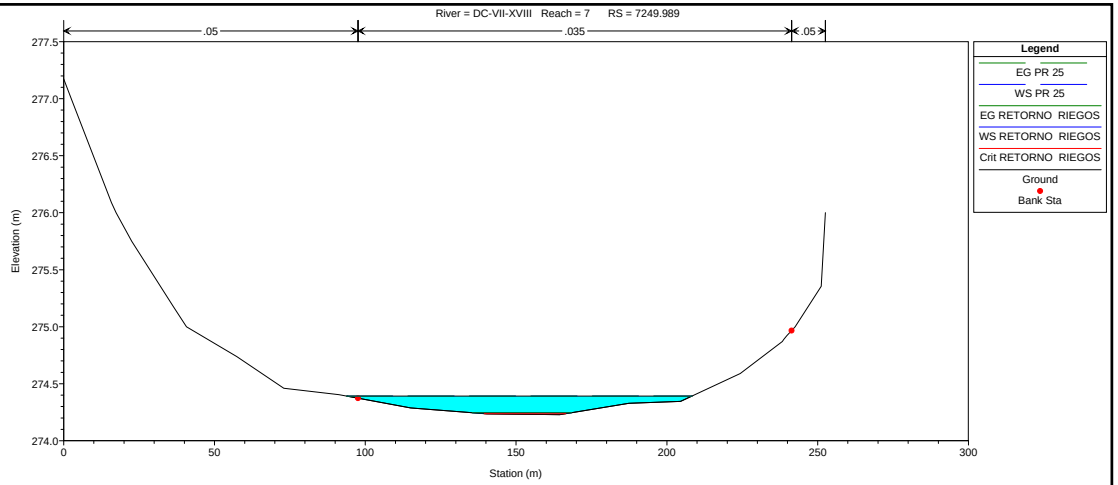

River = DC-VII-XVIII Reach = 7 RS = 7550.077
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

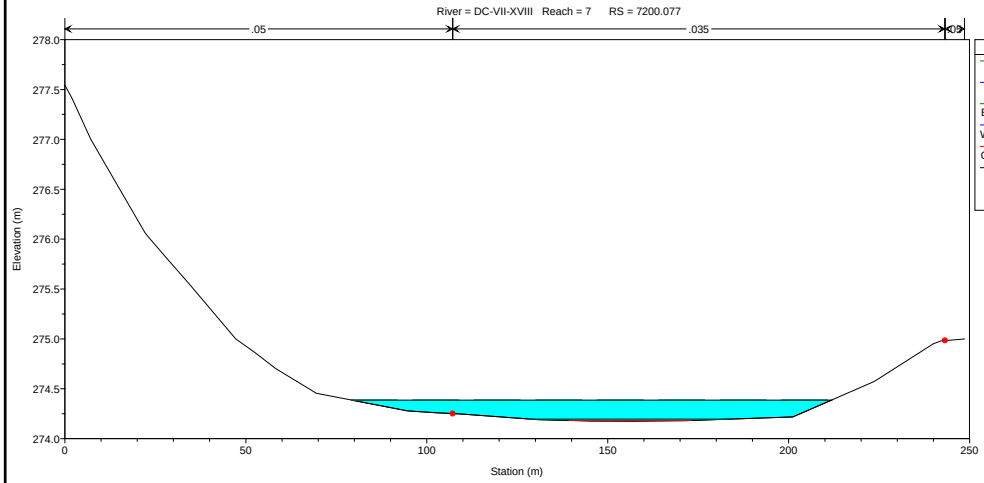

River = DC-VII-XVIII Reach = 7 RS = 7500.056
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

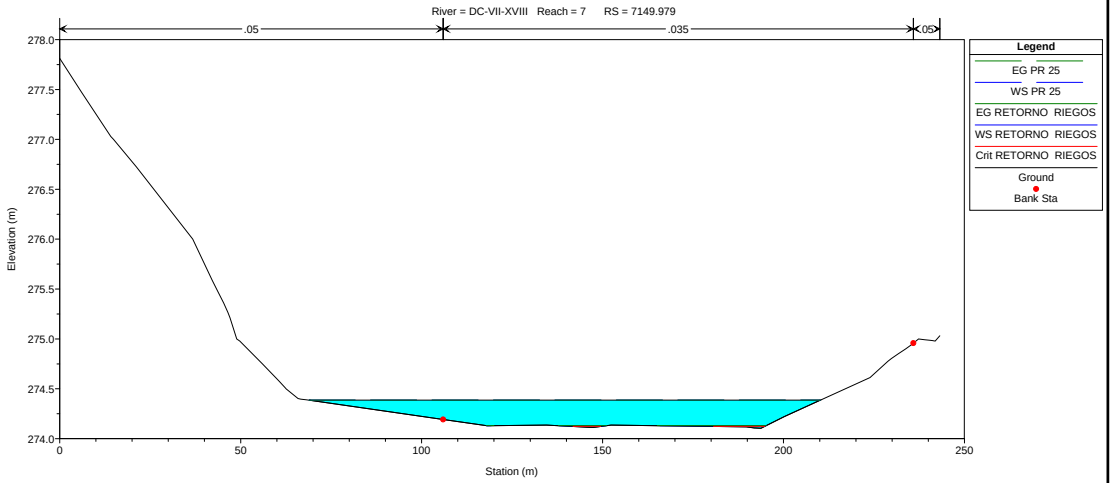

River = DC-VII-XVIII Reach = 7 RS = 7450.075
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

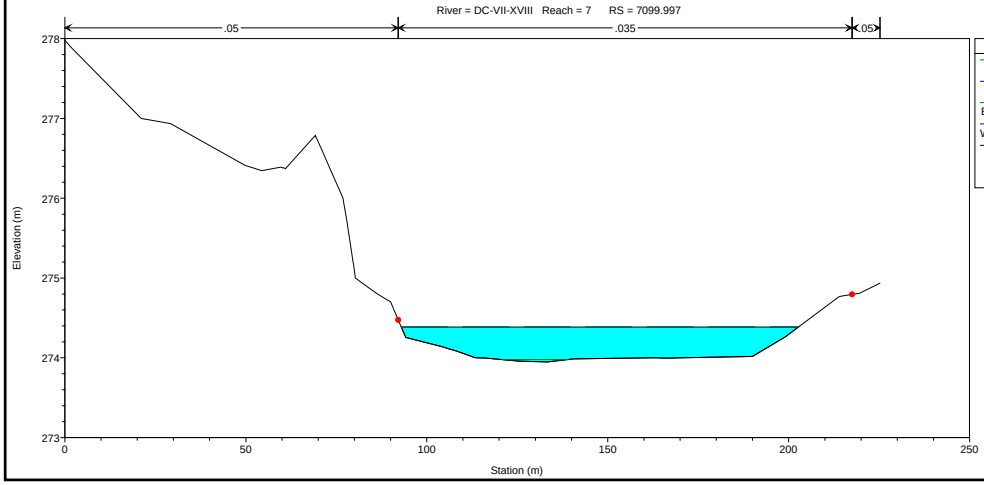

River = DC-VII-XVIII Reach = 7 RS = 7400.119
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

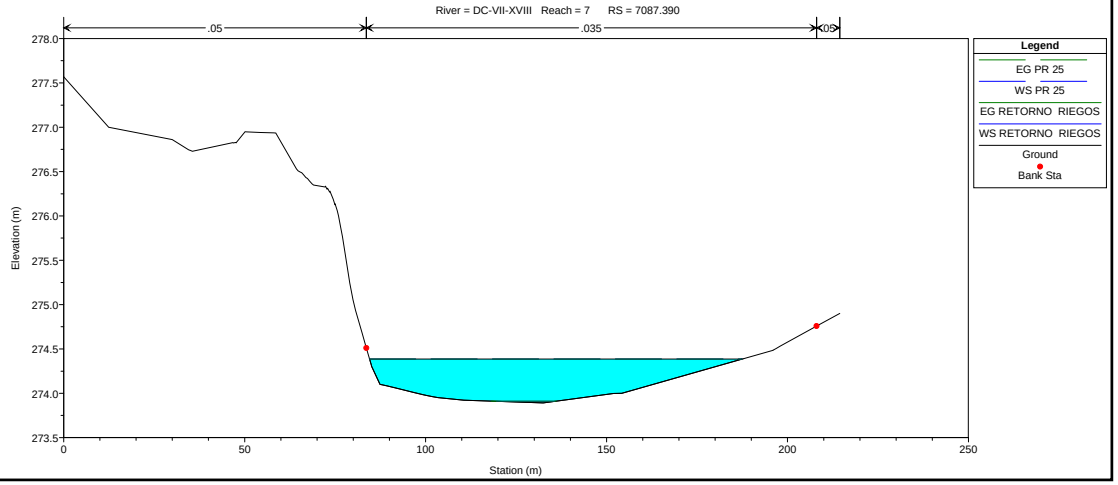

River = DC-VII-XVIII Reach = 7 RS = 7300.129
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

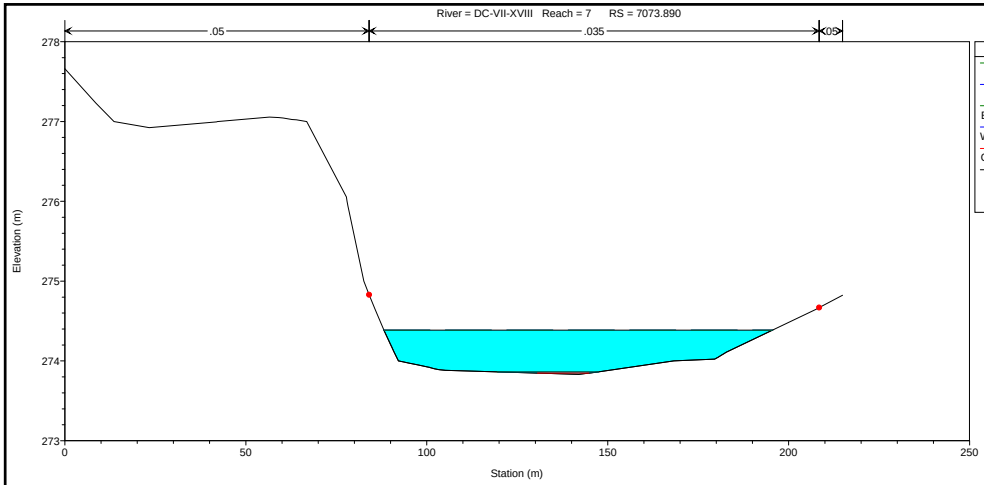

River = DC-VII-XVIII Reach = 7 RS = 7249.989
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

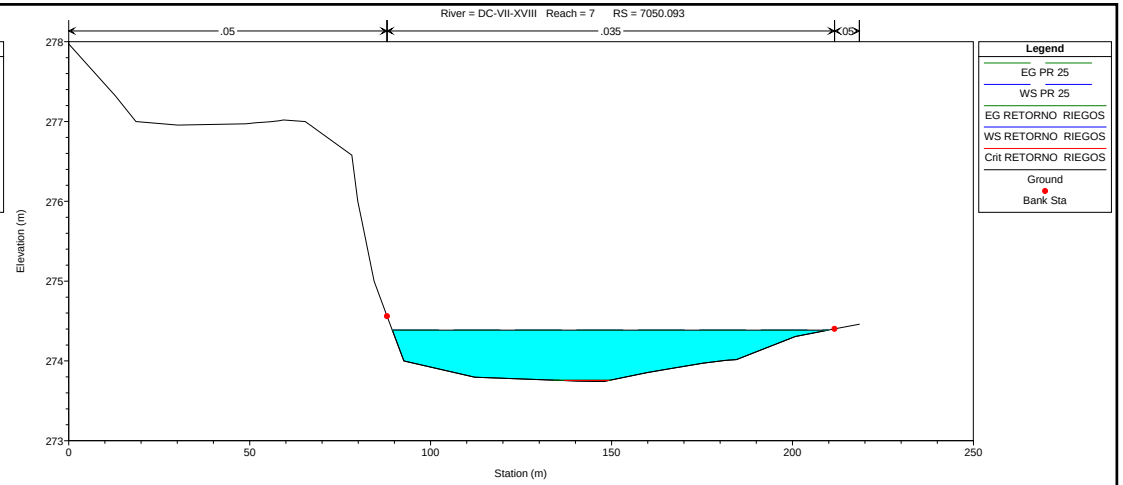

River = DC-VII-XVIII Reach = 7 RS = 7200.077
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

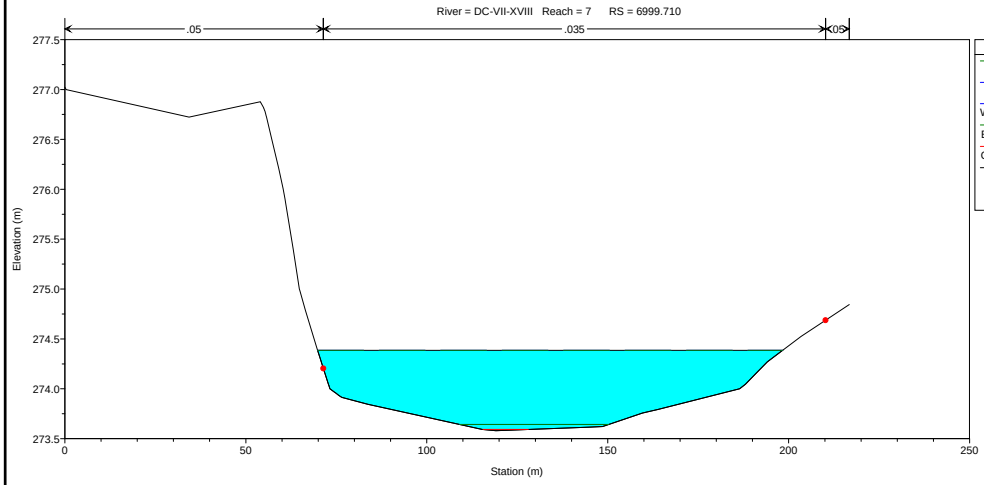

River = DC-VII-XVIII Reach = 7 RS = 7149.979
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

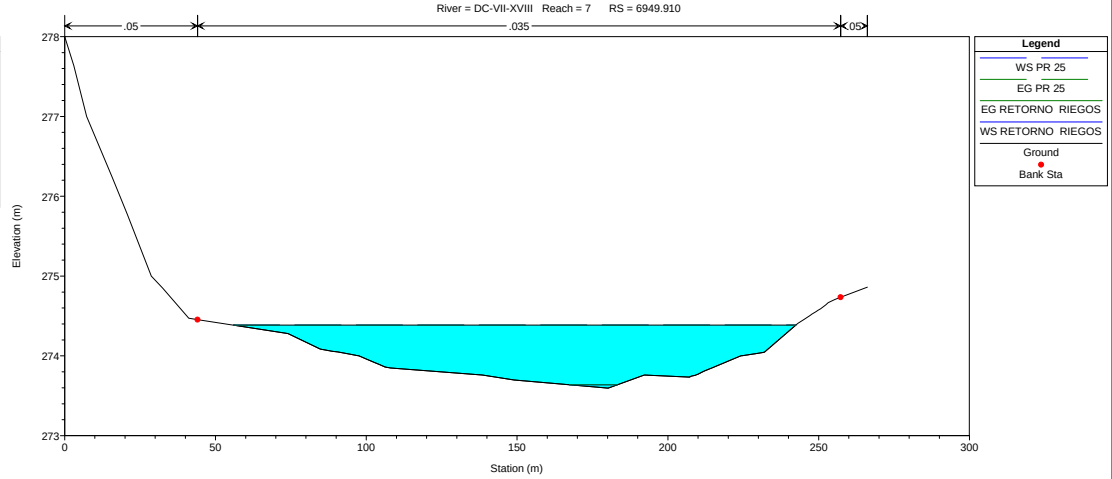

River = DC-VII-XVIII Reach = 7 RS = 7099.997
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

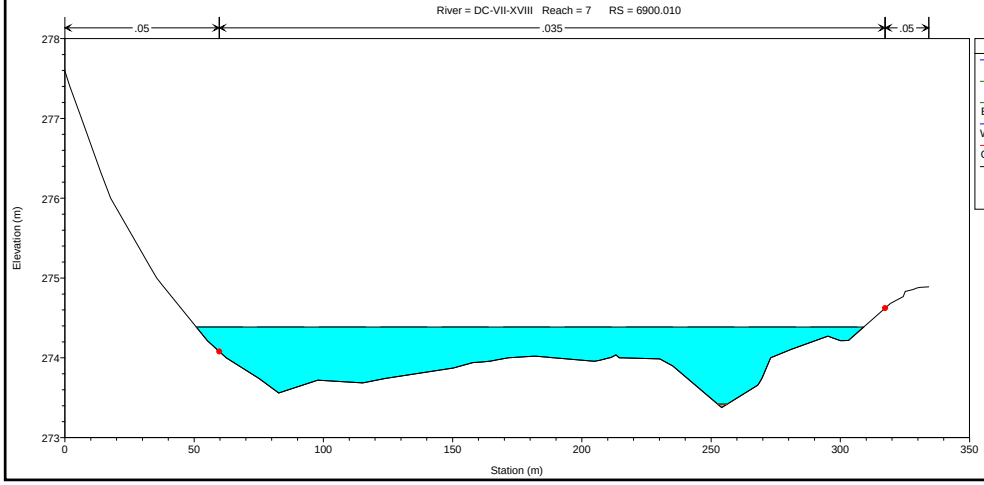

River = DC-VII-XVIII Reach = 7 RS = 7087.390
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

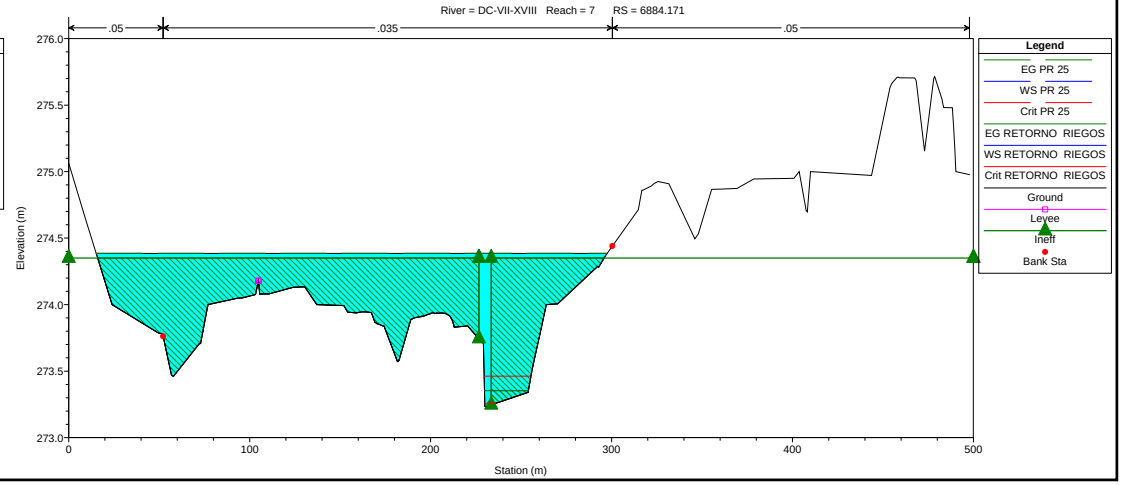

River = DC-VII-XVIII Reach = 7 RS = 7073.890
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

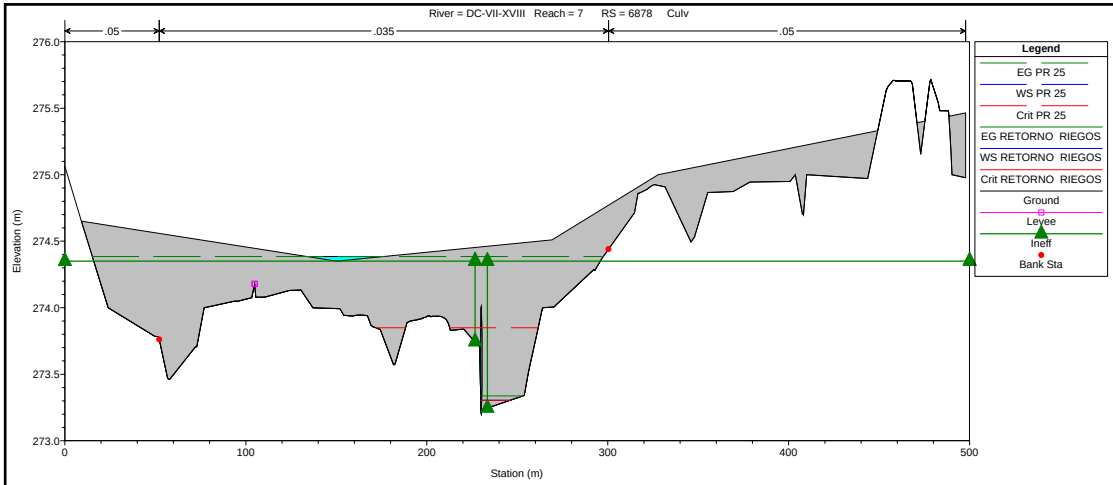

River = DC-VII-XVIII Reach = 7 RS = 7050.093
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

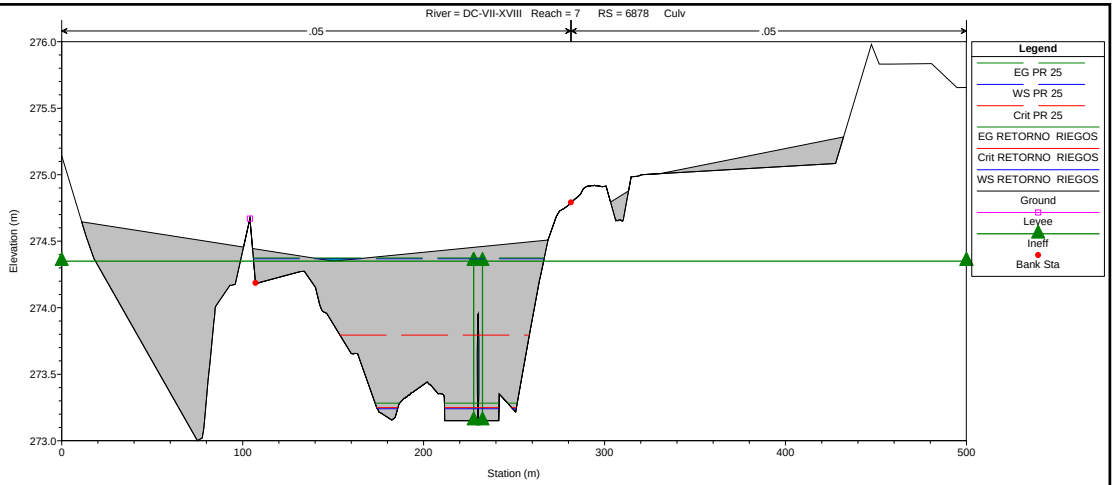

River = DC-VII-XVIII Reach = 7 RS = 6999.710
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
WS RETORNO RIEGOS
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

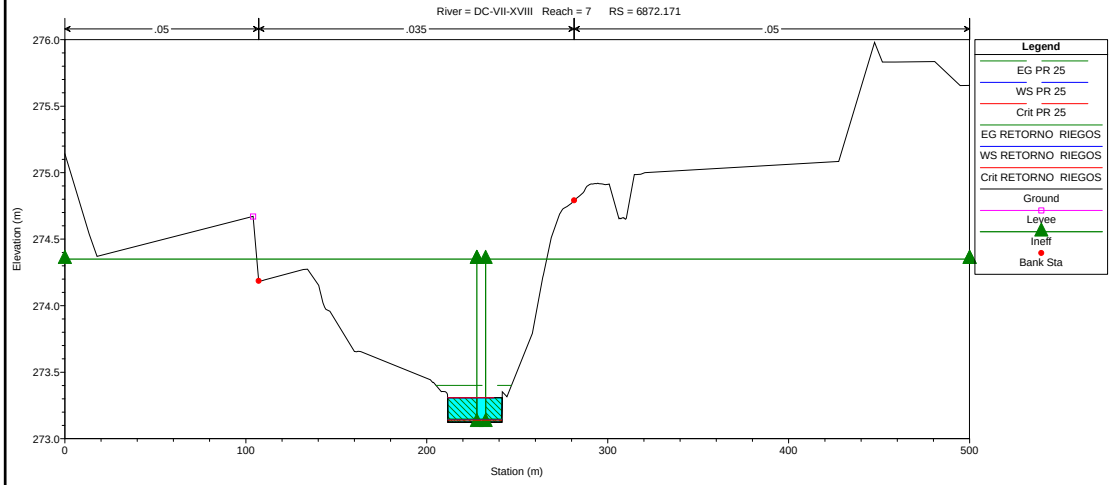

River = DC-VII-XVIII Reach = 7 RS = 6949.910
.05
.035
.05
Elevation (m)
Station (m)
Legend
WS PR 25
EG PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

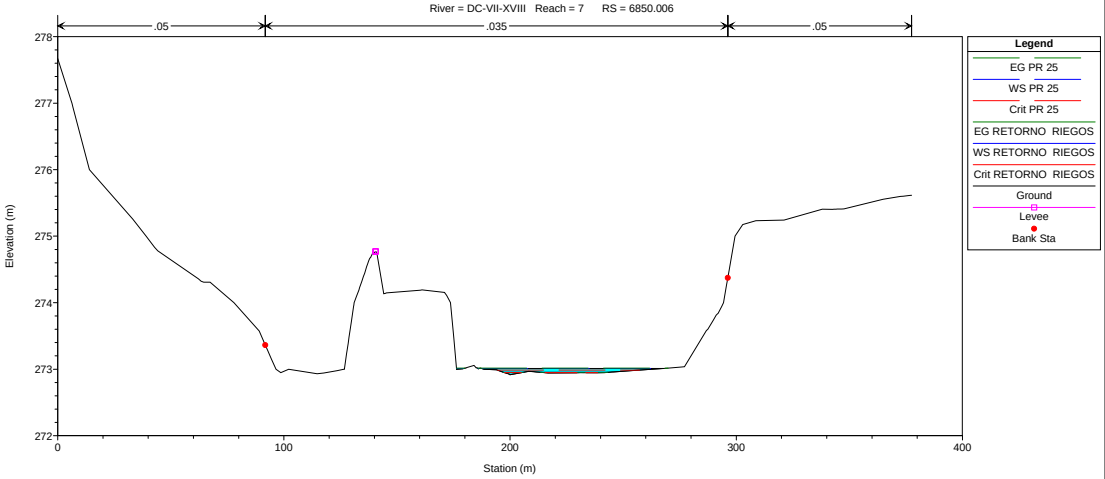

River = DC-VII-XVIII Reach = 7 RS = 6900.010
.05
.035
.05
Elevation (m)
Station (m)
Legend
WS PR 25
EG PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

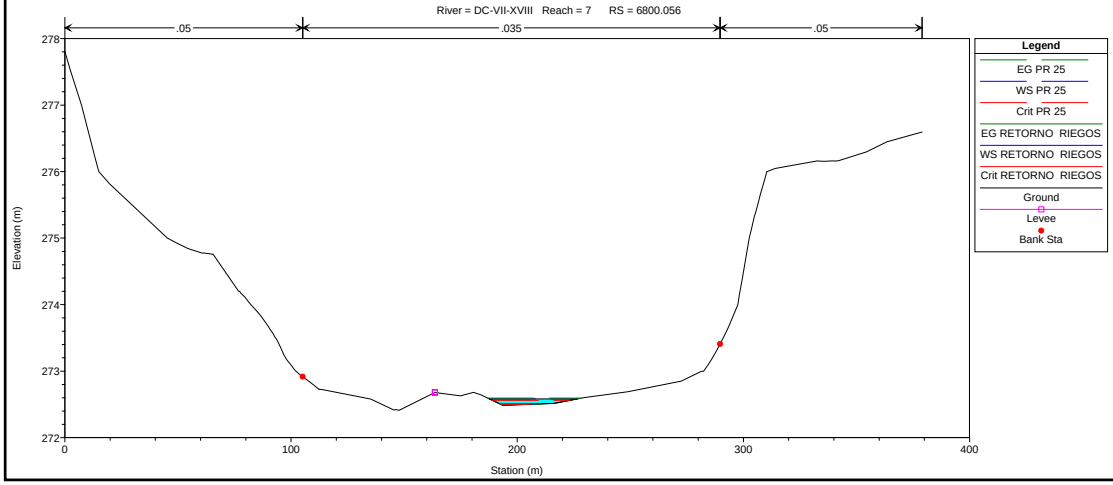

River = DC-VII-XVIII Reach = 7 RS = 6884.171
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

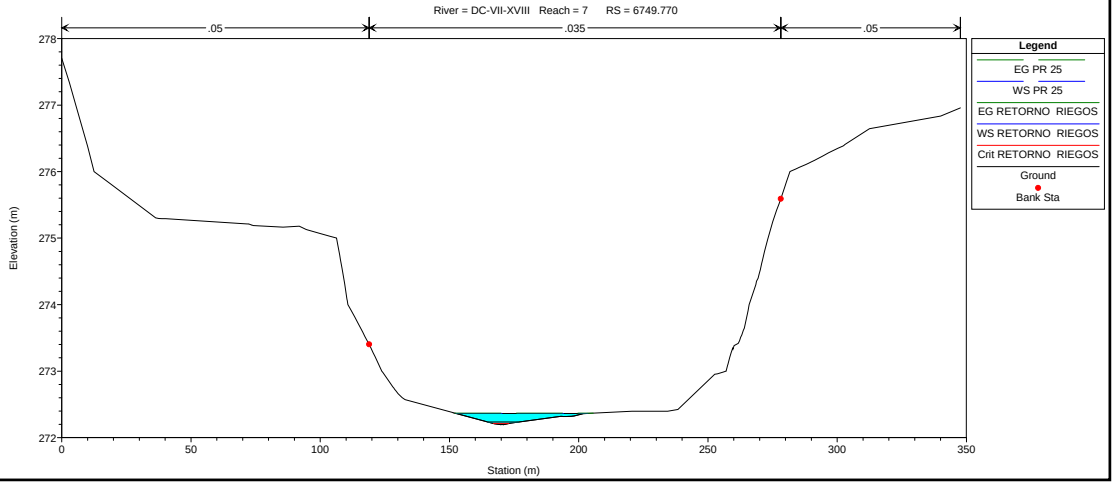

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

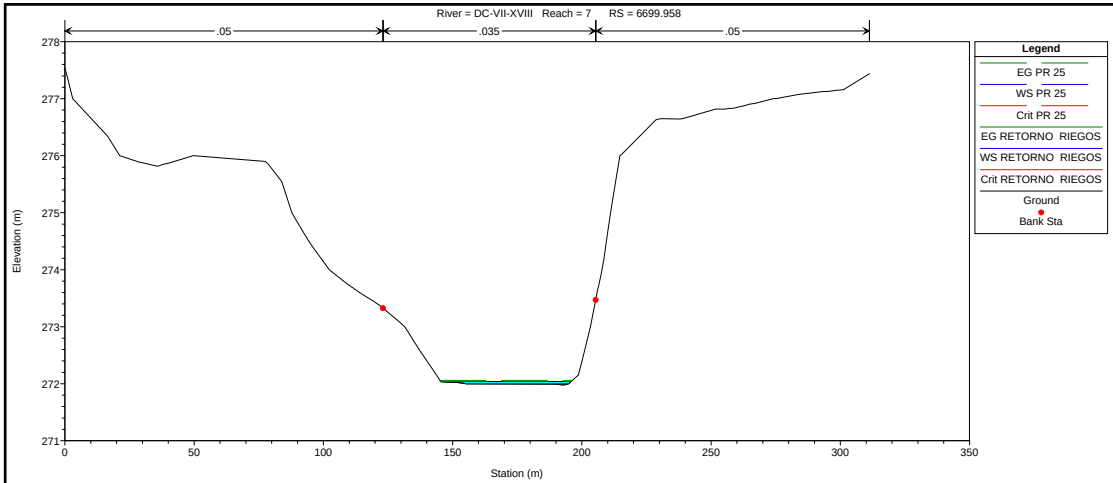

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.05
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

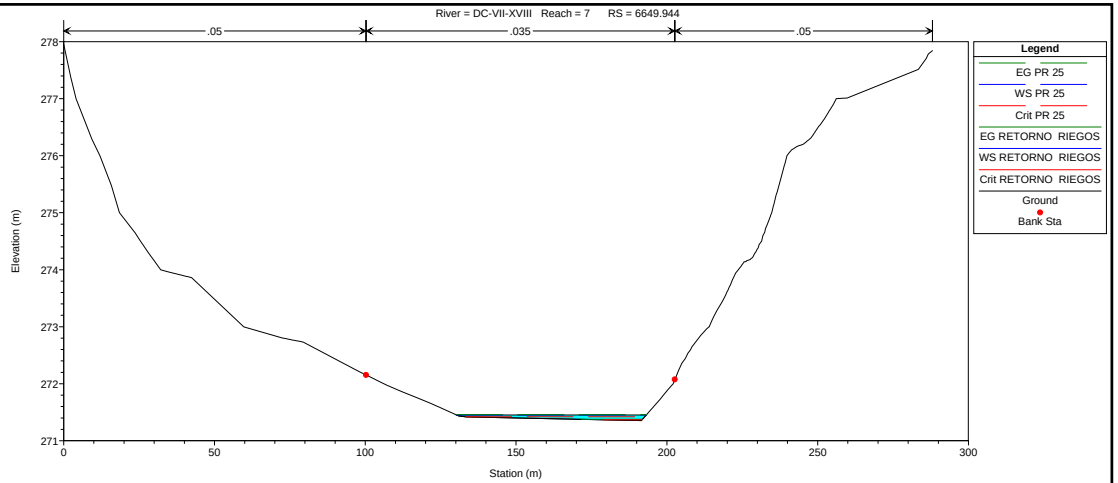

River = DC-VII-XVIII Reach = 7 RS = 6872.171
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

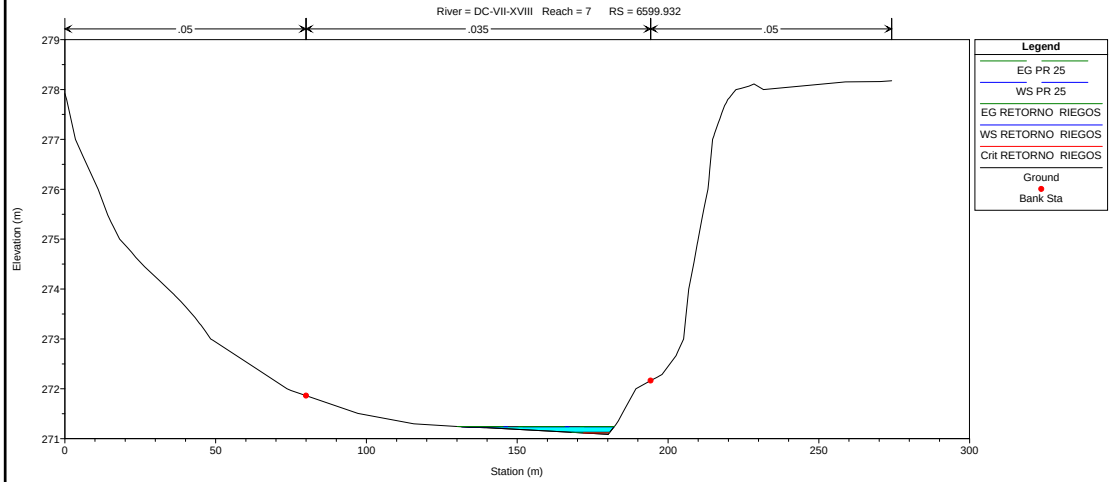

River = DC-VII-XVIII Reach = 7 RS = 6850.006
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

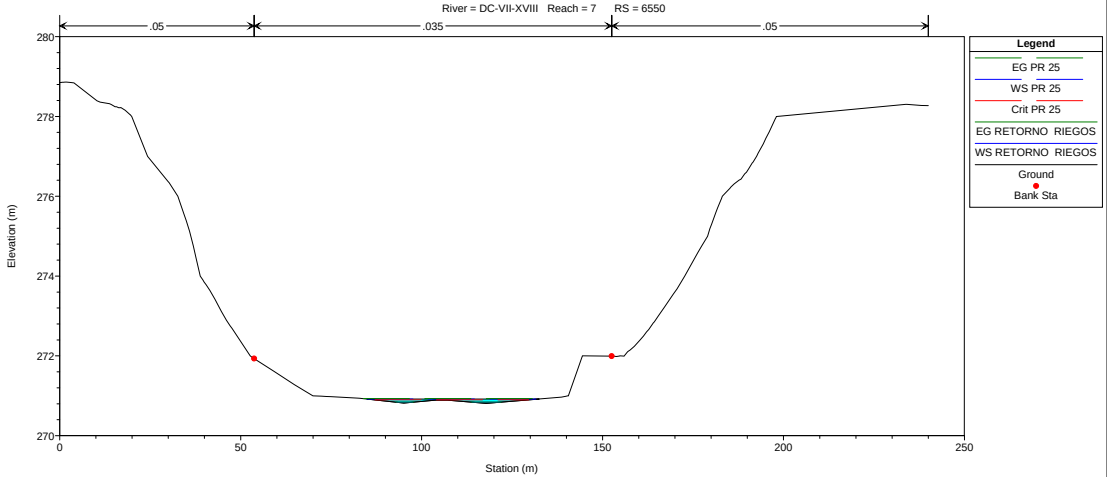

River = DC-VII-XVIII Reach = 7 RS = 6800.056
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

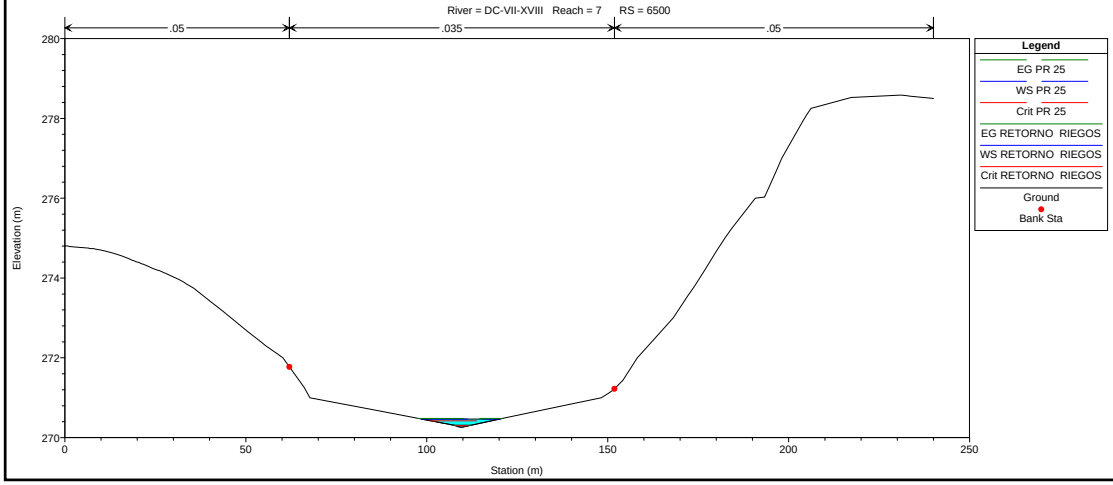

River = DC-VII-XVIII Reach = 7 RS = 6749.770
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

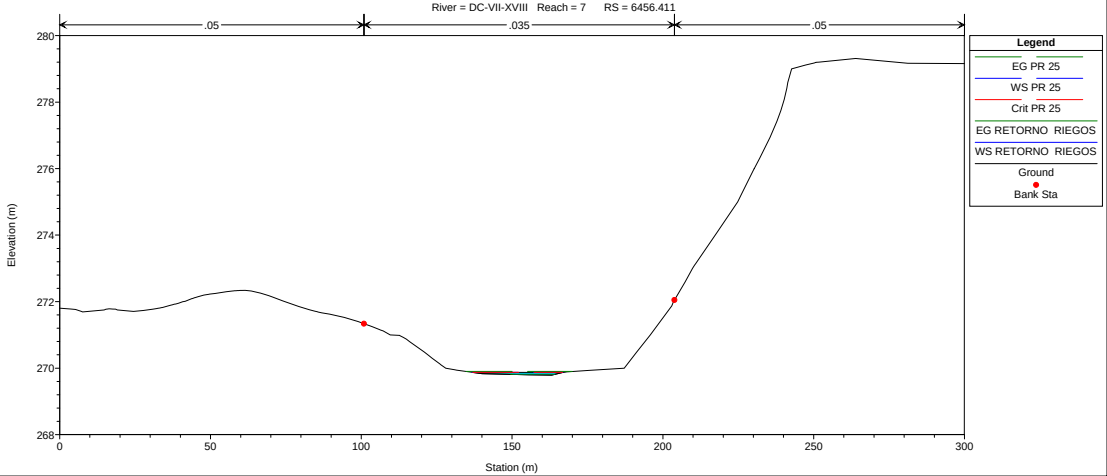

River = DC-VII-XVIII Reach = 7 RS = 6699.958
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

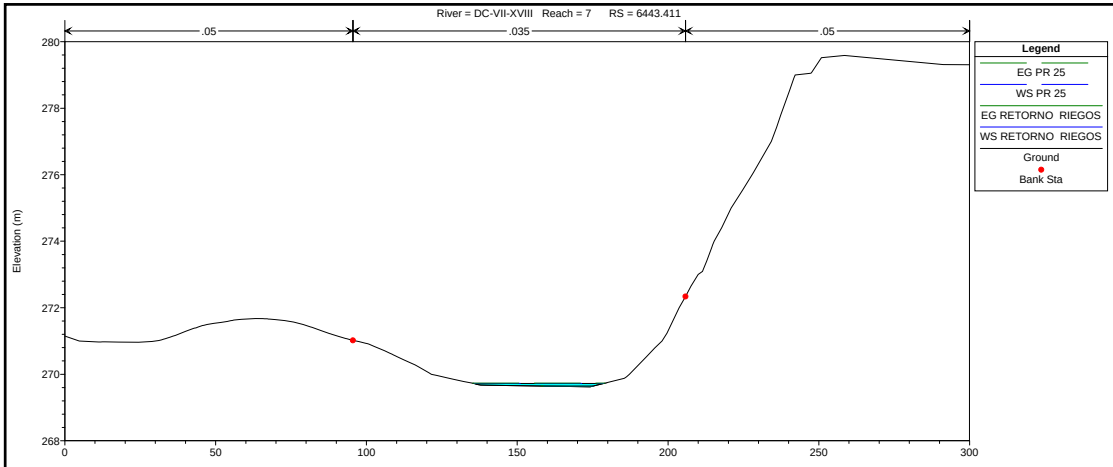

River = DC-VII-XVIII Reach = 7 RS = 6649.944
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

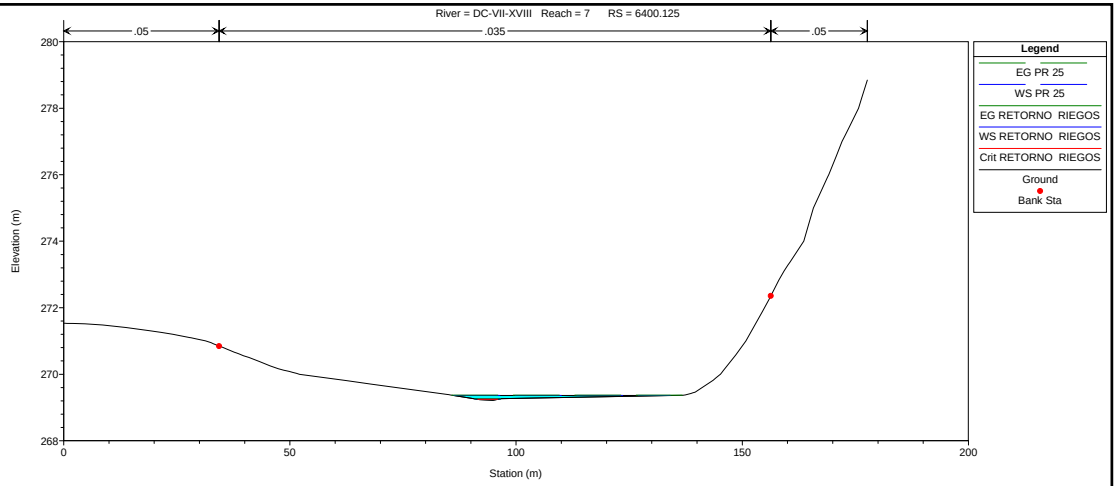

River = DC-VII-XVIII Reach = 7 RS = 6599.932
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

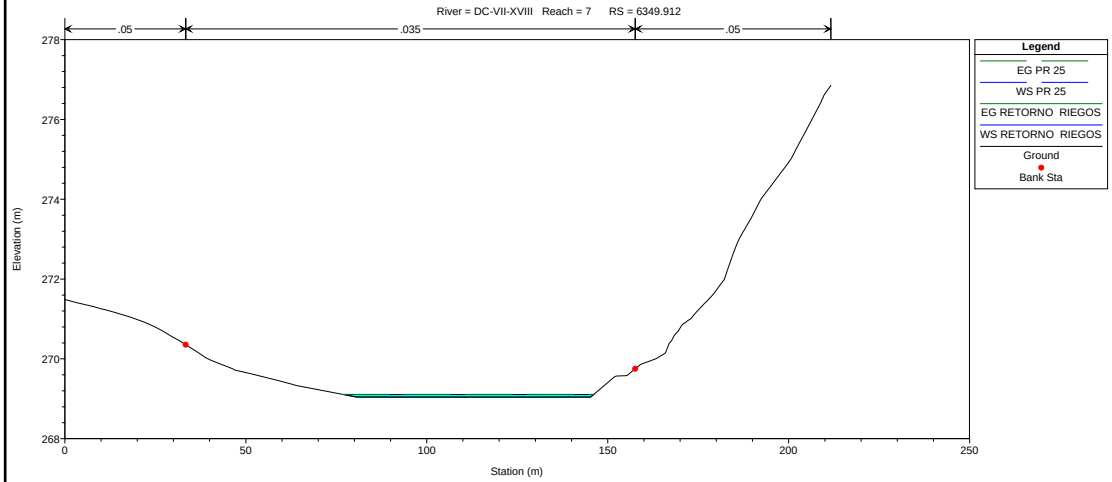

River = DC-VII-XVIII Reach = 7 RS = 6550
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

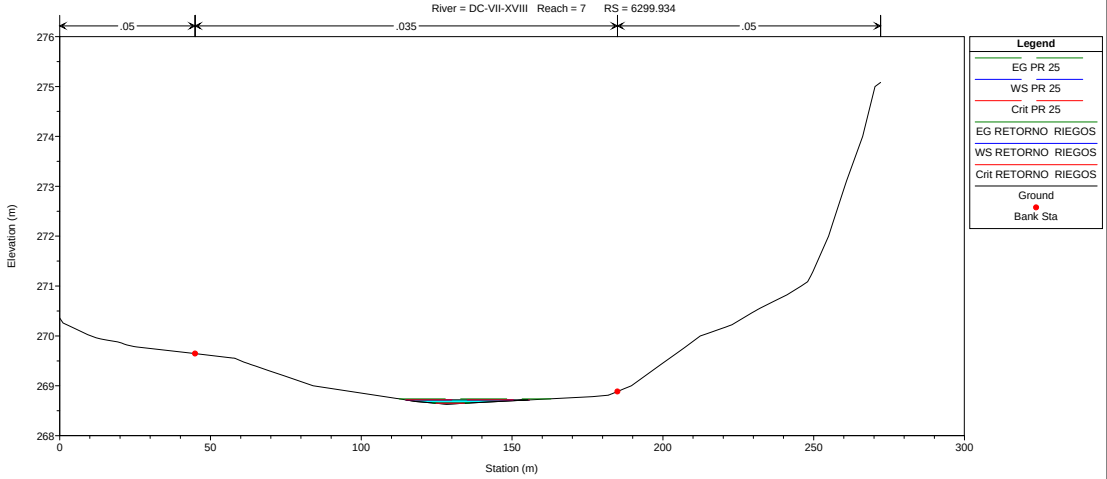

River = DC-VII-XVIII Reach = 7 RS = 6500
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

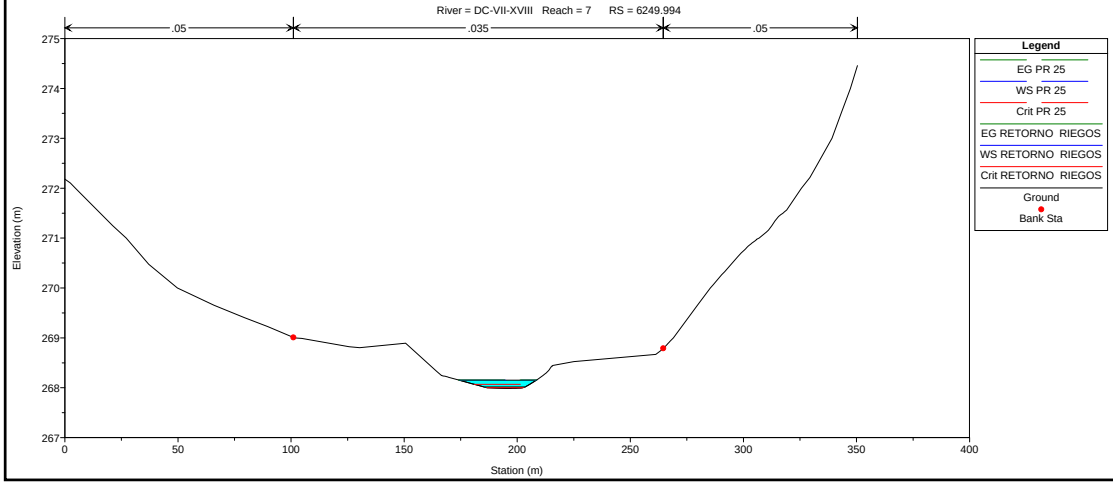

River = DC-VII-XVIII Reach = 7 RS = 6456.411
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

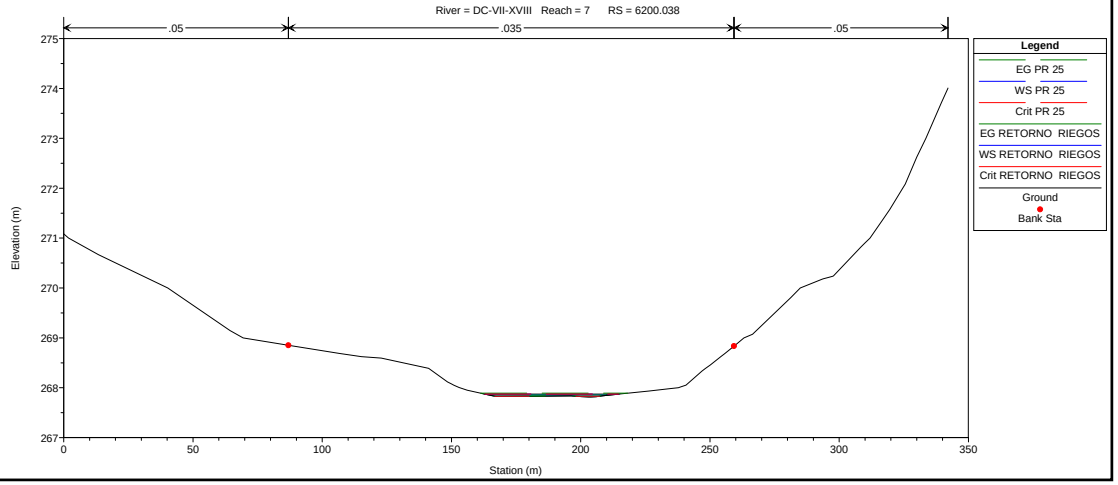

River = DC-VII-XVIII Reach = 7 RS = 6443.411
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

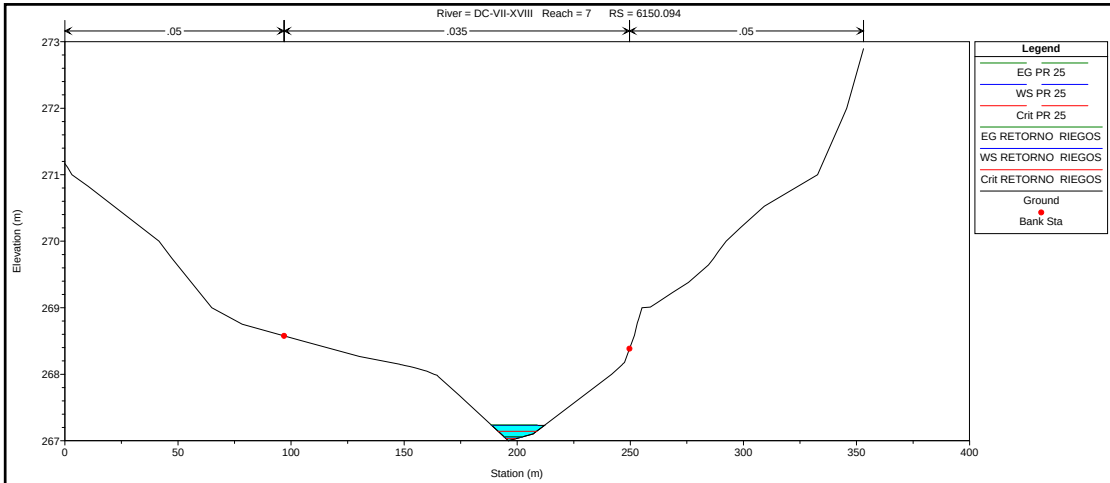

River = DC-VII-XVIII Reach = 7 RS = 6400.125
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

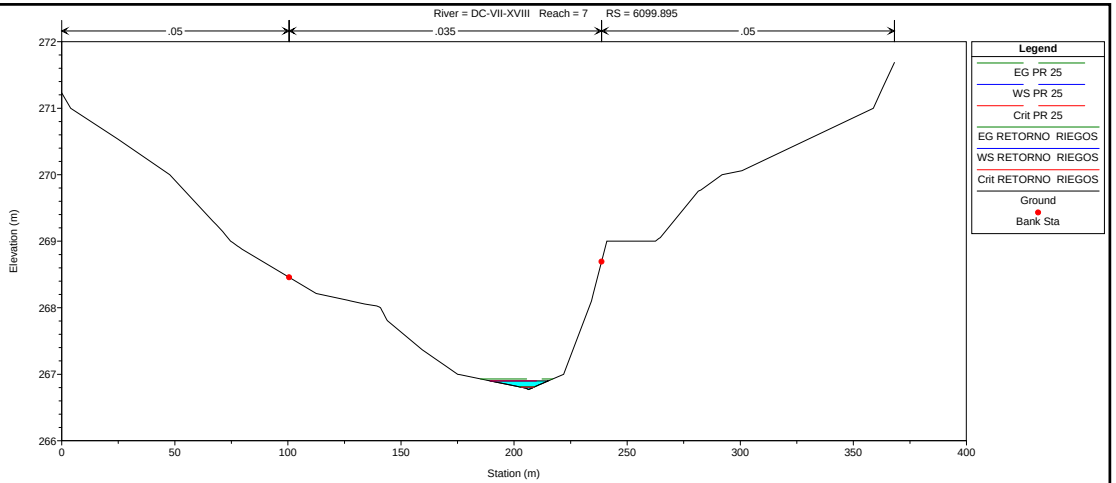

River = DC-VII-XVIII Reach = 7 RS = 6349.912
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

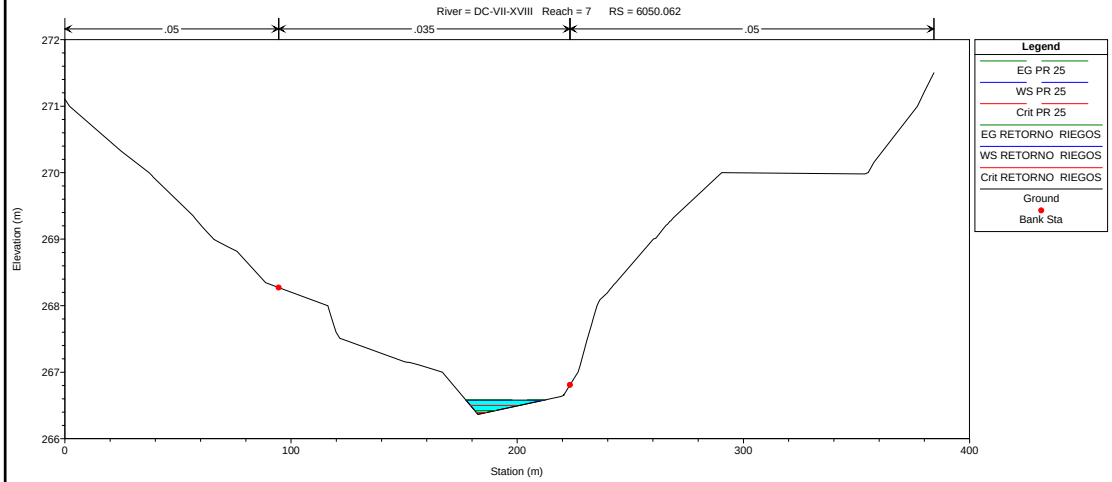

River = DC-VII-XVIII Reach = 7 RS = 6299.934
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

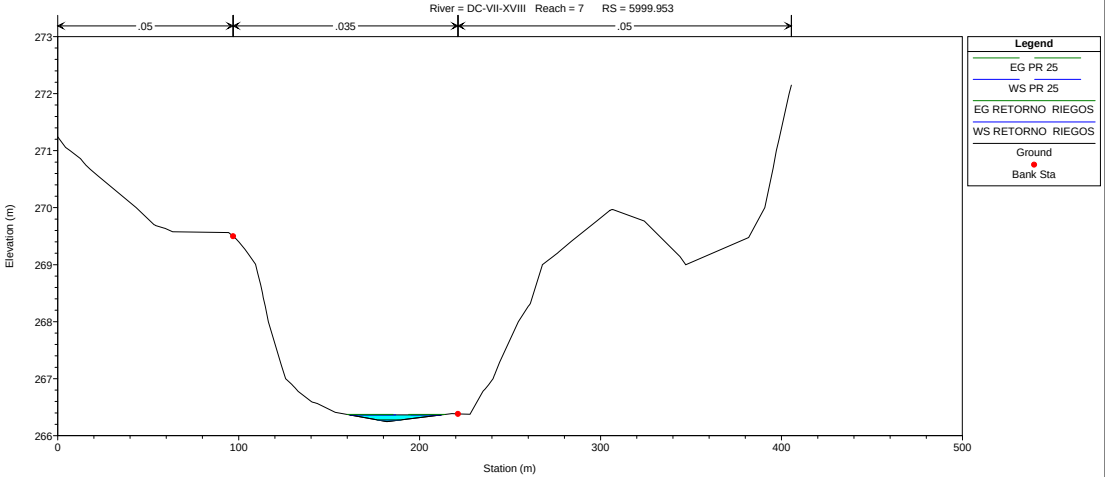

River = DC-VII-XVIII Reach = 7 RS = 6249.994
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

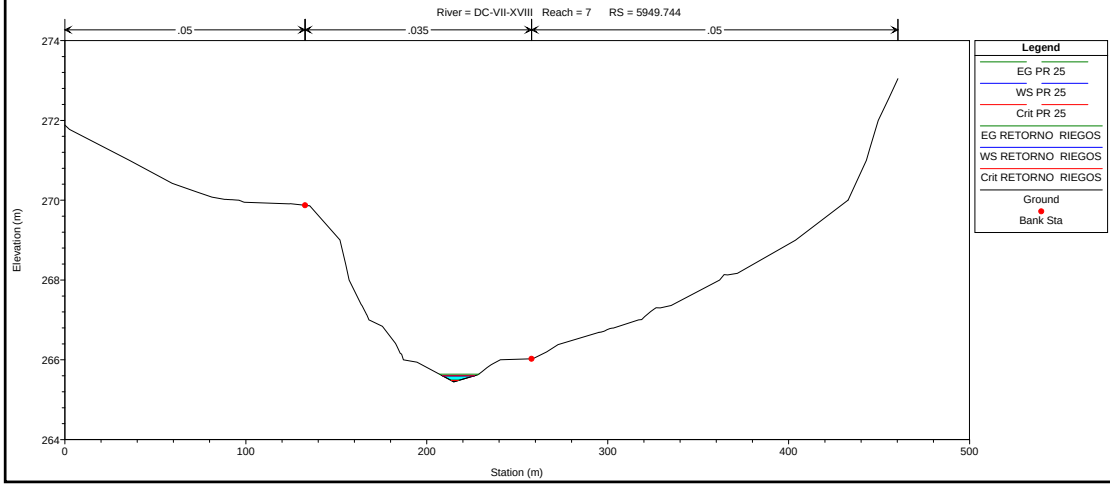

River = DC-VII-XVIII Reach = 7 RS = 6200.038
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

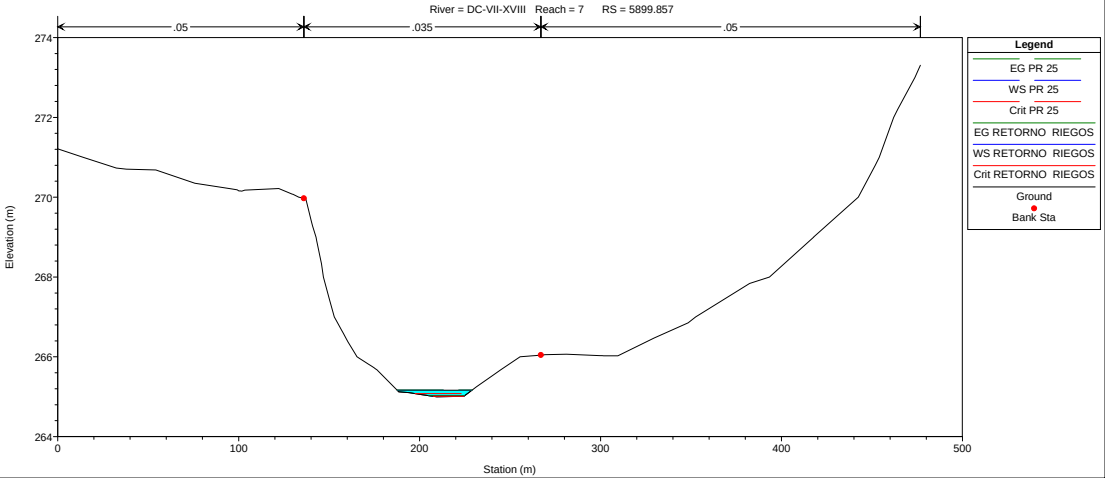

River = DC-VII-XVIII Reach = 7 RS = 6150.094
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

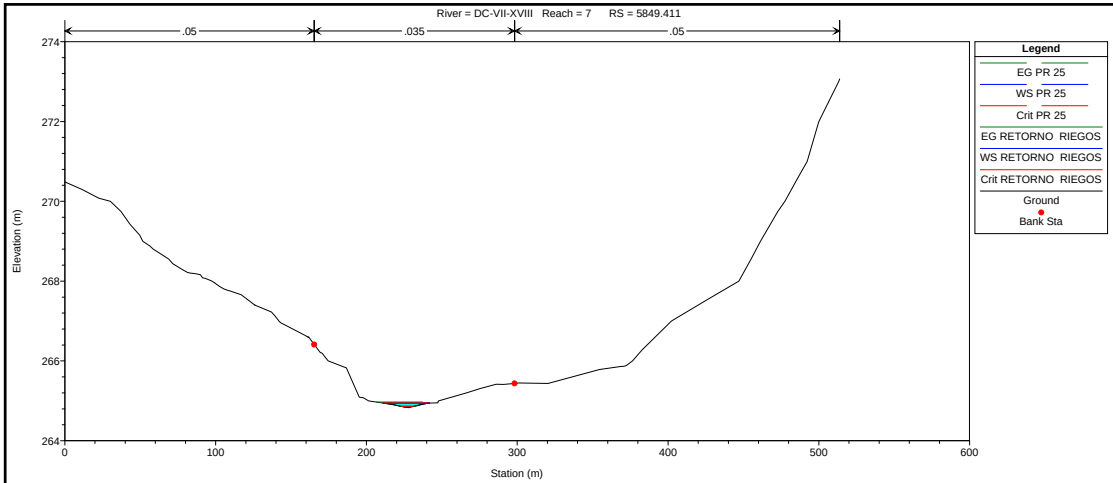

River = DC-VII-XVIII Reach = 7 RS = 6099.895
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

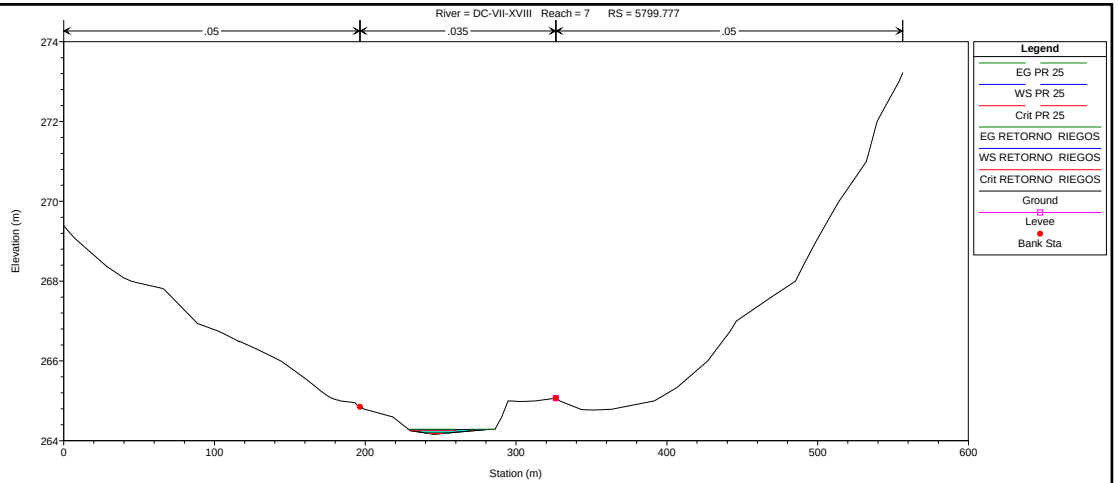

River = DC-VII-XVIII Reach = 7 RS = 6050.062
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

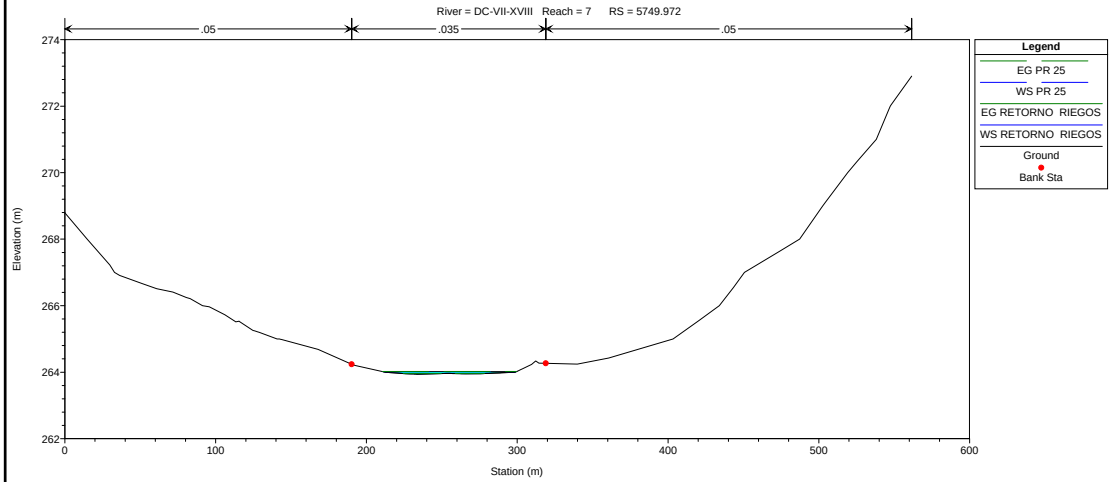

River = DC-VII-XVIII Reach = 7 RS = 5999.953
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

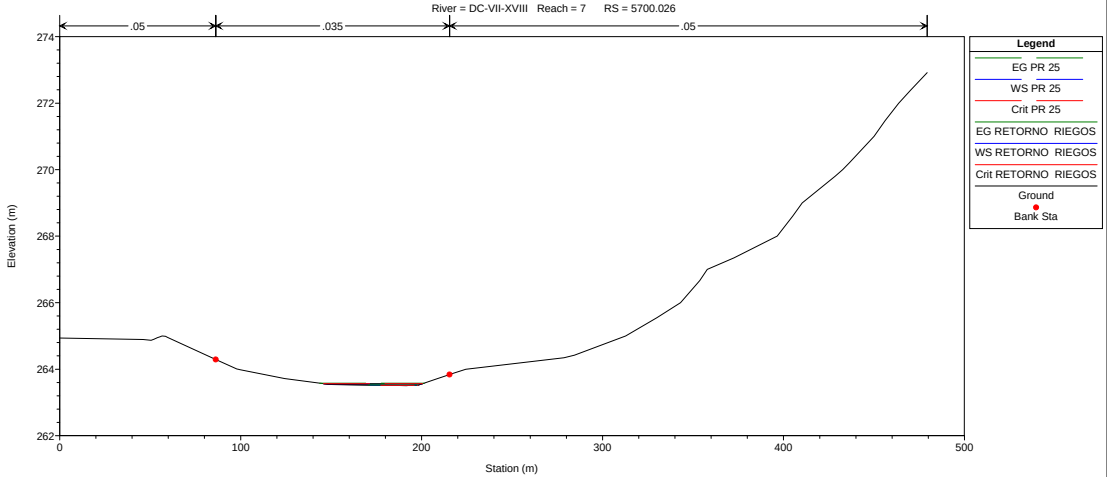

River = DC-VII-XVIII Reach = 7 RS = 5949.744
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

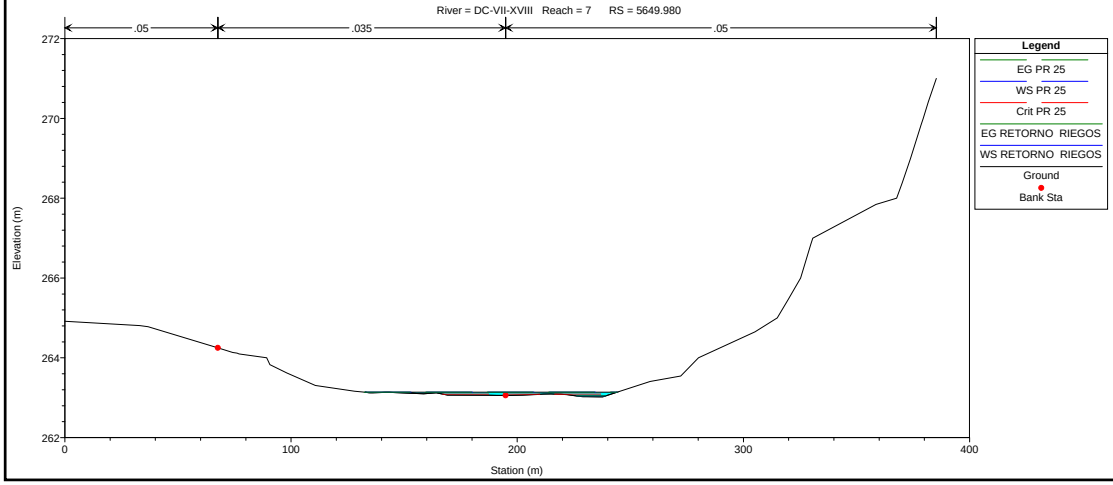

River = DC-VII-XVIII Reach = 7 RS = 5899.857
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

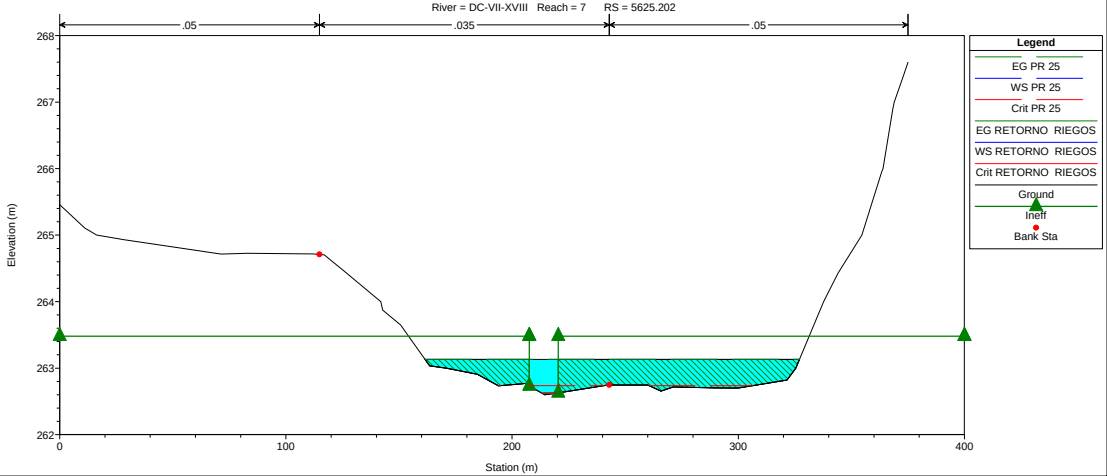

River = DC-VII-XVIII Reach = 7 RS = 5849.411
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

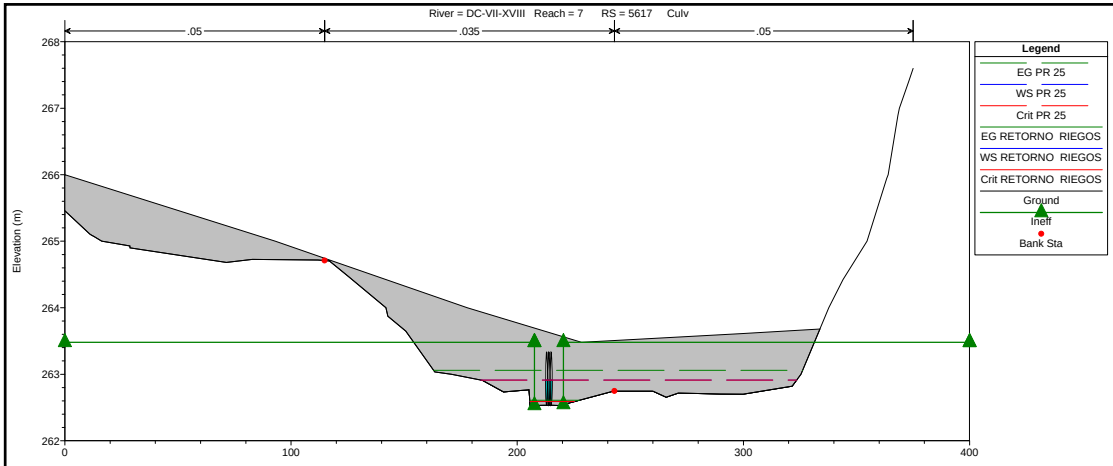

River = DC-VII-XVIII Reach = 7 RS = 5799.777
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

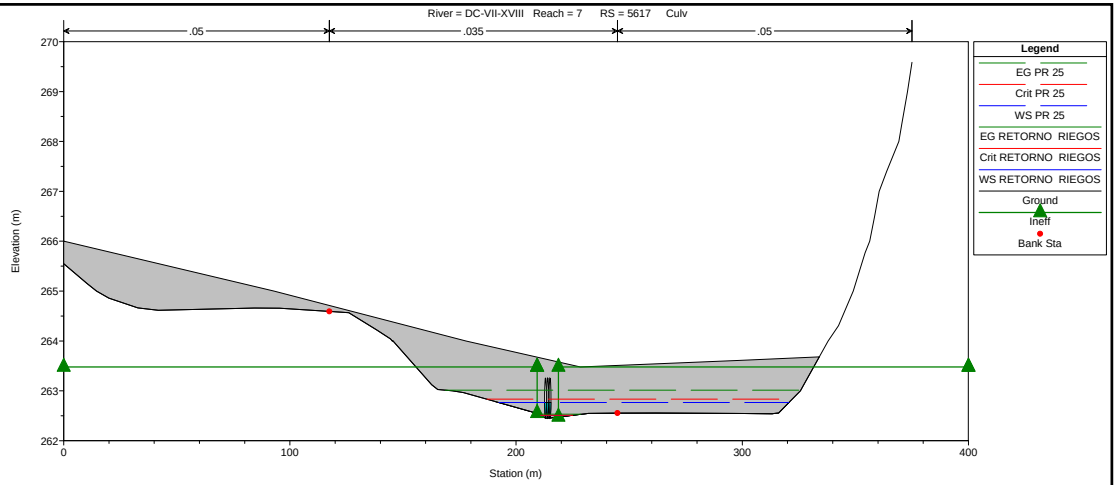

River = DC-VII-XVIII Reach = 7 RS = 5749.972
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

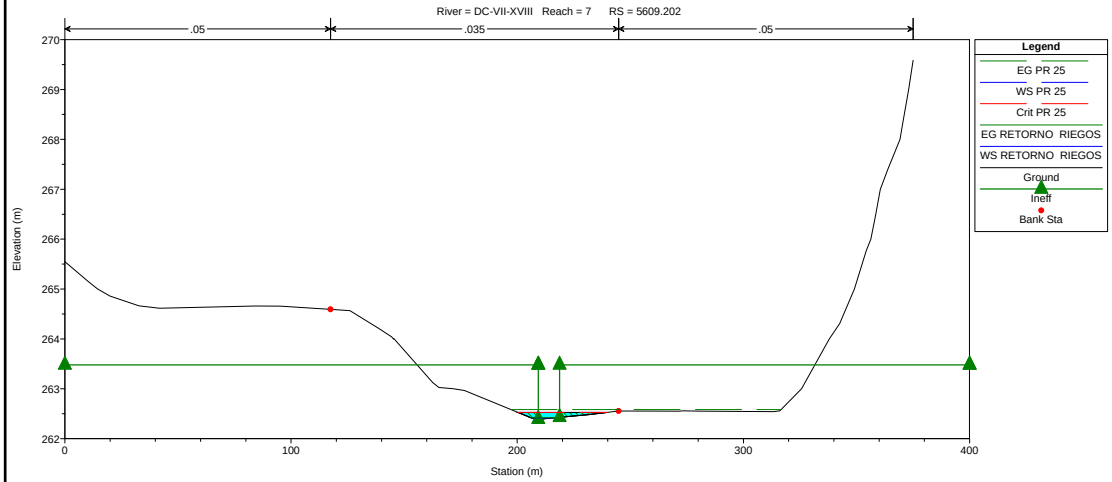

River = DC-VII-XVIII Reach = 7 RS = 5700.026
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

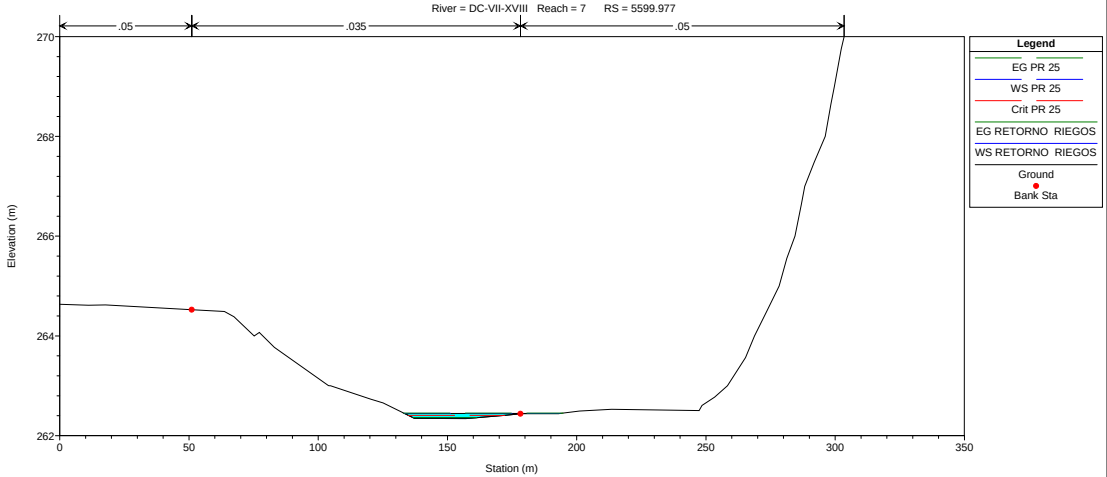

River = DC-VII-XVIII Reach = 7 RS = 5649.980
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

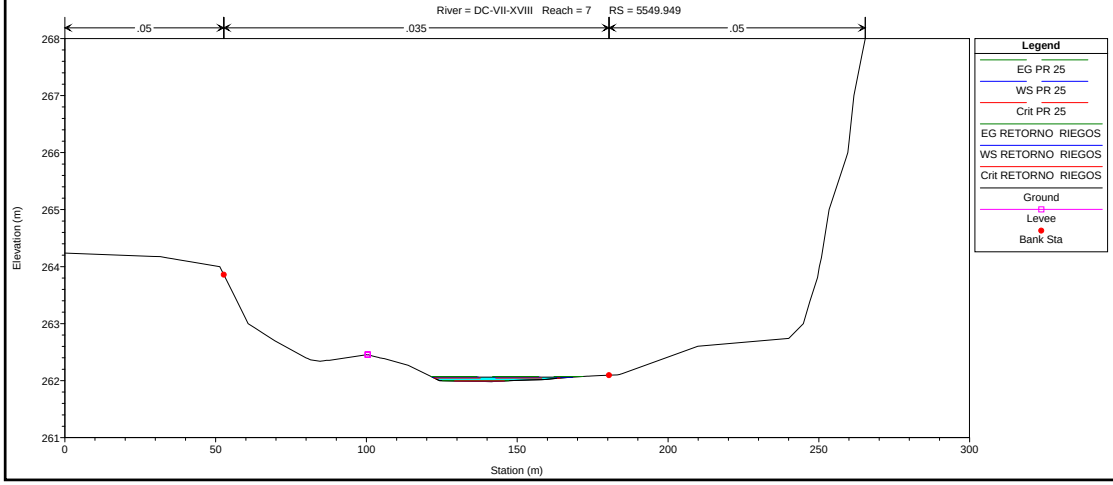

River = DC-VII-XVIII Reach = 7 RS = 5625.202
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

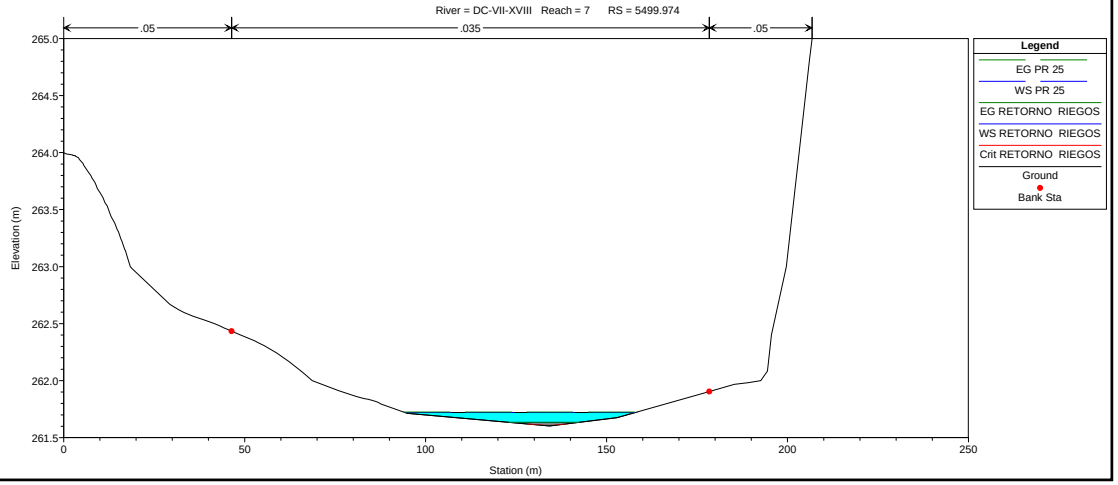

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

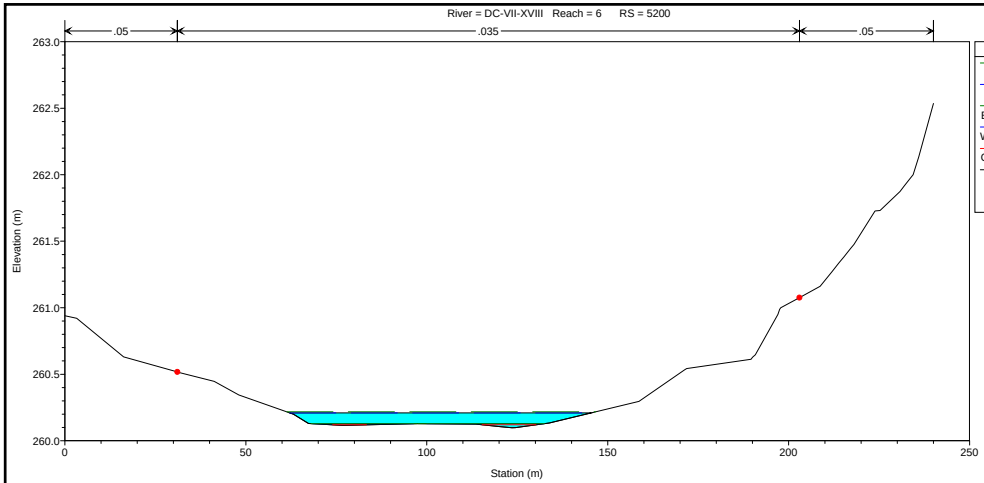

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
Crit PR 25
WS PR 25
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

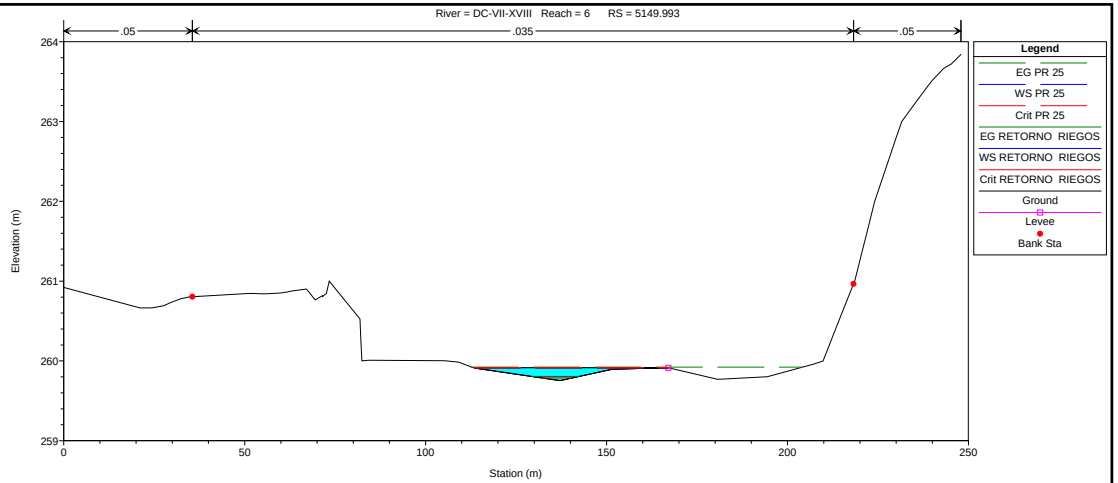

River = DC-VII-XVIII Reach = 7 RS = 5609.202
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

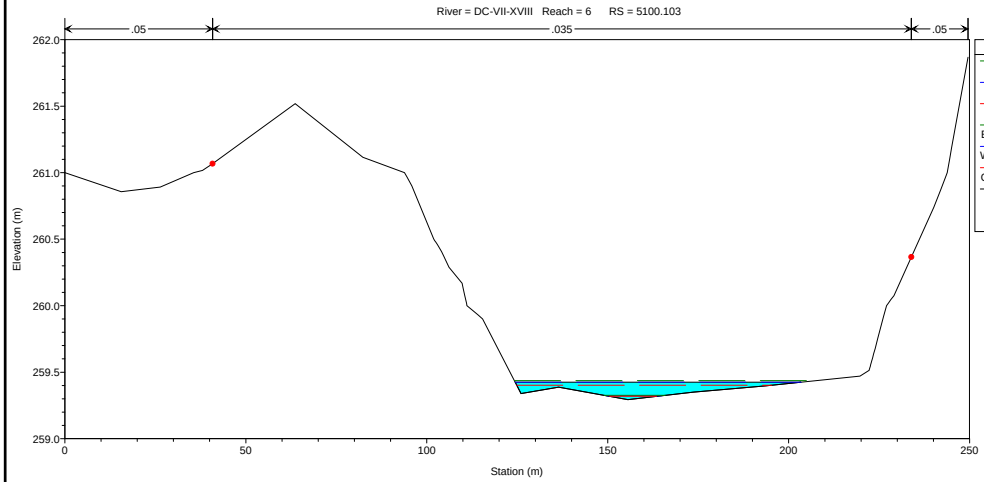

River = DC-VII-XVIII Reach = 7 RS = 5599.977
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

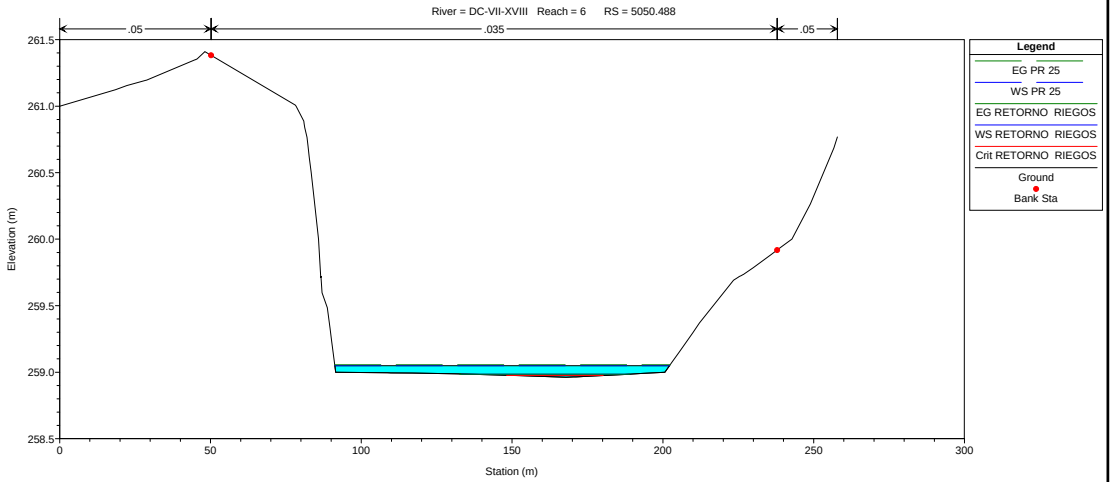

River = DC-VII-XVIII Reach = 7 RS = 5549.949
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

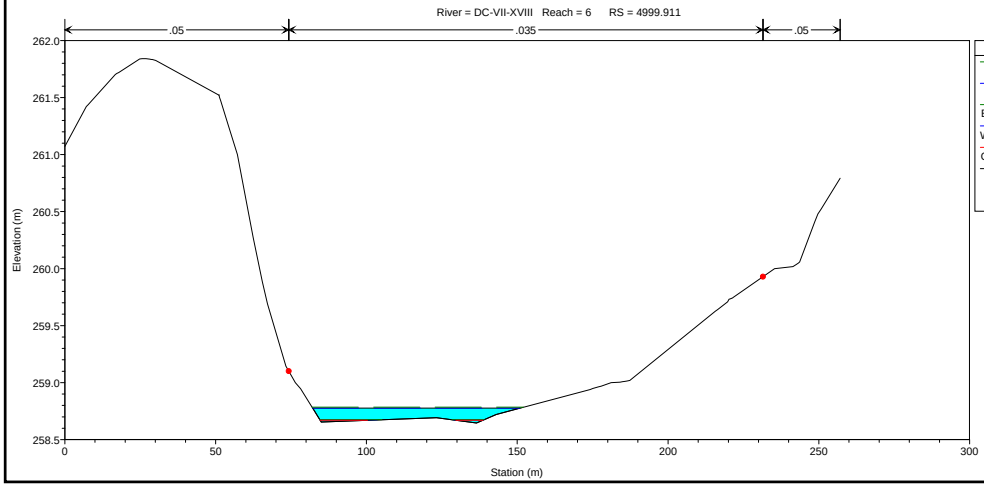

River = DC-VII-XVIII Reach = 7 RS = 5499.974
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

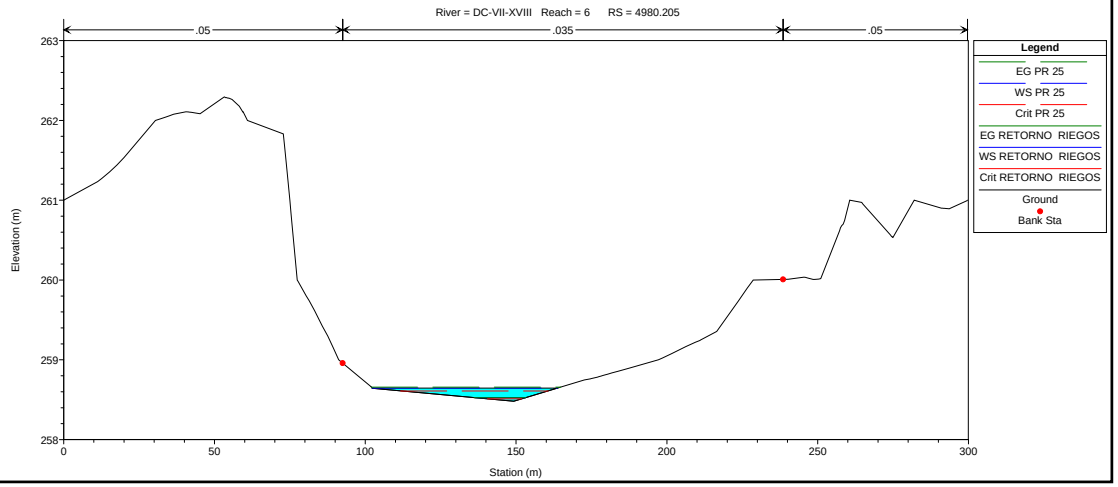

River = DC-VII-XVIII Reach = 6 RS = 5200
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

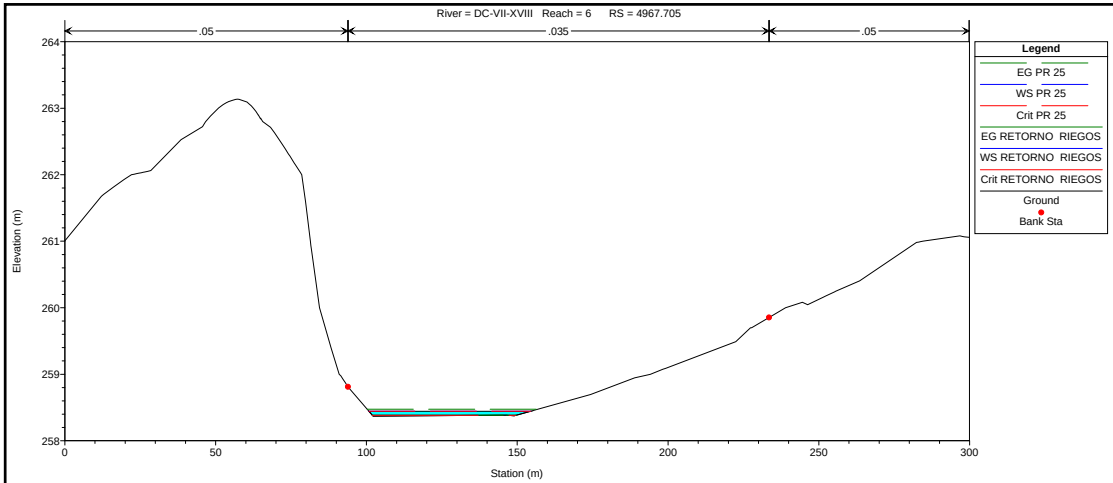

River = DC-VII-XVIII Reach = 6 RS = 5149.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

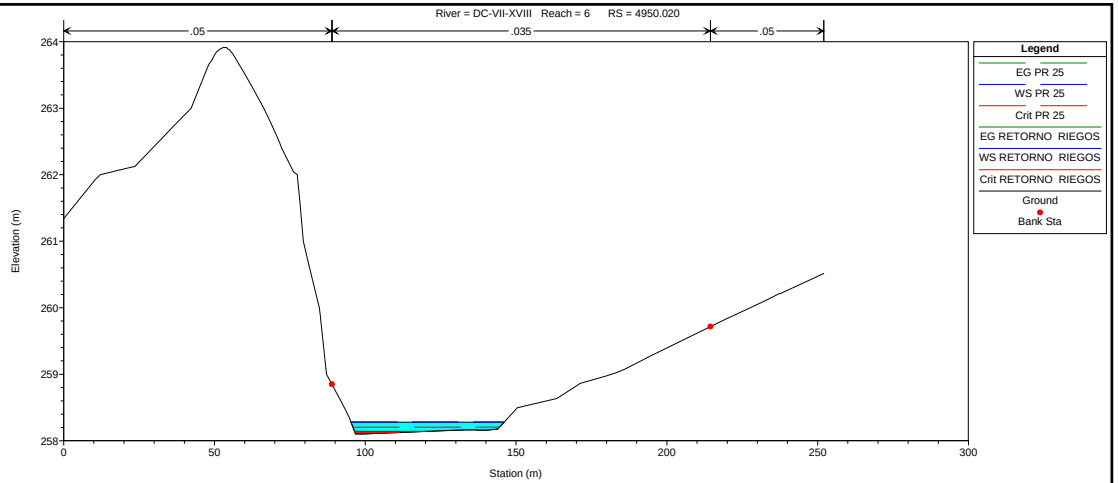

River = DC-VII-XVIII Reach = 6 RS = 5100.103
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

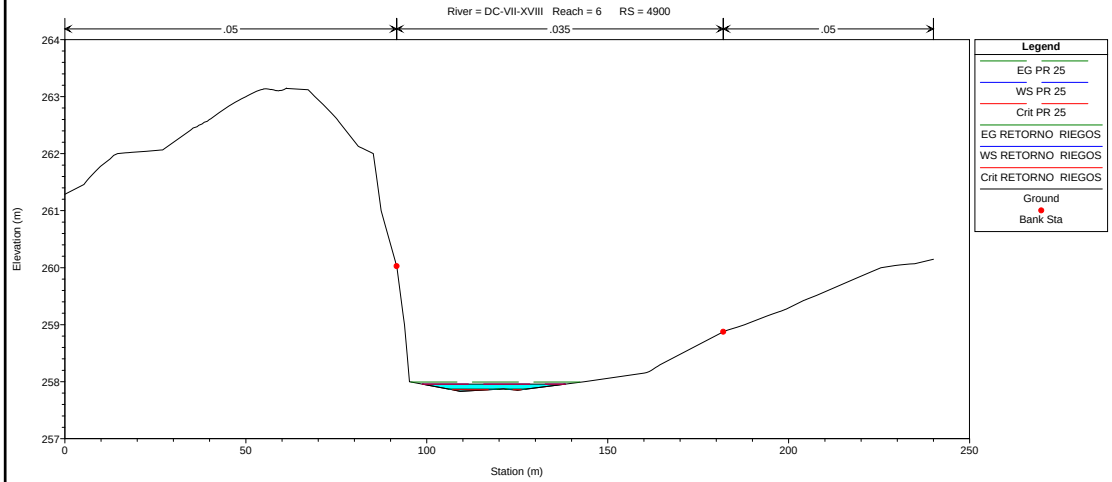

River = DC-VII-XVIII Reach = 6 RS = 5050.488
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

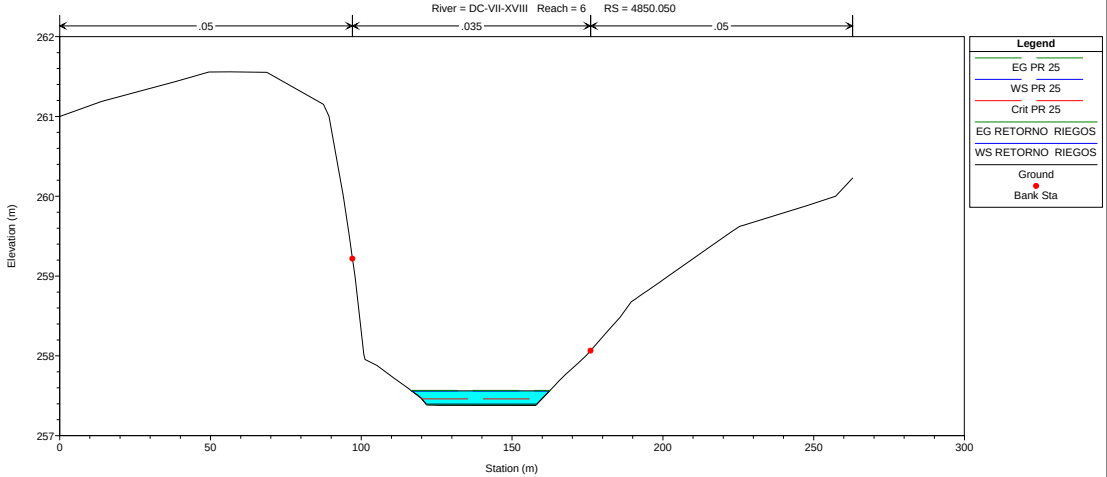

River = DC-VII-XVIII Reach = 6 RS = 4999.911
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

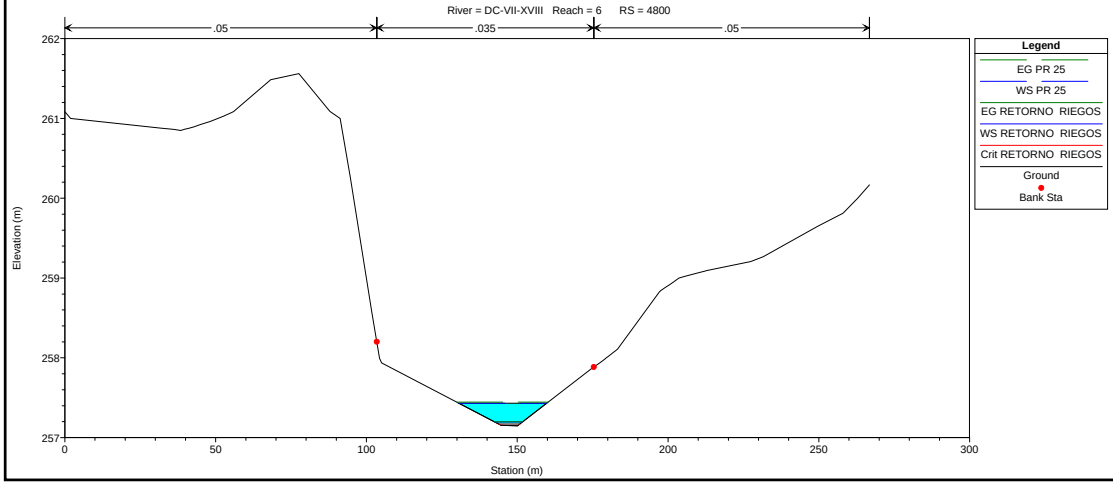

River = DC-VII-XVIII Reach = 6 RS = 4980.205
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

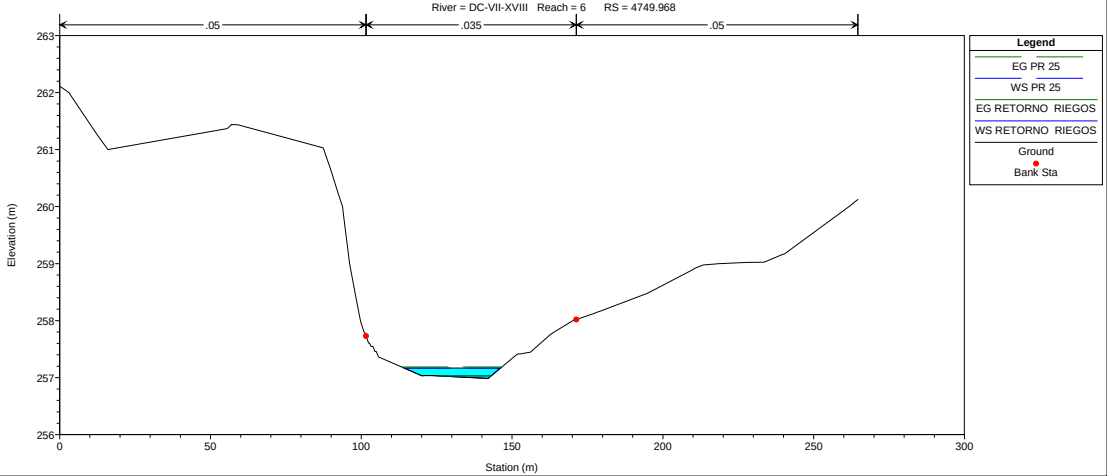

River = DC-VII-XVIII Reach = 6 RS = 4967.705
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

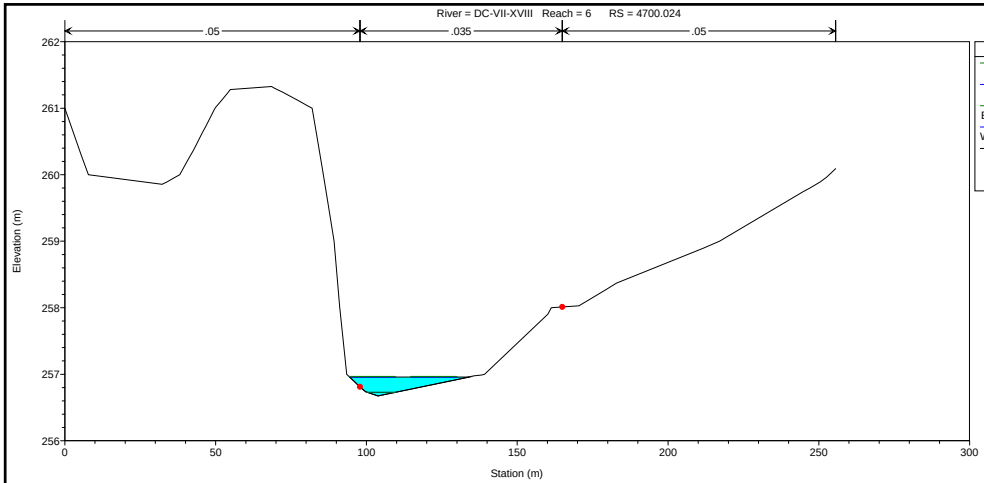

River = DC-VII-XVIII Reach = 6 RS = 4950.020
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

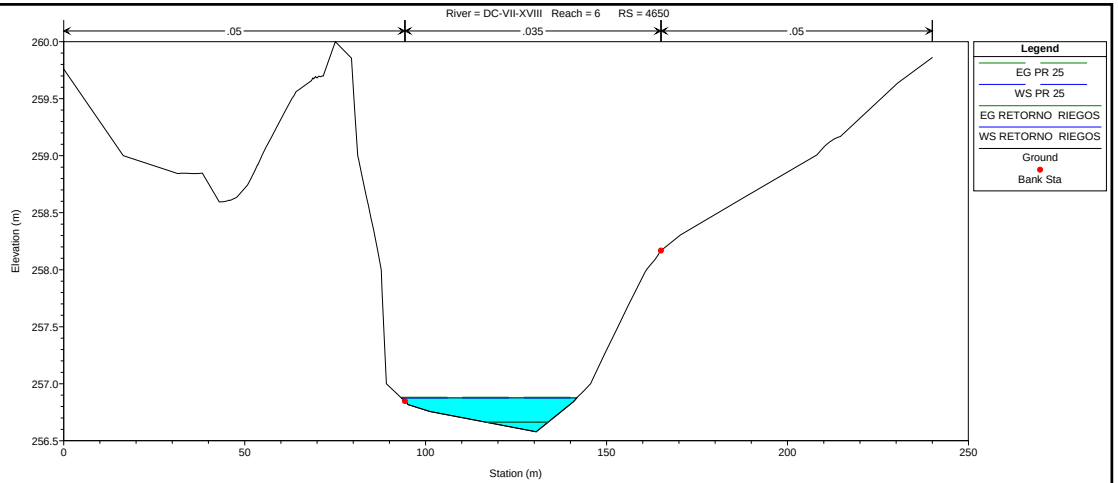

River = DC-VII-XVIII Reach = 6 RS = 4900
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

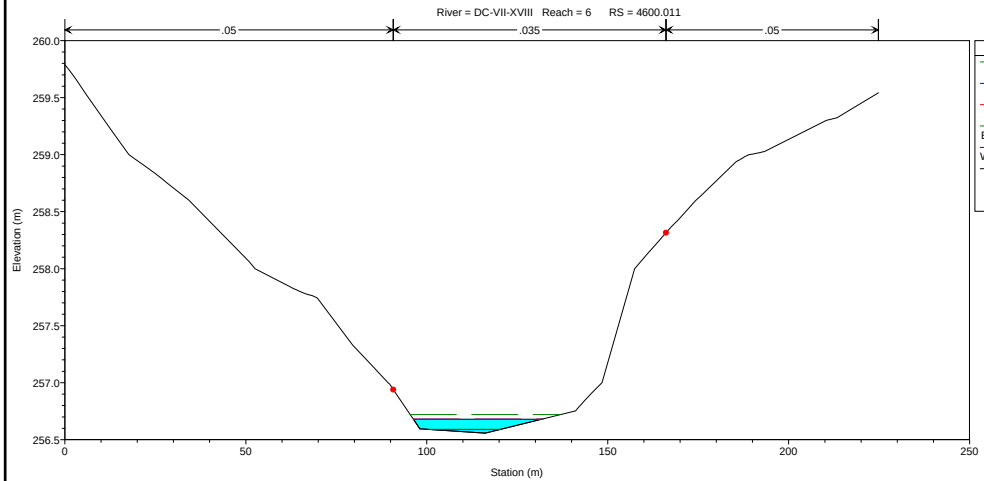

River = DC-VII-XVIII Reach = 6 RS = 4850.050
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

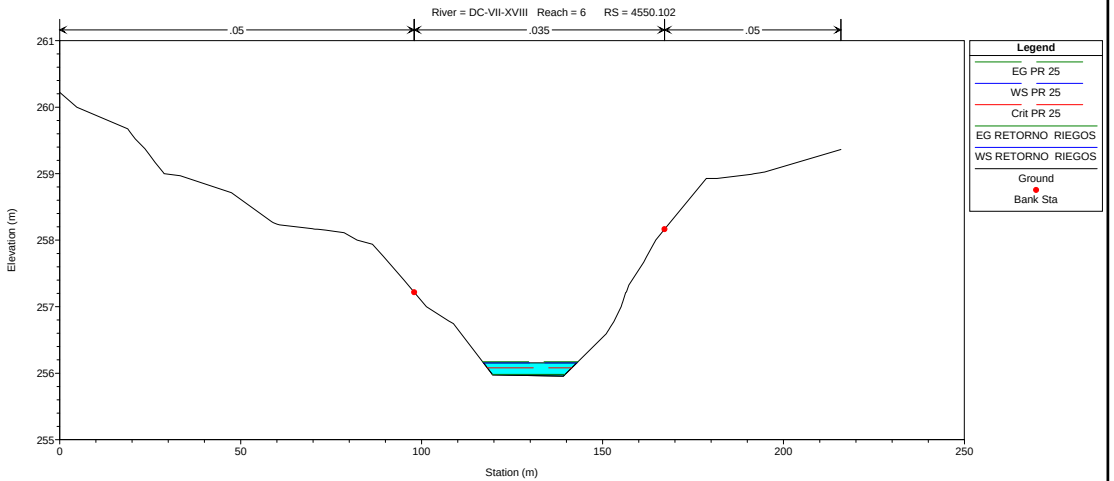

River = DC-VII-XVIII Reach = 6 RS = 4800
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

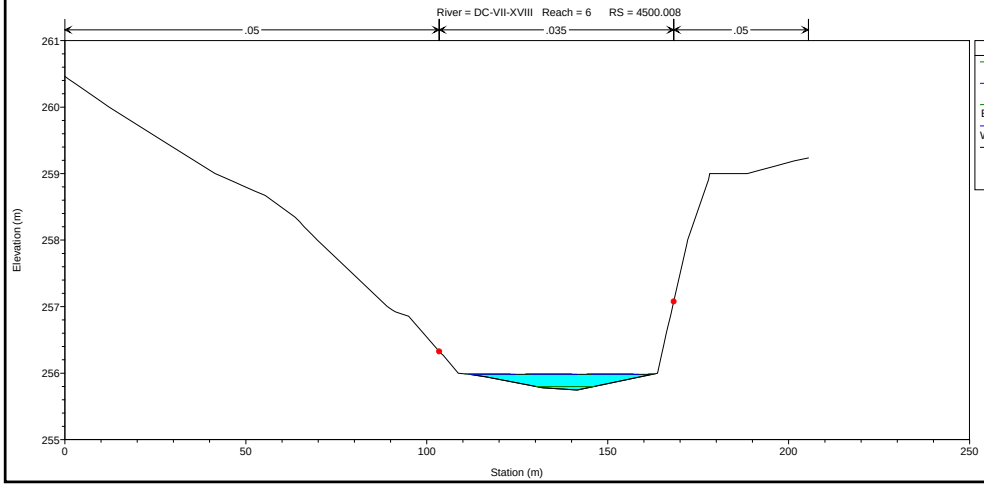

River = DC-VII-XVIII Reach = 6 RS = 4749.968
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

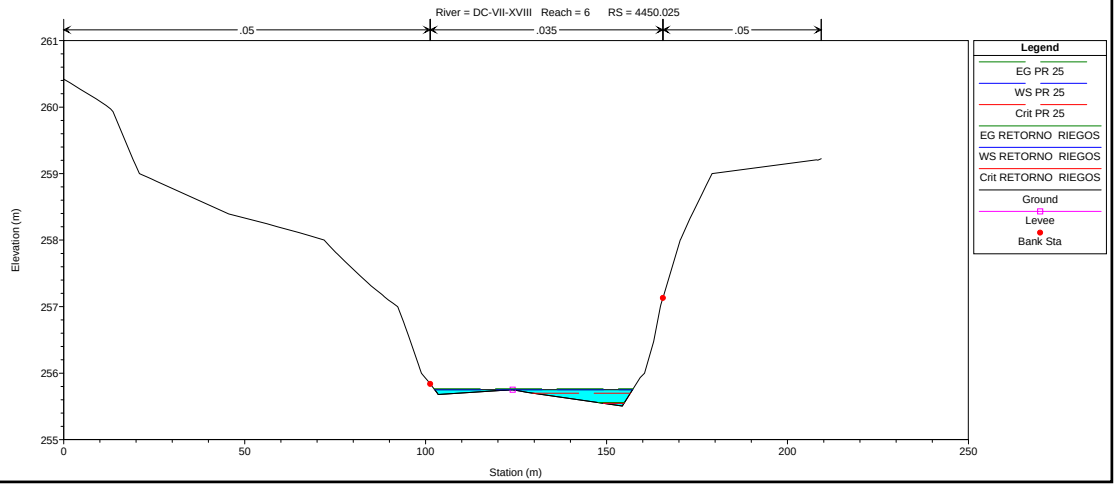

River = DC-VII-XVIII Reach = 6 RS = 4700.024
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

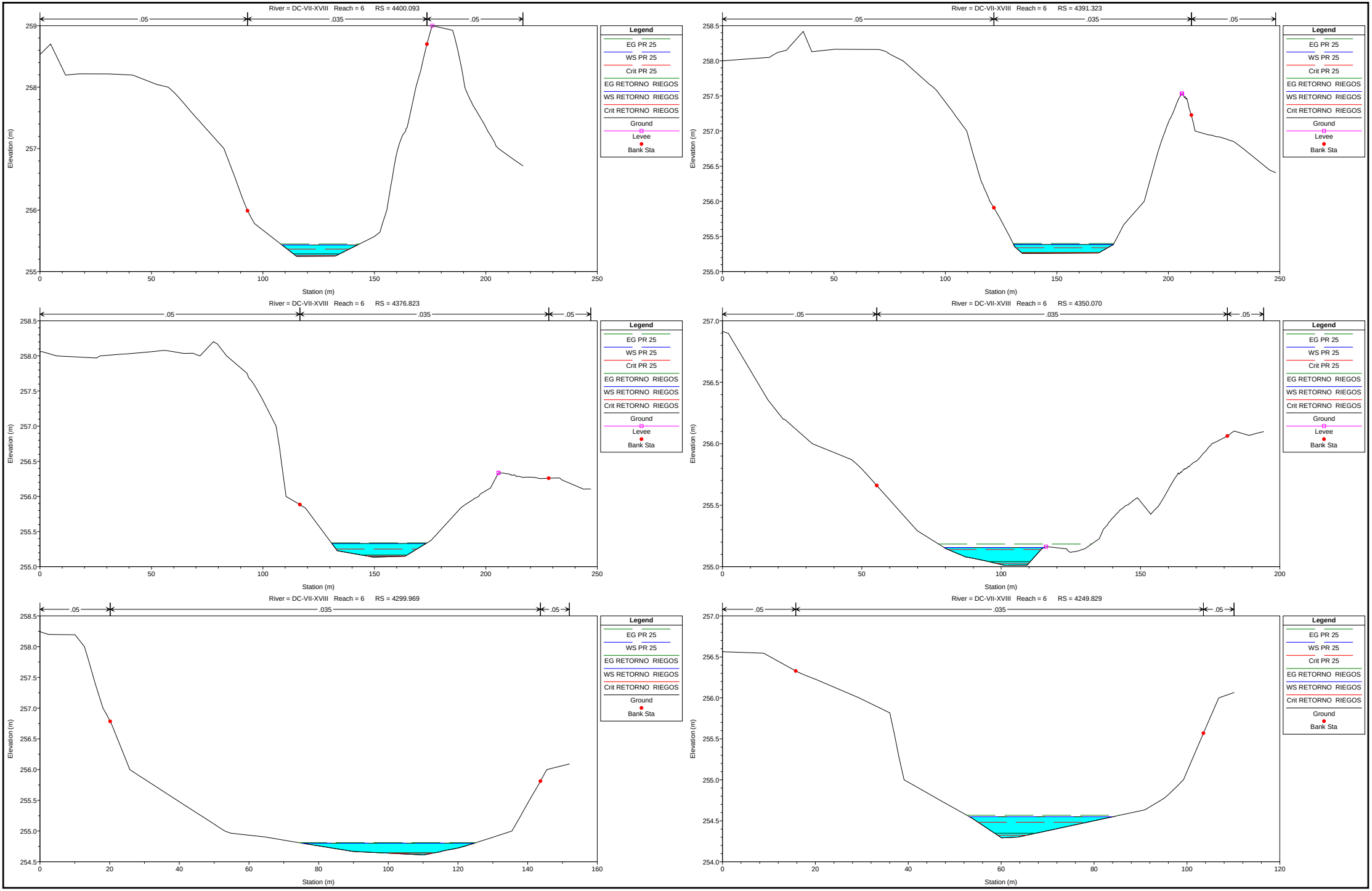

River = DC-VII-XVIII Reach = 6 RS = 4650
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

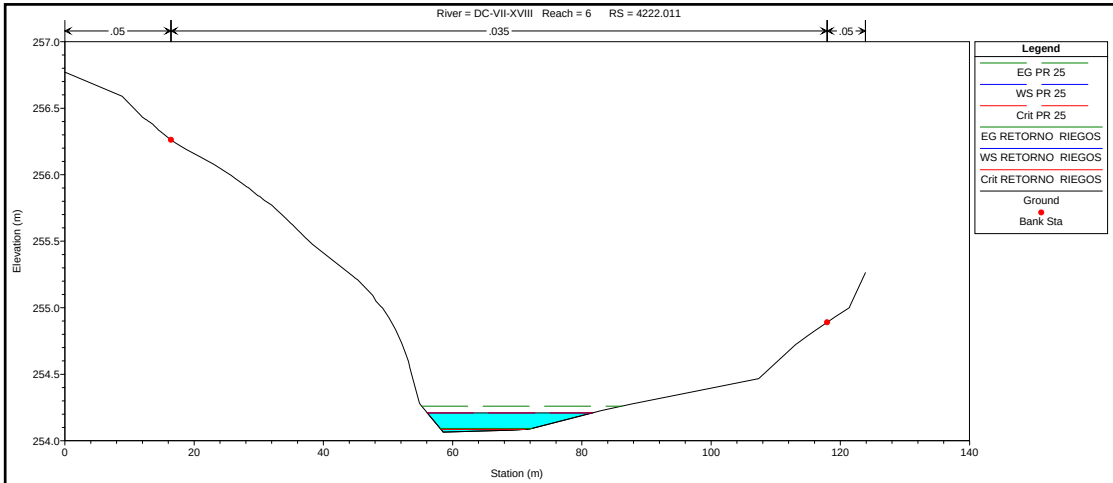

River = DC-VII-XVIII Reach = 6 RS = 4600.011
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

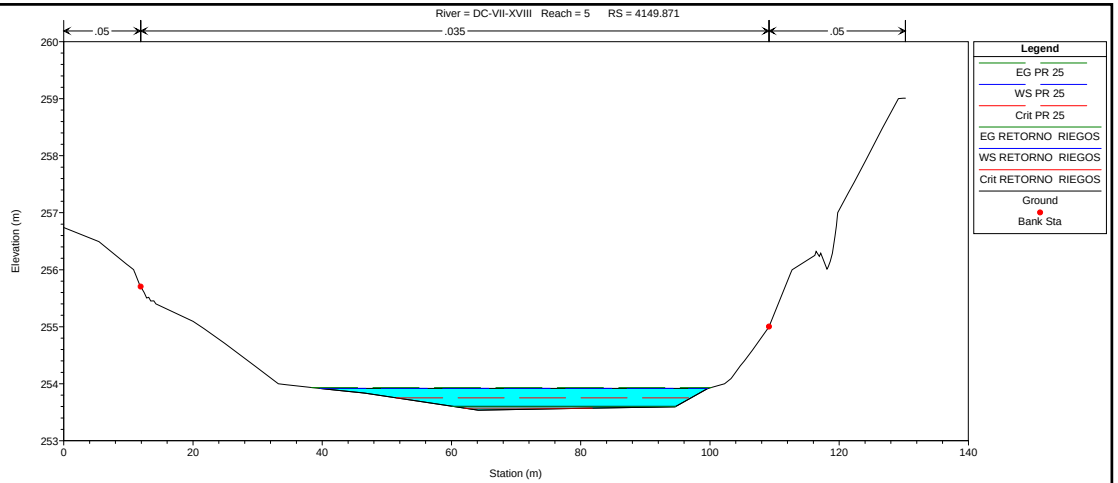

River = DC-VII-XVIII Reach = 6 RS = 4550.102
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

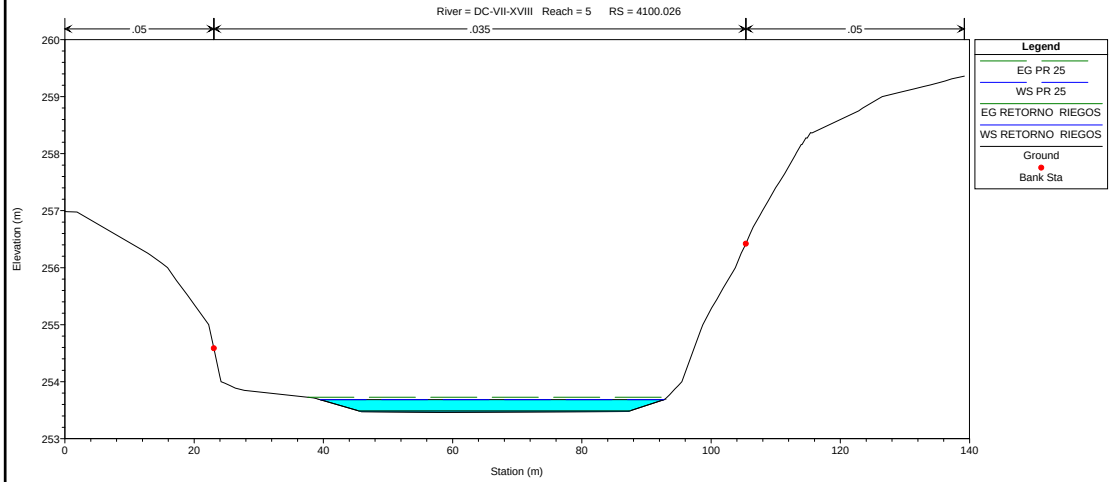

River = DC-VII-XVIII Reach = 6 RS = 4500.008
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

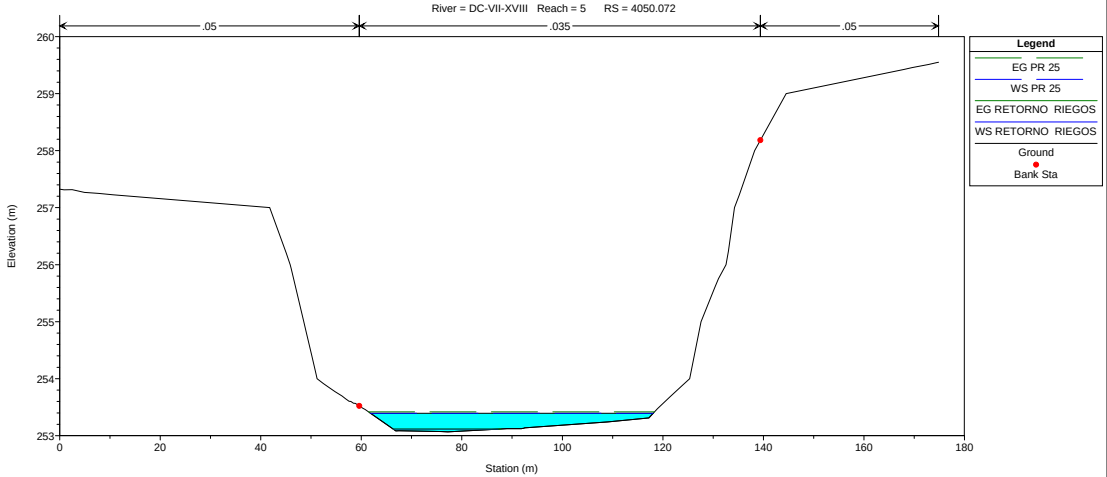

River = DC-VII-XVIII Reach = 6 RS = 4450.025
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

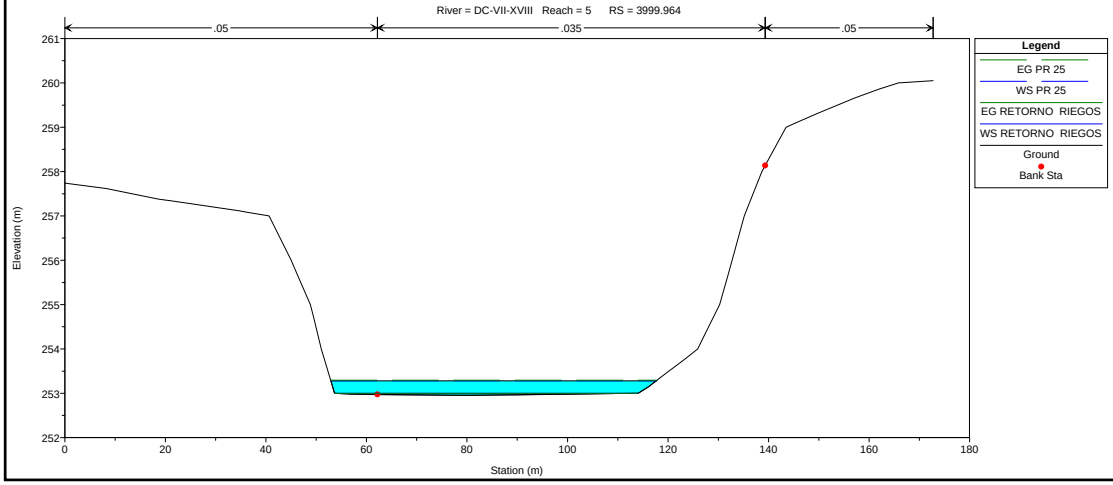

River = DC-VII-XVIII Reach = 6 RS = 4400.093
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4391.323
River = DC-VII-XVIII Reach = 6 RS = 4376.823
River = DC-VII-XVIII Reach = 6 RS = 4350.070
River = DC-VII-XVIII Reach = 6 RS = 4299.969
River = DC-VII-XVIII Reach = 6 RS = 4249.829

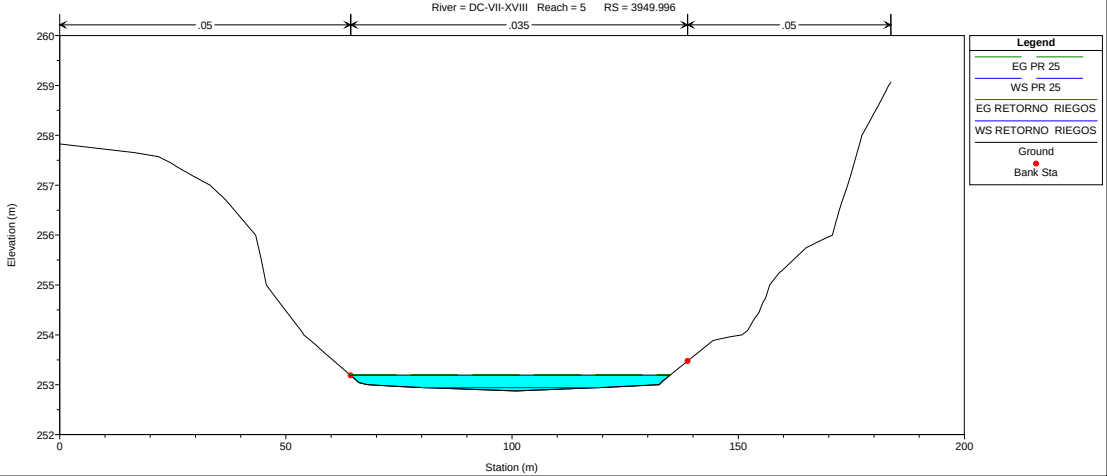

River = DC-VII-XVIII Reach = 6 RS = 4222.011
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

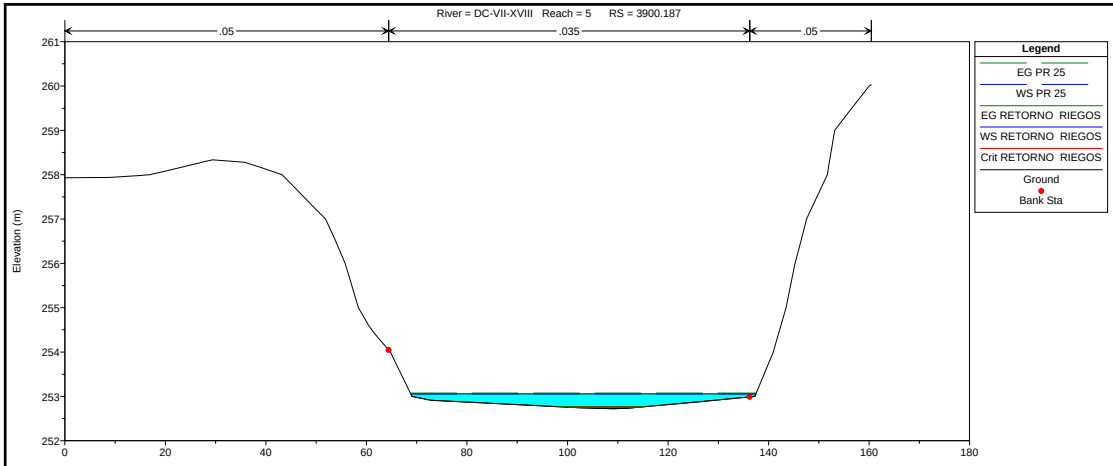

River = DC-VII-XVIII Reach = 5 RS = 4149.871
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

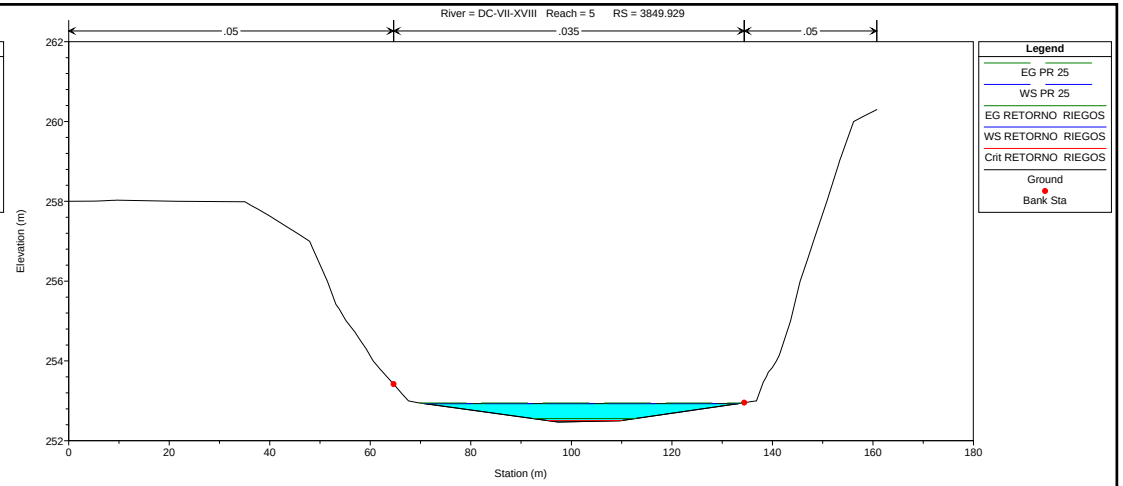

River = DC-VII-XVIII Reach = 5 RS = 4100.026
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

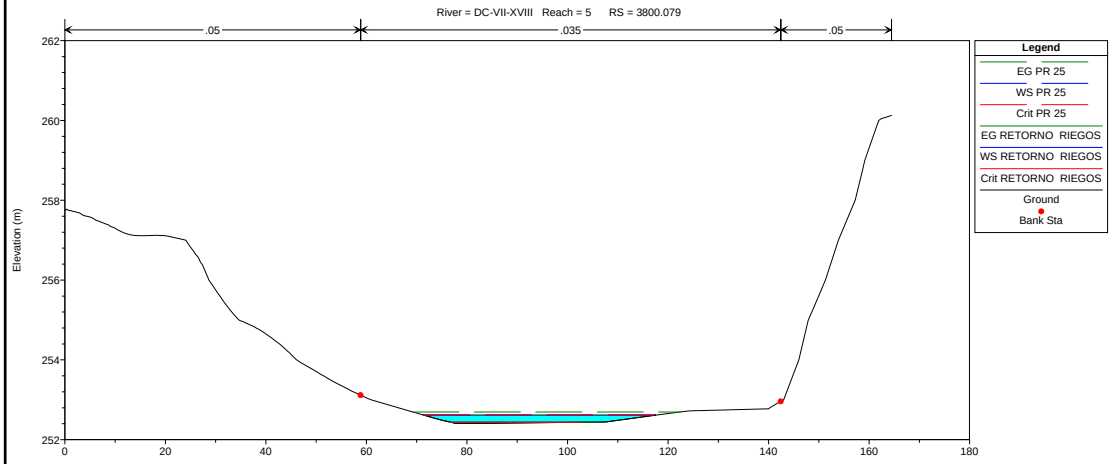

River = DC-VII-XVIII Reach = 5 RS = 4050.072
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

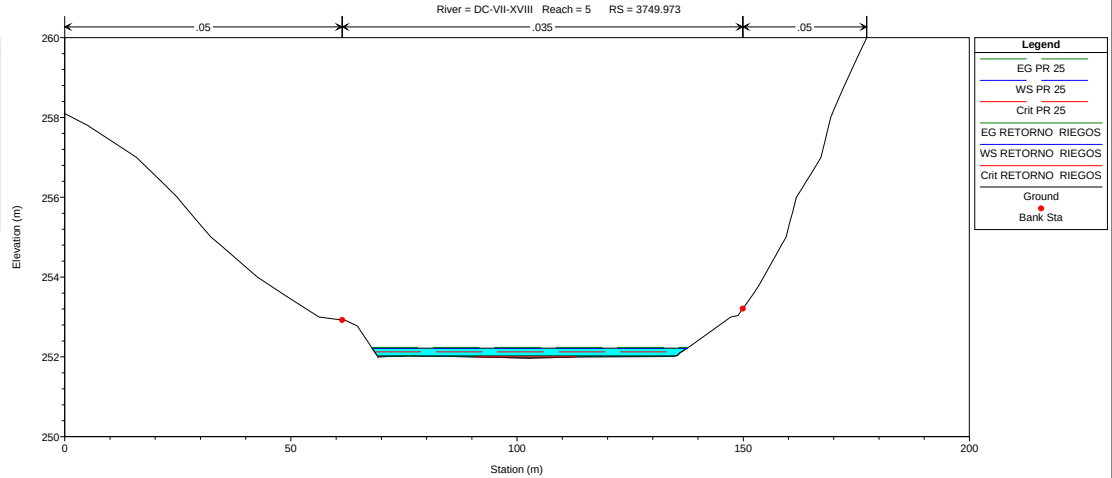

River = DC-VII-XVIII Reach = 5 RS = 3999.964
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

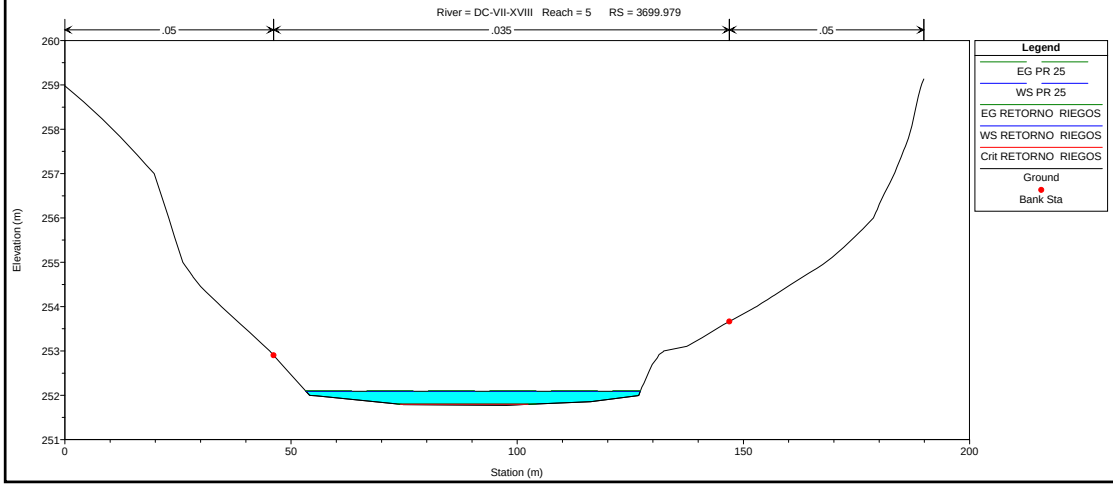

River = DC-VII-XVIII Reach = 5 RS = 3949.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

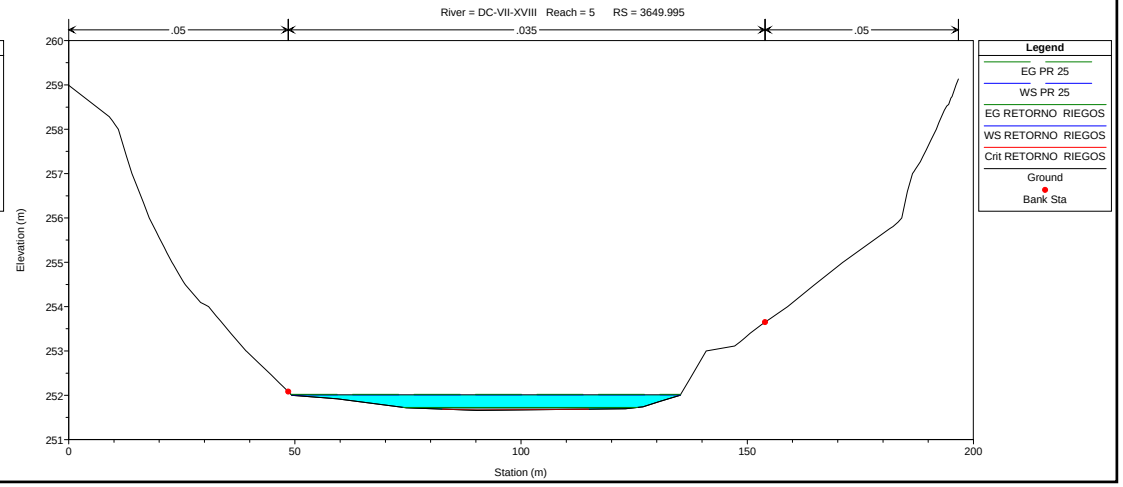

River = DC-VII-XVIII Reach = 5 RS = 3900.187
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

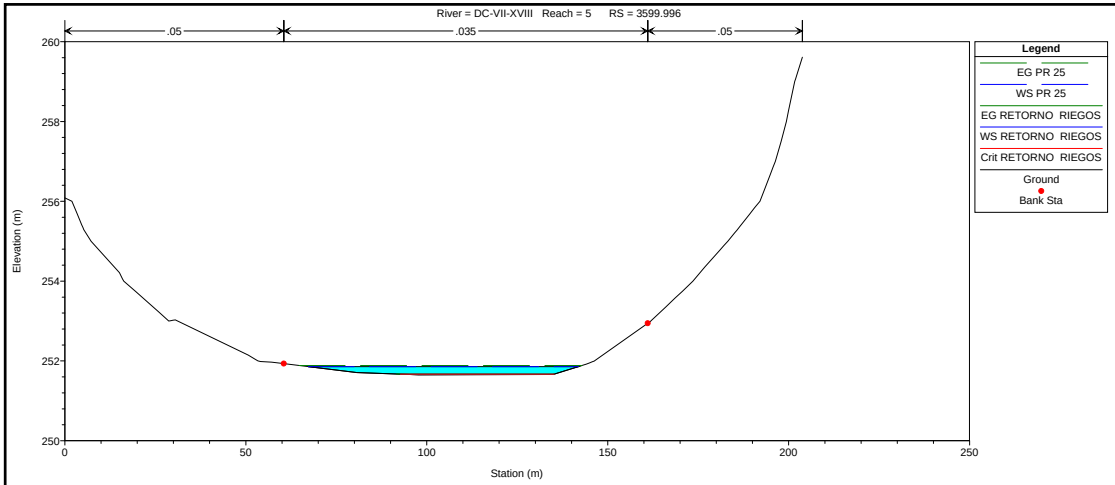

River = DC-VII-XVIII Reach = 5 RS = 3849.929
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

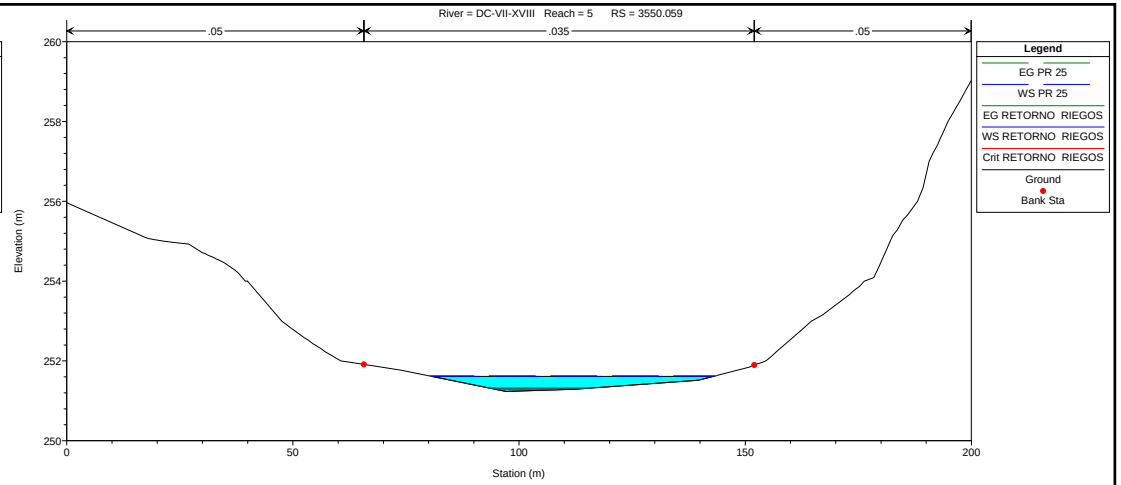

River = DC-VII-XVIII Reach = 5 RS = 3800.079
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

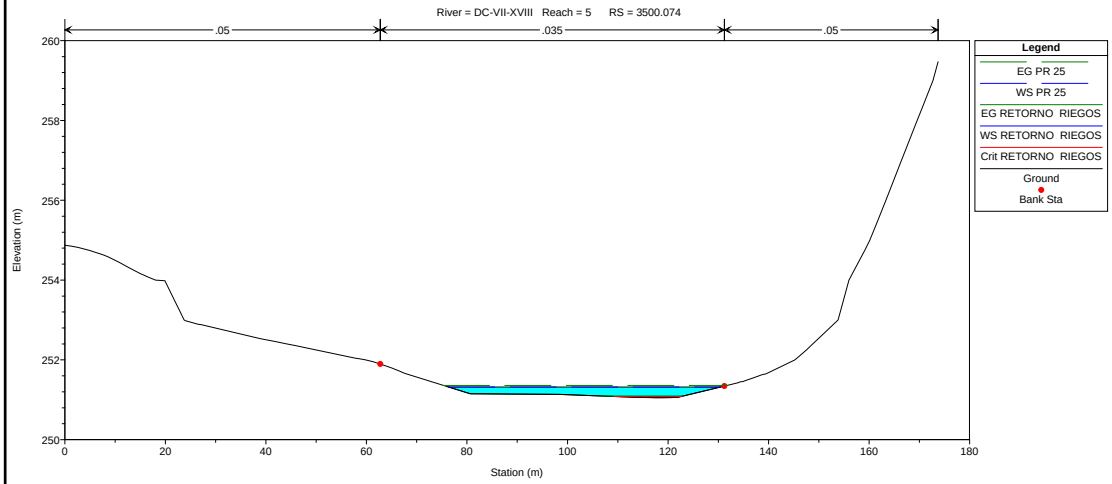

River = DC-VII-XVIII Reach = 5 RS = 3749.973
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

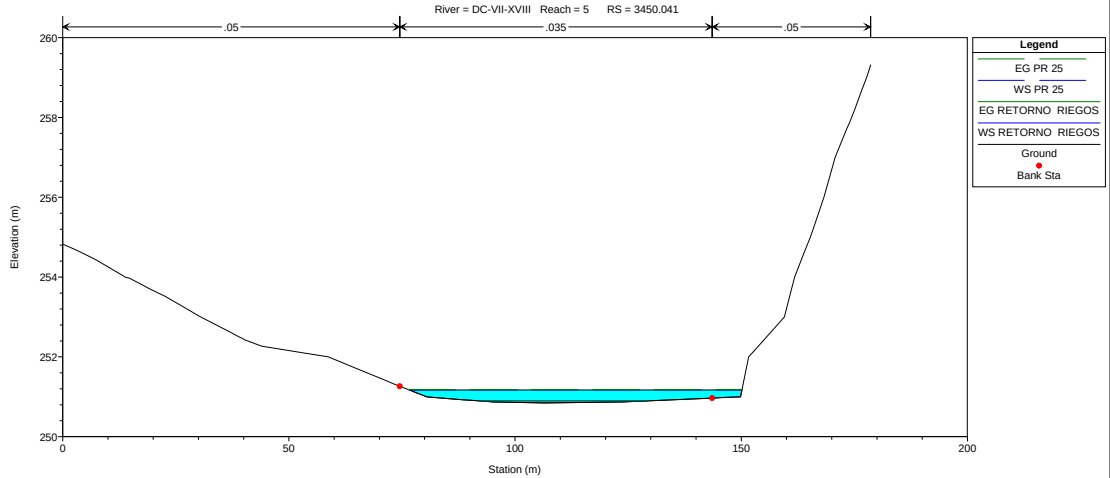

River = DC-VII-XVIII Reach = 5 RS = 3699.979
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

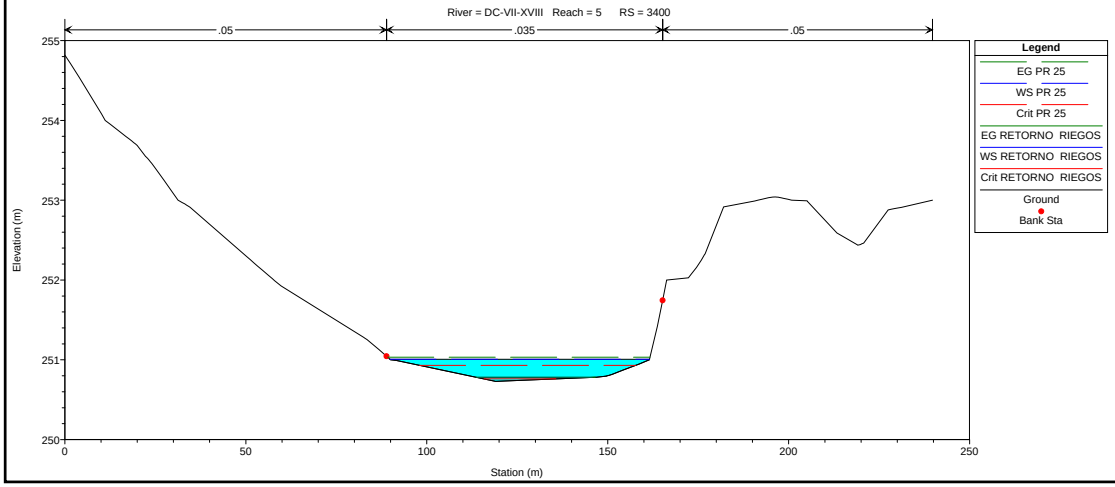

River = DC-VII-XVIII Reach = 5 RS = 3649.995
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

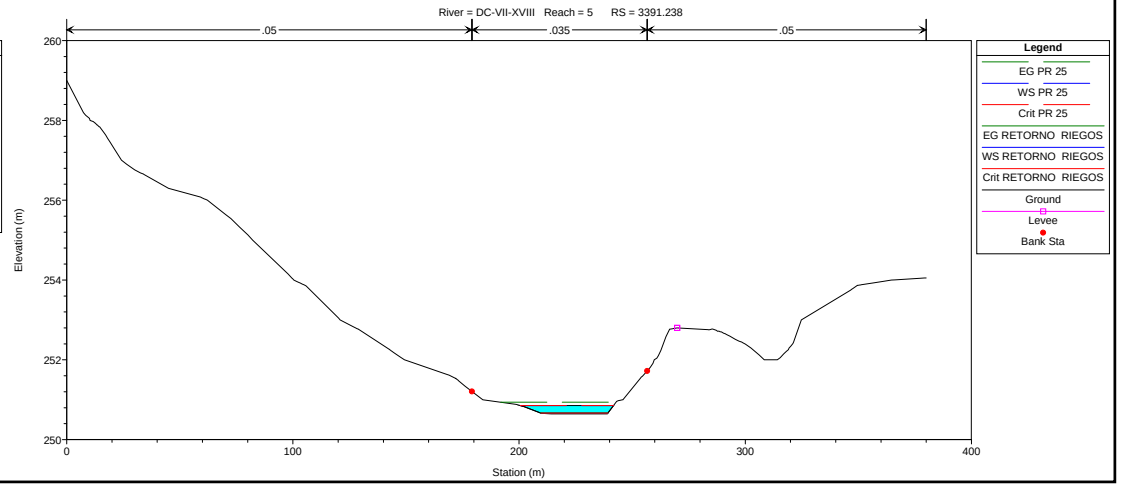

River = DC-VII-XVIII Reach = 5 RS = 3599.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

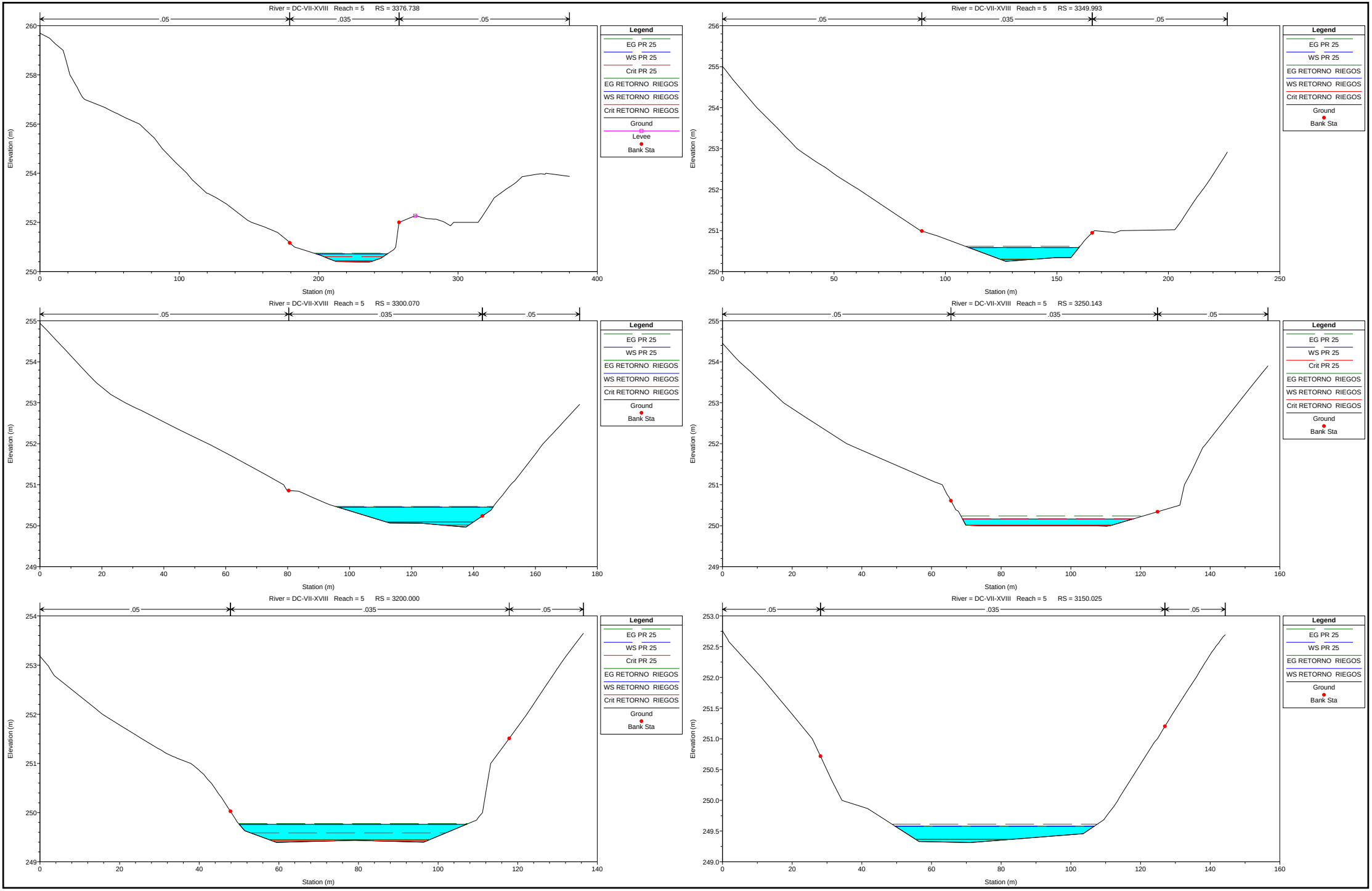

River = DC-VII-XVIII Reach = 5 RS = 3550.059
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

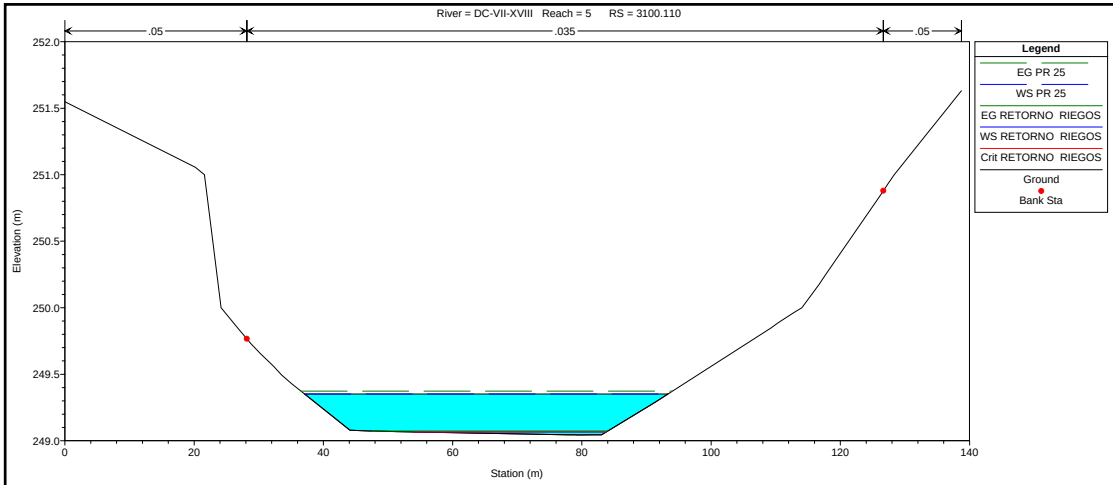

River = DC-VII-XVIII Reach = 5 RS = 3500.074
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

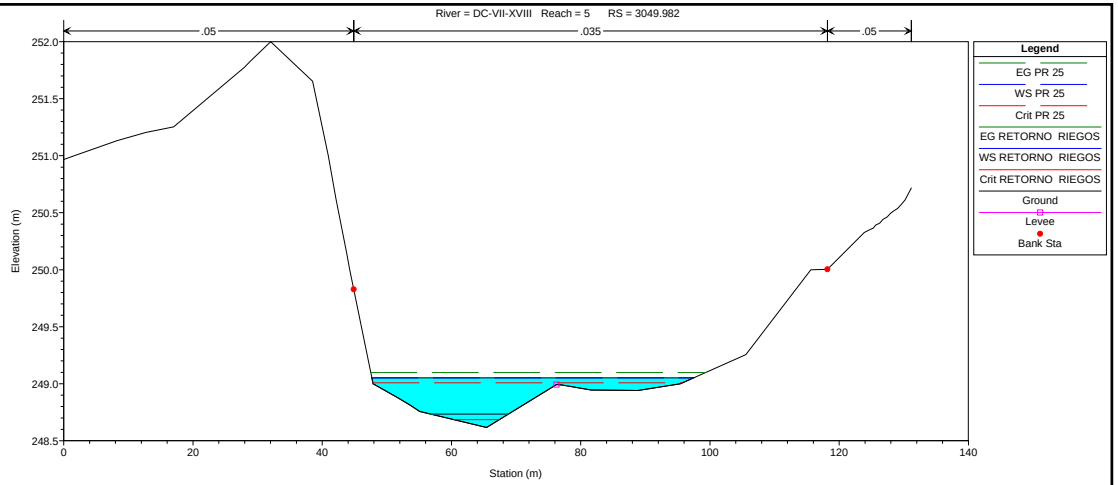

River = DC-VII-XVIII Reach = 5 RS = 3450.041
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

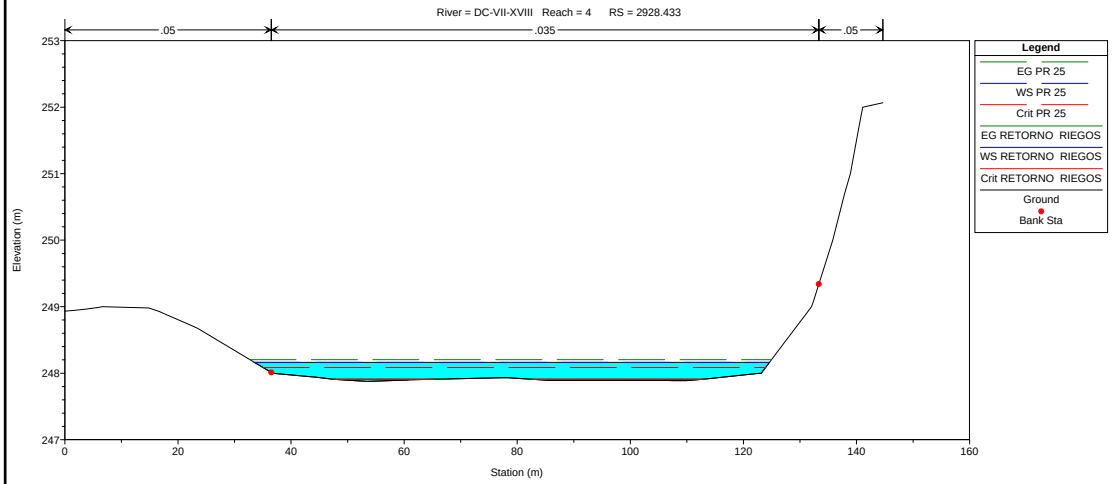

River = DC-VII-XVIII Reach = 5 RS = 3400
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

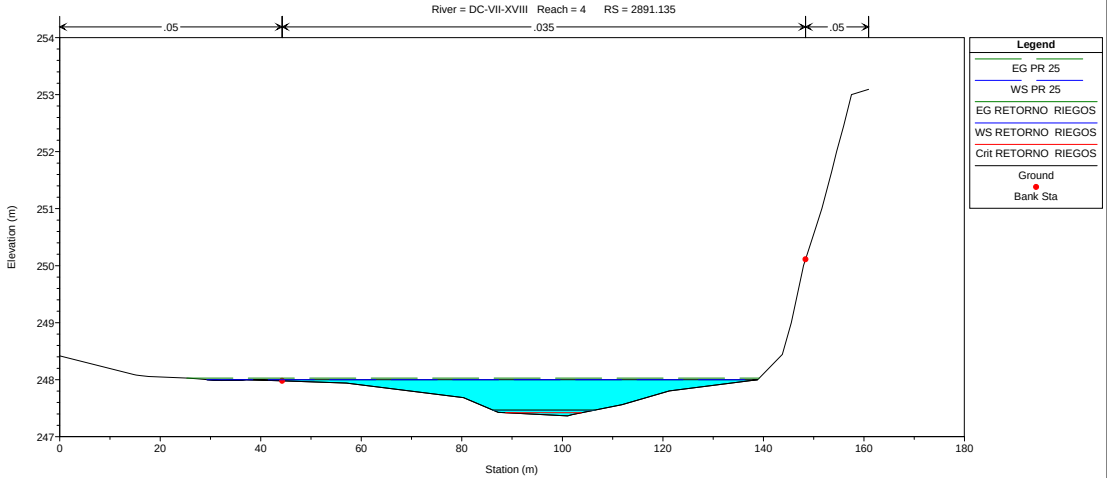

River = DC-VII-XVIII Reach = 5 RS = 3391.238
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

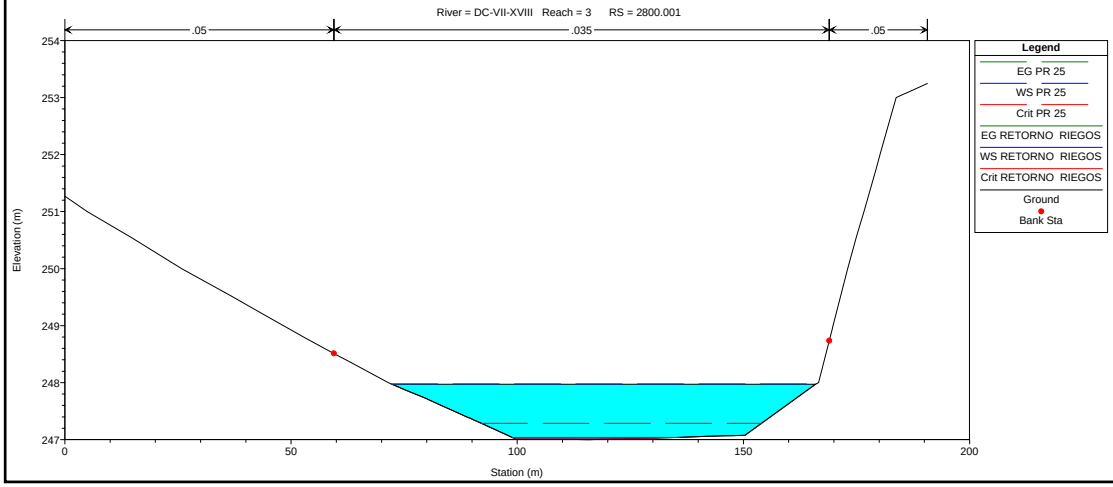

River = DC-VII-XVIII Reach = 5 RS = 3376.738
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 3349.993
River = DC-VII-XVIII Reach = 5 RS = 3300.070
River = DC-VII-XVIII Reach = 5 RS = 3250.143
River = DC-VII-XVIII Reach = 5 RS = 3200.000
River = DC-VII-XVIII Reach = 5 RS = 3150.025

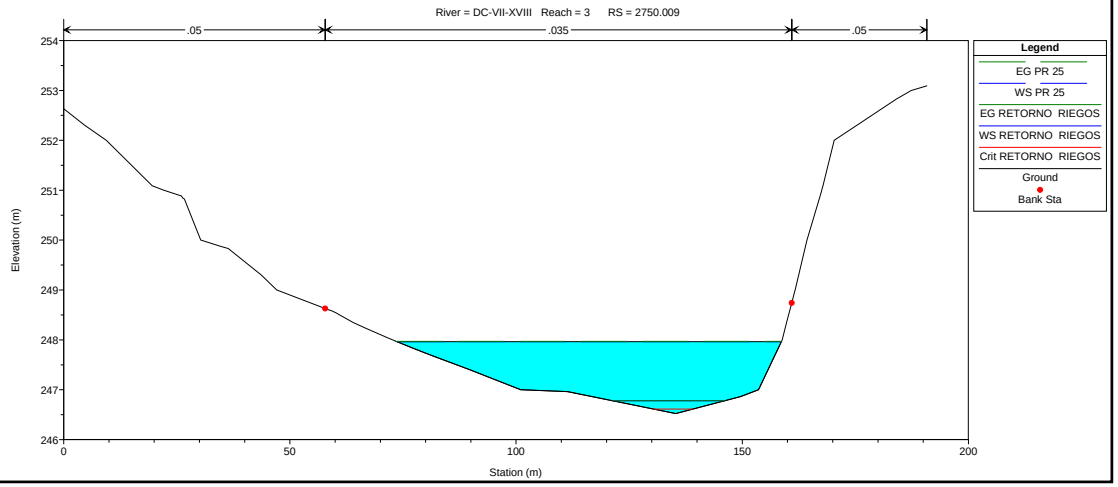

River = DC-VII-XVIII Reach = 5 RS = 3100.110
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

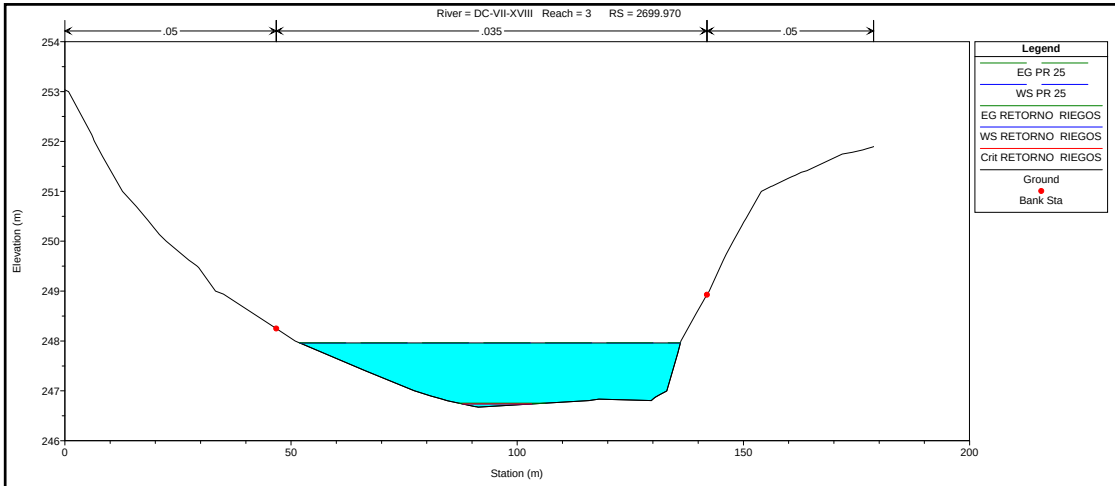

River = DC-VII-XVIII Reach = 5 RS = 3049.982
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

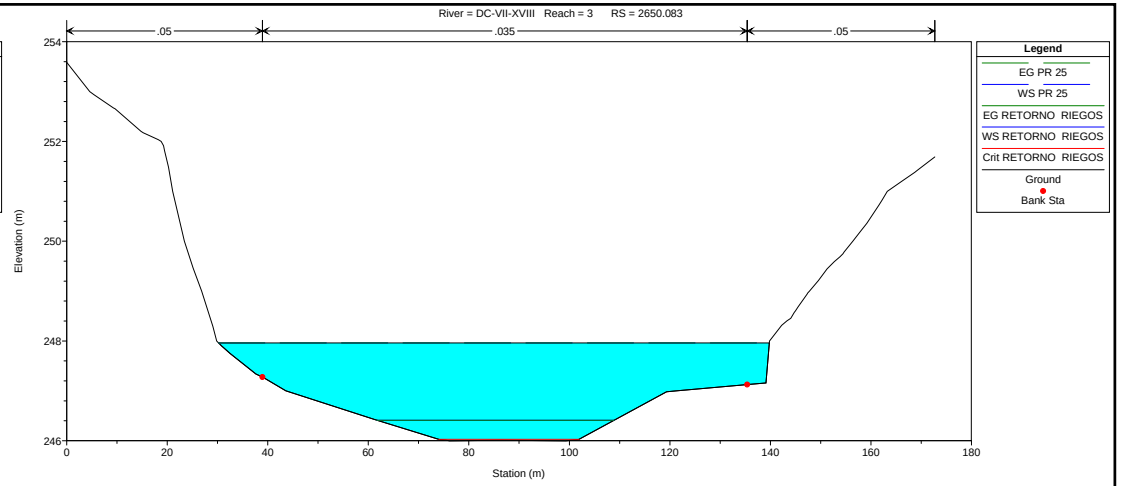

River = DC-VII-XVIII Reach = 4 RS = 2928.433
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

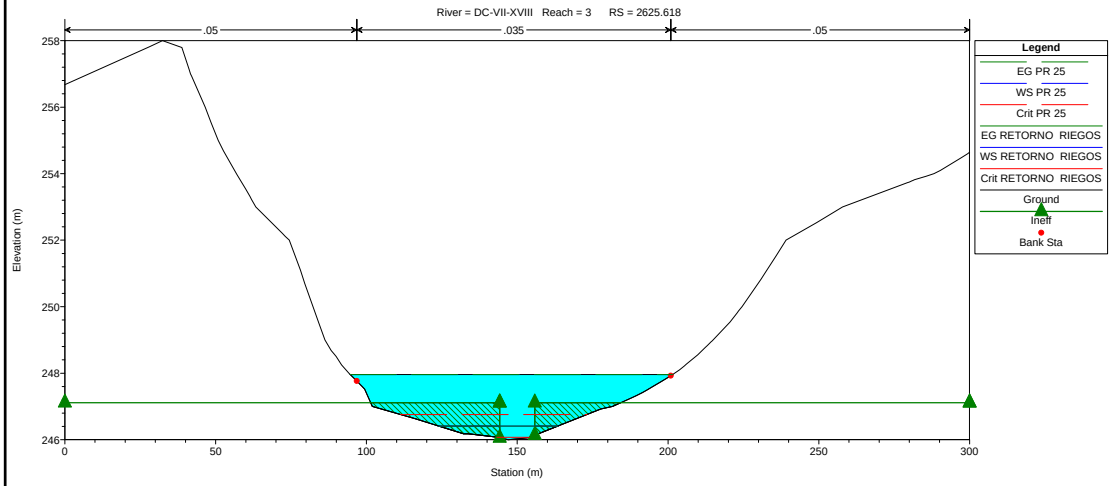

River = DC-VII-XVIII Reach = 4 RS = 2891.135
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

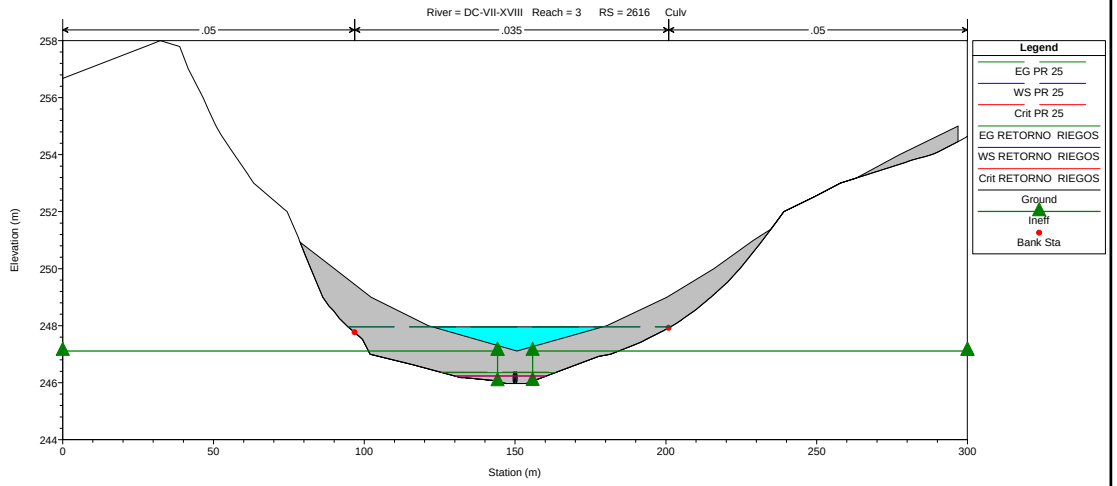

River = DC-VII-XVIII Reach = 3 RS = 2800.001
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

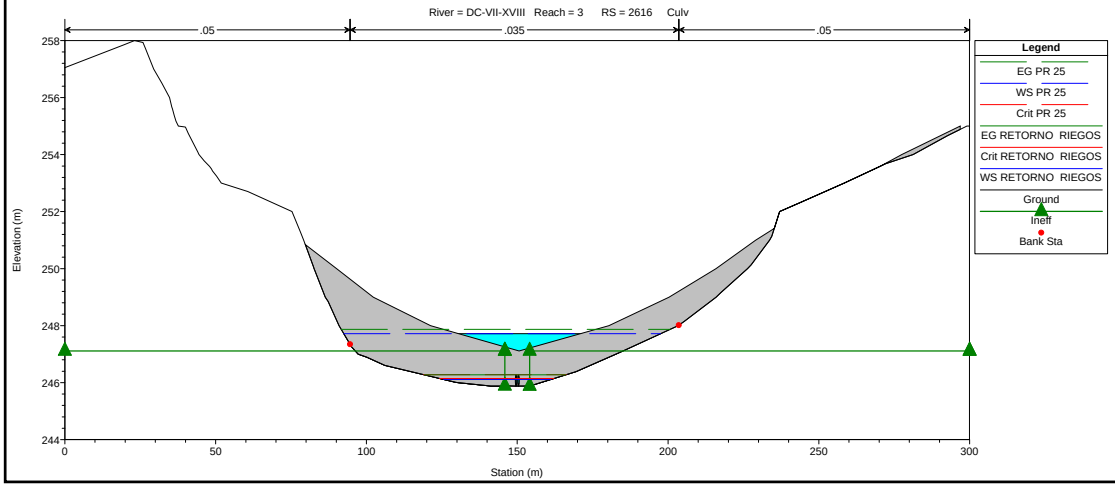

River = DC-VII-XVIII Reach = 3 RS = 2750.009
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

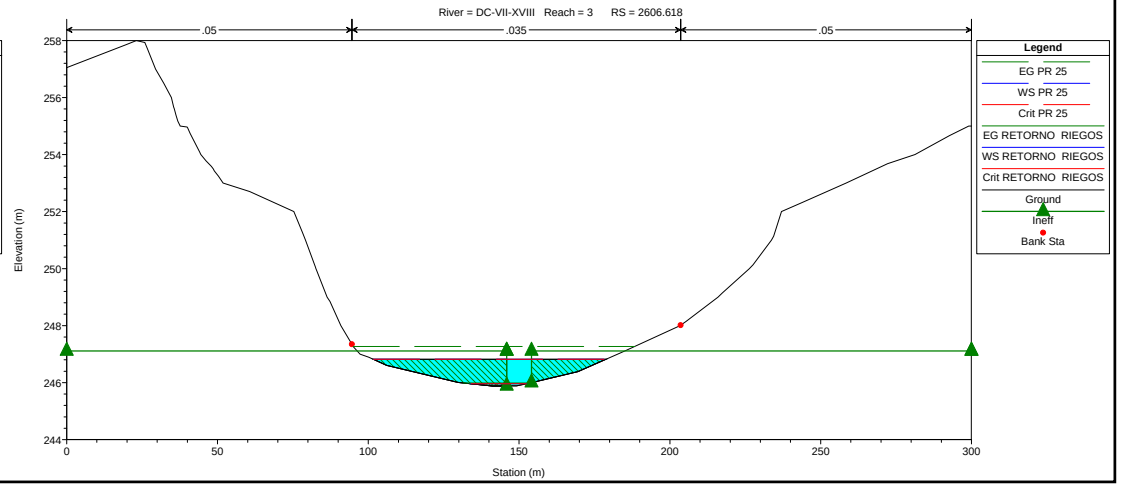

River = DC-VII-XVIII Reach = 3 RS = 2699.970
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

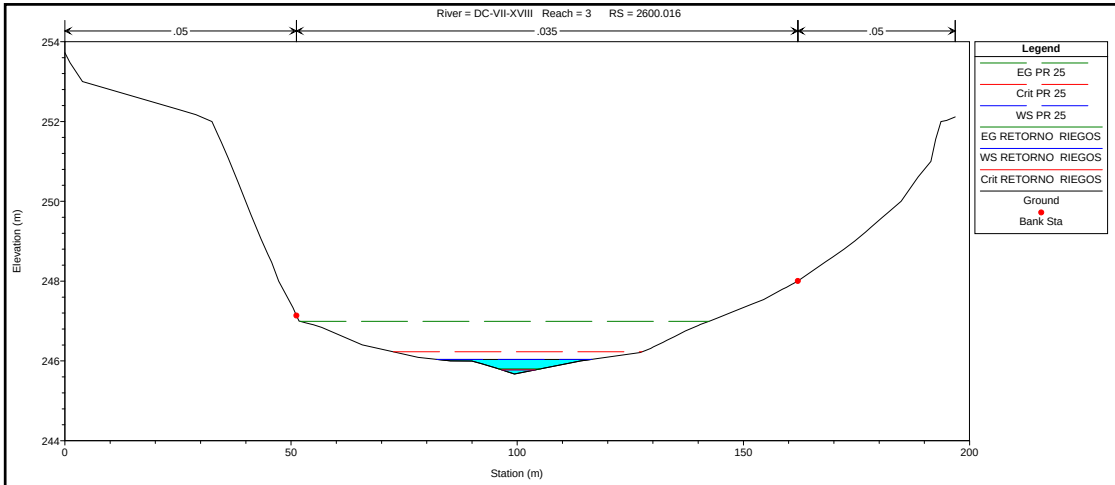

River = DC-VII-XVIII Reach = 3 RS = 2650.083
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

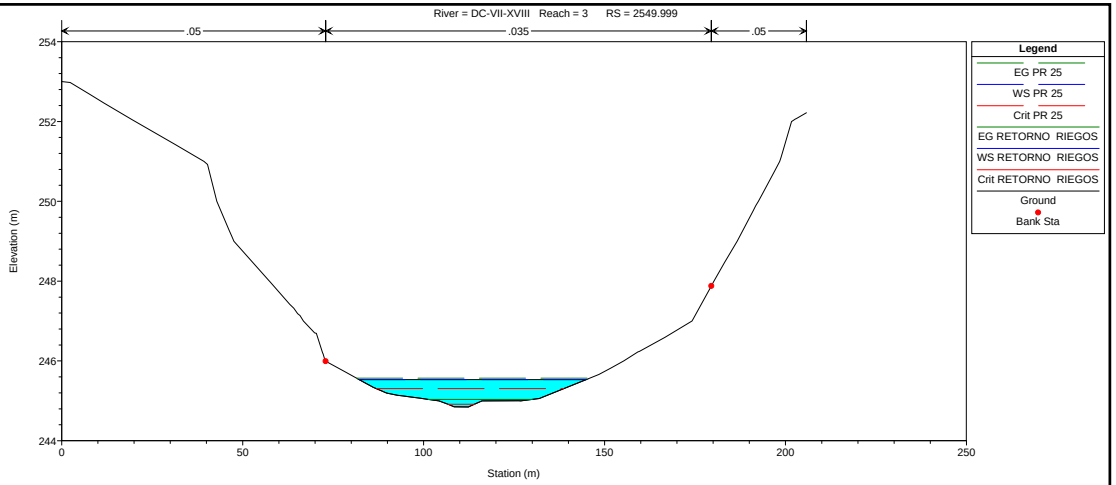

River = DC-VII-XVIII Reach = 3 RS = 2625.618
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

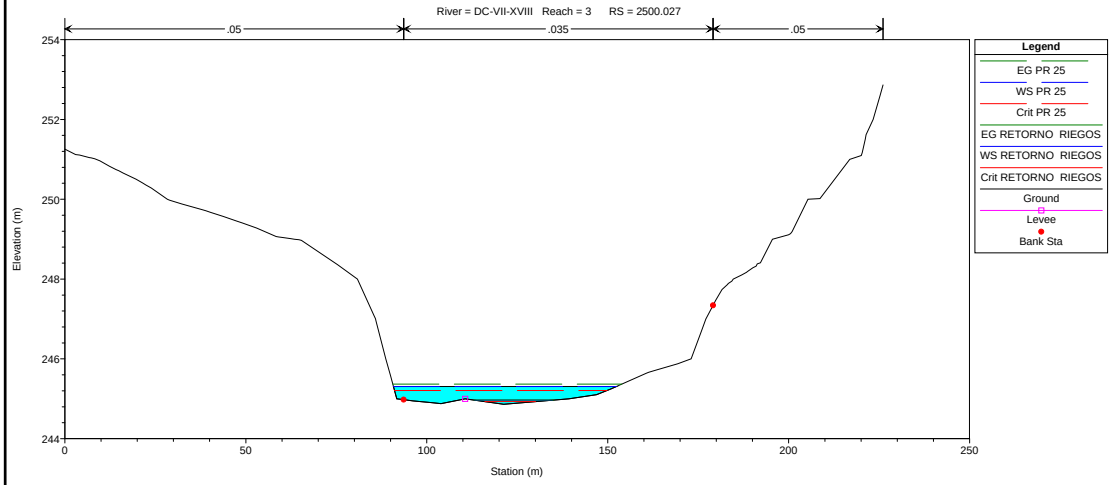

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

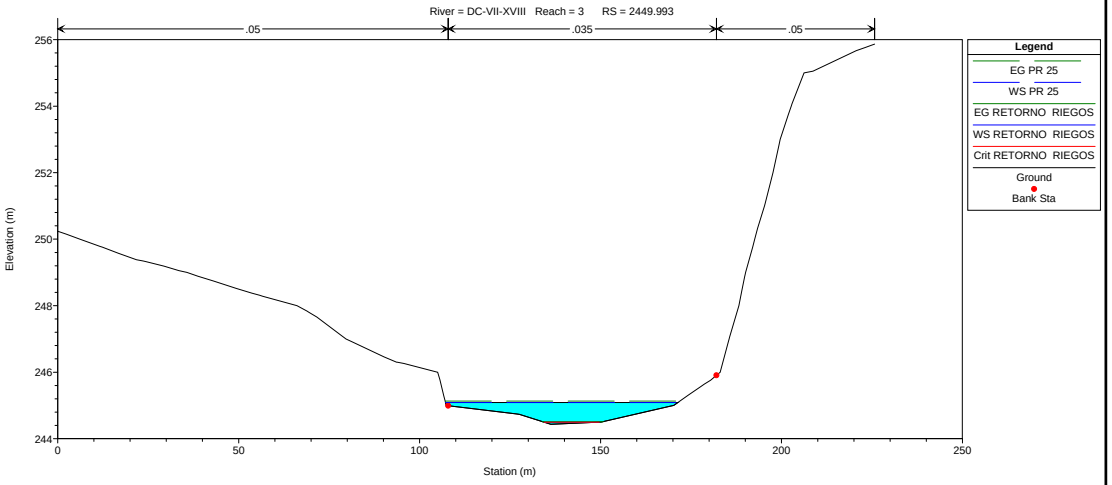

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

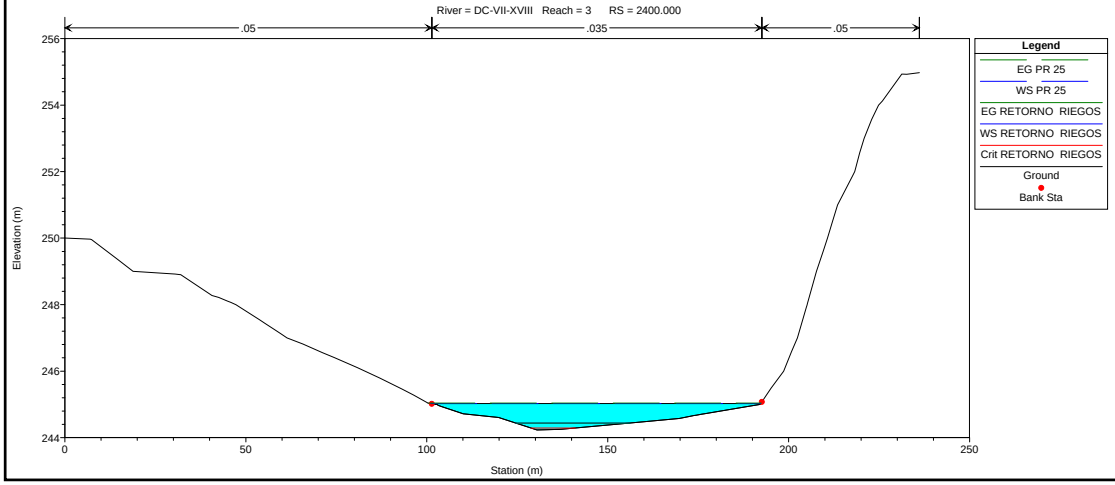

River = DC-VII-XVIII Reach = 3 RS = 2606.618
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

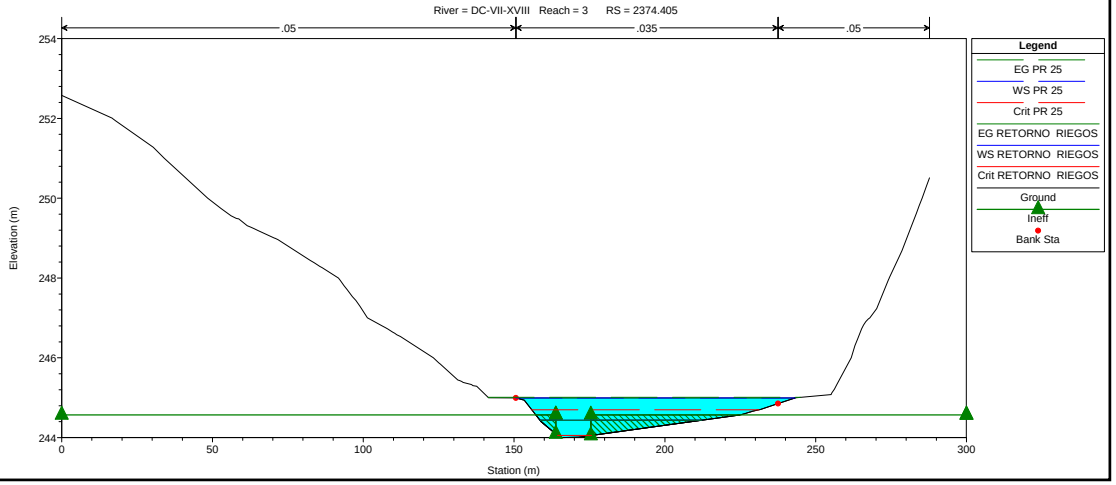

River = DC-VII-XVIII Reach = 3 RS = 2600.016
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
Crit PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

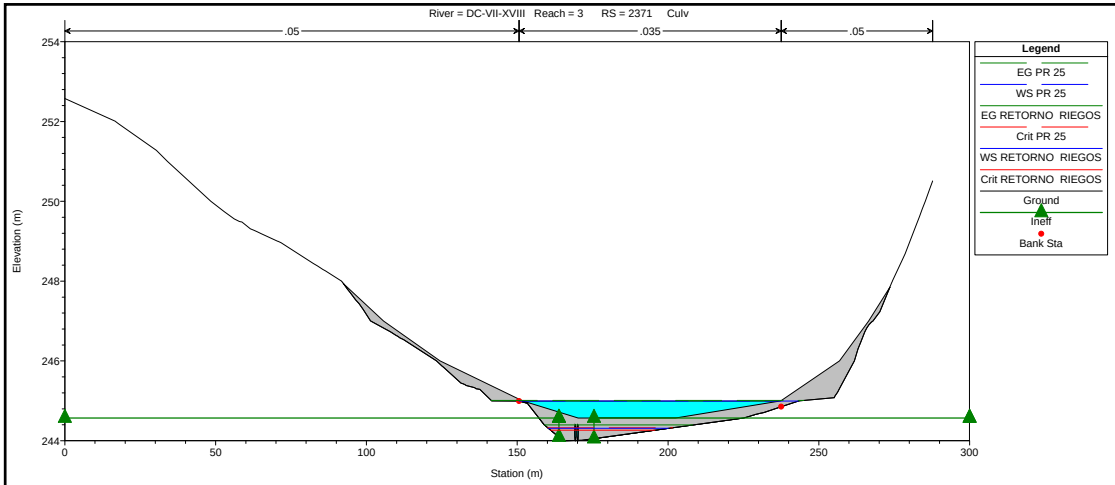

River = DC-VII-XVIII Reach = 3 RS = 2549.999
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

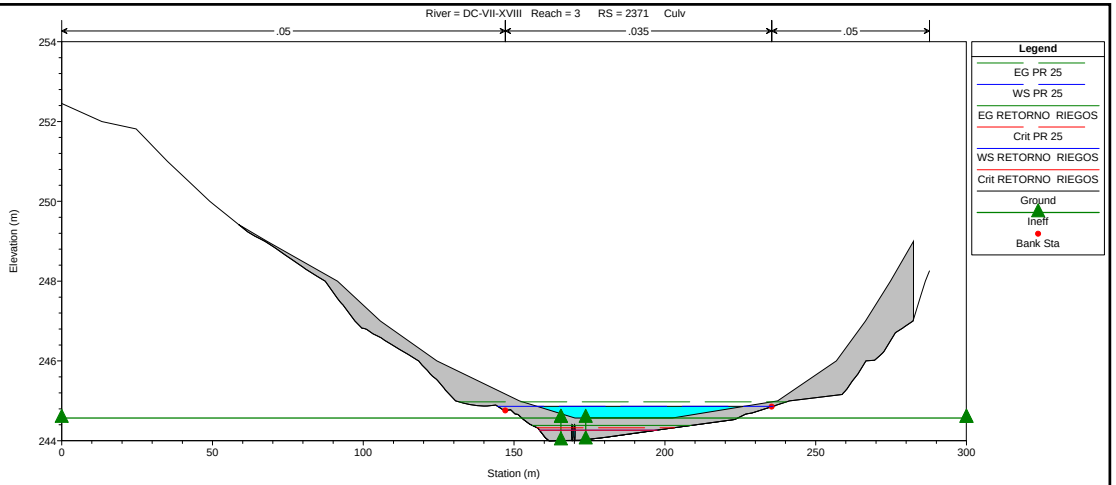

River = DC-VII-XVIII Reach = 3 RS = 2500.027
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

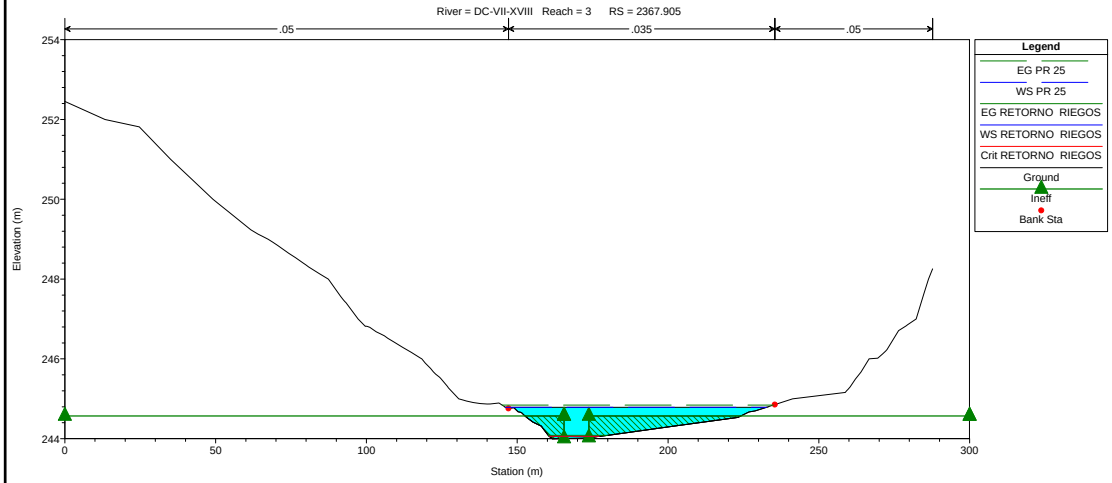

River = DC-VII-XVIII Reach = 3 RS = 2449.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

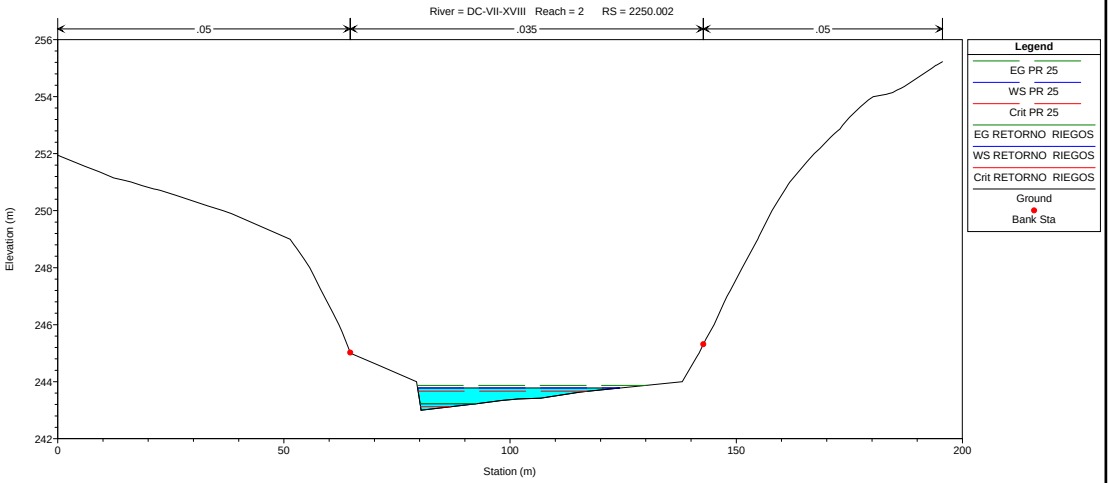

River = DC-VII-XVIII Reach = 3 RS = 2400.000
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

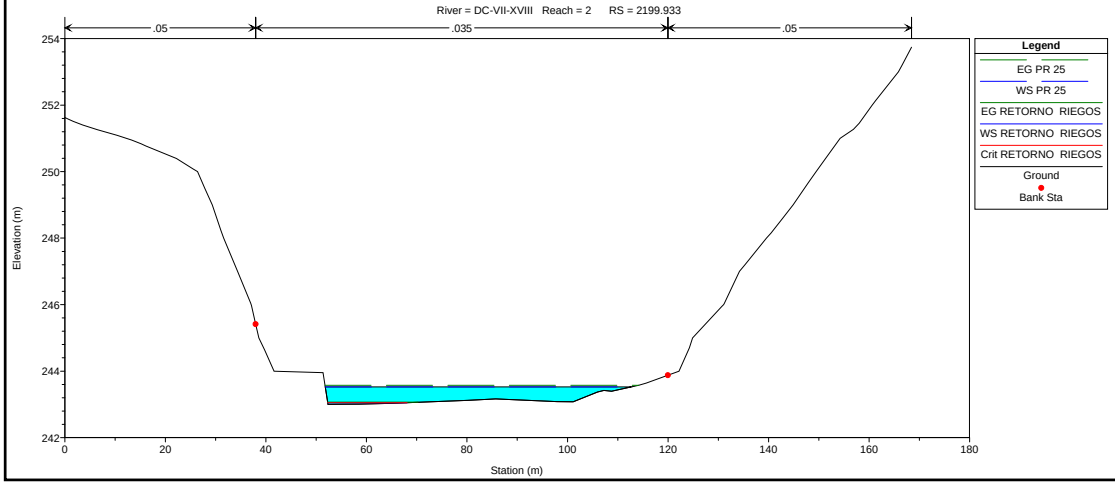

River = DC-VII-XVIII Reach = 3 RS = 2374.405
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

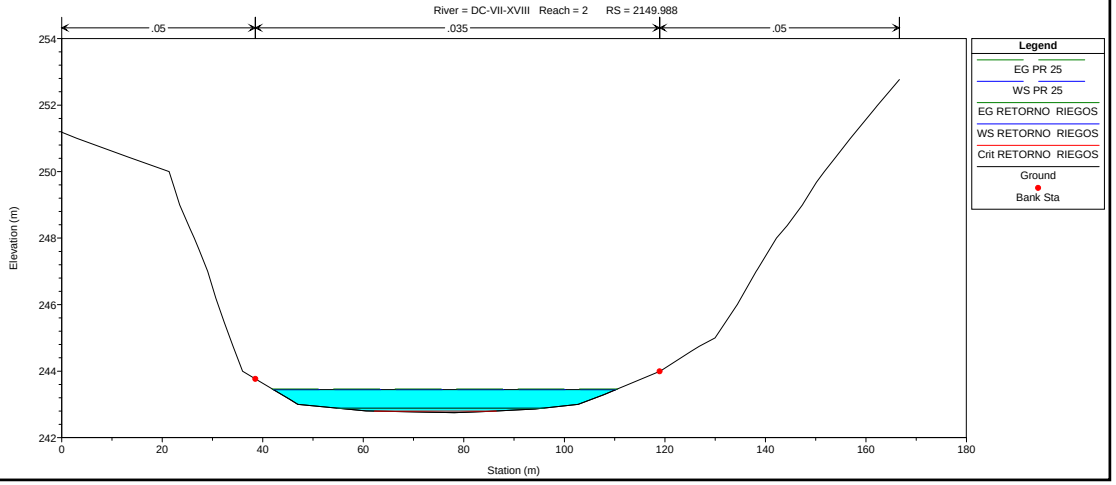

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
Crit PR 25
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

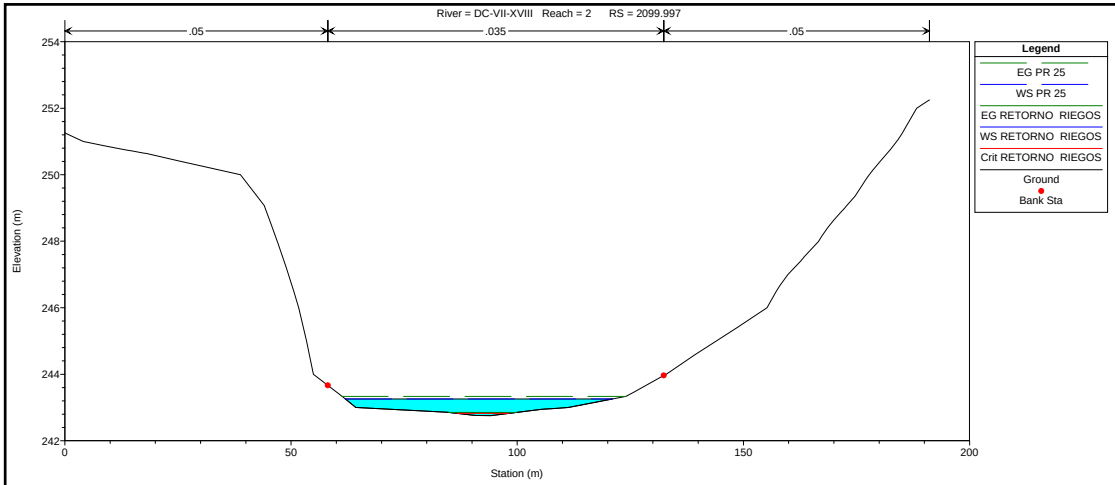

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
Crit PR 25
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

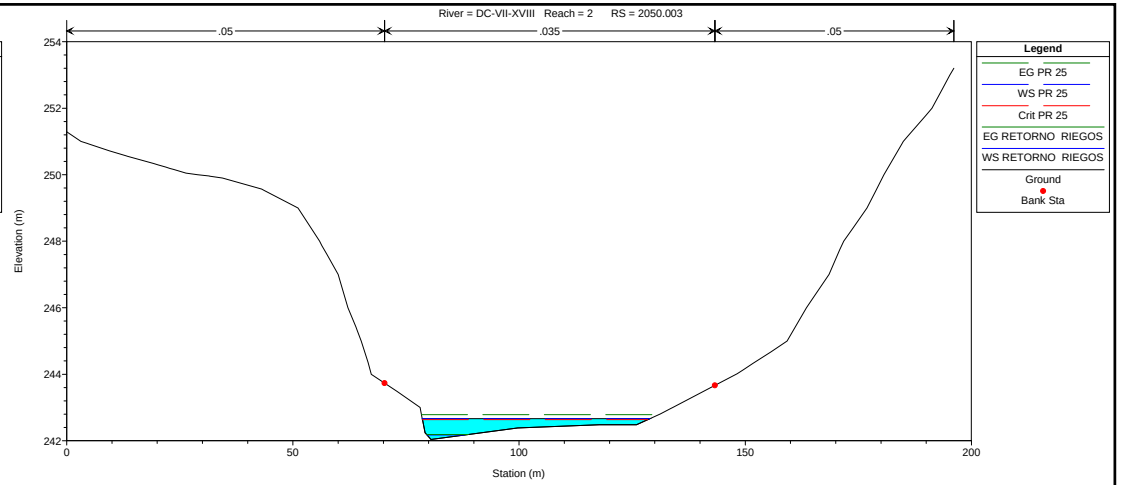

River = DC-VII-XVIII Reach = 3 RS = 2367.905
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

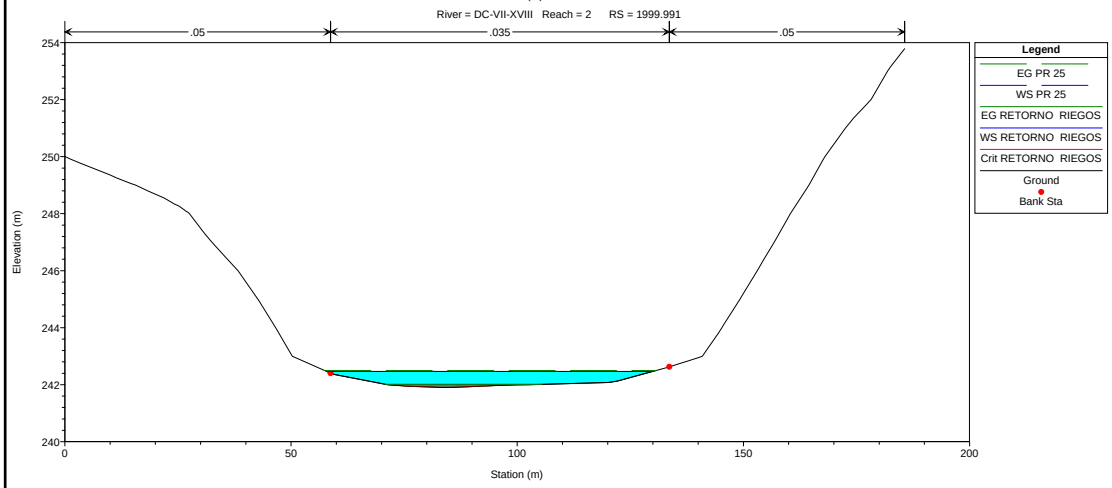

River = DC-VII-XVIII Reach = 2 RS = 2250.002
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

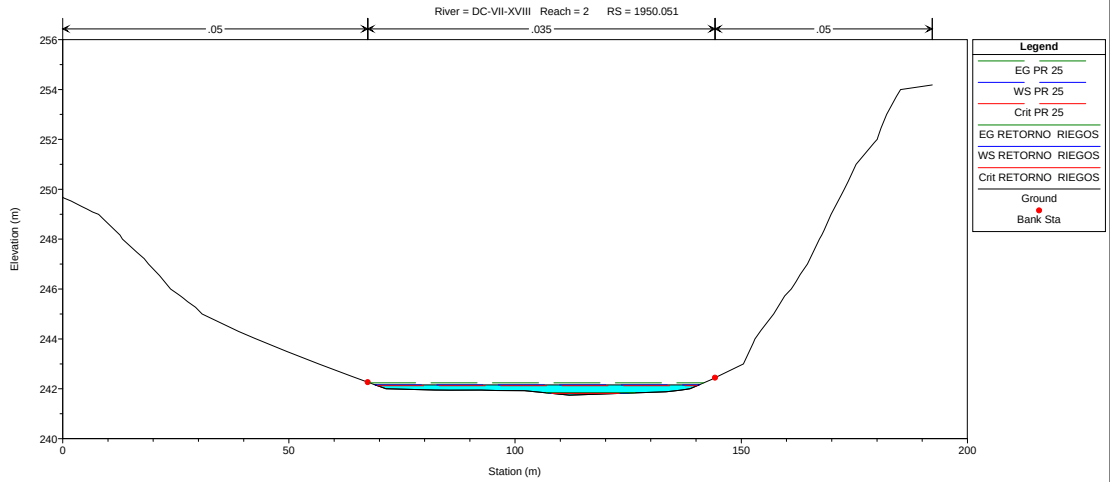

River = DC-VII-XVIII Reach = 2 RS = 2199.933
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

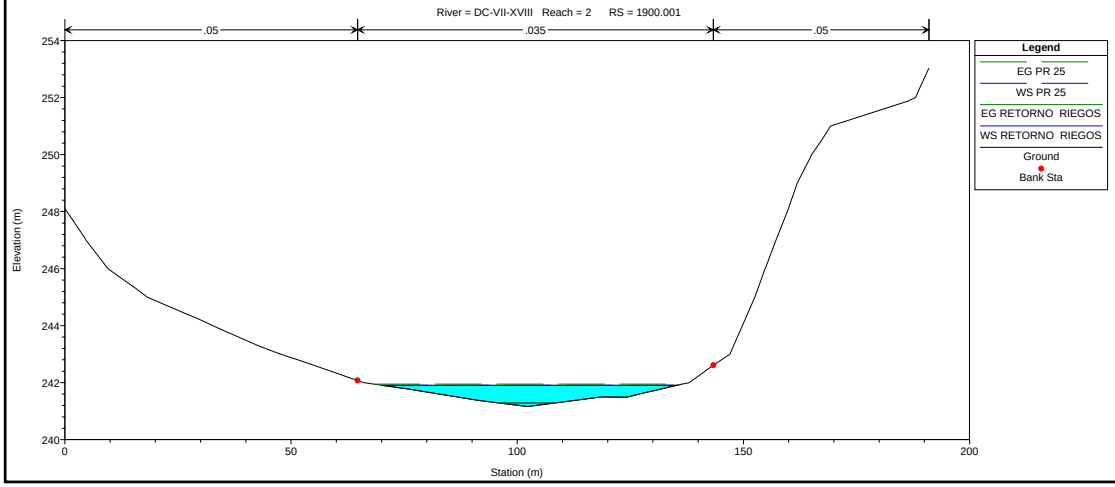

River = DC-VII-XVIII Reach = 2 RS = 2149.988
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

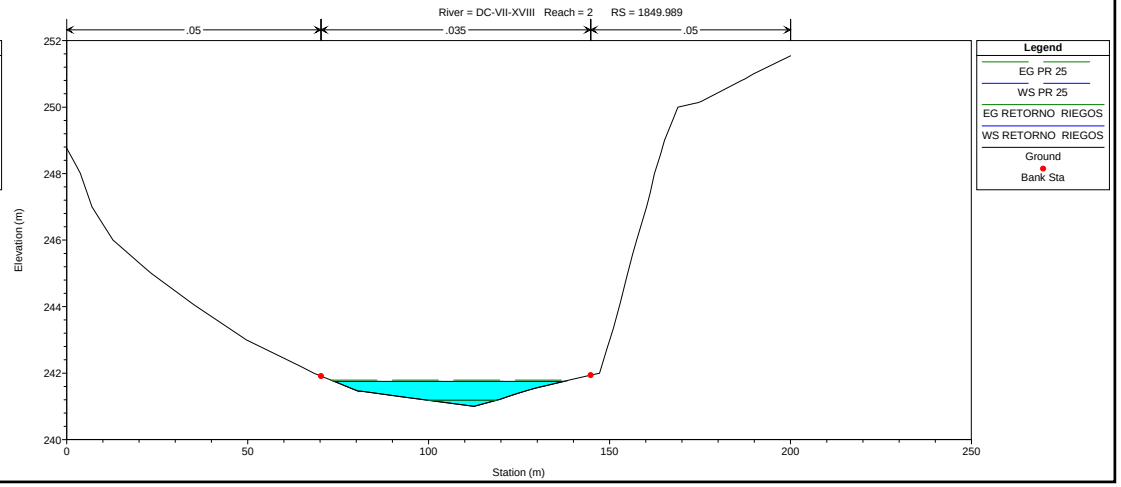

River = DC-VII-XVIII Reach = 2 RS = 2099.997
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

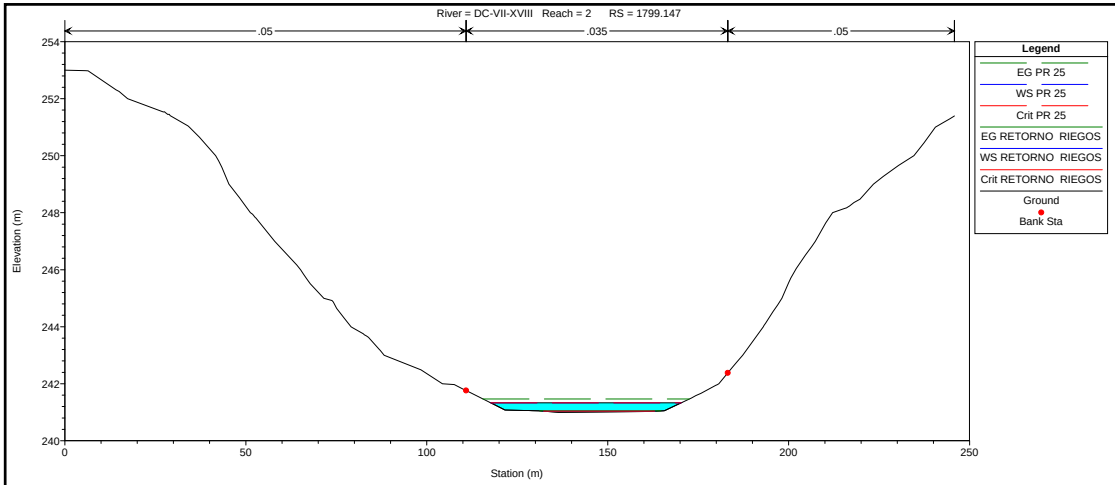

River = DC-VII-XVIII Reach = 2 RS = 2050.003
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

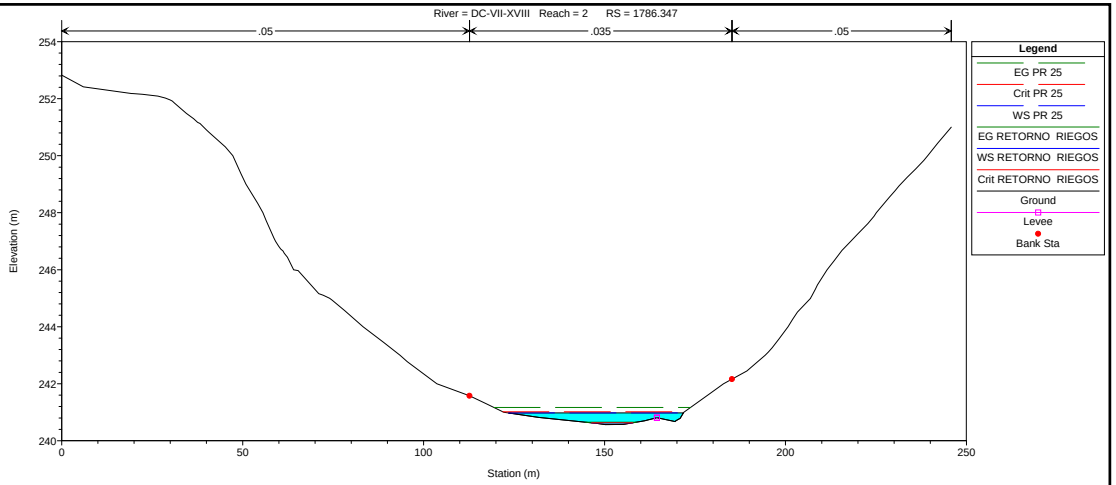

River = DC-VII-XVIII Reach = 2 RS = 1999.991
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

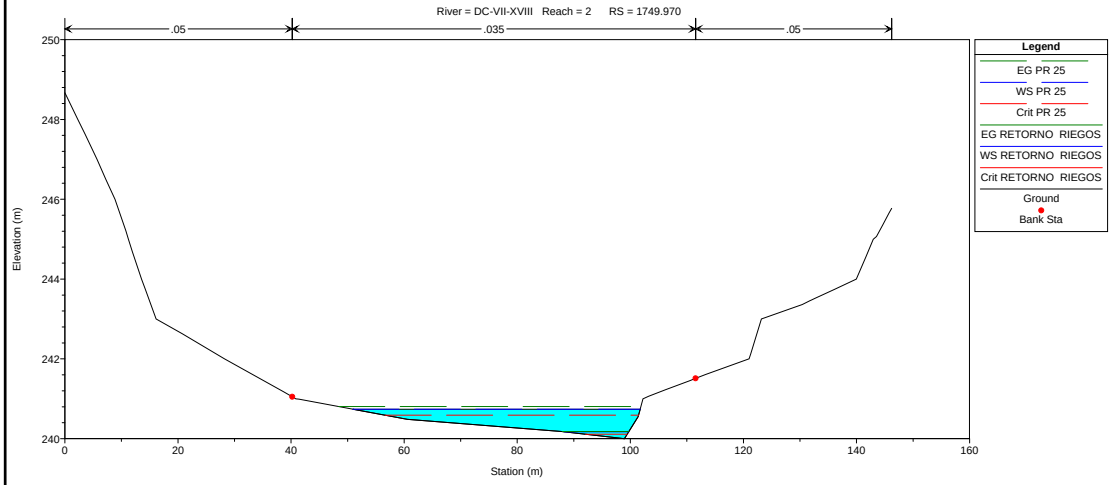

River = DC-VII-XVIII Reach = 2 RS = 1950.051
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

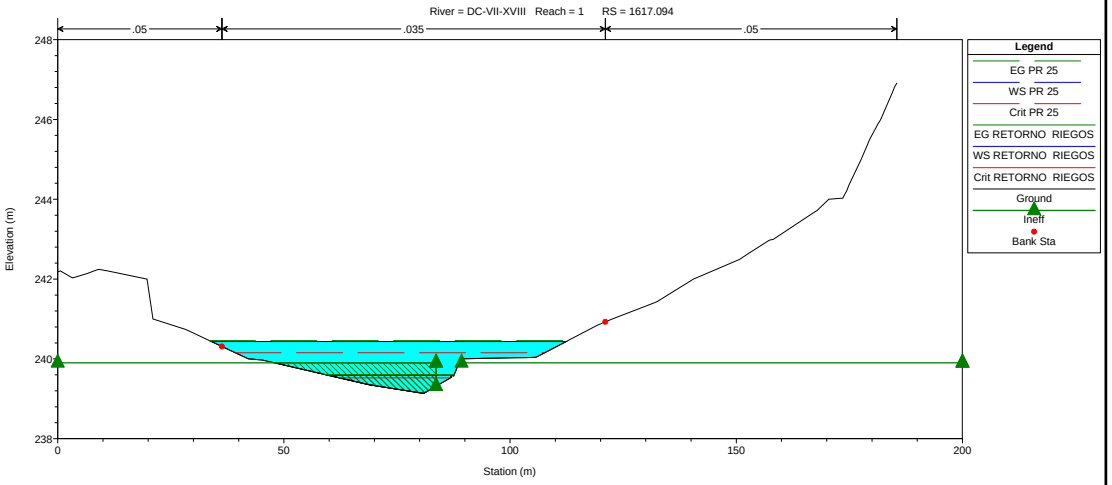

River = DC-VII-XVIII Reach = 2 RS = 1900.001
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

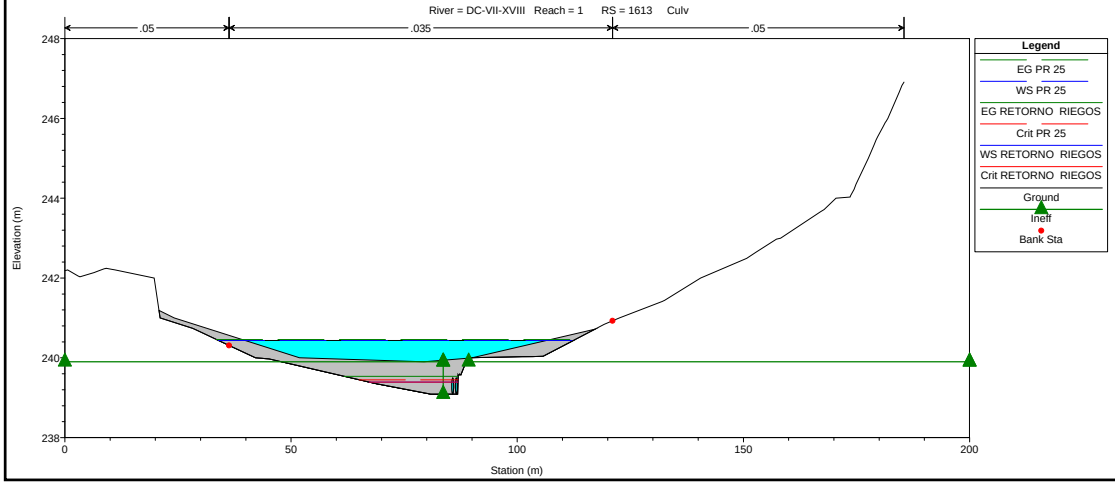

River = DC-VII-XVIII Reach = 2 RS = 1849.989
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

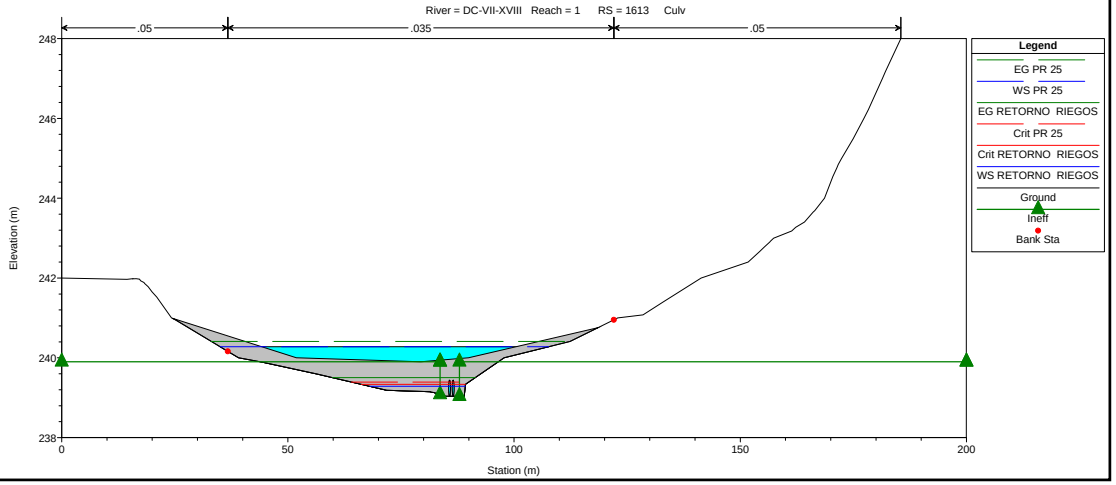

River = DC-VII-XVIII Reach = 2 RS = 1799.147
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

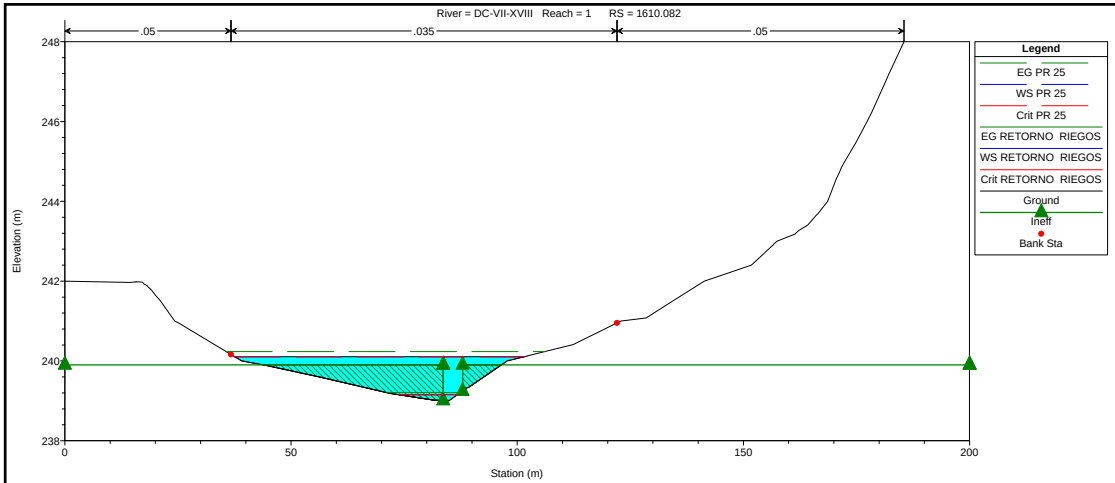

River = DC-VII-XVIII Reach = 2 RS = 1786.347
.05
.035
.05
Legend
EG PR 25
Crit PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

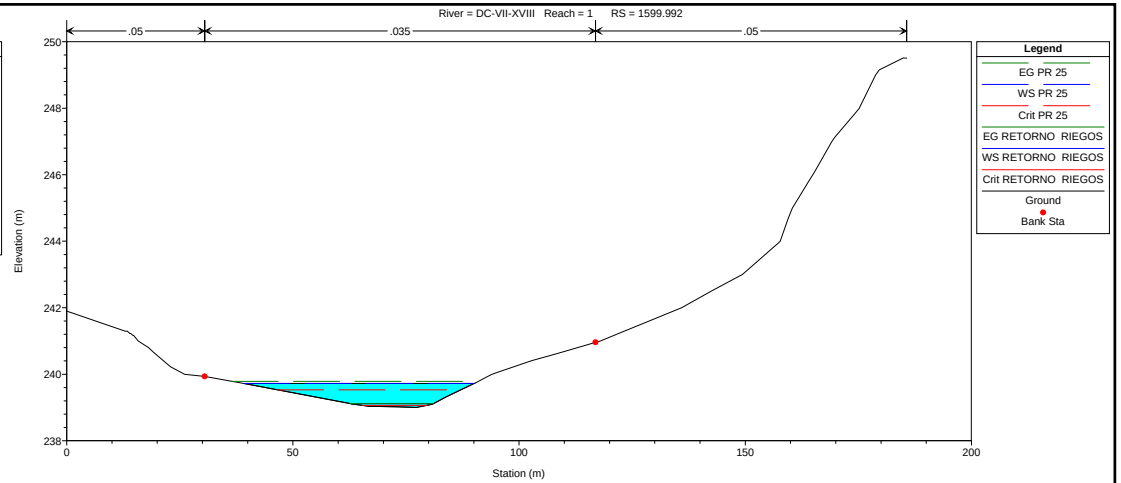

River = DC-VII-XVIII Reach = 2 RS = 1749.970
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

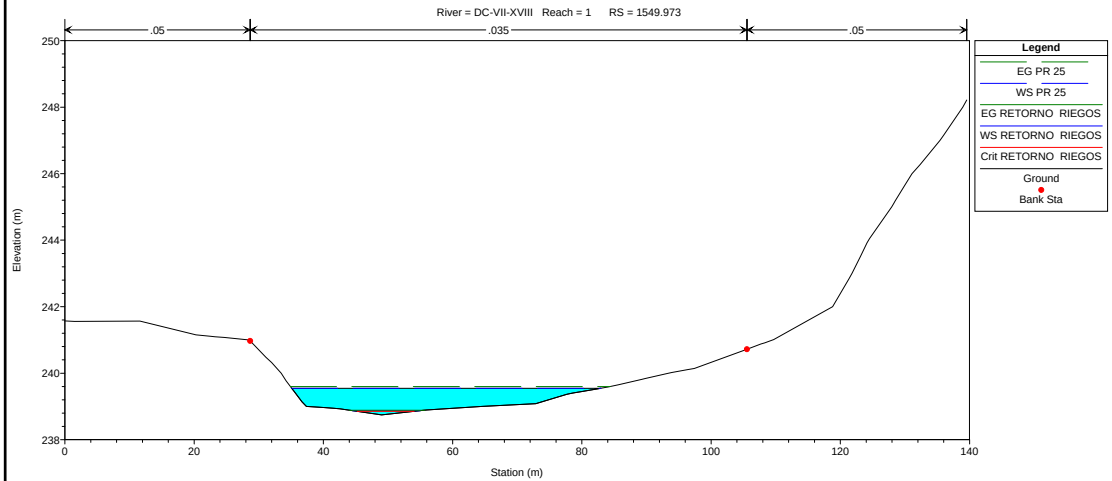

River = DC-VII-XVIII Reach = 1 RS = 1617.094
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

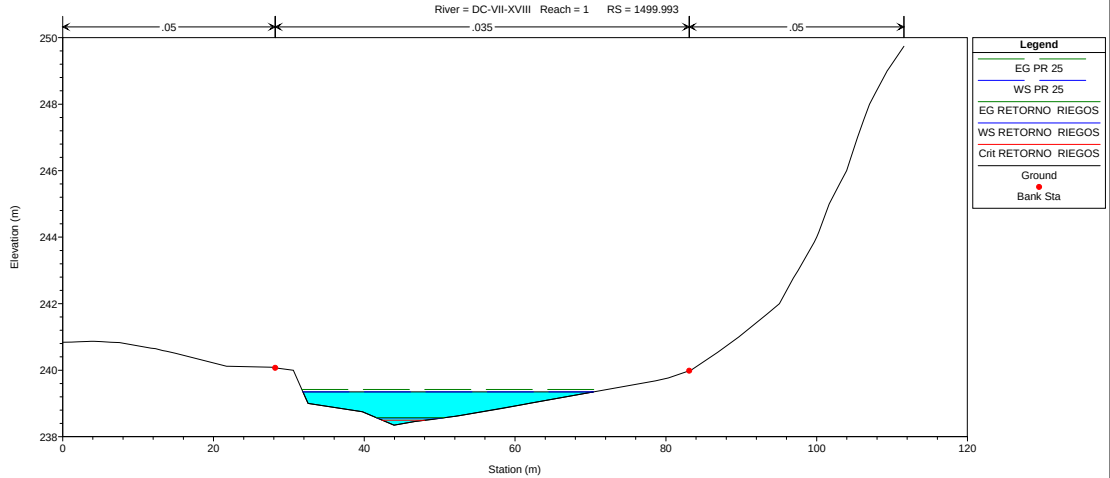

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
Crit PR 25
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

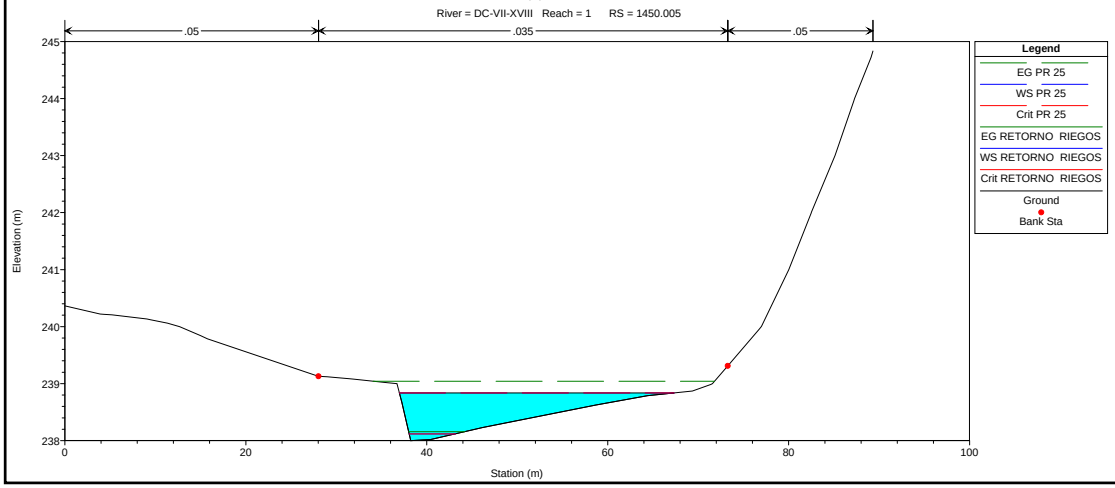

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
Crit PR 25
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

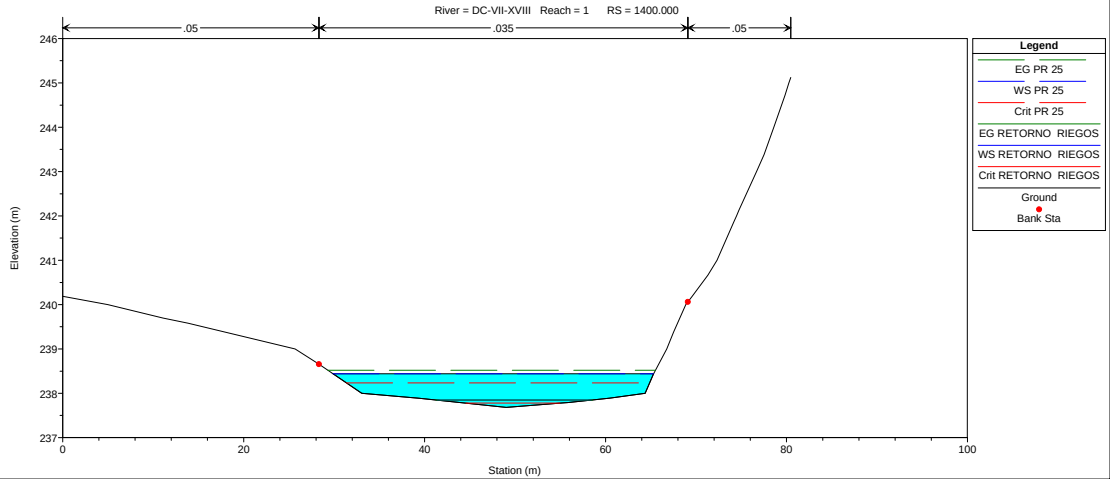

River = DC-VII-XVIII Reach = 1 RS = 1610.082
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

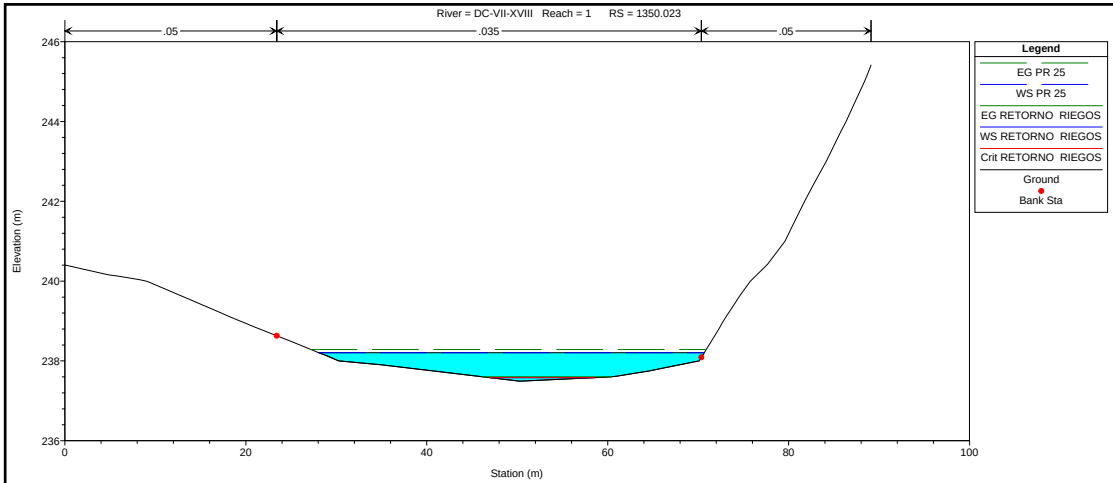

River = DC-VII-XVIII Reach = 1 RS = 1599.992
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

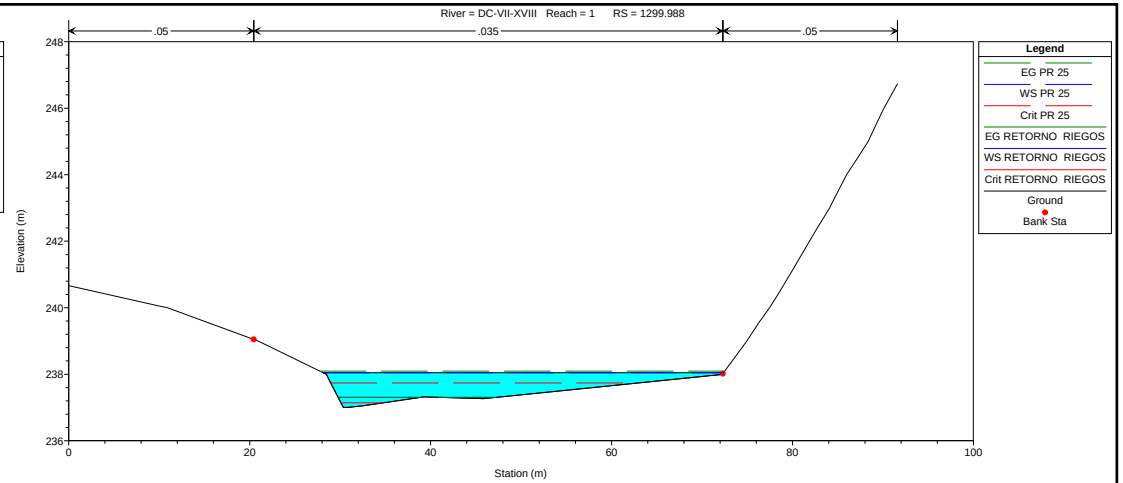

River = DC-VII-XVIII Reach = 1 RS = 1549.973
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

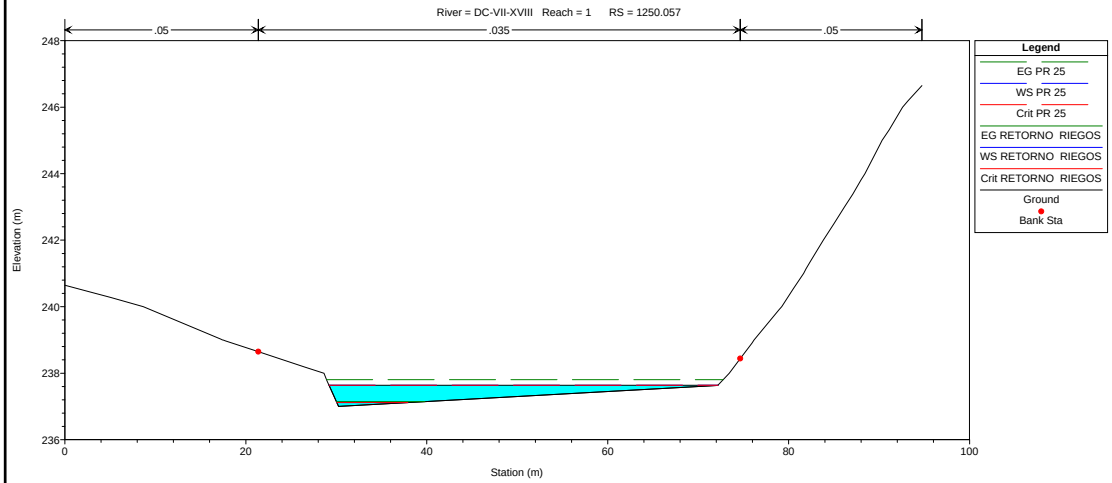

River = DC-VII-XVIII Reach = 1 RS = 1499.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

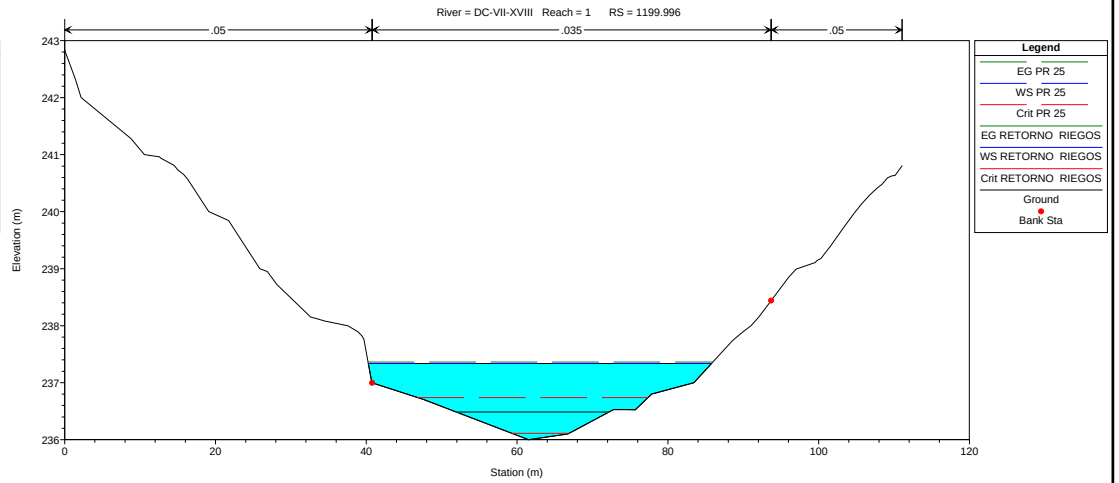

River = DC-VII-XVIII Reach = 1 RS = 1450.005
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

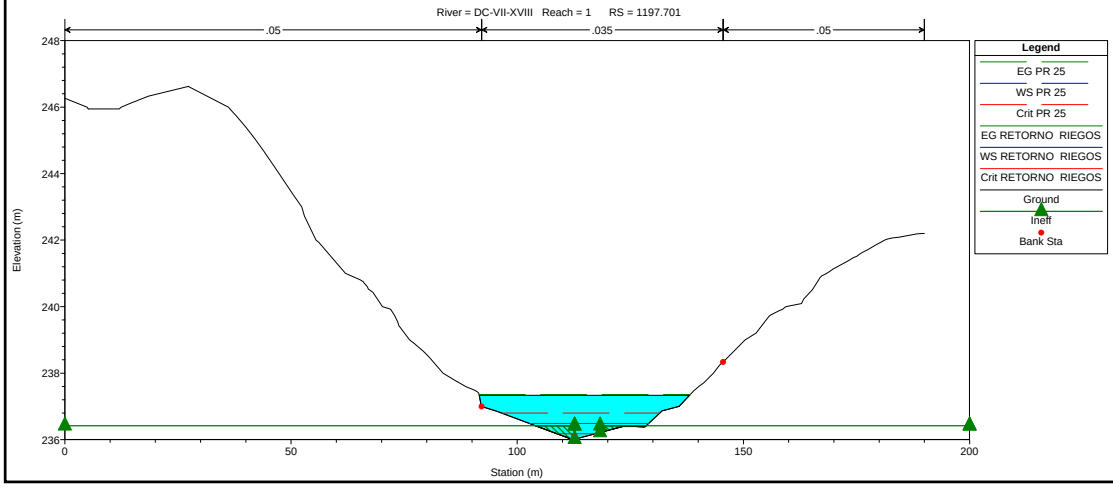

River = DC-VII-XVIII Reach = 1 RS = 1400.000
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

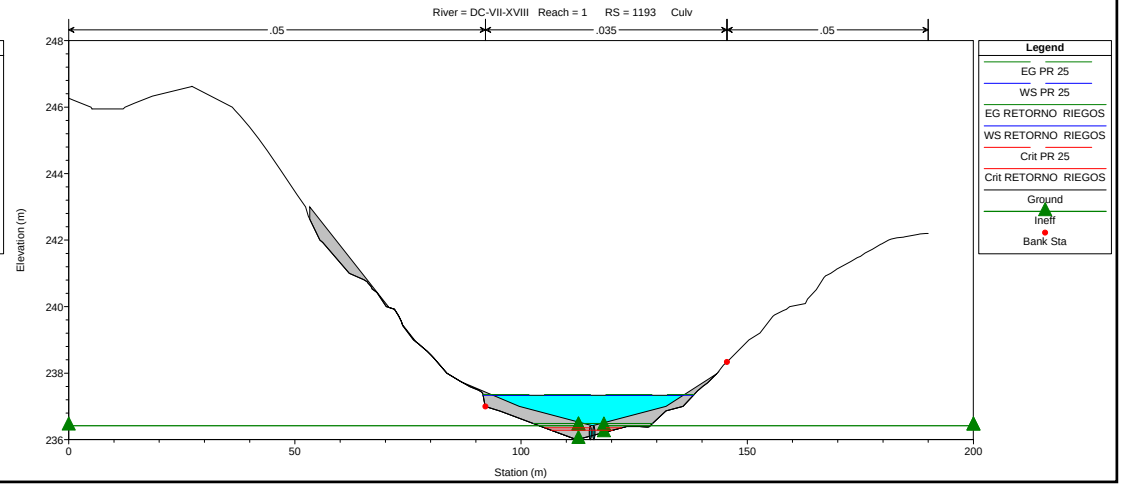

River = DC-VII-XVIII Reach = 1 RS = 1350.023
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

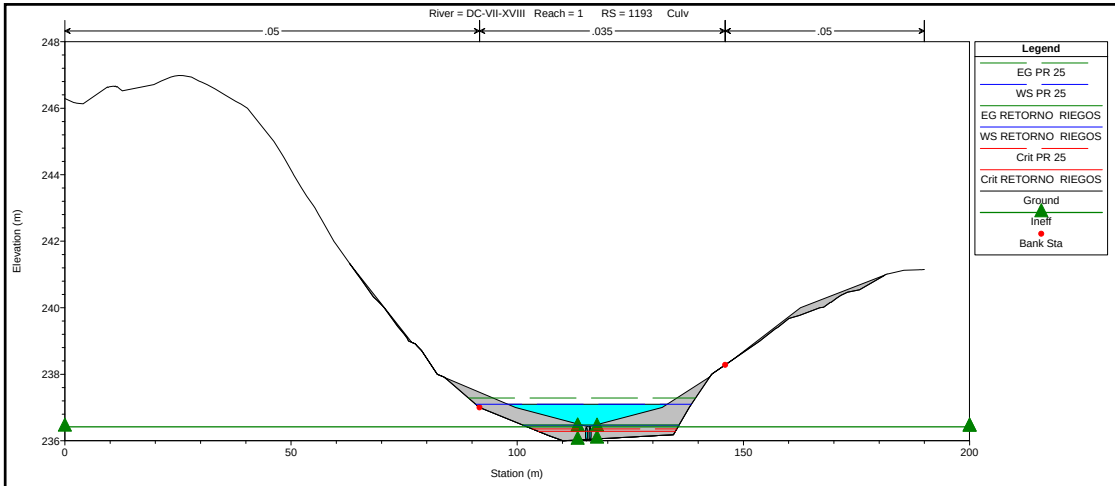

River = DC-VII-XVIII Reach = 1 RS = 1299.988
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

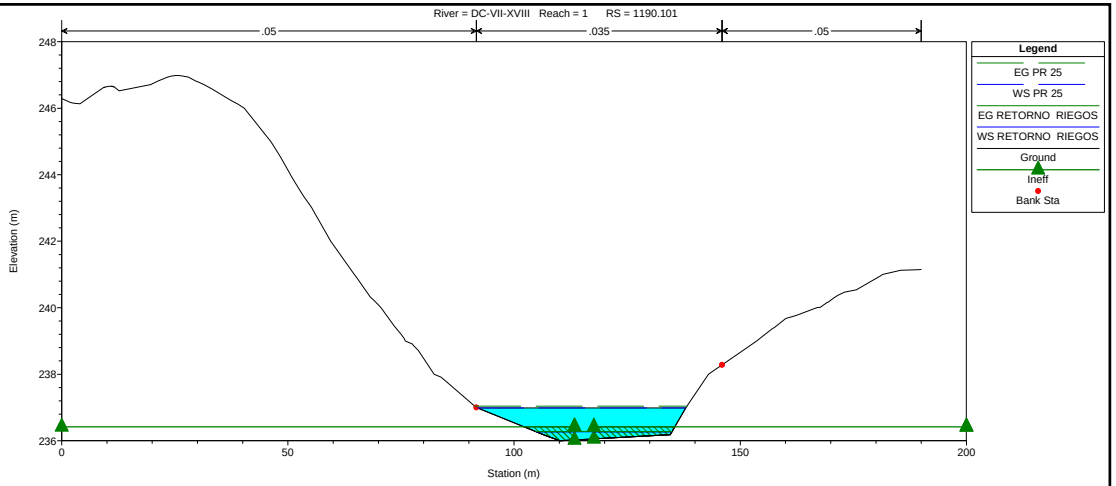

River = DC-VII-XVIII Reach = 1 RS = 1250.057
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

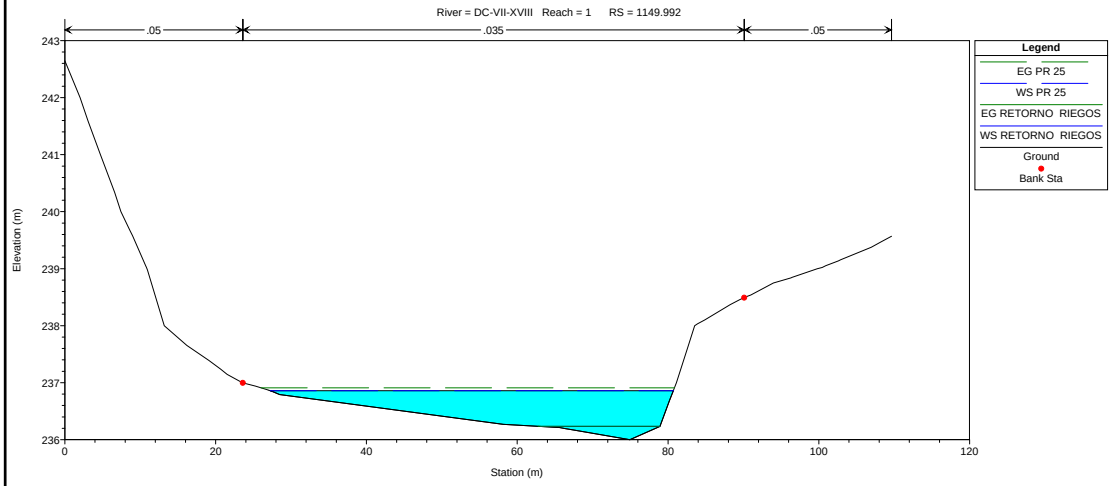

River = DC-VII-XVIII Reach = 1 RS = 1199.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

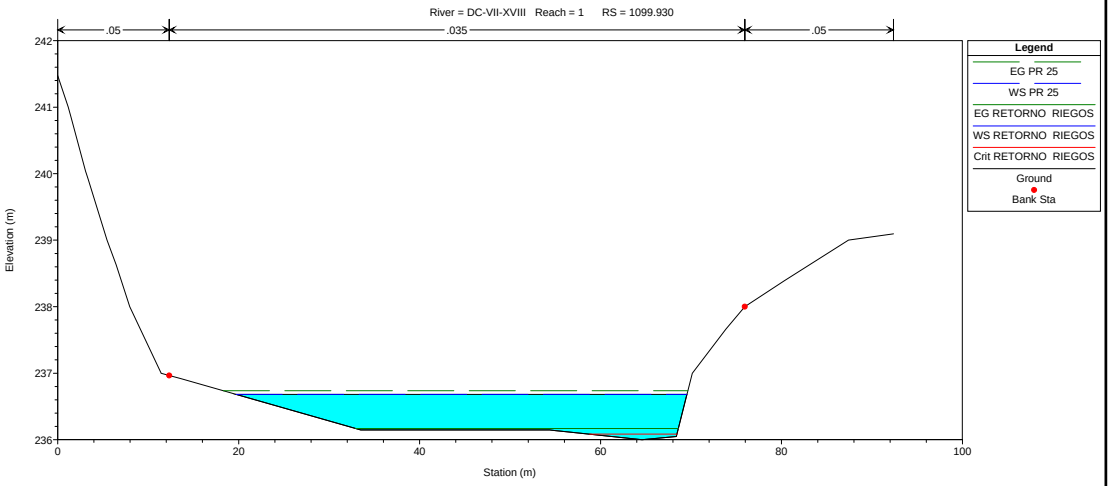

River = DC-VII-XVIII Reach = 1 RS = 1197.701
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

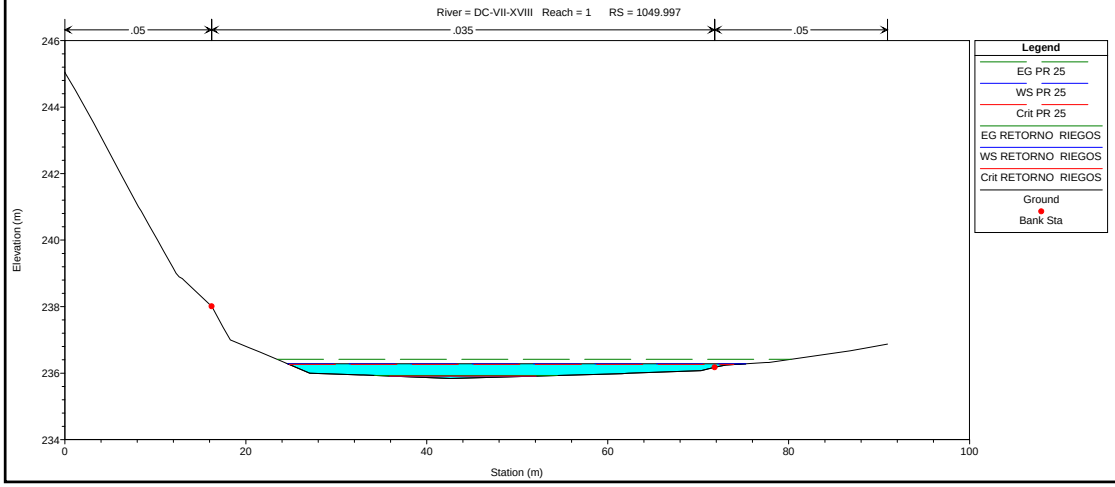

River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit PR 25
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

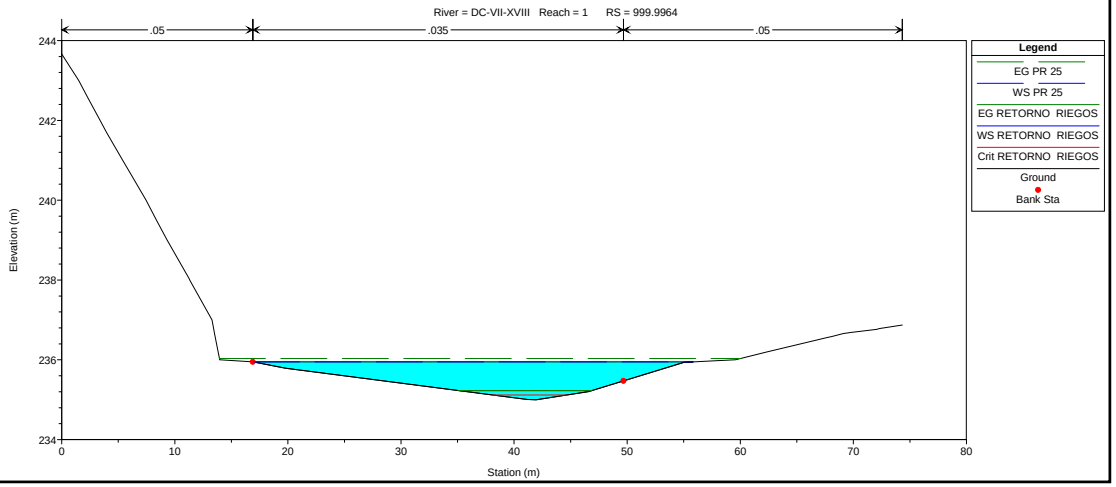

River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit PR 25
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

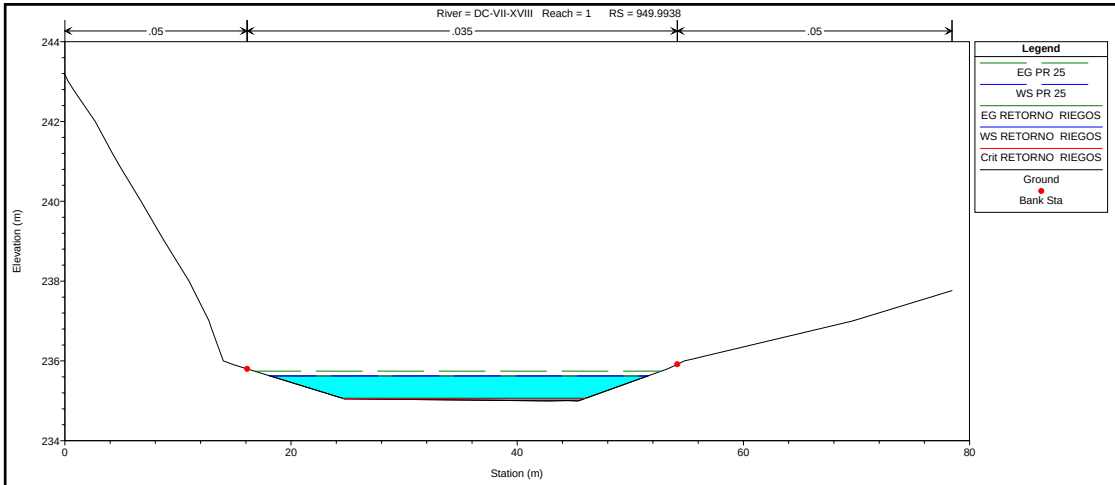

River = DC-VII-XVIII Reach = 1 RS = 1190.101
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

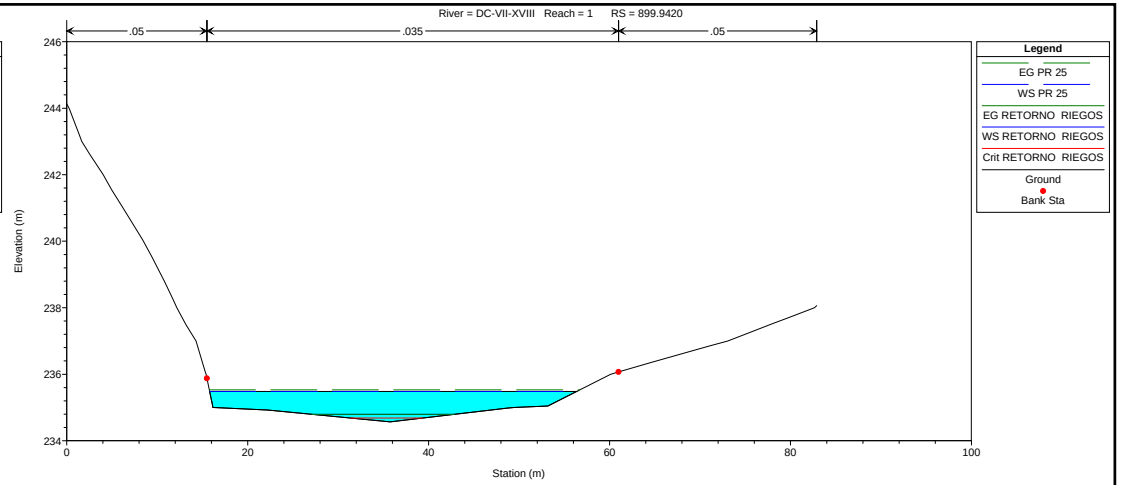

River = DC-VII-XVIII Reach = 1 RS = 1149.992
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

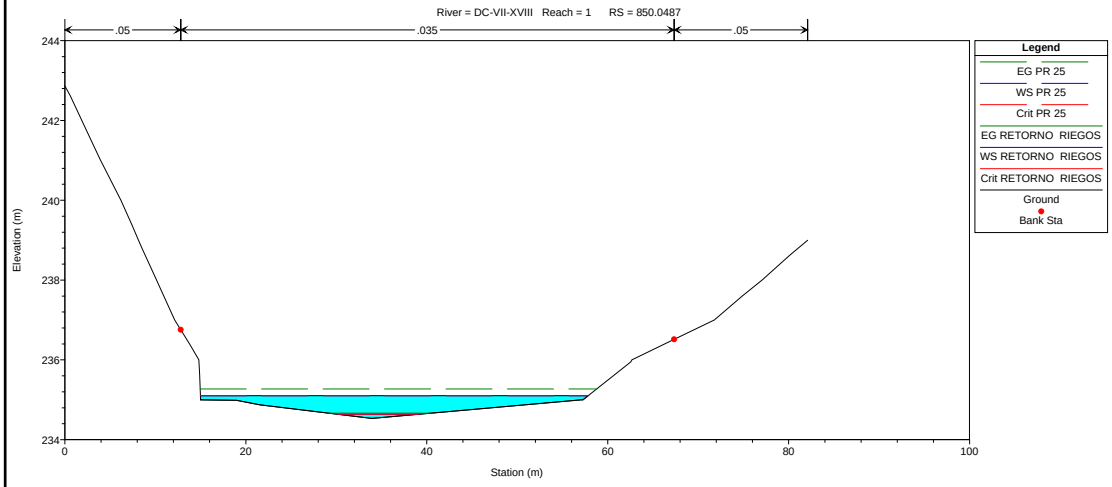

River = DC-VII-XVIII Reach = 1 RS = 1099.930
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

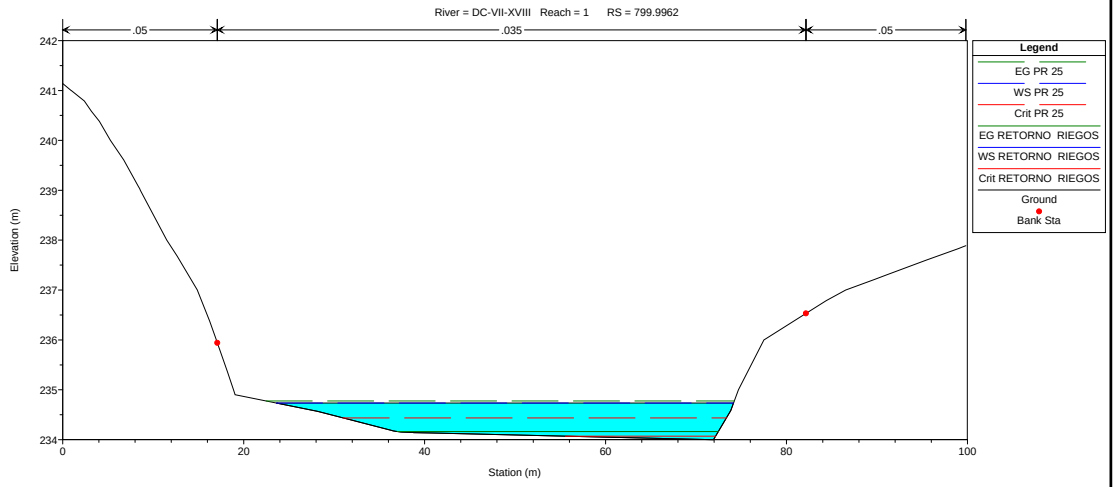

River = DC-VII-XVIII Reach = 1 RS = 1049.997
.05
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

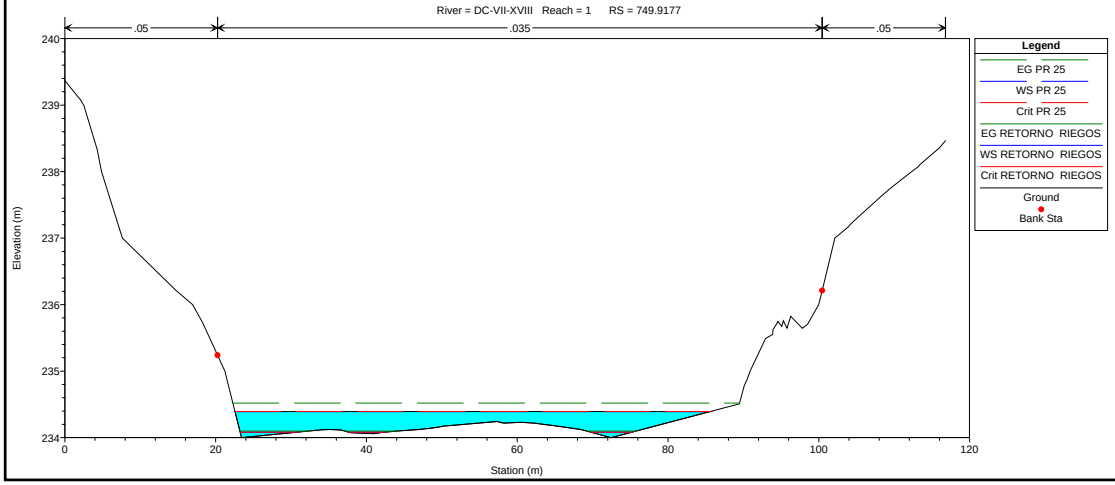

River = DC-VII-XVIII Reach = 1 RS = 999.9964
.05
.035
.05
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

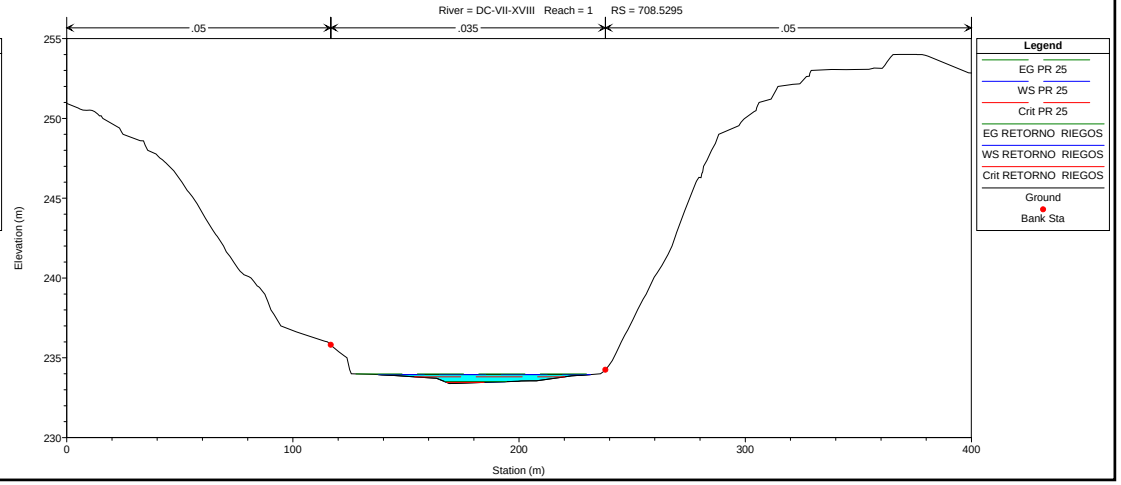

River = DC-VII-XVIII Reach = 1 RS = 949.9938
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

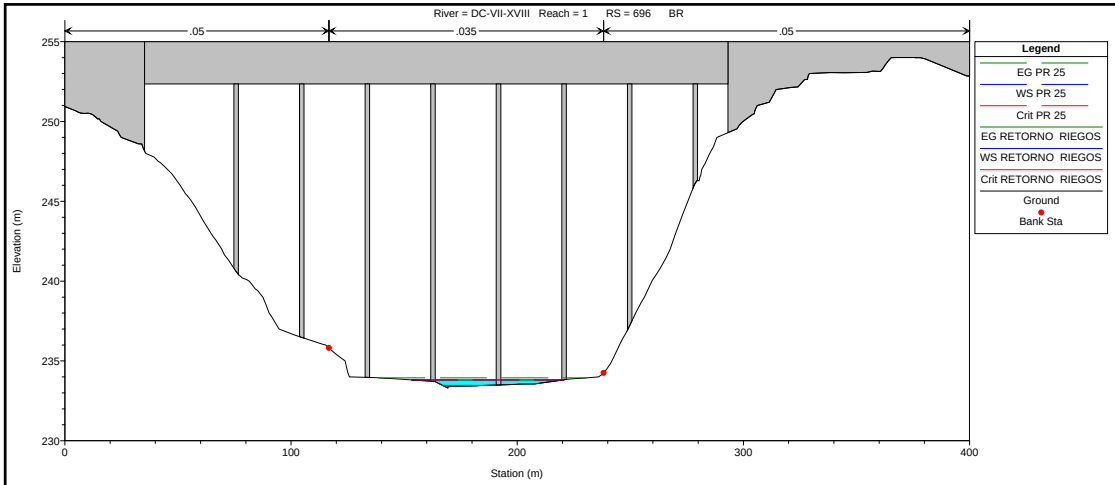

River = DC-VII-XVIII Reach = 1 RS = 899.9420
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

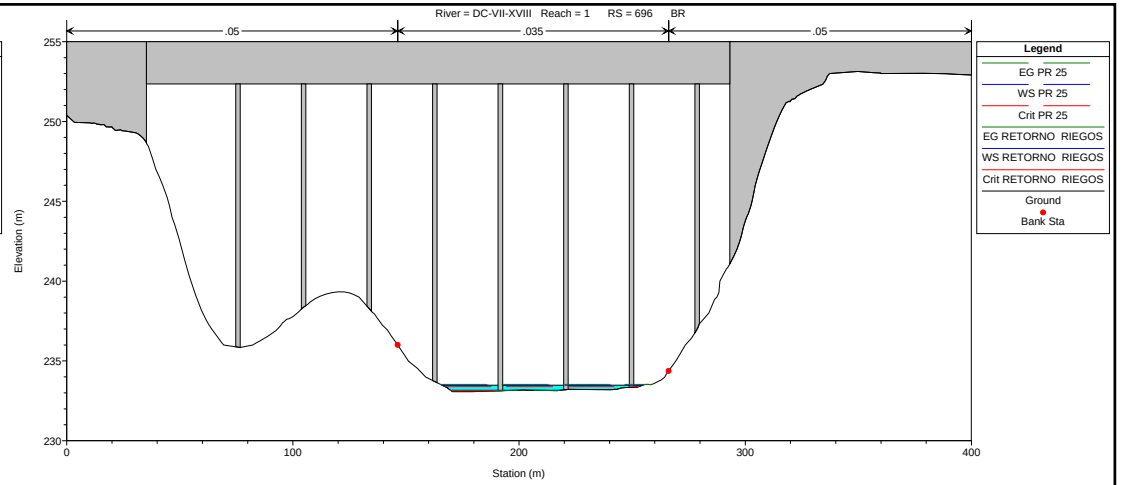

River = DC-VII-XVIII Reach = 1 RS = 850.0487
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

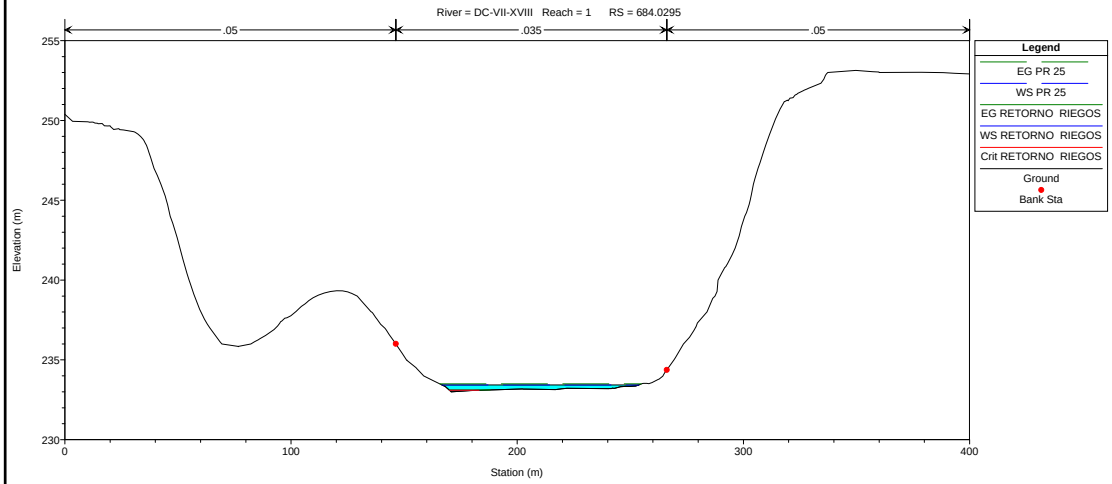

River = DC-VII-XVIII Reach = 1 RS = 799.9962
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

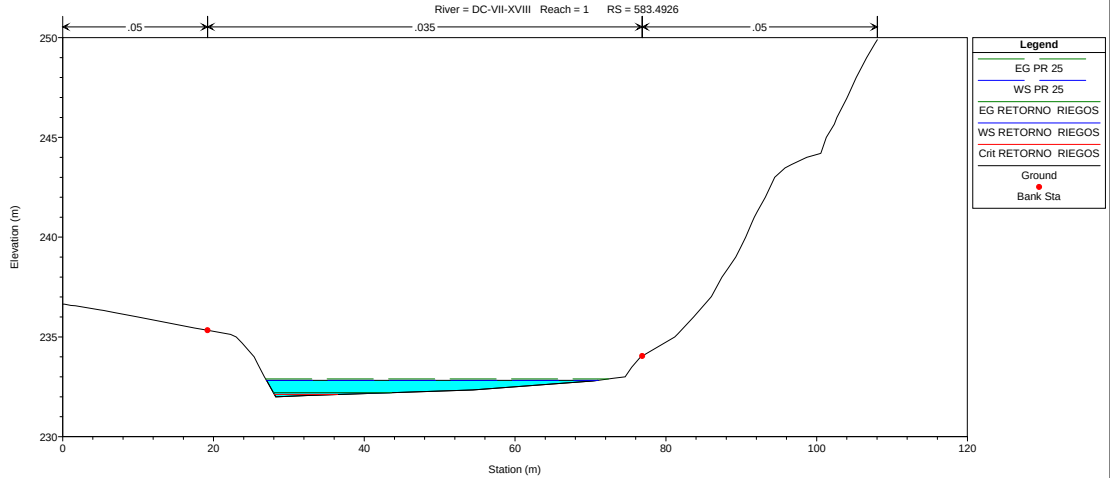

River = DC-VII-XVIII Reach = 1 RS = 749.9177
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

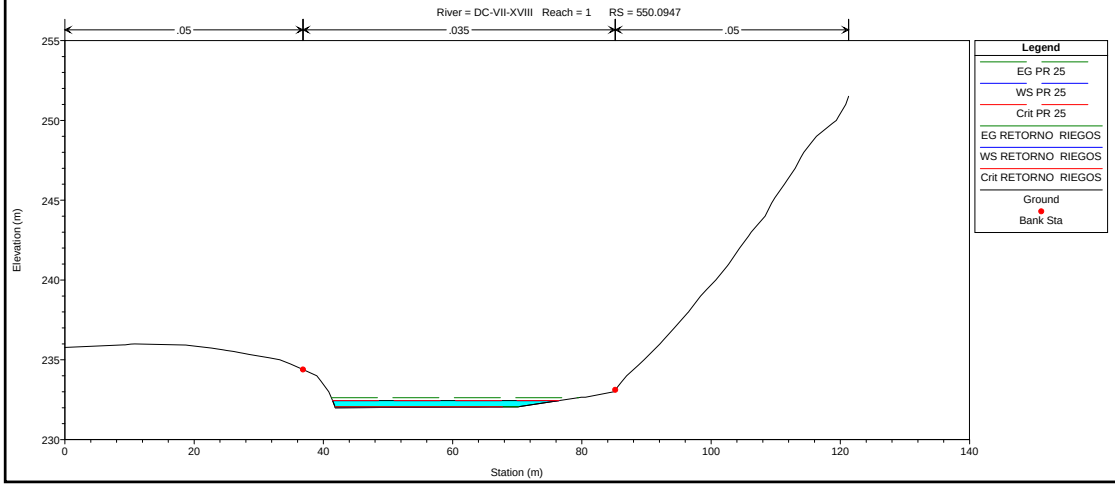

River = DC-VII-XVIII Reach = 1 RS = 708.5295
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

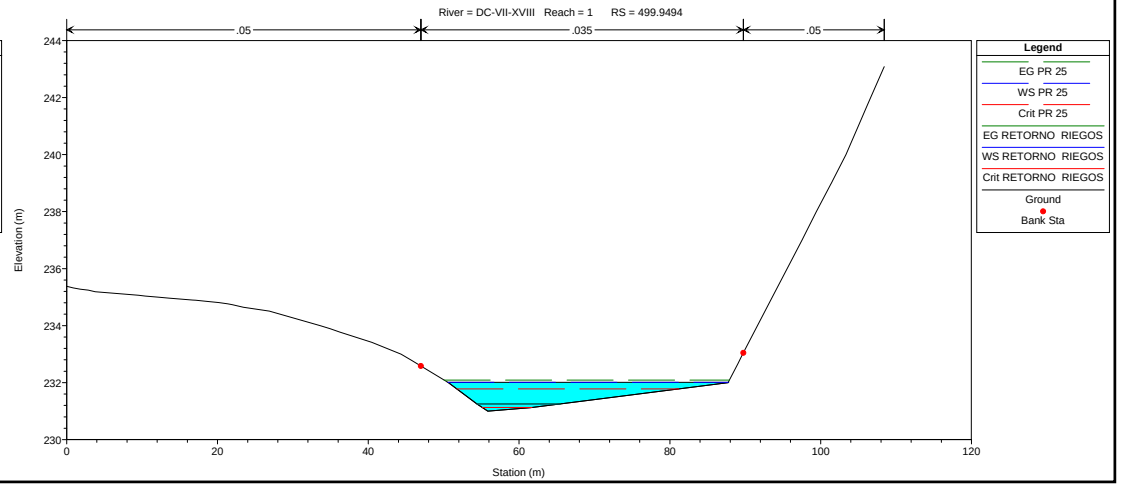

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

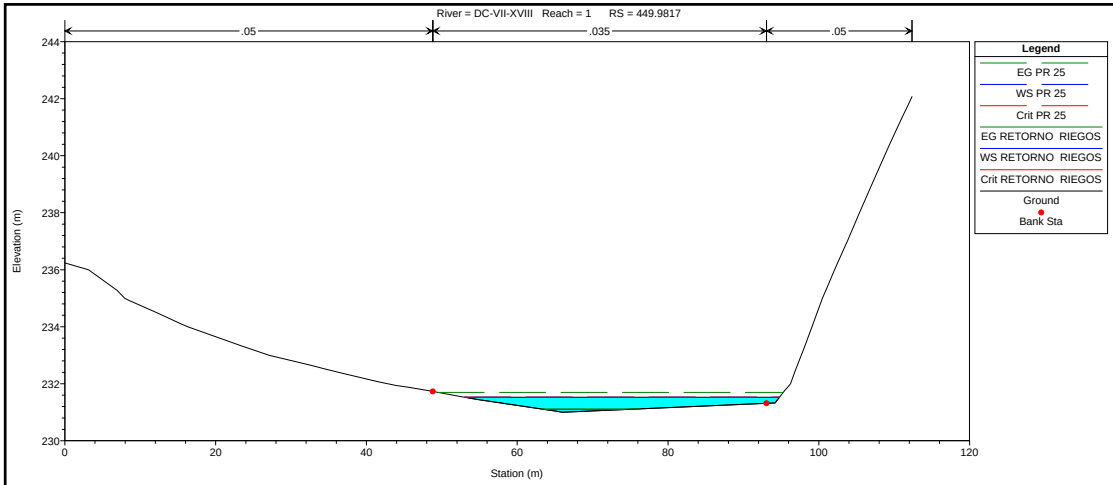

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

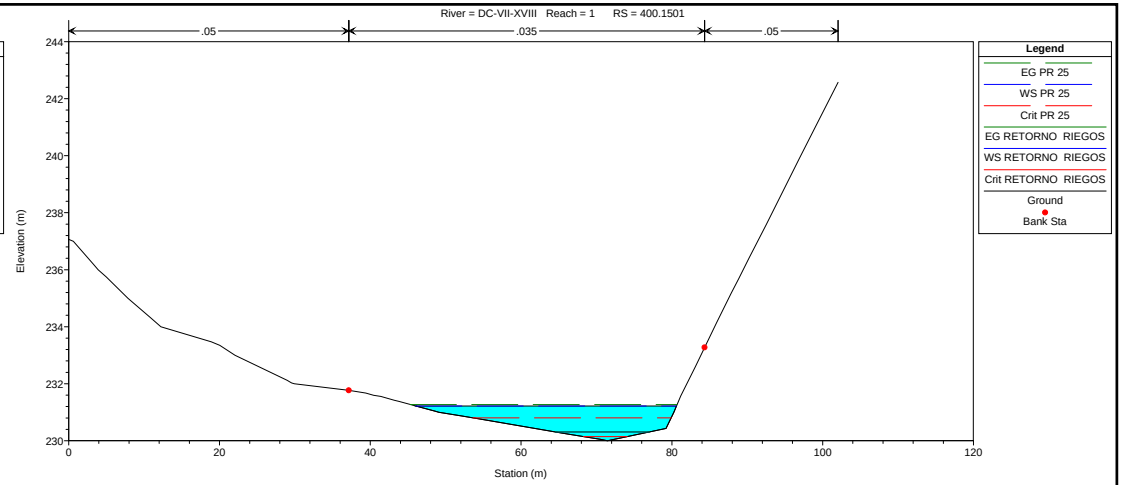

River = DC-VII-XVIII Reach = 1 RS = 684.0295
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

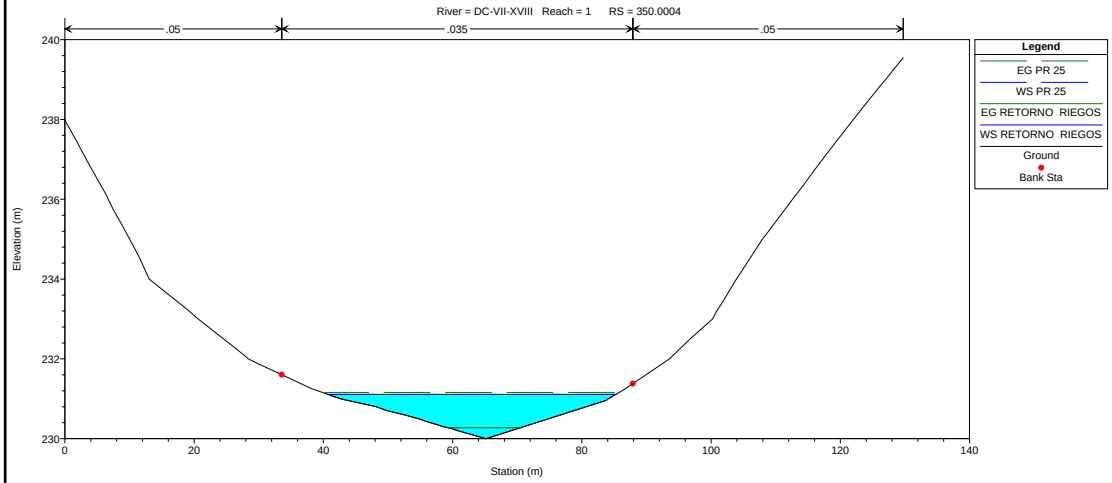

River = DC-VII-XVIII Reach = 1 RS = 583.4926
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

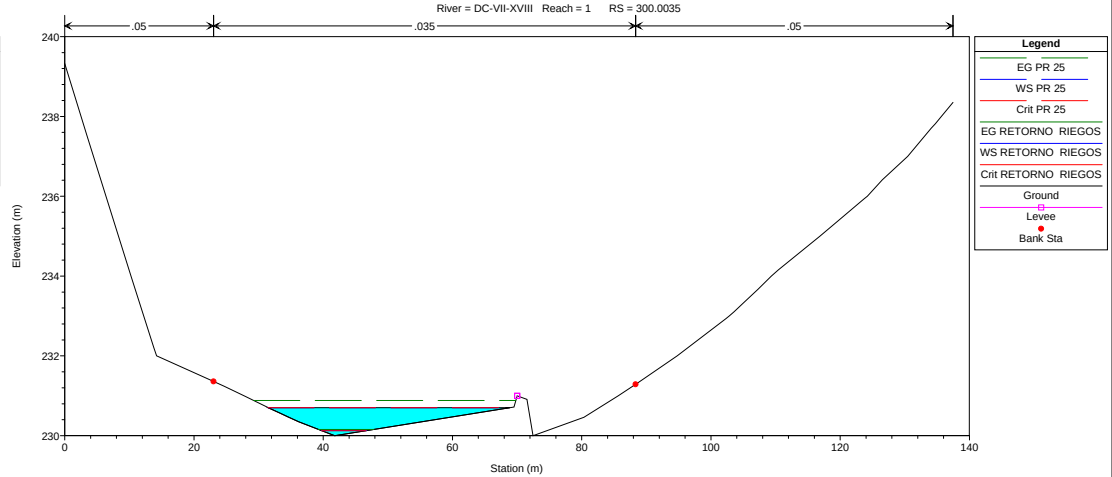

River = DC-VII-XVIII Reach = 1 RS = 550.0947
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

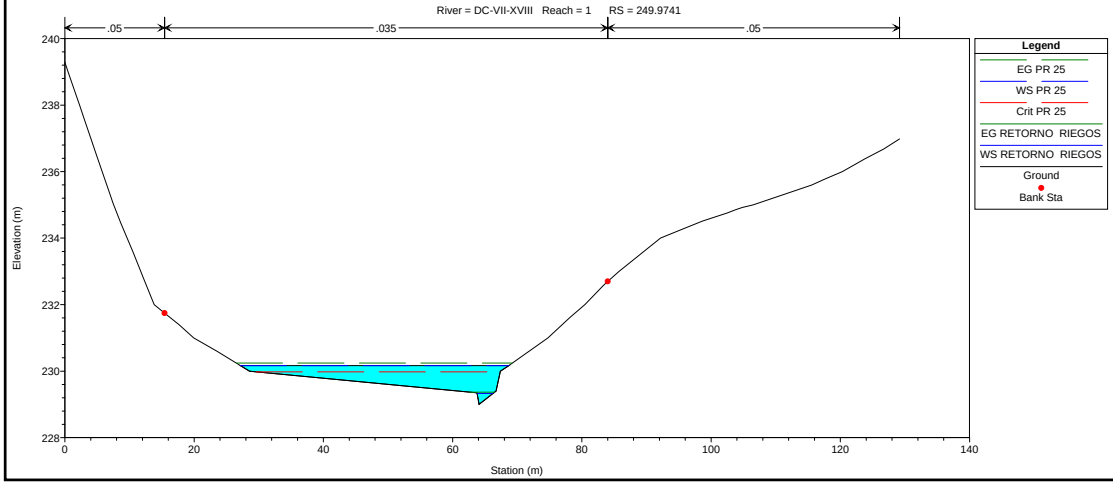

River = DC-VII-XVIII Reach = 1 RS = 499.9494
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

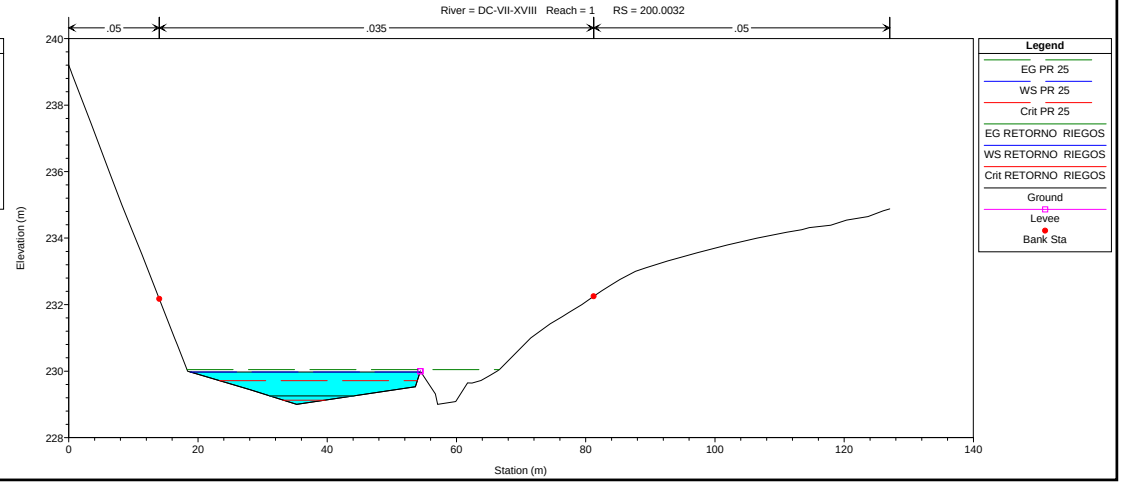

River = DC-VII-XVIII Reach = 1 RS = 449.9817
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

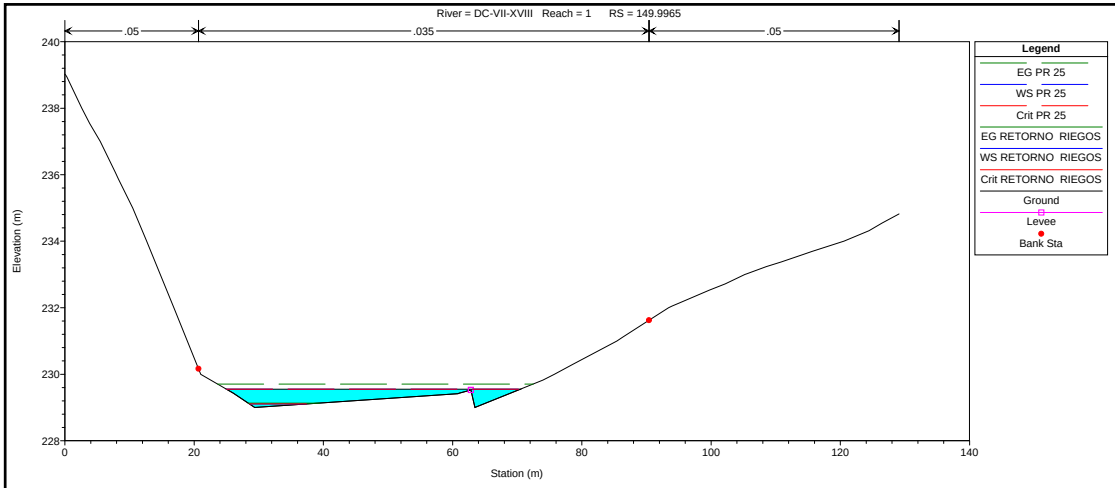

River = DC-VII-XVIII Reach = 1 RS = 400.1501
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

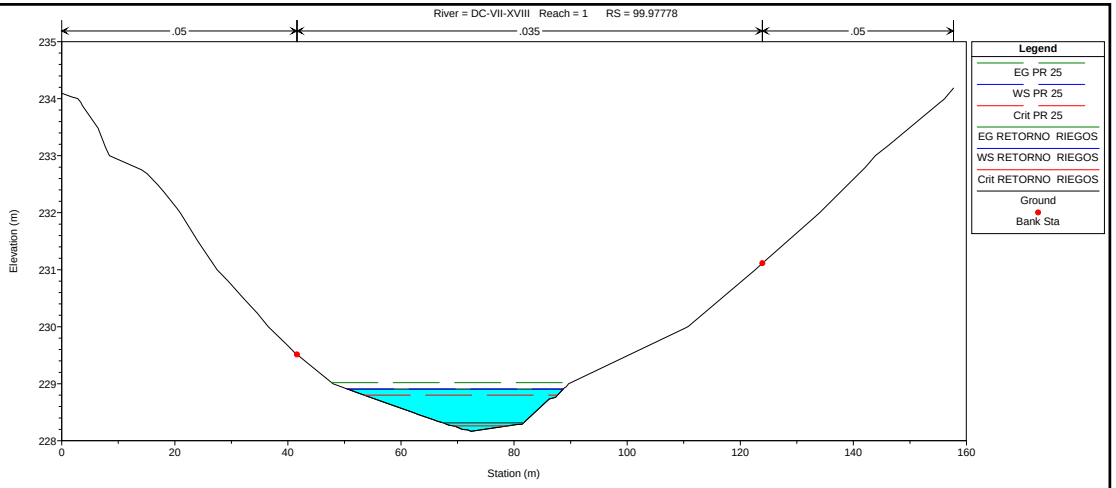

River = DC-VII-XVIII Reach = 1 RS = 350.0004
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

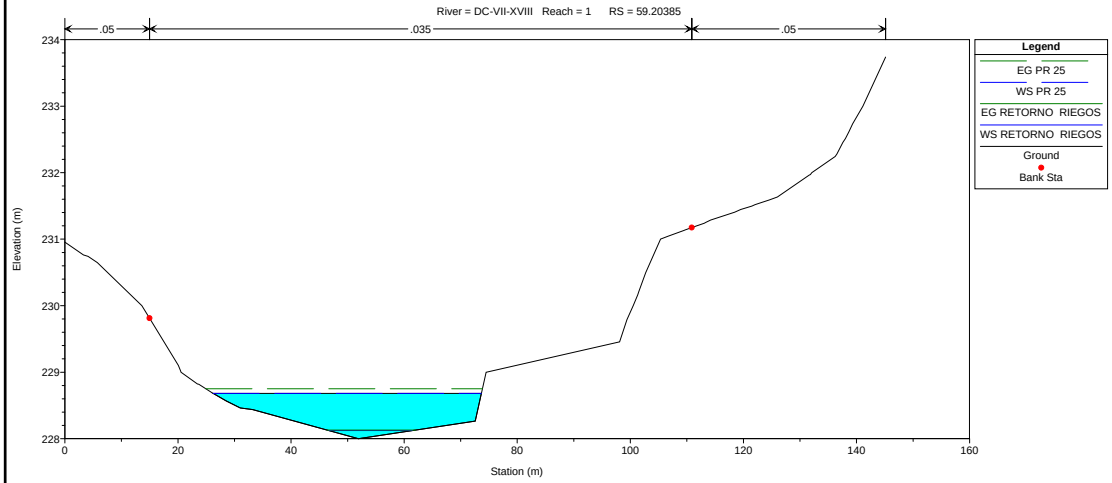

River = DC-VII-XVIII Reach = 1 RS = 300.0035
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 249.9741
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

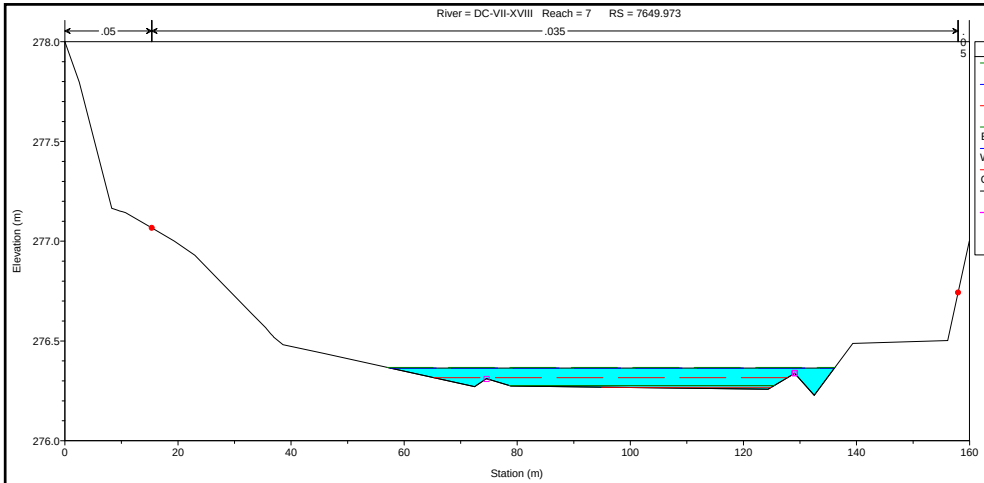

River = DC-VII-XVIII Reach = 1 RS = 200.0032
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

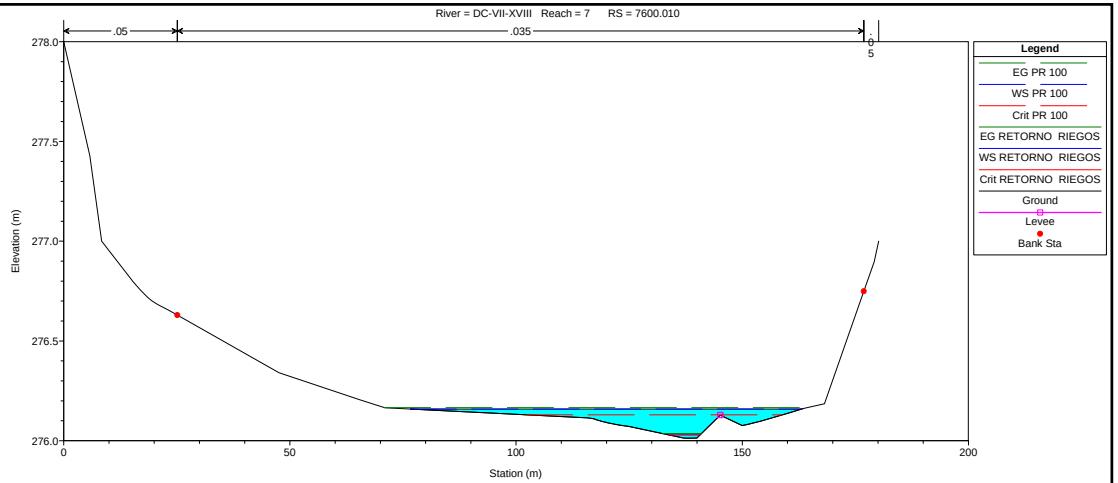

River = DC-VII-XVIII Reach = 1 RS = 149.9965
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

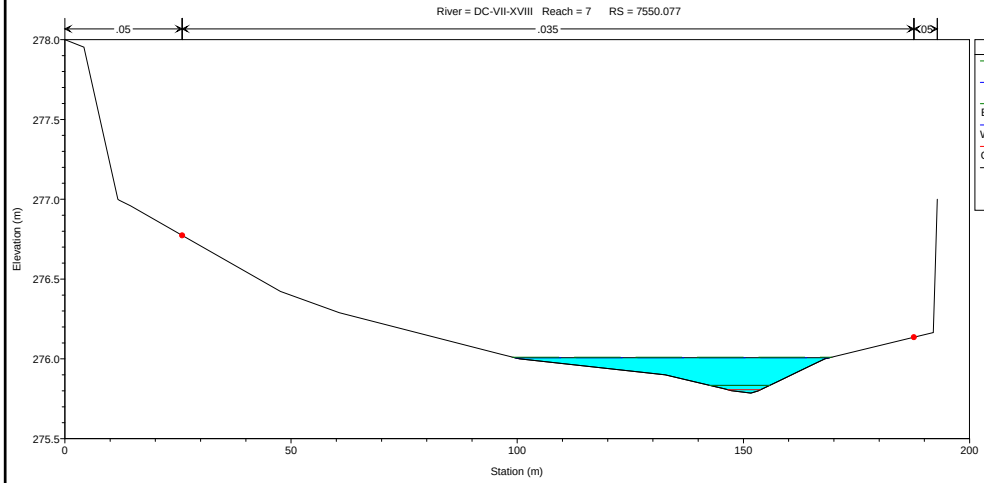

River = DC-VII-XVIII Reach = 1 RS = 99.97778
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

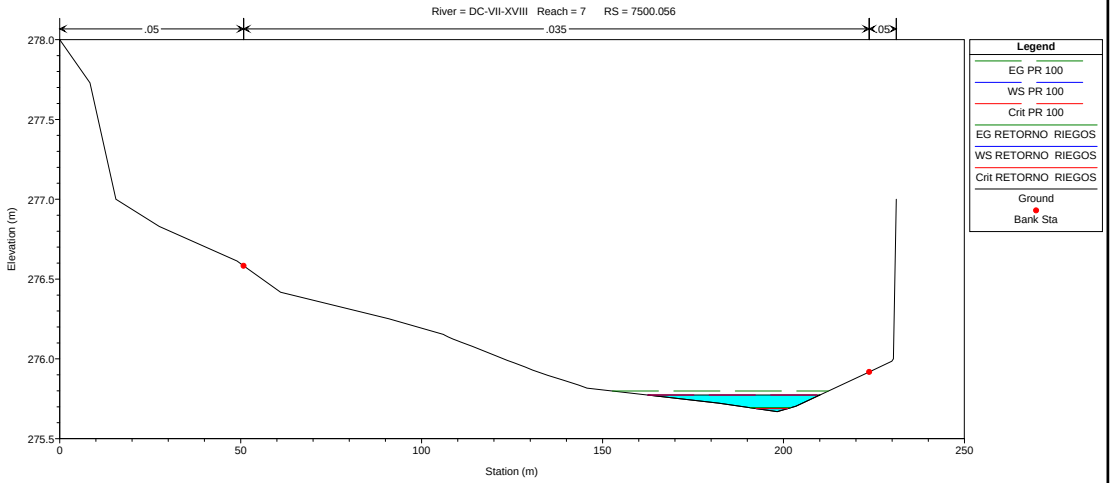

River = DC-VII-XVIII Reach = 1 RS = 59.20385
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

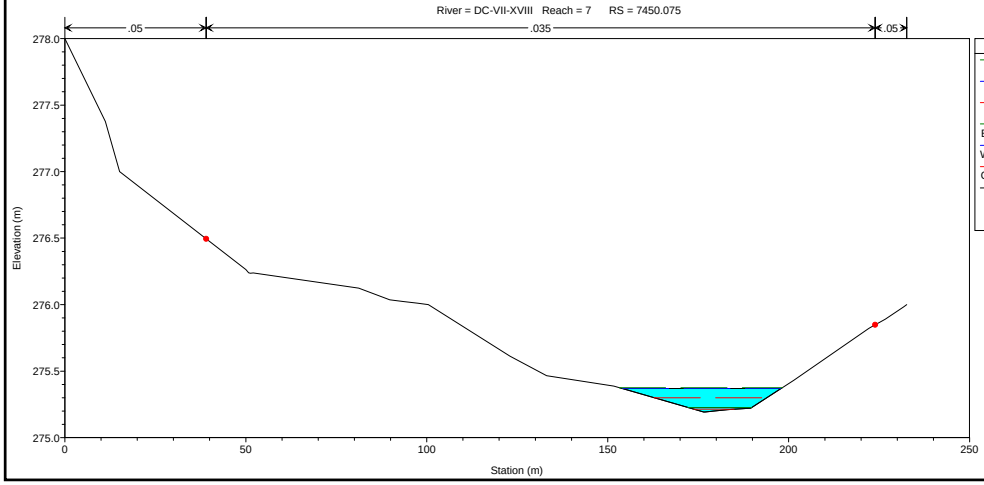
SECCIONES PR100

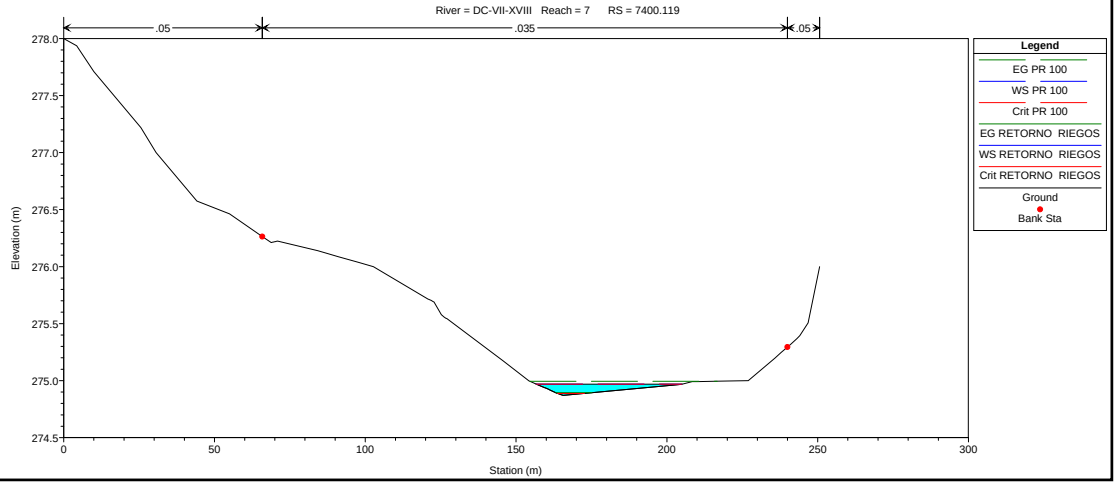

River = DC-VII-XVIII Reach = 7 RS = 7649.973
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

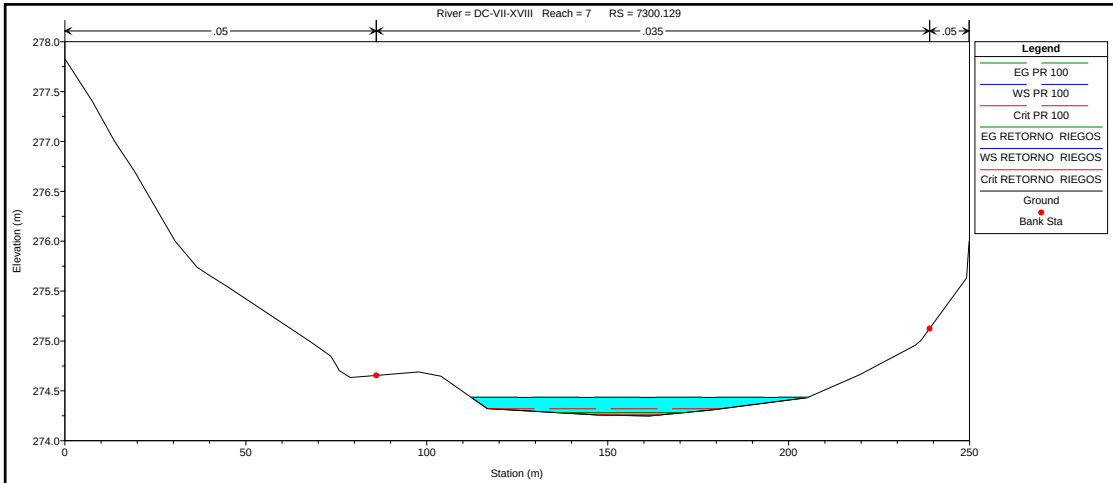

River = DC-VII-XVIII Reach = 7 RS = 7600.010
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

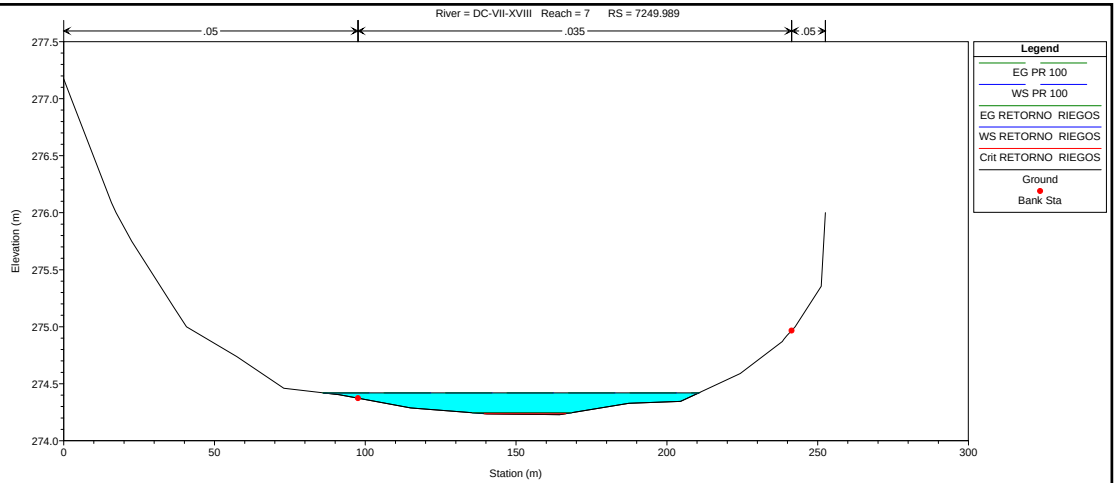

River = DC-VII-XVIII Reach = 7 RS = 7550.077
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

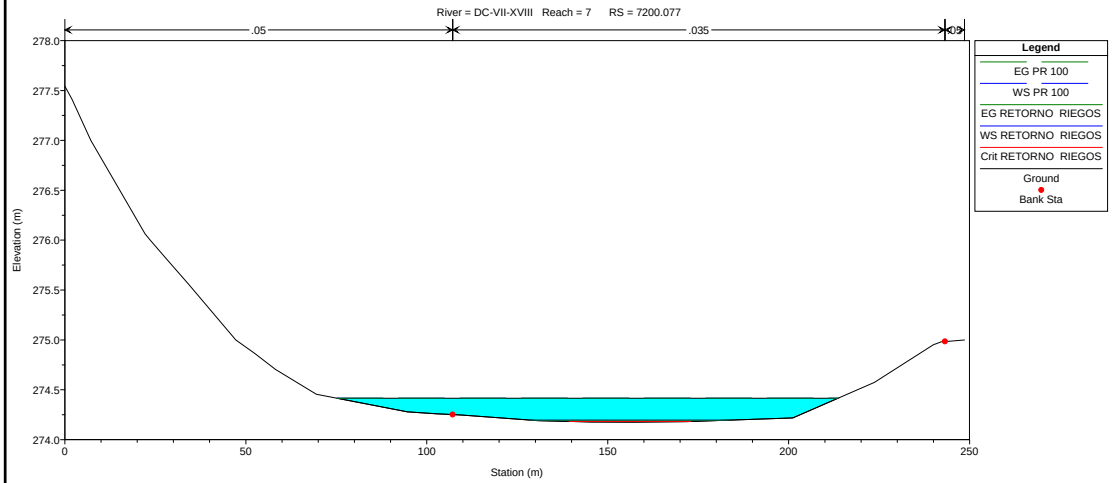

River = DC-VII-XVIII Reach = 7 RS = 7500.056
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

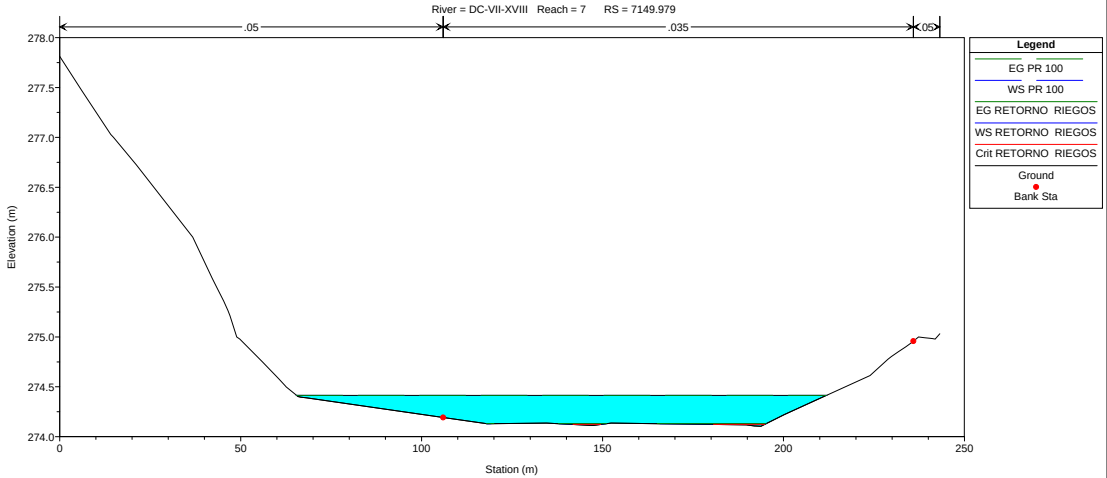

River = DC-VII-XVIII Reach = 7 RS = 7450.075
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

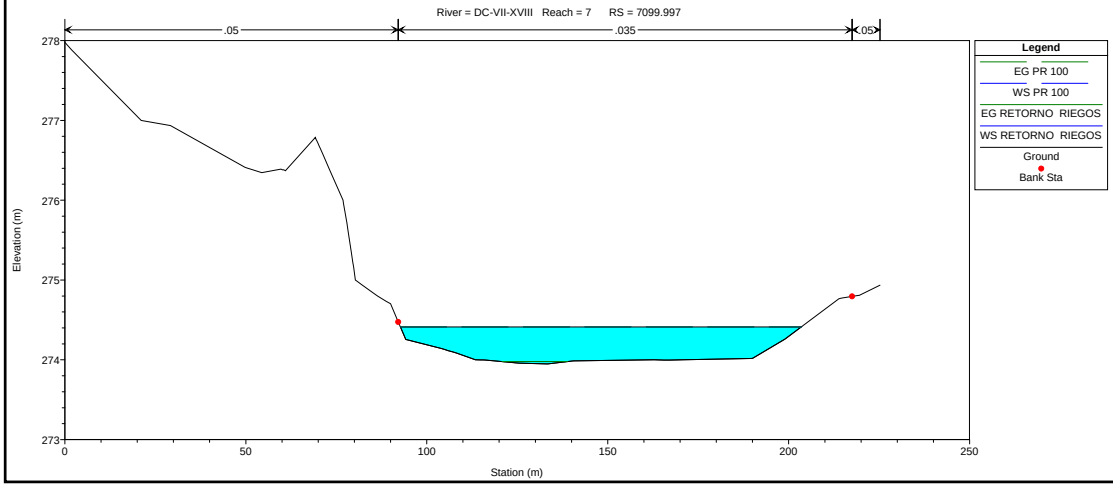

River = DC-VII-XVIII Reach = 7 RS = 7400.119
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

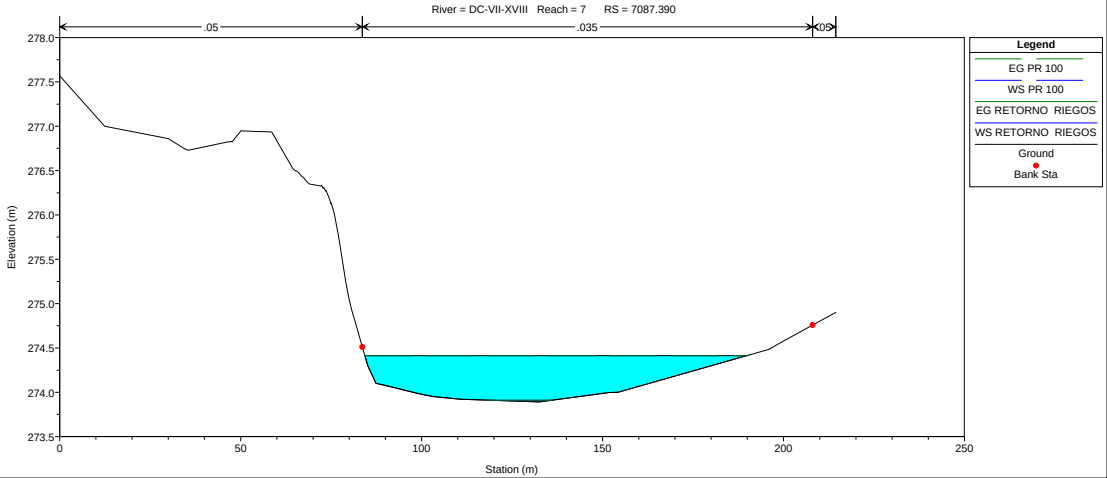

River = DC-VII-XVIII Reach = 7 RS = 7300.129
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

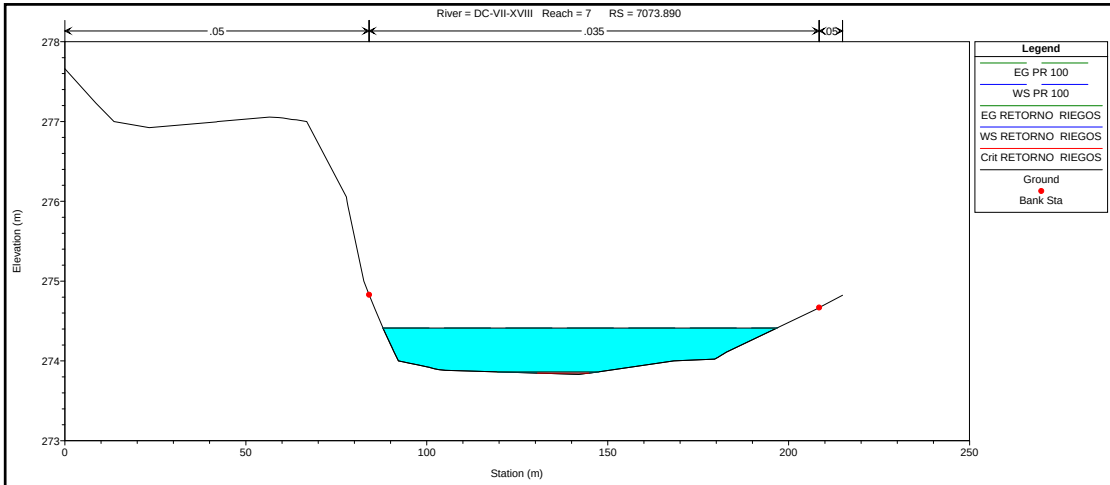

River = DC-VII-XVIII Reach = 7 RS = 7249.989
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

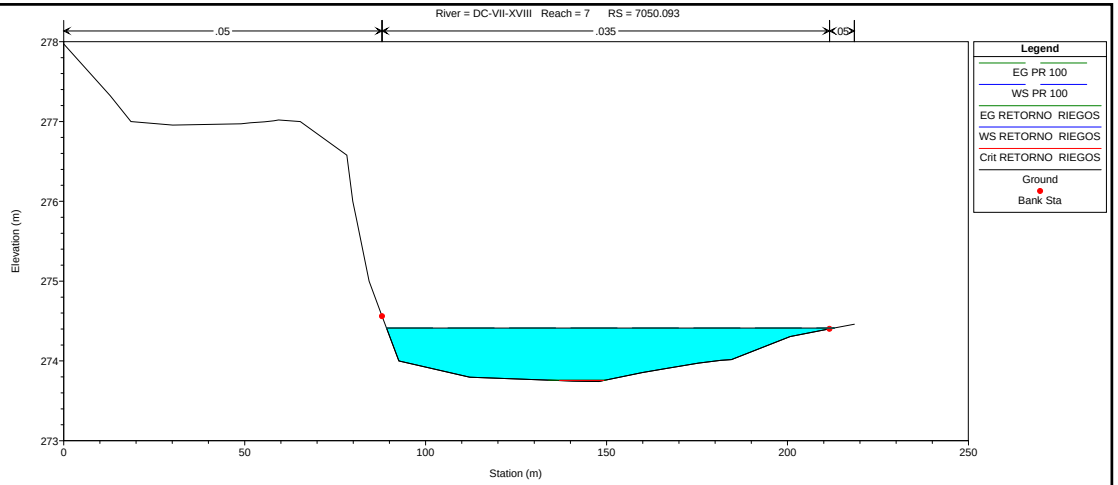

River = DC-VII-XVIII Reach = 7 RS = 7200.077
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

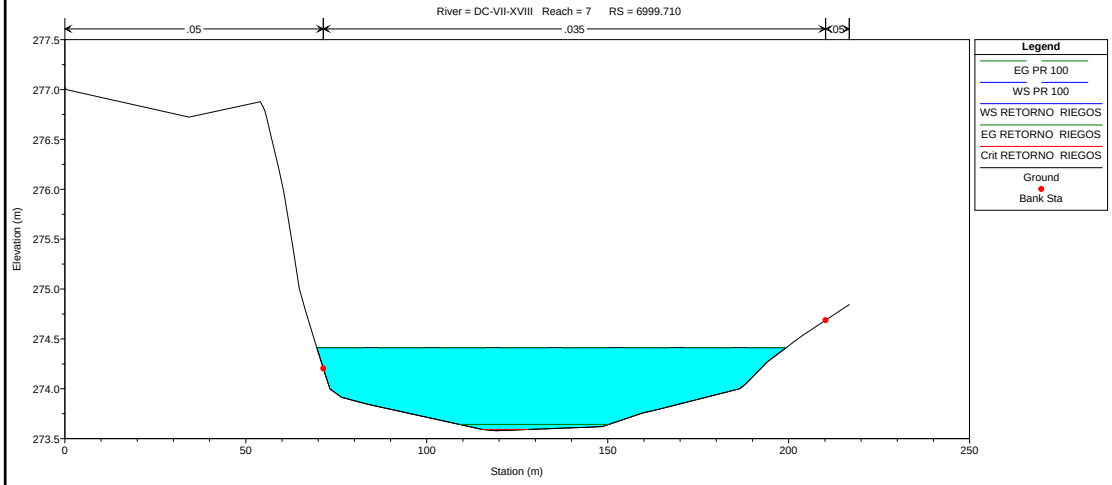

River = DC-VII-XVIII Reach = 7 RS = 7149.979
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

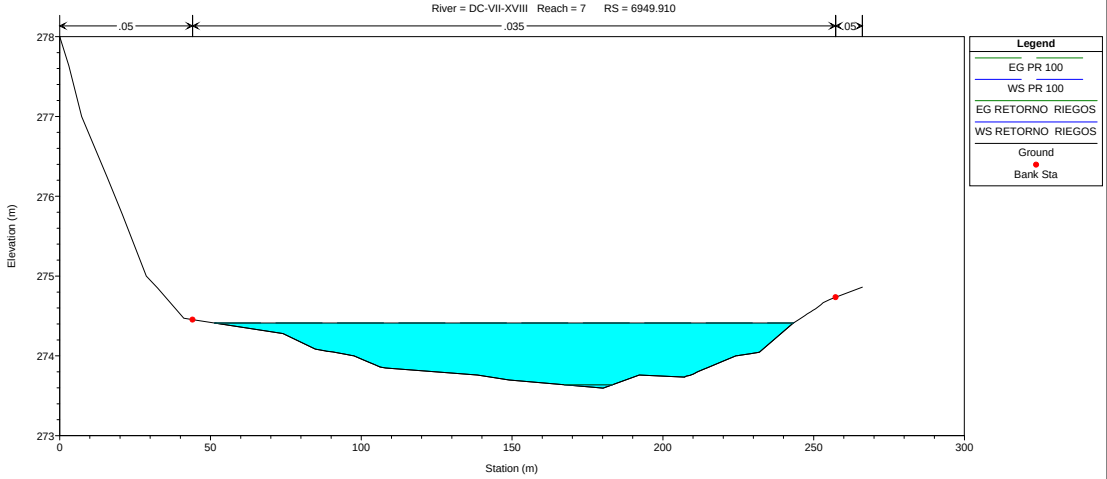

River = DC-VII-XVIII Reach = 7 RS = 7099.997
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

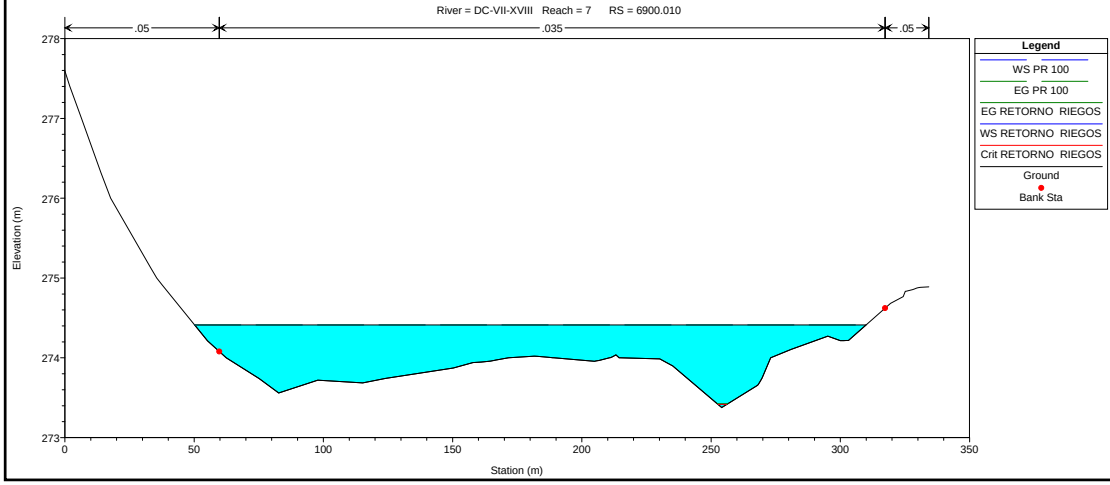

River = DC-VII-XVIII Reach = 7 RS = 7087.390
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

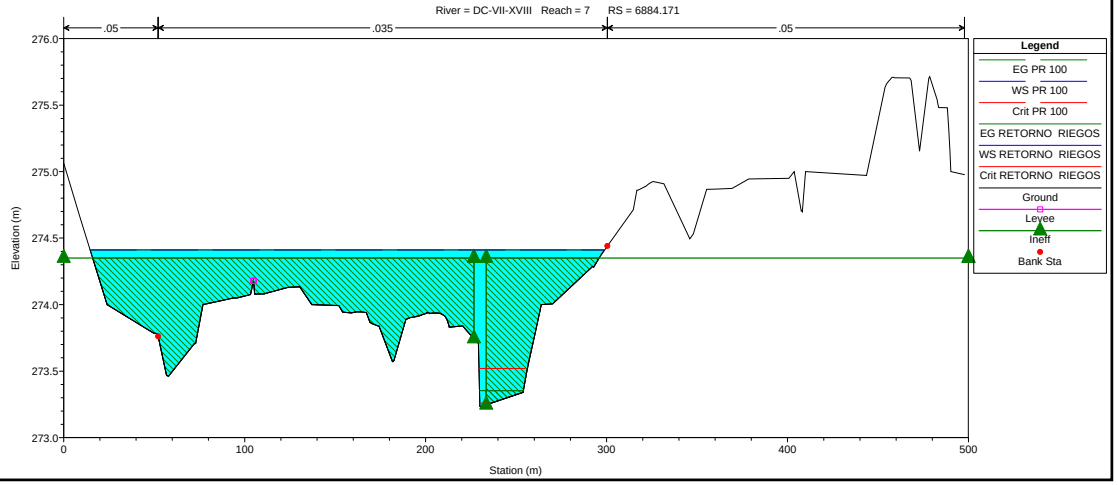

River = DC-VII-XVIII Reach = 7 RS = 7073.890
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

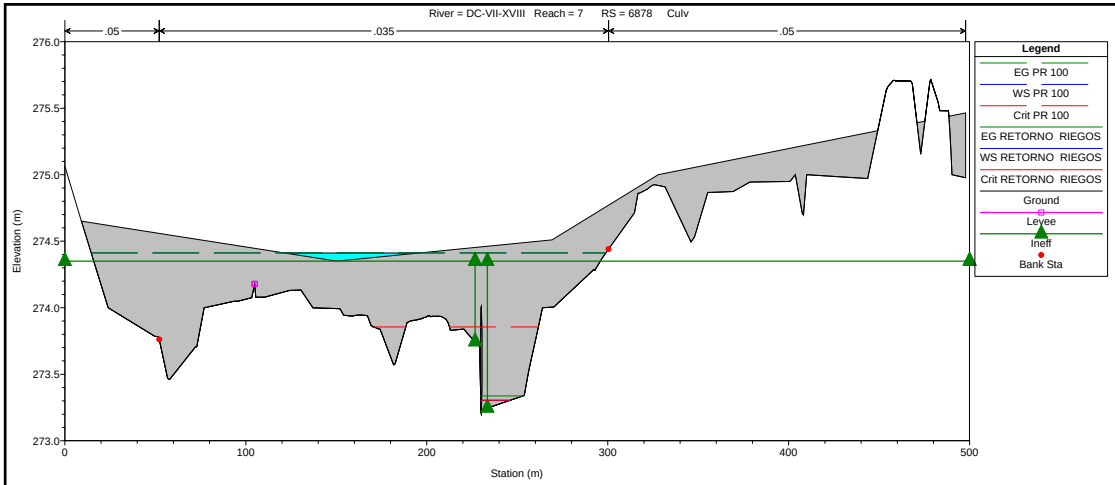

River = DC-VII-XVIII Reach = 7 RS = 7050.093
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

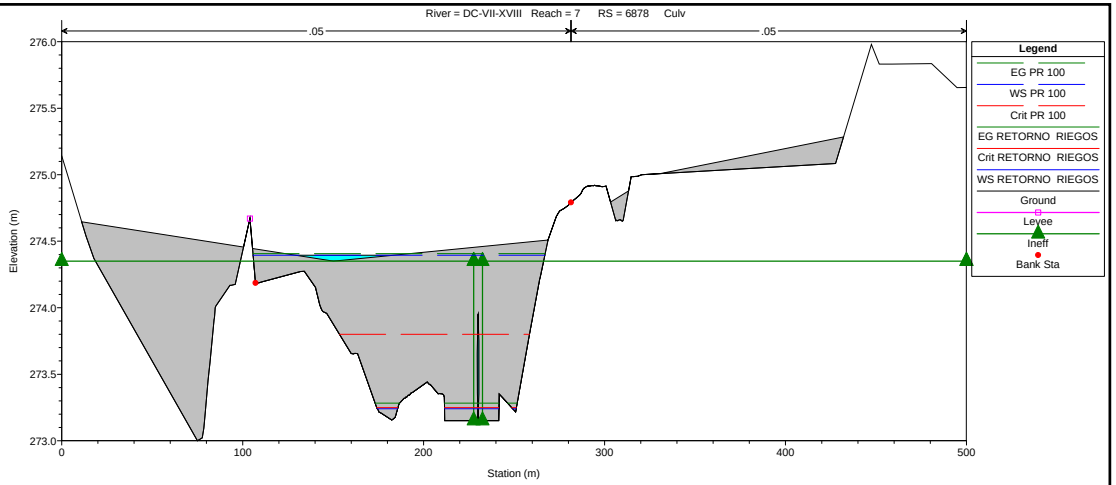

River = DC-VII-XVIII Reach = 7 RS = 6999.710
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
WS RETORNO RIEGOS
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

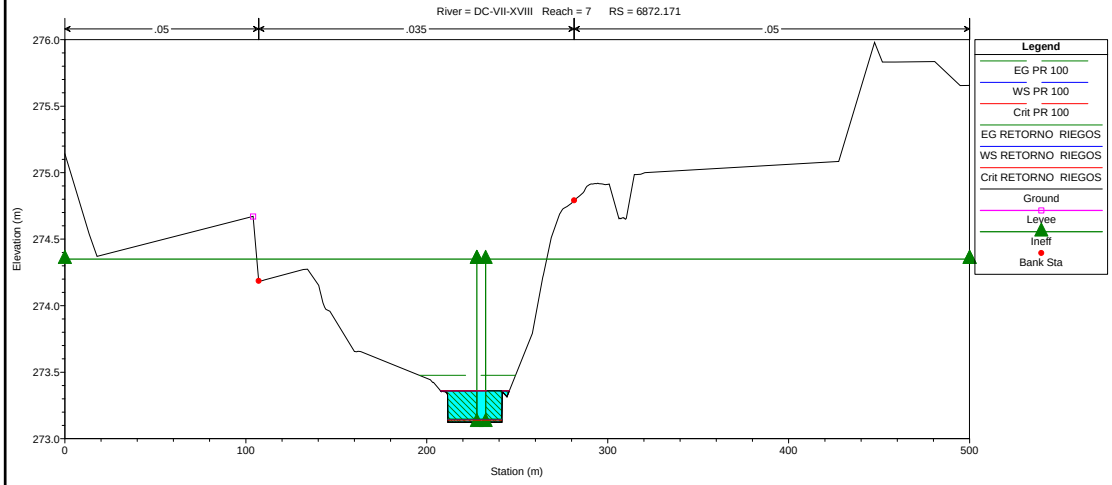

River = DC-VII-XVIII Reach = 7 RS = 6949.910
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

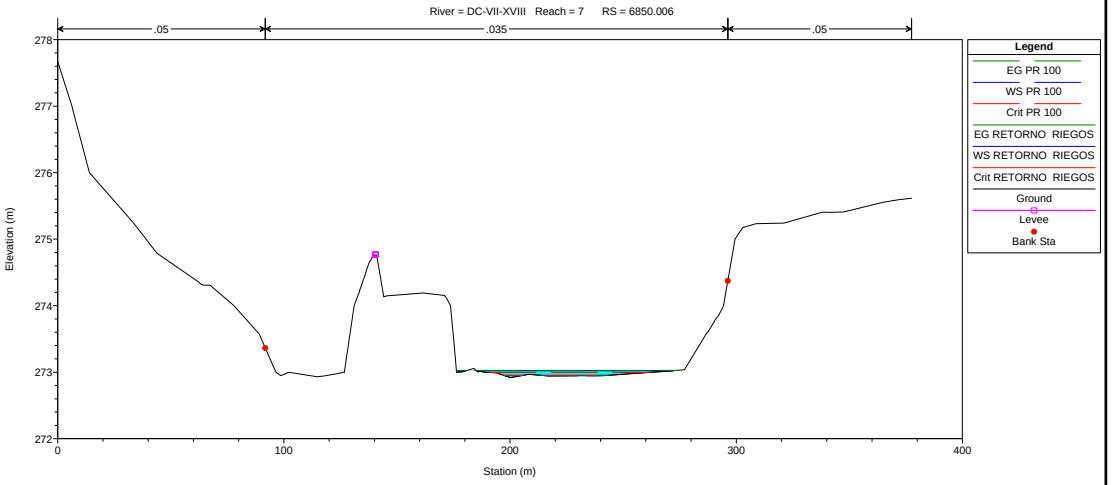

River = DC-VII-XVIII Reach = 7 RS = 6900.010
.05
.035
.05
Elevation (m)
Station (m)
Legend
WS PR 100
EG PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

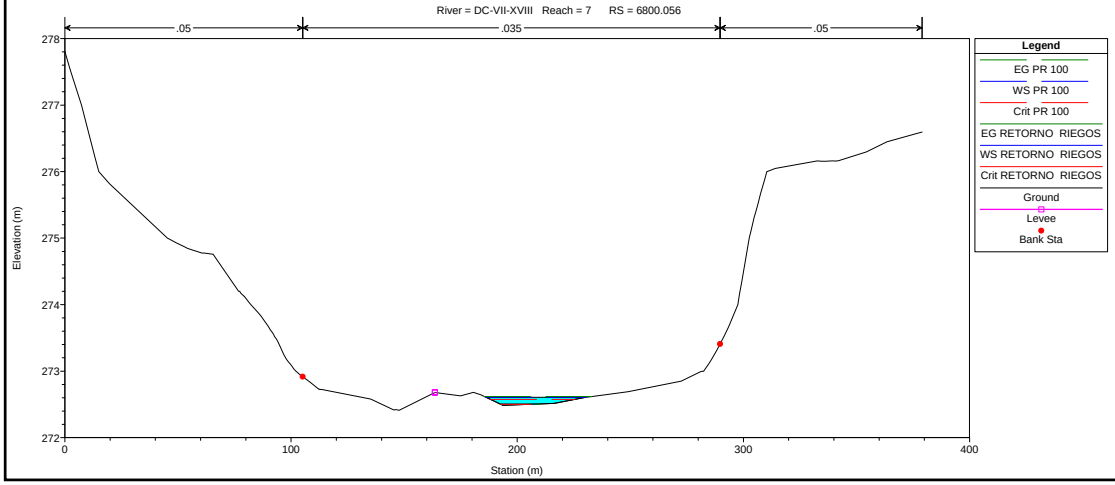

River = DC-VII-XVIII Reach = 7 RS = 6884.171
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

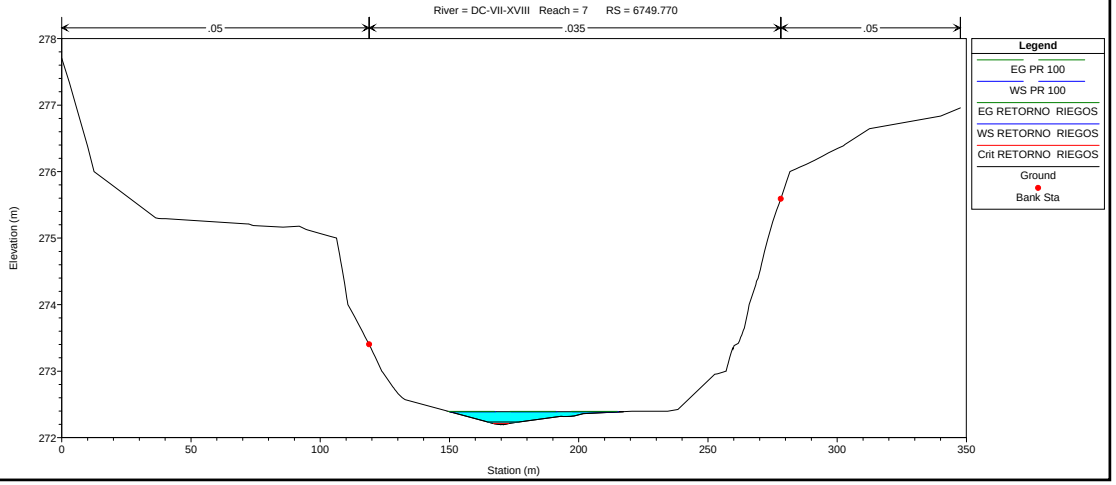

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

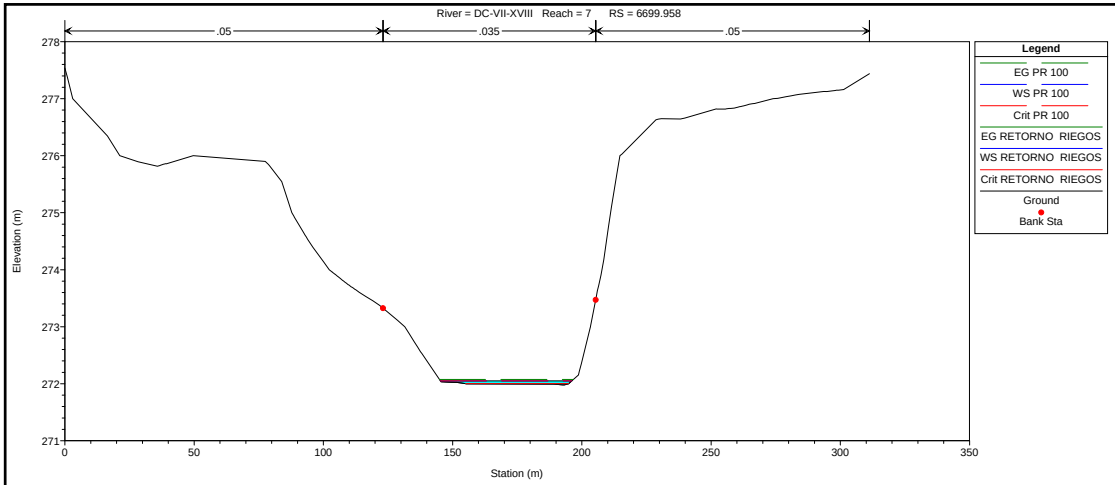

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.05
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

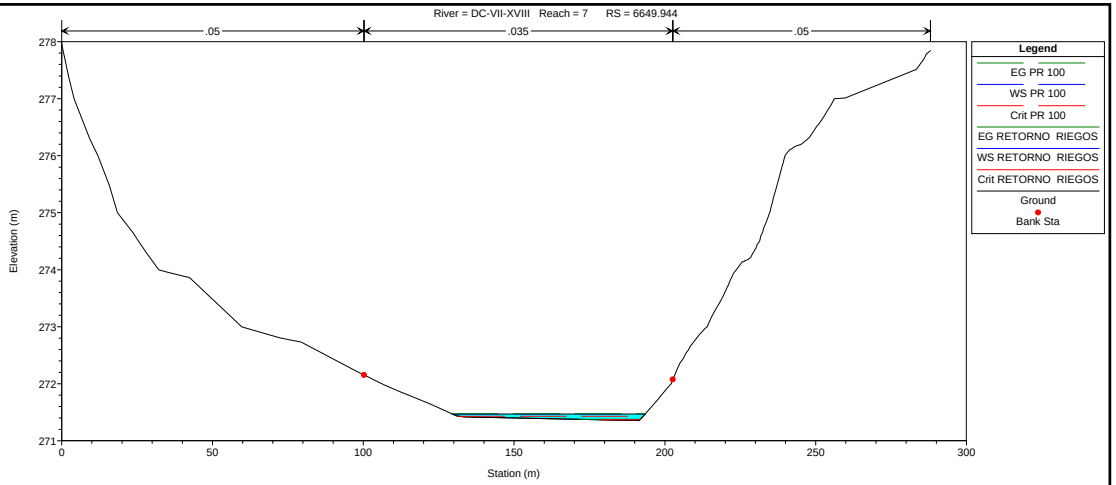

River = DC-VII-XVIII Reach = 7 RS = 6872.171
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

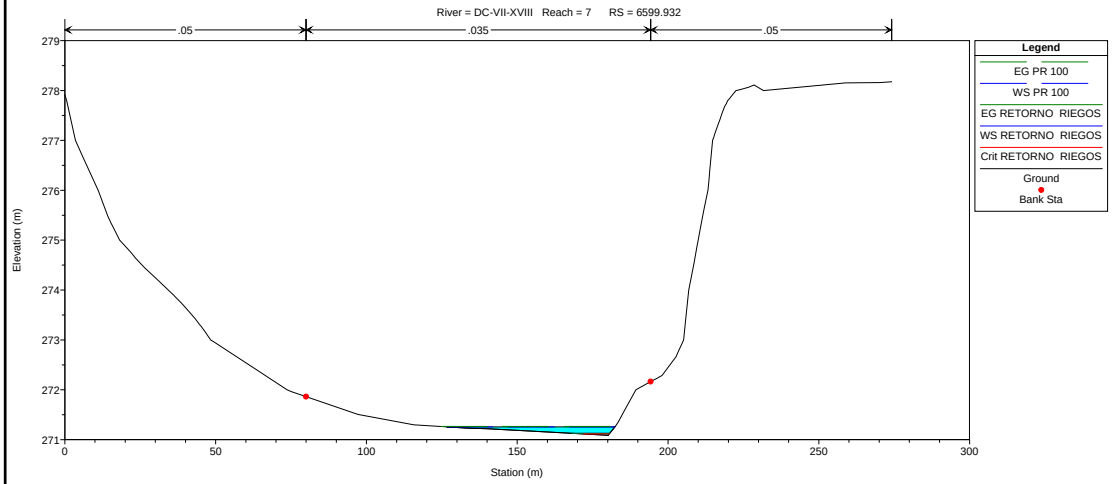

River = DC-VII-XVIII Reach = 7 RS = 6850.006
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

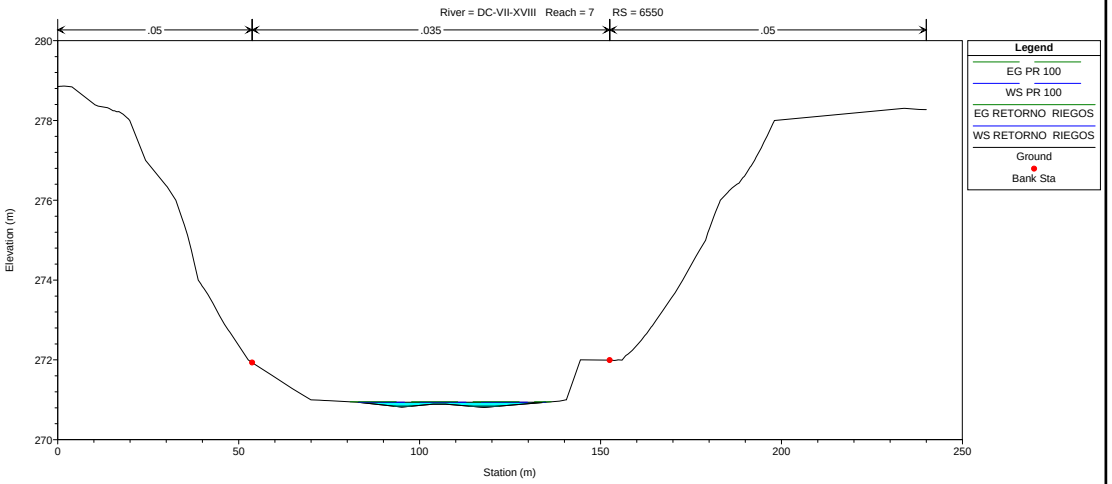

River = DC-VII-XVIII Reach = 7 RS = 6800.056
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

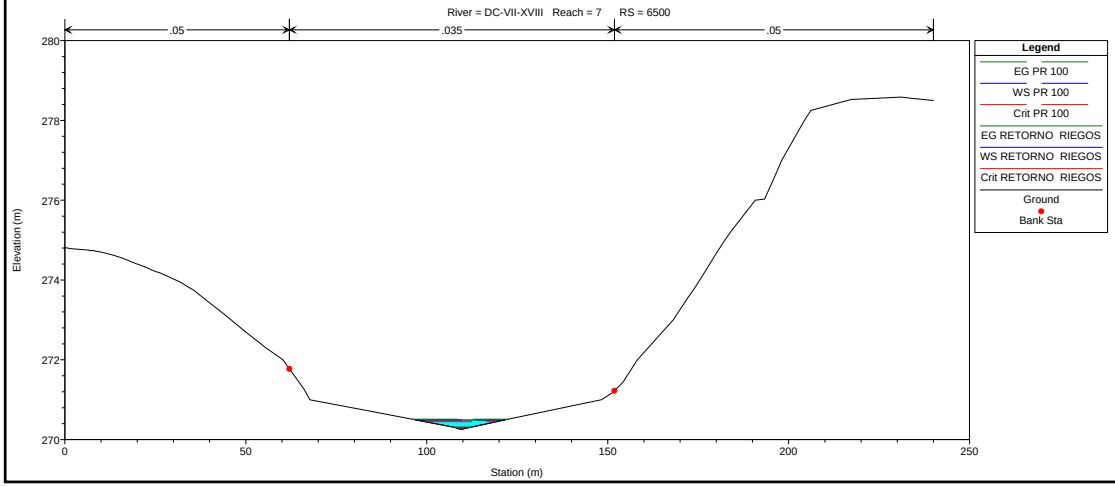

River = DC-VII-XVIII Reach = 7 RS = 6749.770
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

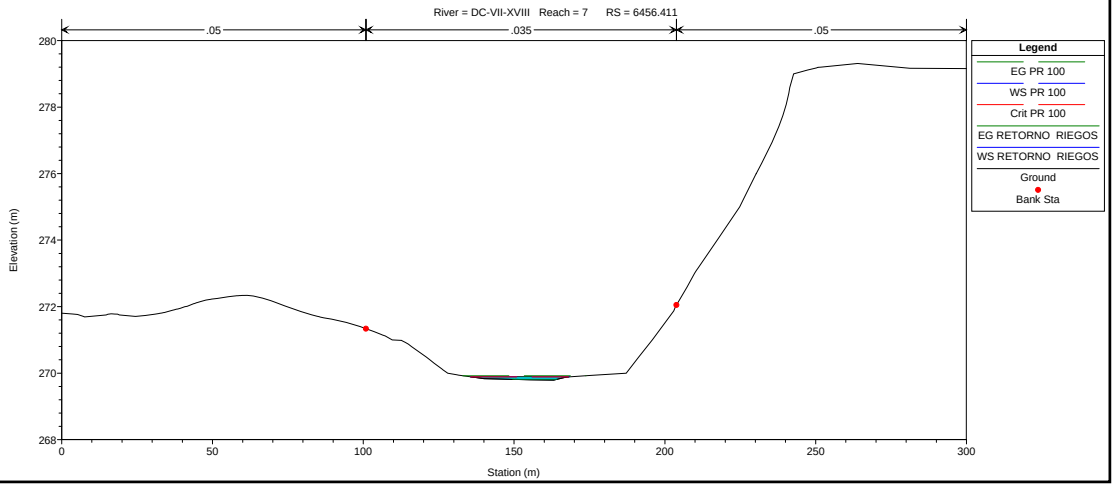

River = DC-VII-XVIII Reach = 7 RS = 6699.958
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

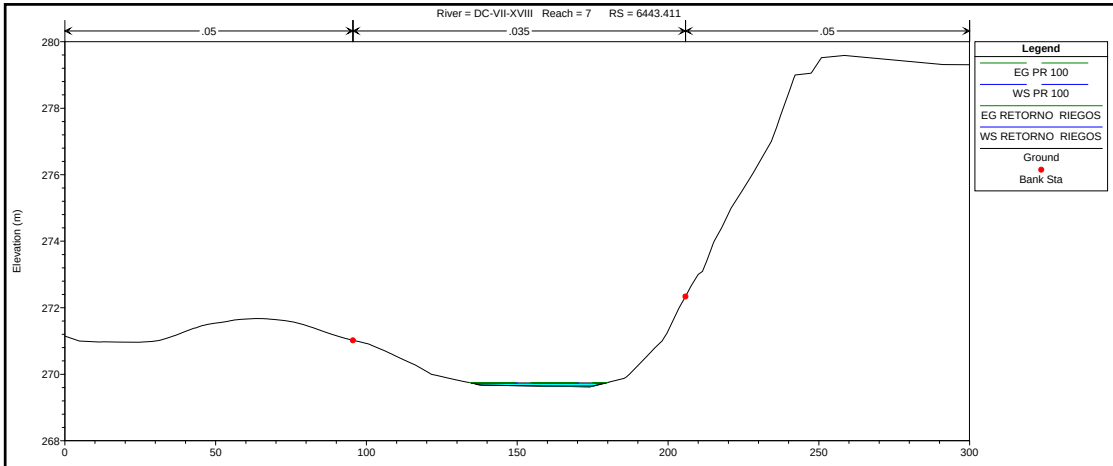

River = DC-VII-XVIII Reach = 7 RS = 6649.944
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

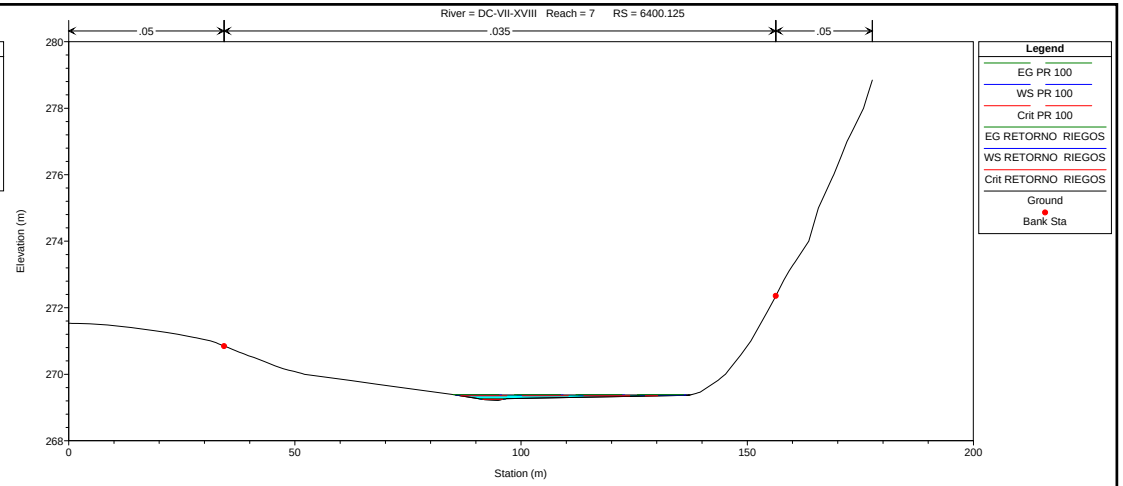

River = DC-VII-XVIII Reach = 7 RS = 6599.932
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

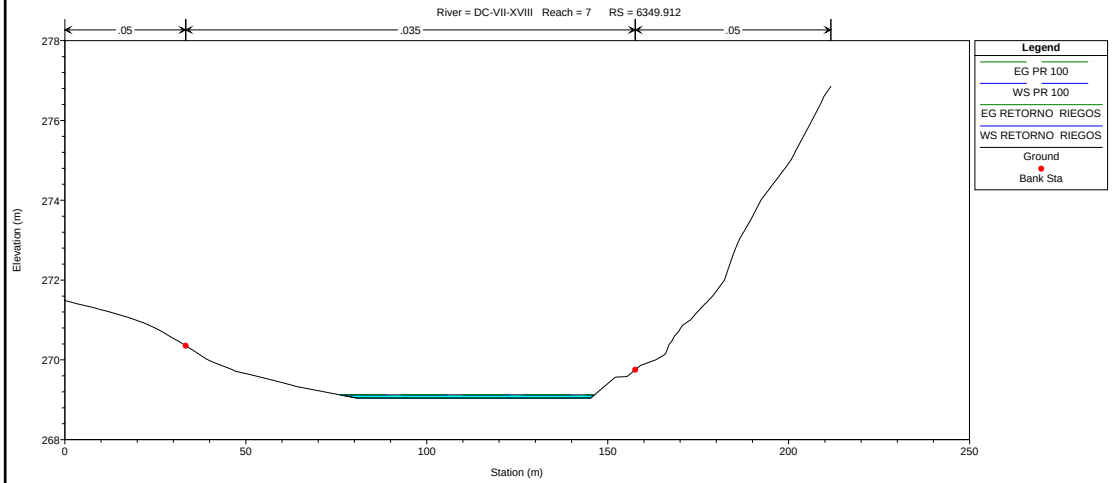

River = DC-VII-XVIII Reach = 7 RS = 6550
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

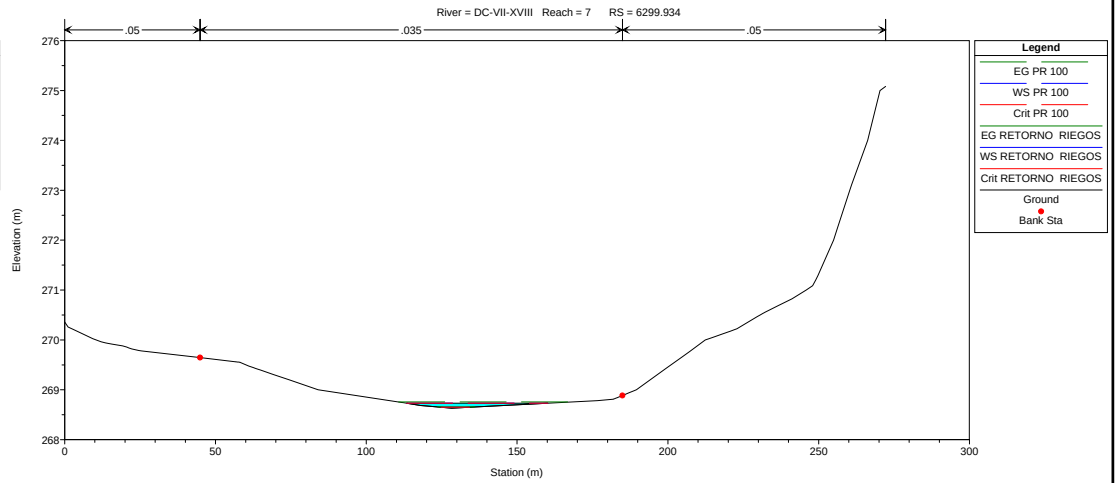

River = DC-VII-XVIII Reach = 7 RS = 6500
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

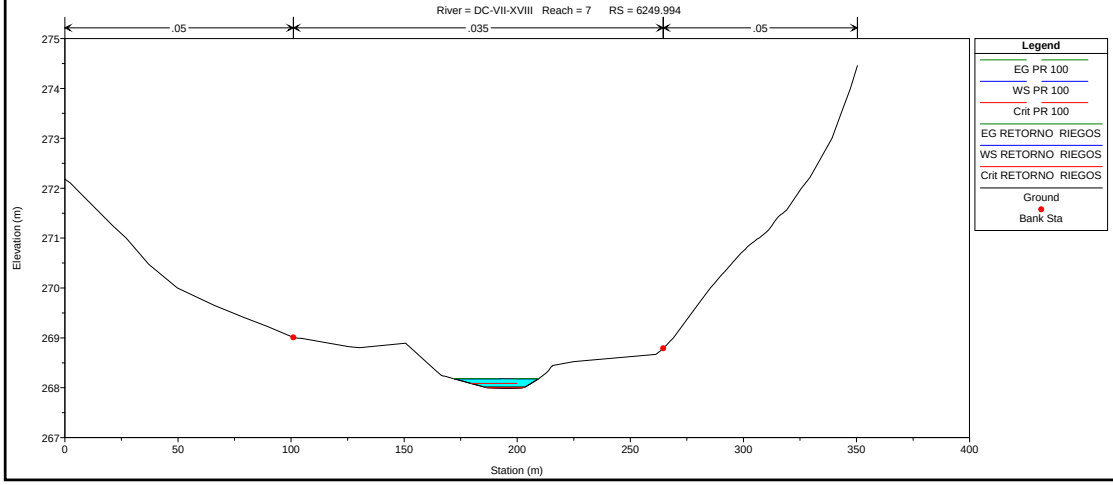

River = DC-VII-XVIII Reach = 7 RS = 6456.411
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

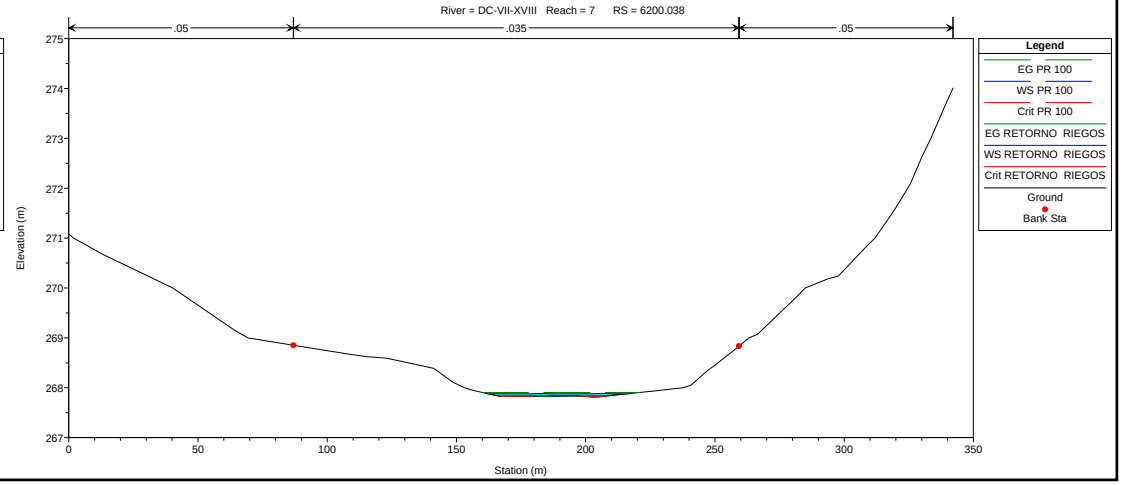

River = DC-VII-XVIII Reach = 7 RS = 6443.411
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

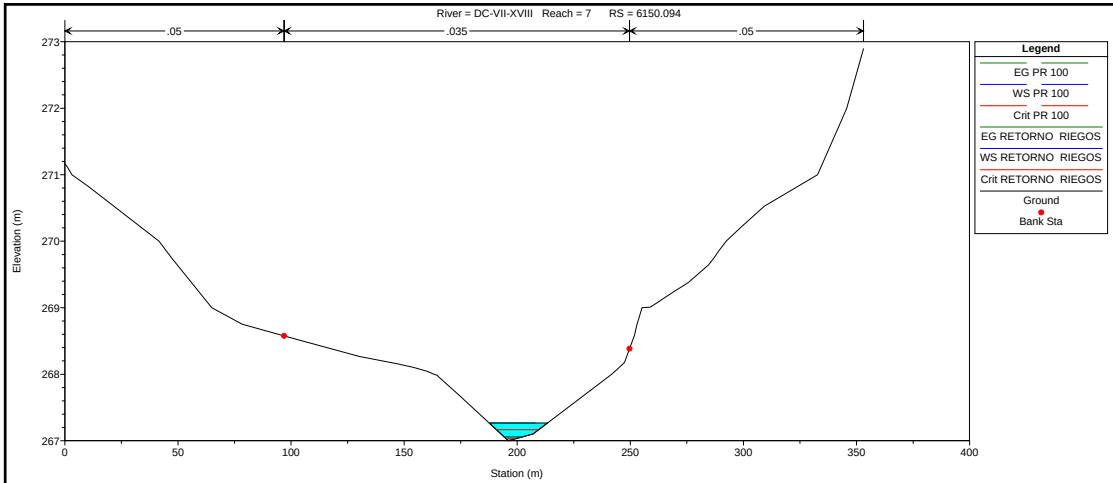

River = DC-VII-XVIII Reach = 7 RS = 6400.125
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

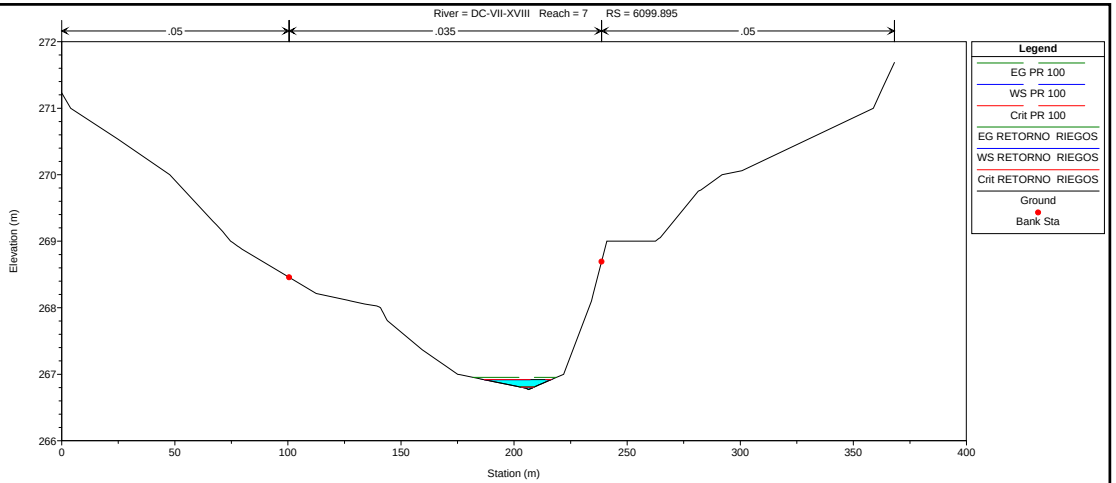

River = DC-VII-XVIII Reach = 7 RS = 6349.912
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

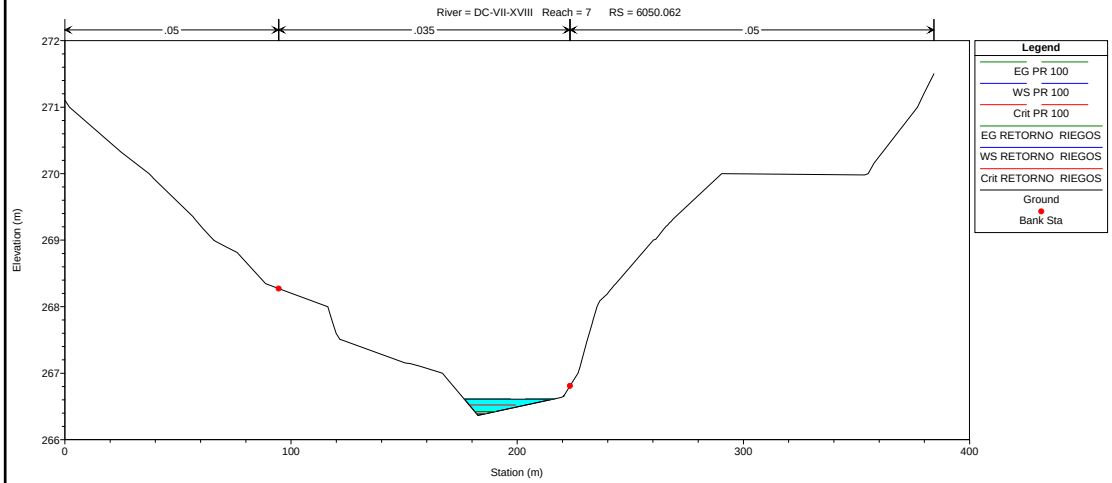

River = DC-VII-XVIII Reach = 7 RS = 6299.934
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

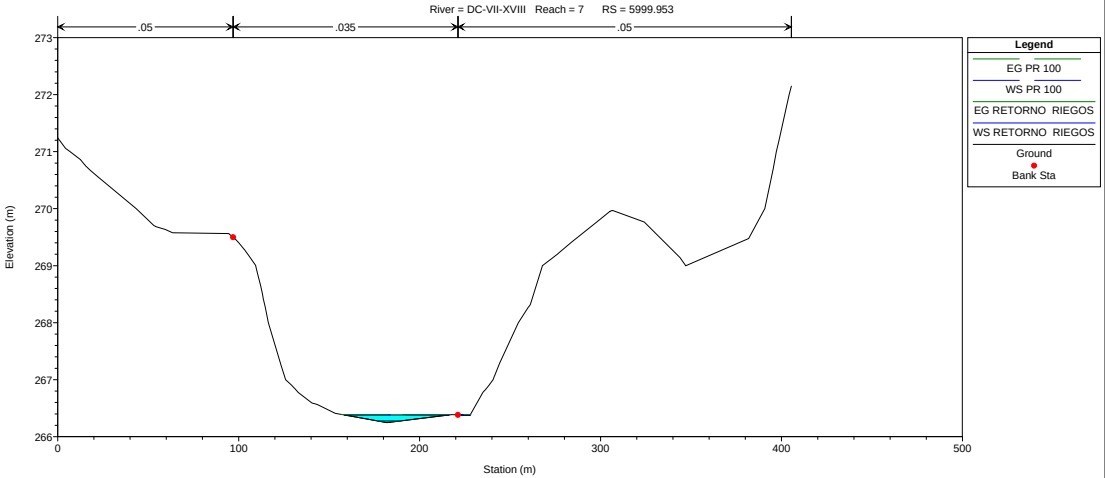

River = DC-VII-XVIII Reach = 7 RS = 6249.994
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

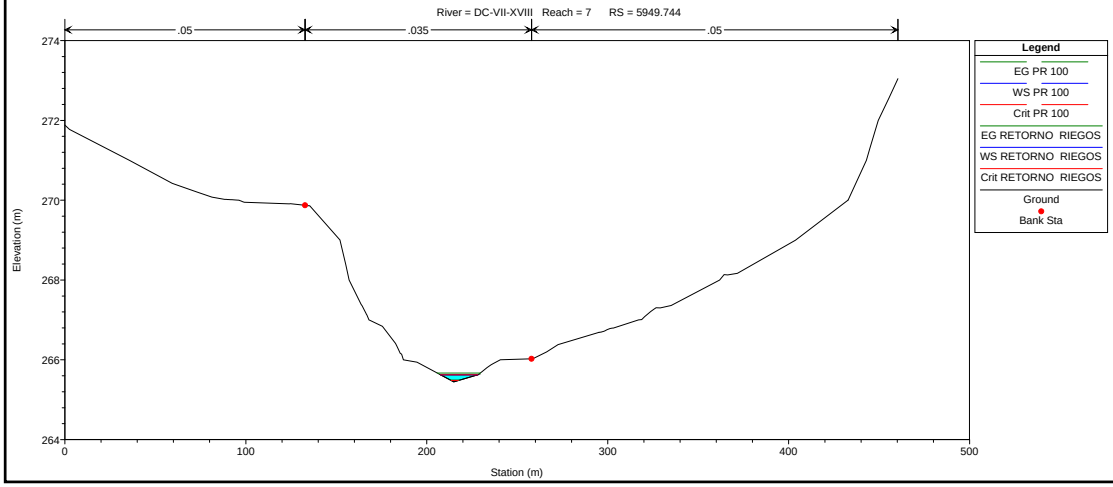

River = DC-VII-XVIII Reach = 7 RS = 6200.038
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

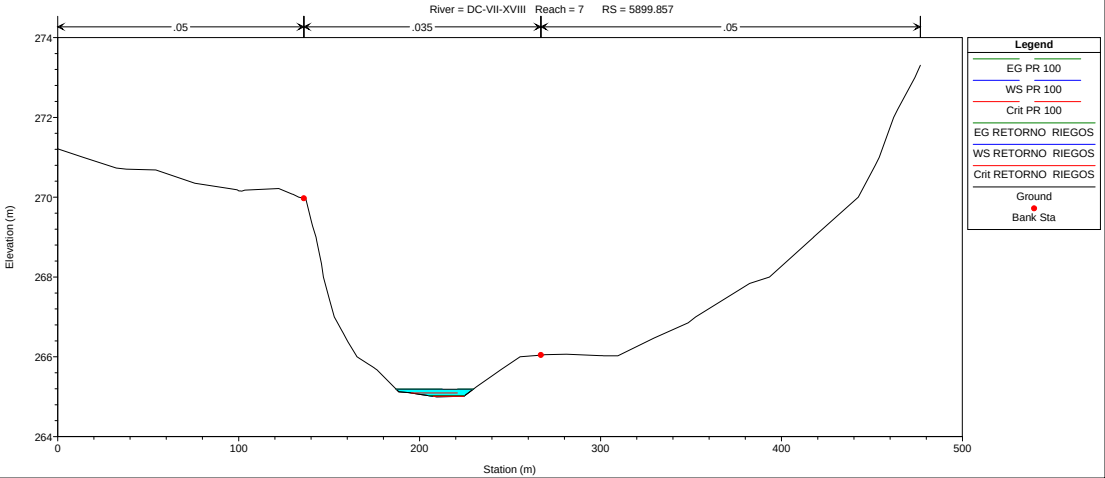

River = DC-VII-XVIII Reach = 7 RS = 6150.094
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

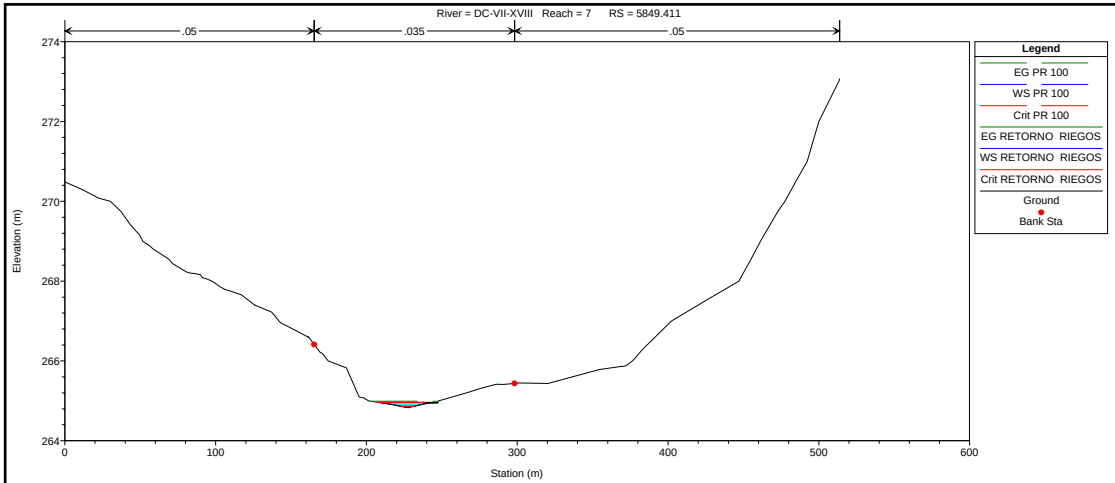

River = DC-VII-XVIII Reach = 7 RS = 6099.895
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

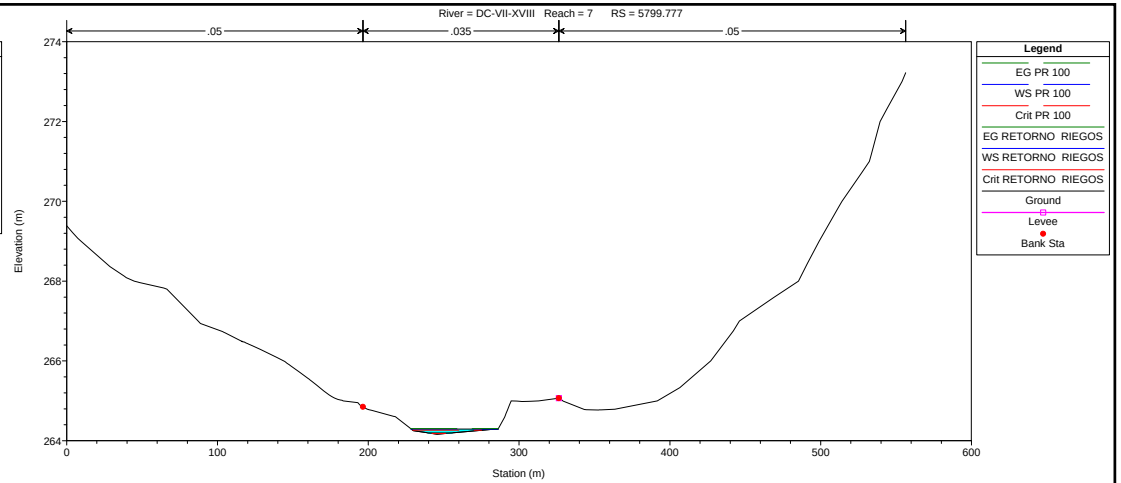

River = DC-VII-XVIII Reach = 7 RS = 6050.062
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

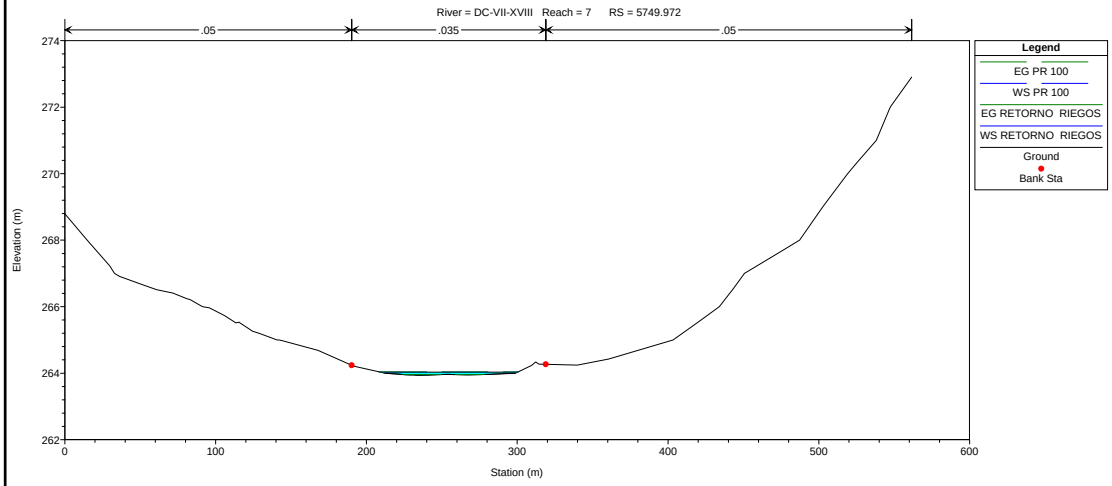

River = DC-VII-XVIII Reach = 7 RS = 5999.953
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

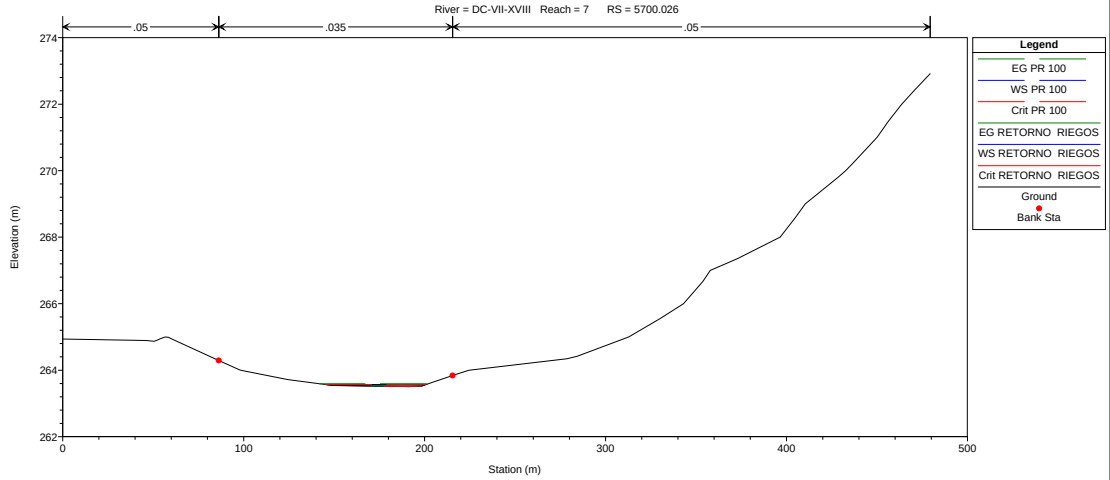

River = DC-VII-XVIII Reach = 7 RS = 5949.744
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

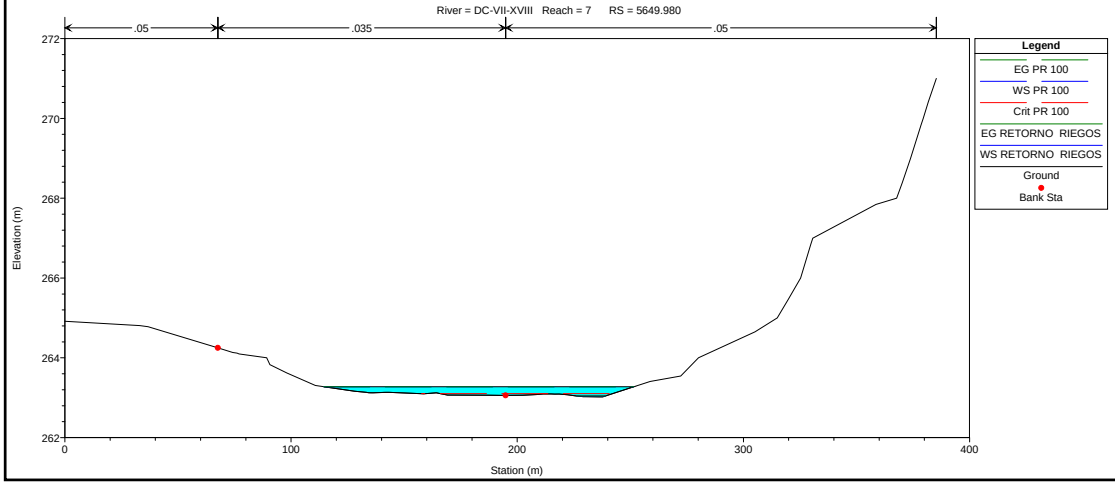

River = DC-VII-XVIII Reach = 7 RS = 5899.857
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

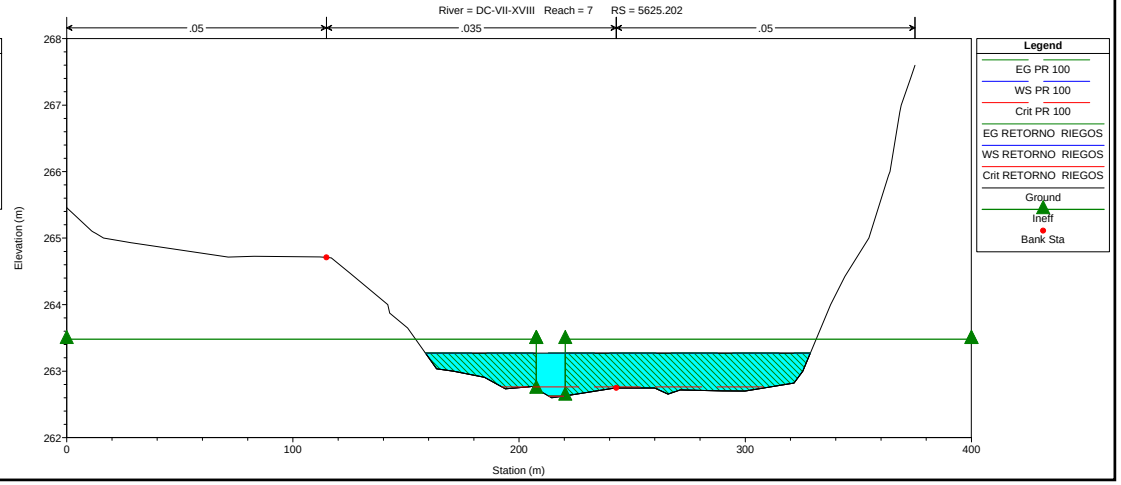

River = DC-VII-XVIII Reach = 7 RS = 5849.411
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

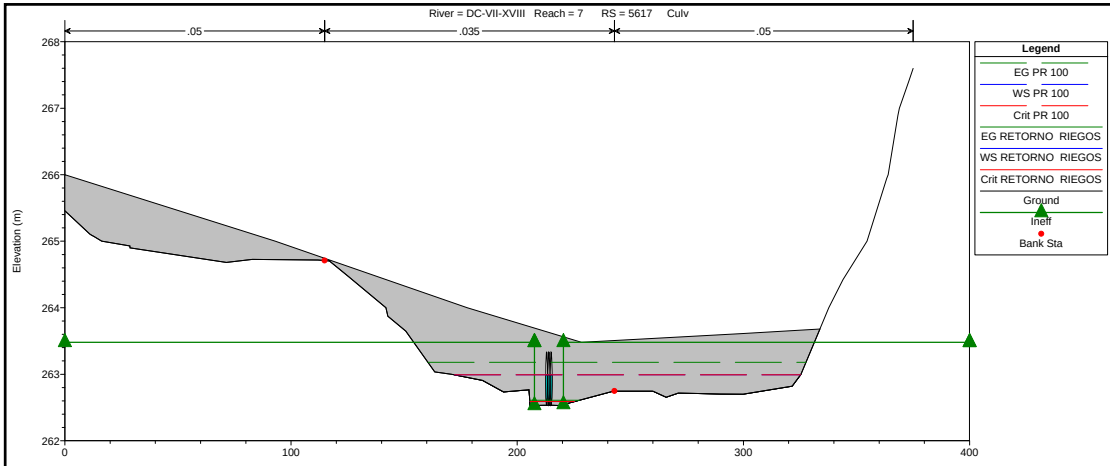

River = DC-VII-XVIII Reach = 7 RS = 5799.777
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

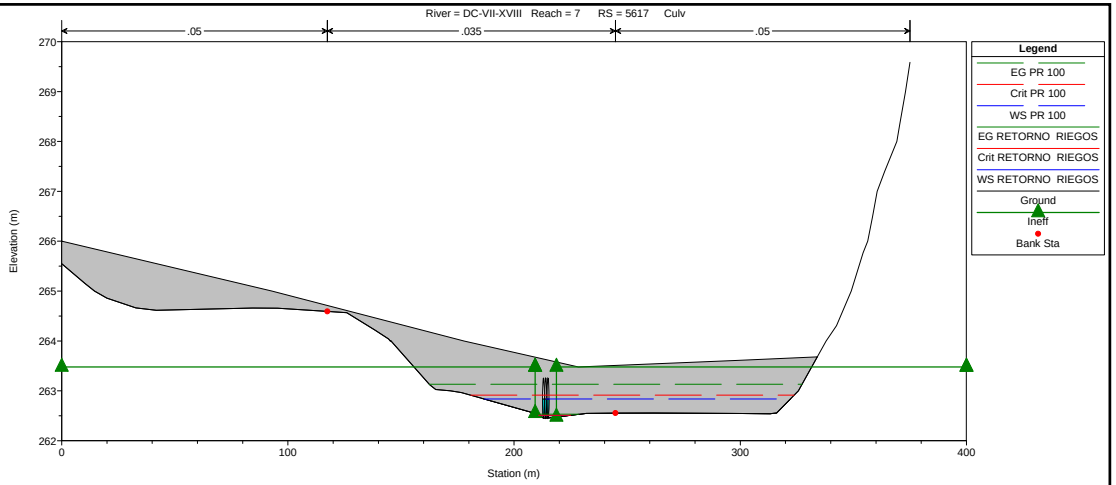

River = DC-VII-XVIII Reach = 7 RS = 5749.972
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

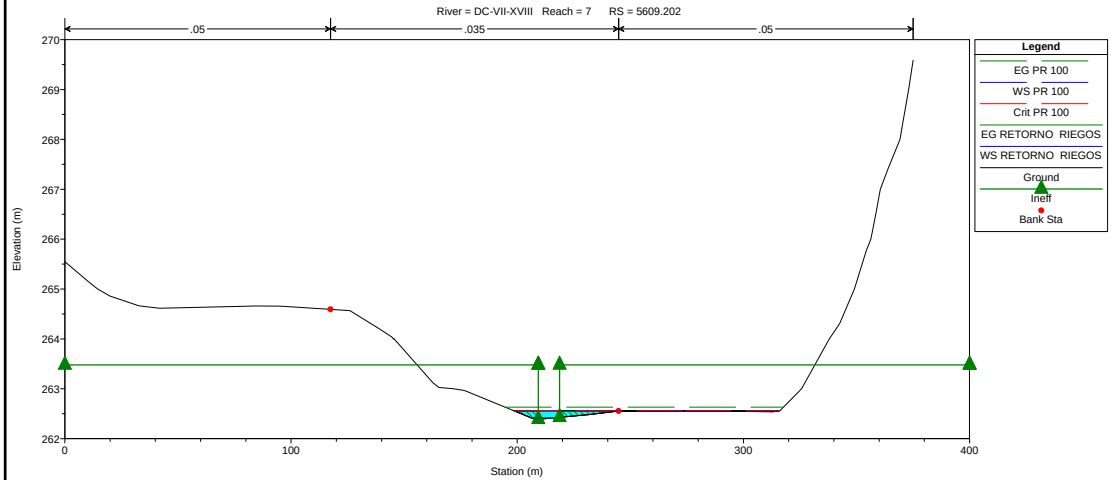

River = DC-VII-XVIII Reach = 7 RS = 5700.026
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

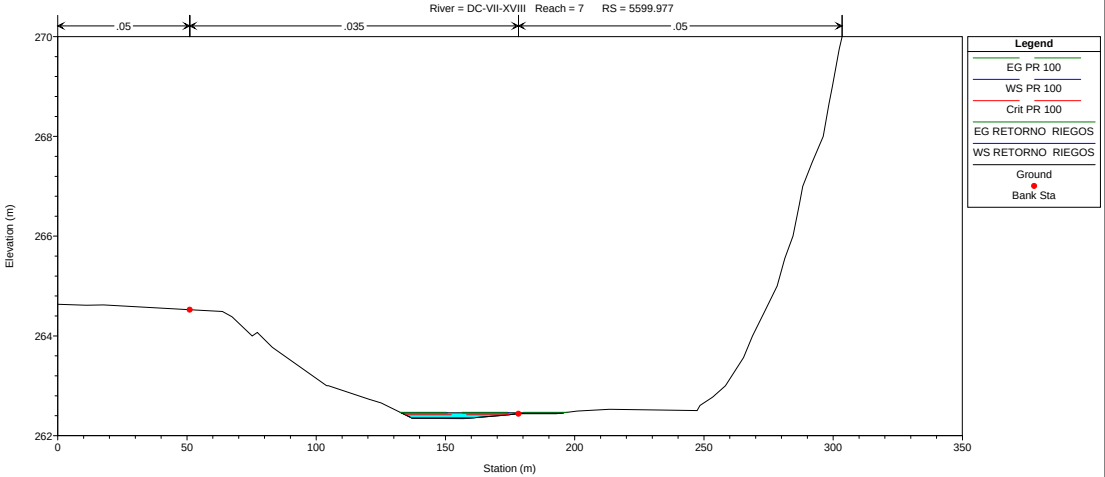

River = DC-VII-XVIII Reach = 7 RS = 5649.980
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

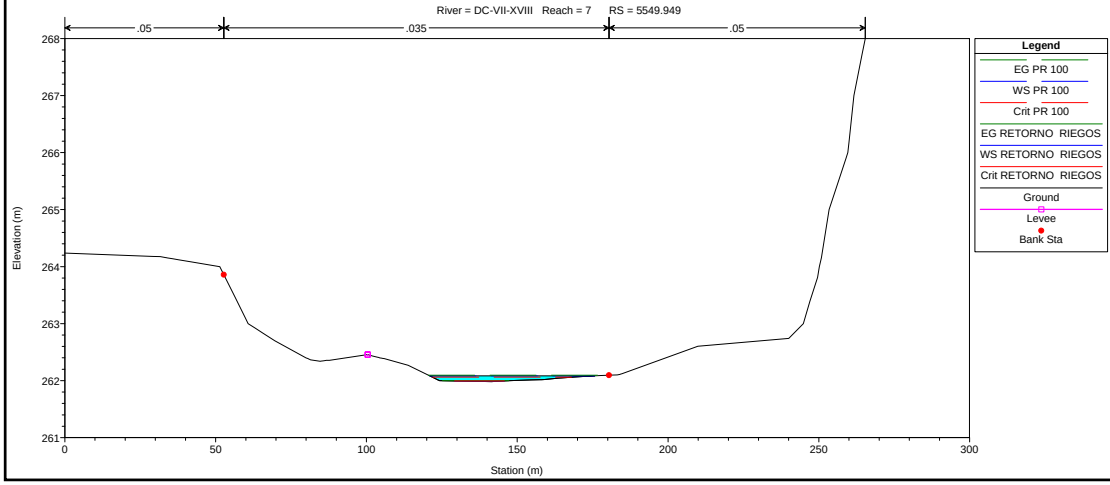

River = DC-VII-XVIII Reach = 7 RS = 5625.202
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

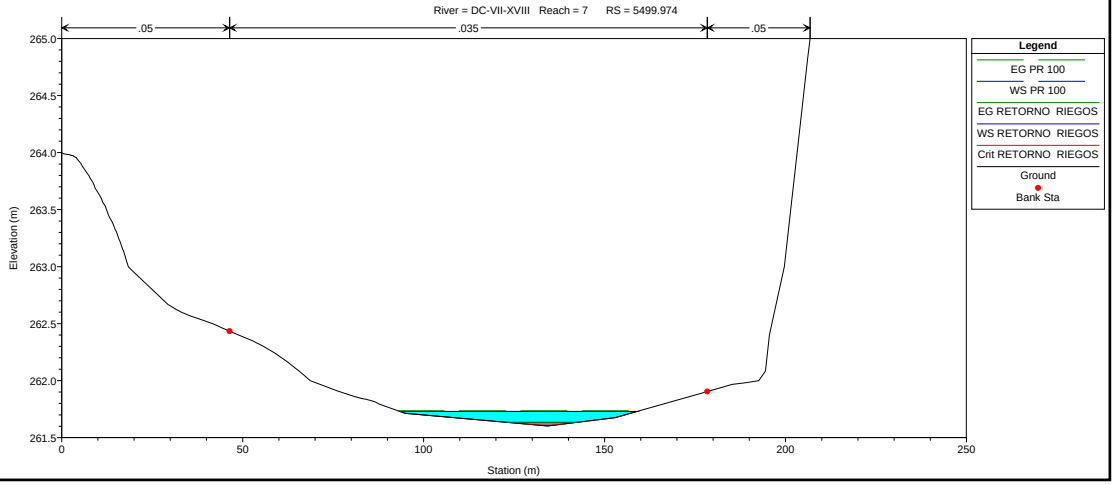

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

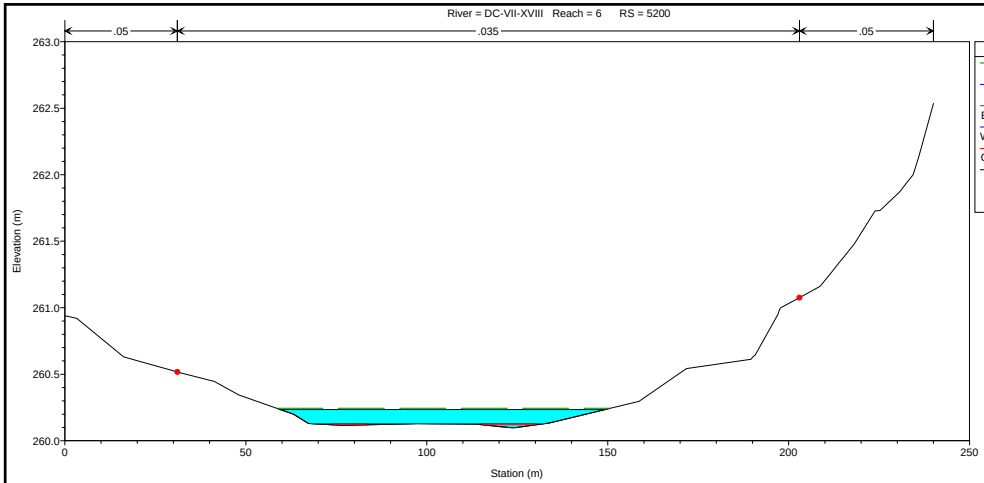

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

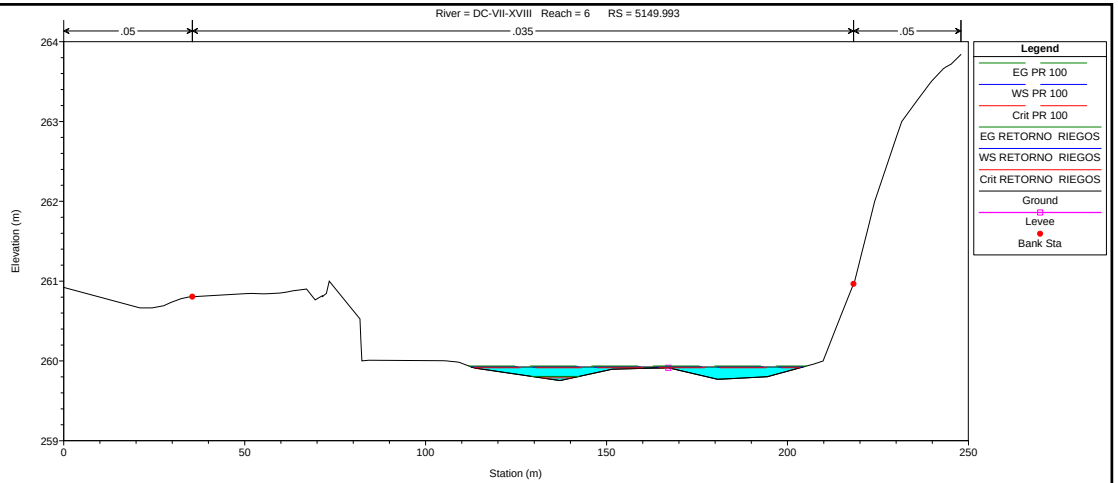

River = DC-VII-XVIII Reach = 7 RS = 5609.202
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

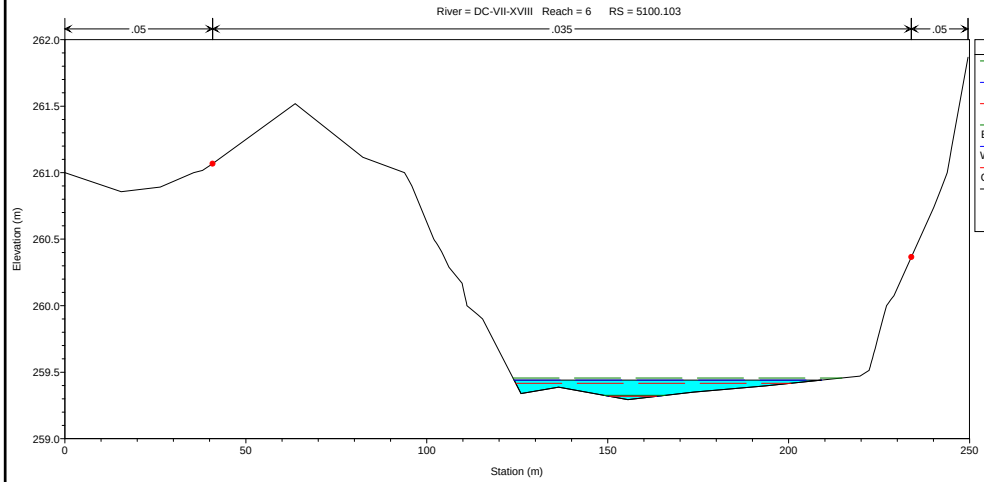

River = DC-VII-XVIII Reach = 7 RS = 5599.977
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

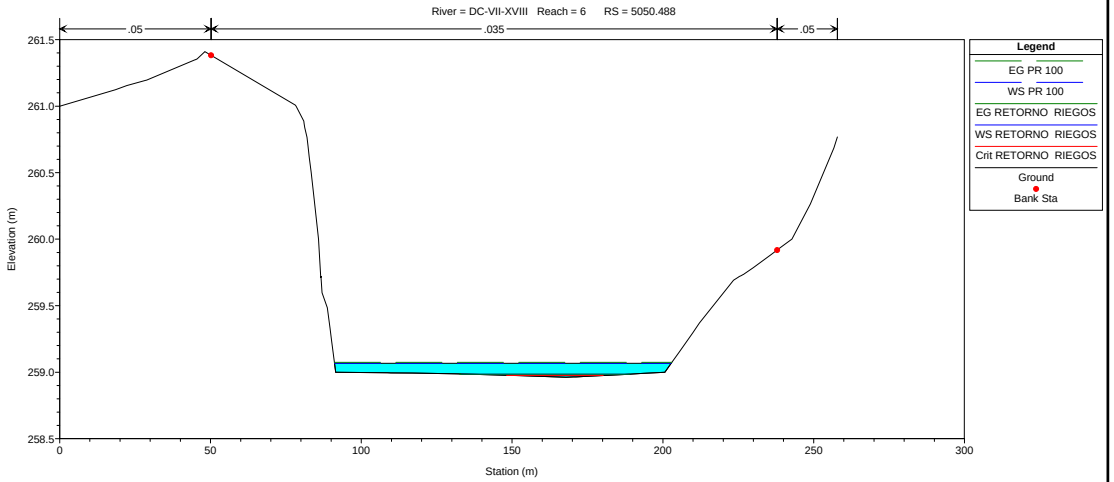

River = DC-VII-XVIII Reach = 7 RS = 5549.949
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

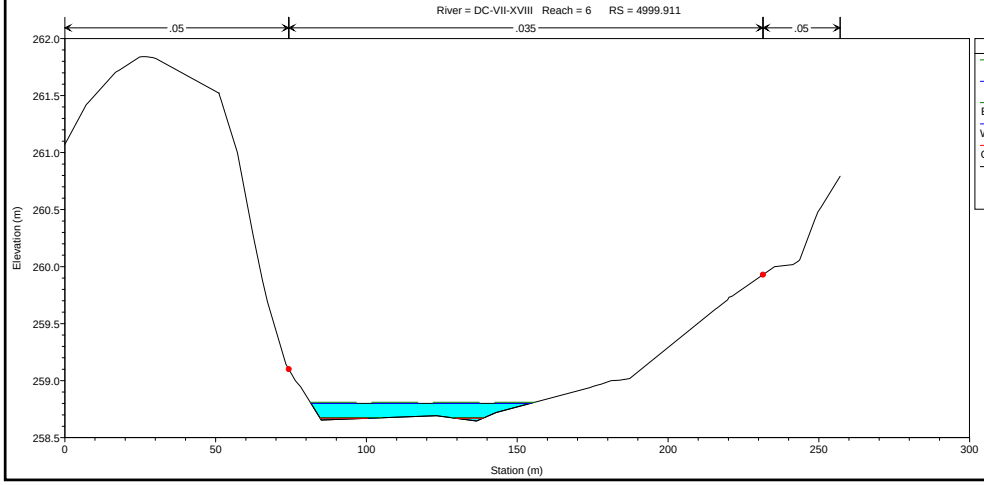

River = DC-VII-XVIII Reach = 7 RS = 5499.974
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

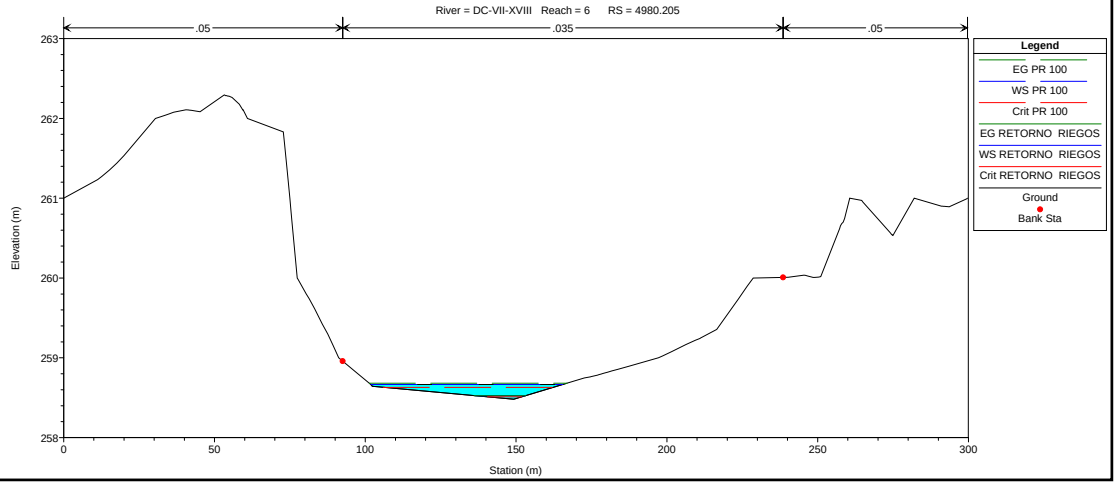

River = DC-VII-XVIII Reach = 6 RS = 5200
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

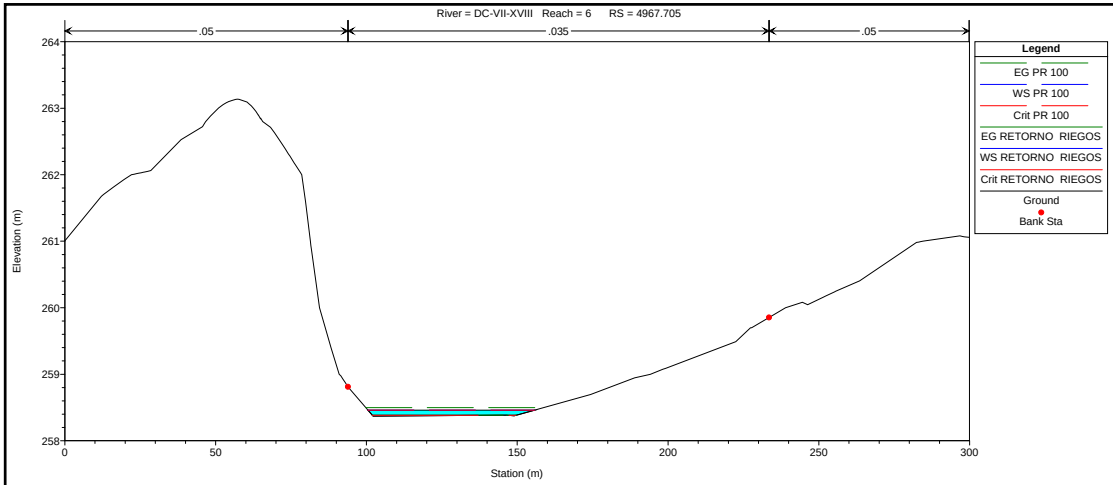

River = DC-VII-XVIII Reach = 6 RS = 5149.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

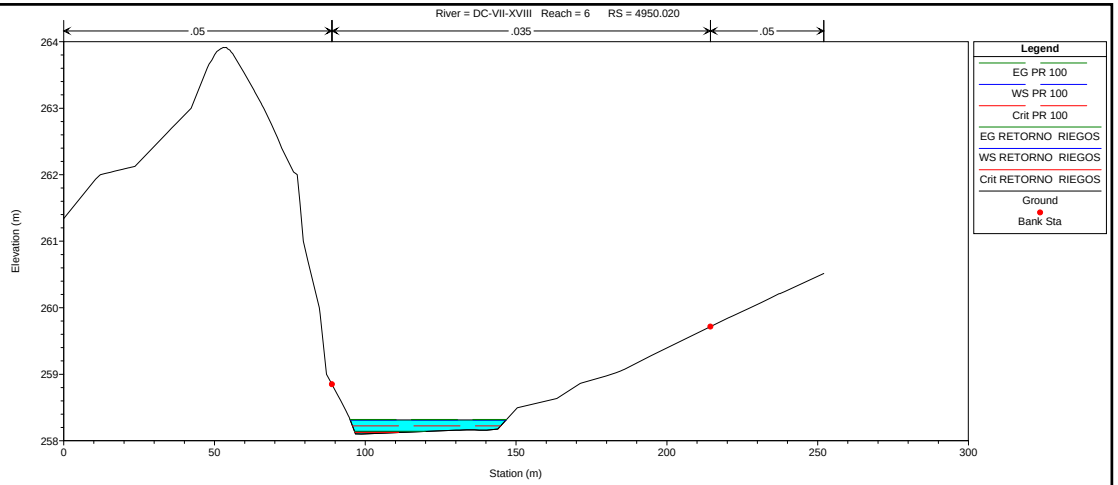

River = DC-VII-XVIII Reach = 6 RS = 5100.103
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

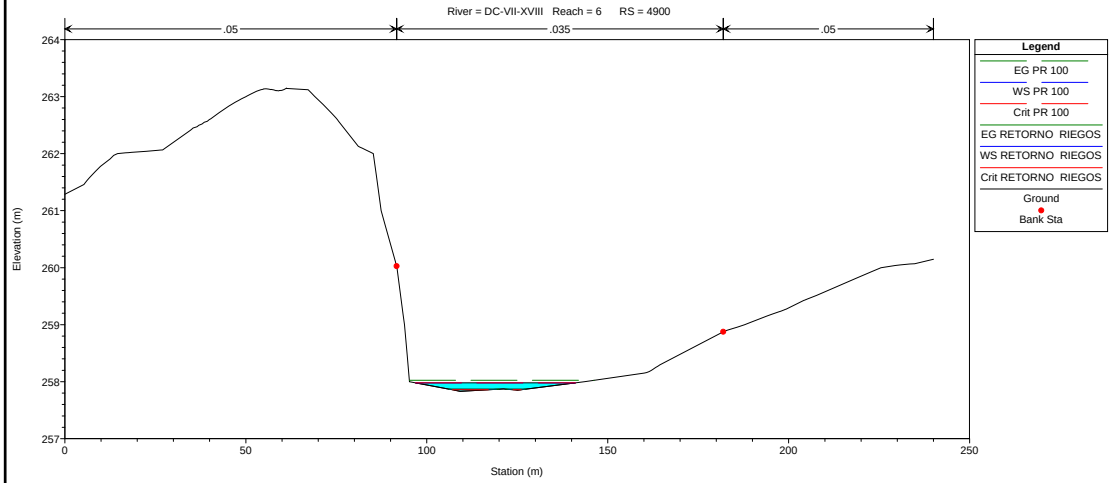

River = DC-VII-XVIII Reach = 6 RS = 5050.488
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

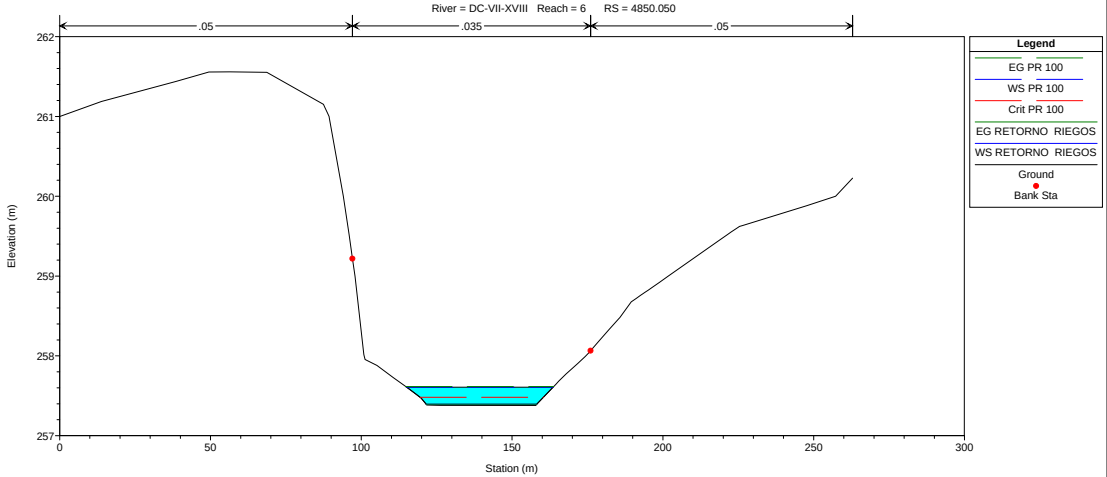

River = DC-VII-XVIII Reach = 6 RS = 4999.911
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

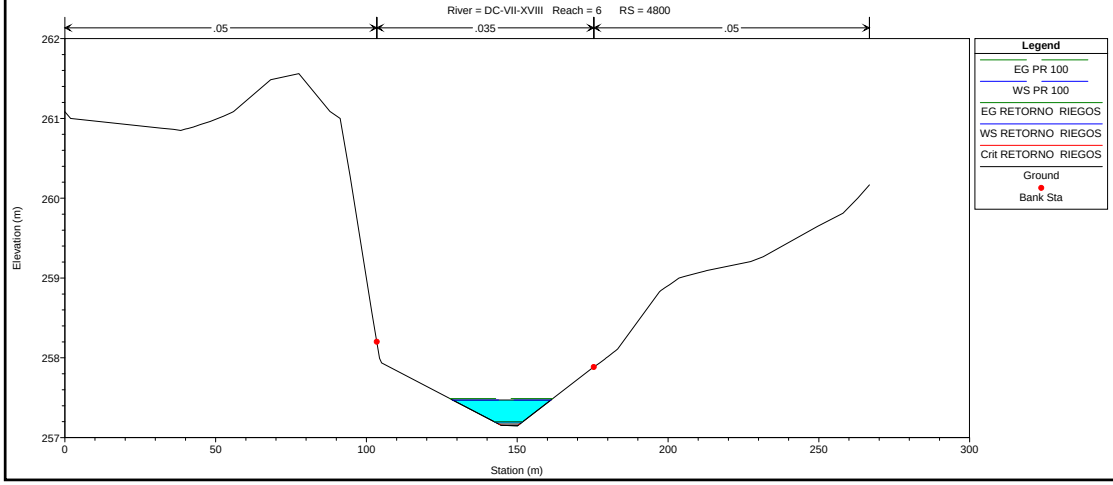

River = DC-VII-XVIII Reach = 6 RS = 4980.205
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

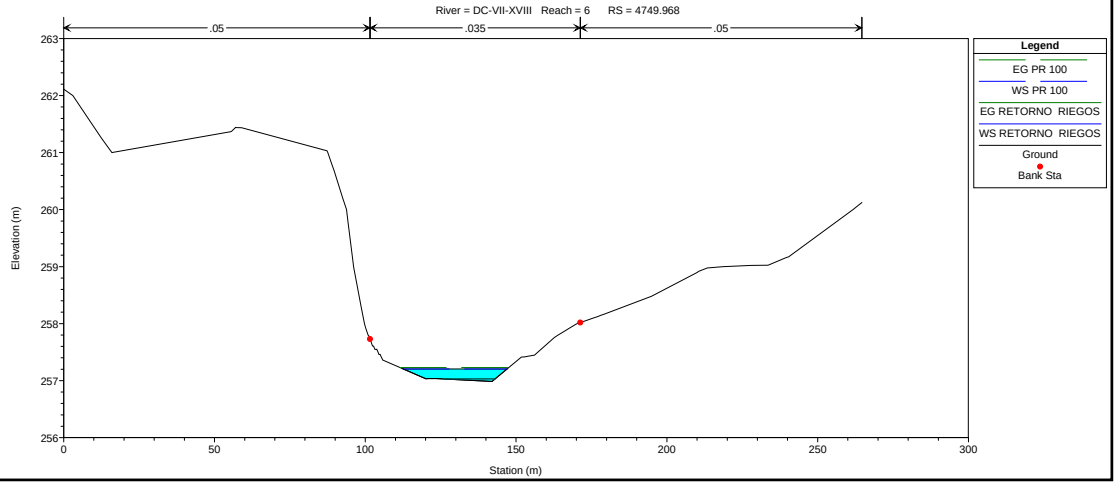

River = DC-VII-XVIII Reach = 6 RS = 4967.705
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

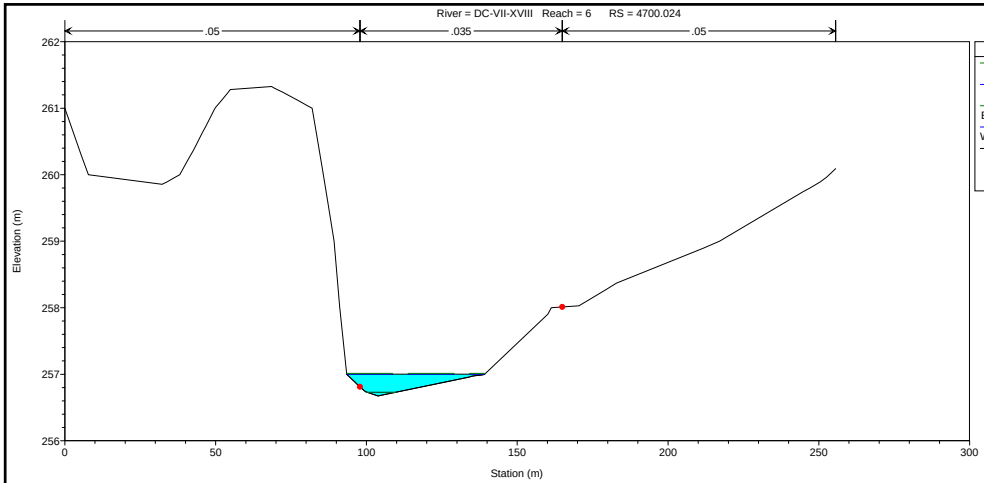

River = DC-VII-XVIII Reach = 6 RS = 4950.020
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

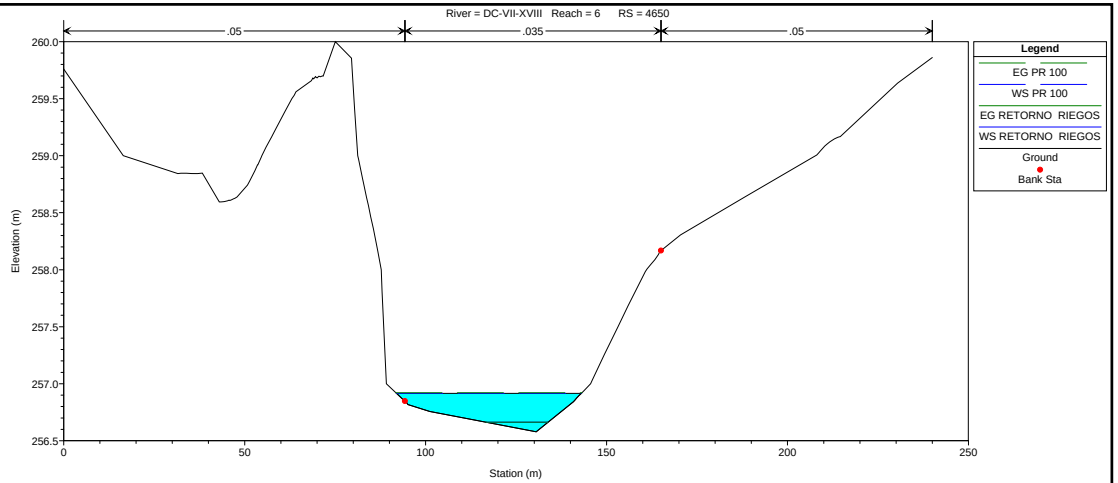

River = DC-VII-XVIII Reach = 6 RS = 4900
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

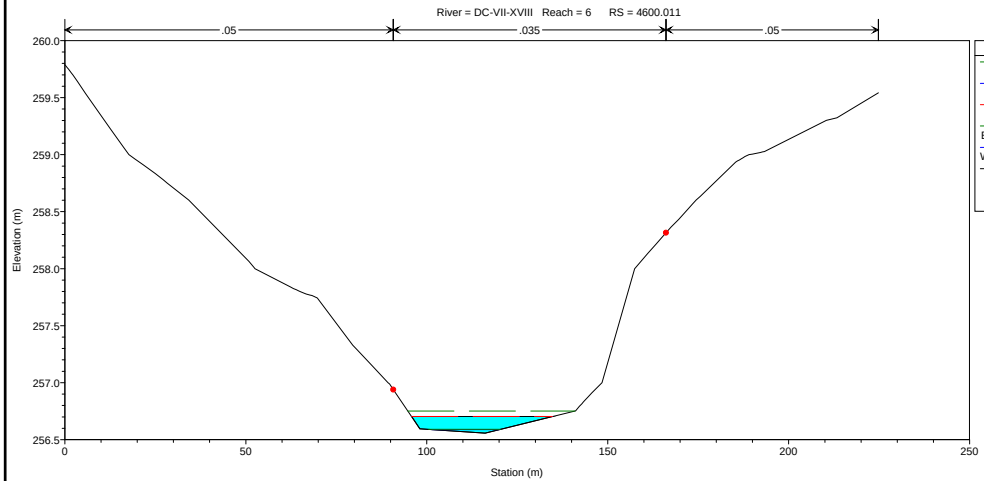

River = DC-VII-XVIII Reach = 6 RS = 4850.050
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

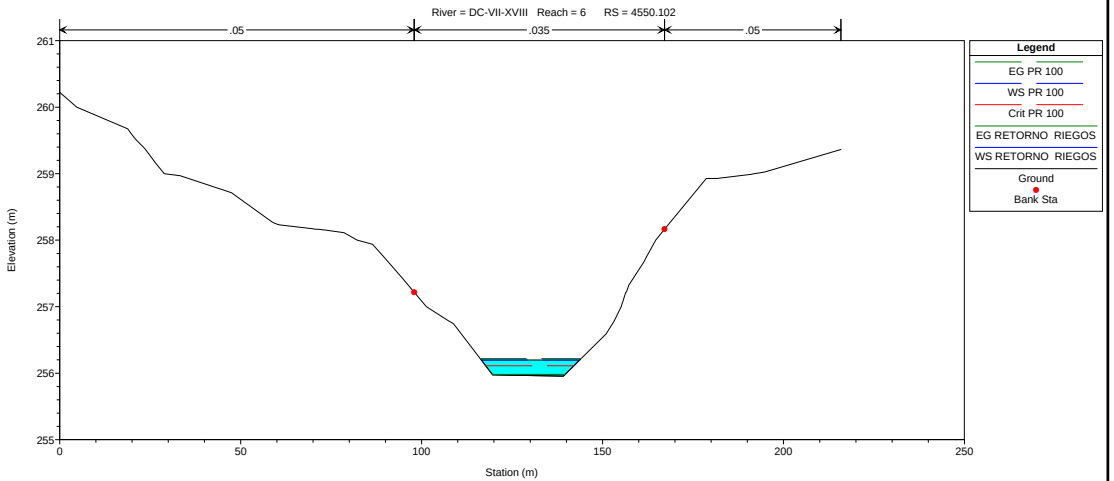

River = DC-VII-XVIII Reach = 6 RS = 4800
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

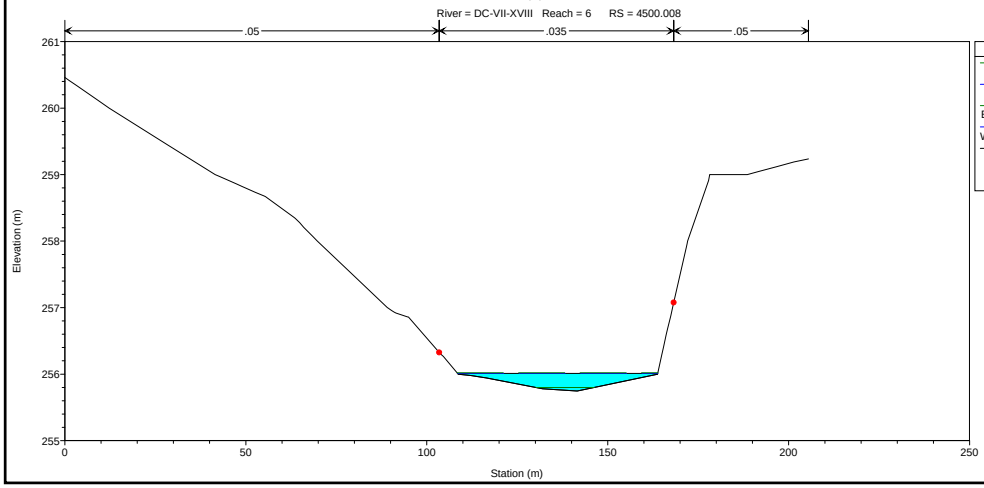

River = DC-VII-XVIII Reach = 6 RS = 4749.968
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

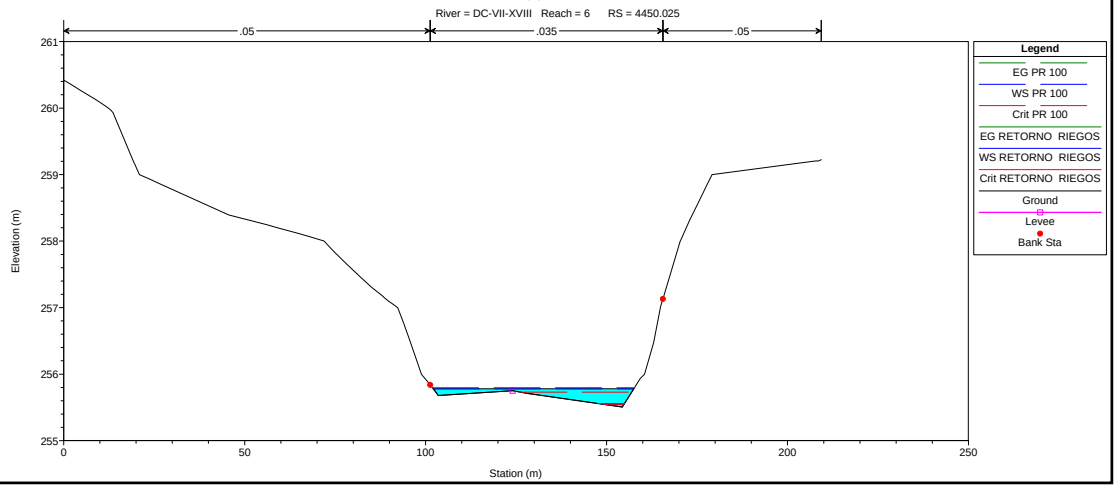

River = DC-VII-XVIII Reach = 6 RS = 4700.024
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

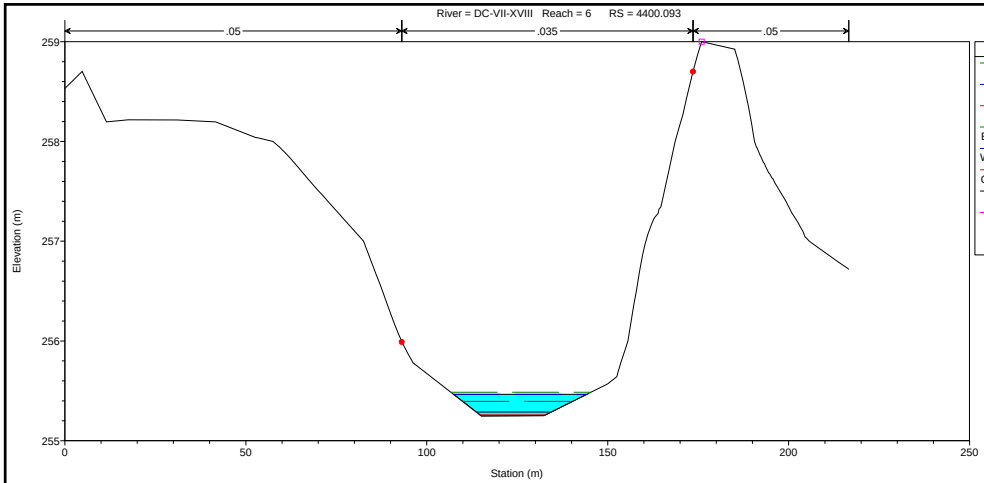

River = DC-VII-XVIII Reach = 6 RS = 4650
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

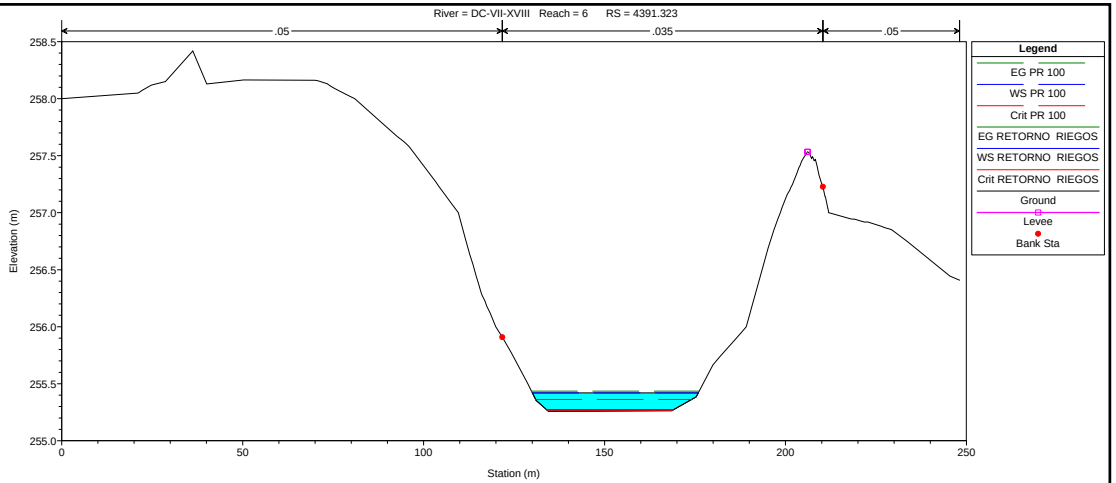

River = DC-VII-XVIII Reach = 6 RS = 4600.011
.05
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

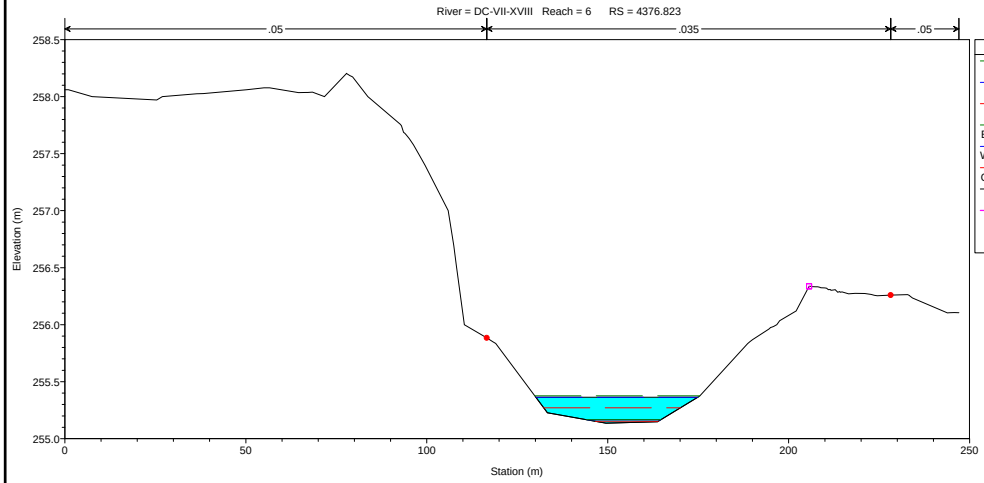

River = DC-VII-XVIII Reach = 6 RS = 4550.102
.05
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

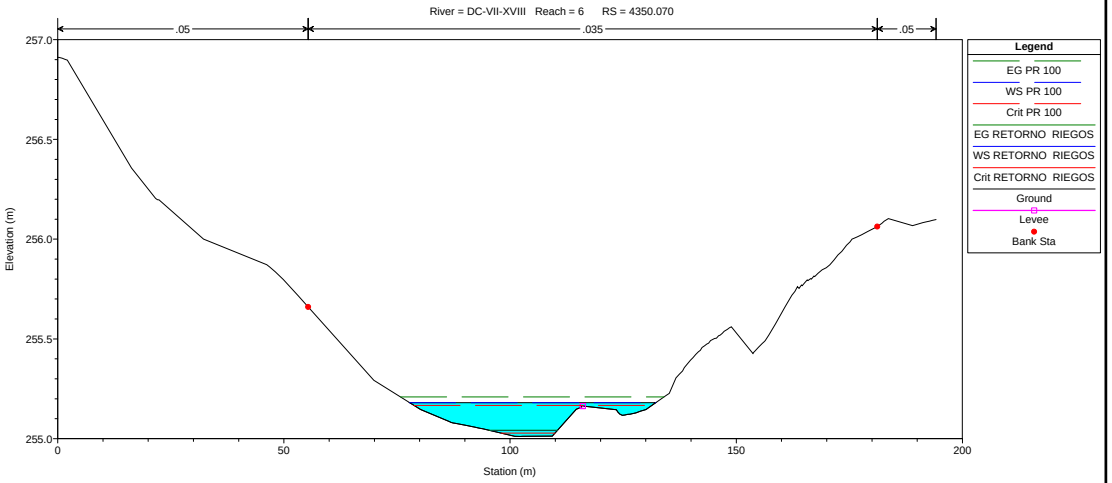

River = DC-VII-XVIII Reach = 6 RS = 4500.008
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

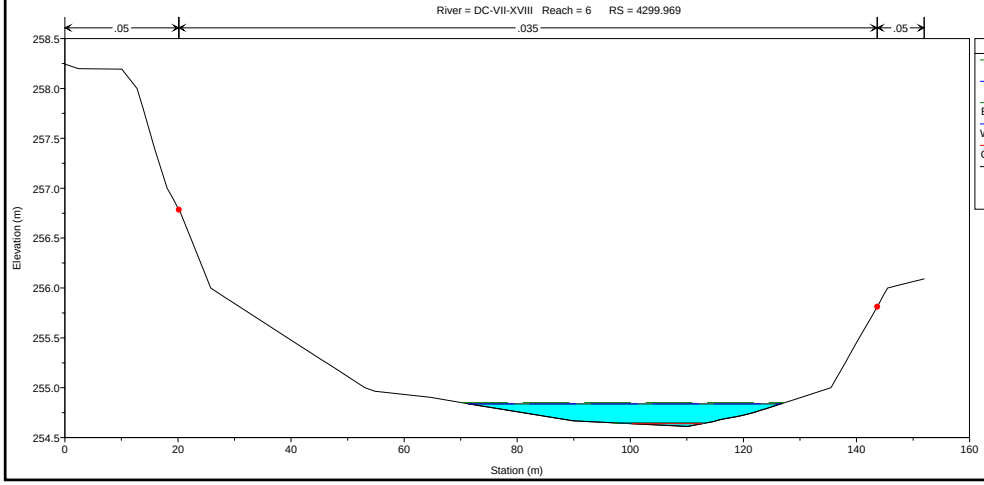

River = DC-VII-XVIII Reach = 6 RS = 4450.025
.05
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

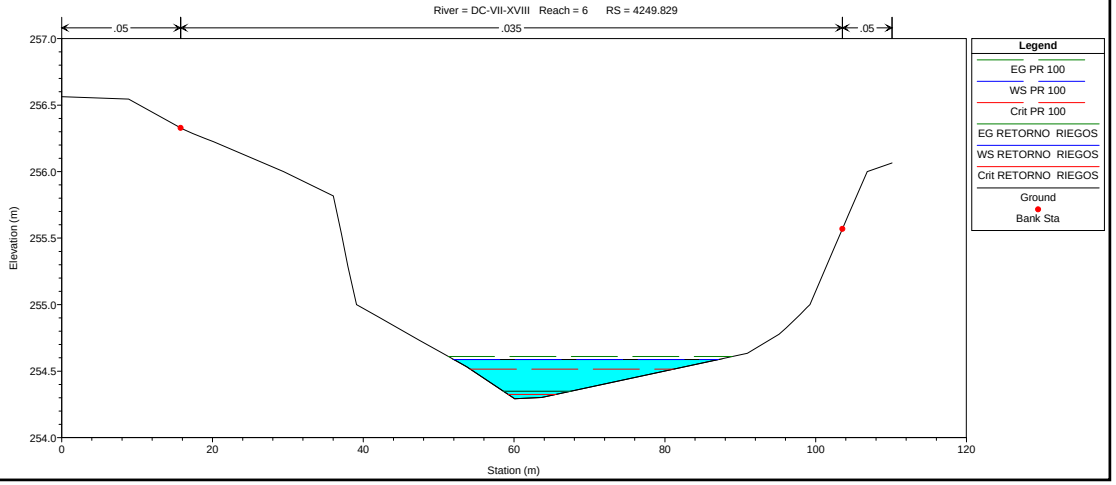

River = DC-VII-XVIII Reach = 6 RS = 4400.093
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

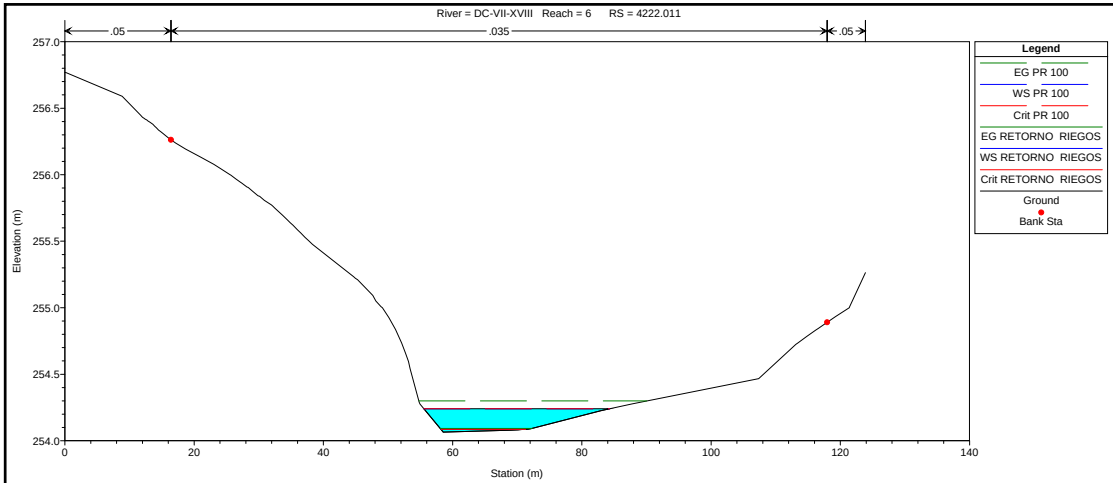

River = DC-VII-XVIII Reach = 6 RS = 4391.323
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

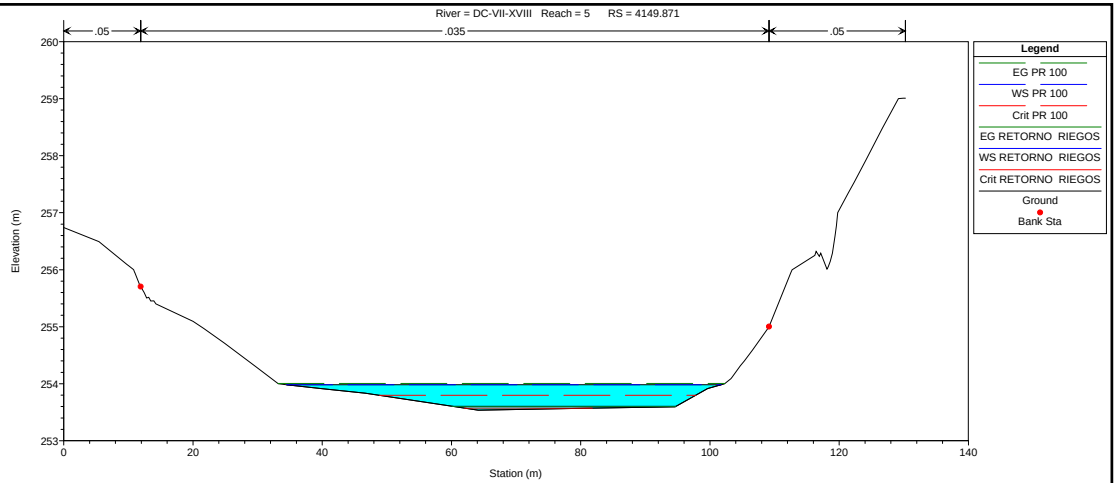

River = DC-VII-XVIII Reach = 6 RS = 4376.823
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

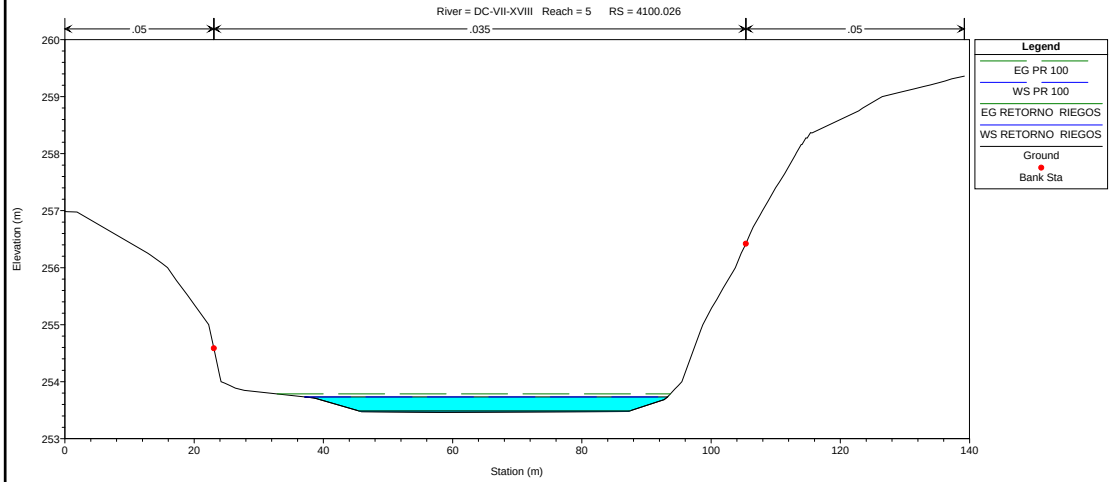

River = DC-VII-XVIII Reach = 6 RS = 4350.070
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

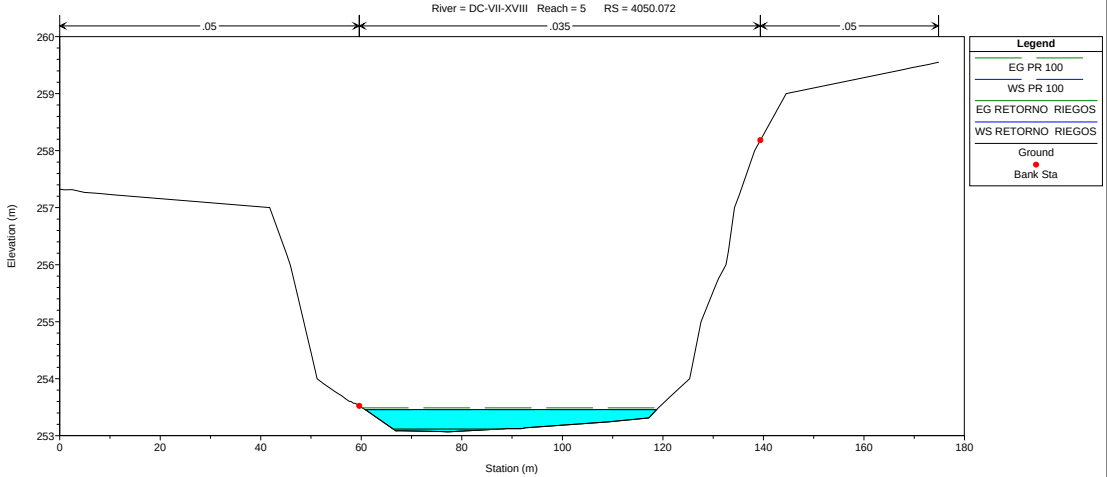

River = DC-VII-XVIII Reach = 6 RS = 4299.969
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

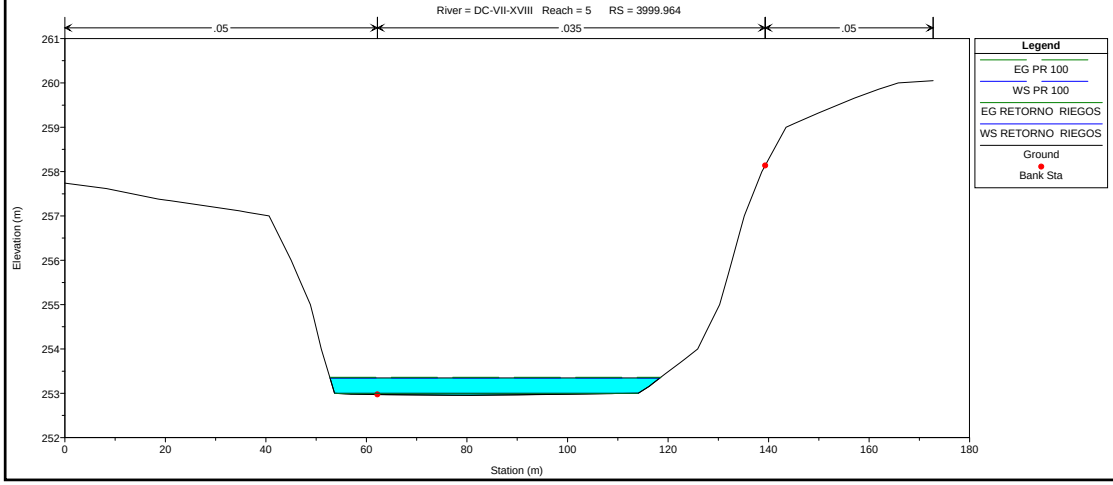

River = DC-VII-XVIII Reach = 6 RS = 4249.829
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

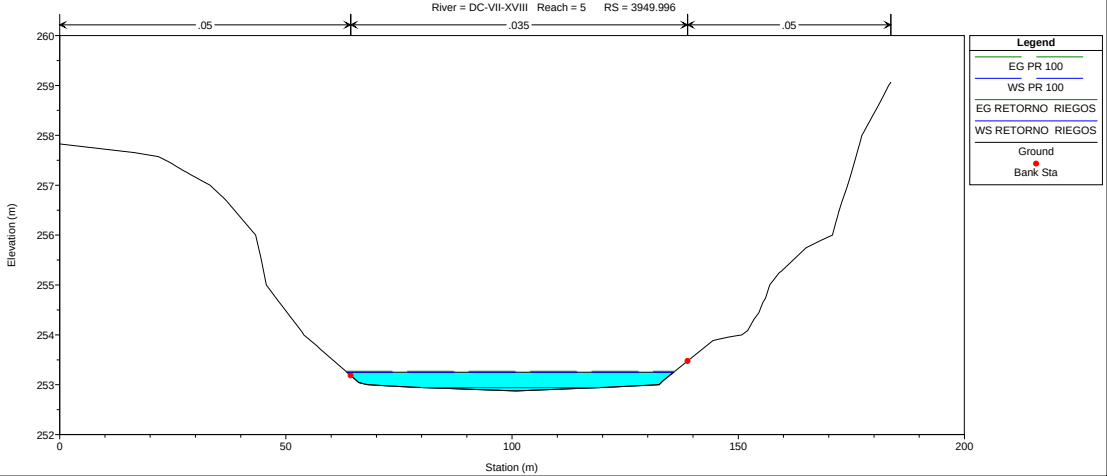

River = DC-VII-XVIII Reach = 6 RS = 4222.011
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

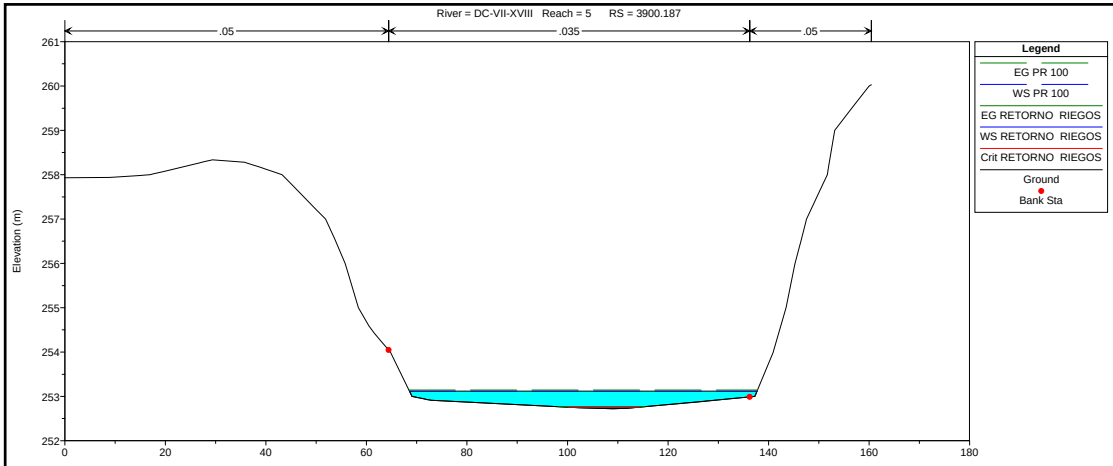

River = DC-VII-XVIII Reach = 5 RS = 4149.871
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

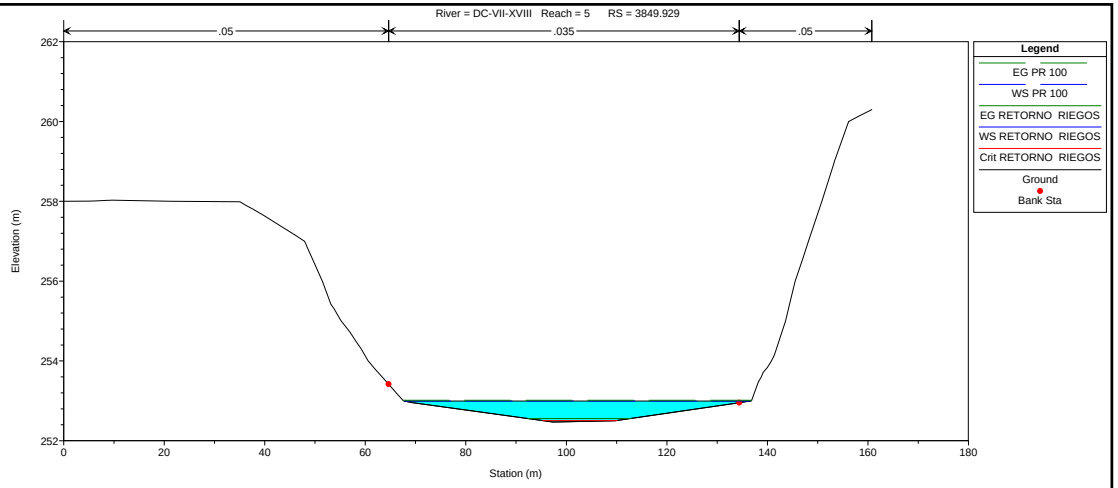

River = DC-VII-XVIII Reach = 5 RS = 4100.026
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

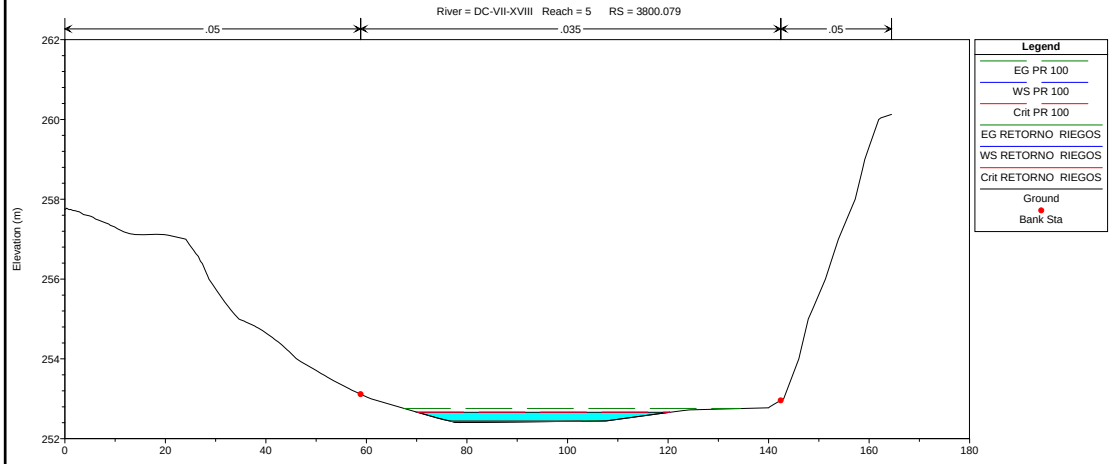

River = DC-VII-XVIII Reach = 5 RS = 4050.072
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

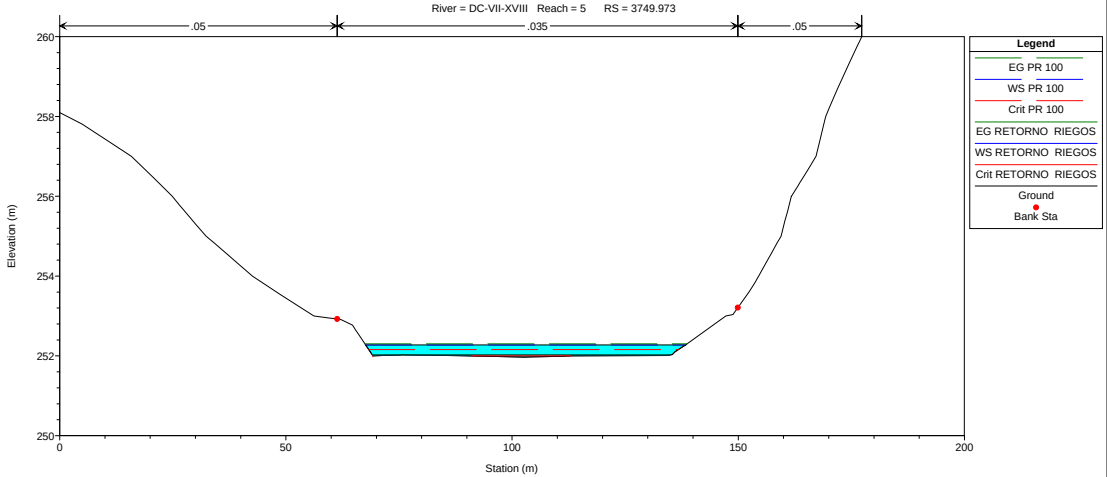

River = DC-VII-XVIII Reach = 5 RS = 3999.964
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

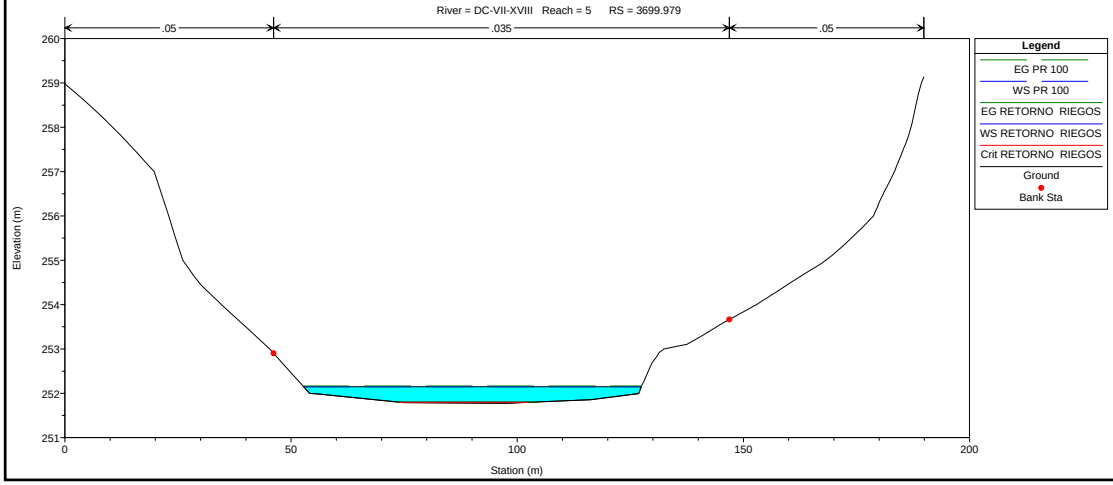

River = DC-VII-XVIII Reach = 5 RS = 3949.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

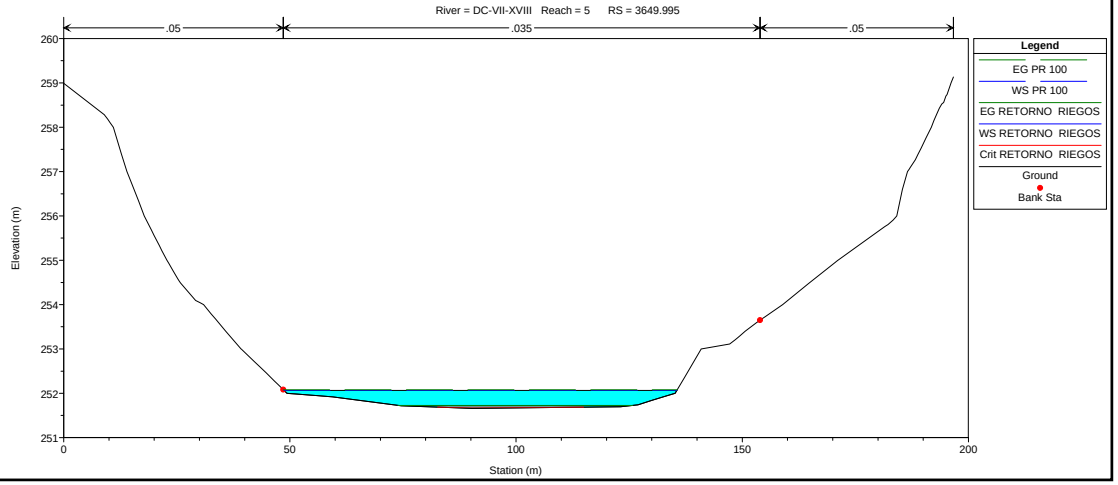

River = DC-VII-XVIII Reach = 5 RS = 3900.187
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

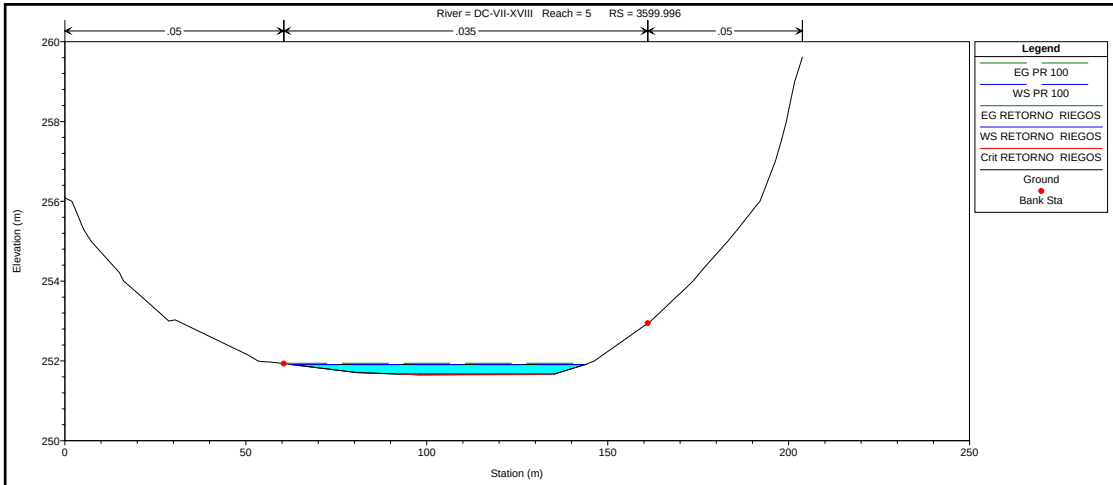

River = DC-VII-XVIII Reach = 5 RS = 3849.929
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

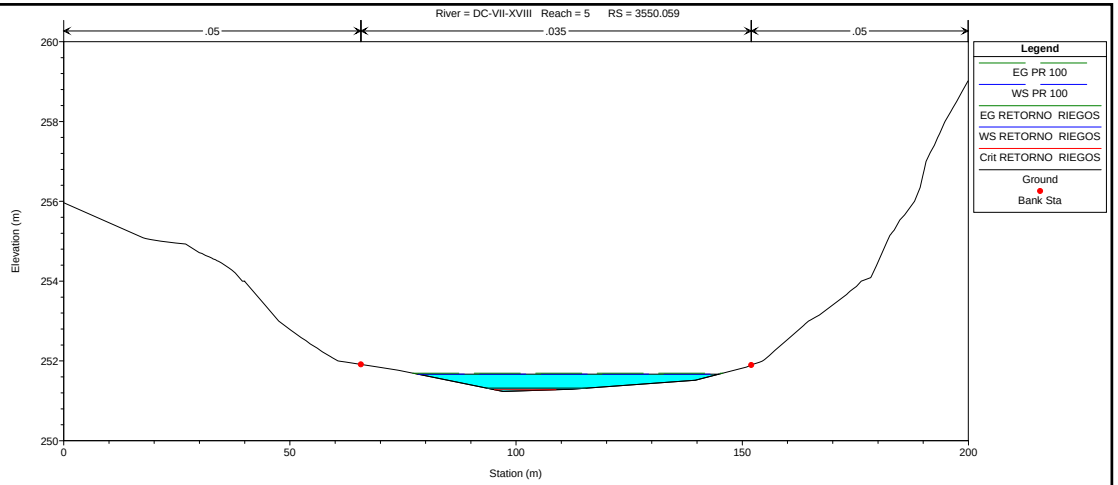

River = DC-VII-XVIII Reach = 5 RS = 3800.079
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

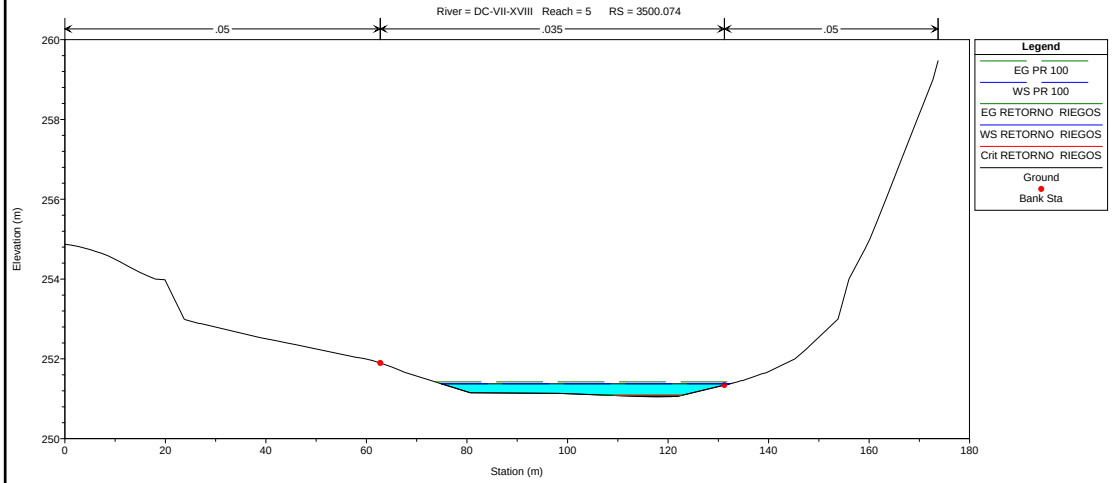

River = DC-VII-XVIII Reach = 5 RS = 3749.973
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

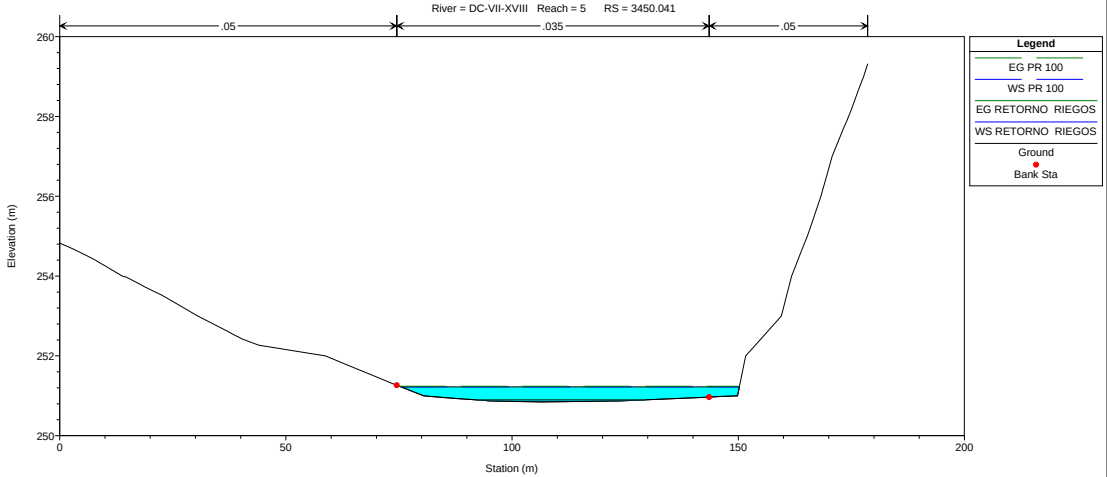

River = DC-VII-XVIII Reach = 5 RS = 3699.979
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

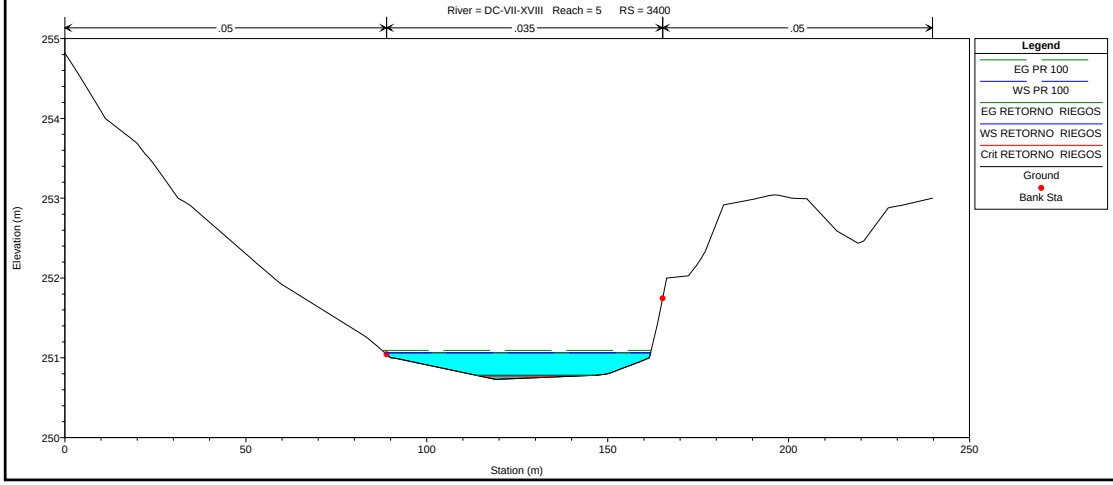

River = DC-VII-XVIII Reach = 5 RS = 3649.995
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

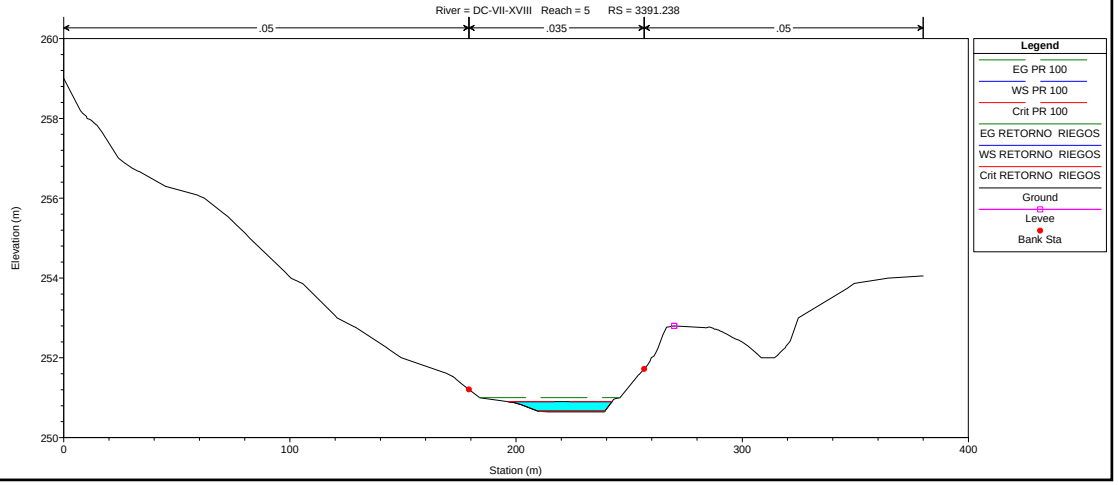

River = DC-VII-XVIII Reach = 5 RS = 3599.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

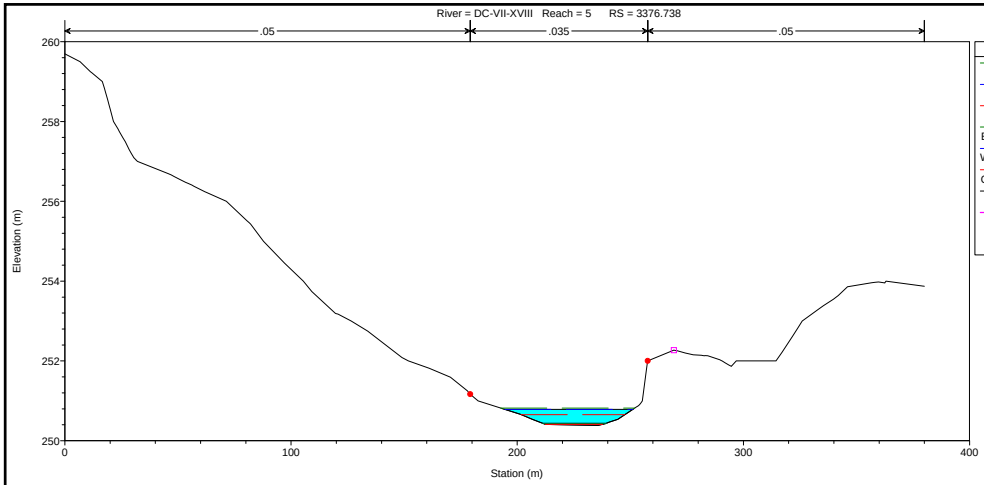

River = DC-VII-XVIII Reach = 5 RS = 3550.059
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

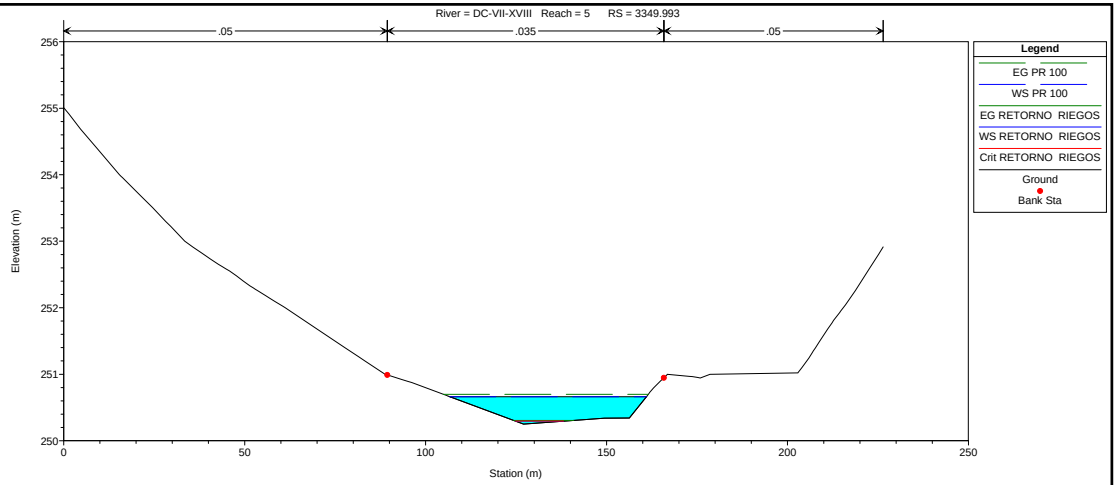

River = DC-VII-XVIII Reach = 5 RS = 3500.074
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

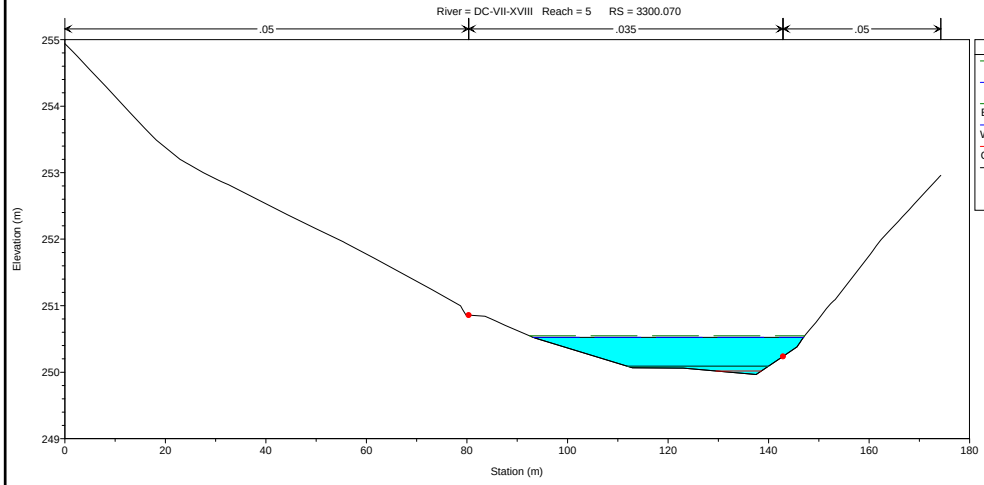

River = DC-VII-XVIII Reach = 5 RS = 3450.041
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

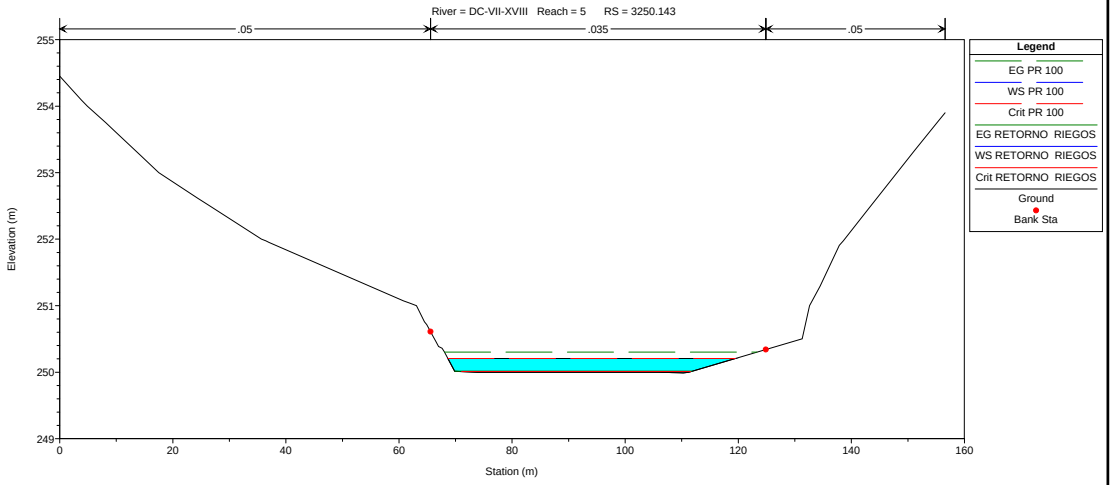

River = DC-VII-XVIII Reach = 5 RS = 3400
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

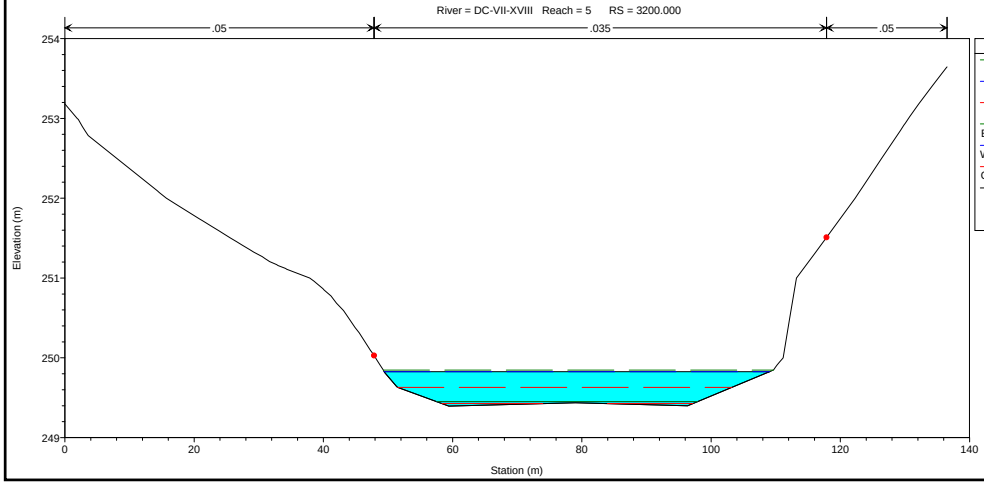

River = DC-VII-XVIII Reach = 5 RS = 3391.238
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

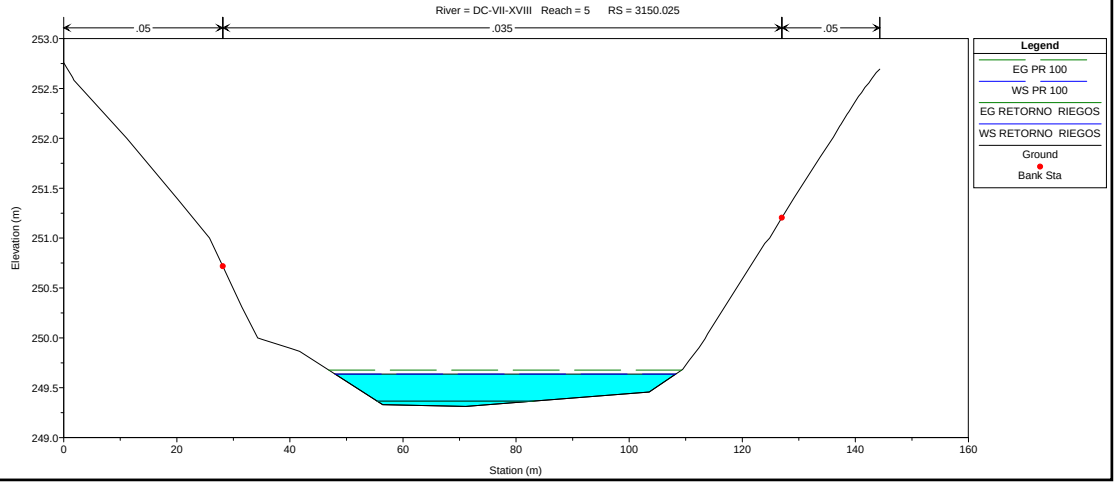

River = DC-VII-XVIII Reach = 5 RS = 3376.738
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

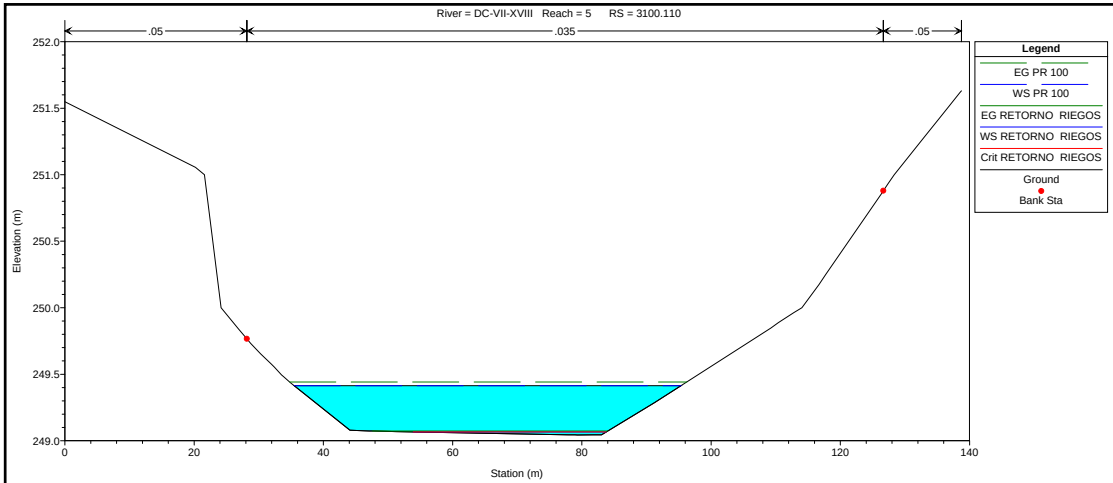

River = DC-VII-XVIII Reach = 5 RS = 3349.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

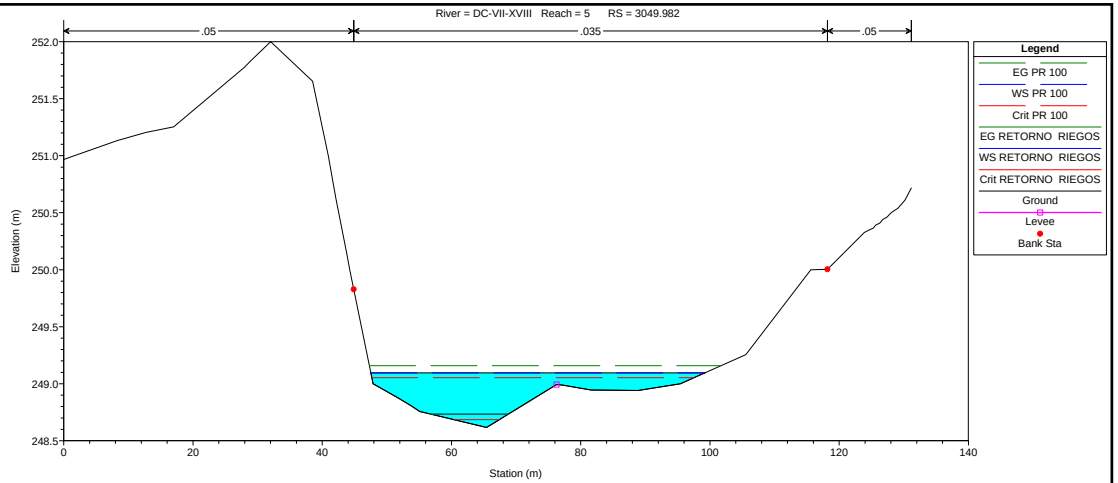

River = DC-VII-XVIII Reach = 5 RS = 3300.070
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

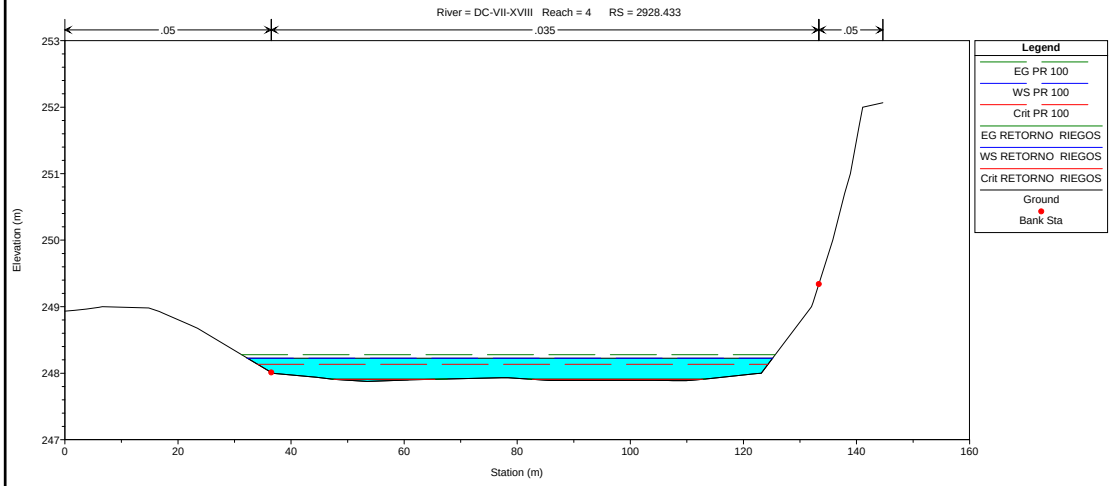

River = DC-VII-XVIII Reach = 5 RS = 3250.143
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

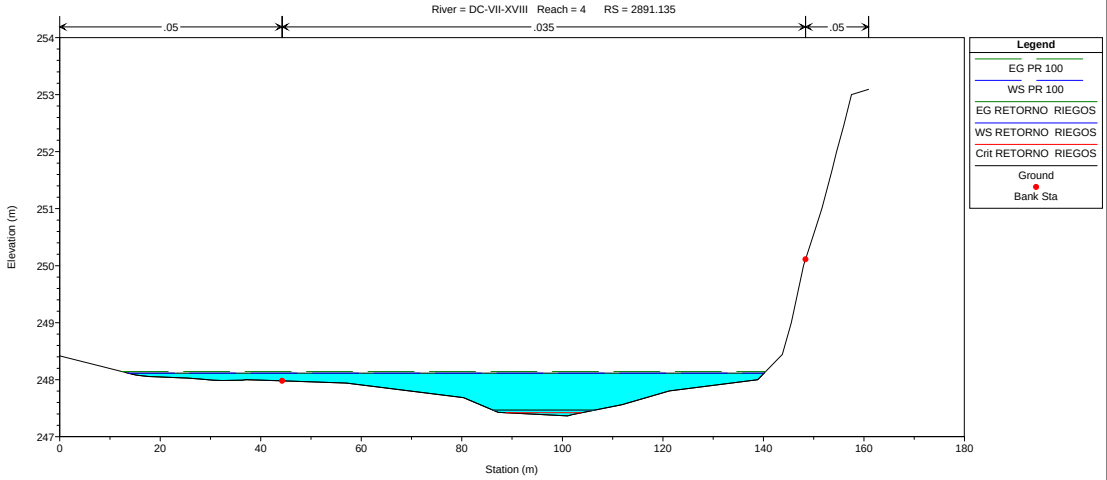

River = DC-VII-XVIII Reach = 5 RS = 3200.000
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

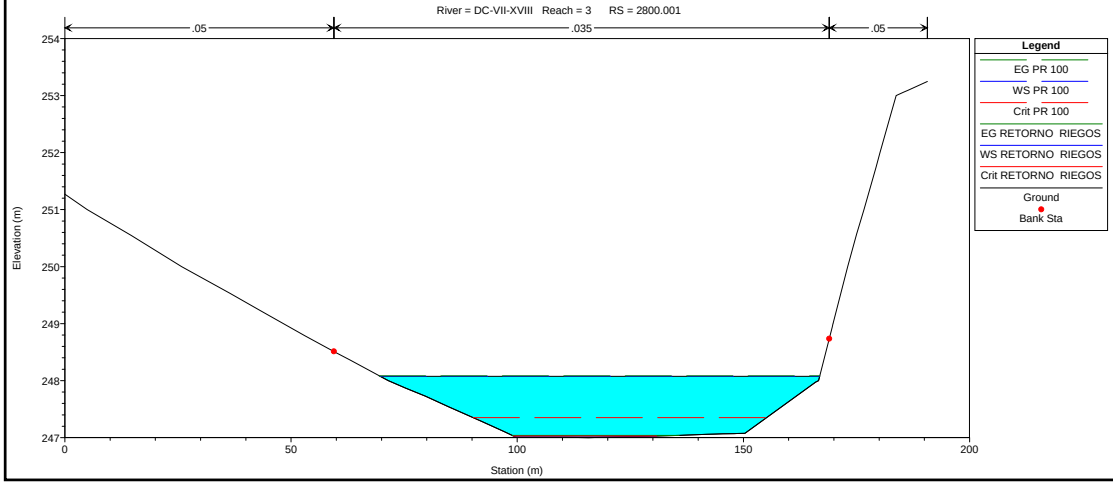

River = DC-VII-XVIII Reach = 5 RS = 3150.025
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

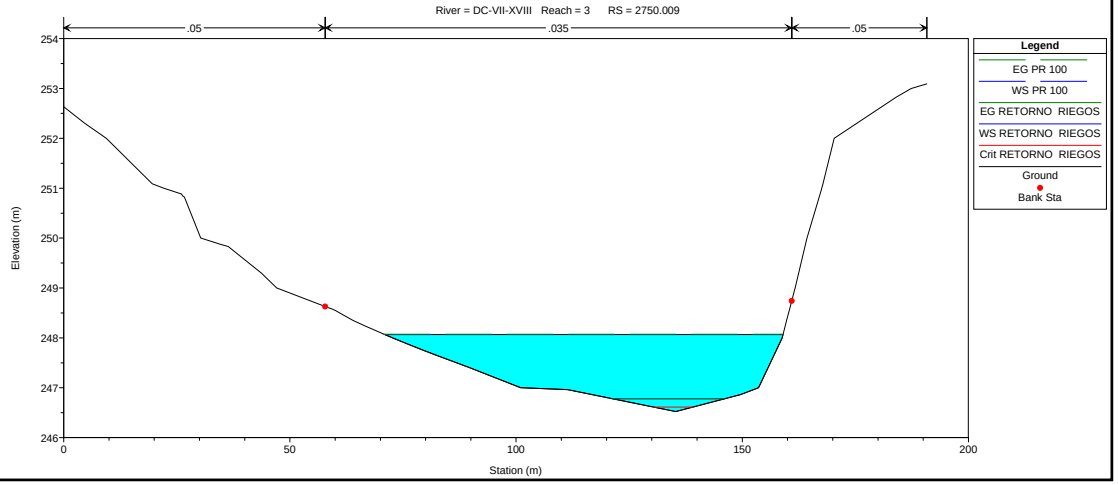

River = DC-VII-XVIII Reach = 5 RS = 3100.110
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

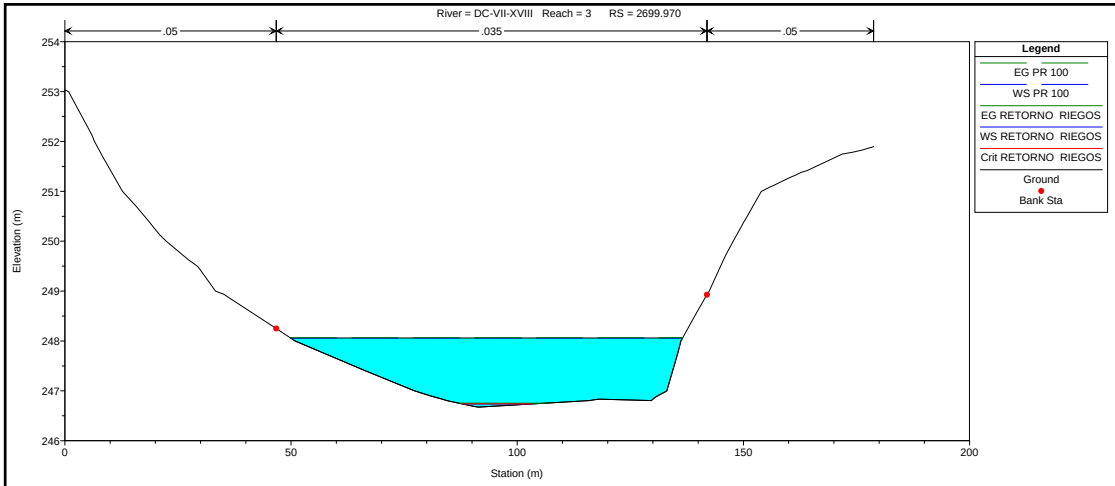

River = DC-VII-XVIII Reach = 5 RS = 3049.982
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

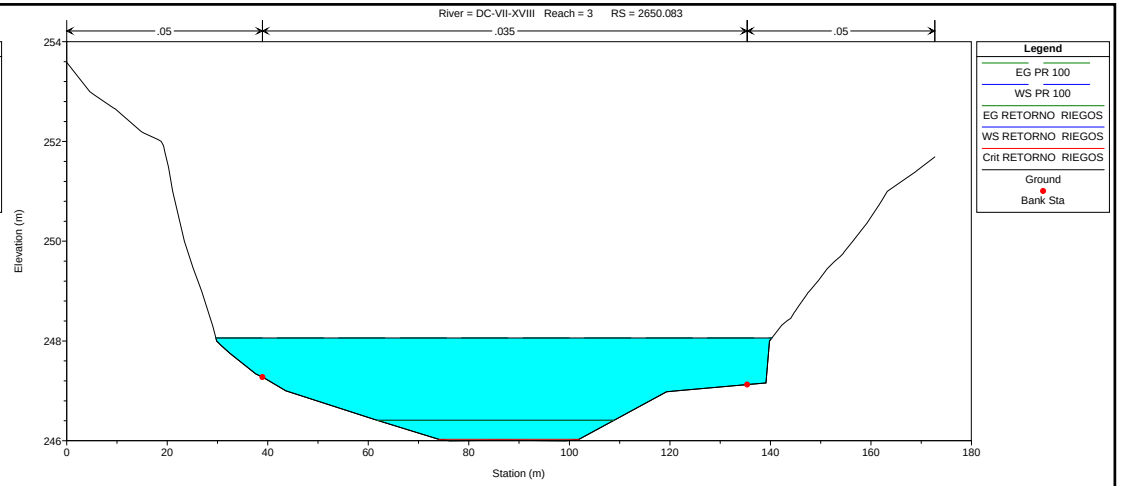

River = DC-VII-XVIII Reach = 4 RS = 2928.433
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

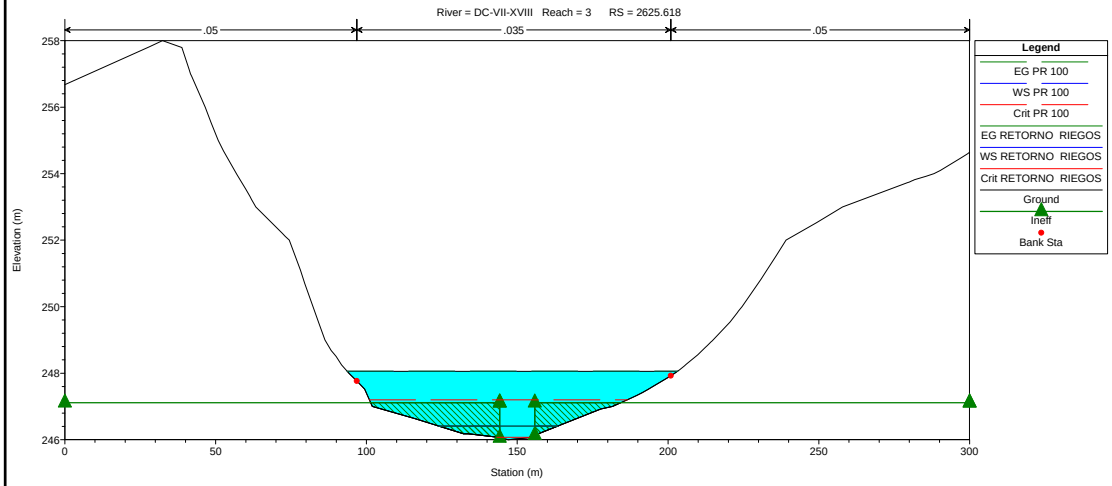

River = DC-VII-XVIII Reach = 4 RS = 2891.135
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

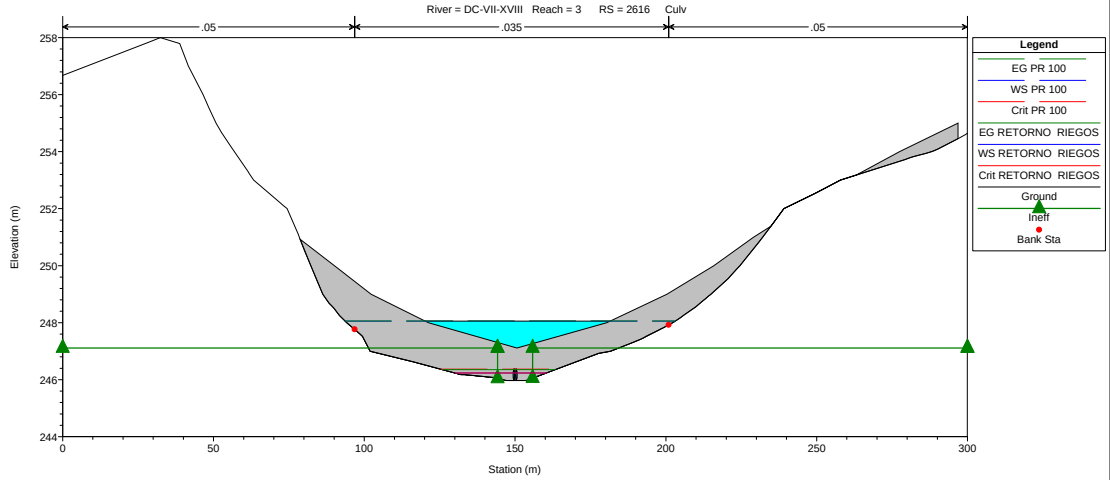

River = DC-VII-XVIII Reach = 3 RS = 2800.001
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

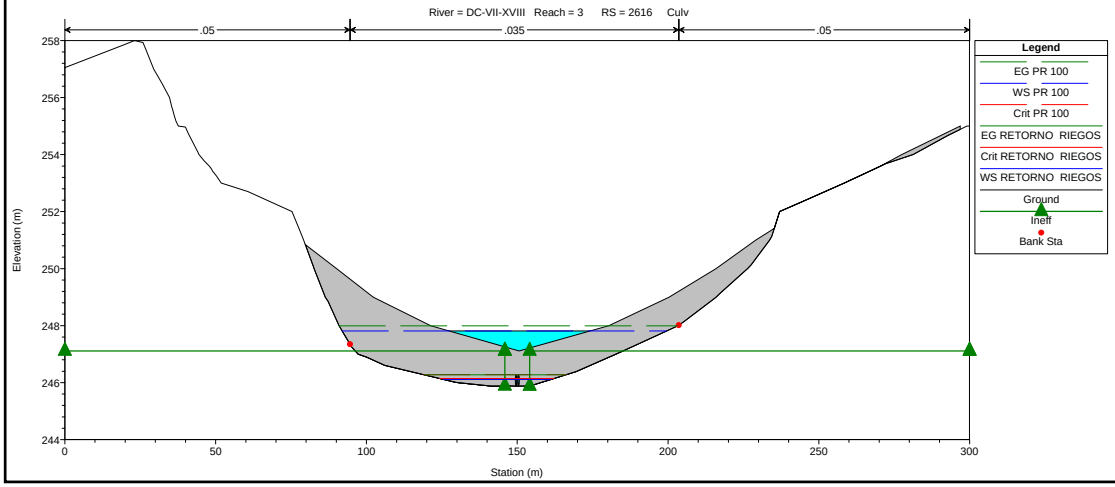

River = DC-VII-XVIII Reach = 3 RS = 2750.009
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

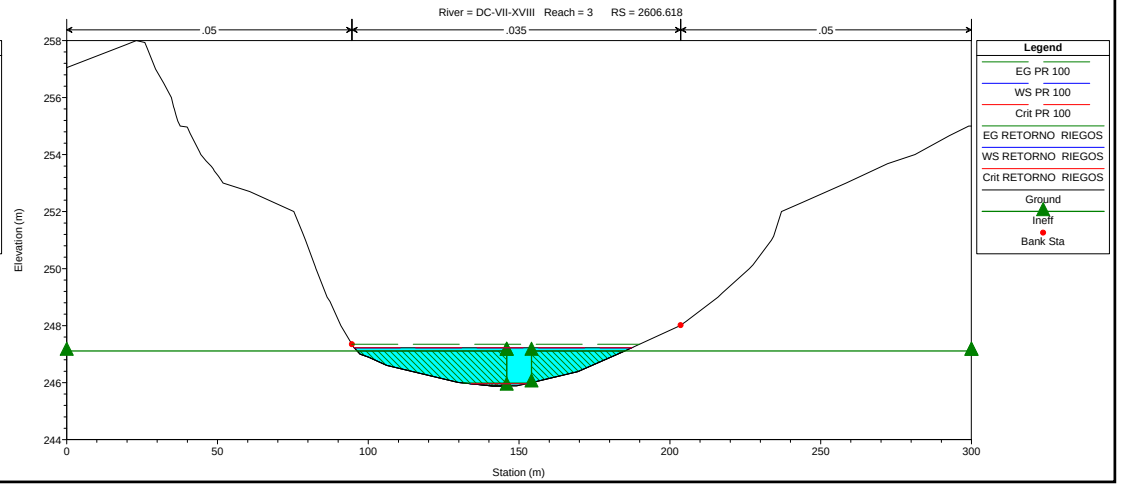

River = DC-VII-XVIII Reach = 3 RS = 2699.970
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

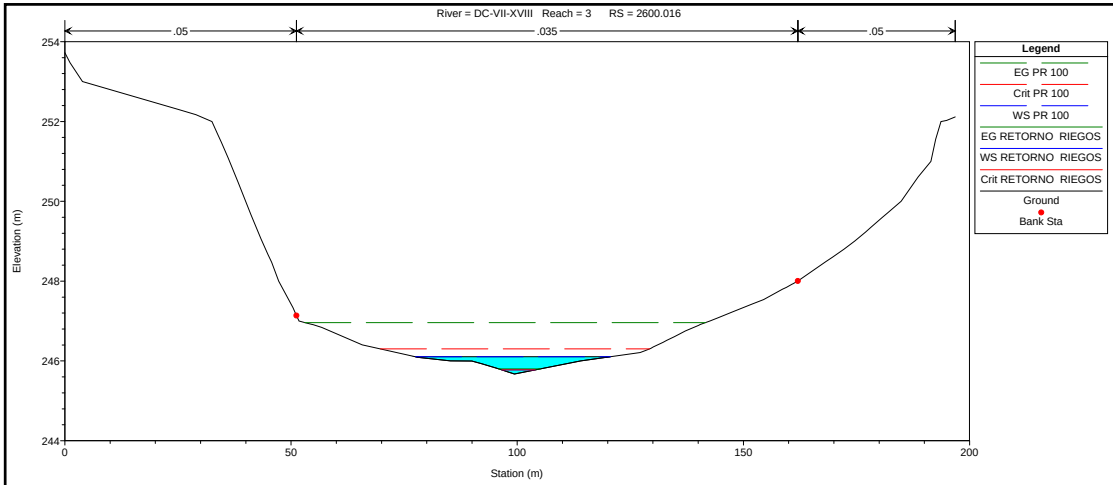

River = DC-VII-XVIII Reach = 3 RS = 2650.083
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

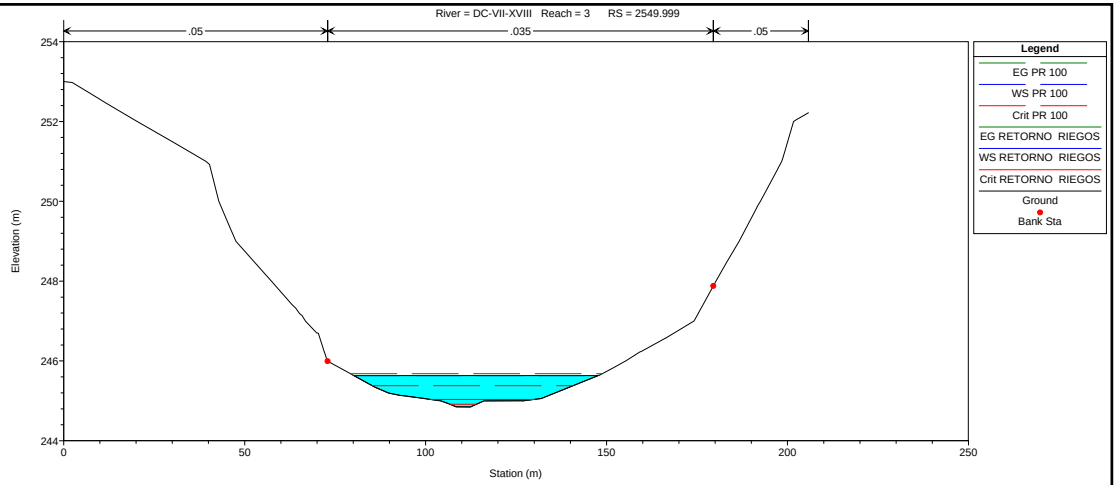

River = DC-VII-XVIII Reach = 3 RS = 2625.618
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

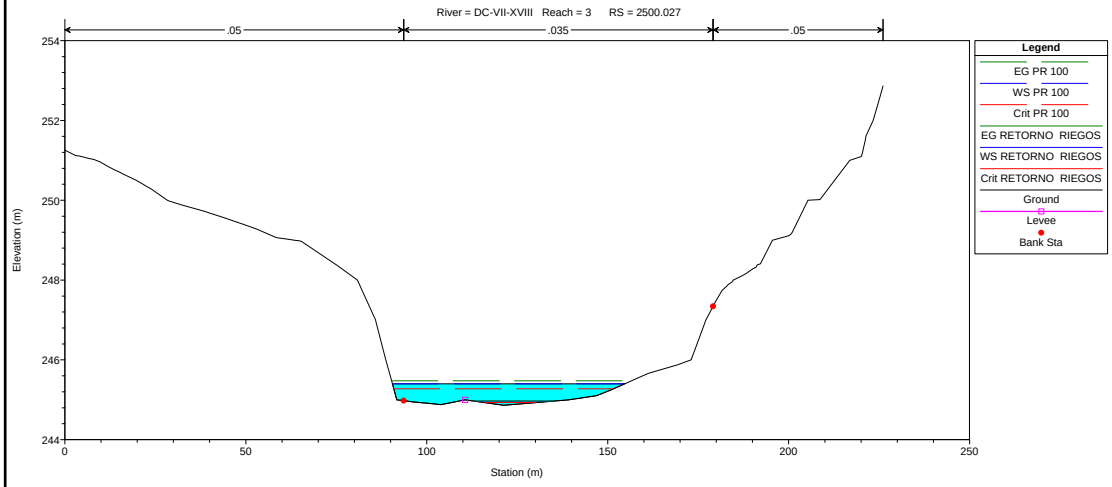

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

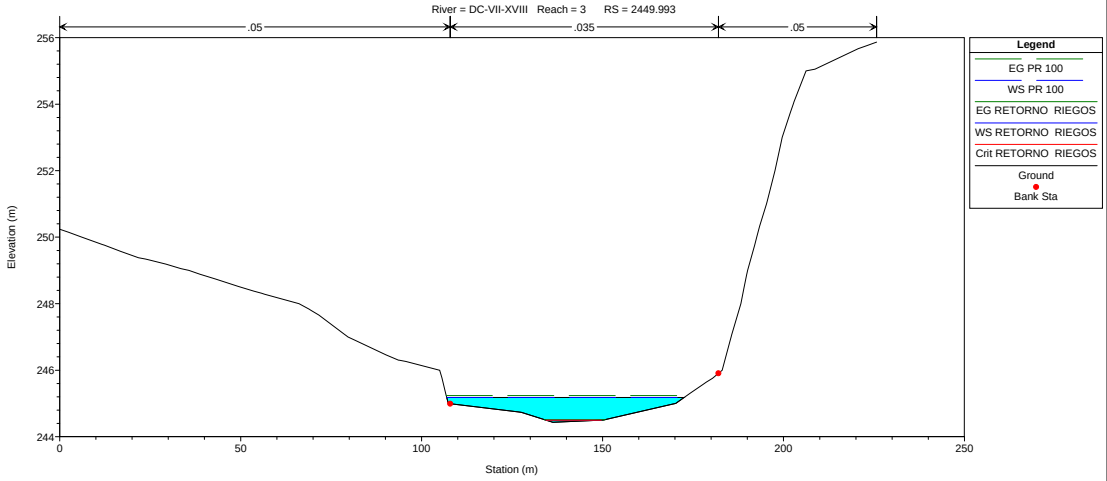

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

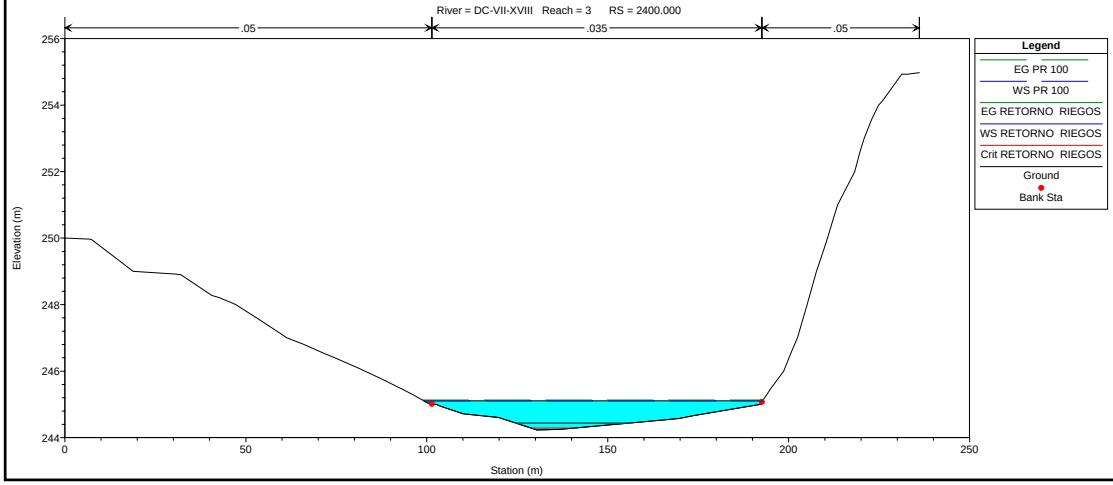

River = DC-VII-XVIII Reach = 3 RS = 2606.618
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

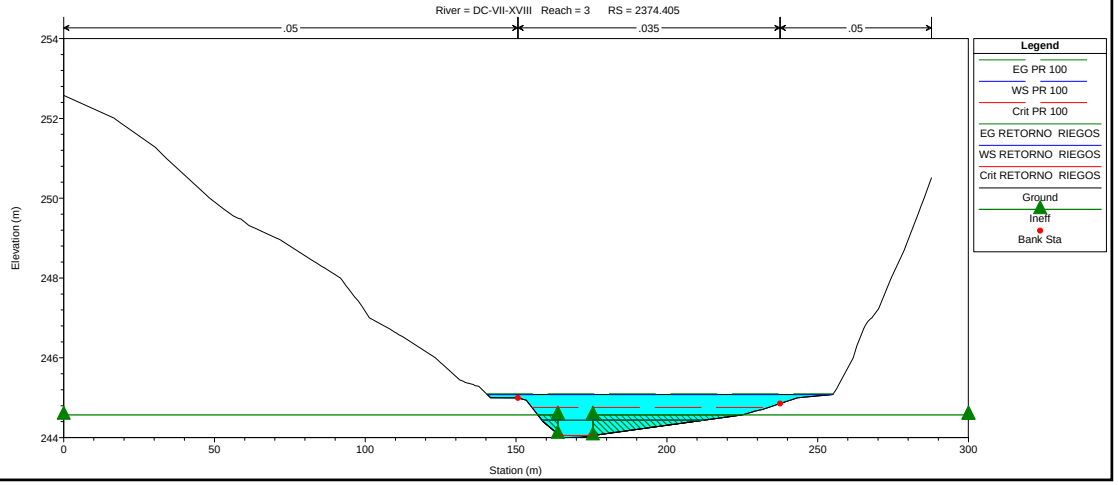

River = DC-VII-XVIII Reach = 3 RS = 2600.016
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

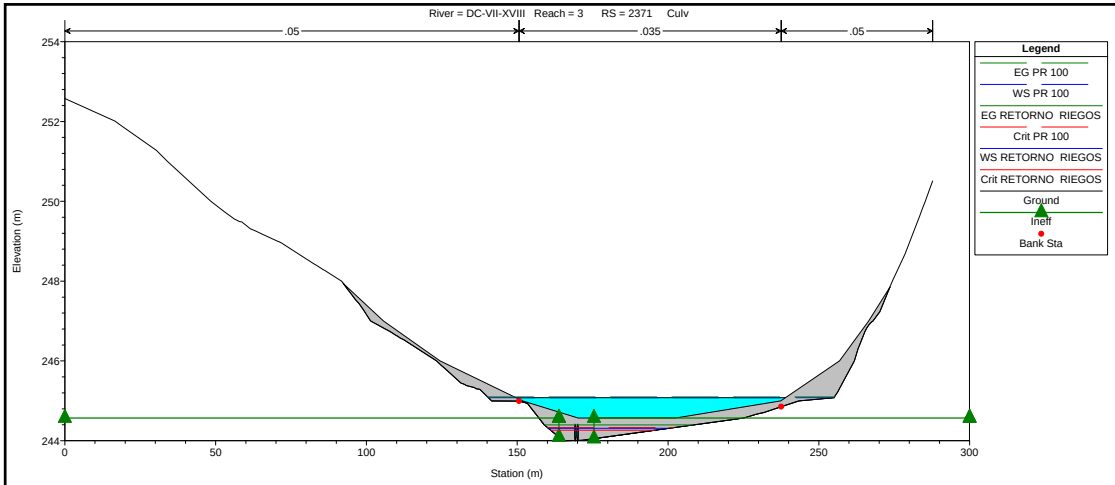

River = DC-VII-XVIII Reach = 3 RS = 2549.999
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

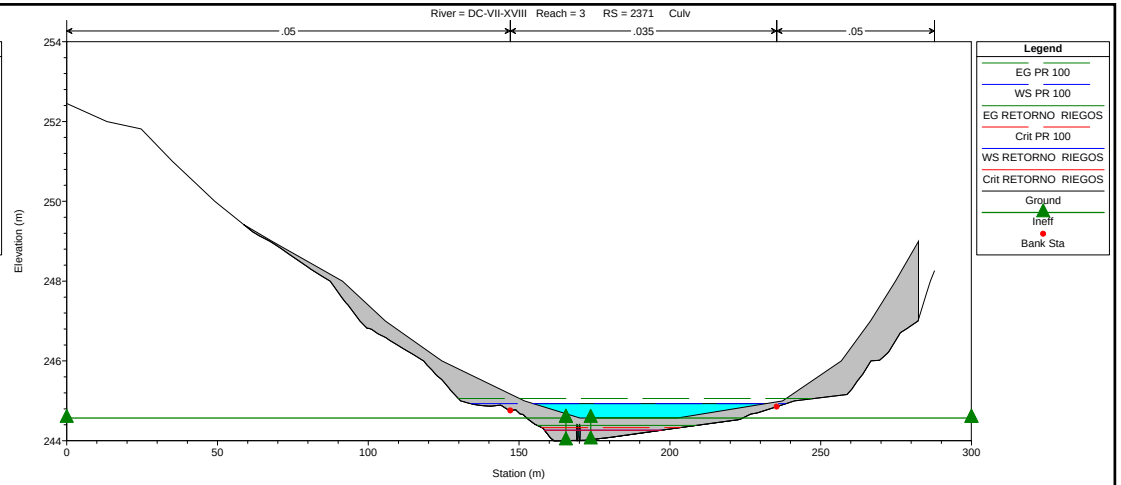

River = DC-VII-XVIII Reach = 3 RS = 2500.027
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

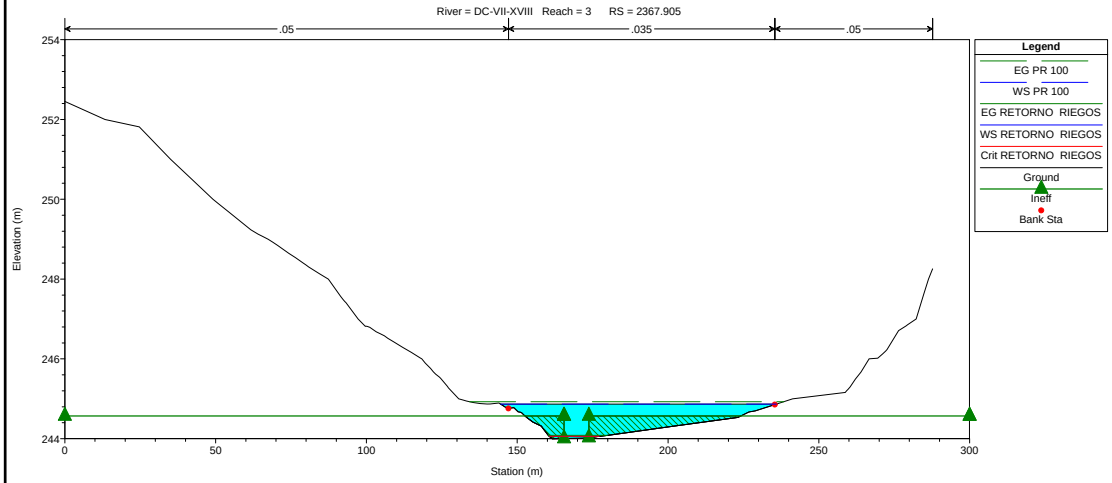

River = DC-VII-XVIII Reach = 3 RS = 2449.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

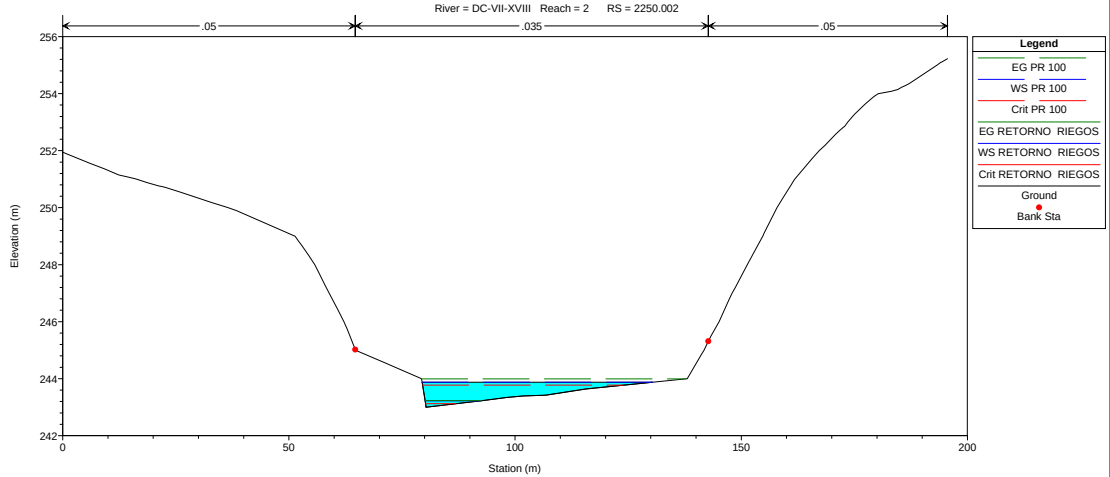

River = DC-VII-XVIII Reach = 3 RS = 2400.000
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

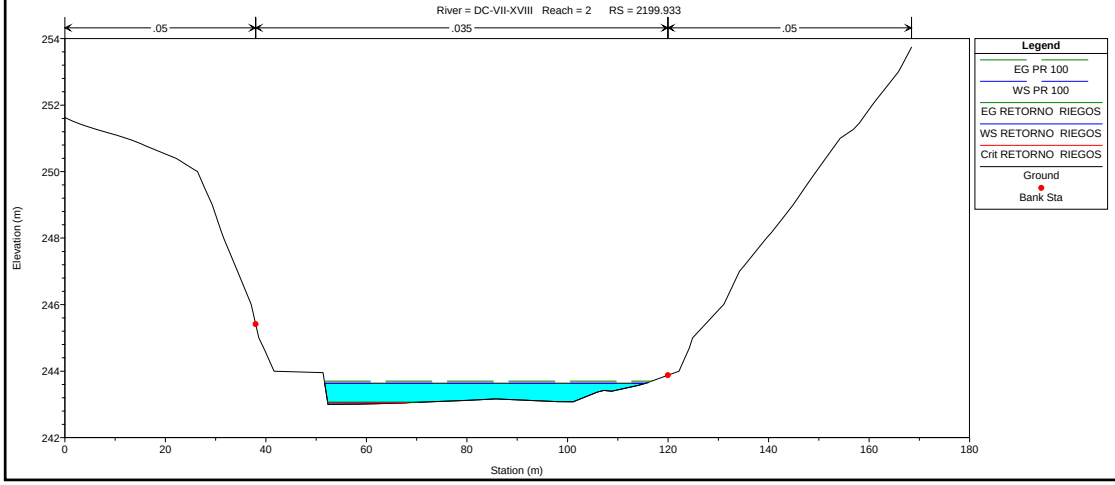

River = DC-VII-XVIII Reach = 3 RS = 2374.405
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

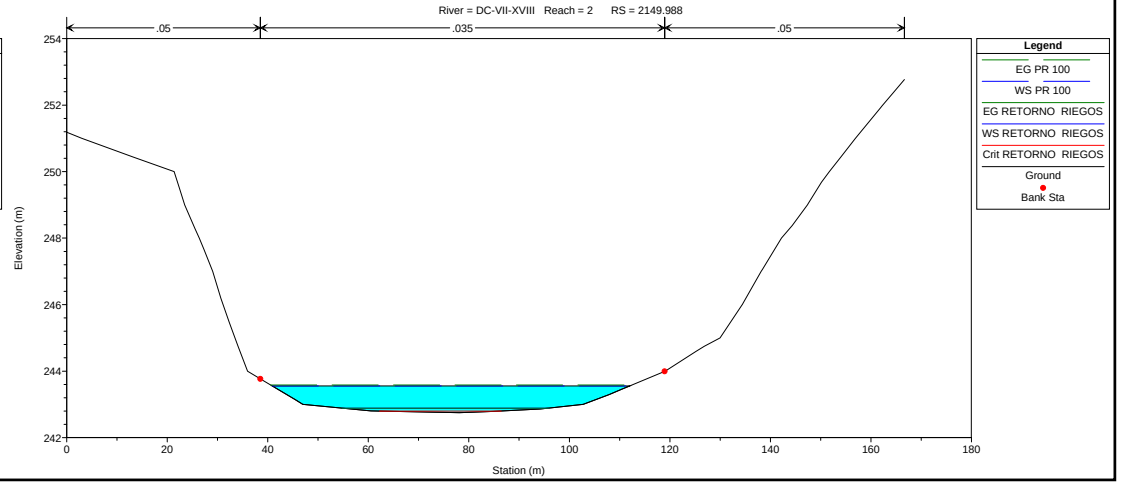

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
Crit PR 100
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

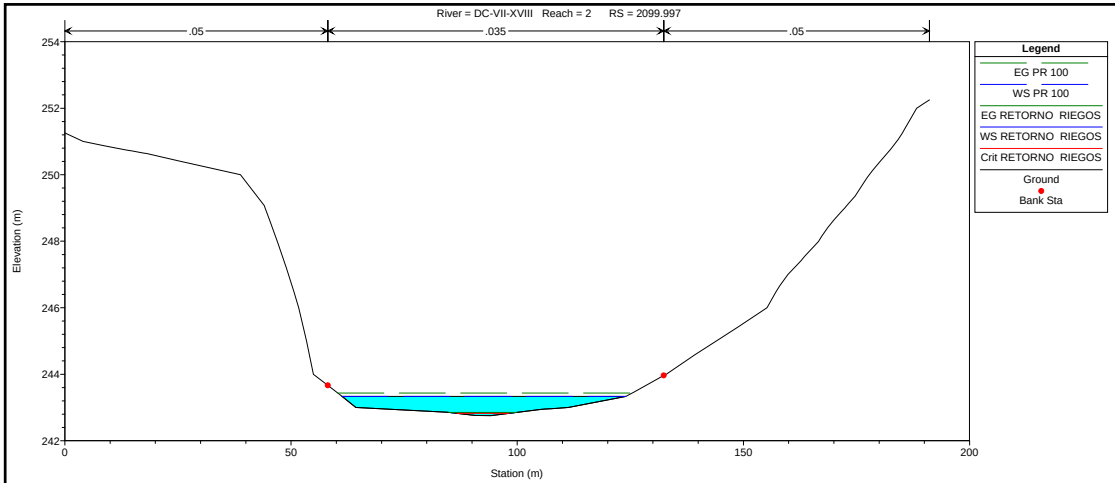

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
Crit PR 100
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

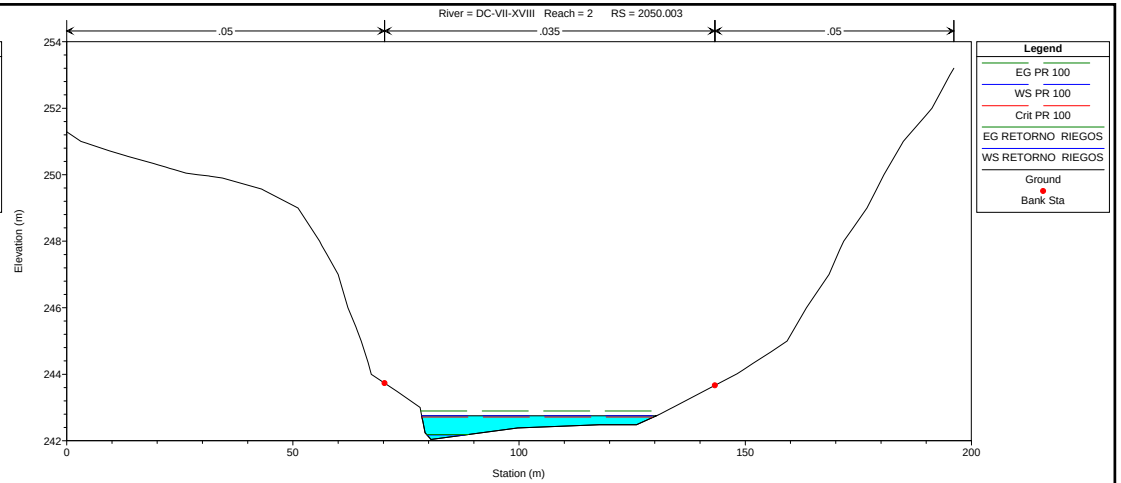

River = DC-VII-XVIII Reach = 3 RS = 2367.905
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

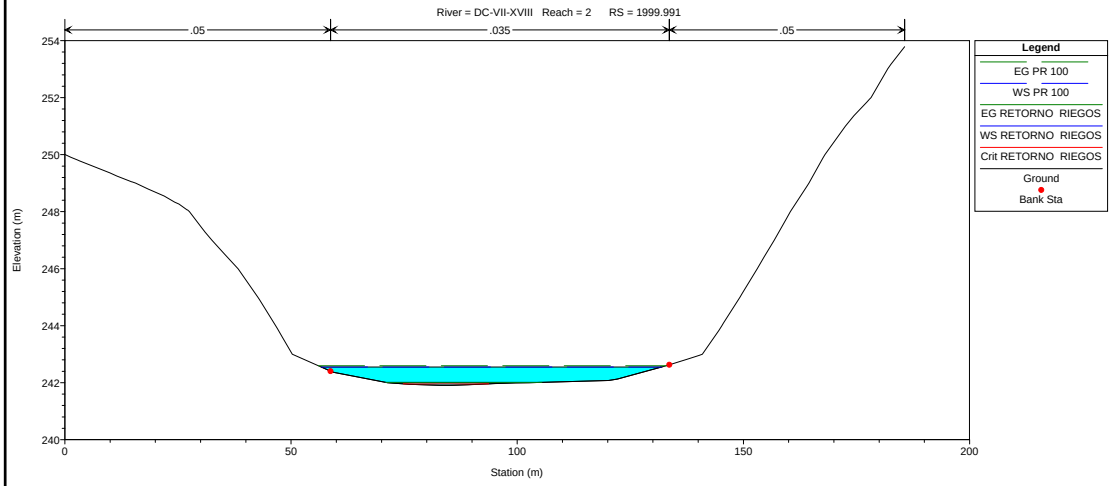

River = DC-VII-XVIII Reach = 2 RS = 2250.002
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

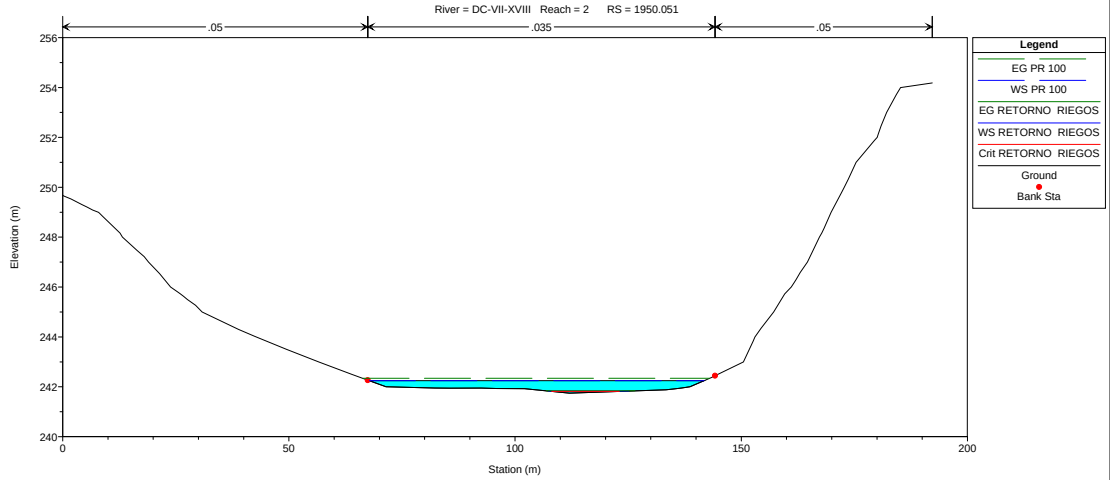

River = DC-VII-XVIII Reach = 2 RS = 2199.933
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

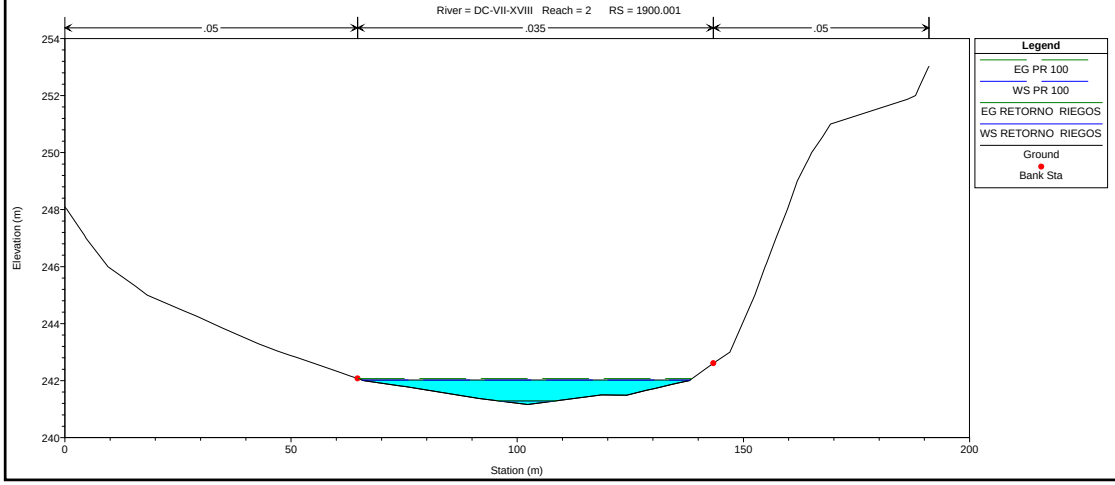

River = DC-VII-XVIII Reach = 2 RS = 2149.988
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

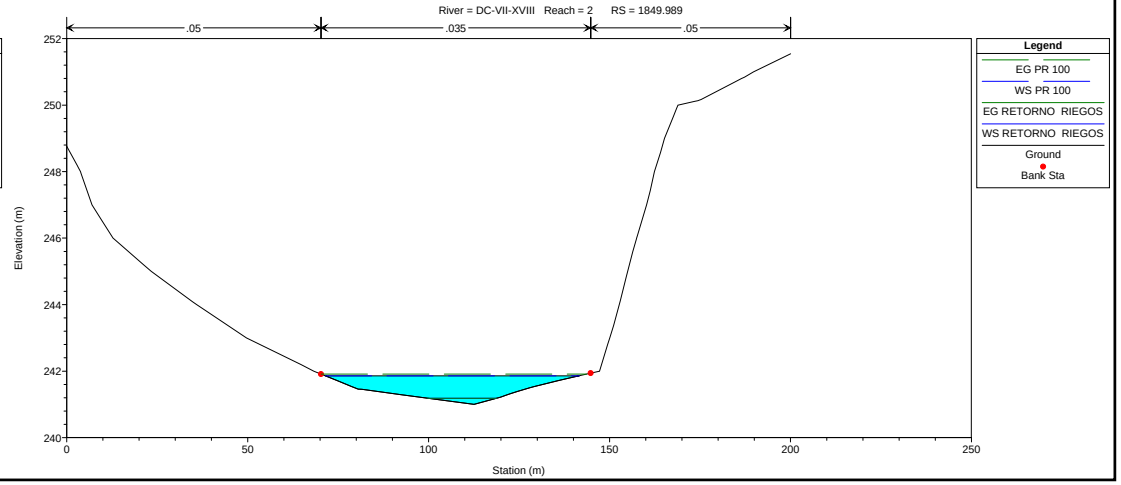

River = DC-VII-XVIII Reach = 2 RS = 2099.997
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

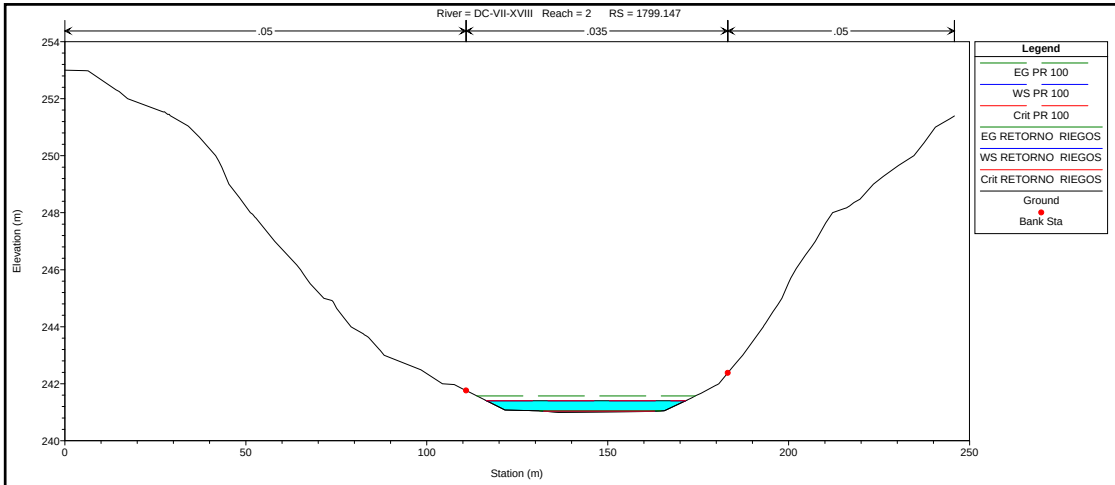

River = DC-VII-XVIII Reach = 2 RS = 2050.003
.05
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

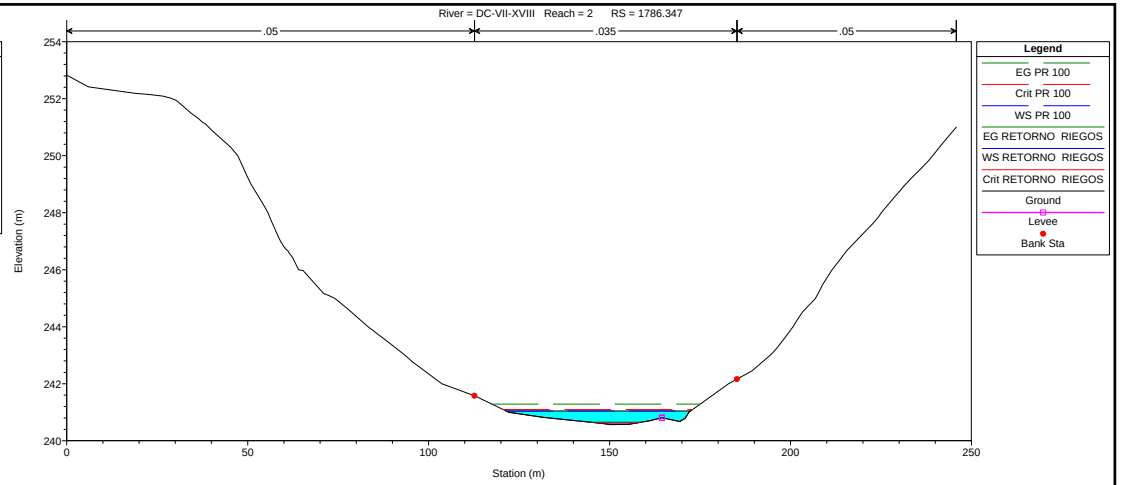

River = DC-VII-XVIII Reach = 2 RS = 1999.991
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

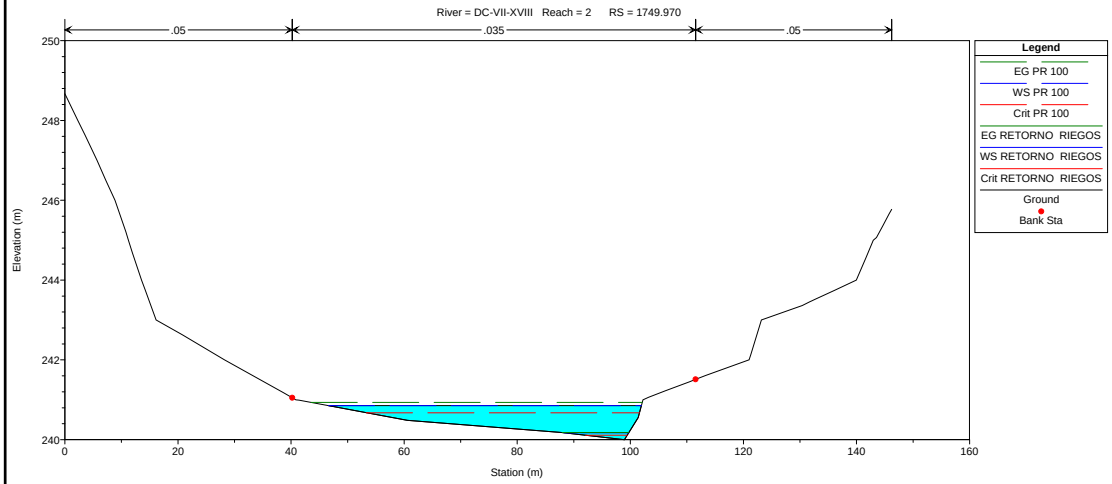

River = DC-VII-XVIII Reach = 2 RS = 1950.051
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

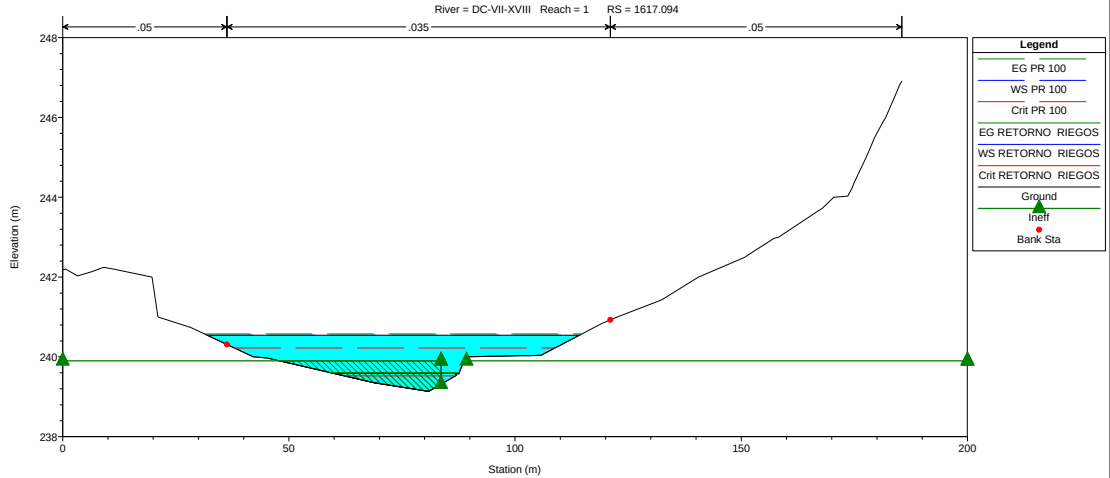

River = DC-VII-XVIII Reach = 2 RS = 1900.001
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

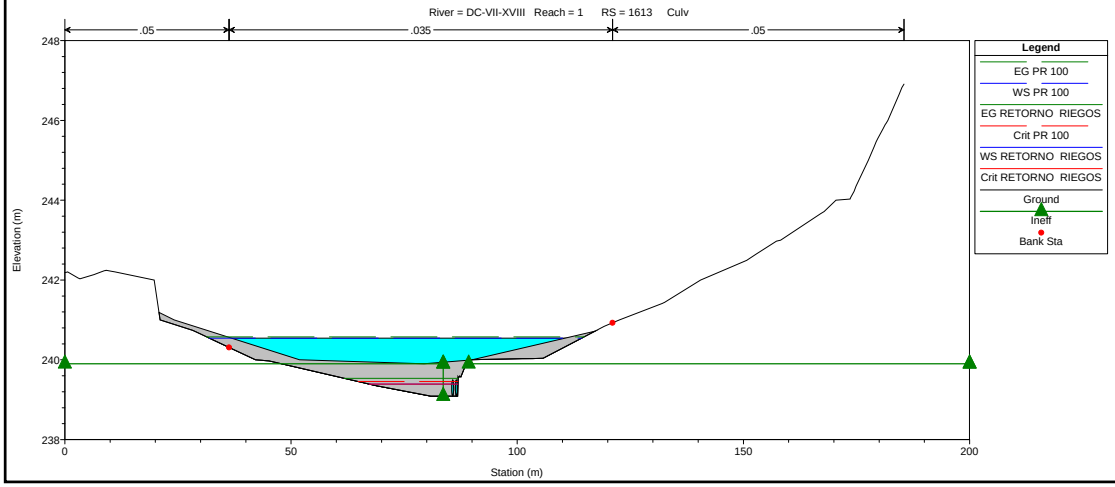

River = DC-VII-XVIII Reach = 2 RS = 1849.989
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

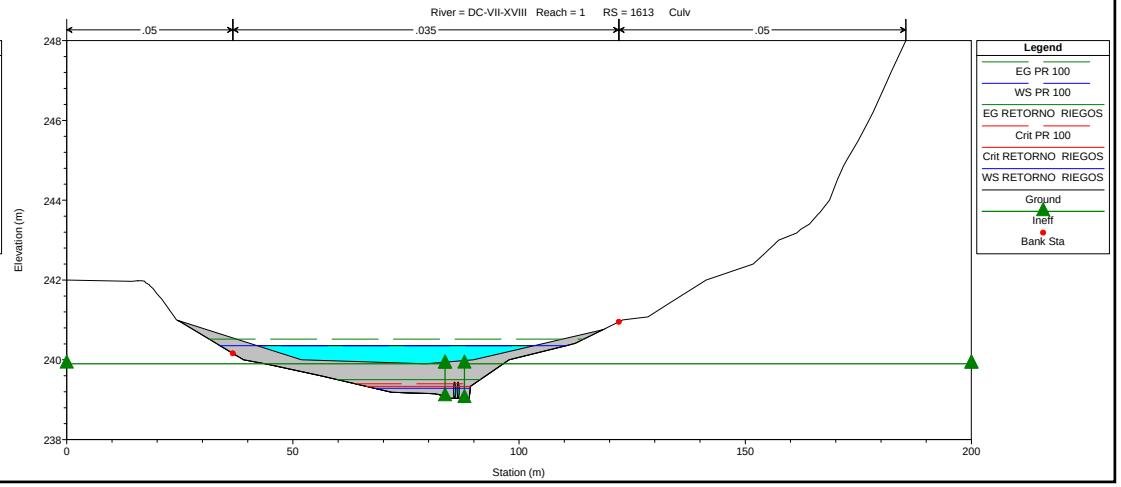

River = DC-VII-XVIII Reach = 2 RS = 1799.147
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

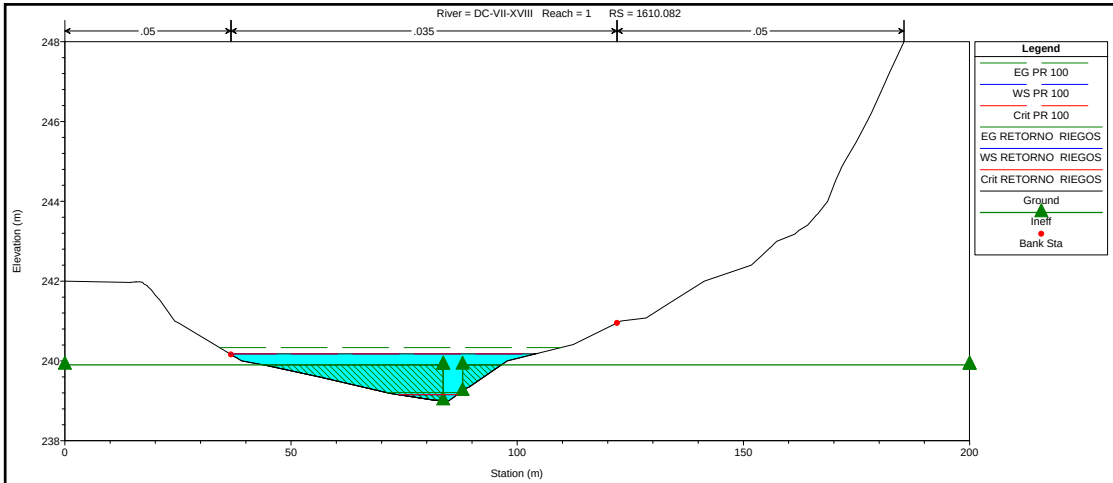

River = DC-VII-XVIII Reach = 2 RS = 1786.347
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
Crit PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

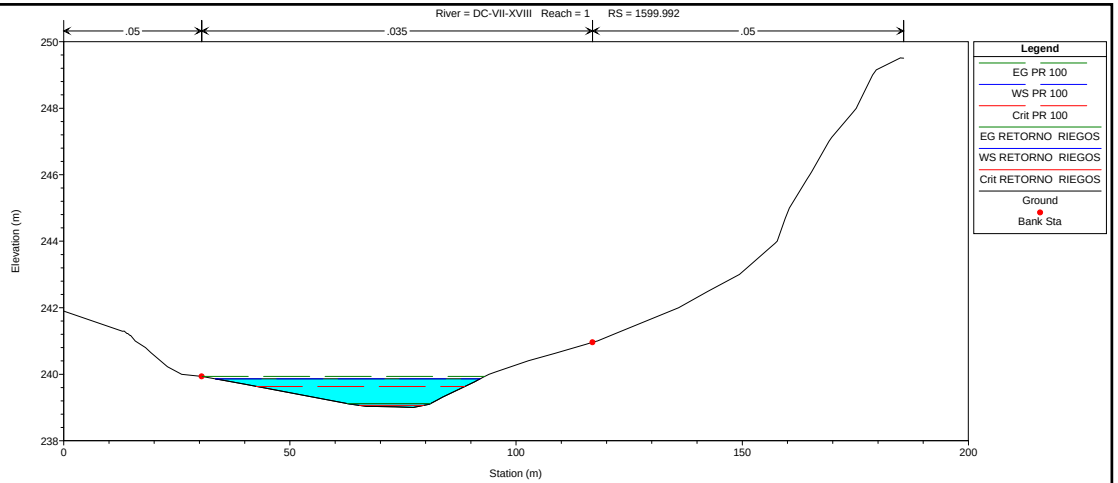

River = DC-VII-XVIII Reach = 2 RS = 1749.970
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

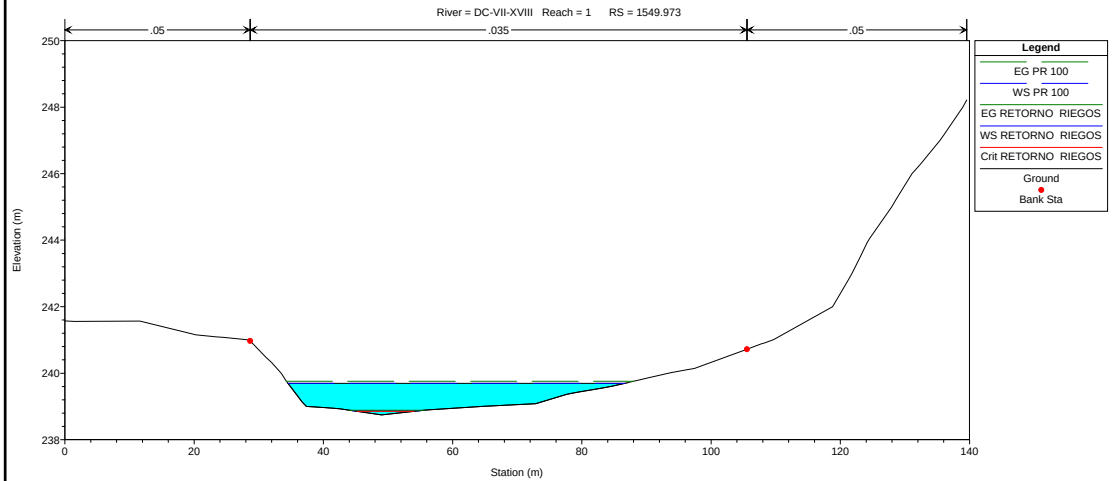

River = DC-VII-XVIII Reach = 1 RS = 1617.094
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

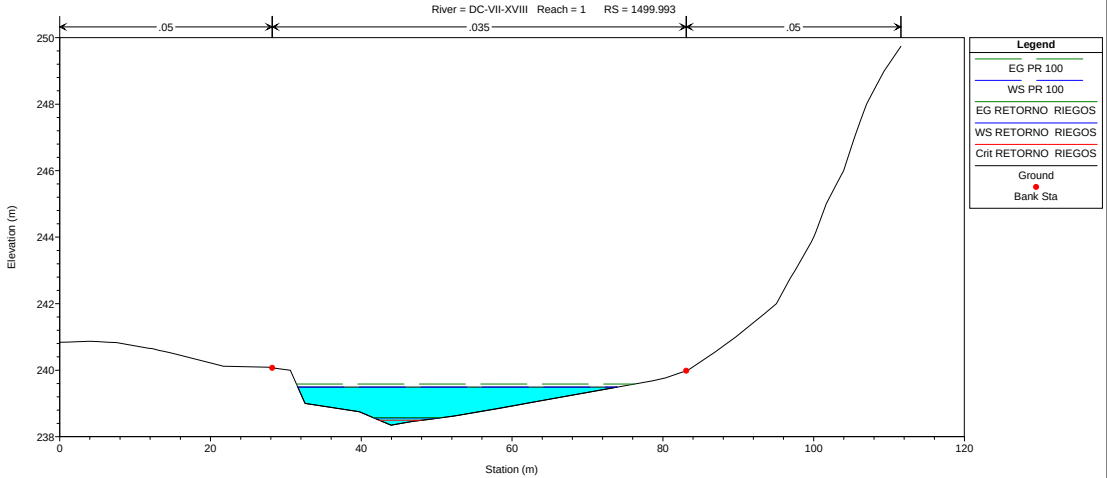

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
Crit PR 100
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

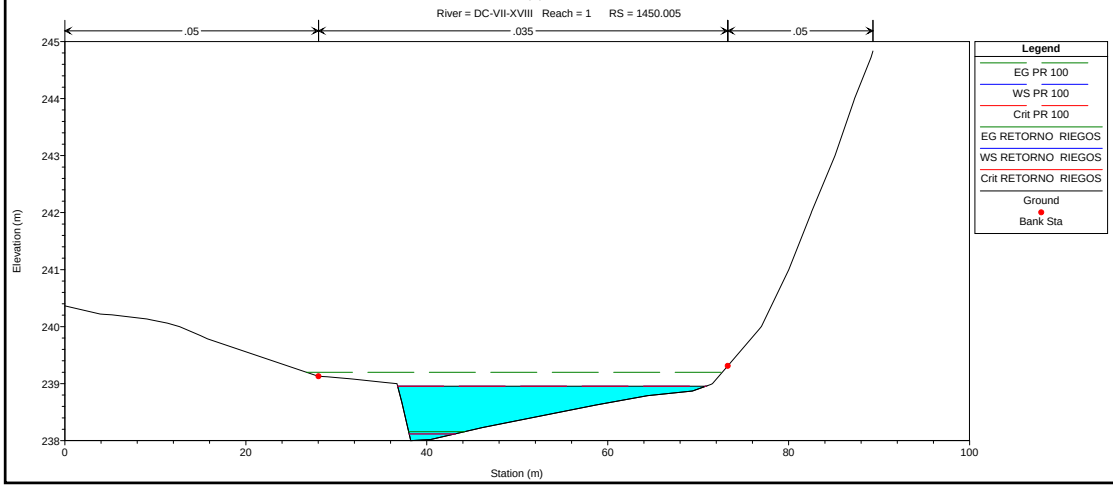

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
Crit PR 100
Crit RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

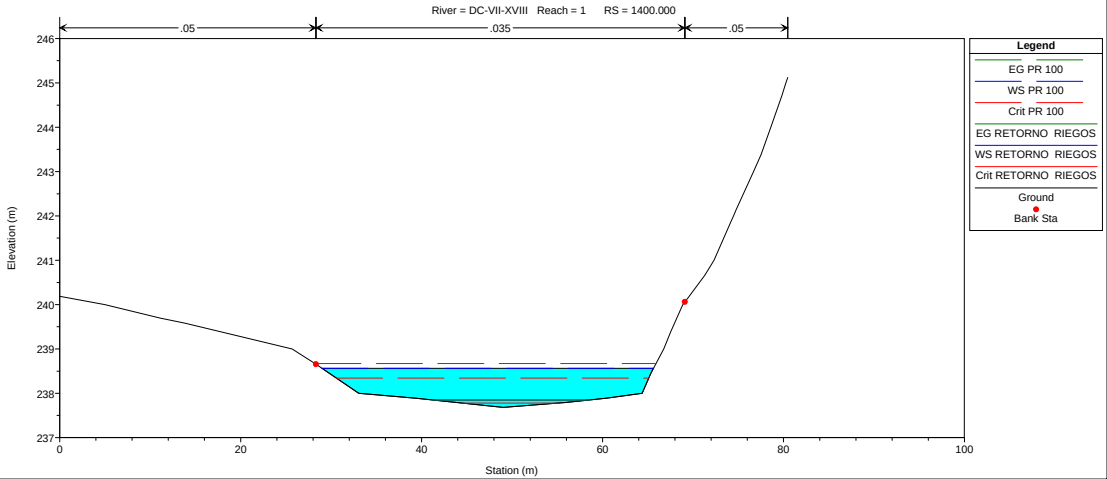

River = DC-VII-XVIII Reach = 1 RS = 1610.082
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

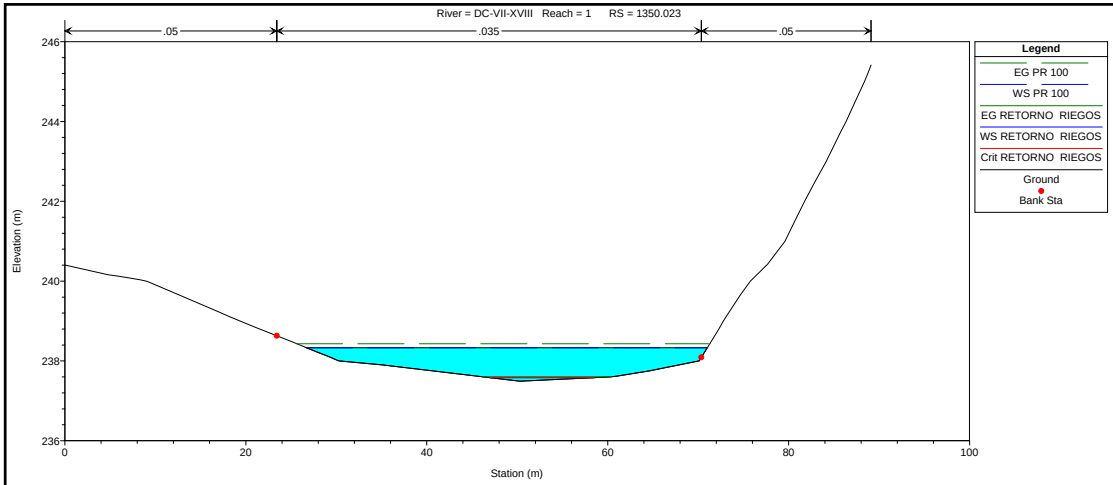

River = DC-VII-XVIII Reach = 1 RS = 1599.992
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

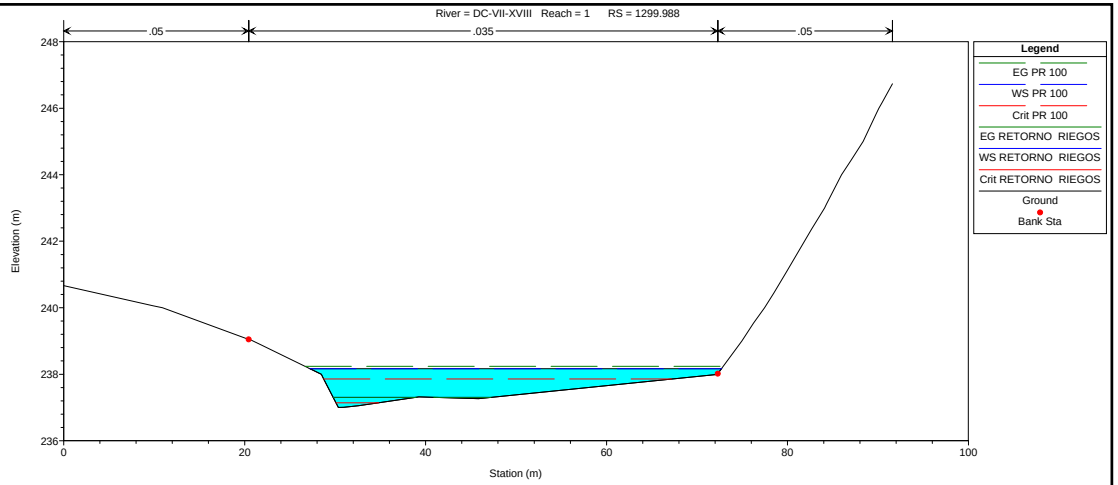

River = DC-VII-XVIII Reach = 1 RS = 1549.973
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

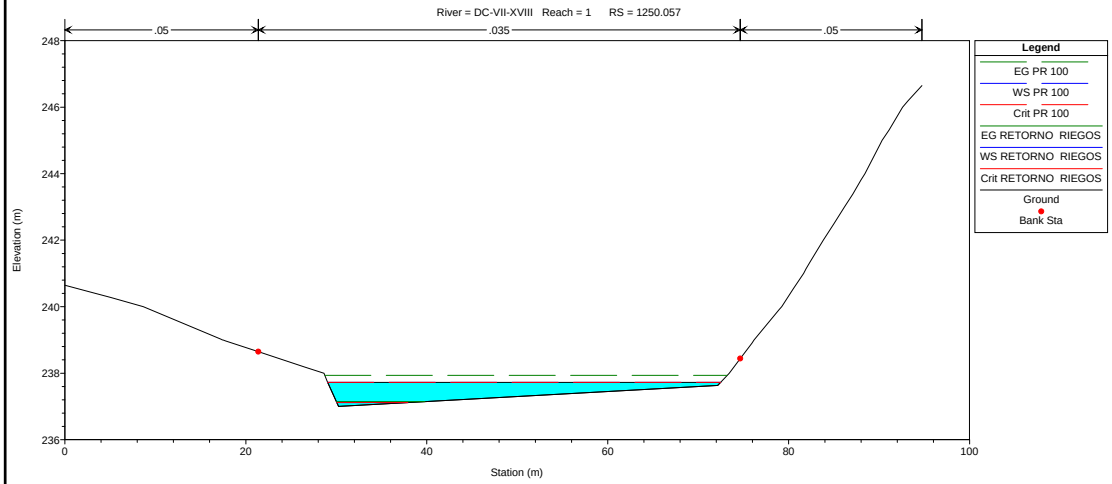

River = DC-VII-XVIII Reach = 1 RS = 1499.993
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

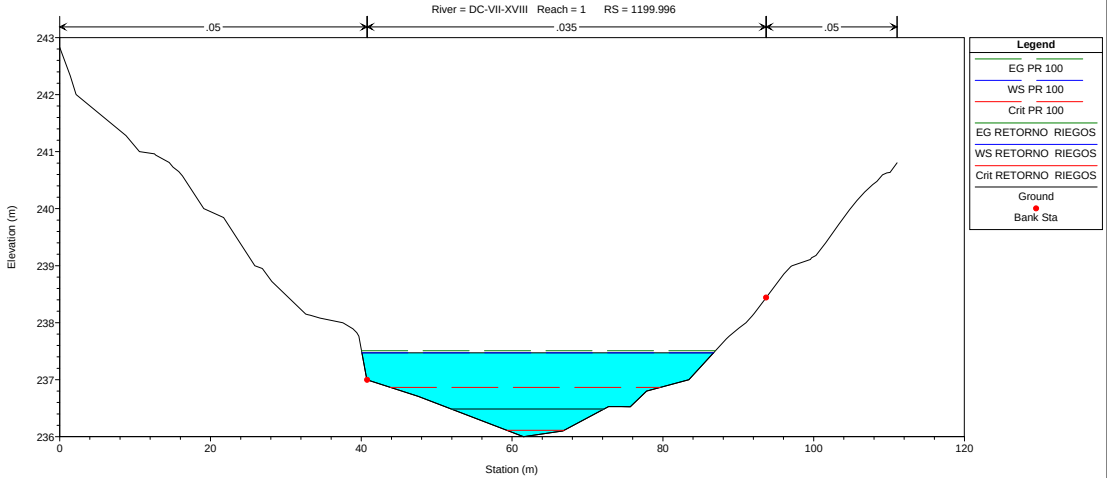

River = DC-VII-XVIII Reach = 1 RS = 1450.005
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

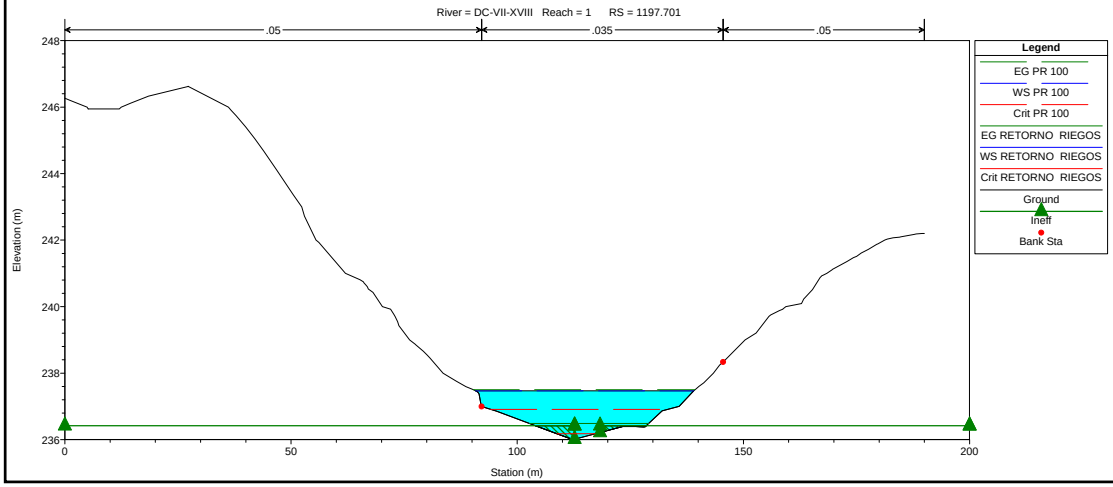

River = DC-VII-XVIII Reach = 1 RS = 1400.000
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

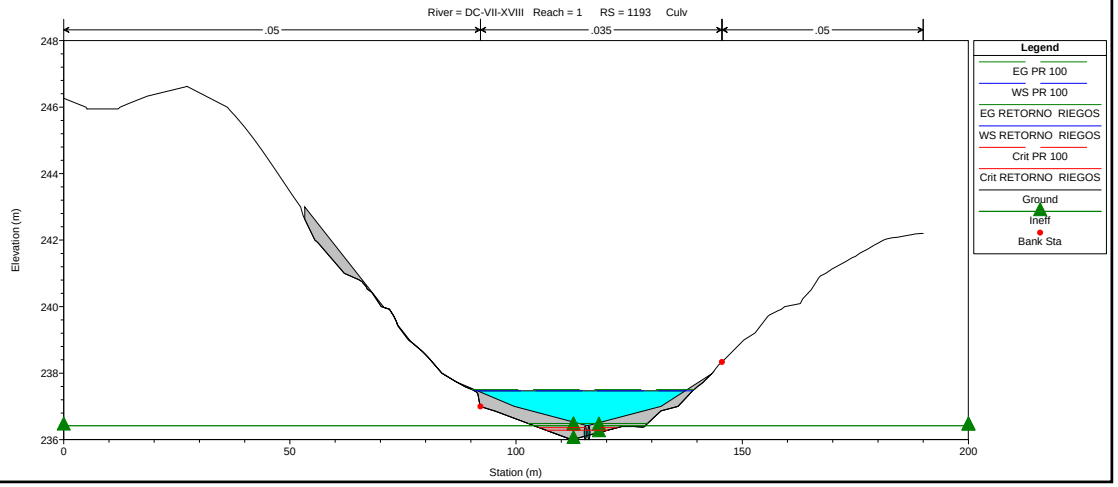

River = DC-VII-XVIII Reach = 1 RS = 1350.023
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

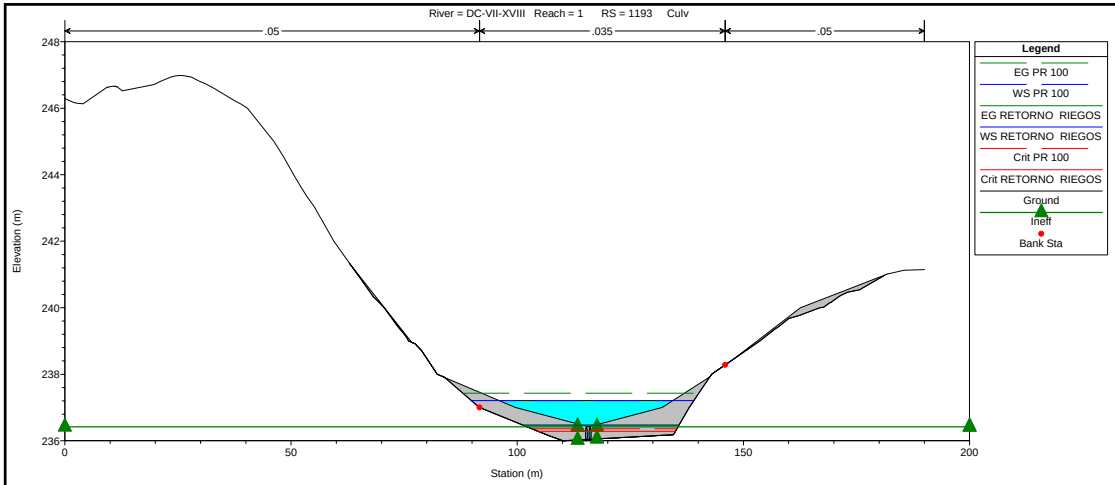

River = DC-VII-XVIII Reach = 1 RS = 1299.988
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

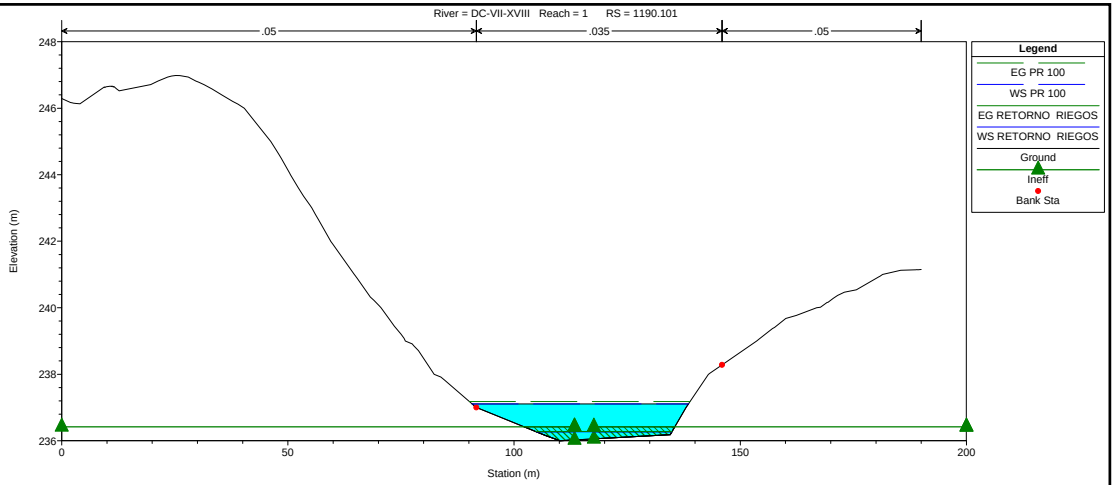

River = DC-VII-XVIII Reach = 1 RS = 1250.057
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

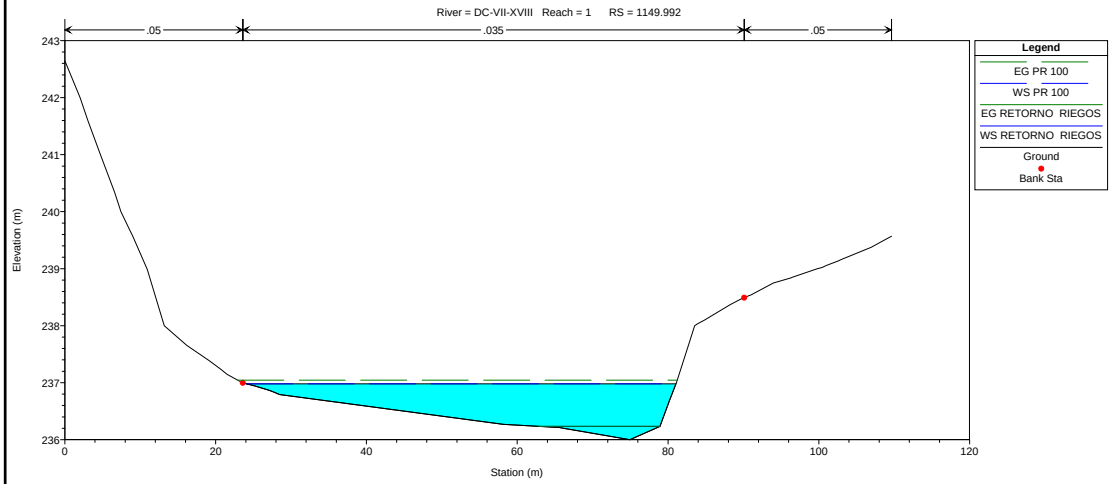

River = DC-VII-XVIII Reach = 1 RS = 1199.996
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

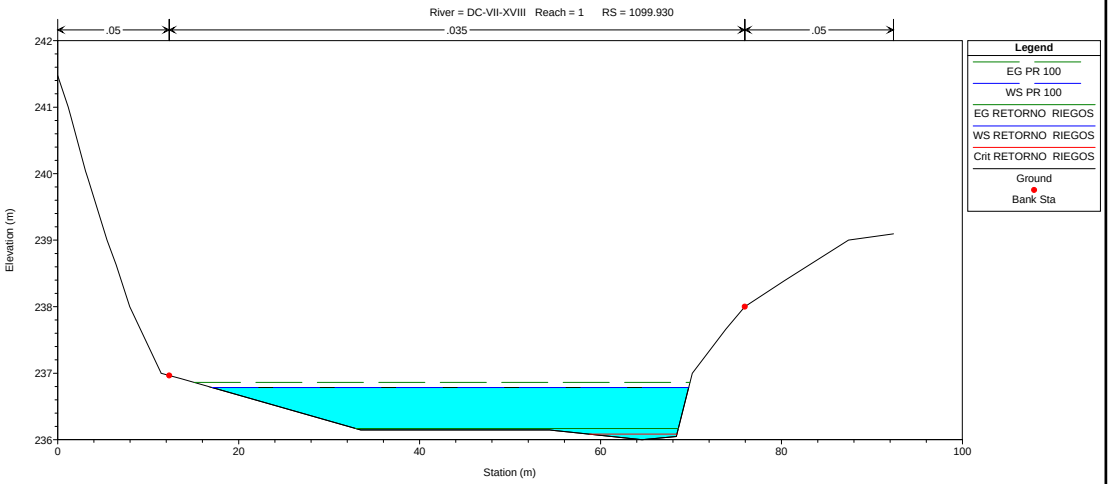

River = DC-VII-XVIII Reach = 1 RS = 1197.701
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

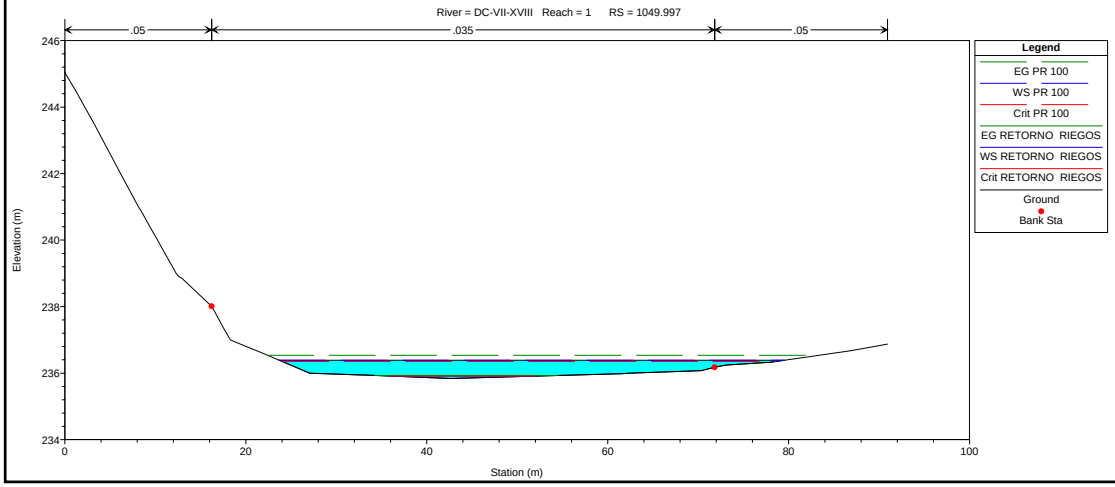

River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit PR 100
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

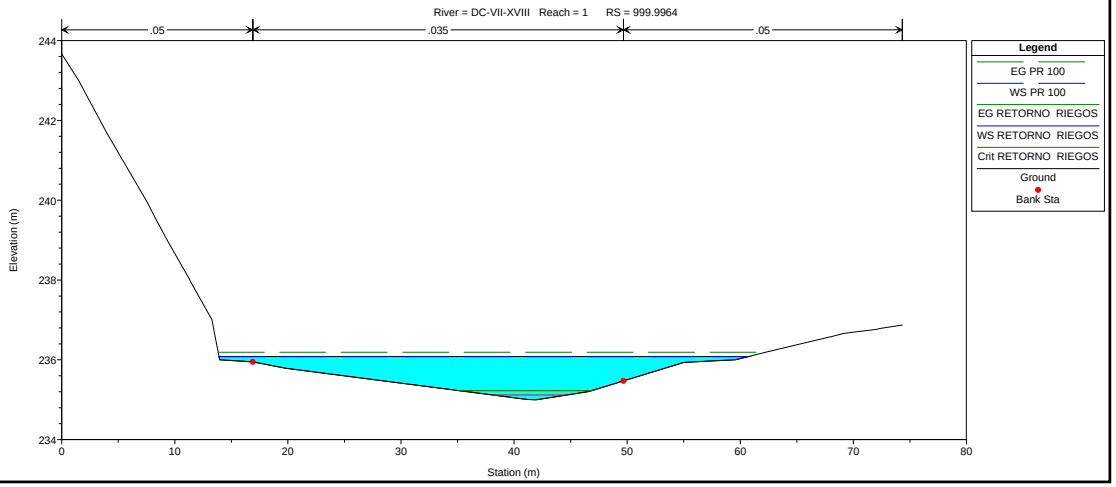

River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit PR 100
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

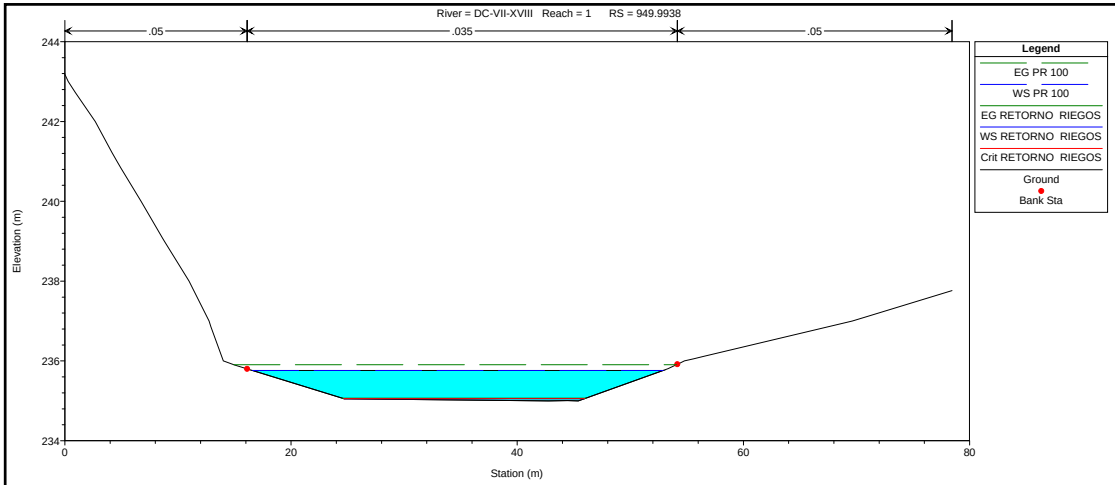

River = DC-VII-XVIII Reach = 1 RS = 1190.101
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

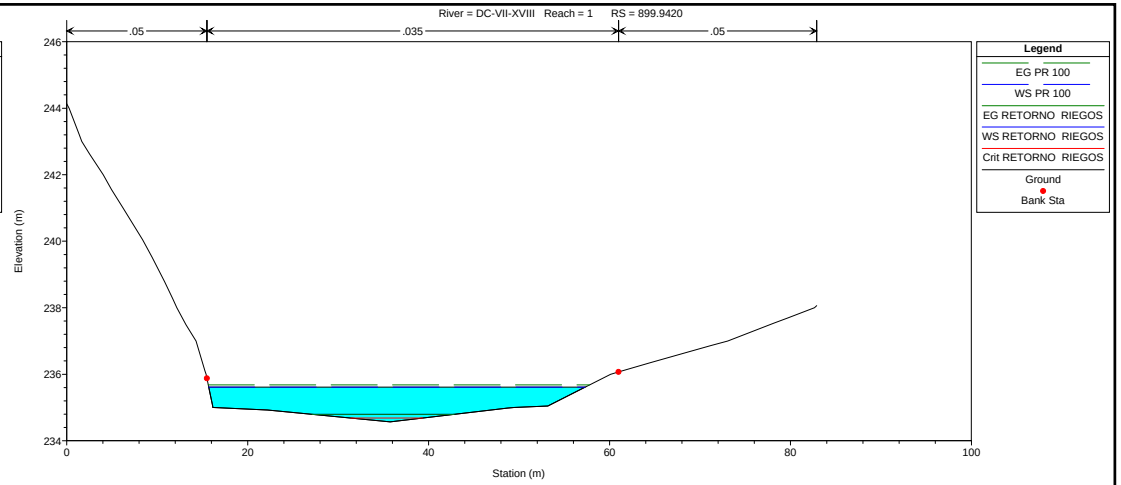

River = DC-VII-XVIII Reach = 1 RS = 1149.992
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

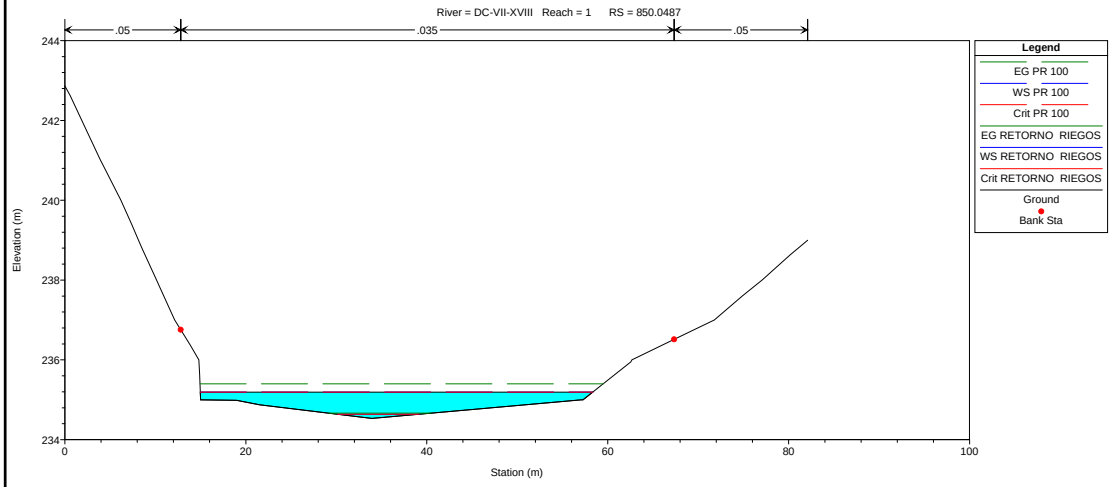

River = DC-VII-XVIII Reach = 1 RS = 1099.930
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

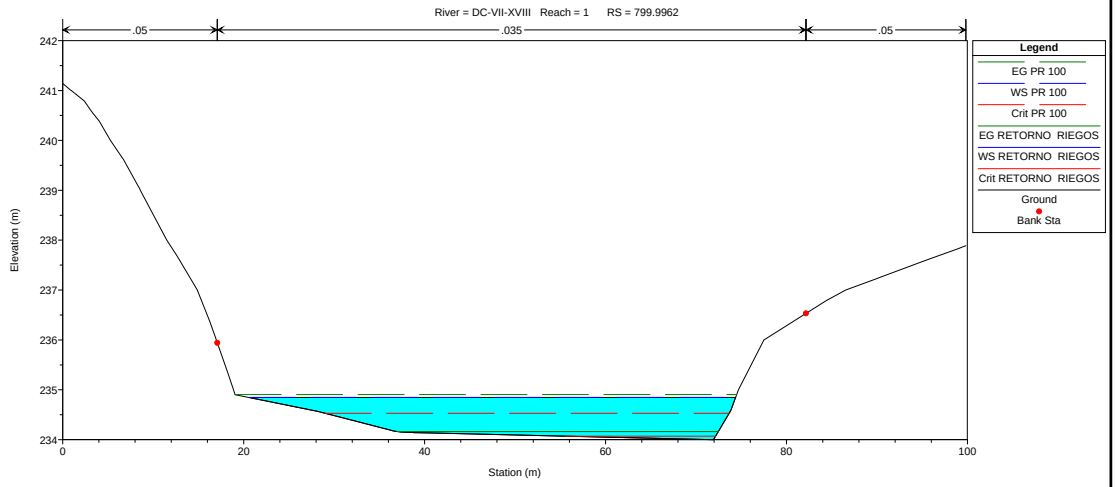

River = DC-VII-XVIII Reach = 1 RS = 1049.997
.05
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

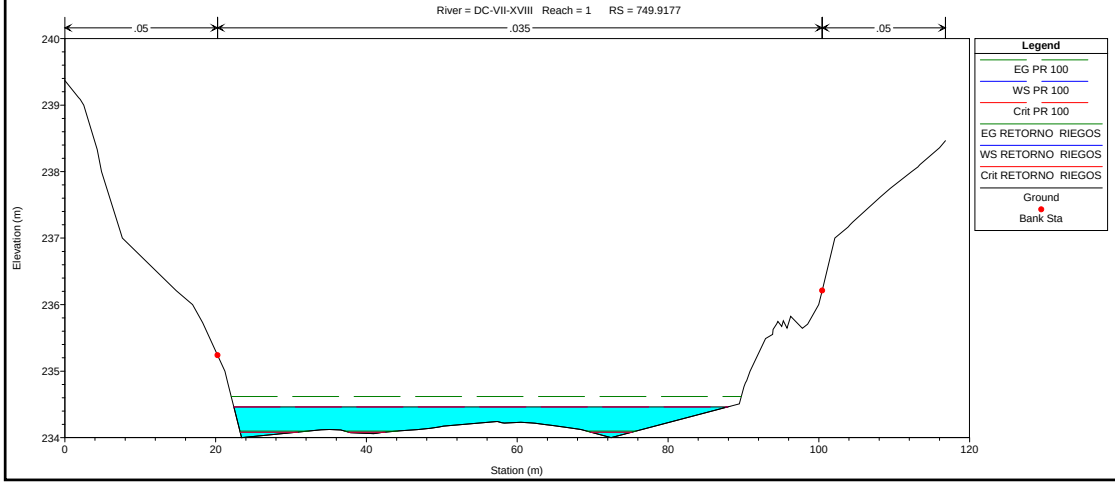

River = DC-VII-XVIII Reach = 1 RS = 999.9964
.05
.035
.05
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

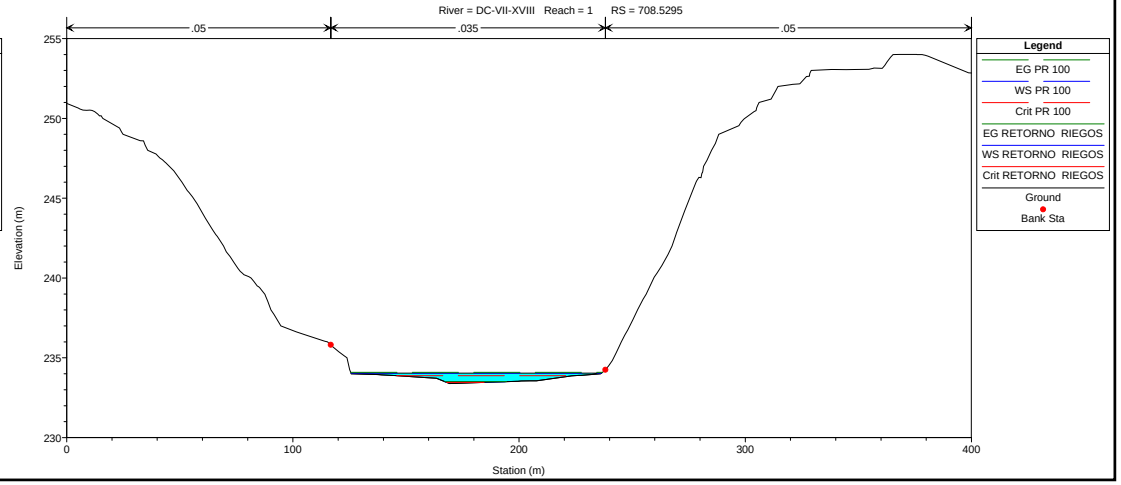

River = DC-VII-XVIII Reach = 1 RS = 949.9938
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

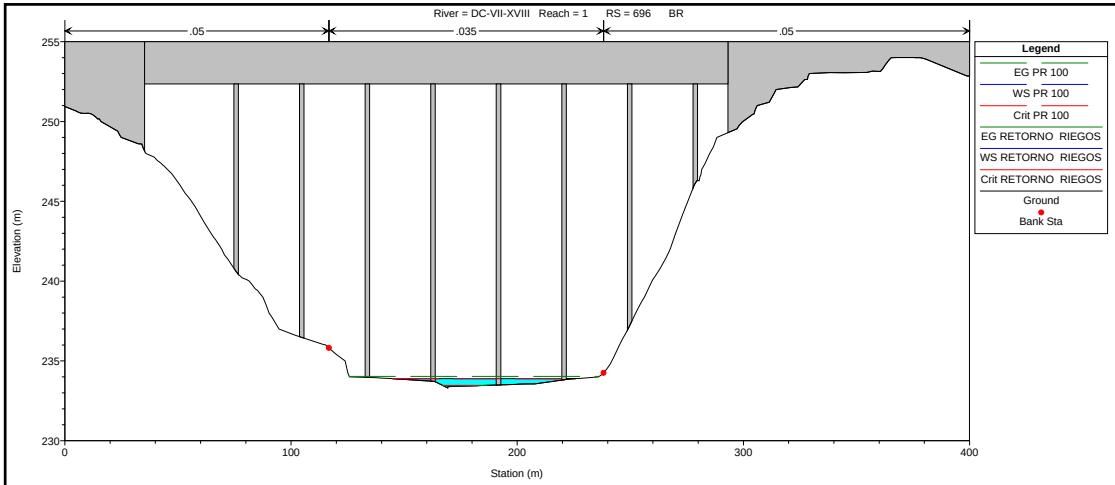

River = DC-VII-XVIII Reach = 1 RS = 899.9420
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

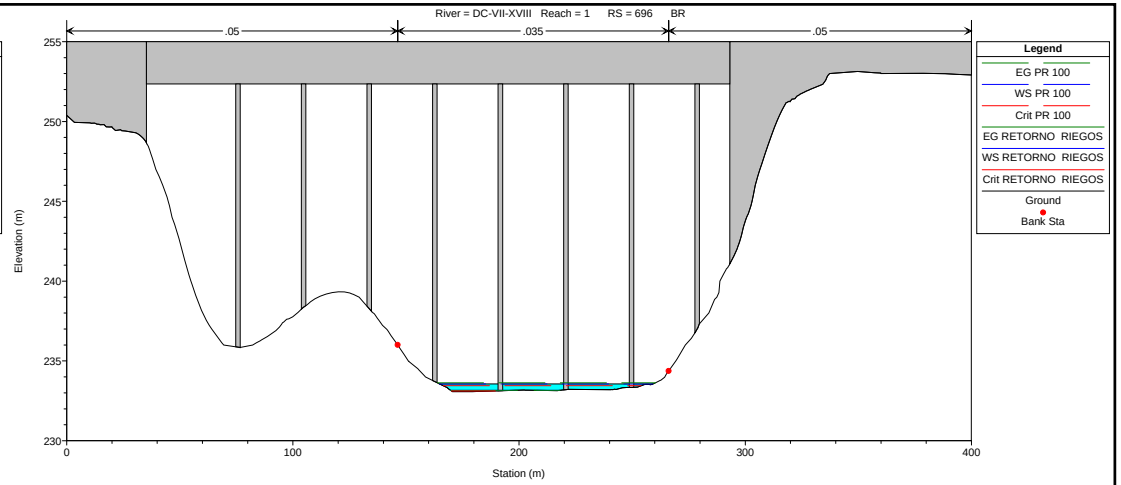

River = DC-VII-XVIII Reach = 1 RS = 850.0487
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

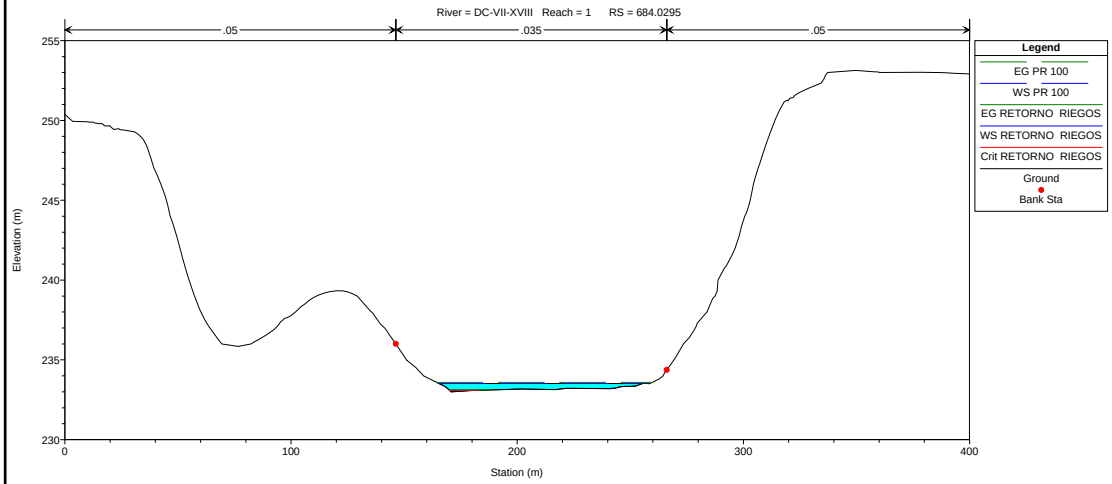

River = DC-VII-XVIII Reach = 1 RS = 799.9962
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

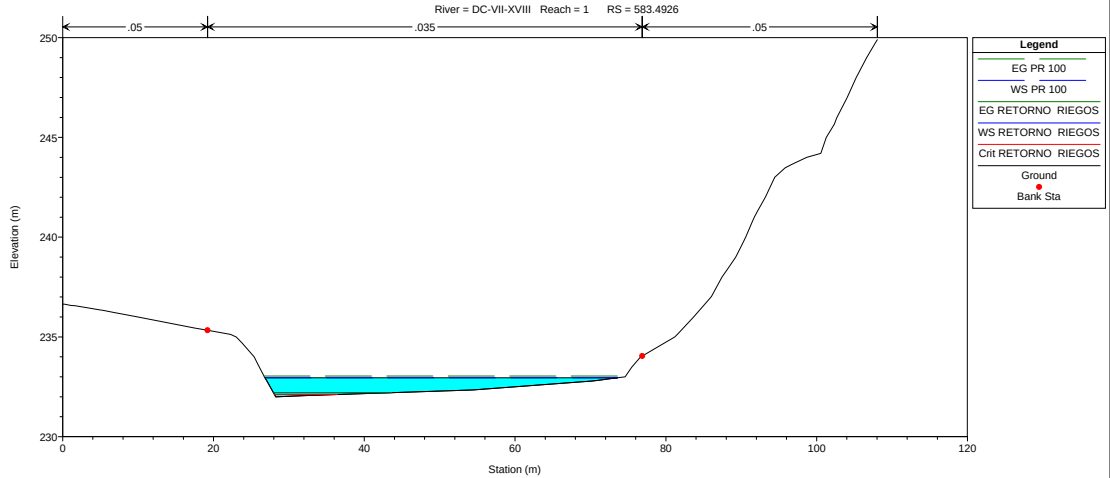

River = DC-VII-XVIII Reach = 1 RS = 749.9177
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

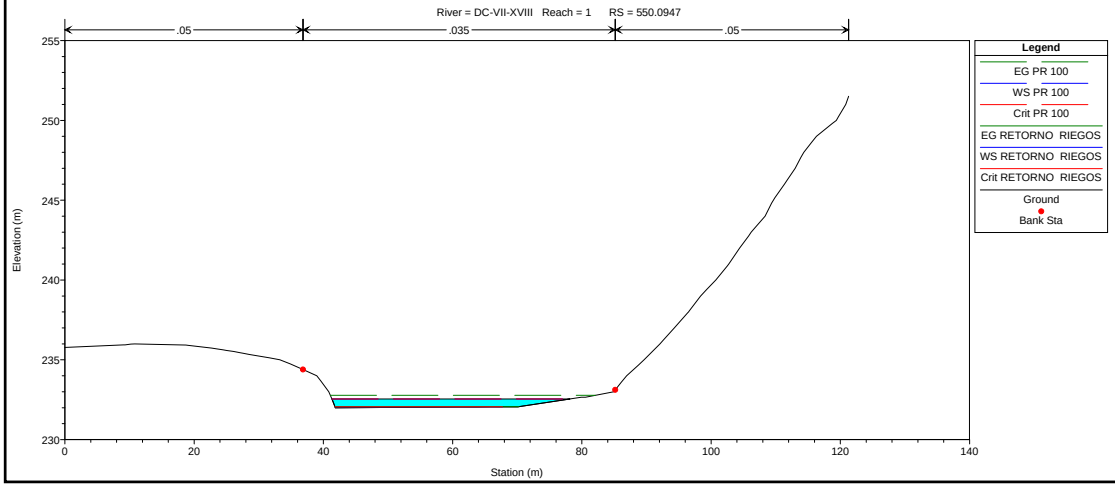

River = DC-VII-XVIII Reach = 1 RS = 708.5295
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

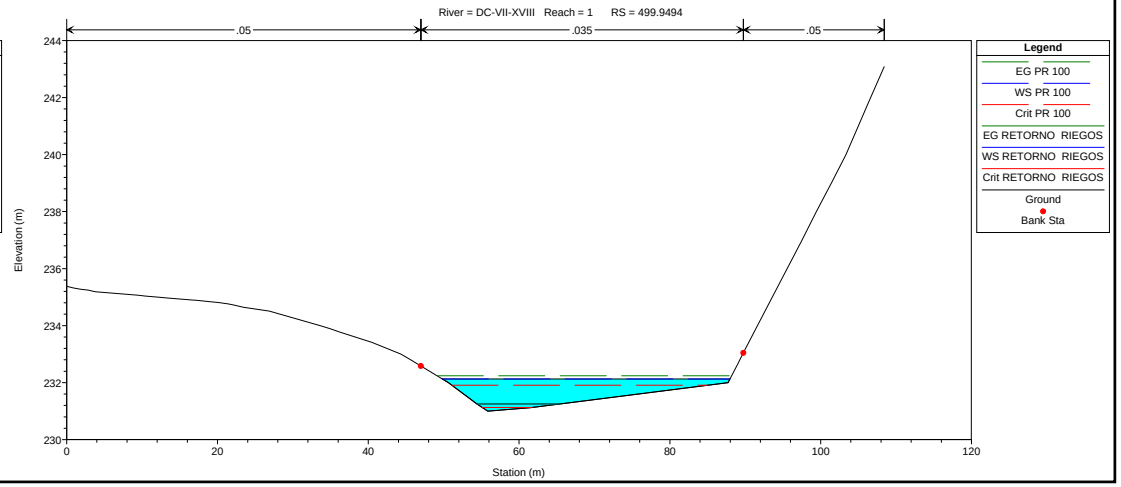

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

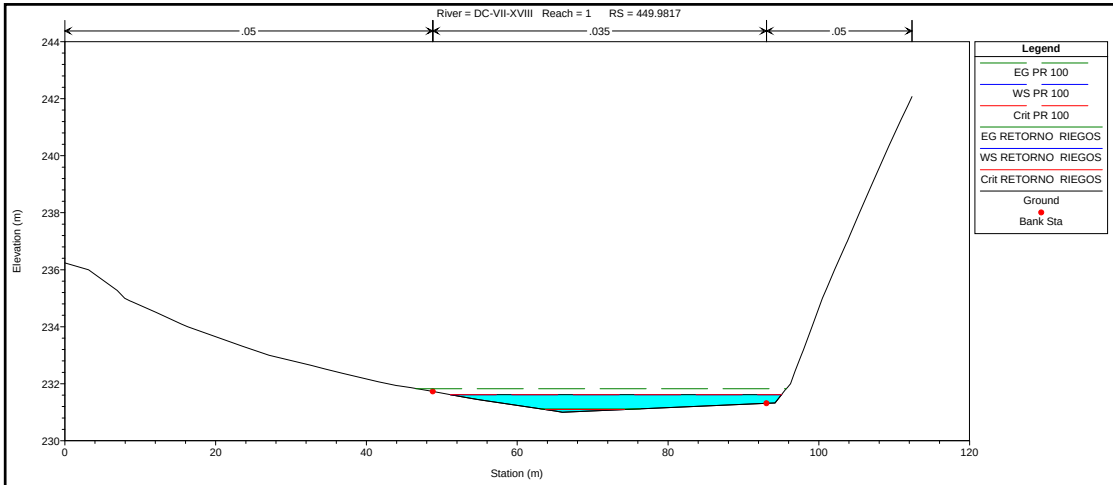

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

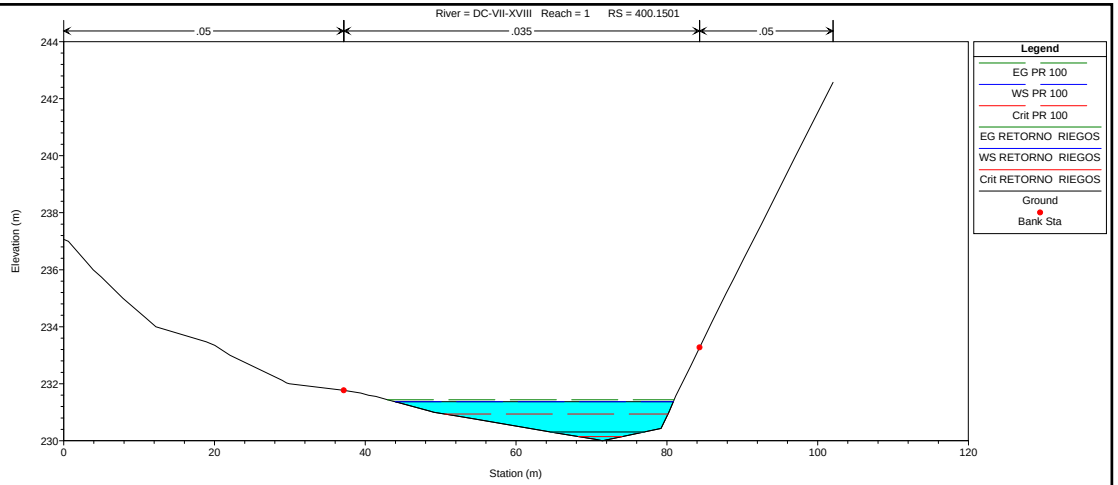

River = DC-VII-XVIII Reach = 1 RS = 684.0295
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

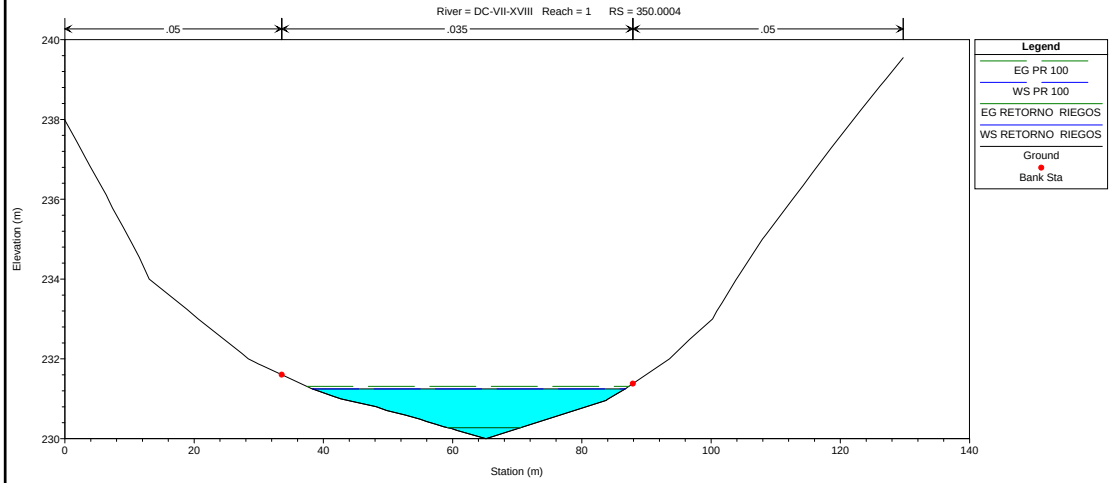

River = DC-VII-XVIII Reach = 1 RS = 583.4926
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

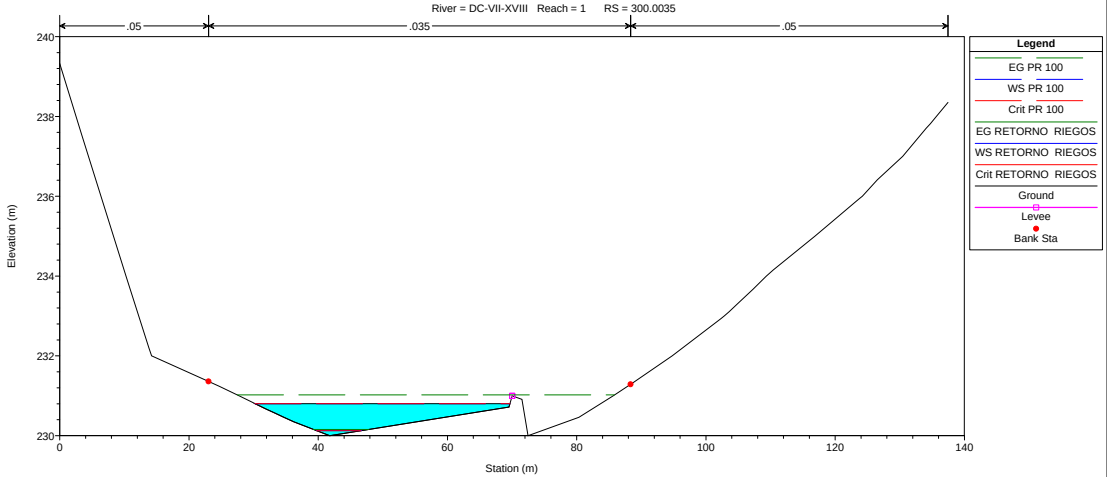

River = DC-VII-XVIII Reach = 1 RS = 550.0947
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

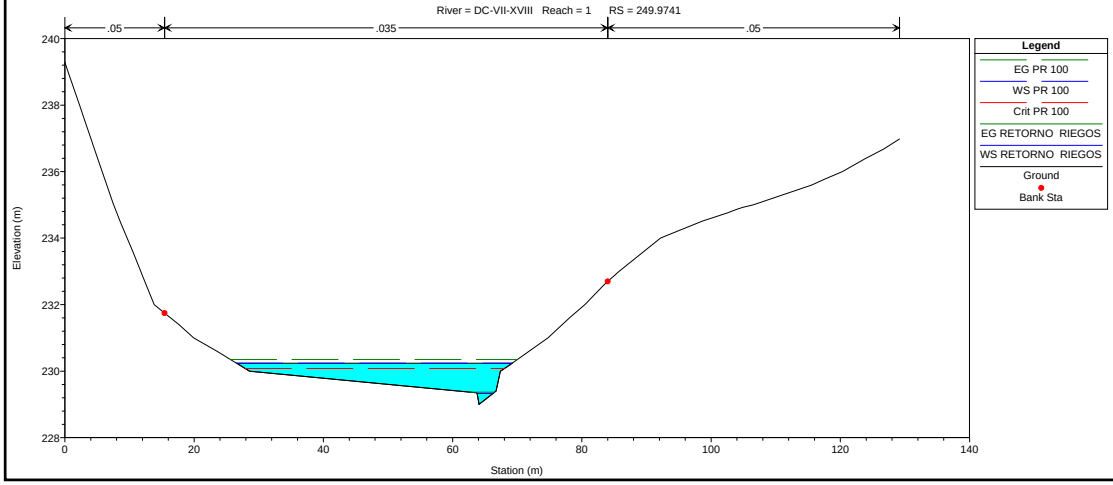

River = DC-VII-XVIII Reach = 1 RS = 499.9494
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

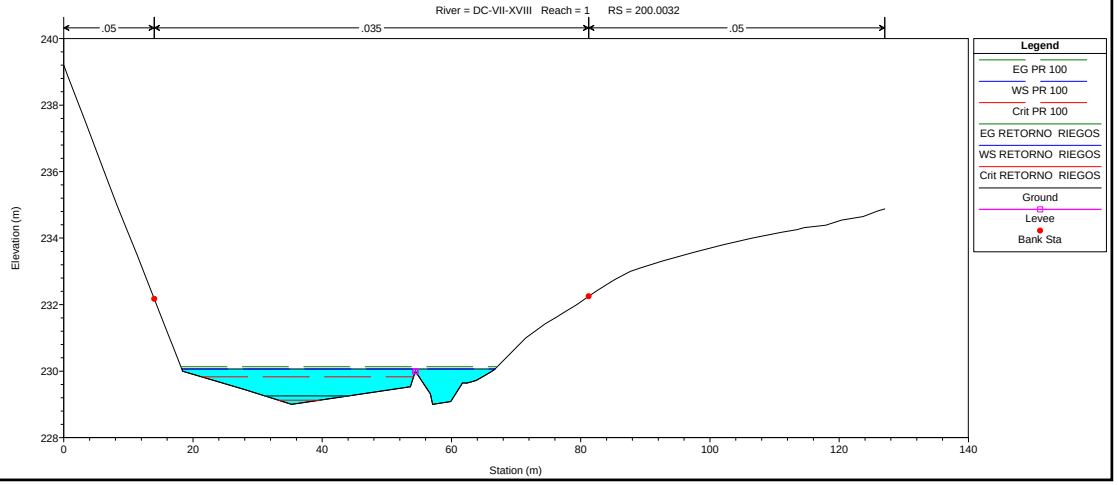

River = DC-VII-XVIII Reach = 1 RS = 449.9817
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

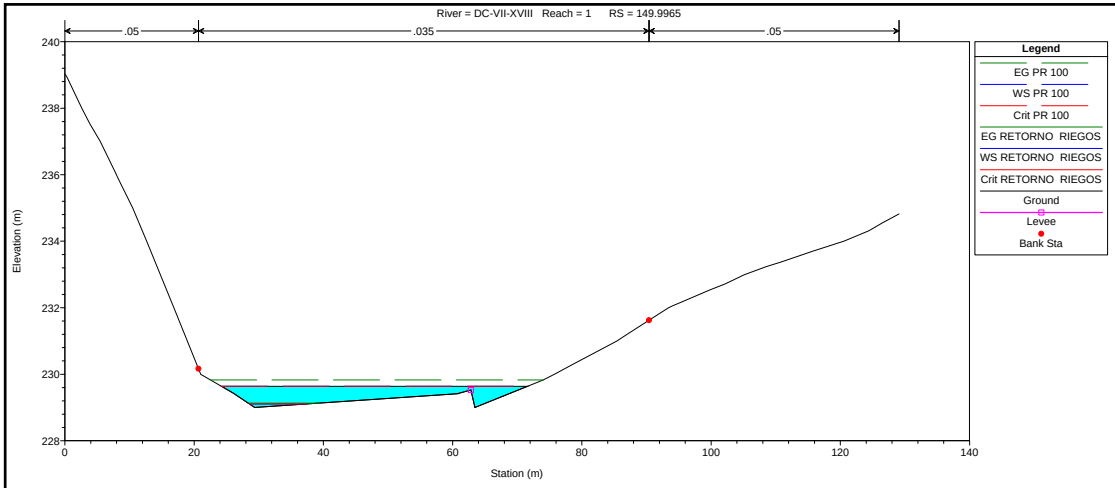

River = DC-VII-XVIII Reach = 1 RS = 400.1501
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

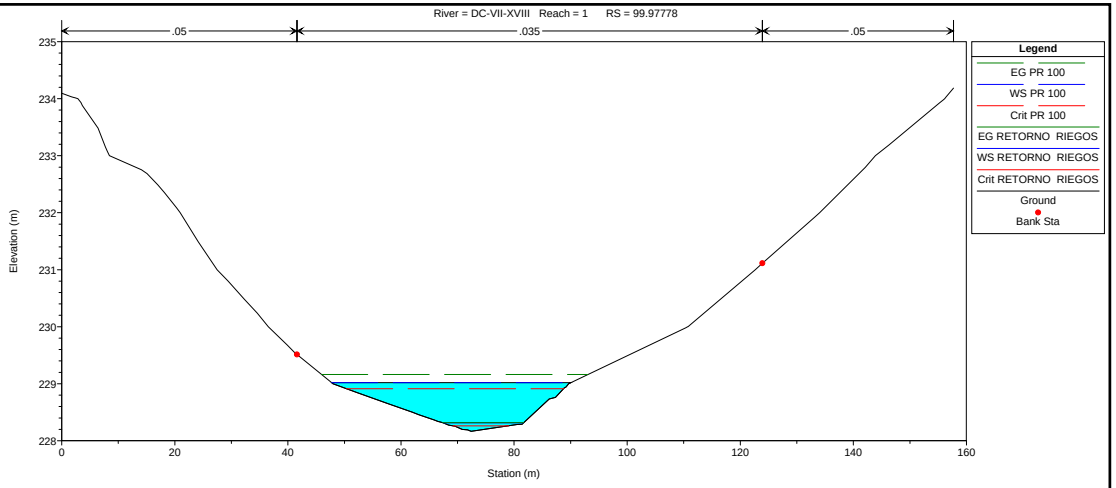

River = DC-VII-XVIII Reach = 1 RS = 350.0004
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

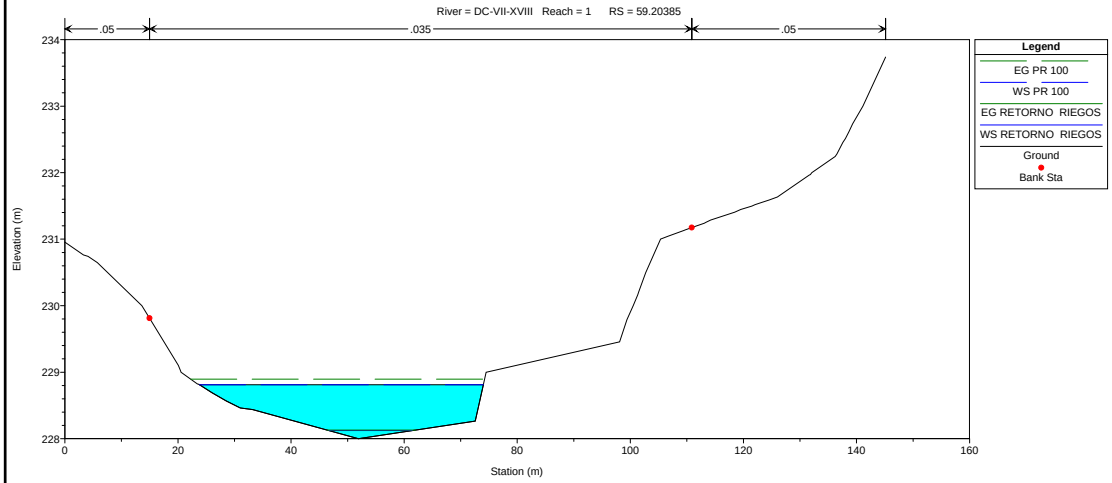

River = DC-VII-XVIII Reach = 1 RS = 300.0035
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 249.9741
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 200.0032
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 149.9965
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 99.97778
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 59.20385
.05
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

TABLAS DE RESULTADOS

TABLA DE RESULTADOS PR25

HEC-RAS Plan: Plan 03 Profile: PR 25

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	PR 25	1.19	276.23	276.35	276.31	276.35	0.002161	0.23	5.28	75.71	0.27
7	7600.010	PR 25	1.19	276.01	276.14	276.12	276.15	0.011031	0.39	3.06	65.38	0.57
7	7550.077	PR 25	1.19	275.79	275.98		275.99	0.001501	0.22	5.40	60.76	0.24
7	7500.056	PR 25	1.19	275.67	275.76	275.76	275.78	0.033693	0.66	1.81	40.78	1.00
7	7450.075	PR 25	1.19	275.19	275.34	275.28	275.35	0.003129	0.33	3.63	39.10	0.34
7	7400.119	PR 25	1.19	274.87	274.96	274.96	274.98	0.033871	0.65	1.84	42.37	0.99
7	7300.129	PR 25	1.19	274.25	274.41	274.31	274.41	0.000416	0.13	9.14	86.40	0.13
7	7249.989	PR 25	1.19	274.23	274.39		274.39	0.000249	0.10	11.80	114.47	0.10
7	7200.077	PR 25	1.19	274.18	274.39		274.39	0.000044	0.06	21.16	132.71	0.05
7	7149.979	PR 25	1.19	274.11	274.39		274.39	0.000018	0.05	28.10	141.22	0.03
7	7099.997	PR 25	1.19	273.95	274.39		274.39	0.000005	0.03	37.63	109.71	0.02
7	7087.390	PR 25	1.19	273.89	274.39		274.39	0.000006	0.03	35.78	102.92	0.02
7	7073.890	PR 25	1.19	273.83	274.39		274.39	0.000003	0.03	45.43	107.35	0.01
7	7050.093	PR 25	1.19	273.74	274.39		274.39	0.000002	0.02	54.10	120.41	0.01
7	6999.710	PR 25	1.19	273.58	274.39		274.39	0.000001	0.02	76.44	128.46	0.01
7	6949.910	PR 25	1.19	273.59	274.39		274.39	0.000001	0.01	91.54	186.49	0.01
7	6900.010	PR 25	1.19	273.38	274.39		274.39	0.000000	0.01	129.50	258.14	0.00
7	6884.171	PR 25	1.19	273.23	274.39	273.46	274.39	0.000312	0.08	16.04	282.33	0.10
7	6878		Culvert									
7	6872.171	PR 25	1.19	273.12	273.31	273.31	273.40	0.021290	1.35	0.88	30.18	1.00
7	6850.006	PR 25	1.19	272.92	273.01	272.99	273.02	0.006948	0.31	3.88	84.17	0.46
7	6800.056	PR 25	1.19	272.41	272.58	272.56	272.59	0.010393	0.47	2.53	39.03	0.59
7	6749.770	PR 25	1.19	272.19	272.36		272.37	0.002479	0.27	4.33	51.11	0.30
7	6699.958	PR 25	1.19	271.98	272.04	272.04	272.06	0.035679	0.61	1.94	50.41	1.00
7	6649.944	PR 25	1.19	271.35	271.45	271.42	271.46	0.004211	0.30	4.02	62.95	0.37
7	6599.932	PR 25	1.19	271.09	271.24		271.24	0.004234	0.32	3.68	50.62	0.38
7	6550	PR 25	1.19	270.81	270.92	270.90	270.93	0.010430	0.43	2.74	47.67	0.58
7	6500	PR 25	1.19	270.26	270.47	270.42	270.48	0.007824	0.55	2.18	21.64	0.55
7	6456.411	PR 25	1.19	269.79	269.87	269.87	269.90	0.027493	0.70	1.71	30.17	0.94
7	6443.411	PR 25	1.19	269.62	269.72		269.73	0.007017	0.40	2.96	42.94	0.49
7	6400.125	PR 25	1.19	269.22	269.36		269.37	0.010001	0.43	2.78	47.89	0.57
7	6349.912	PR 25	1.19	269.04	269.11		269.11	0.003143	0.26	4.55	69.07	0.32
7	6299.934	PR 25	1.19	268.63	268.72	268.72	268.74	0.033774	0.66	1.81	40.99	1.00
7	6249.994	PR 25	1.19	267.99	268.15	268.07	268.16	0.002015	0.30	3.92	34.01	0.29
7	6200.038	PR 25	1.19	267.82	267.87	267.87	267.89	0.036130	0.61	1.95	51.74	1.00
7	6150.094	PR 25	1.19	267.00	267.23	267.14	267.24	0.002513	0.38	3.15	23.33	0.33
7	6099.895	PR 25	1.19	266.77	266.90	266.90	266.93	0.030369	0.77	1.55	25.59	1.00
7	6050.062	PR 25	1.19	266.37	266.58	266.50	266.59	0.002521	0.32	3.69	34.57	0.32
7	5999.953	PR 25	1.19	266.25	266.36		266.37	0.008674	0.40	2.97	50.66	0.53
7	5949.744	PR 25	1.19	265.45	265.60	265.60	265.64	0.029227	0.88	1.36	17.81	1.01
7	5899.857	PR 25	1.19	265.00	265.16	265.08	265.17	0.001433	0.25	4.69	41.19	0.24
7	5849.411	PR 25	1.19	264.83	264.94	264.94	264.97	0.030519	0.71	1.67	30.96	0.98
7	5799.777	PR 25	1.19	264.16	264.28	264.25	264.29	0.006751	0.37	3.22	51.39	0.47
7	5749.972	PR 25	1.19	263.94	264.02		264.02	0.004391	0.26	4.54	88.32	0.37
7	5700.026	PR 25	1.19	263.51	263.57	263.57	263.58	0.025530	0.54	2.21	54.74	0.85
7	5649.980	PR 25	1.19	263.06	263.14	263.09	263.14	0.002979	0.19	6.25	111.44	0.29
7	5625.202	PR 25	1.19	262.60	263.13	262.74	263.13	0.000115	0.19	6.27	165.50	0.09
7	5617		Culvert									
7	5609.202	PR 25	1.19	262.39	262.53	262.53	262.58	0.024422	1.07	1.11	39.19	1.00
7	5599.977	PR 25	1.19	262.34	262.45	262.41	262.45	0.004660	0.35	3.46	60.38	0.41
7	5549.949	PR 25	1.19	261.98	262.06	262.05	262.07	0.014222	0.48	2.47	46.38	0.67
7	5499.974	PR 25	1.19	261.60	261.72		261.72	0.004121	0.29	4.06	63.49	0.37
6	5200	PR 25	2.56	260.10	260.21		260.22	0.005553	0.39	6.55	83.29	0.44
6	5149.993	PR 25	2.56	259.76	259.91	259.91	259.92	0.006211	0.39	6.53	89.98	0.46
6	5100.103	PR 25	2.56	259.29	259.42	259.40	259.44	0.010331	0.48	5.32	79.00	0.59
6	5050.488	PR 25	2.56	258.96	259.05		259.06	0.005831	0.35	7.24	110.97	0.44
6	4999.911	PR 25	2.56	258.65	258.78		258.78	0.004891	0.41	6.30	68.65	0.43
6	4980.205	PR 25	2.56	258.48	258.65	258.61	258.66	0.008373	0.50	5.13	61.43	0.55
6	4967.705	PR 25	2.56	258.37	258.44	258.44	258.47	0.030380	0.78	3.30	53.66	1.00
6	4950.020	PR 25	2.56	258.10	258.28	258.21	258.29	0.002402	0.37	6.91	50.80	0.32
6	4900	PR 25	2.56	257.83	257.96	257.96	258.00	0.028242	0.86	2.99	39.56	1.00
6	4850.050	PR 25	2.56	257.38	257.56	257.46	257.57	0.001763	0.35	7.27	45.74	0.28
6	4800	PR 25	2.56	257.15	257.43		257.44	0.003791	0.53	4.83	29.14	0.42
6	4749.968	PR 25	2.56	256.99	257.17		257.19	0.007288	0.62	4.11	31.94	0.55
6	4700.024	PR 25	2.56	256.68	256.96		256.97	0.002860	0.44	5.92	39.65	0.36
6	4650	PR 25	2.56	256.58	256.88		256.88	0.001134	0.30	8.44	48.50	0.23
6	4600.011	PR 25	2.56	256.56	256.68	256.68	256.72	0.027743	0.89	2.87	35.40	1.00
6	4550.102	PR 25	2.56	255.95	256.16	256.08	256.17	0.004661	0.59	4.32	25.81	0.46
6	4500.008	PR 25	2.56	255.74	255.98		255.99	0.002851	0.39	6.56	50.66	0.35
6	4450.025	PR 25	2.56	255.51	255.75	255.70	255.76	0.008018	0.52	4.96	54.66	0.55
6	4400.093	PR 25	2.56	255.25	255.43	255.37	255.45	0.005071	0.54	4.70	33.95	0.47
6	4391.323	PR 25	2.56	255.26	255.39	255.34	255.40	0.006090	0.52	4.97	44.74	0.49
6	4376.823	PR 25	2.56	255.14	255.33	255.25	255.34	0.002862	0.42	6.09	42.28	0.35
6	4350.070	PR 25	2.56	255.01	255.16	255.14	255.18	0.016387	0.76	3.38	35.86	0.79
6	4299.969	PR 25	2.56	254.61	254.80		254.81	0.004099	0.44	5.83	49.47	0.41
6	4249.829	PR 25	2.56	254.29	254.55	254.48	254.57	0.005942	0.59	4.32	30.88	0.51
6	4222.011	PR 25	2.56	254.07	254.21	254.21	254.26	0.026183	1.00	2.56	25.54	1.01
5	4149.871	PR 25	9.08	253.54	253.92	253.75	253.93	0.002382	0.57	15.84	60.06	0.36
5	4100.026	PR 25	9.08	253.46	253.69		253.73	0.008875	0.89	10.17	53.22	0.65
5	4050.072	PR 25	9.08	253.07	253.39		253.42	0.004413	0.71	12.82	56.23	0.47
5	3999.964	PR 25	9.08	252.95	253.28		253.29	0.001485	0.49	19.28	64.75	0.29
5	3949.996	PR 25	9.08	252.87	253.19		253.21	0.002149	0.52	17.43	70.69	0.33
5	3900.187	PR 25	9.08	252.72	253.06		253.08	0.003251	0.60	15.17	68.68	0.41

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
5	3849.929	PR 25	9.08	252.47	252.93		252.95	0.002101	0.54	16.71	62.51	0.34
5	3800.079	PR 25	9.08	252.41	252.62	252.62	252.70	0.022357	1.25	7.28	46.17	1.00
5	3749.973	PR 25	9.08	251.97	252.22	252.13	252.24	0.003629	0.61	14.81	69.66	0.42
5	3699.979	PR 25	9.08	251.78	252.09		252.10	0.002049	0.50	18.00	73.90	0.33
5	3649.995	PR 25	9.08	251.66	252.01		252.02	0.001342	0.42	21.71	85.98	0.27
5	3599.996	PR 25	9.08	251.65	251.86		251.89	0.007566	0.74	12.21	74.65	0.59
5	3550.059	PR 25	9.08	251.24	251.61		251.63	0.003571	0.64	14.22	62.21	0.43
5	3500.074	PR 25	9.08	251.05	251.32		251.36	0.009011	0.89	10.19	54.08	0.66
5	3450.041	PR 25	9.08	250.84	251.17		251.18	0.001768	0.49	18.89	73.51	0.31
5	3400	PR 25	9.08	250.73	251.01	250.93	251.03	0.005896	0.70	12.95	71.73	0.53
5	3391.238	PR 25	9.08	250.65	250.85	250.85	250.94	0.021235	1.28	7.07	41.21	0.99
5	3376.738	PR 25	9.08	250.39	250.72	250.61	250.75	0.004291	0.73	12.45	51.17	0.47
5	3349.993	PR 25	9.08	250.25	250.59		250.62	0.005388	0.79	11.48	49.52	0.52
5	3300.070	PR 25	9.08	249.96	250.45		250.47	0.001822	0.58	15.85	50.12	0.32
5	3250.143	PR 25	9.08	249.99	250.16	250.16	250.24	0.022699	1.22	7.42	48.90	1.00
5	3200.000	PR 25	9.08	249.40	249.76	249.59	249.78	0.001838	0.54	16.77	57.08	0.32
5	3150.025	PR 25	9.08	249.31	249.58		249.61	0.007275	0.82	11.11	57.15	0.59
5	3100.110	PR 25	9.08	249.04	249.35		249.37	0.003351	0.65	13.92	56.22	0.42
5	3049.982	PR 25	9.08	248.62	249.05	249.01	249.10	0.010347	0.96	9.46	49.78	0.70
4	2928.433	PR 25	19.55	247.88	248.16	248.09	248.20	0.006395	0.90	21.93	91.08	0.58
4	2891.135	PR 25	19.55	247.37	248.00		248.03	0.003490	0.73	26.99	109.60	0.44
3	2800.001	PR 25	22.12	247.00	247.97	247.29	247.98	0.000200	0.33	67.82	93.59	0.12
3	2750.009	PR 25	22.12	246.52	247.97		247.97	0.000114	0.29	77.41	84.99	0.10
3	2699.970	PR 25	22.12	246.67	247.96		247.96	0.000105	0.28	78.98	84.12	0.09
3	2650.083	PR 25	22.12	246.00	247.96		247.96	0.000017	0.15	148.92	109.56	0.04
3	2625.618	PR 25	22.12	246.00	247.96	246.76	247.96	0.000082	0.24	92.73	106.90	0.08
3	2616		Culvert									
3	2606.618	PR 25	22.12	245.88	246.82	246.82	247.27	0.012621	2.99	7.41	77.02	1.01
3	2600.016	PR 25	22.12	245.67	246.04	246.23	246.99	0.290379	4.33	5.11	34.27	3.58
3	2549.999	PR 25	22.12	244.85	245.53	245.31	245.57	0.002650	0.83	26.63	62.75	0.41
3	2500.027	PR 25	22.12	244.86	245.31	245.21	245.37	0.006316	1.10	20.49	61.64	0.60
3	2449.993	PR 25	22.12	244.43	245.09		245.13	0.003609	0.91	24.44	64.19	0.47
3	2400.000	PR 25	22.12	244.23	245.02		245.04	0.000992	0.53	41.49	91.28	0.25
3	2374.405	PR 25	22.12	244.00	245.00	244.70	245.01	0.001062	0.55	40.26	92.56	0.26
3	2371		Culvert									
3	2367.905	PR 25	22.12	244.00	244.79		244.84	0.008256	1.03	21.46	86.54	0.66
2	2250.002	PR 25	23.56	243.00	243.78	243.67	243.87	0.008095	1.36	17.32	44.69	0.70
2	2199.933	PR 25	23.56	243.00	243.52		243.57	0.004201	0.99	23.83	60.85	0.50
2	2149.988	PR 25	23.56	242.75	243.44		243.47	0.001166	0.64	36.58	68.15	0.28
2	2099.997	PR 25	23.56	242.75	243.25		243.33	0.008860	1.25	18.79	59.01	0.71
2	2050.003	PR 25	23.56	242.04	242.66	242.64	242.78	0.013915	1.53	15.42	50.37	0.88
2	1999.991	PR 25	23.56	241.91	242.46		242.50	0.002710	0.82	28.92	71.99	0.41
2	1950.051	PR 25	23.56	241.75	242.16	242.12	242.24	0.012300	1.28	18.40	71.59	0.81
2	1900.001	PR 25	23.56	241.16	241.91		241.95	0.003191	0.89	26.58	65.29	0.44
2	1849.989	PR 25	23.56	241.00	241.75		241.79	0.003047	0.88	26.68	63.64	0.44
2	1799.147	PR 25	23.56	241.00	241.33	241.33	241.47	0.018660	1.64	14.35	52.56	1.00
2	1786.347	PR 25	23.56	240.57	240.98	241.02	241.17	0.028978	1.94	12.16	48.36	1.23
2	1749.970	PR 25	23.56	240.00	240.74	240.59	240.81	0.005275	1.14	20.69	50.81	0.57
1	1617.094	PR 25	24.86	239.14	240.44	240.16	240.46	0.001494	0.68	36.81	78.48	0.31
1	1613		Culvert									
1	1610.082	PR 25	24.86	239.00	240.11	240.11	240.24	0.020568	1.60	15.58	64.01	1.03
1	1599.992	PR 25	24.86	239.00	239.72	239.53	239.79	0.004551	1.11	22.35	50.96	0.54
1	1549.973	PR 25	24.86	238.75	239.55		239.60	0.003018	1.01	24.67	47.86	0.45
1	1499.993	PR 25	24.86	238.35	239.35		239.42	0.004112	1.20	20.63	38.55	0.53
1	1450.005	PR 25	24.86	238.00	238.84	238.84	239.04	0.016469	2.01	12.39	30.36	1.00
1	1400.000	PR 25	24.86	237.68	238.44	238.24	238.52	0.004225	1.26	19.78	35.41	0.54
1	1350.023	PR 25	24.86	237.49	238.21		238.28	0.005230	1.25	19.92	42.60	0.58
1	1299.988	PR 25	24.86	237.00	238.04	237.74	238.09	0.002665	1.00	24.84	44.22	0.43
1	1250.057	PR 25	24.86	237.00	237.64	237.64	237.80	0.018469	1.81	13.74	42.98	1.02
1	1199.996	PR 25	24.86	236.00	237.34	236.74	237.36	0.000748	0.68	36.66	45.52	0.24
1	1197.701	PR 25	24.86	236.00	237.33	236.80	237.36	0.000830	0.70	35.83	46.48	0.25
1	1193		Culvert									
1	1190.101	PR 25	24.86	236.00	236.99		237.04	0.003096	1.03	24.12	46.06	0.45
1	1149.992	PR 25	24.86	236.00	236.86		236.91	0.003369	1.00	24.95	53.46	0.47
1	1099.930	PR 25	24.86	236.00	236.68		236.74	0.003538	1.04	23.91	49.82	0.48
1	1049.997	PR 25	24.86	235.84	236.28	236.26	236.42	0.014210	1.61	15.52	50.67	0.90
1	999.9964	PR 25	24.86	235.00	235.95		236.03	0.004525	1.31	19.78	38.91	0.56
1	949.9938	PR 25	24.86	235.00	235.62		235.74	0.007513	1.53	16.25	33.41	0.70
1	899.9420	PR 25	24.86	234.57	235.48		235.53	0.002295	0.99	25.12	40.56	0.40
1	850.0487	PR 25	24.86	234.53	235.10	235.10	235.27	0.018252	1.81	13.76	42.87	1.02
1	799.9962	PR 25	24.86	234.00	234.74	234.44	234.78	0.002230	0.90	27.61	50.53	0.39
1	749.9177	PR 25	24.86	234.00	234.39	234.39	234.52	0.019607	1.58	15.70	62.99	1.01
1	708.5295	PR 25	24.86	233.39	233.95	233.81	233.99	0.005256	0.91	27.33	93.89	0.54
1	696		Bridge									
1	684.0295	PR 25	24.86	233.00	233.43		233.50	0.009335	1.11	22.32	87.04	0.70
1	583.4926	PR 25	24.86	232.00	232.83		232.89	0.004194	1.15	21.64	43.99	0.52
1	550.0947	PR 25	24.86	232.00	232.45	232.45	232.63	0.016952	1.91	13.00	35.05	1.00
1	499.9494	PR 25	24.86	231.00	232.01	231.78	232.09	0.004356	1.24	19.99	37.19	0.54
1	449.9817	PR 25	24.86	231.00	231.53	231.53	231.70	0.017517	1.83	13.76	41.75	1.01
1	400.1501	PR 25	24.86	230.00	231.22	230.80	231.27	0.001949	1.00	24.75	34.58	0.38
1	350.0004	PR 25	24.86	230.00	231.11		231.16	0.002562	0.99	25.17	44.52	0.42
1	300.0035	PR 25	24.86	230.00	230.70	230.70	230.88	0.016923	1.87	13.33	37.44	1.00
1	249.9741	PR 25	24.86	229.00	230.17	229.98	230.24	0.004440	1.19	20.83	41.53	0.54

HEC-RAS Plan: Plan 03 Profile: PR 25 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	200.0032	PR 25	24.86	229.00	229.98	229.71	230.05	0.003433	1.18	21.09	35.53	0.49
1	149.9965	PR 25	24.86	229.00	229.55	229.55	229.71	0.017882	1.75	14.20	45.47	1.00
1	99.97778	PR 25	24.86	228.17	228.91	228.80	229.02	0.008287	1.50	16.63	38.10	0.72
1	59.20385	PR 25	24.86	228.00	228.68		228.75	0.004906	1.17	21.25	47.43	0.56

TABLA DE RESULTADOS PR100

HEC-RAS Plan: Plan 03 Profile: PR 100

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	PR 100	1.71	276.23	276.36	276.32	276.37	0.002397	0.26	6.46	78.56	0.29
7	7600.010	PR 100	1.71	276.01	276.16	276.13	276.17	0.008450	0.37	4.60	86.60	0.51
7	7550.077	PR 100	1.71	275.79	276.01		276.01	0.001576	0.24	6.98	69.57	0.25
7	7500.056	PR 100	1.71	275.67	275.77	275.77	275.80	0.032042	0.70	2.43	47.54	0.99
7	7450.075	PR 100	1.71	275.19	275.37	275.30	275.38	0.003201	0.36	4.69	43.78	0.36
7	7400.119	PR 100	1.71	274.87	274.97	274.97	274.99	0.034836	0.72	2.38	48.14	1.03
7	7300.129	PR 100	1.71	274.25	274.43	274.32	274.44	0.000421	0.15	11.65	93.04	0.13
7	7249.989	PR 100	1.71	274.23	274.42		274.42	0.000236	0.11	15.19	124.54	0.10
7	7200.077	PR 100	1.71	274.18	274.42		274.42	0.000056	0.07	24.92	138.44	0.05
7	7149.979	PR 100	1.71	274.11	274.41		274.41	0.000025	0.06	32.04	146.34	0.04
7	7099.997	PR 100	1.71	273.95	274.41		274.41	0.000008	0.04	40.61	110.76	0.02
7	7087.390	PR 100	1.71	273.89	274.41		274.41	0.000009	0.04	38.60	105.46	0.02
7	7073.890	PR 100	1.71	273.83	274.41		274.41	0.000005	0.04	48.35	108.86	0.02
7	7050.093	PR 100	1.71	273.74	274.41		274.41	0.000003	0.03	57.40	123.72	0.01
7	6999.710	PR 100	1.71	273.58	274.41		274.41	0.000001	0.02	79.92	129.67	0.01
7	6949.910	PR 100	1.71	273.59	274.41		274.41	0.000001	0.02	96.63	191.95	0.01
7	6900.010	PR 100	1.71	273.38	274.41		274.41	0.000000	0.01	136.48	259.76	0.01
7	6884.171	PR 100	1.71	273.23	274.41	273.52	274.41	0.000182	0.08	23.67	284.35	0.08
7	6878		Culvert									
7	6872.171	PR 100	1.71	273.12	273.36	273.36	273.48	0.019290	1.51	1.13	37.87	1.00
7	6850.006	PR 100	1.71	272.92	273.02	273.00	273.03	0.007682	0.35	4.84	91.32	0.49
7	6800.056	PR 100	1.71	272.41	272.61	272.58	272.62	0.008832	0.49	3.47	44.12	0.56
7	6749.770	PR 100	1.71	272.19	272.39		272.40	0.002660	0.29	5.89	67.34	0.31
7	6699.958	PR 100	1.71	271.98	272.05	272.05	272.07	0.032714	0.69	2.48	50.84	1.00
7	6649.944	PR 100	1.71	271.35	271.47	271.43	271.48	0.003893	0.33	5.15	63.98	0.37
7	6599.932	PR 100	1.71	271.09	271.26		271.26	0.004518	0.37	4.66	55.78	0.41
7	6550	PR 100	1.71	270.81	270.94		270.95	0.009579	0.47	3.61	51.80	0.57
7	6500	PR 100	1.71	270.26	270.50	270.45	270.51	0.007987	0.60	2.84	24.76	0.57
7	6456.411	PR 100	1.71	269.79	269.89	269.89	269.92	0.027860	0.78	2.18	32.79	0.97
7	6443.411	PR 100	1.71	269.62	269.74		269.75	0.007211	0.46	3.71	44.69	0.51
7	6400.125	PR 100	1.71	269.22	269.38	269.35	269.39	0.009922	0.48	3.57	51.77	0.58
7	6349.912	PR 100	1.71	269.04	269.12		269.13	0.003195	0.30	5.67	70.19	0.34
7	6299.934	PR 100	1.71	268.63	268.73	268.73	268.76	0.031937	0.71	2.42	46.82	0.99
7	6249.994	PR 100	1.71	267.99	268.18	268.09	268.19	0.002202	0.35	4.91	37.17	0.31
7	6200.038	PR 100	1.71	267.82	267.88	267.88	267.91	0.033874	0.68	2.53	54.69	1.01
7	6150.094	PR 100	1.71	267.00	267.27	267.17	267.28	0.002707	0.43	3.99	25.72	0.35
7	6099.895	PR 100	1.71	266.77	266.92	266.92	266.95	0.028865	0.82	2.07	29.61	0.99
7	6050.062	PR 100	1.71	266.37	266.61	266.52	266.61	0.002722	0.36	4.70	39.04	0.33
7	5999.953	PR 100	1.71	266.25	266.38		266.39	0.008704	0.44	3.90	63.16	0.54
7	5949.744	PR 100	1.71	265.45	265.63	265.63	265.67	0.027809	0.94	1.81	20.60	1.01
7	5899.857	PR 100	1.71	265.00	265.19	265.09	265.19	0.001535	0.30	5.78	42.54	0.26
7	5849.411	PR 100	1.71	264.83	264.96	264.96	264.99	0.027666	0.72	2.36	39.69	0.95
7	5799.777	PR 100	1.71	264.16	264.29	264.26	264.30	0.008176	0.43	3.95	57.60	0.53
7	5749.972	PR 100	1.71	263.94	264.03		264.04	0.003760	0.29	5.98	90.75	0.36
7	5700.026	PR 100	1.71	263.51	263.57	263.57	263.59	0.039047	0.70	2.44	55.54	1.07
7	5649.980	PR 100	1.71	263.06	263.28	263.10	263.28	0.000096	0.08	23.31	137.01	0.07
7	5625.202	PR 100	1.71	262.60	263.27	262.76	263.27	0.000102	0.21	8.06	170.15	0.09
7	5617		Culvert									
7	5609.202	PR 100	1.71	262.39	262.56	262.56	262.63	0.022912	1.21	1.41	115.76	1.00
7	5599.977	PR 100	1.71	262.34	262.46	262.42	262.47	0.005747	0.43	4.22	62.80	0.46
7	5549.949	PR 100	1.71	261.98	262.08	262.06	262.10	0.010007	0.47	3.64	54.72	0.58
7	5499.974	PR 100	1.71	261.60	261.73		261.74	0.005415	0.36	4.71	65.51	0.43
6	5200	PR 100	3.66	260.10	260.24		260.24	0.004783	0.42	8.75	89.84	0.43
6	5149.993	PR 100	3.66	259.76	259.92	259.91	259.94	0.008285	0.49	7.48	91.62	0.55
6	5100.103	PR 100	3.66	259.29	259.44	259.42	259.46	0.011188	0.55	6.63	84.99	0.63
6	5050.488	PR 100	3.66	258.96	259.07		259.07	0.005547	0.40	9.13	111.60	0.45
6	4999.911	PR 100	3.66	258.65	258.80		258.81	0.004845	0.46	8.01	72.66	0.44
6	4980.205	PR 100	3.66	258.48	258.67	258.63	258.68	0.008643	0.57	6.38	63.61	0.58
6	4967.705	PR 100	3.66	258.37	258.46	258.46	258.50	0.028233	0.86	4.23	55.33	1.00
6	4950.020	PR 100	3.66	258.10	258.31	258.22	258.32	0.002494	0.43	8.53	51.70	0.34
6	4900	PR 100	3.66	257.83	257.98	257.98	258.02	0.026761	0.93	3.93	44.24	1.00
6	4850.050	PR 100	3.66	257.38	257.61	257.48	257.61	0.001655	0.39	9.41	48.55	0.28
6	4800	PR 100	3.66	257.15	257.47		257.49	0.004111	0.60	6.11	32.67	0.44
6	4749.968	PR 100	3.66	256.99	257.20		257.23	0.006791	0.68	5.37	34.44	0.55
6	4700.024	PR 100	3.66	256.68	257.00		257.01	0.002894	0.49	7.77	45.77	0.37
6	4650	PR 100	3.66	256.58	256.92		256.92	0.001226	0.35	10.38	51.02	0.25
6	4600.011	PR 100	3.66	256.56	256.70	256.70	256.75	0.026571	0.98	3.74	38.91	1.01
6	4550.102	PR 100	3.66	255.95	256.20	256.11	256.22	0.004721	0.67	5.45	27.20	0.48
6	4500.008	PR 100	3.66	255.74	256.01		256.02	0.003259	0.45	8.08	55.28	0.38
6	4450.025	PR 100	3.66	255.51	255.78	255.73	255.80	0.006732	0.56	6.51	55.41	0.52
6	4400.093	PR 100	3.66	255.25	255.47	255.39	255.49	0.005699	0.63	5.81	36.80	0.51
6	4391.323	PR 100	3.66	255.26	255.42	255.36	255.44	0.005370	0.57	6.46	45.81	0.48
6	4376.823	PR 100	3.66	255.14	255.36	255.27	255.38	0.003157	0.49	7.50	44.71	0.38
6	4350.070	PR 100	3.66	255.01	255.18	255.17	255.21	0.017281	0.75	4.87	54.38	0.80
6	4299.969	PR 100	3.66	254.61	254.84		254.85	0.003837	0.48	7.70	55.26	0.41
6	4249.829	PR 100	3.66	254.29	254.59	254.51	254.61	0.006227	0.66	5.55	35.14	0.53
6	4222.011	PR 100	3.66	254.07	254.24	254.24	254.30	0.024501	1.08	3.40	28.75	1.00
5	4149.871	PR 100	12.97	253.54	253.98	253.80	254.00	0.002566	0.65	20.07	67.26	0.38
5	4100.026	PR 100	12.97	253.46	253.73		253.79	0.009170	1.02	12.75	56.20	0.68
5	4050.072	PR 100	12.97	253.07	253.46		253.49	0.004040	0.79	16.50	57.96	0.47
5	3999.964	PR 100	12.97	252.95	253.35		253.36	0.001623	0.58	23.38	65.64	0.31
5	3949.996	PR 100	12.97	252.87	253.25		253.27	0.002199	0.60	21.56	72.22	0.35
5	3900.187	PR 100	12.97	252.72	253.12		253.14	0.002921	0.67	19.48	69.18	0.40

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
5	3849.929	PR 100	12.97	252.47	253.00		253.02	0.002213	0.62	20.94	68.83	0.35
5	3800.079	PR 100	12.97	252.41	252.66	252.66	252.76	0.021278	1.37	9.47	50.24	1.01
5	3749.973	PR 100	12.97	251.97	252.28	252.16	252.30	0.003445	0.69	18.75	70.77	0.43
5	3699.979	PR 100	12.97	251.78	252.15		252.17	0.002086	0.58	22.27	74.62	0.34
5	3649.995	PR 100	12.97	251.66	252.07		252.08	0.001455	0.49	26.35	86.83	0.29
5	3599.996	PR 100	12.97	251.65	251.91		251.94	0.006646	0.80	16.26	81.16	0.57
5	3550.059	PR 100	12.97	251.24	251.67		251.69	0.003821	0.73	17.72	66.43	0.45
5	3500.074	PR 100	12.97	251.05	251.38		251.43	0.007937	0.97	13.34	57.40	0.64
5	3450.041	PR 100	12.97	250.84	251.22		251.24	0.001947	0.58	22.94	74.82	0.33
5	3400	PR 100	12.97	250.73	251.06		251.09	0.005030	0.77	16.95	73.39	0.51
5	3391.238	PR 100	12.97	250.65	250.90	250.90	251.00	0.020922	1.41	9.19	46.01	1.01
5	3376.738	PR 100	12.97	250.39	250.79	250.65	250.82	0.004351	0.81	15.98	56.55	0.49
5	3349.993	PR 100	12.97	250.25	250.66		250.70	0.004689	0.84	15.38	54.35	0.51
5	3300.070	PR 100	12.97	249.96	250.52		250.55	0.002036	0.68	19.58	53.74	0.35
5	3250.143	PR 100	12.97	249.99	250.21	250.21	250.30	0.021322	1.36	9.51	50.84	1.01
5	3200.000	PR 100	12.97	249.40	249.83	249.63	249.85	0.002034	0.63	20.51	59.62	0.34
5	3150.025	PR 100	12.97	249.31	249.64		249.68	0.006596	0.90	14.47	60.22	0.58
5	3100.110	PR 100	12.97	249.04	249.41		249.44	0.003424	0.74	17.57	59.84	0.43
5	3049.982	PR 100	12.97	248.62	249.09	249.05	249.16	0.011017	1.11	11.67	51.67	0.75
4	2928.433	PR 100	27.92	247.88	248.23	248.13	248.28	0.006102	1.02	27.74	92.88	0.59
4	2891.135	PR 100	27.92	247.37	248.12		248.14	0.002225	0.72	40.73	126.55	0.37
3	2800.001	PR 100	31.60	247.00	248.08	247.35	248.09	0.000271	0.41	77.85	97.14	0.14
3	2750.009	PR 100	31.60	246.52	248.07		248.07	0.000169	0.37	86.23	88.01	0.12
3	2699.970	PR 100	31.60	246.67	248.06		248.07	0.000158	0.36	87.46	86.63	0.11
3	2650.083	PR 100	31.60	246.00	248.06		248.06	0.000028	0.20	159.86	110.60	0.05
3	2625.618	PR 100	31.60	246.00	248.06	247.20	248.06	0.000118	0.31	103.32	109.47	0.10
3	2616		Culvert									
3	2606.618	PR 100	31.60	245.88	247.22	247.22	247.35	0.022705	1.57	20.19	92.07	1.07
3	2600.016	PR 100	31.60	245.67	246.11	246.30	246.96	0.203958	4.10	7.71	43.11	3.09
3	2549.999	PR 100	31.60	244.85	245.63	245.38	245.68	0.002877	0.95	33.13	67.45	0.43
3	2500.027	PR 100	31.60	244.86	245.40	245.28	245.47	0.006051	1.23	26.13	64.15	0.61
3	2449.993	PR 100	31.60	244.43	245.18		245.24	0.003715	1.05	30.27	65.58	0.49
3	2400.000	PR 100	31.60	244.23	245.11		245.13	0.001139	0.64	49.48	93.65	0.28
3	2374.405	PR 100	31.60	244.00	245.08	244.76	245.10	0.001241	0.67	49.02	114.06	0.29
3	2371		Culvert									
3	2367.905	PR 100	31.60	244.00	244.86		244.93	0.007014	1.12	28.39	91.39	0.63
2	2250.002	PR 100	33.66	243.00	243.88	243.77	243.99	0.008828	1.53	22.03	50.90	0.74
2	2199.933	PR 100	33.66	243.00	243.64		243.70	0.003824	1.09	30.98	63.93	0.50
2	2149.988	PR 100	33.66	242.75	243.55		243.58	0.001336	0.76	44.26	71.14	0.31
2	2099.997	PR 100	33.66	242.75	243.33		243.44	0.009156	1.43	23.62	62.73	0.74
2	2050.003	PR 100	33.66	242.04	242.75	242.71	242.90	0.012687	1.69	19.88	51.91	0.87
2	1999.991	PR 100	33.66	241.91	242.55		242.59	0.003037	0.96	35.09	75.14	0.44
2	1950.051	PR 100	33.66	241.75	242.25		242.34	0.009750	1.36	24.76	74.00	0.75
2	1900.001	PR 100	33.66	241.16	242.02		242.07	0.003182	0.98	34.37	72.51	0.45
2	1849.989	PR 100	33.66	241.00	241.86		241.91	0.003244	1.00	33.71	70.13	0.46
2	1799.147	PR 100	33.66	241.00	241.40	241.40	241.57	0.017527	1.82	18.45	55.04	1.01
2	1786.347	PR 100	33.66	240.57	241.04	241.10	241.28	0.028425	2.18	15.47	50.89	1.26
2	1749.970	PR 100	33.66	240.00	240.85	240.68	240.93	0.005140	1.26	26.73	55.33	0.58
1	1617.094	PR 100	35.52	239.14	240.54	240.22	240.58	0.001587	0.79	45.47	82.33	0.33
1	1613		Culvert									
1	1610.082	PR 100	35.52	239.00	240.18	240.18	240.33	0.018773	1.76	20.24	67.57	1.02
1	1599.992	PR 100	35.52	239.00	239.86	239.63	239.93	0.004217	1.19	29.95	58.55	0.53
1	1549.973	PR 100	35.52	238.75	239.70		239.76	0.002876	1.11	32.08	52.12	0.45
1	1499.993	PR 100	35.52	238.35	239.49		239.58	0.004192	1.35	26.39	42.35	0.54
1	1450.005	PR 100	35.52	238.00	238.96	238.96	239.20	0.015968	2.19	16.23	34.06	1.01
1	1400.000	PR 100	35.52	237.68	238.56	238.34	238.67	0.004568	1.46	24.27	36.63	0.57
1	1350.023	PR 100	35.52	237.49	238.33		238.43	0.004991	1.40	25.39	44.32	0.59
1	1299.988	PR 100	35.52	237.00	238.17	237.86	238.24	0.002886	1.17	30.32	45.47	0.46
1	1250.057	PR 100	35.52	237.00	237.72	237.72	237.93	0.016924	2.02	17.55	43.43	1.02
1	1199.996	PR 100	35.52	236.00	237.47	236.87	237.51	0.000936	0.83	42.86	46.64	0.28
1	1197.701	PR 100	35.52	236.00	237.47	236.91	237.50	0.001019	0.85	42.15	48.23	0.29
1	1193		Culvert									
1	1190.101	PR 100	35.52	236.00	237.11		237.18	0.003209	1.19	29.81	47.82	0.48
1	1149.992	PR 100	35.52	236.00	236.98		237.05	0.003396	1.12	31.63	56.95	0.48
1	1099.930	PR 100	35.52	236.00	236.79		236.86	0.003988	1.22	29.23	52.68	0.52
1	1049.997	PR 100	35.52	235.84	236.39	236.35	236.54	0.011534	1.73	21.11	55.81	0.85
1	999.9964	PR 100	35.52	235.00	236.08		236.19	0.004447	1.50	25.70	46.78	0.57
1	949.9938	PR 100	35.52	235.00	235.76		235.91	0.007312	1.69	20.98	36.30	0.71
1	899.9420	PR 100	35.52	234.57	235.61		235.68	0.002572	1.17	30.39	41.59	0.44
1	850.0487	PR 100	35.52	234.53	235.19	235.19	235.40	0.016852	2.02	17.55	43.37	1.02
1	799.9962	PR 100	35.52	234.00	234.85	234.53	234.90	0.002623	1.06	33.41	53.79	0.43
1	749.9177	PR 100	35.52	234.00	234.46	234.46	234.62	0.018151	1.76	20.22	65.51	1.01
1	708.5295	PR 100	35.52	233.39	234.04	233.88	234.09	0.004935	0.96	36.84	110.65	0.53
1	696		Bridge									
1	684.0295	PR 100	35.52	233.00	233.52		233.59	0.007355	1.18	30.18	90.65	0.65
1	583.4926	PR 100	35.52	232.00	232.95		233.04	0.004222	1.29	27.43	46.81	0.54
1	550.0947	PR 100	35.52	232.00	232.55	232.55	232.78	0.015981	2.12	16.73	36.87	1.01
1	499.9494	PR 100	35.52	231.00	232.13	231.91	232.24	0.004733	1.46	24.41	38.16	0.58
1	449.9817	PR 100	35.52	231.00	231.62	231.62	231.83	0.016388	2.03	17.77	43.93	1.01
1	400.1501	PR 100	35.52	230.00	231.37	230.94	231.44	0.002281	1.18	30.02	36.88	0.42
1	350.0004	PR 100	35.52	230.00	231.25		231.31	0.002756	1.13	31.53	48.36	0.45
1	300.0035	PR 100	35.52	230.00	230.80	230.80	231.02	0.015892	2.07	17.18	39.45	1.00
1	249.9741	PR 100	35.52	229.00	230.24	230.08	230.35	0.006107	1.50	23.69	42.60	0.64

HEC-RAS Plan: Plan 03 Profile: PR 100 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	200.0032	PR 100	35.52	229.00	230.07	229.83	230.13	0.002907	1.14	31.17	48.48	0.45
1	149.9965	PR 100	35.52	229.00	229.63	229.63	229.83	0.016962	1.96	18.15	47.32	1.01
1	99.97778	PR 100	35.52	228.17	229.02	228.91	229.16	0.008689	1.68	21.17	42.28	0.76
1	59.20385	PR 100	35.52	228.00	228.81		228.90	0.004496	1.29	27.64	50.19	0.55

TABLA DE RESULTADOS RR

HEC-RAS Plan: Plan 03 Profile: RETORNO RIEGOS

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	RETORNO RIEGOS	0.03	276.23	276.28	276.27	276.28	0.001652	0.06	0.50	46.91	0.17
7	7600.010	RETORNO RIEGOS	0.03	276.01	276.03	276.03	276.04	0.055882	0.35	0.08	7.01	1.03
7	7550.077	RETORNO RIEGOS	0.03	275.79	275.83	275.81	275.83	0.000892	0.08	0.36	13.23	0.15
7	7500.056	RETORNO RIEGOS	0.03	275.67	275.69	275.69	275.69	0.061930	0.33	0.09	8.77	1.05
7	7450.075	RETORNO RIEGOS	0.03	275.19	275.23	275.21	275.23	0.002267	0.09	0.31	17.60	0.22
7	7400.119	RETORNO RIEGOS	0.03	274.87	274.89	274.89	274.89	0.082116	0.35	0.08	8.93	1.19
7	7300.129	RETORNO RIEGOS	0.03	274.25	274.28	274.26	274.28	0.000323	0.04	0.73	35.84	0.09
7	7249.989	RETORNO RIEGOS	0.03	274.23	274.25	274.24	274.25	0.002520	0.07	0.38	32.84	0.22
7	7200.077	RETORNO RIEGOS	0.03	274.18	274.20	274.18	274.20	0.000569	0.04	0.73	54.81	0.11
7	7149.979	RETORNO RIEGOS	0.03	274.11	274.13	274.12	274.13	0.004950	0.08	0.35	42.87	0.29
7	7099.997	RETORNO RIEGOS	0.03	273.95	273.98		273.98	0.002115	0.09	0.31	17.88	0.21
7	7087.390	RETORNO RIEGOS	0.03	273.89	273.91		273.91	0.026610	0.20	0.14	16.07	0.68
7	7073.890	RETORNO RIEGOS	0.03	273.83	273.86	273.85	273.86	0.001319	0.06	0.43	27.89	0.17
7	7050.093	RETORNO RIEGOS	0.03	273.74	273.76	273.76	273.76	0.086945	0.32	0.09	12.16	1.18
7	6999.710	RETORNO RIEGOS	0.03	273.58	273.64	273.59	273.64	0.000027	0.02	1.63	41.15	0.03
7	6949.910	RETORNO RIEGOS	0.03	273.59	273.64		273.64	0.001458	0.08	0.34	15.92	0.18
7	6900.010	RETORNO RIEGOS	0.03	273.38	273.42	273.42	273.43	0.044979	0.44	0.06	3.33	1.00
7	6884.171	RETORNO RIEGOS	0.03	273.23	273.35	273.26	273.35	0.000108	0.07	0.41	24.27	0.07
7	6878		Culvert									
7	6872.171	RETORNO RIEGOS	0.03	273.12	273.14	273.14	273.15	0.019200	0.29	0.10	29.82	0.66
7	6850.006	RETORNO RIEGOS	0.03	272.92	272.95	272.95	272.95	0.004982	0.08	0.33	38.10	0.29
7	6800.056	RETORNO RIEGOS	0.03	272.41	272.50	272.50	272.51	0.020315	0.18	0.15	16.36	0.60
7	6749.770	RETORNO RIEGOS	0.03	272.19	272.23	272.21	272.24	0.002420	0.11	0.26	11.96	0.24
7	6699.958	RETORNO RIEGOS	0.03	271.98	272.00	272.00	272.00	0.012952	0.11	0.25	39.77	0.45
7	6649.944	RETORNO RIEGOS	0.03	271.35	271.37	271.37	271.38	0.008454	0.13	0.22	19.67	0.40
7	6599.932	RETORNO RIEGOS	0.03	271.09	271.13	271.11	271.13	0.003265	0.12	0.24	12.29	0.27
7	6550	RETORNO RIEGOS	0.03	270.81	270.84		270.84	0.012371	0.18	0.16	12.29	0.49
7	6500	RETORNO RIEGOS	0.03	270.26	270.31	270.30	270.31	0.009177	0.24	0.12	4.44	0.48
7	6456.411	RETORNO RIEGOS	0.03	269.79	269.81		269.81	0.014708	0.18	0.16	13.78	0.53
7	6443.411	RETORNO RIEGOS	0.03	269.62	269.64		269.65	0.011184	0.15	0.18	16.37	0.46
7	6400.125	RETORNO RIEGOS	0.03	269.22	269.26	269.24	269.26	0.007302	0.21	0.14	5.61	0.42
7	6349.912	RETORNO RIEGOS	0.03	269.04	269.05		269.05	0.002790	0.06	0.48	64.79	0.21
7	6299.934	RETORNO RIEGOS	0.03	268.63	268.65	268.65	268.66	0.070790	0.33	0.08	9.42	1.11
7	6249.994	RETORNO RIEGOS	0.03	267.99	268.02	268.00	268.02	0.001178	0.07	0.38	17.97	0.16
7	6200.038	RETORNO RIEGOS	0.03	267.82	267.83	267.83	267.83	0.072017	0.23	0.12	22.31	1.02
7	6150.094	RETORNO RIEGOS	0.03	267.00	267.06	267.03	267.06	0.001856	0.12	0.24	8.09	0.22
7	6099.895	RETORNO RIEGOS	0.03	266.77	266.81	266.81	266.81	0.036715	0.34	0.08	5.49	0.87
7	6050.062	RETORNO RIEGOS	0.03	266.37	266.42	266.39	266.42	0.001544	0.11	0.27	9.29	0.20
7	5999.953	RETORNO RIEGOS	0.03	266.25	266.28		266.28	0.007767	0.15	0.19	12.68	0.40
7	5949.744	RETORNO RIEGOS	0.03	265.45	265.48	265.48	265.49	0.046249	0.41	0.07	4.01	1.00
7	5899.857	RETORNO RIEGOS	0.03	265.00	265.03	265.01	265.03	0.001321	0.07	0.38	19.78	0.17
7	5849.411	RETORNO RIEGOS	0.03	264.83	264.86	264.86	264.86	0.017876	0.23	0.12	8.00	0.61
7	5799.777	RETORNO RIEGOS	0.03	264.16	264.20	264.18	264.20	0.003125	0.10	0.27	15.91	0.26
7	5749.972	RETORNO RIEGOS	0.03	263.94	263.96		263.96	0.008391	0.09	0.30	43.57	0.36
7	5700.026	RETORNO RIEGOS	0.03	263.51	263.52	263.52	263.52	0.009101	0.12	0.24	26.90	0.40
7	5649.980	RETORNO RIEGOS	0.03	263.06	263.05		263.05	0.006940		0.24	12.79	0.00
7	5625.202	RETORNO RIEGOS	0.03	262.60	262.62	262.62	262.63	0.051152	0.35	0.08	6.51	0.99
7	5617		Culvert									
7	5609.202	RETORNO RIEGOS	0.03	262.39	262.42		262.42	0.032944	0.30	0.09	9.60	0.81
7	5599.977	RETORNO RIEGOS	0.03	262.34	262.36		262.36	0.002457	0.08	0.34	24.56	0.22
7	5549.949	RETORNO RIEGOS	0.03	261.98	262.00	262.00	262.00	0.086570	0.28	0.10	16.57	1.15
7	5499.974	RETORNO RIEGOS	0.03	261.60	261.63	261.62	261.63	0.002490	0.09	0.31	19.37	0.23
6	5200	RETORNO RIEGOS	0.06	260.10	260.13	260.12	260.13	0.008101	0.11	0.51	59.83	0.37
6	5149.993	RETORNO RIEGOS	0.06	259.76	259.80	259.79	259.81	0.005223	0.18	0.31	12.58	0.36
6	5100.103	RETORNO RIEGOS	0.06	259.29	259.32	259.32	259.33	0.023095	0.26	0.22	15.11	0.68
6	5050.488	RETORNO RIEGOS	0.06	258.96	258.99	258.98	258.99	0.003212	0.08	0.66	55.61	0.25
6	4999.911	RETORNO RIEGOS	0.06	258.65	258.67	258.67	258.68	0.015831	0.18	0.31	29.14	0.54
6	4980.205	RETORNO RIEGOS	0.06	258.48	258.53	258.51	258.53	0.004400	0.15	0.37	16.68	0.32
6	4967.705	RETORNO RIEGOS	0.06	258.37	258.38	258.38	258.39	0.065934	0.24	0.23	37.30	1.00
6	4950.020	RETORNO RIEGOS	0.06	258.10	258.14	258.12	258.14	0.002805	0.11	0.48	23.32	0.25
6	4900	RETORNO RIEGOS	0.06	257.83	257.87	257.86	257.87	0.014961	0.21	0.26	17.73	0.55
6	4850.050	RETORNO RIEGOS	0.06	257.38	257.40		257.40	0.006521	0.12	0.45	36.72	0.35
6	4800	RETORNO RIEGOS	0.06	257.15	257.20	257.17	257.20	0.002652	0.16	0.34	9.31	0.27
6	4749.968	RETORNO RIEGOS	0.06	256.99	257.03		257.03	0.004432	0.15	0.37	16.75	0.32
6	4700.024	RETORNO RIEGOS	0.06	256.68	256.73		256.73	0.008605	0.23	0.24	9.04	0.46
6	4650	RETORNO RIEGOS	0.06	256.58	256.66		256.66	0.000516	0.08	0.71	16.99	0.12
6	4600.011	RETORNO RIEGOS	0.06	256.56	256.59		256.59	0.011475	0.19	0.29	18.71	0.49
6	4550.102	RETORNO RIEGOS	0.06	255.95	255.98		255.98	0.013015	0.19	0.29	20.06	0.51
6	4500.008	RETORNO RIEGOS	0.06	255.74	255.80		255.80	0.001703	0.11	0.48	15.94	0.21
6	4450.025	RETORNO RIEGOS	0.06	255.51	255.55	255.55	255.56	0.047708	0.47	0.12	5.74	1.04
6	4400.093	RETORNO RIEGOS	0.06	255.25	255.29	255.26	255.29	0.000671	0.08	0.71	20.66	0.13
6	4391.323	RETORNO RIEGOS	0.06	255.26	255.27	255.27	255.27	0.017293	0.17	0.33	34.91	0.55
6	4376.823	RETORNO RIEGOS	0.06	255.14	255.17	255.15	255.17	0.003943	0.13	0.41	20.32	0.30
6	4350.070	RETORNO RIEGOS	0.06	255.01	255.04	255.03	255.04	0.005437	0.17	0.33	14.77	0.36
6	4299.969	RETORNO RIEGOS	0.06	254.61	254.65	254.64	254.65	0.012600	0.21	0.26	15.38	0.52
6	4249.829	RETORNO RIEGOS	0.06	254.29	254.35	254.33	254.35	0.003445	0.18	0.31	8.79	0.31
6	4222.011	RETORNO RIEGOS	0.06	254.07	254.09	254.09	254.09	0.066886	0.37	0.15	13.12	1.12
5	4149.871	RETORNO RIEGOS	0.14	253.54	253.60	253.57	253.61	0.001047	0.10	1.31	34.65	0.17
5	4100.026	RETORNO RIEGOS	0.14	253.46	253.49		253.49	0.009074	0.18	0.74	41.91	0.44
5	4050.072	RETORNO RIEGOS	0.14	253.07	253.12		253.12	0.006198	0.22	0.63	20.91	0.40
5	3999.964	RETORNO RIEGOS	0.14	252.95	253.00		253.00	0.001206	0.09	1.58	60.42	0.17
5	3949.996	RETORNO RIEGOS	0.14	252.87	252.94		252.94	0.001145	0.10	1.34	39.12	0.18
5	3900.187	RETORNO RIEGOS	0.14	252.72	252.76	252.76	252.77	0.048323	0.47	0.29	14.19	1.05
5	3849.929	RETORNO RIEGOS	0.14	252.47	252.56	252.51	252.56	0.000747	0.12	1.17	20.34	0.15
5	3800.079	RETORNO RIEGOS	0.14	252.41	252.44	252.44	252.44	0.035439	0.34	0.41	25.93	0.86
5	3749.973	RETORNO RIEGOS	0.14	251.97	252.02	252.00	252.02	0.001472	0.09	1.53	65.13	0.19
5	3699.979	RETORNO RIEGOS	0.14	251.78	251.80	251.80	251.80	0.059148	0.38	0.36	28.23	1.07
5	3649.995	RETORNO RIEGOS	0.14	251.66	251.73	251.69	251.73	0.000312	0.06	2.22	51.84	0.10

HEC-RAS Plan: Plan 03 Profile: RETORNO RIEGOS (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
5	3599.996	RETORNO RIEGOS	0.14	251.65	251.67	251.67	251.67	0.028083	0.26	0.53	42.52	0.74
5	3550.059	RETORNO RIEGOS	0.14	251.24	251.32	251.28	251.32	0.001548	0.14	0.97	21.67	0.21
5	3500.074	RETORNO RIEGOS	0.14	251.05	251.08	251.08	251.10	0.043951	0.47	0.29	13.60	1.01
5	3450.041	RETORNO RIEGOS	0.14	250.84	250.90		250.90	0.001323	0.11	1.26	37.25	0.19
5	3400	RETORNO RIEGOS	0.14	250.73	250.78	250.76	250.78	0.005422	0.18	0.77	31.75	0.36
5	3391.238	RETORNO RIEGOS	0.14	250.65	250.66	250.66	250.67	0.052456	0.36	0.38	29.61	1.01
5	3376.738	RETORNO RIEGOS	0.14	250.39	250.44	250.41	250.44	0.001716	0.13	1.04	28.14	0.22
5	3349.993	RETORNO RIEGOS	0.14	250.25	250.30	250.30	250.31	0.043799	0.47	0.29	13.26	1.01
5	3300.070	RETORNO RIEGOS	0.14	249.96	250.09	250.02	250.09	0.000434	0.09	1.57	28.14	0.12
5	3250.143	RETORNO RIEGOS	0.14	249.99	250.01	250.01	250.02	0.057200	0.33	0.42	40.53	1.02
5	3200.000	RETORNO RIEGOS	0.14	249.40	249.45	249.43	249.45	0.001361	0.11	1.29	40.30	0.19
5	3150.025	RETORNO RIEGOS	0.14	249.31	249.37		249.37	0.002100	0.14	0.97	27.40	0.24
5	3100.110	RETORNO RIEGOS	0.14	249.04	249.07	249.07	249.07	0.051945	0.36	0.38	29.73	1.01
5	3049.982	RETORNO RIEGOS	0.14	248.62	248.73	248.68	248.74	0.002154	0.20	0.69	11.91	0.26
4	2928.433	RETORNO RIEGOS	0.21	247.88	247.91	247.91	247.91	0.027546	0.29	0.72	47.98	0.75
4	2891.135	RETORNO RIEGOS	0.21	247.37	247.47	247.42	247.47	0.001332	0.16	1.28	20.32	0.21
3	2800.001	RETORNO RIEGOS	0.27	247.00	247.03	247.03	247.04	0.045599	0.44	0.61	31.75	1.01
3	2750.009	RETORNO RIEGOS	0.27	246.52	246.78	246.61	246.78	0.000137	0.09	3.17	24.73	0.08
3	2699.970	RETORNO RIEGOS	0.27	246.67	246.74	246.74	246.75	0.038705	0.56	0.48	15.19	1.01
3	2650.083	RETORNO RIEGOS	0.27	246.00	246.41	246.03	246.41	0.000002	0.02	14.98	47.21	0.01
3	2625.618	RETORNO RIEGOS	0.27	246.00	246.41	246.07	246.41	0.000018	0.06	4.29	39.53	0.03
3	2616		Culvert									
3	2606.618	RETORNO RIEGOS	0.27	245.88	245.97	245.96	245.99	0.023903	0.67	0.40	18.97	0.88
3	2600.016	RETORNO RIEGOS	0.27	245.67	245.78	245.78	245.80	0.033251	0.72	0.38	7.33	1.01
3	2549.999	RETORNO RIEGOS	0.27	244.85	245.04	244.92	245.04	0.000678	0.13	2.08	28.62	0.15
3	2500.027	RETORNO RIEGOS	0.27	244.86	244.97	244.93	244.97	0.003974	0.25	1.09	21.44	0.35
3	2449.993	RETORNO RIEGOS	0.27	244.43	244.50	244.50	244.51	0.037673	0.56	0.49	15.28	1.00
3	2400.000	RETORNO RIEGOS	0.27	244.23	244.44	244.29	244.44	0.000110	0.07	3.74	31.53	0.07
3	2374.405	RETORNO RIEGOS	0.27	244.00	244.44	244.06	244.44	0.000012	0.06	4.86	53.64	0.03
3	2371		Culvert									
3	2367.905	RETORNO RIEGOS	0.27	244.00	244.06	244.06	244.08	0.032950	0.68	0.40	16.46	1.00
2	2250.002	RETORNO RIEGOS	0.31	243.00	243.23	243.12	243.23	0.001073	0.22	1.41	12.32	0.21
2	2199.933	RETORNO RIEGOS	0.31	243.00	243.05	243.05	243.07	0.040130	0.59	0.52	15.79	1.03
2	2149.988	RETORNO RIEGOS	0.31	242.75	242.89	242.80	242.89	0.000245	0.09	3.55	41.11	0.09
2	2099.997	RETORNO RIEGOS	0.31	242.75	242.84	242.82	242.85	0.012164	0.44	0.71	13.76	0.61
2	2050.003	RETORNO RIEGOS	0.31	242.04	242.17		242.19	0.014518	0.56	0.55	8.25	0.70
2	1999.991	RETORNO RIEGOS	0.31	241.91	242.01	241.96	242.01	0.001506	0.16	1.91	34.14	0.22
2	1950.051	RETORNO RIEGOS	0.31	241.75	241.83	241.82	241.84	0.014190	0.41	0.75	17.83	0.64
2	1900.001	RETORNO RIEGOS	0.31	241.16	241.29		241.29	0.008566	0.41	0.75	12.21	0.53
2	1849.989	RETORNO RIEGOS	0.31	241.00	241.18		241.19	0.000946	0.18	1.73	18.89	0.19
2	1799.147	RETORNO RIEGOS	0.31	241.00	241.04	241.04	241.05	0.026566	0.40	0.78	31.11	0.80
2	1786.347	RETORNO RIEGOS	0.31	240.57	240.63	240.63	240.65	0.036262	0.65	0.47	11.36	1.02
2	1749.970	RETORNO RIEGOS	0.31	240.00	240.17	240.11	240.18	0.003059	0.31	1.00	11.48	0.34
1	1617.094	RETORNO RIEGOS	0.34	239.14	239.59	239.52	239.61	0.006127	0.61	0.56	27.77	0.51
1	1613		Culvert									
1	1610.082	RETORNO RIEGOS	0.34	239.00	239.15	239.15	239.21	0.025889	1.02	0.33	12.92	1.01
1	1599.992	RETORNO RIEGOS	0.34	239.00	239.11	239.06	239.12	0.002327	0.25	1.38	18.29	0.29
1	1549.973	RETORNO RIEGOS	0.34	238.75	238.87	238.85	238.89	0.012860	0.51	0.66	10.49	0.65
1	1499.993	RETORNO RIEGOS	0.34	238.35	238.56	238.50	238.57	0.003767	0.38	0.89	8.64	0.38
1	1450.005	RETORNO RIEGOS	0.34	238.00	238.12	238.12	238.16	0.029215	0.87	0.39	5.11	1.01
1	1400.000	RETORNO RIEGOS	0.34	237.68	237.85	237.78	237.85	0.001854	0.24	1.44	17.04	0.26
1	1350.023	RETORNO RIEGOS	0.34	237.49	237.58	237.58	237.60	0.033570	0.66	0.52	11.58	1.00
1	1299.988	RETORNO RIEGOS	0.34	237.00	237.30	237.14	237.31	0.001111	0.21	1.60	15.06	0.21
1	1250.057	RETORNO RIEGOS	0.34	237.00	237.12	237.12	237.14	0.030987	0.75	0.45	7.85	1.00
1	1199.996	RETORNO RIEGOS	0.34	236.00	236.48	236.11	236.49	0.000024	0.06	5.64	20.24	0.04
1	1197.701	RETORNO RIEGOS	0.34	236.00	236.48	236.18	236.48	0.000199	0.10	3.34	26.30	0.09
1	1193		Culvert									
1	1190.101	RETORNO RIEGOS	0.34	236.00	236.27		236.28	0.001033	0.35	0.98	29.98	0.23
1	1149.992	RETORNO RIEGOS	0.34	236.00	236.23		236.24	0.001014	0.20	1.67	15.86	0.20
1	1099.930	RETORNO RIEGOS	0.34	236.00	236.17	236.08	236.17	0.001798	0.17	1.95	35.64	0.24
1	1049.997	RETORNO RIEGOS	0.34	235.84	235.91	235.91	235.93	0.036337	0.59	0.58	16.18	1.00
1	999.9964	RETORNO RIEGOS	0.34	235.00	235.23	235.12	235.23	0.001141	0.24	1.43	11.71	0.22
1	949.9938	RETORNO RIEGOS	0.34	235.00	235.05	235.05	235.07	0.032503	0.51	0.67	21.29	0.92
1	899.9420	RETORNO RIEGOS	0.34	234.57	234.79	234.68	234.80	0.000865	0.20	1.74	15.57	0.19
1	850.0487	RETORNO RIEGOS	0.34	234.53	234.64	234.64	234.66	0.032048	0.72	0.47	9.04	1.00
1	799.9962	RETORNO RIEGOS	0.34	234.00	234.16	234.07	234.16	0.000376	0.11	3.11	35.46	0.12
1	749.9177	RETORNO RIEGOS	0.34	234.00	234.08	234.08	234.10	0.036862	0.57	0.60	17.90	0.99
1	708.5295	RETORNO RIEGOS	0.34	233.39	233.50	233.46	233.51	0.002845	0.23	1.51	26.59	0.30
1	696		Bridge									
1	684.0295	RETORNO RIEGOS	0.34	233.00	233.09	233.09	233.11	0.034824	0.63	0.54	13.07	1.00
1	583.4926	RETORNO RIEGOS	0.34	232.00	232.20	232.11	232.21	0.001373	0.22	1.52	15.48	0.23
1	550.0947	RETORNO RIEGOS	0.34	232.00	232.05	232.05	232.07	0.046413	0.53	0.65	25.88	1.06
1	499.9494	RETORNO RIEGOS	0.34	231.00	231.25	231.13	231.25	0.000875	0.22	1.51	10.98	0.19
1	449.9817	RETORNO RIEGOS	0.34	231.00	231.10	231.10	231.12	0.034161	0.69	0.49	10.50	1.01
1	400.1501	RETORNO RIEGOS	0.34	230.00	230.31	230.15	230.31	0.000485	0.18	1.90	12.44	0.15
1	350.0004	RETORNO RIEGOS	0.34	230.00	230.28		230.28	0.000819	0.22	1.56	11.24	0.19
1	300.0035	RETORNO RIEGOS	0.34	230.00	230.13	230.13	230.16	0.026784	0.75	0.45	7.02	0.94
1	249.9741	RETORNO RIEGOS	0.34	229.00	229.33		229.37	0.010450	0.84	0.40	2.45	0.66
1	200.0032	RETORNO RIEGOS	0.34	229.00	229.25	229.13	229.26	0.000808	0.21	1.65	12.97	0.18
1	149.9965	RETORNO RIEGOS	0.34	229.00	229.11	229.11	229.13	0.033092	0.73	0.47	8.81	1.02
1	99.97778	RETORNO RIEGOS	0.34	228.17	228.31	228.26	228.32	0.003232	0.30	1.13	14.19	0.34
1	59.20385	RETORNO RIEGOS	0.34	228.00	228.12		228.13	0.007139	0.38	0.91	14.78	0.48

Universidad Zaragoza
1542

Proyecto Fin de Carrera

Título del trabajo:

Simulación del cauce natural y posterior encauzamiento con Hec-Ras del Barranco de Campillo.

Autor/es

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Director/es y/o ponente

César González Cebollada

Escuela Politécnica Superior de Huesca

2013

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4.2.4.1 TABLA DE RESULTADOS PR25

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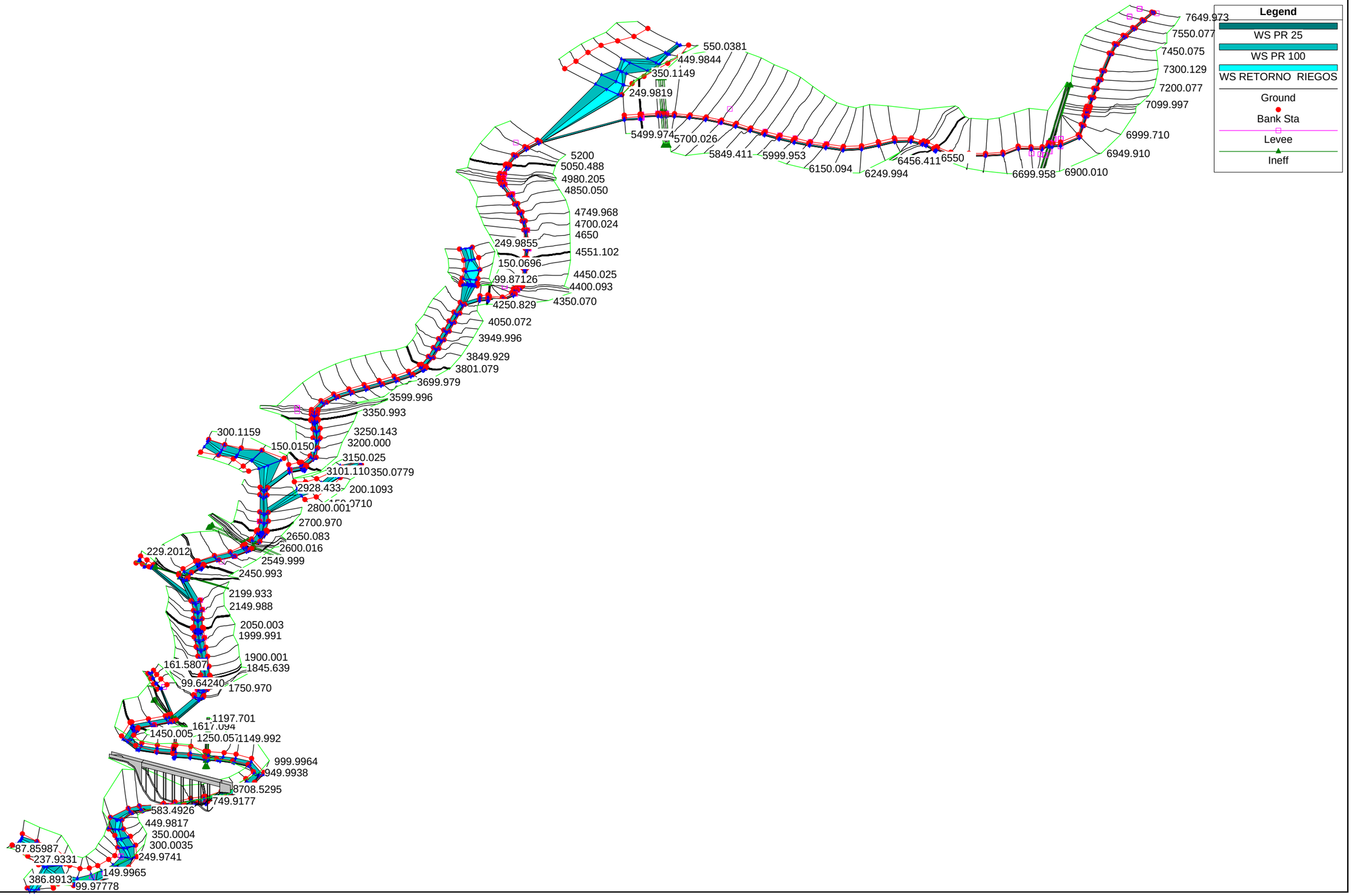
4.2.4.3 TABLA DE RESULTADOS RR

RESULTADOS

RESULTADOS MODELIZACIÓN ENCAUZAMIENTO

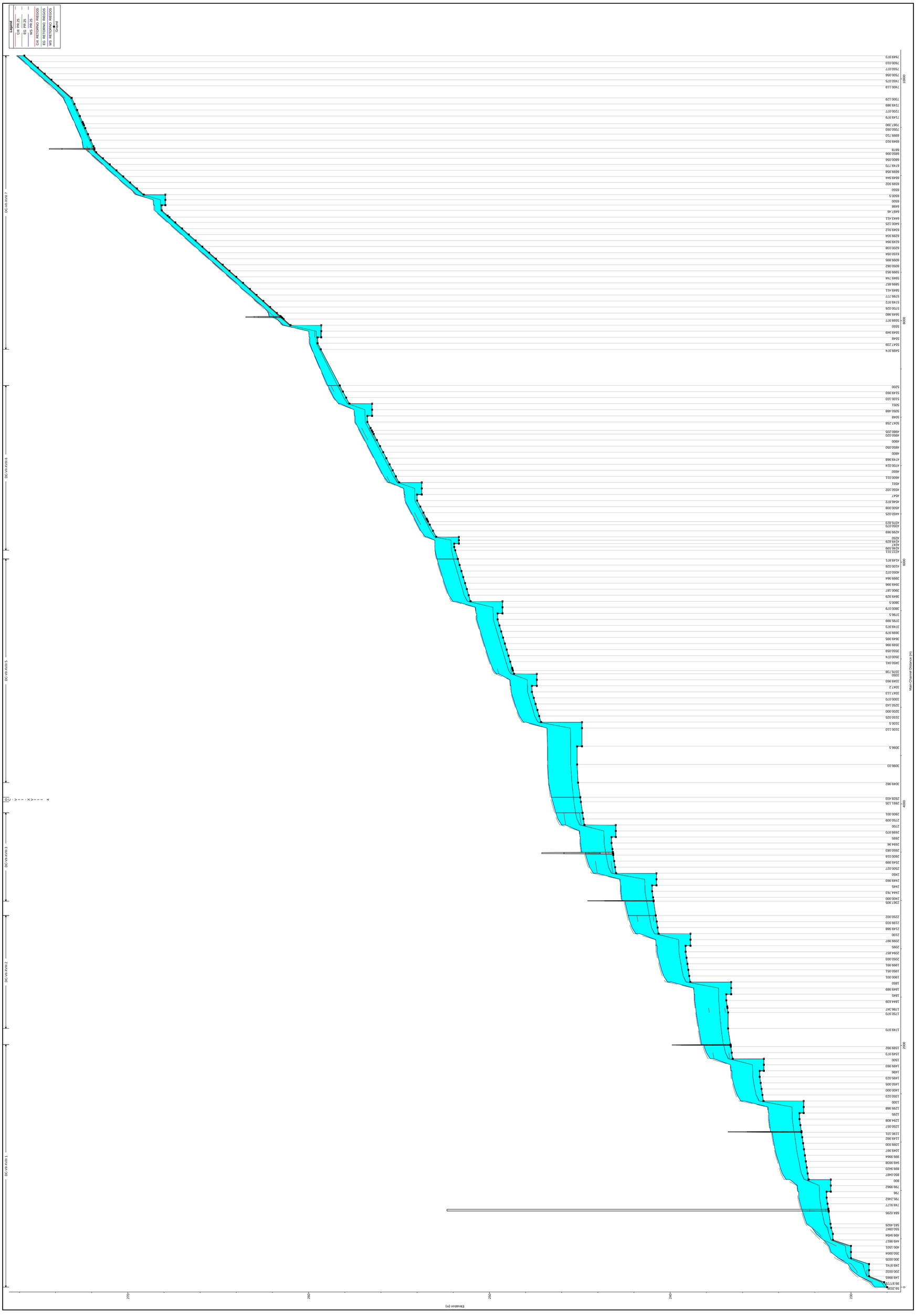
PLANO DE PLANTA 3D

ENCAUZADO CON WEIRS V02 Plan: ENCAUZWEIRSV02 04/05/2013



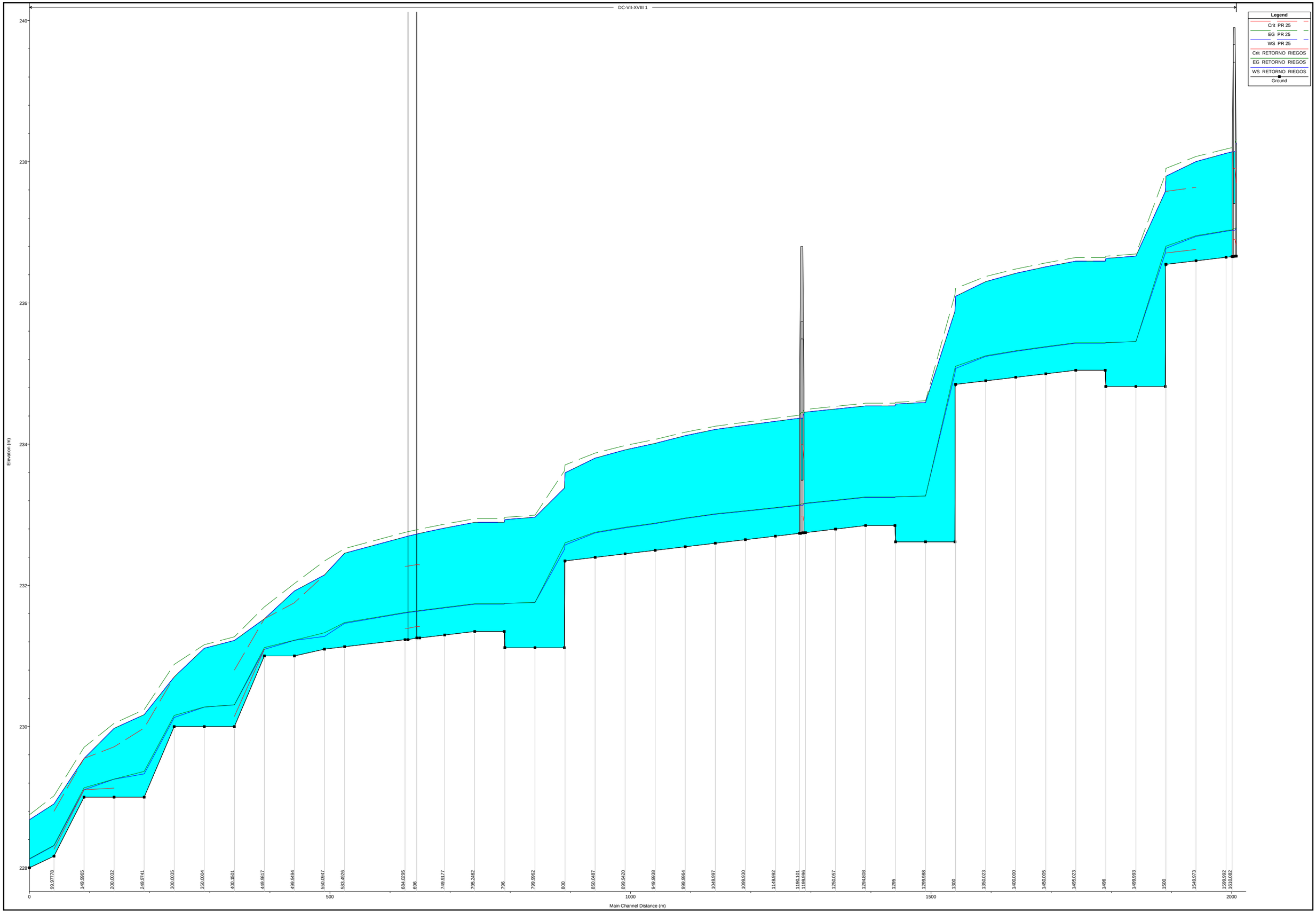
PERFILES LONGITUDINALES

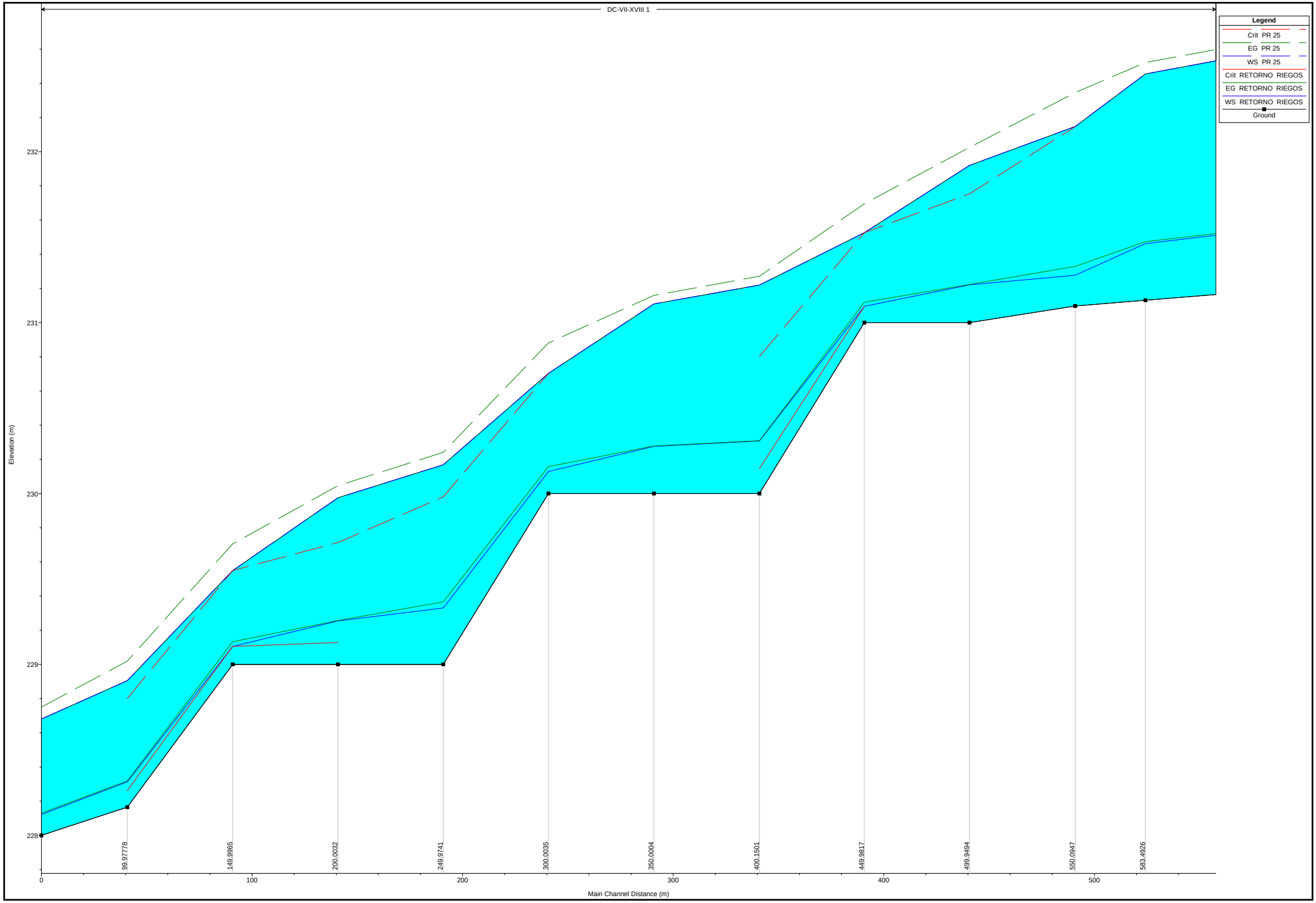
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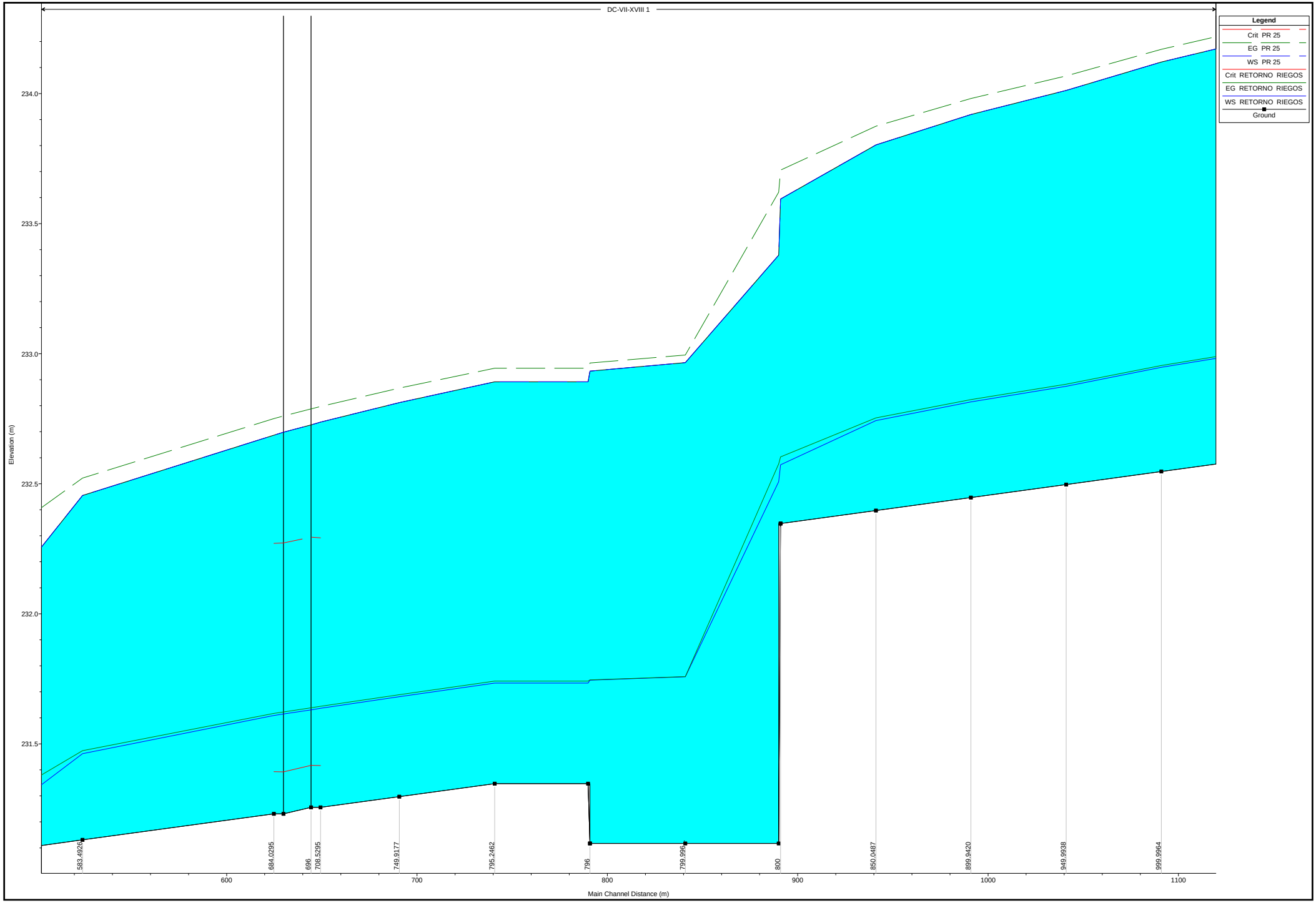

Legend
CR PF4 25
EG PF4 25
WS PF4 25
CR RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
DC-V9-XVIII 7
DC-V9-XVIII 6
DC-V9-XVIII 5
DC-V9-XVIII 4
DC-V9-XVIII 3
DC-V9-XVIII 2
DC-V9-XVIII 1
Elevation (m)
270
260
250
240
230
Main Channel Distance (m)
0
59.9203
99.97778
149.9965
200.0032
249.9741
300.0035
350.0004
400.1501
449.9617
499.9484
550.0947
583.4926
684.0295
749.9177
795.2462
796
799.9962
800
850.0487
899.9420
949.9938
999.9964
1049.997
1099.530
1149.992
1190.101
1250.057
1294.808
1295
1299.988
1300
1350.023
1400.000
1450.005
1495.023
1496
1499.991
1500
1549.973
1599.992
1749.970
1786.347
1844.639
1845
1849.989
1850
1900.001
1950.051
1999.991
2050.003
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2099.997
2100
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3550.059
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3649.995
3749.973
3795.999
3796.5
3800.079
3849.529
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3949.996
3999.964
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4247
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4250
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4350.070
4376.823
4450.025
4500.008
4546.872
4547
4550.102
4551
4600.011
4650
4700.024
4749.968
4800
4850.050
4900
4950.020
4980.205
5047.258
5048
5050.488
5051
5100.103
5149.991
5200
5499.974
5547.239
5548
5549.949
5550
5599.977
5649.980
5700.026
5749.972
5799.777
5849.411
5899.857
5949.744
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6049.042
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
6400.125
6443.411
6497.46
6498
6500
6500.5
6550
6599.932
6649.944
6699.958
6749.770
6800.056
6850.006
6876
6949.910
6999.710
7050.093
7087.390
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7450.075
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7600.010
7649.973

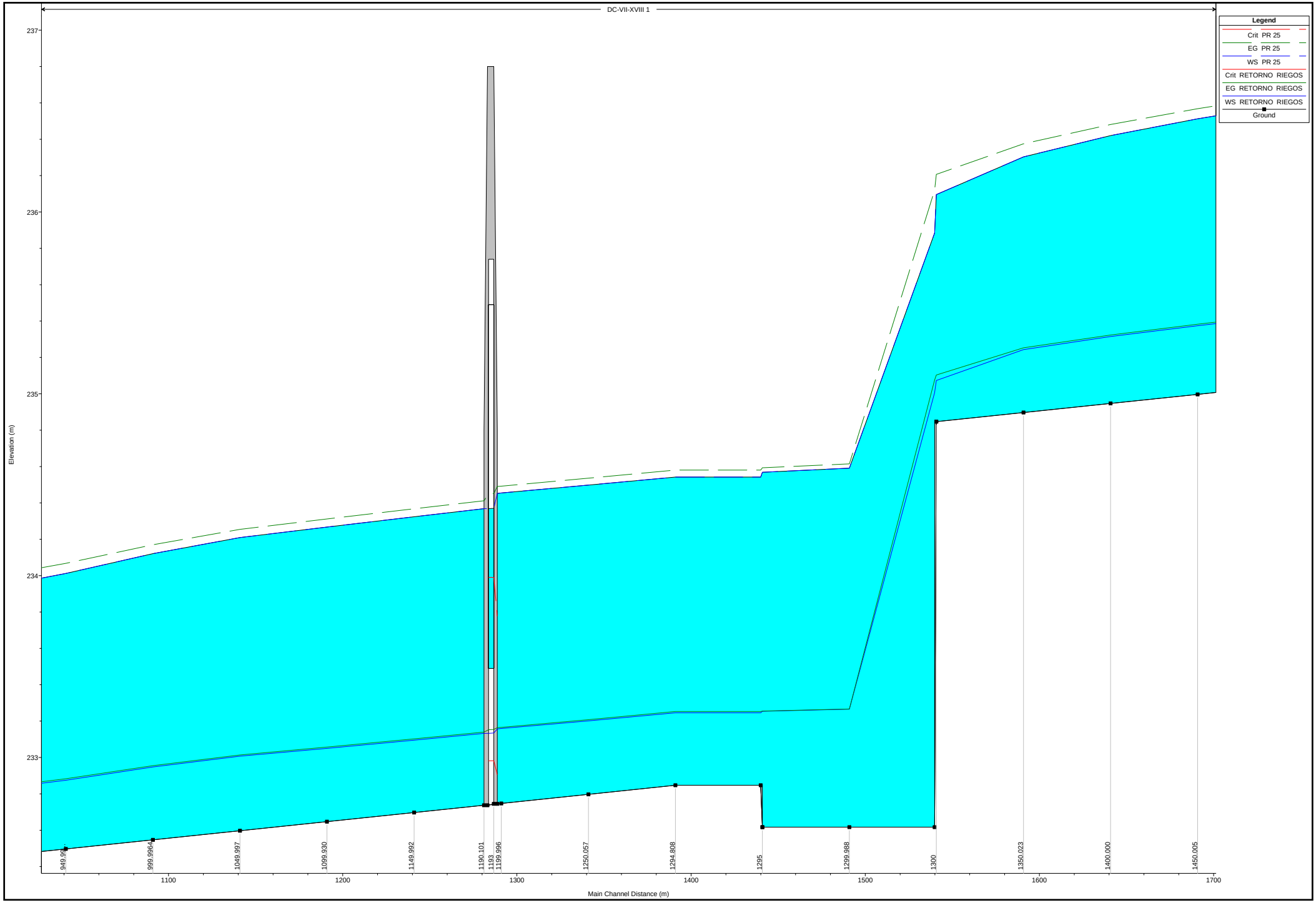
PERFIL LONGITUDINAL TRAMOS PR25

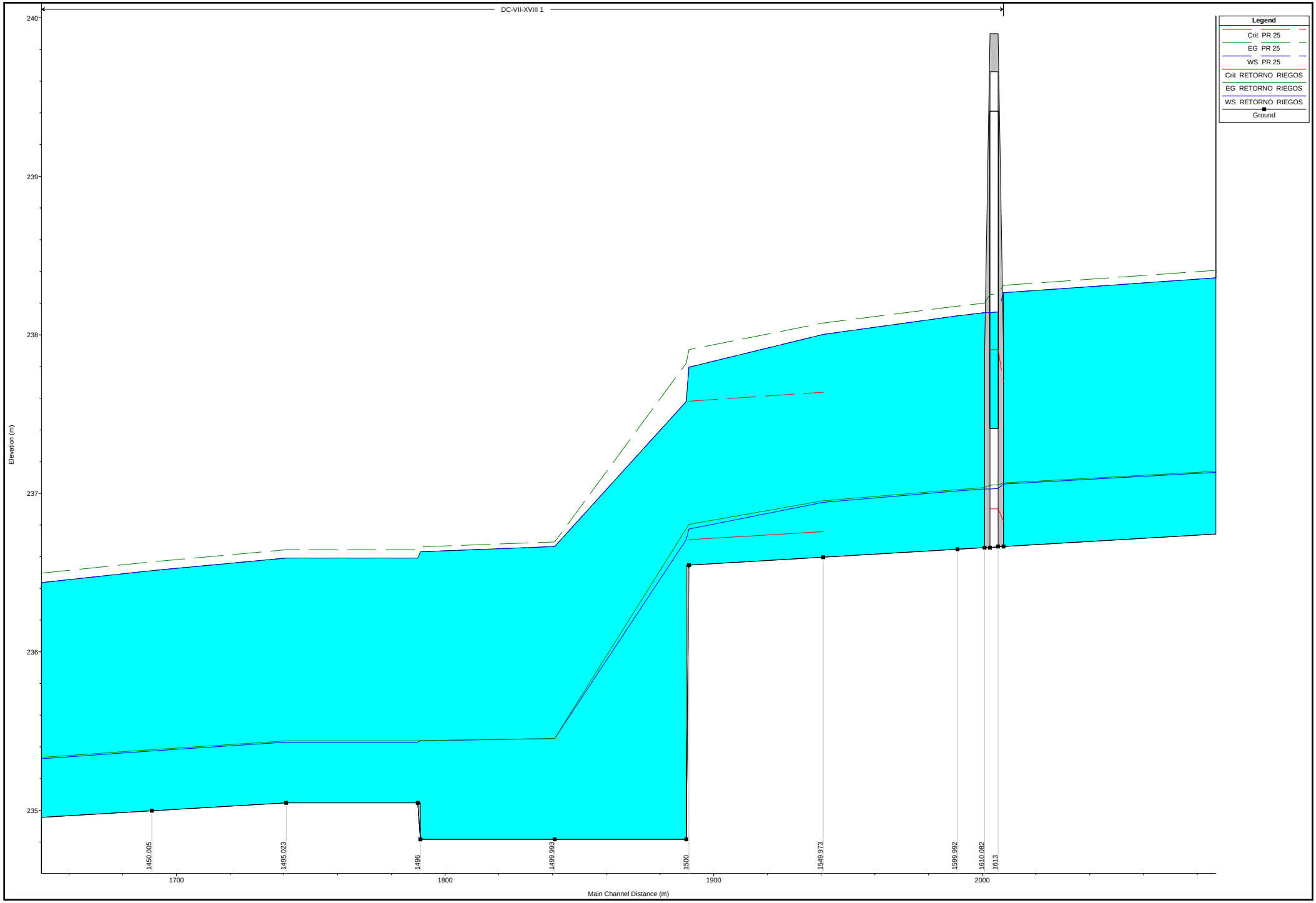
DC-VII-XVIII 1




DC-VII-XVIII 1
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
232
231
230
229
228
99.9778
149.9965
200.0032
249.9741
300.0035
350.0004
400.1501
449.9817
499.9494
550.0947
583.4926
0
100
200
300
400
500
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
234.0
233.5
233.0
232.5
232.0
231.5
583.4926
684.0295
696
708.5295
749.9177
795.2462
796
799.996
800
850.0487
899.9420
949.9938
999.9964
600
700
800
900
1000
1100
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
237
236
235
234
233
949.994
999.9964
1049.997
1099.930
1149.992
1190.101
1193
1199.996
1250.057
1294.808
1295
1299.988
1300
1350.023
1400.000
1450.005
1100
1200
1300
1400
1500
1600
1700
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
240
239
238
237
236
235
1450.005
1495.023
1496
1499.993
1500
1549.973
1599.992
1610.082
1613
1700
1800
1900
2000
Main Channel Distance (m)

DC-VII-XVIII 2

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

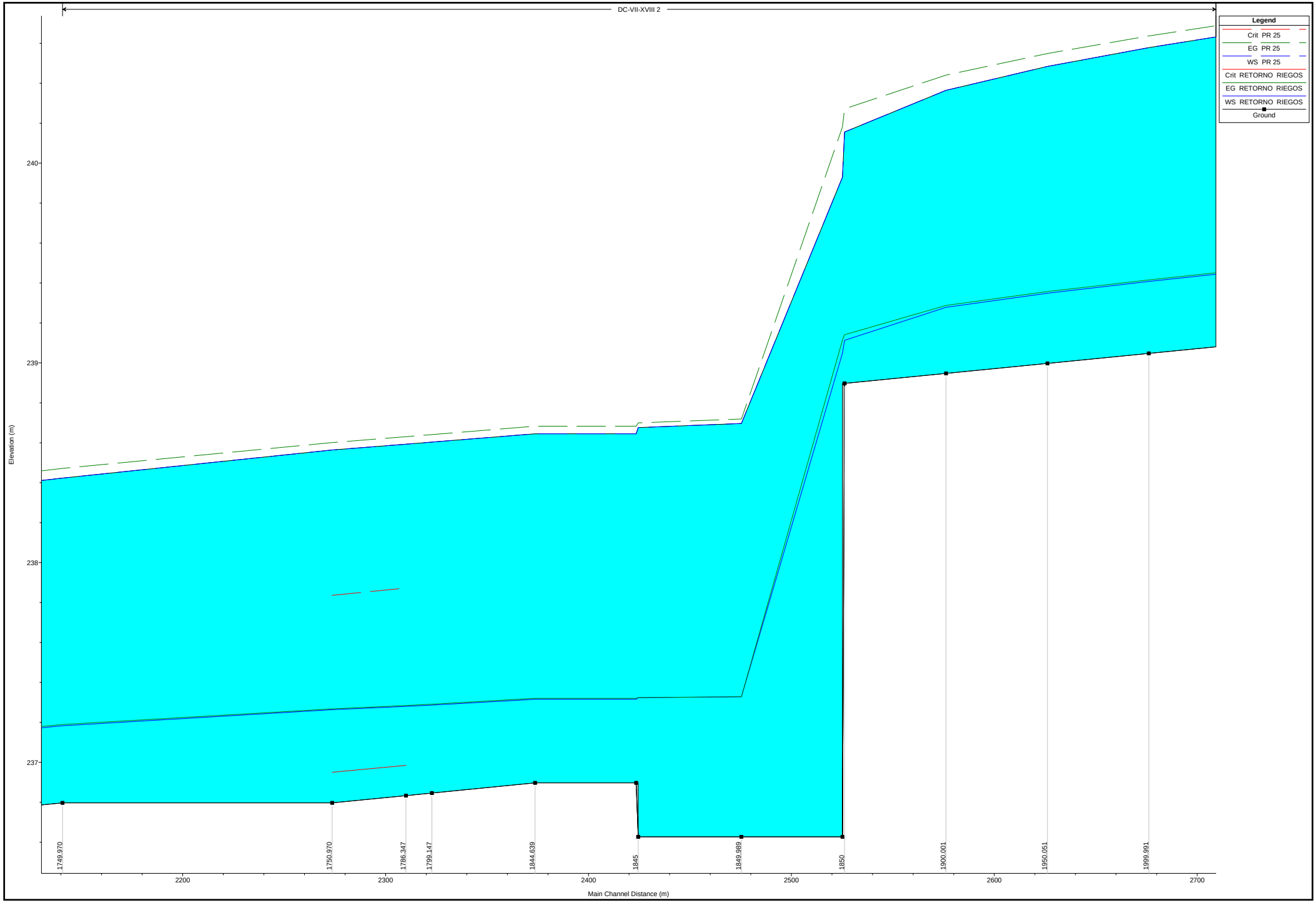
Elevation (m)

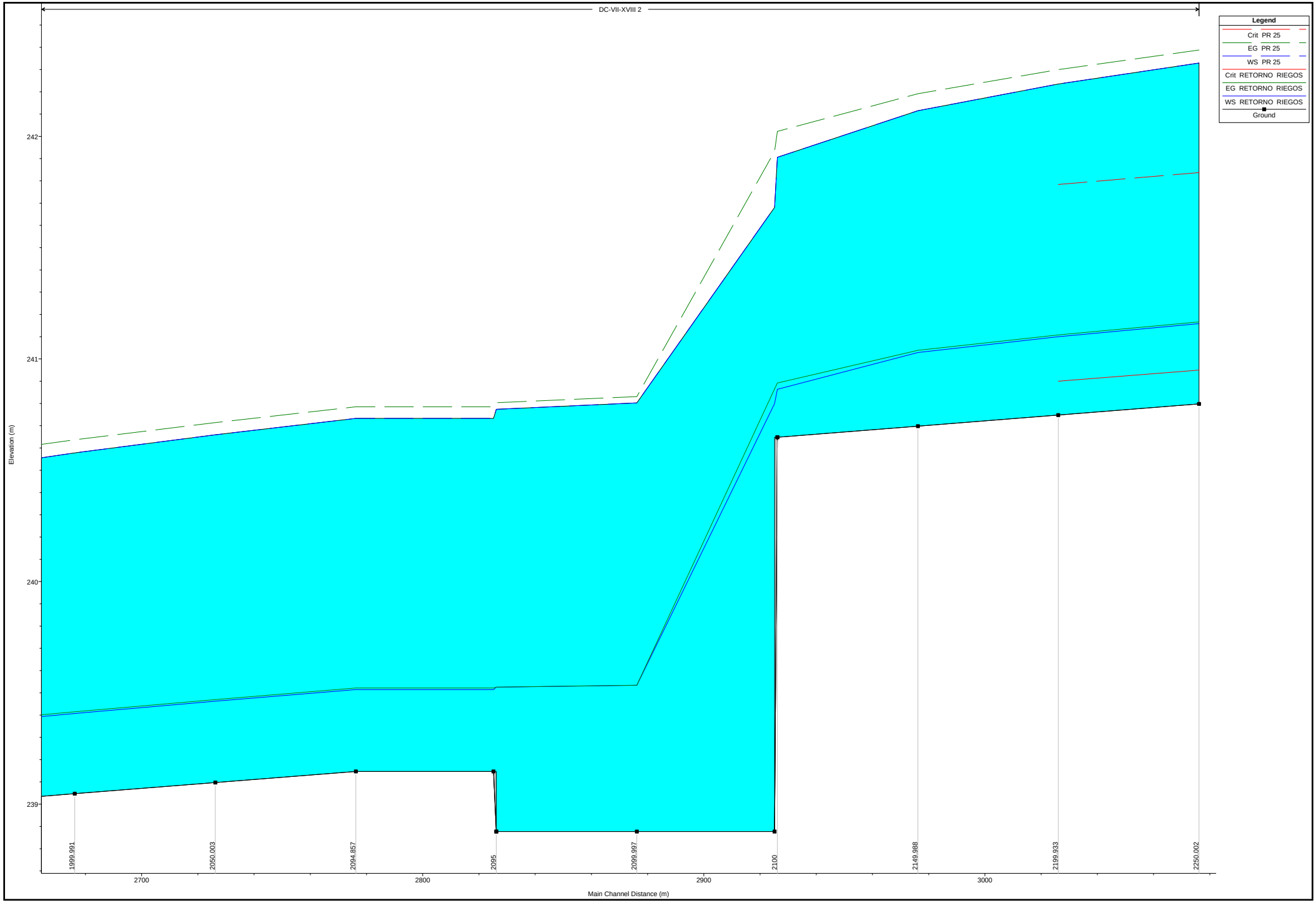
242
241
240
239
238
237

1749.970
1750.970
1786.347
1799.147
1844.639
1845
1849.9
1850
1900.001
1950.051
1999.991
2050.003
2094.857
2095
2099.997
2100
2149.988
2199.933
2250.002

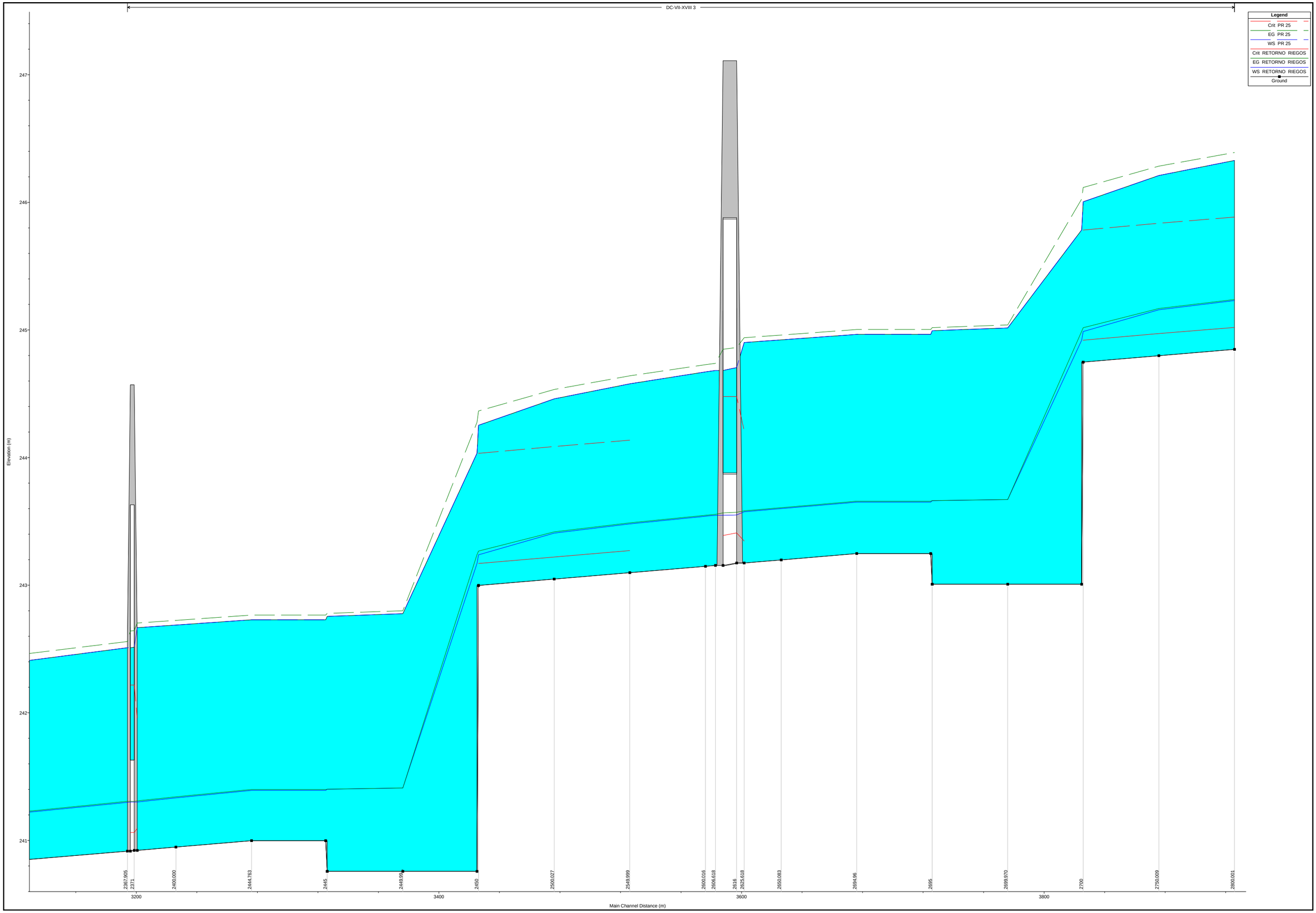
2200
2400
2600
2800
3000

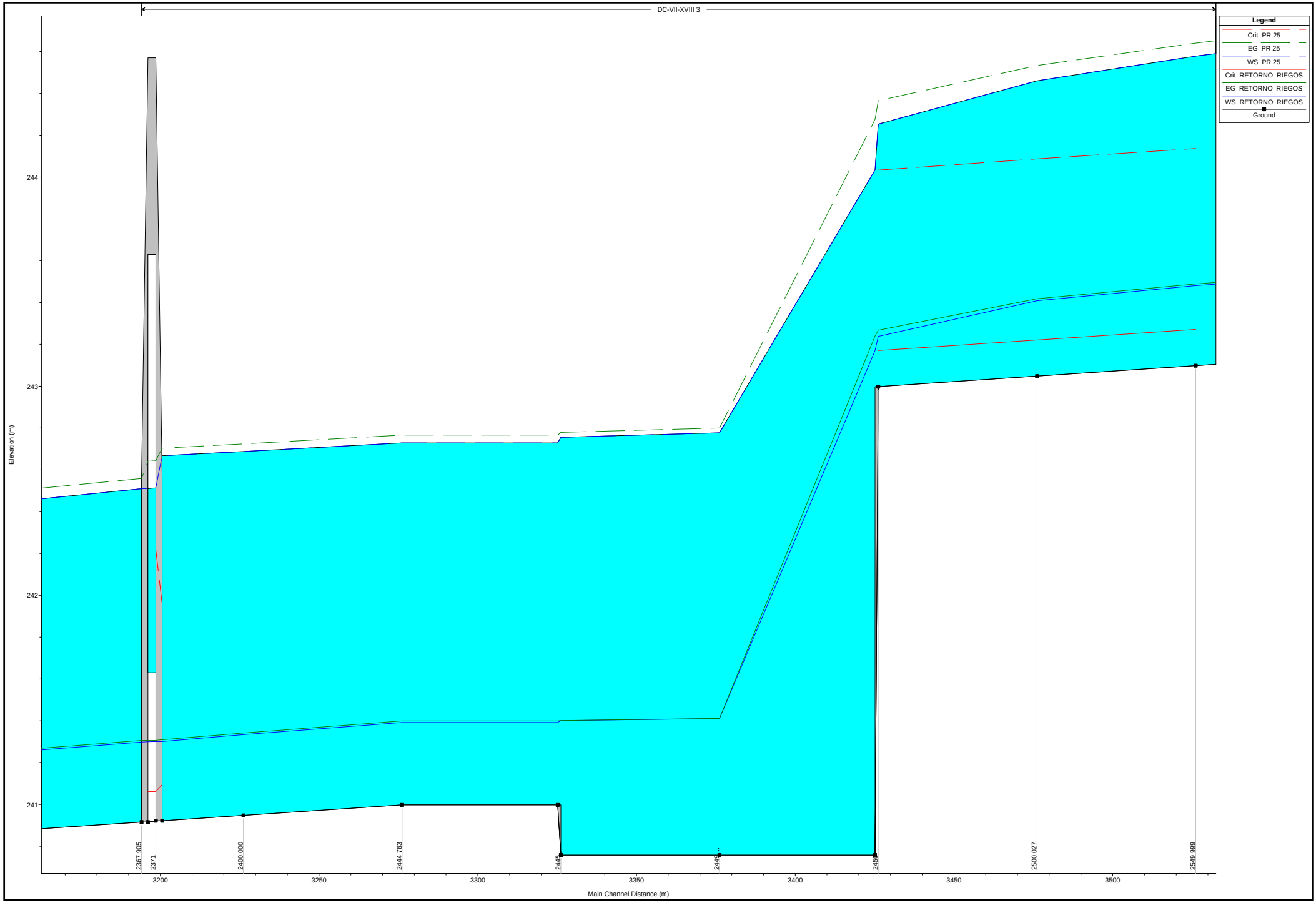
Main Channel Distance (m)

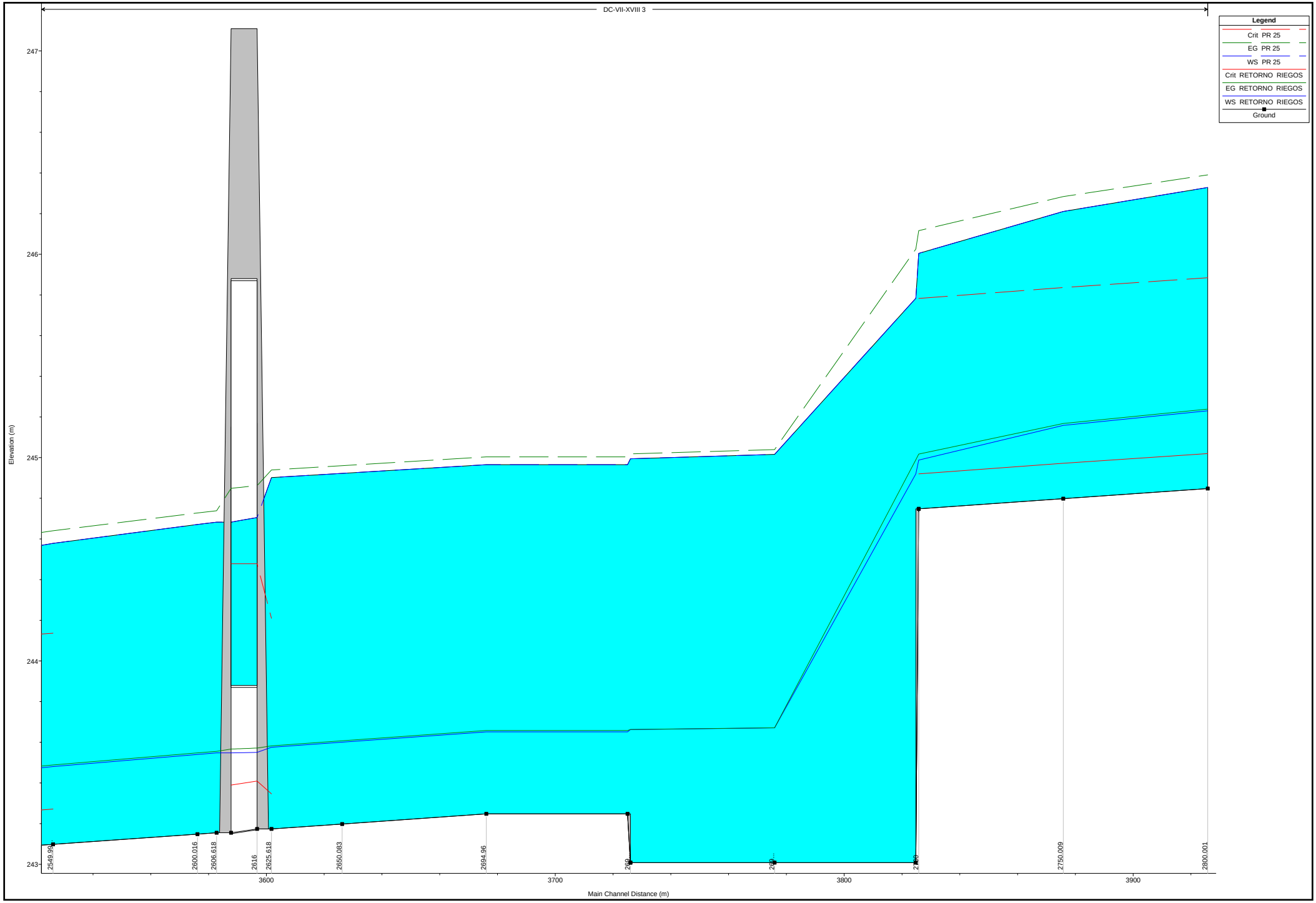

DC-VII-XVIII 2
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
240
239
238
237
1749.970
1750.970
1786.347
1799.147
1844.639
1845
1849.989
1850
1900.001
1950.051
1999.991
2200
2300
2400
2500
2600
2700
Main Channel Distance (m)


DC-VII-XVIII 2
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
242
241
240
239
1999.991
2050.003
2094.857
2095
2099.997
2100
2149.988
2199.933
2250.002
2700
2800
2900
3000
Main Channel Distance (m)

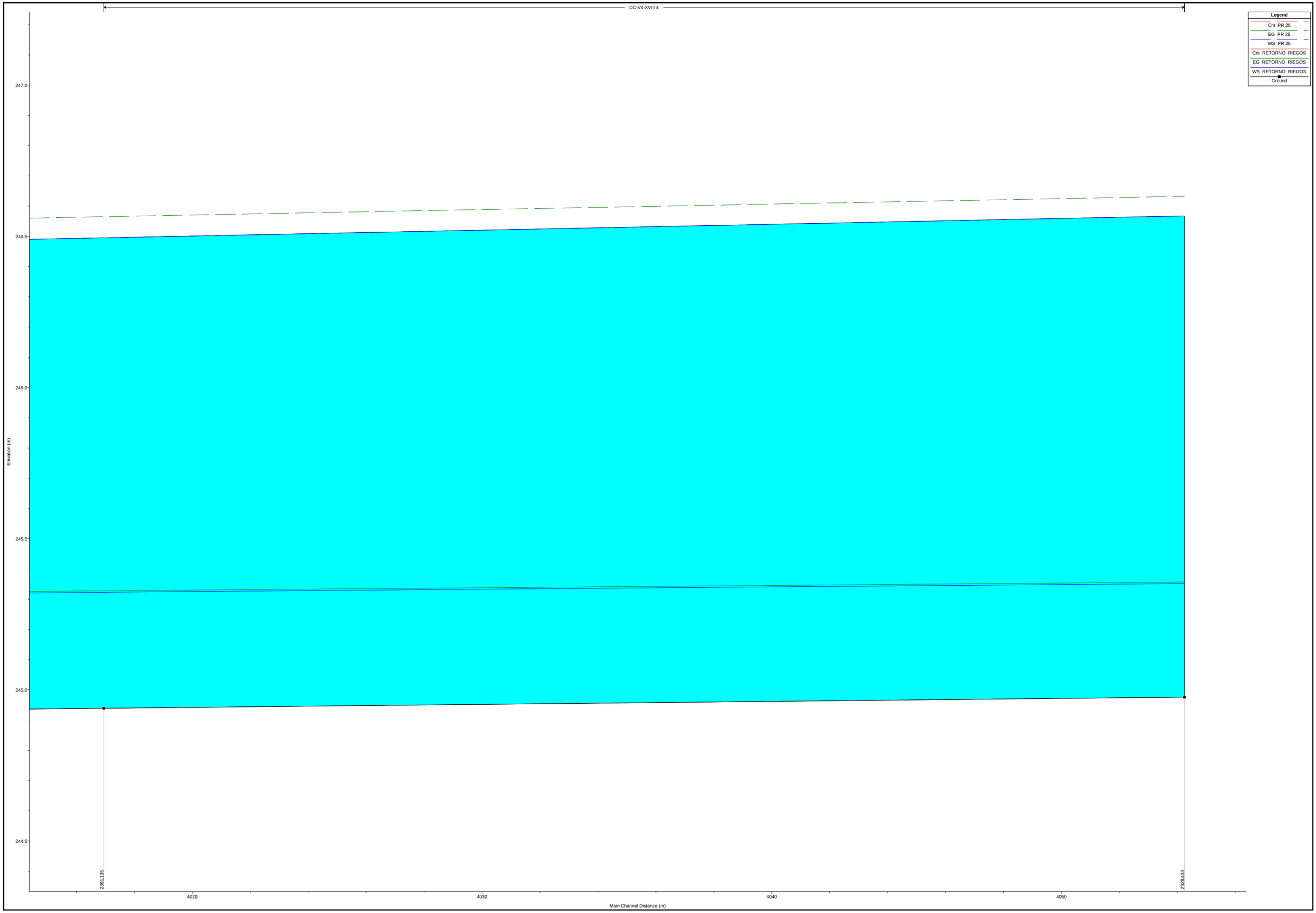
DC-VII-XVIII 3




DC-VII-XVIII 3
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
244
243
242
241
2367.905
2371
2400.000
2444.763
2445
2449
2458
2500.027
2549.999
3200
3250
3300
3350
3400
3450
3500
Main Channel Distance (m)


DC-VII-XVIII 3
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
247
246
245
244
243
2549.99
2600.016
2606.618
2616
2625.618
2650.083
2694.96
2750.009
2800.001
3600
3700
3800
3900
Main Channel Distance (m)

DC-VII-XVIII 4



DC-VII-XVIII 5

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

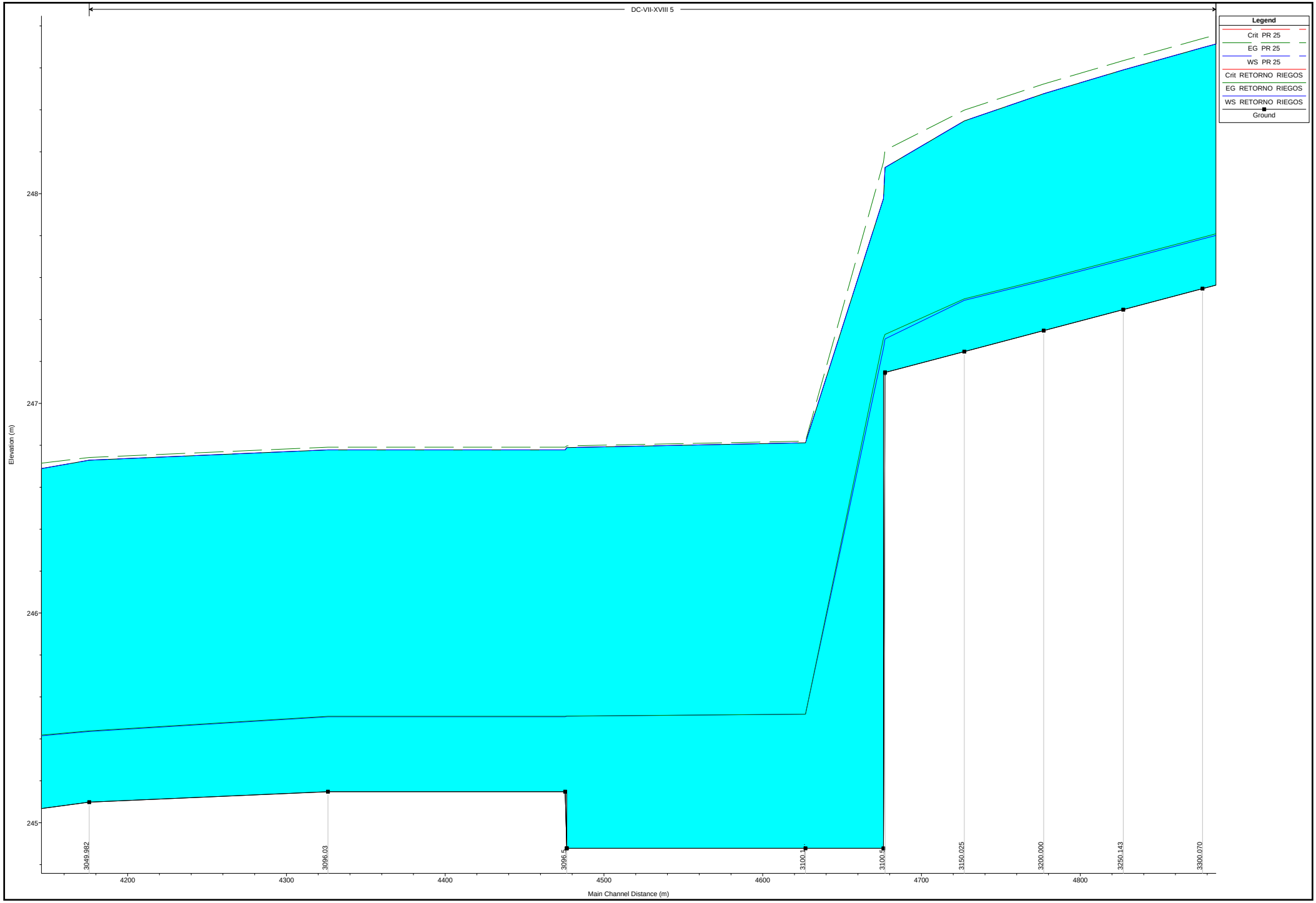
Elevation (m)

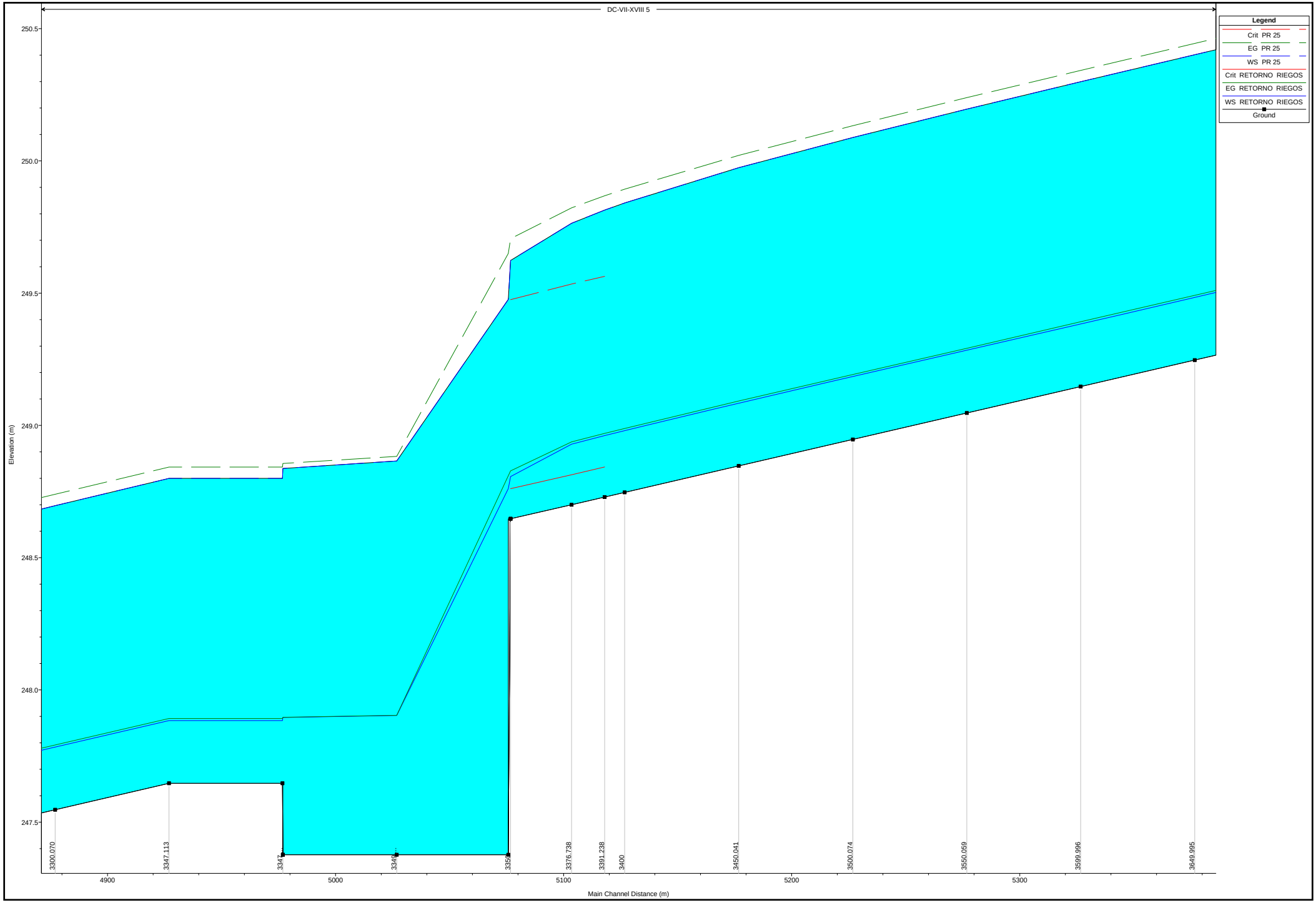
252
250
248
246

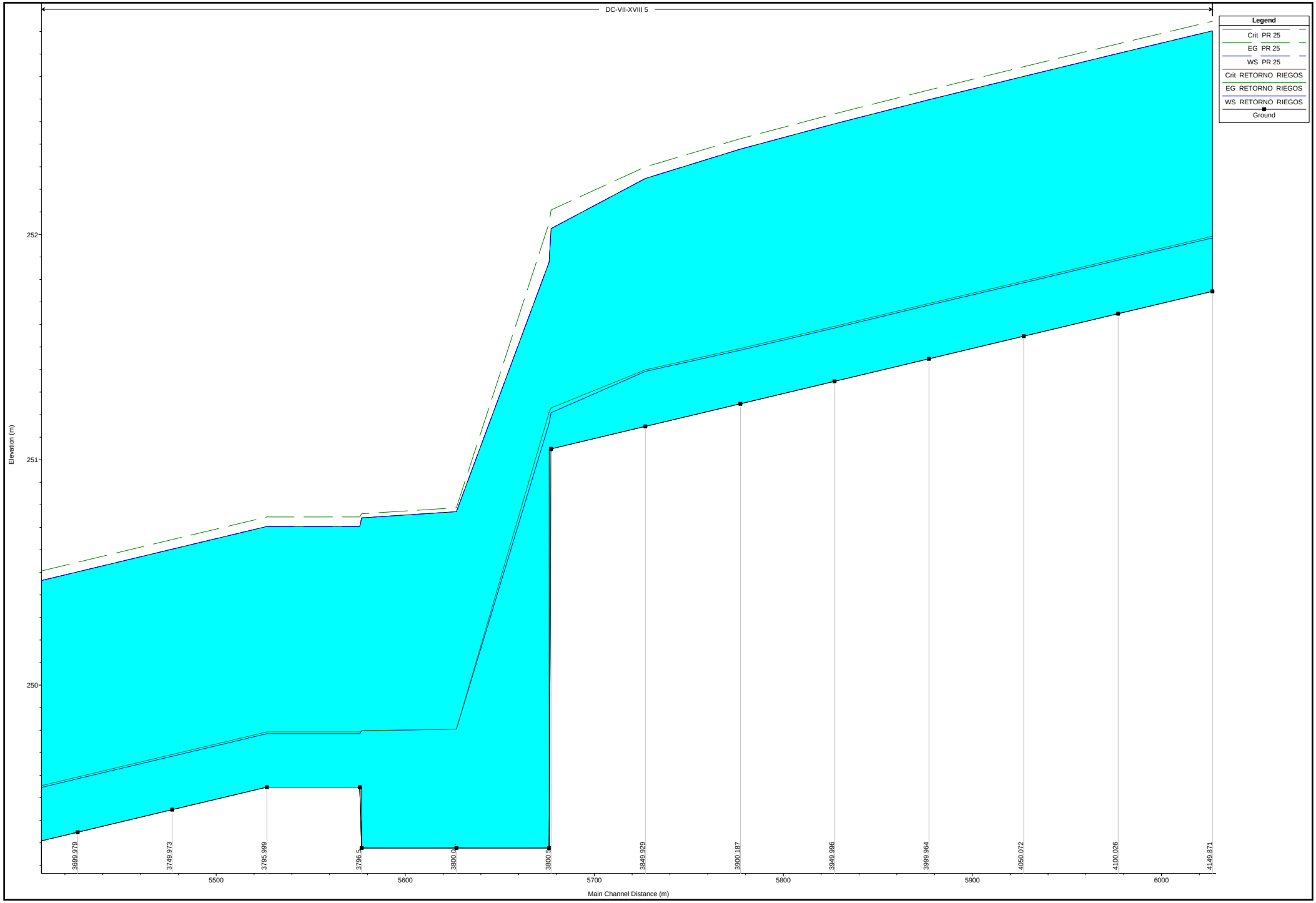
3049.982 3096.03 3096 3100 3100 3150.025 3200.000 3250.143 3300.070 3347.113 3347.2 3349.993 3350 3376.738 3391.238 3400 3450.041 3500.074 3550.059 3599.996 3649.995 3699.979 3749.973 3795.999 3796.5 3800.079 3800.15 3849.929 3900.187 3949.996 3999.964 4050.072 4100.026 4149.871

4500 5000 5500 6000

Main Channel Distance (m)


DC-VII-XVIII 5
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
248
247
246
245
3049.982
3096.03
3096.5
3100.1
3100.5
3150.025
3200.000
3250.143
3300.070
4200
4300
4400
4500
4600
4700
4800
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
250.5
250.0
249.5
249.0
248.5
248.0
247.5
3300.070
3347.113
3347
3349
3350
3376.738
3391.238
3400
3450.041
3500.074
3550.059
3599.996
3649.995
4900
5000
5100
5200
5300
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
252
251
250
3699.979
3749.973
3795.999
3796.5
3800.0
3800.5
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871
5500
5600
5700
5800
5900
6000
Main Channel Distance (m)

DC-VII-XVIII 6

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

Elevation (m)

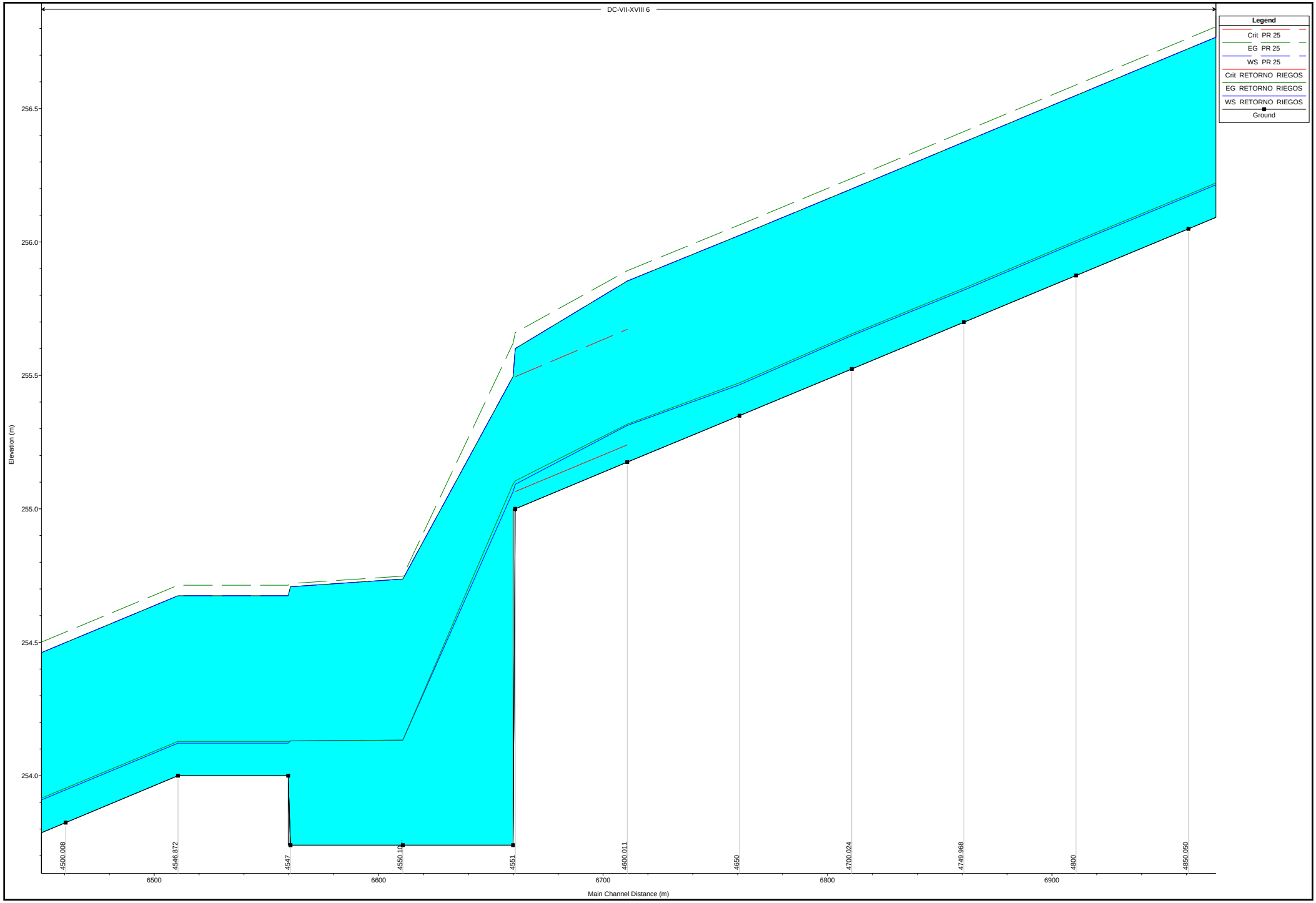
258
256
254
252

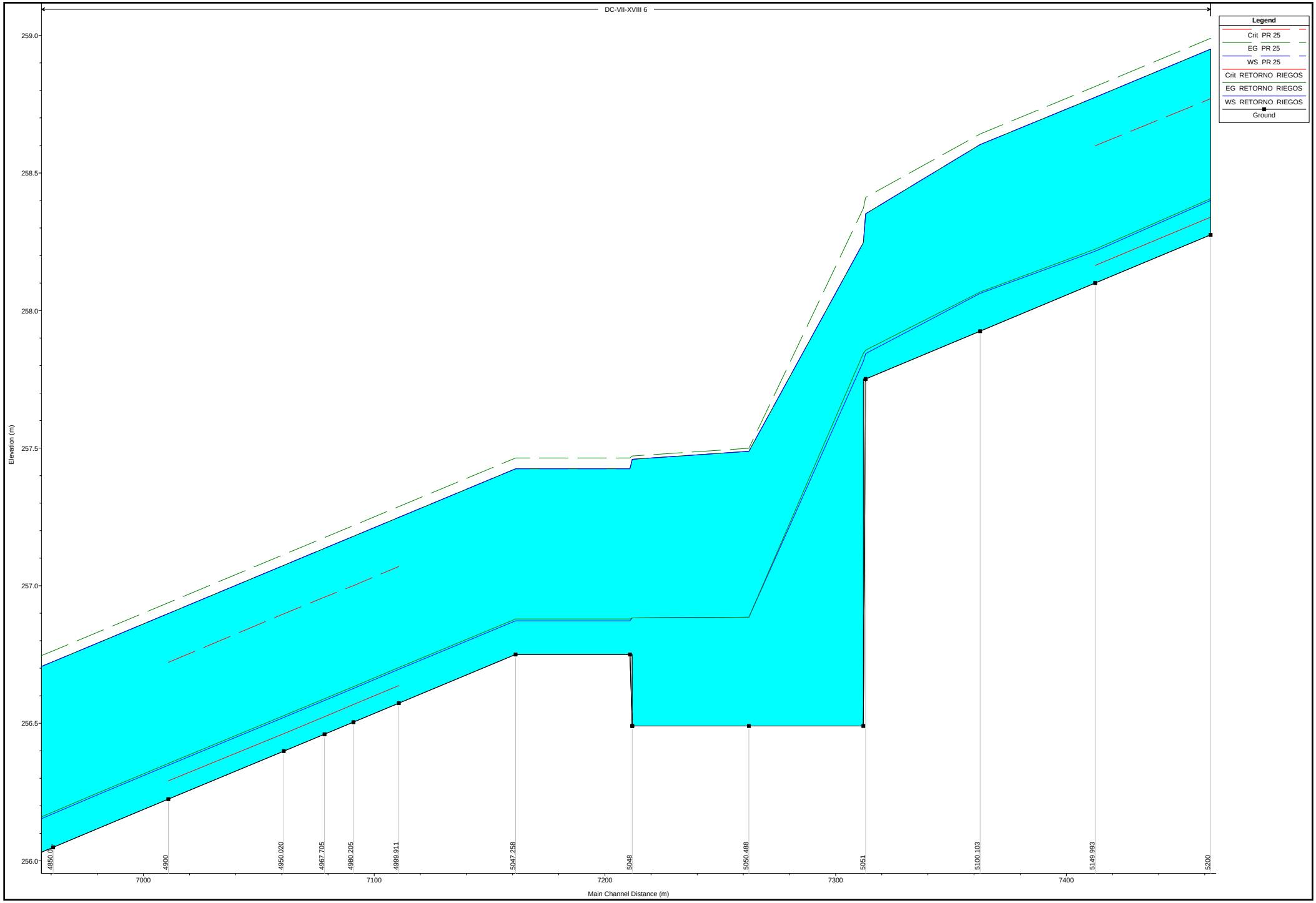
4222.011
4246.599
4247
4249.824
4250
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
4500.008
4546.872
4547
4550.102
4551
4600.011
4650
4700.024
4749.968
4800
4850.050
4900
4950.020
4967.705
4980.205
4999.911
5047.258
5048
5050.488
5051
5100.103
5149.993
5200

6200
6400
6600
6800
7000
7200
7400

Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
254.5
254.0
253.5
253.0
252.5
252.0
4222.011
4246.599
4247
4249.829
4250
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
6100
6150
6200
6250
6300
6350
6400
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
256.5
256.0
255.5
255.0
254.5
254.0
4500.008
4546.872
4547
4550.104
4551
4600.011
4650
4700.024
4749.968
4800
4850.050
6500
6600
6700
6800
6900
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
259.0
258.5
258.0
257.5
257.0
256.5
256.0
4850.0
4900
4950.020
4967.705
4980.205
4999.911
5047.258
5048
5050.488
5051
5100.103
5149.993
5200
7000
7100
7200
7300
7400
Main Channel Distance (m)

DC-VII-XVIII 7

Legend

- Crit PR 25
- EG PR 25
- WS PR 25
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

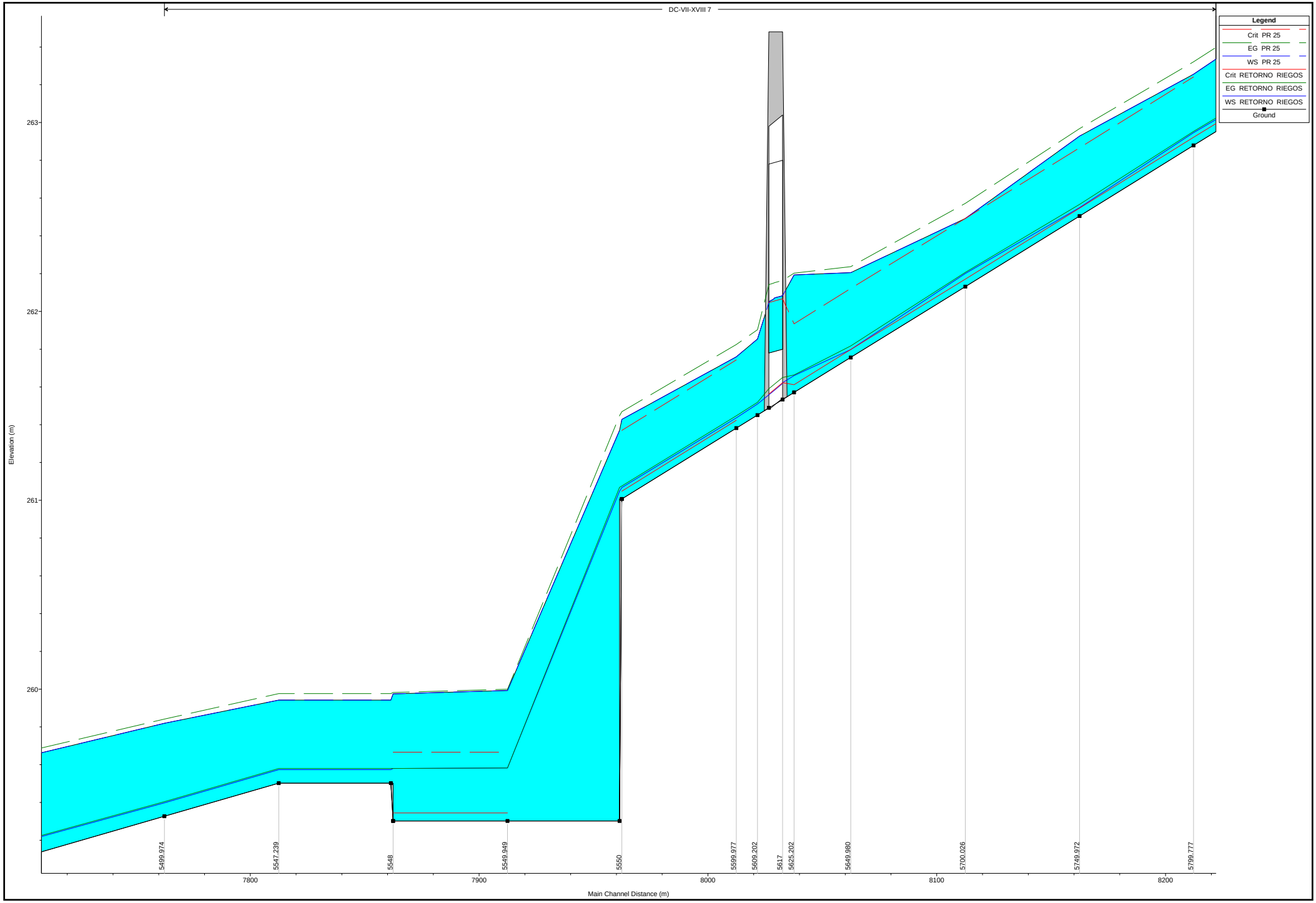
Elevation (m)

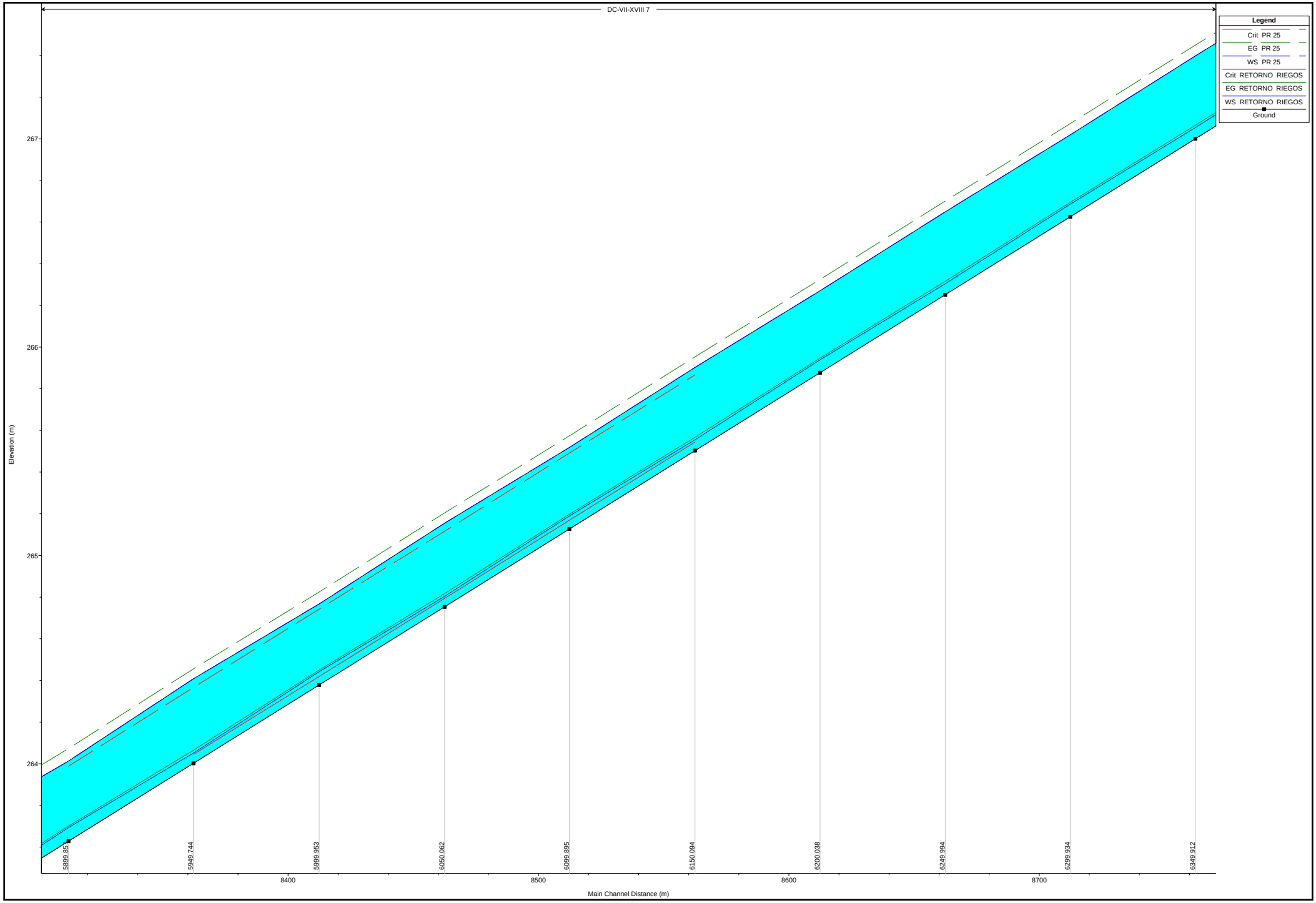
275
270
265
260

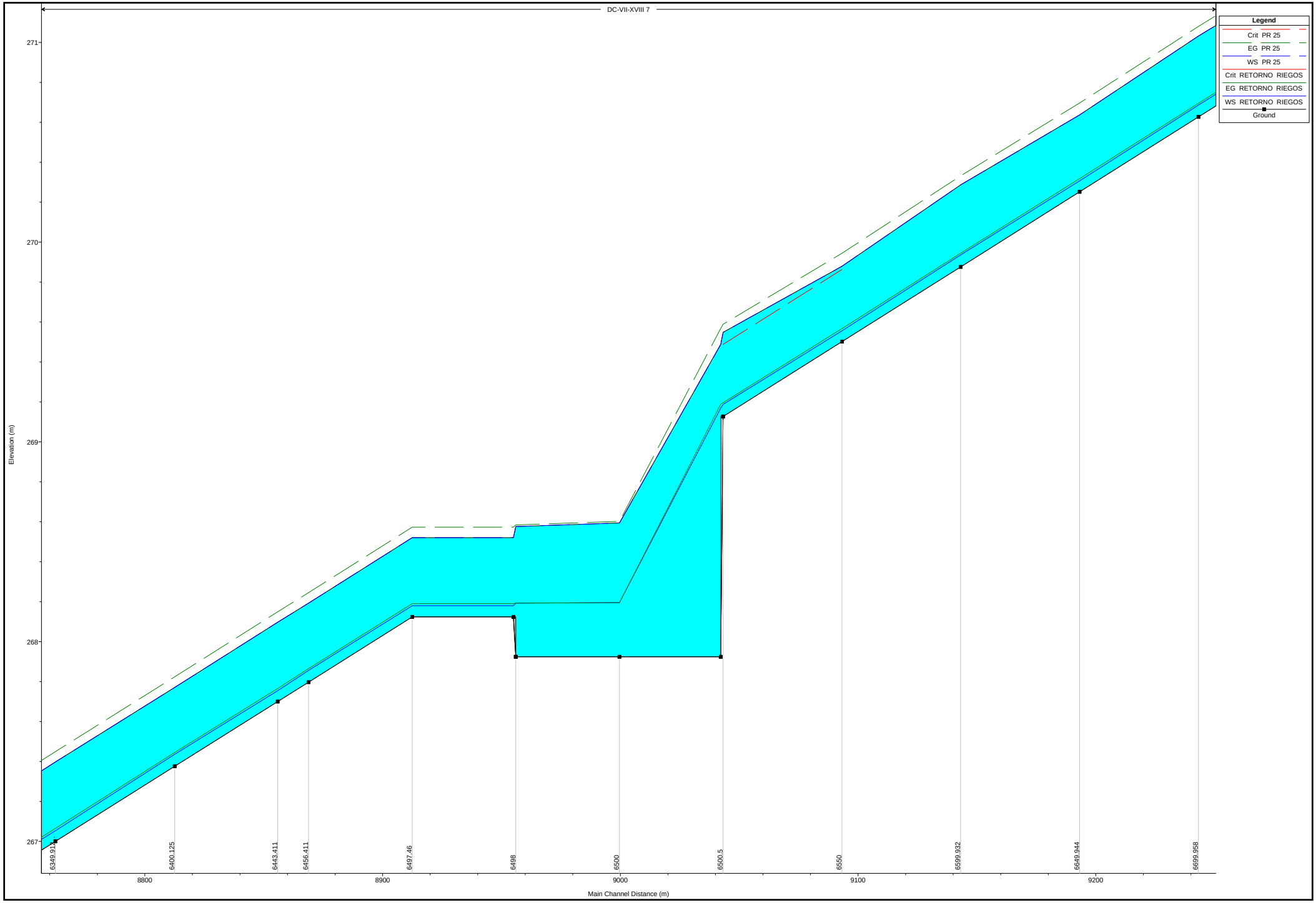
5499.974
5547.239
5548
5549.94
5550
5599.977
5617
5649.980
5700.026
5749.972
5799.777
5849.411
5899.857
5949.744
5999.953
6050.062
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
6400.125
6443.411
6456.411
6497.46
6498
6500
6500.5
6550
6599.932
6649.944
6699.958
6749.770
6800.056
6850.006
6872.171
6884.171
6900.010
6949.910
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
7200.077
7249.989
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973

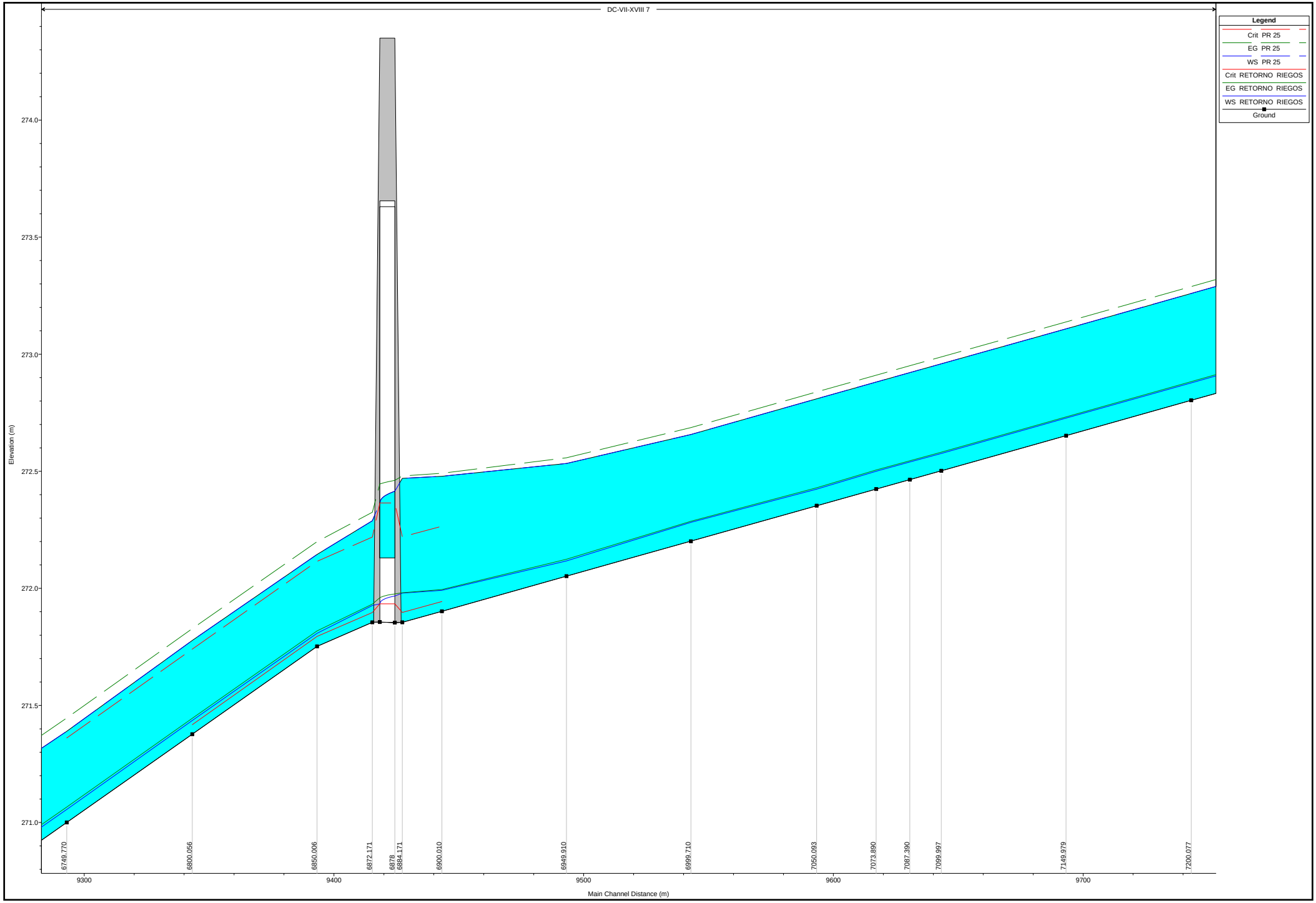
8000
8500
9000
9500
10000

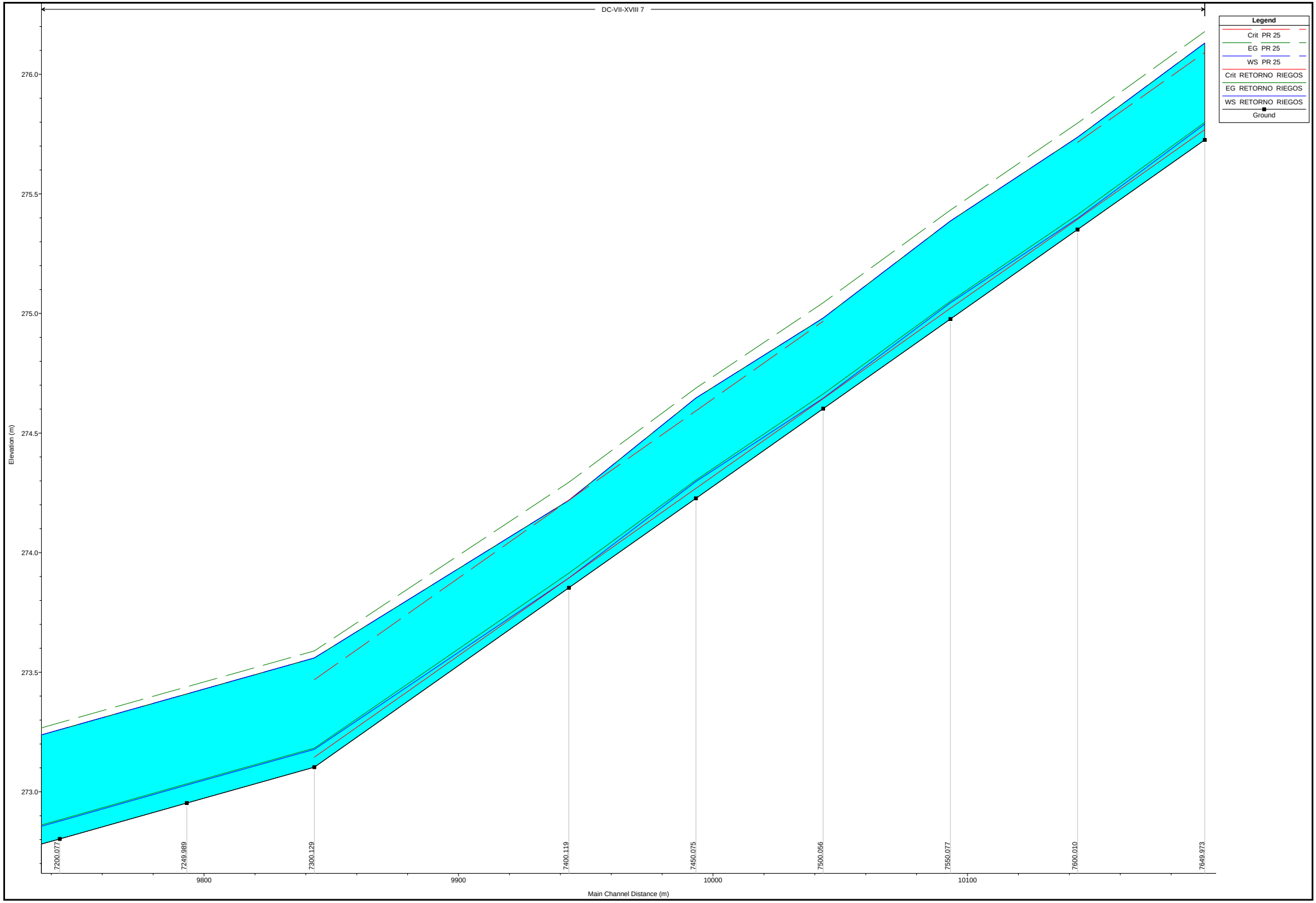
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
263
262
261
260
5499.974
5547.239
5548
5549.949
5550
5599.977
5609.202
5617
5625.202
5649.980
5700.026
5749.972
5799.777
7800
7900
8000
8100
8200
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
267
266
265
264
5899.85
5949.744
5999.953
6050.062
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
8400
8500
8600
8700
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
271
270
269
268
267
6349.91
6400.125
6443.411
6456.411
6497.46
6498
6500
6500.5
6550
6599.932
6649.944
6699.958
8800
8900
9000
9100
9200
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
274.0
273.5
273.0
272.5
272.0
271.5
271.0
6749.770
6800.056
6850.006
6872.171
6878
6884.171
6900.010
6949.910
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
7200.077
9300
9400
9500
9600
9700
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 25
EG PR 25
WS PR 25
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
276.0
275.5
275.0
274.5
274.0
273.5
273.0
7200.077
7249.989
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973
9800
9900
10000
10100
Main Channel Distance (m)

PERFIL LONGITUDINAL EJE COMPLETO PR100

DC-VII-XVIII 1
DC-VII-XVIII 2
DC-VII-XVIII 3
DC-VII-XVIII 4
DC-VII-XVIII 5
DC-VII-XVIII 6
DC-VII-XVIII 7

Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground

Elevation (m)
270
260
250
240
230

Main Channel Distance (m)
0
2000
4000
6000
8000
10000

PERFIL LONGITUDINAL TRAMOS PR100

DC-VII-XVIII 1

Legend

Crit PR 100

EG PR 100

WS PR 100

Crit RETORNO RIEGOS

EG RETORNO RIEGOS

WS RETORNO RIEGOS

Ground

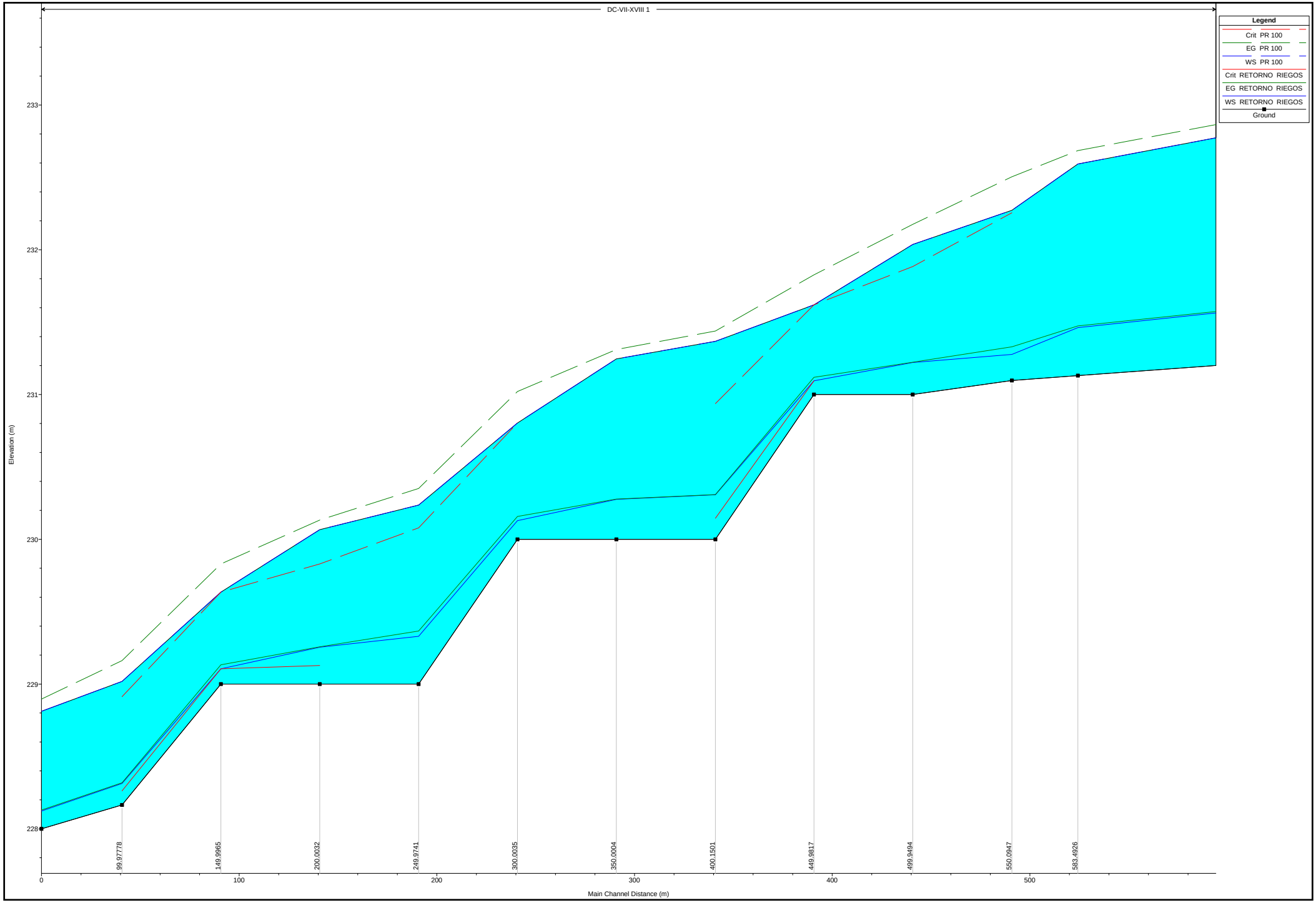
Elevation (m)

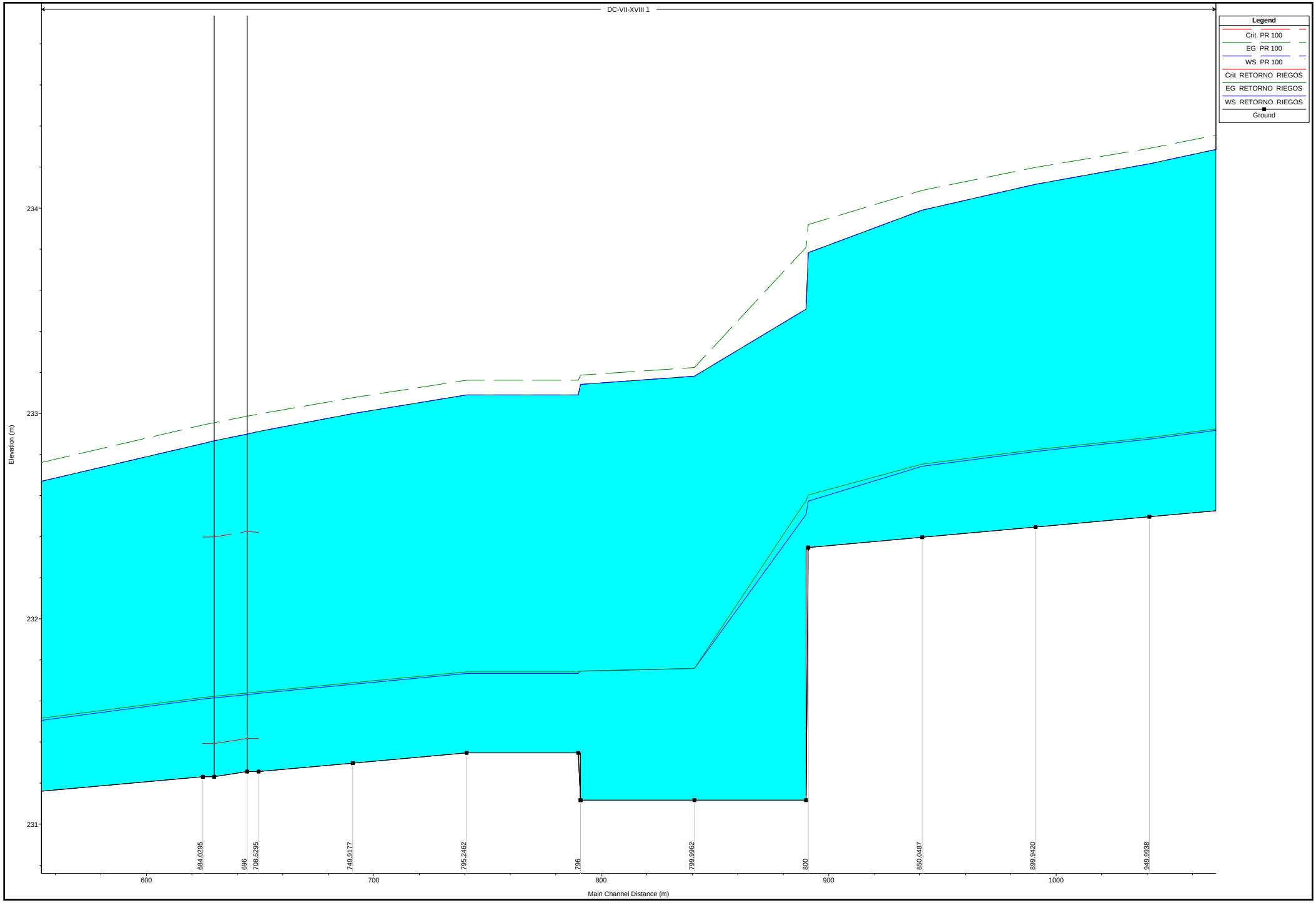
255
250
245
240
235
230
225

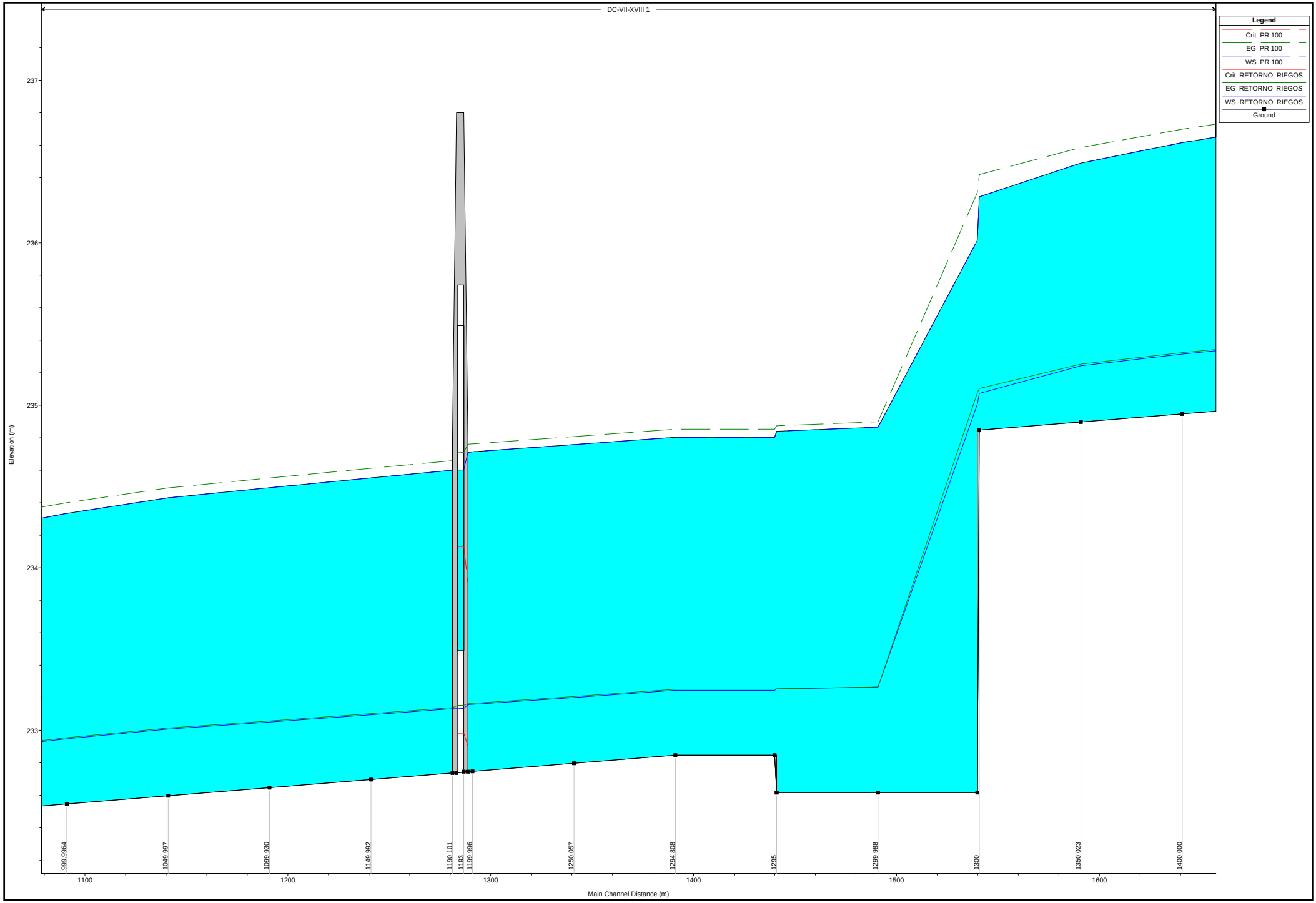
99.97778
149.9965
200.0032
249.9741
300.0035
350.0004
400.1501
449.9817
499.9494
550.0947
583.4926
684.0295
708.5295
749.9177
795.2462
796
799.9962
800
850.0487
899.9420
949.9938
999.9964
1049.997
1099.930
1149.992
1190.101
1250.057
1294.808
1295
1299.988
1300
1350.023
1400.000
1450.005
1495.023
1496
1499.993
1500
1549.973
1599.992

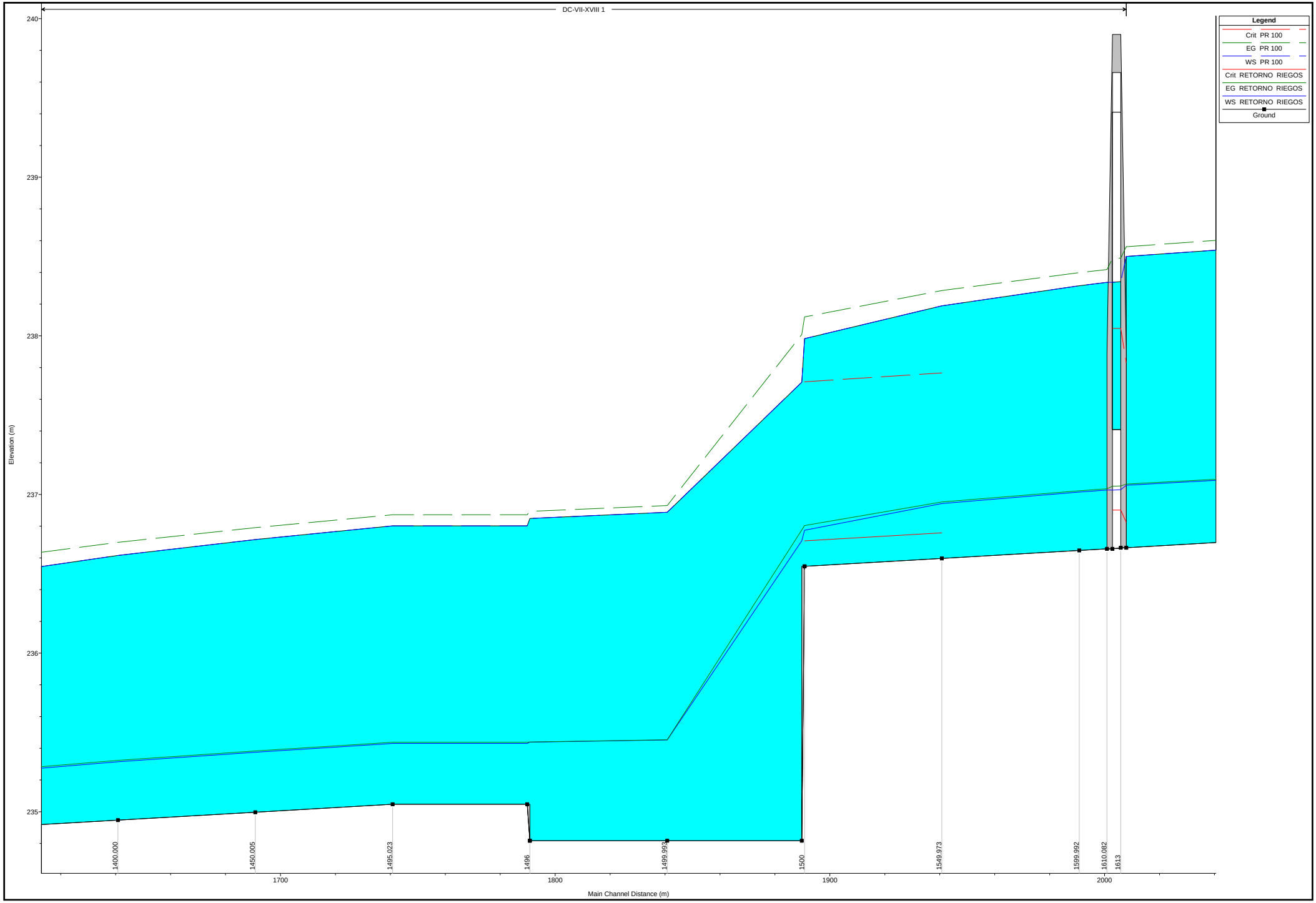
0
500
1000
1500
2000
2500

Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
233
232
231
230
229
228
99.97778
149.9965
200.0032
249.9741
300.0035
350.0004
400.1501
449.9817
499.9494
550.0947
583.4926
0
100
200
300
400
500
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
234
233
232
231
684.0295
696
708.5295
749.9177
795.2462
796
799.9962
800
850.0487
899.9420
949.9938
600
700
800
900
1000
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
237
236
235
234
233
999.9964
1049.997
1099.930
1149.992
1190.101
1193
1199.996
1250.057
1294.808
1295
1299.988
1300
1350.023
1400.000
1100
1200
1300
1400
1500
1600
Main Channel Distance (m)


DC-VII-XVIII 1
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
240
239
238
237
236
235
1400.000
1450.005
1495.023
1496
1499.993
1500
1549.973
1599.992
1610.082
1613
1700
1800
1900
2000
Main Channel Distance (m)

DC-VII-XVIII 2

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

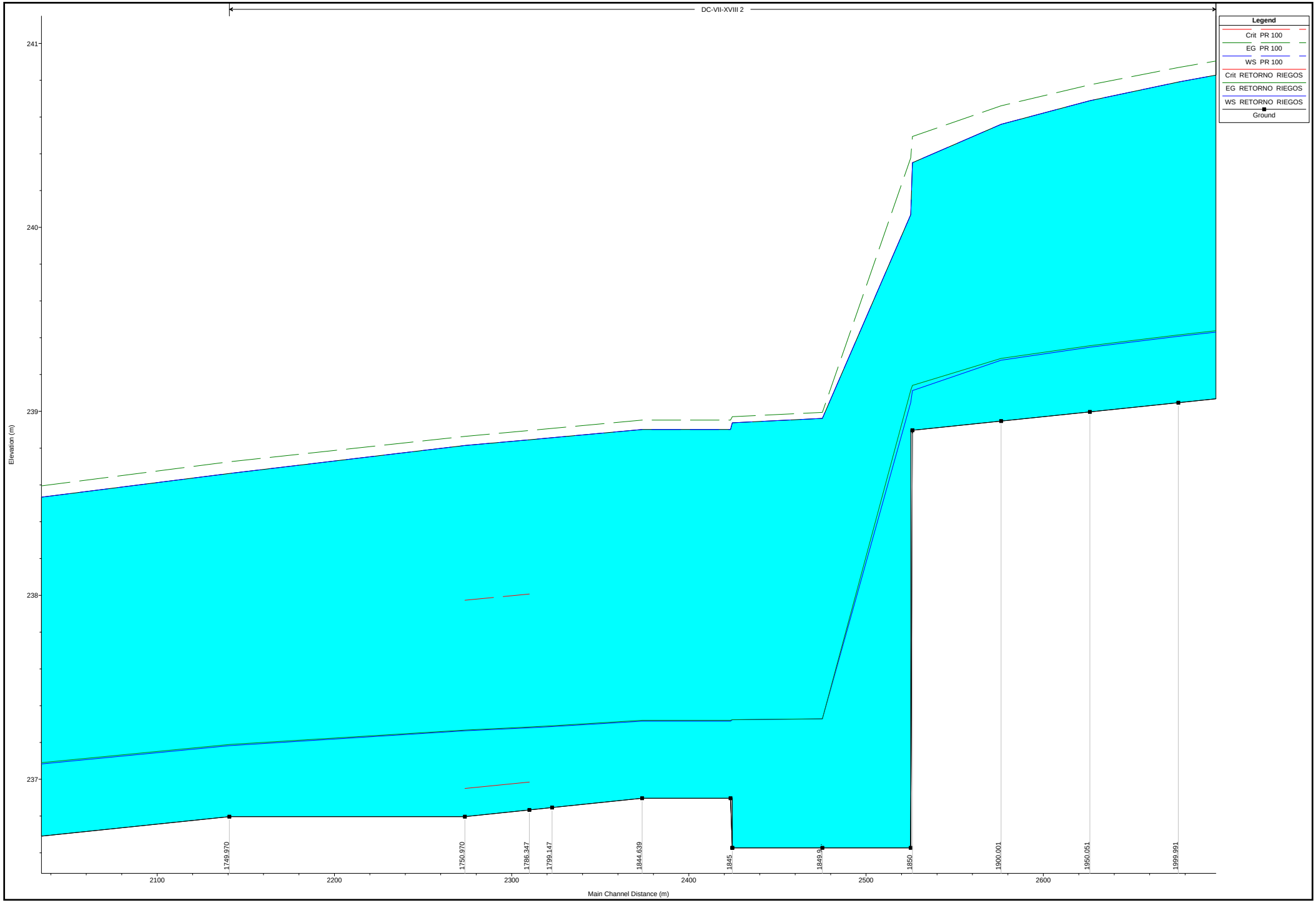
Elevation (m)

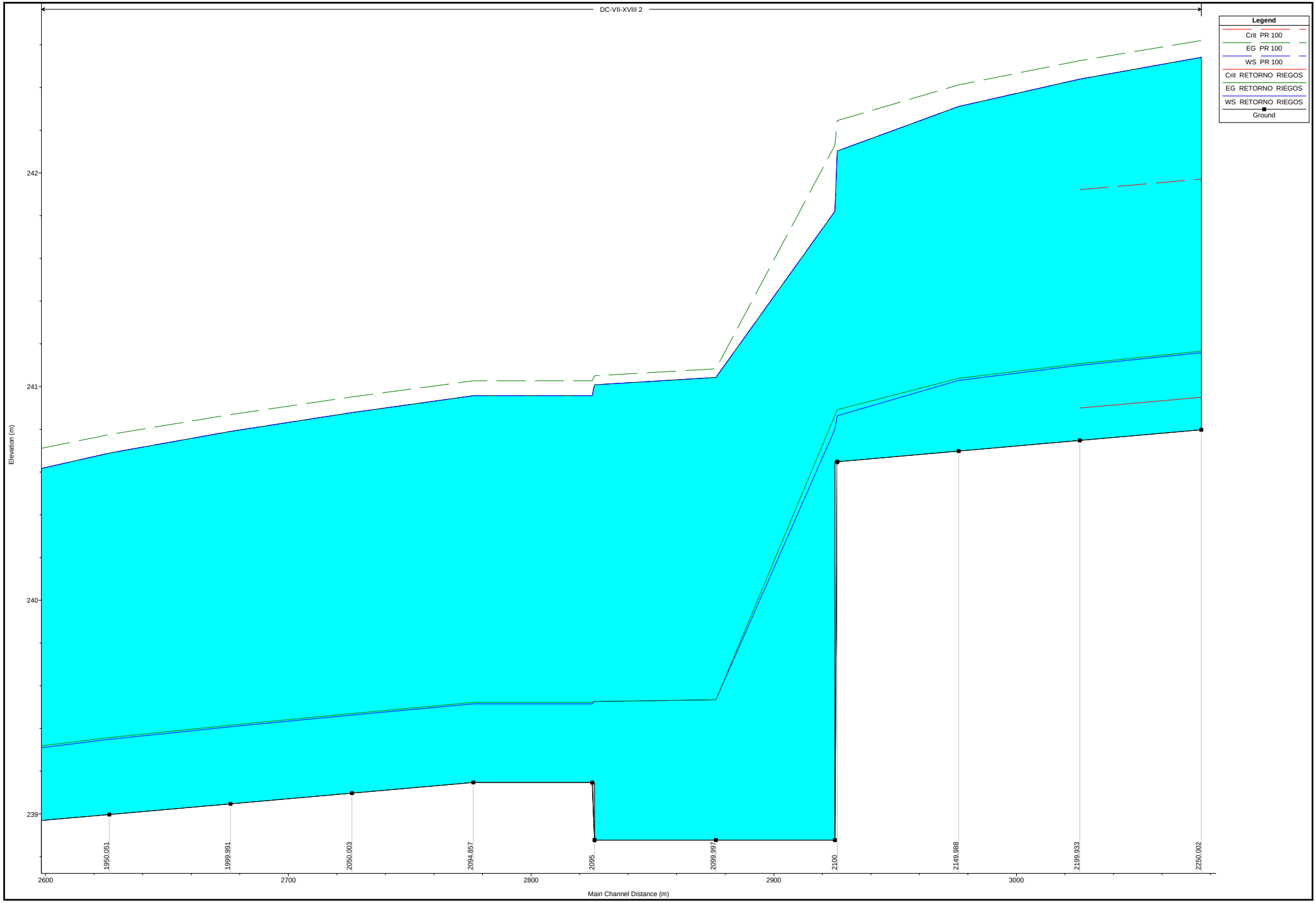
243
242
241
240
239
238
237
236

0
200
400
600
800
1000

Main Channel Distance (m)

1750.970
1786.347
1799.147
1844.639
1845
1849.989
1850
1900.001
1950.051
1999.991
2050.003
2094.857
2095
2099.997
2100
2149.988
2199.933
2250.002


DC-VII-XVIII 2
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
241
240
239
238
237
1749.970
1750.970
1786.347
1799.147
1844.639
1845
1849.9
1850
1900.001
1950.051
1999.991
2100
2200
2300
2400
2500
2600
Main Channel Distance (m)


DC-VII-XVIII 2
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
242
241
240
239
1950.051
1999.991
2050.003
2094.857
2095
2099.997
2100
2149.988
2199.933
2250.002
2600
2700
2800
2900
3000
Main Channel Distance (m)

DC-VII-XVIII 3

Legend

EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground

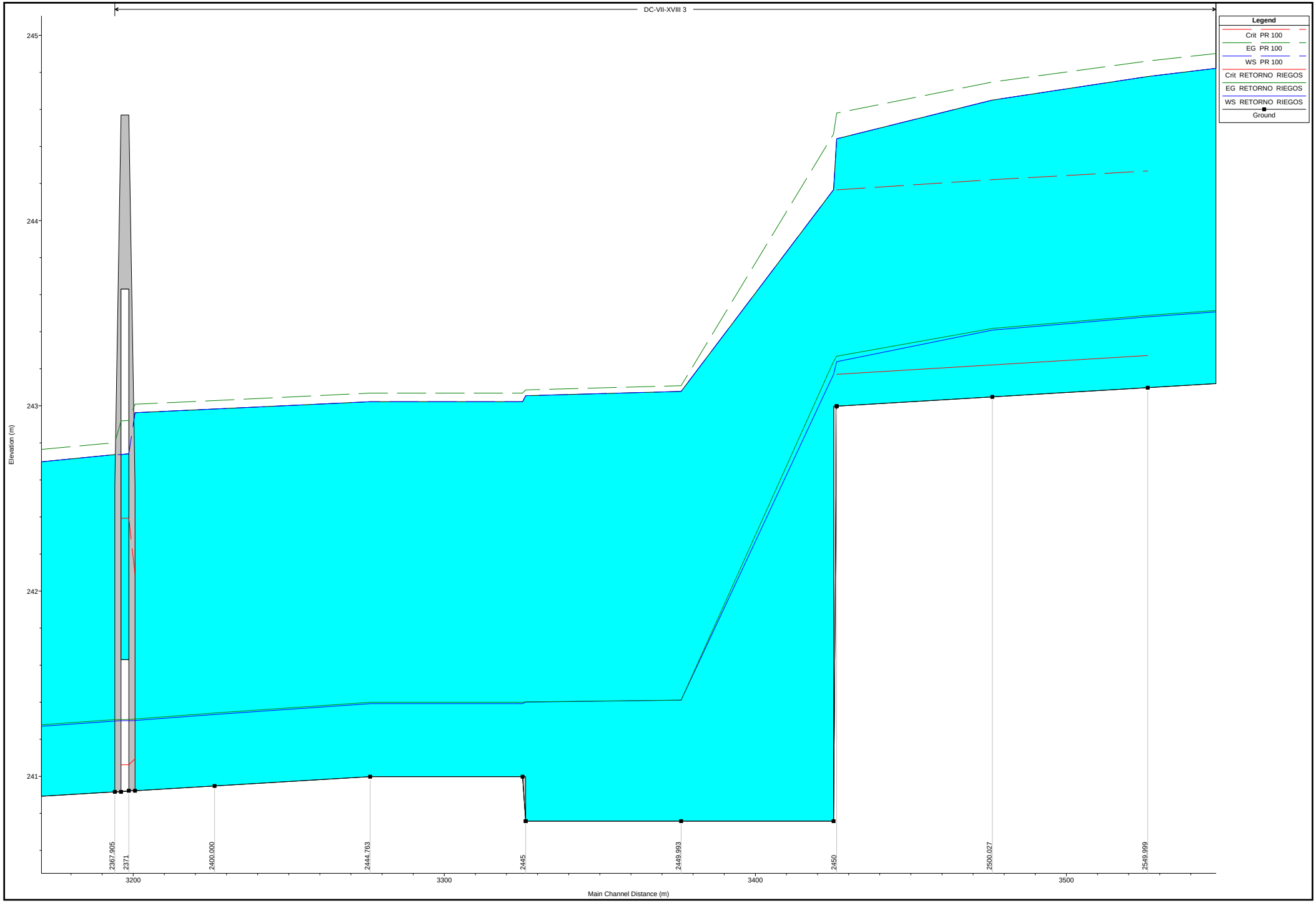
Elevation (m)

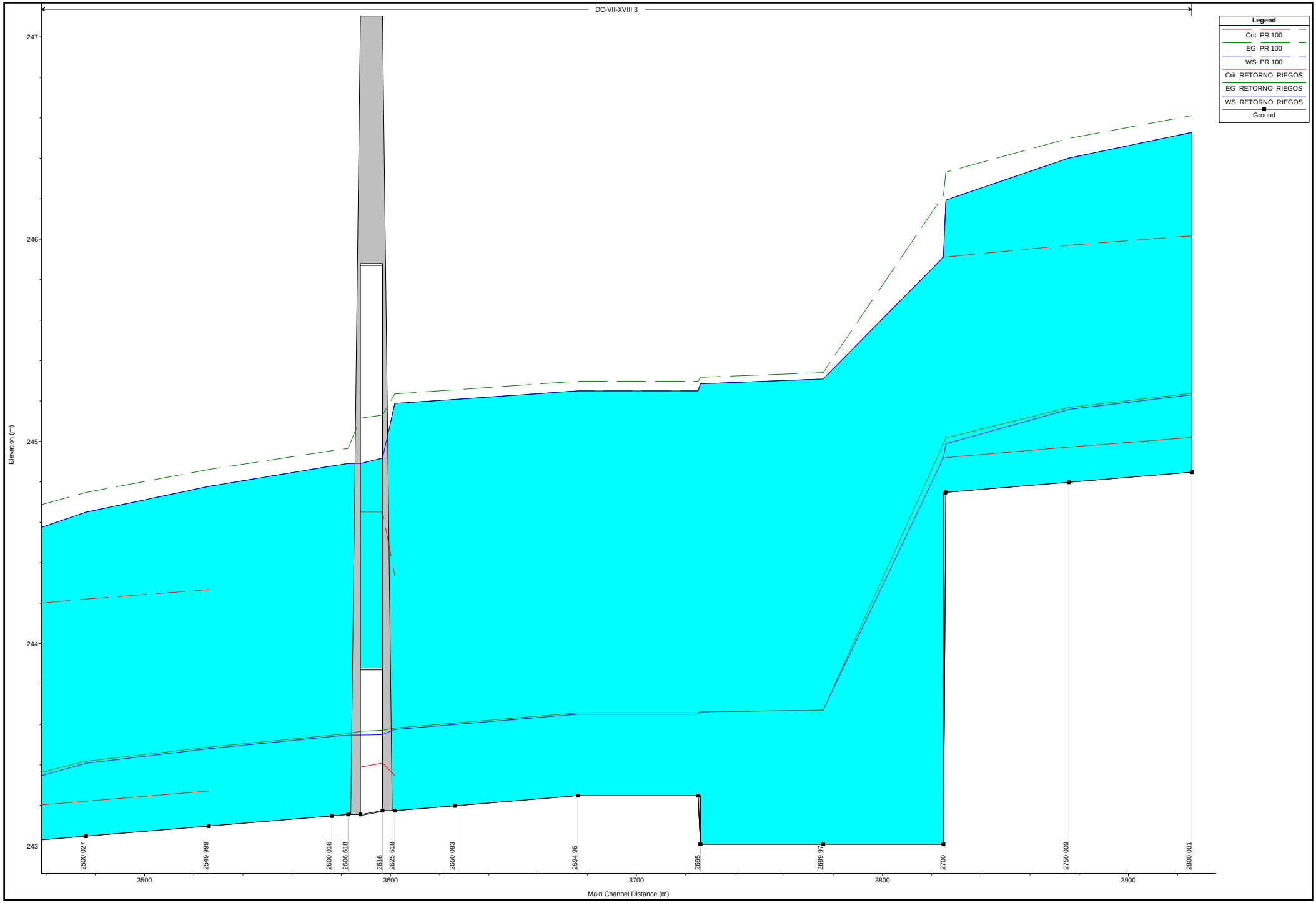
248
247
246
245
244
243
242
241
240

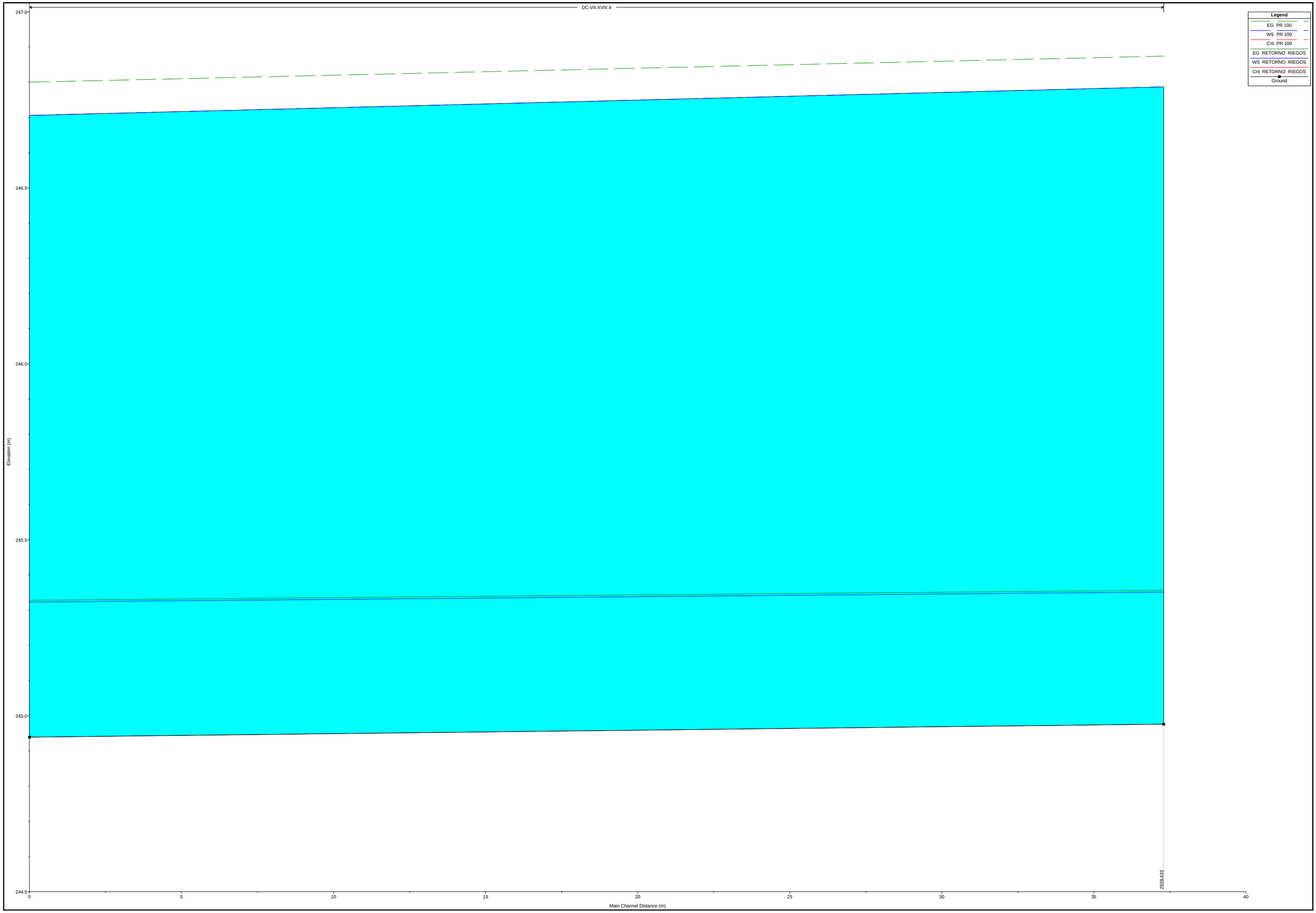
2371
2400.000
2444.763
2445
2449.993
2450
2500.027
2549.999
2600.016
2606.618
2616
2625.618
2650.083
2694.96
2695
2699.970
2700
2750.009
2800.001

0
100
200
300
400
500
600
700
800

Main Channel Distance (m)


DC-VII-XVIII 3
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
245
244
243
242
241
2367.905
2371
2400.000
2444.763
2445
2449.993
2450
2500.027
2549.999
3200
3300
3400
3500
Main Channel Distance (m)


DC-VII-XVIII 3
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
247
246
245
244
243
2500.027
2549.999
2600.016
2606.618
2616
2625.618
2650.083
2694.96
2695
2699.97
2700
2750.009
2800.001
3500
3600
3700
3800
3900
Main Channel Distance (m)


DC-VII-XVIII 4
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
247.0
246.5
246.0
245.5
245.0
244.5
Elevation (m)
0
5
10
15
20
25
30
35
40
Main Channel Distance (m)
2928.433

DC-VII-XVIII 5

Legend

- EG PR 100
- WS PR 100
- Crit PR 100
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Crit RETORNO RIEGOS
- Ground

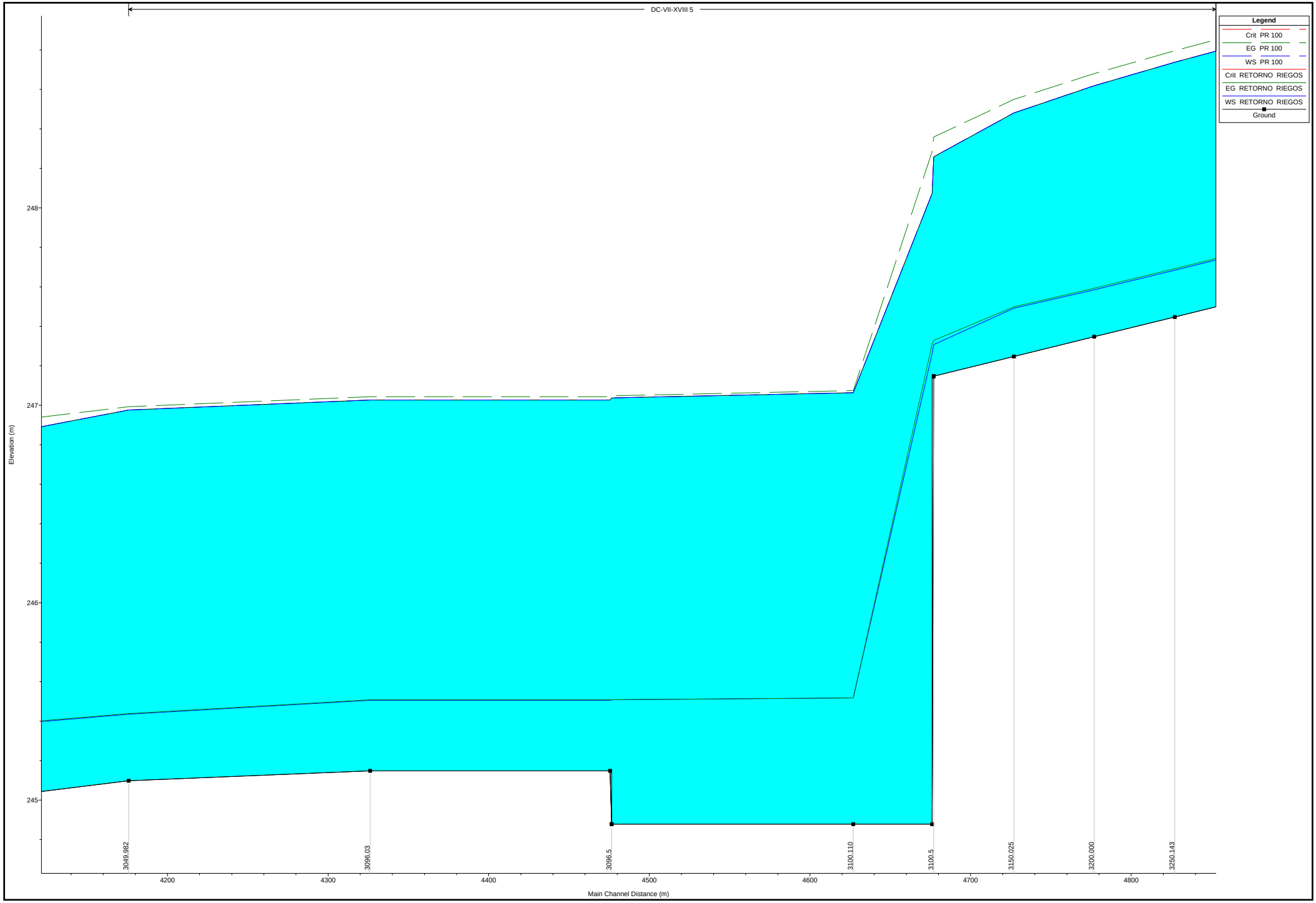
Elevation (m)

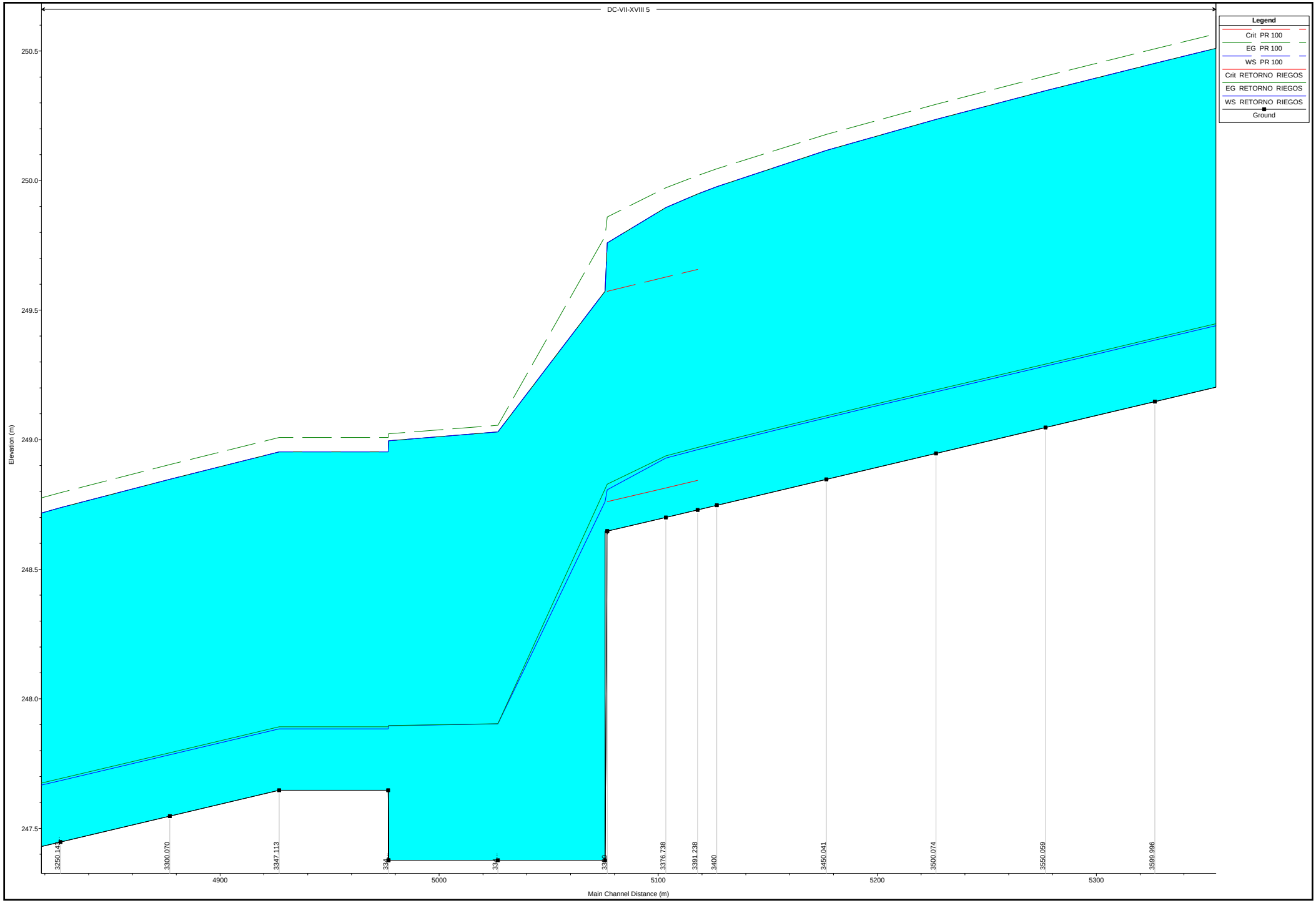
254
252
250
248
246
244

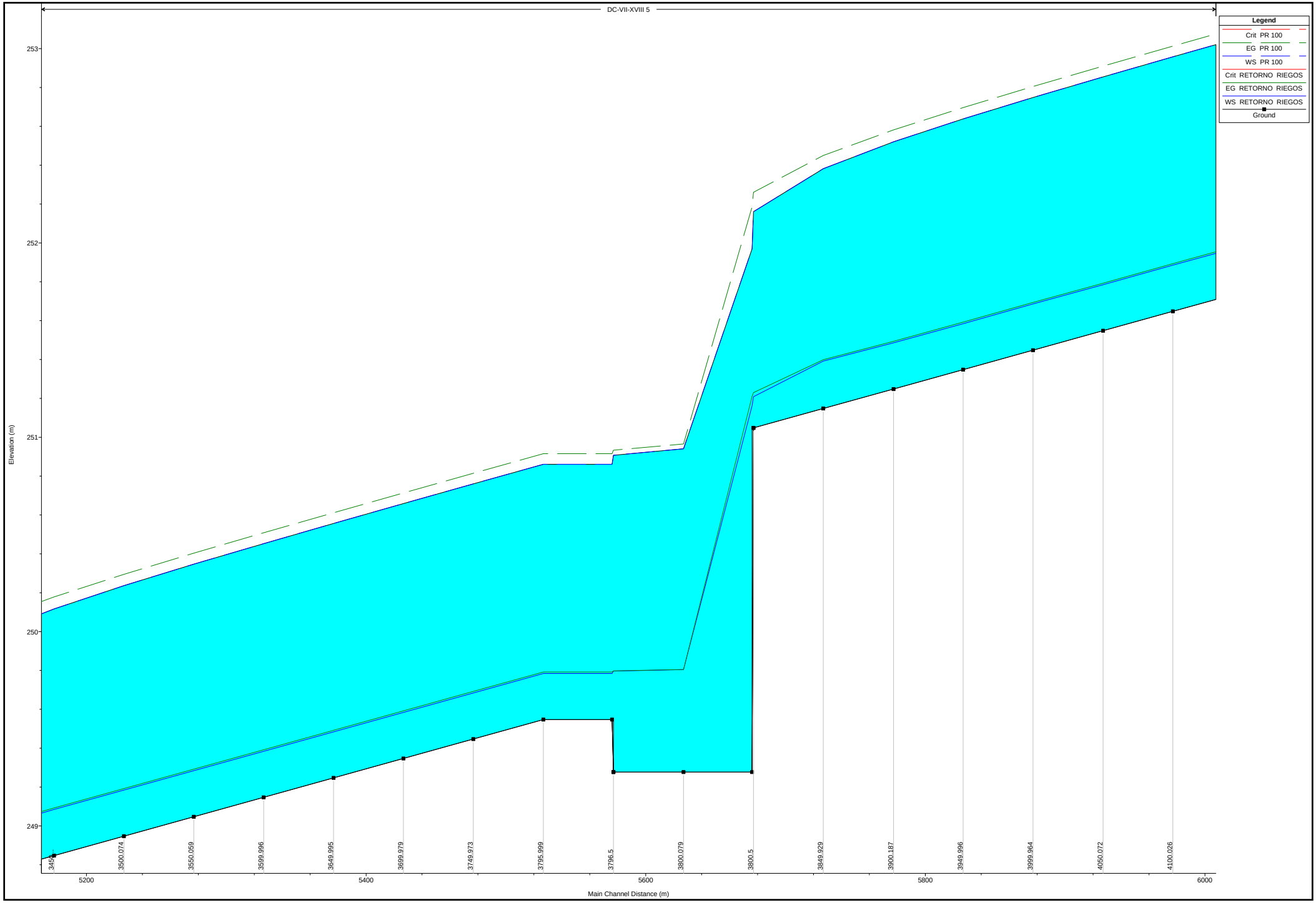
0
500
1000
1500
2000

Main Channel Distance (m)

3096.03
3096.5
3100.110
3100.5
3150.025
3200.000
3250.143
3300.070
3347.113
3347.2
3349.993
3350
3376.738
3391.238
3400
3450.041
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
3795.999
3796.5
3800.079
3800.5
3848.929
3900.187
3949.996
3999.964
4050.072
4100.026
4149.871


DC-VII-XVIII 5
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
248
247
246
245
3049.982
3096.03
3096.5
3100.110
3100.5
3150.025
3200.000
3250.143
4200
4300
4400
4500
4600
4700
4800
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
250.5
250.0
249.5
249.0
248.5
248.0
247.5
3250.141
3300.070
3347.113
3376.738
3391.238
3400
3450.041
3500.074
3550.059
3599.996
4900
5000
5100
5200
5300
Main Channel Distance (m)


DC-VII-XVIII 5
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
253
252
251
250
249
3450
3500.074
3550.059
3599.996
3649.995
3699.979
3749.973
3795.999
3796.5
3800.079
3800.5
3849.929
3900.187
3949.996
3999.964
4050.072
4100.026
5200
5400
5600
5800
6000
Main Channel Distance (m)

DC-VII-XVIII 6

Legend

- Crit PR 100
- EG PR 100
- WS PR 100
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

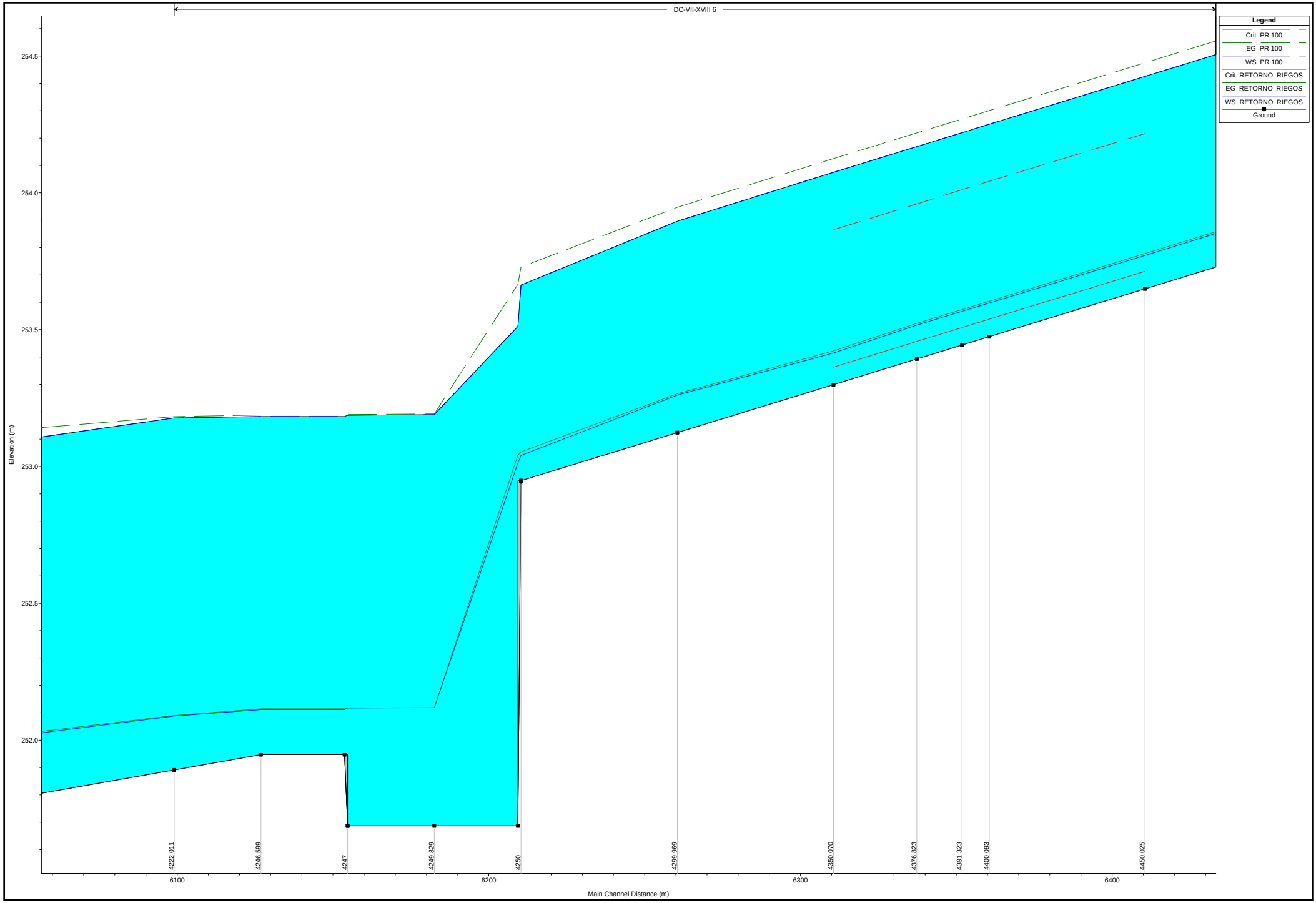
Elevation (m)

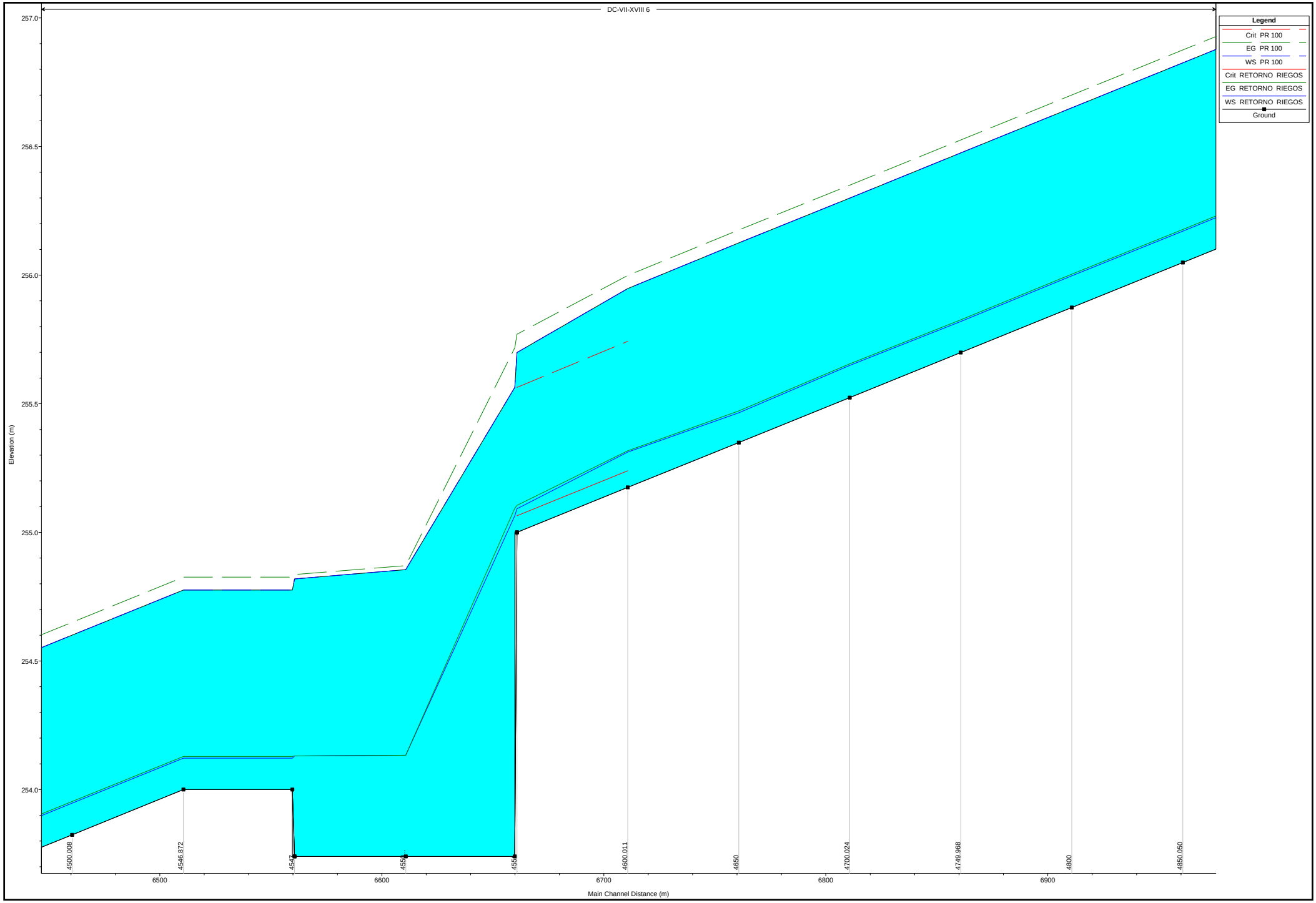
258
256
254
252

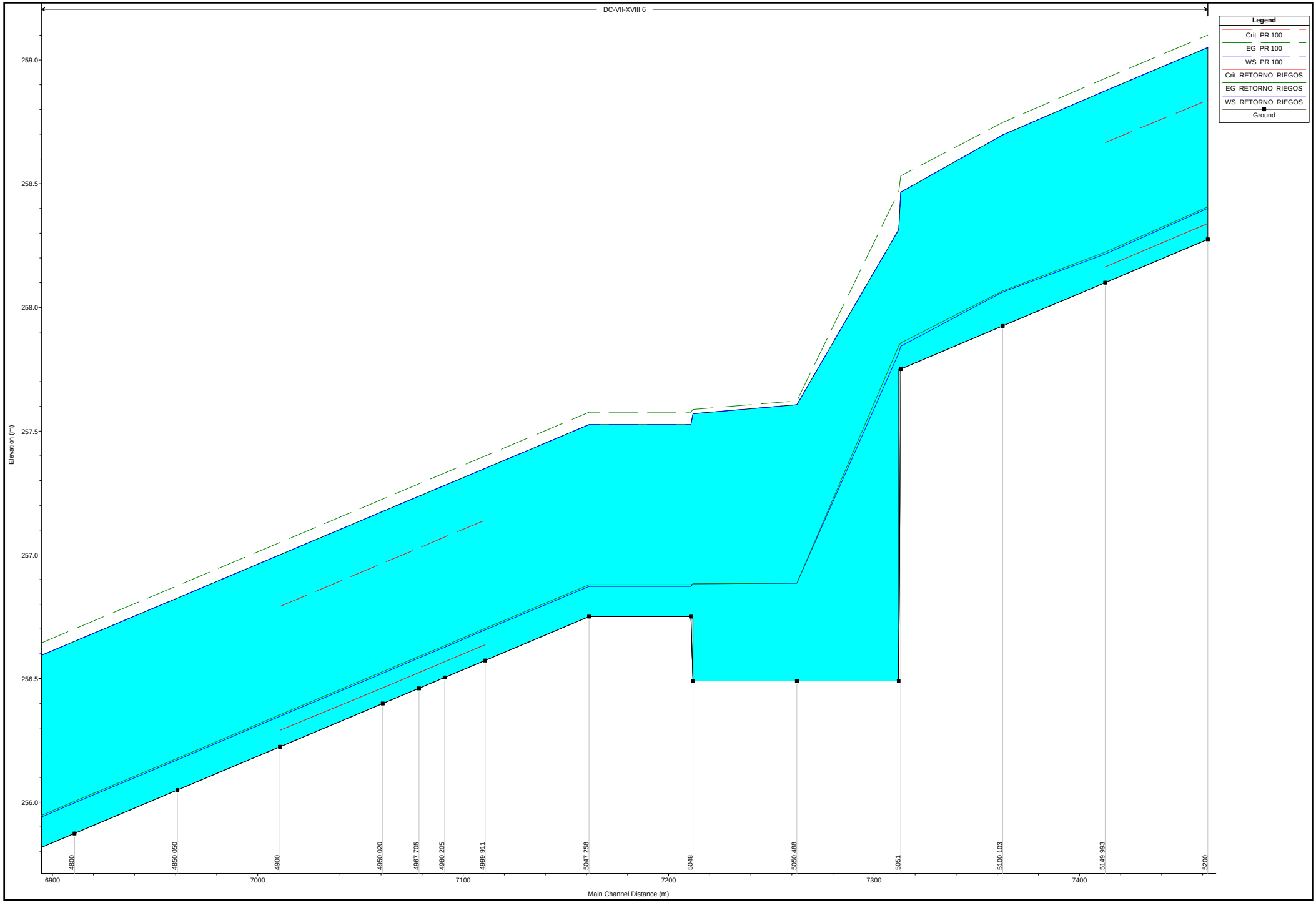
4222.011
4246.599
4247
4249.82
4250
4298.989
4350.070
4376.823
4391.323
4400.093
4450.025
4500.008
4546.872
4547
4560.102
4551
4600.011
4650
4700.024
4749.968
4800
4850.050
4900
4950.020
4967.705
4980.205
4998.911
5047.258
5048
5050.488
5051
5100.103
5149.993
5200

6200
6400
6600
6800
7000
7200
7400

Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
254.5
254.0
253.5
253.0
252.5
252.0
4222.011
4246.599
4247
4249.829
4250
4299.969
4350.070
4376.823
4391.323
4400.093
4450.025
6100
6200
6300
6400
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
257.0
256.5
256.0
255.5
255.0
254.5
254.0
Elevation (m)
4500.008
4546.872
4600.011
4650
4700.024
4749.968
4800
4850.050
6500
6600
6700
6800
6900
Main Channel Distance (m)


DC-VII-XVIII 6
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
259.0
258.5
258.0
257.5
257.0
256.5
256.0
4800
4850.050
4900
4950.020
4967.705
4980.205
4999.911
5047.258
5048
5050.488
5051
5100.103
5149.993
5200
6900
7000
7100
7200
7300
7400
Main Channel Distance (m)

DC-VII-XVIII 7

Legend

- Crit PR 100
- EG PR 100
- WS PR 100
- Crit RETORNO RIEGOS
- EG RETORNO RIEGOS
- WS RETORNO RIEGOS
- Ground

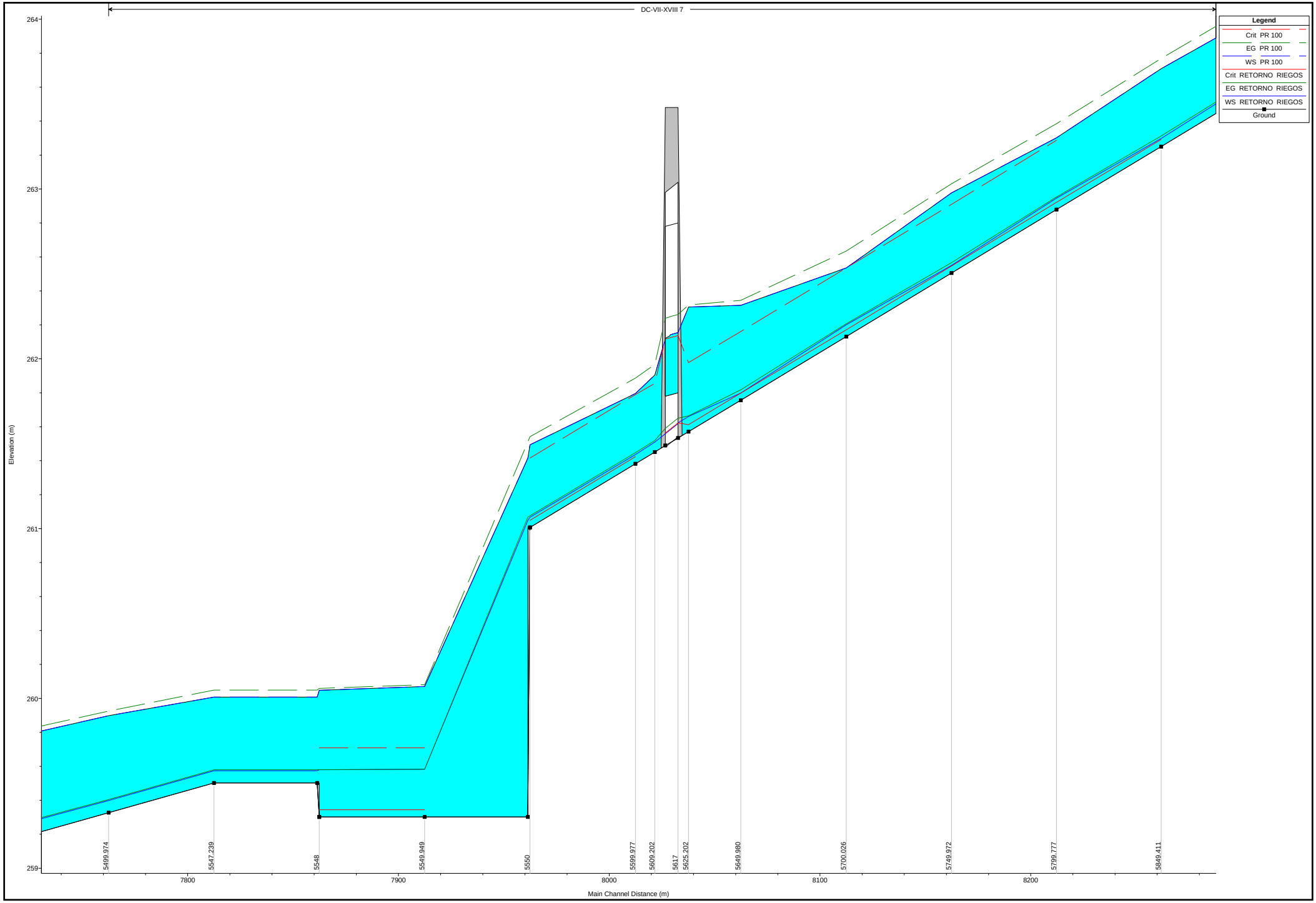
Elevation (m)

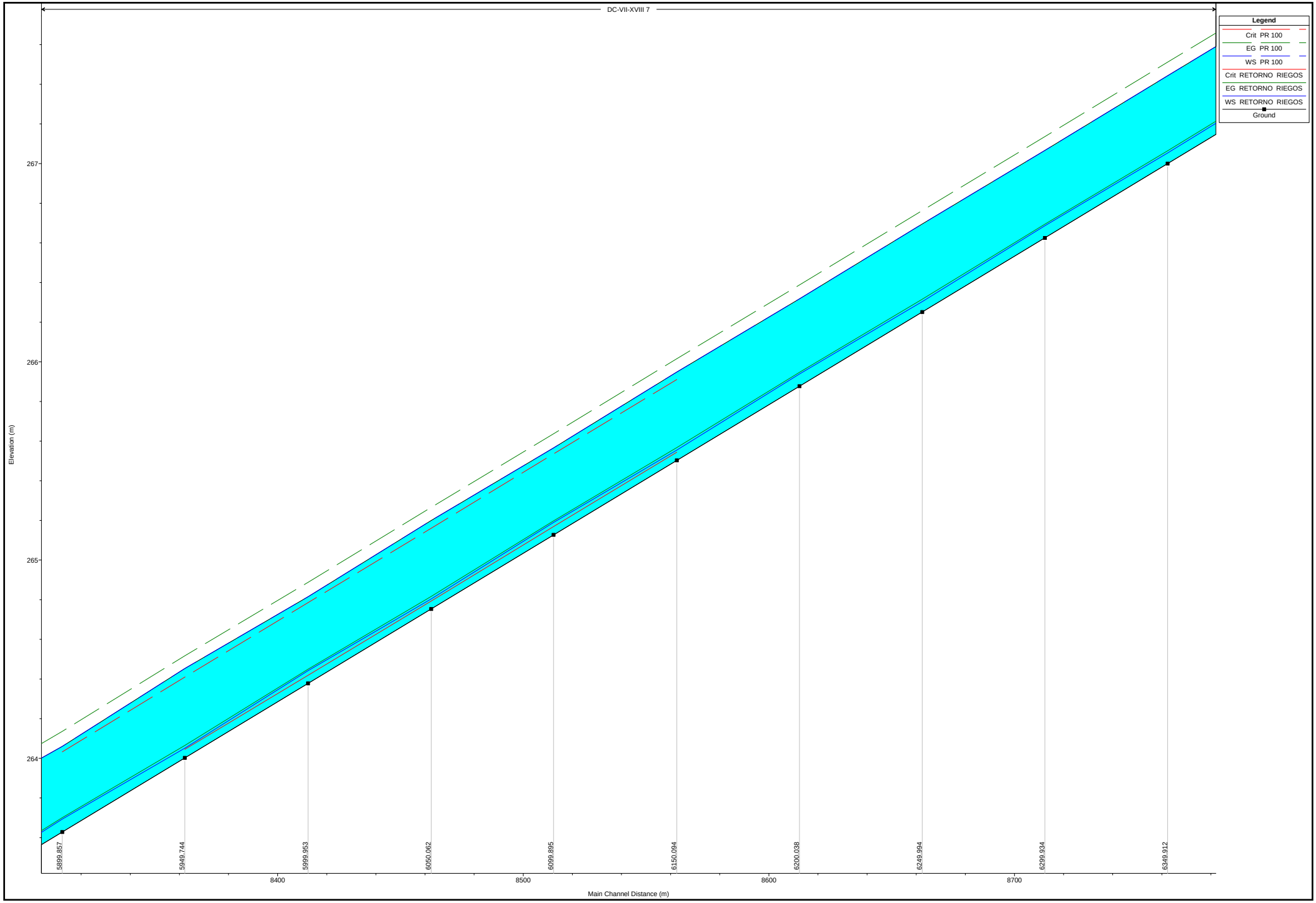
275
270
265
260

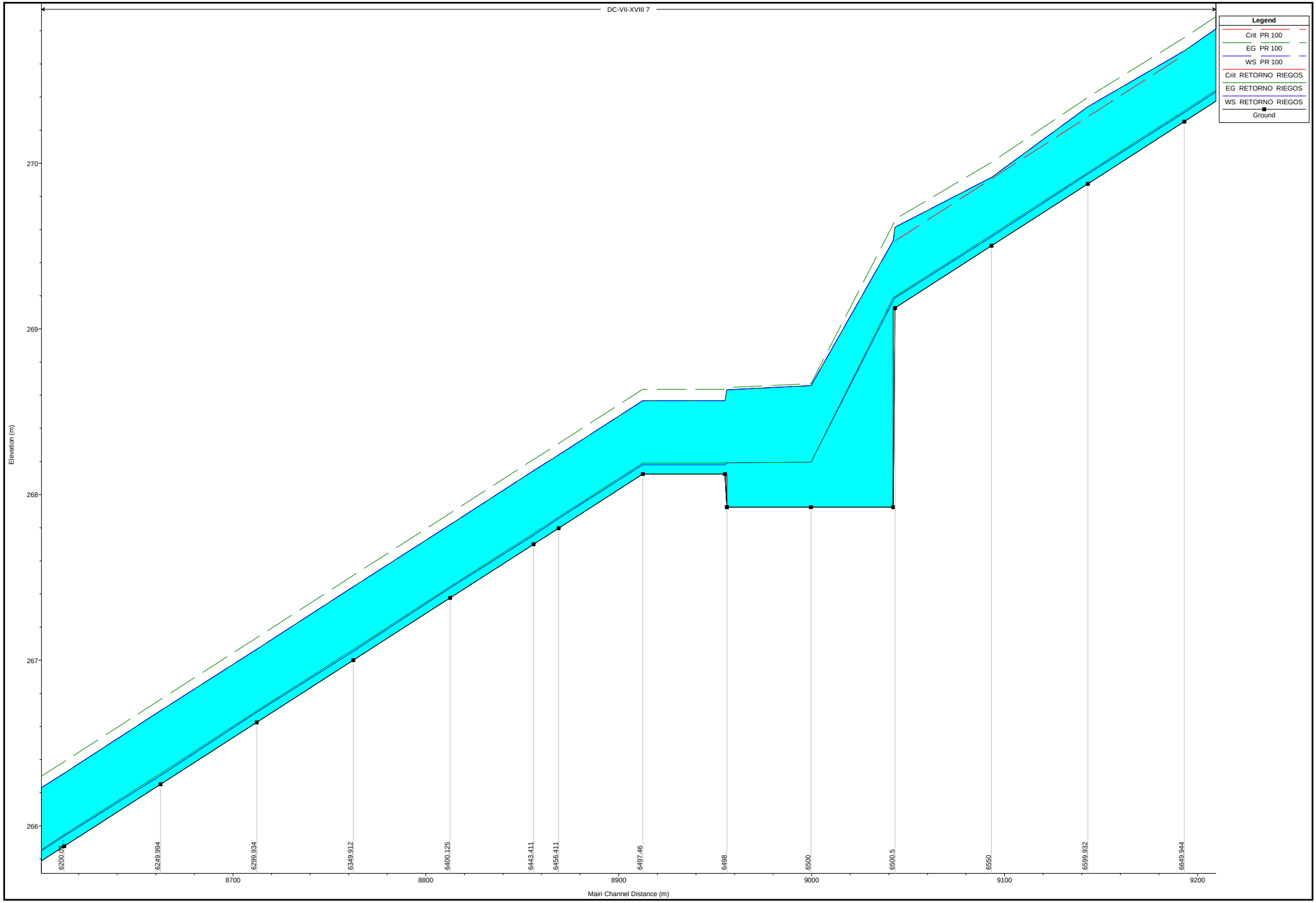
5499.974
5547.239
5548
5548.949
5550
5599.977
5617
5649.980
5700.026
5749.972
5799.777
5849.411
5899.857
5949.744
5999.953
6050.062
6099.895
6150.094
6200.038
6249.994
6299.934
6348.912
6400.125
6443.411
6456.411
6497.46
6498
6500
6500.5
6550
6599.932
6649.944
6699.958
6749.770
6800.056
6850.006
6872.171
6894.171
6950.010
6949.910
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
7200.077
7249.989
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973

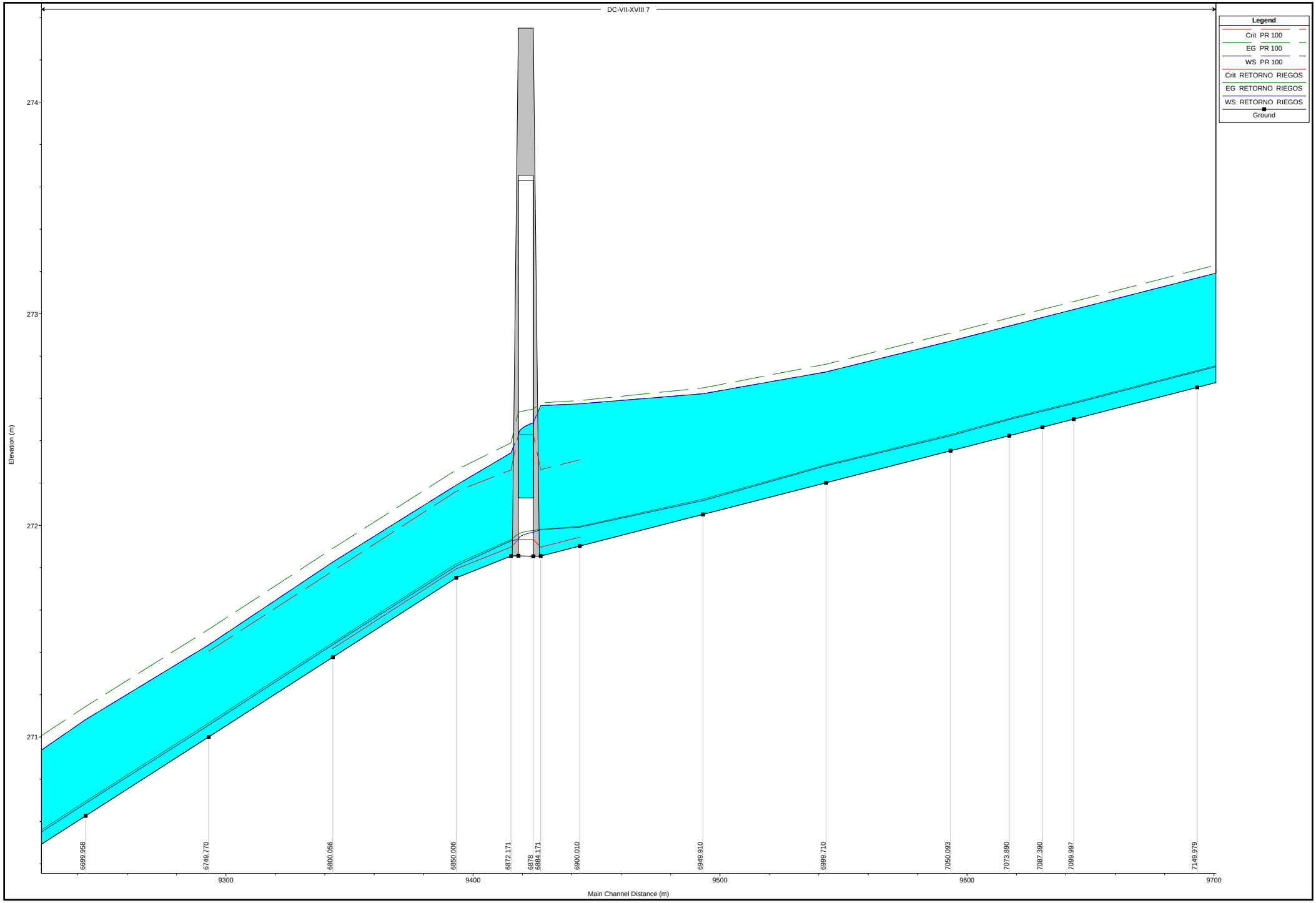
8000
8500
9000
9500
10000

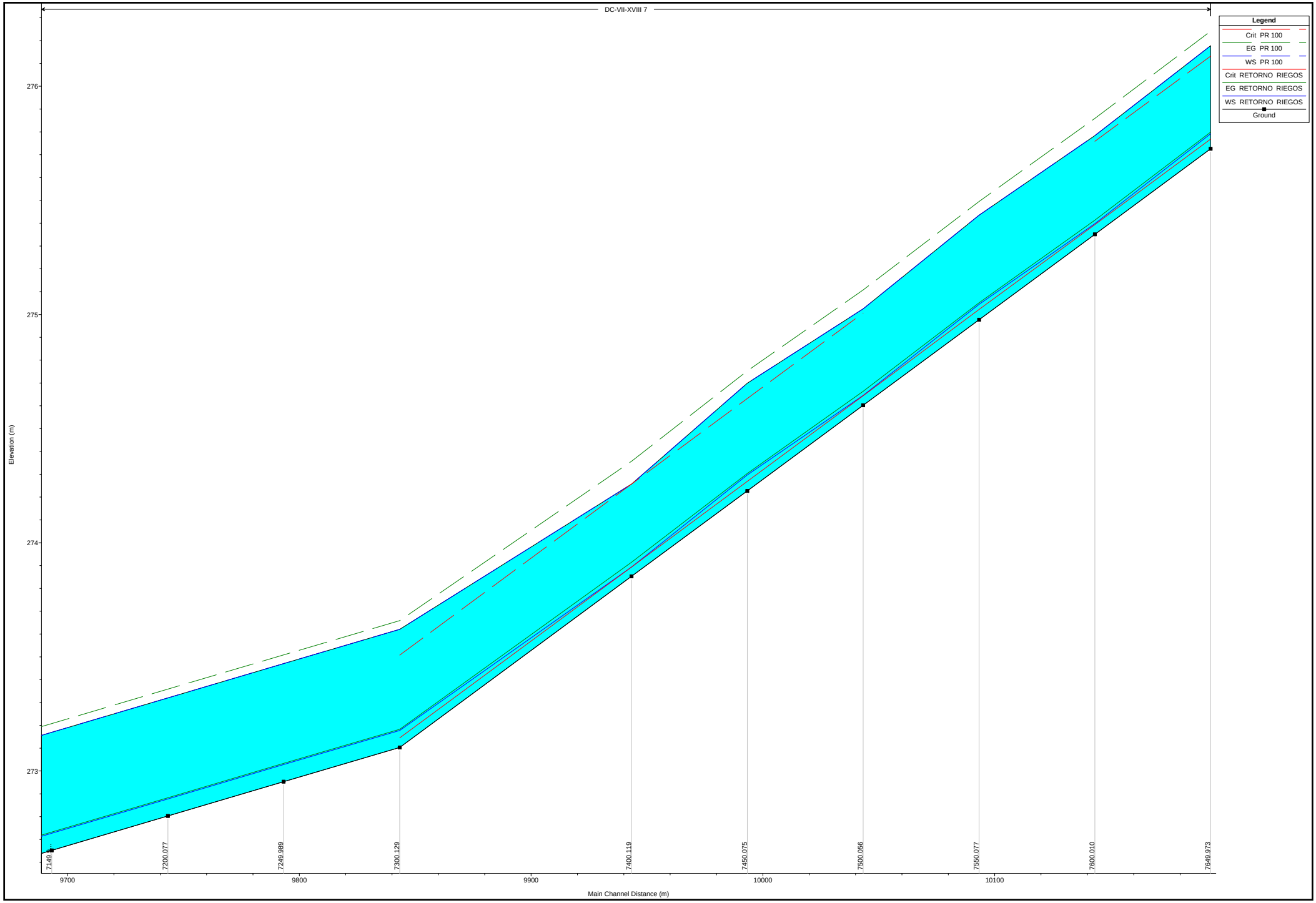
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
264
263
262
261
260
259
5499.974
5547.239
5548
5549.949
5550
5599.977
5609.202
5617
5625.202
5649.980
5700.026
5749.972
5799.777
5849.411
7800
7900
8000
8100
8200
Main Channel Distance (m)


DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
267
266
265
264
5899.857
5949.744
5999.953
6050.062
6099.895
6150.094
6200.038
6249.994
6299.934
6349.912
8400
8500
8600
8700
Main Channel Distance (m)

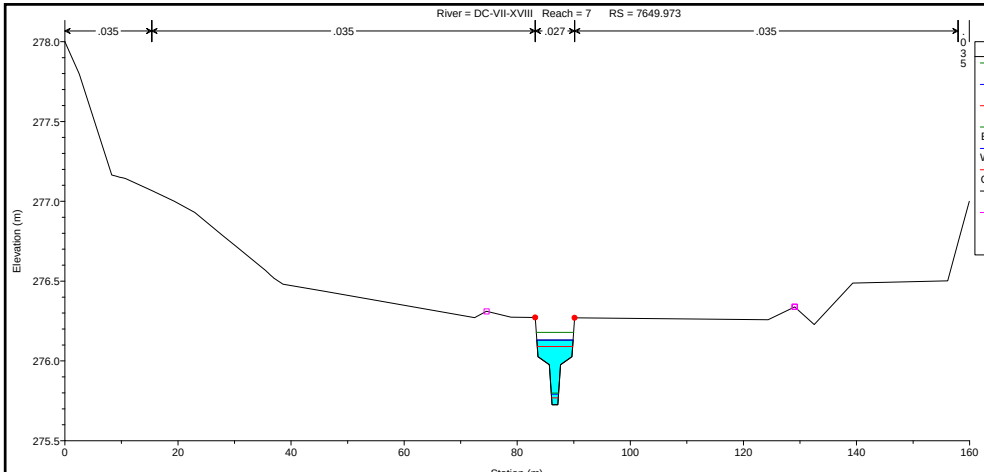

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
270
269
268
267
266
6200.05
6249.994
6299.934
6349.912
6400.125
6443.411
6456.411
6497.46
6498
6500
6500.5
6550
6599.932
6649.944
8700
8800
8900
9000
9100
9200
Main Channel Distance (m)

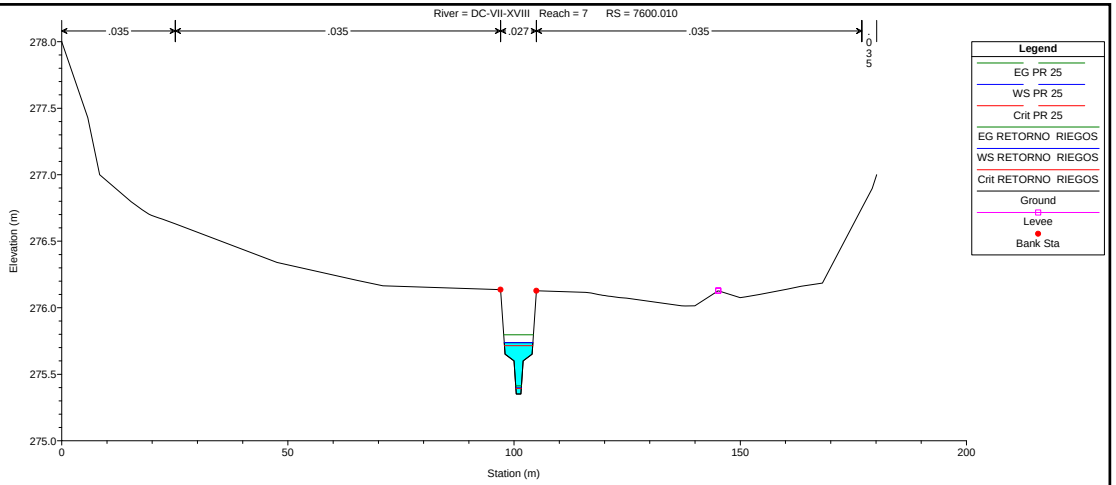

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
274
273
272
271
6699.958
6749.770
6800.056
6850.006
6872.171
6878
6884.171
6900.010
6949.910
6999.710
7050.093
7073.890
7087.390
7099.997
7149.979
9300
9400
9500
9600
9700
Main Channel Distance (m)

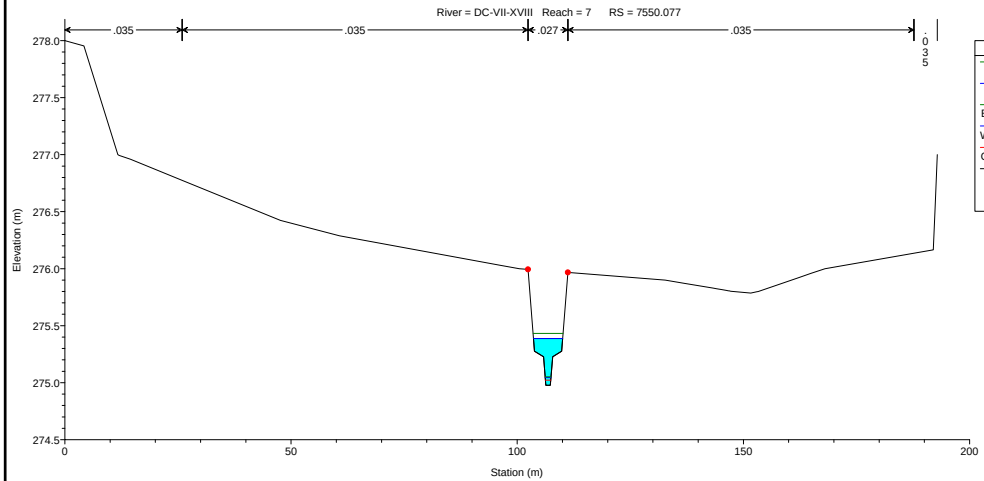

DC-VII-XVIII 7
Legend
Crit PR 100
EG PR 100
WS PR 100
Crit RETORNO RIEGOS
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Elevation (m)
276
275
274
273
7149.
7200.077
7249.989
7300.129
7400.119
7450.075
7500.056
7550.077
7600.010
7649.973
9700
9800
9900
10000
10100
Main Channel Distance (m)

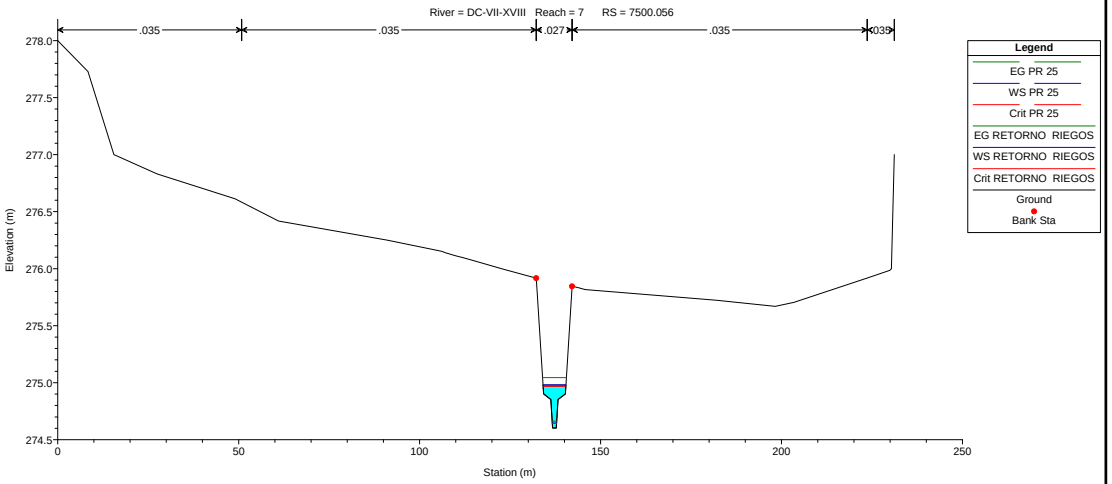
SECCIONES

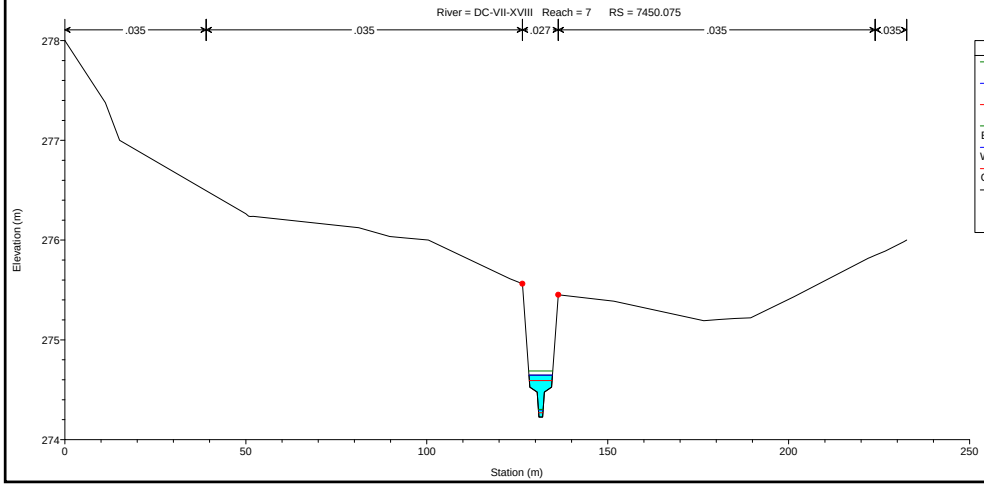
SECCIONES PR25

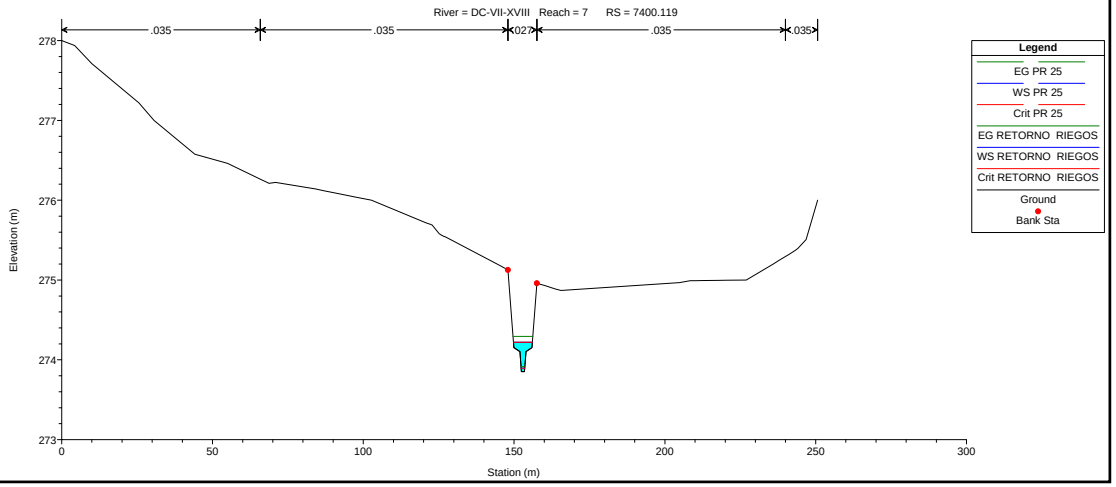

River = DC-VII-XVIII Reach = 7 RS = 7649.973
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

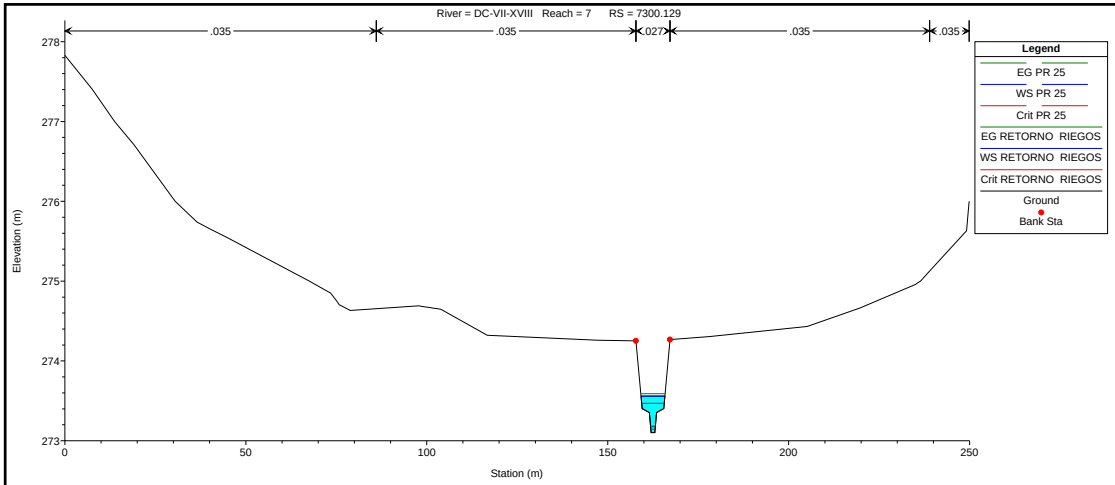

River = DC-VII-XVIII Reach = 7 RS = 7600.010
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

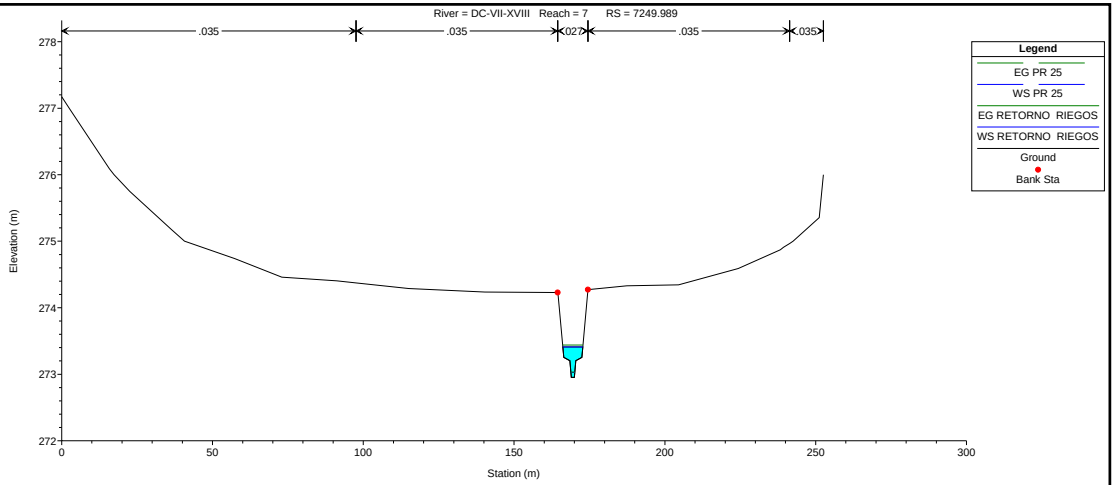

River = DC-VII-XVIII Reach = 7 RS = 7550.077
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

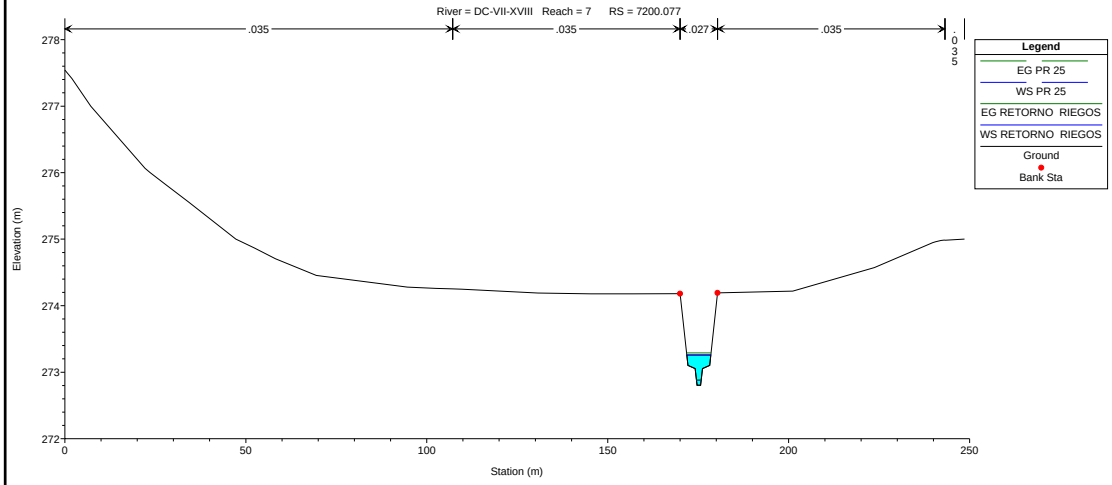

River = DC-VII-XVIII Reach = 7 RS = 7500.056
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

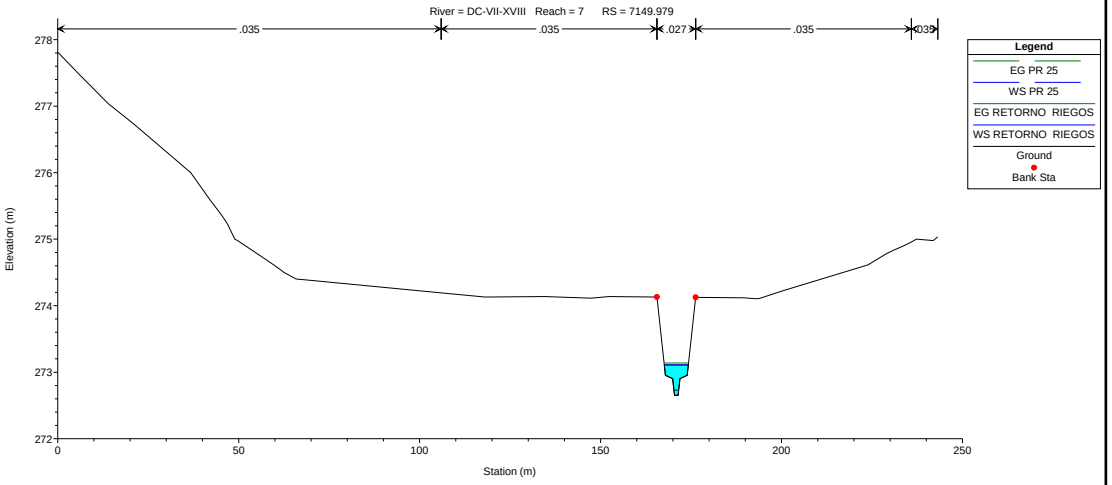

River = DC-VII-XVIII Reach = 7 RS = 7450.075
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

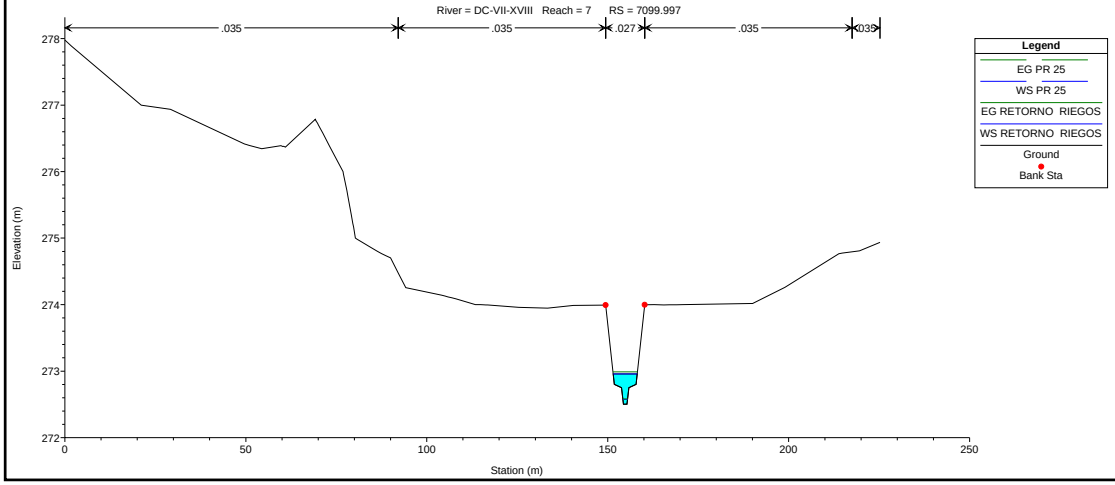

River = DC-VII-XVIII Reach = 7 RS = 7400.119
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

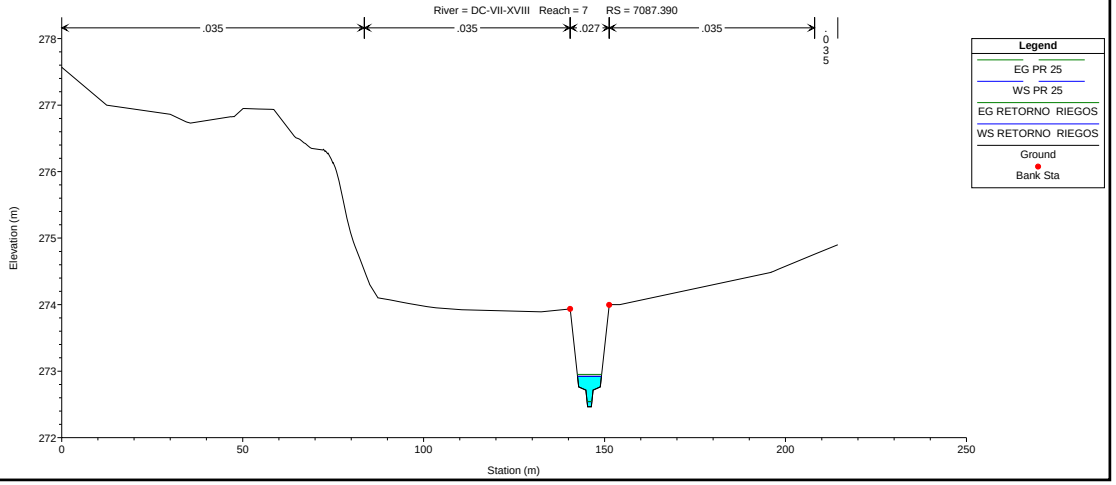

River = DC-VII-XVIII Reach = 7 RS = 7300.129
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

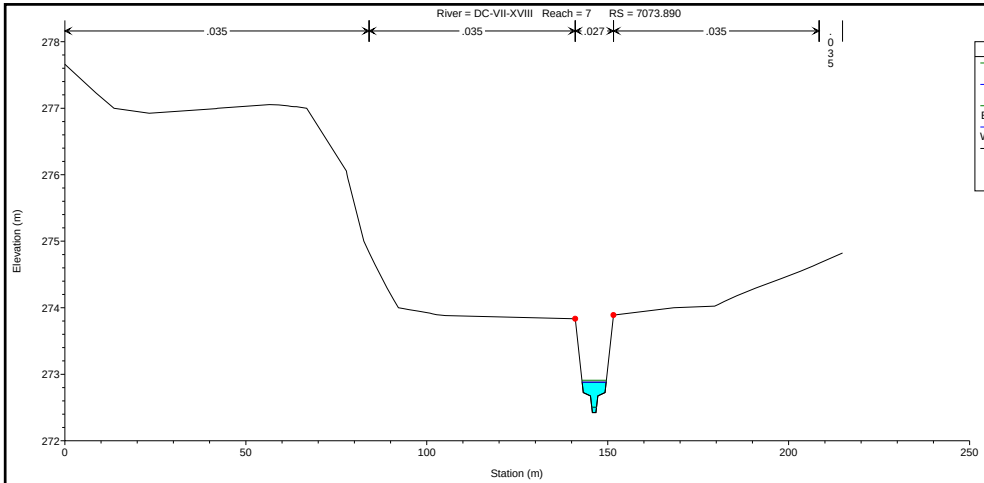

River = DC-VII-XVIII Reach = 7 RS = 7249.989
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

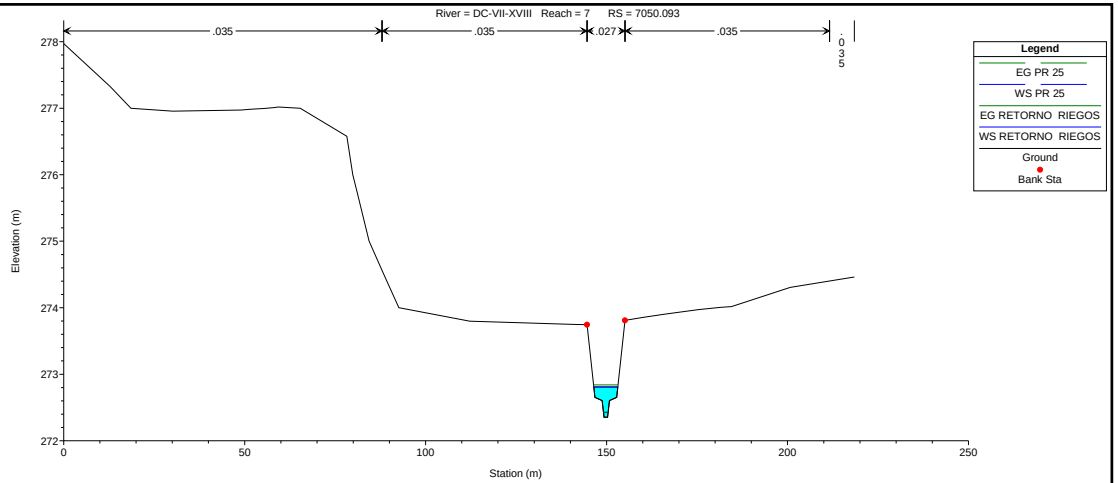

River = DC-VII-XVIII Reach = 7 RS = 7200.077
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

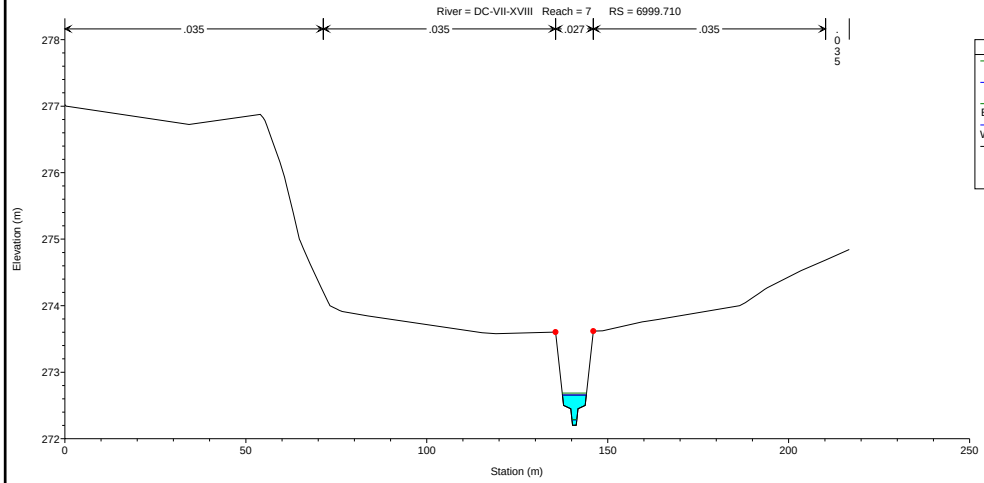

River = DC-VII-XVIII Reach = 7 RS = 7149.979
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

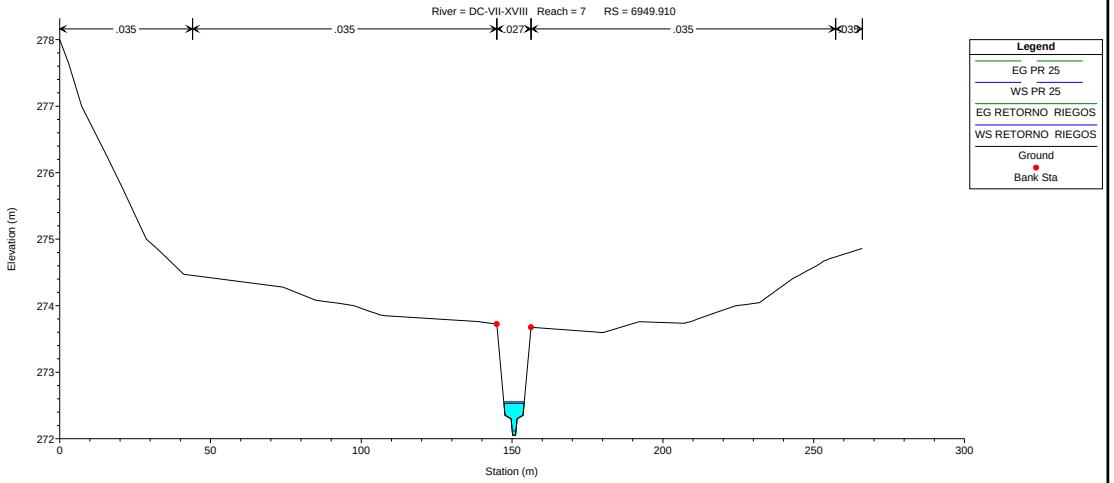

River = DC-VII-XVIII Reach = 7 RS = 7099.997
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

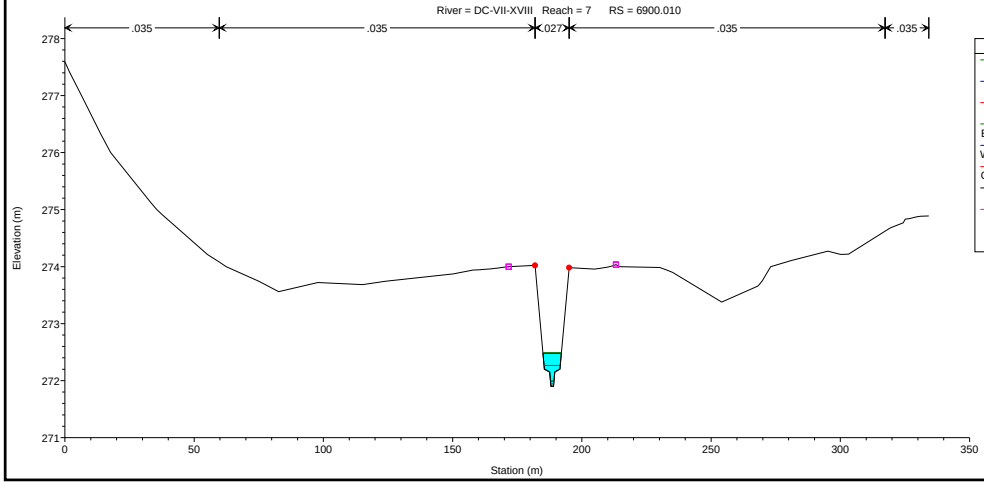

River = DC-VII-XVIII Reach = 7 RS = 7087.390
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

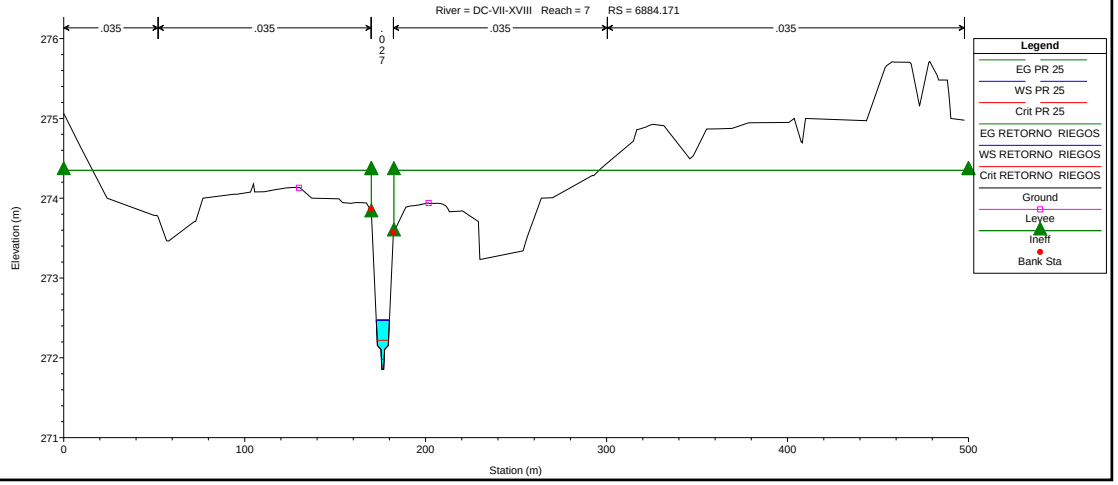

River = DC-VII-XVIII Reach = 7 RS = 7073.890
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

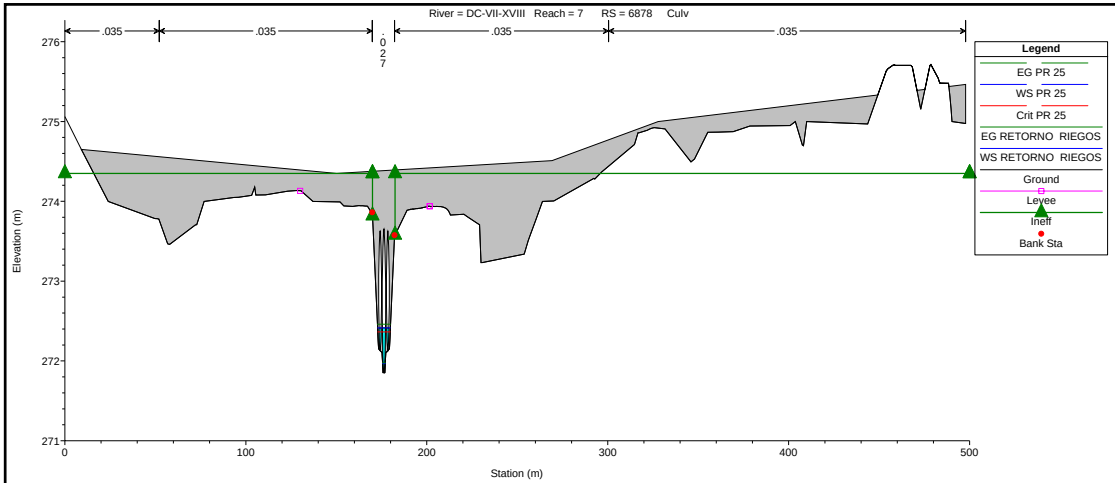

River = DC-VII-XVIII Reach = 7 RS = 7050.093
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

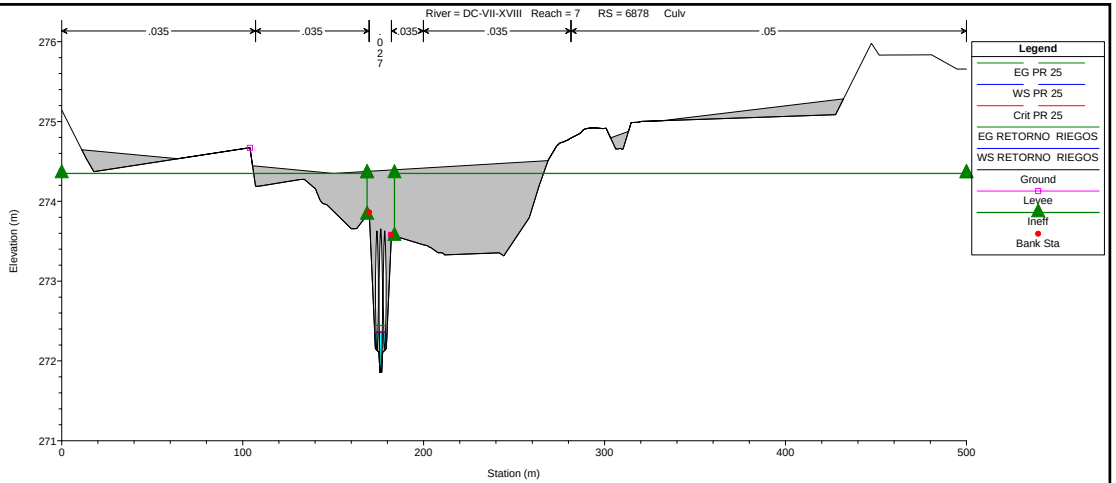

River = DC-VII-XVIII Reach = 7 RS = 6999.710
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

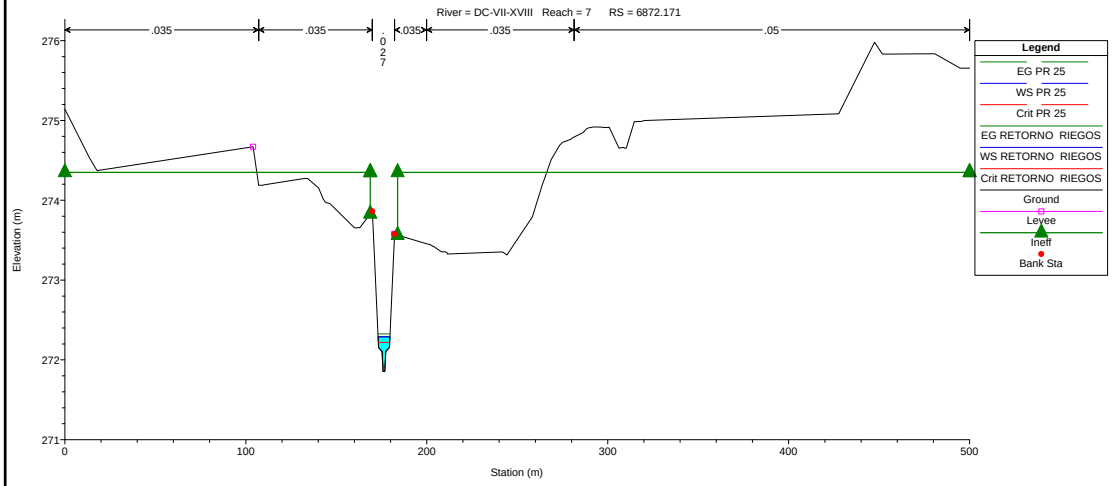

River = DC-VII-XVIII Reach = 7 RS = 6949.910
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

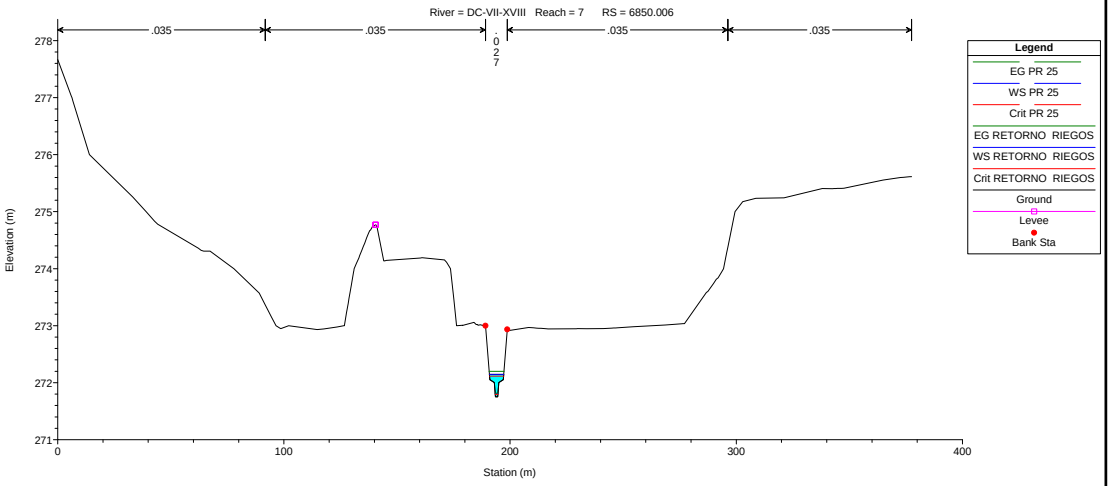

River = DC-VII-XVIII Reach = 7 RS = 6900.010
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

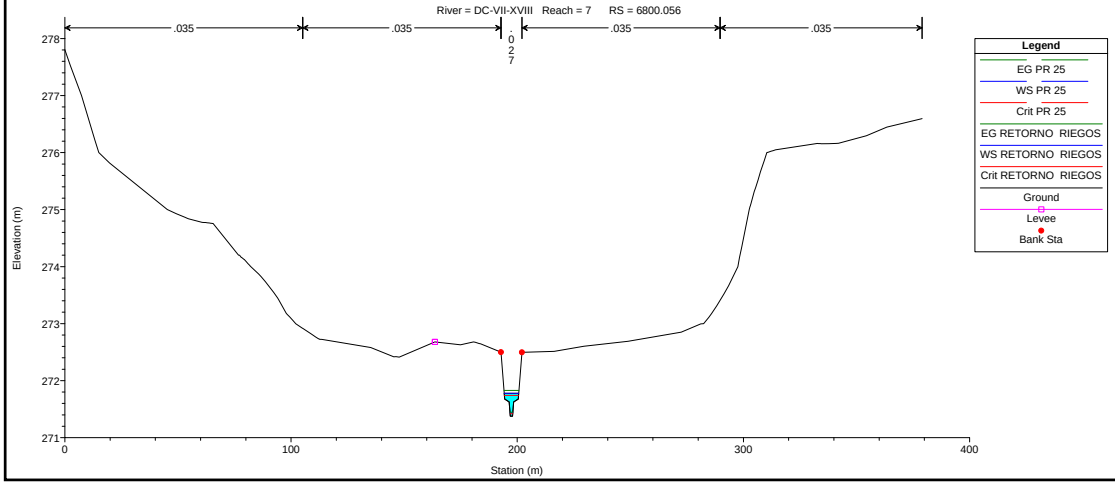

River = DC-VII-XVIII Reach = 7 RS = 6884.171
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

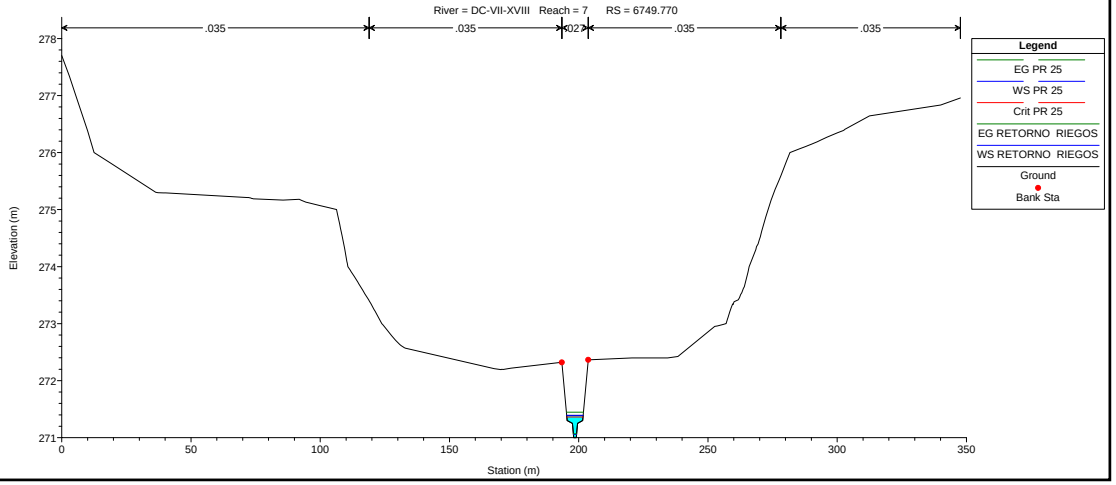

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

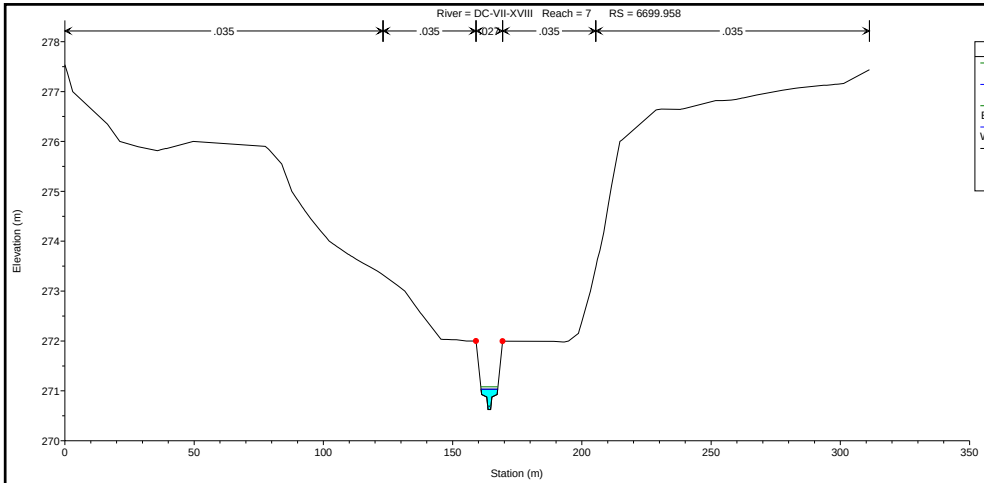

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.035
.035
.027
.035
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

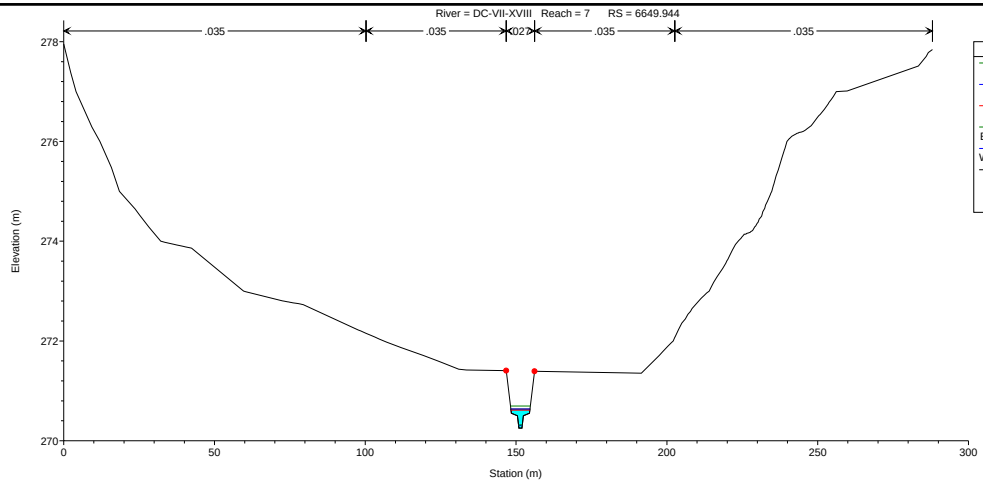

River = DC-VII-XVIII Reach = 7 RS = 6872.171
.035
.035
.027
.035
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

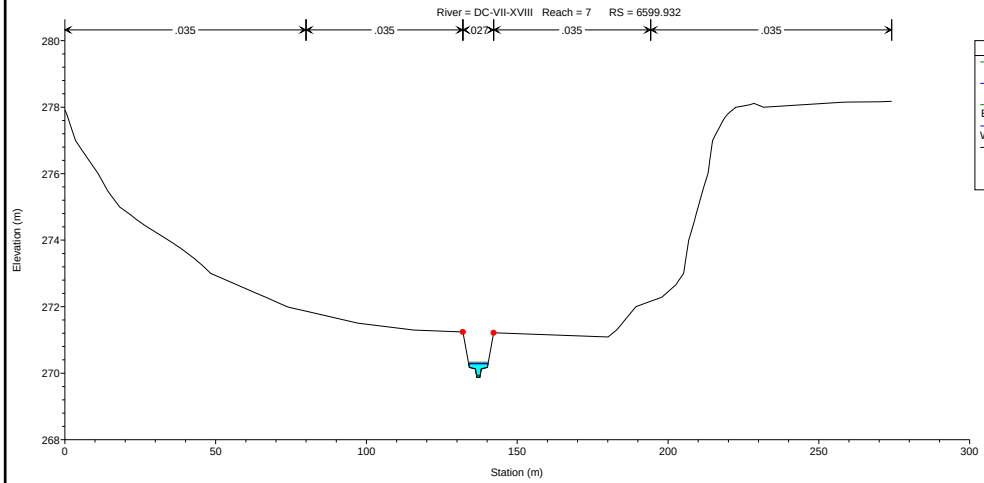

River = DC-VII-XVIII Reach = 7 RS = 6850.006
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

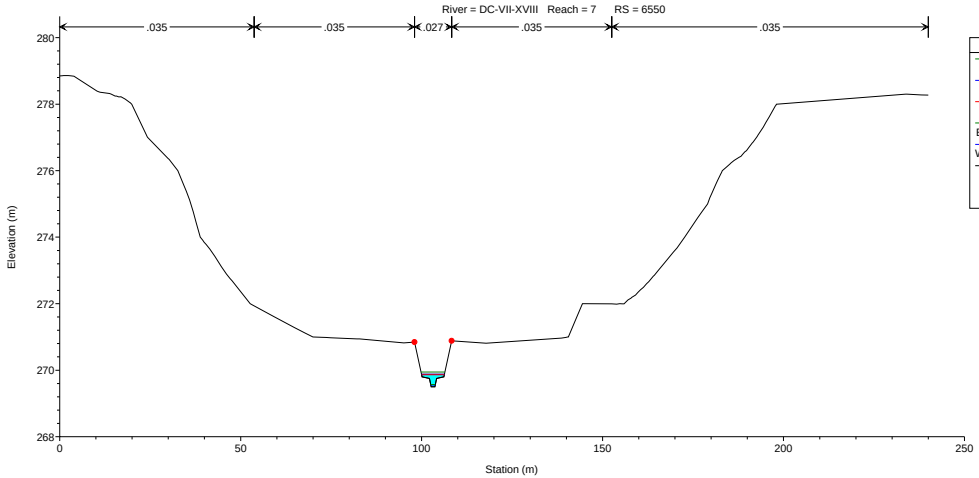

River = DC-VII-XVIII Reach = 7 RS = 6800.056
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

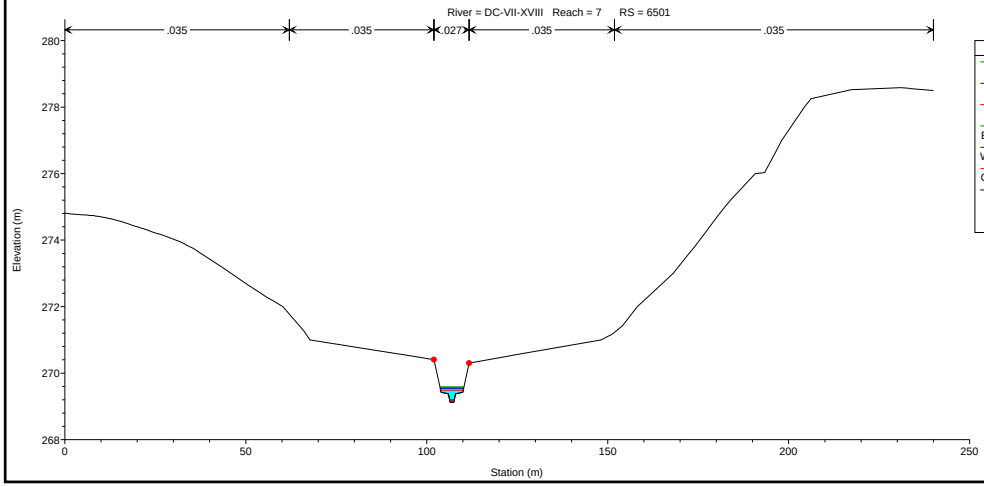

River = DC-VII-XVIII Reach = 7 RS = 6749.770
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

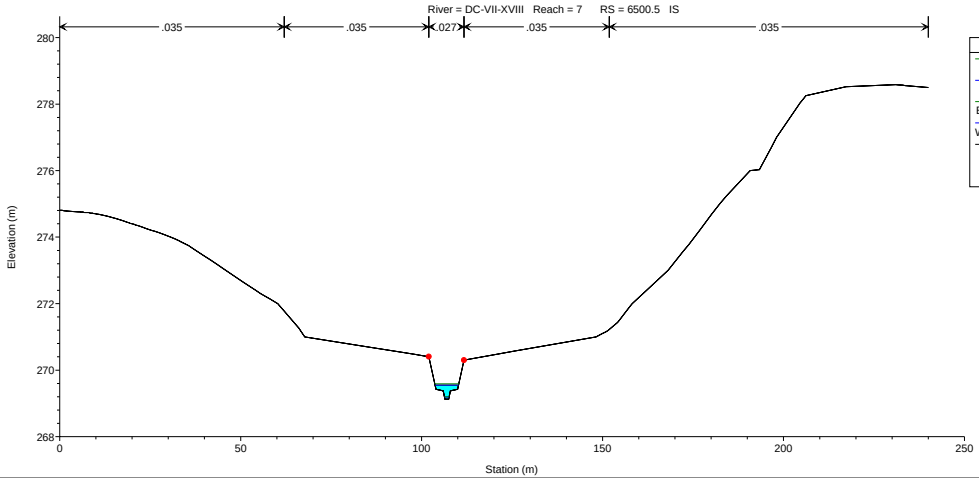

River = DC-VII-XVIII Reach = 7 RS = 6699.958
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

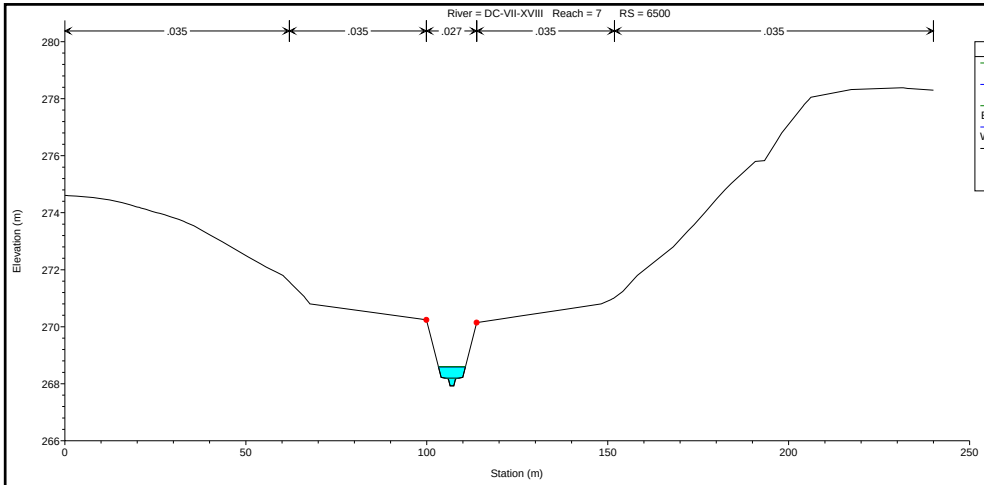

River = DC-VII-XVIII Reach = 7 RS = 6649.944
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

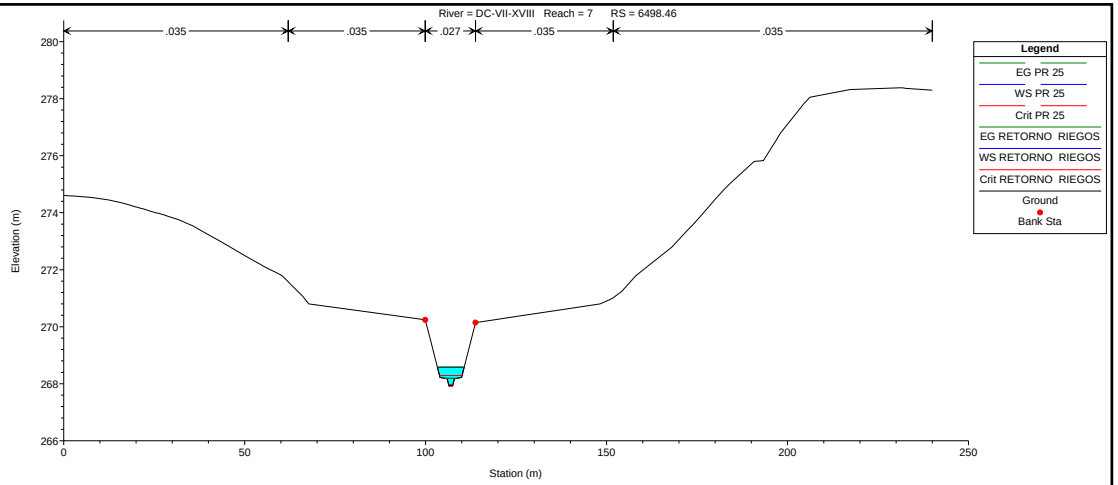

River = DC-VII-XVIII Reach = 7 RS = 6599.932
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

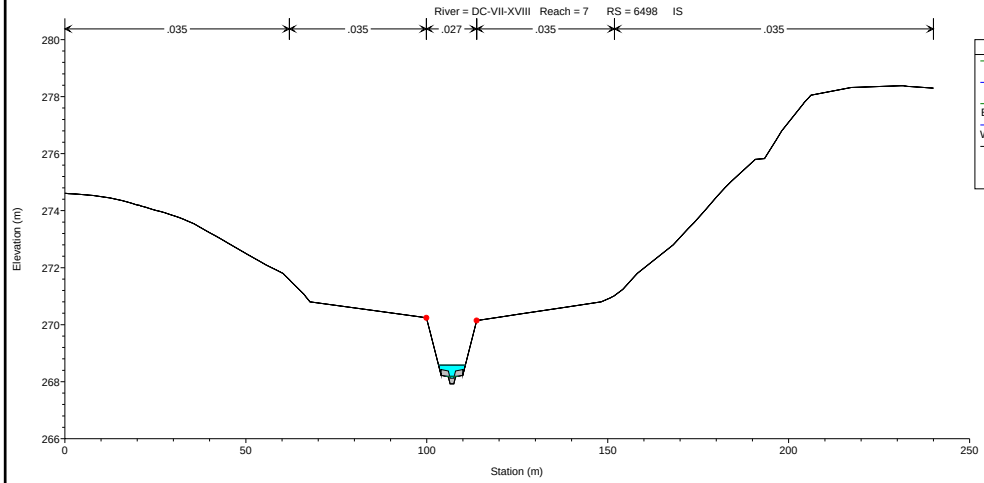

River = DC-VII-XVIII Reach = 7 RS = 6550
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

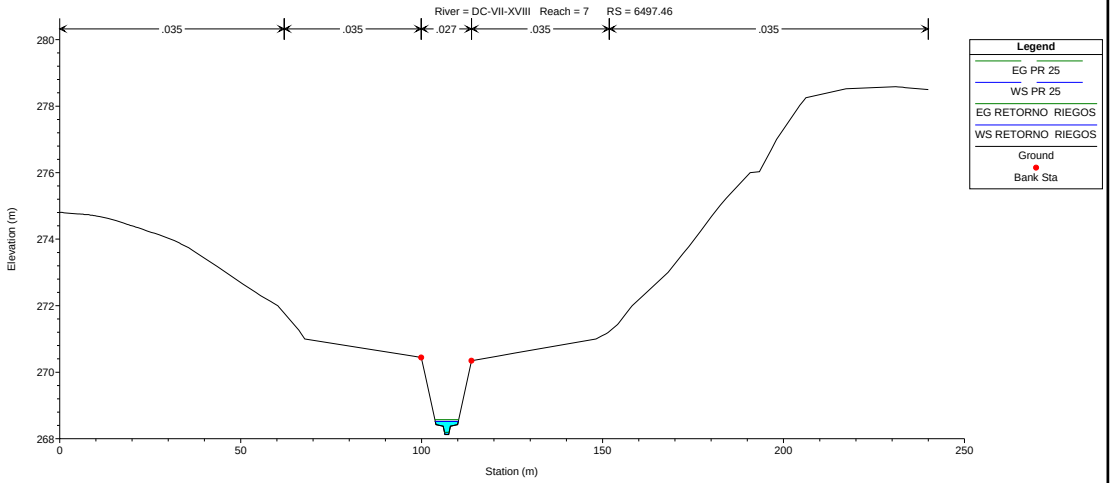

River = DC-VII-XVIII Reach = 7 RS = 6501
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

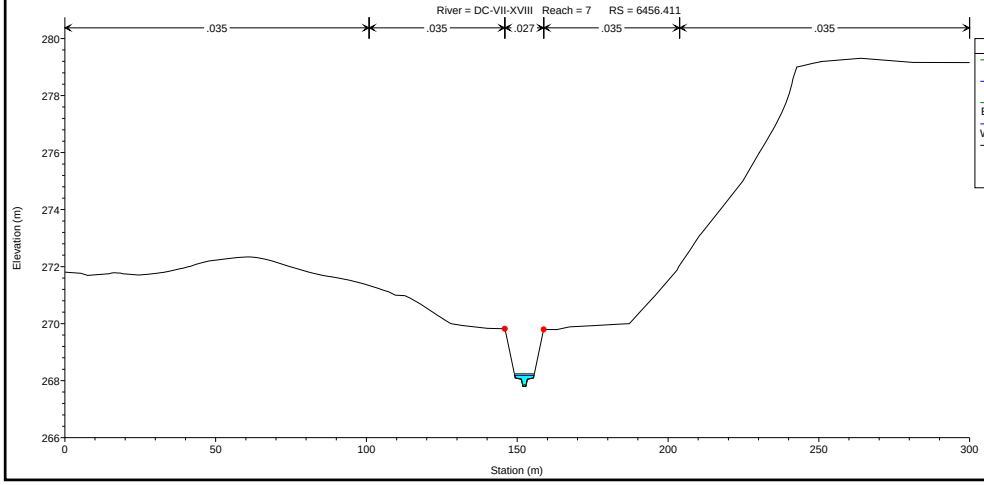

River = DC-VII-XVIII Reach = 7 RS = 6500.5 IS
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

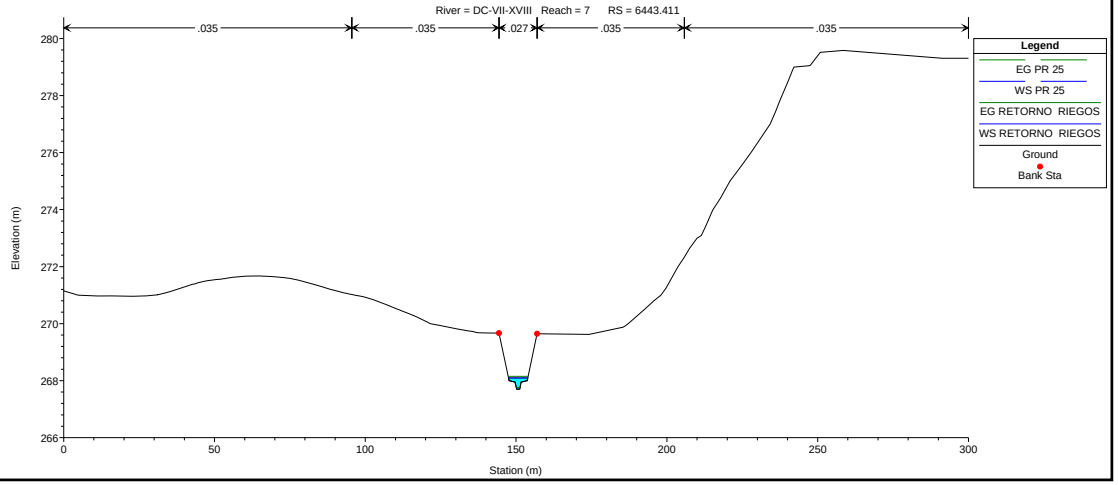

River = DC-VII-XVIII Reach = 7 RS = 6500
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

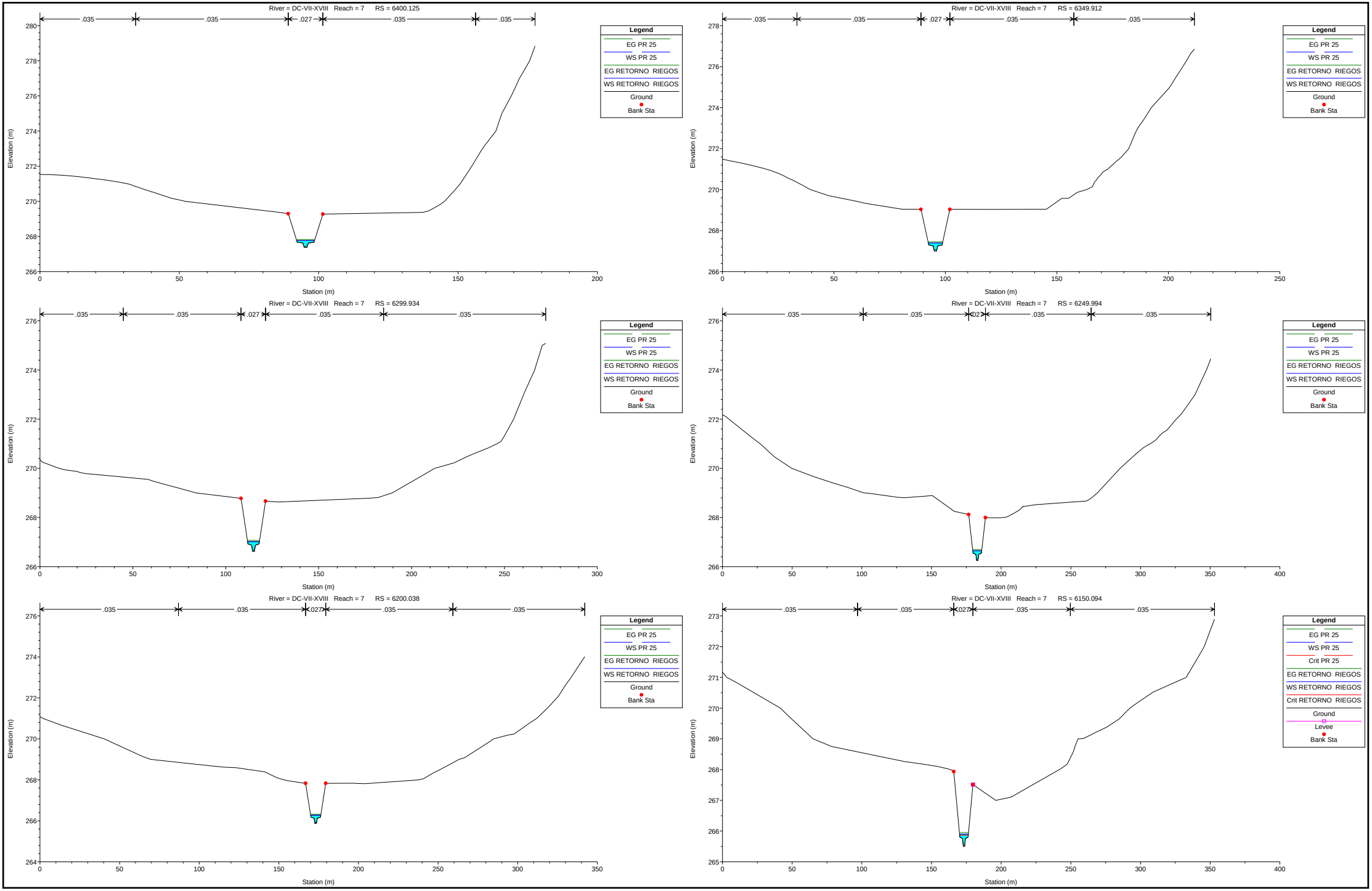

River = DC-VII-XVIII Reach = 7 RS = 6498.46
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

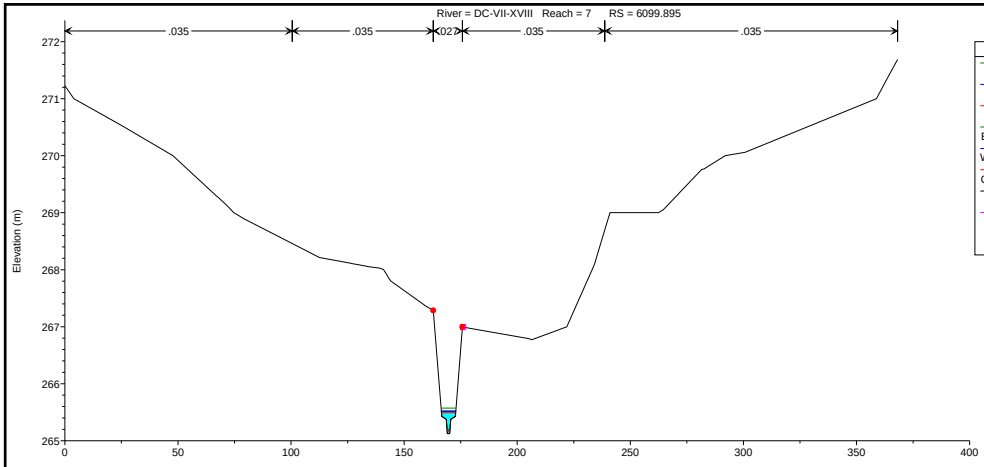

River = DC-VII-XVIII Reach = 7 RS = 6498 IS
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

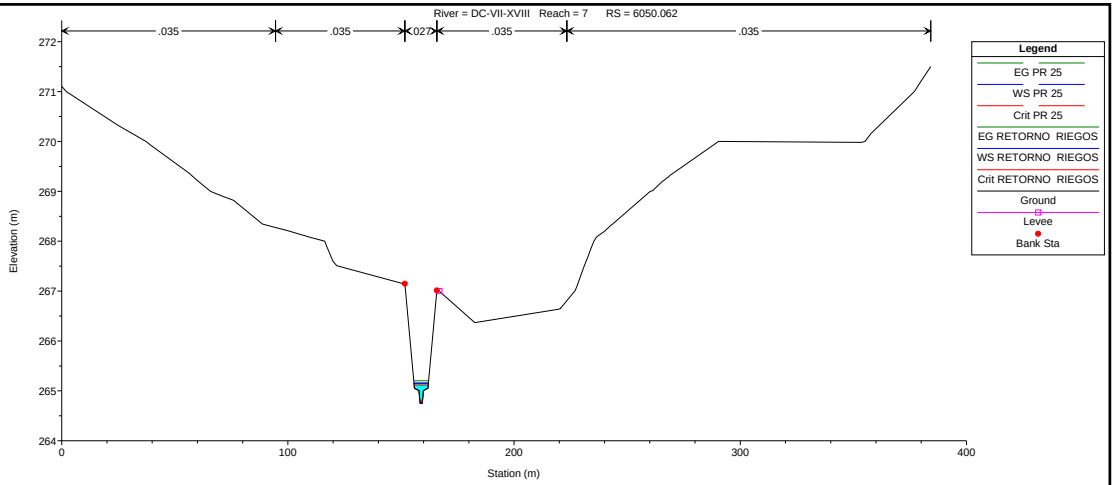

River = DC-VII-XVIII Reach = 7 RS = 6497.46
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

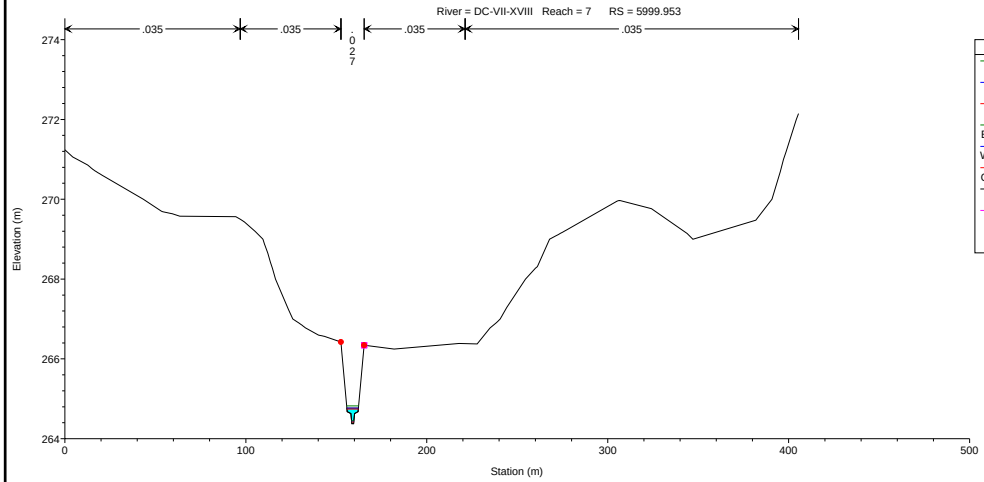

River = DC-VII-XVIII Reach = 7 RS = 6456.411
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

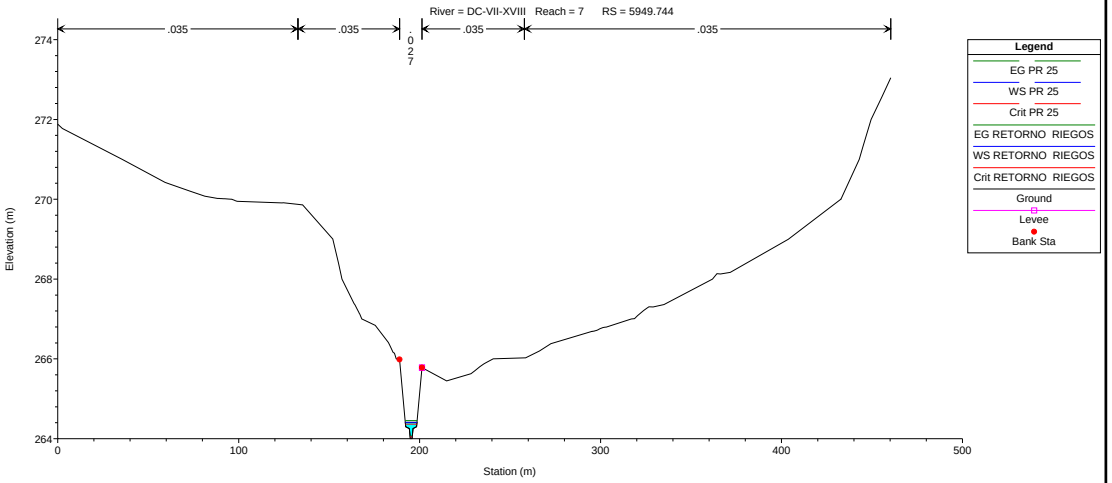

River = DC-VII-XVIII Reach = 7 RS = 6443.411
.035
.035
.027
.035
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

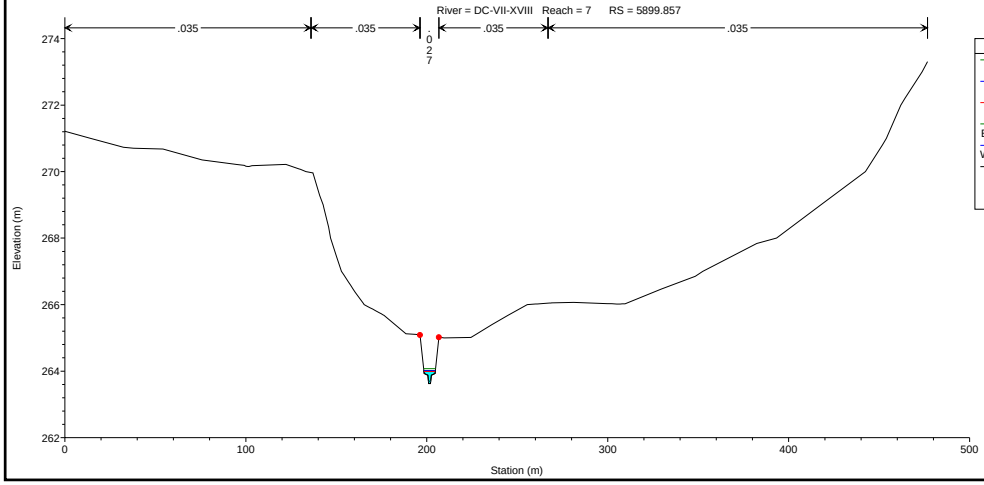

River = DC-VII-XVIII Reach = 7 RS = 6400.125
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 7 RS = 6349.912
River = DC-VII-XVIII Reach = 7 RS = 6299.934
River = DC-VII-XVIII Reach = 7 RS = 6249.994
River = DC-VII-XVIII Reach = 7 RS = 6200.038
River = DC-VII-XVIII Reach = 7 RS = 6150.094
Crit PR 25
Crit RETORNO RIEGOS
Levee

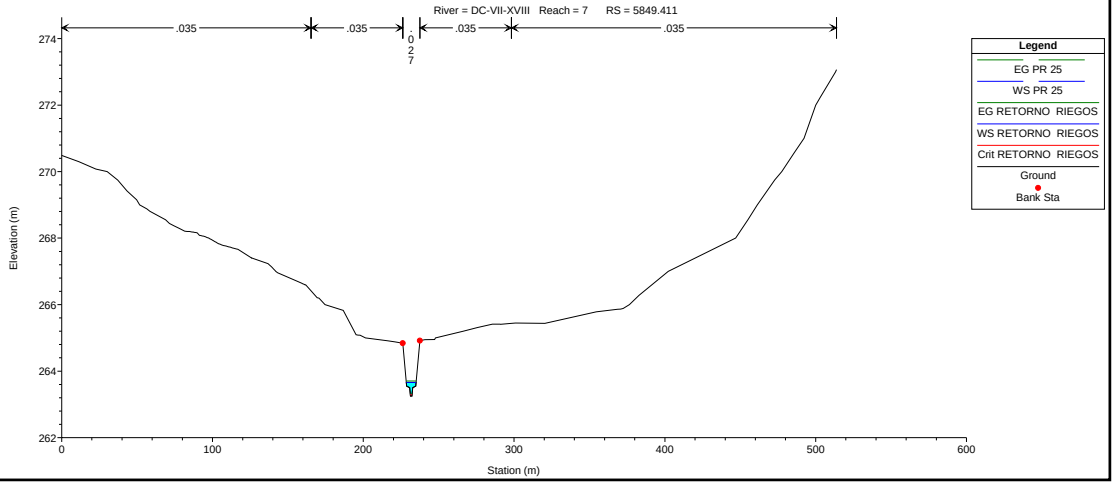

River = DC-VII-XVIII Reach = 7 RS = 6099.895
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

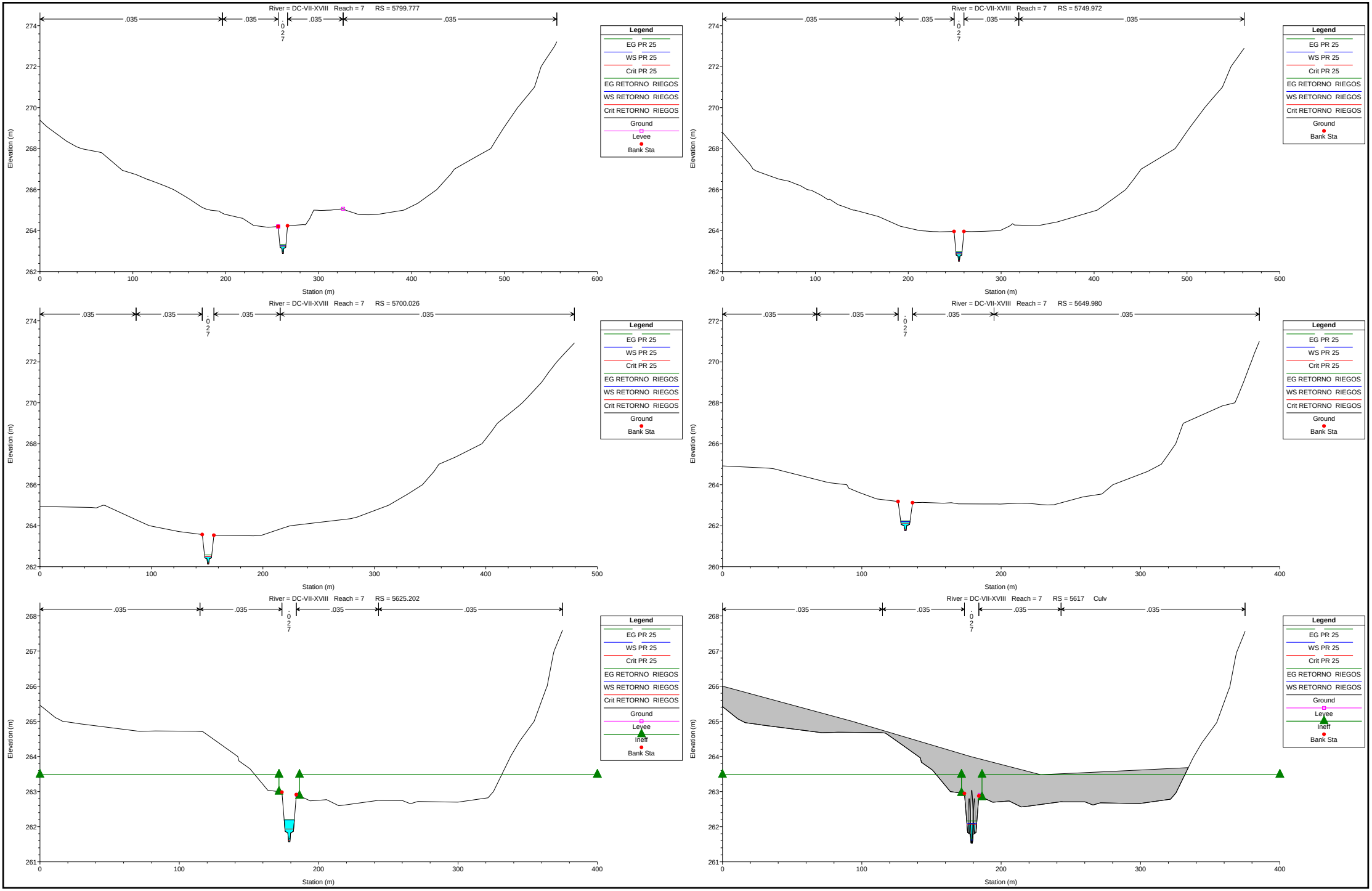

River = DC-VII-XVIII Reach = 7 RS = 6050.062
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

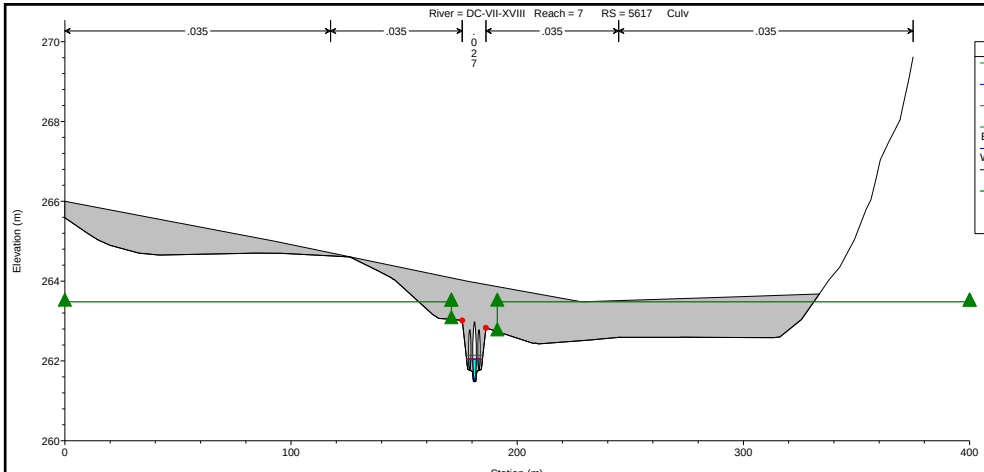

River = DC-VII-XVIII Reach = 7 RS = 5999.953
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

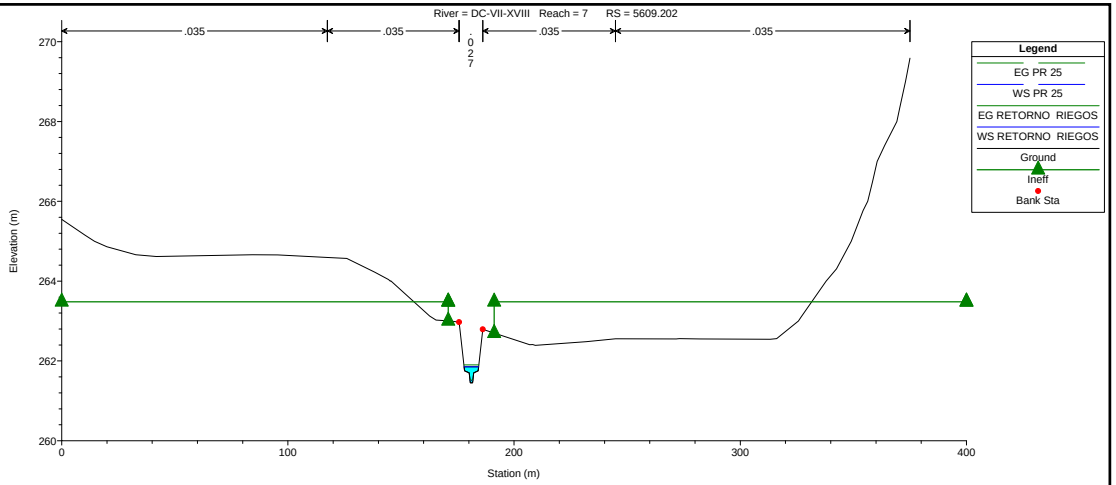

River = DC-VII-XVIII Reach = 7 RS = 5949.744
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

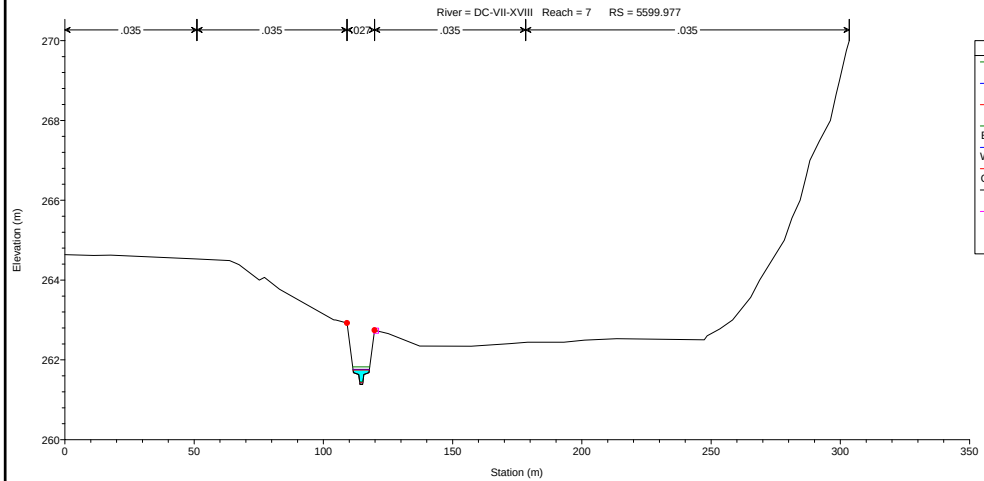

River = DC-VII-XVIII Reach = 7 RS = 5899.857
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

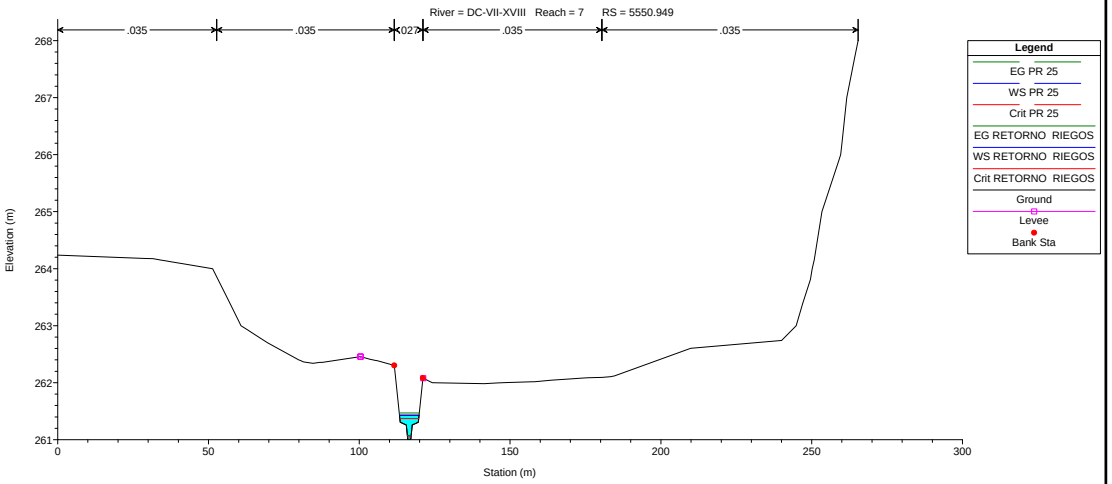

River = DC-VII-XVIII Reach = 7 RS = 5849.411
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

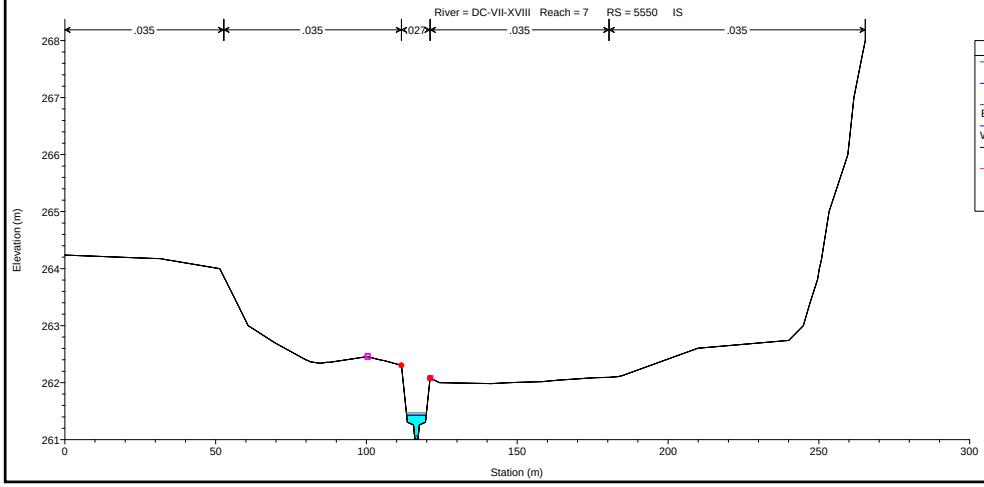

River = DC-VII-XVIII Reach = 7 RS = 5799.777
River = DC-VII-XVIII Reach = 7 RS = 5749.972
River = DC-VII-XVIII Reach = 7 RS = 5700.026
River = DC-VII-XVIII Reach = 7 RS = 5649.980
River = DC-VII-XVIII Reach = 7 RS = 5625.202
River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.035
.027
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

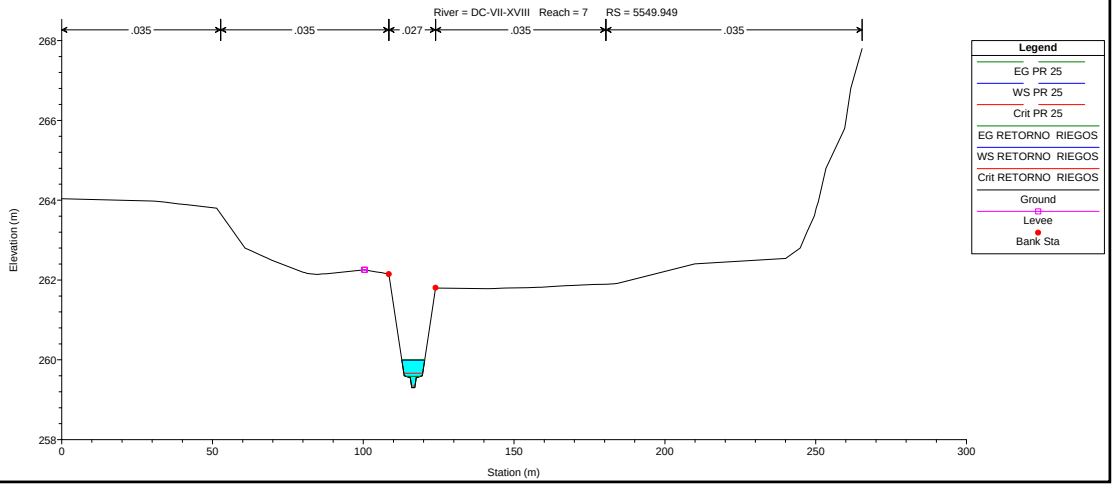

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

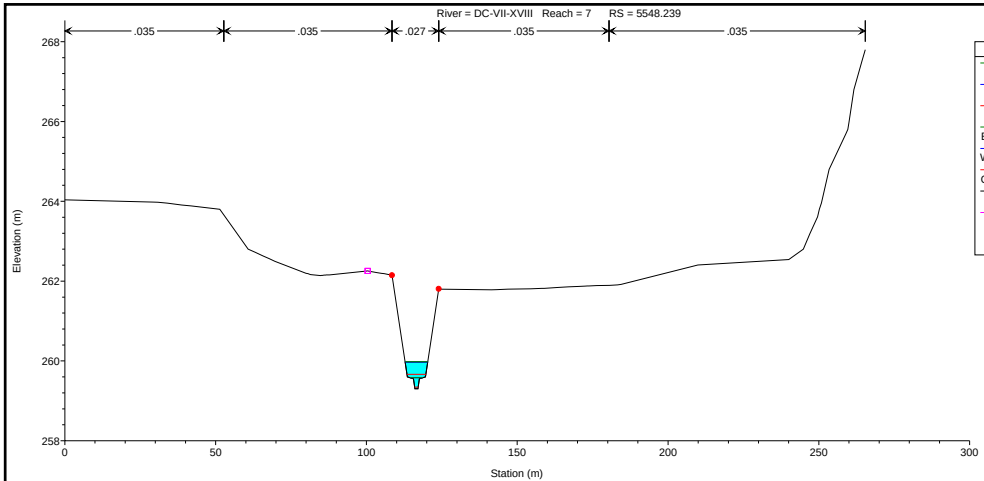

River = DC-VII-XVIII Reach = 7 RS = 5609.202
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

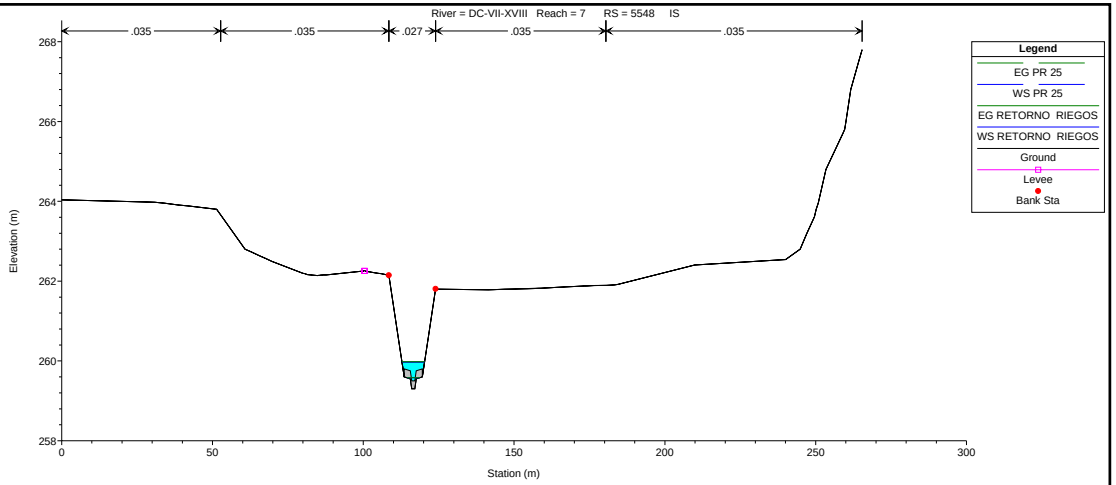

River = DC-VII-XVIII Reach = 7 RS = 5599.977
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

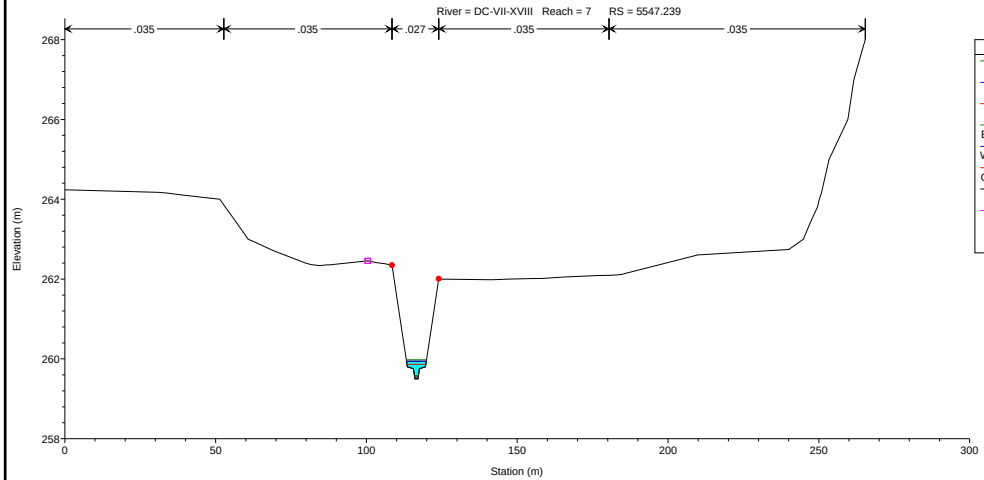

River = DC-VII-XVIII Reach = 7 RS = 5550.949
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

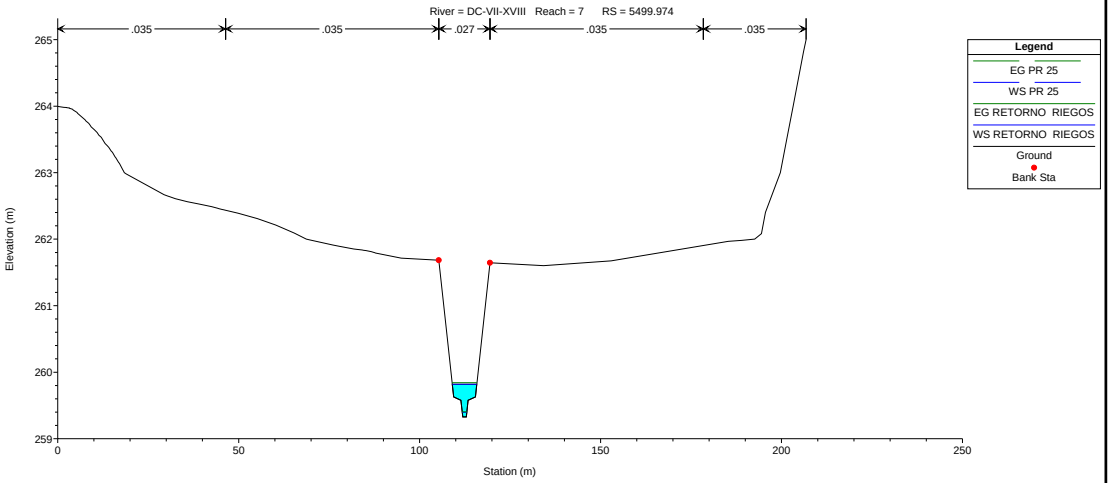

River = DC-VII-XVIII Reach = 7 RS = 5550 IS
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Bank Sta

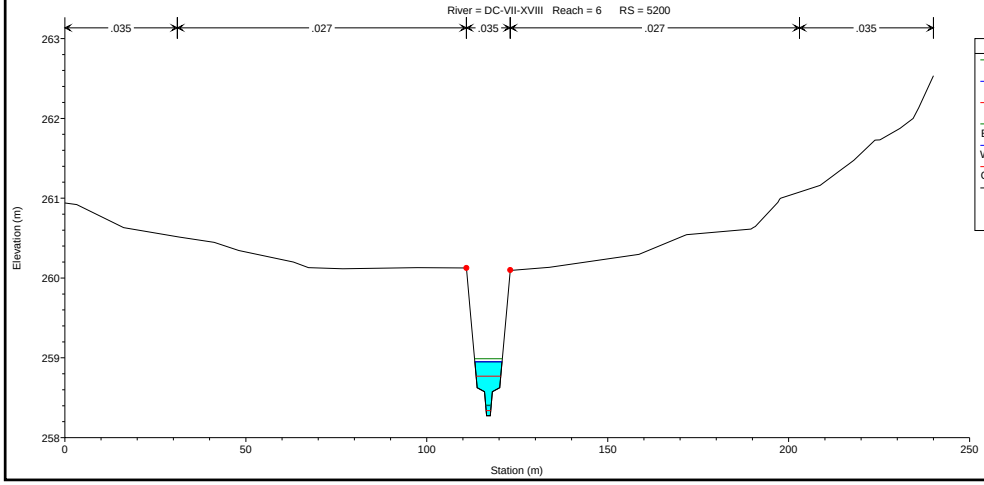

River = DC-VII-XVIII Reach = 7 RS = 5549.949
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

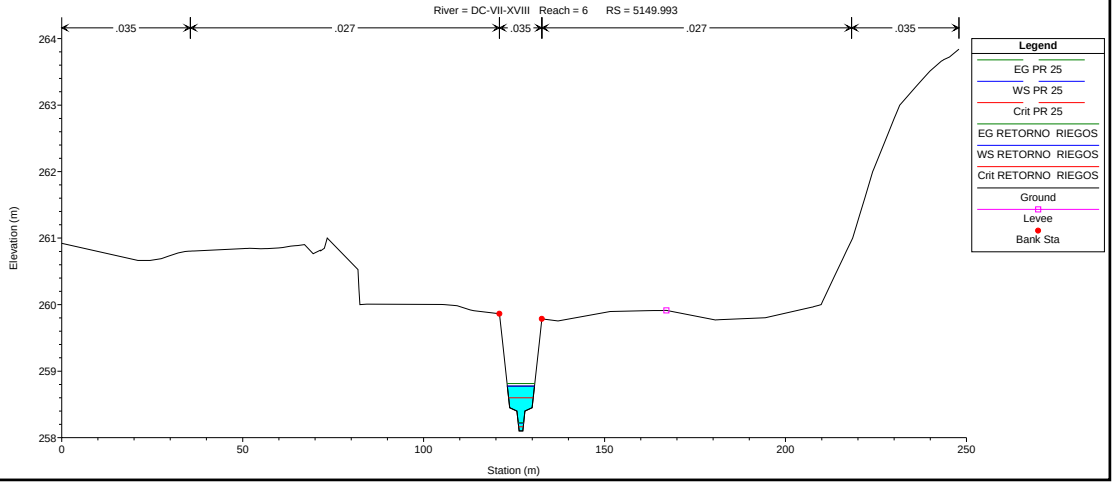

River = DC-VII-XVIII Reach = 7 RS = 5548.239
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

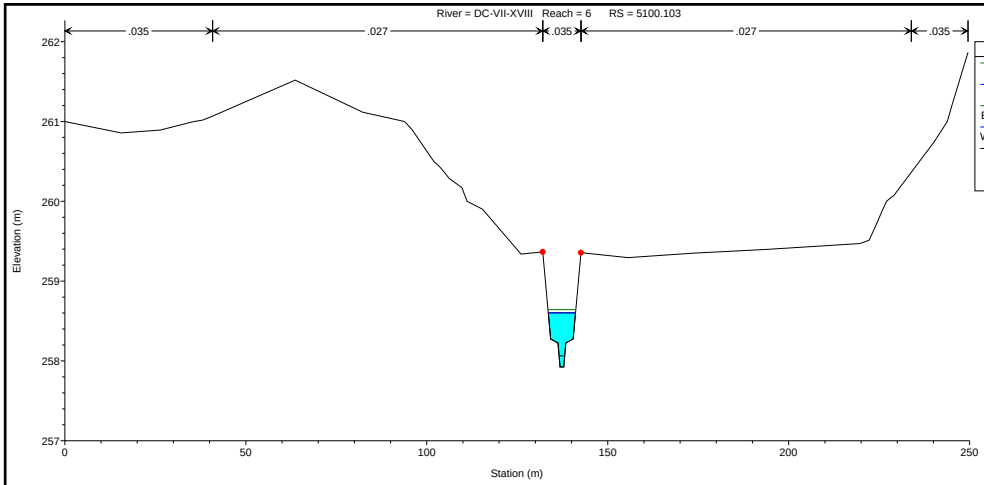

River = DC-VII-XVIII Reach = 7 RS = 5548 IS
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Bank Sta

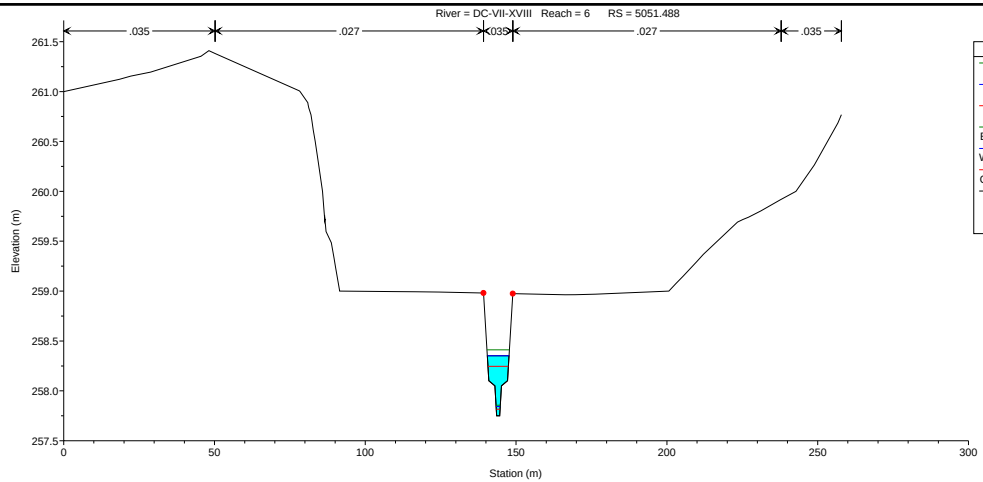

River = DC-VII-XVIII Reach = 7 RS = 5547.239
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

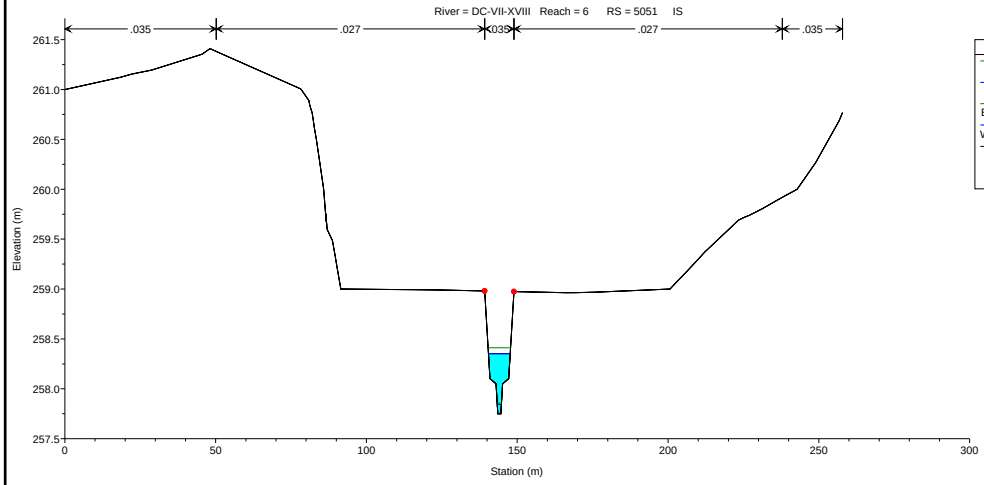

River = DC-VII-XVIII Reach = 7 RS = 5499.974
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

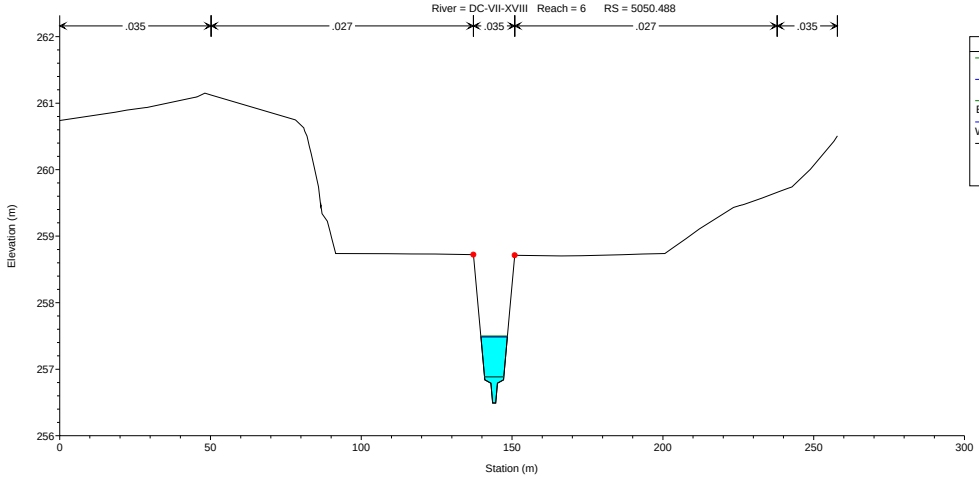

River = DC-VII-XVIII Reach = 6 RS = 5200
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

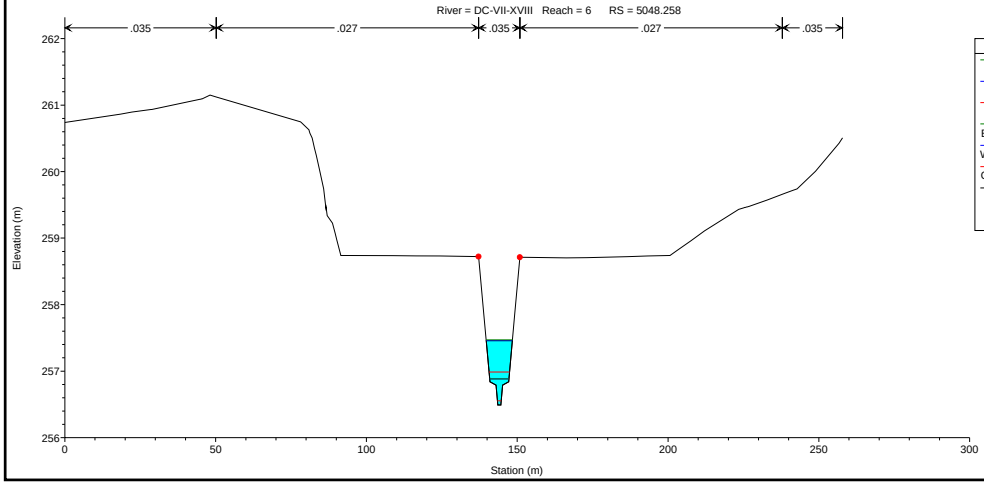

River = DC-VII-XVIII Reach = 6 RS = 5149.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

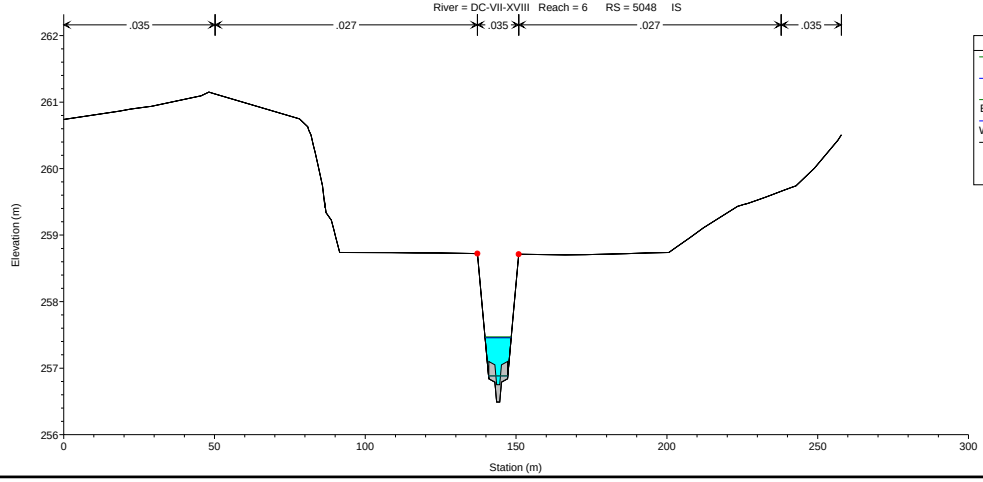

River = DC-VII-XVIII Reach = 6 RS = 5100.103
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

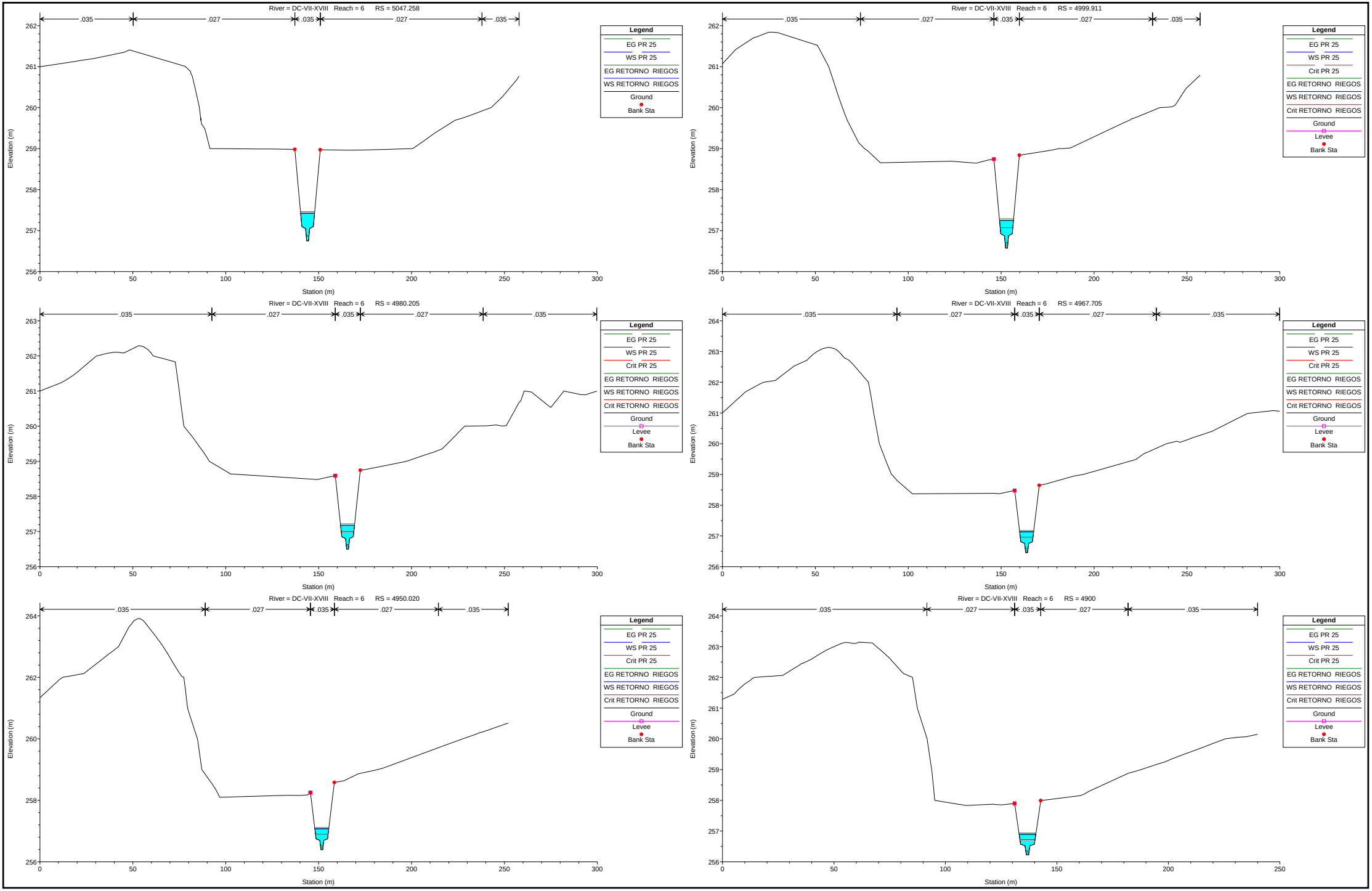

River = DC-VII-XVIII Reach = 6 RS = 5051.488
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

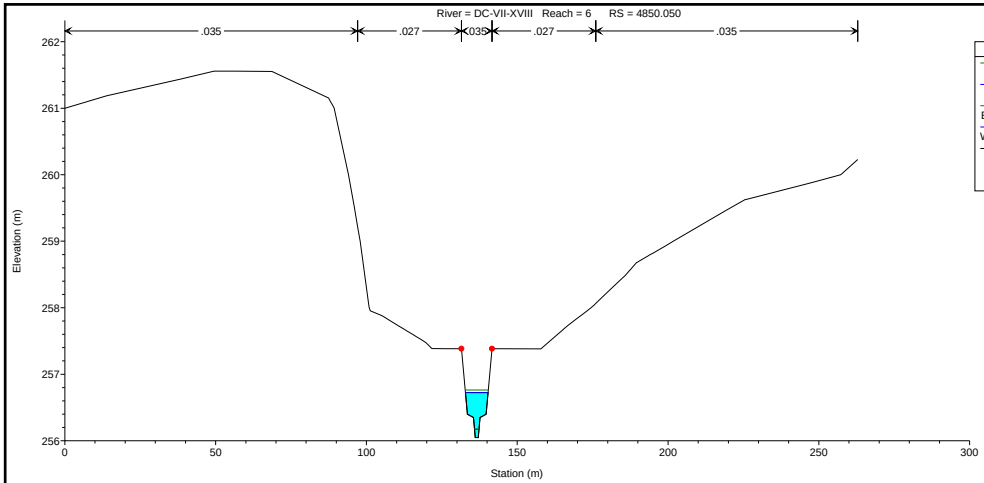

River = DC-VII-XVIII Reach = 6 RS = 5051 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

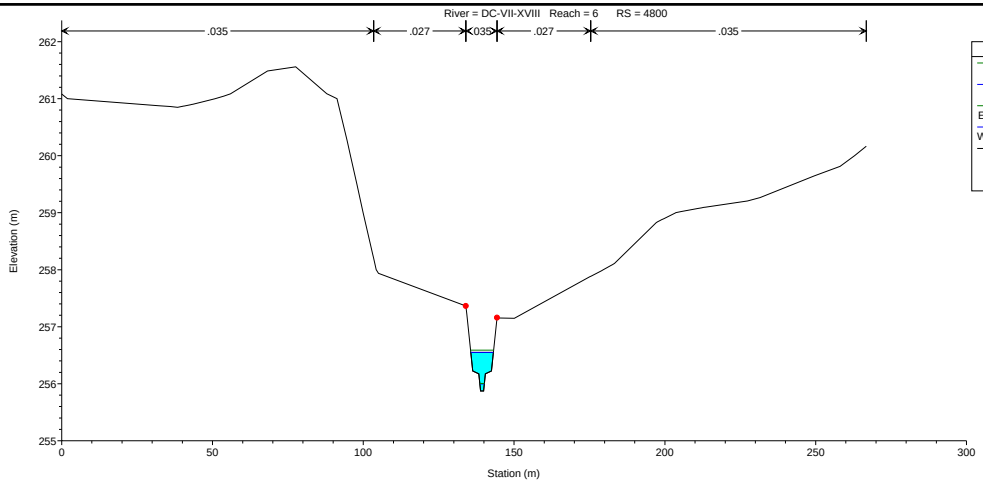

River = DC-VII-XVIII Reach = 6 RS = 5050.488
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

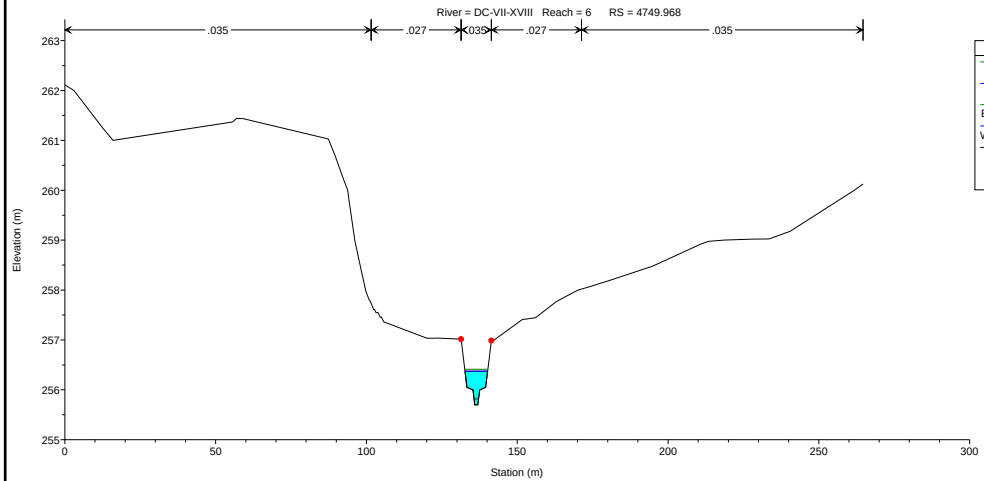

River = DC-VII-XVIII Reach = 6 RS = 5048.258
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

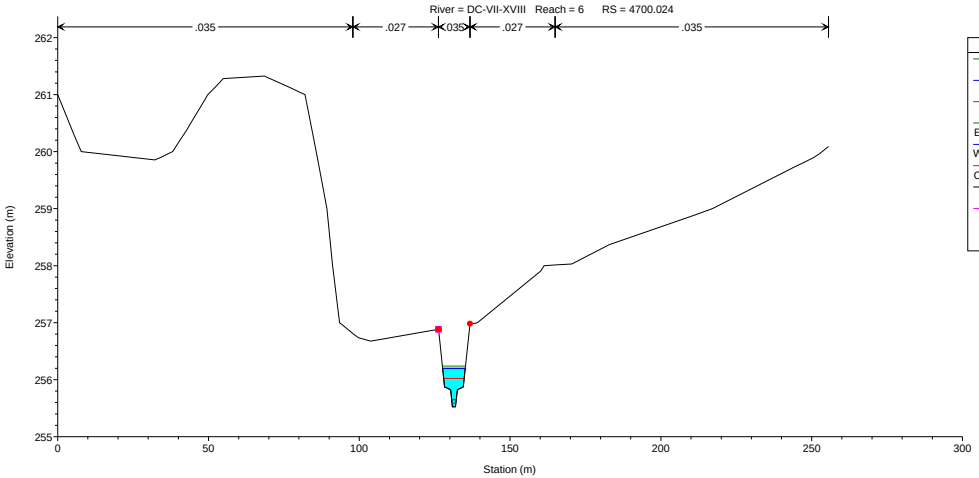

River = DC-VII-XVIII Reach = 6 RS = 5048 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

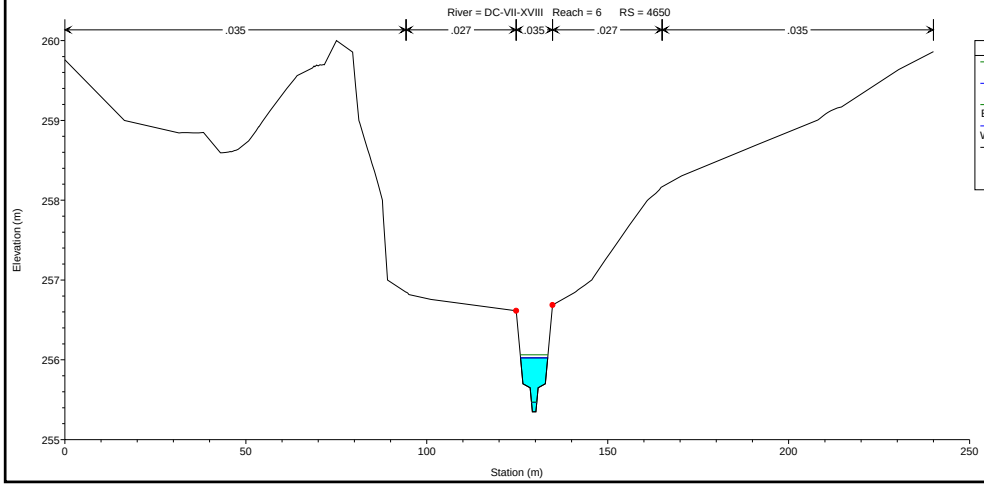

River = DC-VII-XVIII Reach = 6 RS = 5047.258
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)
River = DC-VII-XVIII Reach = 6 RS = 4999.911
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4980.205
River = DC-VII-XVIII Reach = 6 RS = 4967.705
River = DC-VII-XVIII Reach = 6 RS = 4950.020
River = DC-VII-XVIII Reach = 6 RS = 4900

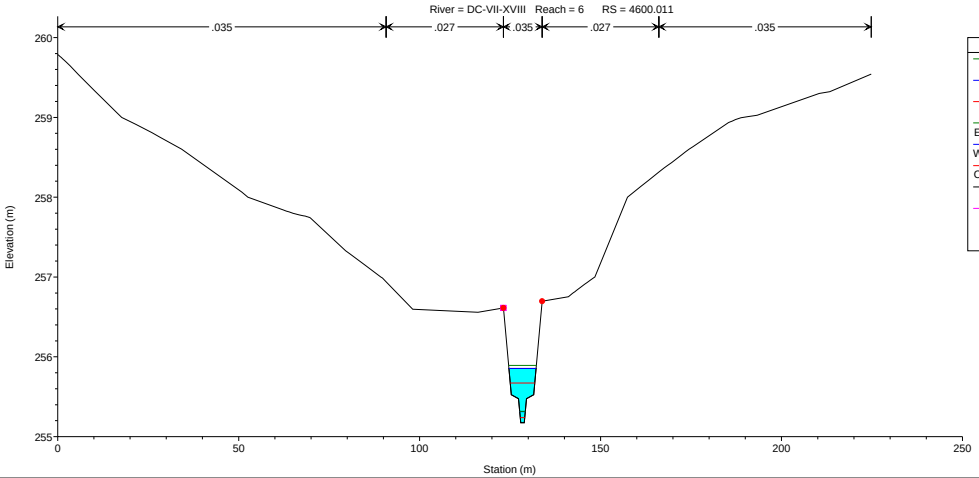

River = DC-VII-XVIII Reach = 6 RS = 4850.050
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

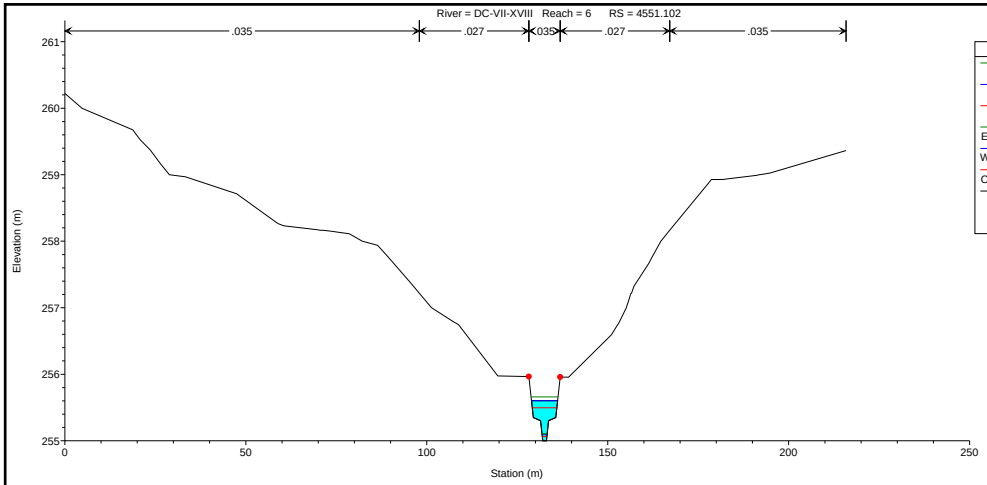

River = DC-VII-XVIII Reach = 6 RS = 4800
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

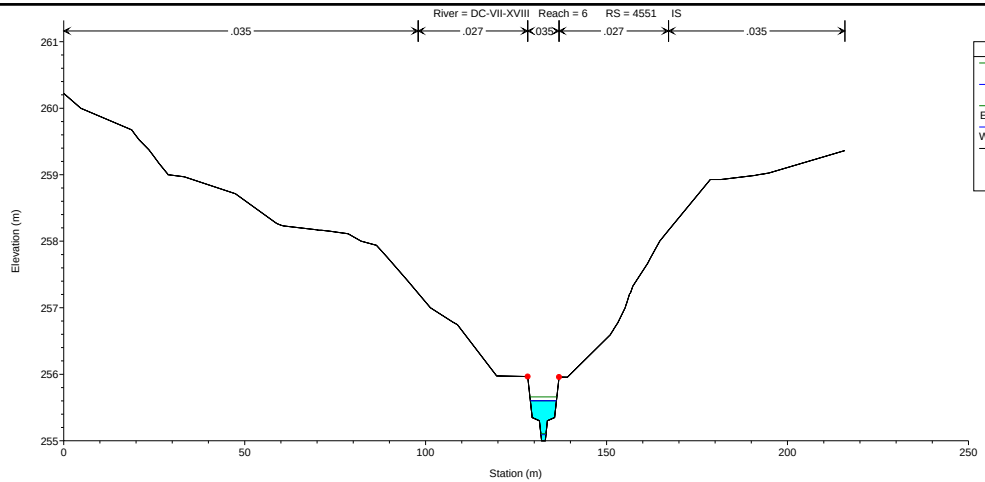

River = DC-VII-XVIII Reach = 6 RS = 4749.968
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

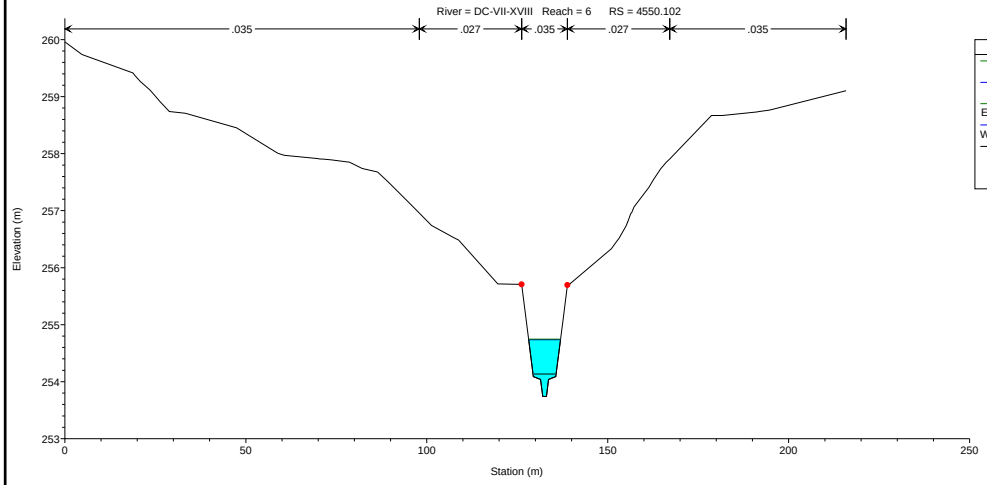

River = DC-VII-XVIII Reach = 6 RS = 4700.024
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

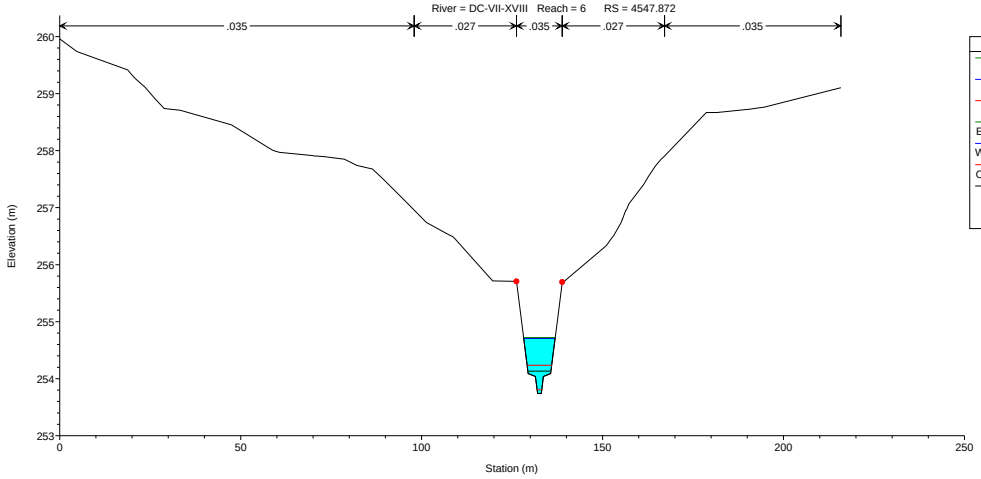

River = DC-VII-XVIII Reach = 6 RS = 4650
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

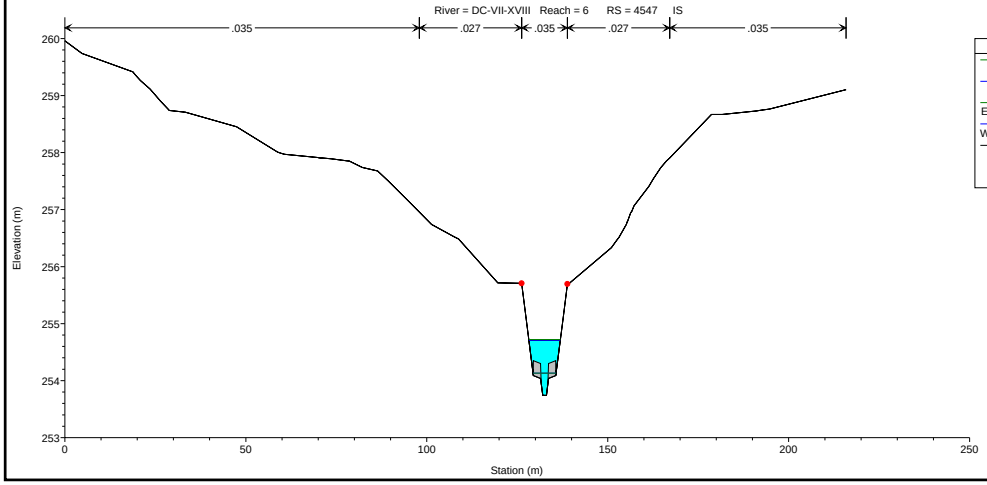

River = DC-VII-XVIII Reach = 6 RS = 4600.011
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

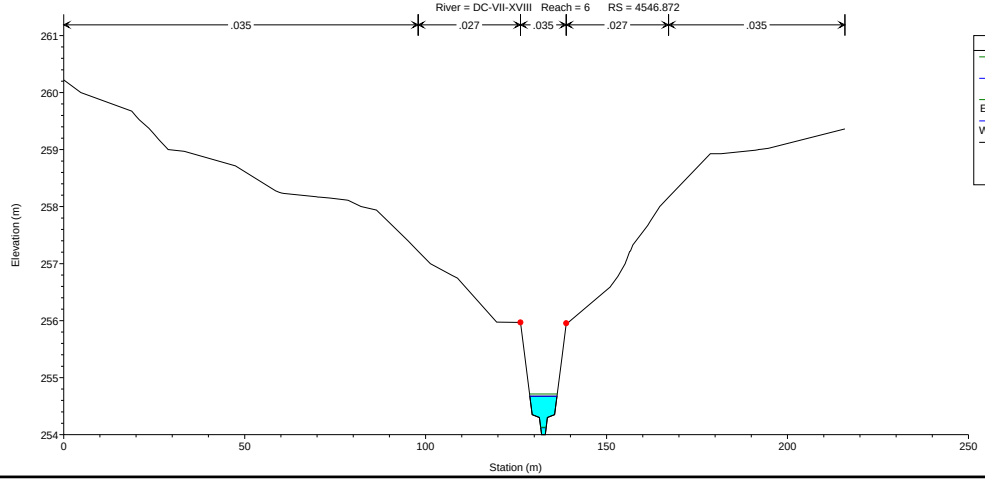

River = DC-VII-XVIII Reach = 6 RS = 4551.102
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

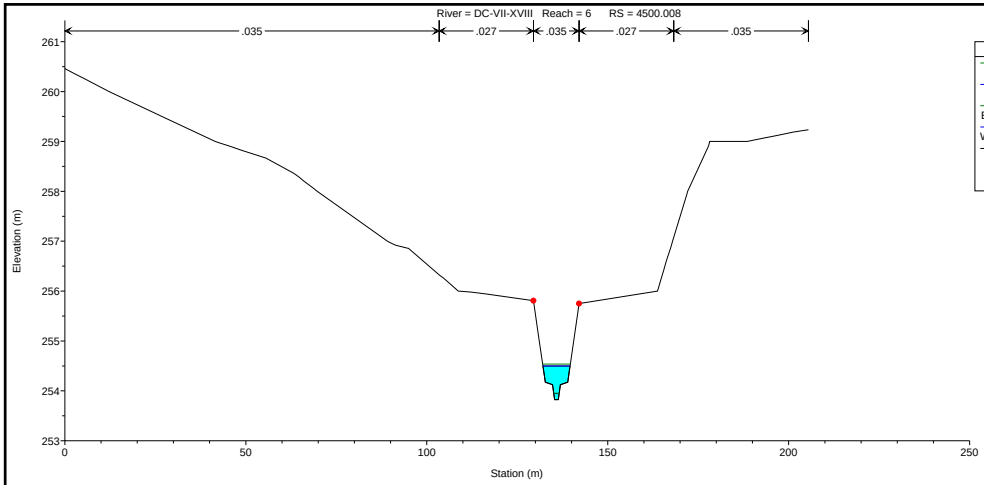

River = DC-VII-XVIII Reach = 6 RS = 4551 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

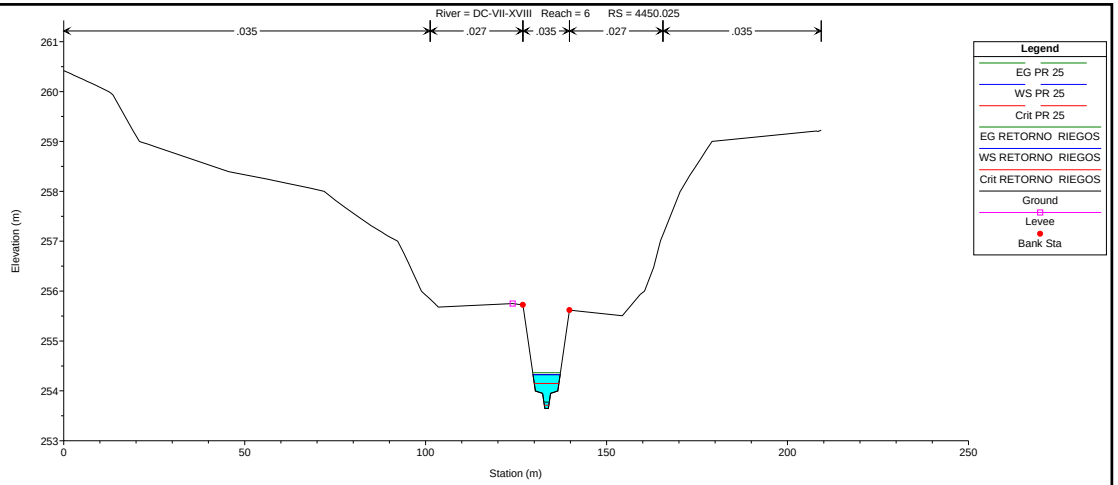

River = DC-VII-XVIII Reach = 6 RS = 4550.102
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

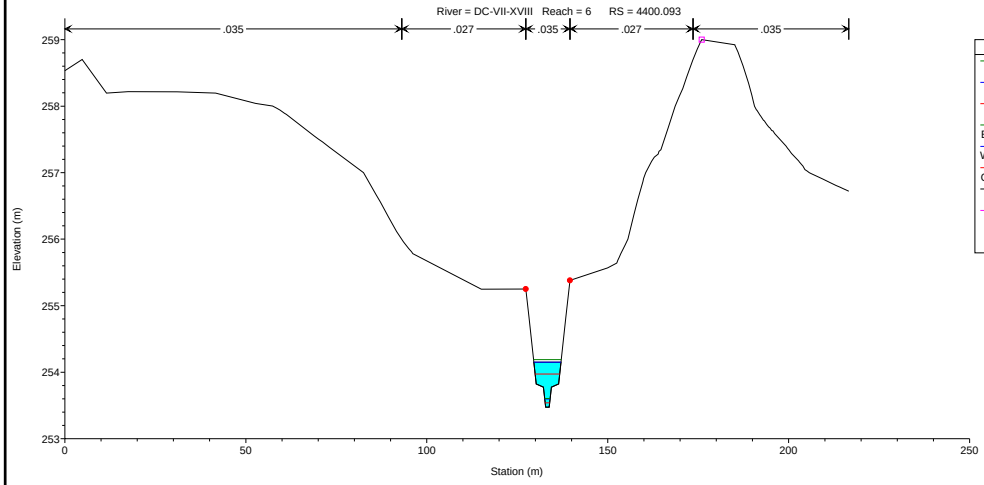

River = DC-VII-XVIII Reach = 6 RS = 4547.872
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

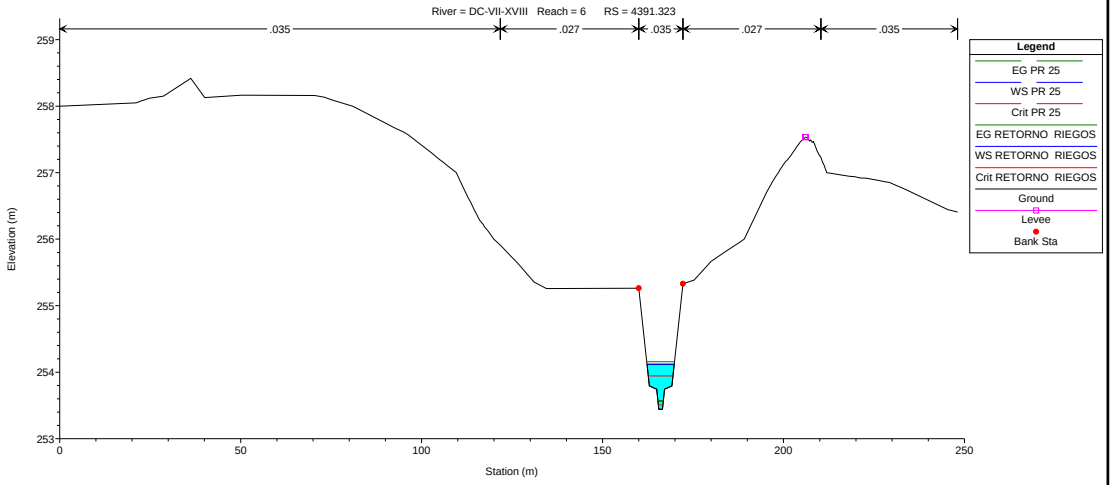

River = DC-VII-XVIII Reach = 6 RS = 4547 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

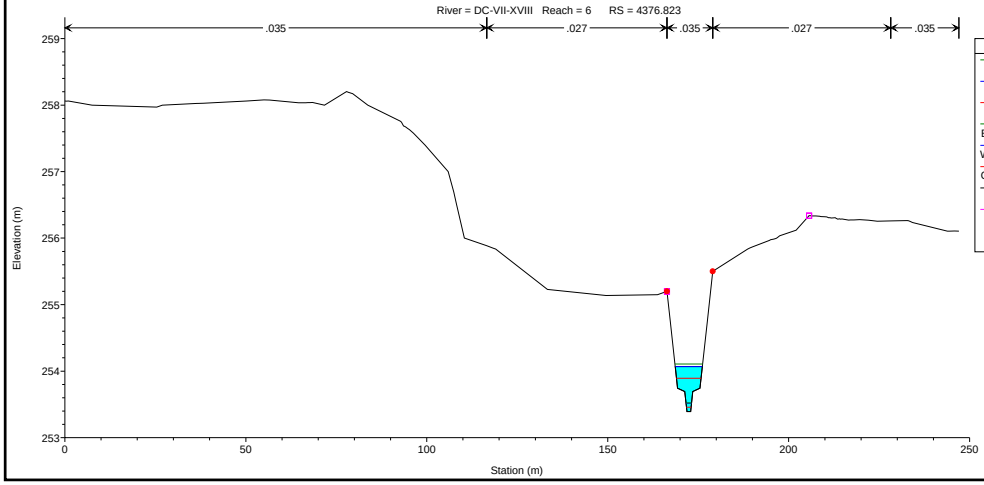

River = DC-VII-XVIII Reach = 6 RS = 4546.872
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

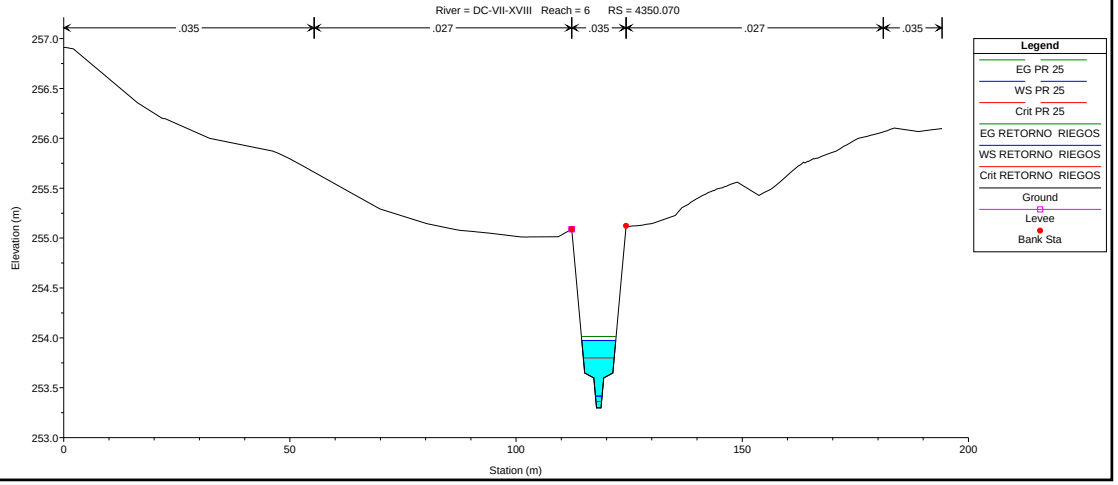

River = DC-VII-XVIII Reach = 6 RS = 4500.008
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

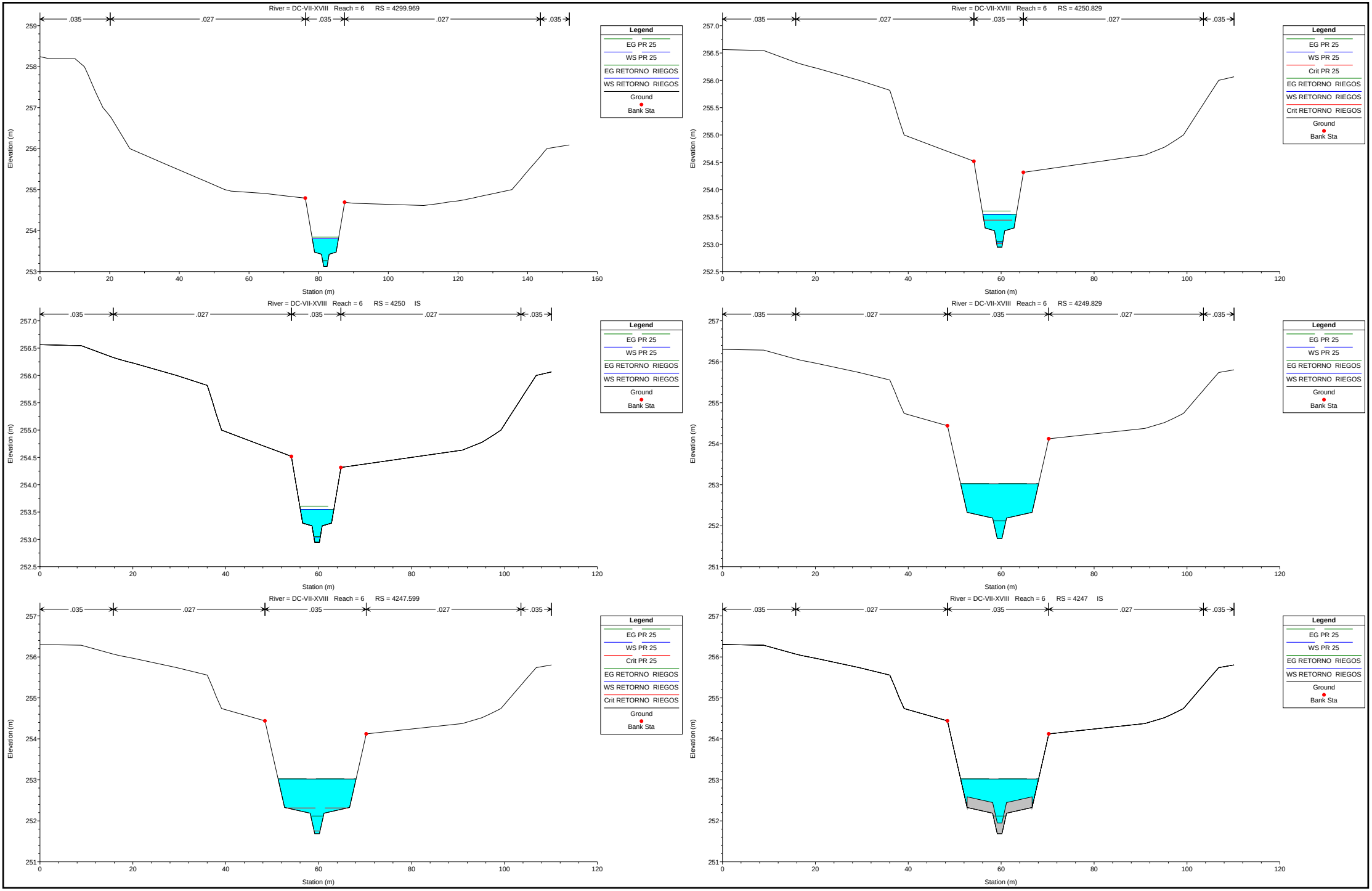

River = DC-VII-XVIII Reach = 6 RS = 4450.025
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

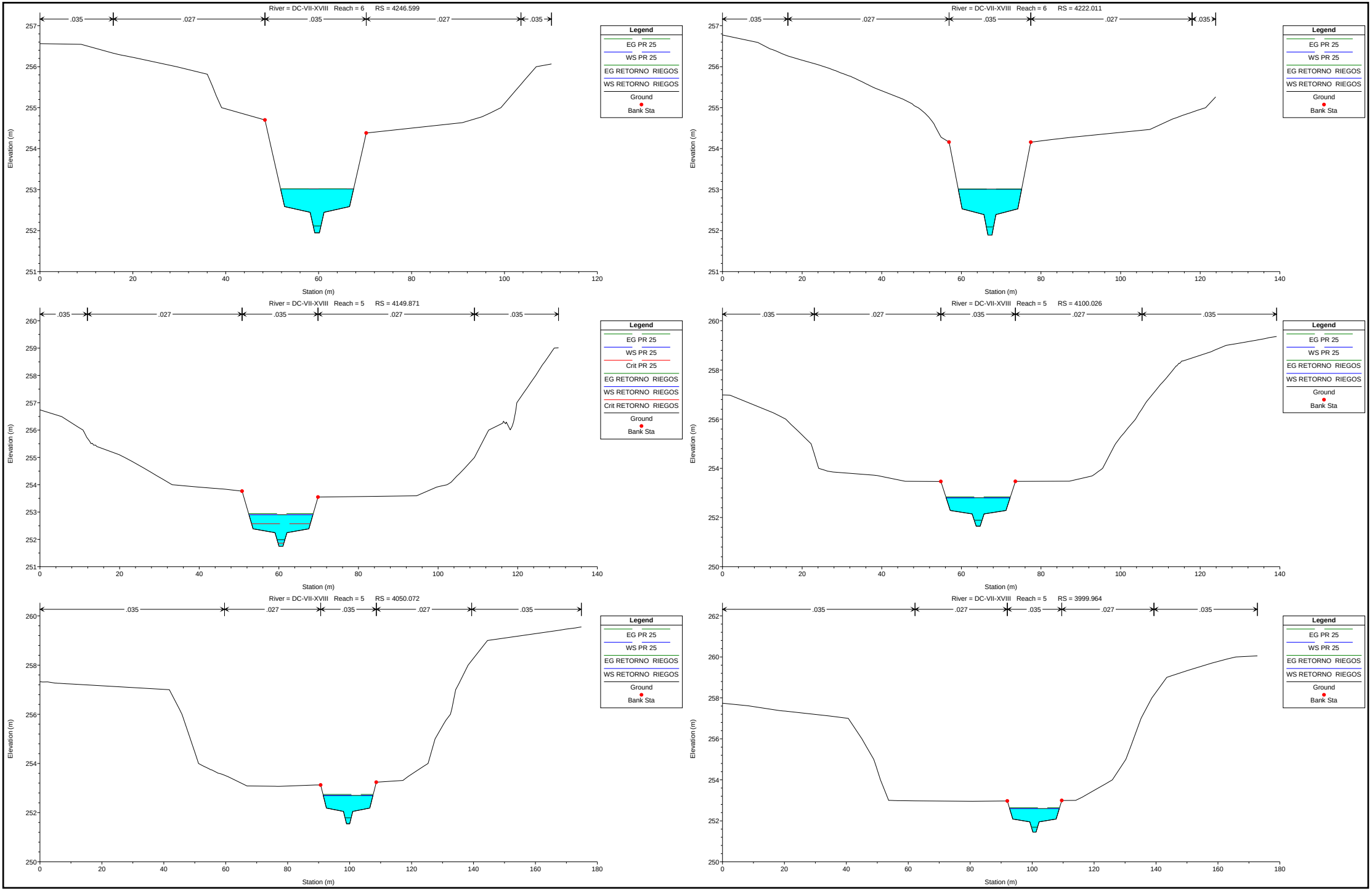

River = DC-VII-XVIII Reach = 6 RS = 4400.093
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

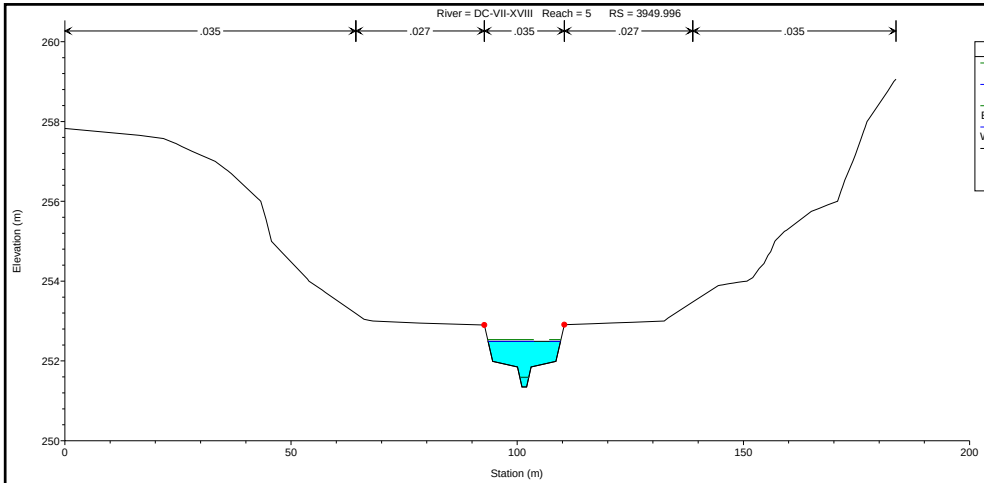

River = DC-VII-XVIII Reach = 6 RS = 4391.323
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

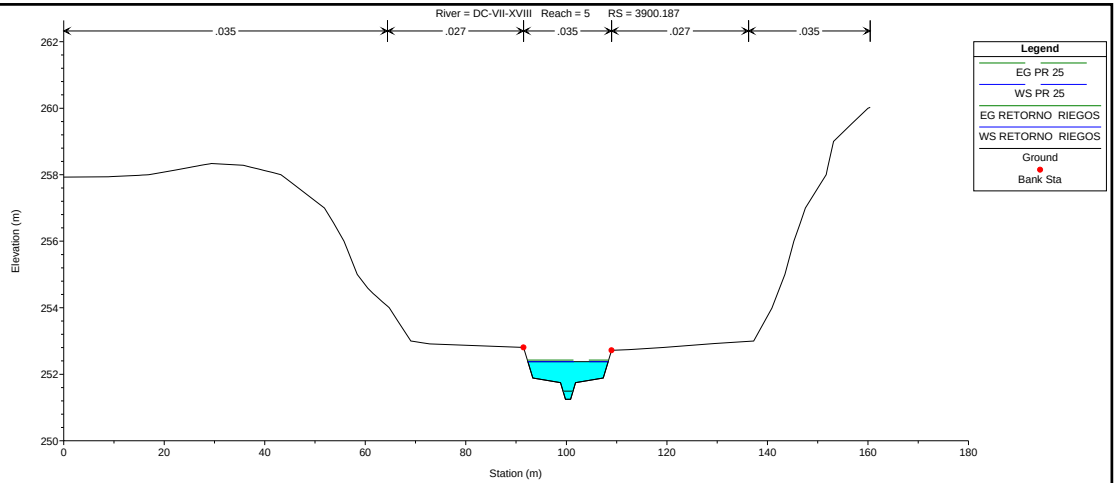

River = DC-VII-XVIII Reach = 6 RS = 4376.823
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

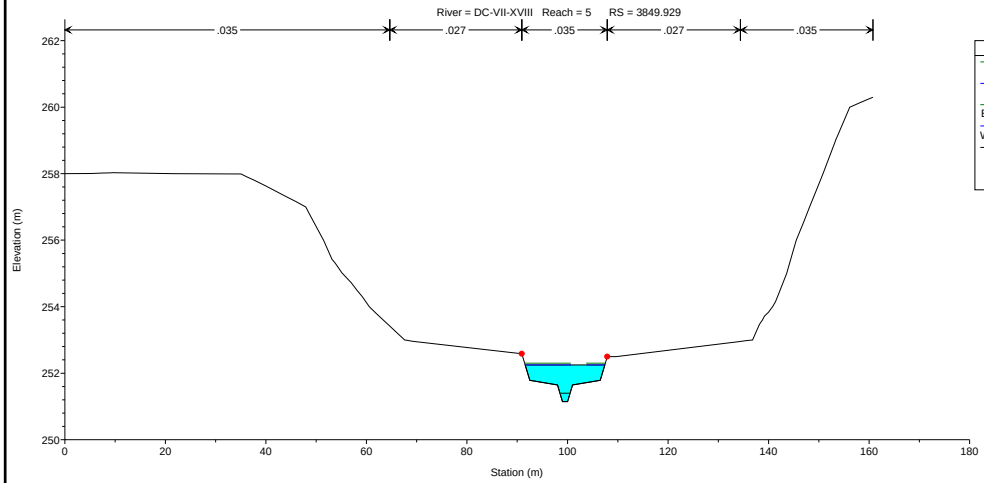

River = DC-VII-XVIII Reach = 6 RS = 4350.070
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

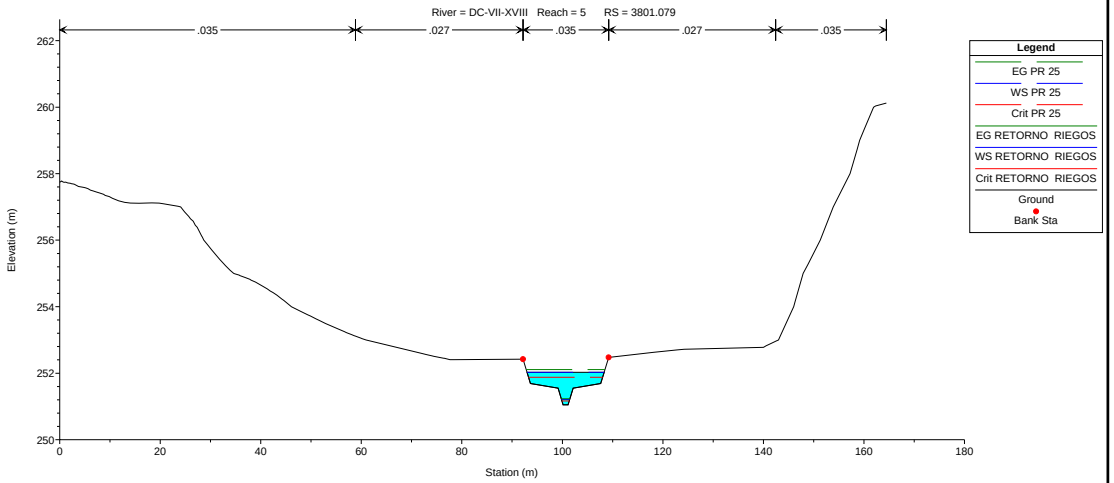

River = DC-VII-XVIII Reach = 6 RS = 4299.969
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4250.829
Crit PR 25
Crit RETORNO RIEGOS
River = DC-VII-XVIII Reach = 6 RS = 4250 IS
River = DC-VII-XVIII Reach = 6 RS = 4249.829
River = DC-VII-XVIII Reach = 6 RS = 4247.599
River = DC-VII-XVIII Reach = 6 RS = 4247 IS

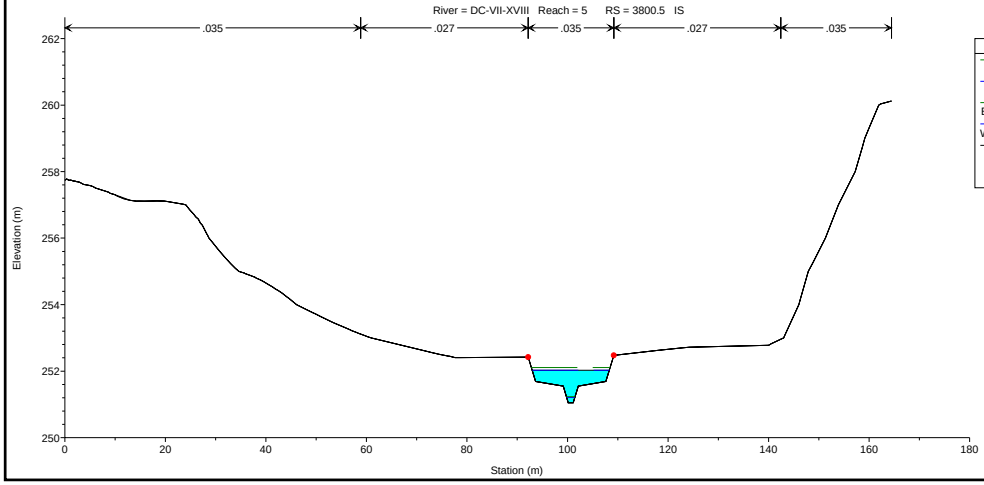

River = DC-VII-XVIII Reach = 6 RS = 4246.599
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4222.011
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4149.871
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4100.026
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4050.072
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 3999.964
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

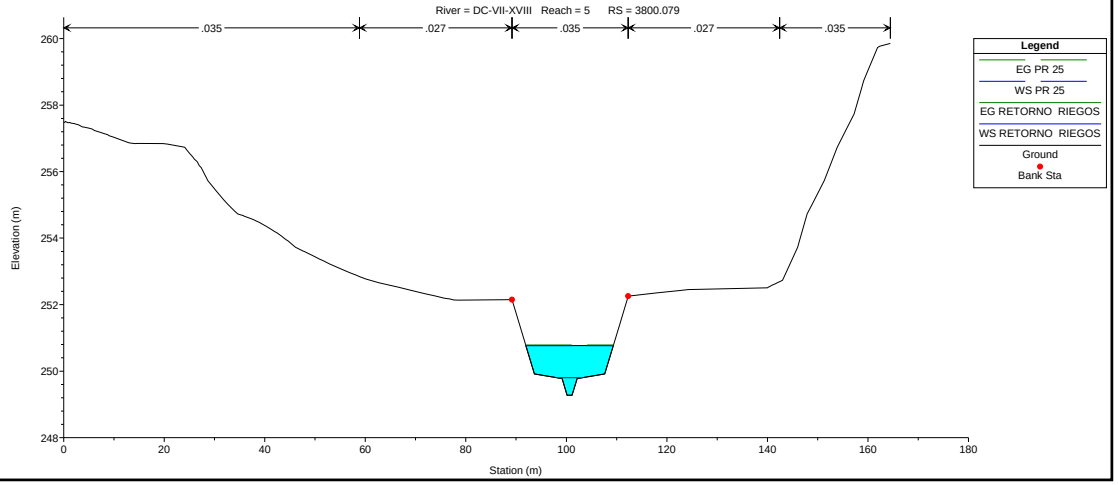

River = DC-VII-XVIII Reach = 5 RS = 3949.996
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

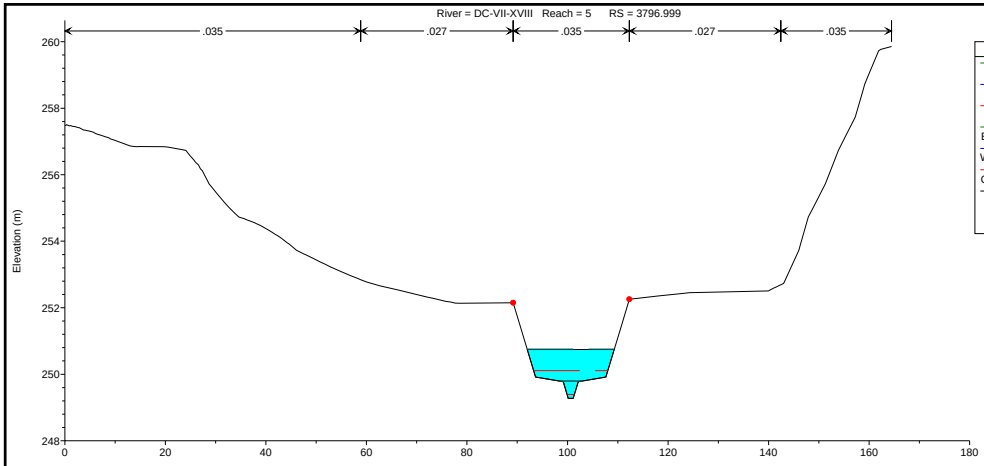

River = DC-VII-XVIII Reach = 5 RS = 3900.187
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

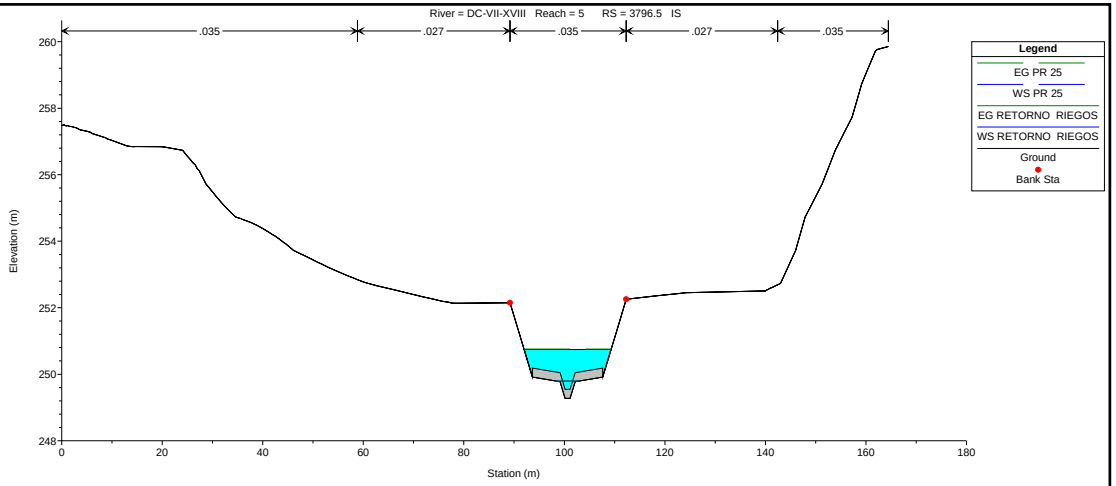

River = DC-VII-XVIII Reach = 5 RS = 3849.929
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

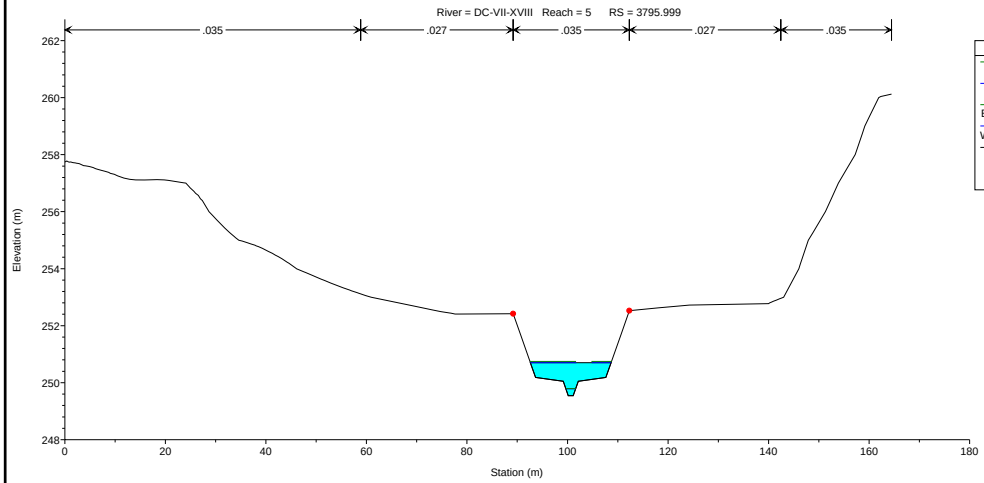

River = DC-VII-XVIII Reach = 5 RS = 3801.079
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

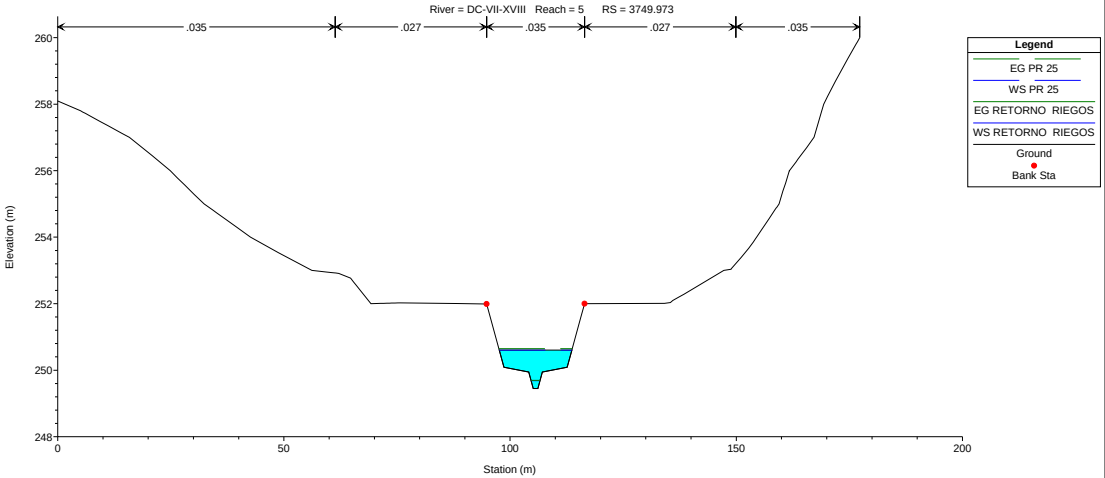

River = DC-VII-XVIII Reach = 5 RS = 3800.5 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

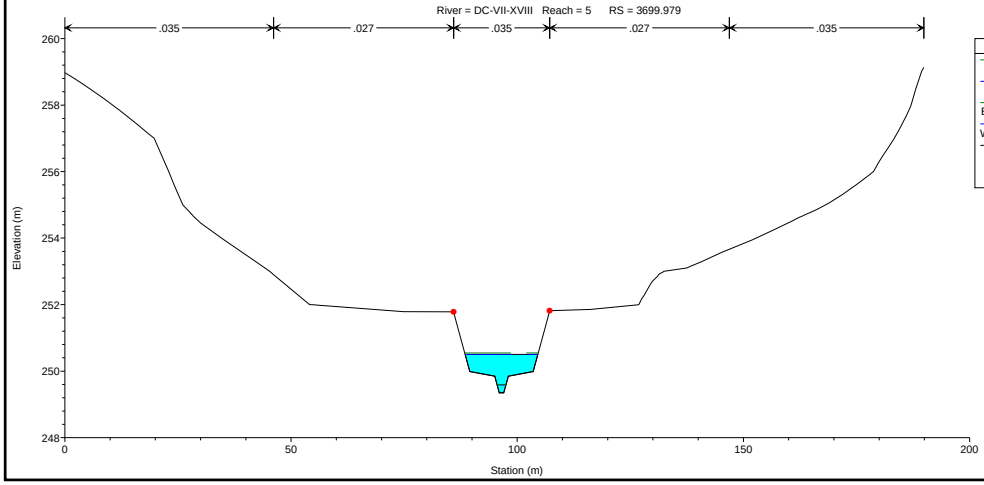

River = DC-VII-XVIII Reach = 5 RS = 3800.079
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

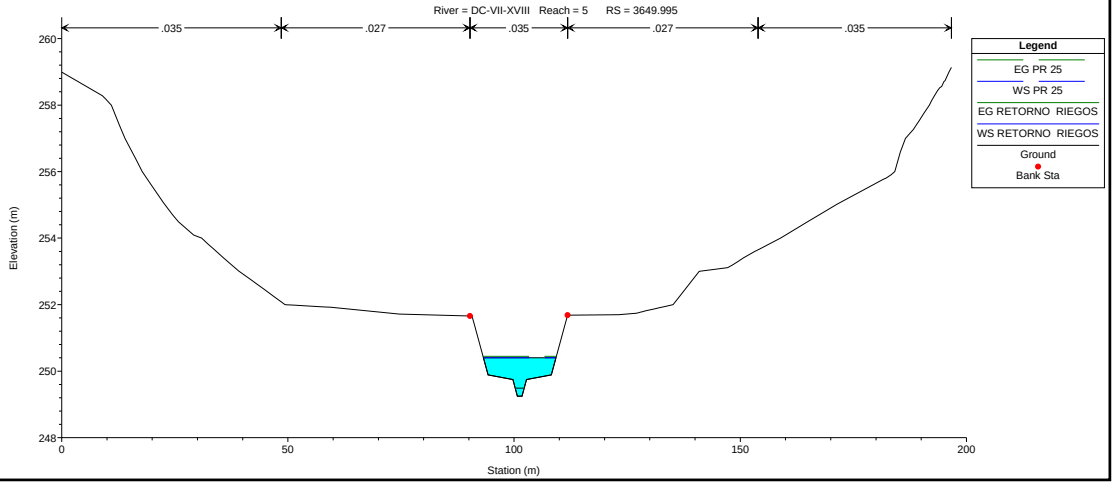

River = DC-VII-XVIII Reach = 5 RS = 3796.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

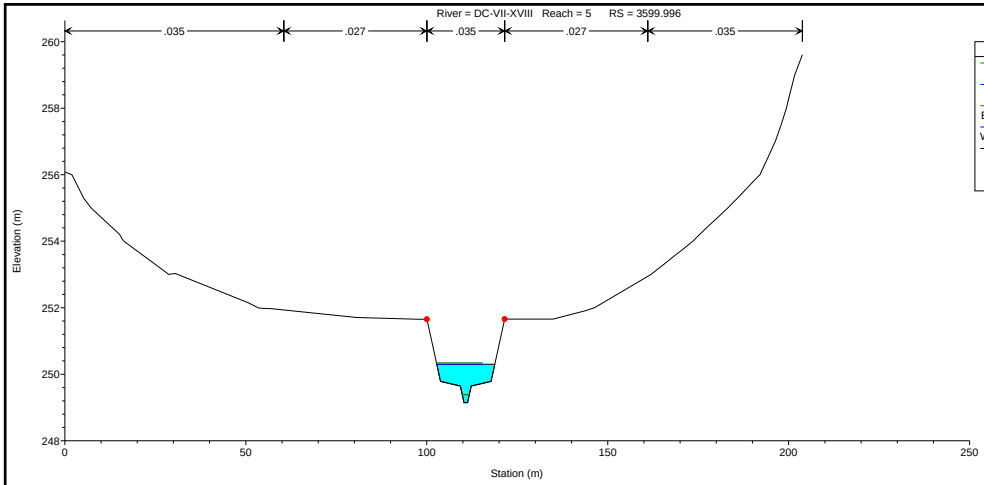

River = DC-VII-XVIII Reach = 5 RS = 3796.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

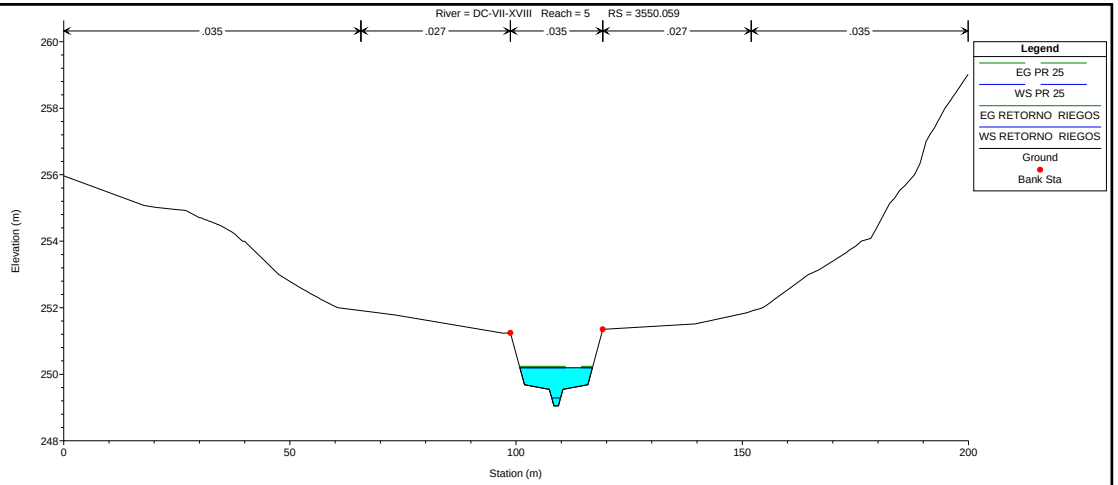

River = DC-VII-XVIII Reach = 5 RS = 3795.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

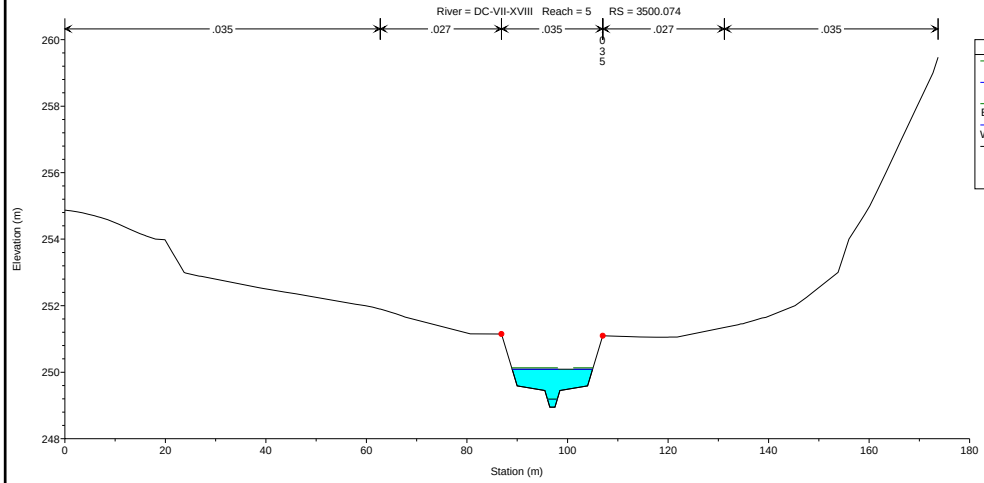

River = DC-VII-XVIII Reach = 5 RS = 3749.973
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

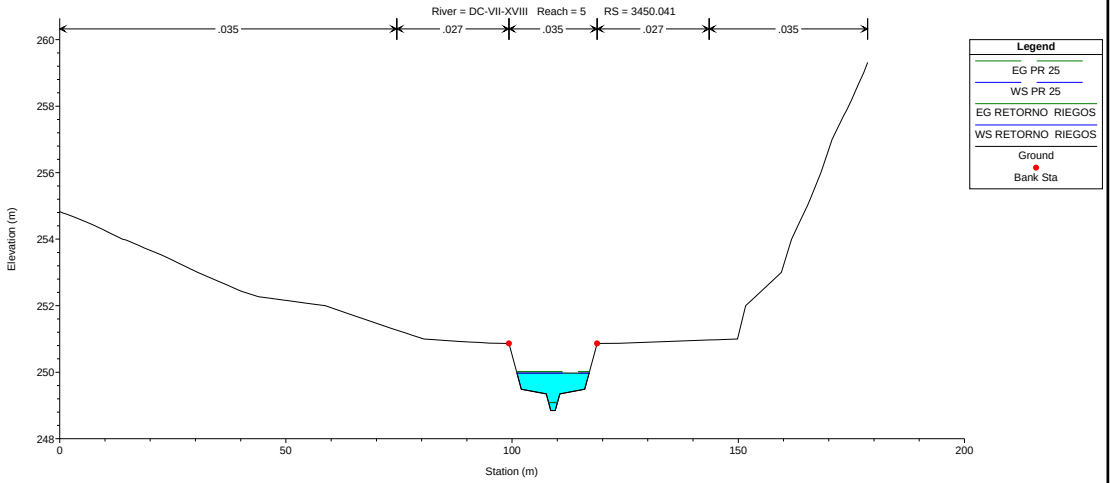

River = DC-VII-XVIII Reach = 5 RS = 3699.979
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

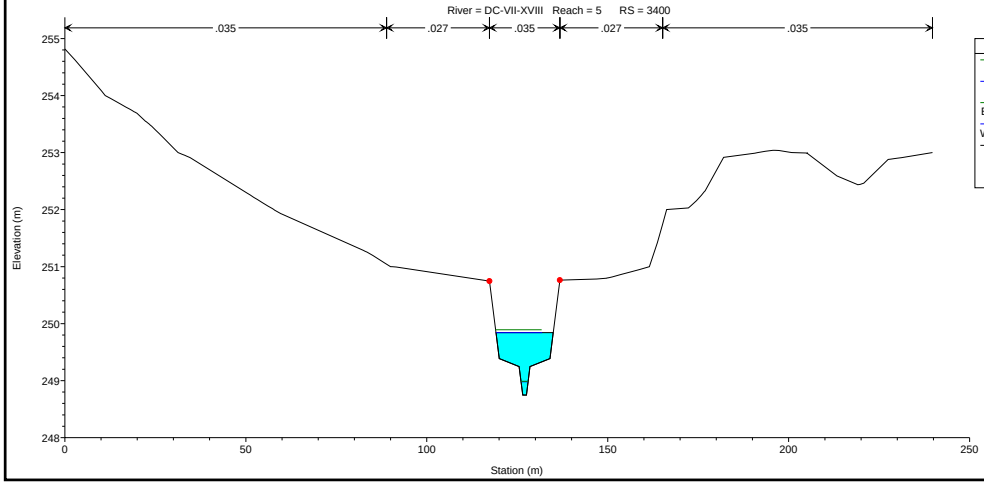

River = DC-VII-XVIII Reach = 5 RS = 3649.995
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

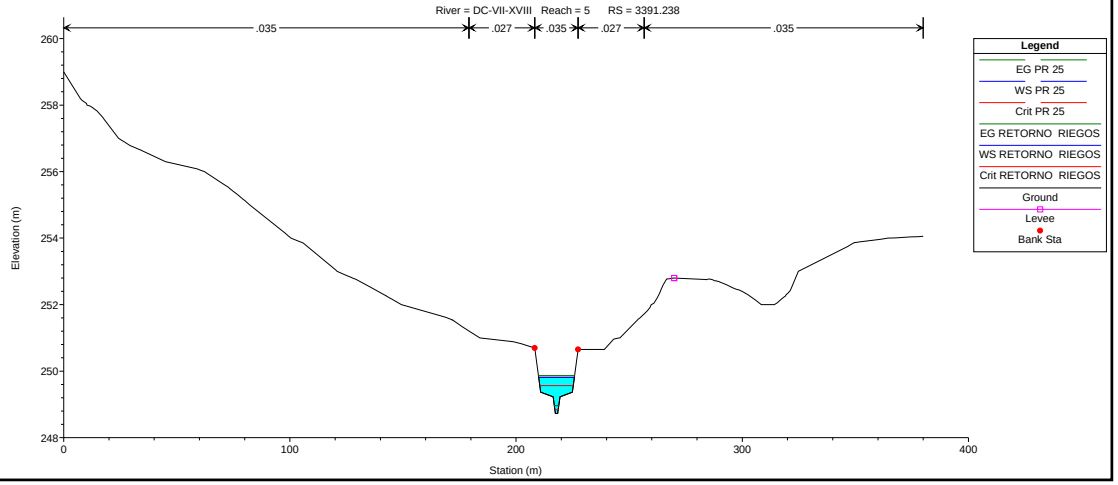

River = DC-VII-XVIII Reach = 5 RS = 3599.996
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

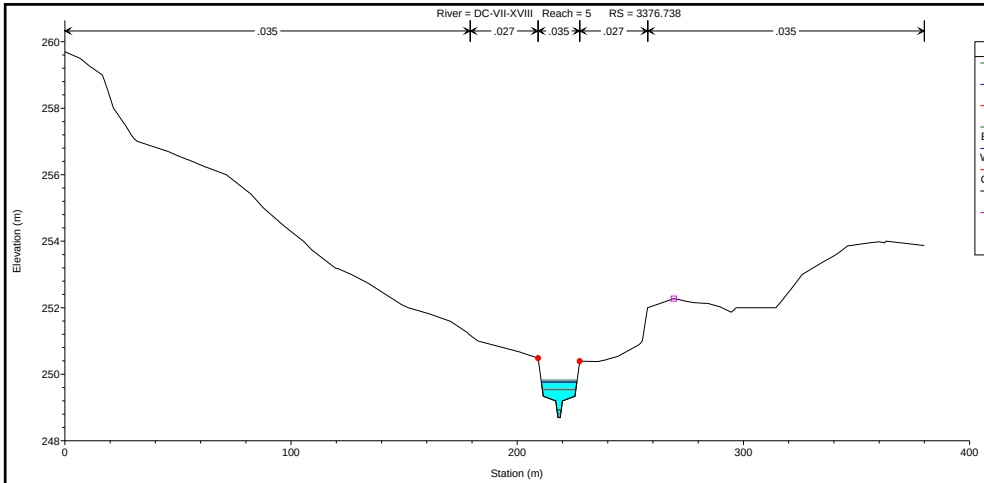

River = DC-VII-XVIII Reach = 5 RS = 3550.059
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

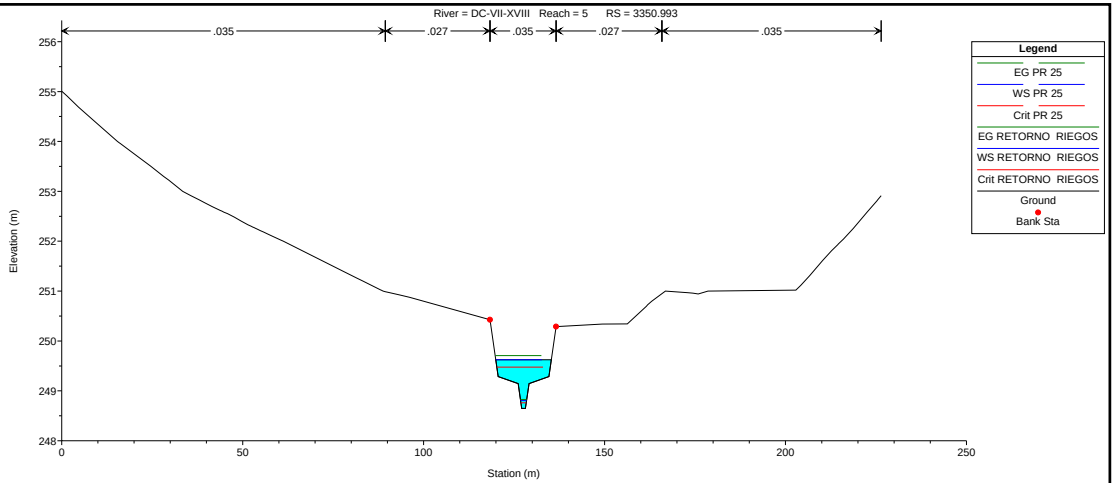

River = DC-VII-XVIII Reach = 5 RS = 3500.074
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

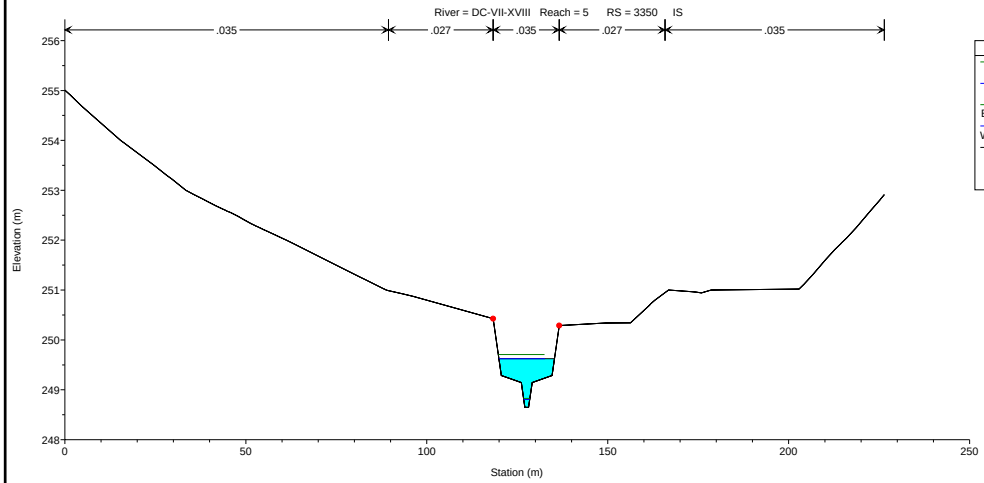

River = DC-VII-XVIII Reach = 5 RS = 3450.041
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

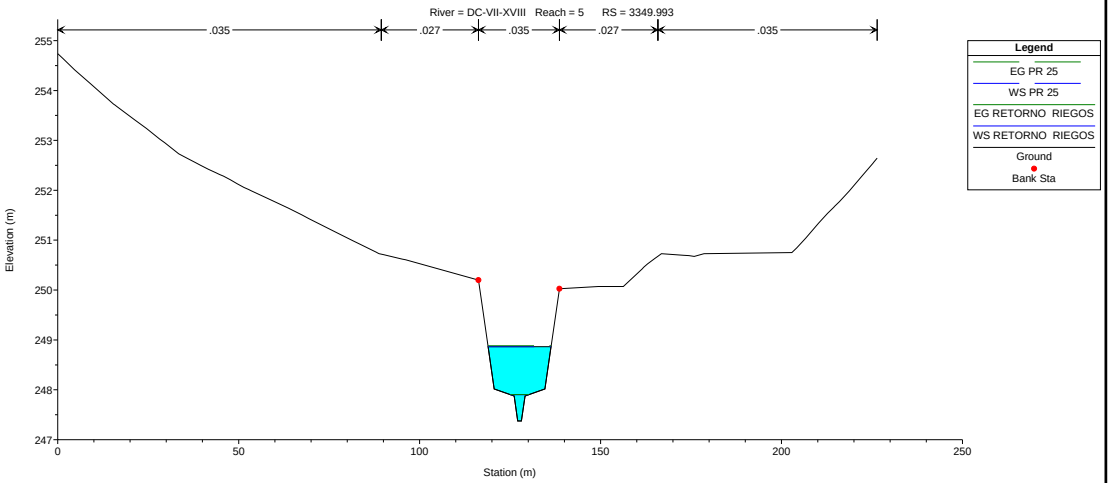

River = DC-VII-XVIII Reach = 5 RS = 3400
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

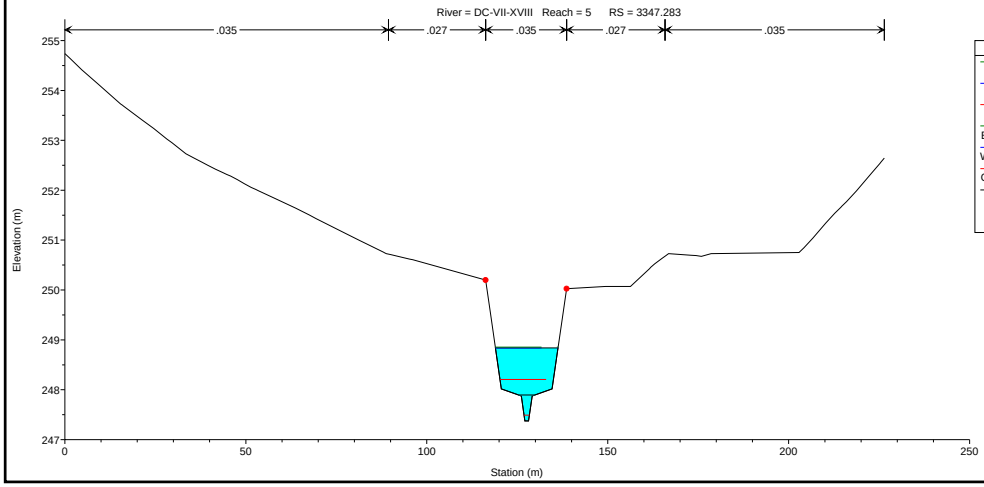

River = DC-VII-XVIII Reach = 5 RS = 3391.238
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

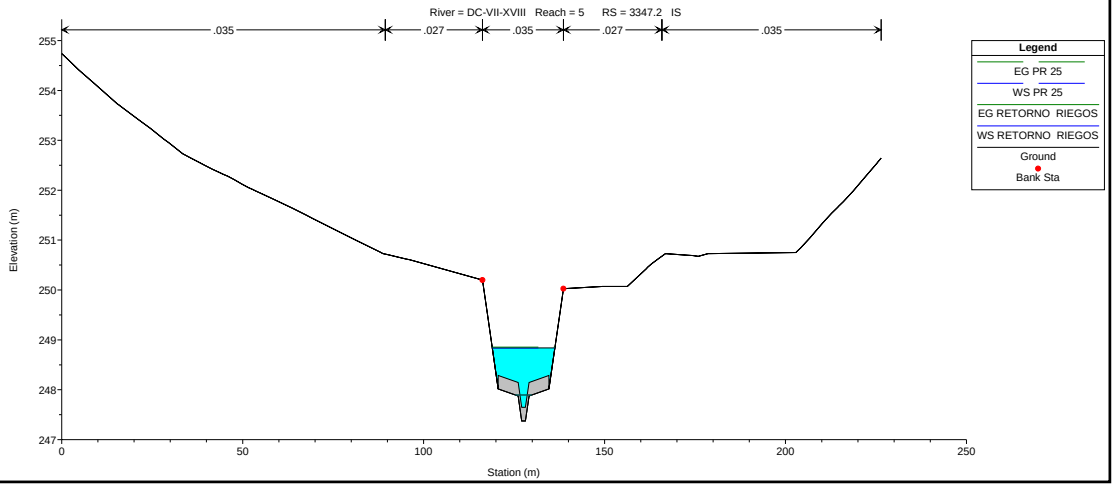

River = DC-VII-XVIII Reach = 5 RS = 3376.738
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

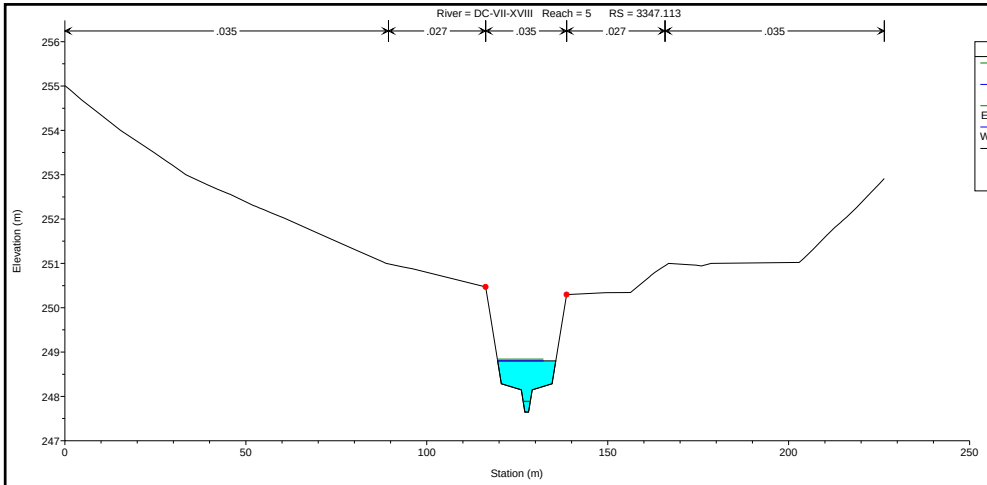

River = DC-VII-XVIII Reach = 5 RS = 3350.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

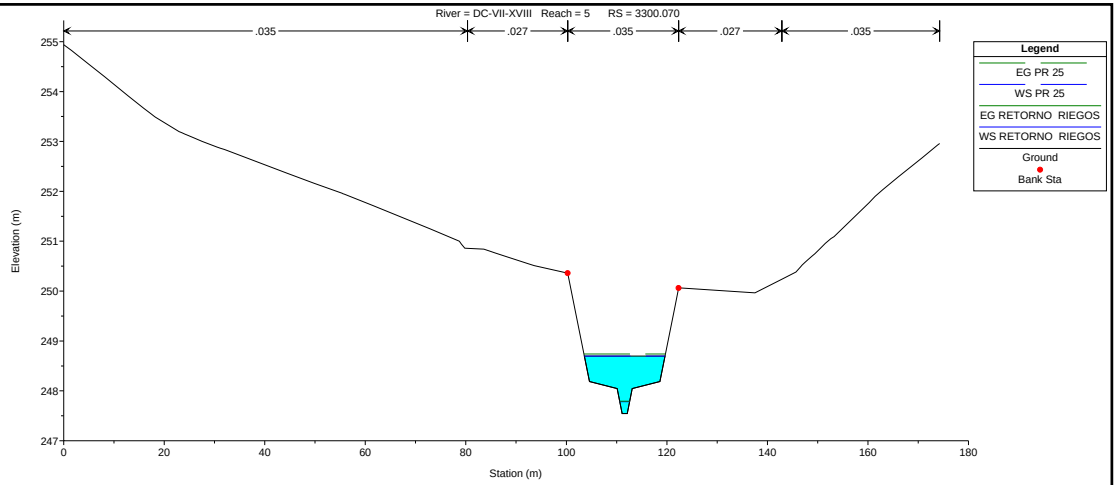

River = DC-VII-XVIII Reach = 5 RS = 3350 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

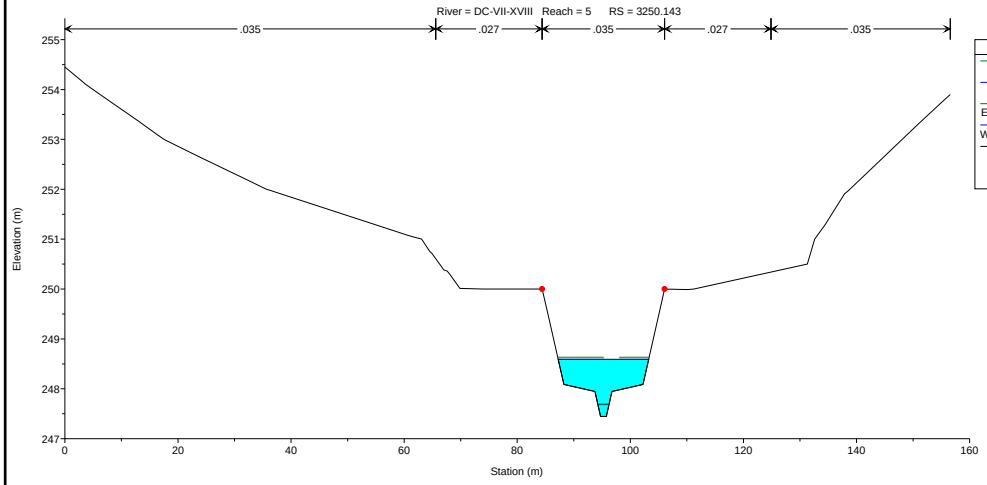

River = DC-VII-XVIII Reach = 5 RS = 3349.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

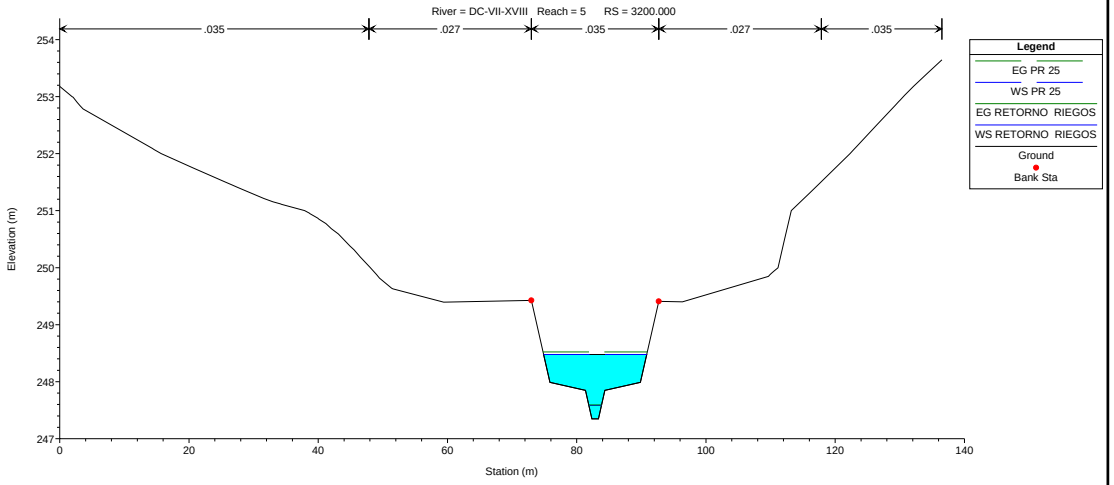

River = DC-VII-XVIII Reach = 5 RS = 3347.283
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

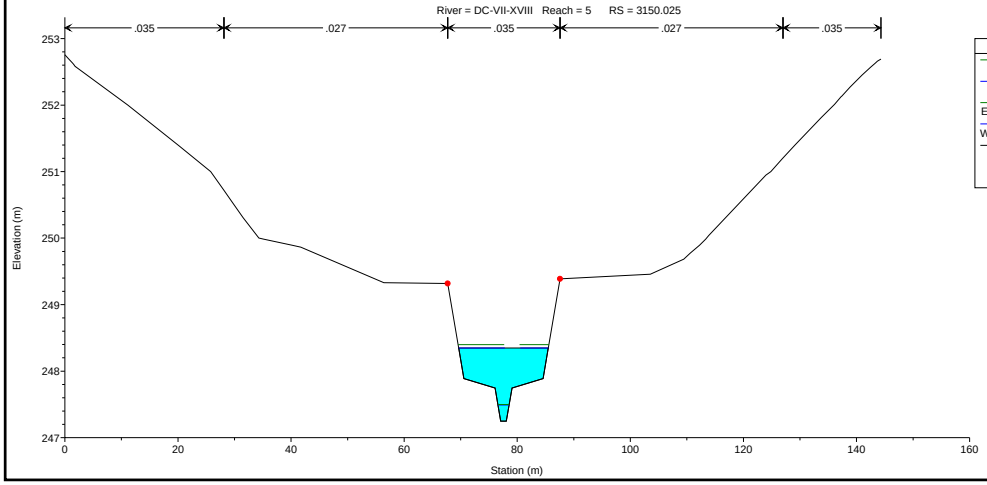

River = DC-VII-XVIII Reach = 5 RS = 3347.2 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

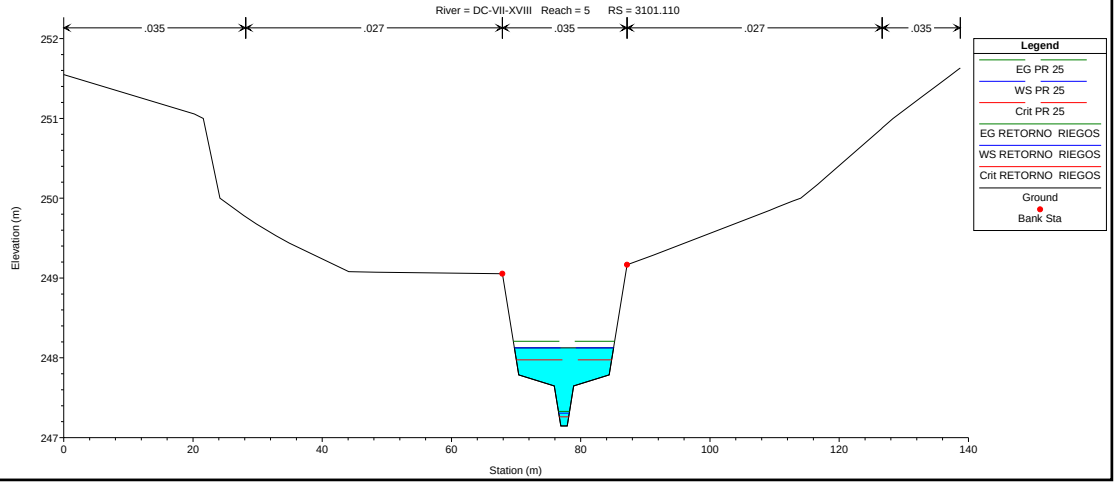

River = DC-VII-XVIII Reach = 5 RS = 3347.113
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

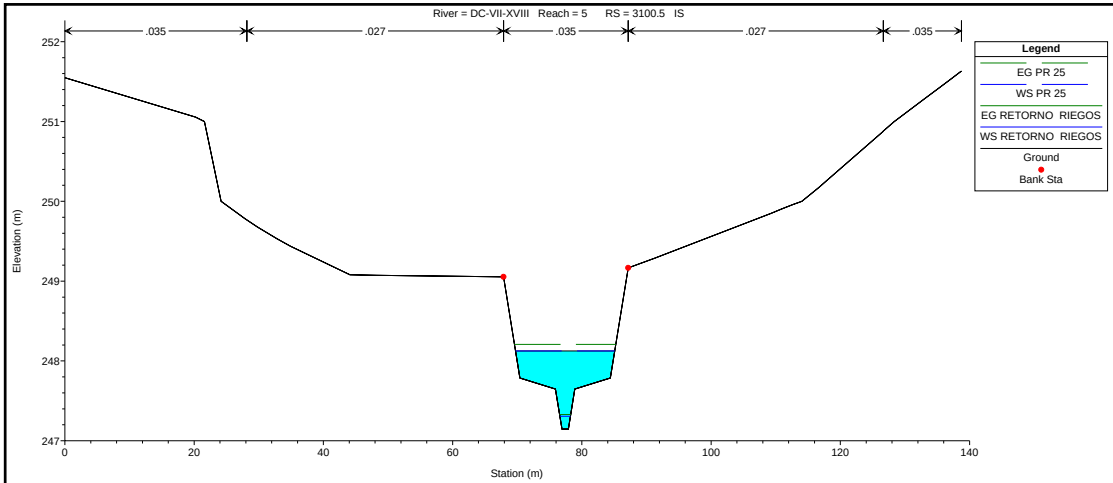

River = DC-VII-XVIII Reach = 5 RS = 3300.070
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

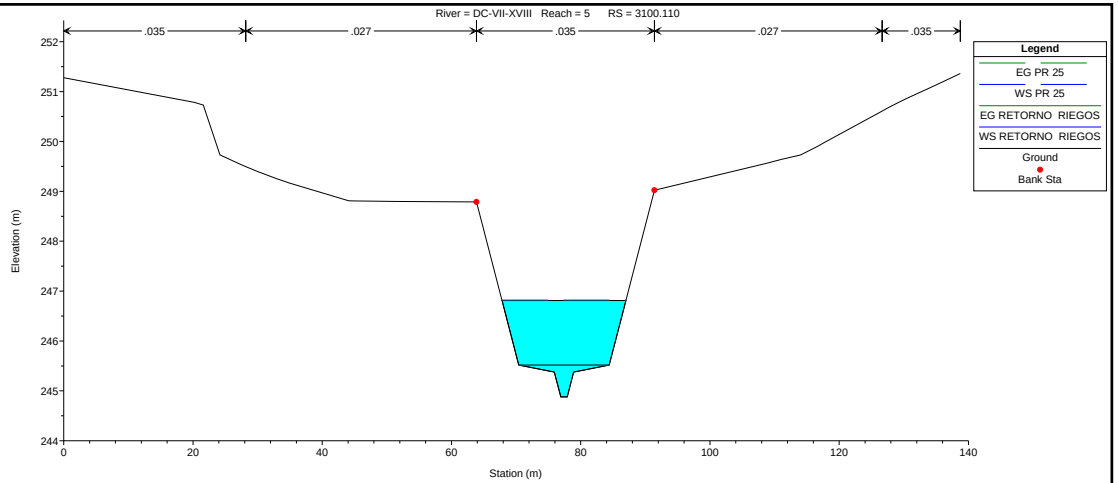

River = DC-VII-XVIII Reach = 5 RS = 3250.143
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

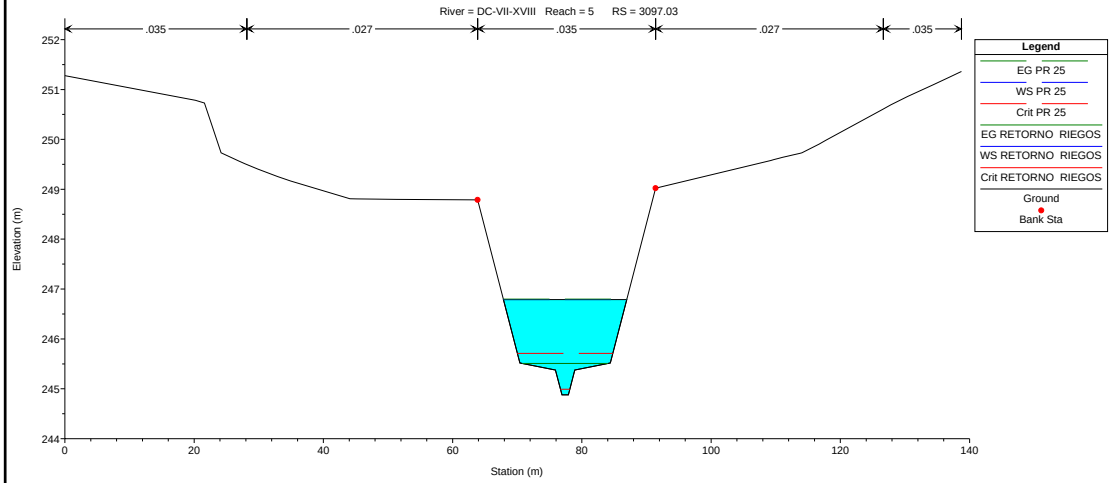

River = DC-VII-XVIII Reach = 5 RS = 3200.000
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

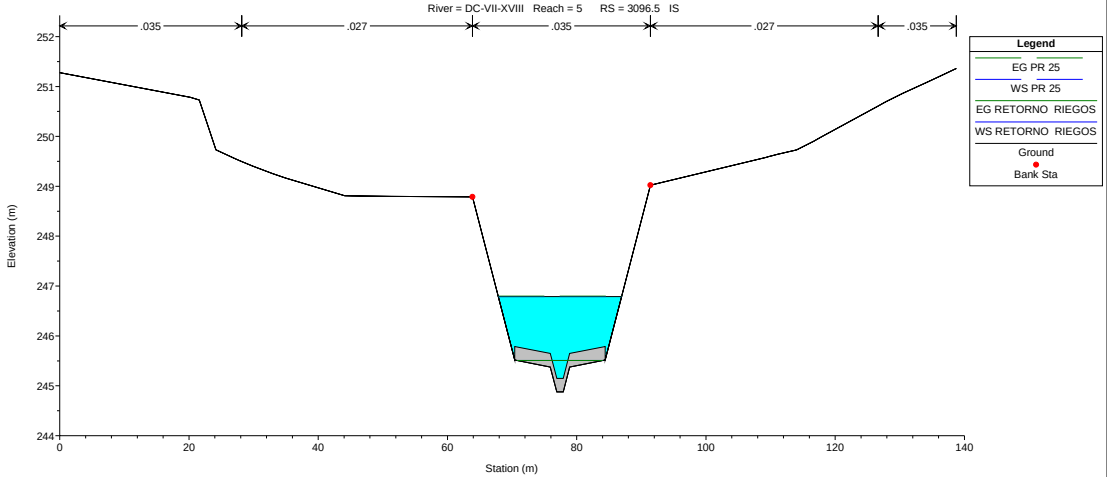

River = DC-VII-XVIII Reach = 5 RS = 3150.025
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

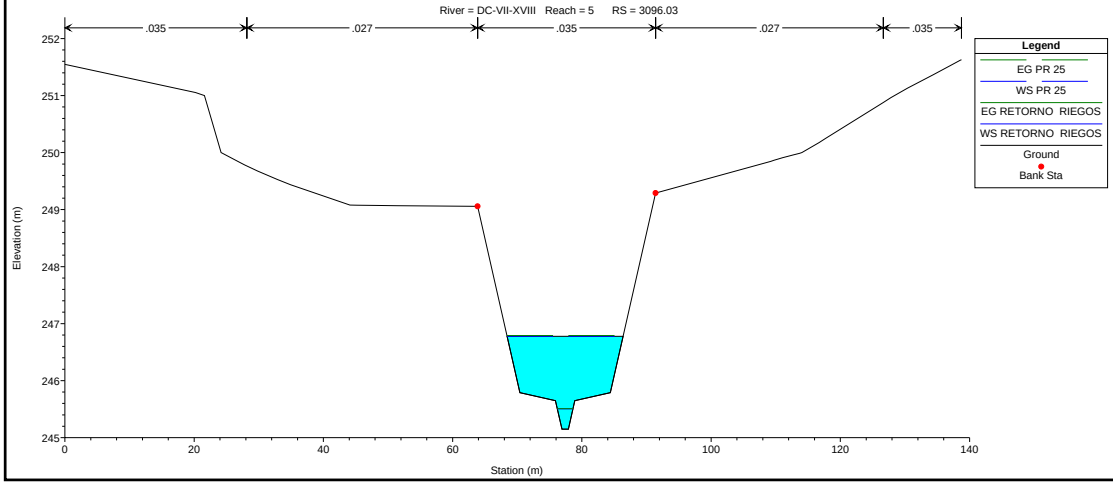

River = DC-VII-XVIII Reach = 5 RS = 3101.110
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

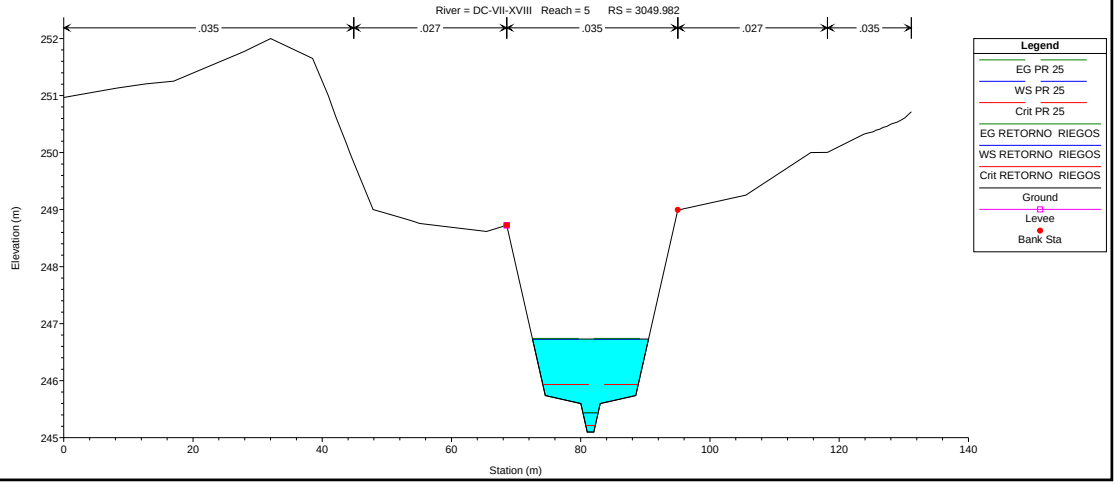

River = DC-VII-XVIII Reach = 5 RS = 3100.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

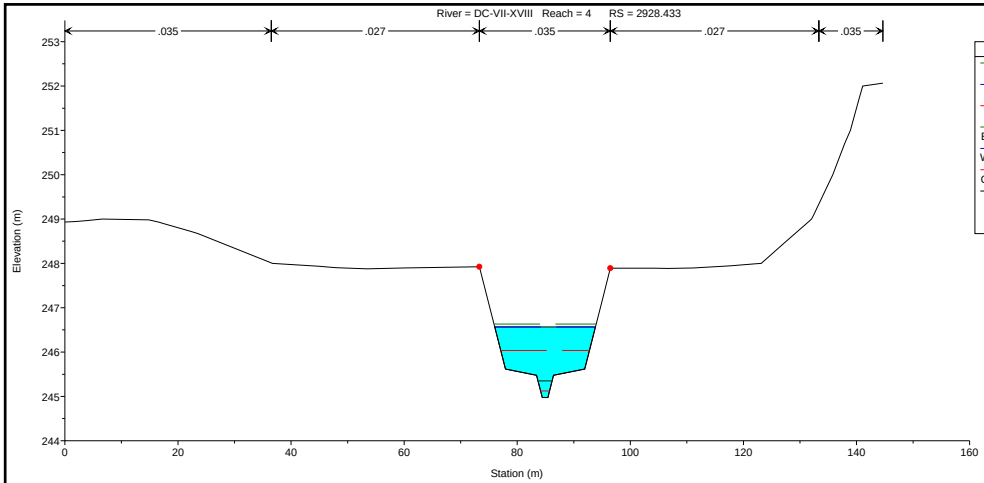

River = DC-VII-XVIII Reach = 5 RS = 3100.110
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

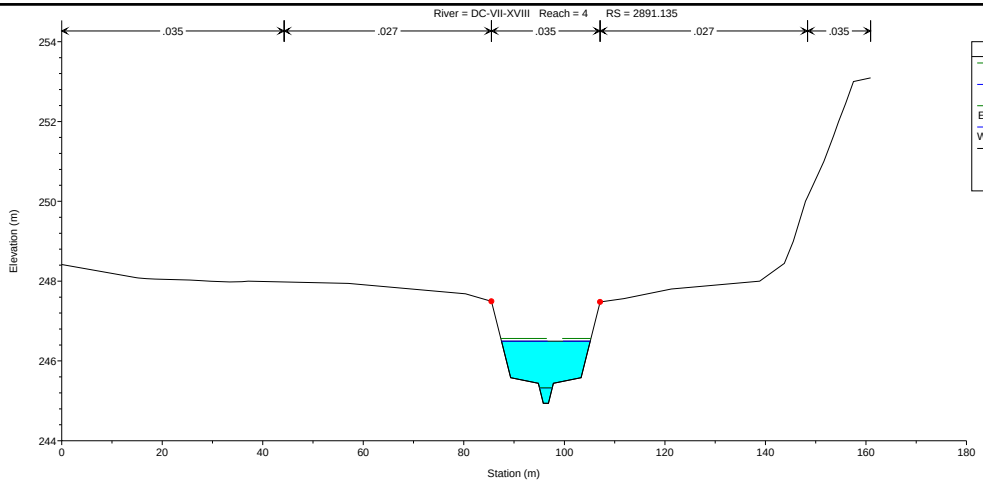

River = DC-VII-XVIII Reach = 5 RS = 3097.03
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

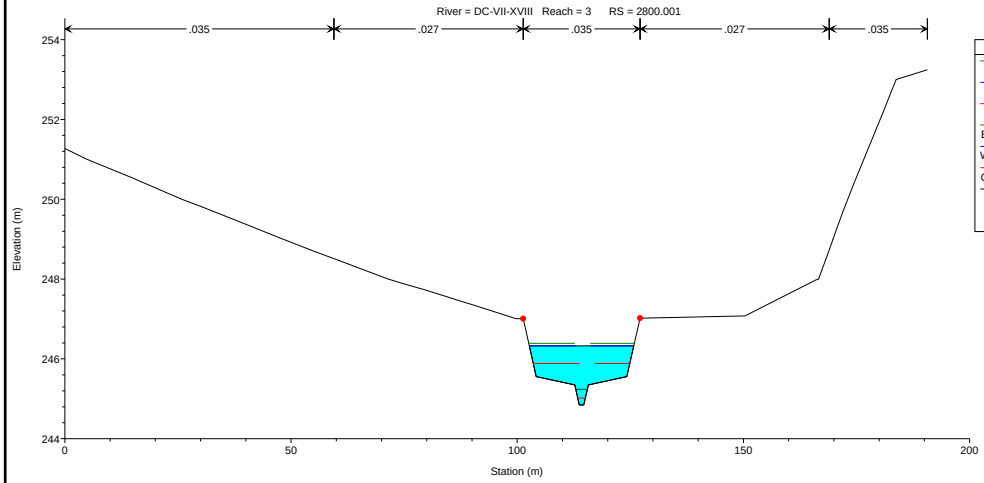

River = DC-VII-XVIII Reach = 5 RS = 3096.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

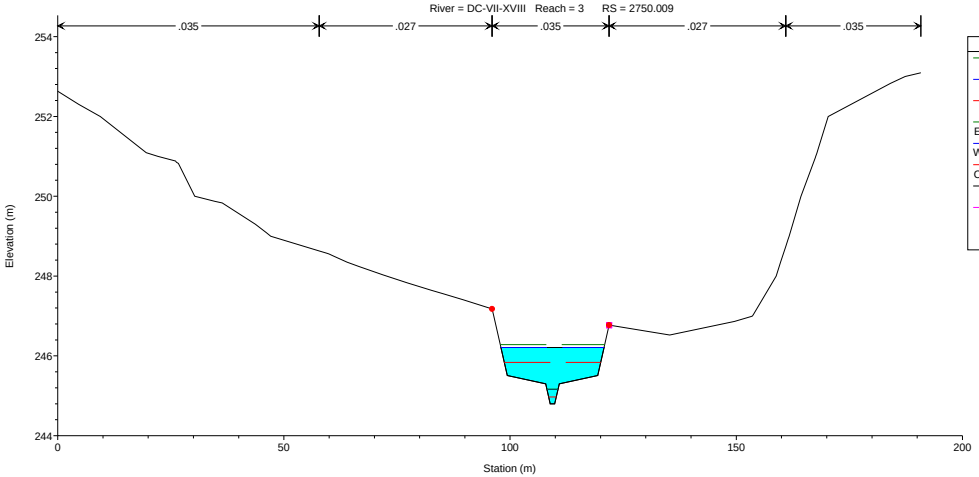

River = DC-VII-XVIII Reach = 5 RS = 3096.03
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

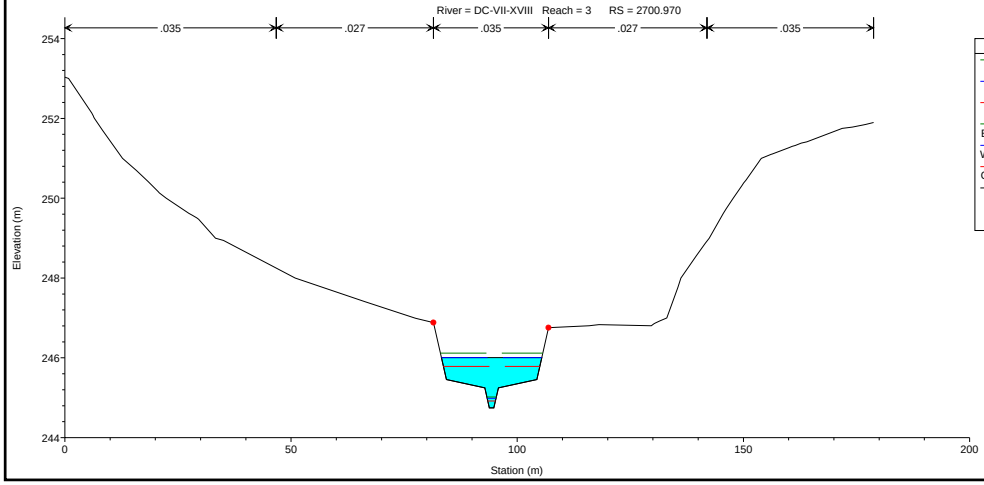

River = DC-VII-XVIII Reach = 5 RS = 3049.982
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

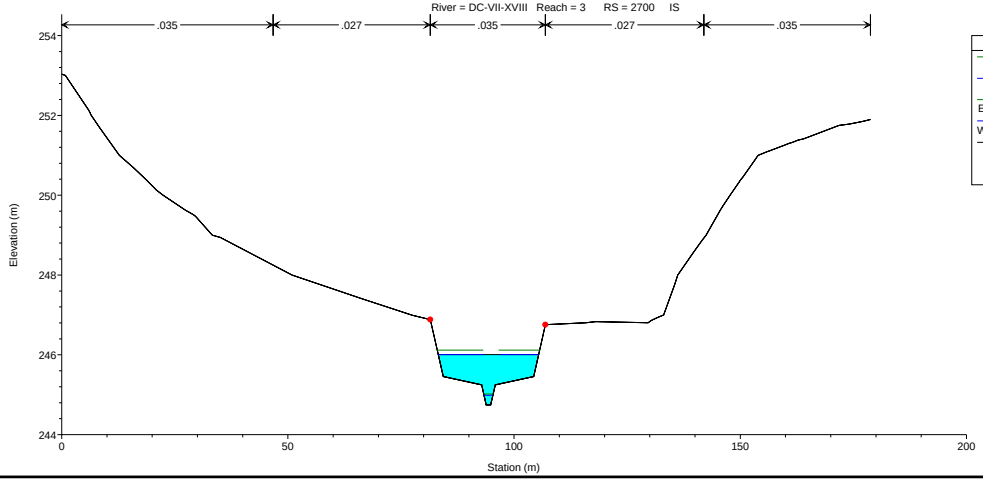

River = DC-VII-XVIII Reach = 4 RS = 2928.433
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

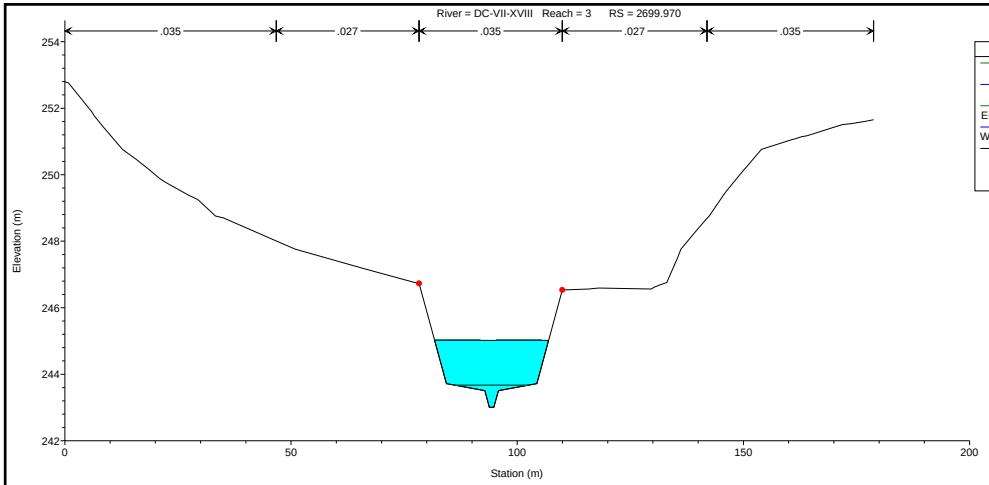

River = DC-VII-XVIII Reach = 4 RS = 2891.135
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

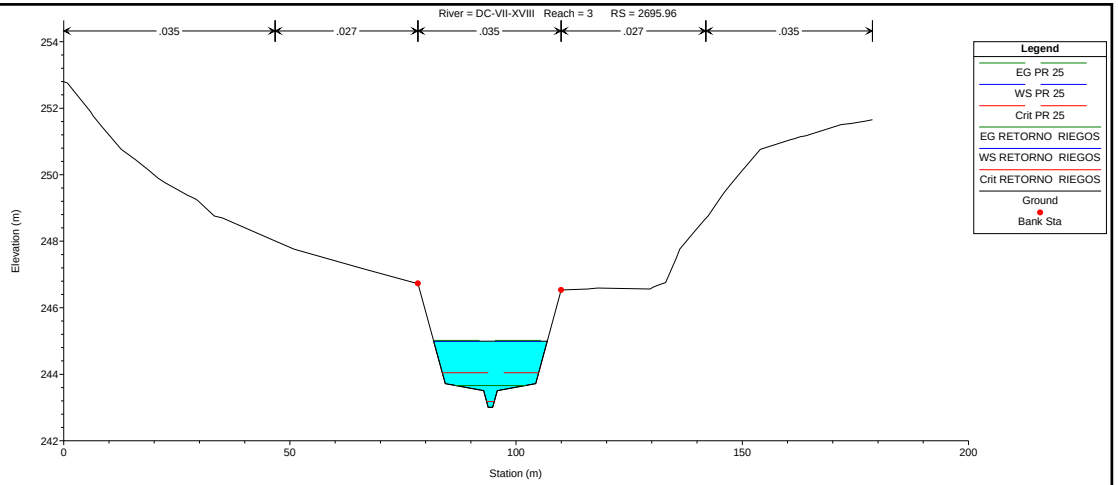

River = DC-VII-XVIII Reach = 3 RS = 2800.001
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

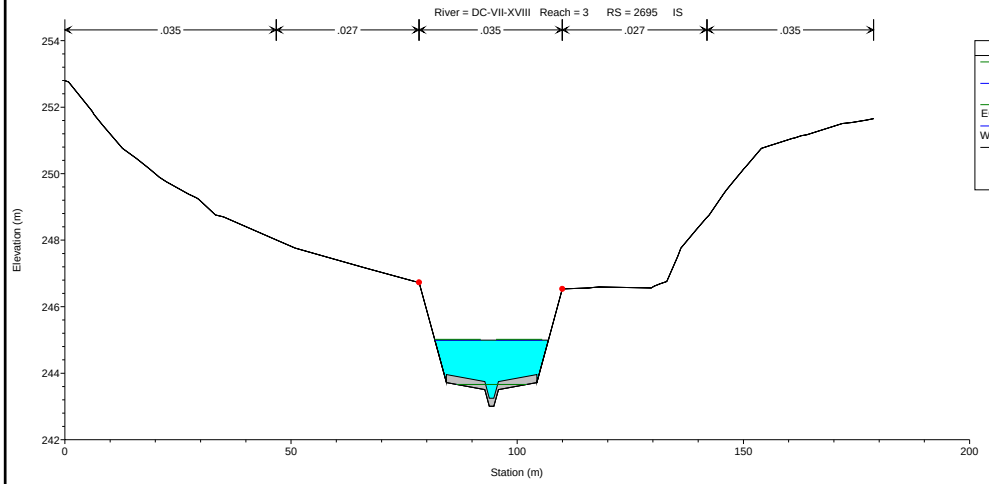

River = DC-VII-XVIII Reach = 3 RS = 2750.009
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

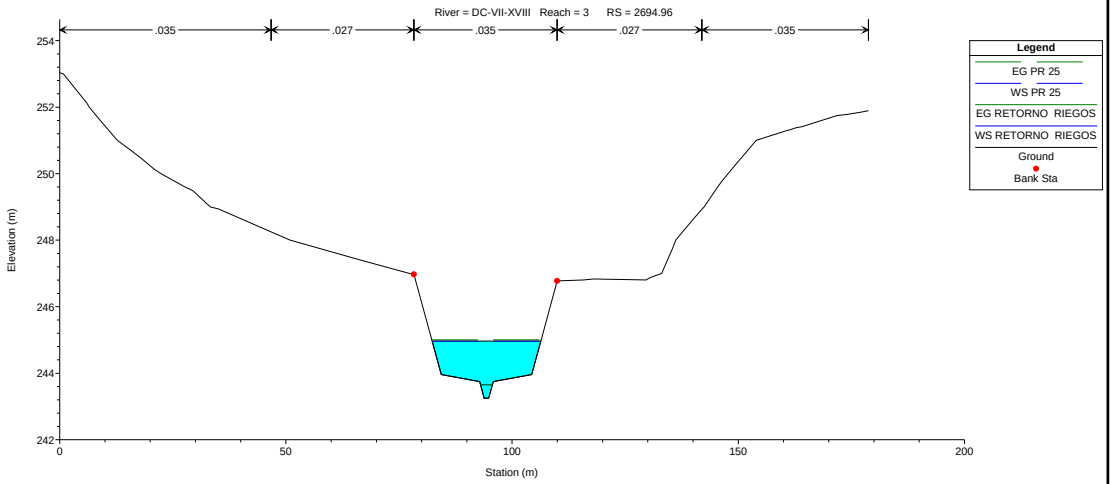

River = DC-VII-XVIII Reach = 3 RS = 2700.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

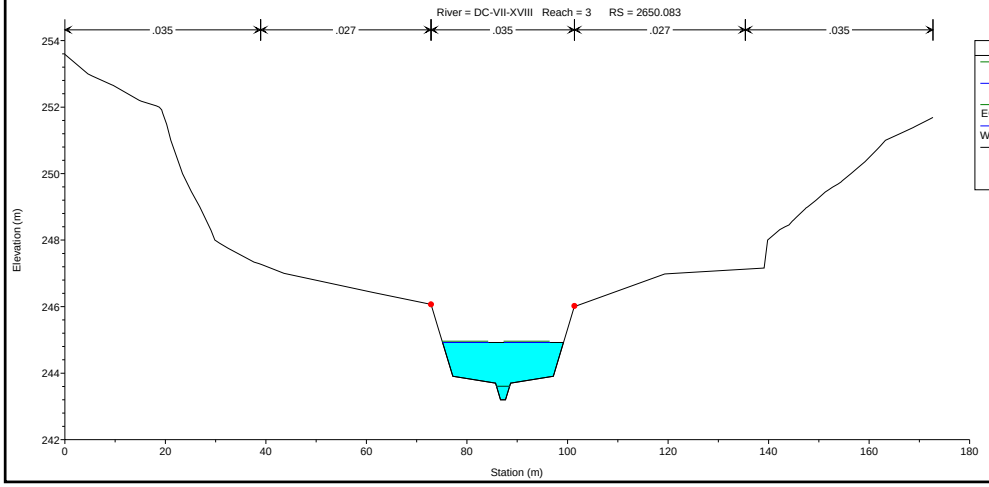

River = DC-VII-XVIII Reach = 3 RS = 2700 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

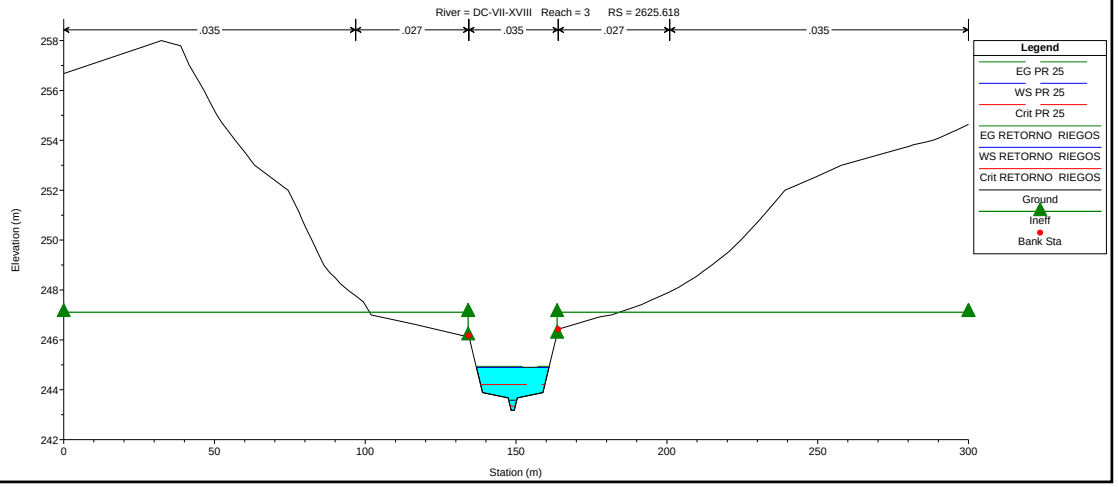

River = DC-VII-XVIII Reach = 3 RS = 2699.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

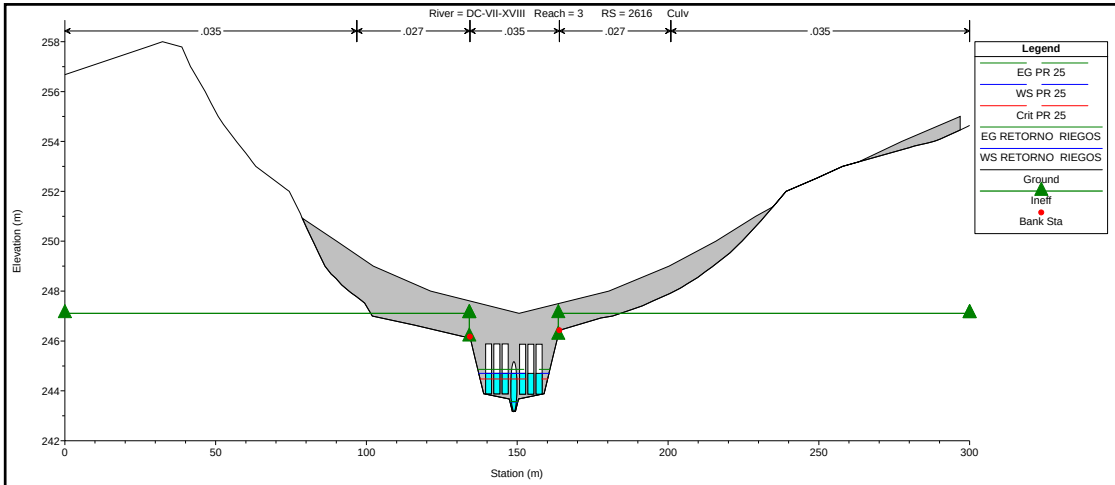

River = DC-VII-XVIII Reach = 3 RS = 2695.96
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

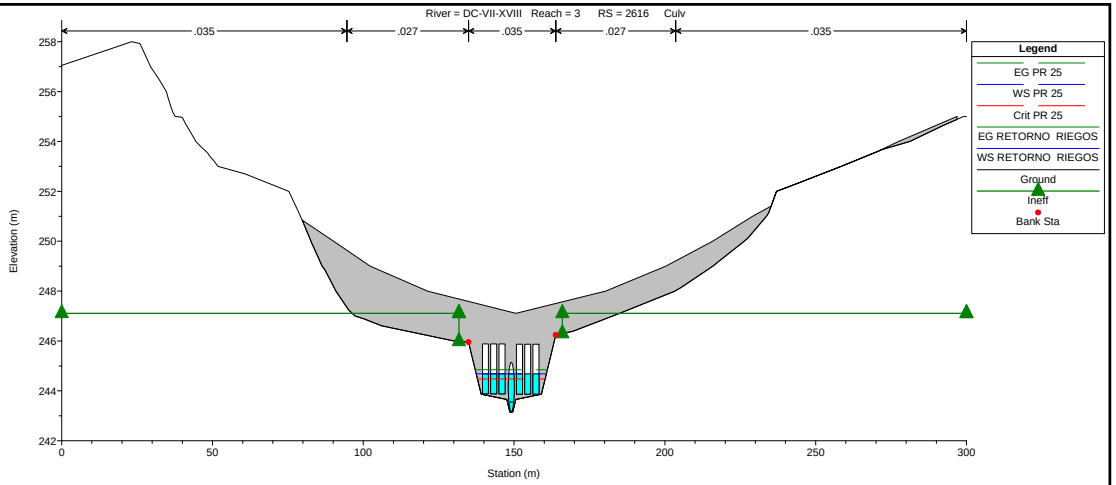

River = DC-VII-XVIII Reach = 3 RS = 2695 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

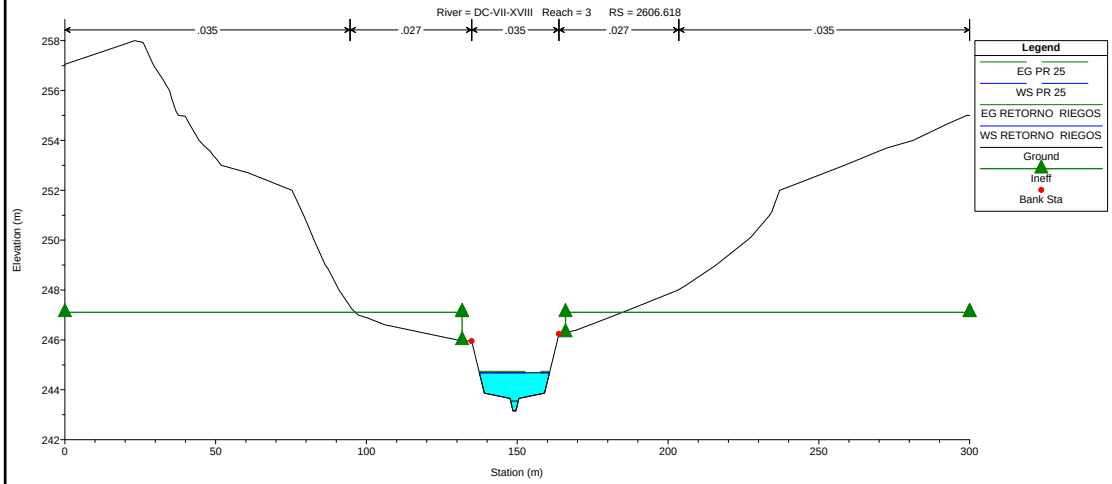

River = DC-VII-XVIII Reach = 3 RS = 2694.96
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

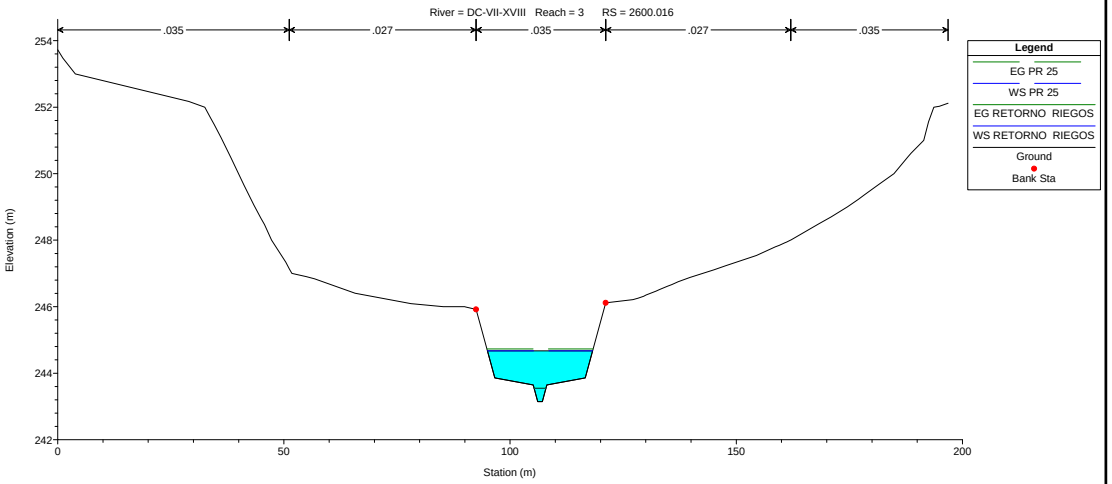

River = DC-VII-XVIII Reach = 3 RS = 2650.083
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

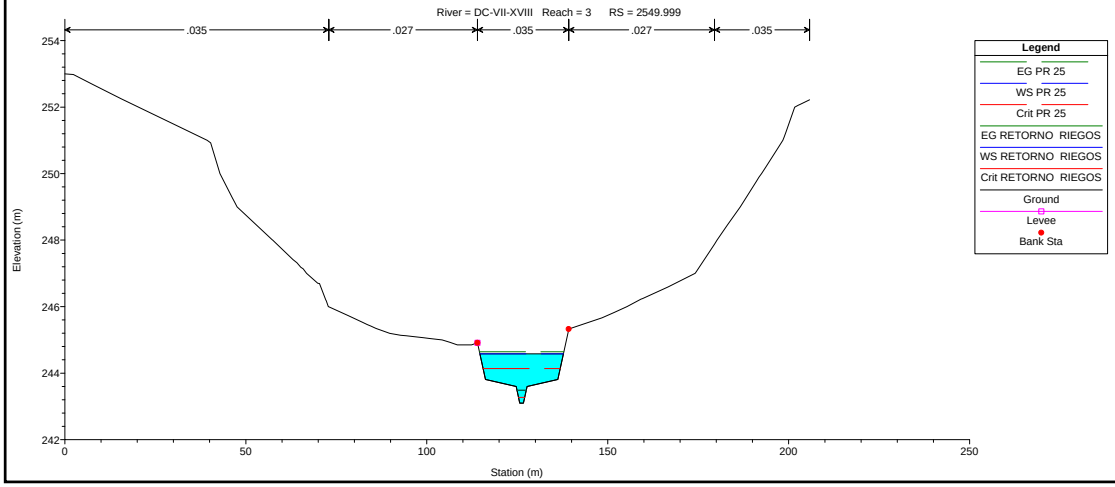

River = DC-VII-XVIII Reach = 3 RS = 2625.618
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

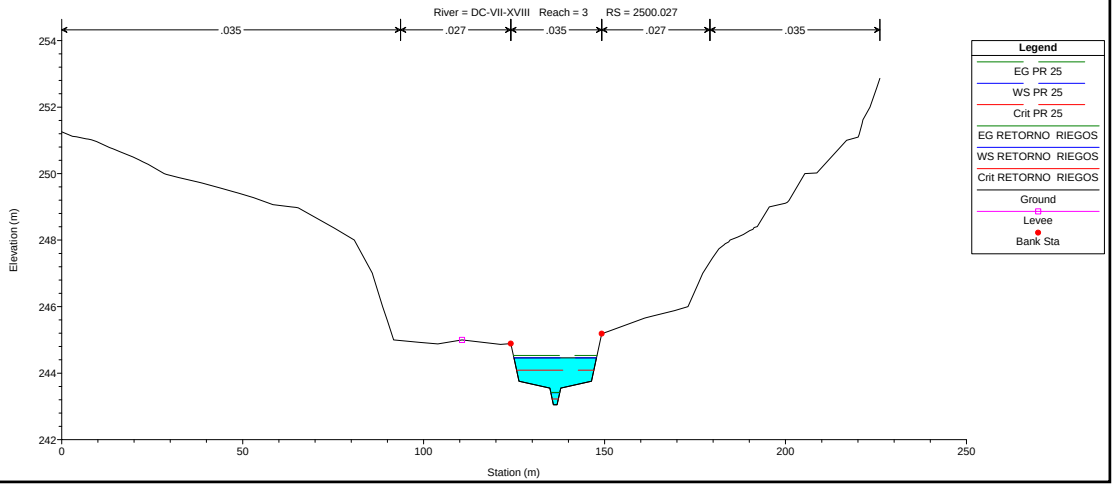

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

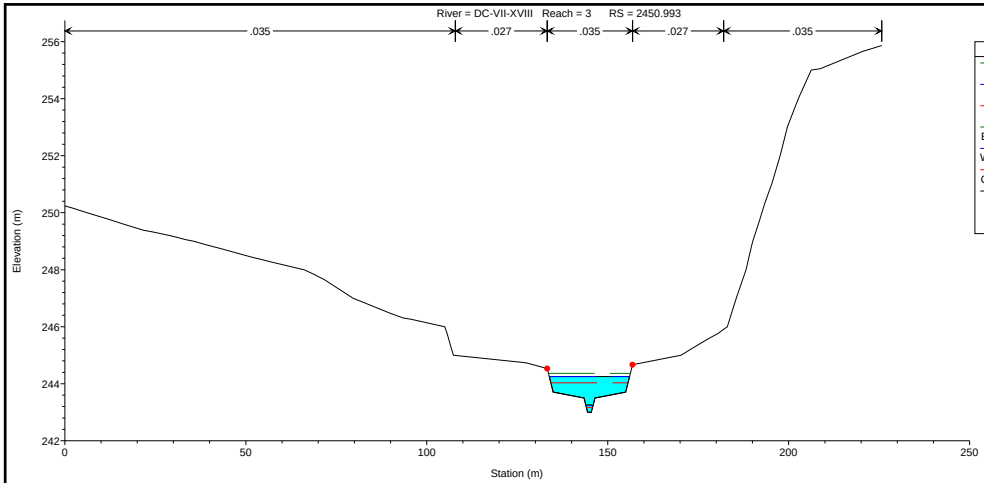

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

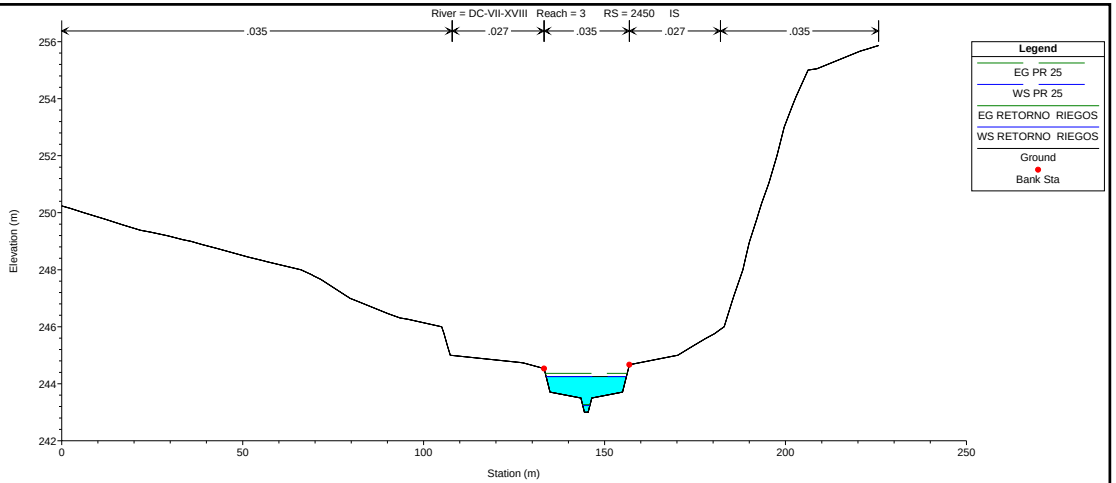

River = DC-VII-XVIII Reach = 3 RS = 2606.618
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

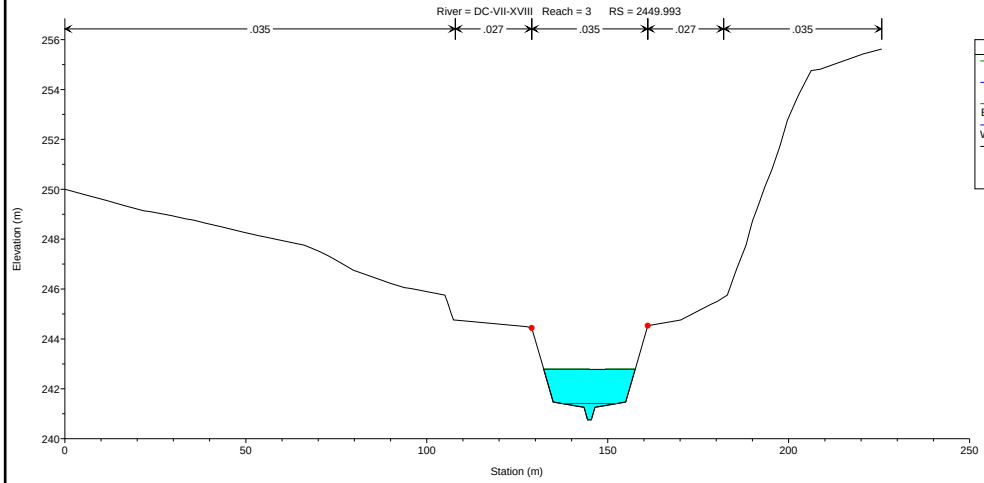

River = DC-VII-XVIII Reach = 3 RS = 2600.016
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

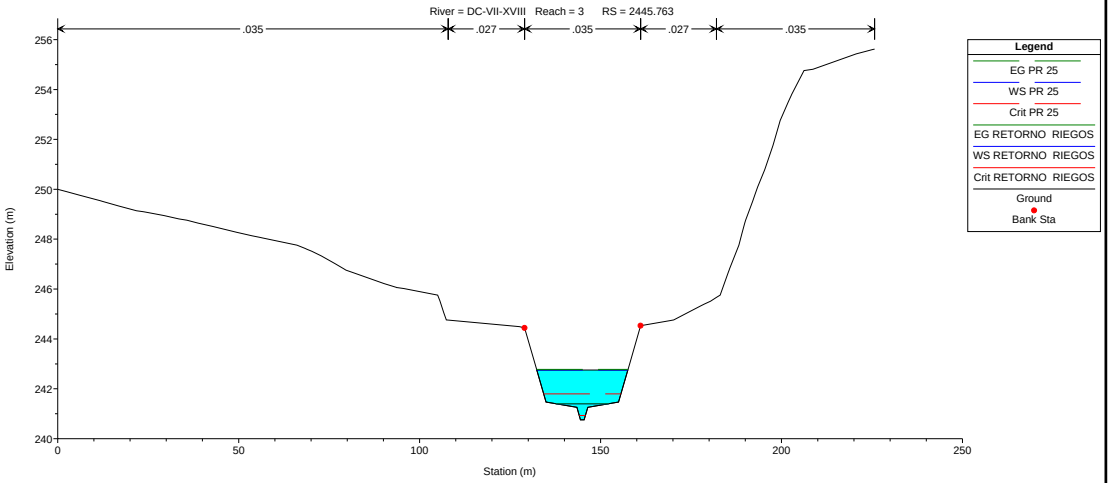

River = DC-VII-XVIII Reach = 3 RS = 2549.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

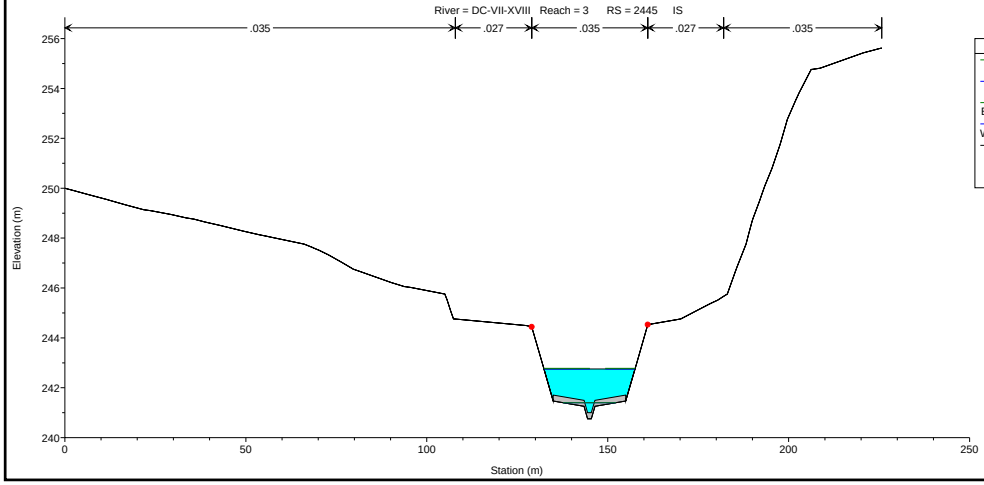

River = DC-VII-XVIII Reach = 3 RS = 2500.027
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

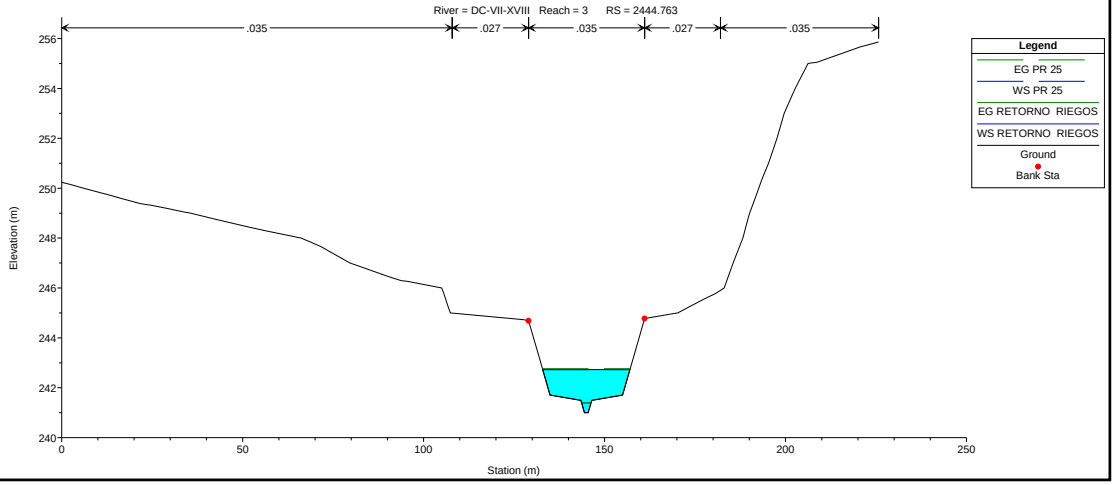

River = DC-VII-XVIII Reach = 3 RS = 2450.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

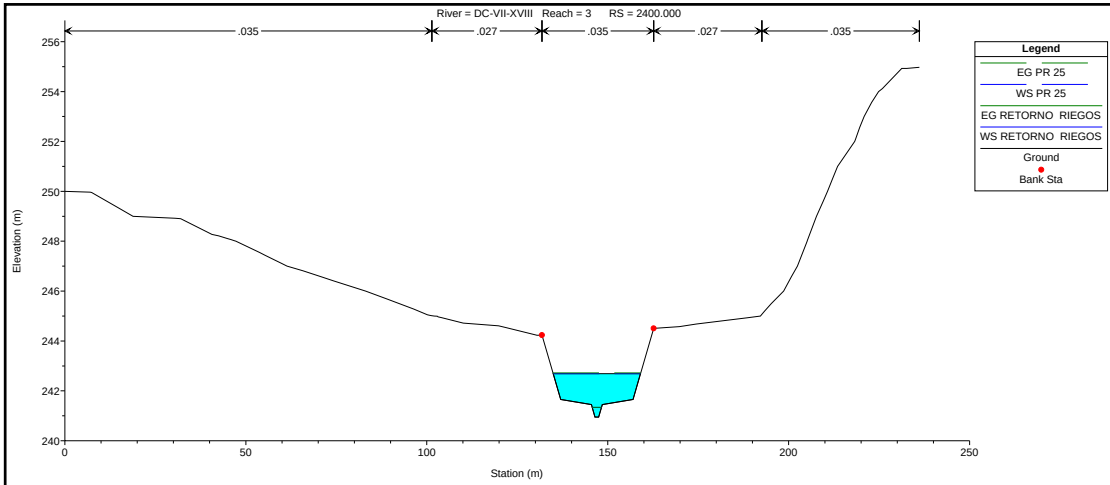

River = DC-VII-XVIII Reach = 3 RS = 2450 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

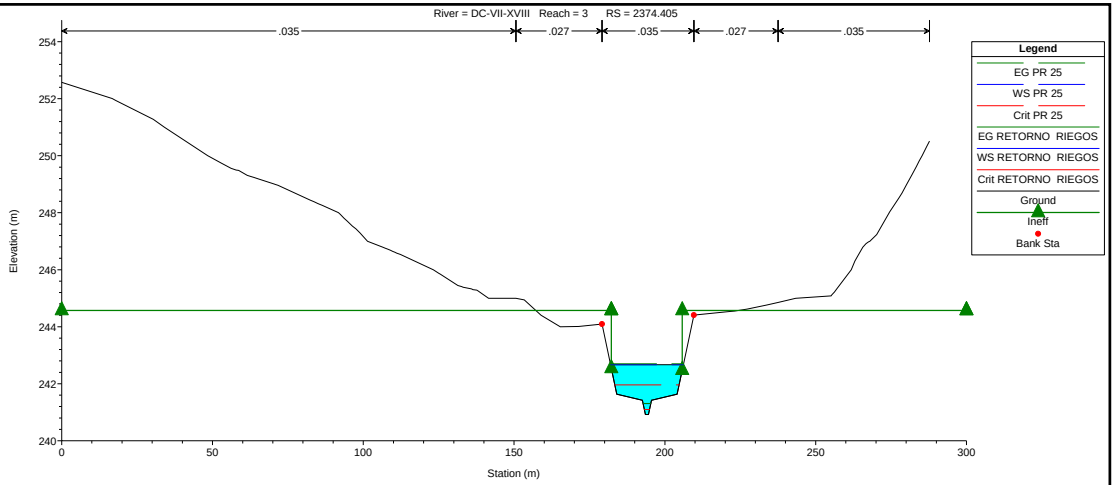

River = DC-VII-XVIII Reach = 3 RS = 2449.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

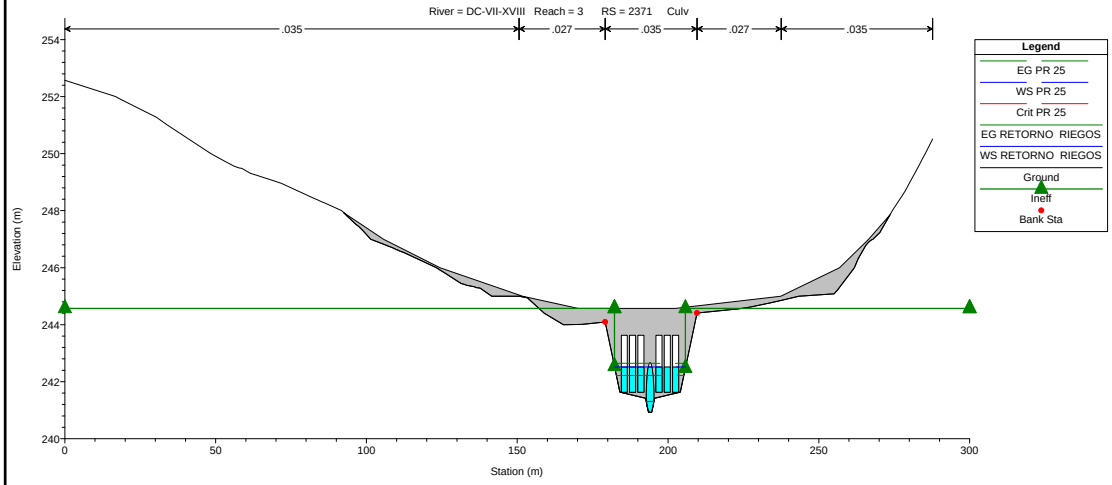

River = DC-VII-XVIII Reach = 3 RS = 2445.763
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

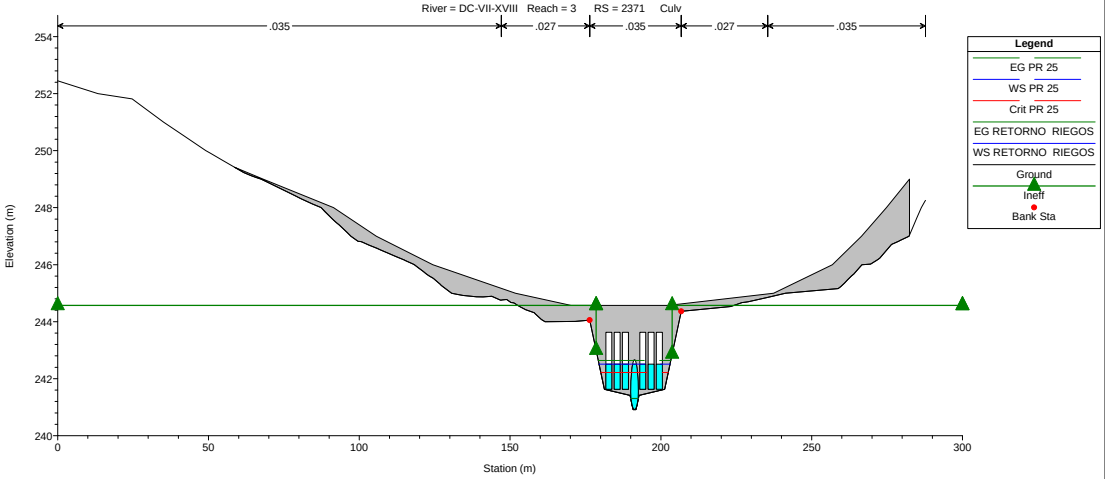

River = DC-VII-XVIII Reach = 3 RS = 2445 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

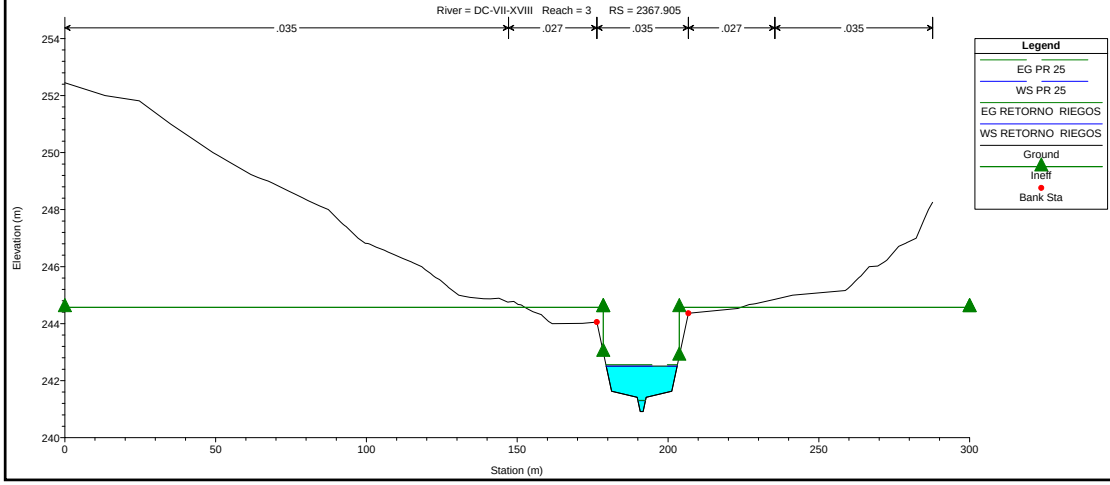

River = DC-VII-XVIII Reach = 3 RS = 2444.763
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

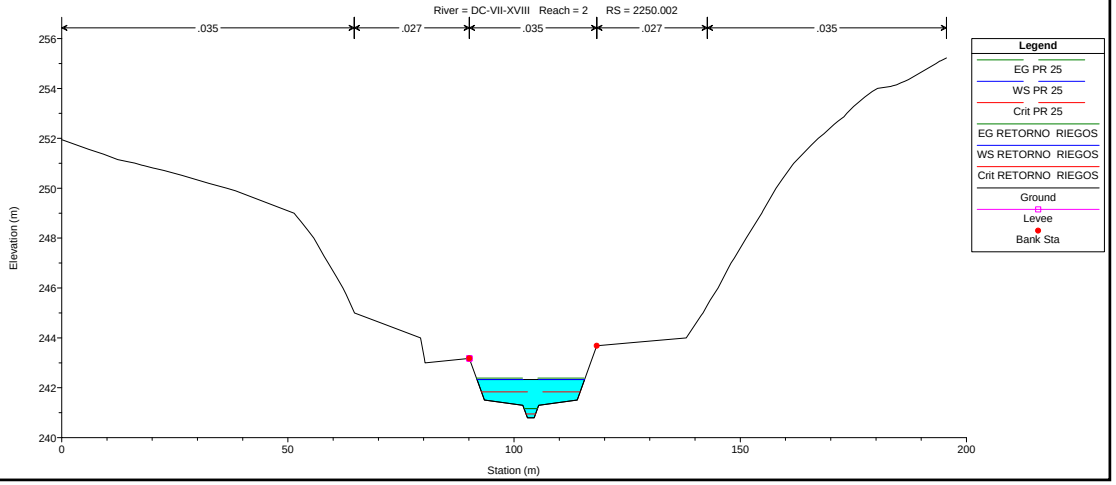

River = DC-VII-XVIII Reach = 3 RS = 2400.000
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

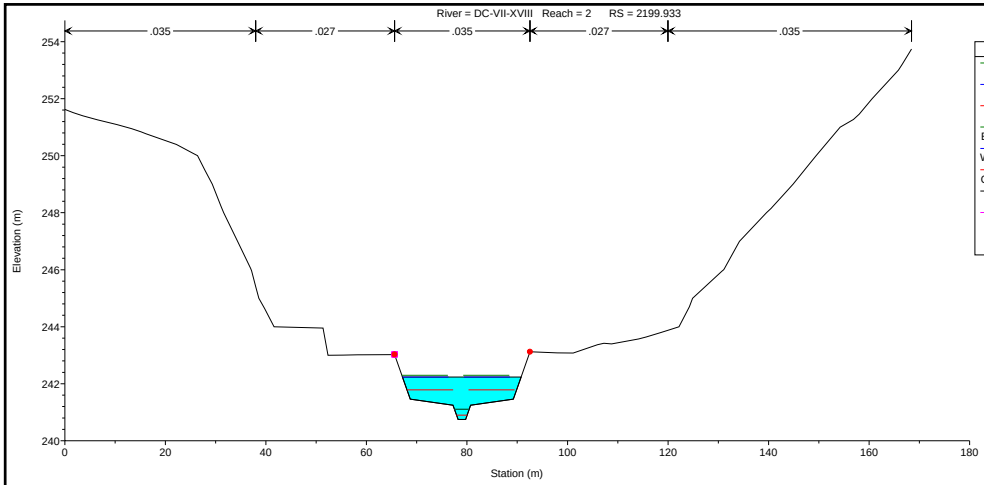

River = DC-VII-XVIII Reach = 3 RS = 2374.405
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

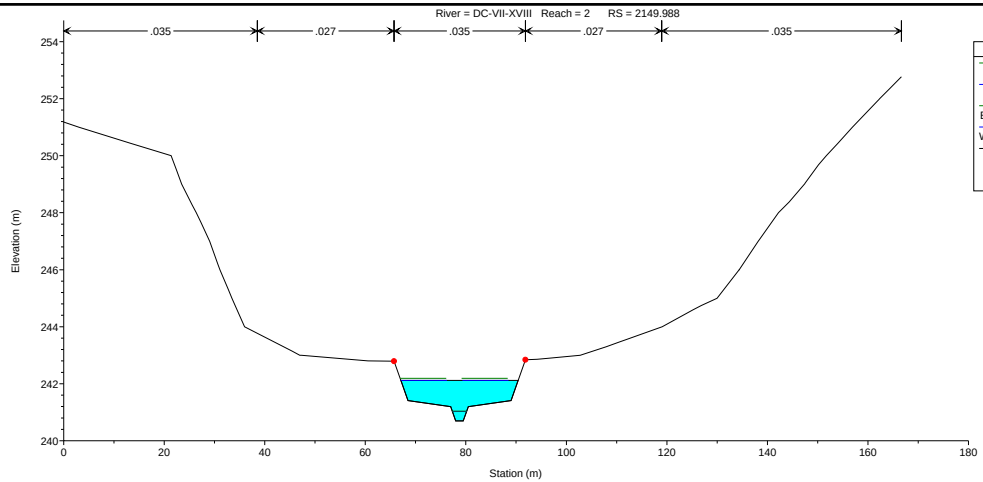

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

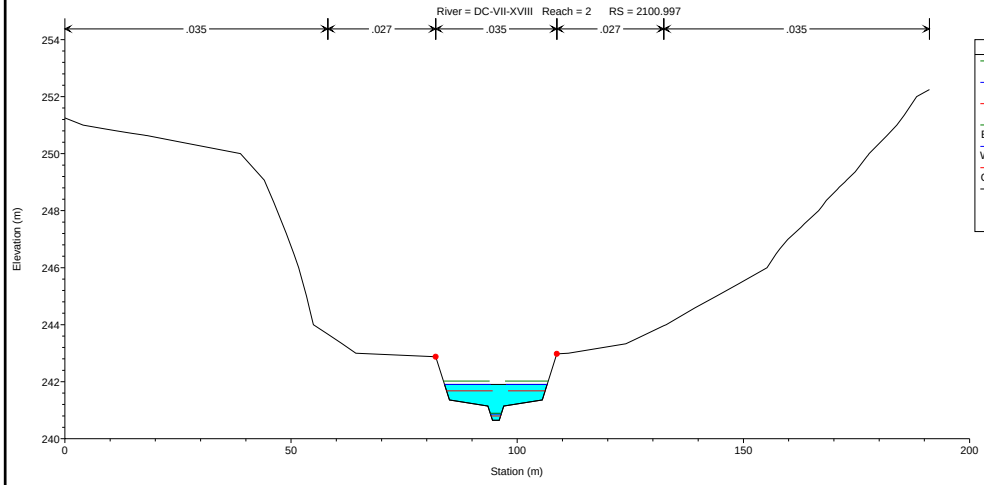

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

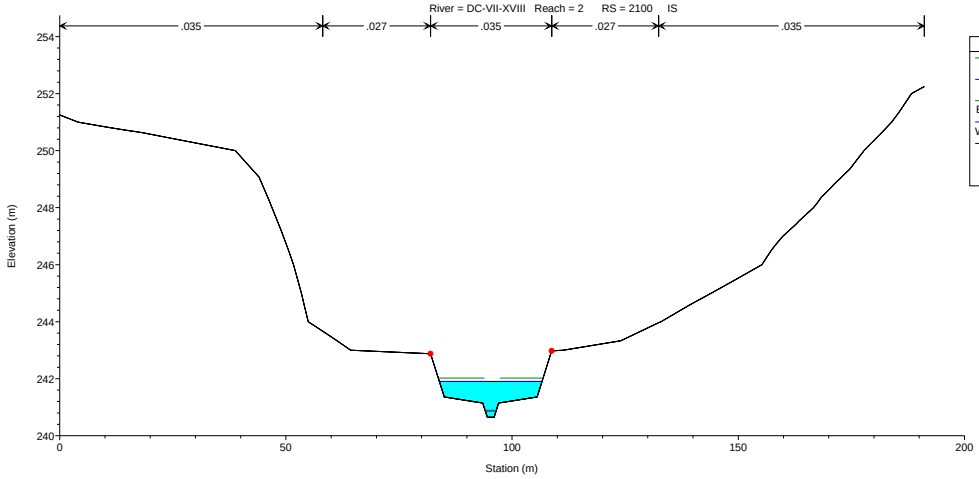

River = DC-VII-XVIII Reach = 3 RS = 2367.905
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

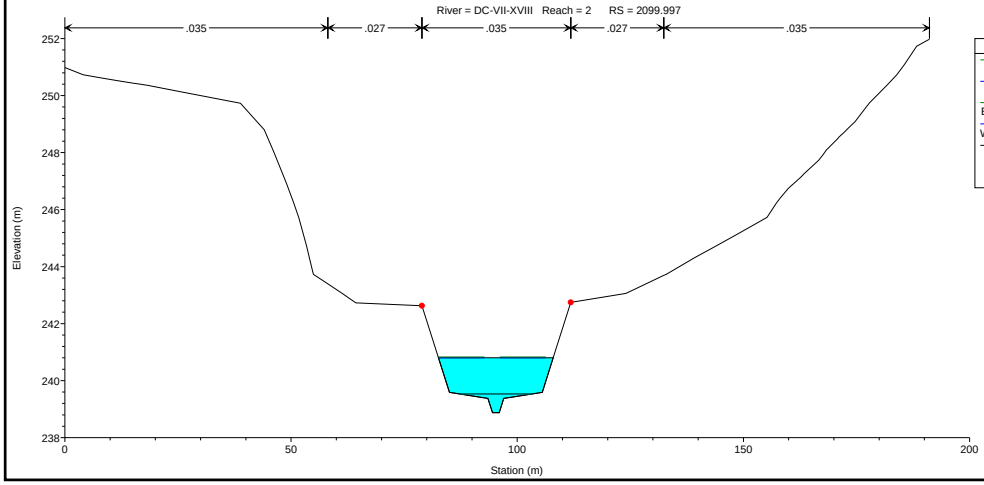

River = DC-VII-XVIII Reach = 2 RS = 2250.002
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

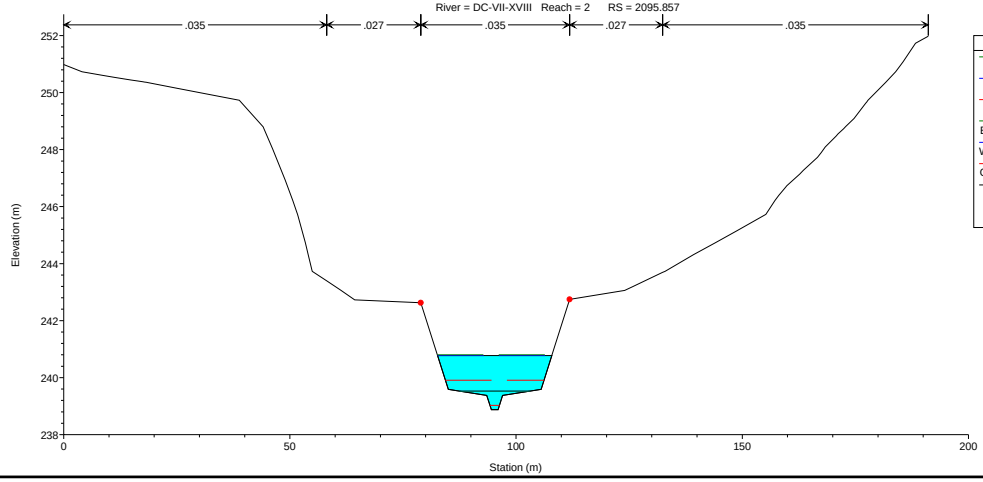

River = DC-VII-XVIII Reach = 2 RS = 2199.933
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

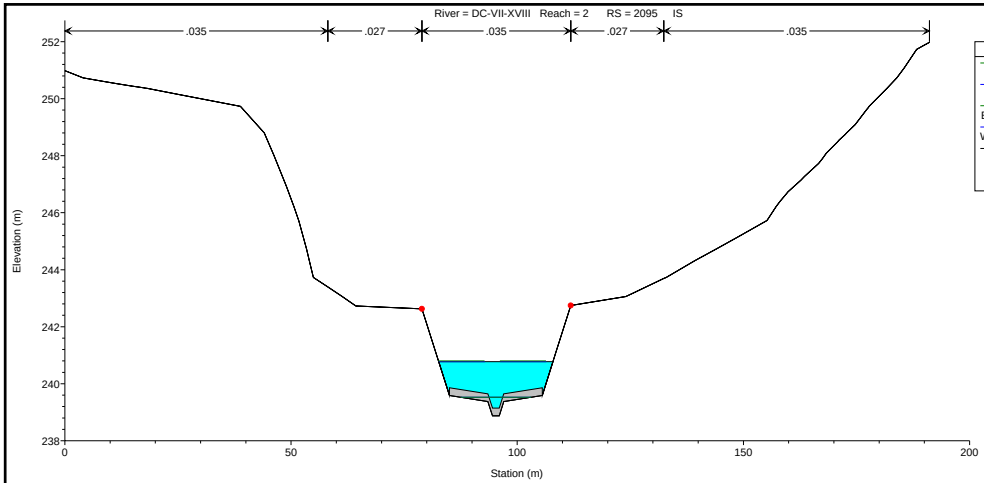

River = DC-VII-XVIII Reach = 2 RS = 2149.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

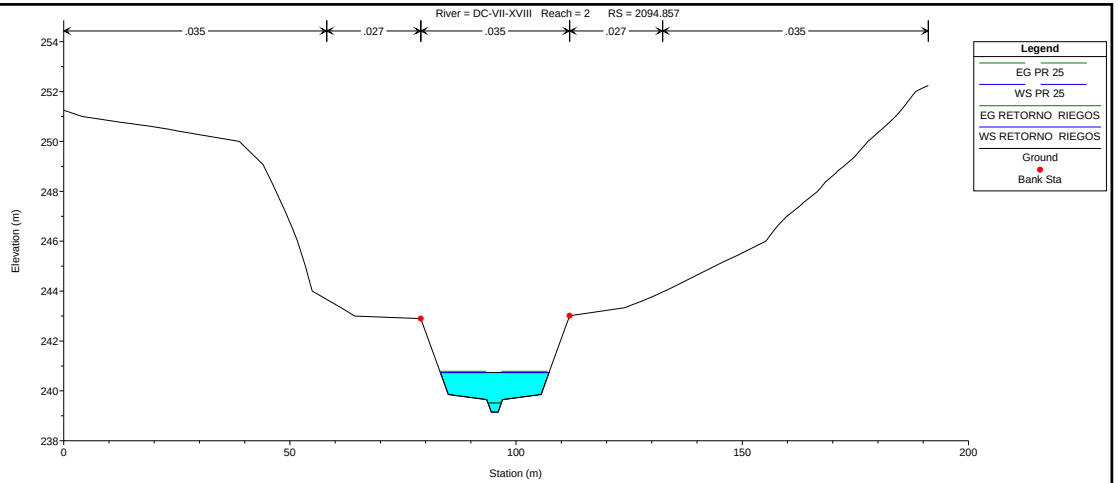

River = DC-VII-XVIII Reach = 2 RS = 2100.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

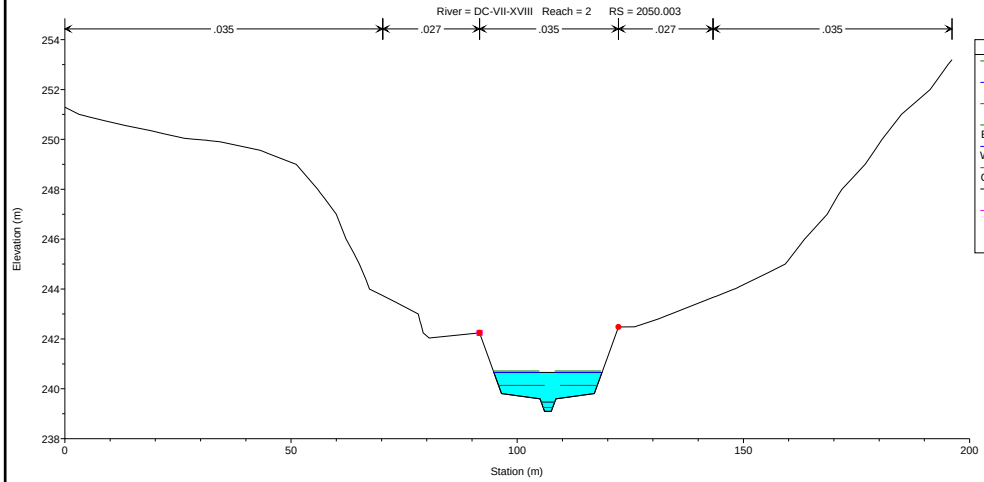

River = DC-VII-XVIII Reach = 2 RS = 2100 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

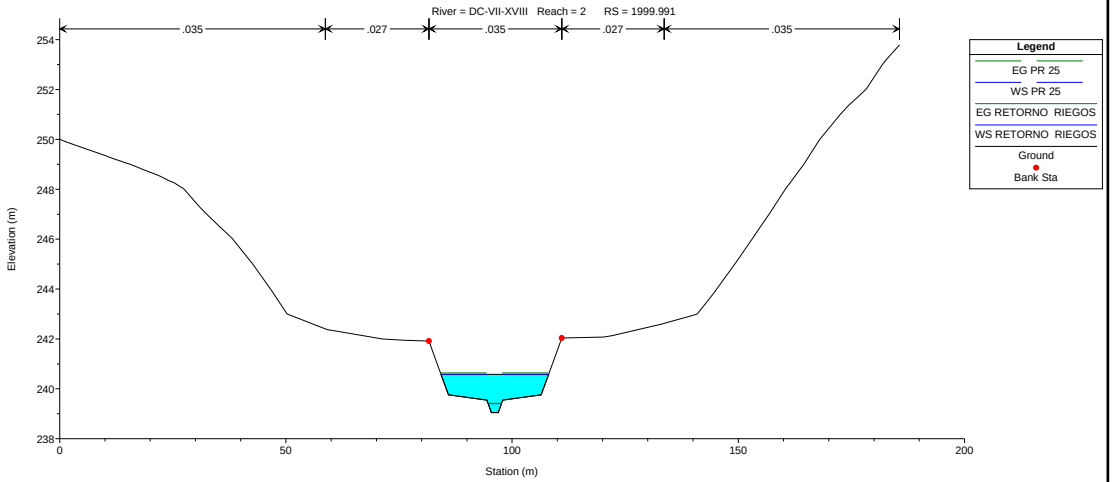

River = DC-VII-XVIII Reach = 2 RS = 2099.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

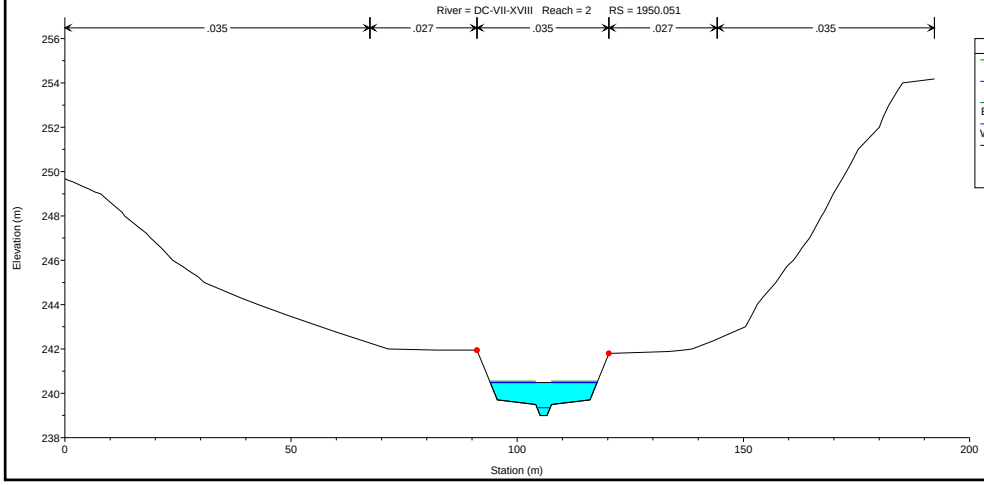

River = DC-VII-XVIII Reach = 2 RS = 2095.857
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

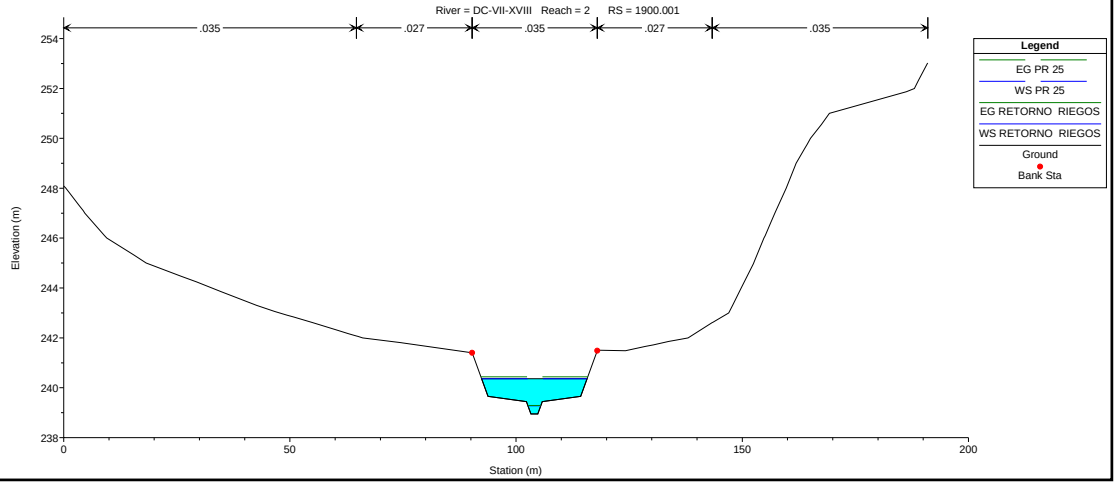

River = DC-VII-XVIII Reach = 2 RS = 2095 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

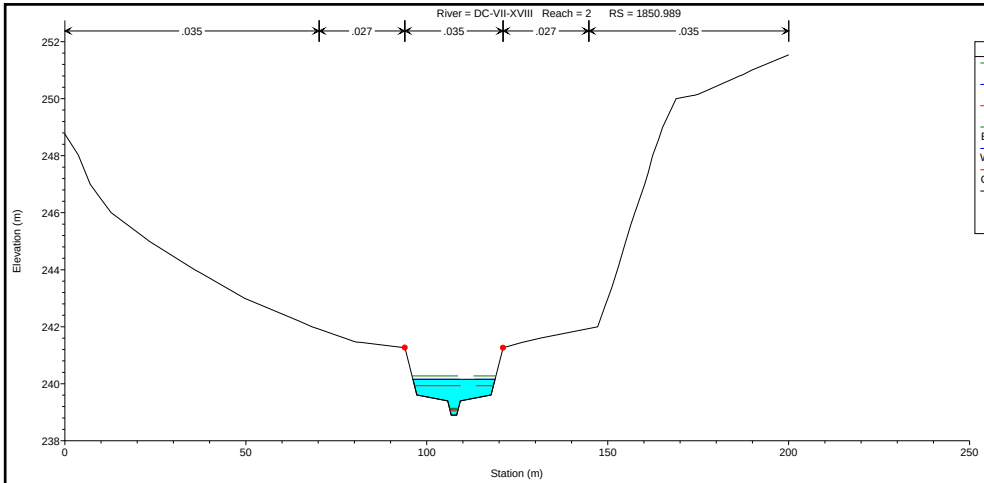

River = DC-VII-XVIII Reach = 2 RS = 2094.857
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

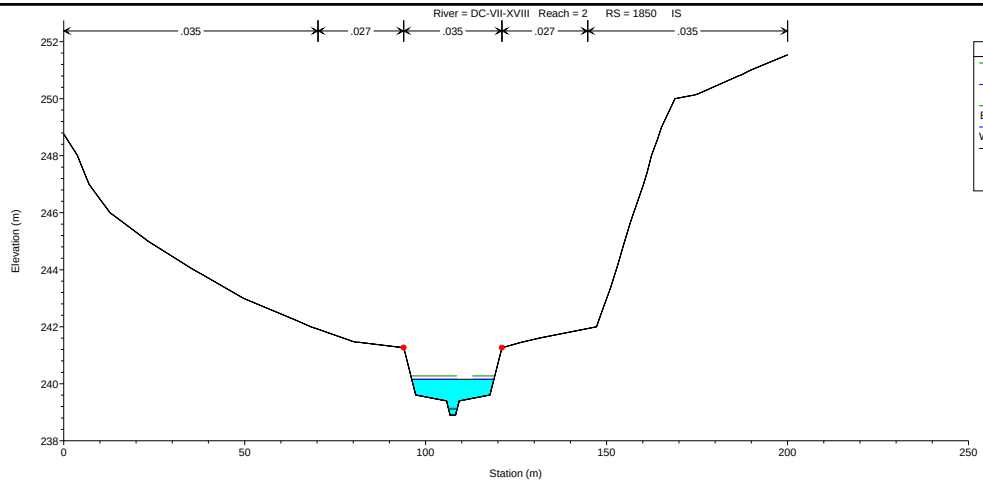

River = DC-VII-XVIII Reach = 2 RS = 2050.003
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

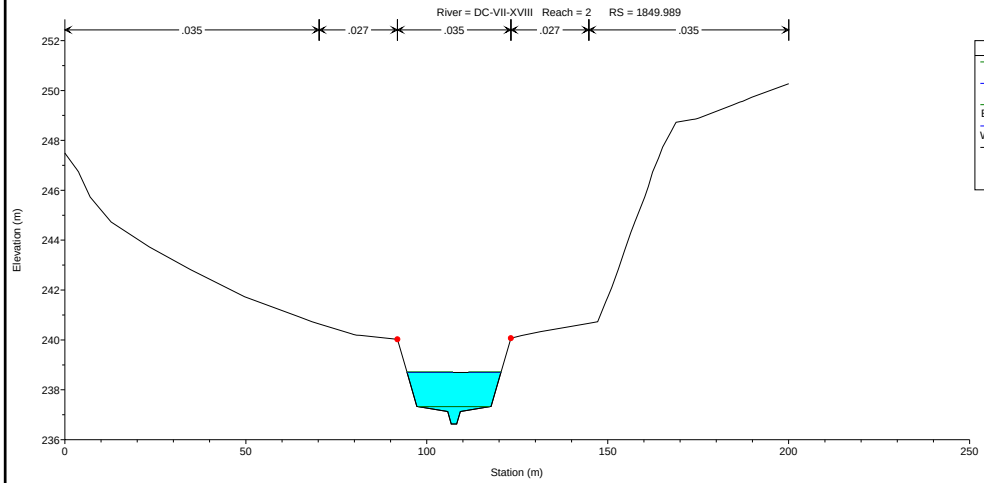

River = DC-VII-XVIII Reach = 2 RS = 1999.991
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

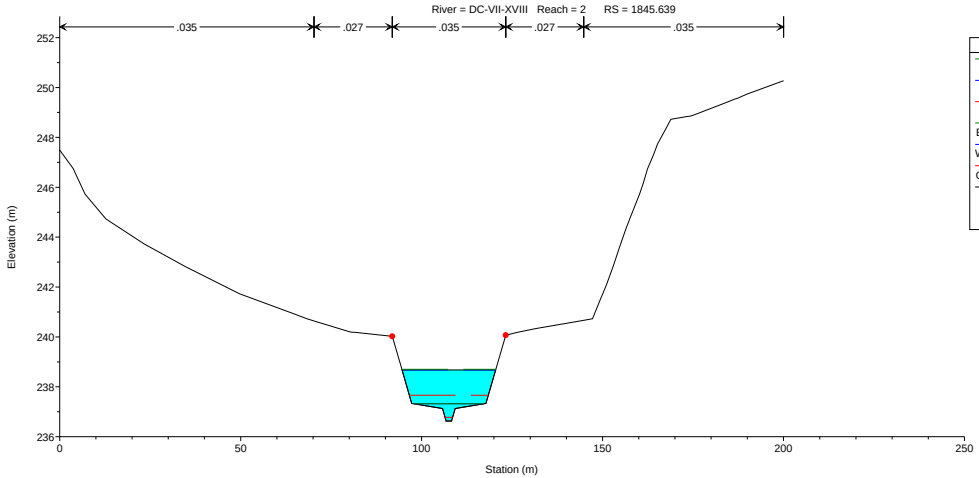

River = DC-VII-XVIII Reach = 2 RS = 1950.051
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

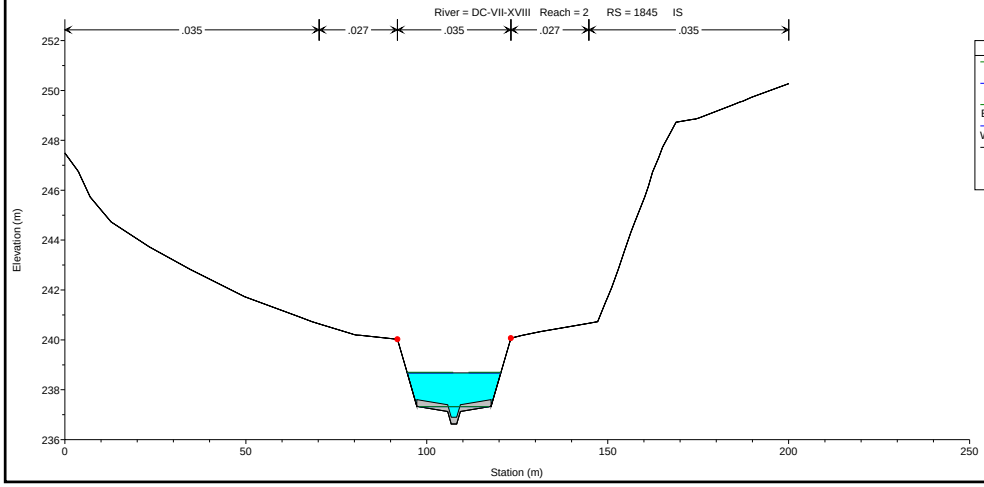

River = DC-VII-XVIII Reach = 2 RS = 1900.001
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

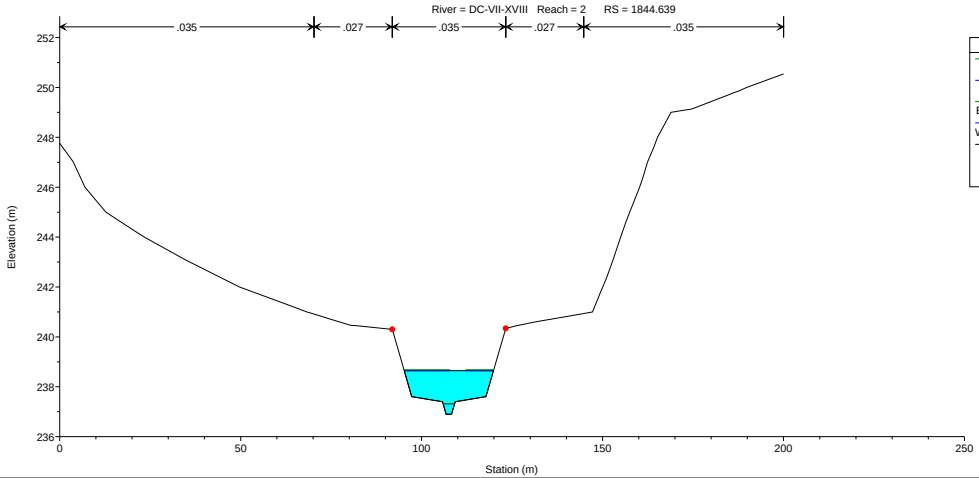

River = DC-VII-XVIII Reach = 2 RS = 1850.989
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

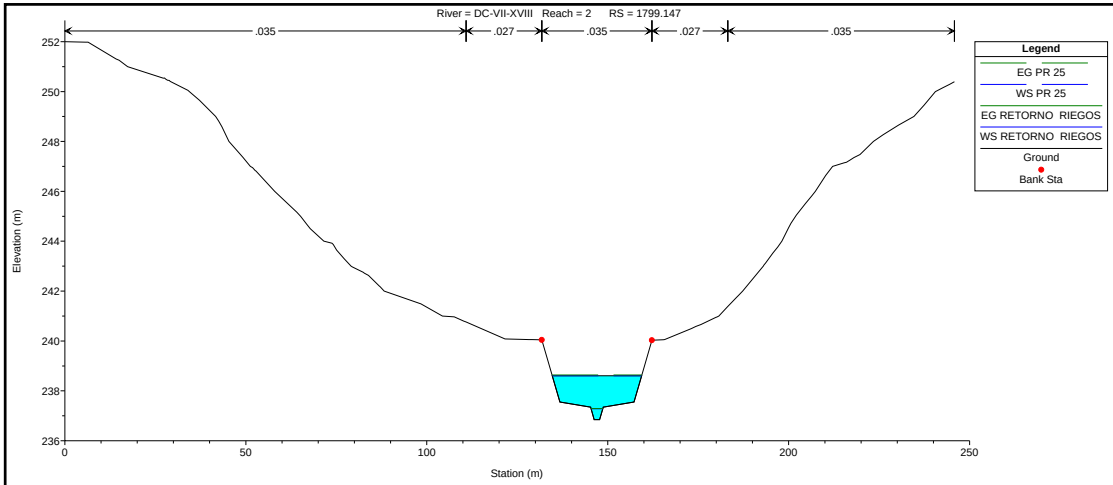

River = DC-VII-XVIII Reach = 2 RS = 1850 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

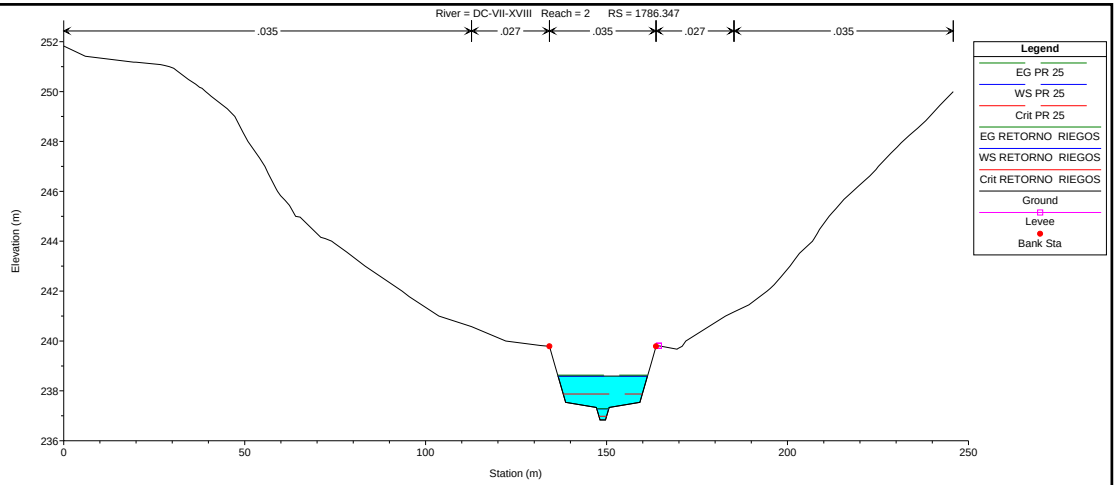

River = DC-VII-XVIII Reach = 2 RS = 1849.989
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

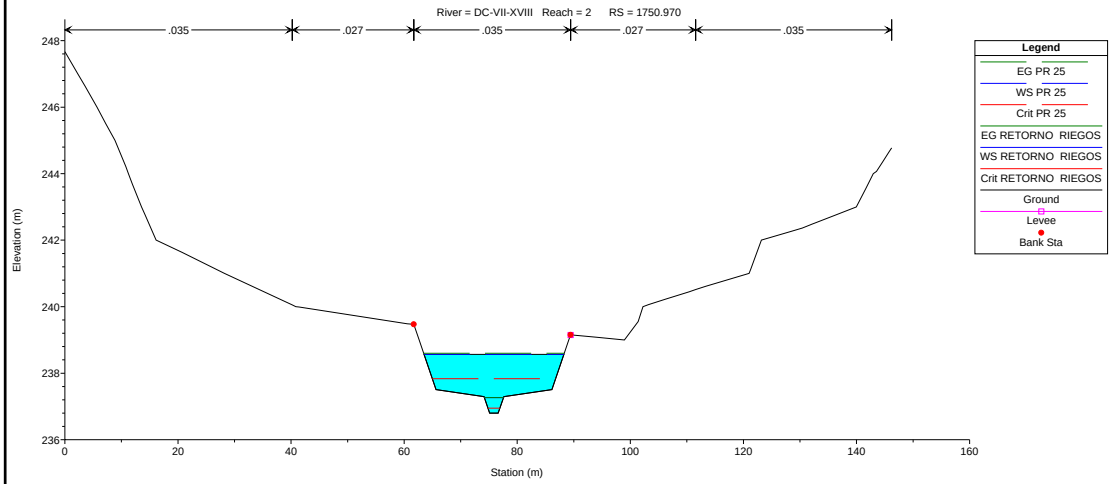

River = DC-VII-XVIII Reach = 2 RS = 1845.639
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

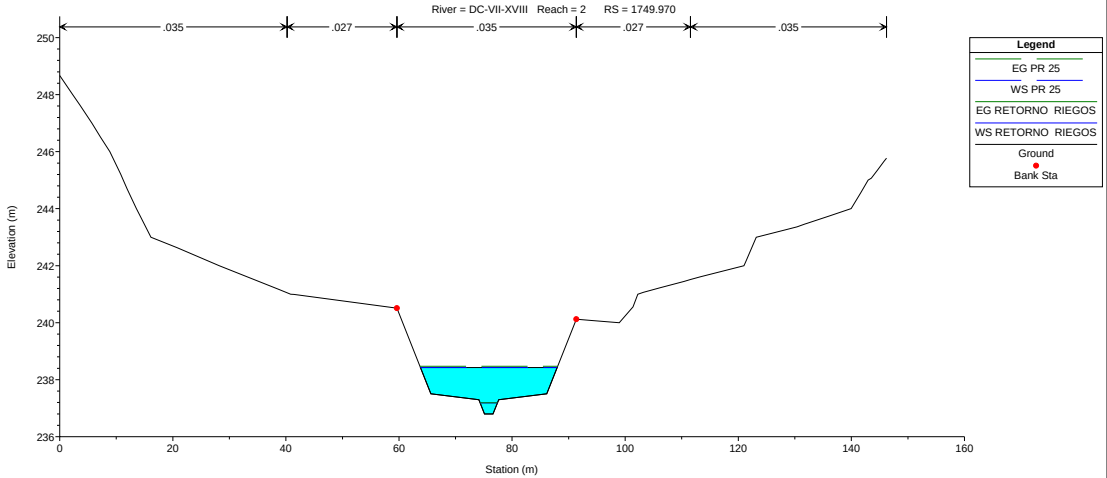

River = DC-VII-XVIII Reach = 2 RS = 1845 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

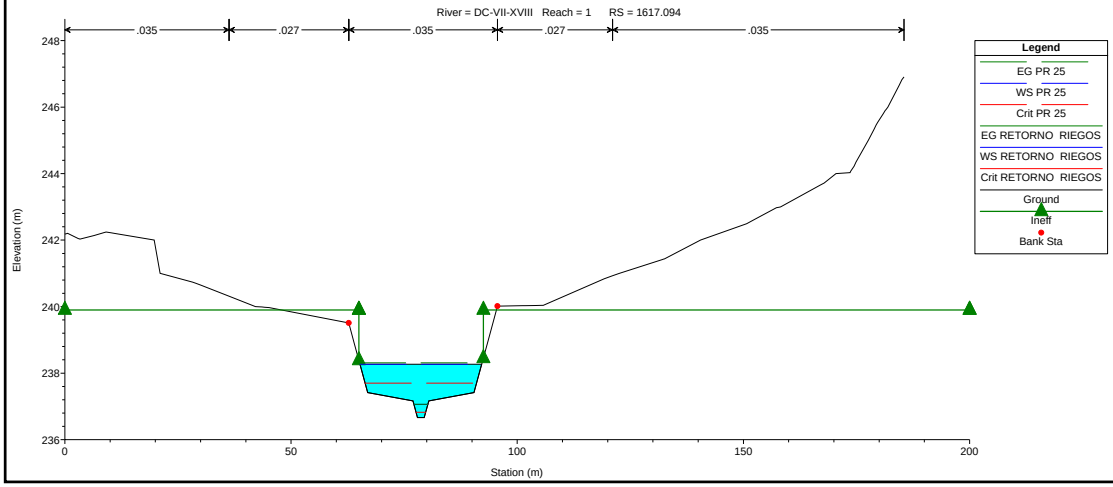

River = DC-VII-XVIII Reach = 2 RS = 1844.639
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

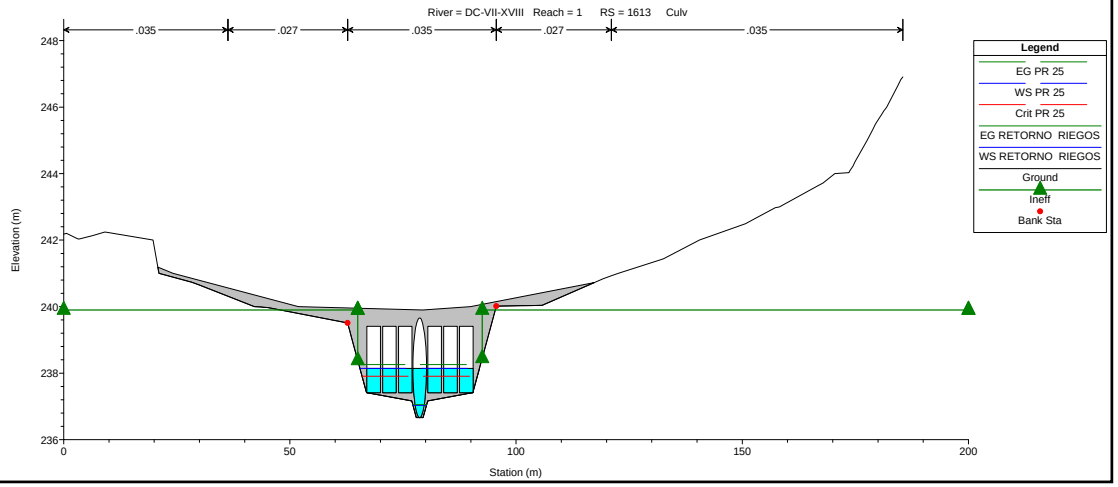

River = DC-VII-XVIII Reach = 2 RS = 1799.147
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

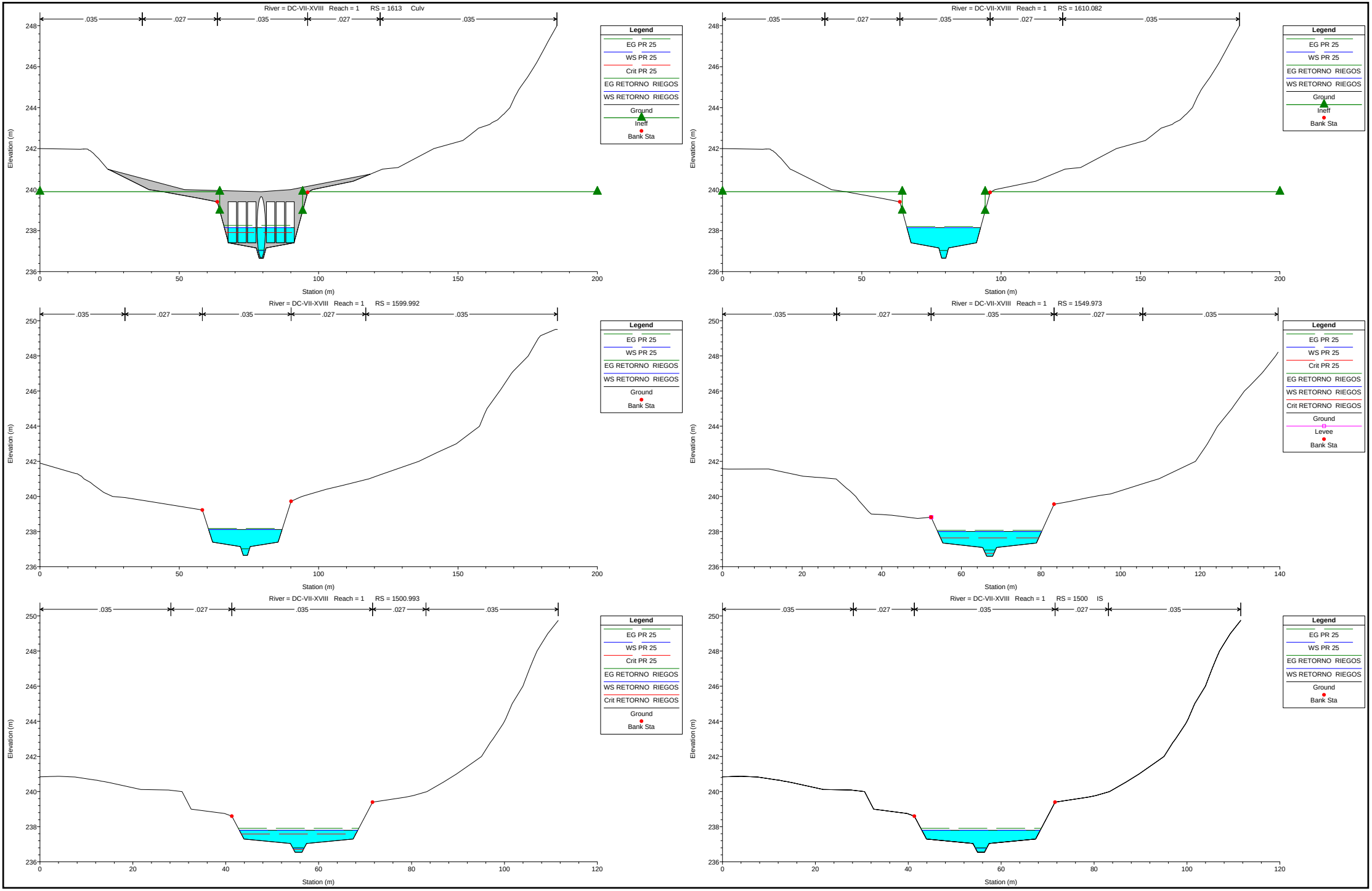

River = DC-VII-XVIII Reach = 2 RS = 1786.347
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

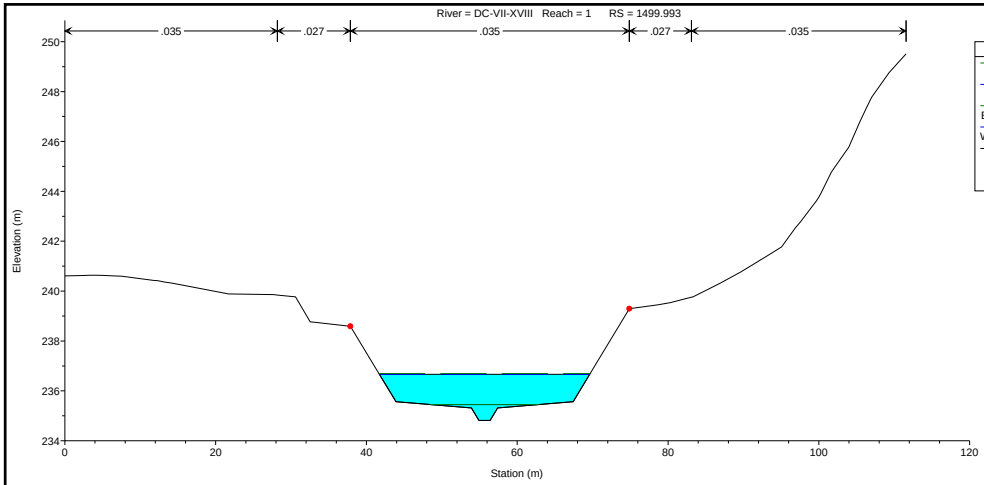

River = DC-VII-XVIII Reach = 2 RS = 1750.970
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

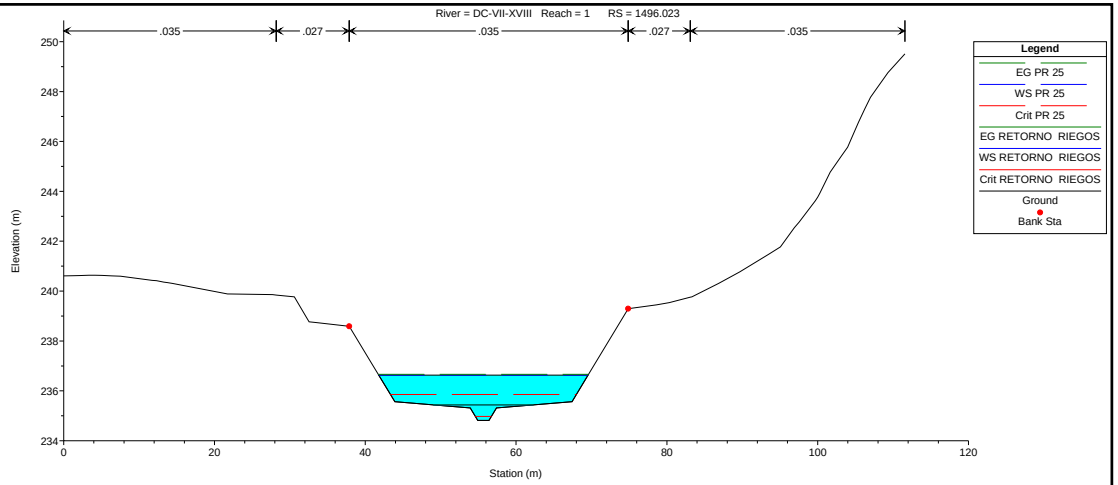

River = DC-VII-XVIII Reach = 2 RS = 1749.970
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

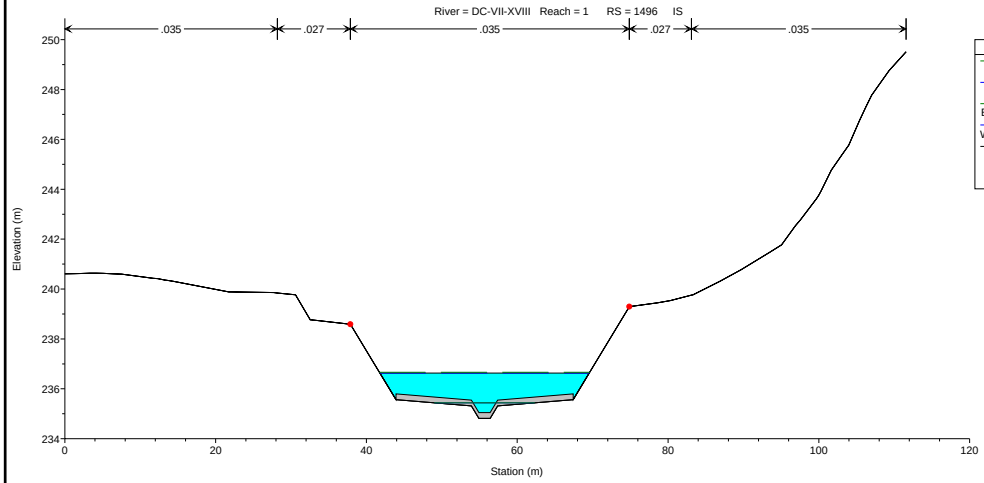

River = DC-VII-XVIII Reach = 1 RS = 1617.094
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

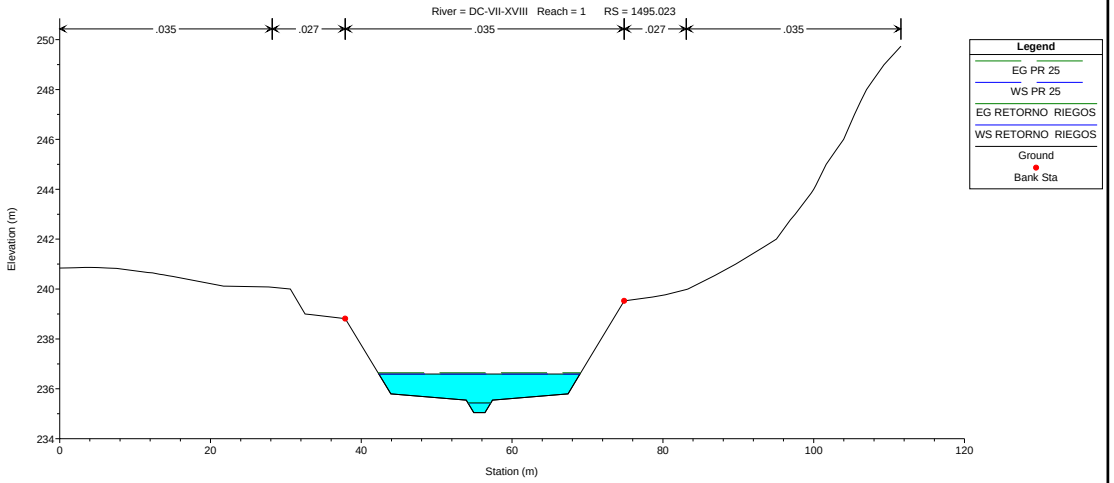

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

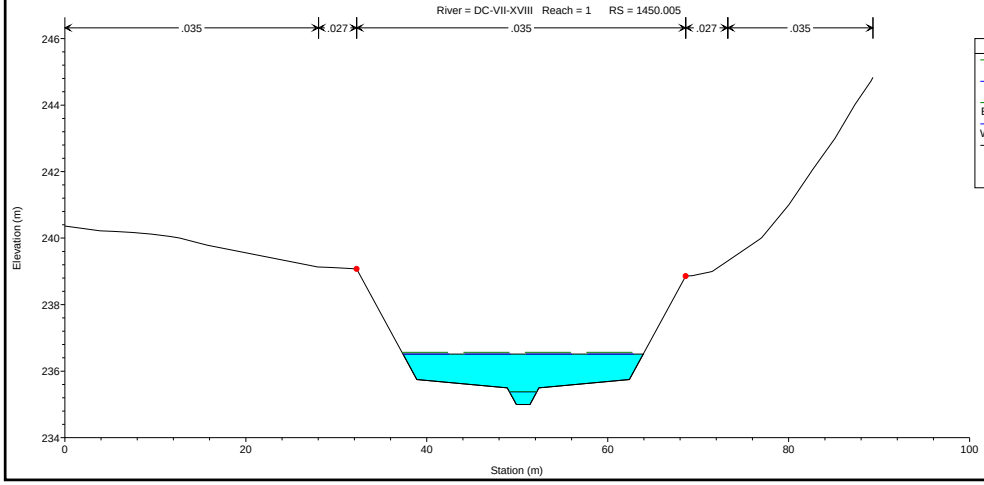

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
River = DC-VII-XVIII Reach = 1 RS = 1610.082
River = DC-VII-XVIII Reach = 1 RS = 1599.992
River = DC-VII-XVIII Reach = 1 RS = 1549.973
River = DC-VII-XVIII Reach = 1 RS = 1500.993
River = DC-VII-XVIII Reach = 1 RS = 1500 IS
.035
.027
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Levee
Bank Sta

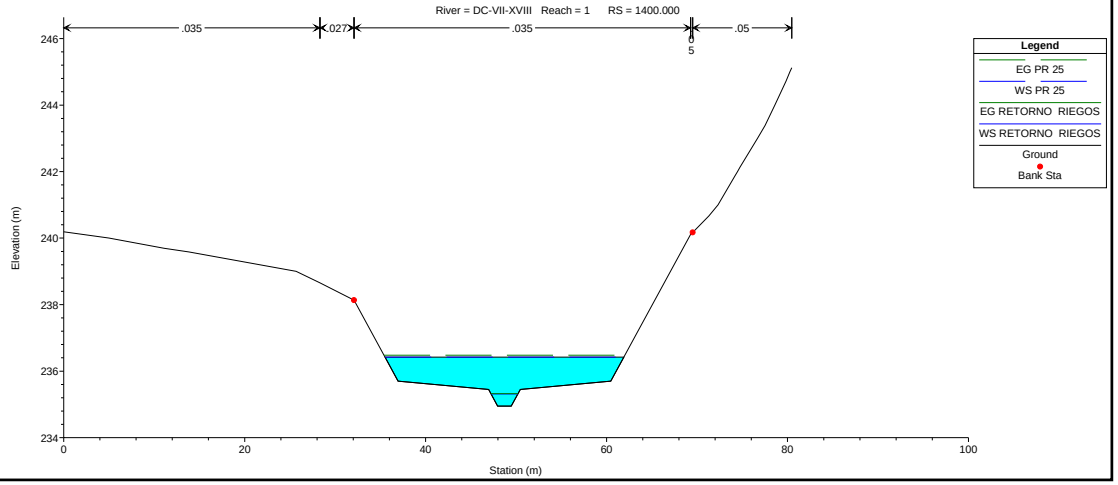

River = DC-VII-XVIII Reach = 1 RS = 1499.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

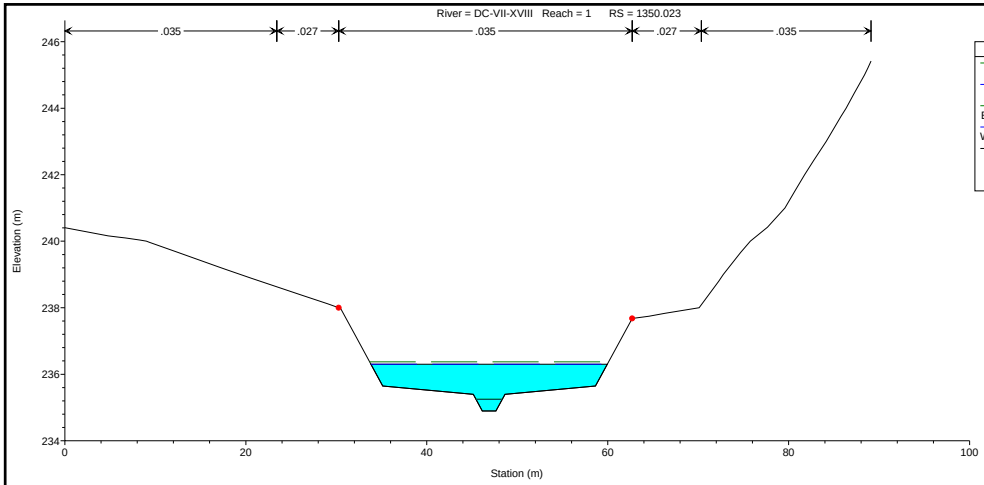

River = DC-VII-XVIII Reach = 1 RS = 1496.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

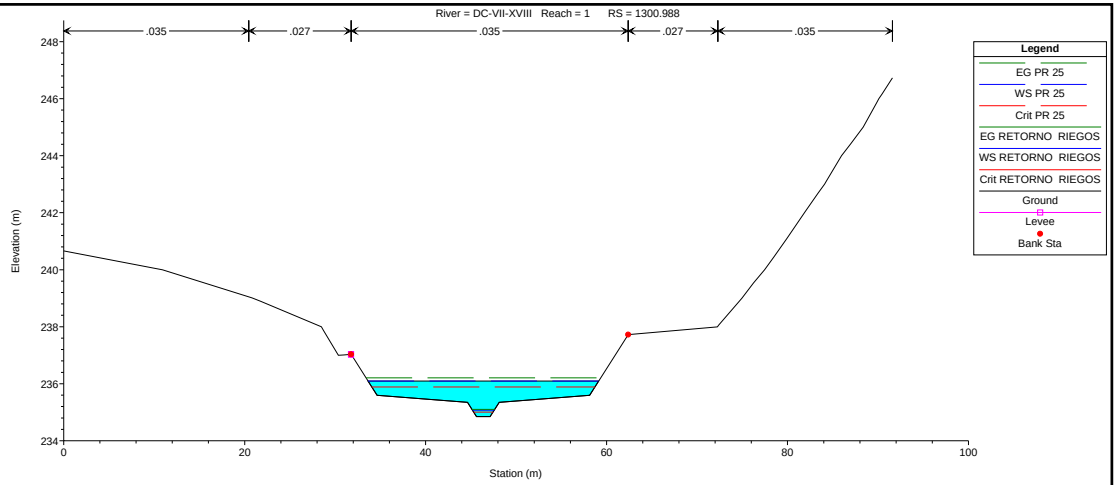

River = DC-VII-XVIII Reach = 1 RS = 1496 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

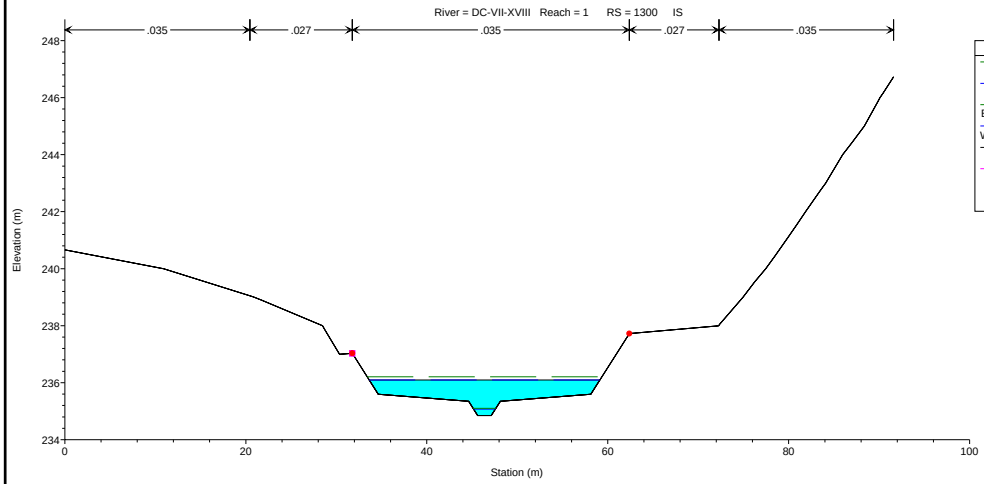

River = DC-VII-XVIII Reach = 1 RS = 1495.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

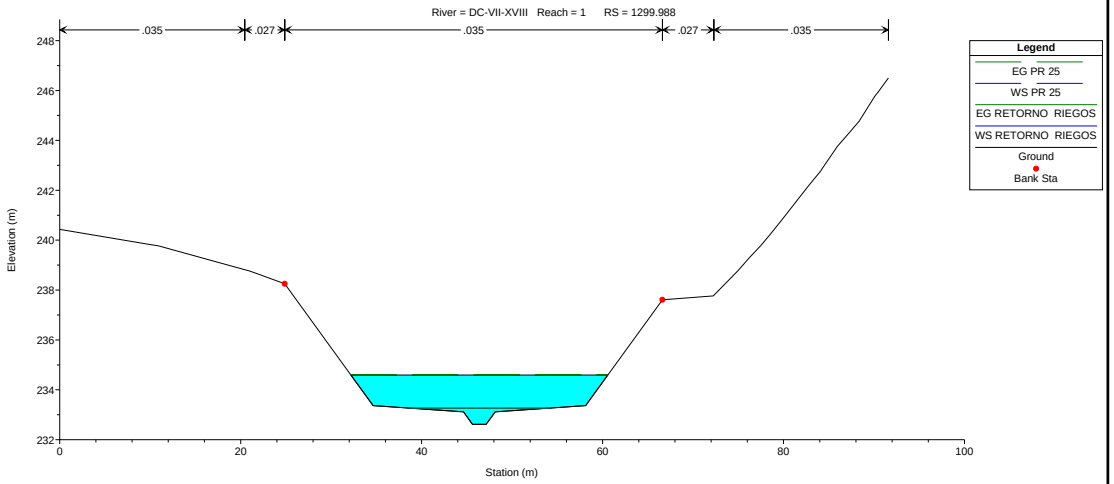

River = DC-VII-XVIII Reach = 1 RS = 1450.005
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

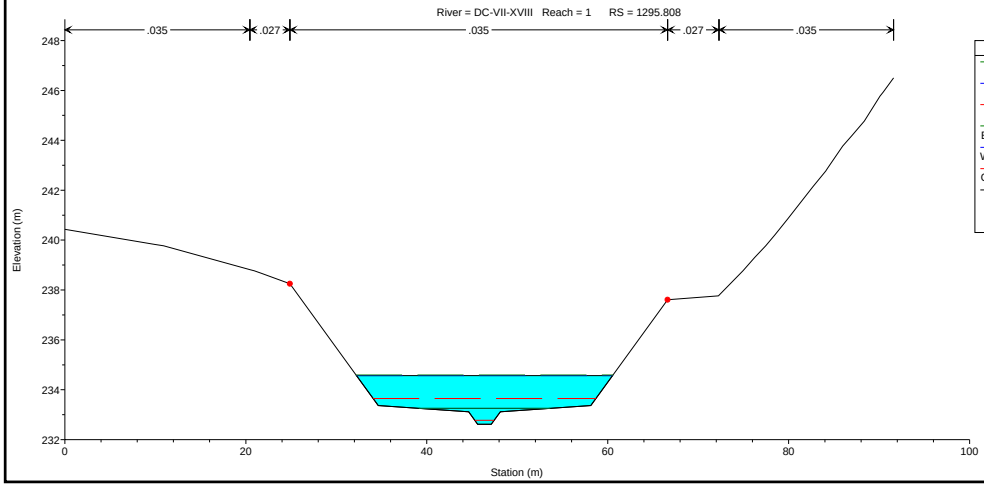

River = DC-VII-XVIII Reach = 1 RS = 1400.000
.035
.027
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

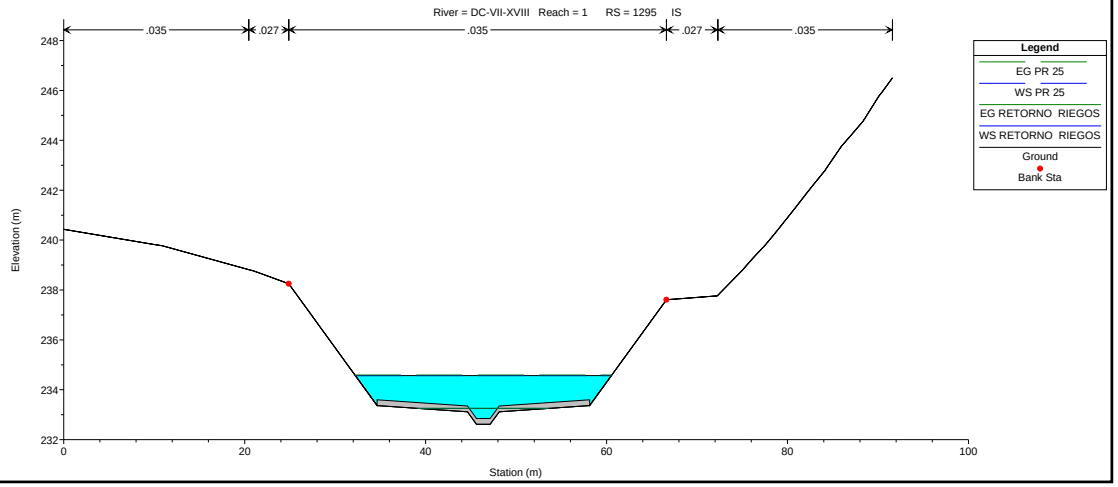

River = DC-VII-XVIII Reach = 1 RS = 1350.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

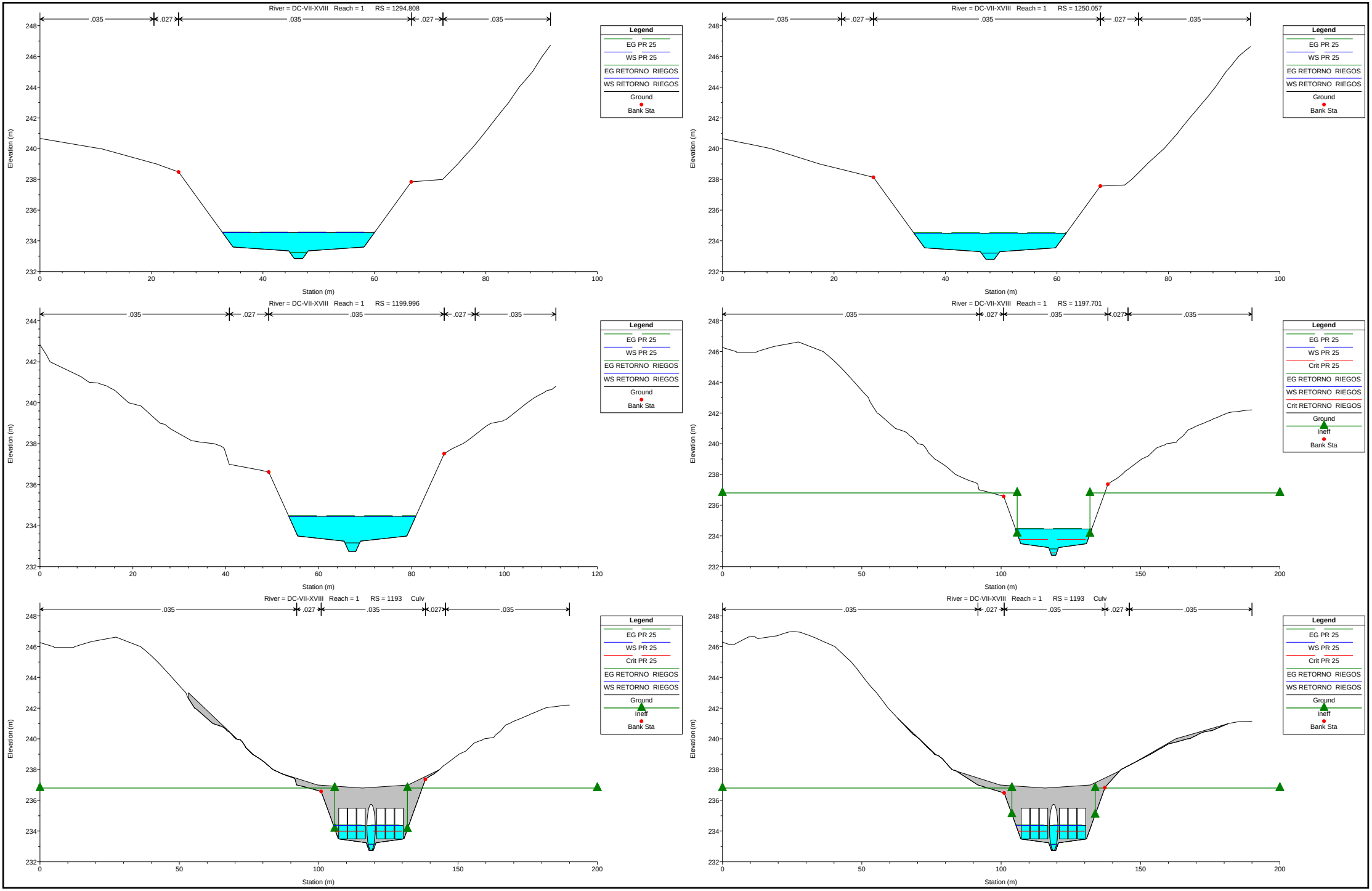

River = DC-VII-XVIII Reach = 1 RS = 1300.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

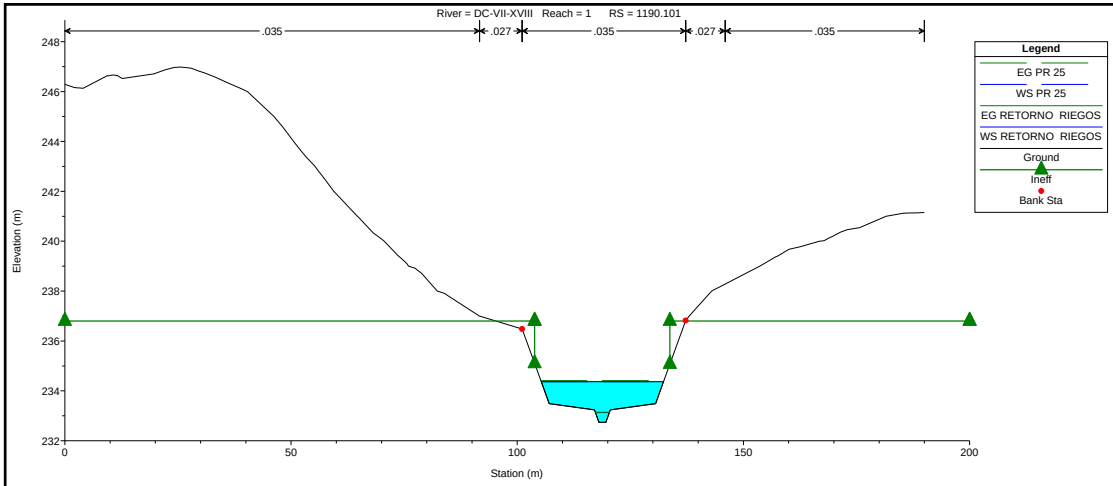

River = DC-VII-XVIII Reach = 1 RS = 1300 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Bank Sta

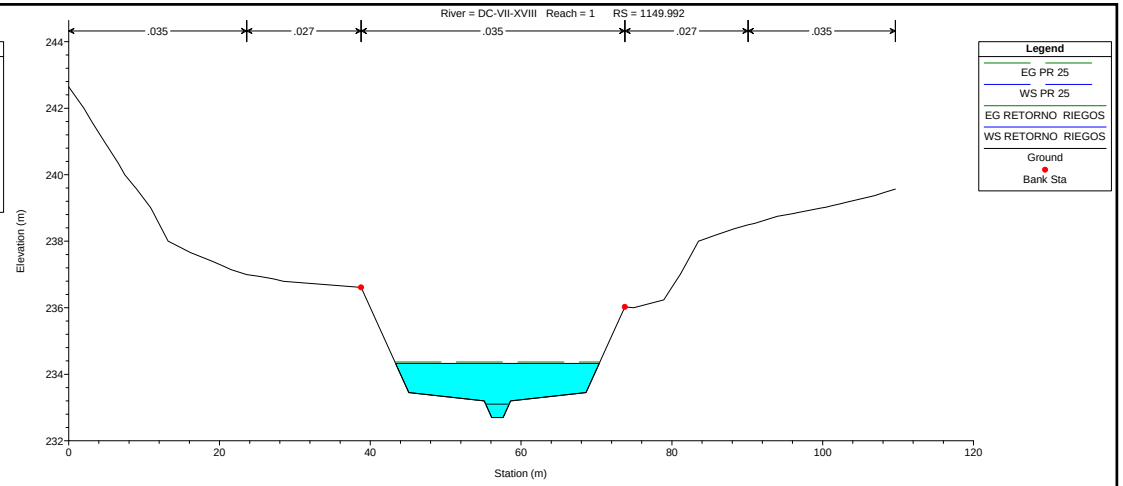

River = DC-VII-XVIII Reach = 1 RS = 1299.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

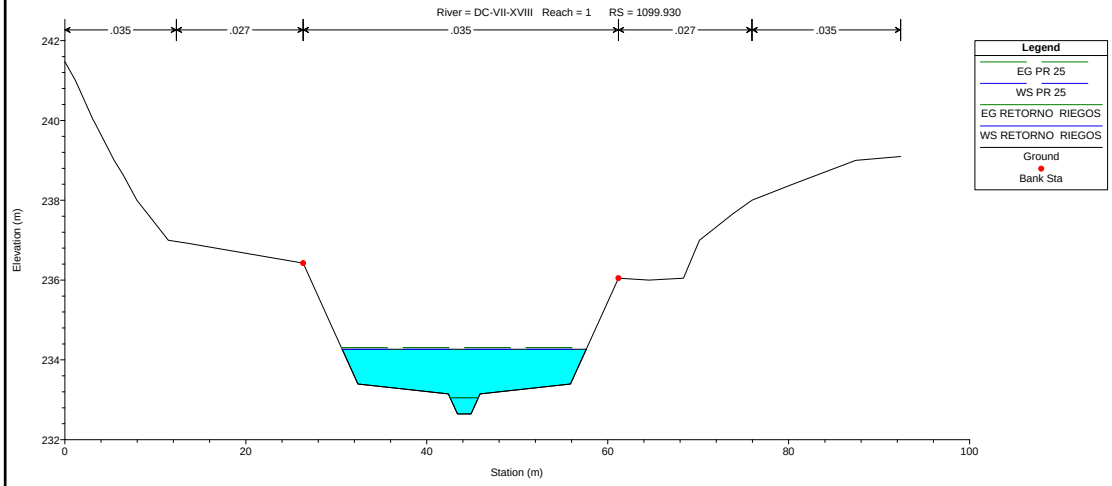

River = DC-VII-XVIII Reach = 1 RS = 1295.808
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

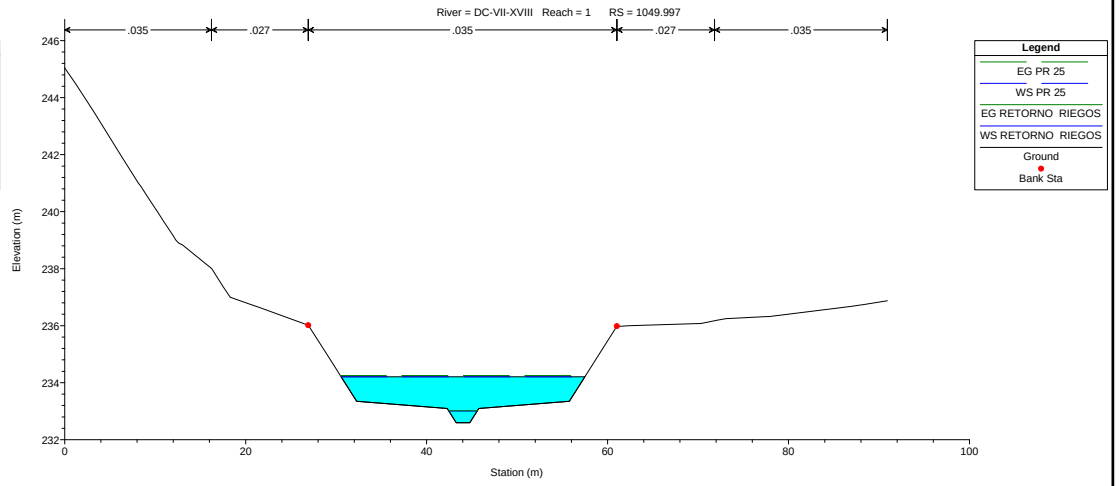

River = DC-VII-XVIII Reach = 1 RS = 1295 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

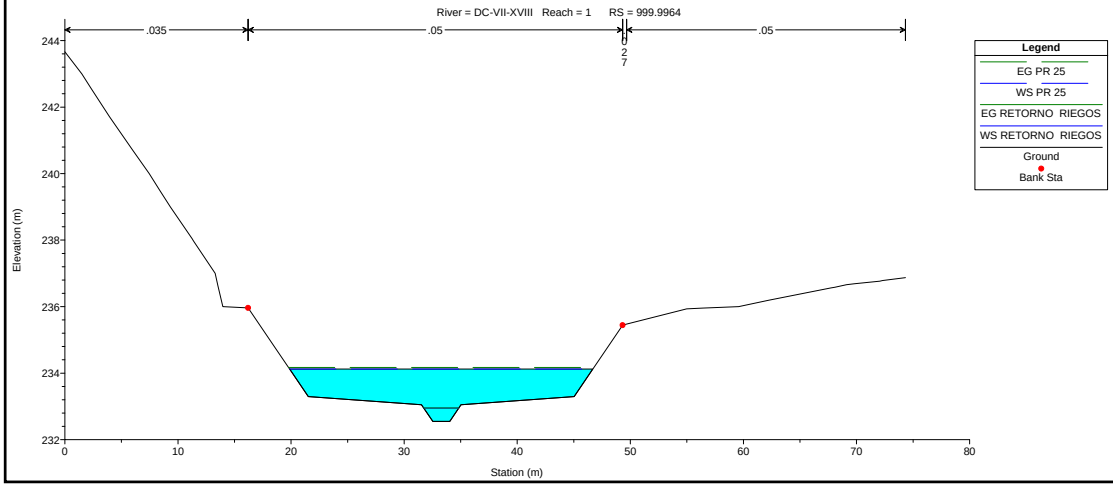

River = DC-VII-XVIII Reach = 1 RS = 1294.808
River = DC-VII-XVIII Reach = 1 RS = 1250.057
River = DC-VII-XVIII Reach = 1 RS = 1199.996
River = DC-VII-XVIII Reach = 1 RS = 1197.701
River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.035
.027
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta
Elevation (m)
Station (m)

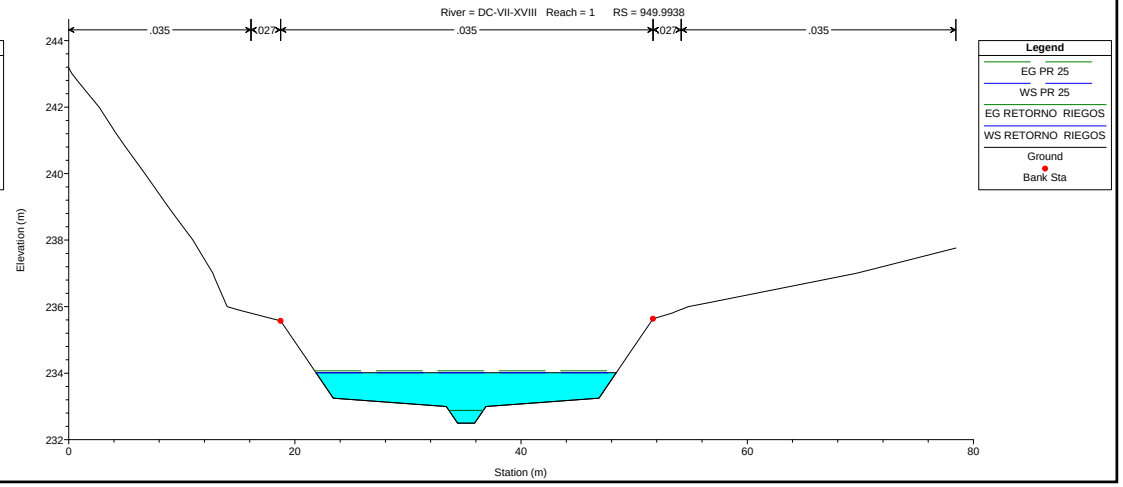

River = DC-VII-XVIII Reach = 1 RS = 1190.101
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

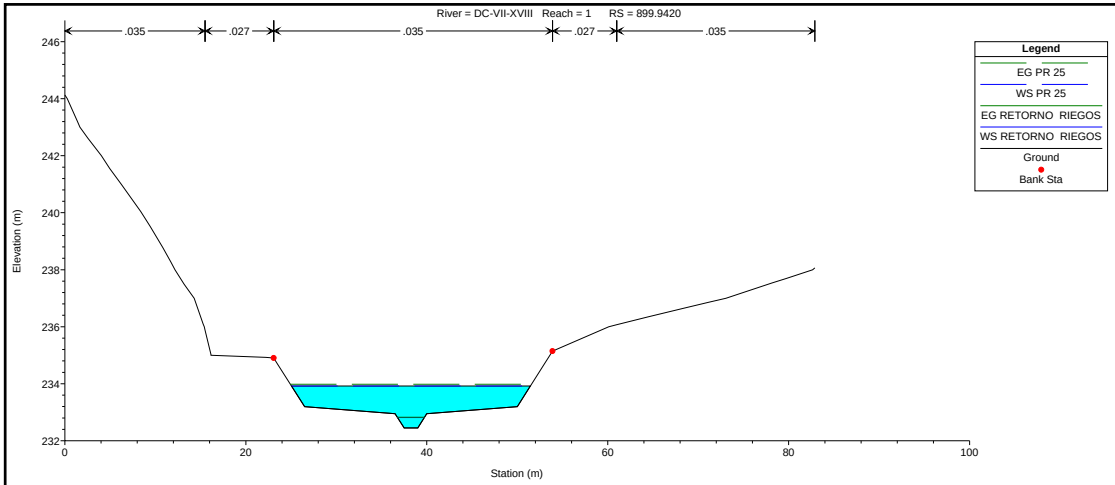

River = DC-VII-XVIII Reach = 1 RS = 1149.992
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

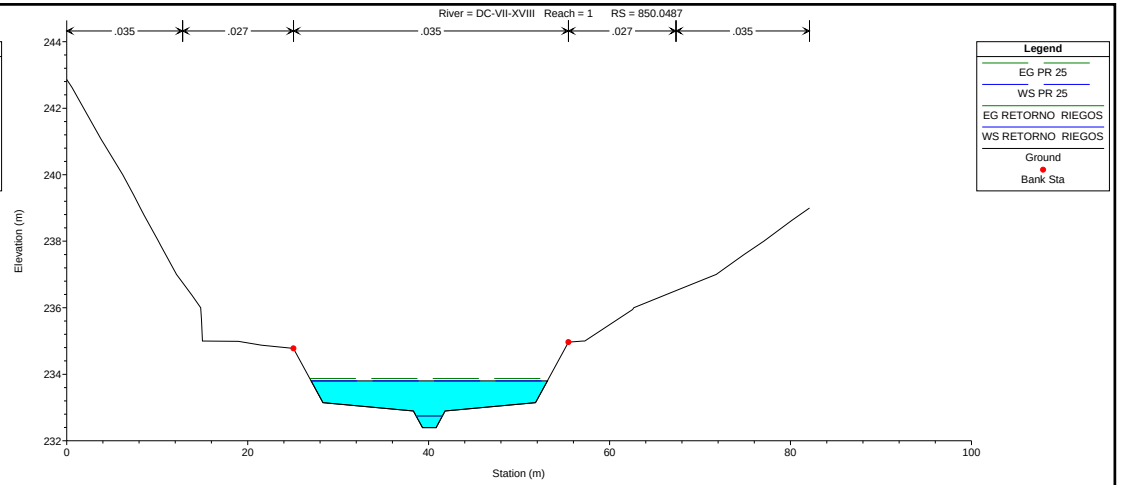

River = DC-VII-XVIII Reach = 1 RS = 1099.930
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

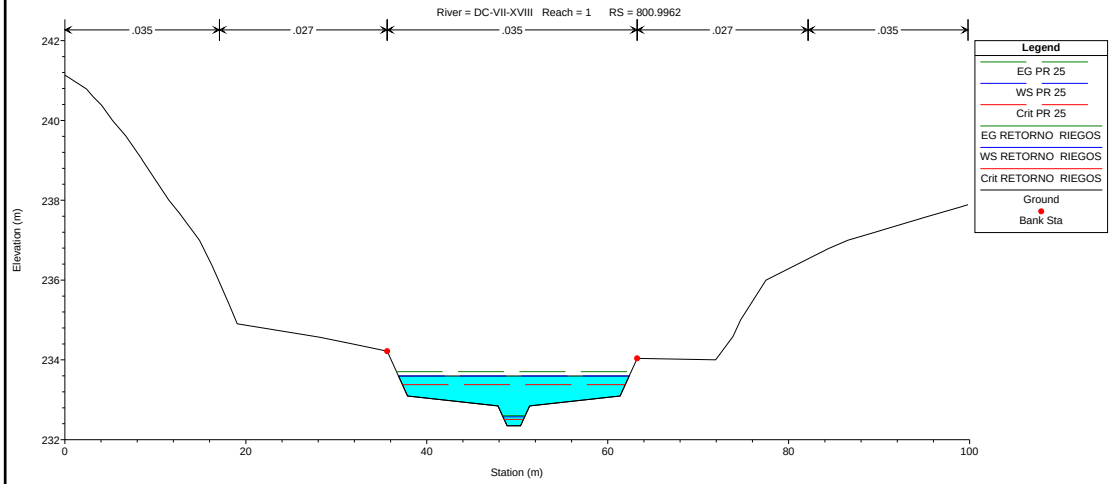

River = DC-VII-XVIII Reach = 1 RS = 1049.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

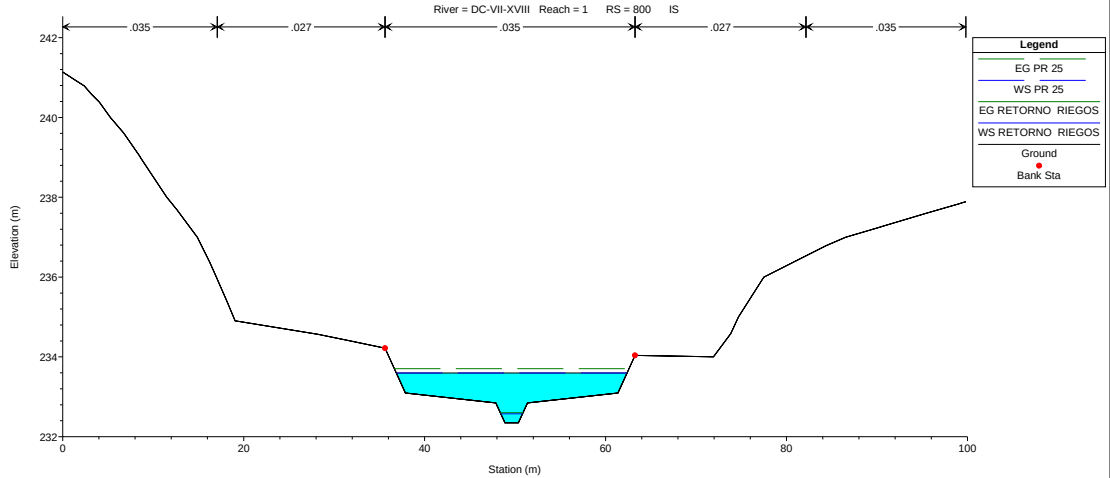

River = DC-VII-XVIII Reach = 1 RS = 999.9964
.035
.05
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

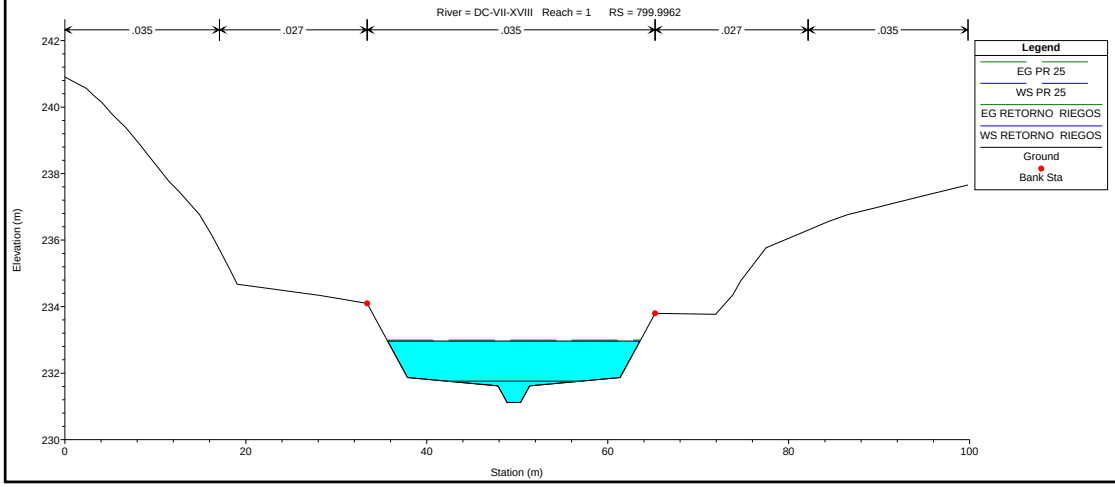

River = DC-VII-XVIII Reach = 1 RS = 949.9938
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

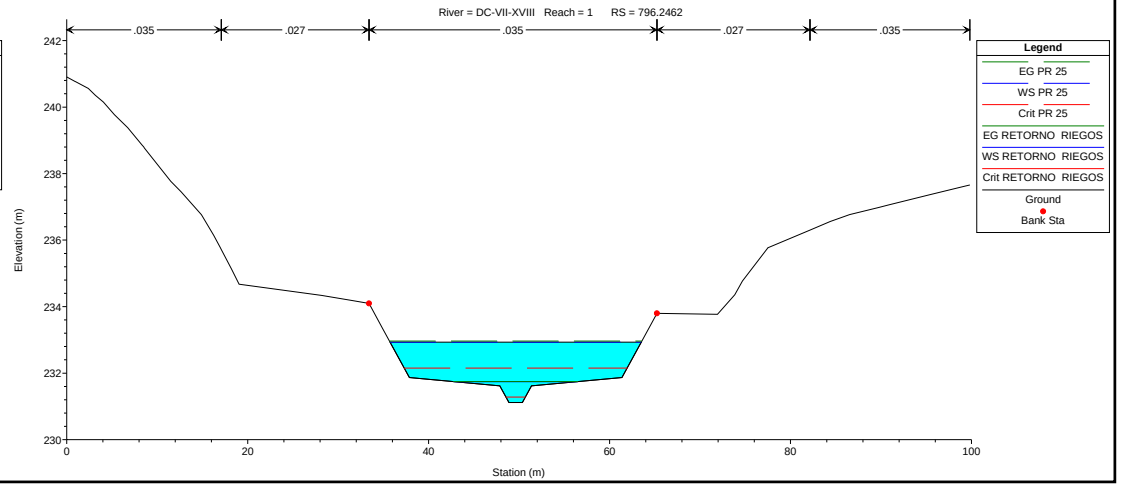

River = DC-VII-XVIII Reach = 1 RS = 899.9420
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

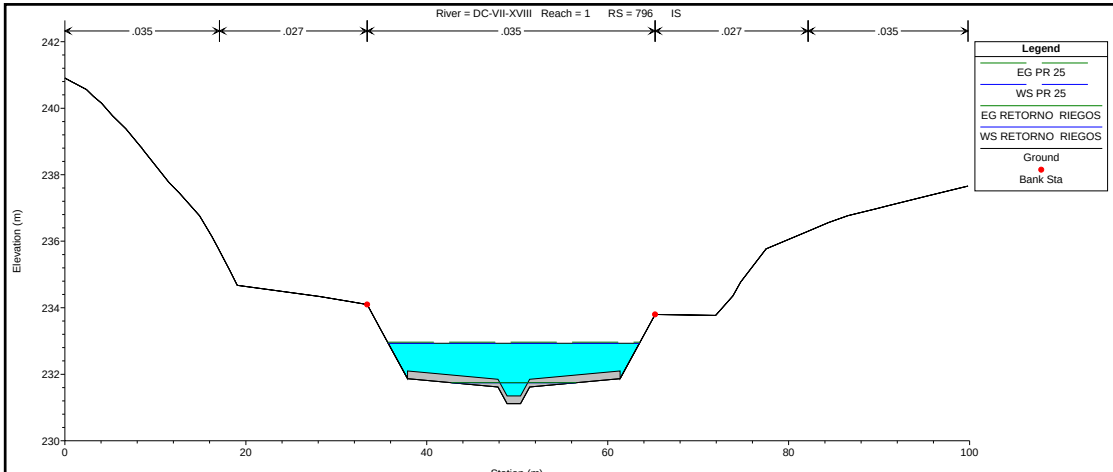

River = DC-VII-XVIII Reach = 1 RS = 850.0487
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

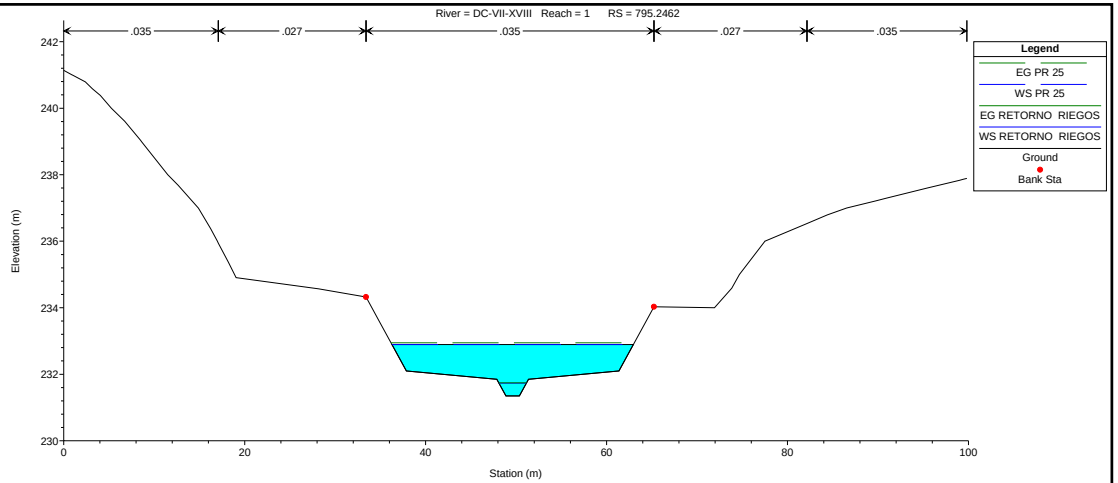

River = DC-VII-XVIII Reach = 1 RS = 800.9962
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

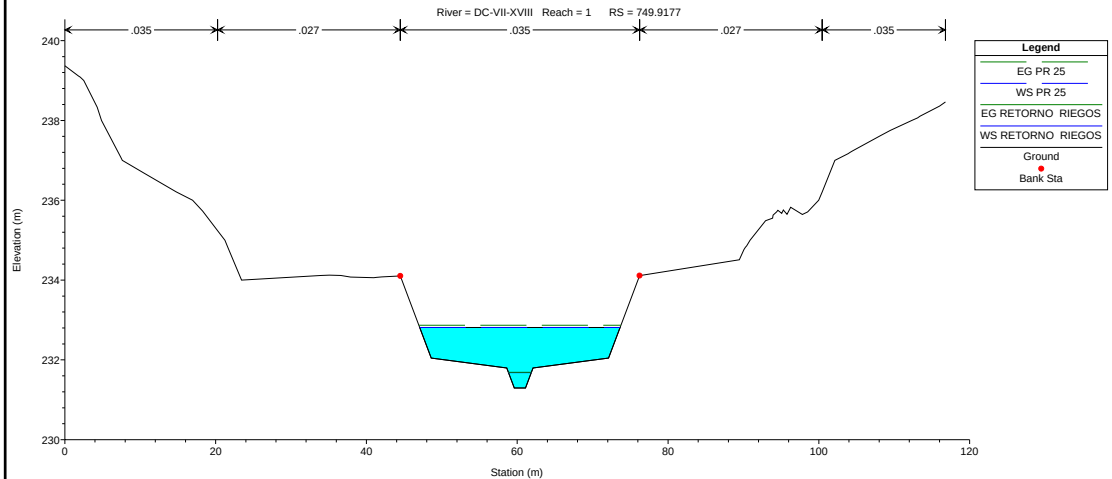

River = DC-VII-XVIII Reach = 1 RS = 800 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

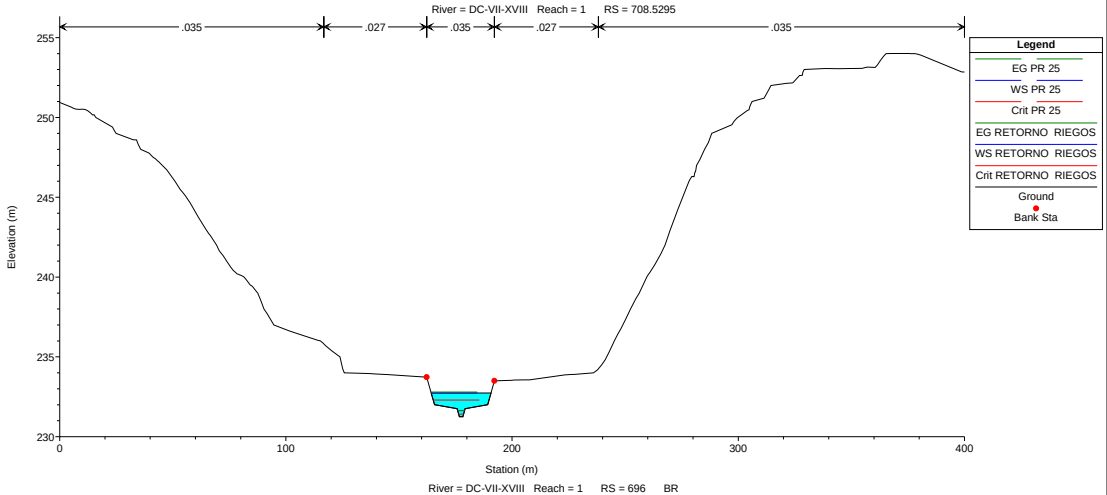

River = DC-VII-XVIII Reach = 1 RS = 799.9962
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

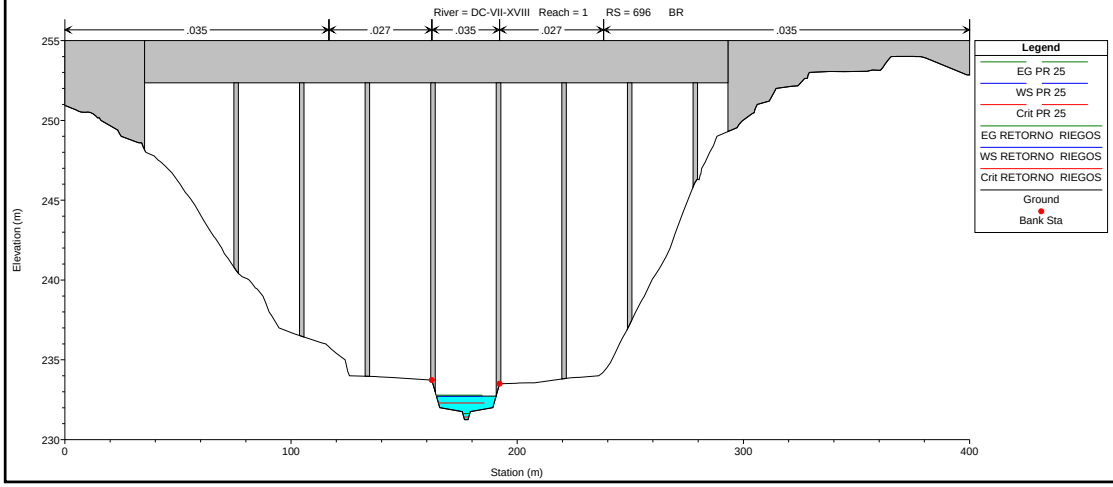

River = DC-VII-XVIII Reach = 1 RS = 796.2462
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

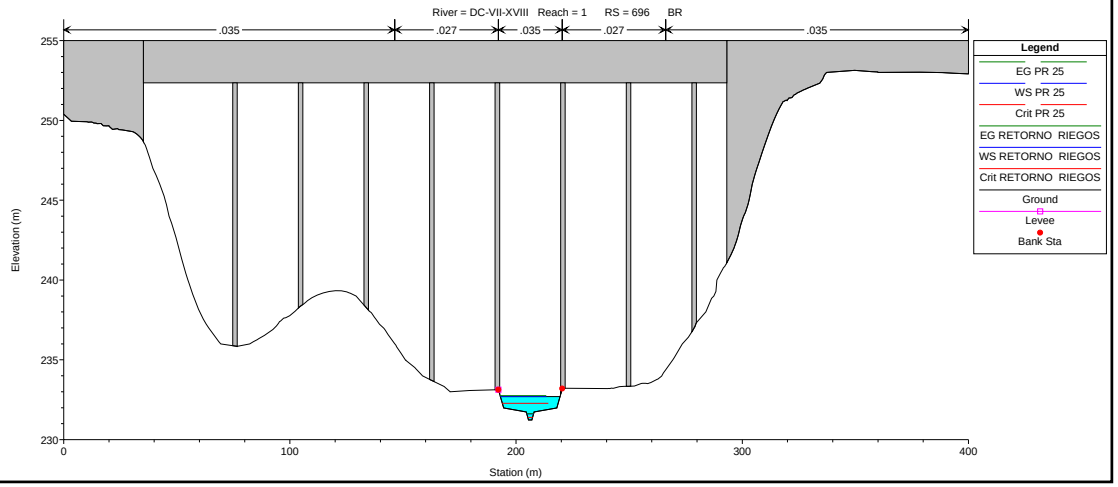

River = DC-VII-XVIII Reach = 1 RS = 796 IS
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

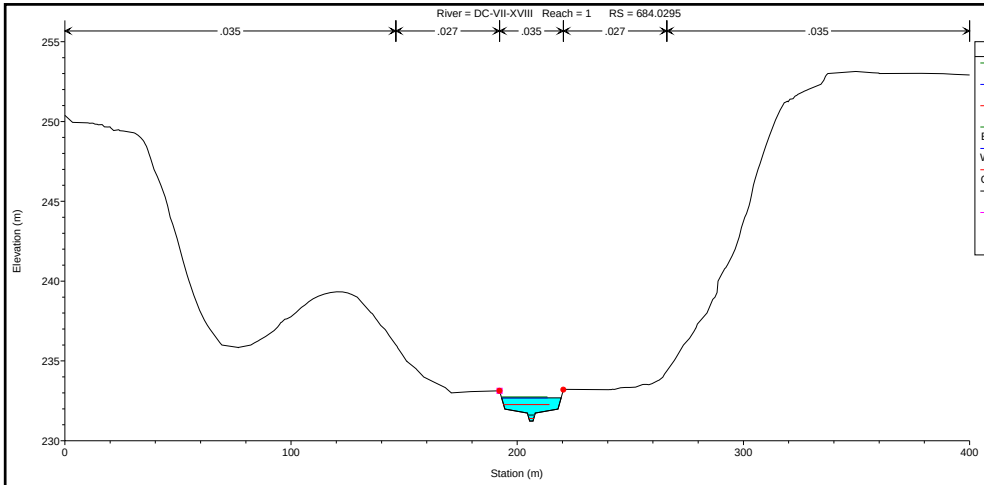

River = DC-VII-XVIII Reach = 1 RS = 795.2462
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

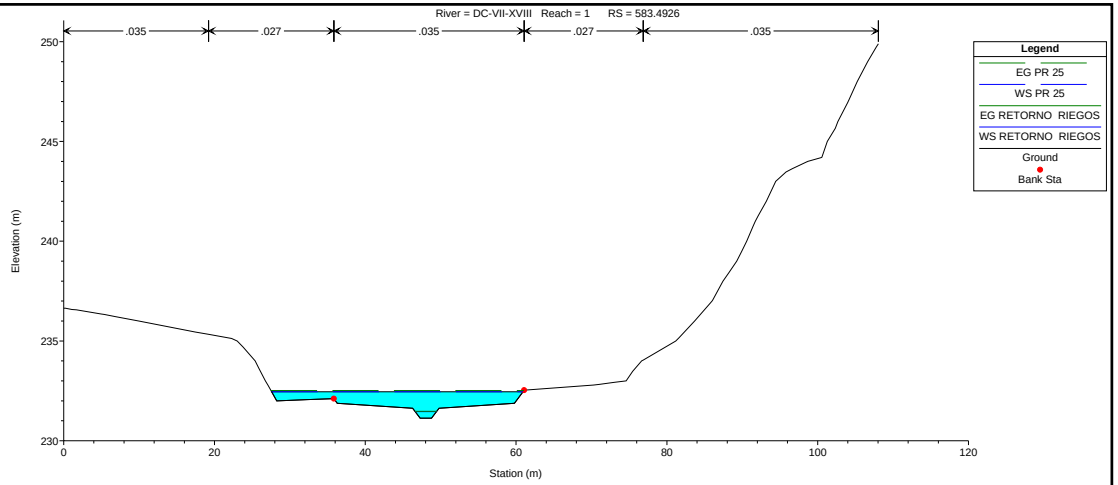

River = DC-VII-XVIII Reach = 1 RS = 749.9177
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

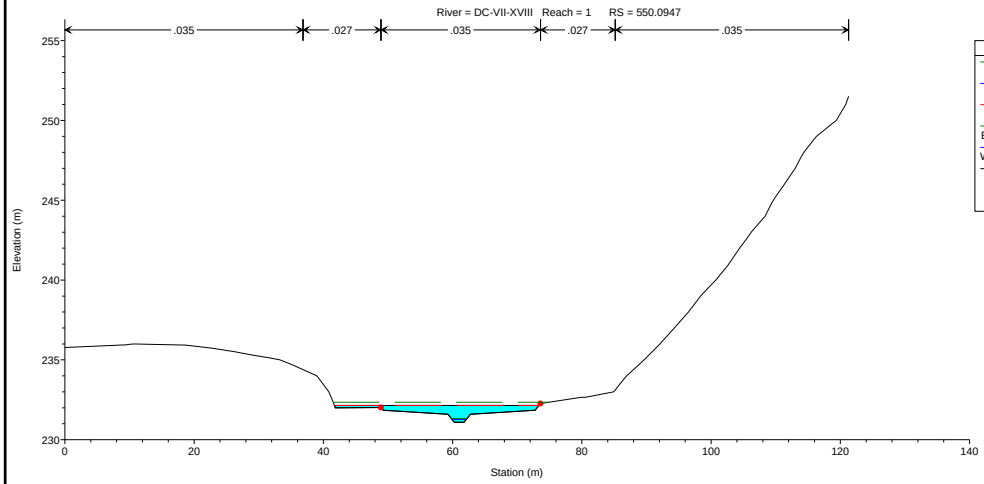

River = DC-VII-XVIII Reach = 1 RS = 708.5295
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

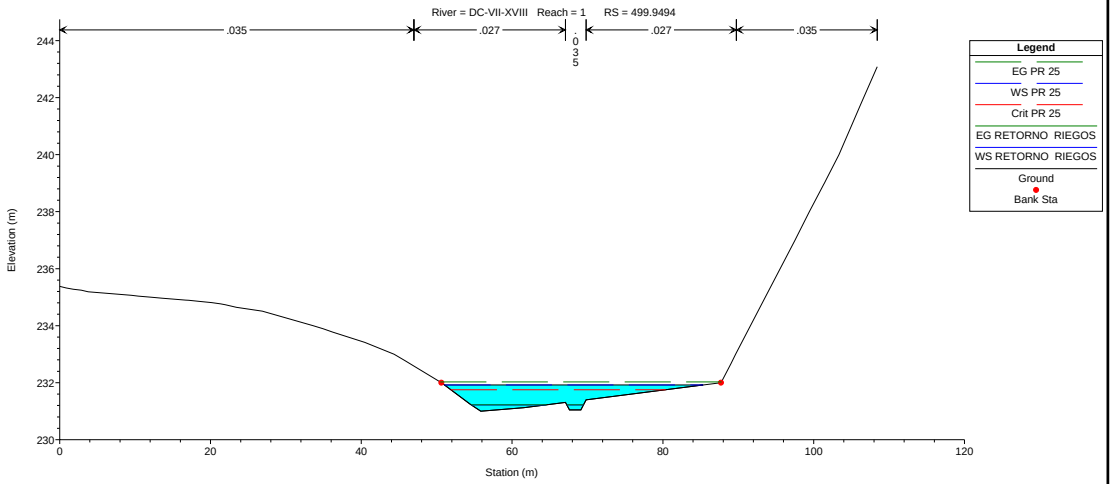

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

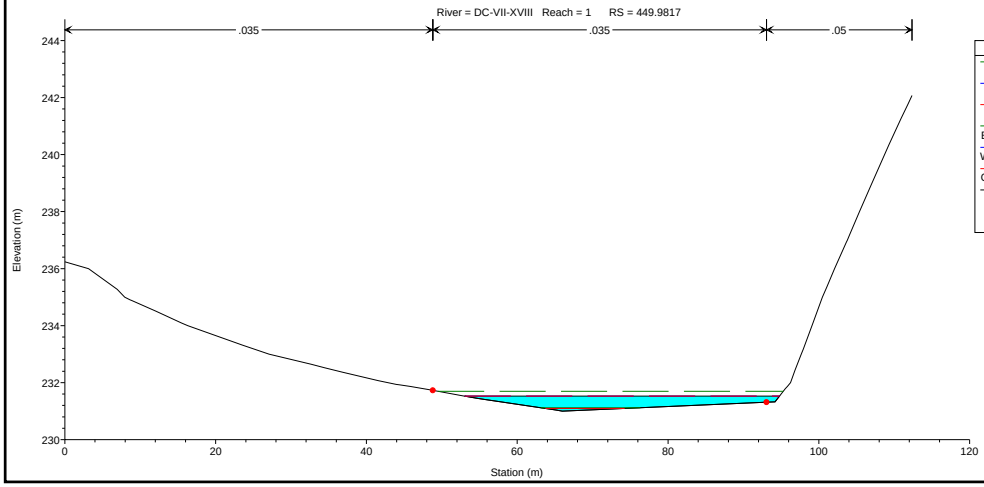

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

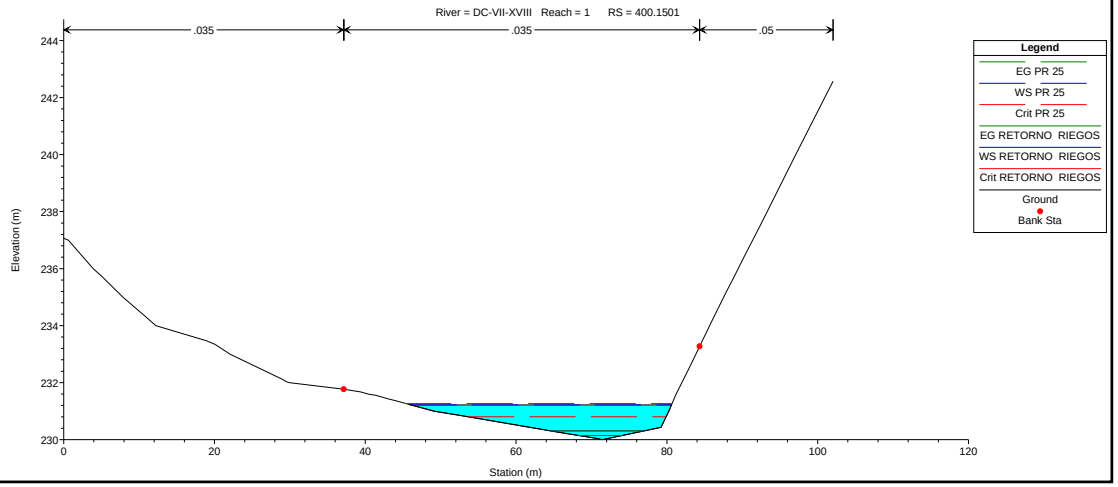

River = DC-VII-XVIII Reach = 1 RS = 684.0295
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

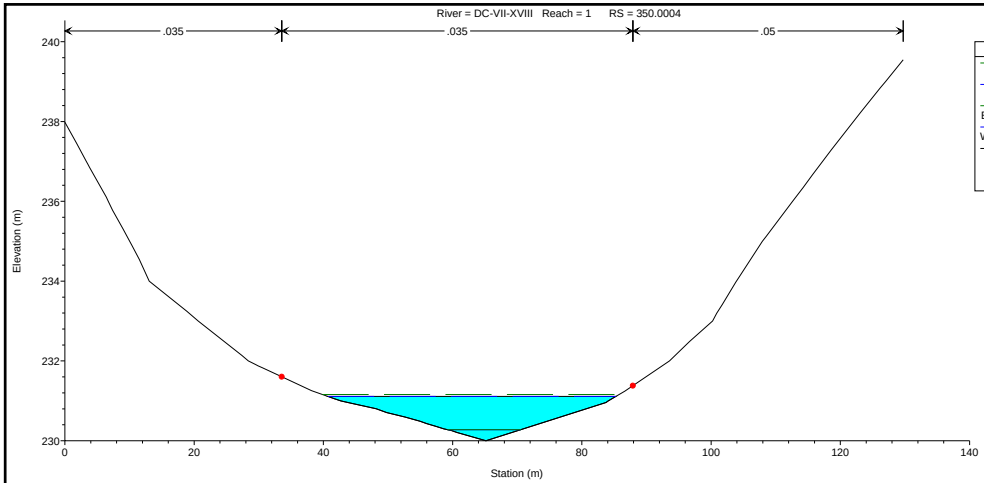

River = DC-VII-XVIII Reach = 1 RS = 583.4926
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

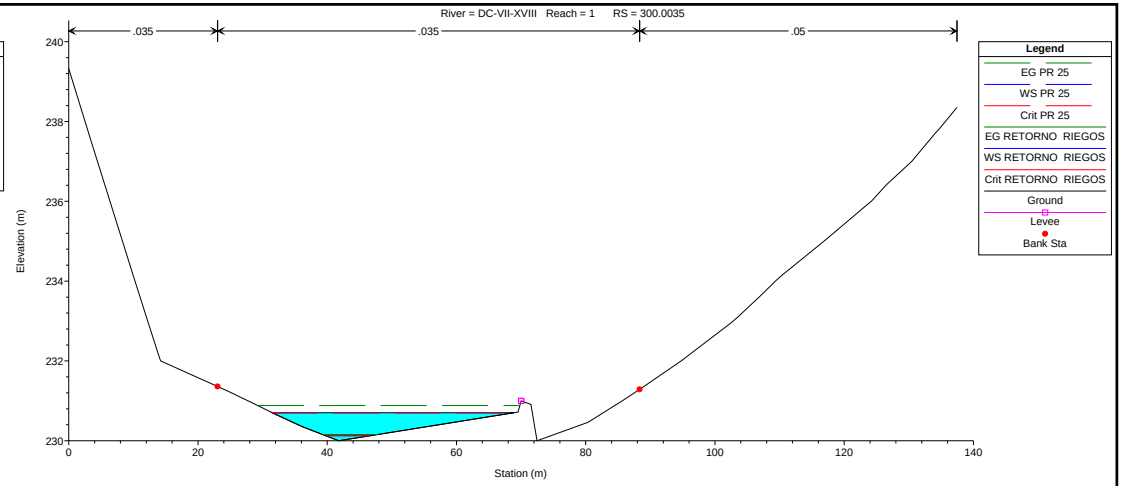

River = DC-VII-XVIII Reach = 1 RS = 550.0947
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

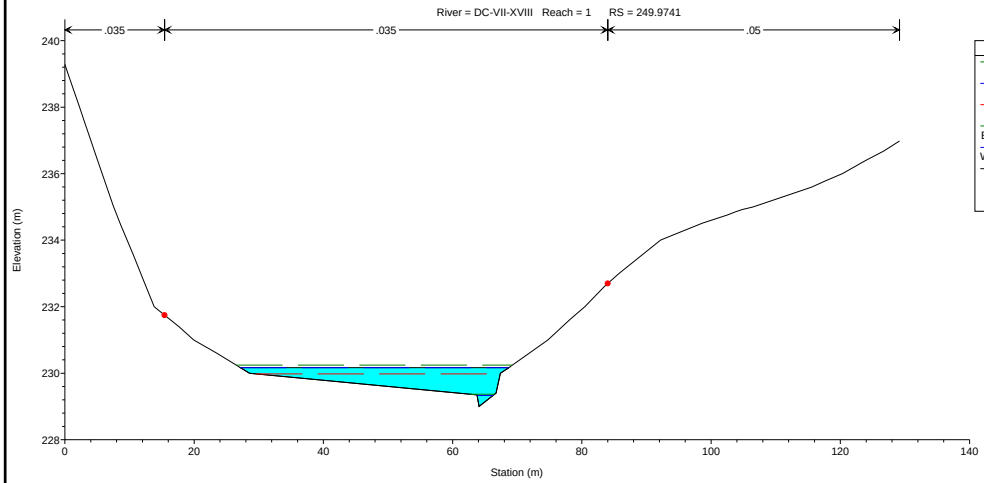

River = DC-VII-XVIII Reach = 1 RS = 499.9494
.035
.027
.035
.027
.035
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

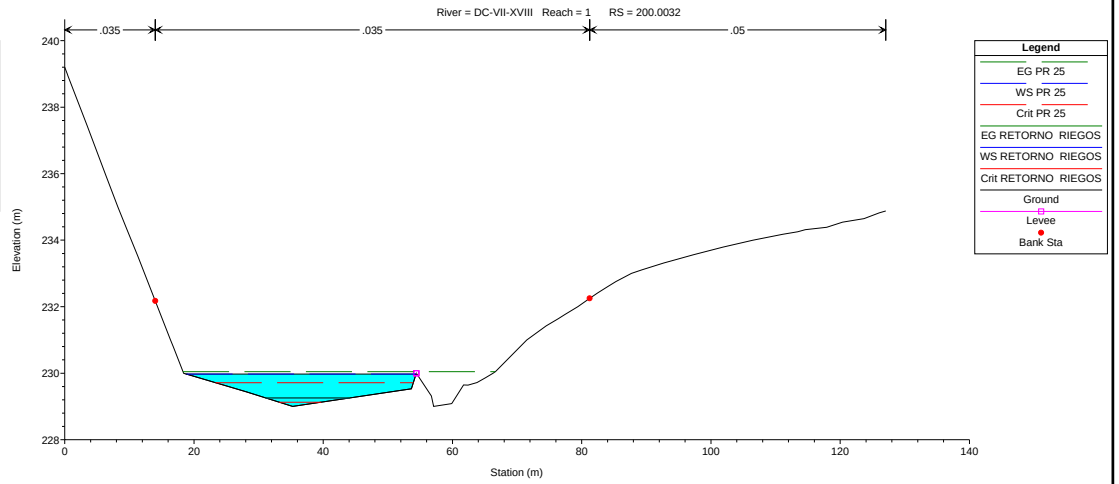

River = DC-VII-XVIII Reach = 1 RS = 449.9817
.035
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

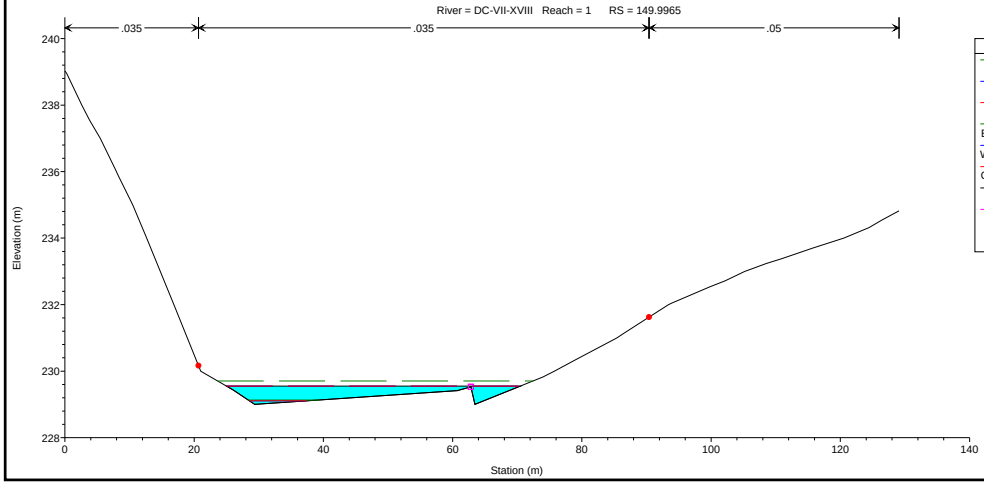

River = DC-VII-XVIII Reach = 1 RS = 400.1501
.035
.035
.05
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

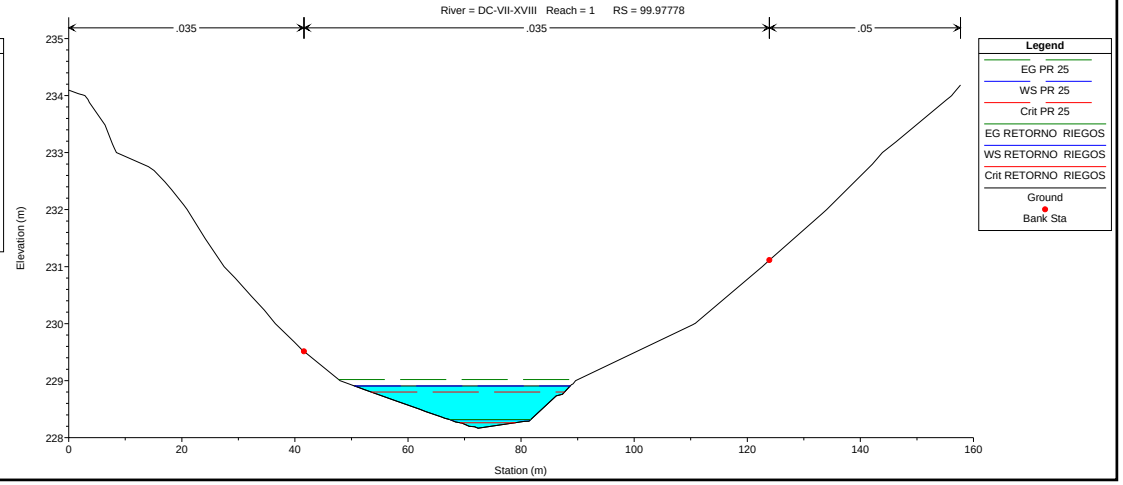

River = DC-VII-XVIII Reach = 1 RS = 350.0004
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

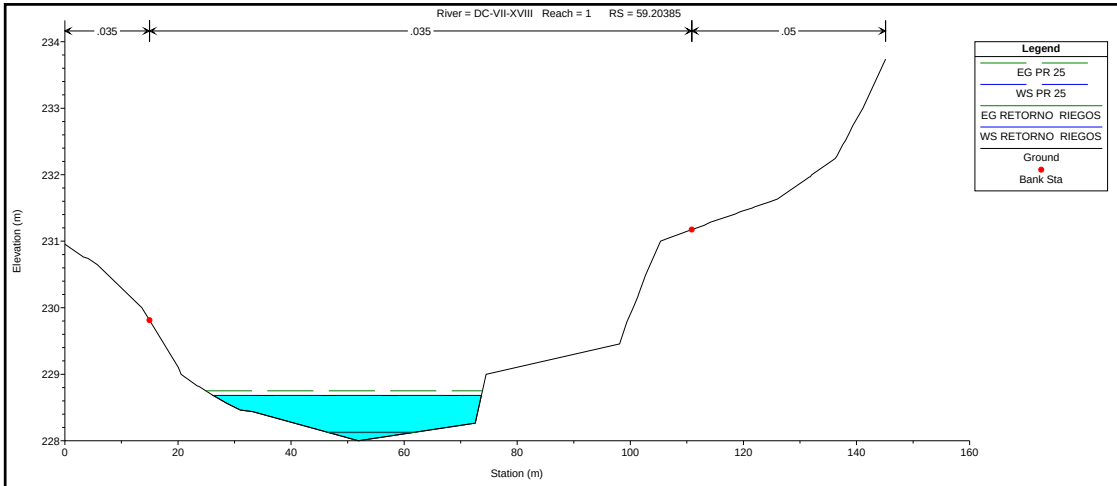

River = DC-VII-XVIII Reach = 1 RS = 300.0035
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 249.9741
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

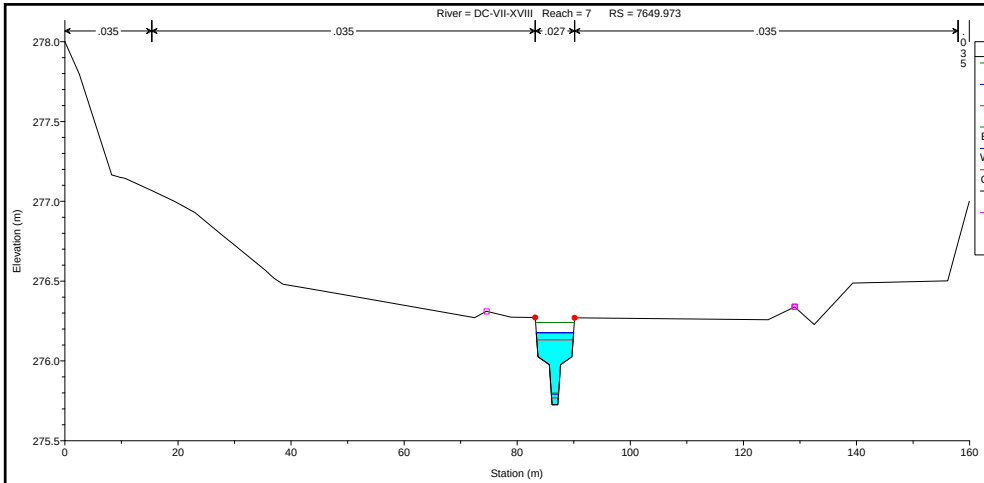

River = DC-VII-XVIII Reach = 1 RS = 200.0032
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

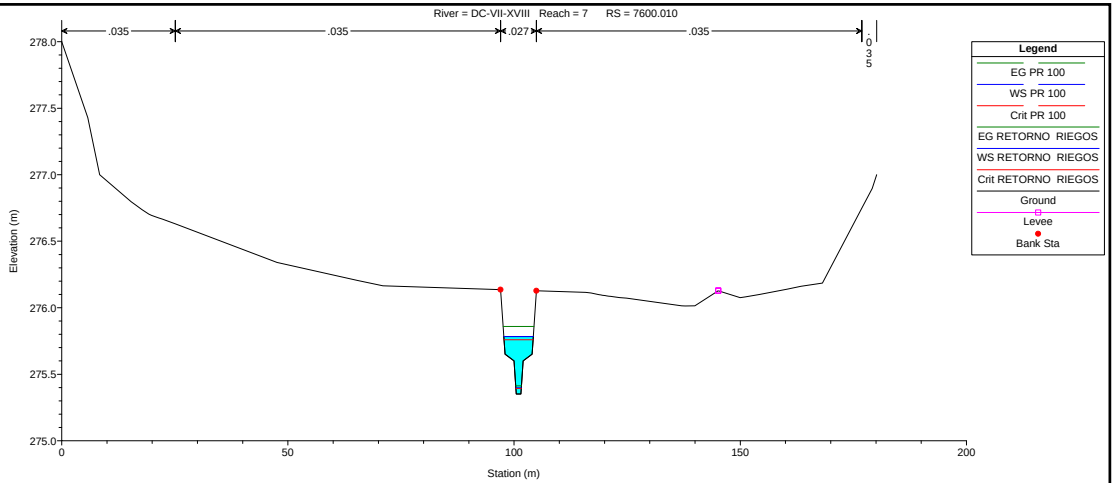

River = DC-VII-XVIII Reach = 1 RS = 149.9965
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

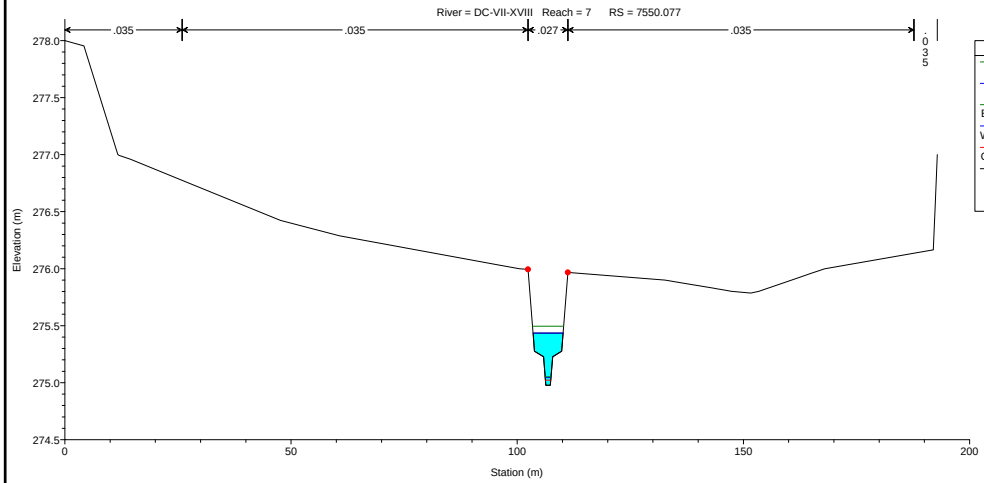

River = DC-VII-XVIII Reach = 1 RS = 99.97778
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 25
WS PR 25
Crit PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

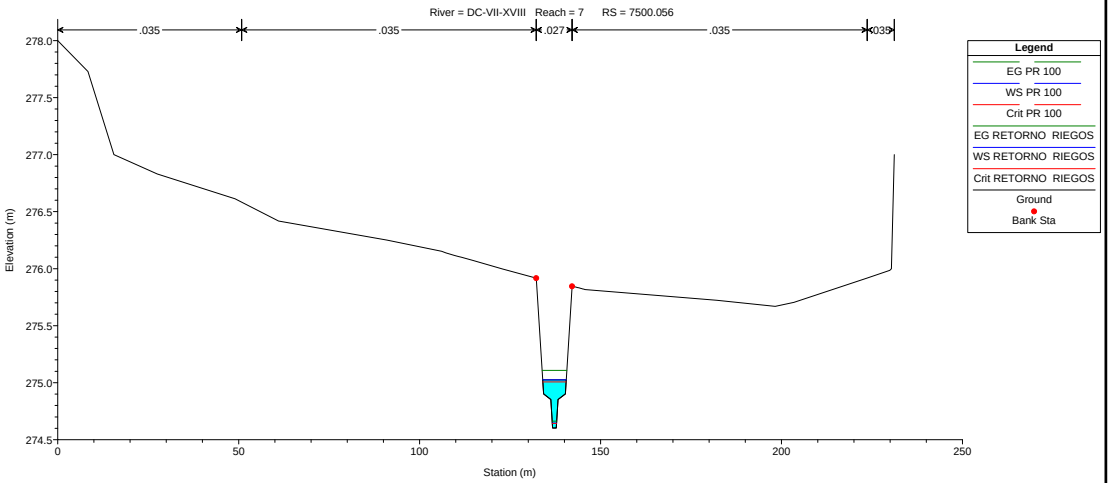

River = DC-VII-XVIII Reach = 1 RS = 59.20385
.035
.035
.05
Elevation (m)
Station (m)
234
233
232
231
230
229
228
0
20
40
60
80
100
120
140
160
Legend
EG PR 25
WS PR 25
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

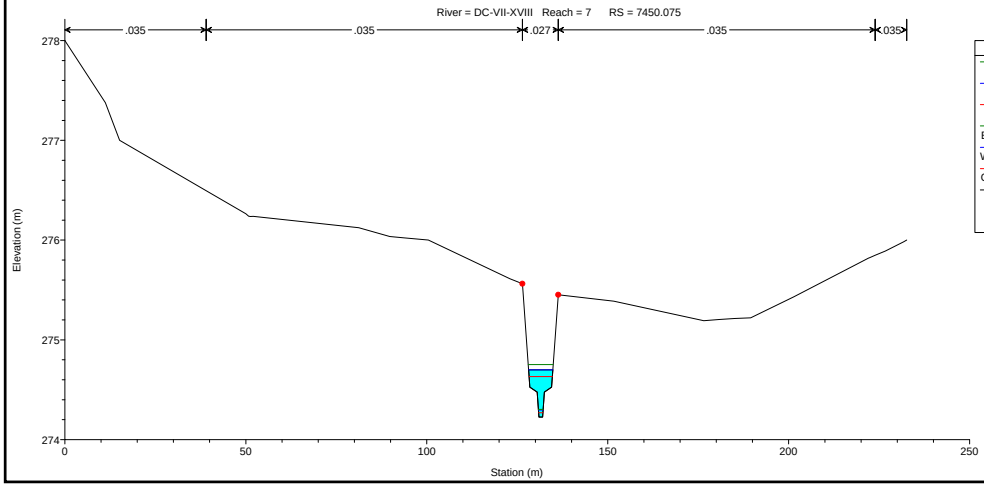
SECCIONES PR100

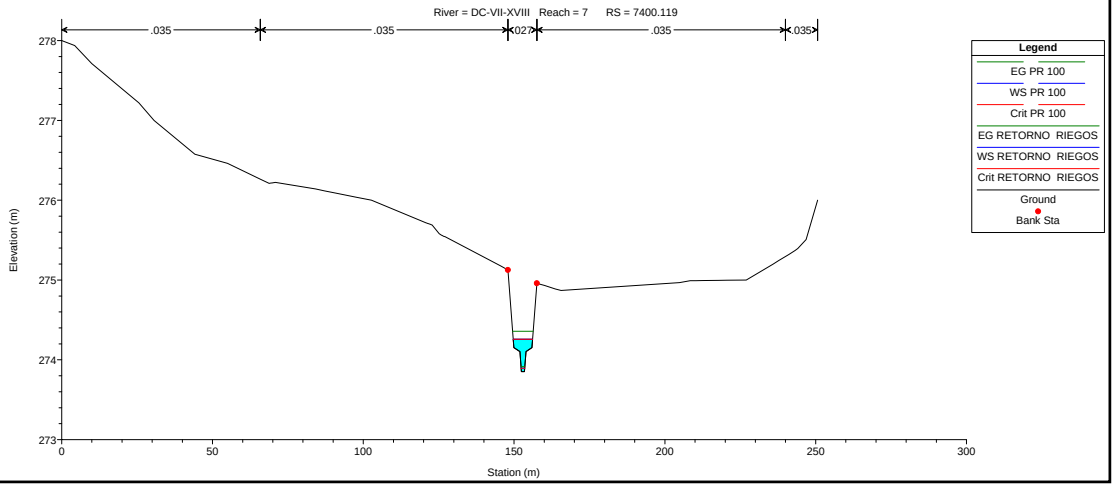

River = DC-VII-XVIII Reach = 7 RS = 7649.973
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

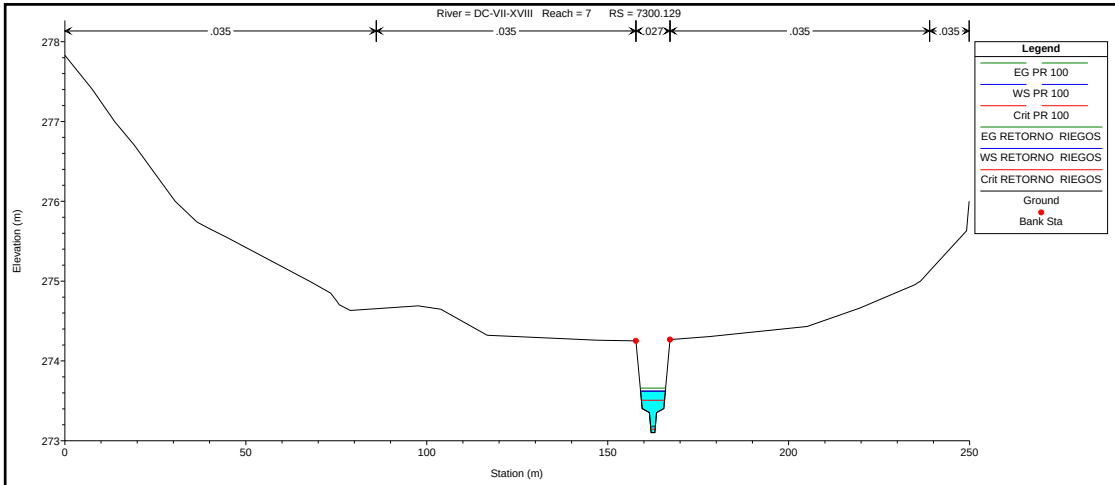

River = DC-VII-XVIII Reach = 7 RS = 7600.010
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

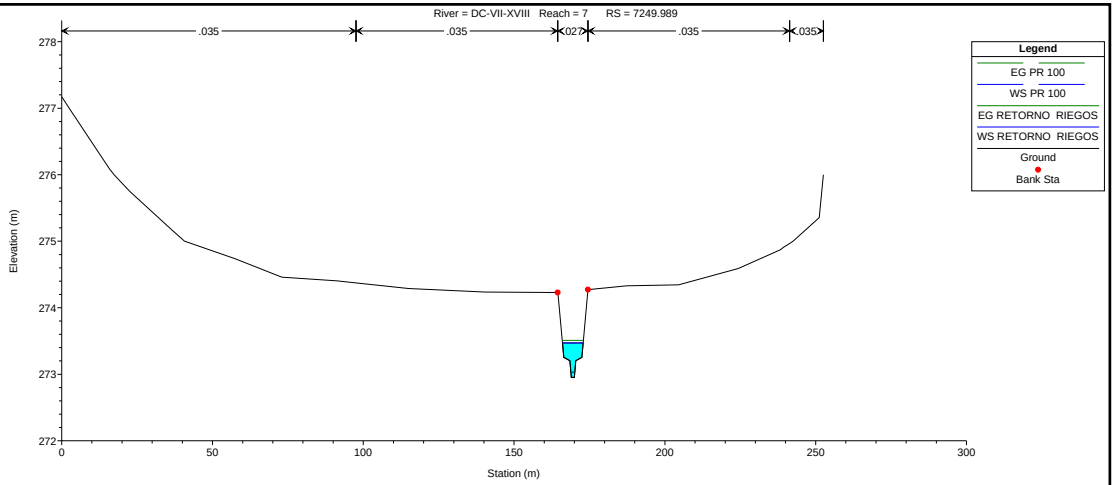

River = DC-VII-XVIII Reach = 7 RS = 7550.077
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

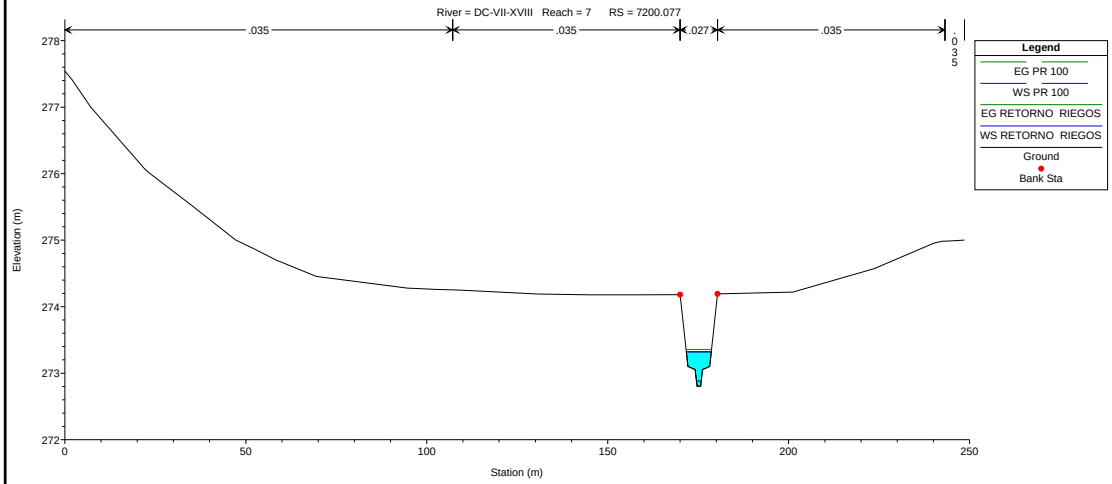

River = DC-VII-XVIII Reach = 7 RS = 7500.056
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

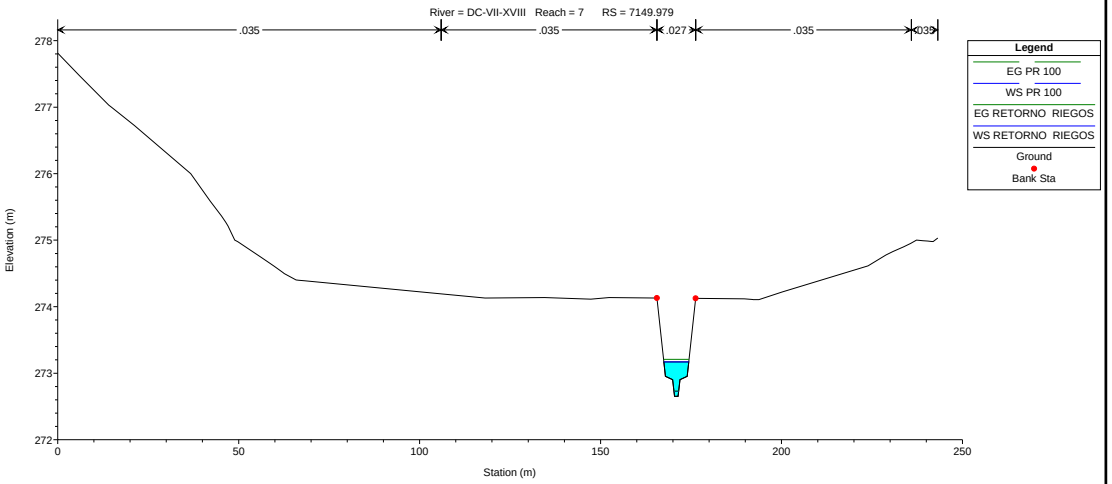

River = DC-VII-XVIII Reach = 7 RS = 7450.075
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

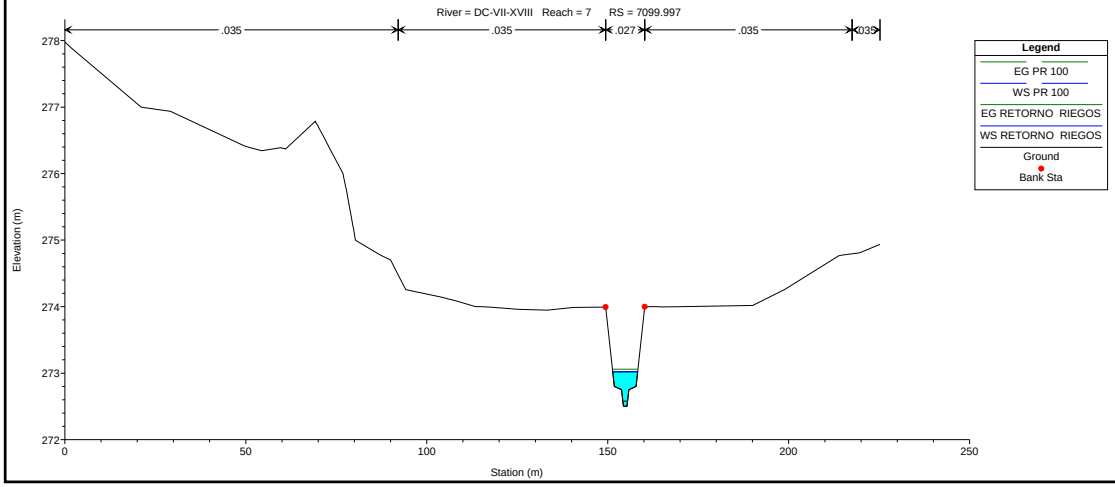

River = DC-VII-XVIII Reach = 7 RS = 7400.119
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

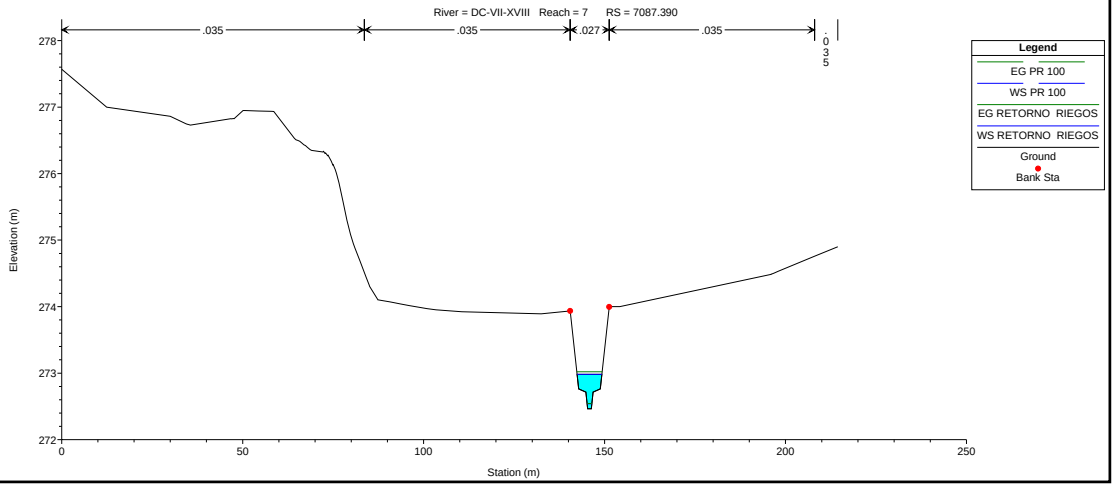

River = DC-VII-XVIII Reach = 7 RS = 7300.129
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

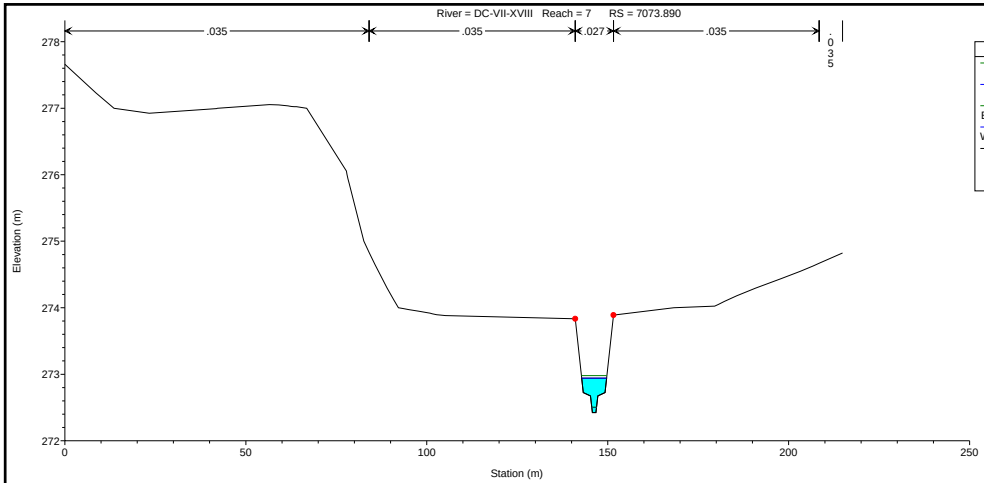

River = DC-VII-XVIII Reach = 7 RS = 7249.989
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

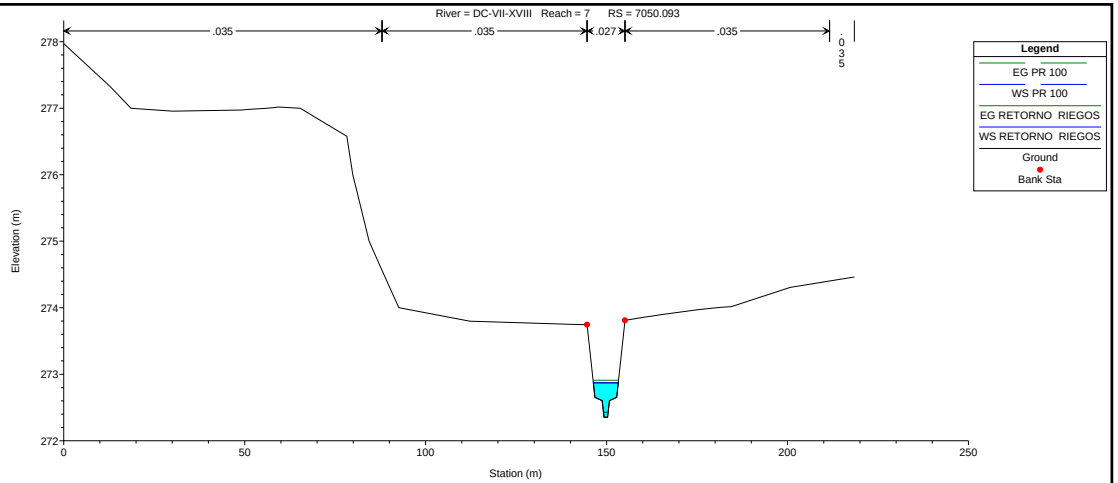

River = DC-VII-XVIII Reach = 7 RS = 7200.077
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

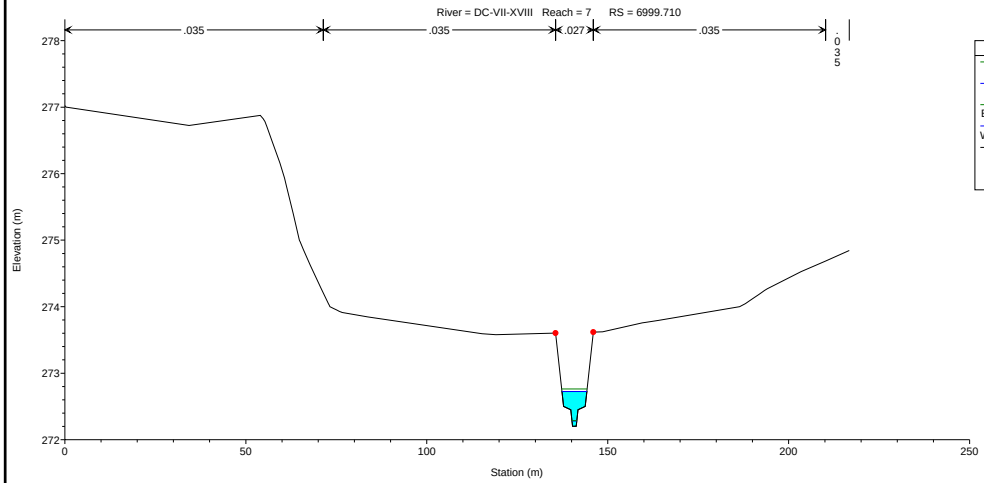

River = DC-VII-XVIII Reach = 7 RS = 7149.979
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

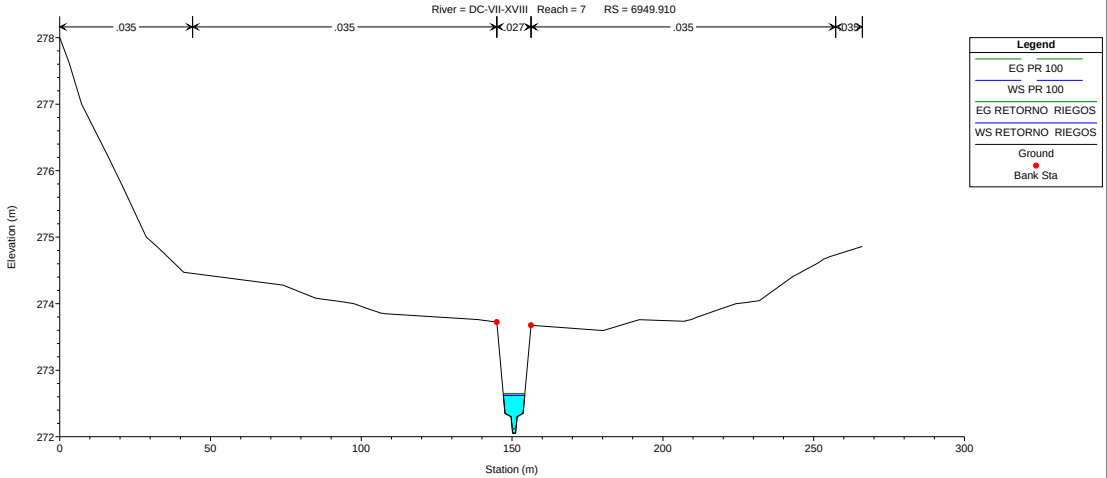

River = DC-VII-XVIII Reach = 7 RS = 7099.997
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

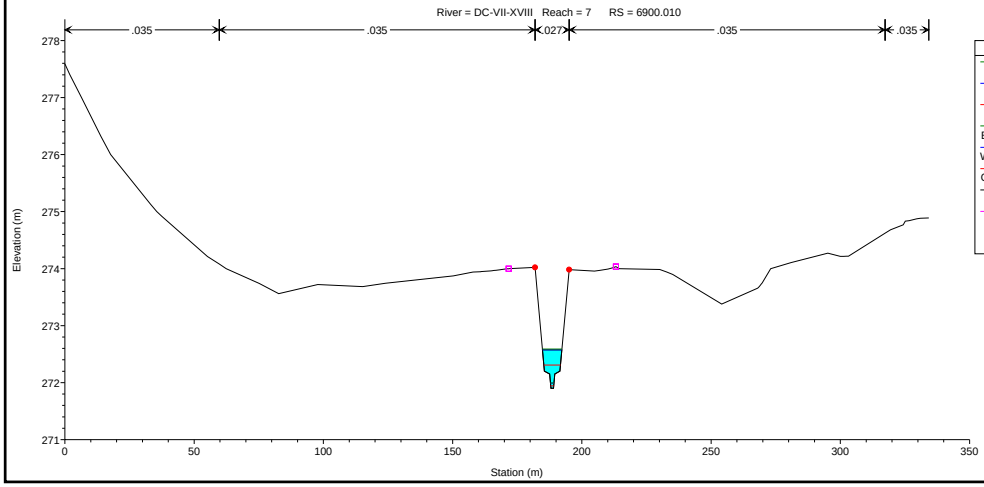

River = DC-VII-XVIII Reach = 7 RS = 7087.390
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

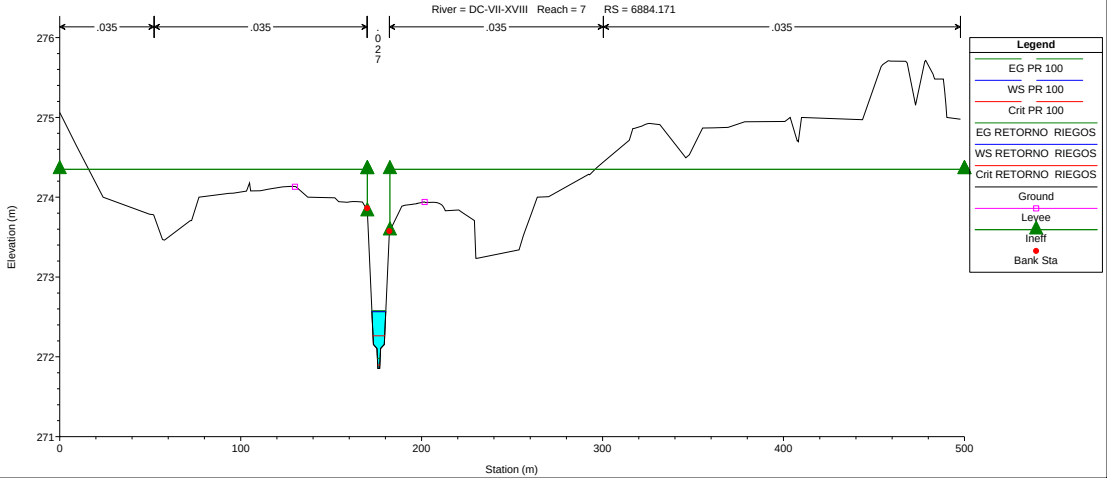

River = DC-VII-XVIII Reach = 7 RS = 7073.890
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

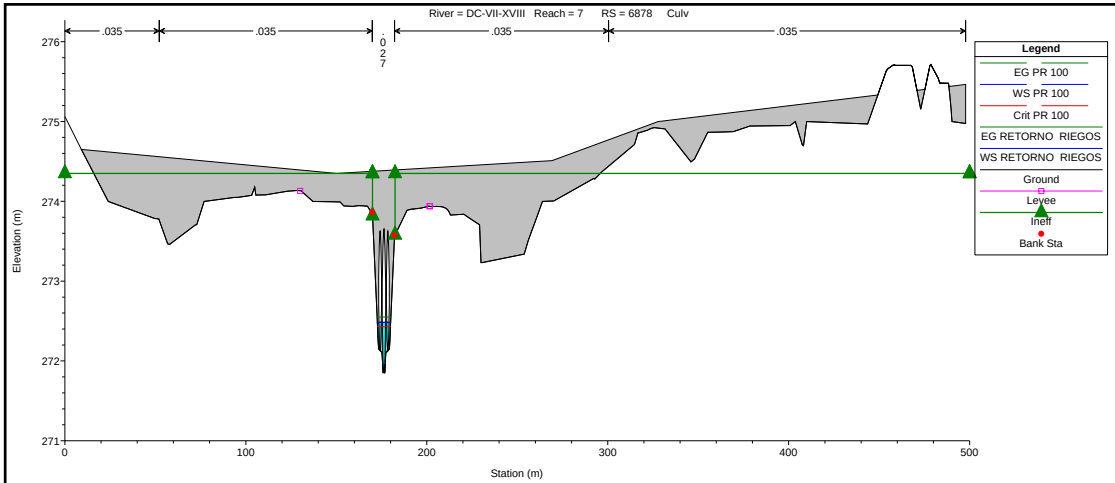

River = DC-VII-XVIII Reach = 7 RS = 7050.093
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

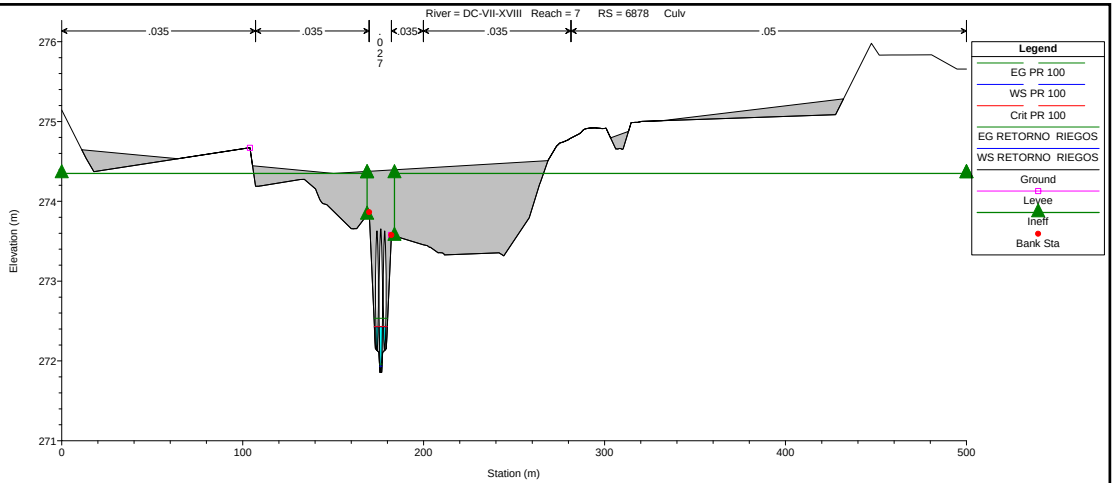

River = DC-VII-XVIII Reach = 7 RS = 6999.710
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

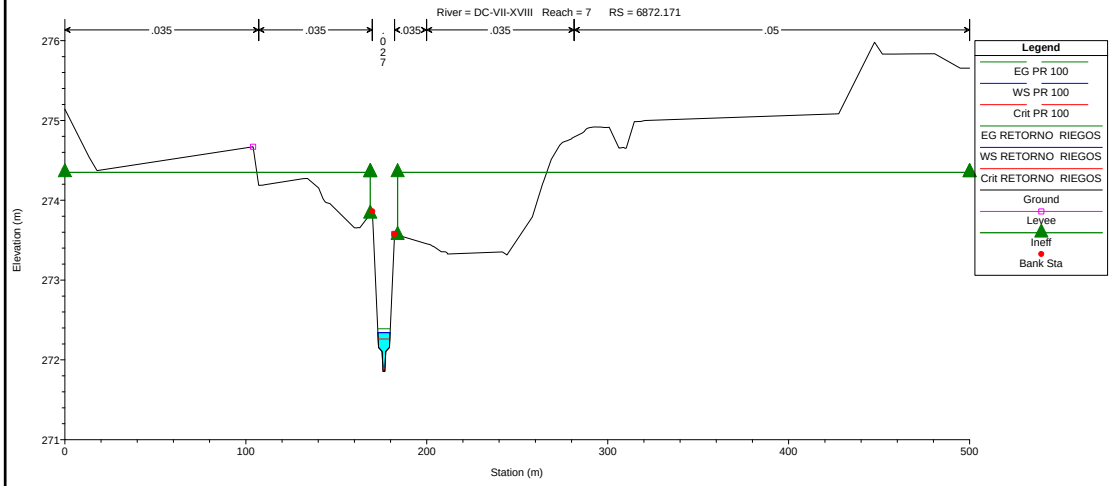

River = DC-VII-XVIII Reach = 7 RS = 6949.910
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

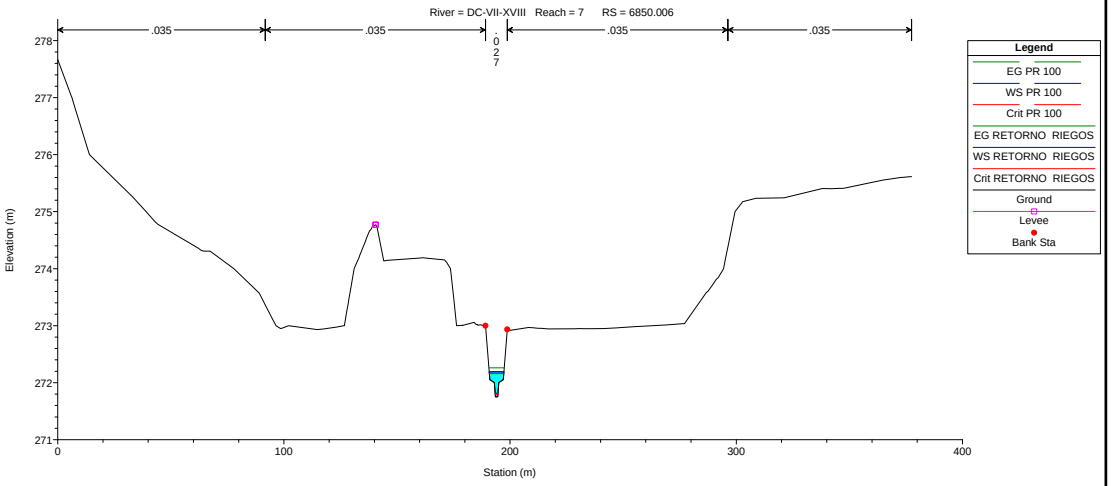

River = DC-VII-XVIII Reach = 7 RS = 6900.010
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

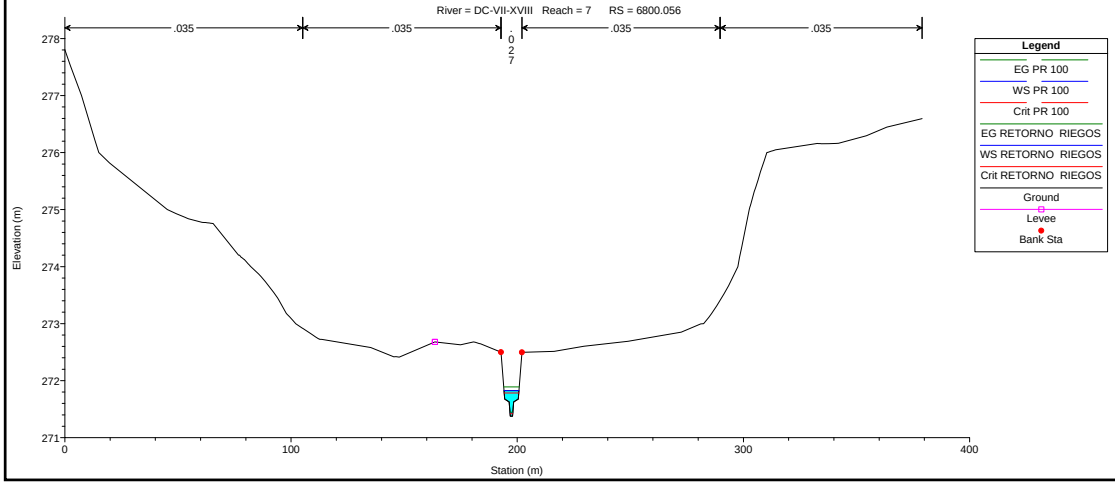

River = DC-VII-XVIII Reach = 7 RS = 6884.171
.035
.035
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

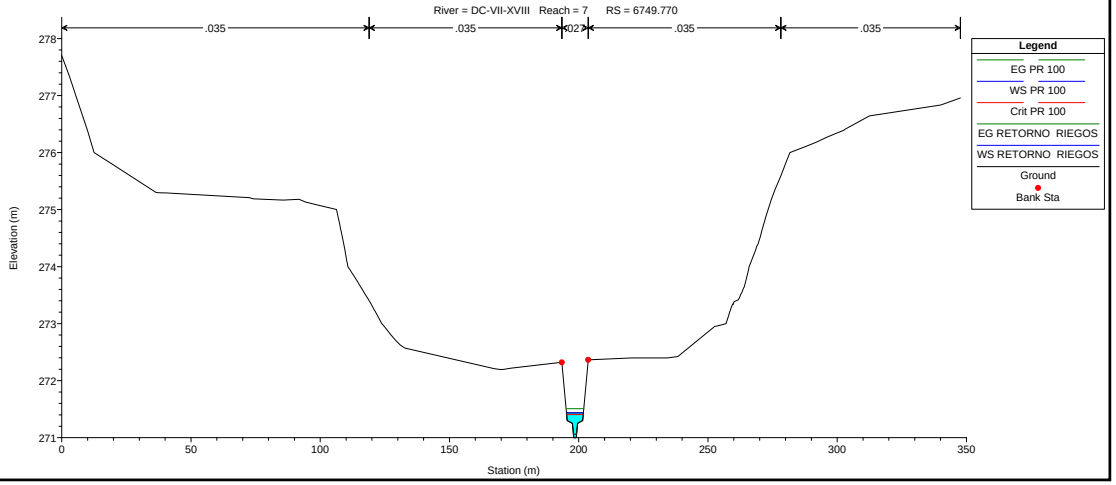

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

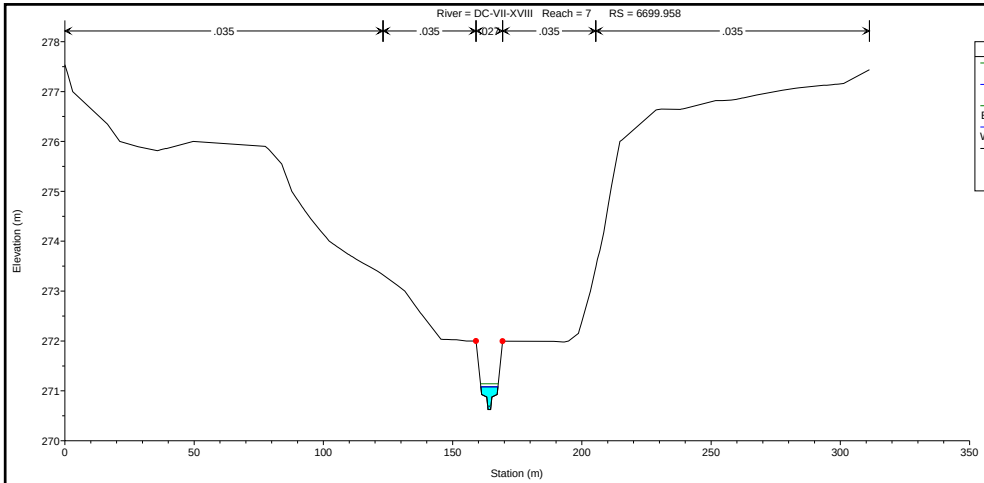

River = DC-VII-XVIII Reach = 7 RS = 6878 Culv
.035
.035
.027
.035
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

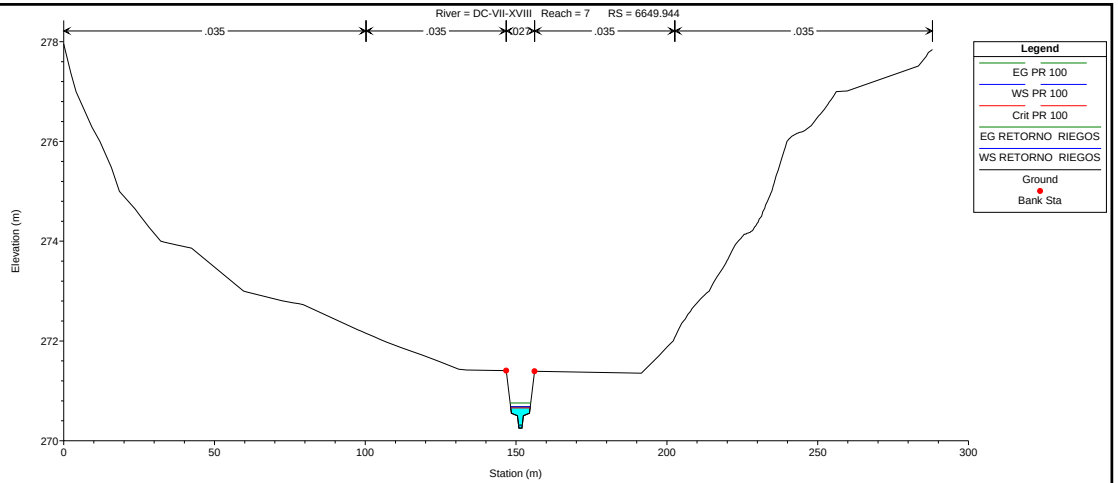

River = DC-VII-XVIII Reach = 7 RS = 6872.171
.035
.035
.027
.035
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta
Elevation (m)
Station (m)

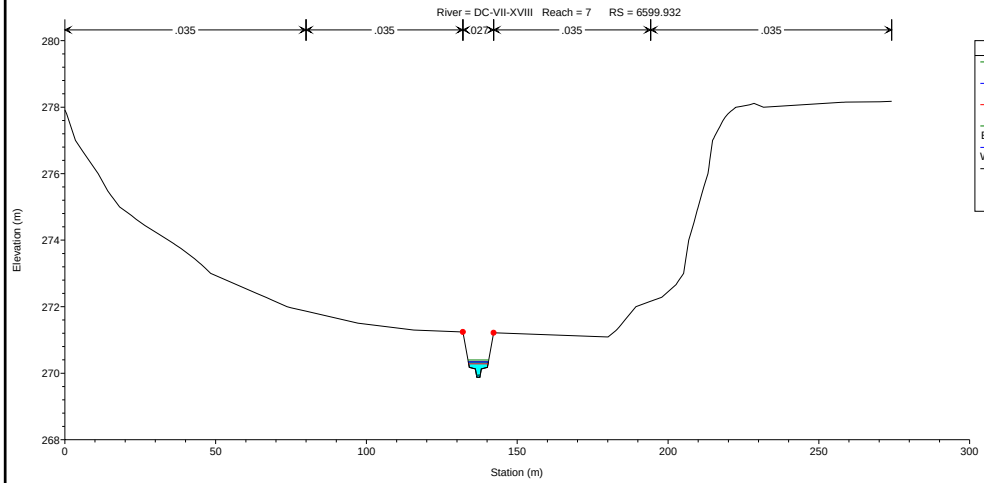

River = DC-VII-XVIII Reach = 7 RS = 6850.006
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

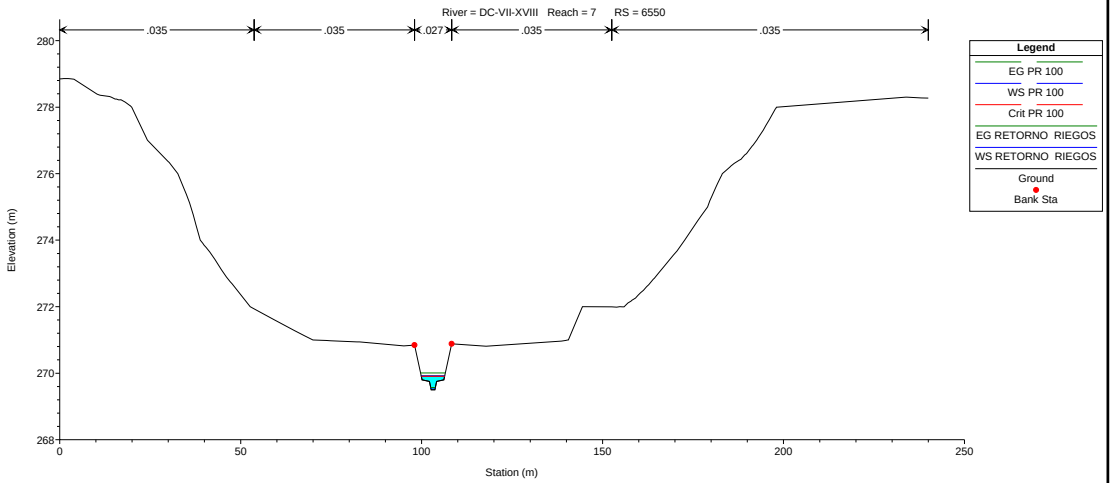

River = DC-VII-XVIII Reach = 7 RS = 6800.056
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

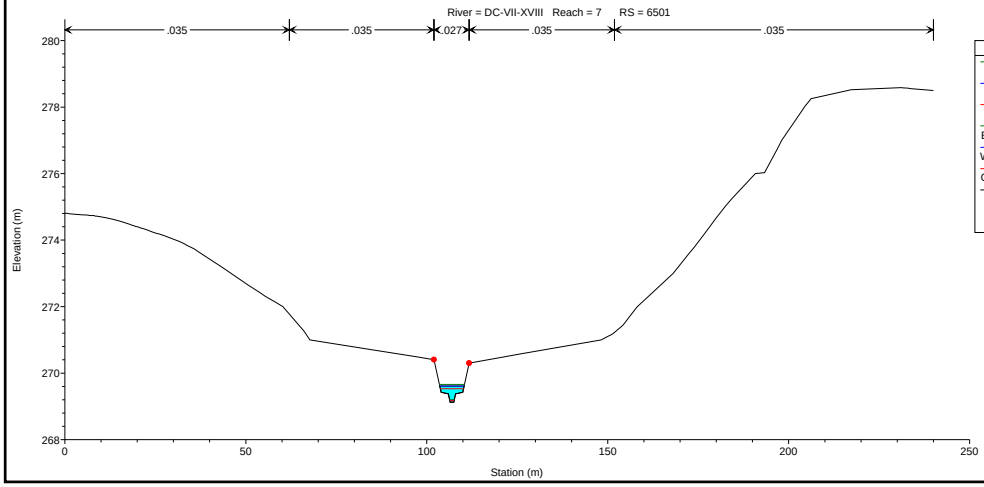

River = DC-VII-XVIII Reach = 7 RS = 6749.770
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

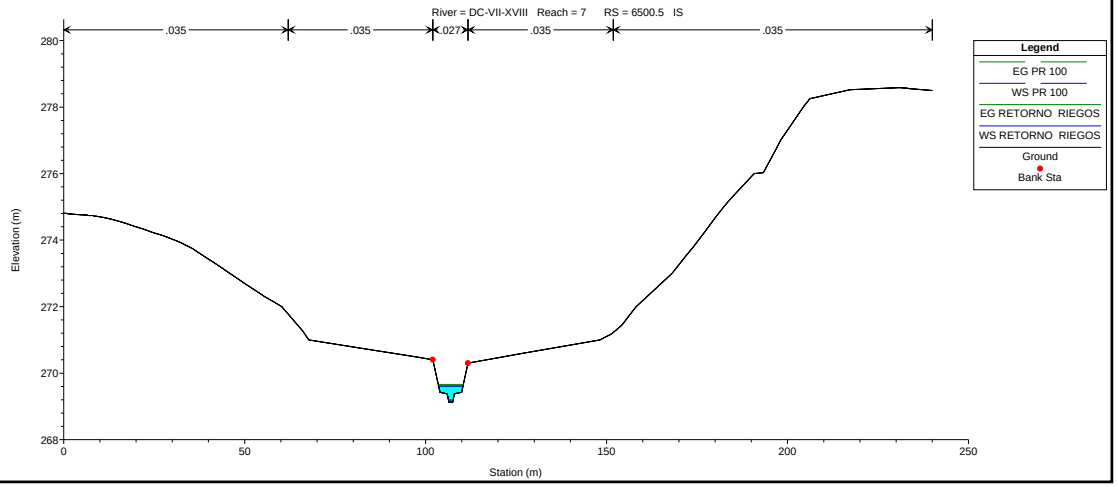

River = DC-VII-XVIII Reach = 7 RS = 6699.958
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

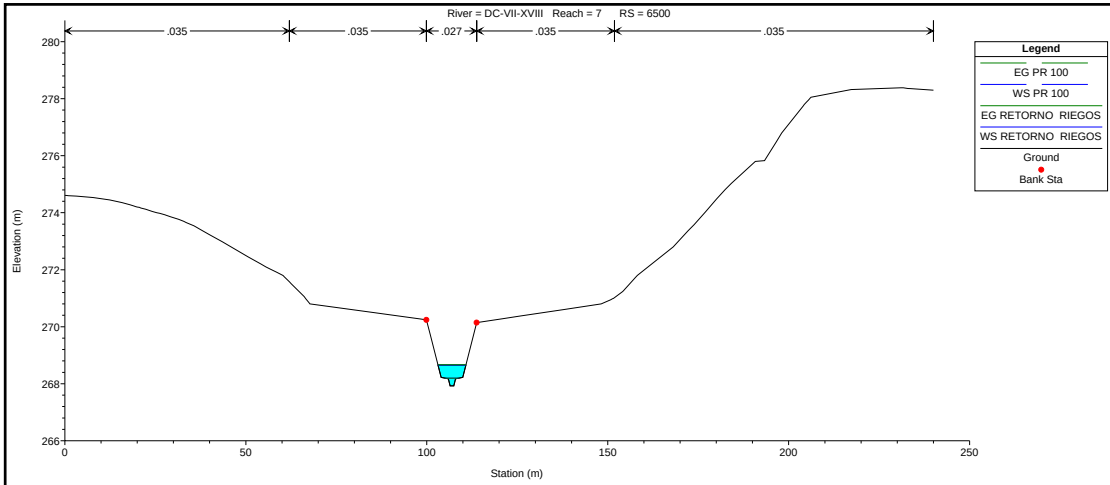

River = DC-VII-XVIII Reach = 7 RS = 6649.944
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

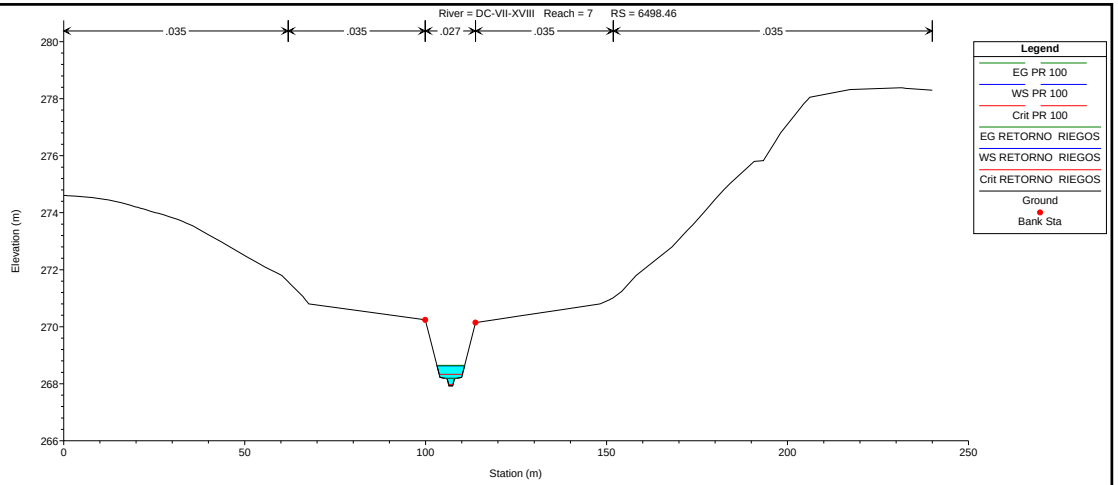

River = DC-VII-XVIII Reach = 7 RS = 6599.932
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

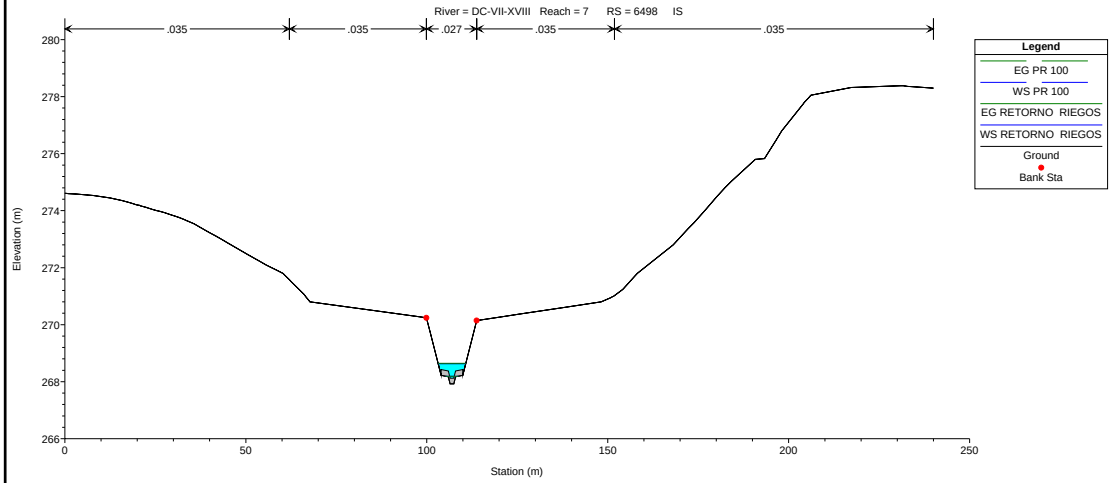

River = DC-VII-XVIII Reach = 7 RS = 6550
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

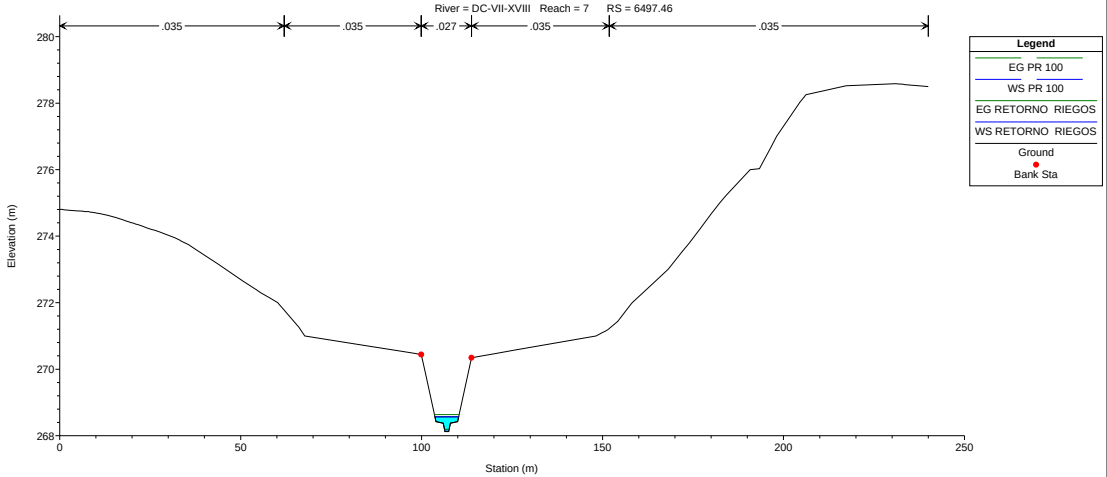

River = DC-VII-XVIII Reach = 7 RS = 6501
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

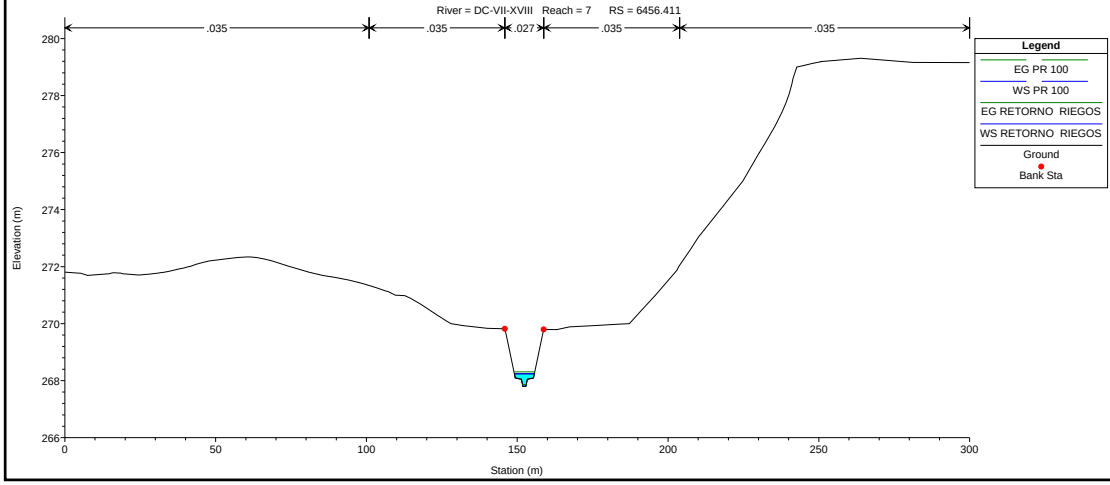

River = DC-VII-XVIII Reach = 7 RS = 6500.5 IS
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

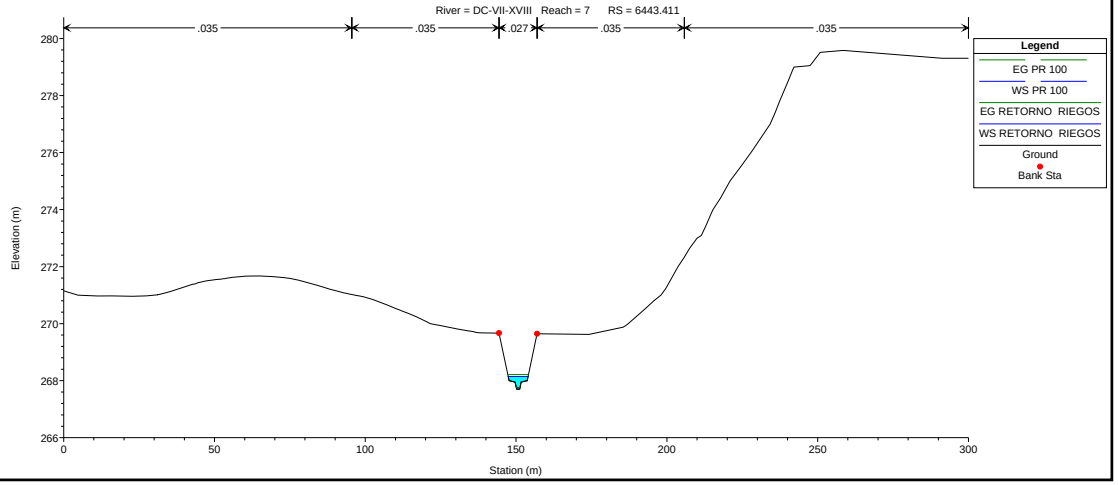

River = DC-VII-XVIII Reach = 7 RS = 6500
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

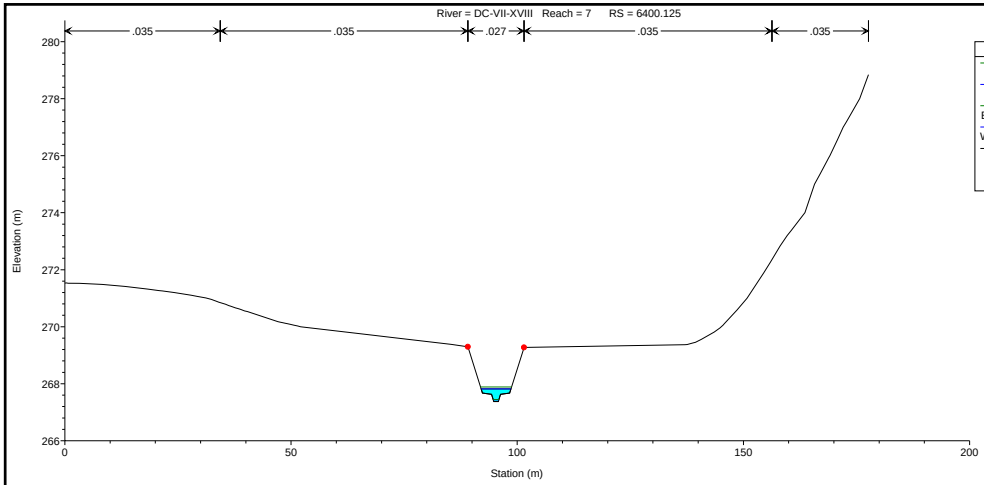

River = DC-VII-XVIII Reach = 7 RS = 6498.46
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

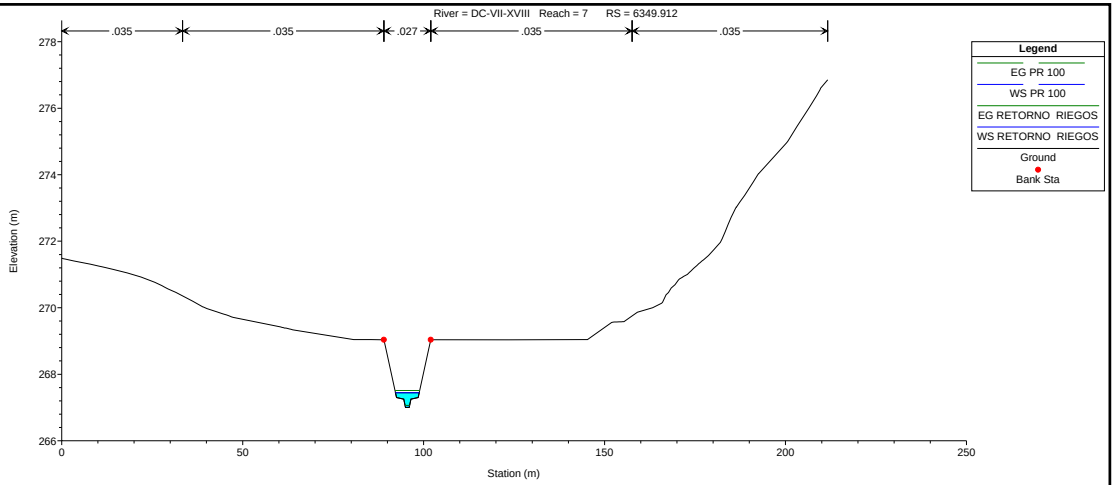

River = DC-VII-XVIII Reach = 7 RS = 6498 IS
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

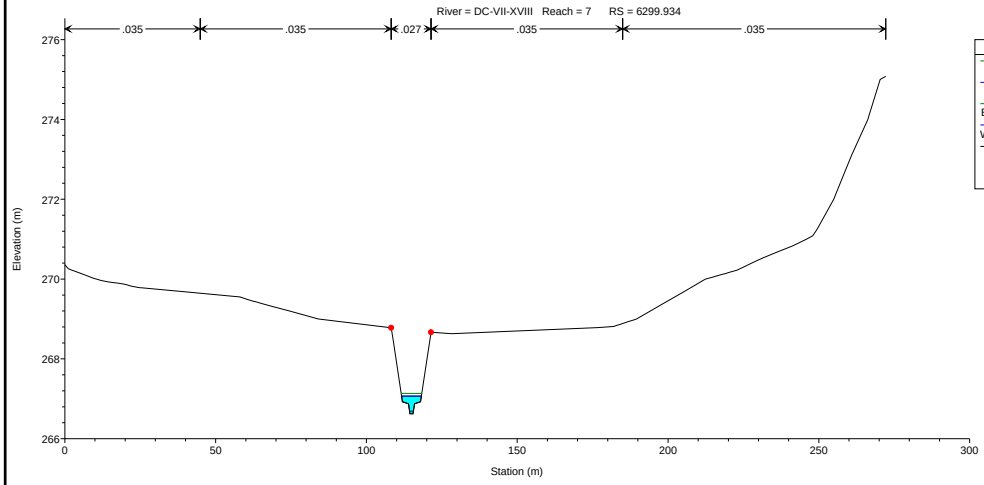

River = DC-VII-XVIII Reach = 7 RS = 6497.46
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

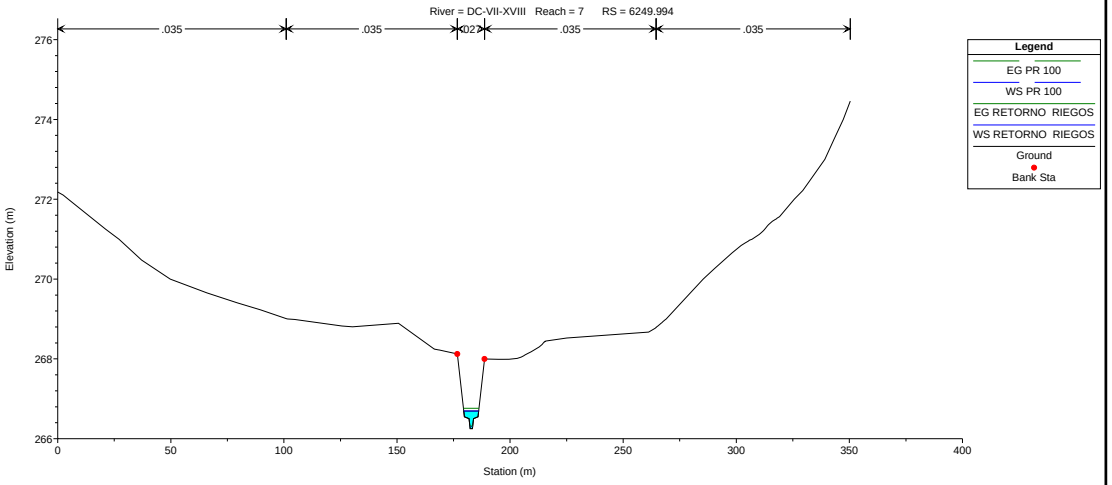

River = DC-VII-XVIII Reach = 7 RS = 6456.411
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

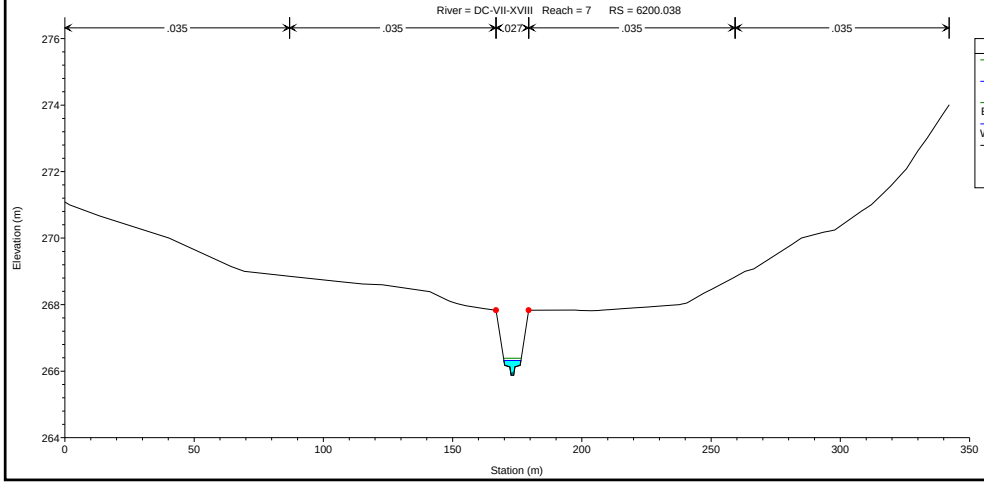

River = DC-VII-XVIII Reach = 7 RS = 6443.411
.035
.035
.027
.035
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

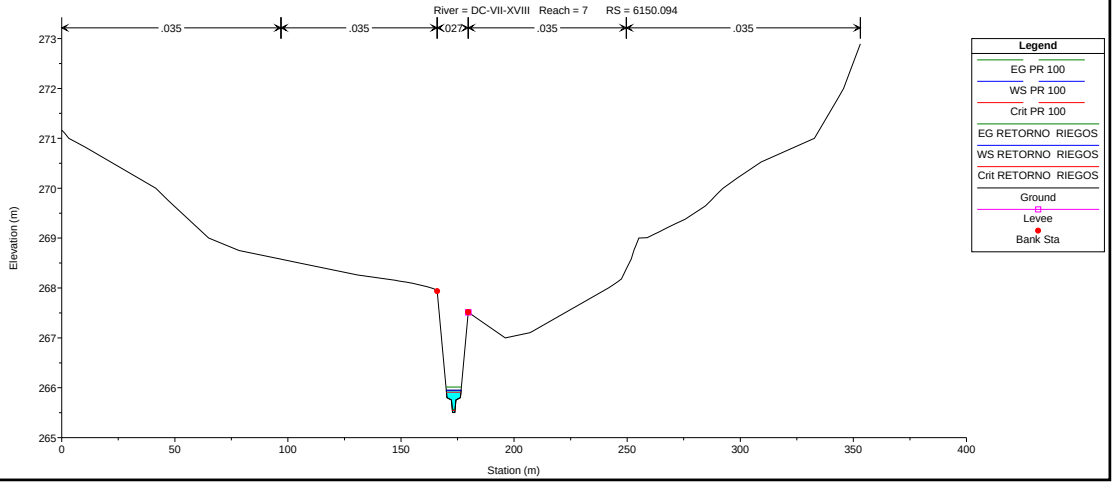

River = DC-VII-XVIII Reach = 7 RS = 6400.125
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

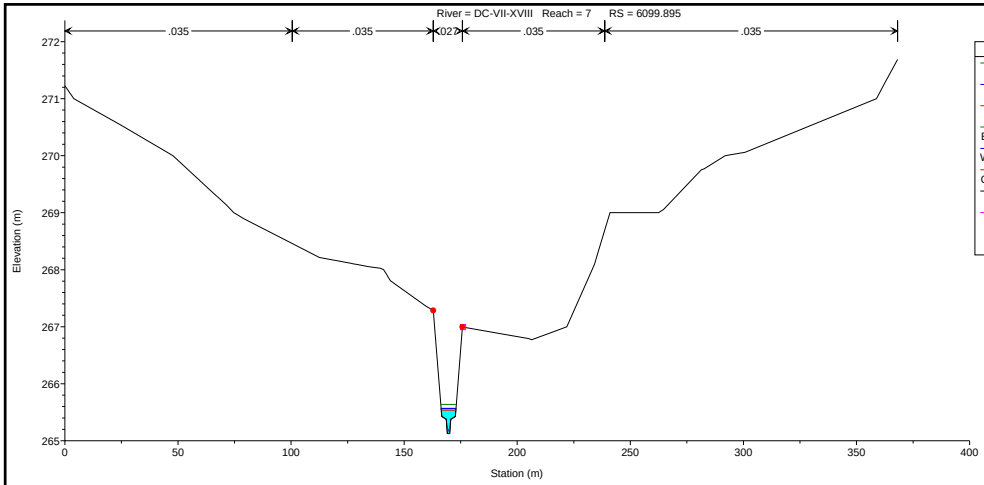

River = DC-VII-XVIII Reach = 7 RS = 6349.912
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

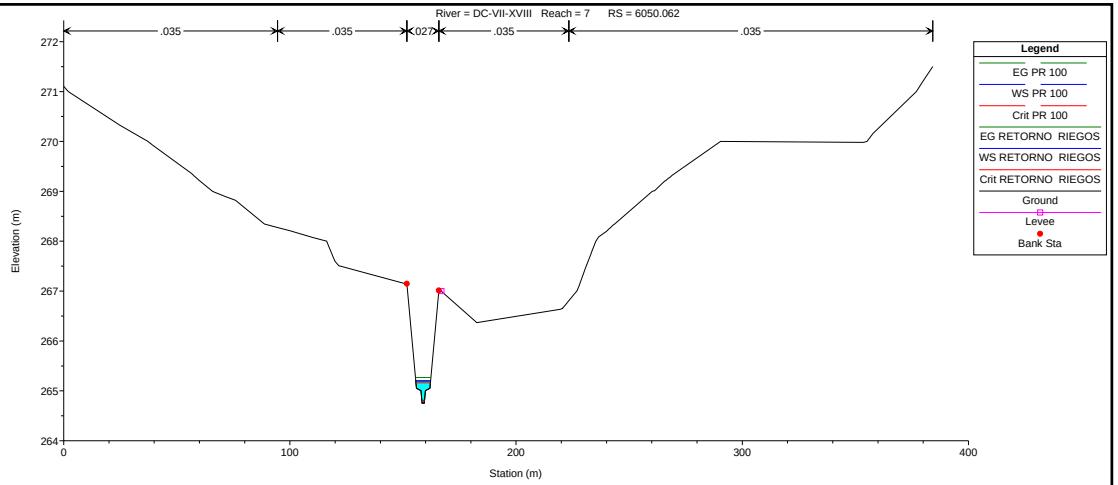

River = DC-VII-XVIII Reach = 7 RS = 6299.934
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

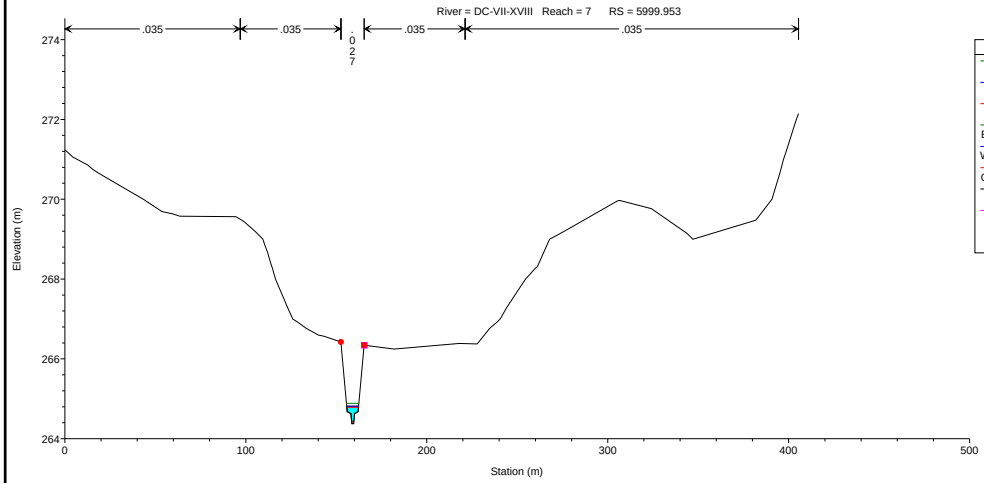

River = DC-VII-XVIII Reach = 7 RS = 6249.994
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

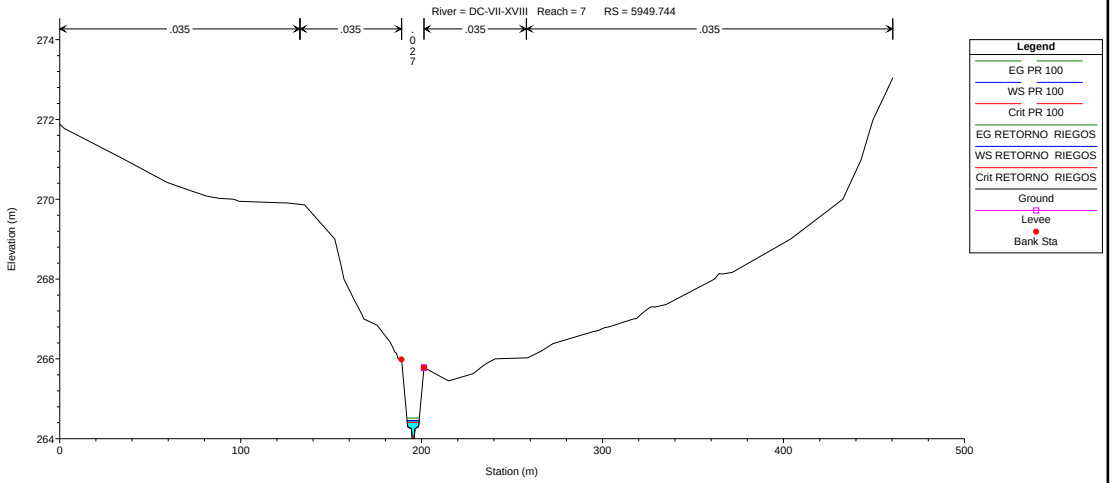

River = DC-VII-XVIII Reach = 7 RS = 6200.038
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

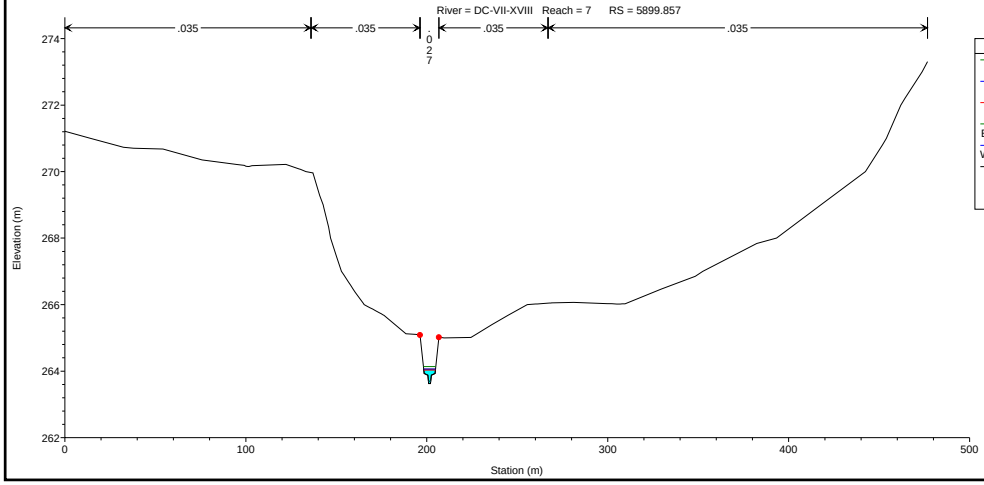

River = DC-VII-XVIII Reach = 7 RS = 6150.094
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

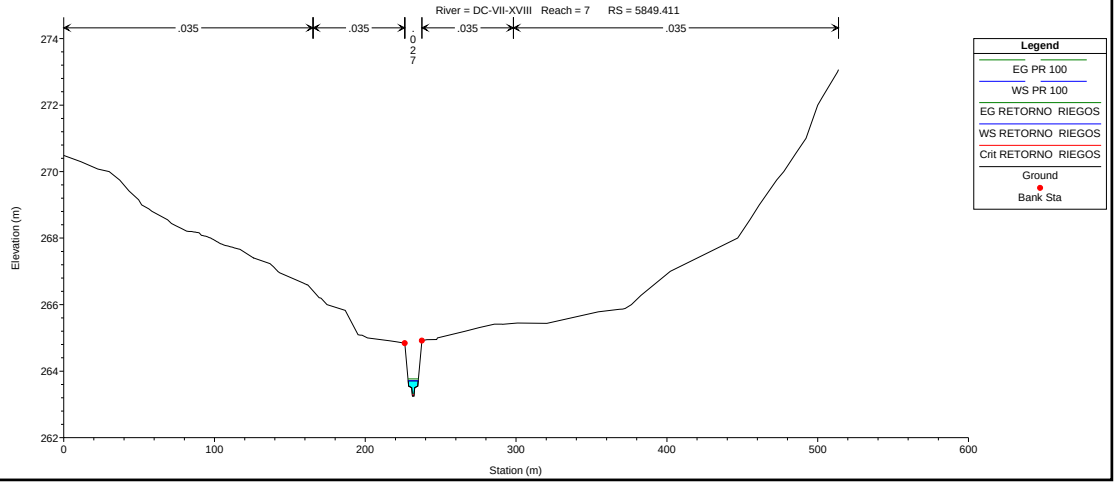

River = DC-VII-XVIII Reach = 7 RS = 6099.895
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

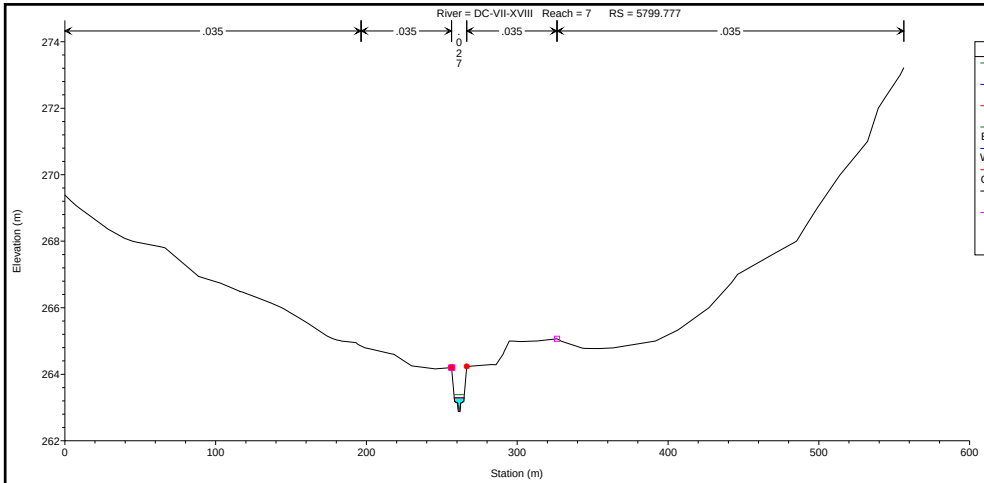

River = DC-VII-XVIII Reach = 7 RS = 6050.062
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

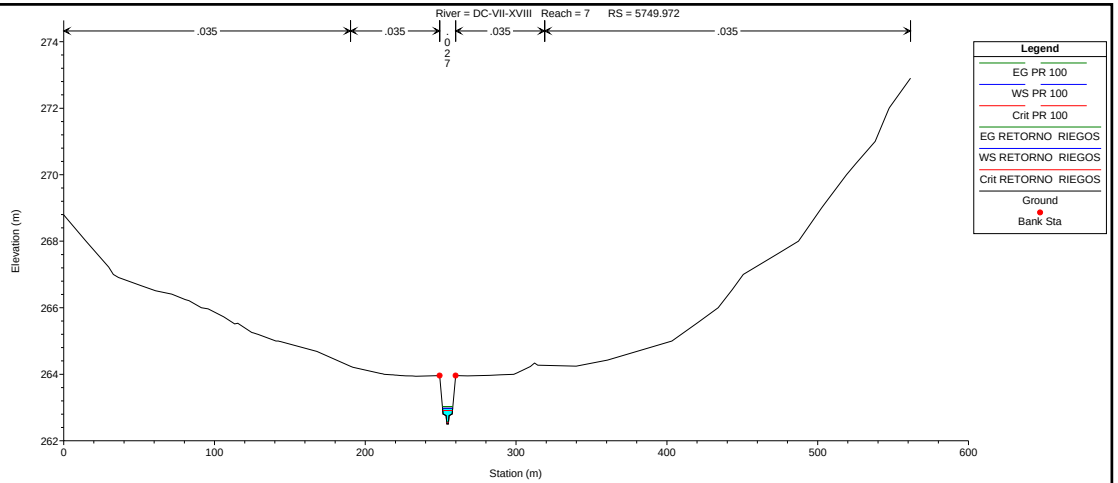

River = DC-VII-XVIII Reach = 7 RS = 5999.953
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

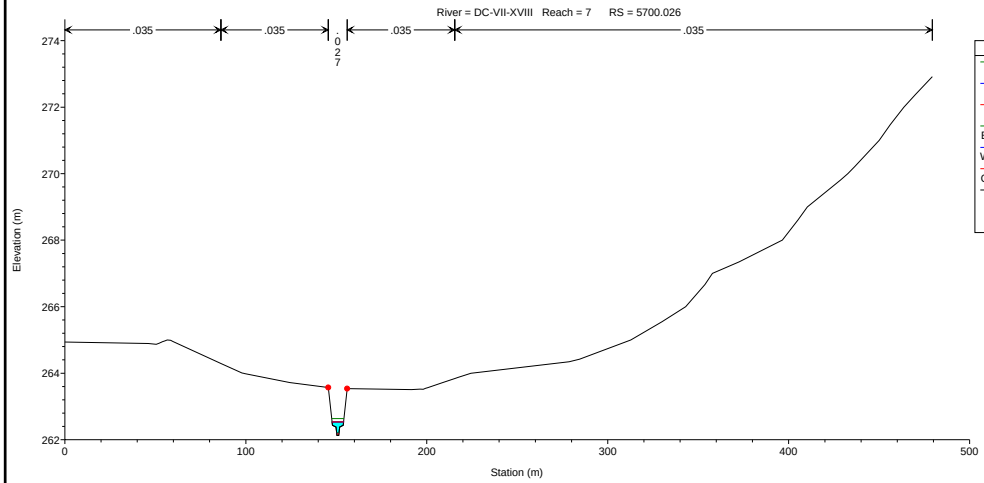

River = DC-VII-XVIII Reach = 7 RS = 5949.744
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

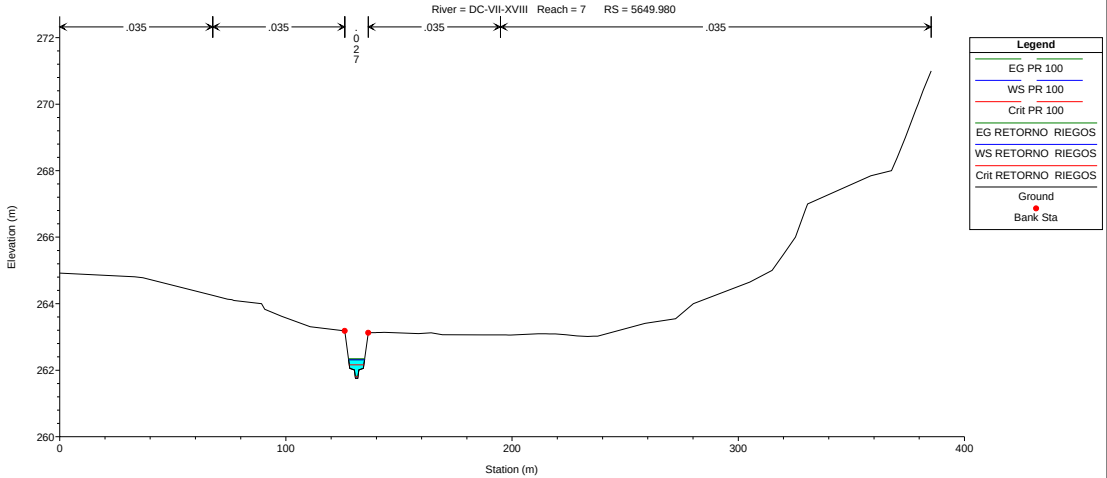

River = DC-VII-XVIII Reach = 7 RS = 5899.857
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

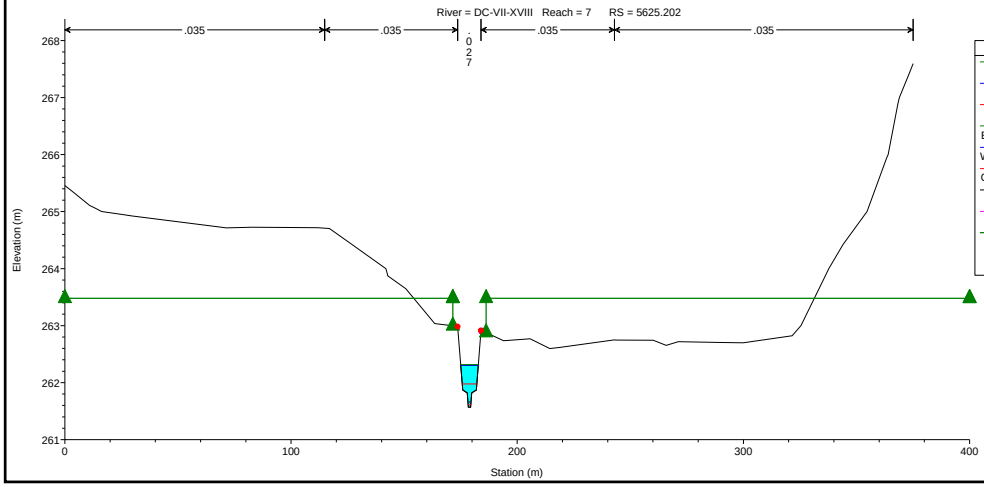

River = DC-VII-XVIII Reach = 7 RS = 5849.411
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

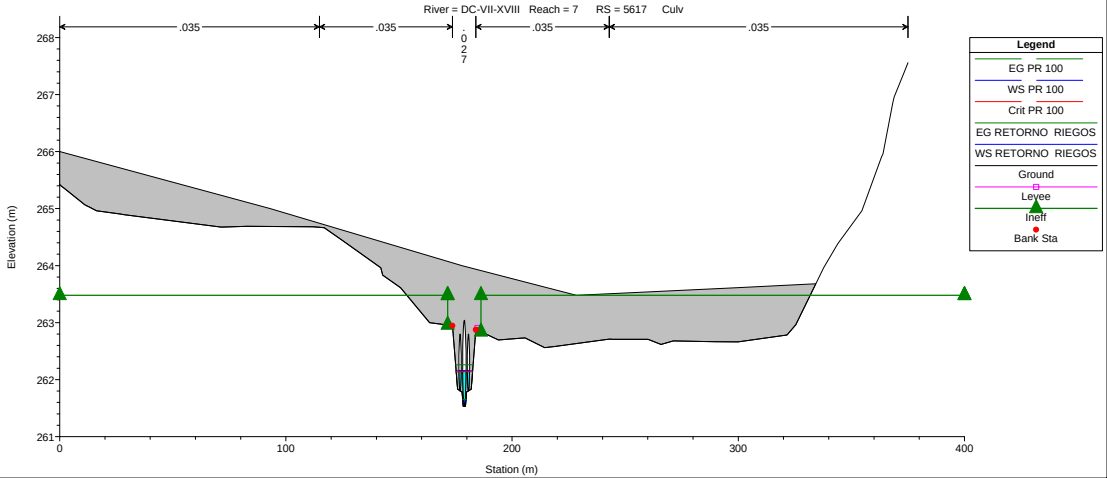

River = DC-VII-XVIII Reach = 7 RS = 5799.777
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

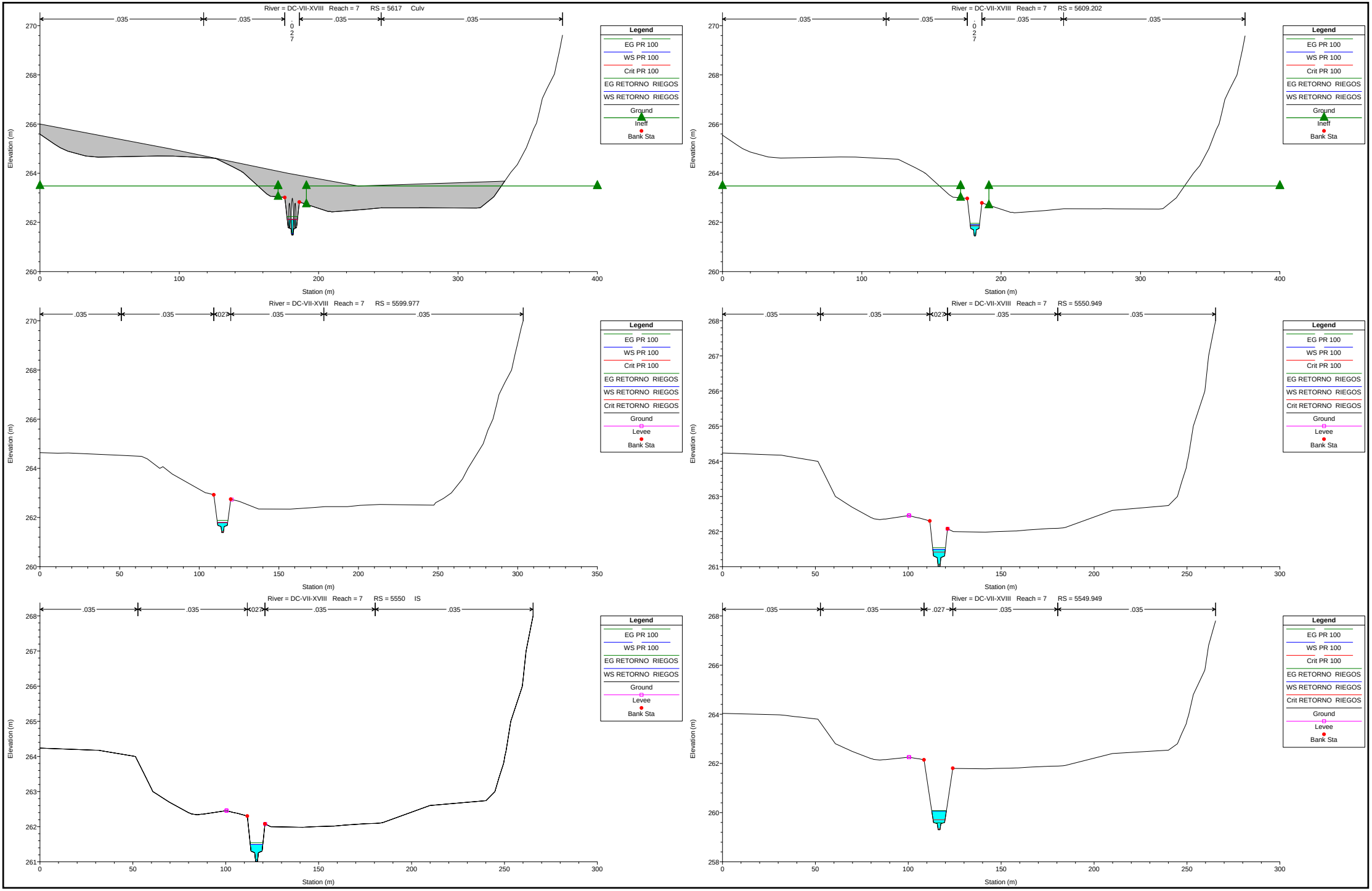

River = DC-VII-XVIII Reach = 7 RS = 5749.972
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

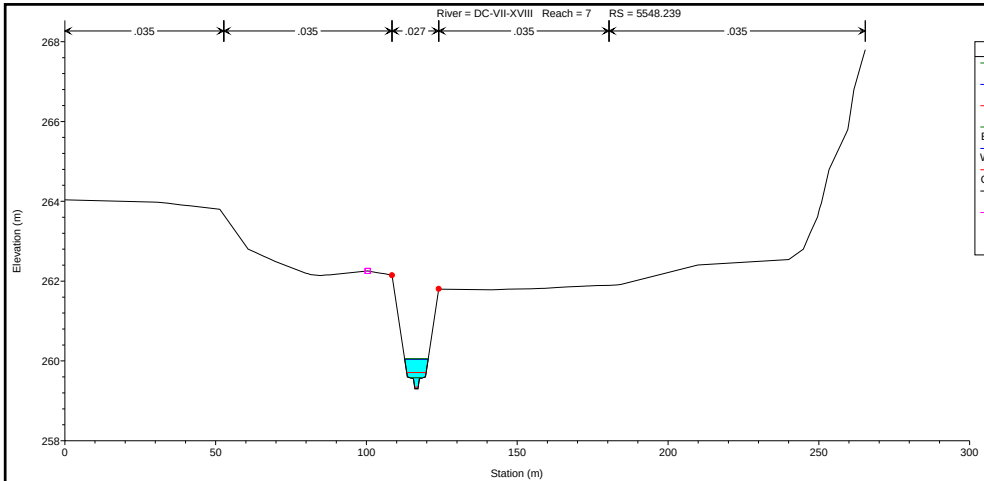

River = DC-VII-XVIII Reach = 7 RS = 5700.026
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

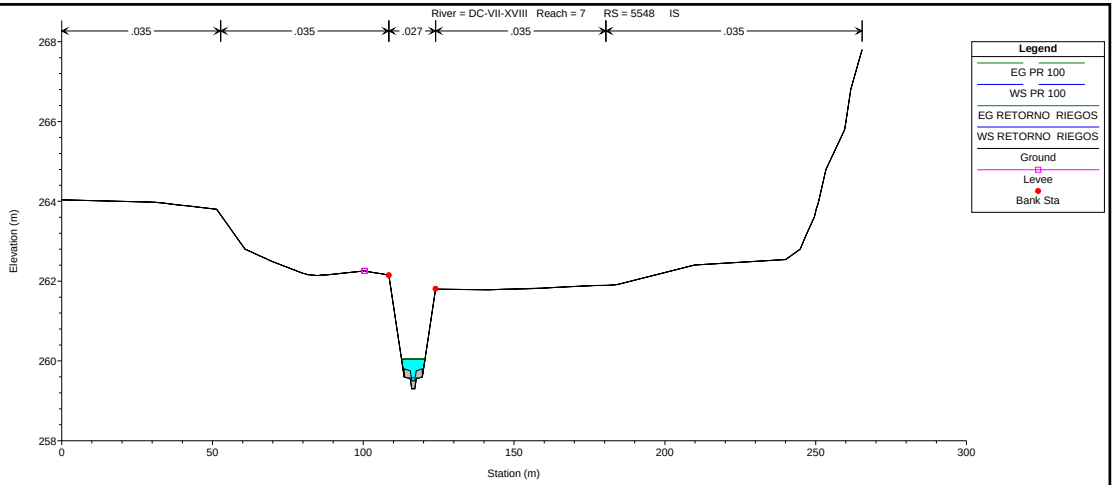

River = DC-VII-XVIII Reach = 7 RS = 5649.980
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

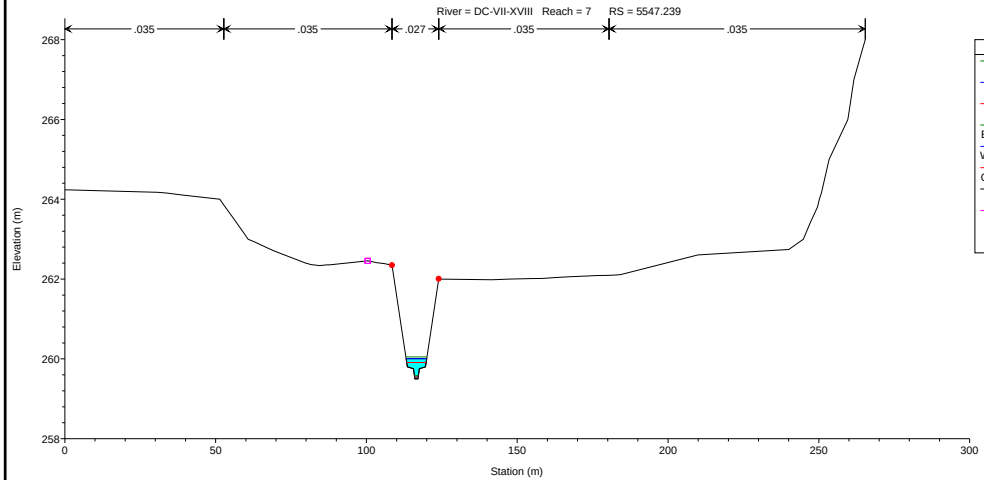

River = DC-VII-XVIII Reach = 7 RS = 5625.202
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

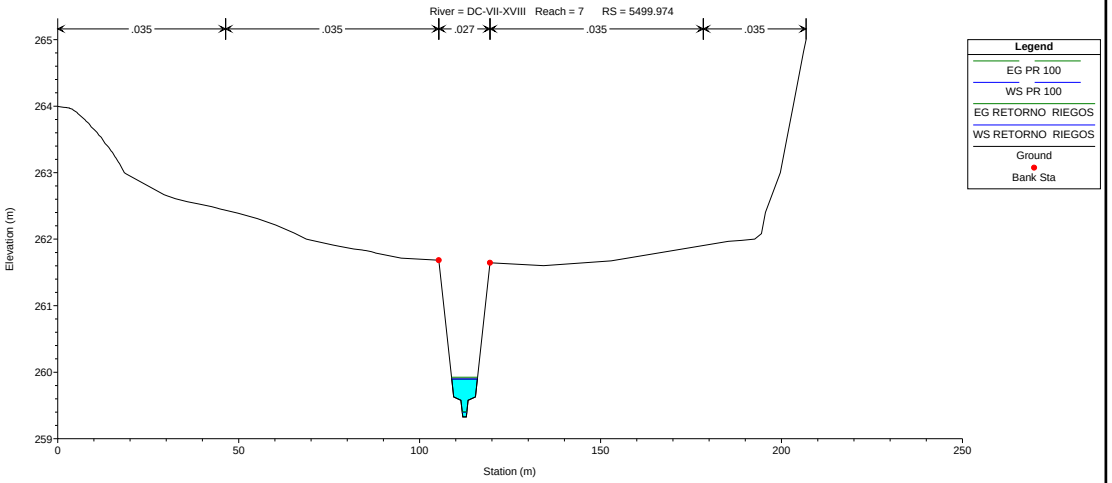

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Ineff
Bank Sta

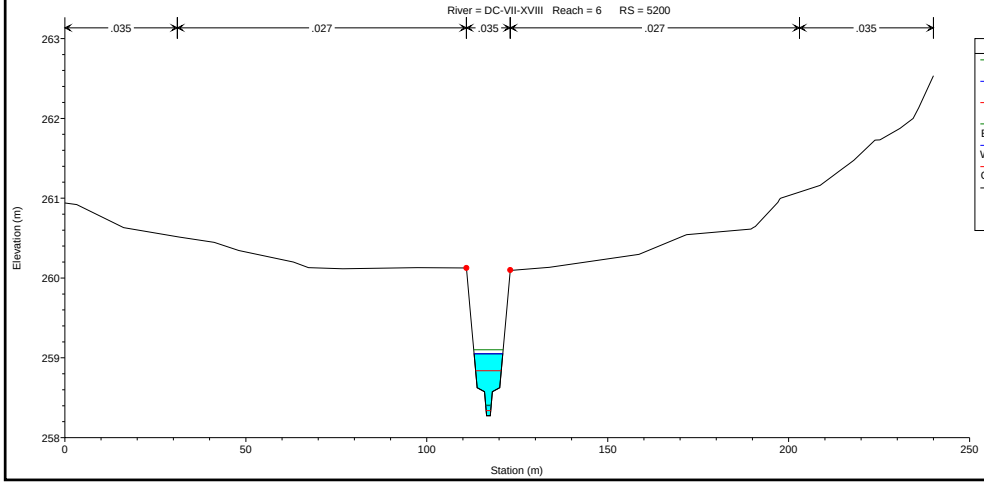

River = DC-VII-XVIII Reach = 7 RS = 5617 Culv
River = DC-VII-XVIII Reach = 7 RS = 5609.202
River = DC-VII-XVIII Reach = 7 RS = 5599.977
River = DC-VII-XVIII Reach = 7 RS = 5550.949
River = DC-VII-XVIII Reach = 7 RS = 5550 IS
River = DC-VII-XVIII Reach = 7 RS = 5549.949
.035
.027
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Levee
Bank Sta
Elevation (m)
Station (m)

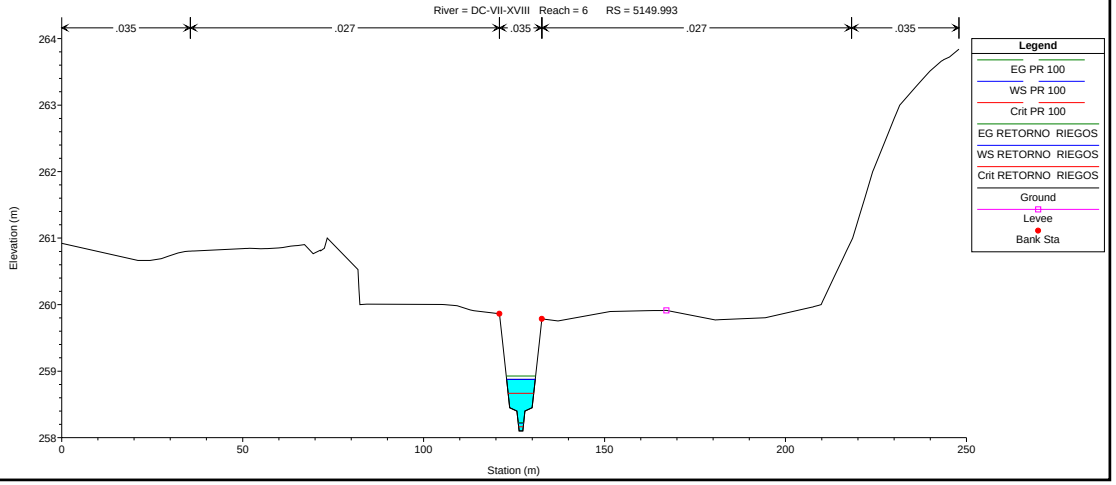

River = DC-VII-XVIII Reach = 7 RS = 5548.239
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

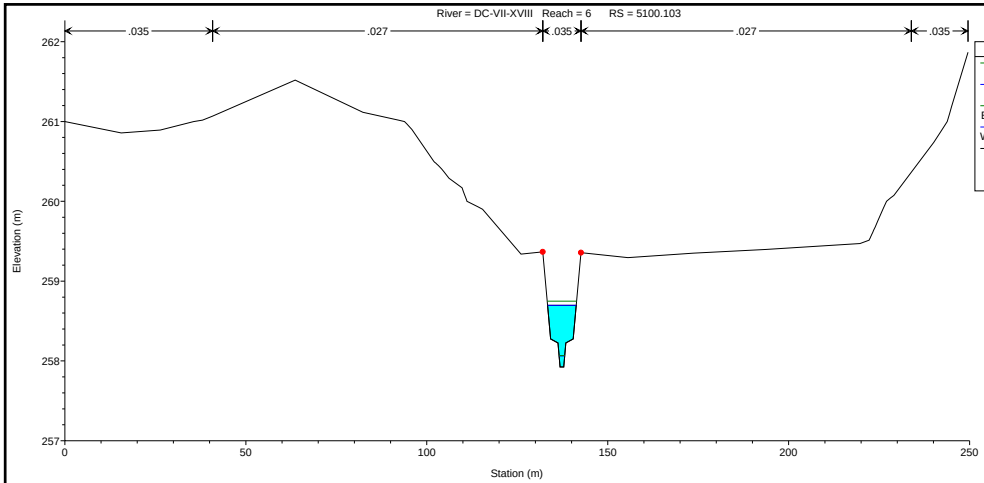

River = DC-VII-XVIII Reach = 7 RS = 5548 IS
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Bank Sta

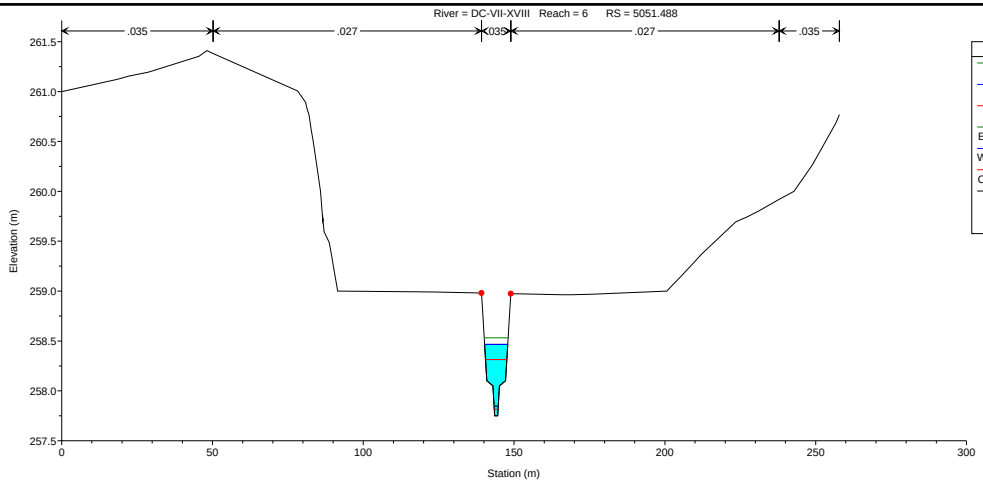

River = DC-VII-XVIII Reach = 7 RS = 5547.239
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

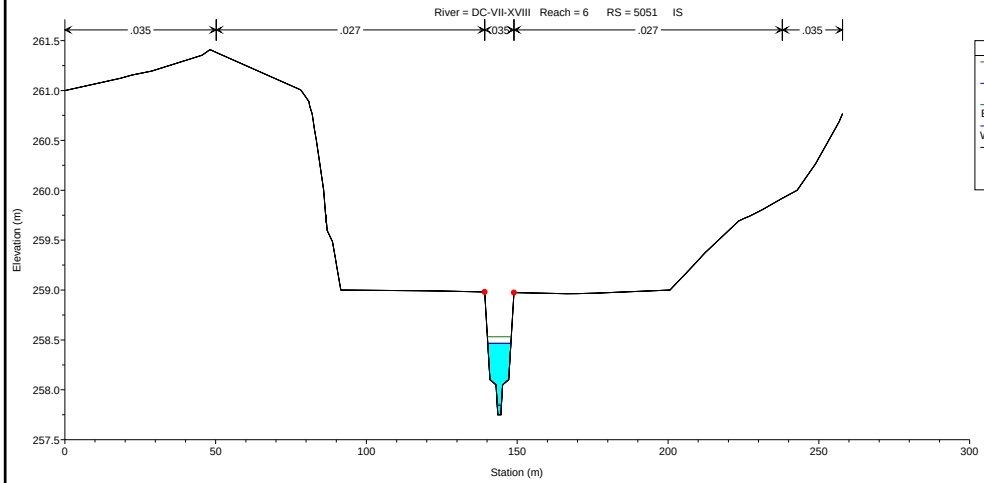

River = DC-VII-XVIII Reach = 7 RS = 5499.974
.035
.035
.027
.035
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

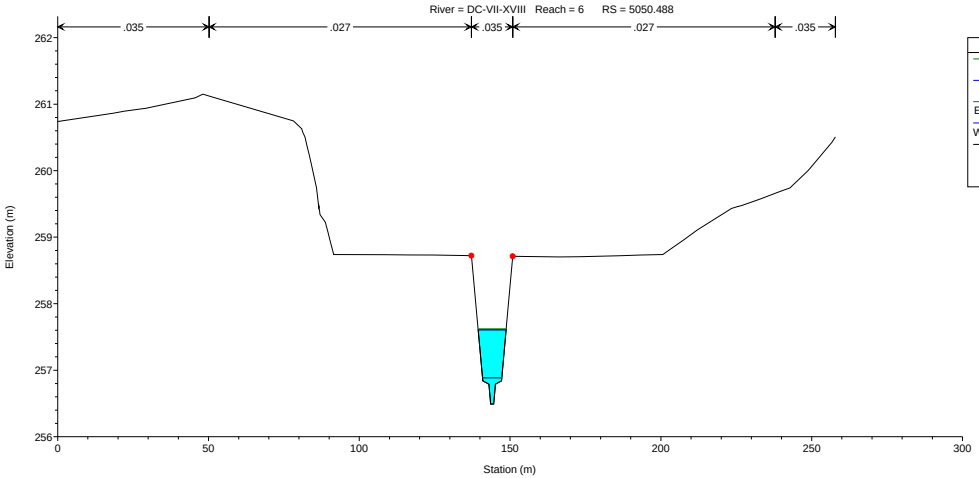

River = DC-VII-XVIII Reach = 6 RS = 5200
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

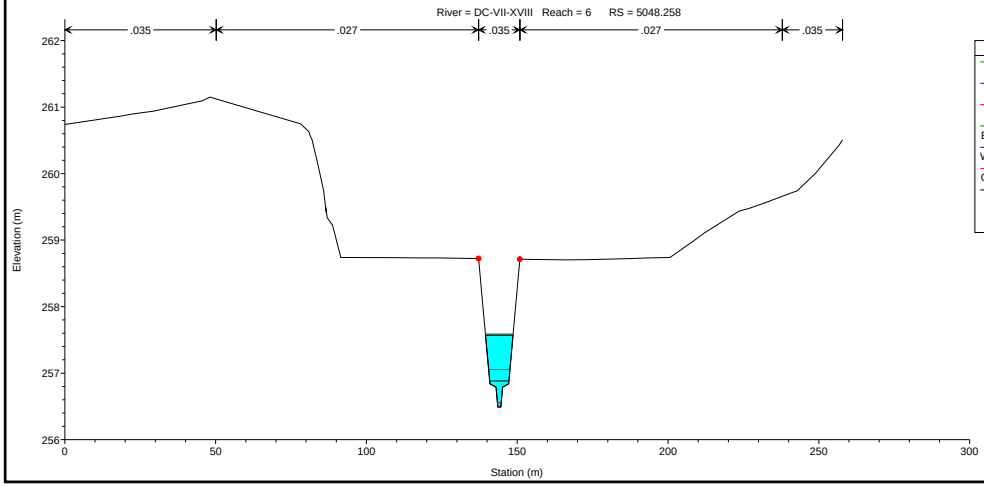

River = DC-VII-XVIII Reach = 6 RS = 5149.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

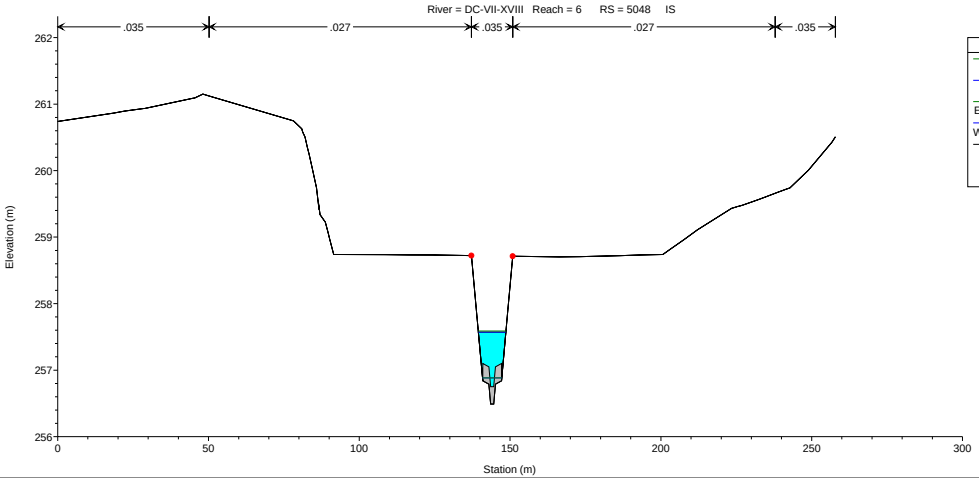

River = DC-VII-XVIII Reach = 6 RS = 5100.103
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

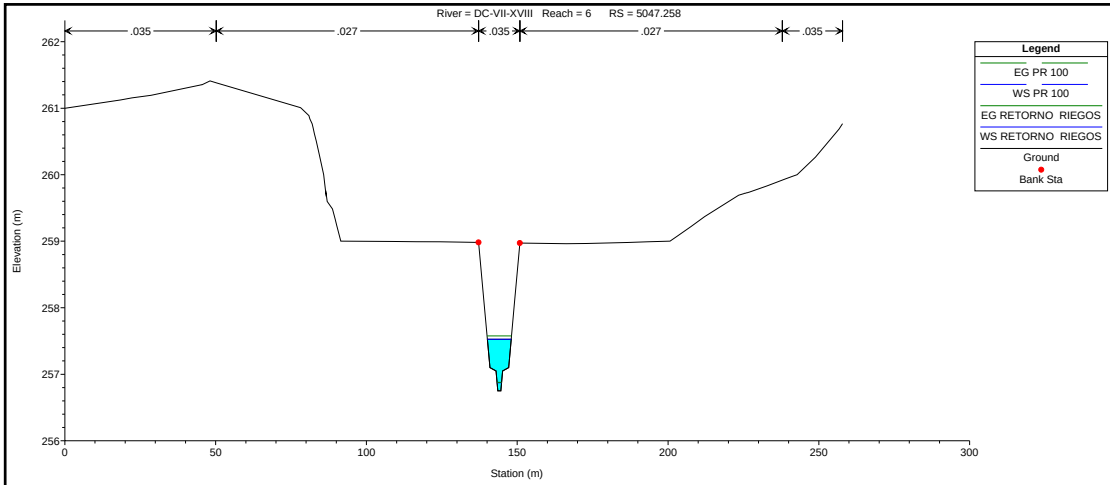

River = DC-VII-XVIII Reach = 6 RS = 5051.488
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

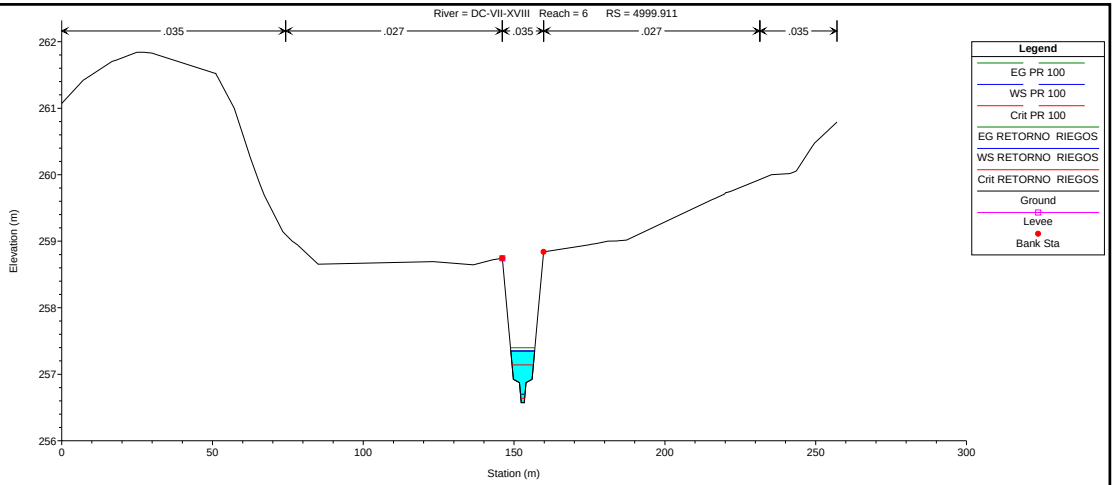

River = DC-VII-XVIII Reach = 6 RS = 5051 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

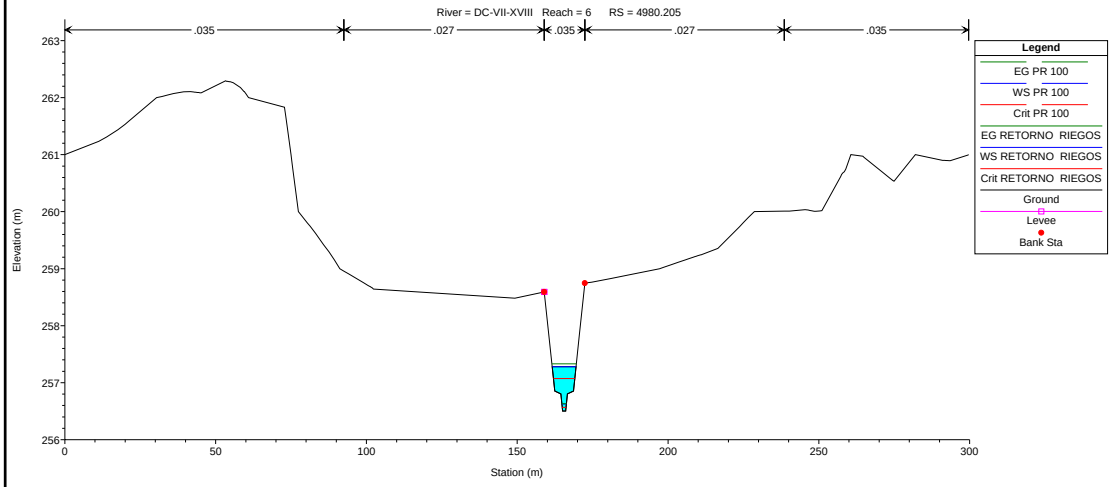

River = DC-VII-XVIII Reach = 6 RS = 5050.488
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

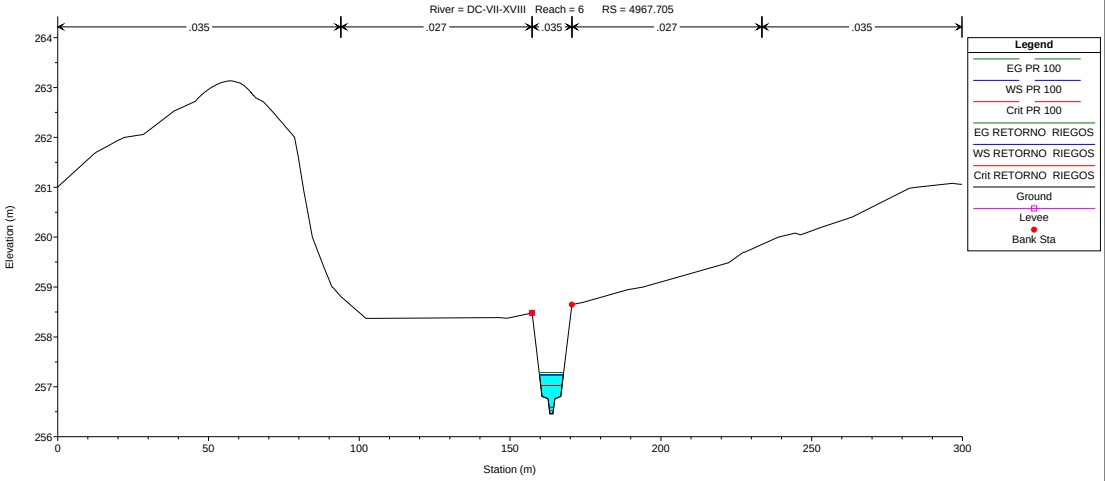

River = DC-VII-XVIII Reach = 6 RS = 5048.258
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

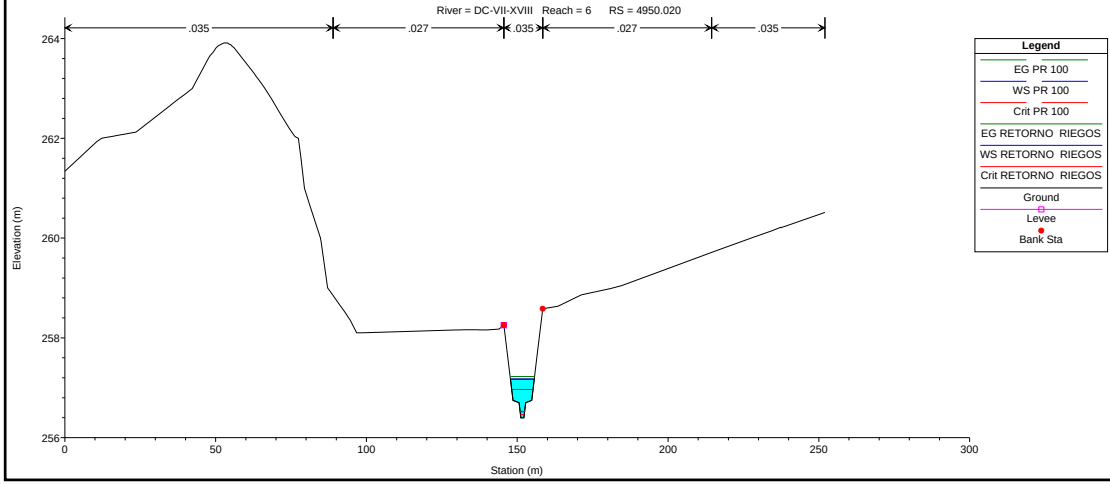

River = DC-VII-XVIII Reach = 6 RS = 5048 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

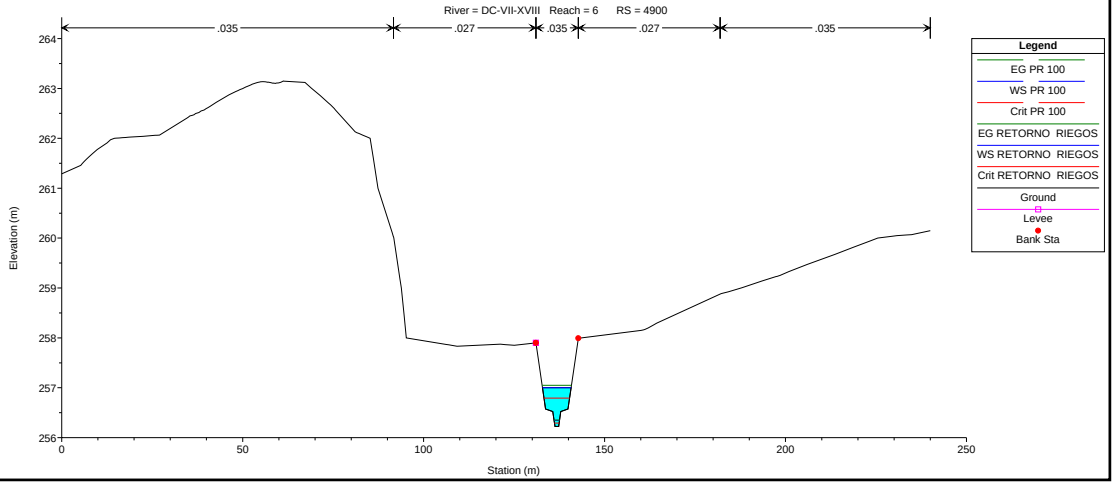

River = DC-VII-XVIII Reach = 6 RS = 5047.258
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

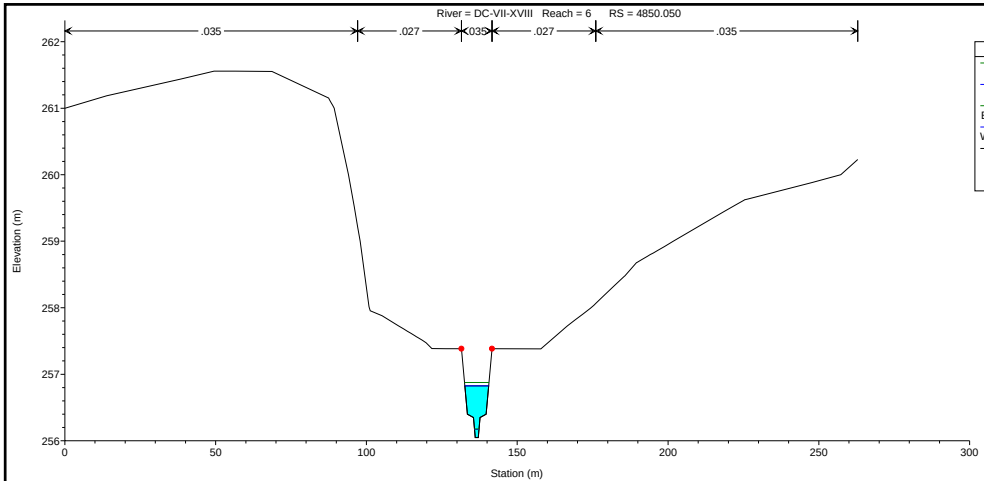

River = DC-VII-XVIII Reach = 6 RS = 4999.911
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

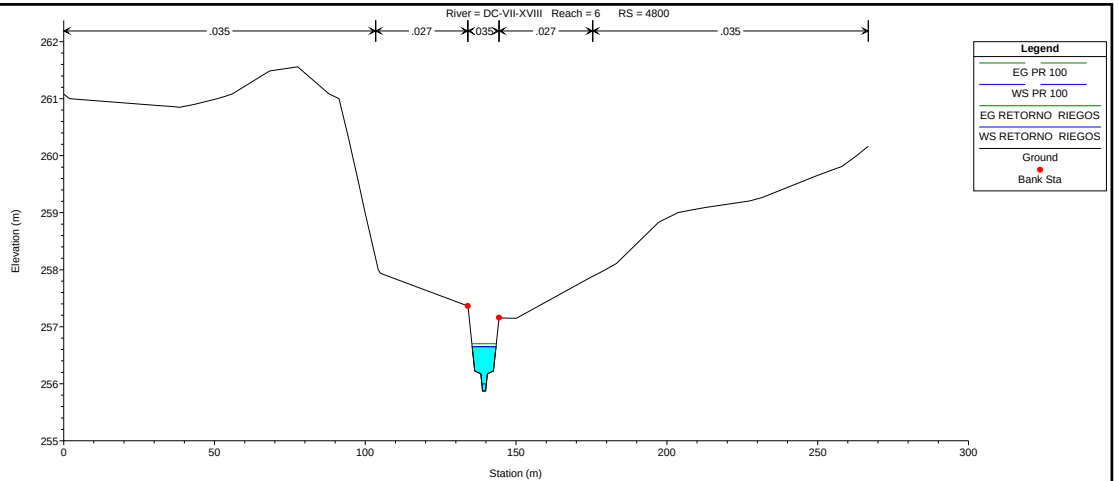

River = DC-VII-XVIII Reach = 6 RS = 4980.205
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

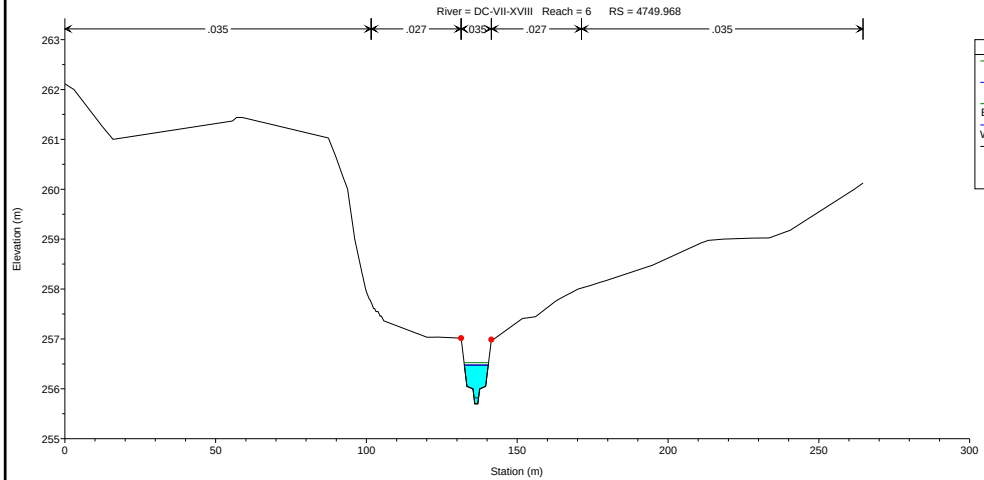

River = DC-VII-XVIII Reach = 6 RS = 4967.705
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

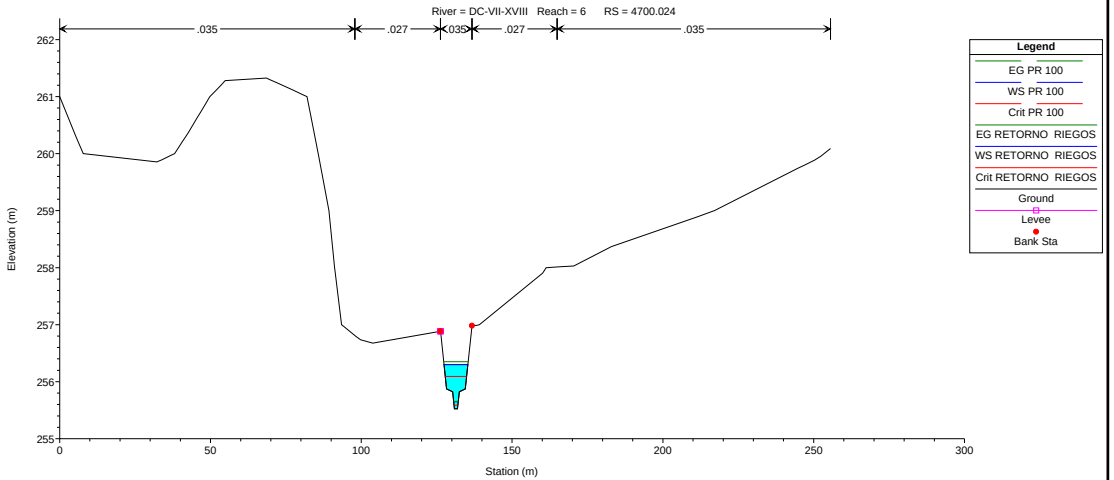

River = DC-VII-XVIII Reach = 6 RS = 4950.020
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

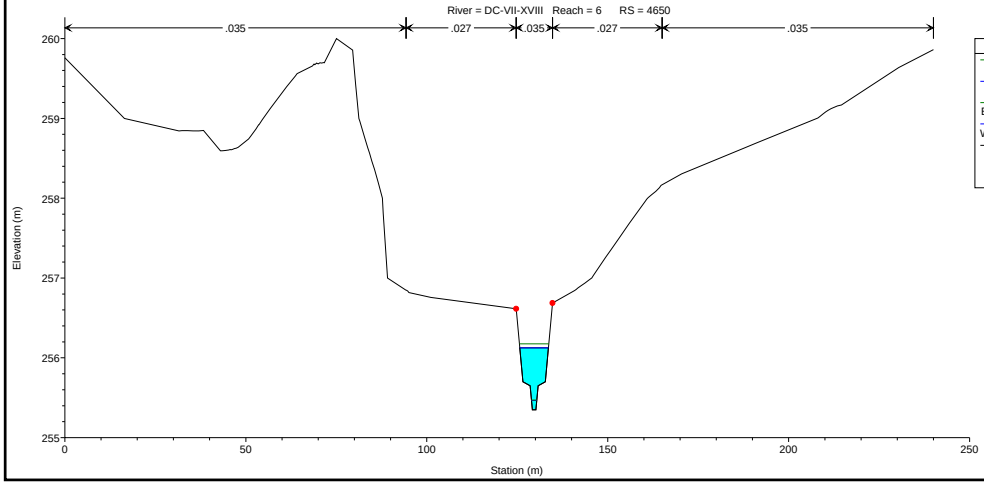

River = DC-VII-XVIII Reach = 6 RS = 4900
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

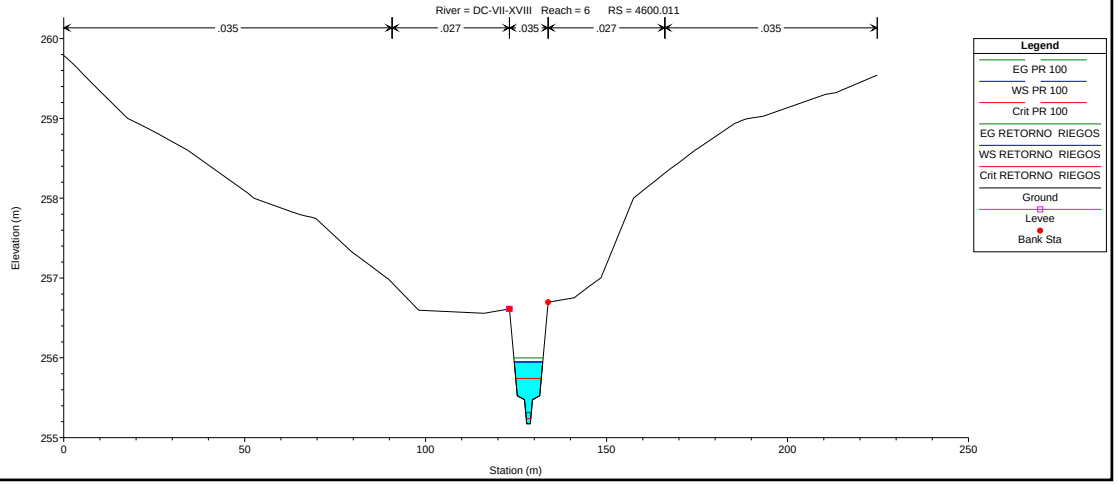

River = DC-VII-XVIII Reach = 6 RS = 4850.050
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

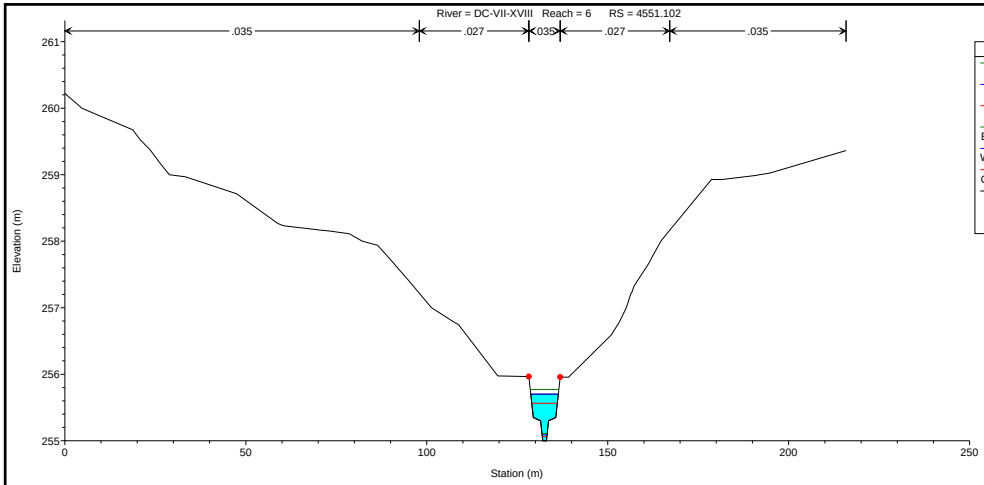

River = DC-VII-XVIII Reach = 6 RS = 4800
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

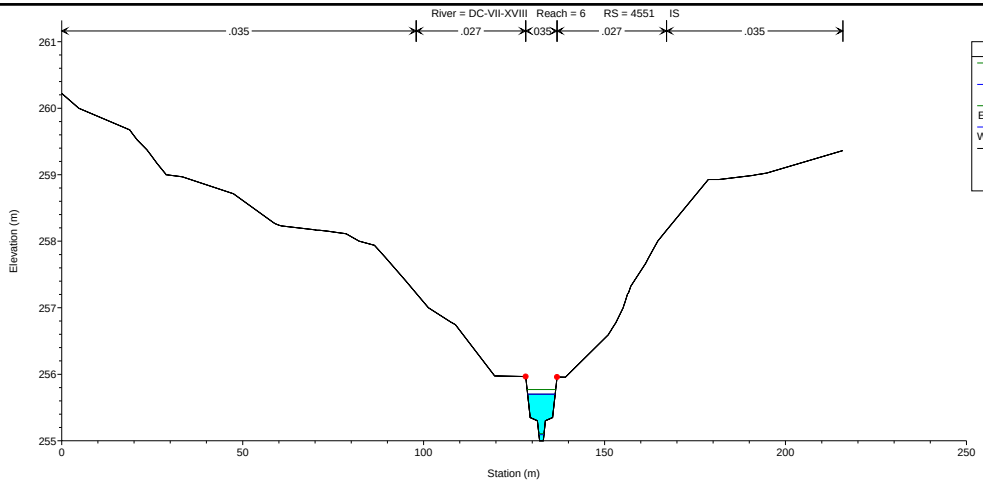

River = DC-VII-XVIII Reach = 6 RS = 4749.968
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

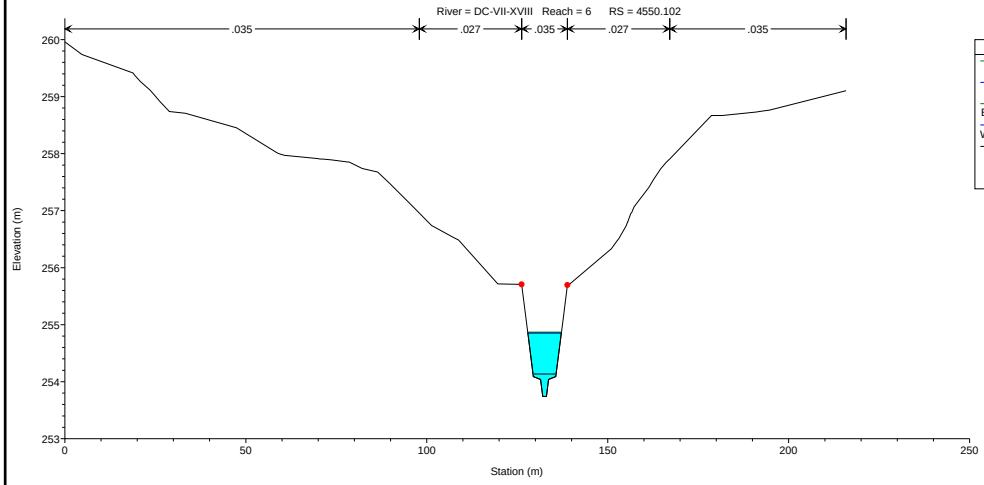

River = DC-VII-XVIII Reach = 6 RS = 4700.024
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

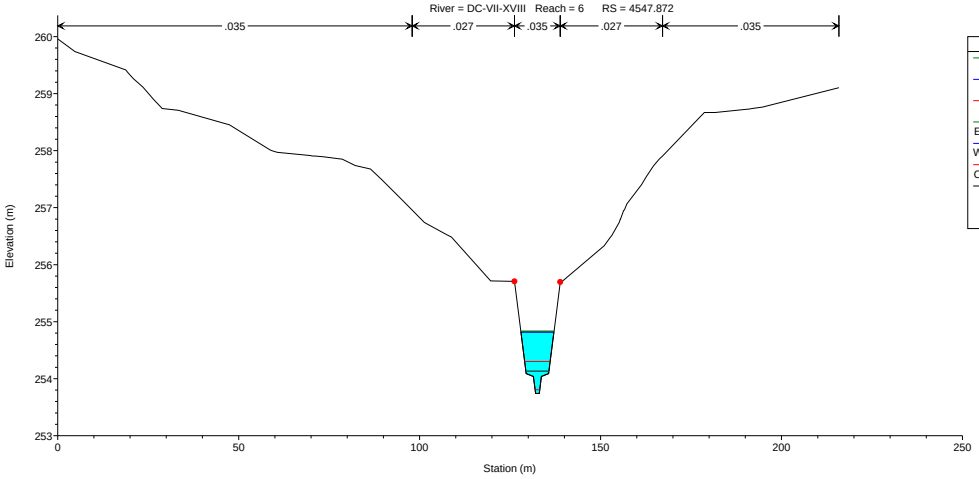

River = DC-VII-XVIII Reach = 6 RS = 4650
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

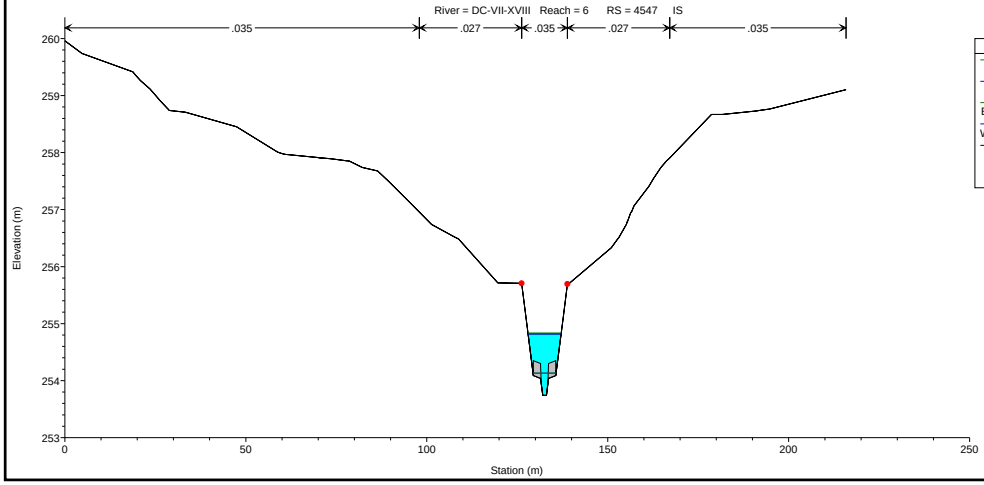

River = DC-VII-XVIII Reach = 6 RS = 4600.011
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

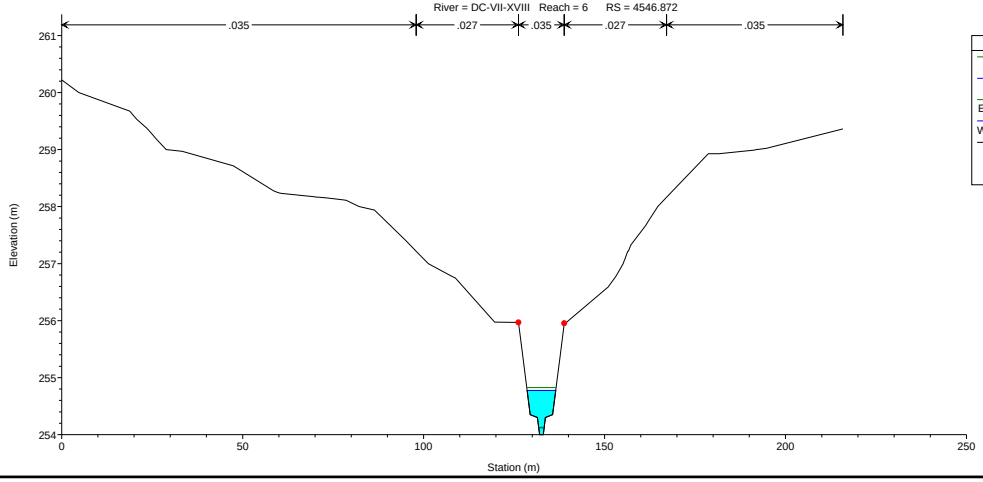

River = DC-VII-XVIII Reach = 6 RS = 4551.102
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

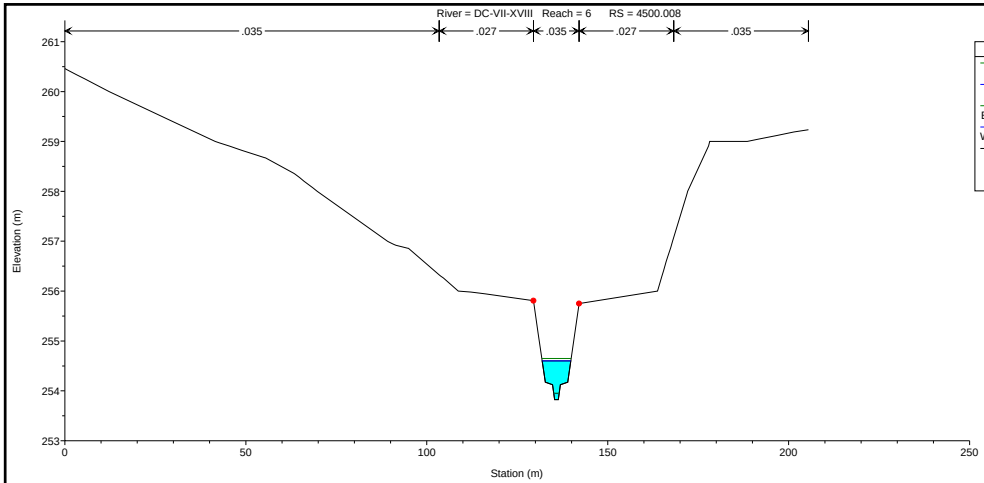

River = DC-VII-XVIII Reach = 6 RS = 4551 IS
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

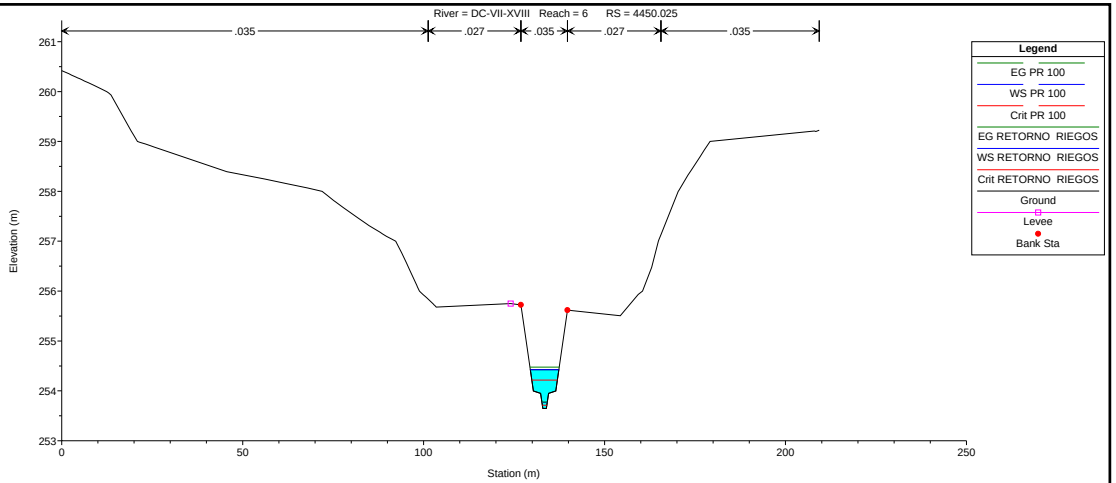

River = DC-VII-XVIII Reach = 6 RS = 4550.102
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

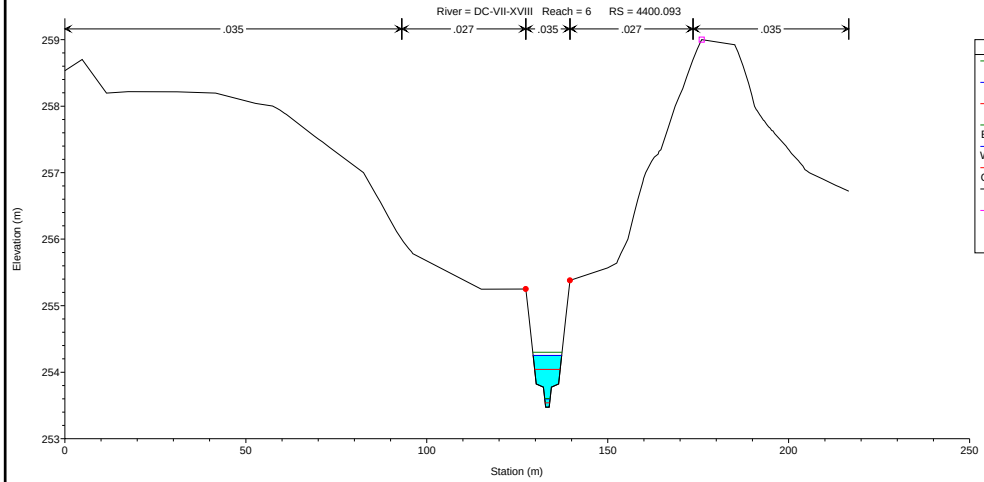

River = DC-VII-XVIII Reach = 6 RS = 4547.872
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

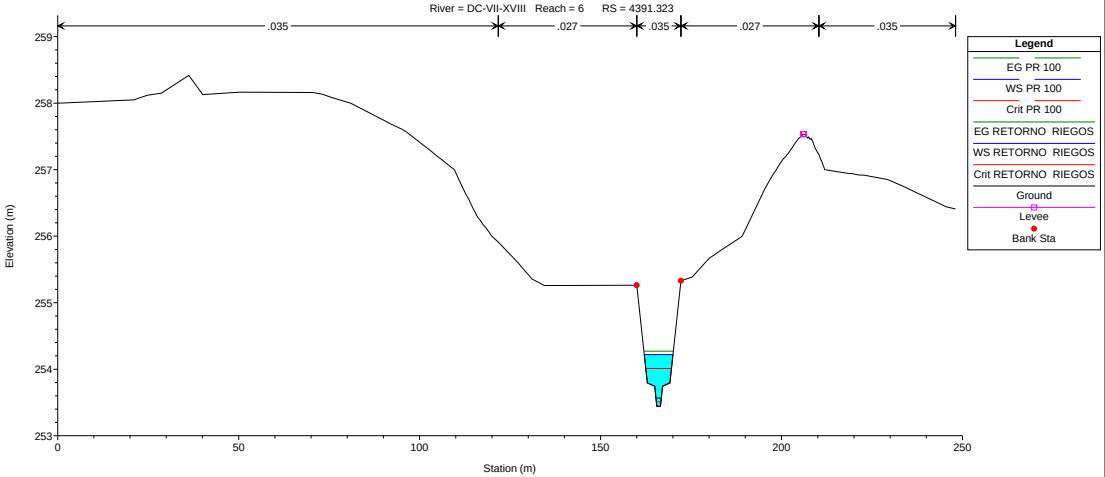

River = DC-VII-XVIII Reach = 6 RS = 4547 IS
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

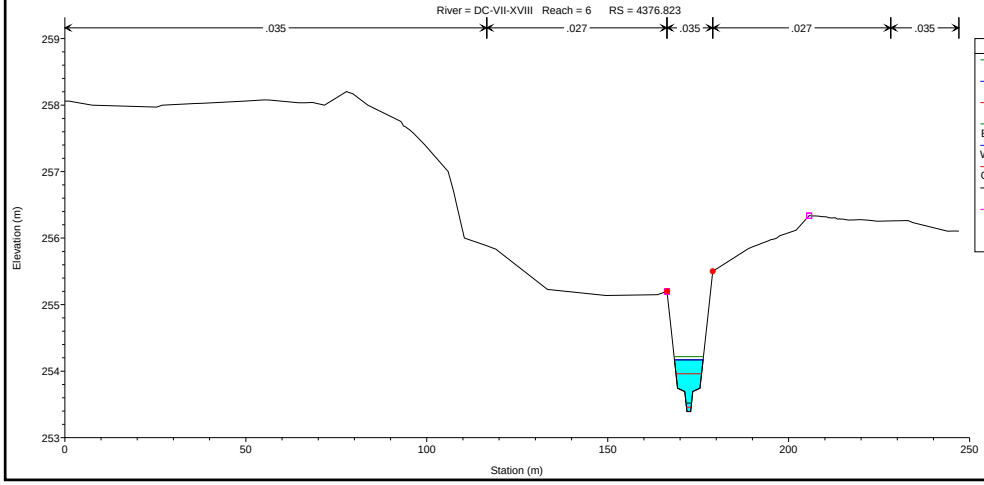

River = DC-VII-XVIII Reach = 6 RS = 4546.872
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

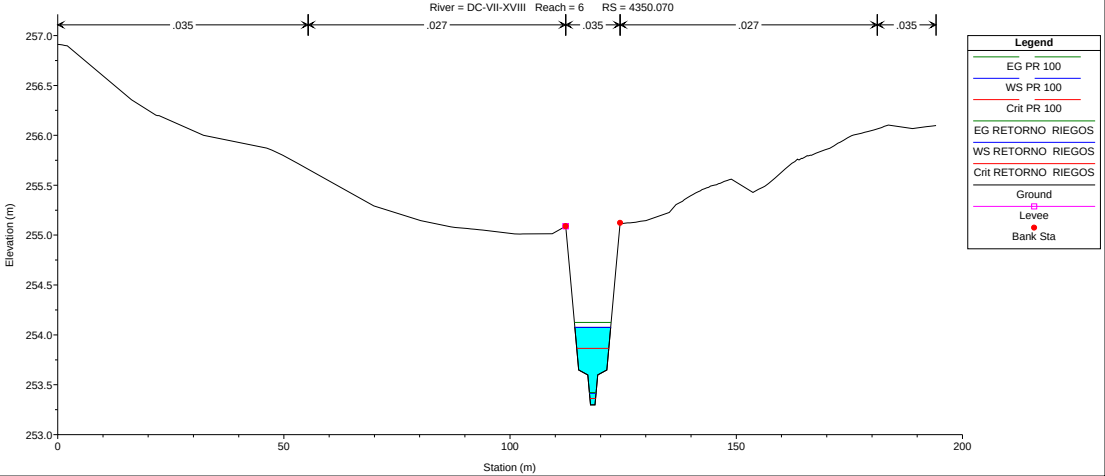

River = DC-VII-XVIII Reach = 6 RS = 4500.008
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

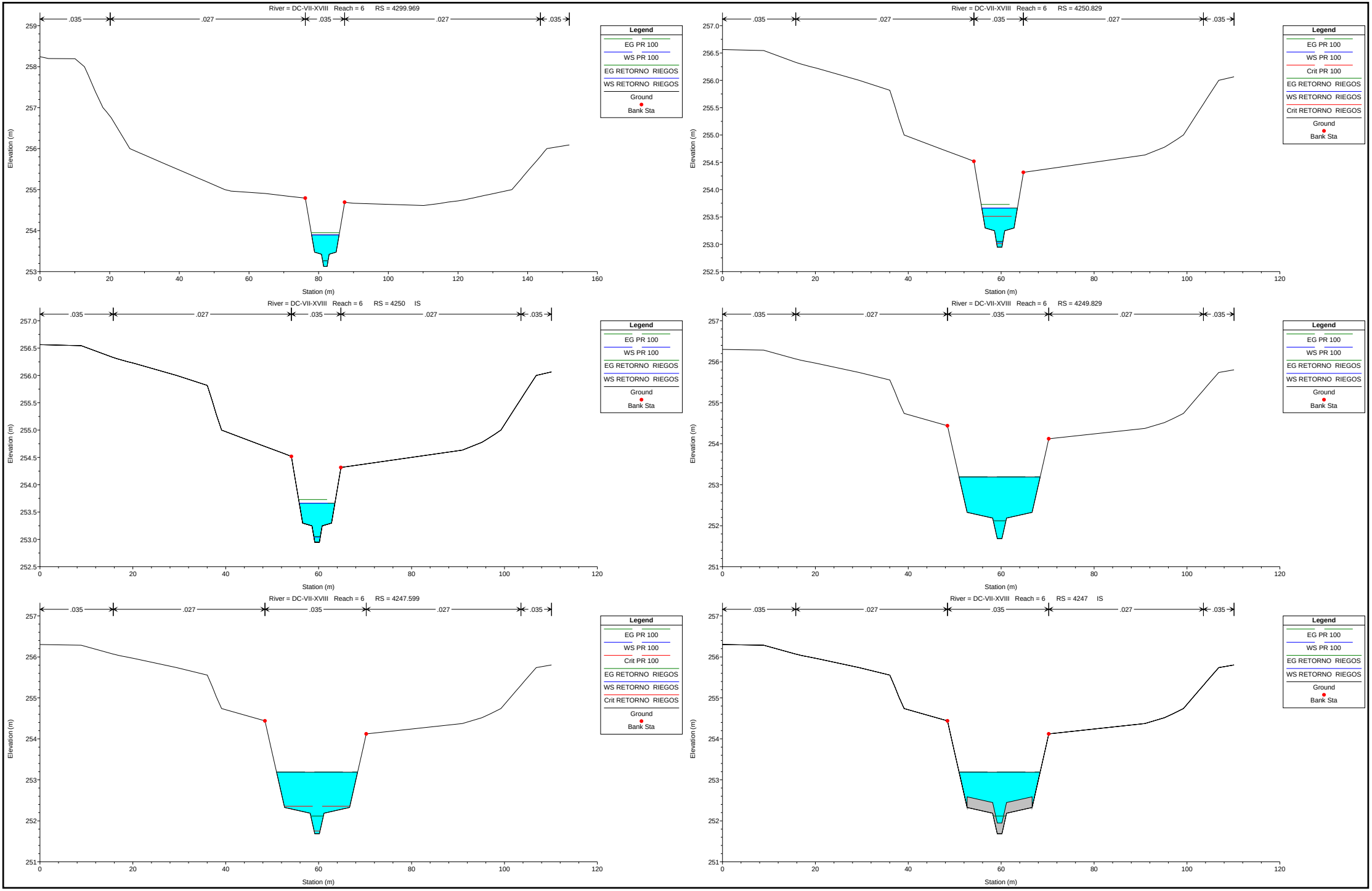

River = DC-VII-XVIII Reach = 6 RS = 4450.025
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

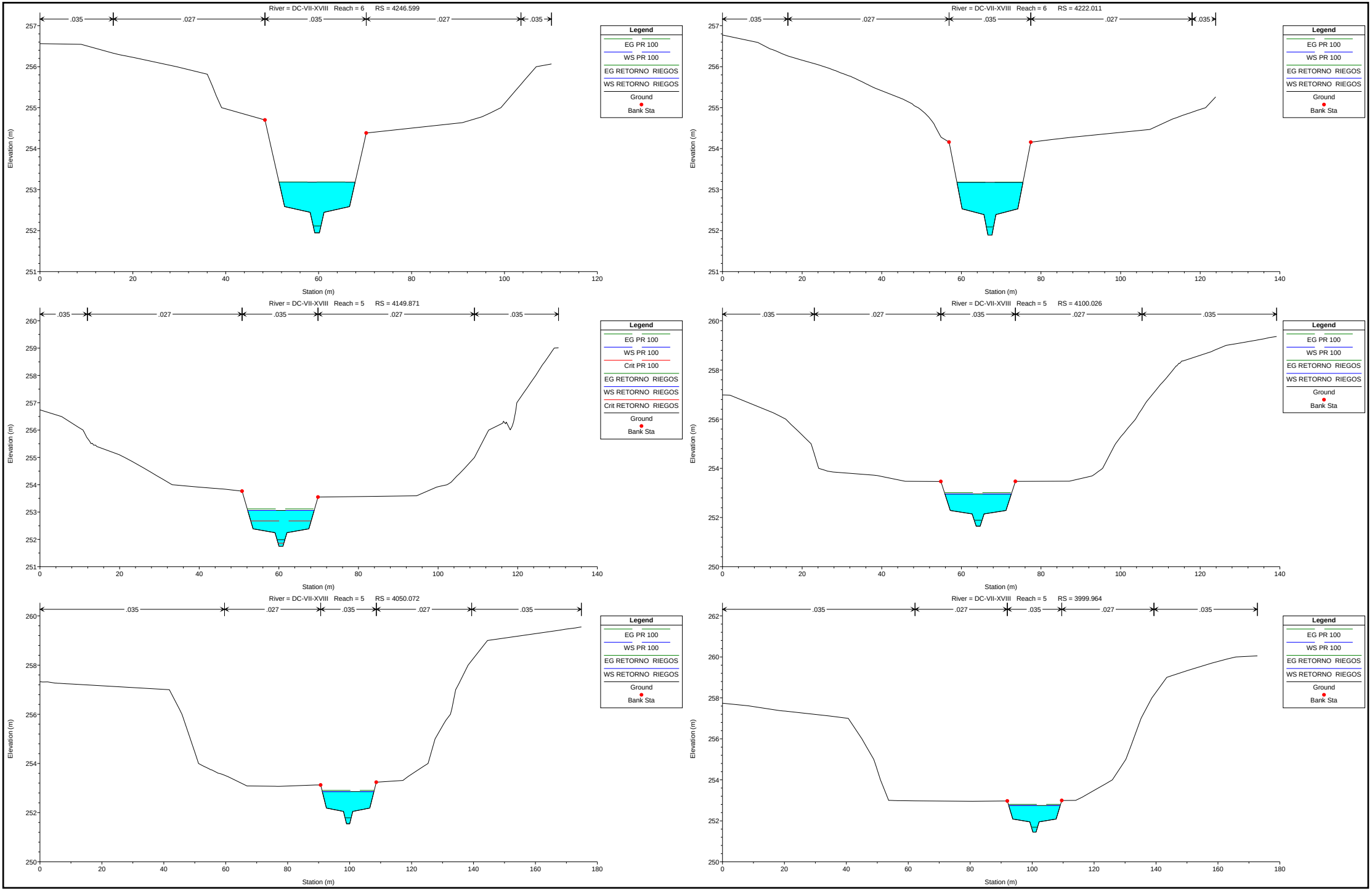

River = DC-VII-XVIII Reach = 6 RS = 4400.093
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

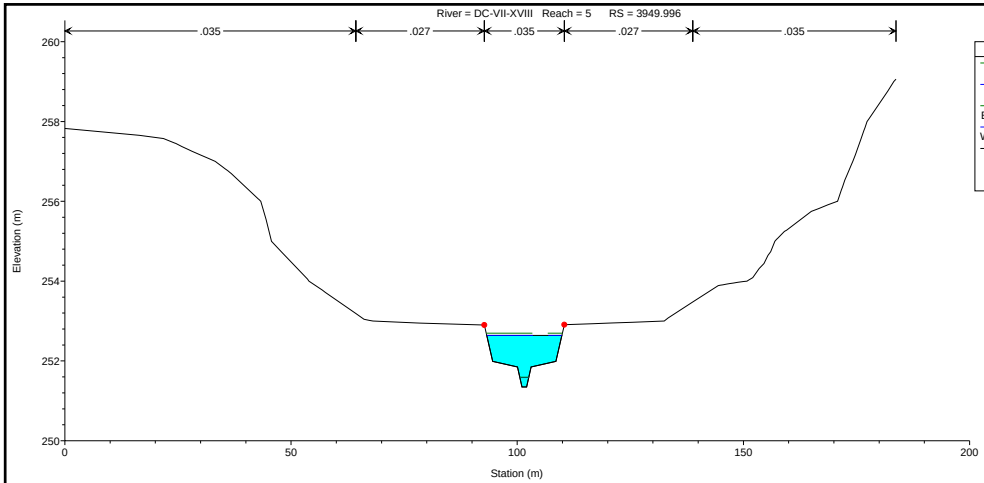

River = DC-VII-XVIII Reach = 6 RS = 4391.323
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

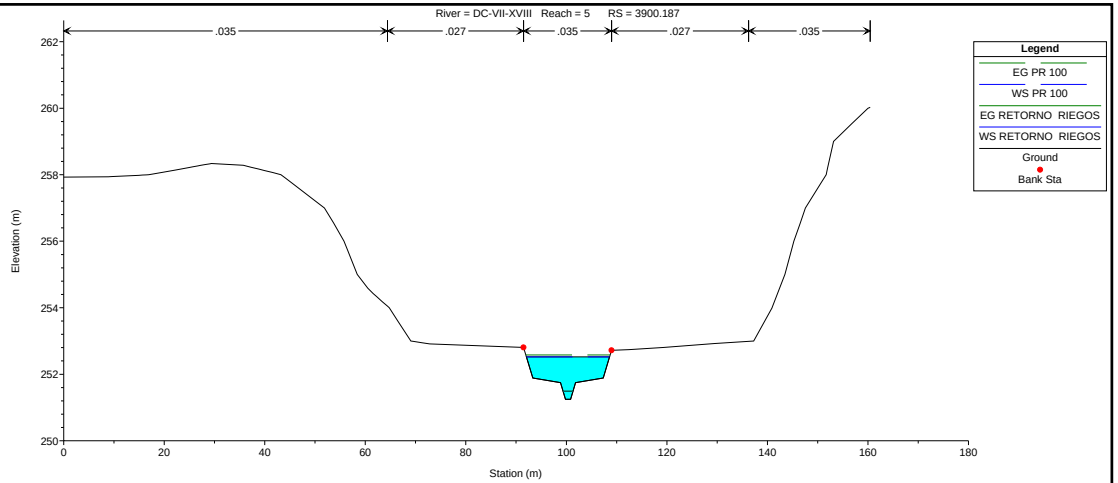

River = DC-VII-XVIII Reach = 6 RS = 4376.823
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

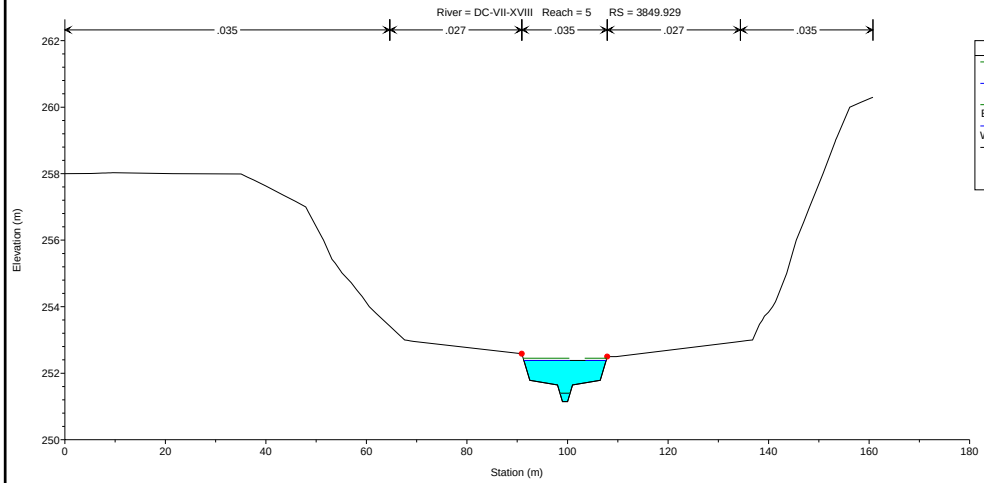

River = DC-VII-XVIII Reach = 6 RS = 4350.070
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

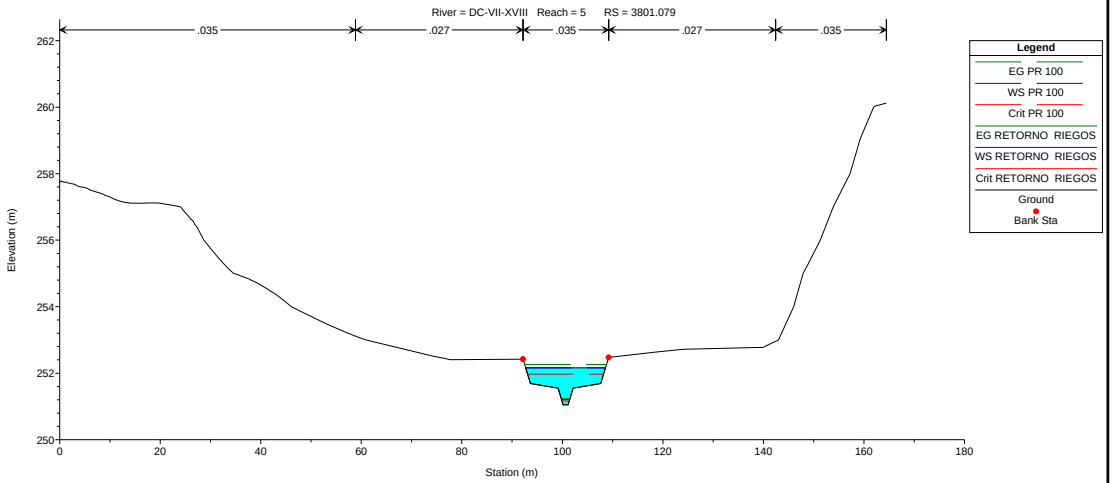

River = DC-VII-XVIII Reach = 6 RS = 4299.969
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4250.829
Crit PR 100
Crit RETORNO RIEGOS
River = DC-VII-XVIII Reach = 6 RS = 4250 IS
River = DC-VII-XVIII Reach = 6 RS = 4249.829
River = DC-VII-XVIII Reach = 6 RS = 4247.599
River = DC-VII-XVIII Reach = 6 RS = 4247 IS

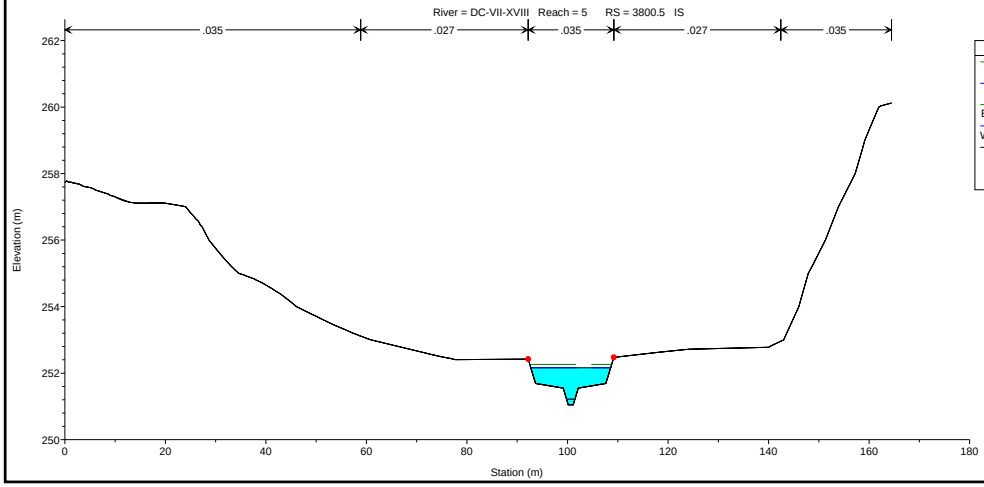

River = DC-VII-XVIII Reach = 6 RS = 4246.599
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 6 RS = 4222.011
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4149.871
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4100.026
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 4050.072
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
River = DC-VII-XVIII Reach = 5 RS = 3999.964
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

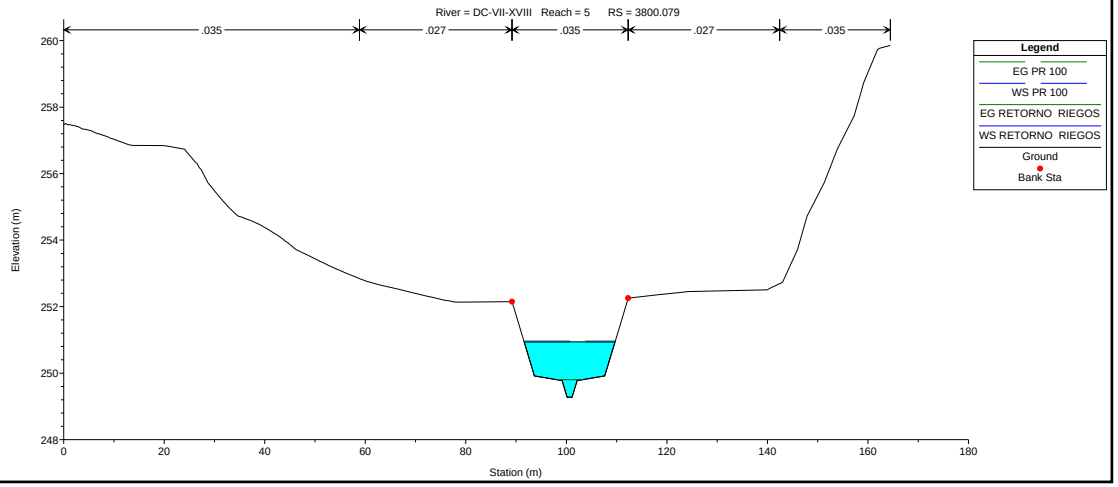

River = DC-VII-XVIII Reach = 5 RS = 3949.996
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

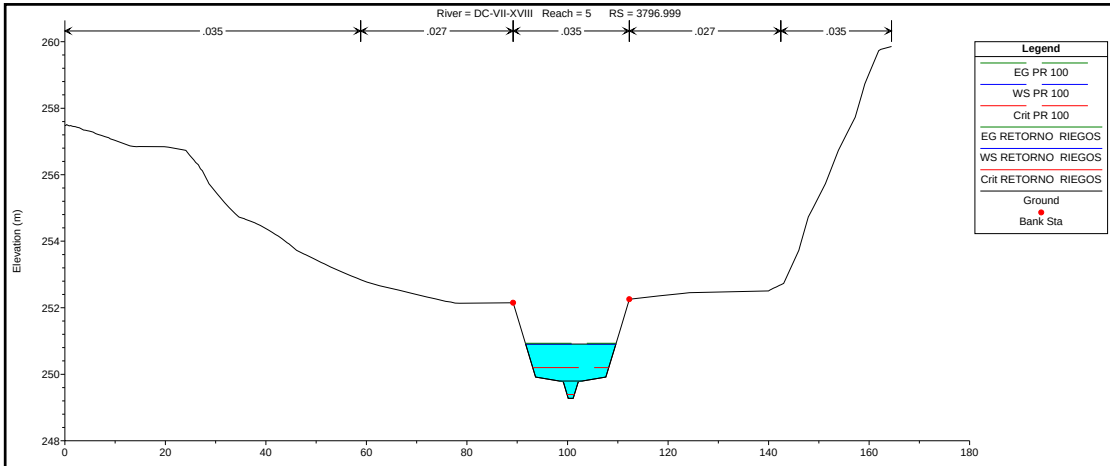

River = DC-VII-XVIII Reach = 5 RS = 3900.187
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

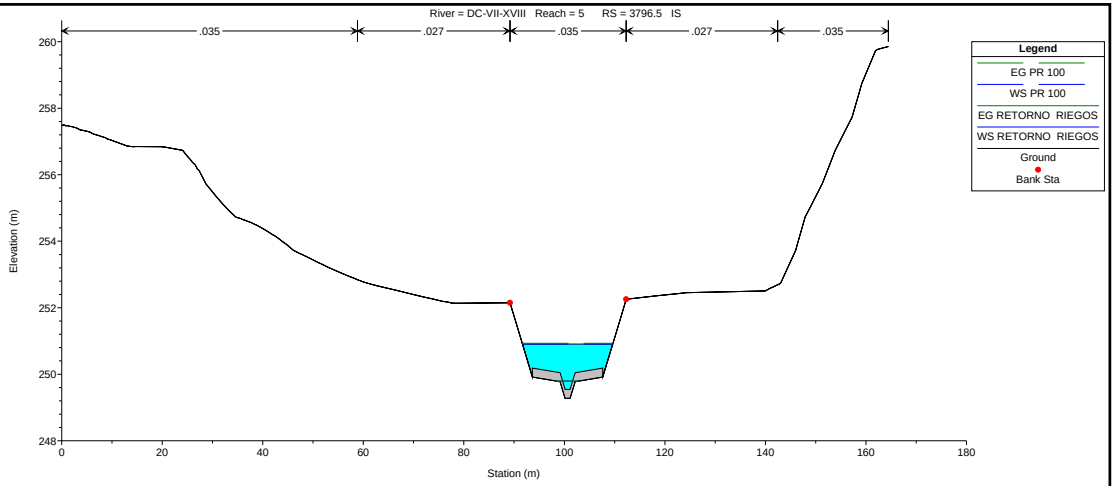

River = DC-VII-XVIII Reach = 5 RS = 3849.929
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

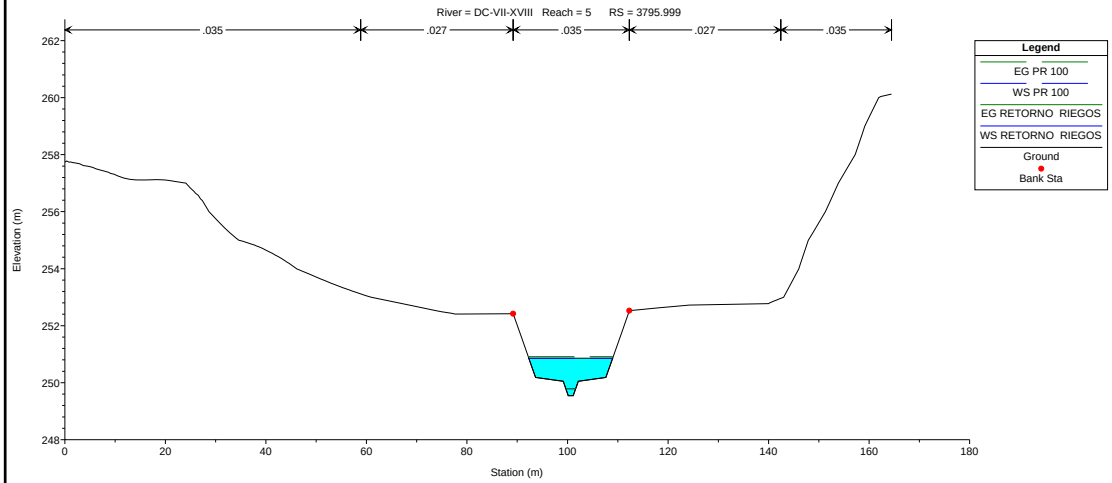

River = DC-VII-XVIII Reach = 5 RS = 3801.079
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

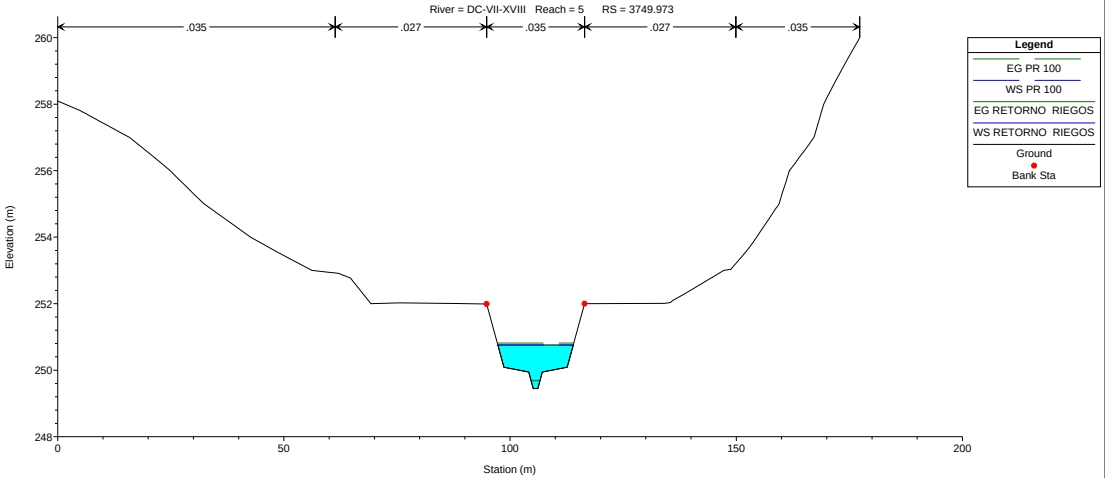

River = DC-VII-XVIII Reach = 5 RS = 3800.5 IS
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

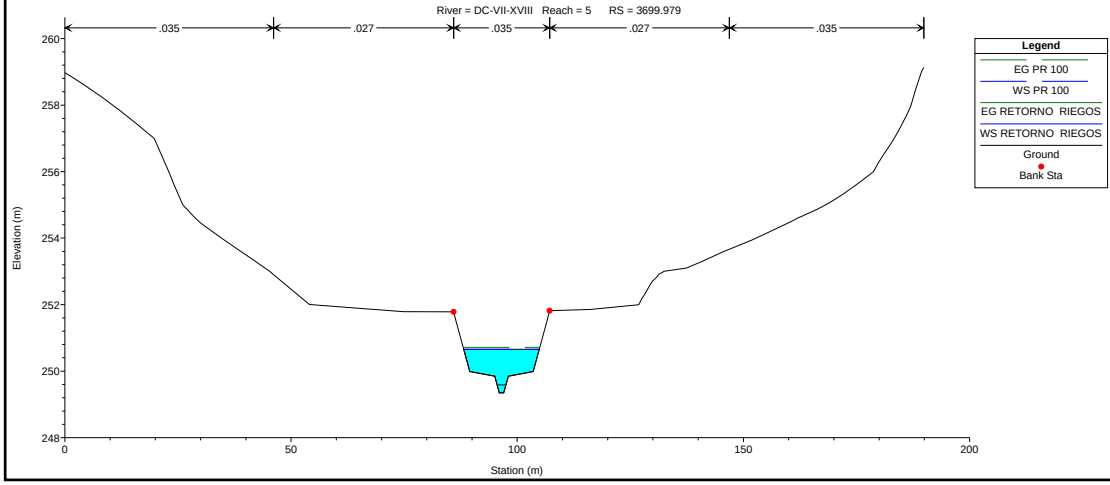

River = DC-VII-XVIII Reach = 5 RS = 3800.079
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

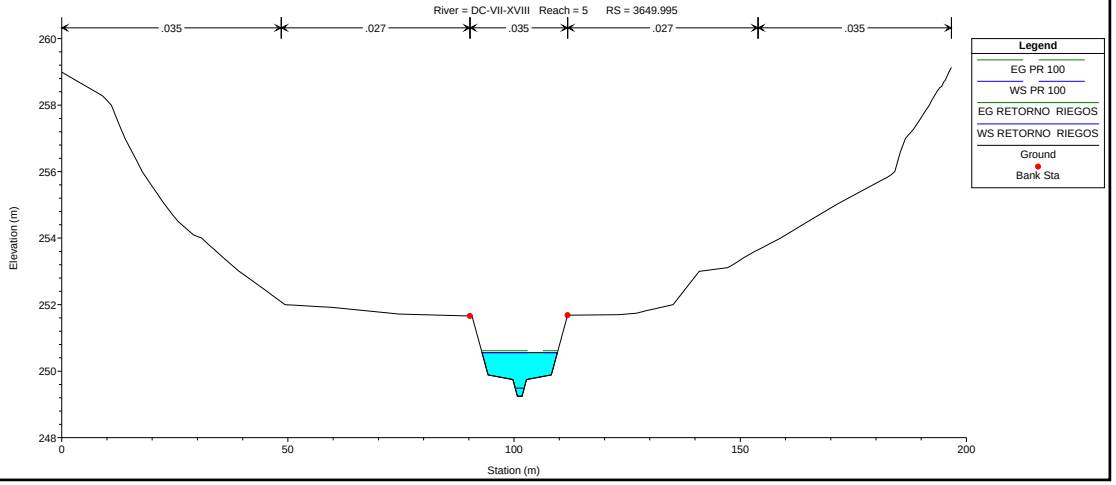

River = DC-VII-XVIII Reach = 5 RS = 3796.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

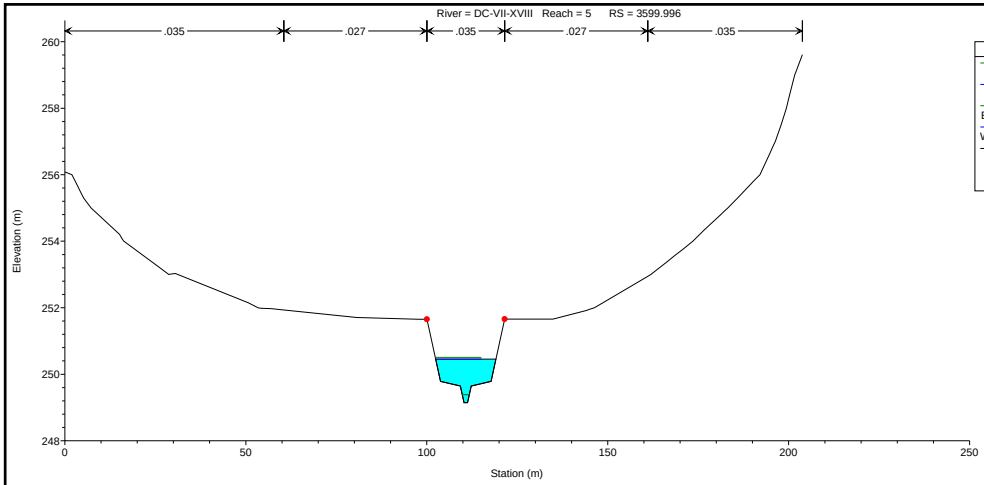

River = DC-VII-XVIII Reach = 5 RS = 3796.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

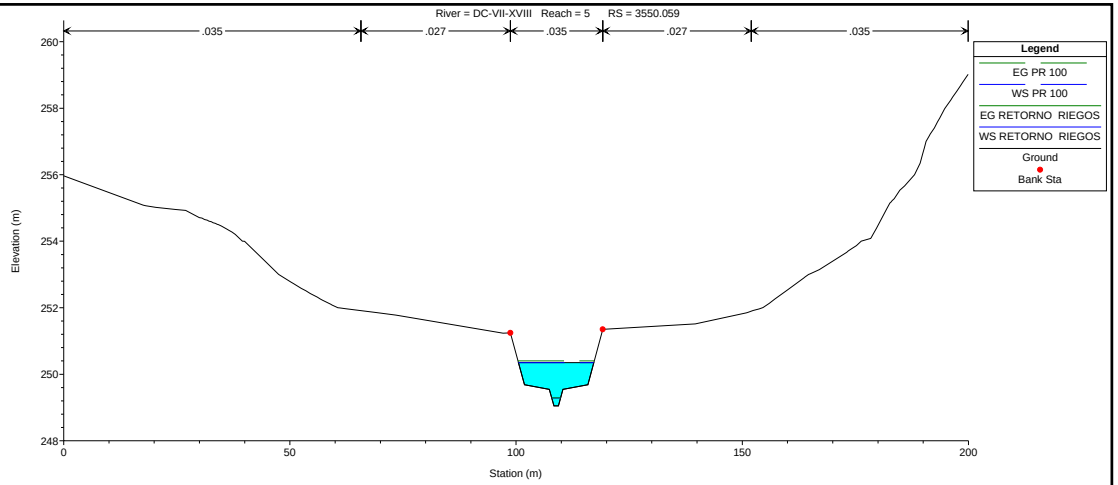

River = DC-VII-XVIII Reach = 5 RS = 3795.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

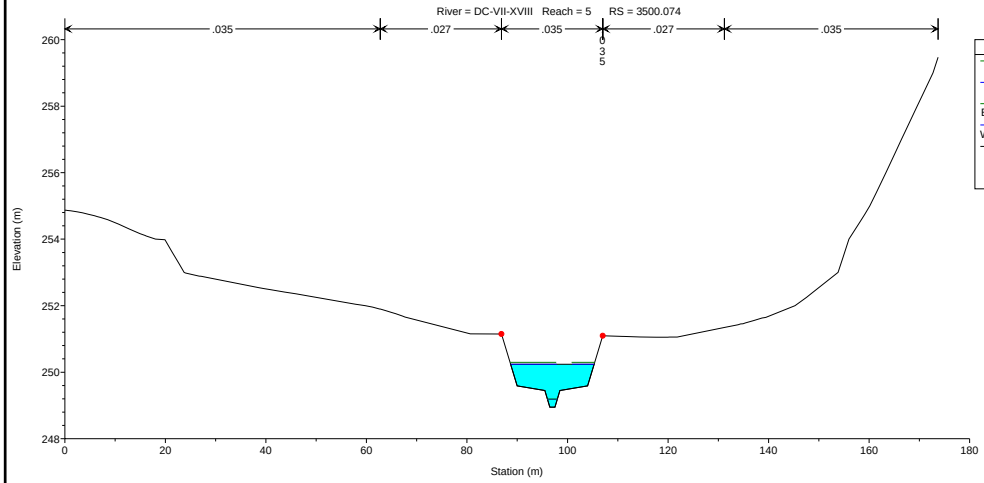

River = DC-VII-XVIII Reach = 5 RS = 3749.973
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

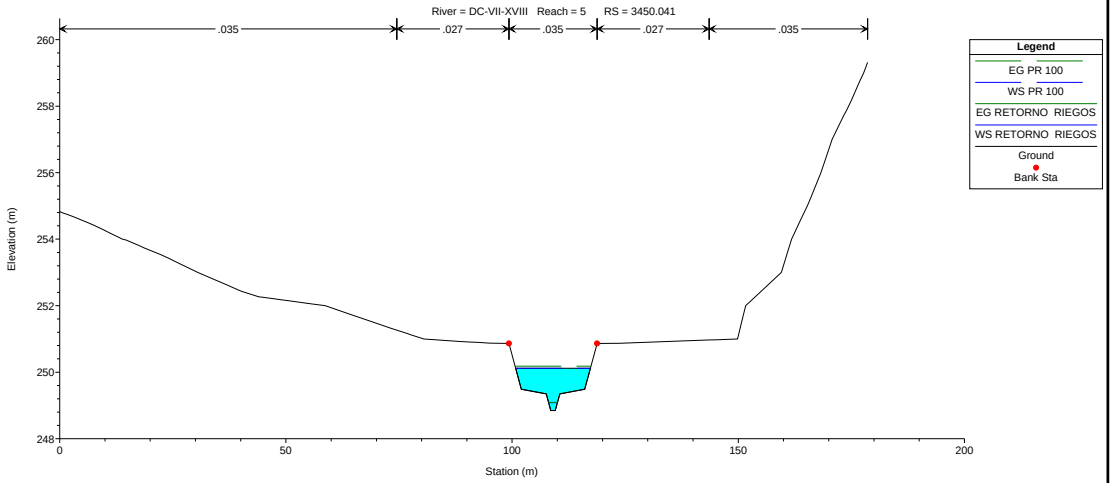

River = DC-VII-XVIII Reach = 5 RS = 3699.979
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

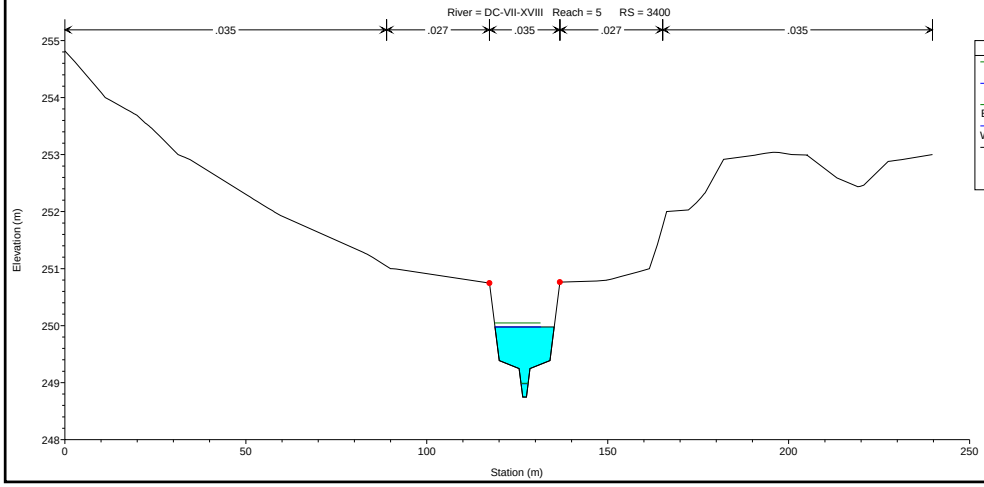

River = DC-VII-XVIII Reach = 5 RS = 3649.995
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

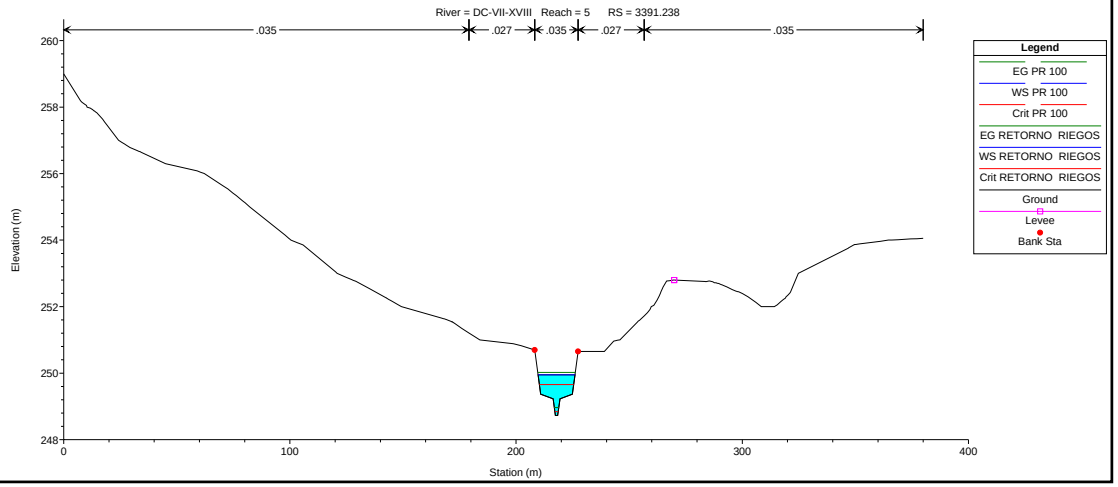

River = DC-VII-XVIII Reach = 5 RS = 3599.996
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

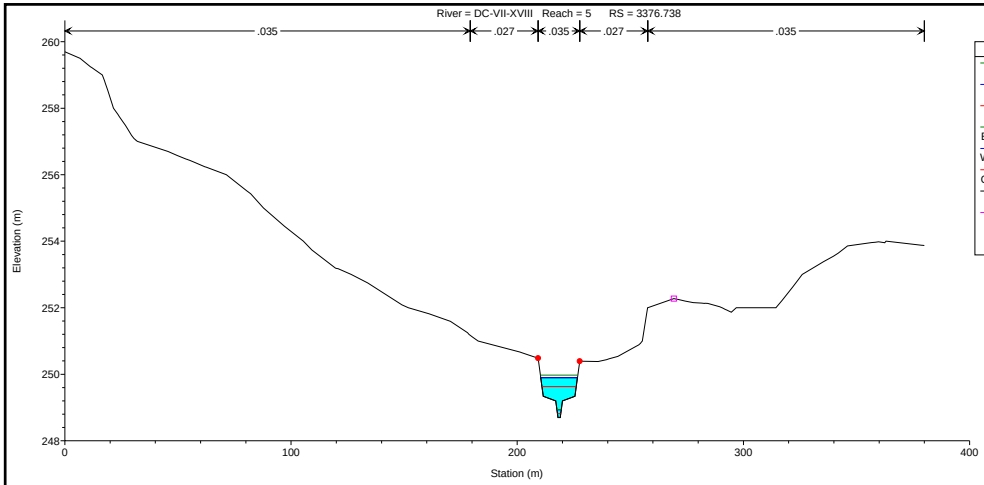

River = DC-VII-XVIII Reach = 5 RS = 3550.059
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

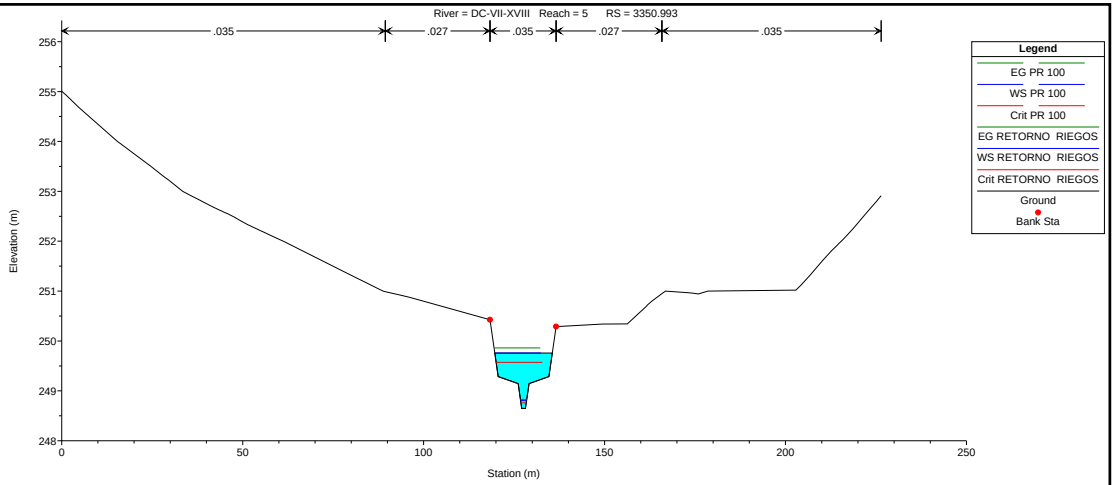

River = DC-VII-XVIII Reach = 5 RS = 3500.074
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

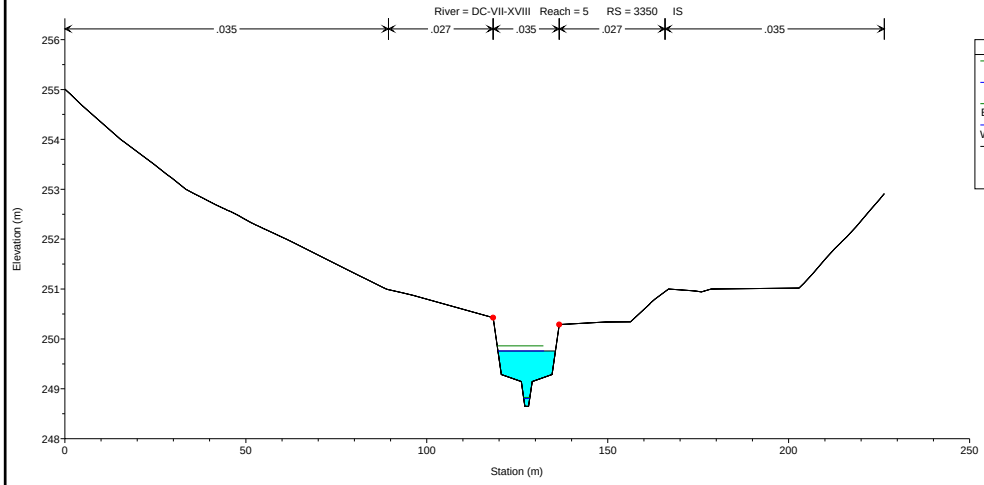

River = DC-VII-XVIII Reach = 5 RS = 3450.041
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

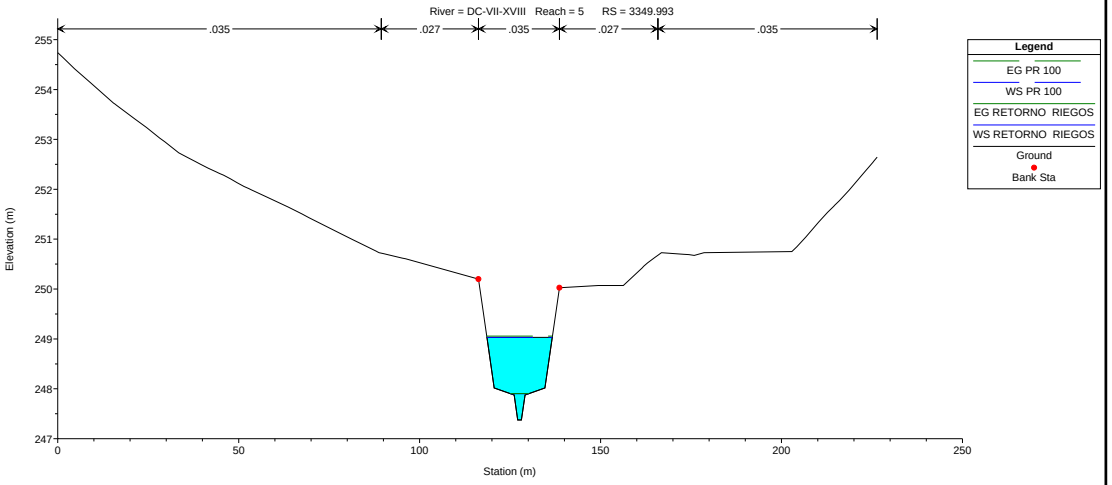

River = DC-VII-XVIII Reach = 5 RS = 3400
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

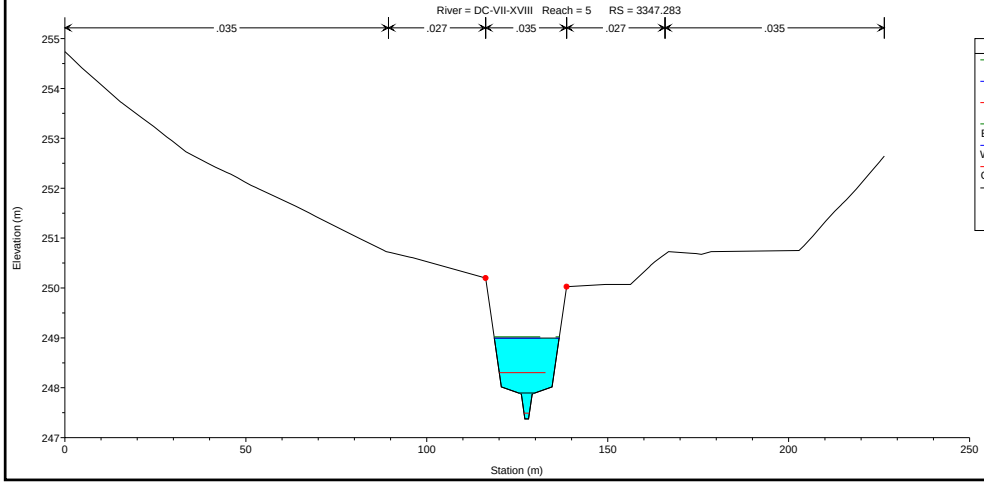

River = DC-VII-XVIII Reach = 5 RS = 3391.238
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

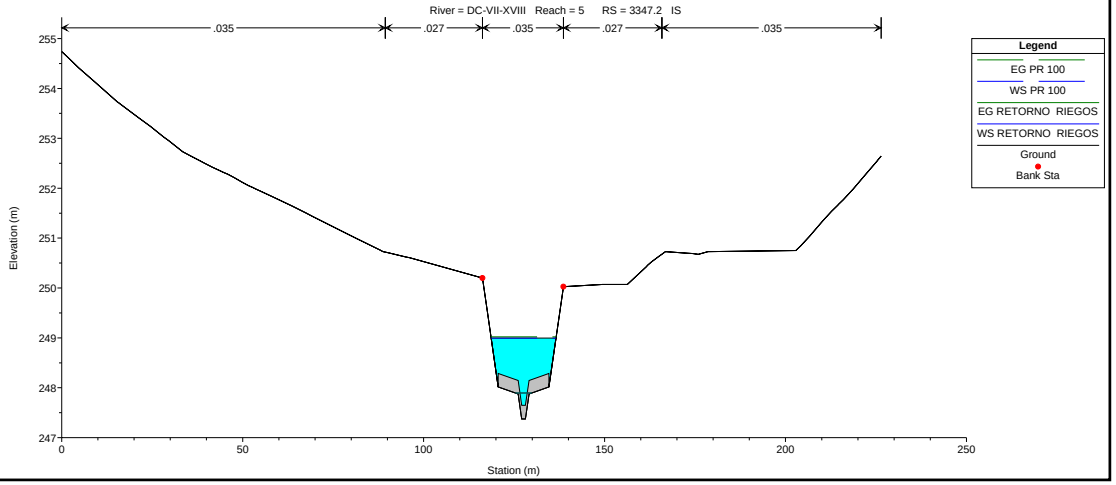

River = DC-VII-XVIII Reach = 5 RS = 3376.738
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

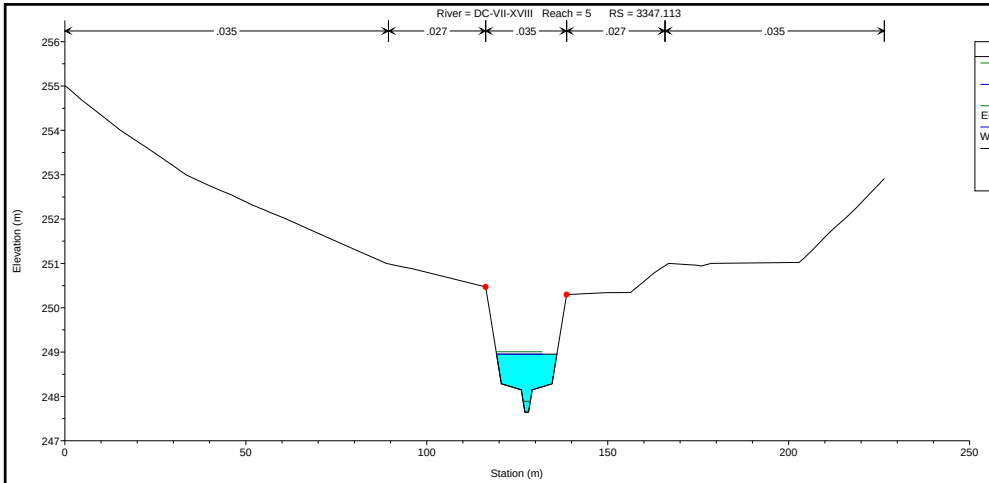

River = DC-VII-XVIII Reach = 5 RS = 3350.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

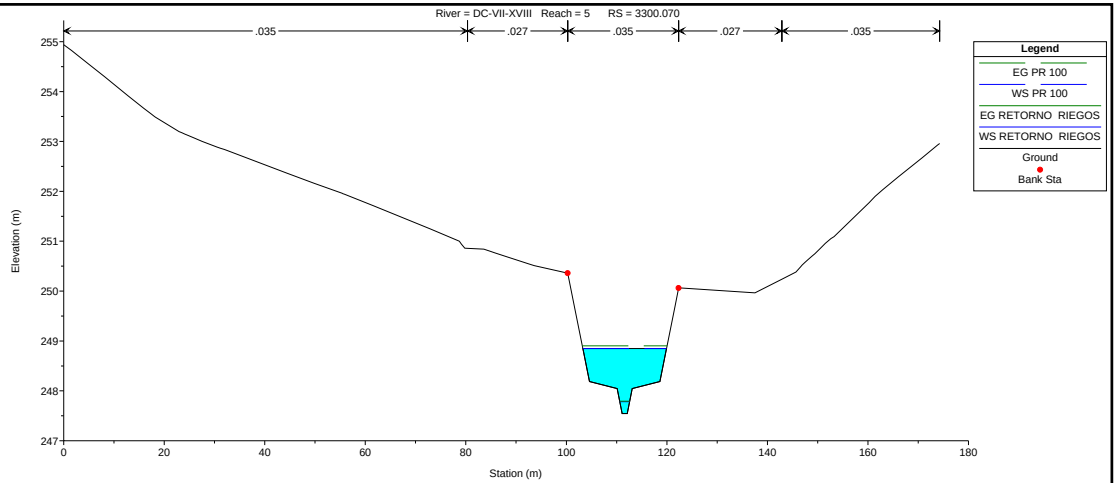

River = DC-VII-XVIII Reach = 5 RS = 3350 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

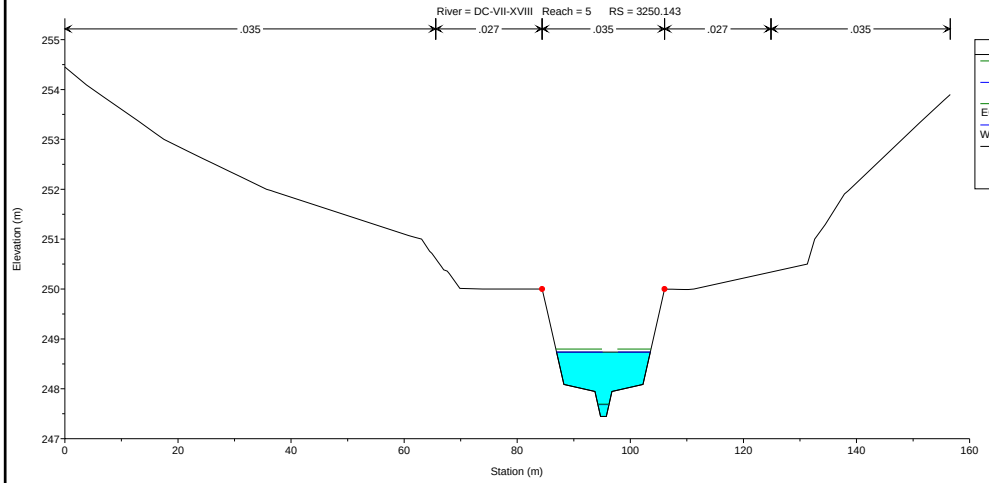

River = DC-VII-XVIII Reach = 5 RS = 3349.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

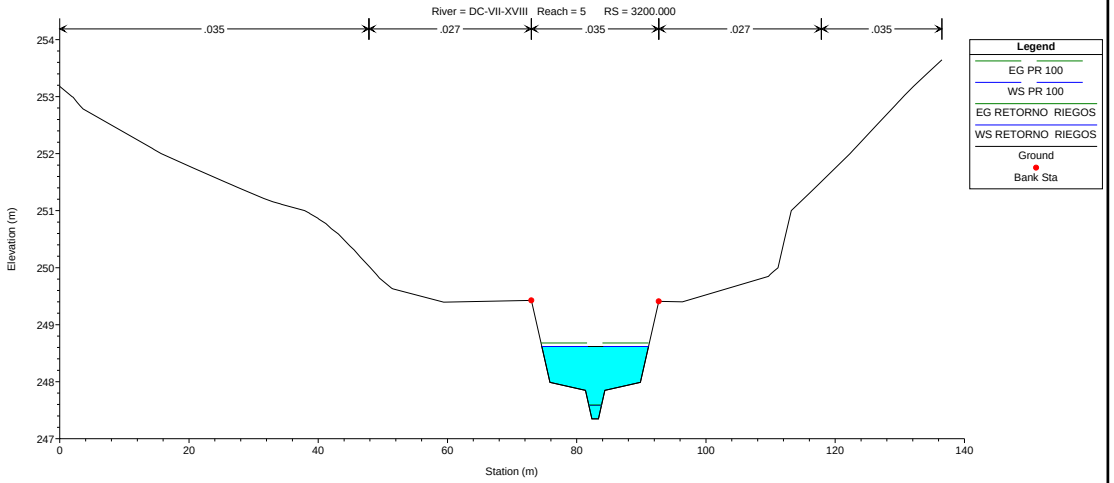

River = DC-VII-XVIII Reach = 5 RS = 3347.283
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

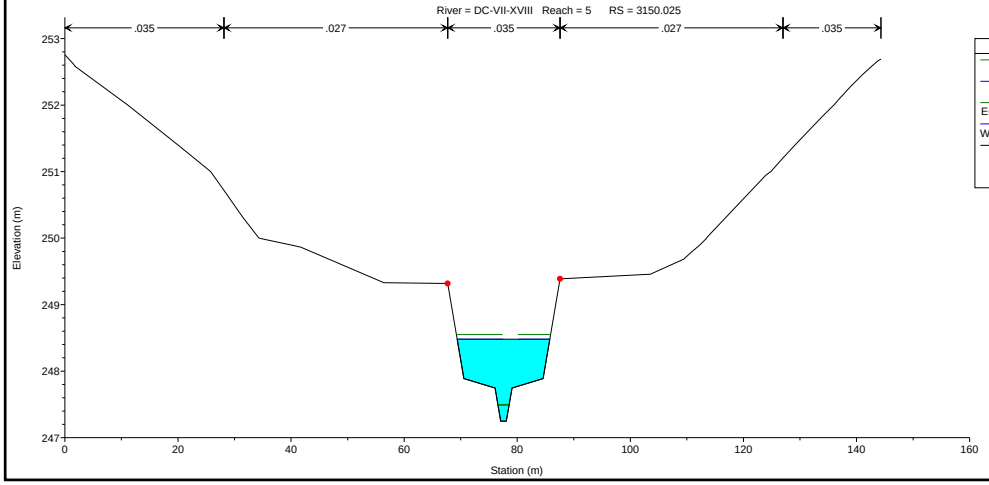

River = DC-VII-XVIII Reach = 5 RS = 3347.2 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

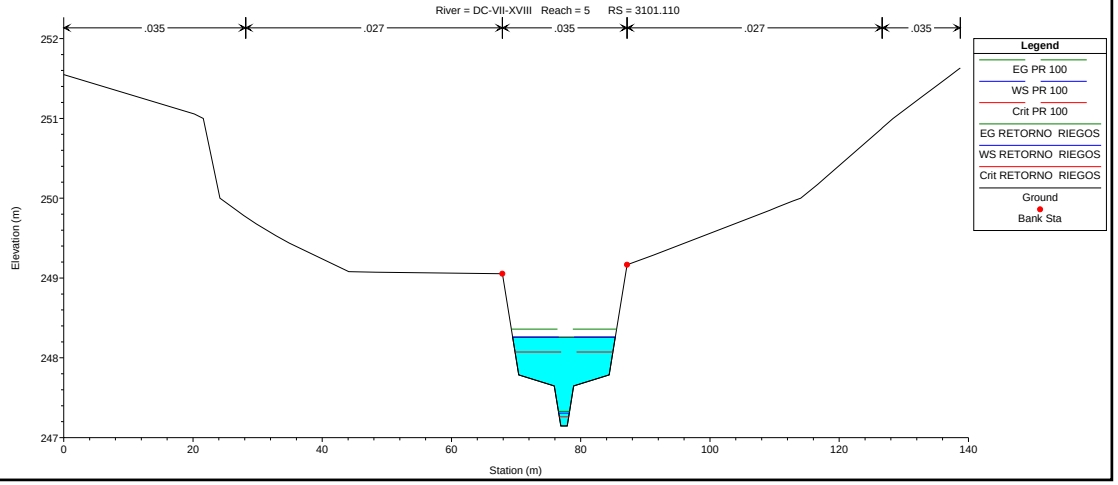

River = DC-VII-XVIII Reach = 5 RS = 3347.113
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

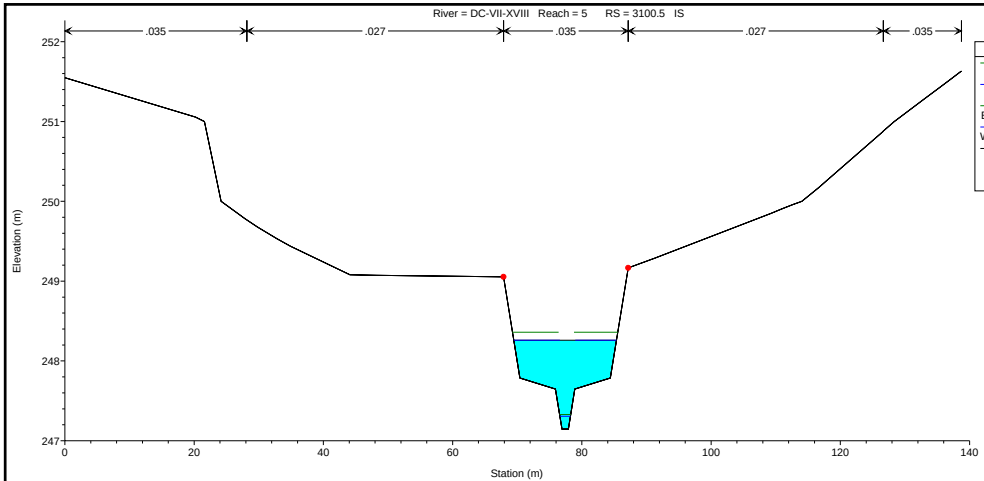

River = DC-VII-XVIII Reach = 5 RS = 3300.070
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

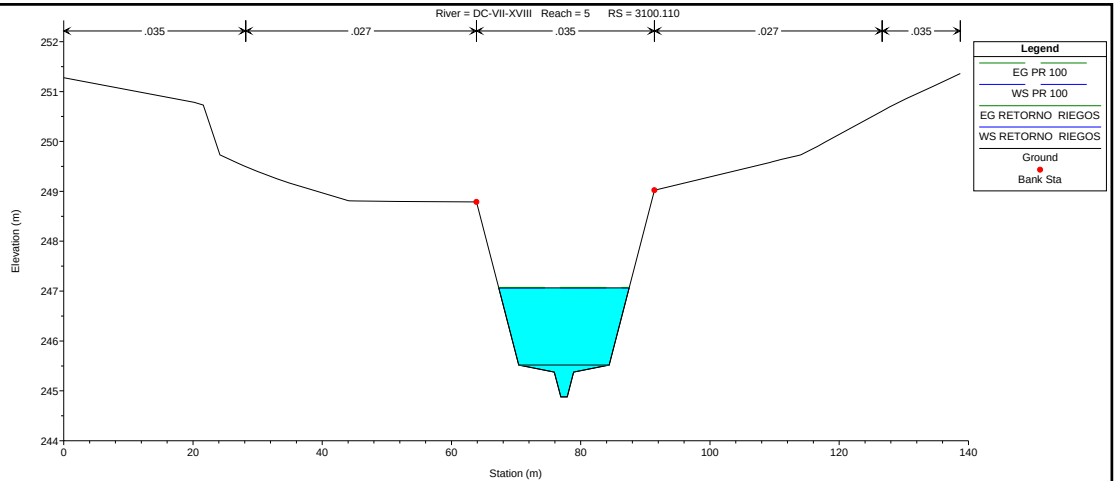

River = DC-VII-XVIII Reach = 5 RS = 3250.143
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

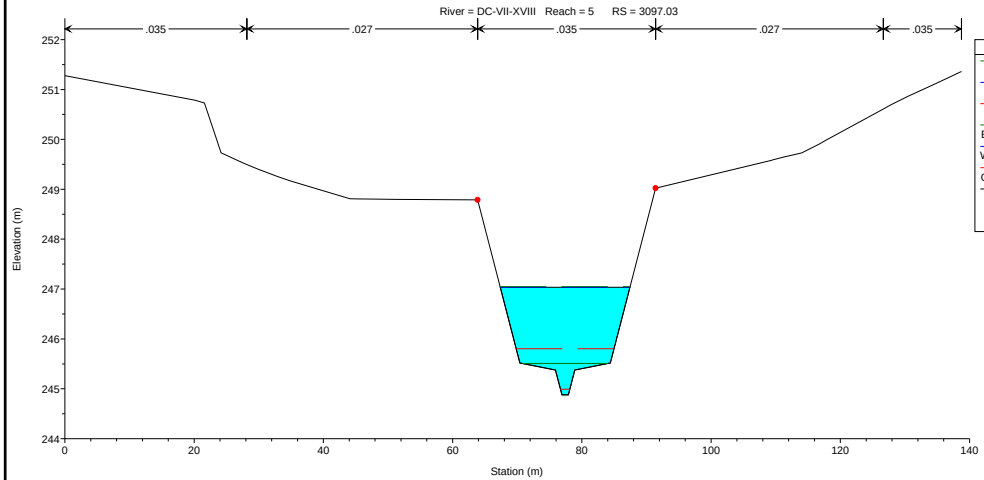

River = DC-VII-XVIII Reach = 5 RS = 3200.000
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

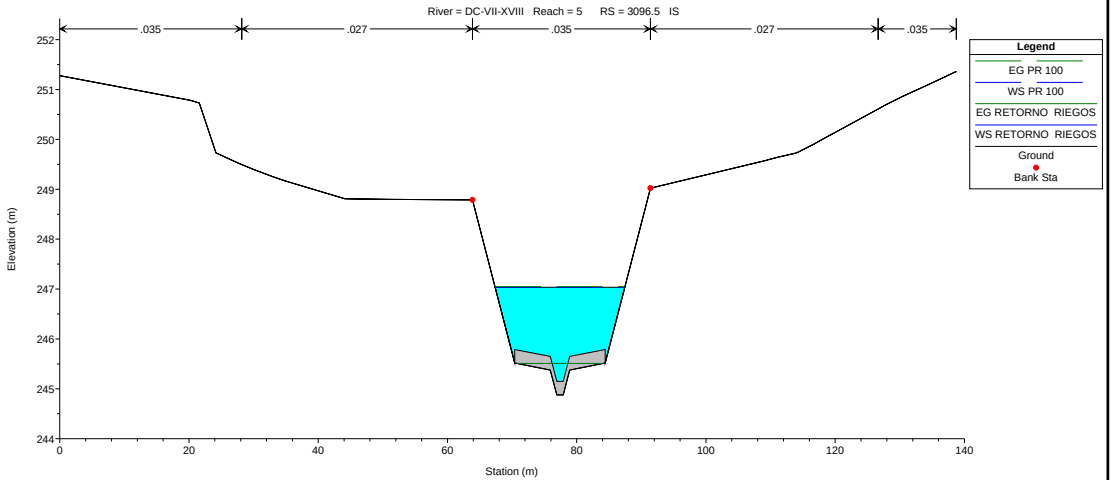

River = DC-VII-XVIII Reach = 5 RS = 3150.025
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

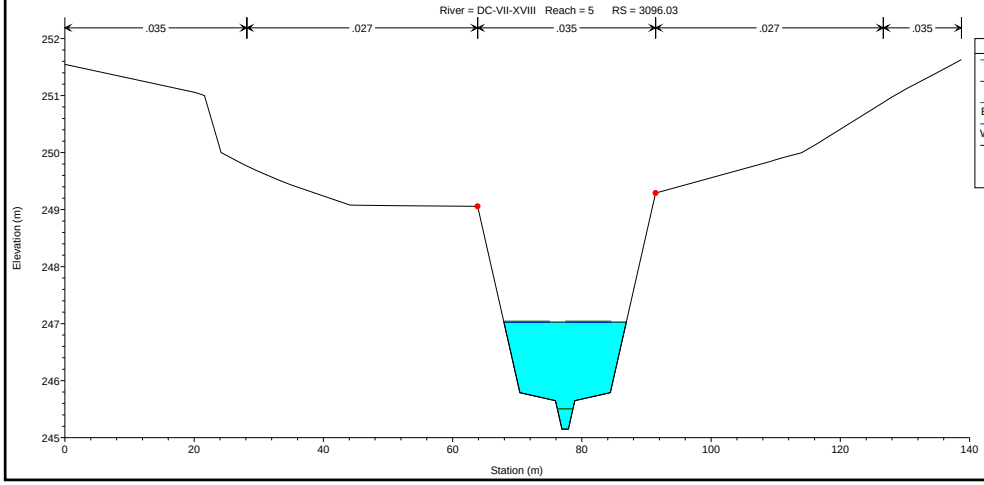

River = DC-VII-XVIII Reach = 5 RS = 3101.110
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

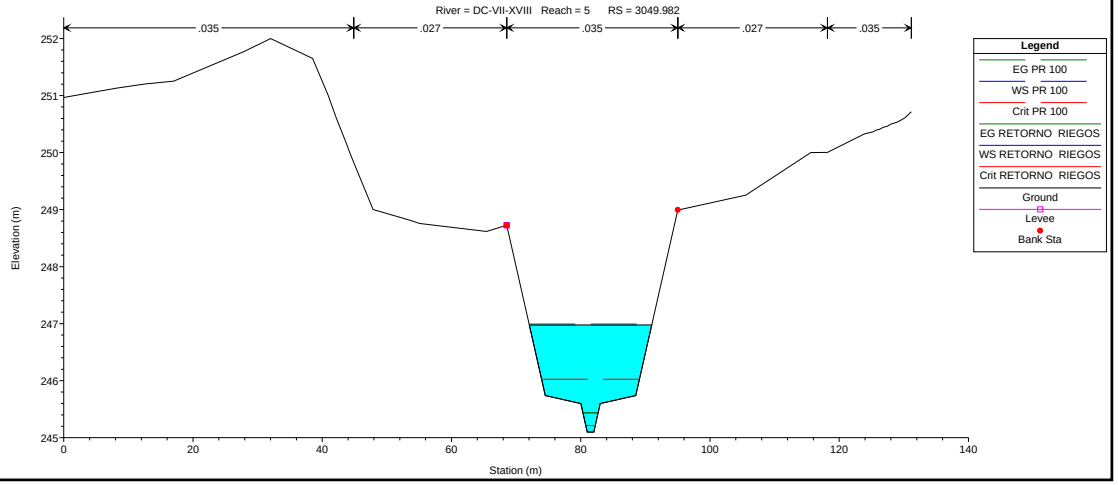

River = DC-VII-XVIII Reach = 5 RS = 3100.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

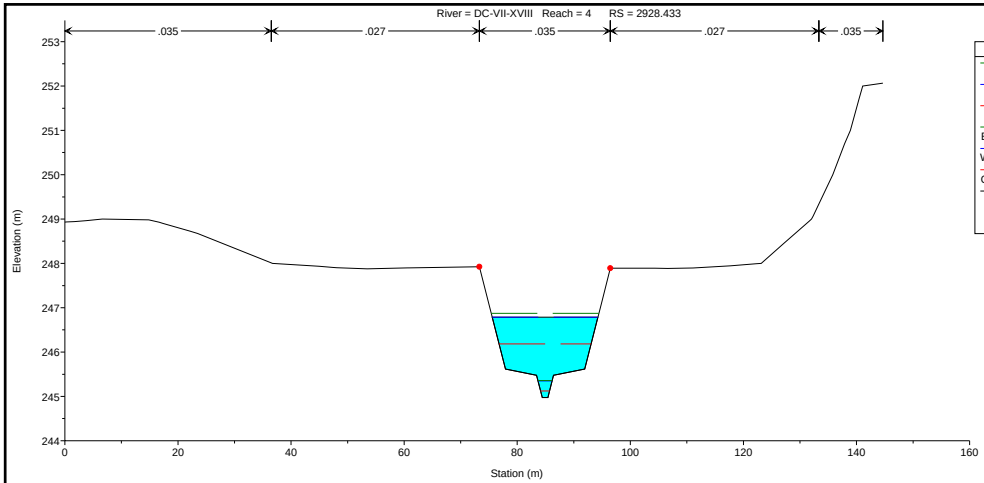

River = DC-VII-XVIII Reach = 5 RS = 3100.110
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

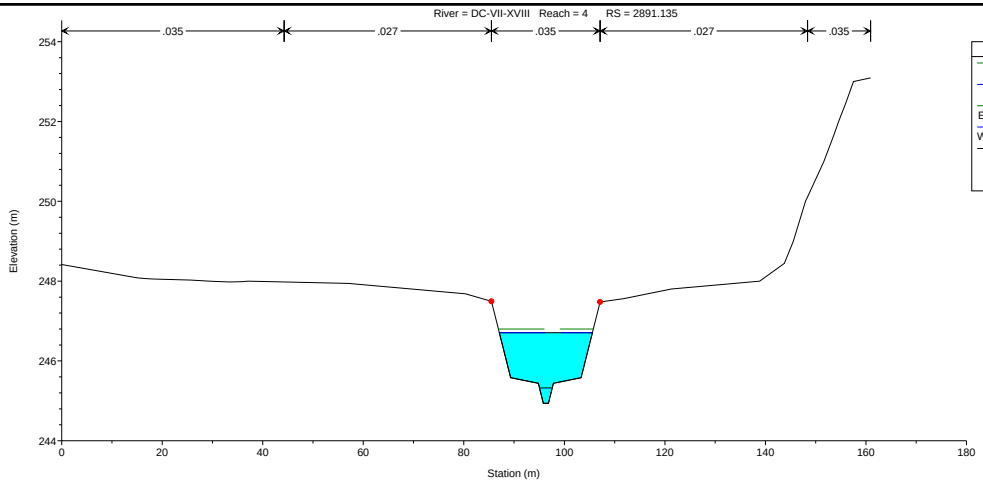

River = DC-VII-XVIII Reach = 5 RS = 3097.03
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

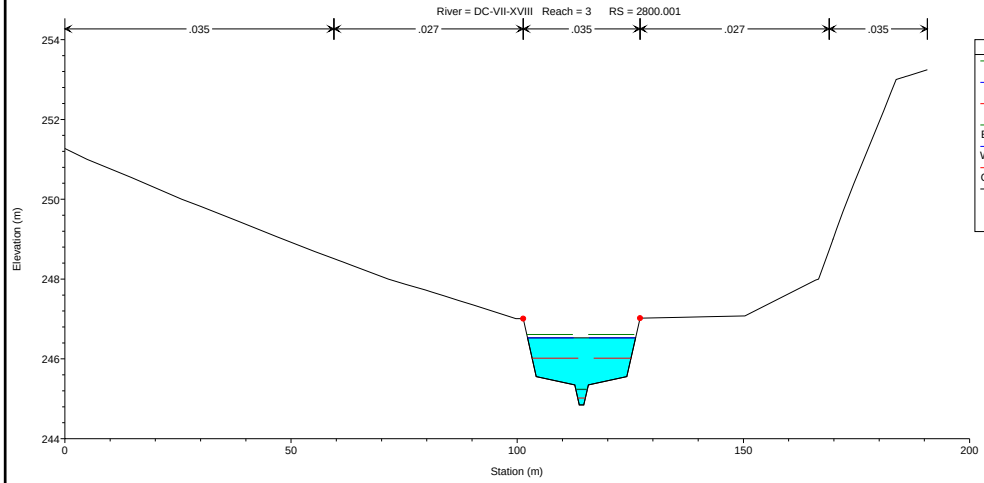

River = DC-VII-XVIII Reach = 5 RS = 3096.5 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

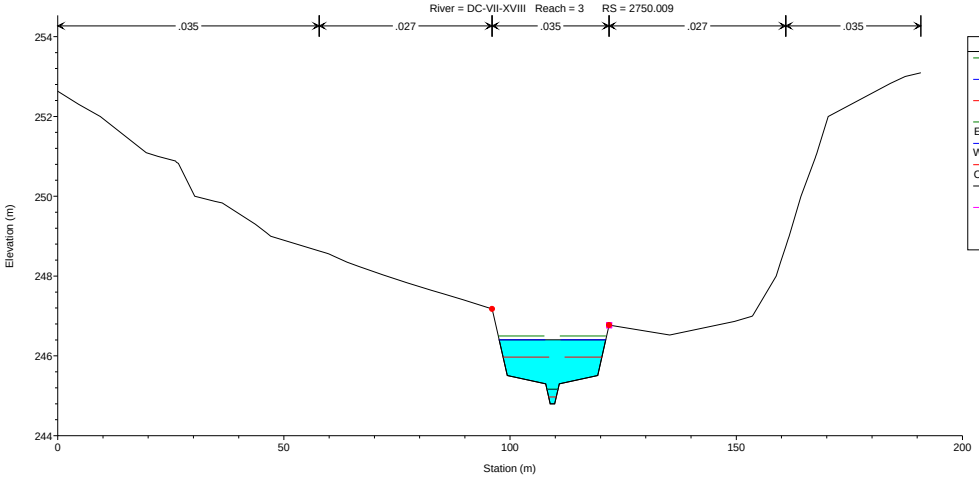

River = DC-VII-XVIII Reach = 5 RS = 3096.03
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

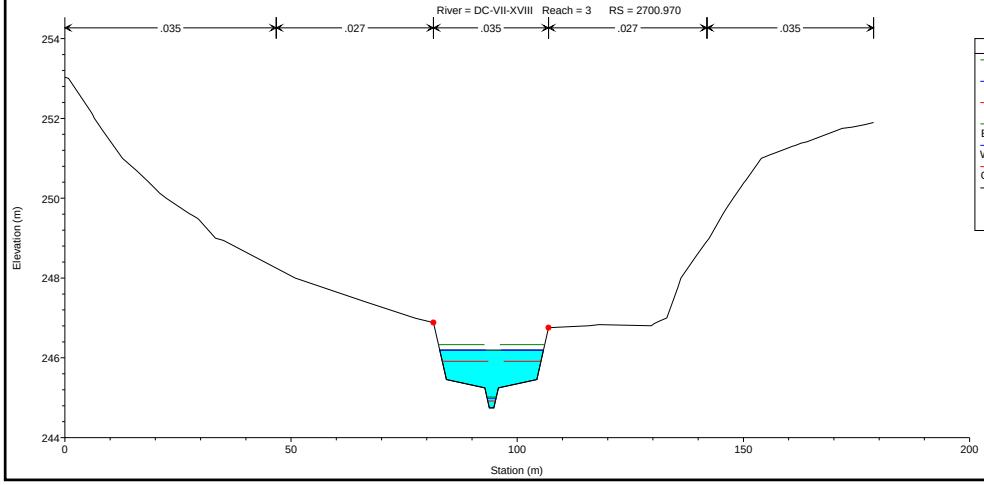

River = DC-VII-XVIII Reach = 5 RS = 3049.982
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

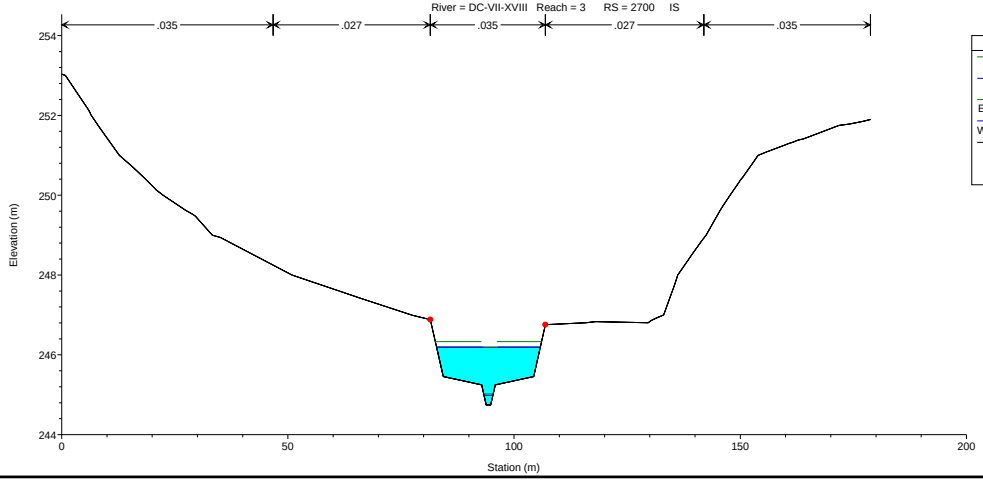

River = DC-VII-XVIII Reach = 4 RS = 2928.433
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

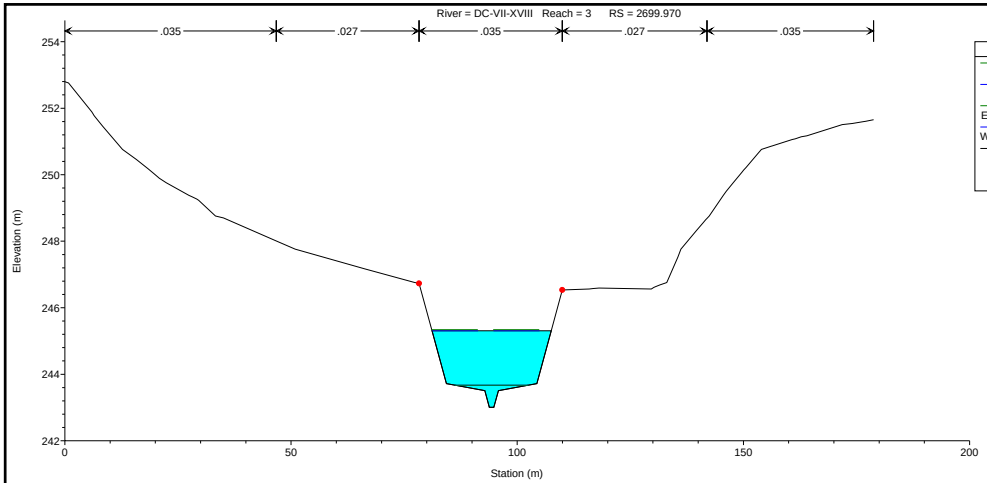

River = DC-VII-XVIII Reach = 4 RS = 2891.135
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

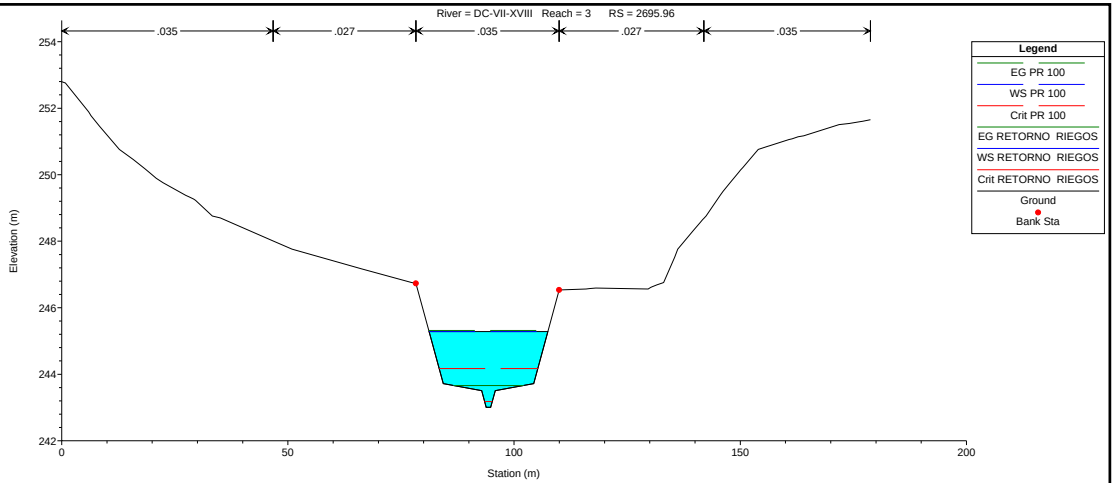

River = DC-VII-XVIII Reach = 3 RS = 2800.001
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

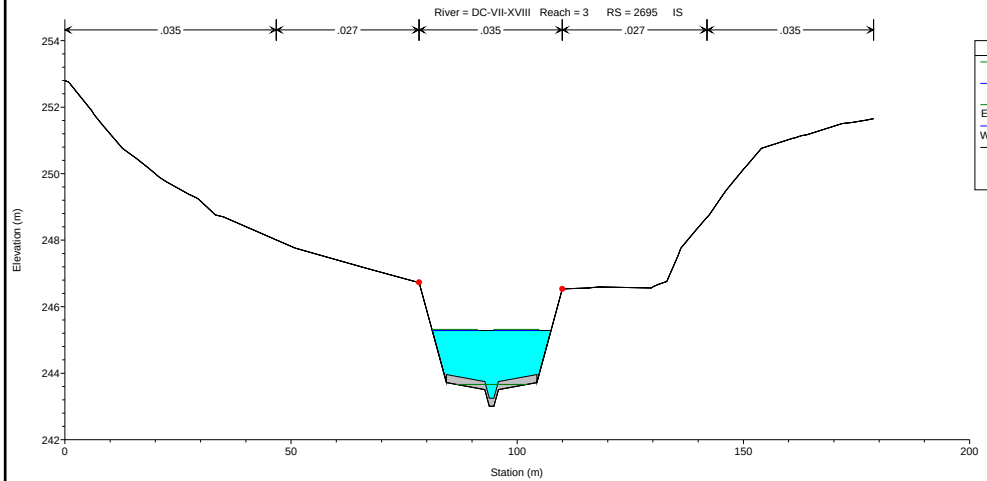

River = DC-VII-XVIII Reach = 3 RS = 2750.009
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

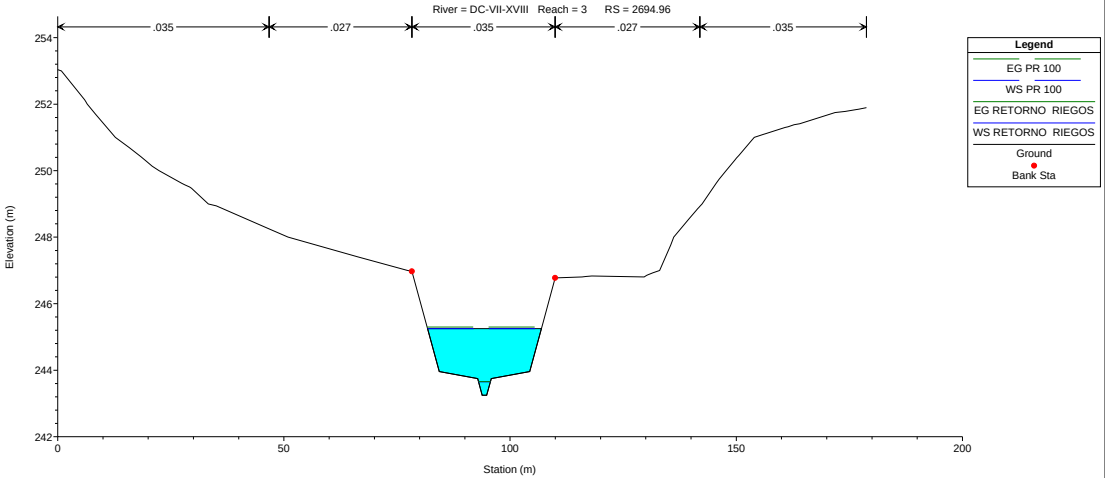

River = DC-VII-XVIII Reach = 3 RS = 2700.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

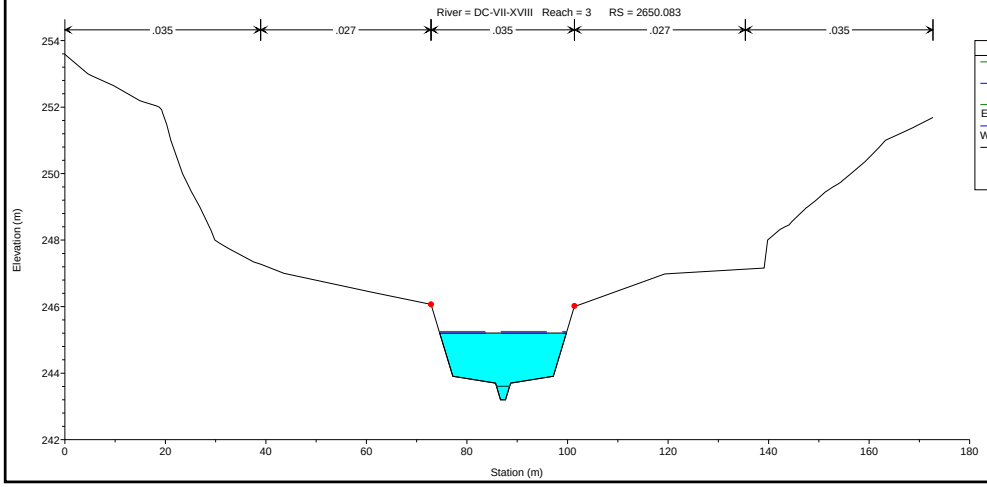

River = DC-VII-XVIII Reach = 3 RS = 2700 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

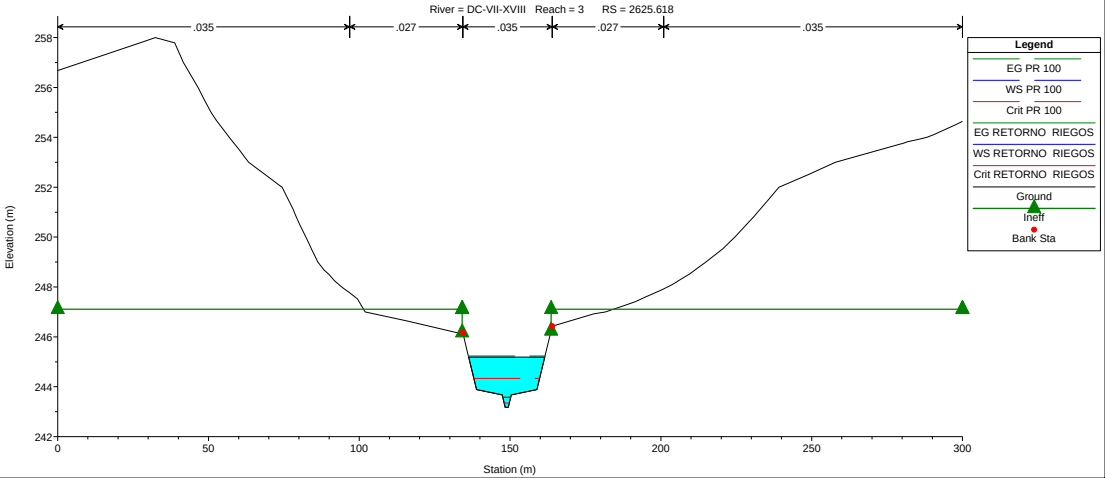

River = DC-VII-XVIII Reach = 3 RS = 2699.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

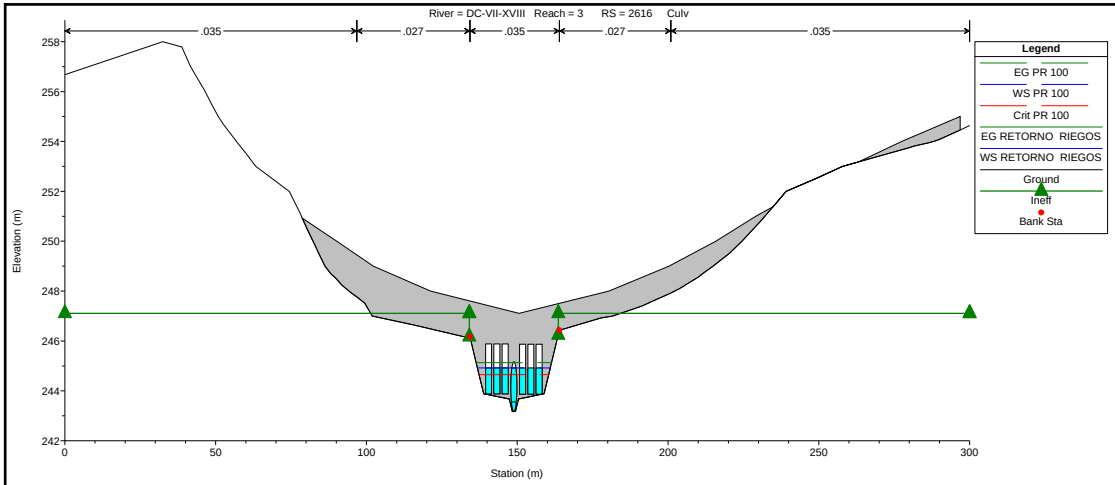

River = DC-VII-XVIII Reach = 3 RS = 2695.96
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

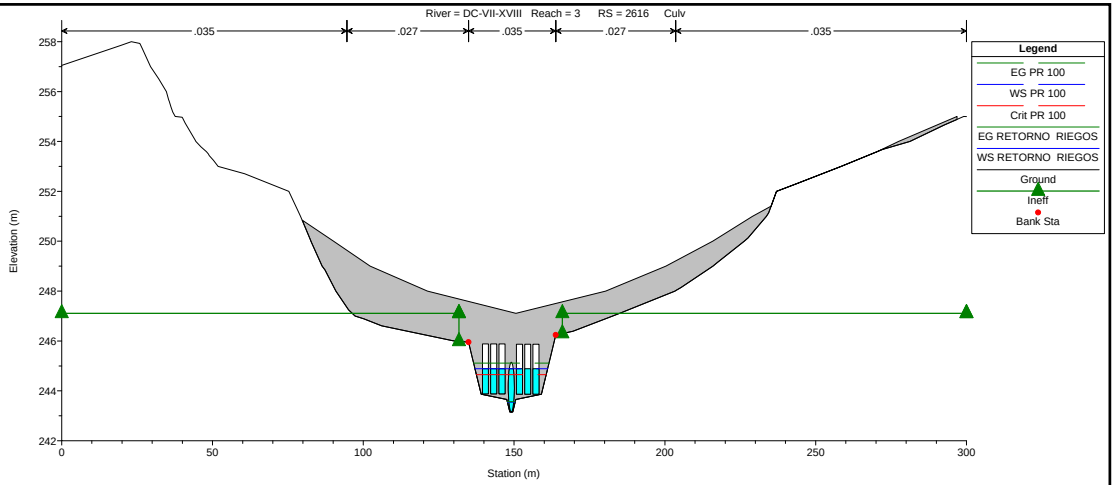

River = DC-VII-XVIII Reach = 3 RS = 2695 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

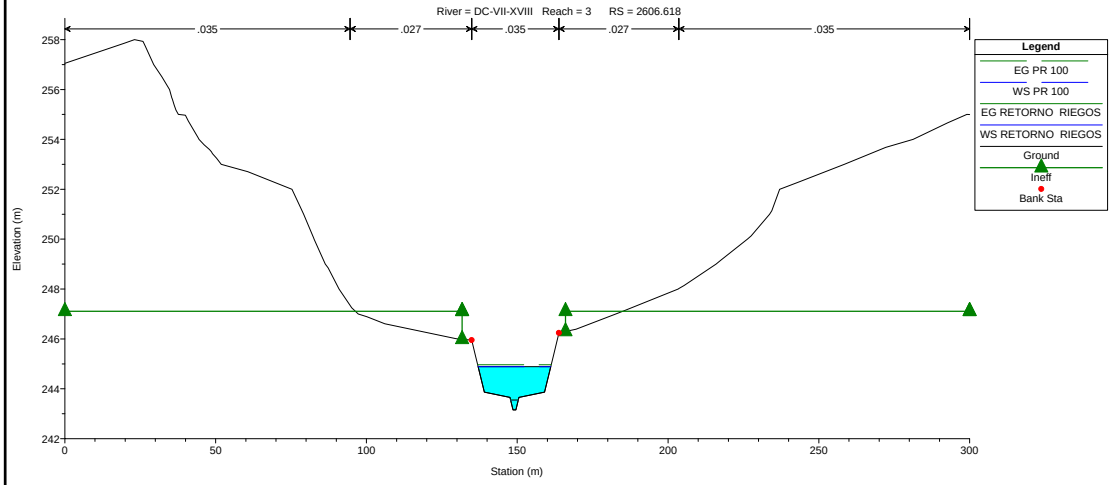

River = DC-VII-XVIII Reach = 3 RS = 2694.96
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

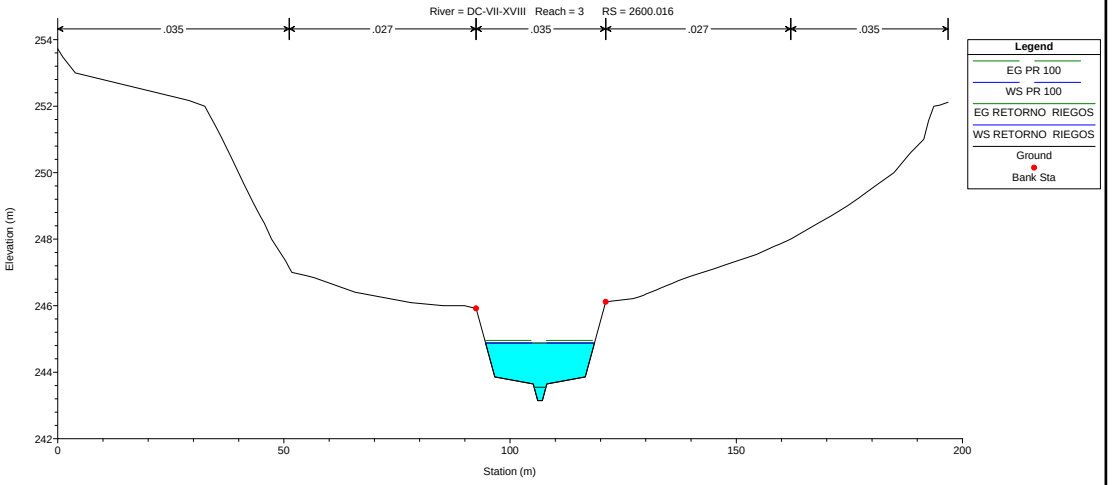

River = DC-VII-XVIII Reach = 3 RS = 2650.083
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

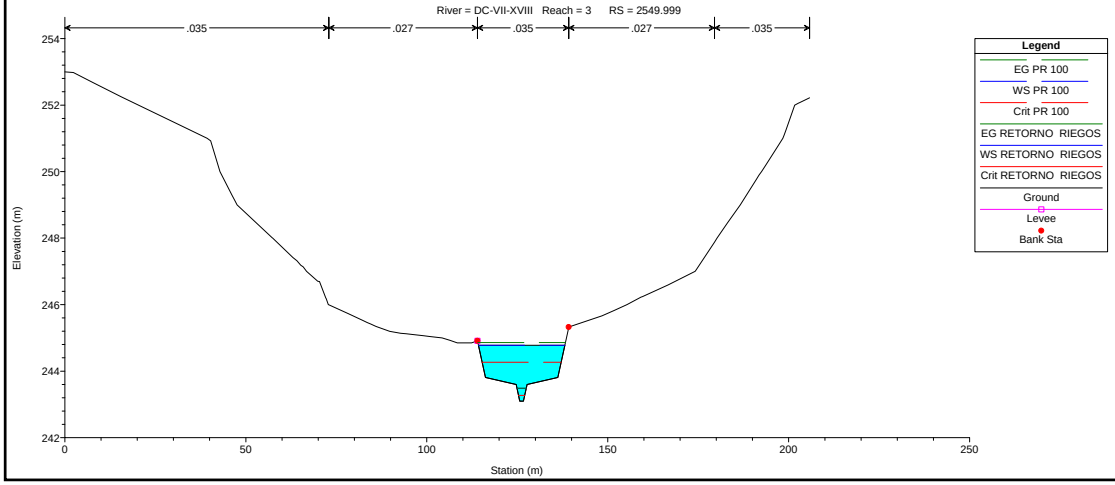

River = DC-VII-XVIII Reach = 3 RS = 2625.618
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

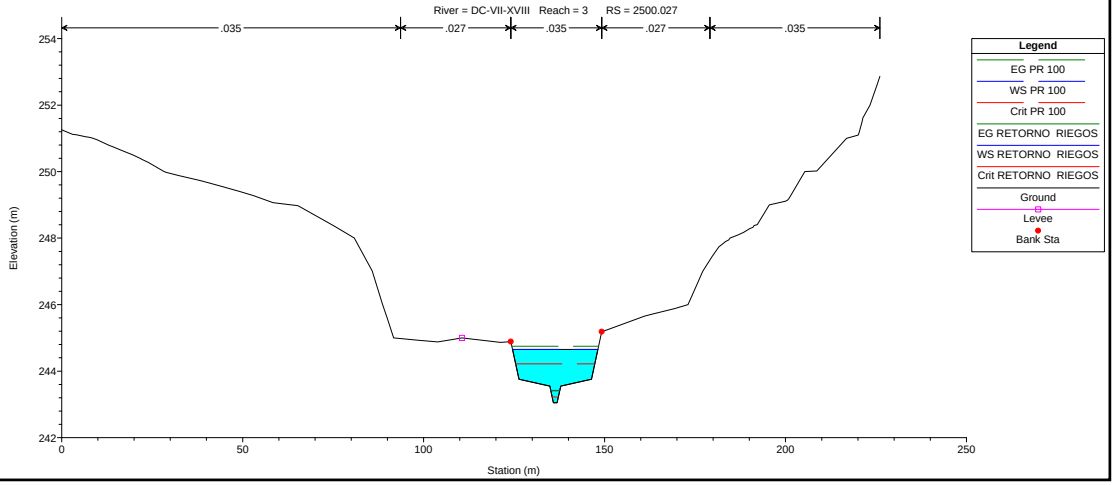

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

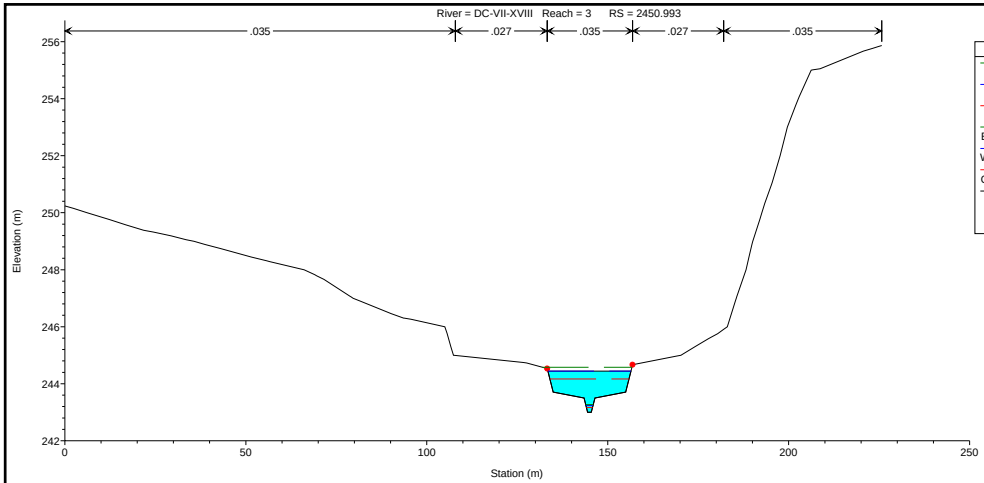

River = DC-VII-XVIII Reach = 3 RS = 2616 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

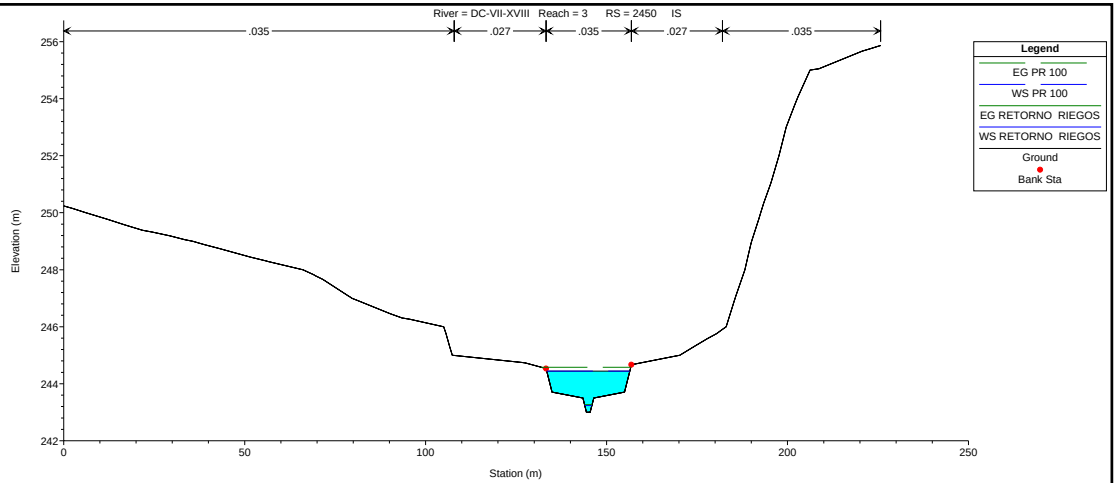

River = DC-VII-XVIII Reach = 3 RS = 2606.618
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

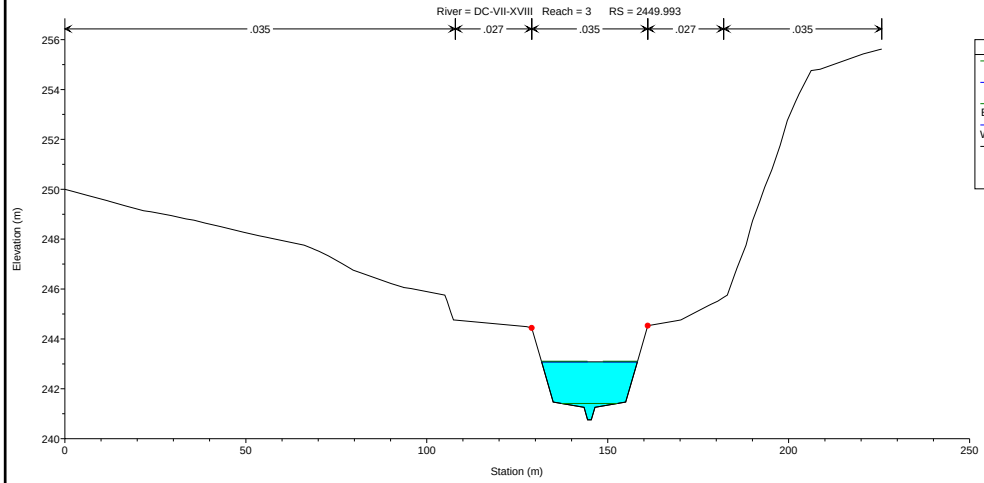

River = DC-VII-XVIII Reach = 3 RS = 2600.016
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

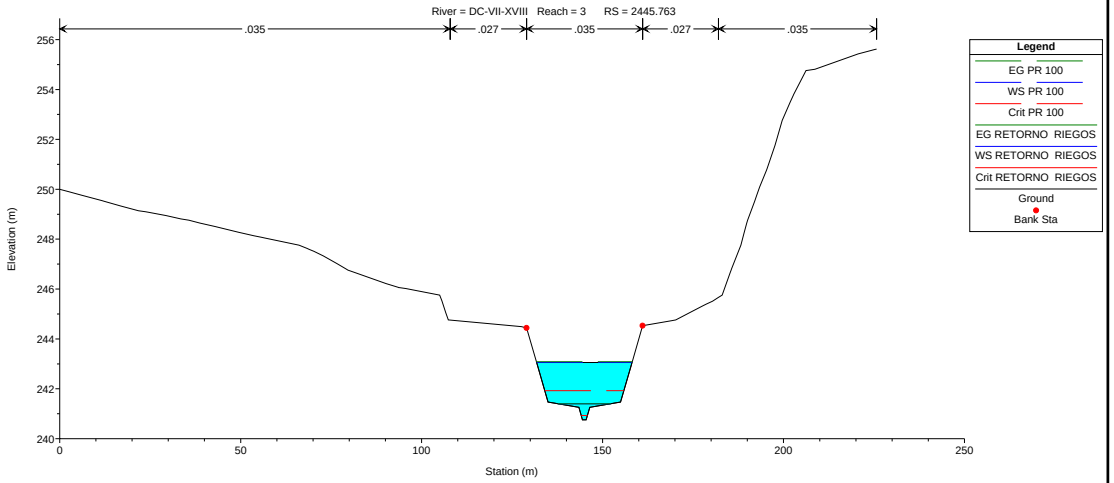

River = DC-VII-XVIII Reach = 3 RS = 2549.999
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

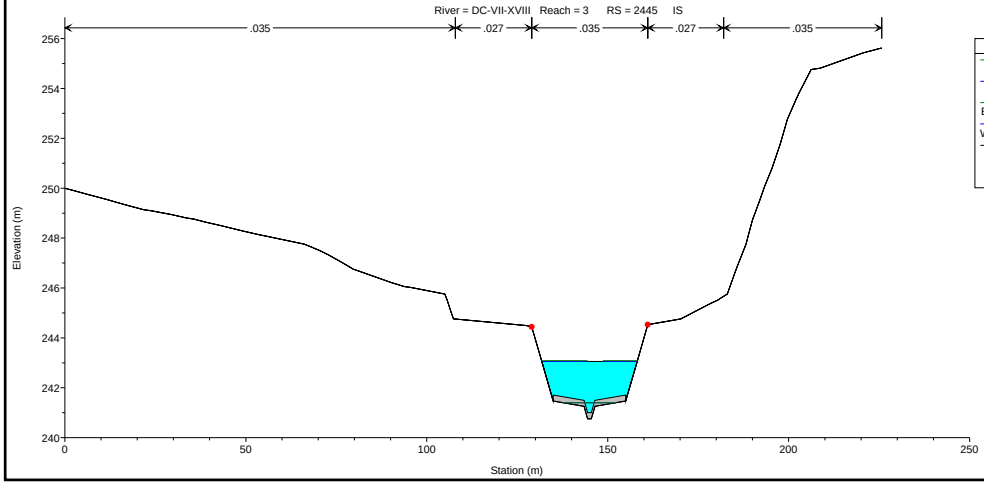

River = DC-VII-XVIII Reach = 3 RS = 2500.027
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

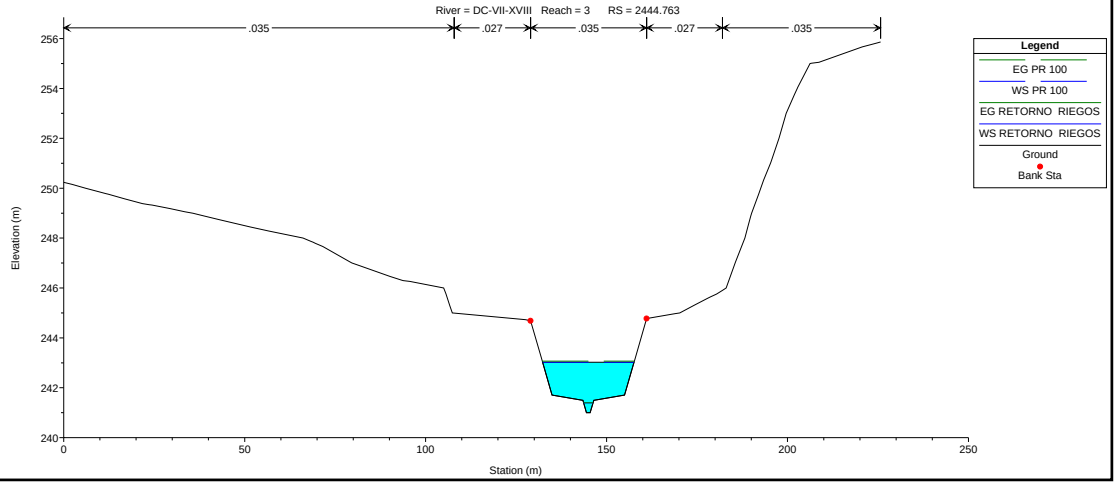

River = DC-VII-XVIII Reach = 3 RS = 2450.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

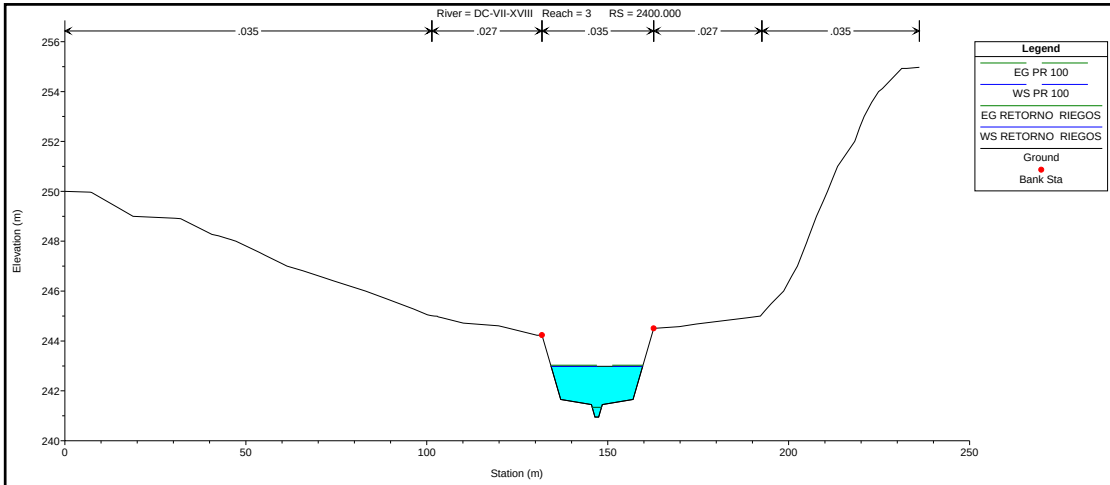

River = DC-VII-XVIII Reach = 3 RS = 2450 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

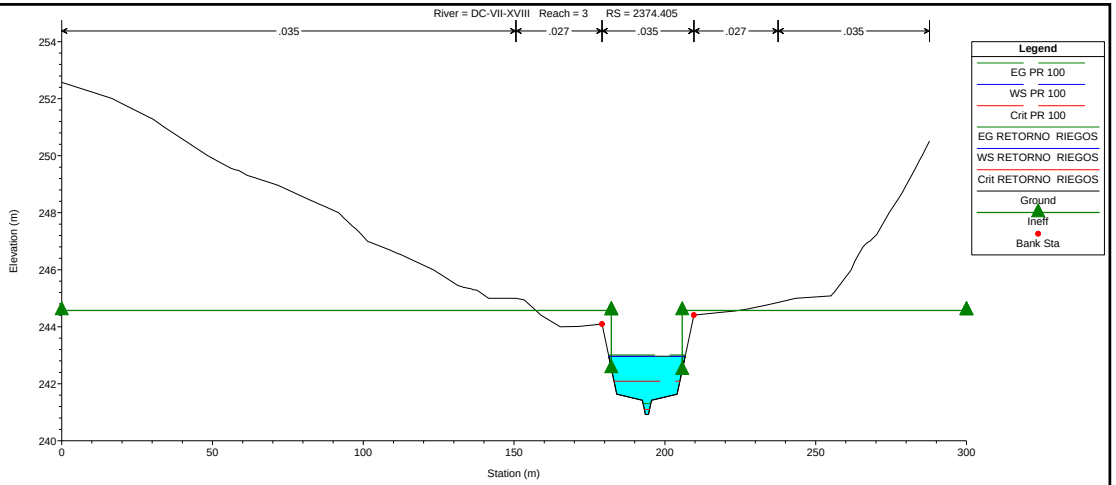

River = DC-VII-XVIII Reach = 3 RS = 2449.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

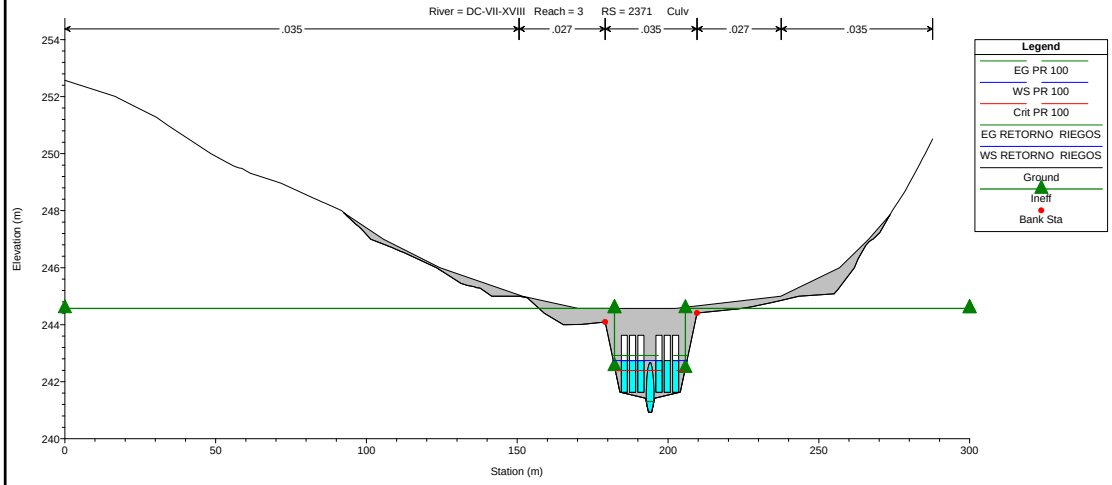

River = DC-VII-XVIII Reach = 3 RS = 2445.763
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

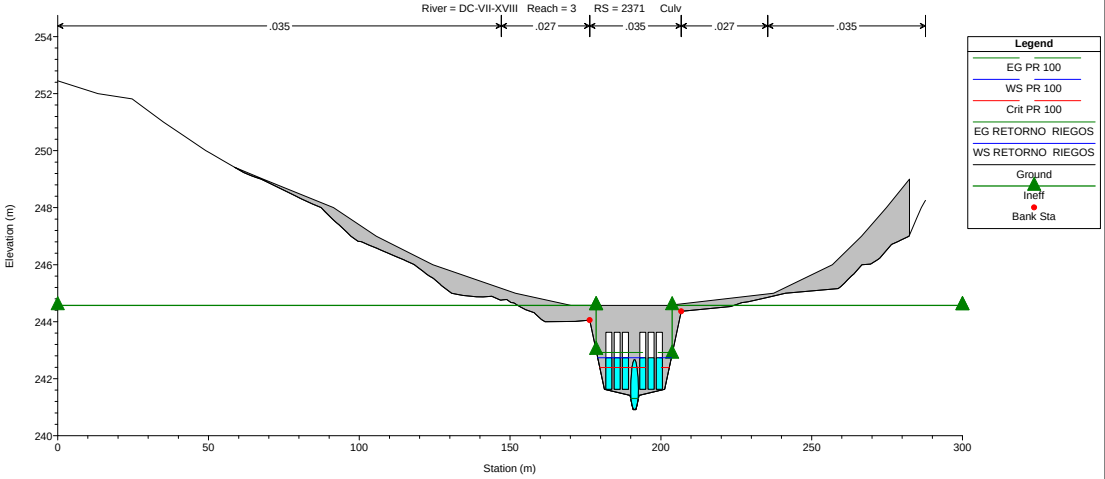

River = DC-VII-XVIII Reach = 3 RS = 2445 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

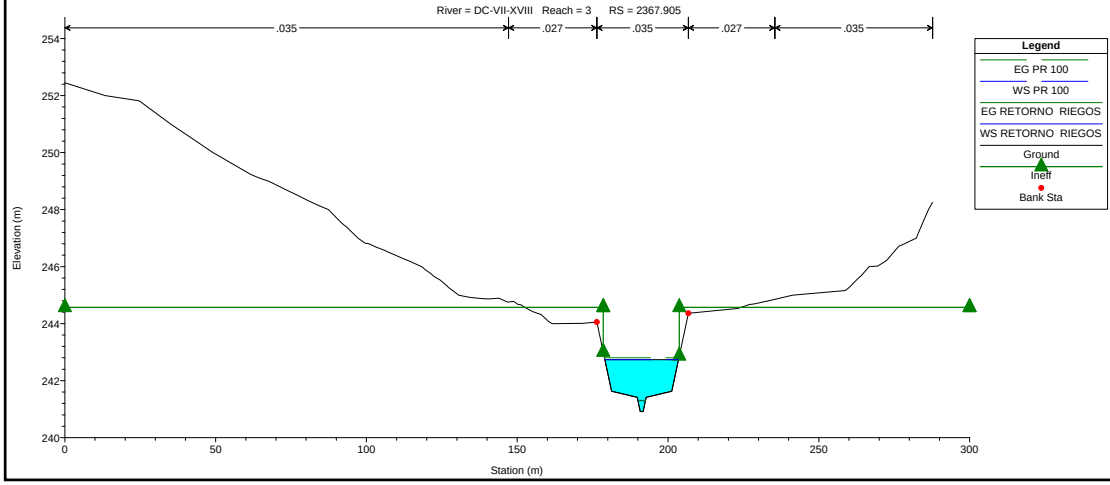

River = DC-VII-XVIII Reach = 3 RS = 2444.763
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

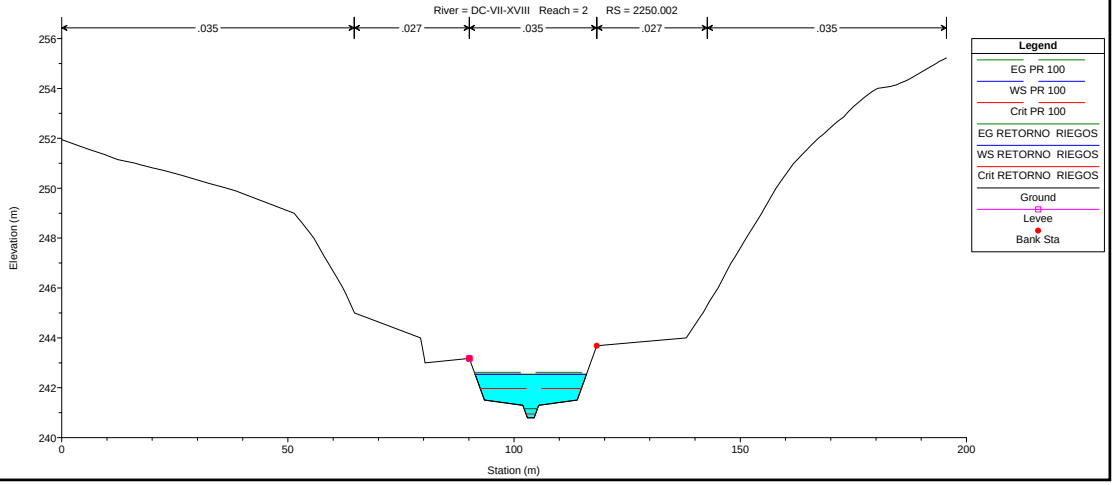

River = DC-VII-XVIII Reach = 3 RS = 2400.000
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

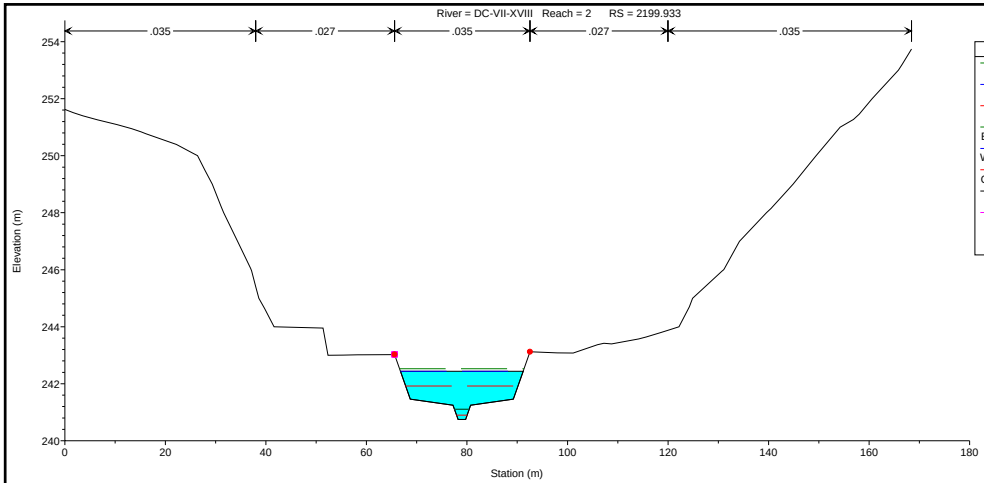

River = DC-VII-XVIII Reach = 3 RS = 2374.405
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

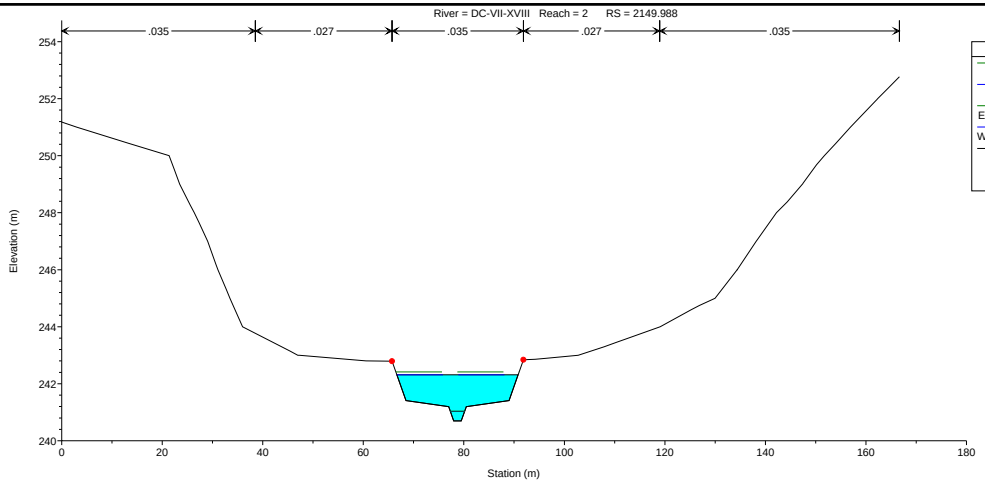

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

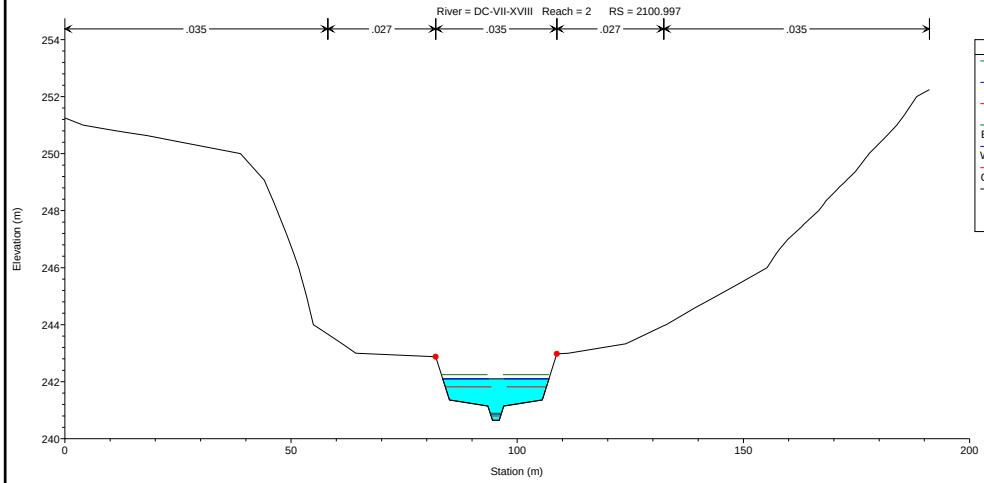

River = DC-VII-XVIII Reach = 3 RS = 2371 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

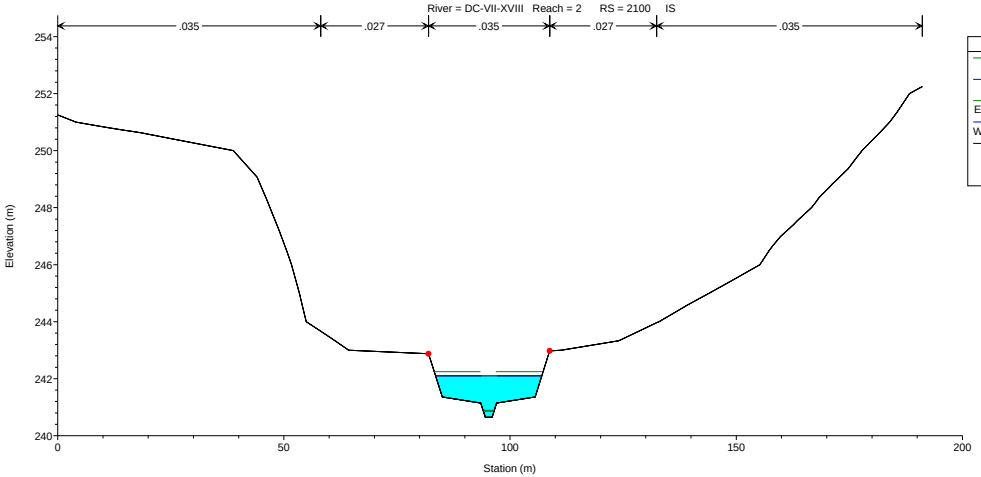

River = DC-VII-XVIII Reach = 3 RS = 2367.905
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

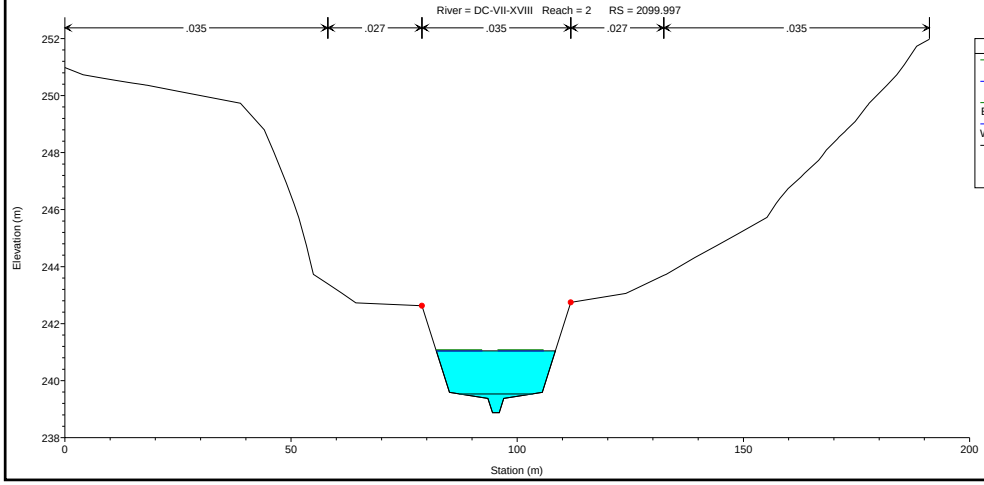

River = DC-VII-XVIII Reach = 2 RS = 2250.002
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

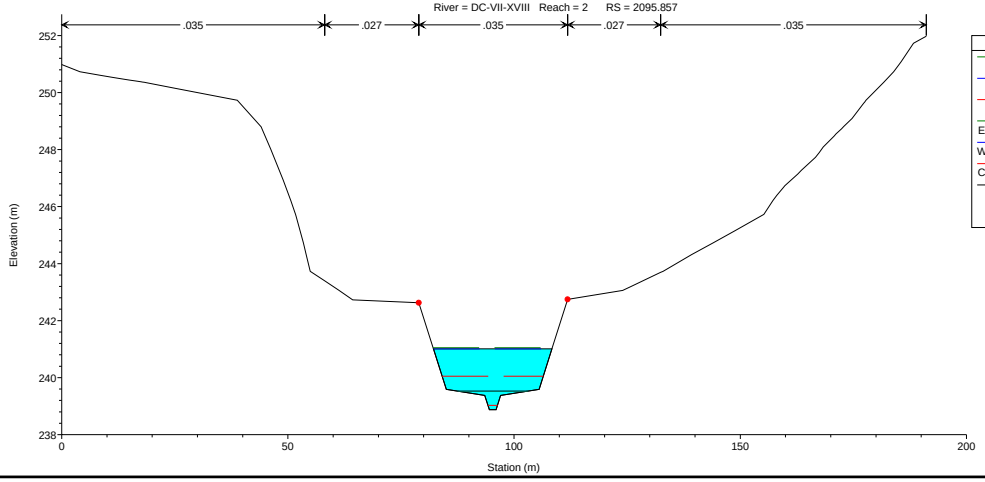

River = DC-VII-XVIII Reach = 2 RS = 2199.933
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

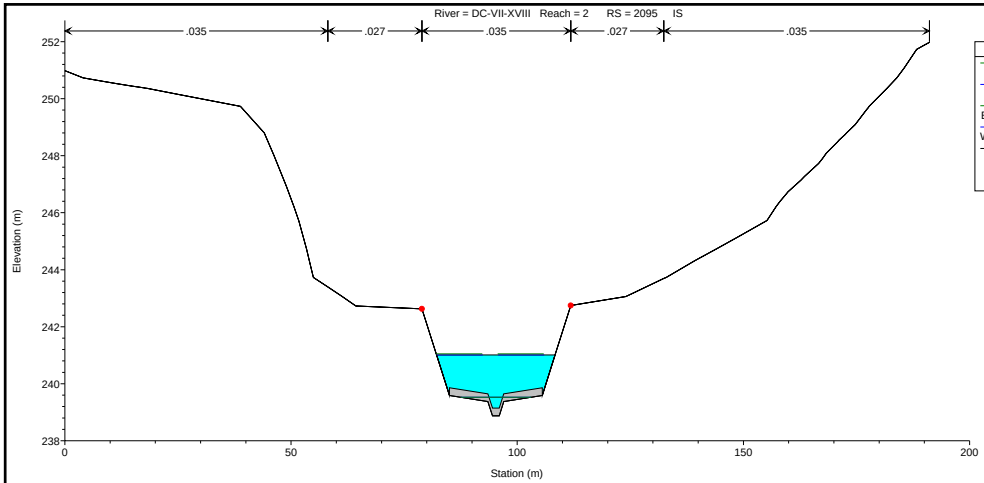

River = DC-VII-XVIII Reach = 2 RS = 2149.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

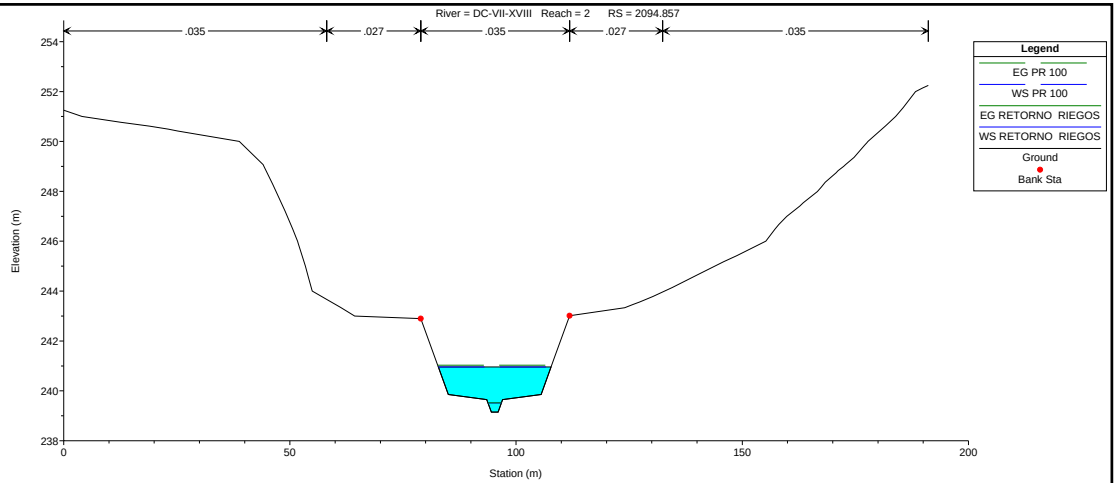

River = DC-VII-XVIII Reach = 2 RS = 2100.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

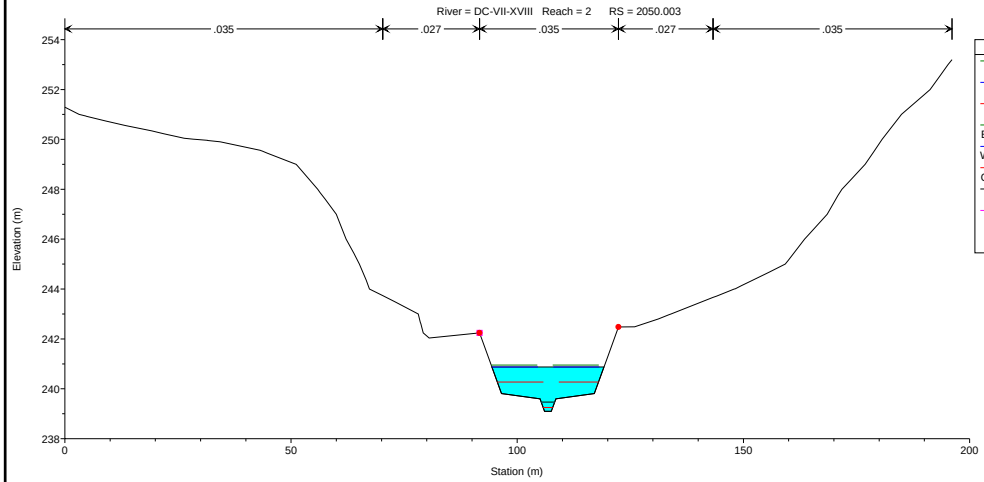

River = DC-VII-XVIII Reach = 2 RS = 2100 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

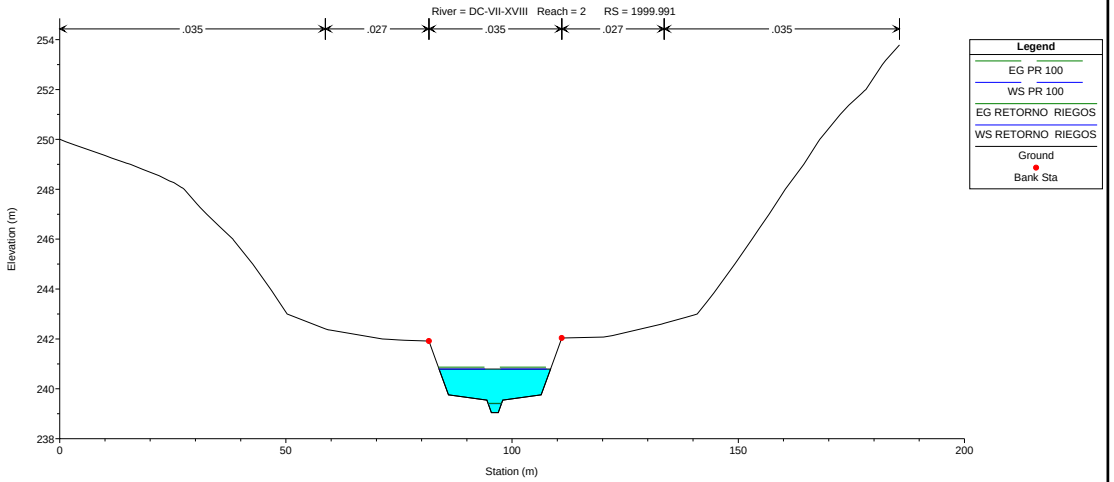

River = DC-VII-XVIII Reach = 2 RS = 2099.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

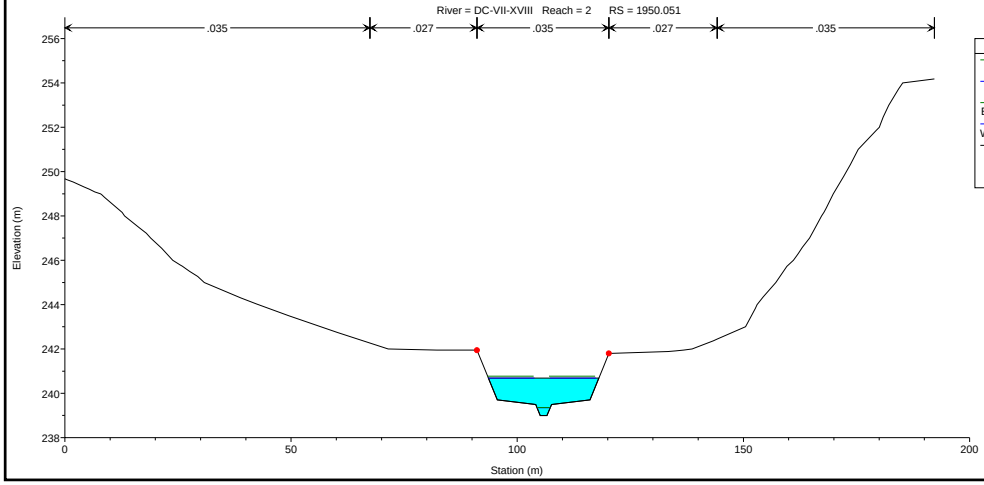

River = DC-VII-XVIII Reach = 2 RS = 2095.857
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

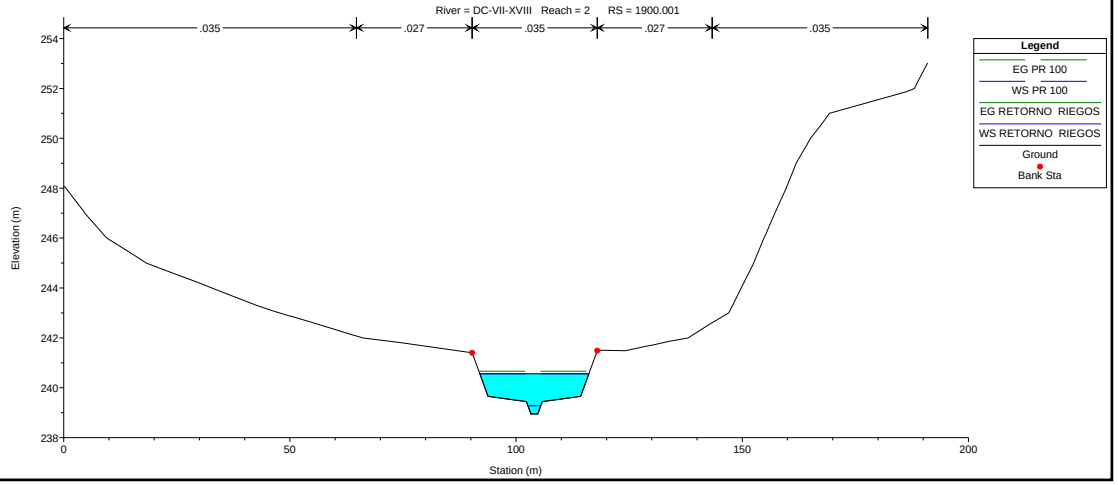

River = DC-VII-XVIII Reach = 2 RS = 2095 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

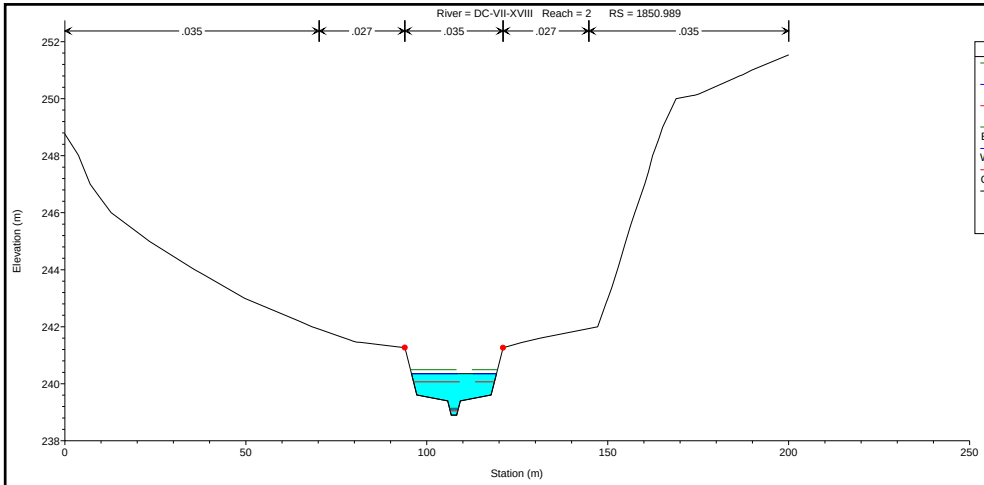

River = DC-VII-XVIII Reach = 2 RS = 2094.857
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

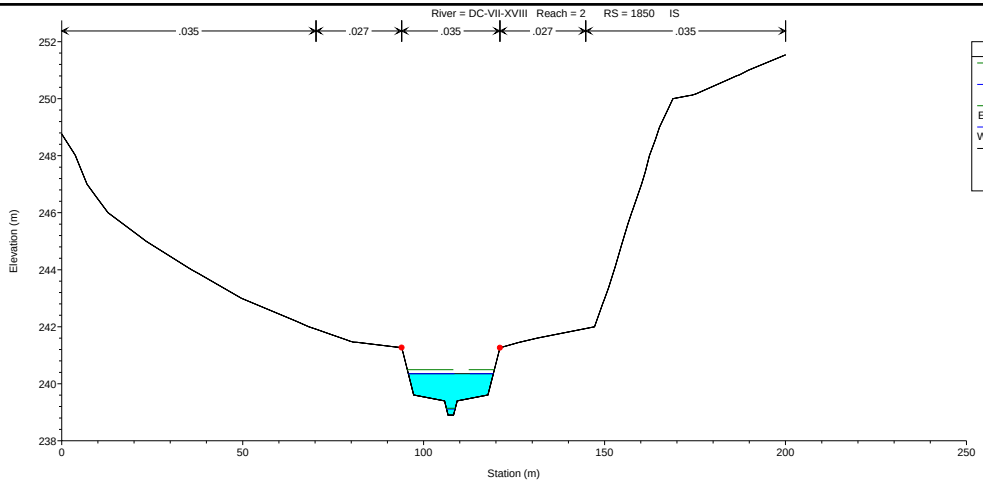

River = DC-VII-XVIII Reach = 2 RS = 2050.003
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

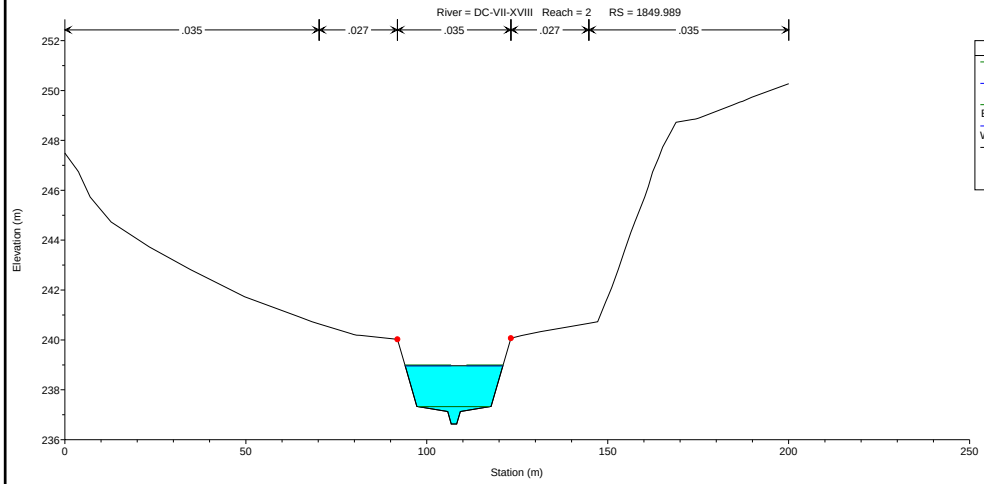

River = DC-VII-XVIII Reach = 2 RS = 1999.991
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

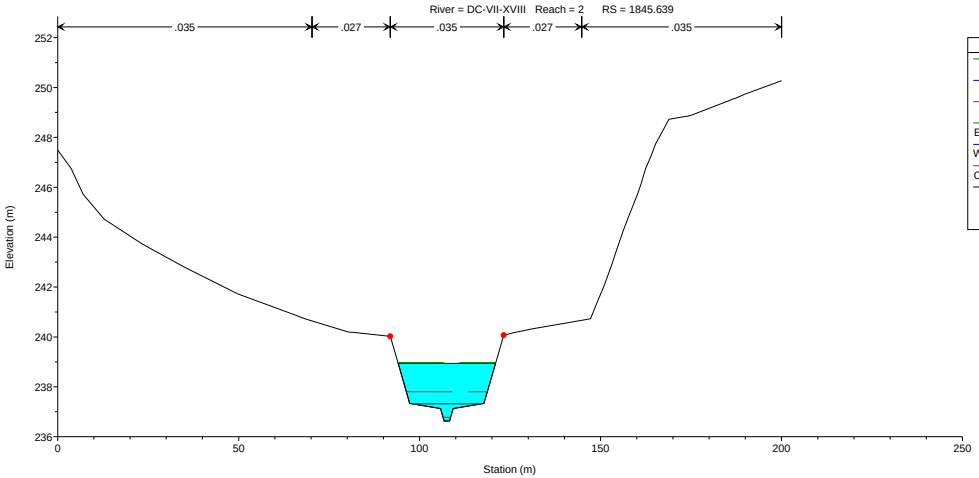

River = DC-VII-XVIII Reach = 2 RS = 1950.051
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

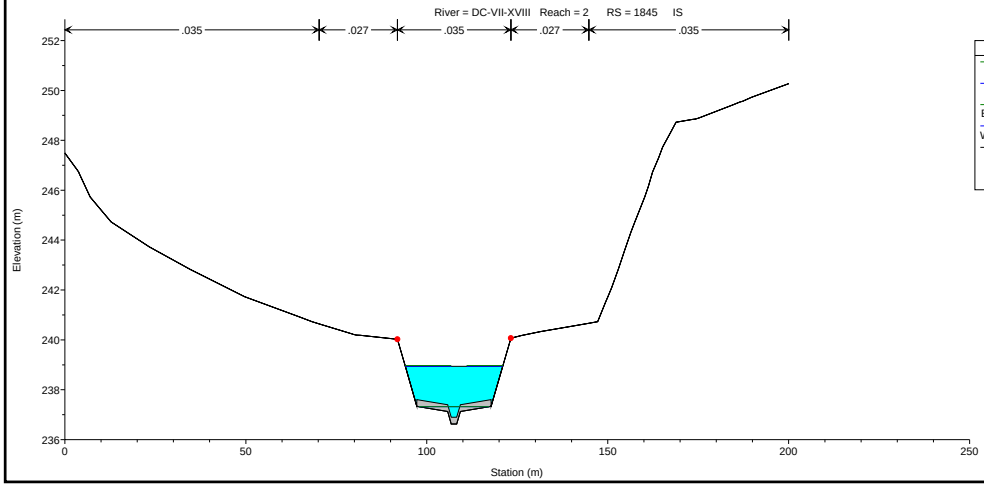

River = DC-VII-XVIII Reach = 2 RS = 1900.001
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

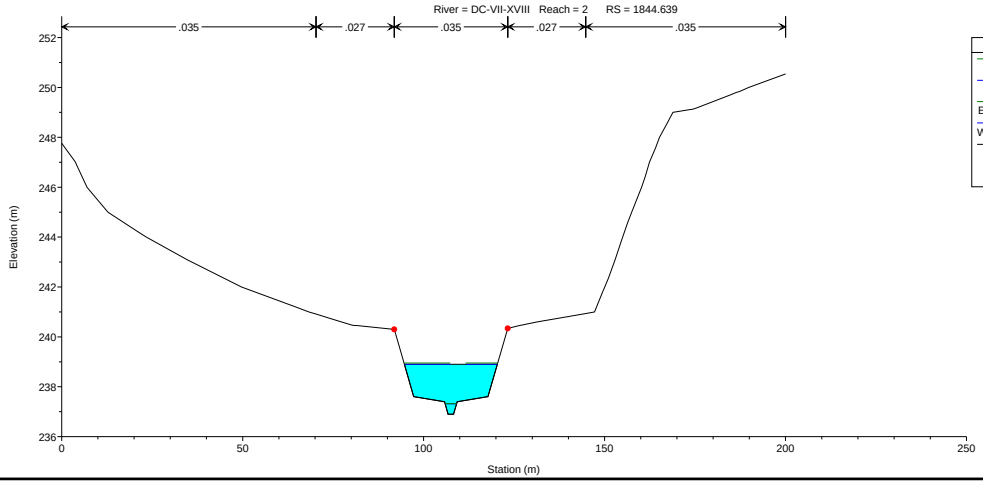

River = DC-VII-XVIII Reach = 2 RS = 1850.989
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

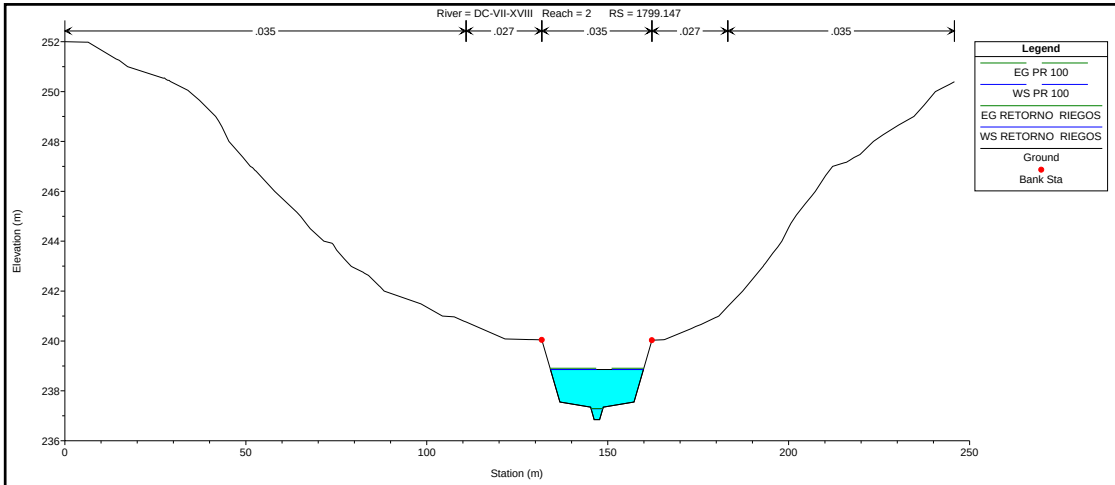

River = DC-VII-XVIII Reach = 2 RS = 1850 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

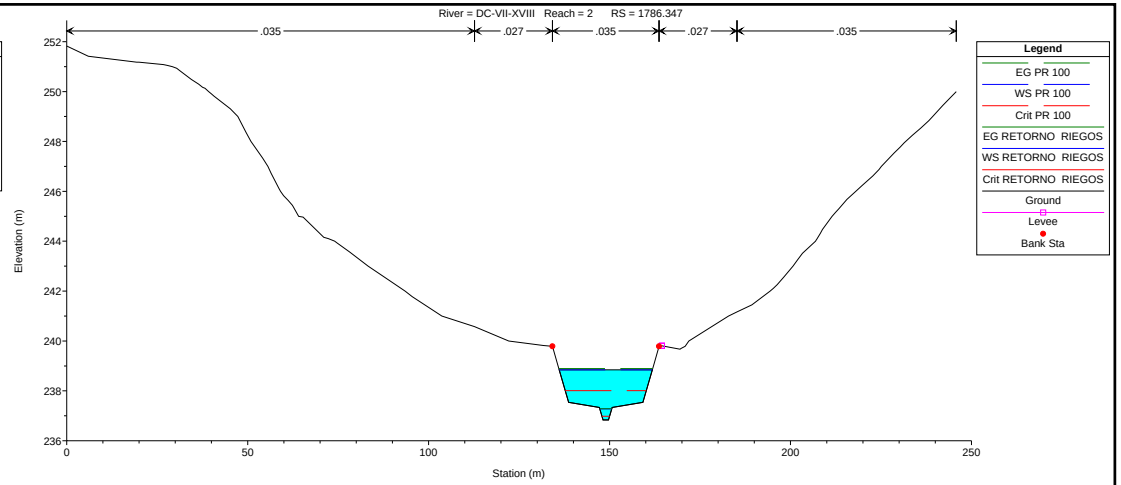

River = DC-VII-XVIII Reach = 2 RS = 1849.989
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

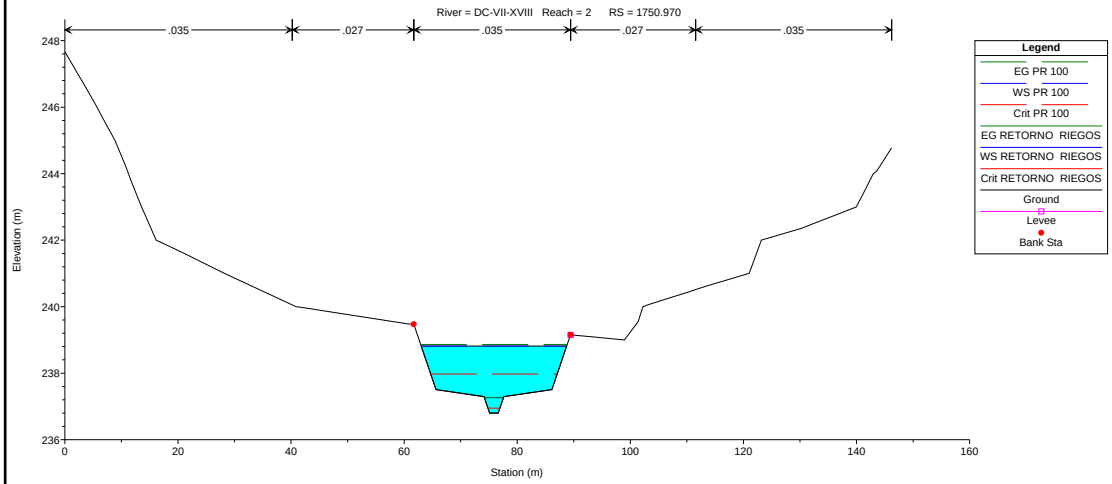

River = DC-VII-XVIII Reach = 2 RS = 1845.639
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

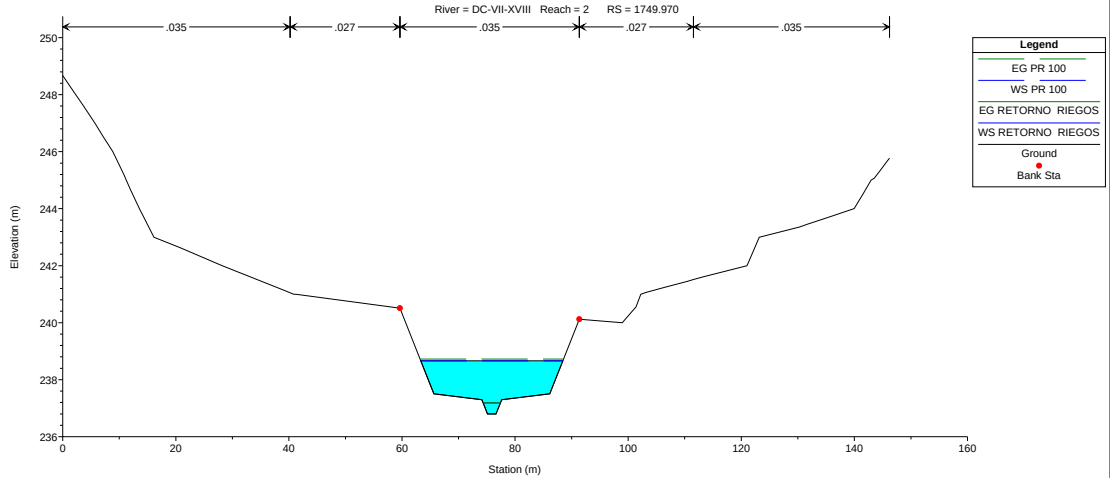

River = DC-VII-XVIII Reach = 2 RS = 1845 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

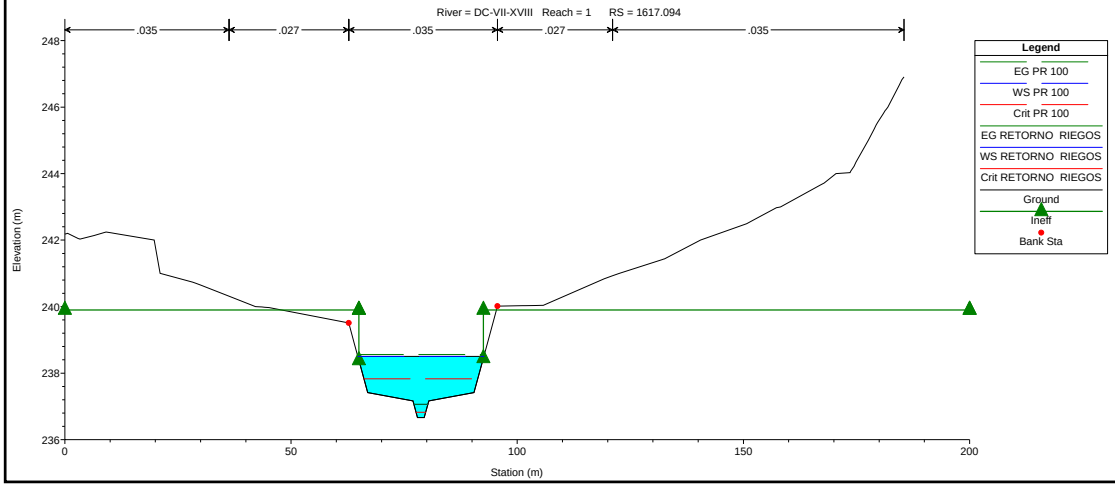

River = DC-VII-XVIII Reach = 2 RS = 1844.639
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

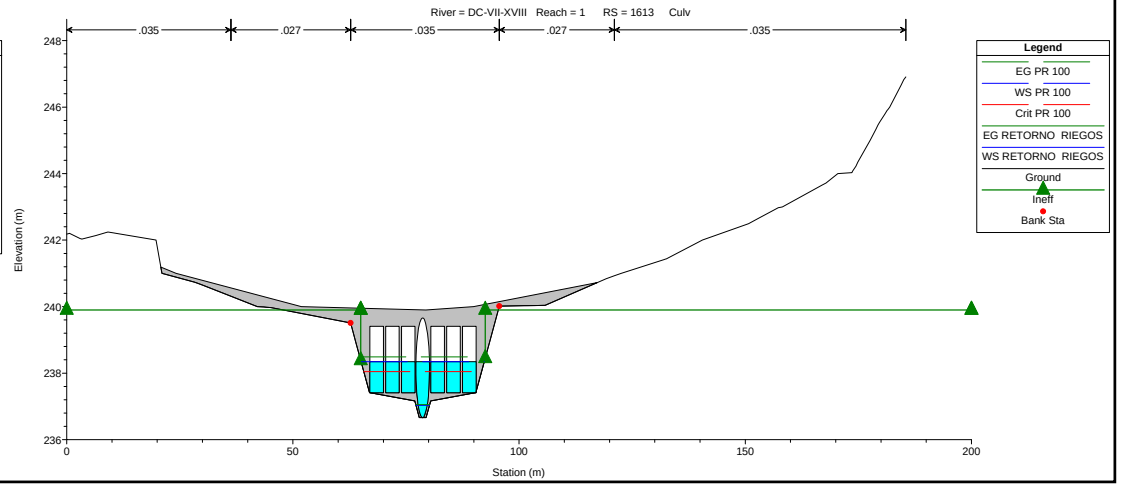

River = DC-VII-XVIII Reach = 2 RS = 1799.147
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

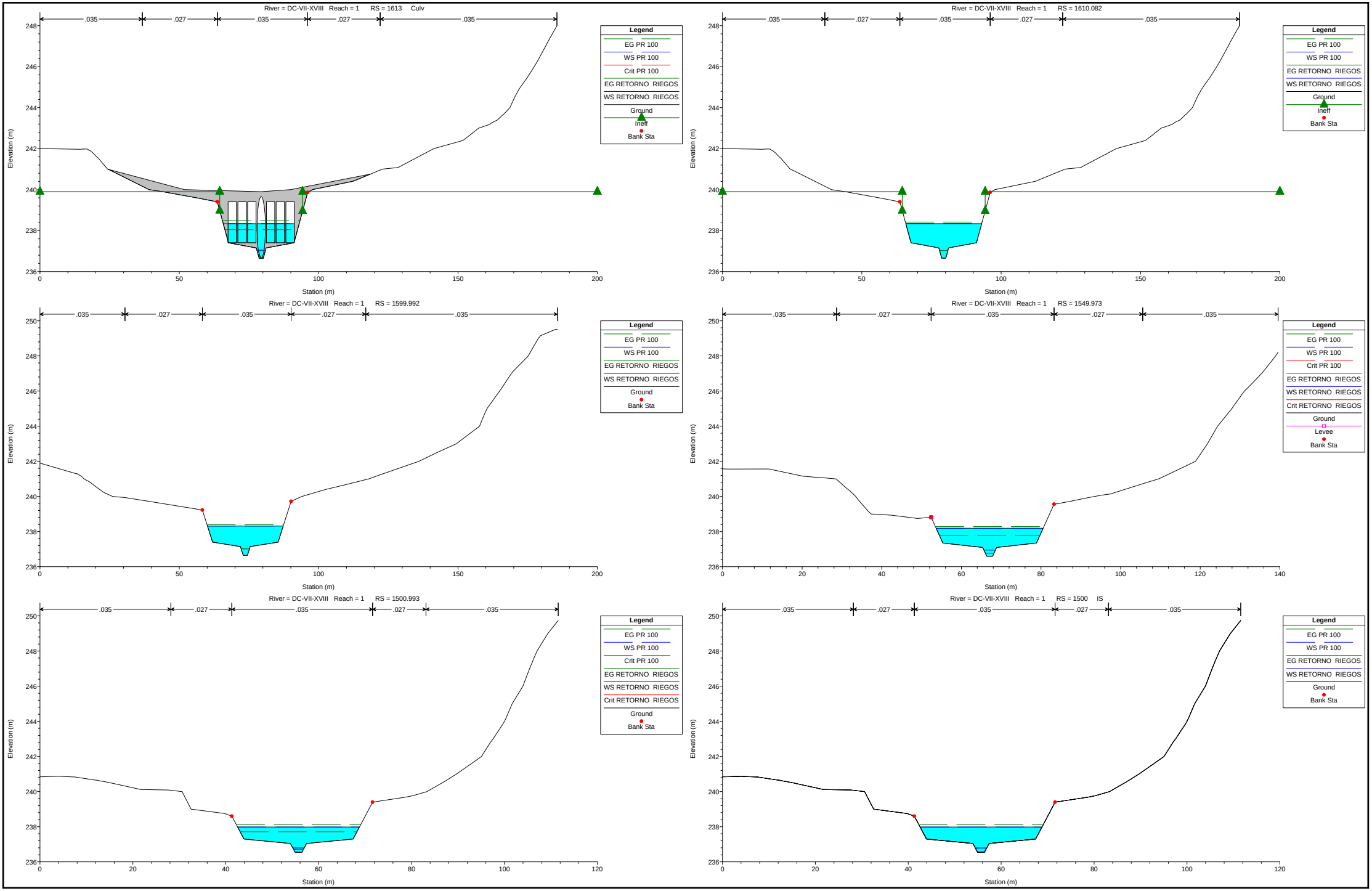

River = DC-VII-XVIII Reach = 2 RS = 1786.347
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

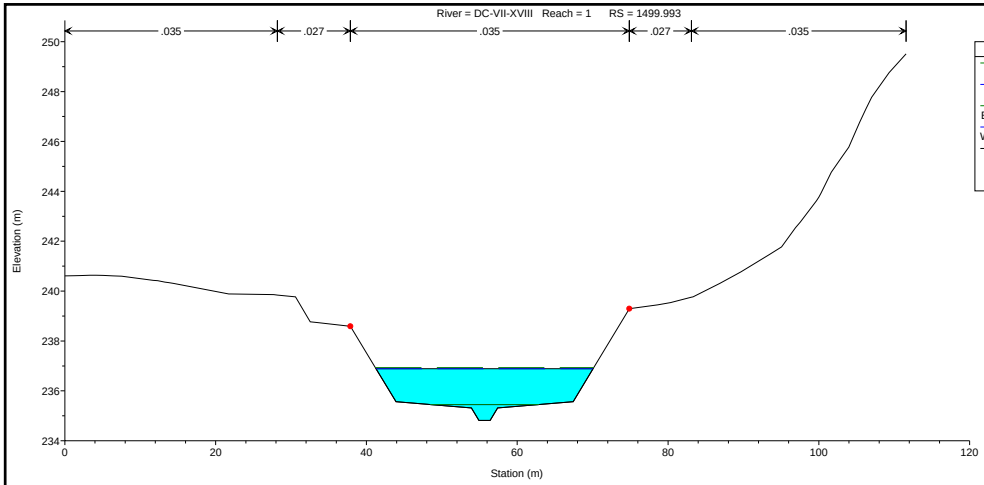

River = DC-VII-XVIII Reach = 2 RS = 1750.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

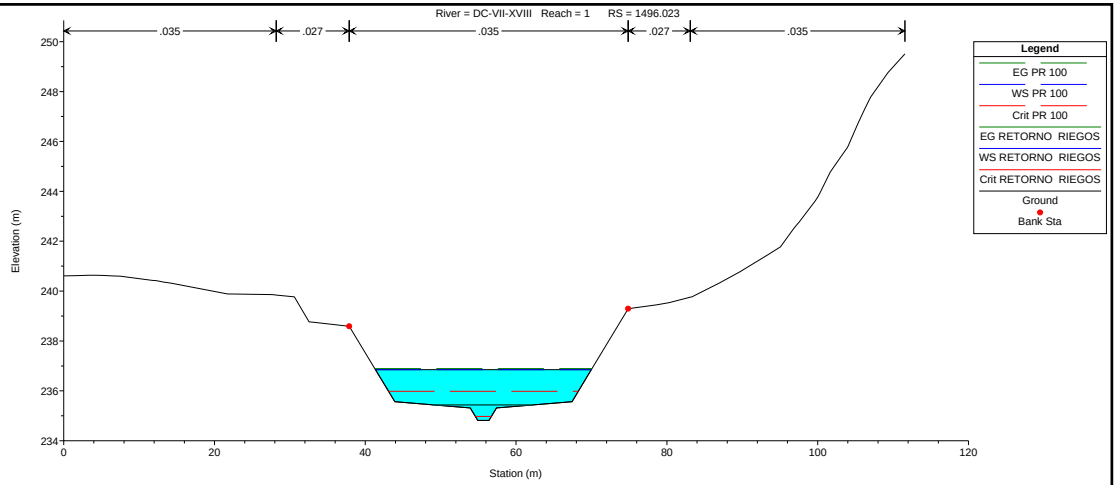

River = DC-VII-XVIII Reach = 2 RS = 1749.970
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

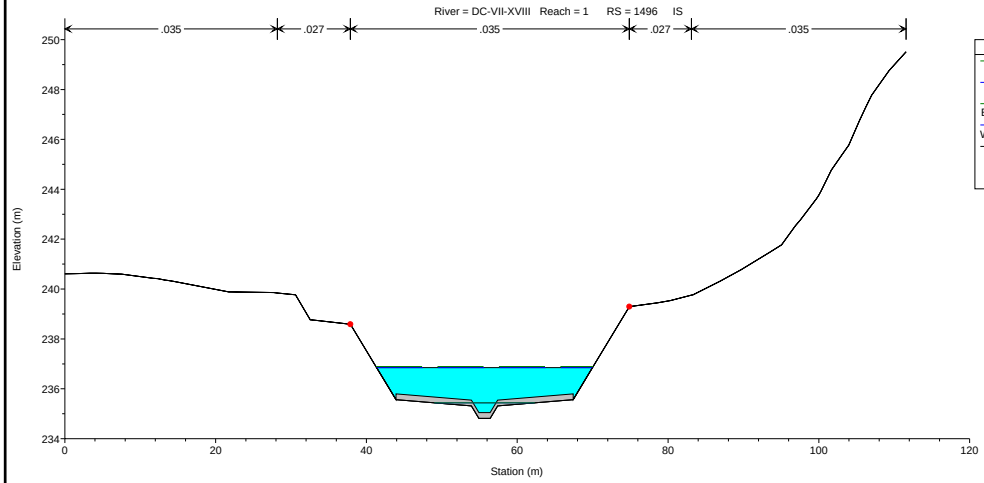

River = DC-VII-XVIII Reach = 1 RS = 1617.094
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta

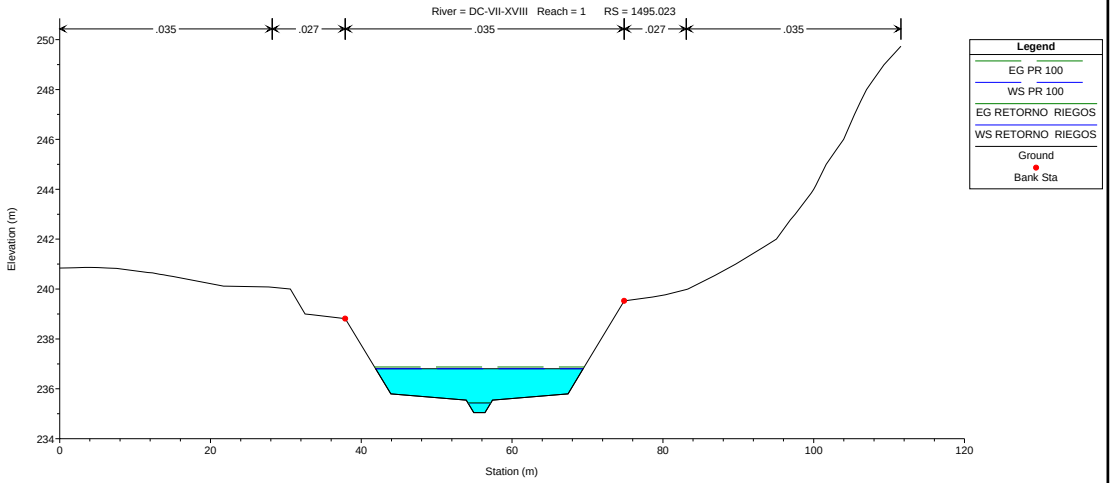

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

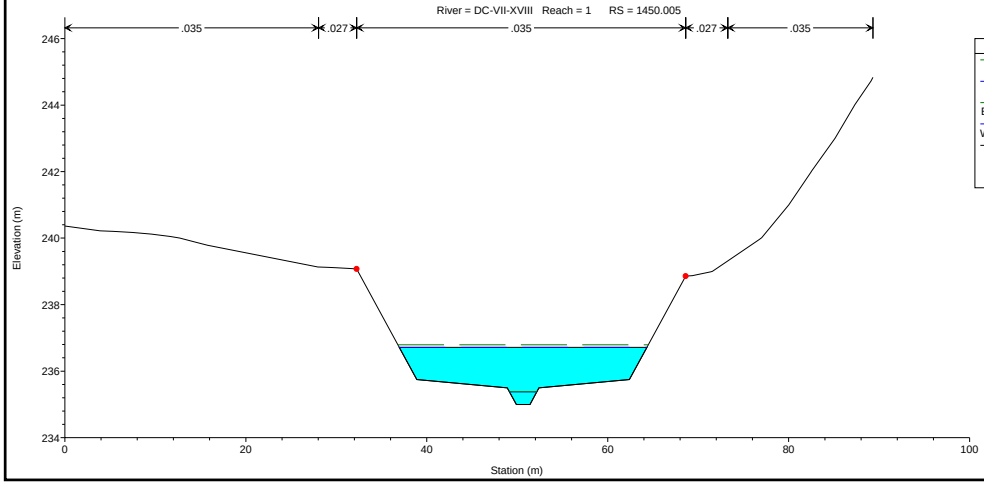

River = DC-VII-XVIII Reach = 1 RS = 1613 Culv
River = DC-VII-XVIII Reach = 1 RS = 1610.082
River = DC-VII-XVIII Reach = 1 RS = 1599.992
River = DC-VII-XVIII Reach = 1 RS = 1549.973
River = DC-VII-XVIII Reach = 1 RS = 1500.993
River = DC-VII-XVIII Reach = 1 RS = 1500 IS
.035
.027
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Levee
Bank Sta

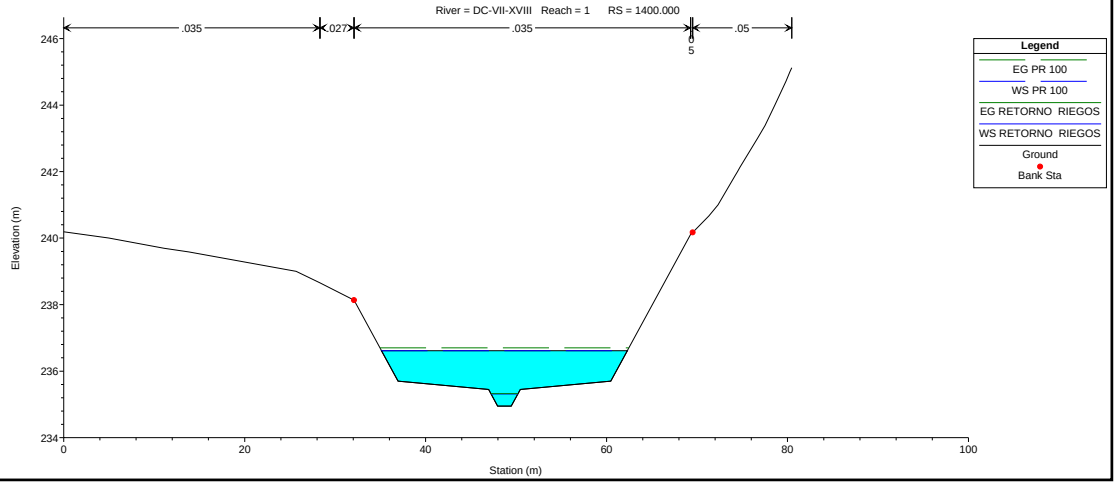

River = DC-VII-XVIII Reach = 1 RS = 1499.993
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

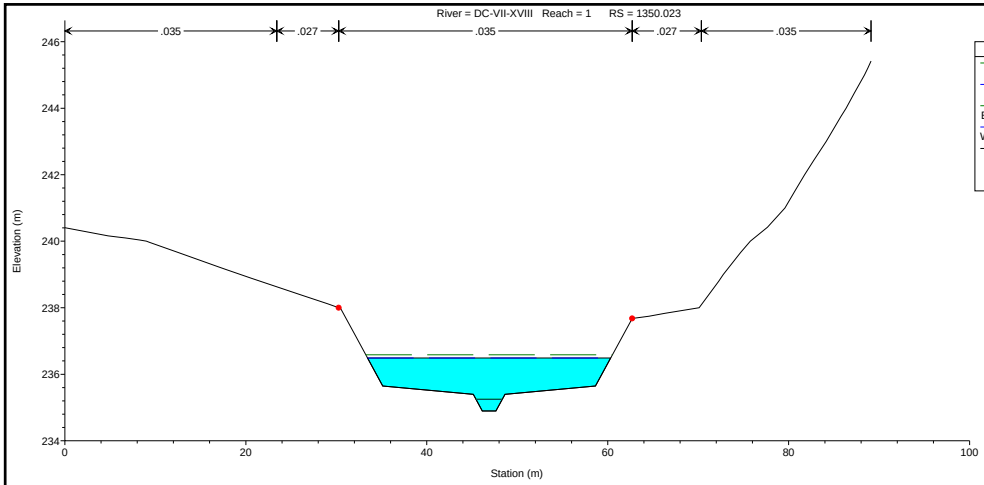

River = DC-VII-XVIII Reach = 1 RS = 1496.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

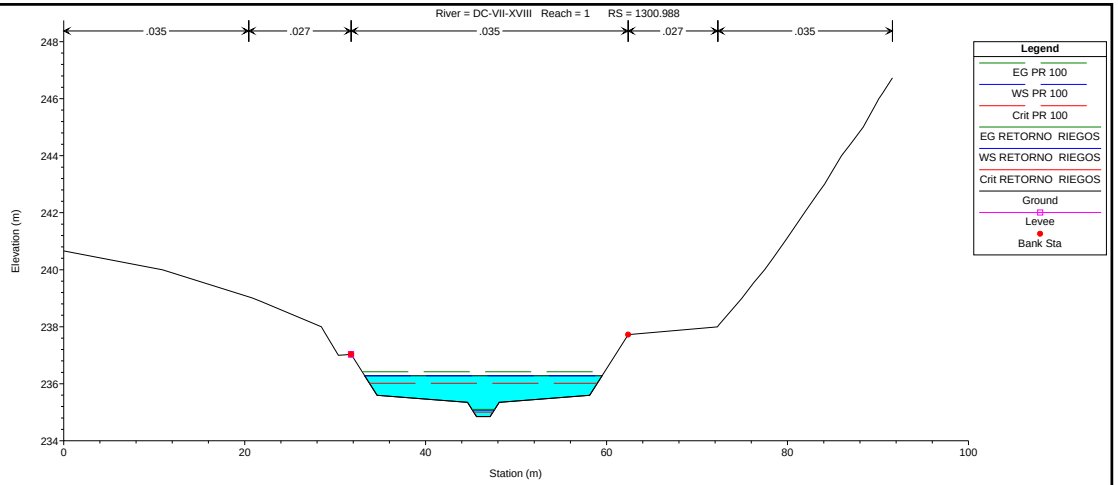

River = DC-VII-XVIII Reach = 1 RS = 1496 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

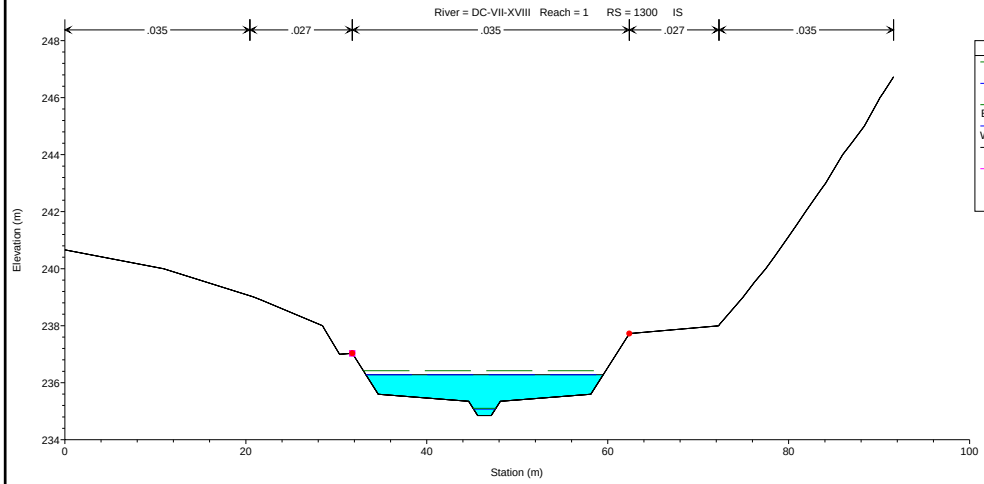

River = DC-VII-XVIII Reach = 1 RS = 1495.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

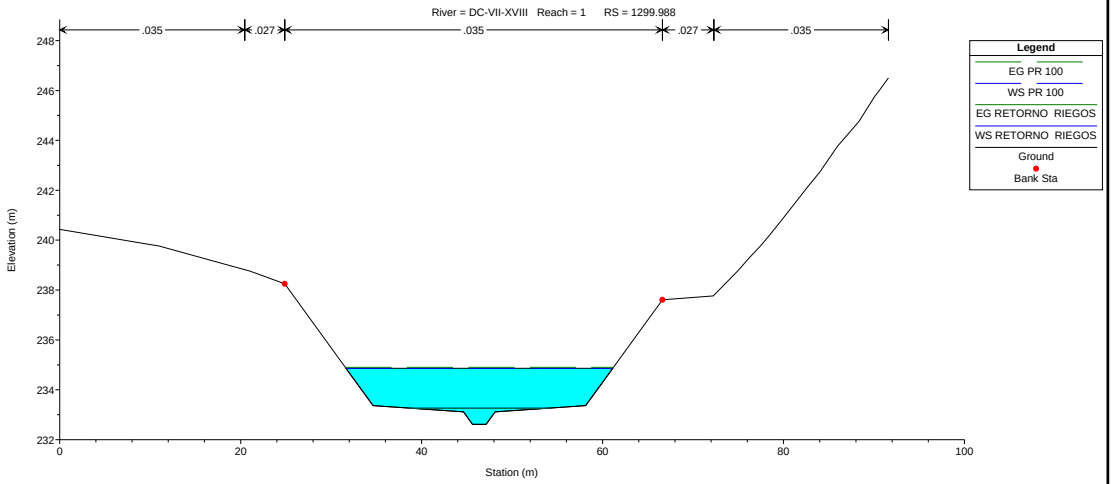

River = DC-VII-XVIII Reach = 1 RS = 1450.005
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

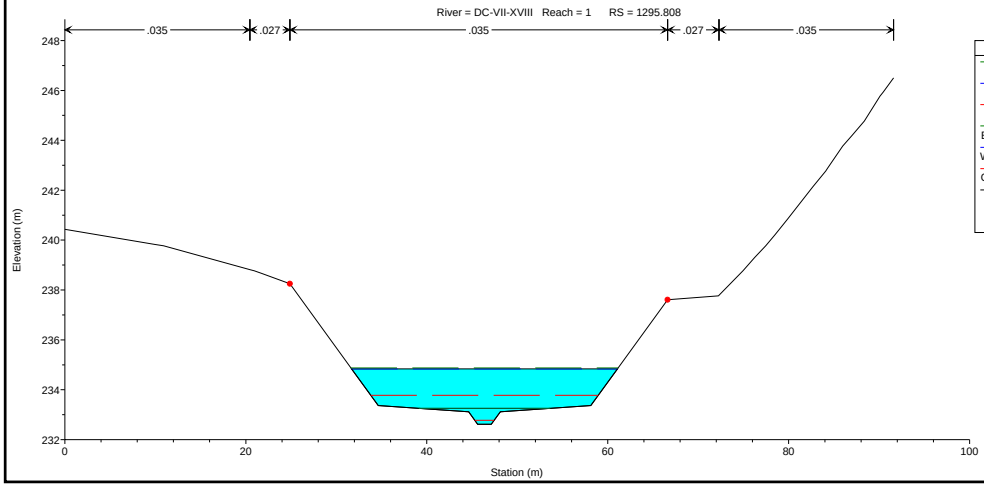

River = DC-VII-XVIII Reach = 1 RS = 1400.000
.035
.027
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

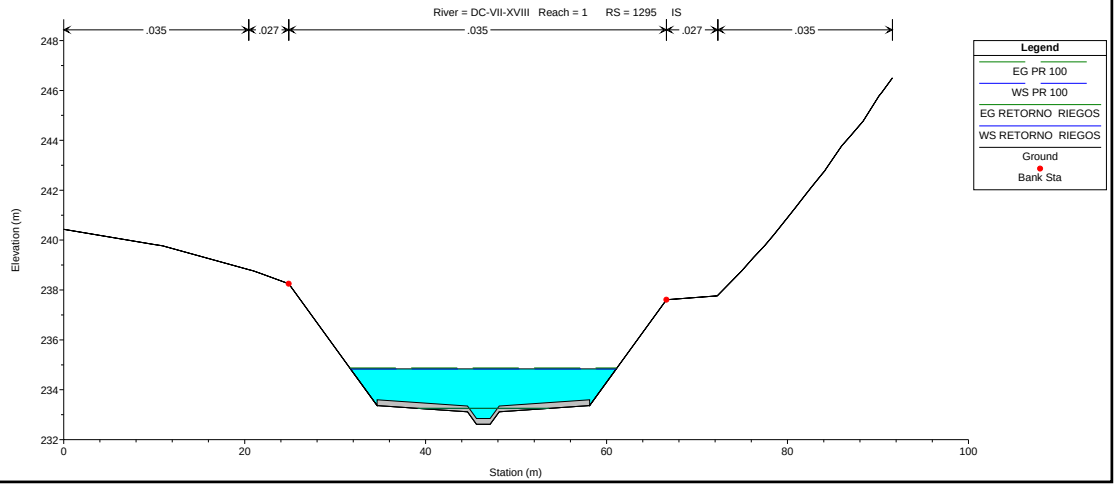

River = DC-VII-XVIII Reach = 1 RS = 1350.023
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

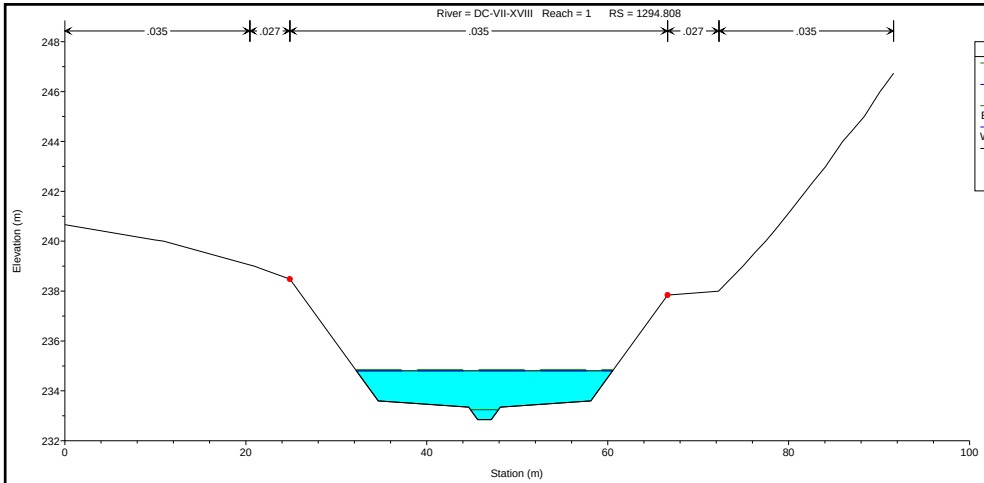

River = DC-VII-XVIII Reach = 1 RS = 1300.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta

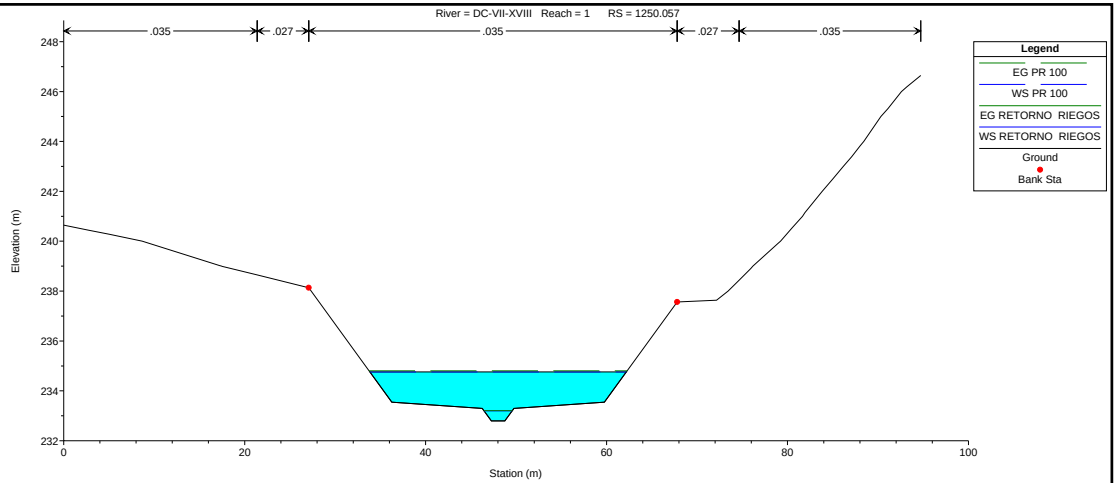

River = DC-VII-XVIII Reach = 1 RS = 1300 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Levee
Bank Sta

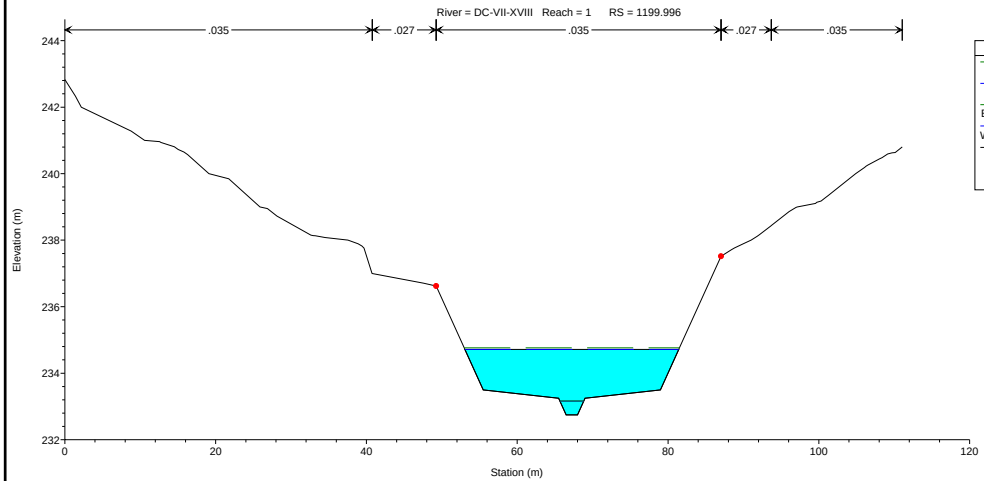

River = DC-VII-XVIII Reach = 1 RS = 1299.988
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

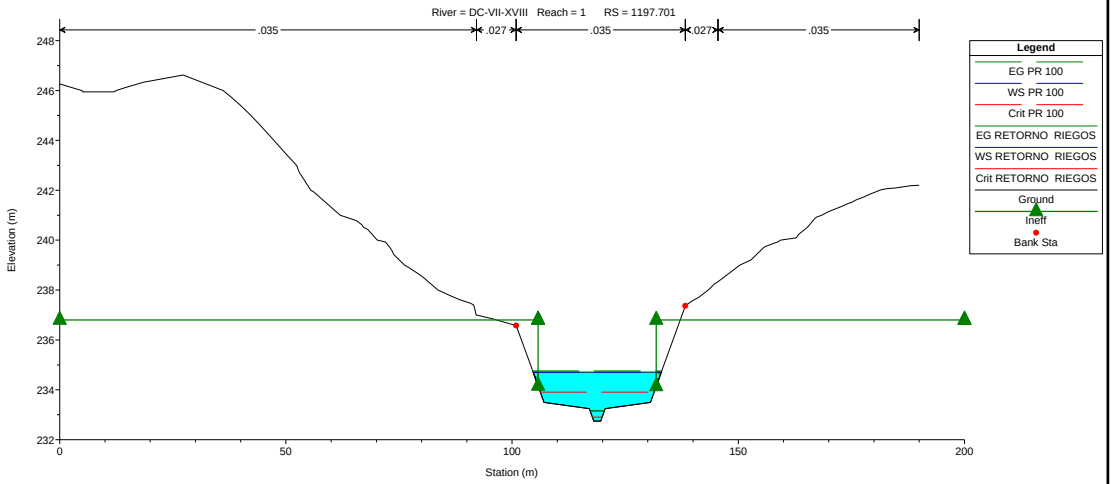

River = DC-VII-XVIII Reach = 1 RS = 1295.808
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta

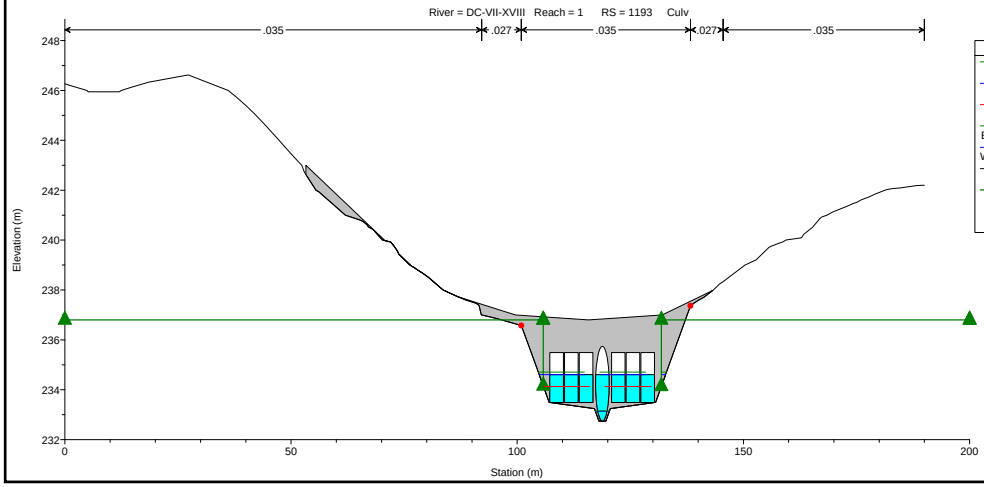

River = DC-VII-XVIII Reach = 1 RS = 1295 IS
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

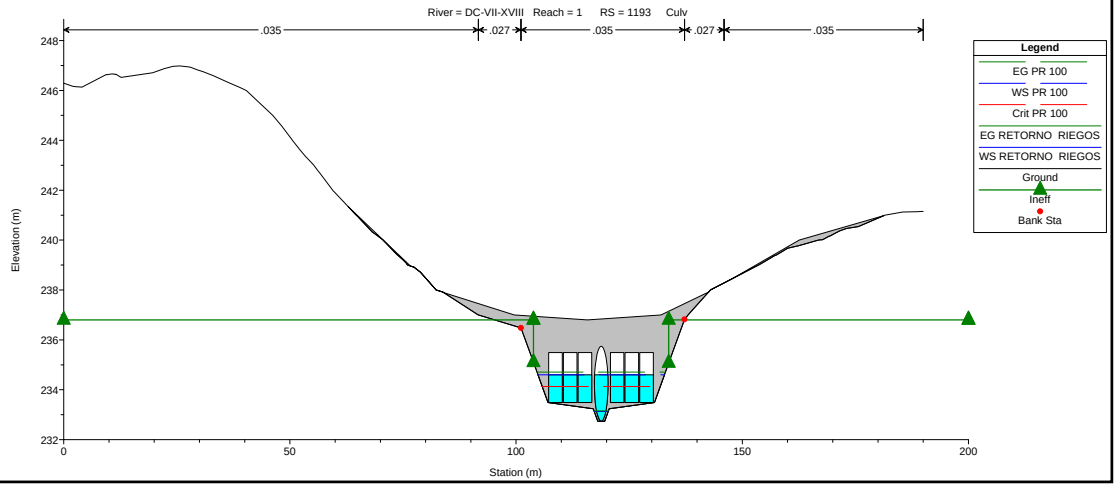

River = DC-VII-XVIII Reach = 1 RS = 1294.808
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

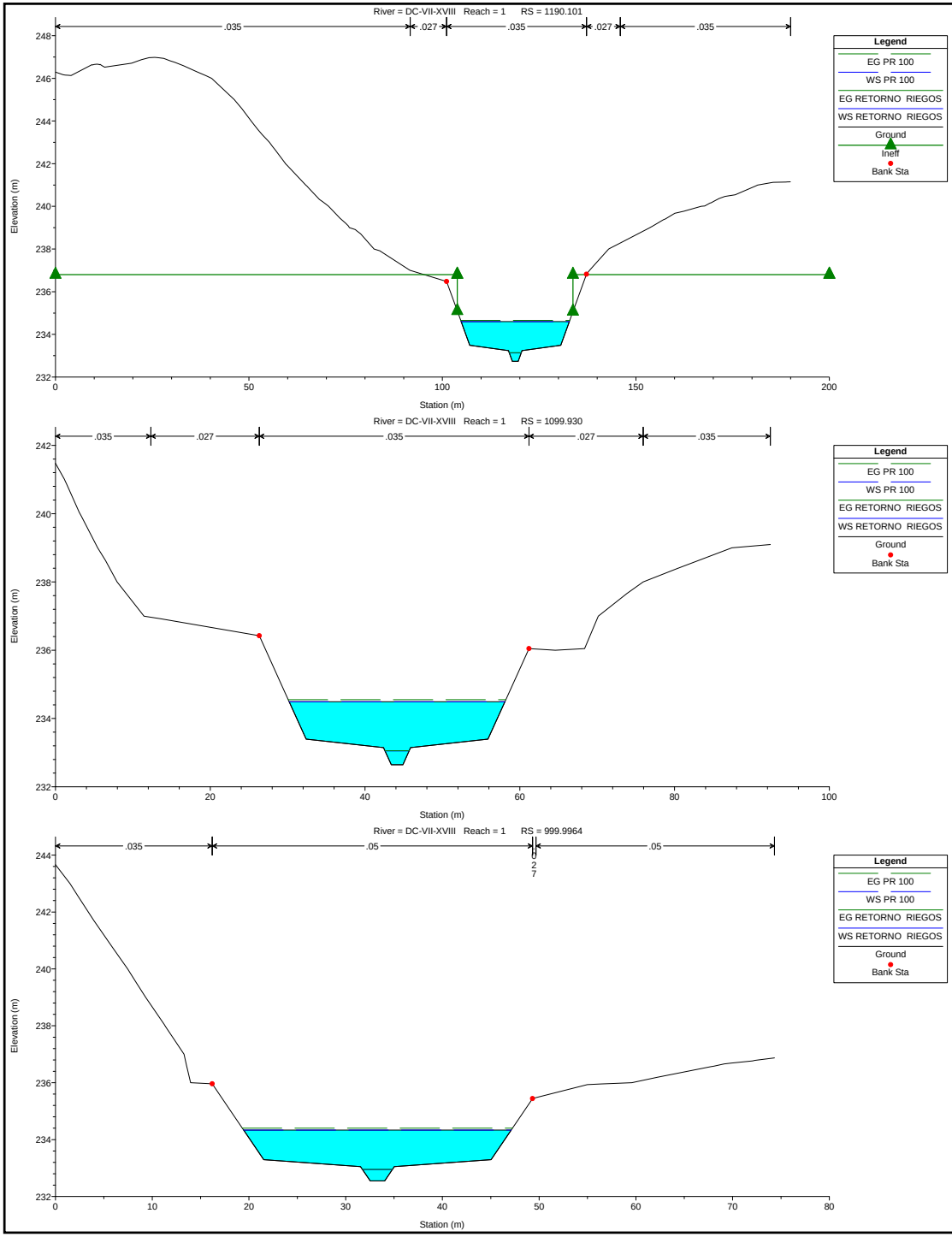

River = DC-VII-XVIII Reach = 1 RS = 1250.057
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

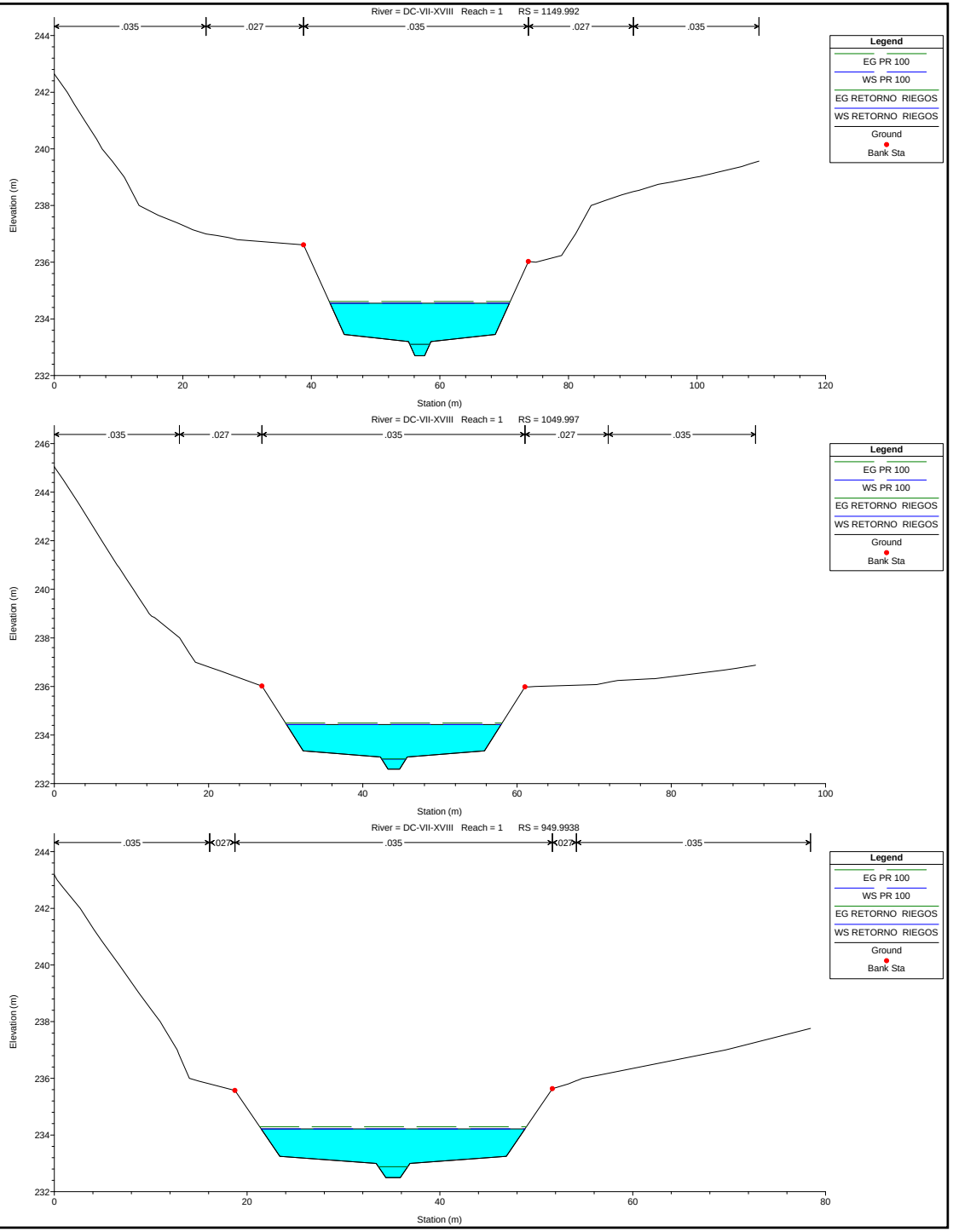

River = DC-VII-XVIII Reach = 1 RS = 1199.996
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 1197.701
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Ineff
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 1193 Culv
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 1190.101
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Ineff
Bank Sta

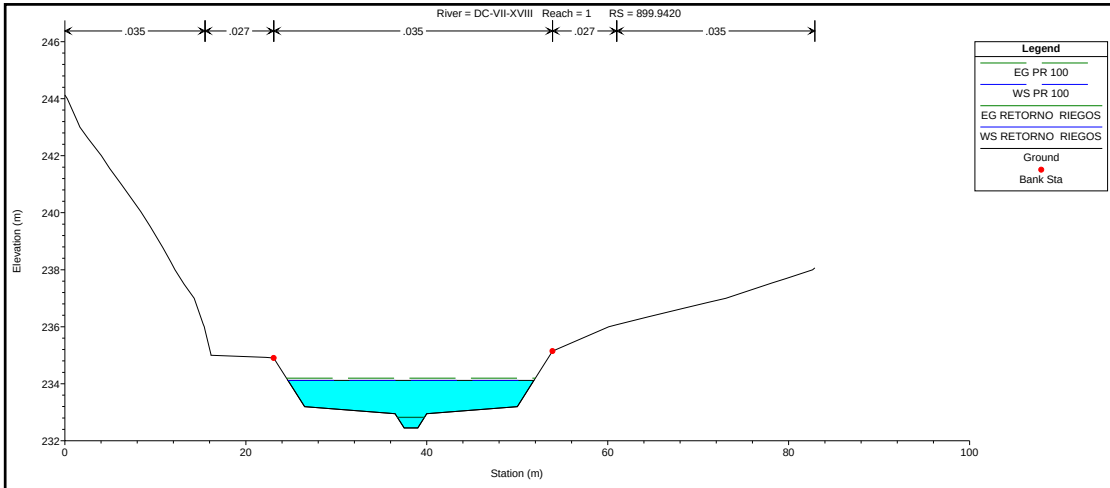

River = DC-VII-XVIII Reach = 1 RS = 1149.992
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

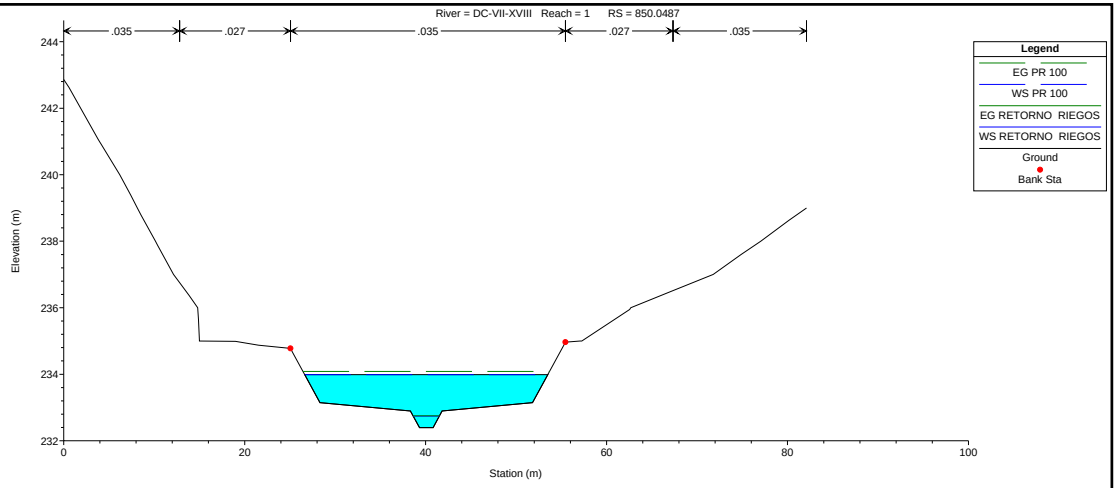
River = DC-VII-XVIII Reach = 1 RS = 1099.930
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

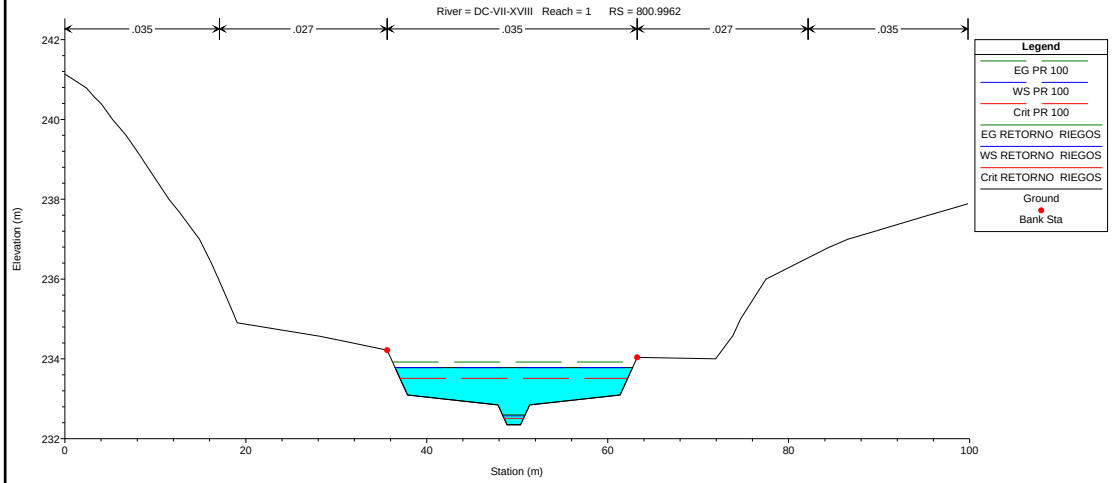
River = DC-VII-XVIII Reach = 1 RS = 1049.997
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

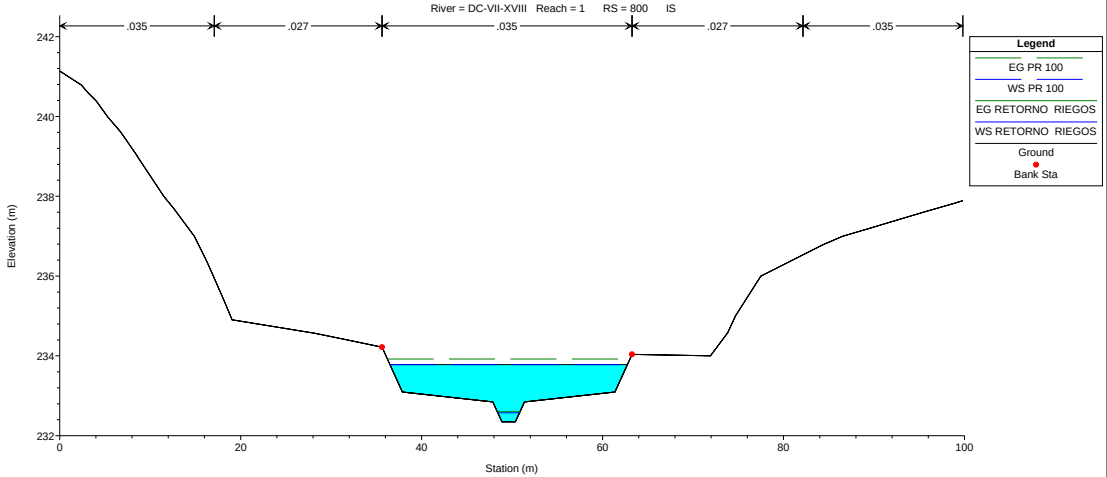
River = DC-VII-XVIII Reach = 1 RS = 999.9964
.035
.05
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

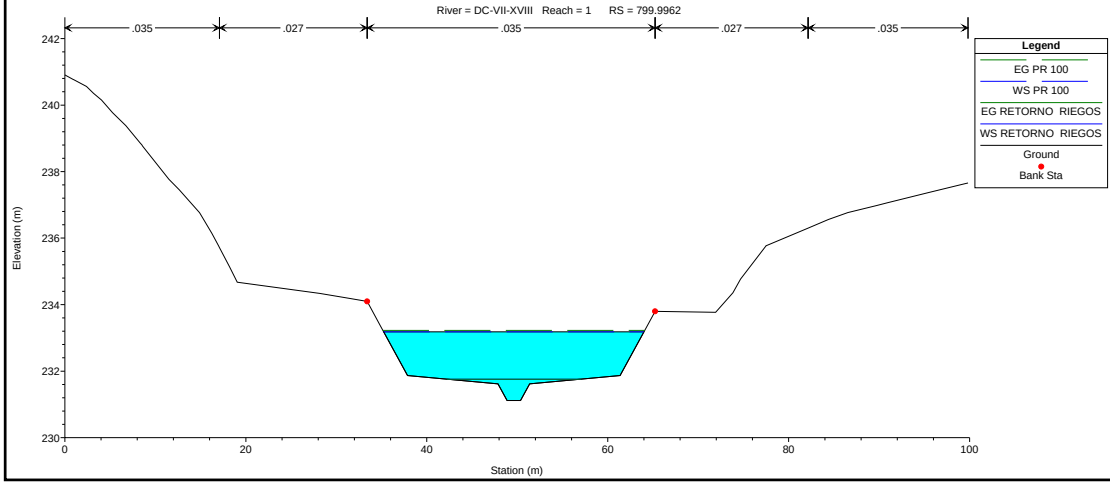
River = DC-VII-XVIII Reach = 1 RS = 949.9938
.035
.027
.035
.027
.035
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

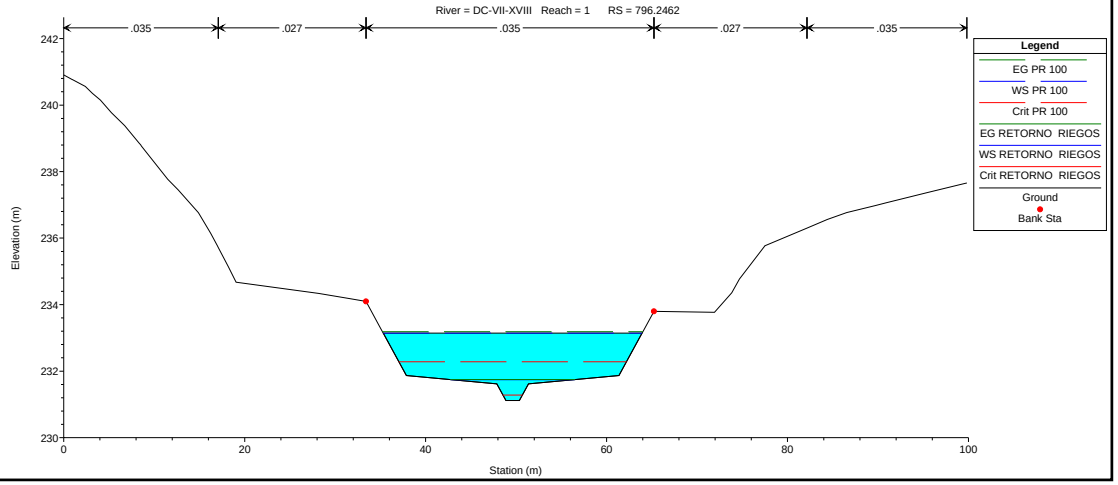

River = DC-VII-XVIII Reach = 1 RS = 899.9420
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

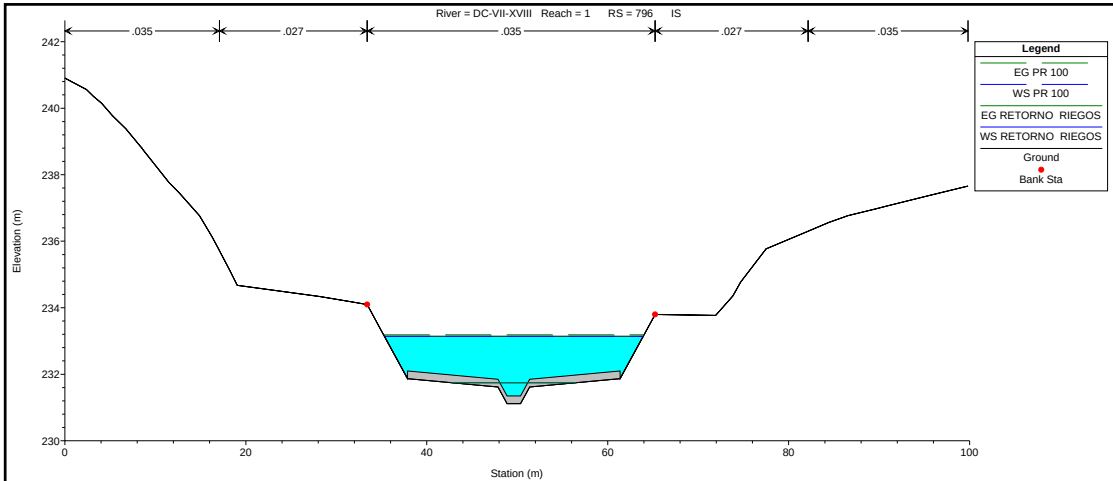

River = DC-VII-XVIII Reach = 1 RS = 850.0487
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

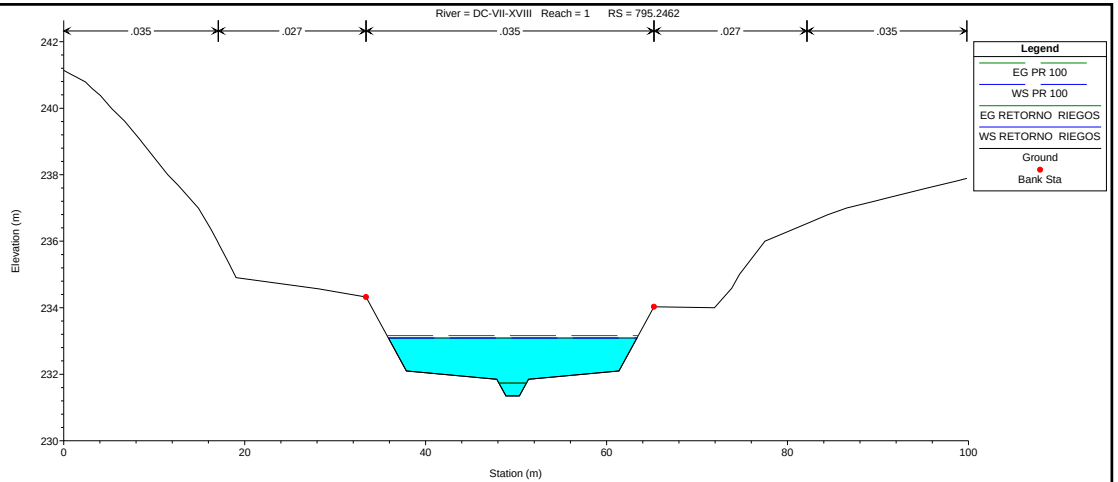

River = DC-VII-XVIII Reach = 1 RS = 800.9962
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

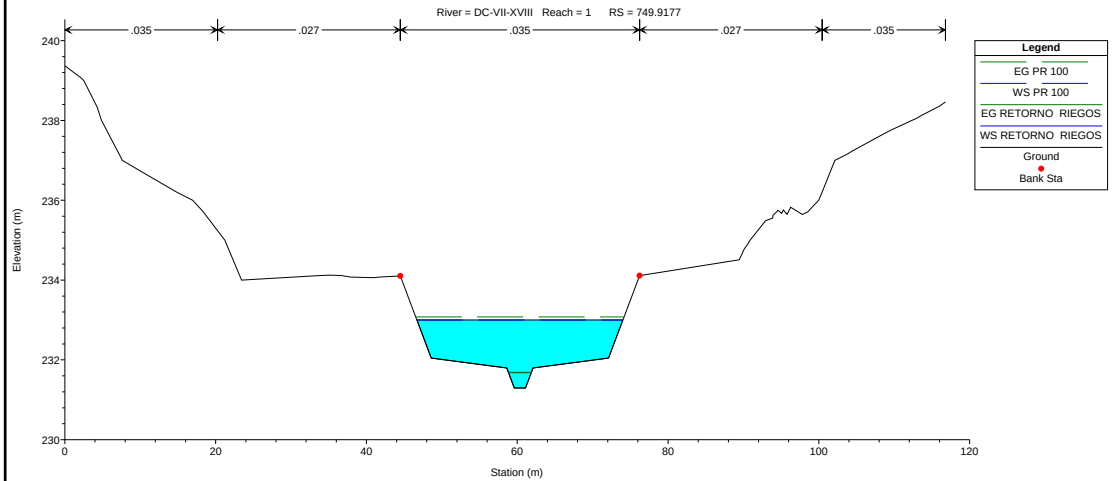

River = DC-VII-XVIII Reach = 1 RS = 800 IS
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

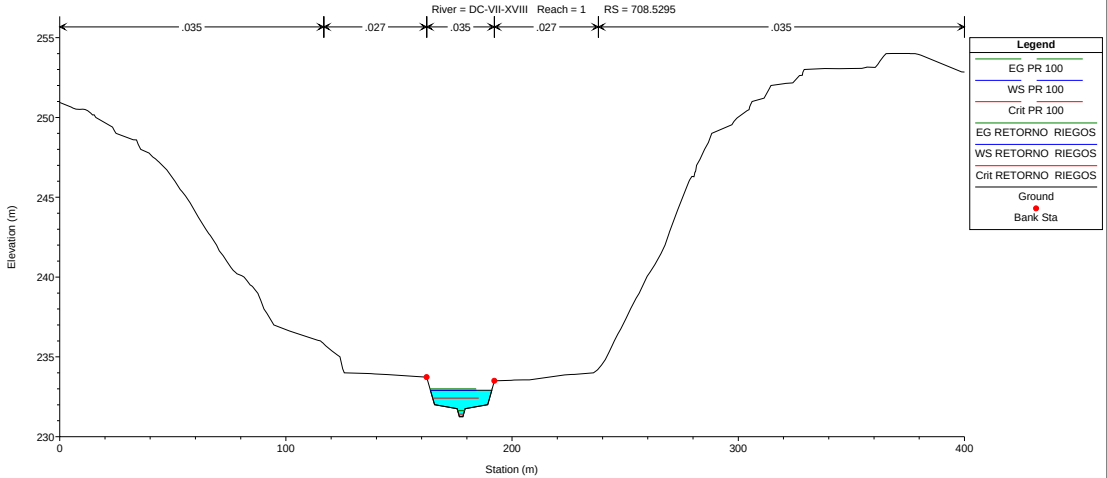

River = DC-VII-XVIII Reach = 1 RS = 799.9962
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

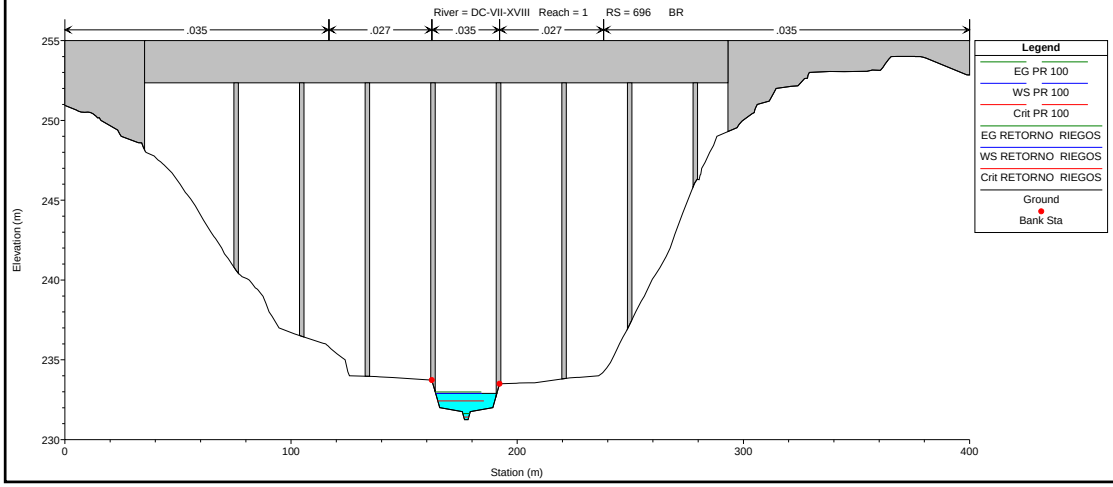

River = DC-VII-XVIII Reach = 1 RS = 796.2462
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

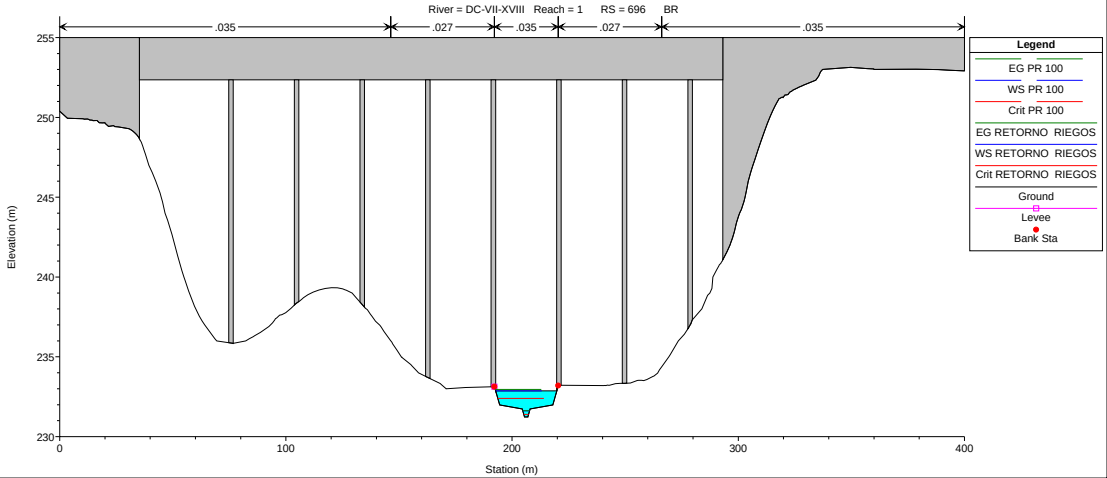

River = DC-VII-XVIII Reach = 1 RS = 796 IS
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

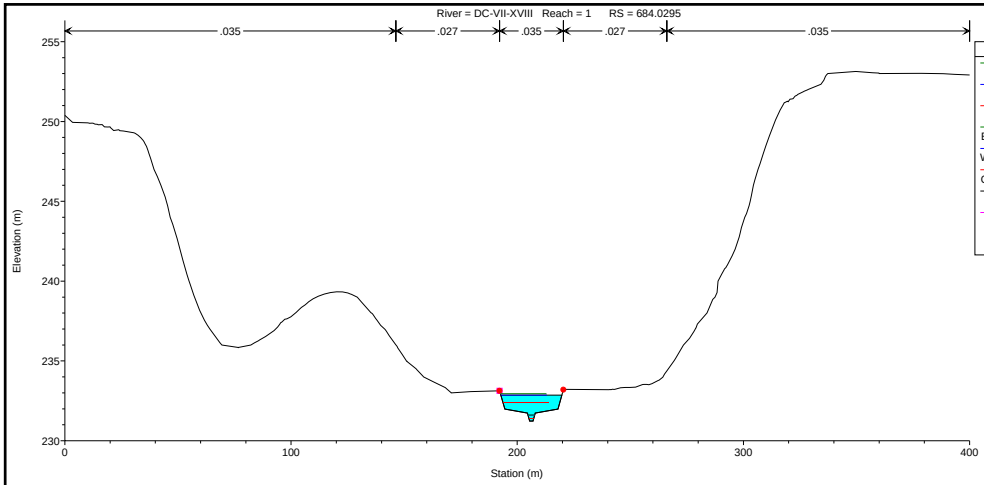

River = DC-VII-XVIII Reach = 1 RS = 795.2462
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

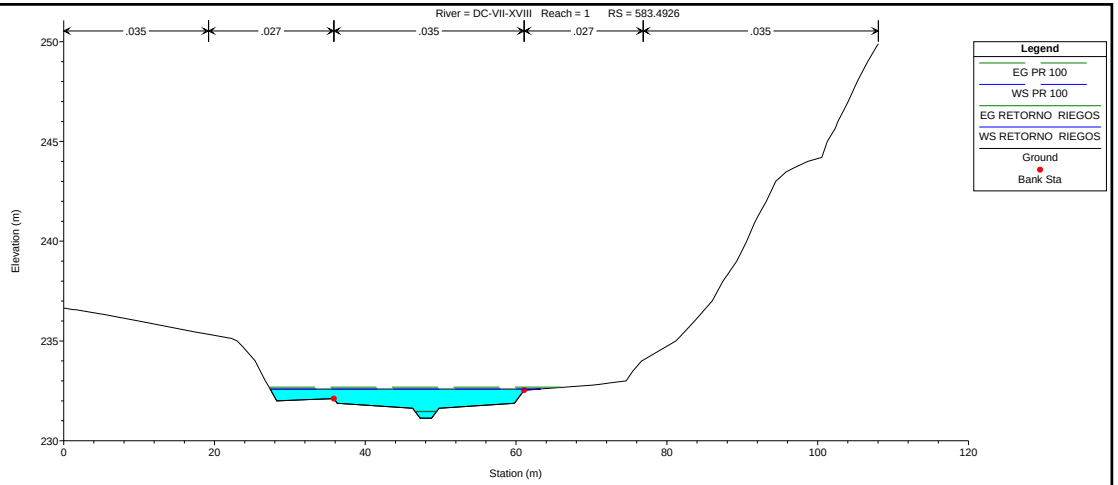

River = DC-VII-XVIII Reach = 1 RS = 749.9177
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

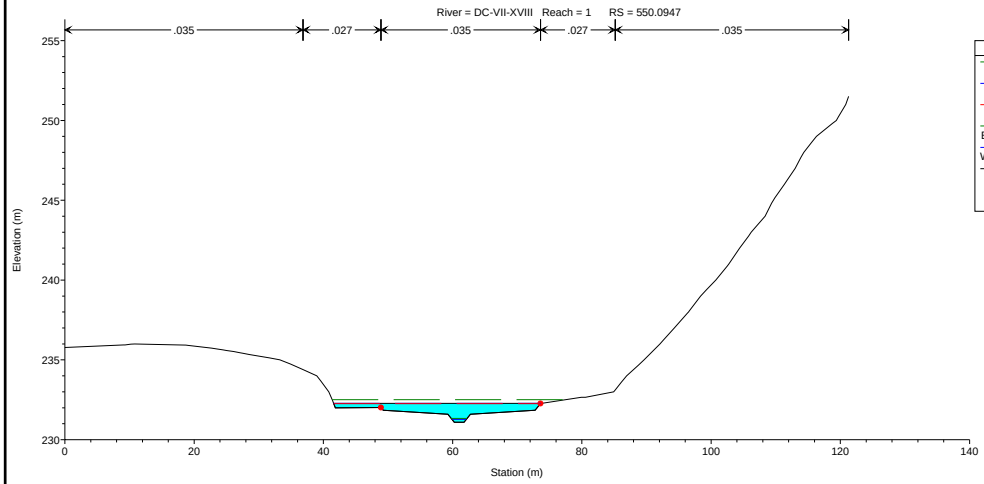

River = DC-VII-XVIII Reach = 1 RS = 708.5295
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

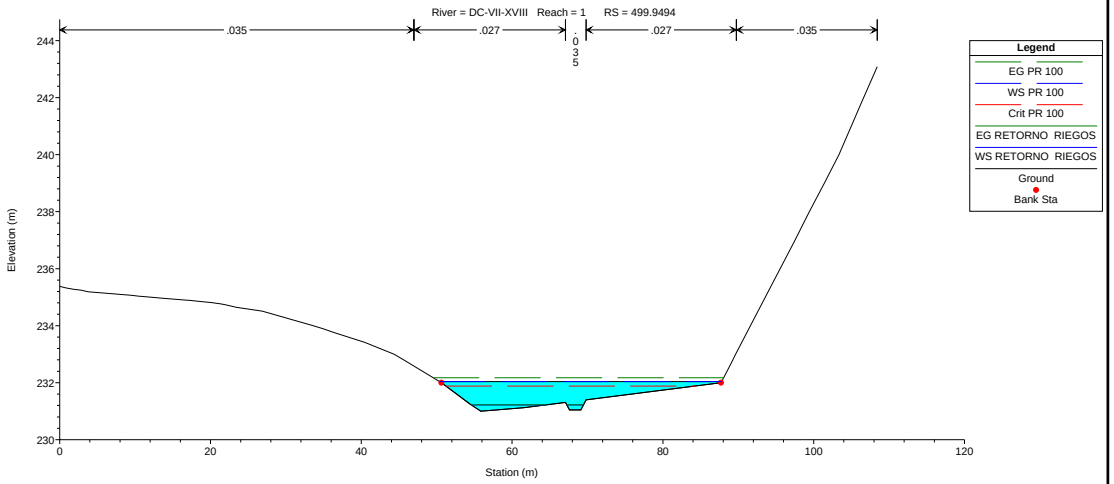

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

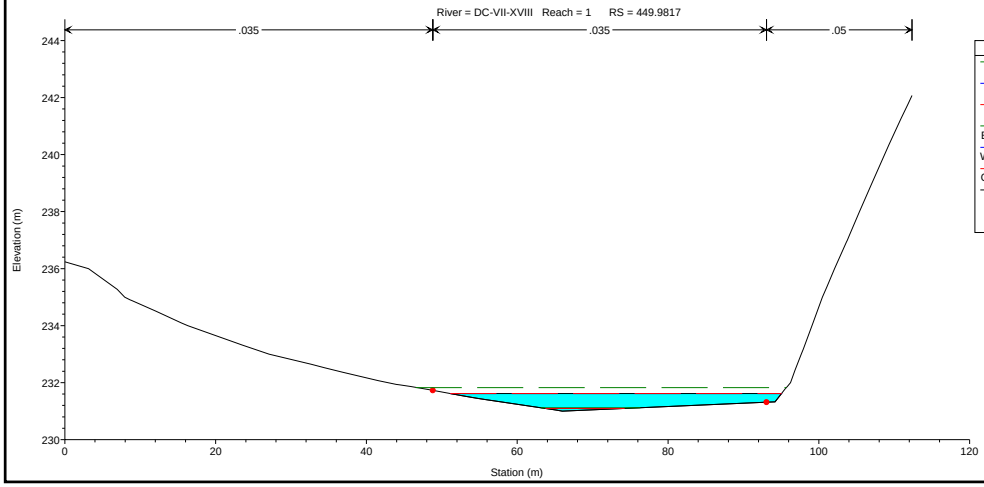

River = DC-VII-XVIII Reach = 1 RS = 696 BR
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

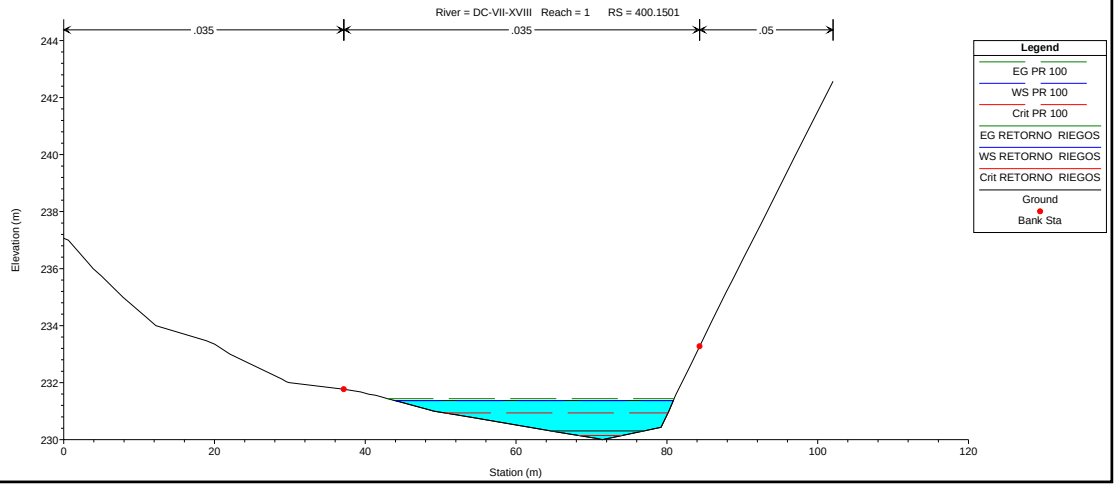

River = DC-VII-XVIII Reach = 1 RS = 684.0295
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta
Elevation (m)
Station (m)

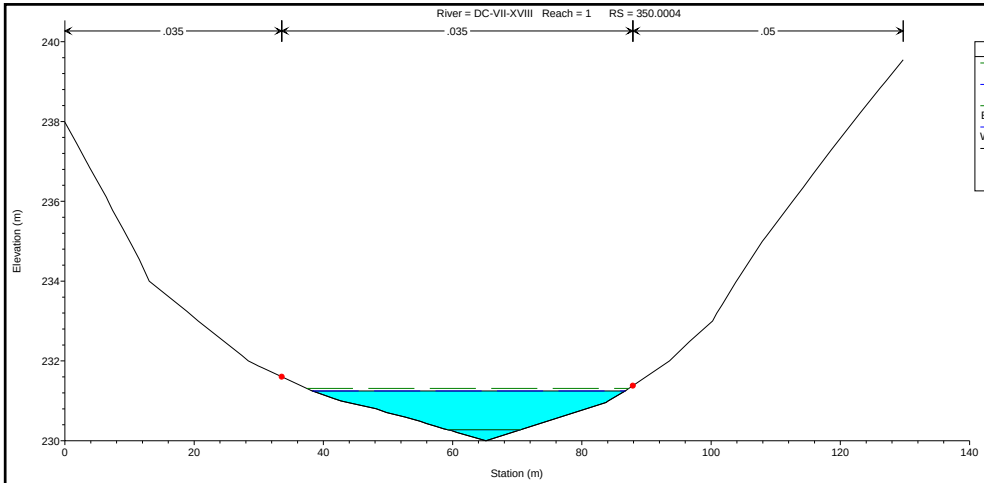

River = DC-VII-XVIII Reach = 1 RS = 583.4926
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

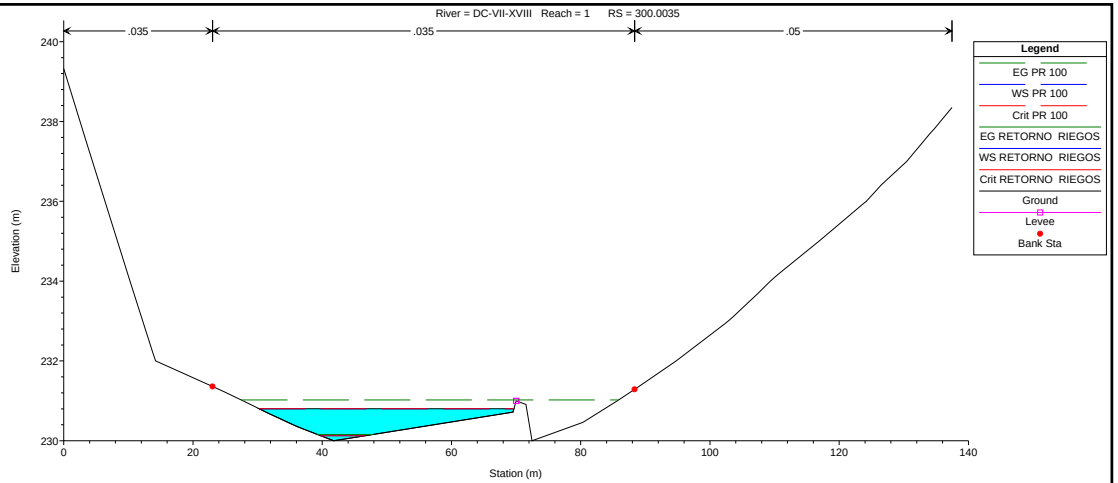

River = DC-VII-XVIII Reach = 1 RS = 550.0947
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

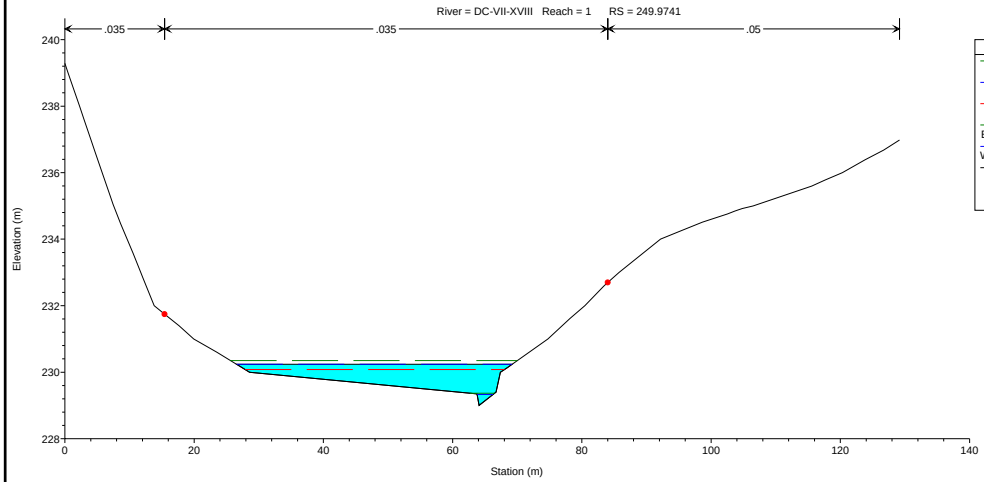

River = DC-VII-XVIII Reach = 1 RS = 499.9494
.035
.027
.035
.027
.035
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

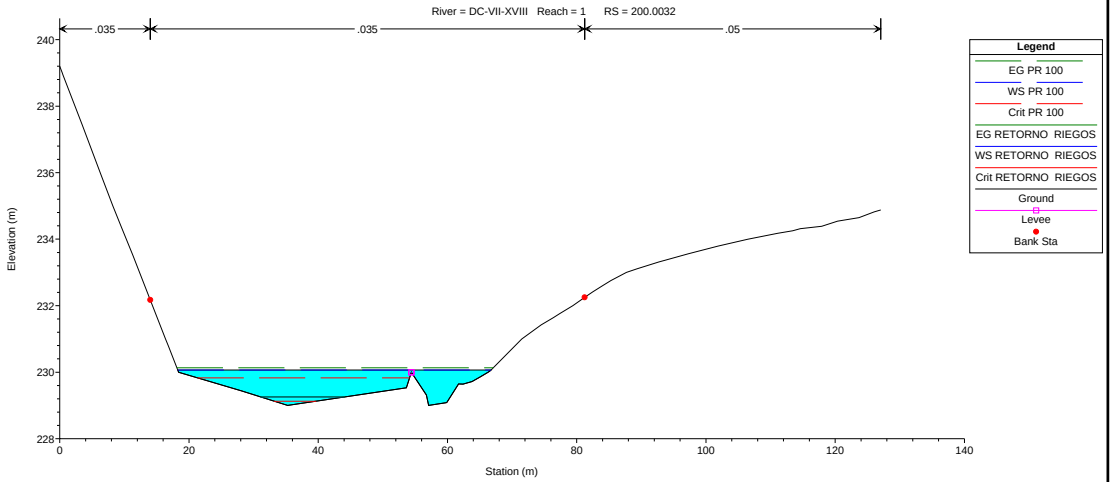

River = DC-VII-XVIII Reach = 1 RS = 449.9817
.035
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

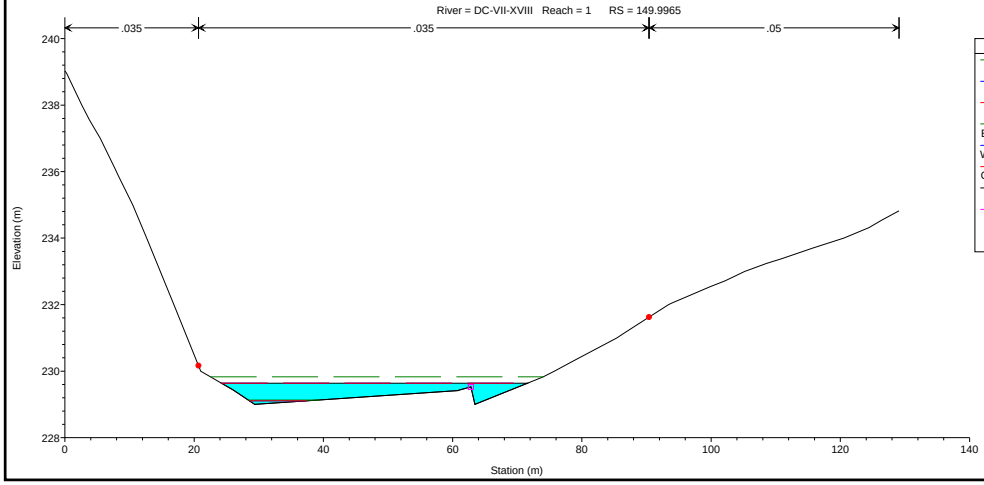

River = DC-VII-XVIII Reach = 1 RS = 400.1501
.035
.035
.05
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta
Elevation (m)
Station (m)

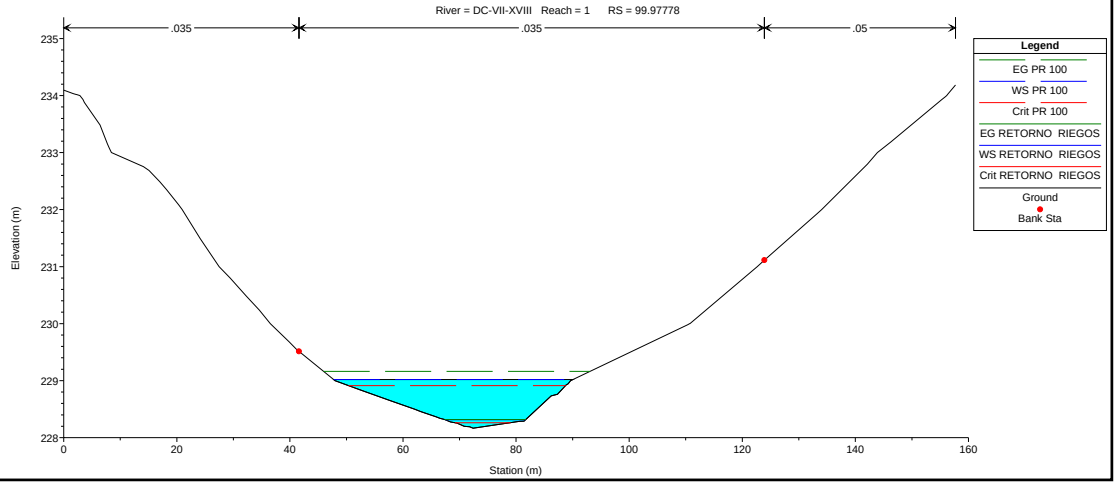

River = DC-VII-XVIII Reach = 1 RS = 350.0004
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

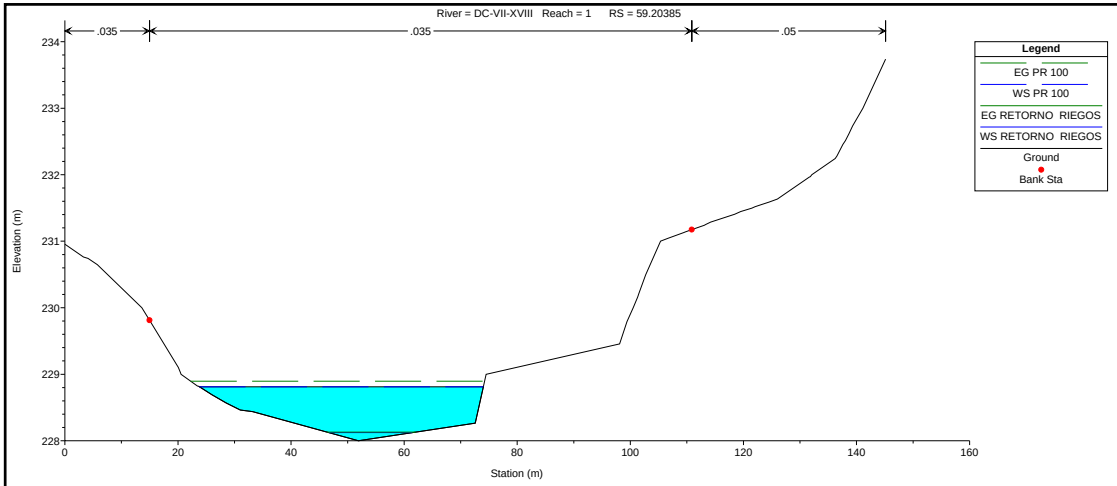

River = DC-VII-XVIII Reach = 1 RS = 300.0035
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 249.9741
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 200.0032
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 149.9965
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Levee
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 99.97778
.035
.035
.05
Elevation (m)
Station (m)
Legend
EG PR 100
WS PR 100
Crit PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Crit RETORNO RIEGOS
Ground
Bank Sta


River = DC-VII-XVIII Reach = 1 RS = 59.20385
.035
.035
.05
Elevation (m)
Station (m)
234
233
232
231
230
229
228
0
20
40
60
80
100
120
140
160
Legend
EG PR 100
WS PR 100
EG RETORNO RIEGOS
WS RETORNO RIEGOS
Ground
Bank Sta

TABLAS DE RESULTADOS

TABLA DE RESULTADOS PR25

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 25

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	PR 25	1.19	275.73	276.13	276.09	276.18	0.006508	0.97	1.22	6.42	0.71
7	7600.010	PR 25	1.19	275.35	275.74	275.72	275.80	0.008952	1.08	1.11	6.34	0.82
7	7550.077	PR 25	1.19	274.98	275.39		275.43	0.005956	0.95	1.26	6.44	0.68
7	7500.056	PR 25	1.19	274.60	274.98	274.97	275.04	0.010217	1.12	1.06	6.32	0.87
7	7450.075	PR 25	1.19	274.23	274.65	274.59	274.69	0.005113	0.90	1.32	6.48	0.64
7	7400.119	PR 25	1.19	273.85	274.22	274.22	274.29	0.013178	1.21	0.98	6.26	0.98
7	7300.129	PR 25	1.19	273.10	273.56	273.47	273.59	0.003000	0.76	1.57	6.63	0.50
7	7249.989	PR 25	1.19	272.95	273.41		273.44	0.003011	0.76	1.56	6.63	0.50
7	7200.077	PR 25	1.19	272.80	273.26		273.29	0.003009	0.76	1.56	6.63	0.50
7	7149.979	PR 25	1.19	272.65	273.11		273.14	0.003015	0.76	1.56	6.63	0.50
7	7099.997	PR 25	1.19	272.50	272.96		272.99	0.002996	0.76	1.57	6.63	0.50
7	7087.390	PR 25	1.19	272.46	272.92		272.95	0.002974	0.76	1.57	6.63	0.50
7	7073.890	PR 25	1.19	272.42	272.88		272.91	0.002992	0.76	1.57	6.63	0.50
7	7050.093	PR 25	1.19	272.35	272.81		272.84	0.003009	0.76	1.56	6.63	0.50
7	6999.710	PR 25	1.19	272.20	272.66		272.69	0.003028	0.76	1.56	6.62	0.50
7	6949.910	PR 25	1.19	272.05	272.53		272.56	0.002196	0.69	1.73	6.73	0.43
7	6900.010	PR 25	1.19	271.90	272.48	272.27	272.49	0.000810	0.50	2.39	7.11	0.27
7	6884.171	PR 25	1.19	271.86	272.47	272.22	272.48	0.000583	0.45	2.66	7.26	0.24
7	6878		Culvert									
7	6872.171	PR 25	1.19	271.86	272.29	272.22	272.32	0.004131	0.84	1.41	6.54	0.58
7	6850.006	PR 25	1.19	271.75	272.14	272.12	272.20	0.007965	1.04	1.15	6.37	0.78
7	6800.056	PR 25	1.19	271.38	271.78	271.74	271.83	0.006932	0.99	1.20	6.40	0.73
7	6749.770	PR 25	1.19	271.00	271.39	271.36	271.45	0.008412	1.05	1.13	6.36	0.80
7	6699.958	PR 25	1.19	270.63	271.03		271.08	0.006435	0.97	1.23	6.42	0.71
7	6649.944	PR 25	1.19	270.25	270.64	270.61	270.70	0.009158	1.08	1.10	6.34	0.83
7	6599.932	PR 25	1.19	269.88	270.29		270.33	0.005841	0.94	1.27	6.44	0.68
7	6550	PR 25	1.19	269.50	269.88	269.86	269.94	0.010527	1.13	1.05	6.31	0.89
7	6501	PR 25	1.19	269.13	269.55	269.49	269.59	0.004945	0.89	1.33	6.49	0.63
7	6500.5		Inl Struct									
7	6500	PR 25	1.19	267.92	268.59		268.60	0.000378	0.39	3.07	7.48	0.19
7	6498.46	PR 25	1.19	267.92	268.58	268.29	268.58	0.000434	0.41	2.93	7.41	0.21
7	6498		Inl Struct									
7	6497.46	PR 25	1.19	268.12	268.52		268.57	0.007429	1.01	1.17	6.39	0.76
7	6456.411	PR 25	1.19	267.80	268.19		268.25	0.007544	1.02	1.17	6.38	0.76
7	6443.411	PR 25	1.19	267.70	268.10		268.15	0.007351	1.01	1.18	6.39	0.75
7	6400.125	PR 25	1.19	267.38	267.77		267.82	0.007677	1.02	1.16	6.38	0.77
7	6349.912	PR 25	1.19	267.00	267.40		267.45	0.007320	1.01	1.18	6.39	0.75
7	6299.934	PR 25	1.19	266.63	267.02		267.07	0.007765	1.03	1.16	6.38	0.77
7	6249.994	PR 25	1.19	266.25	266.65		266.70	0.007244	1.01	1.18	6.39	0.75
7	6200.038	PR 25	1.19	265.88	266.27		266.32	0.007868	1.03	1.15	6.37	0.78
7	6150.094	PR 25	1.19	265.50	265.90	265.87	265.95	0.007064	1.00	1.19	6.40	0.74
7	6099.895	PR 25	1.19	265.13	265.52	265.49	265.57	0.008137	1.04	1.14	6.37	0.79
7	6050.062	PR 25	1.19	264.75	265.15	265.12	265.20	0.006801	0.99	1.21	6.41	0.73
7	5999.953	PR 25	1.19	264.38	264.77	264.74	264.82	0.008453	1.06	1.13	6.36	0.80
7	5949.744	PR 25	1.19	264.00	264.41	264.37	264.46	0.006395	0.97	1.23	6.42	0.71
7	5899.857	PR 25	1.19	263.63	264.01	263.99	264.07	0.009149	1.08	1.10	6.34	0.83
7	5849.411	PR 25	1.19	263.25	263.66		263.71	0.005805	0.94	1.27	6.45	0.68
7	5799.777	PR 25	1.19	262.88	263.26	263.24	263.32	0.010604	1.13	1.05	6.31	0.89
7	5749.972	PR 25	1.19	262.51	262.93	262.87	262.97	0.004844	0.89	1.34	6.49	0.62
7	5700.026	PR 25	1.19	262.13	262.49	262.49	262.57	0.014638	1.26	0.95	6.24	1.03
7	5649.980	PR 25	1.19	261.76	262.21	262.12	262.24	0.003318	0.79	1.52	6.60	0.52
7	5625.202	PR 25	1.19	261.57	262.19	261.93	262.20	0.000549	0.44	2.71	7.29	0.23
7	5617		Culvert									
7	5609.202	PR 25	1.19	261.45	261.85		261.90	0.006704	0.98	1.21	6.41	0.72
7	5599.977	PR 25	1.19	261.38	261.76	261.74	261.82	0.010506	1.13	1.05	6.31	0.88
7	5550.949	PR 25	1.19	261.01	261.43	261.37	261.47	0.004955	0.89	1.33	6.49	0.63
7	5550		Inl Struct									
7	5549.949	PR 25	1.19	259.30	259.99	259.67	260.00	0.000326	0.37	3.22	7.56	0.18
7	5548.239	PR 25	1.19	259.30	259.97	259.67	259.98	0.000371	0.39	3.09	7.49	0.19
7	5548		Inl Struct									
7	5547.239	PR 25	1.19	259.50	259.94	259.87	259.98	0.003774	0.82	1.45	6.56	0.55
7	5499.974	PR 25	1.19	259.33	259.82		259.84	0.001937	0.66	1.80	6.77	0.41
6	5200	PR 25	2.56	258.28	258.95	258.77	258.99	0.003497	0.88	2.92	7.50	0.45
6	5149.993	PR 25	2.56	258.10	258.78	258.60	258.81	0.003504	0.88	2.92	7.50	0.45
6	5100.103	PR 25	2.56	257.93	258.60		258.64	0.003418	0.87	2.94	7.51	0.44
6	5051.488	PR 25	2.56	257.75	258.35	258.25	258.41	0.006593	1.08	2.37	7.20	0.60
6	5051		Inl Struct									
6	5050.488	PR 25	2.56	256.49	257.49		257.50	0.000514	0.46	5.55	8.79	0.19
6	5048.258	PR 25	2.56	256.49	257.46	256.99	257.47	0.000589	0.48	5.30	8.68	0.20
6	5048		Inl Struct									
6	5047.258	PR 25	2.56	256.75	257.43		257.46	0.003504	0.88	2.92	7.50	0.45
6	4999.911	PR 25	2.56	256.57	257.25	257.07	257.29	0.003495	0.88	2.92	7.50	0.45

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 25 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
6	4980.205	PR 25	2.56	256.50	257.18	257.00	257.22	0.003495	0.88	2.92	7.50	0.45
6	4967.705	PR 25	2.56	256.46	257.14	256.96	257.18	0.003474	0.88	2.92	7.50	0.45
6	4950.020	PR 25	2.56	256.40	257.07	256.90	257.11	0.003498	0.88	2.92	7.50	0.45
6	4900	PR 25	2.56	256.22	256.90	256.72	256.94	0.003504	0.88	2.92	7.50	0.45
6	4850.050	PR 25	2.56	256.05	256.72		256.76	0.003498	0.88	2.92	7.50	0.45
6	4800	PR 25	2.56	255.87	256.55		256.59	0.003500	0.88	2.92	7.50	0.45
6	4749.968	PR 25	2.56	255.70	256.37		256.41	0.003501	0.88	2.92	7.50	0.45
6	4700.024	PR 25	2.56	255.52	256.20	256.02	256.24	0.003508	0.88	2.91	7.50	0.45
6	4650	PR 25	2.56	255.35	256.02		256.06	0.003477	0.88	2.92	7.50	0.45
6	4600.011	PR 25	2.56	255.17	255.85	255.67	255.89	0.003413	0.87	2.94	7.51	0.44
6	4551.102	PR 25	2.56	255.00	255.60	255.49	255.66	0.006591	1.08	2.37	7.20	0.60
6	4551		Inl Struct									
6	4550.102	PR 25	2.56	253.74	254.74		254.75	0.000518	0.46	5.54	8.79	0.19
6	4547.872	PR 25	2.56	253.74	254.71	254.24	254.72	0.000594	0.48	5.29	8.67	0.20
6	4547		Inl Struct									
6	4546.872	PR 25	2.56	254.00	254.67		254.71	0.003519	0.88	2.91	7.50	0.45
6	4500.008	PR 25	2.56	253.82	254.50		254.54	0.003497	0.88	2.92	7.50	0.45
6	4450.025	PR 25	2.56	253.65	254.32	254.15	254.36	0.003509	0.88	2.91	7.50	0.45
6	4400.093	PR 25	2.56	253.47	254.15	253.97	254.19	0.003490	0.88	2.92	7.50	0.45
6	4391.323	PR 25	2.56	253.44	254.12	253.94	254.16	0.003508	0.88	2.91	7.50	0.45
6	4376.823	PR 25	2.56	253.39	254.07	253.89	254.11	0.003507	0.88	2.92	7.50	0.45
6	4350.070	PR 25	2.56	253.30	253.97	253.80	254.01	0.003489	0.88	2.92	7.50	0.45
6	4299.969	PR 25	2.56	253.12	253.80		253.84	0.003411	0.87	2.94	7.51	0.44
6	4250.829	PR 25	2.56	252.95	253.55	253.44	253.61	0.006596	1.08	2.37	7.20	0.60
6	4250		Inl Struct									
6	4249.829	PR 25	2.56	251.69	253.02		253.03	0.000071	0.20	12.91	16.79	0.07
6	4247.599	PR 25	2.56	251.69	253.02	252.31	253.02	0.000072	0.20	12.88	16.78	0.07
6	4247		Inl Struct									
6	4246.599	PR 25	2.56	251.95	253.02		253.02	0.000254	0.30	8.57	15.72	0.13
6	4222.011	PR 25	2.56	251.89	253.01		253.01	0.000193	0.27	9.37	15.92	0.11
5	4149.871	PR 25	9.08	251.75	252.90	252.58	252.95	0.002008	0.91	9.95	16.07	0.37
5	4100.026	PR 25	9.08	251.65	252.80		252.85	0.002024	0.91	9.93	16.06	0.37
5	4050.072	PR 25	9.08	251.55	252.70		252.74	0.002042	0.92	9.90	16.05	0.37
5	3999.964	PR 25	9.08	251.45	252.60		252.64	0.002080	0.92	9.84	16.04	0.38
5	3949.996	PR 25	9.08	251.35	252.49		252.54	0.002152	0.93	9.73	16.01	0.38
5	3900.187	PR 25	9.08	251.25	252.38		252.42	0.002293	0.95	9.54	15.96	0.39
5	3849.929	PR 25	9.08	251.15	252.25		252.30	0.002697	1.00	9.05	15.84	0.42
5	3801.079	PR 25	9.08	251.05	252.03	251.88	252.11	0.005667	1.27	7.15	15.35	0.59
5	3800.5		Inl Struct									
5	3800.079	PR 25	9.08	249.28	250.77		250.79	0.000506	0.58	15.58	17.41	0.20
5	3796.999	PR 25	9.08	249.28	250.74	250.11	250.76	0.000557	0.60	15.10	17.30	0.21
5	3796.5		Inl Struct									
5	3795.999	PR 25	9.08	249.55	250.70		250.75	0.002003	0.91	9.96	16.07	0.37
5	3749.973	PR 25	9.08	249.45	250.60		250.65	0.002009	0.91	9.95	16.07	0.37
5	3699.979	PR 25	9.08	249.35	250.50		250.55	0.002016	0.91	9.94	16.06	0.37
5	3649.995	PR 25	9.08	249.25	250.40		250.44	0.002028	0.92	9.92	16.06	0.37
5	3599.996	PR 25	9.08	249.15	250.30		250.34	0.002049	0.92	9.89	16.05	0.37
5	3550.059	PR 25	9.08	249.05	250.20		250.24	0.002086	0.92	9.83	16.04	0.38
5	3500.074	PR 25	9.08	248.95	250.09		250.13	0.002164	0.93	9.72	16.01	0.38
5	3450.041	PR 25	9.08	248.85	249.97		250.02	0.002332	0.96	9.49	15.95	0.40
5	3400	PR 25	9.08	248.75	249.84		249.89	0.002790	1.01	8.96	15.82	0.43
5	3391.238	PR 25	9.08	248.73	249.81	249.56	249.87	0.002930	1.03	8.82	15.78	0.44
5	3376.738	PR 25	9.08	248.70	249.76	249.53	249.82	0.003298	1.07	8.49	15.70	0.46
5	3350.993	PR 25	9.08	248.65	249.62	249.48	249.71	0.005716	1.27	7.13	15.35	0.60
5	3350		Inl Struct									
5	3349.993	PR 25	9.08	247.38	248.87		248.88	0.000513	0.59	15.51	17.39	0.20
5	3347.283	PR 25	9.08	247.38	248.84	248.21	248.86	0.000566	0.60	15.02	17.28	0.21
5	3347.2		Inl Struct									
5	3347.113	PR 25	9.08	247.65	248.80		248.84	0.002047	0.92	9.89	16.05	0.37
5	3300.070	PR 25	9.08	247.55	248.70		248.74	0.002079	0.92	9.84	16.04	0.38
5	3250.143	PR 25	9.08	247.45	248.59		248.63	0.002147	0.93	9.74	16.01	0.38
5	3200.000	PR 25	9.08	247.35	248.48		248.52	0.002300	0.95	9.53	15.96	0.39
5	3150.025	PR 25	9.08	247.25	248.35		248.40	0.002696	1.00	9.06	15.84	0.42
5	3101.110	PR 25	9.08	247.15	248.12	247.98	248.21	0.005668	1.27	7.15	15.35	0.59
5	3100.5		Inl Struct									
5	3100.110	PR 25	9.08	244.88	246.81		246.82	0.000145	0.38	23.65	19.18	0.11
5	3097.03	PR 25	9.08	244.88	246.79	245.71	246.80	0.000153	0.39	23.22	19.08	0.11
5	3096.5		Inl Struct									
5	3096.03	PR 25	9.08	245.15	246.78		246.79	0.000326	0.50	18.01	17.96	0.16
5	3049.982	PR 25	9.08	245.10	246.73	245.93	246.74	0.000326	0.50	18.03	17.96	0.16
4	2928.433	PR 25	19.55	244.98	246.57	246.04	246.63	0.001702	1.13	17.32	17.81	0.37
4	2891.135	PR 25	19.55	244.94	246.50		246.57	0.001903	1.17	16.70	17.66	0.38

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 25 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
3	2800.001	PR 25	22.12	244.85	246.33	245.88	246.39	0.001874	1.11	20.01	23.08	0.38
3	2750.009	PR 25	22.12	244.80	246.21	245.84	246.28	0.002414	1.20	18.45	22.81	0.43
3	2700.970	PR 25	22.12	244.75	246.00	245.78	246.12	0.004676	1.48	14.95	22.19	0.58
3	2700		Inl Struct									
3	2699.970	PR 25	22.12	243.01	245.02		245.04	0.000412	0.68	32.75	25.19	0.19
3	2695.96	PR 25	22.12	243.01	244.99	244.04	245.02	0.000434	0.69	32.19	25.10	0.19
3	2695		Inl Struct									
3	2694.96	PR 25	22.12	243.25	244.97		245.00	0.000875	0.86	25.60	24.03	0.27
3	2650.083	PR 25	22.12	243.20	244.92		244.96	0.000857	0.86	25.77	24.06	0.26
3	2625.618	PR 25	22.12	243.17	244.90	244.21	244.94	0.000848	0.86	25.85	24.07	0.26
3	2616		Culvert									
3	2606.618	PR 25	22.12	243.16	244.68		244.74	0.001588	1.05	21.10	23.27	0.35
3	2600.016	PR 25	22.12	243.15	244.67		244.73	0.001611	1.05	21.01	23.25	0.35
3	2549.999	PR 25	22.12	243.10	244.58	244.14	244.64	0.001876	1.11	20.01	23.08	0.38
3	2500.027	PR 25	22.12	243.05	244.46	244.09	244.53	0.002417	1.20	18.44	22.81	0.43
3	2450.993	PR 25	22.12	243.00	244.25	244.03	244.37	0.004715	1.48	14.91	22.18	0.58
3	2450		Inl Struct									
3	2449.993	PR 25	22.12	240.76	242.78		242.80	0.000402	0.67	33.02	25.24	0.19
3	2445.763	PR 25	22.12	240.76	242.76	241.80	242.78	0.000422	0.68	32.48	25.15	0.19
3	2445		Inl Struct									
3	2444.763	PR 25	22.12	241.00	242.73		242.77	0.000842	0.85	25.92	24.08	0.26
3	2400.000	PR 25	22.12	240.95	242.69		242.72	0.000821	0.85	26.13	24.12	0.26
3	2374.405	PR 25	22.12	240.92	242.67	241.96	242.70	0.000782	0.84	26.21	24.14	0.26
3	2371		Culvert									
3	2367.905	PR 25	22.12	240.92	242.51		242.56	0.001274	0.98	22.66	23.54	0.32
2	2250.002	PR 25	23.56	240.80	242.33	241.84	242.39	0.001625	1.07	21.96	23.79	0.36
2	2199.933	PR 25	23.56	240.75	242.23	241.78	242.30	0.001893	1.13	20.90	23.61	0.38
2	2149.988	PR 25	23.56	240.70	242.12		242.19	0.002440	1.22	19.27	23.33	0.43
2	2100.997	PR 25	23.56	240.65	241.91	241.68	242.02	0.004738	1.51	15.60	22.69	0.58
2	2100		Inl Struct									
2	2099.997	PR 25	23.56	238.88	240.80		240.83	0.000527	0.74	31.65	25.36	0.21
2	2095.857	PR 25	23.56	238.88	240.77	239.91	240.80	0.000566	0.76	30.92	25.25	0.22
2	2095		Inl Struct									
2	2094.857	PR 25	23.56	239.15	240.73		240.79	0.001358	1.01	23.26	24.00	0.33
2	2050.003	PR 25	23.56	239.10	240.66	240.14	240.71	0.001465	1.04	22.70	23.91	0.34
2	1999.991	PR 25	23.56	239.05	240.58		240.64	0.001625	1.07	21.96	23.78	0.36
2	1950.051	PR 25	23.56	239.00	240.48		240.55	0.001891	1.13	20.91	23.61	0.38
2	1900.001	PR 25	23.56	238.95	240.36		240.44	0.002437	1.22	19.28	23.33	0.43
2	1850.989	PR 25	23.56	238.90	240.16	239.93	240.27	0.004713	1.51	15.63	22.70	0.58
2	1850		Inl Struct									
2	1849.989	PR 25	23.56	236.63	238.70		238.72	0.000377	0.67	35.33	25.94	0.18
2	1845.639	PR 25	23.56	236.63	238.68	237.67	238.70	0.000395	0.68	34.80	25.86	0.19
2	1845		Inl Struct									
2	1844.639	PR 25	23.56	236.90	238.64		238.68	0.000839	0.87	27.20	24.65	0.26
2	1799.147	PR 25	23.56	236.85	238.60		238.64	0.000817	0.86	27.43	24.69	0.26
2	1786.347	PR 25	23.56	236.83	238.59	237.87	238.63	0.000811	0.86	27.49	24.70	0.26
2	1750.970	PR 25	23.56	236.80	238.56	237.84	238.60	0.000795	0.85	27.67	24.73	0.26
2	1749.970	PR 25	23.56	236.80	238.42		238.47	0.001196	0.97	24.24	24.17	0.31
1	1617.094	PR 25	24.86	236.66	238.27	237.70	238.31	0.001196	0.95	26.09	26.91	0.31
1	1613		Culvert									
1	1610.082	PR 25	24.86	236.66	238.14		238.20	0.001793	1.08	22.93	26.43	0.37
1	1599.992	PR 25	24.86	236.65	238.12		238.18	0.001861	1.10	22.66	26.39	0.38
1	1549.973	PR 25	24.86	236.60	238.00	237.64	238.07	0.002404	1.19	20.89	26.12	0.42
1	1500.993	PR 25	24.86	236.55	237.80	237.58	237.91	0.004758	1.48	16.84	25.49	0.58
1	1500		Inl Struct									
1	1499.993	PR 25	24.86	234.82	236.66		236.69	0.000587	0.76	32.81	27.89	0.22
1	1496.023	PR 25	24.86	234.82	236.63	235.86	236.66	0.000640	0.78	31.90	27.76	0.23
1	1496		Inl Struct									
1	1495.023	PR 25	24.86	235.05	236.59		236.64	0.001443	1.01	24.57	26.68	0.34
1	1450.005	PR 25	24.86	235.00	236.51		236.57	0.001599	1.05	23.78	26.56	0.35
1	1400.000	PR 25	24.86	234.95	236.42		236.48	0.001861	1.10	22.66	26.39	0.38
1	1350.023	PR 25	24.86	234.90	236.30		236.37	0.002401	1.19	20.90	26.12	0.42
1	1300.988	PR 25	24.86	234.85	236.10	235.88	236.21	0.004757	1.48	16.84	25.49	0.58
1	1300		Inl Struct									
1	1299.988	PR 25	24.86	232.62	234.59		234.61	0.000427	0.68	36.39	28.40	0.19
1	1295.808	PR 25	24.86	232.62	234.57	233.65	234.59	0.000451	0.70	35.74	28.31	0.20
1	1295		Inl Struct									
1	1294.808	PR 25	24.86	232.85	234.54		234.58	0.000896	0.87	28.62	27.28	0.27
1	1250.057	PR 25	24.86	232.80	234.50		234.54	0.000881	0.86	28.78	27.30	0.27
1	1199.996	PR 25	24.86	232.75	234.45		234.49	0.000863	0.86	28.97	27.33	0.27
1	1197.701	PR 25	24.86	232.75	234.45	233.78	234.49	0.000827	0.86	28.76	27.33	0.26
1	1193		Culvert									

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 25 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	1190.101	PR 25	24.86	232.74	234.37		234.41	0.001089	0.92	26.89	27.02	0.30
1	1149.992	PR 25	24.86	232.70	234.32		234.37	0.001104	0.93	26.76	27.01	0.30
1	1099.930	PR 25	24.86	232.65	234.27		234.31	0.001127	0.93	26.59	26.98	0.30
1	1049.997	PR 25	24.86	232.60	234.21		234.25	0.001156	0.94	26.38	26.95	0.30
1	999.9964	PR 25	24.86	232.55	234.12		234.17	0.002670	0.98	25.35	26.80	0.32
1	949.9938	PR 25	24.86	232.50	234.01		234.07	0.001600	1.05	23.78	26.56	0.35
1	899.9420	PR 25	24.86	232.45	233.92		233.98	0.001863	1.10	22.65	26.39	0.38
1	850.0487	PR 25	24.86	232.40	233.80		233.87	0.002403	1.19	20.89	26.12	0.42
1	800.9962	PR 25	24.86	232.35	233.59	233.38	233.71	0.004781	1.48	16.81	25.49	0.58
1	800		Inl Struct									
1	799.9962	PR 25	24.86	231.12	232.97		232.99	0.000585	0.76	32.85	27.89	0.22
1	796.2462	PR 25	24.86	231.12	232.93	232.15	232.96	0.000637	0.78	31.95	27.76	0.23
1	796		Inl Struct									
1	795.2462	PR 25	24.86	231.35	232.89		232.94	0.001443	1.01	24.57	26.68	0.34
1	749.9177	PR 25	24.86	231.30	232.81		232.87	0.001600	1.05	23.78	26.56	0.35
1	708.5295	PR 25	24.86	231.26	232.74	232.29	232.80	0.001807	1.09	22.87	26.42	0.37
1	696		Bridge									
1	684.0295	PR 25	24.86	231.23	232.69	232.27	232.75	0.001983	1.12	22.20	26.32	0.39
1	583.4926	PR 25	24.86	231.13	232.46		232.52	0.002531	1.17	21.83	33.34	0.43
1	550.0947	PR 25	24.86	231.10	232.15	232.15	232.35	0.013127	2.00	12.85	31.65	0.92
1	499.9494	PR 25	24.86	231.00	231.92	231.75	232.03	0.003312	1.44	17.30	34.30	0.65
1	449.9817	PR 25	24.86	231.00	231.53	231.53	231.70	0.017517	1.83	13.76	41.75	1.01
1	400.1501	PR 25	24.86	230.00	231.22	230.80	231.27	0.001949	1.00	24.75	34.58	0.38
1	350.0004	PR 25	24.86	230.00	231.11		231.16	0.002562	0.99	25.17	44.52	0.42
1	300.0035	PR 25	24.86	230.00	230.70	230.70	230.88	0.016923	1.87	13.33	37.44	1.00
1	249.9741	PR 25	24.86	229.00	230.17	229.98	230.24	0.004440	1.19	20.83	41.53	0.54
1	200.0032	PR 25	24.86	229.00	229.98	229.71	230.05	0.003433	1.18	21.09	35.53	0.49
1	149.9965	PR 25	24.86	229.00	229.55	229.55	229.71	0.017882	1.75	14.20	45.47	1.00
1	99.97778	PR 25	24.86	228.17	228.91	228.80	229.02	0.008287	1.50	16.63	38.10	0.72
1	59.20385	PR 25	24.86	228.00	228.68		228.75	0.004906	1.17	21.25	47.43	0.56

TABLA DE RESULTADOS PR100

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 100

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	PR 100	1.71	275.73	276.18	276.13	276.24	0.006668	1.12	1.53	6.61	0.74
7	7600.010	PR 100	1.71	275.35	275.78	275.76	275.86	0.008661	1.22	1.41	6.53	0.84
7	7550.077	PR 100	1.71	274.98	275.44		275.50	0.006089	1.09	1.57	6.63	0.71
7	7500.056	PR 100	1.71	274.60	275.02	275.01	275.11	0.010007	1.27	1.34	6.49	0.89
7	7450.075	PR 100	1.71	274.23	274.70	274.63	274.75	0.005094	1.03	1.67	6.69	0.66
7	7400.119	PR 100	1.71	273.85	274.26	274.26	274.36	0.013482	1.40	1.22	6.42	1.02
7	7300.129	PR 100	1.71	273.10	273.62	273.51	273.66	0.002998	0.87	1.98	6.87	0.51
7	7249.989	PR 100	1.71	272.95	273.47		273.51	0.003006	0.87	1.97	6.87	0.52
7	7200.077	PR 100	1.71	272.80	273.32		273.36	0.003011	0.87	1.97	6.87	0.52
7	7149.979	PR 100	1.71	272.65	273.17		273.21	0.003012	0.87	1.97	6.87	0.52
7	7099.997	PR 100	1.71	272.50	273.02		273.06	0.002992	0.86	1.98	6.87	0.51
7	7087.390	PR 100	1.71	272.46	272.98		273.02	0.002974	0.86	1.98	6.87	0.51
7	7073.890	PR 100	1.71	272.42	272.94		272.98	0.002988	0.86	1.98	6.87	0.51
7	7050.093	PR 100	1.71	272.35	272.87		272.91	0.003002	0.87	1.98	6.87	0.52
7	6999.710	PR 100	1.71	272.20	272.73		272.76	0.002795	0.85	2.02	6.90	0.50
7	6949.910	PR 100	1.71	272.05	272.62		272.65	0.001775	0.73	2.34	7.08	0.40
7	6900.010	PR 100	1.71	271.90	272.57	272.31	272.59	0.000766	0.55	3.09	7.49	0.28
7	6884.171	PR 100	1.71	271.86	272.57	272.26	272.58	0.000585	0.51	3.38	7.64	0.24
7	6878		Culvert									
7	6872.171	PR 100	1.71	271.86	272.34	272.26	272.39	0.004223	0.97	1.77	6.75	0.60
7	6850.006	PR 100	1.71	271.75	272.19	272.16	272.26	0.008015	1.19	1.44	6.55	0.81
7	6800.056	PR 100	1.71	271.38	271.83	271.78	271.89	0.006836	1.13	1.52	6.60	0.75
7	6749.770	PR 100	1.71	271.00	271.43	271.40	271.51	0.008402	1.20	1.42	6.54	0.82
7	6699.958	PR 100	1.71	270.63	271.08		271.14	0.006335	1.10	1.55	6.62	0.73
7	6649.944	PR 100	1.71	270.25	270.68	270.66	270.76	0.009400	1.25	1.37	6.51	0.87
7	6599.932	PR 100	1.71	269.88	270.34	270.28	270.40	0.005514	1.05	1.62	6.66	0.68
7	6550	PR 100	1.71	269.50	269.92	269.91	270.01	0.011668	1.34	1.28	6.45	0.96
7	6501	PR 100	1.71	269.13	269.61	269.53	269.66	0.004234	0.97	1.77	6.75	0.60
7	6500.5		Inl Struct									
7	6500	PR 100	1.71	267.92	268.66		268.67	0.000502	0.48	3.56	7.74	0.23
7	6498.46	PR 100	1.71	267.92	268.63	268.33	268.65	0.000595	0.51	3.36	7.63	0.24
7	6498		Inl Struct									
7	6497.46	PR 100	1.71	268.12	268.57		268.64	0.007517	1.16	1.47	6.57	0.78
7	6456.411	PR 100	1.71	267.80	268.24		268.31	0.007499	1.16	1.47	6.57	0.78
7	6443.411	PR 100	1.71	267.70	268.14		268.21	0.007328	1.15	1.48	6.58	0.77
7	6400.125	PR 100	1.71	267.38	267.82		267.89	0.007558	1.16	1.47	6.57	0.79
7	6349.912	PR 100	1.71	267.00	267.44		267.51	0.007409	1.16	1.48	6.57	0.78
7	6299.934	PR 100	1.71	266.63	267.07		267.14	0.007621	1.17	1.46	6.57	0.79
7	6249.994	PR 100	1.71	266.25	266.70		266.76	0.007319	1.15	1.48	6.58	0.77
7	6200.038	PR 100	1.71	265.88	266.32		266.39	0.007717	1.17	1.46	6.56	0.79
7	6150.094	PR 100	1.71	265.50	265.95	265.91	266.02	0.007224	1.15	1.49	6.58	0.77
7	6099.895	PR 100	1.71	265.13	265.57	265.54	265.64	0.007887	1.18	1.45	6.56	0.80
7	6050.062	PR 100	1.71	264.75	265.20	265.16	265.27	0.007083	1.14	1.50	6.59	0.76
7	5999.953	PR 100	1.71	264.38	264.82	264.79	264.89	0.008122	1.19	1.44	6.55	0.81
7	5949.744	PR 100	1.71	264.00	264.45	264.41	264.52	0.006697	1.12	1.53	6.60	0.74
7	5899.857	PR 100	1.71	263.63	264.06	264.03	264.14	0.008716	1.22	1.40	6.53	0.84
7	5849.411	PR 100	1.71	263.25	263.71		263.77	0.006050	1.08	1.58	6.63	0.71
7	5799.777	PR 100	1.71	262.88	263.30	263.29	263.38	0.010044	1.27	1.34	6.49	0.89
7	5749.972	PR 100	1.71	262.51	262.98	262.91	263.03	0.005086	1.03	1.67	6.69	0.66
7	5700.026	PR 100	1.71	262.13	262.54	262.54	262.64	0.013520	1.40	1.22	6.42	1.02
7	5649.980	PR 100	1.71	261.76	262.32	262.16	262.34	0.001972	0.76	2.26	7.04	0.42
7	5625.202	PR 100	1.71	261.57	262.31	261.98	262.32	0.000501	0.48	3.56	7.74	0.23
7	5617		Culvert									
7	5609.202	PR 100	1.71	261.45	261.90	261.86	261.97	0.006452	1.11	1.54	6.62	0.73
7	5599.977	PR 100	1.71	261.38	261.80	261.79	261.89	0.011611	1.33	1.28	6.45	0.96
7	5550.949	PR 100	1.71	261.01	261.49	261.42	261.54	0.004263	0.97	1.76	6.75	0.60
7	5550		Inl Struct									
7	5549.949	PR 100	1.71	259.30	260.07	259.71	260.08	0.000404	0.45	3.82	7.87	0.20
7	5548.239	PR 100	1.71	259.30	260.05	259.71	260.06	0.000466	0.47	3.64	7.78	0.22
7	5548		Inl Struct									
7	5547.239	PR 100	1.71	259.50	260.01	259.91	260.05	0.003429	0.90	1.89	6.82	0.55
7	5499.974	PR 100	1.71	259.33	259.90		259.93	0.001759	0.73	2.35	7.09	0.40
6	5200	PR 100	3.66	258.28	259.05	258.84	259.10	0.003518	0.99	3.69	7.90	0.46
6	5149.993	PR 100	3.66	258.10	258.88	258.67	258.93	0.003520	0.99	3.69	7.90	0.46
6	5100.103	PR 100	3.66	257.93	258.70		258.75	0.003598	1.00	3.66	7.89	0.47
6	5051.488	PR 100	3.66	257.75	258.47	258.31	258.53	0.005315	1.14	3.22	7.66	0.56
6	5051		Inl Struct									
6	5050.488	PR 100	3.66	256.49	257.61		257.62	0.000630	0.55	6.62	9.27	0.21
6	5048.258	PR 100	3.66	256.49	257.57	257.05	257.59	0.000731	0.58	6.29	9.12	0.22
6	5048		Inl Struct									
6	5047.258	PR 100	3.66	256.75	257.53		257.58	0.003502	0.99	3.70	7.91	0.46
6	4999.911	PR 100	3.66	256.57	257.35	257.14	257.40	0.003495	0.99	3.70	7.91	0.46

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 100 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
6	4980.205	PR 100	3.66	256.50	257.28	257.07	257.33	0.003494	0.99	3.70	7.91	0.46
6	4967.705	PR 100	3.66	256.46	257.24	257.03	257.29	0.003477	0.99	3.71	7.91	0.46
6	4950.020	PR 100	3.66	256.40	257.18	256.97	257.23	0.003498	0.99	3.70	7.91	0.46
6	4900	PR 100	3.66	256.22	257.00	256.79	257.05	0.003503	0.99	3.70	7.90	0.46
6	4850.050	PR 100	3.66	256.05	256.83		256.88	0.003497	0.99	3.70	7.91	0.46
6	4800	PR 100	3.66	255.87	256.65		256.70	0.003501	0.99	3.70	7.91	0.46
6	4749.968	PR 100	3.66	255.70	256.48		256.53	0.003502	0.99	3.70	7.90	0.46
6	4700.024	PR 100	3.66	255.52	256.30	256.09	256.35	0.003516	0.99	3.69	7.90	0.46
6	4650	PR 100	3.66	255.35	256.13		256.18	0.003492	0.99	3.70	7.91	0.46
6	4600.011	PR 100	3.66	255.17	255.95	255.74	256.00	0.003580	1.00	3.67	7.89	0.47
6	4551.102	PR 100	3.66	255.00	255.70	255.56	255.77	0.005956	1.18	3.10	7.60	0.59
6	4551		Inl Struct									
6	4550.102	PR 100	3.66	253.74	254.85		254.87	0.000634	0.55	6.60	9.26	0.21
6	4547.872	PR 100	3.66	253.74	254.82	254.30	254.84	0.000737	0.58	6.27	9.12	0.22
6	4547		Inl Struct									
6	4546.872	PR 100	3.66	254.00	254.78		254.83	0.003516	0.99	3.69	7.90	0.46
6	4500.008	PR 100	3.66	253.82	254.60		254.65	0.003499	0.99	3.70	7.91	0.46
6	4450.025	PR 100	3.66	253.65	254.43	254.22	254.48	0.003505	0.99	3.70	7.90	0.46
6	4400.093	PR 100	3.66	253.47	254.25	254.04	254.30	0.003495	0.99	3.70	7.91	0.46
6	4391.323	PR 100	3.66	253.44	254.22	254.01	254.27	0.003511	0.99	3.69	7.90	0.46
6	4376.823	PR 100	3.66	253.39	254.17	253.96	254.22	0.003511	0.99	3.69	7.90	0.46
6	4350.070	PR 100	3.66	253.30	254.08	253.87	254.13	0.003507	0.99	3.69	7.90	0.46
6	4299.969	PR 100	3.66	253.12	253.90		253.95	0.003595	1.00	3.66	7.89	0.47
6	4250.829	PR 100	3.66	252.95	253.66	253.51	253.73	0.005311	1.14	3.22	7.66	0.56
6	4250		Inl Struct									
6	4249.829	PR 100	3.66	251.69	253.19		253.19	0.000080	0.23	15.75	17.45	0.08
6	4247.599	PR 100	3.66	251.69	253.19	252.36	253.19	0.000080	0.23	15.72	17.44	0.08
6	4247		Inl Struct									
6	4246.599	PR 100	3.66	251.95	253.18		253.19	0.000224	0.33	11.24	16.38	0.13
6	4222.011	PR 100	3.66	251.89	253.18		253.18	0.000179	0.30	12.08	16.59	0.11
5	4149.871	PR 100	12.97	251.75	253.06	252.67	253.11	0.002022	1.04	12.51	16.69	0.38
5	4100.026	PR 100	12.97	251.65	252.96		253.01	0.002044	1.04	12.46	16.68	0.38
5	4050.072	PR 100	12.97	251.55	252.85		252.91	0.002072	1.05	12.41	16.66	0.39
5	3999.964	PR 100	12.97	251.45	252.75		252.80	0.002125	1.05	12.31	16.64	0.39
5	3949.996	PR 100	12.97	251.35	252.64		252.70	0.002217	1.07	12.14	16.60	0.40
5	3900.187	PR 100	12.97	251.25	252.52		252.58	0.002392	1.10	11.84	16.53	0.41
5	3849.929	PR 100	12.97	251.15	252.38		252.45	0.002833	1.16	11.21	16.38	0.45
5	3801.079	PR 100	12.97	251.05	252.16	251.97	252.26	0.005137	1.40	9.26	15.89	0.59
5	3800.5		Inl Struct									
5	3800.079	PR 100	12.97	249.28	250.94		250.97	0.000603	0.70	18.62	18.09	0.22
5	3796.999	PR 100	12.97	249.28	250.91	250.20	250.93	0.000666	0.72	18.01	17.96	0.23
5	3796.5		Inl Struct									
5	3795.999	PR 100	12.97	249.55	250.86		250.92	0.002009	1.03	12.53	16.70	0.38
5	3749.973	PR 100	12.97	249.45	250.76		250.81	0.002017	1.04	12.52	16.69	0.38
5	3699.979	PR 100	12.97	249.35	250.66		250.71	0.002029	1.04	12.49	16.69	0.38
5	3649.995	PR 100	12.97	249.25	250.56		250.61	0.002047	1.04	12.46	16.68	0.38
5	3599.996	PR 100	12.97	249.15	250.45		250.51	0.002078	1.05	12.40	16.66	0.39
5	3550.059	PR 100	12.97	249.05	250.35		250.40	0.002129	1.05	12.30	16.64	0.39
5	3500.074	PR 100	12.97	248.95	250.24		250.29	0.002225	1.07	12.12	16.60	0.40
5	3450.041	PR 100	12.97	248.85	250.12		250.18	0.002420	1.10	11.80	16.52	0.42
5	3400	PR 100	12.97	248.75	249.98		250.05	0.002892	1.16	11.14	16.36	0.45
5	3391.238	PR 100	12.97	248.73	249.95	249.66	250.02	0.003028	1.18	10.97	16.32	0.46
5	3376.738	PR 100	12.97	248.70	249.90	249.63	249.97	0.003378	1.22	10.59	16.22	0.48
5	3350.993	PR 100	12.97	248.65	249.76	249.57	249.86	0.005137	1.40	9.26	15.89	0.59
5	3350		Inl Struct									
5	3349.993	PR 100	12.97	247.38	249.03		249.06	0.000622	0.70	18.43	18.05	0.22
5	3347.283	PR 100	12.97	247.38	249.00	248.30	249.02	0.000690	0.73	17.81	17.92	0.23
5	3347.2		Inl Struct									
5	3347.113	PR 100	12.97	247.65	248.95		249.01	0.002076	1.05	12.40	16.66	0.39
5	3300.070	PR 100	12.97	247.55	248.85		248.90	0.002124	1.05	12.31	16.64	0.39
5	3250.143	PR 100	12.97	247.45	248.74		248.80	0.002213	1.07	12.15	16.60	0.40
5	3200.000	PR 100	12.97	247.35	248.62		248.68	0.002399	1.10	11.83	16.53	0.41
5	3150.025	PR 100	12.97	247.25	248.48		248.55	0.002834	1.16	11.21	16.37	0.45
5	3101.110	PR 100	12.97	247.15	248.26	248.07	248.36	0.005168	1.40	9.24	15.89	0.59
5	3100.5		Inl Struct									
5	3100.110	PR 100	12.97	244.88	247.06		247.07	0.000168	0.45	28.61	20.18	0.12
5	3097.03	PR 100	12.97	244.88	247.04	245.80	247.05	0.000178	0.46	28.08	20.08	0.12
5	3096.5		Inl Struct									
5	3096.03	PR 100	12.97	245.15	247.03		247.04	0.000338	0.57	22.60	18.96	0.17
5	3049.982	PR 100	12.97	245.10	246.98	246.03	246.99	0.000338	0.57	22.58	18.95	0.17
4	2928.433	PR 100	27.92	244.98	246.79	246.19	246.87	0.001859	1.31	21.33	18.68	0.39
4	2891.135	PR 100	27.92	244.94	246.71		246.80	0.002091	1.36	20.51	18.51	0.41

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 100 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
3	2800.001	PR 100	31.60	244.85	246.53	246.02	246.61	0.001993	1.28	24.70	23.88	0.40
3	2750.009	PR 100	31.60	244.80	246.40	245.97	246.50	0.002527	1.38	22.87	23.57	0.45
3	2700.970	PR 100	31.60	244.75	246.19	245.91	246.33	0.004342	1.64	19.21	22.94	0.57
3	2700		Inl Struct									
3	2699.970	PR 100	31.60	243.01	245.31		245.34	0.000450	0.78	40.29	26.36	0.20
3	2695.96	PR 100	31.60	243.01	245.28	244.17	245.32	0.000472	0.80	39.66	26.27	0.21
3	2695		Inl Struct									
3	2694.96	PR 100	31.60	243.25	245.25		245.30	0.000853	0.97	32.59	25.17	0.27
3	2650.083	PR 100	31.60	243.20	245.21		245.26	0.000837	0.96	32.80	25.20	0.27
3	2625.618	PR 100	31.60	243.17	245.19	244.34	245.23	0.000829	0.96	32.89	25.21	0.27
3	2616		Culvert									
3	2606.618	PR 100	31.60	243.16	244.89		244.97	0.001695	1.21	26.03	24.10	0.37
3	2600.016	PR 100	31.60	243.15	244.88		244.95	0.001719	1.22	25.91	24.08	0.38
3	2549.999	PR 100	31.60	243.10	244.78	244.27	244.86	0.001995	1.28	24.69	23.88	0.40
3	2500.027	PR 100	31.60	243.05	244.65	244.22	244.75	0.002532	1.38	22.85	23.57	0.45
3	2450.993	PR 100	31.60	243.00	244.44	244.17	244.58	0.004376	1.65	19.17	22.94	0.58
3	2450		Inl Struct									
3	2449.993	PR 100	31.60	240.76	243.08		243.11	0.000433	0.77	40.80	26.44	0.20
3	2445.763	PR 100	31.60	240.76	243.05	241.93	243.09	0.000453	0.79	40.18	26.35	0.20
3	2445		Inl Struct									
3	2444.763	PR 100	31.60	241.00	243.02		243.07	0.000809	0.95	33.16	25.26	0.27
3	2400.000	PR 100	31.60	240.95	242.98		243.03	0.000790	0.95	33.43	25.30	0.26
3	2374.405	PR 100	31.60	240.92	242.96	242.09	243.01	0.000730	0.95	33.15	25.32	0.26
3	2371		Culvert									
3	2367.905	PR 100	31.60	240.92	242.74		242.80	0.001341	1.12	28.10	24.44	0.33
2	2250.002	PR 100	33.66	240.80	242.54	241.97	242.62	0.001731	1.24	27.09	24.63	0.38
2	2199.933	PR 100	33.66	240.75	242.44	241.92	242.53	0.002009	1.30	25.82	24.43	0.40
2	2149.988	PR 100	33.66	240.70	242.31		242.41	0.002543	1.41	23.92	24.11	0.45
2	2100.997	PR 100	33.66	240.65	242.10	241.82	242.25	0.004335	1.67	20.15	23.48	0.58
2	2100		Inl Struct									
2	2099.997	PR 100	33.66	238.88	241.04		241.08	0.000625	0.89	37.86	26.32	0.24
2	2095.857	PR 100	33.66	238.88	241.01	240.05	241.05	0.000672	0.91	36.95	26.19	0.24
2	2095		Inl Struct									
2	2094.857	PR 100	33.66	239.15	240.96		241.03	0.001443	1.17	28.75	24.90	0.35
2	2050.003	PR 100	33.66	239.10	240.88	240.27	240.95	0.001560	1.20	28.03	24.78	0.36
2	1999.991	PR 100	33.66	239.05	240.79		240.87	0.001732	1.24	27.09	24.63	0.38
2	1950.051	PR 100	33.66	239.00	240.69		240.78	0.002007	1.30	25.82	24.43	0.40
2	1900.001	PR 100	33.66	238.95	240.56		240.66	0.002543	1.41	23.92	24.11	0.45
2	1850.989	PR 100	33.66	238.90	240.35	240.07	240.49	0.004338	1.67	20.14	23.48	0.58
2	1850		Inl Struct									
2	1849.989	PR 100	33.66	236.63	238.96		238.99	0.000446	0.79	42.36	27.00	0.20
2	1845.639	PR 100	33.66	236.63	238.94	237.80	238.97	0.000467	0.81	41.70	26.90	0.21
2	1845		Inl Struct									
2	1844.639	PR 100	33.66	236.90	238.90		238.95	0.000892	1.00	33.66	25.68	0.28
2	1799.147	PR 100	33.66	236.85	238.86		238.91	0.000879	1.00	33.82	25.70	0.28
2	1786.347	PR 100	33.66	236.83	238.85	238.01	238.90	0.000876	0.99	33.86	25.71	0.28
2	1750.970	PR 100	33.66	236.80	238.81	237.97	238.86	0.000866	0.99	33.99	25.73	0.28
2	1749.970	PR 100	33.66	236.80	238.66		238.73	0.001251	1.12	30.13	25.12	0.33
1	1617.094	PR 100	35.52	236.66	238.50	237.83	238.56	0.001211	1.09	32.51	27.85	0.32
1	1613		Culvert									
1	1610.082	PR 100	35.52	236.66	238.34		238.42	0.001910	1.26	28.23	27.22	0.39
1	1599.992	PR 100	35.52	236.65	238.32		238.40	0.001980	1.27	27.90	27.17	0.40
1	1549.973	PR 100	35.52	236.60	238.19	237.77	238.29	0.002515	1.37	25.84	26.87	0.45
1	1500.993	PR 100	35.52	236.55	237.98	237.71	238.12	0.004369	1.64	21.67	26.24	0.58
1	1500		Inl Struct									
1	1499.993	PR 100	35.52	234.82	236.89		236.93	0.000695	0.91	39.16	28.78	0.25
1	1496.023	PR 100	35.52	234.82	236.85	235.98	236.89	0.000760	0.93	38.04	28.63	0.26
1	1496		Inl Struct									
1	1495.023	PR 100	35.52	235.05	236.80		236.87	0.001538	1.17	30.27	27.52	0.36
1	1450.005	PR 100	35.52	235.00	236.72		236.79	0.001706	1.21	29.27	27.38	0.37
1	1400.000	PR 100	35.52	234.95	236.62		236.70	0.001979	1.27	27.91	27.18	0.40
1	1350.023	PR 100	35.52	234.90	236.49		236.59	0.002513	1.37	25.85	26.87	0.45
1	1300.988	PR 100	35.52	234.85	236.28	236.01	236.42	0.004368	1.64	21.67	26.24	0.58
1	1300		Inl Struct									
1	1299.988	PR 100	35.52	232.62	234.87		234.90	0.000477	0.80	44.33	29.49	0.21
1	1295.808	PR 100	35.52	232.62	234.84	233.78	234.87	0.000502	0.82	43.57	29.39	0.21
1	1295		Inl Struct									
1	1294.808	PR 100	35.52	232.85	234.80		234.85	0.000910	0.99	35.87	28.32	0.28
1	1250.057	PR 100	35.52	232.80	234.76		234.81	0.000899	0.99	36.01	28.34	0.28
1	1199.996	PR 100	35.52	232.75	234.71		234.76	0.000887	0.98	36.17	28.37	0.28
1	1197.701	PR 100	35.52	232.75	234.71	233.91	234.76	0.000839	1.00	35.47	28.36	0.27
1	1193		Culvert									

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: PR 100 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	1190.101	PR 100	35.52	232.74	234.60		234.66	0.001147	1.07	33.28	27.95	0.31
1	1149.992	PR 100	35.52	232.70	234.55		234.61	0.001169	1.07	33.07	27.93	0.32
1	1099.930	PR 100	35.52	232.65	234.49		234.55	0.001202	1.08	32.78	27.88	0.32
1	1049.997	PR 100	35.52	232.60	234.43		234.49	0.001242	1.10	32.43	27.83	0.32
1	999.9964	PR 100	35.52	232.55	234.33		234.40	0.002869	1.14	31.16	27.65	0.34
1	949.9938	PR 100	35.52	232.50	234.22		234.29	0.001706	1.21	29.27	27.38	0.37
1	899.9420	PR 100	35.52	232.45	234.12		234.20	0.001979	1.27	27.91	27.18	0.40
1	850.0487	PR 100	35.52	232.40	233.99		234.09	0.002511	1.37	25.86	26.87	0.45
1	800.9962	PR 100	35.52	232.35	233.78	233.51	233.92	0.004361	1.64	21.69	26.24	0.58
1	800		Inl Struct									
1	799.9962	PR 100	35.52	231.12	233.18		233.22	0.000706	0.91	38.97	28.76	0.25
1	796.2462	PR 100	35.52	231.12	233.14	232.28	233.19	0.000773	0.94	37.83	28.60	0.26
1	796		Inl Struct									
1	795.2462	PR 100	35.52	231.35	233.09		233.16	0.001591	1.19	29.94	27.47	0.36
1	749.9177	PR 100	35.52	231.30	233.00		233.08	0.001790	1.23	28.82	27.31	0.38
1	708.5295	PR 100	35.52	231.26	232.91	232.42	233.00	0.002056	1.29	27.57	27.13	0.41
1	696		Bridge									
1	684.0295	PR 100	35.52	231.23	232.85	232.40	232.94	0.002286	1.33	26.64	26.99	0.43
1	583.4926	PR 100	35.52	231.13	232.59		232.69	0.002779	1.36	26.53	35.86	0.46
1	550.0947	PR 100	35.52	231.10	232.27	232.26	232.50	0.011567	2.17	16.83	32.04	0.89
1	499.9494	PR 100	35.52	231.00	232.04	231.88	232.18	0.003725	1.65	21.52	37.39	0.69
1	449.9817	PR 100	35.52	231.00	231.62	231.62	231.83	0.016388	2.03	17.77	43.93	1.01
1	400.1501	PR 100	35.52	230.00	231.37	230.94	231.44	0.002281	1.18	30.02	36.88	0.42
1	350.0004	PR 100	35.52	230.00	231.25		231.31	0.002756	1.13	31.53	48.36	0.45
1	300.0035	PR 100	35.52	230.00	230.80	230.80	231.02	0.015892	2.07	17.18	39.45	1.00
1	249.9741	PR 100	35.52	229.00	230.24	230.08	230.35	0.006107	1.50	23.69	42.60	0.64
1	200.0032	PR 100	35.52	229.00	230.07	229.83	230.13	0.002907	1.14	31.17	48.48	0.45
1	149.9965	PR 100	35.52	229.00	229.63	229.63	229.83	0.016962	1.96	18.15	47.32	1.01
1	99.97778	PR 100	35.52	228.17	229.02	228.91	229.16	0.008689	1.68	21.17	42.28	0.76
1	59.20385	PR 100	35.52	228.00	228.81		228.90	0.004496	1.29	27.64	50.19	0.55

TABLA DE RESULTADOS RR

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: RETORNO RIEGOS

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
7	7649.973	RETORNO RIEGOS	0.03	275.73	275.79	275.77	275.80	0.004686	0.38	0.07	1.26	0.50
7	7600.010	RETORNO RIEGOS	0.03	275.35	275.40	275.39	275.41	0.014954	0.55	0.05	1.19	0.85
7	7550.077	RETORNO RIEGOS	0.03	274.98	275.04	275.02	275.05	0.004192	0.36	0.08	1.27	0.47
7	7500.056	RETORNO RIEGOS	0.03	274.60	274.65	274.64	274.66	0.018612	0.59	0.05	1.17	0.93
7	7450.075	RETORNO RIEGOS	0.03	274.23	274.30	274.27	274.30	0.003765	0.35	0.08	1.28	0.45
7	7400.119	RETORNO RIEGOS	0.03	273.85	273.89	273.89	273.91	0.023827	0.64	0.04	1.16	1.05
7	7300.129	RETORNO RIEGOS	0.03	273.10	273.18	273.14	273.18	0.003030	0.33	0.09	1.30	0.41
7	7249.989	RETORNO RIEGOS	0.03	272.95	273.03		273.03	0.002935	0.32	0.09	1.30	0.40
7	7200.077	RETORNO RIEGOS	0.03	272.80	272.88		272.88	0.003051	0.33	0.09	1.30	0.41
7	7149.979	RETORNO RIEGOS	0.03	272.65	272.73		272.73	0.002970	0.32	0.09	1.30	0.40
7	7099.997	RETORNO RIEGOS	0.03	272.50	272.58		272.58	0.003086	0.33	0.09	1.30	0.41
7	7087.390	RETORNO RIEGOS	0.03	272.46	272.54		272.55	0.002874	0.32	0.09	1.30	0.40
7	7073.890	RETORNO RIEGOS	0.03	272.42	272.50		272.51	0.002826	0.32	0.09	1.30	0.39
7	7050.093	RETORNO RIEGOS	0.03	272.35	272.42		272.43	0.003666	0.35	0.08	1.28	0.44
7	6999.710	RETORNO RIEGOS	0.03	272.20	272.28		272.29	0.002293	0.30	0.09	1.32	0.36
7	6949.910	RETORNO RIEGOS	0.03	272.05	272.12		272.12	0.004830	0.38	0.07	1.26	0.50
7	6900.010	RETORNO RIEGOS	0.03	271.90	271.99	271.94	272.00	0.001608	0.27	0.11	1.36	0.30
7	6884.171	RETORNO RIEGOS	0.03	271.86	271.98	271.90	271.98	0.000512	0.18	0.16	1.50	0.18
7	6878		Culvert									
7	6872.171	RETORNO RIEGOS	0.03	271.86	271.93	271.90	271.93	0.003478	0.34	0.08	1.29	0.43
7	6850.006	RETORNO RIEGOS	0.03	271.75	271.81	271.79	271.82	0.008127	0.45	0.06	1.22	0.64
7	6800.056	RETORNO RIEGOS	0.03	271.38	271.44	271.42	271.45	0.006891	0.43	0.07	1.23	0.59
7	6749.770	RETORNO RIEGOS	0.03	271.00	271.06		271.07	0.008295	0.45	0.06	1.22	0.65
7	6699.958	RETORNO RIEGOS	0.03	270.63	270.69		270.70	0.006658	0.42	0.07	1.24	0.58
7	6649.944	RETORNO RIEGOS	0.03	270.25	270.31		270.32	0.008655	0.46	0.06	1.22	0.66
7	6599.932	RETORNO RIEGOS	0.03	269.88	269.94		269.94	0.006459	0.42	0.07	1.24	0.58
7	6550	RETORNO RIEGOS	0.03	269.50	269.56		269.57	0.008961	0.47	0.06	1.22	0.67
7	6501	RETORNO RIEGOS	0.03	269.13	269.19	269.17	269.20	0.006176	0.41	0.07	1.24	0.56
7	6500.5		Inl Struct									
7	6500	RETORNO RIEGOS	0.03	267.92	268.20		268.20	0.000055	0.06	0.43	3.69	0.06
7	6498.46	RETORNO RIEGOS	0.03	267.92	268.19	267.97	268.19	0.000054	0.07	0.43	3.50	0.06
7	6498		Inl Struct									
7	6497.46	RETORNO RIEGOS	0.03	268.12	268.18		268.19	0.008091	0.45	0.06	1.22	0.64
7	6456.411	RETORNO RIEGOS	0.03	267.80	267.86		267.87	0.006795	0.43	0.07	1.24	0.59
7	6443.411	RETORNO RIEGOS	0.03	267.70	267.75		267.77	0.008966	0.47	0.06	1.22	0.67
7	6400.125	RETORNO RIEGOS	0.03	267.38	267.44		267.45	0.006267	0.41	0.07	1.24	0.57
7	6349.912	RETORNO RIEGOS	0.03	267.00	267.05		267.06	0.009459	0.47	0.06	1.21	0.69
7	6299.934	RETORNO RIEGOS	0.03	266.63	266.69		266.69	0.005967	0.41	0.07	1.24	0.55
7	6249.994	RETORNO RIEGOS	0.03	266.25	266.30		266.32	0.009820	0.48	0.06	1.21	0.70
7	6200.038	RETORNO RIEGOS	0.03	265.88	265.94		265.95	0.005785	0.40	0.07	1.25	0.55
7	6150.094	RETORNO RIEGOS	0.03	265.50	265.56	265.54	265.57	0.010337	0.49	0.06	1.21	0.71
7	6099.895	RETORNO RIEGOS	0.03	265.13	265.19	265.17	265.20	0.005511	0.40	0.07	1.25	0.53
7	6050.062	RETORNO RIEGOS	0.03	264.75	264.80	264.79	264.82	0.011202	0.50	0.06	1.20	0.74
7	5999.953	RETORNO RIEGOS	0.03	264.38	264.44	264.42	264.45	0.005165	0.39	0.07	1.26	0.52
7	5949.744	RETORNO RIEGOS	0.03	264.00	264.05	264.04	264.06	0.012386	0.52	0.05	1.20	0.78
7	5899.857	RETORNO RIEGOS	0.03	263.63	263.69		263.70	0.004801	0.38	0.07	1.26	0.50
7	5849.411	RETORNO RIEGOS	0.03	263.25	263.30	263.29	263.31	0.014079	0.54	0.05	1.19	0.82
7	5799.777	RETORNO RIEGOS	0.03	262.88	262.95	262.92	262.95	0.004357	0.37	0.08	1.27	0.48
7	5749.972	RETORNO RIEGOS	0.03	262.51	262.55	262.55	262.57	0.017057	0.57	0.05	1.18	0.90
7	5700.026	RETORNO RIEGOS	0.03	262.13	262.20	262.17	262.21	0.003909	0.36	0.08	1.28	0.46
7	5649.980	RETORNO RIEGOS	0.03	261.76	261.80	261.80	261.82	0.021612	0.62	0.05	1.17	1.00
7	5625.202	RETORNO RIEGOS	0.03	261.57	261.66	261.61	261.66	0.001642	0.27	0.10	1.36	0.31
7	5617		Culvert									
7	5609.202	RETORNO RIEGOS	0.03	261.45	261.51		261.52	0.006944	0.43	0.07	1.23	0.59
7	5599.977	RETORNO RIEGOS	0.03	261.38	261.44	261.42	261.45	0.008880	0.46	0.06	1.22	0.67
7	5550.949	RETORNO RIEGOS	0.03	261.01	261.07	261.05	261.08	0.006287	0.42	0.07	1.24	0.57
7	5550		Inl Struct									
7	5549.949	RETORNO RIEGOS	0.03	259.30	259.58	259.34	259.58	0.000052	0.06	0.47	4.44	0.06
7	5548.239	RETORNO RIEGOS	0.03	259.30	259.58	259.34	259.58	0.000053	0.06	0.46	4.23	0.06
7	5548		Inl Struct									
7	5547.239	RETORNO RIEGOS	0.03	259.50	259.57	259.54	259.58	0.003447	0.34	0.08	1.29	0.43
7	5499.974	RETORNO RIEGOS	0.03	259.33	259.40		259.40	0.003526	0.34	0.08	1.29	0.44
6	5200	RETORNO RIEGOS	0.06	258.28	258.40	258.34	258.41	0.003240	0.35	0.16	1.50	0.35
6	5149.993	RETORNO RIEGOS	0.06	258.10	258.22	258.16	258.22	0.004304	0.39	0.14	1.46	0.40
6	5100.103	RETORNO RIEGOS	0.06	257.93	258.06		258.07	0.002356	0.32	0.17	1.55	0.30
6	5051.488	RETORNO RIEGOS	0.06	257.75	257.84	257.82	257.86	0.009411	0.50	0.11	1.37	0.57
6	5051		Inl Struct									
6	5050.488	RETORNO RIEGOS	0.06	256.49	256.89		256.89	0.000049	0.06	0.97	6.38	0.05
6	5048.258	RETORNO RIEGOS	0.06	256.49	256.88	256.55	256.88	0.000052	0.06	0.96	6.37	0.05
6	5048		Inl Struct									
6	5047.258	RETORNO RIEGOS	0.06	256.75	256.87		256.88	0.003539	0.36	0.15	1.49	0.36
6	4999.911	RETORNO RIEGOS	0.06	256.57	256.70	256.64	256.70	0.003428	0.36	0.15	1.49	0.36
6	4980.205	RETORNO RIEGOS	0.06	256.50	256.63	256.57	256.63	0.003566	0.36	0.15	1.49	0.36
6	4967.705	RETORNO RIEGOS	0.06	256.46	256.58	256.52	256.59	0.003417	0.36	0.15	1.49	0.36
6	4950.020	RETORNO RIEGOS	0.06	256.40	256.52	256.46	256.53	0.003539	0.36	0.15	1.49	0.36
6	4900	RETORNO RIEGOS	0.06	256.22	256.35	256.29	256.35	0.003417	0.36	0.15	1.49	0.36
6	4850.050	RETORNO RIEGOS	0.06	256.05	256.17		256.18	0.003560	0.36	0.15	1.49	0.36

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: RETORNO RIEGOS (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
6	4800	RETORNO RIEGOS	0.06	255.87	256.00		256.00	0.003428	0.36	0.15	1.49	0.36
6	4749.968	RETORNO RIEGOS	0.06	255.70	255.82		255.83	0.003692	0.37	0.15	1.48	0.37
6	4700.024	RETORNO RIEGOS	0.06	255.52	255.65	255.59	255.66	0.003251	0.35	0.16	1.50	0.35
6	4650	RETORNO RIEGOS	0.06	255.35	255.46		255.47	0.004271	0.39	0.14	1.46	0.39
6	4600.011	RETORNO RIEGOS	0.06	255.17	255.31	255.24	255.32	0.002339	0.31	0.18	1.55	0.30
6	4551.102	RETORNO RIEGOS	0.06	255.00	255.09	255.06	255.10	0.009519	0.51	0.11	1.37	0.57
6	4551		Inl Struct									
6	4550.102	RETORNO RIEGOS	0.06	253.74	254.13		254.13	0.000052	0.06	0.96	6.37	0.05
6	4547.872	RETORNO RIEGOS	0.06	253.74	254.13	253.80	254.13	0.000055	0.06	0.94	6.36	0.05
6	4547		Inl Struct									
6	4546.872	RETORNO RIEGOS	0.06	254.00	254.12		254.13	0.003544	0.36	0.15	1.49	0.36
6	4500.008	RETORNO RIEGOS	0.06	253.82	253.95		253.95	0.003446	0.36	0.15	1.49	0.36
6	4450.025	RETORNO RIEGOS	0.06	253.65	253.77	253.71	253.78	0.003535	0.36	0.15	1.49	0.36
6	4400.093	RETORNO RIEGOS	0.06	253.47	253.60	253.54	253.60	0.003444	0.36	0.15	1.49	0.36
6	4391.323	RETORNO RIEGOS	0.06	253.44	253.57	253.51	253.57	0.003466	0.36	0.15	1.49	0.36
6	4376.823	RETORNO RIEGOS	0.06	253.39	253.52	253.46	253.52	0.003391	0.36	0.15	1.49	0.35
6	4350.070	RETORNO RIEGOS	0.06	253.30	253.41	253.36	253.42	0.004281	0.39	0.14	1.46	0.39
6	4299.969	RETORNO RIEGOS	0.06	253.12	253.26		253.27	0.002356	0.32	0.17	1.55	0.30
6	4250.829	RETORNO RIEGOS	0.06	252.95	253.04	253.01	253.05	0.009354	0.50	0.11	1.37	0.57
6	4250		Inl Struct									
6	4249.829	RETORNO RIEGOS	0.06	251.69	252.12		252.12	0.000032	0.07	0.80	2.73	0.04
6	4247.599	RETORNO RIEGOS	0.06	251.69	252.12	251.75	252.12	0.000032	0.07	0.80	2.72	0.04
6	4247		Inl Struct									
6	4246.599	RETORNO RIEGOS	0.06	251.95	252.11		252.11	0.001235	0.25	0.22	1.66	0.22
6	4222.011	RETORNO RIEGOS	0.06	251.89	252.09		252.09	0.000638	0.20	0.27	1.79	0.16
5	4149.871	RETORNO RIEGOS	0.14	251.75	251.98	251.86	251.99	0.002003	0.39	0.35	1.95	0.30
5	4100.026	RETORNO RIEGOS	0.14	251.65	251.89		251.89	0.001992	0.39	0.35	1.95	0.29
5	4050.072	RETORNO RIEGOS	0.14	251.55	251.78		251.79	0.002017	0.39	0.35	1.95	0.30
5	3999.964	RETORNO RIEGOS	0.14	251.45	251.69		251.69	0.001984	0.39	0.35	1.95	0.29
5	3949.996	RETORNO RIEGOS	0.14	251.35	251.58		251.59	0.002036	0.39	0.35	1.94	0.30
5	3900.187	RETORNO RIEGOS	0.14	251.25	251.49		251.49	0.001973	0.39	0.35	1.95	0.29
5	3849.929	RETORNO RIEGOS	0.14	251.15	251.39		251.40	0.001801	0.38	0.36	1.98	0.28
5	3801.079	RETORNO RIEGOS	0.14	251.05	251.21	251.16	251.23	0.008242	0.64	0.21	1.64	0.57
5	3800.5		Inl Struct									
5	3800.079	RETORNO RIEGOS	0.14	249.28	249.80		249.81	0.000153	0.12	1.11	5.14	0.08
5	3796.999	RETORNO RIEGOS	0.14	249.28	249.80	249.39	249.80	0.000146	0.13	1.07	4.55	0.08
5	3796.5		Inl Struct									
5	3795.999	RETORNO RIEGOS	0.14	249.55	249.78		249.79	0.001997	0.39	0.35	1.95	0.29
5	3749.973	RETORNO RIEGOS	0.14	249.45	249.68		249.69	0.002005	0.39	0.35	1.95	0.30
5	3699.979	RETORNO RIEGOS	0.14	249.35	249.58		249.59	0.001999	0.39	0.35	1.95	0.30
5	3649.995	RETORNO RIEGOS	0.14	249.25	249.48		249.49	0.002009	0.39	0.35	1.95	0.30
5	3599.996	RETORNO RIEGOS	0.14	249.15	249.38		249.39	0.001998	0.39	0.35	1.95	0.29
5	3550.059	RETORNO RIEGOS	0.14	249.05	249.28		249.29	0.002009	0.39	0.35	1.95	0.30
5	3500.074	RETORNO RIEGOS	0.14	248.95	249.18		249.19	0.001985	0.39	0.35	1.95	0.29
5	3450.041	RETORNO RIEGOS	0.14	248.85	249.08		249.09	0.001989	0.39	0.35	1.95	0.29
5	3400	RETORNO RIEGOS	0.14	248.75	248.98		248.99	0.002125	0.40	0.34	1.93	0.30
5	3391.238	RETORNO RIEGOS	0.14	248.73	248.96	248.84	248.97	0.002151	0.40	0.34	1.93	0.31
5	3376.738	RETORNO RIEGOS	0.14	248.70	248.93	248.81	248.94	0.002276	0.41	0.33	1.92	0.31
5	3350.993	RETORNO RIEGOS	0.14	248.65	248.81	248.76	248.83	0.008445	0.65	0.21	1.64	0.58
5	3350		Inl Struct									
5	3349.993	RETORNO RIEGOS	0.14	247.38	247.90		247.90	0.000152	0.12	1.11	5.06	0.08
5	3347.283	RETORNO RIEGOS	0.14	247.38	247.90	247.49	247.90	0.000145	0.13	1.07	4.47	0.08
5	3347.2		Inl Struct									
5	3347.113	RETORNO RIEGOS	0.14	247.65	247.88		247.89	0.002002	0.39	0.35	1.95	0.30
5	3300.070	RETORNO RIEGOS	0.14	247.55	247.78		247.79	0.002003	0.39	0.35	1.95	0.30
5	3250.143	RETORNO RIEGOS	0.14	247.45	247.68		247.69	0.002001	0.39	0.35	1.95	0.30
5	3200.000	RETORNO RIEGOS	0.14	247.35	247.58		247.59	0.001981	0.39	0.35	1.95	0.29
5	3150.025	RETORNO RIEGOS	0.14	247.25	247.49		247.50	0.001794	0.38	0.36	1.98	0.28
5	3101.110	RETORNO RIEGOS	0.14	247.15	247.31	247.26	247.33	0.008382	0.65	0.21	1.64	0.58
5	3100.5		Inl Struct									
5	3100.110	RETORNO RIEGOS	0.14	244.88	245.52		245.52	0.000059	0.06	2.18	13.98	0.05
5	3097.03	RETORNO RIEGOS	0.14	244.88	245.51	244.99	245.51	0.000067	0.07	2.06	13.24	0.05
5	3096.5		Inl Struct									
5	3096.03	RETORNO RIEGOS	0.14	245.15	245.51		245.51	0.000420	0.22	0.61	2.43	0.14
5	3049.982	RETORNO RIEGOS	0.14	245.10	245.44	245.21	245.44	0.000526	0.24	0.56	2.35	0.16
4	2928.433	RETORNO RIEGOS	0.21	244.98	245.35	245.12	245.36	0.000814	0.32	0.66	2.50	0.20
4	2891.135	RETORNO RIEGOS	0.21	244.94	245.32		245.33	0.000746	0.31	0.68	2.54	0.19
3	2800.001	RETORNO RIEGOS	0.27	244.85	245.23	245.02	245.24	0.001251	0.40	0.67	2.53	0.25
3	2750.009	RETORNO RIEGOS	0.27	244.80	245.16	244.97	245.17	0.001581	0.44	0.62	2.44	0.28
3	2700.970	RETORNO RIEGOS	0.27	244.75	244.99	244.92	245.02	0.007435	0.76	0.36	1.96	0.57
3	2700		Inl Struct									
3	2699.970	RETORNO RIEGOS	0.27	243.01	243.67		243.67	0.000162	0.11	2.56	16.19	0.08
3	2695.96	RETORNO RIEGOS	0.27	243.01	243.66	243.18	243.66	0.000183	0.11	2.43	15.49	0.09
3	2695		Inl Struct									
3	2694.96	RETORNO RIEGOS	0.27	243.25	243.65		243.66	0.001016	0.37	0.73	2.61	0.22
3	2650.083	RETORNO RIEGOS	0.27	243.20	243.60		243.61	0.001025	0.37	0.73	2.61	0.23
3	2625.618	RETORNO RIEGOS	0.27	243.17	243.58	243.35	243.58	0.001035	0.37	0.72	2.61	0.23

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: RETORNO RIEGOS (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
3	2616		Culvert									
3	2606.618	RETORNO RIEGOS	0.27	243.16	243.55		243.56	0.001127	0.39	0.70	2.57	0.24
3	2600.016	RETORNO RIEGOS	0.27	243.15	243.54		243.55	0.001133	0.39	0.70	2.57	0.24
3	2549.999	RETORNO RIEGOS	0.27	243.10	243.48	243.27	243.49	0.001252	0.40	0.67	2.53	0.25
3	2500.027	RETORNO RIEGOS	0.27	243.05	243.41	243.22	243.42	0.001581	0.44	0.62	2.44	0.28
3	2450.993	RETORNO RIEGOS	0.27	243.00	243.24	243.17	243.27	0.007441	0.76	0.36	1.96	0.57
3	2450		Inl Struct									
3	2449.993	RETORNO RIEGOS	0.27	240.76	241.41		241.41	0.000187	0.11	2.41	15.38	0.09
3	2445.763	RETORNO RIEGOS	0.27	240.76	241.40	240.93	241.40	0.000216	0.12	2.25	14.56	0.10
3	2445		Inl Struct									
3	2444.763	RETORNO RIEGOS	0.27	241.00	241.39		241.40	0.001111	0.38	0.70	2.58	0.23
3	2400.000	RETORNO RIEGOS	0.27	240.95	241.33		241.34	0.001208	0.39	0.68	2.54	0.24
3	2374.405	RETORNO RIEGOS	0.27	240.92	241.30	241.09	241.31	0.001296	0.41	0.67	2.52	0.25
3	2371		Culvert									
3	2367.905	RETORNO RIEGOS	0.27	240.92	241.30		241.31	0.001255	0.40	0.67	2.53	0.25
2	2250.002	RETORNO RIEGOS	0.31	240.80	241.16	240.95	241.17	0.001121	0.39	0.80	2.94	0.24
2	2199.933	RETORNO RIEGOS	0.31	240.75	241.10	240.90	241.11	0.001231	0.40	0.77	2.91	0.25
2	2149.988	RETORNO RIEGOS	0.31	240.70	241.03		241.04	0.001540	0.43	0.72	2.82	0.27
2	2100.997	RETORNO RIEGOS	0.31	240.65	240.86	240.80	240.89	0.007292	0.75	0.42	2.36	0.57
2	2100		Inl Struct									
2	2099.997	RETORNO RIEGOS	0.31	238.88	239.53		239.53	0.000160	0.11	2.79	16.19	0.09
2	2095.857	RETORNO RIEGOS	0.31	238.88	239.53	239.03	239.53	0.000178	0.12	2.66	15.51	0.09
2	2095		Inl Struct									
2	2094.857	RETORNO RIEGOS	0.31	239.15	239.51		239.52	0.001042	0.38	0.82	2.97	0.23
2	2050.003	RETORNO RIEGOS	0.31	239.10	239.46	239.25	239.47	0.001067	0.38	0.82	2.96	0.23
2	1999.991	RETORNO RIEGOS	0.31	239.05	239.41		239.42	0.001122	0.39	0.80	2.94	0.24
2	1950.051	RETORNO RIEGOS	0.31	239.00	239.35		239.36	0.001230	0.40	0.78	2.91	0.25
2	1900.001	RETORNO RIEGOS	0.31	238.95	239.28		239.29	0.001540	0.43	0.72	2.82	0.27
2	1850.989	RETORNO RIEGOS	0.31	238.90	239.11	239.05	239.14	0.007279	0.74	0.42	2.36	0.57
2	1850		Inl Struct									
2	1849.989	RETORNO RIEGOS	0.31	236.63	237.33		237.33	0.000090	0.09	3.59	19.78	0.06
2	1845.639	RETORNO RIEGOS	0.31	236.63	237.32	236.78	237.32	0.000096	0.09	3.50	19.39	0.07
2	1845		Inl Struct									
2	1844.639	RETORNO RIEGOS	0.31	236.90	237.32		237.32	0.000641	0.32	0.98	3.17	0.18
2	1799.147	RETORNO RIEGOS	0.31	236.85	237.29		237.29	0.000528	0.30	1.05	3.26	0.17
2	1786.347	RETORNO RIEGOS	0.31	236.83	237.28	236.98	237.28	0.000499	0.29	1.07	3.29	0.16
2	1750.970	RETORNO RIEGOS	0.31	236.80	237.26	236.95	237.27	0.000423	0.27	1.14	3.37	0.15
2	1749.970	RETORNO RIEGOS	0.31	236.80	237.18		237.19	0.000871	0.35	0.88	3.04	0.21
1	1617.094	RETORNO RIEGOS	0.34	236.66	237.06	236.82	237.07	0.000967	0.38	0.90	3.08	0.22
1	1613		Culvert									
1	1610.082	RETORNO RIEGOS	0.34	236.66	237.03		237.04	0.001219	0.41	0.83	2.98	0.25
1	1599.992	RETORNO RIEGOS	0.34	236.65	237.01		237.02	0.001251	0.41	0.82	2.97	0.25
1	1549.973	RETORNO RIEGOS	0.34	236.60	236.94	236.76	236.95	0.001577	0.45	0.76	2.88	0.28
1	1500.993	RETORNO RIEGOS	0.34	236.55	236.77	236.71	236.80	0.007219	0.76	0.44	2.41	0.57
1	1500		Inl Struct									
1	1499.993	RETORNO RIEGOS	0.34	234.82	235.45		235.45	0.000251	0.14	2.46	14.33	0.11
1	1496.023	RETORNO RIEGOS	0.34	234.82	235.44	234.98	235.44	0.000296	0.15	2.27	13.23	0.12
1	1496		Inl Struct									
1	1495.023	RETORNO RIEGOS	0.34	235.05	235.43		235.44	0.001078	0.39	0.87	3.03	0.23
1	1450.005	RETORNO RIEGOS	0.34	235.00	235.37		235.38	0.001134	0.40	0.85	3.01	0.24
1	1400.000	RETORNO RIEGOS	0.34	234.95	235.31		235.32	0.001251	0.41	0.82	2.97	0.25
1	1350.023	RETORNO RIEGOS	0.34	234.90	235.24		235.25	0.001574	0.45	0.76	2.88	0.28
1	1300.988	RETORNO RIEGOS	0.34	234.85	235.07	235.01	235.10	0.007372	0.77	0.44	2.40	0.57
1	1300		Inl Struct									
1	1299.988	RETORNO RIEGOS	0.34	232.62	233.27		233.27	0.000214	0.13	2.65	15.38	0.10
1	1295.808	RETORNO RIEGOS	0.34	232.62	233.25	232.78	233.25	0.000247	0.14	2.48	14.45	0.11
1	1295		Inl Struct									
1	1294.808	RETORNO RIEGOS	0.34	232.85	233.25		233.25	0.000925	0.37	0.92	3.10	0.22
1	1250.057	RETORNO RIEGOS	0.34	232.80	233.20		233.21	0.000880	0.36	0.93	3.12	0.21
1	1199.996	RETORNO RIEGOS	0.34	232.75	233.16		233.17	0.000817	0.35	0.96	3.15	0.21
1	1197.701	RETORNO RIEGOS	0.34	232.75	233.16	232.91	233.16	0.000815	0.35	0.96	3.15	0.21
1	1193		Culvert									
1	1190.101	RETORNO RIEGOS	0.34	232.74	233.13		233.14	0.000954	0.38	0.91	3.08	0.22
1	1149.992	RETORNO RIEGOS	0.34	232.70	233.10		233.10	0.000930	0.37	0.91	3.09	0.22
1	1099.930	RETORNO RIEGOS	0.34	232.65	233.05		233.06	0.000889	0.37	0.93	3.11	0.21
1	1049.997	RETORNO RIEGOS	0.34	232.60	233.01		233.01	0.000831	0.36	0.95	3.14	0.21
1	999.9964	RETORNO RIEGOS	0.34	232.55	232.95		232.95	0.001850	0.37	0.92	3.10	0.22
1	949.9938	RETORNO RIEGOS	0.34	232.50	232.87		232.88	0.001134	0.40	0.85	3.01	0.24
1	899.9420	RETORNO RIEGOS	0.34	232.45	232.81		232.82	0.001251	0.41	0.82	2.97	0.25
1	850.0487	RETORNO RIEGOS	0.34	232.40	232.74		232.75	0.001573	0.45	0.76	2.88	0.28
1	800.9962	RETORNO RIEGOS	0.34	232.35	232.57	232.51	232.60	0.007413	0.77	0.44	2.40	0.57
1	800		Inl Struct									
1	799.9962	RETORNO RIEGOS	0.34	231.12	231.76		231.76	0.000236	0.13	2.53	14.75	0.10
1	796.2462	RETORNO RIEGOS	0.34	231.12	231.74	231.28	231.75	0.000276	0.14	2.35	13.72	0.11
1	796		Inl Struct									
1	795.2462	RETORNO RIEGOS	0.34	231.35	231.73		231.74	0.001038	0.39	0.88	3.05	0.23
1	749.9177	RETORNO RIEGOS	0.34	231.30	231.68		231.69	0.001063	0.39	0.87	3.04	0.23

HEC-RAS Plan: ENCAUZWEIRSV02 Profile: RETORNO RIEGOS (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)	
1	708.5295	RETORNO RIEGOS	0.34	231.26	231.64	231.42	231.64	0.001102	0.40	0.86	3.02	0.24
1	696		Bridge									
1	684.0295	RETORNO RIEGOS	0.34	231.23	231.61	231.39	231.62	0.001132	0.40	0.85	3.01	0.24
1	583.4926	RETORNO RIEGOS	0.34	231.13	231.46		231.47	0.001847	0.47	0.72	2.83	0.30
1	550.0947	RETORNO RIEGOS	0.34	231.10	231.28		231.33	0.016481	1.01	0.34	2.22	0.83
1	499.9494	RETORNO RIEGOS	0.34	231.00	231.22		231.22	0.000649	0.22	1.52	12.11	0.20
1	449.9817	RETORNO RIEGOS	0.34	231.00	231.10	231.10	231.12	0.034161	0.69	0.49	10.50	1.01
1	400.1501	RETORNO RIEGOS	0.34	230.00	230.31	230.15	230.31	0.000485	0.18	1.90	12.44	0.15
1	350.0004	RETORNO RIEGOS	0.34	230.00	230.28		230.28	0.000819	0.22	1.56	11.24	0.19
1	300.0035	RETORNO RIEGOS	0.34	230.00	230.13	230.13	230.16	0.026784	0.75	0.45	7.02	0.94
1	249.9741	RETORNO RIEGOS	0.34	229.00	229.33		229.37	0.010450	0.84	0.40	2.45	0.66
1	200.0032	RETORNO RIEGOS	0.34	229.00	229.25	229.13	229.26	0.000808	0.21	1.65	12.97	0.18
1	149.9965	RETORNO RIEGOS	0.34	229.00	229.11	229.11	229.13	0.033092	0.73	0.47	8.81	1.02
1	99.97778	RETORNO RIEGOS	0.34	228.17	228.31	228.26	228.32	0.003232	0.30	1.13	14.19	0.34
1	59.20385	RETORNO RIEGOS	0.34	228.00	228.12		228.13	0.007139	0.38	0.91	14.78	0.48

Proyecto Fin de Carrera

Título del trabajo:

Simulación del cauce natural y posterior encauzamiento con Hec-Ras del Barranco de Campillo.

Autor/es

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César González Cebollada

Escuela Politécnica Superior de Huesca

2013

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5. DISCUSIÓN.

Una vez modelizado el cauce natural y el encauzamiento, podemos comparar los resultados obtenidos en cada una de las modelizaciones.

Es posible evaluar cuantitativa y cualitativamente las mejoras obtenidas con el encauzamiento respecto a la situación inicial del cauce.

5.1 SUPERFICIE INUNDADA.

Para comparar la superficie inundada antes y después del encauzamiento, tomaremos como valor indicativo la anchura del cauce, por ser directamente proporcional al área inundada.

En las figuras 1,2 y 3 podemos ver la anchura del cauce antes y después del encauzamiento, para los tres caudales estudiados.

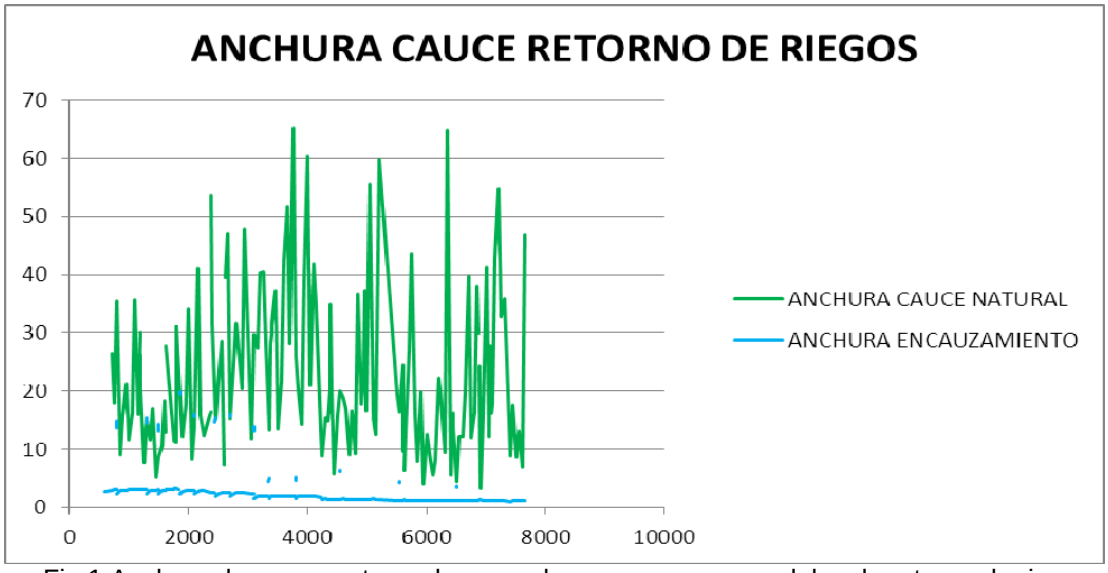


Fig.1 Anchura de cauce antes y despues de encauzar con caudales de retorno de riegos.

En la Fig.1 podemos ver como para los caudales de retorno de riegos, que tienen valores bajos, se observan anchuras de cauce de más de 60 metros en el cauce natural.

Estos valores nos indican que una vez puesta en riego la zona, la ausencia de un cauce definido del barranco debido a la roturación completa de este, provocara la inundación continuada de amplias superficies.

Observando los valores para los mismos caudales una vez encauzado el barranco, se aprecia que las anchuras del cauce no sobrepasan los 2 metros, salvo en los cuencos amortiguadores de los saltos.

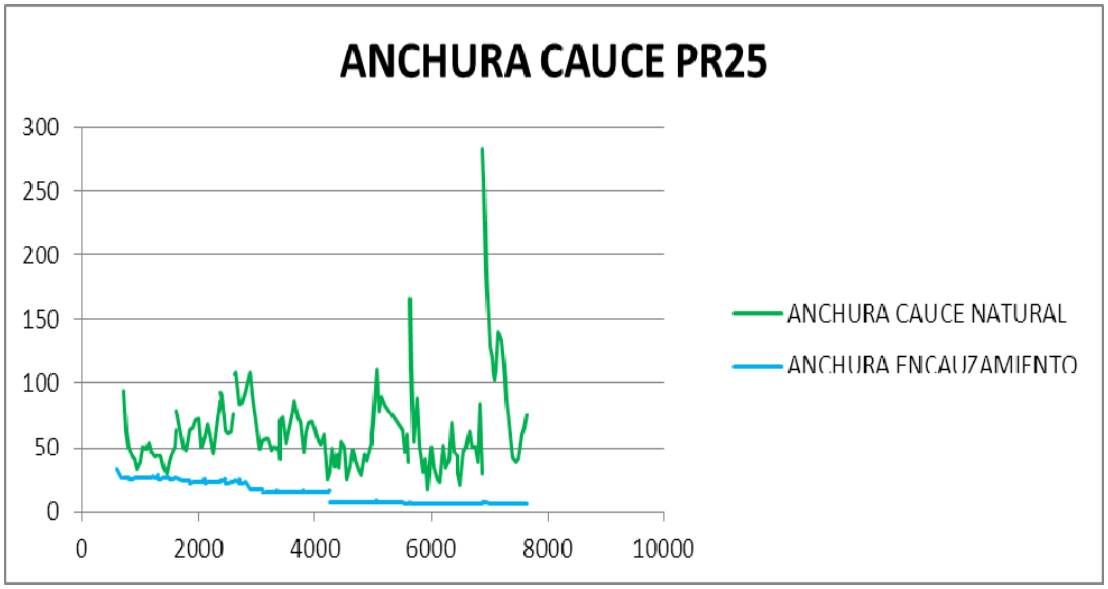


Fig.2 Anchura de cauce antes y despues de encauzar con caudales de PR25.

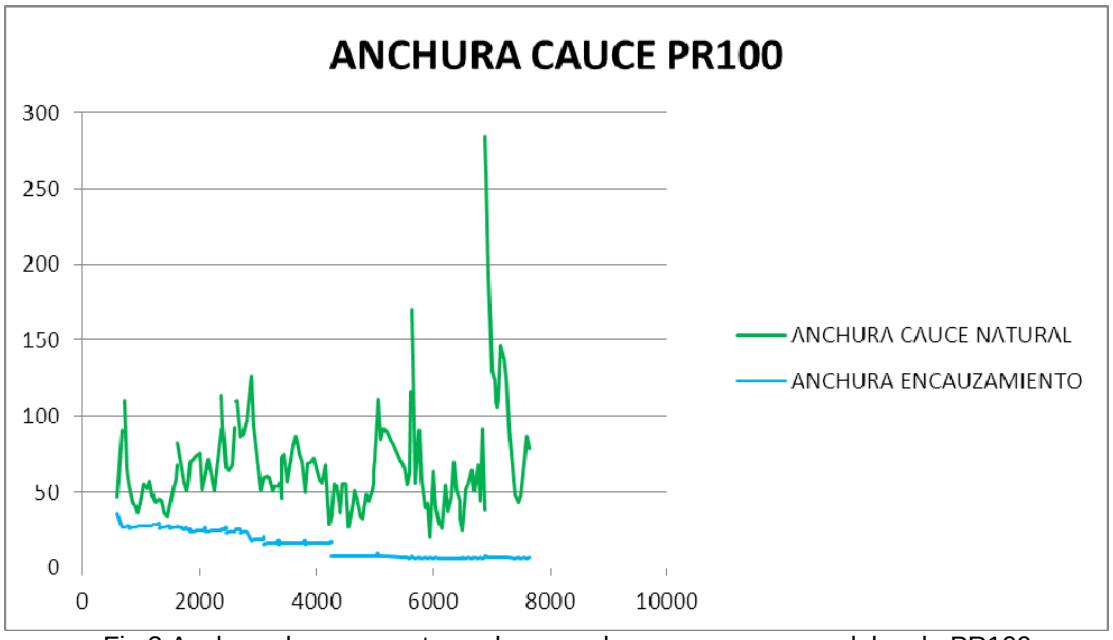


Fig.3 Anchura de cauce antes y despues de encauzar con caudales de PR100.

En la Fig.2 y Fig.3 se observan anchuras de cauce que en su mayoría oscilan entre los 50 y 100 metros, para avenidas con periodo de retorno de 25 y 100 años.

Una vez encauzado el barranco, las anchuras de cauce se reducen hasta valores máximos entorno a los 25 metros. Lo cual implica una disminución de la superficie inundada.

5.2 VELOCIDADES DE FLUJO.

Como se vio en los objetivos de este proyecto, se busca evitar tanto altas velocidades del agua que provoquen erosión como velocidades bajas que provoquen deposición de materiales en suspensión y por tanto la colmatación del cauce.

Se fijó velocidades máximas admisibles de 1.32 m/s y mínimas de 0.11 m/s, teniendo en cuenta que los materiales presentes en la zona se califican como arcillas compactas.

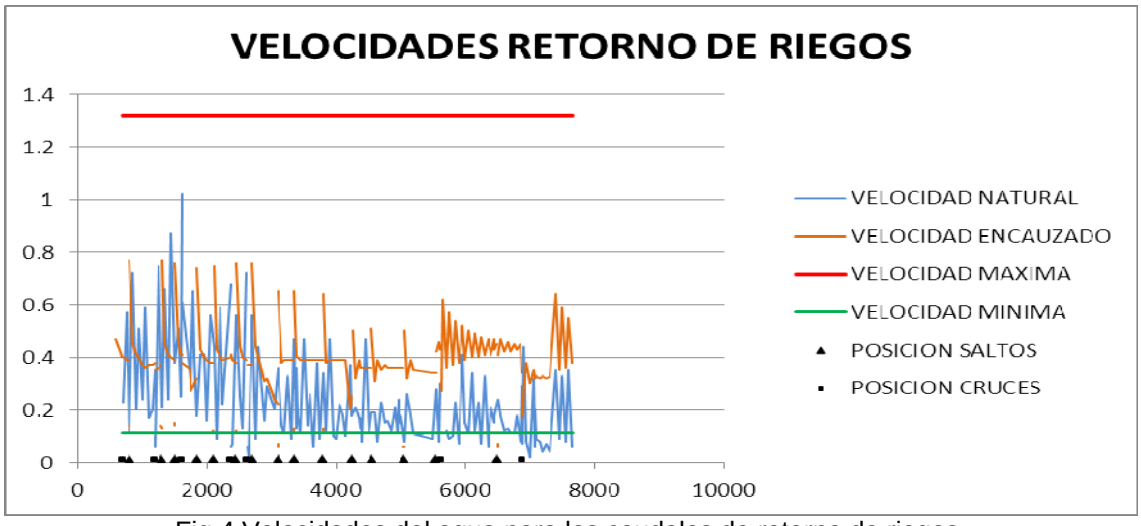


Fig.4 Velocidades del agua para los caudales de retorno de riegos.

En la Fig.4 podemos ver como en el cauce natural, para los caudales de retorno de riegos, las velocidades máximas no llegan en ningún caso a 1.32 m/s, sin embargo las velocidades mínimas se aproximan y llegan a estar por debajo de los 0.11 m/s.

Una vez encauzado el barranco, las velocidades del agua para los caudales de retorno de riegos, las velocidades del agua no se aproximan en ningún caso a los valores mínimos ni máximos admisibles. Así pues no son de esperar erosión ni sedimentación de materiales.

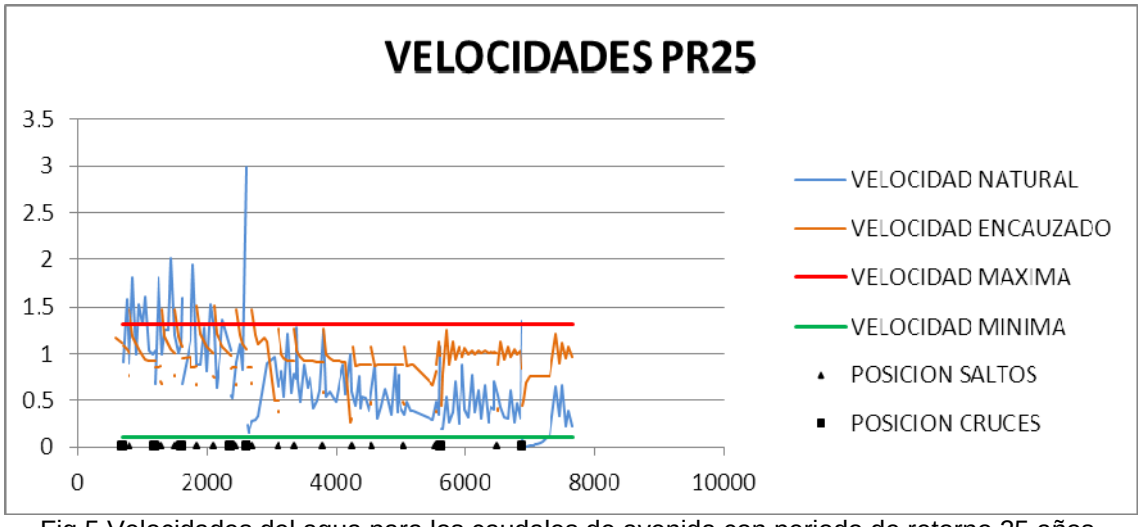


Fig.5 Velocidades del agua para los caudales de avenida con periodo de retorno 25 años.

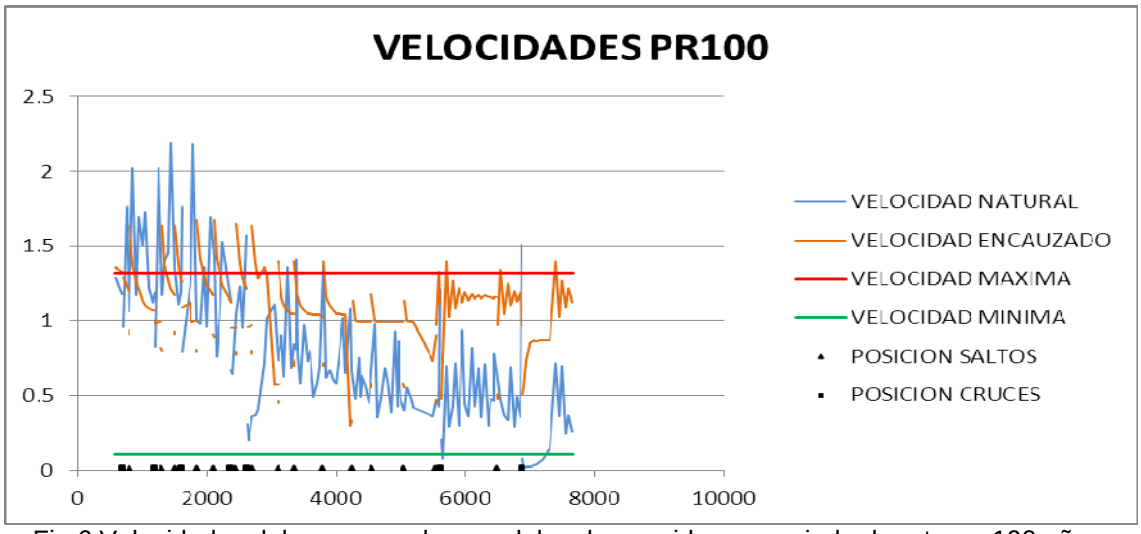


Fig.6 Velocidades del agua para los caudales de avenida con periodo de retorno 100 años.

En la Fig.6 y Fig.7 vemos como en el cauce natural, para caudales de avenida con periodo de retorno de 25 y 100 años, se observan zonas con altas velocidades del agua, en el tramo final del barranco.

En cambio en el mismo cauce natural se observan velocidades con valores bajos que pueden provocar sedimentación de materiales en tramos altos.

Los problemas de sedimentación se solventan en el caso del barranco encauzado, con valores mínimos de velocidad del agua más elevados.

Sin embargo, en el barranco encauzado, se observan secciones puntuales con valores de velocidades máximas superiores al límite admisible. Esto se explica comparando el PK de estos valores elevados con la ubicación de los saltos. Ya que en el punto de vertido de cada salto, el flujo se convierte en crítico, aumentando la velocidad.

Estas altas velocidades del agua son previsibles, siendo corregidos sus efectos mediante la rigidización de las zonas colindantes de los saltos con escollera, rip rap u hormigón.

5.3 NÚMERO DE FROUDE.

El número de Froude nos indica la existencia de flujo crítico si su valor es igual o superior a 1.

Como se ha indicado en el punto anterior, la existencia de flujo critico indica una velocidad alta del agua y por tanto la existencia de efectos erosivos.

Debe evitarse la aparición de flujo crítico siempre que sea posible y en caso de ser imposible evitar su aparición, fijar los tramos en los que se produce, lo cual permite diseñar estructuras que disipen la energía del flujo.

En la Fig.7, Fig.8 y Fig.9 podemos observar como los valores de Froude en el cauce natural superan en muchas ocasiones el valor de 1.

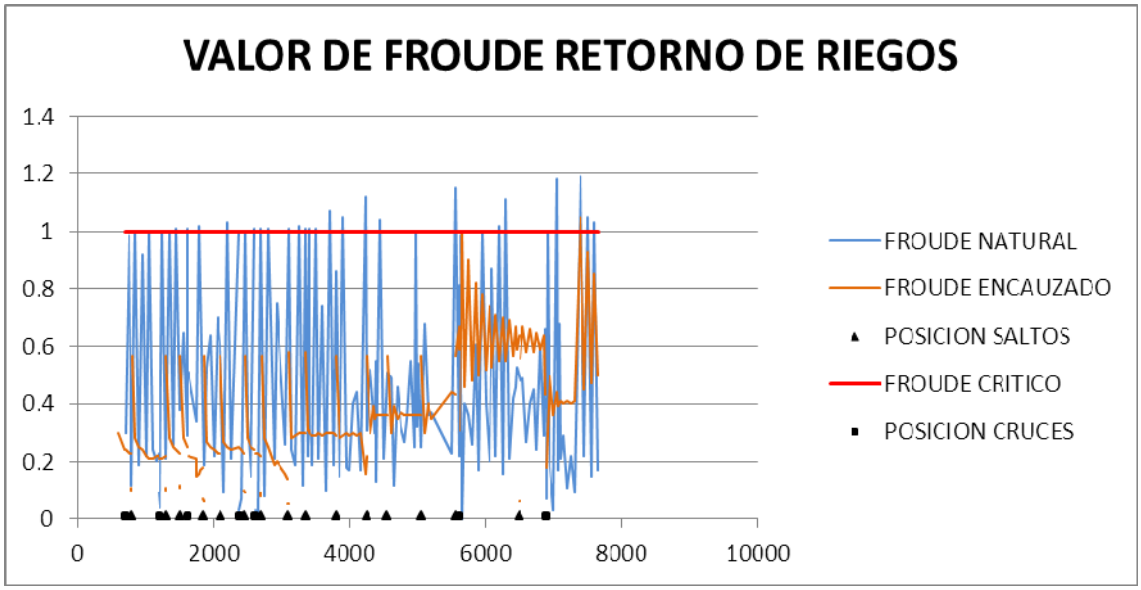


Fig.7 Valores de Froude para los caudales de retorno de riegos.

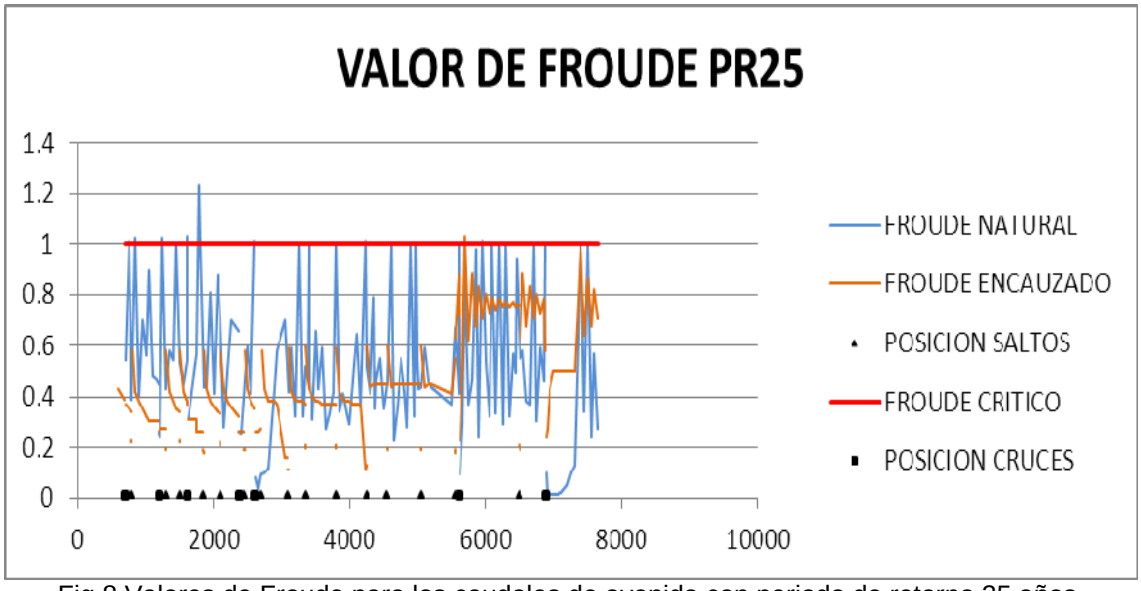


Fig.8 Valores de Froude para los caudales de avenida con periodo de retorno 25 años.

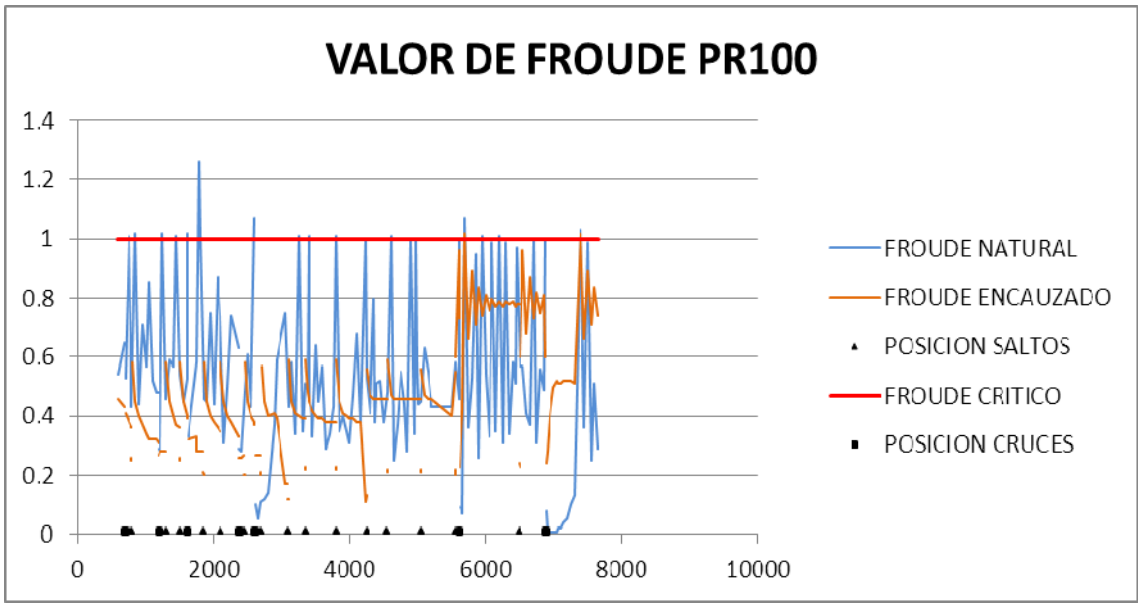


Fig.9 Valores de Froude para los caudales de avenida con periodo de retorno 100 años.

En el encauzamiento, siguen apareciendo puntos con Froude superior a 1, pero el número de valores mayores a 1 disminuye y además estos valores están localizados en los saltos.

Así pues rigidizando las zonas aledañas a los saltos, la infraestructura estará a salvo de efectos erosivos que arruinarían la obra.

5.4 SALTOS.

Como hemos visto en los puntos anteriores, el flujo crítico está concentrado en los saltos.

Esto es previsto y provocado ya que siempre que se genera un vertido, se genera flujo critico en dicho punto de vertido.

Para la modelización de dichos saltos, se ha procedido a definir tanto el punto de vertido como el escalón final del cuenco amortiguador como vertederos de cresta ancha con el fin de que el programa Hec-Ras interprete correctamente la situación que se da.

En la Fig.10 podemos observar la transición de flujo normal a flujo critico aguas arriba del salto conforme se acerca el punto de vertido.

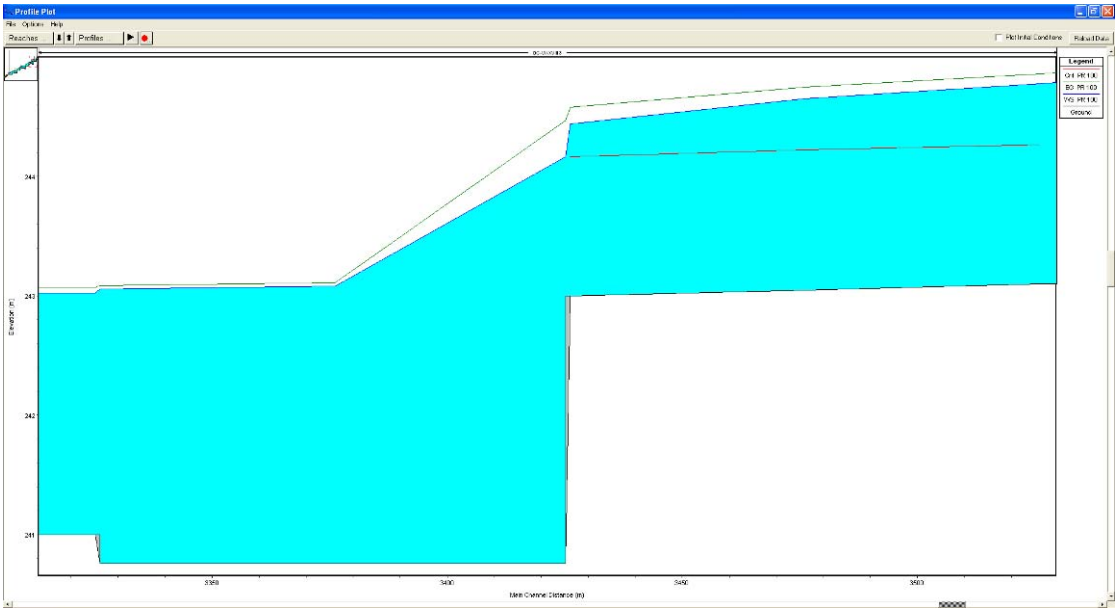


Fig.10 Salto definido mediante vertederos a la entrada y salida del flujo.

Así mismo en la Fig.10 podemos observar la aparición del resalto hidráulico en el punto en que se ha posicionado el escalón final del cuenco amortiguador. Esta estructura ayuda a que la posición de dicho resalto sea previsible y fija, permitiendo la disipación de energía y evitando su aparición en zonas no protegidas mediante estructuras de escollera u hormigón.

En la Fig.11 se representa la sucesión de tramos con pendiente suave y saltos para la disipación de energía que conforman el encauzamiento.

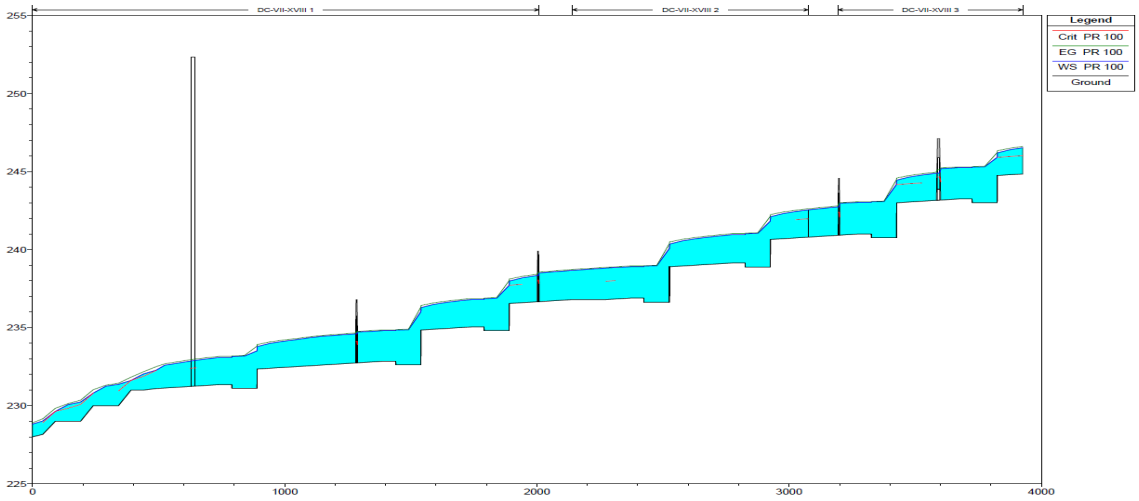


Fig.11 Salto definido mediante vertederos a la entrada y salida del flujo.

5.5 CRUCES DE CAMINOS.

Si comparamos la situación inicial de los cruces de caminos sobre el cauce con la situación una vez encauzado el barranco, podemos observar varias diferencias.

En la situación original del barranco, los cruces no estaban dimensionados para ser permeables a los caudales de avenida esperados. Provocándose flujos por la zona de tránsito de vehículos, con el consiguiente peligro de arrastre de estos en caso de avenida.

Esta falta de permeabilidad de los cruces de caminos, provocaba zonas inundadas extensas aguas arriba de los cruces.

Por ultimo estas zonas inundadas aguas arribas de los cruces de caminos actuaban como embalses temporales y los taludes de los cruces de caminos como presas de contención. Esta situación puede observarse en la Fig.12

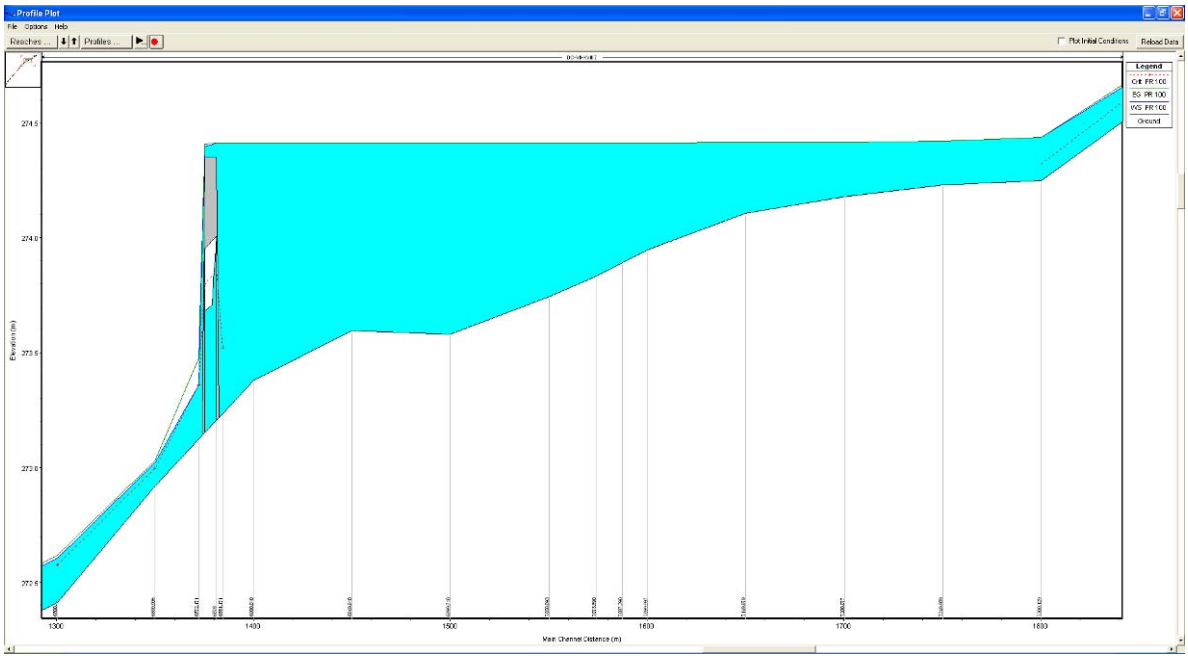


Fig.12 Volumen de agua embalsado aguas arriba de un cruce de camino en cauce natural.

El hecho de que un talud dimensionado únicamente como base para un camino, actué como presa de contención de un volumen elevado de agua, es un peligro para la seguridad de las personas e infraestructuras situadas aguas abajo, ya que una rotura repentina de este talud puede provocar una inundación de grandes dimensiones.

Una vez realizado el encauzamiento, estos problemas de insuficiente dimensionamiento de los cruces de caminos se eliminan. Evitándose los embalsamientos de agua y el consiguiente peligro de avenida repentina. Se eliminan también los flujos de agua por la zona de tránsito de vehículos. La situación corregida puede observarse en la Fig.13.

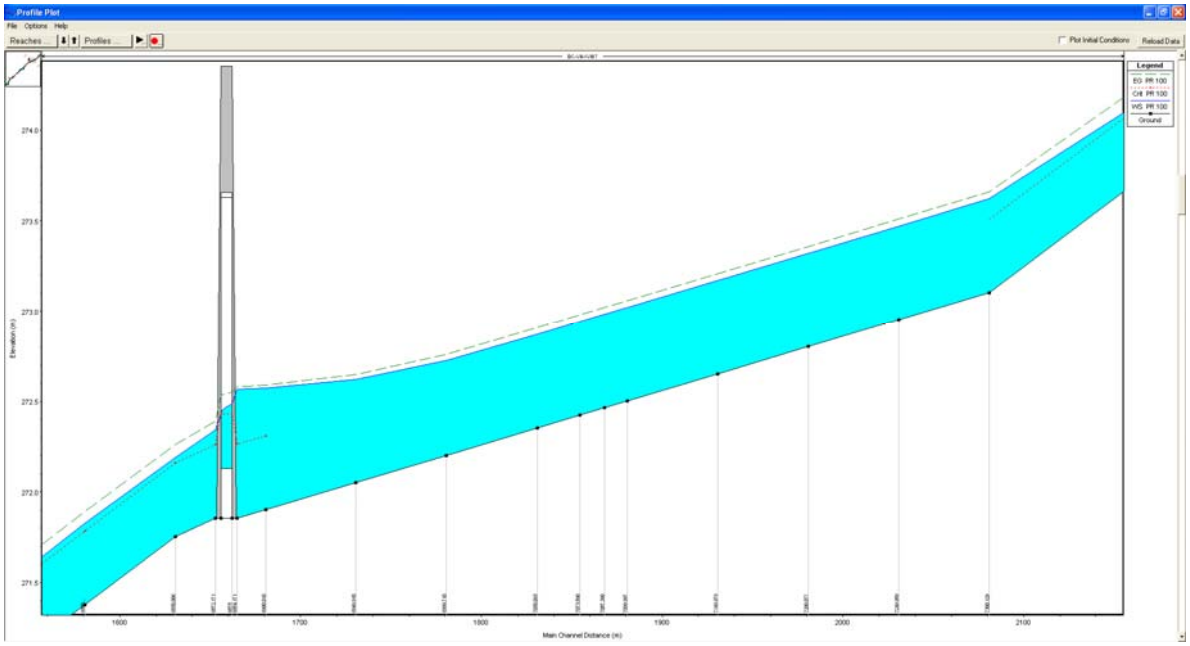


Fig.13 Volumen de agua embalsado aguas arriba de un cruce de camino en encauzamiento.

6. CONCLUSIONES

6. CONCLUSIÓN.

Una vez modelizado el cauce natural y el encauzamiento, se detectan las siguientes mejoras en el encauzamiento frente al cauce natural.

6.1 SUPERFICIE INUNDADA.

Se reduce la superficie inundada en un 97% para caudales de retorno de riegos y en un 75% para caudales de avenida.

6.2 VELOCIDADES DE FLUJO.

Se evitan velocidades del flujo por debajo del mínimo admisible, evitando sedimentaciones.

La velocidad no supera la máxima velocidad admisible en los tramos de pendiente constante. Limitándose los puntos con velocidades superiores a la máxima admisible a los saltos.

6.3 NÚMERO DE FROUDE.

En los tramos de encauzamiento, con pendiente constante, se produce flujo normal subcrítico (número de Froude menor que 1) en las zonas alejadas de los saltos.

6.4 SALTOS.

Los saltos diseñados a lo largo del encauzamiento disipan la energía del flujo, concentrando los puntos de flujo critico en dichos saltos.

6.5 CRUCES DE CAMINOS.

El dimensionado adecuado de los cruces de caminos sobre el barranco, evita la inundación de grandes superficies aguas arriba de los cruces y el flujo de agua por la zona de tránsito de vehículos.

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7. BIBLIOGRAFÍA.

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ANEXOS

ANEXO 1

REPORTAJE FOTOGRÁFICO



Fig.1 Cauce en zona PK 7+650



Fig.2 Cauce en zona PK 7+650



Fig.3 Cauce en zona PK 6+875



Fig.4 Cauce en zona PK 6+875



Fig.5 Cauce en zona PK 6+875



Fig.6 Cauce en zona PK 6+875



Fig.7 Cauce en zona PK 7+650



Fig.8 Cauce en zona PK 2+370



Fig.9 Cauce en zona PK 2+370



Fig.10 Cauce en zona PK 1+615



Fig.11 Cauce en zona PK 1+615



Fig.12 Cauce en zona PK 1+615



Fig.13 Cauce en zona PK 1+200



Fig.14 Cauce en zona PK 1+300



Fig.15 Cauce en zona PK 1+300



Fig.16 Cauce en zona PK 1+200



Fig.17 Cauce en zona PK 0+690



Fig.18 Cauce en zona PK 0+690

ANEXO 2

LEVANTAMIENTO TOPOGRÁFICO

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza

ESCALA 1:500

HOJA 1

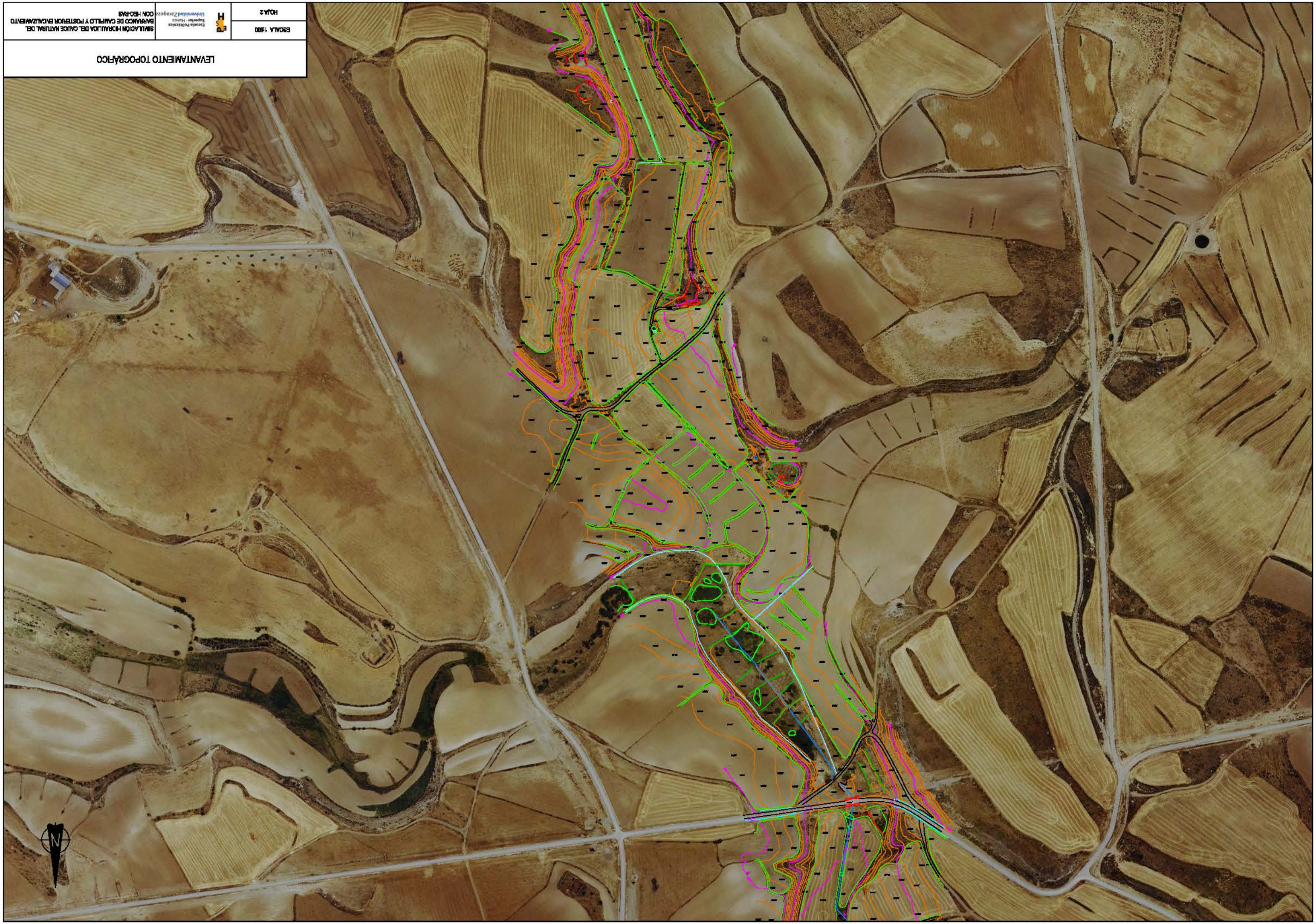
LEVANTAMIENTO TOPOGRÁFICO



LEVANTAMIENTO TOPOGRÁFICO

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HOJA 2	

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS



LEVANTAMIENTO TOPOGRÁFICO

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HOJA 3	

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza

HOJA 4

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LEVANTAMIENTO TOPOGRÁFICO



LEVANTAMIENTO TOPOGRÁFICO

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HOJA 8	

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS



LEVANTAMIENTO TOPOGRÁFICO

SIMULACIÓN HIDRÁULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza

ESCALA 1:500

HOJA 6



ANEXO 3

PLAN COORDINADO

ESTUDIO HIDROLOGICO

Existen numerosos antecedentes en relación con el estudio de la hidrología de la zona. Así del Estudio General de la Infraestructura Hidráulica de la Zona de Monegros II del Sistema de Riegos del Alto Aragón, elaborado por la Confederación Hidrográfica del Ebro en 1988 y cuyo autor es D. Oswaldo Zaera Borobia, resultan los resultados que a continuación se exponen:

Cuenca	Sup. (Km2)	Long (Km)	Pdte. (m/m)	T. Concent.	Qmáx (25 años)	Qmáx (100 años)
Chermanillo	54,00	14,80	0,018	6	28,87	42,13
Valcarreta	120,50	22,70	0,012	12	48,88	69,53
Campillo	54,75	16,80	0,008	10	22,25	31,95
Val de Liberola	184,75	24,20	0,013	12	72,86	103,64
Val de Mateo	75,25	15,35	0,014	8	38,92	55,92

Así mismo del Estudio de Impacto Ambiental relativo a la Transformación en Regadío de Monegros II-3ª Parte elaborado por la Secretaría General de Estructuras Agrarias del MAPA en 1995 y cuyo autor es D. Lorenzo Desviat Pérez, resultan los siguientes datos complementarios:

Cuenca	Sup. (Km2)	l/seg/Km2 (1)	Coef. (2)	Hm3/año(3)	mm máx/día (4)	Qmáx (15 años)
Valdecanales	28,67	2,936	31,1	2,65	35	11,62
Chermanillo	60,50	2,94	31,100	5,47	35	23,92
Valcarreta	123,85	2,58	27,120	10,06	35	50,17
Val de Liberola	215,05	2,55	26,820	17,27	35	87,11

(1) Caudal específico
(2) Coeficiente de escorrentía
(3) Aportación media
(4) Escorrentía máxima diaria

Las dos fuentes anteriores resultan coherentes y se proponen como base del estudio hidrológico del presente Plan Coordinado de Obras.

Sobre la cartografía de la zona, representada a la escala 1:25.000, se ha procedido a delimitar las cuencas y subcuencas tomando en consideración las distribución y límites definitivos de los sectores hidráulicos considerados. Así han resultado las siguientes cuencas principales:

- Valdecanales
- Chermanillo
- Valcarreta
- Campillo
- Val de Mateo
- Val de Liberola

Además, se han obtenido las siguientes cuencas, independientes de las anteriores pero de menor significación por su carácter marginal:

- Cuencas vertientes directas al Alcanadre (7 cuencas)
- Cuenca vertiente directa al Ebro (1 cuenca)
- Cuencas Endorreicas: Basal, Balsalet y Balsalet de D. Juan.

Merece la pena aclarar que las cuencas endorreicas permanecen al margen de la transformación en regadío en respuesta a las exigencias ambientales de partida consideradas en el propio diseño del Plan.

La superficie total de las cuencas estudiadas es de 46.205 Has. La más extensa es Val de Liberola con 23.161 has de superficie total seguida de Valcarreta con 12.186 has. Ambas presentan una superficie de regadío muy similar, 5.176 has y 5.146 has respectivamente. Lógicamente, la máxima actividad hidrológica corresponde al tramo final de la Val de Liberola para el que se ha calculado una avenida máxima de 90,328 m3/seg para un periodo de retorno de 25 años y de 129,702 m3/seg para 100 años, el caudal de retorno de riego, cuyo cálculo se justifica en anexo independiente, para es e mismo tramo se evalúa en 621 l/seg.

En los listados que se acompañan se recogen los diferentes parámetros considerados y resultados obtenidos para las diferentes cuencas y subcuencas que integran la zona así como para los distintos tramos en los que se han subdividido los diferentes cauces que desalojan las mismas.

SUPERFICIE DE LAS CUENCAS

CUENCA	SUBCUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Valdecanales	DC-XXI-a	156	23
	DC-XXI-b	71	5
	DC-XXI-c	320	3
	D-XXI-2	270	214
	D-XXI-3	800	203
	TOTAL	**1617**	**448**
D-XXI-1	D-XXI-1	229	161
	TOTAL	**229**	**161**
D-XXI-7	D-XXI-7-a	614	211
	D-XXI-7-b	1	0
	D-XXI-7-1	101	44
	TOTAL	**716**	**255**
Chermanillo	DC-XXI-XX-XXII-a	255	58
	DC-XXI-XX-XXII-b	167	115
	DC-XXI-XX-XXII-c	302	200
	DC-XXI-XX-XXII-d	59	6
	DC-XXI-XX-XXII-e	142	46
	DC-XXI-XX-XXII-f	188	92
	DC-XXI-XX-XXII-g	55	18
	DC-XXI-XX-XXII-h	44	13
	DC-XXI-XX-XXII-i	497	87
	D-XX-XXII-1	206	20
	D-XX-XXII-2	134	105
	D-XX-XXII-3-a	195	7
	D-XX-XXII-3-b	830	49
	D-XX-XXII-3-c	767	119
	D-XX-XXII-3-1	153	135
	San Gregorio	187	0
	D-XX-XXII-4	322	227
	D-XX-XXII-5-a	108	82
	D-XX-XXII-5b	187	173
	D-XX-XXII-5c	144	19
	D-XX-XXII-5-1	25	21
	D-XX-XXII-5-2	363	55
	D-XXI-4	243	203
	D-XXI-5	105	65
	D-XXI-6-a	44	29
	D-XXI-6-b	43	30
	D-XXI-6-c	51	20
	D-XXI-6-1	42	41
	D-XXI-6-2	25	11
	TOTAL	**5883**	**2046**

CUENCA	SUBCUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Valcarreta	DC-XIX-7-a	190	41
	DC-XIX-7-b	52	29
	DC-XIX-7-c	80	35
	DC-XIX-7-d	215	148
	DC-XIX-7-e	80	52
	DC-XIX-7-f	118	58
	DC-XIX-7-g	168	62
	DC-XIX-7-h	43	27
	D-VII-1	28	19
	D-VII-2	70	53
	D-VII-3-a	335	274
	D-VII-3-b	185	130
	D-VII-3-1	84	54
	D-XIX-1	182	86
	D-XIX-2	275	97
	D-XIX-3	317	153
	D-XIX-4	391	302
	D-XIX-5	1422	398
	D-XX-XXII-8	30	14
	D-XX-XXII-9	119	15
	DC-XX-XII-VII-a	43	32
	DC-XX-XII-VII-b	32	25
	DC-XX-XXII-XVIII-a	101	53
	DC-XX-XXII-XVIII-b	1503	189
	DC-VII-XVIII-a	294	239
	DC-VII-XVIII-b	75	70
	DC-VII-XVIII-c	169	148
	DC-VII-XVIII-d	4	2
	DC-VII-XVIII-e	45	34
	DC-VII-XVIII-f	8	6
	DC-VII-XVIII-g	292	218
	D-VII-4-a	135	114
	D-VII-4-b	170	136
	D-VII-4-c	50	40
	D-VII-4-1	210	159
	D-VII-4-2	24	21
	D-XVIII-1	30	30
	D-XVIII-2	346	291
	D-XVIII-3-a	870	54
	D-XVIII-3-b	845	221
	D-XVIII-3-c	32	23
	D-XVIII-3-1	382	233
	D-XVIII-3-2-a	88	16
	D-XVIII-3-2-b	148	36
	D-XVIII-3-2-1	211	27
	D-XVIII-4-a	540	66
	D-XVIII-4-b	7	7
	D-XVIII-4-c	92	81
	D-XVIII-4-d	7	5
	D-XVIII-4-e	35	25
	D-XVIII-4-1	570	174
	D-XVIII-4-2	39	36
	D-XVIII-4-3	59	56
	D-XVIII-4-4	89	85
	D-XVIII-5-a	228	117
	D-XVIII-5-b	14	13
	D-XVIII-5-1	18	17
	TOTAL	**12186**	**5146**

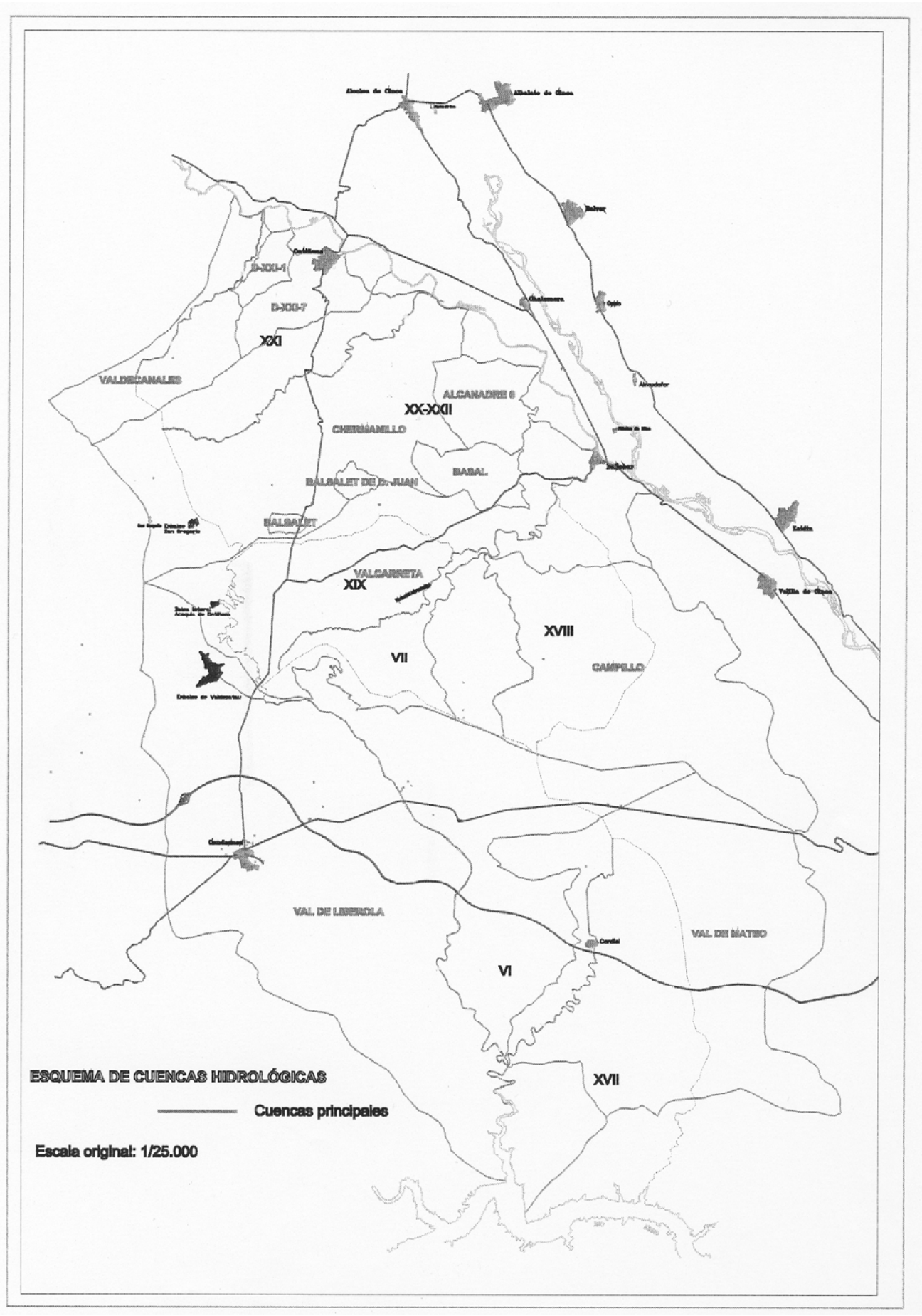
CUENCA	SUBCUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Campillo	DC-VII-XVIII-a	294	239
	DC-VII-XVIII-b	75	70
	DC-VII-XVIII-c	169	148
	DC-VII-XVIII-d	4	2
	DC-VII-XVIII-e	45	34
	DC-VII-XVIII-f	8	6
	DC-VII-XVIII-g	292	218
	D-VII-4-a	135	114
	D-VII-4-b	170	136
	D-VII-4-c	50	40
	D-VII-4-1	210	159
	D-VII-4-2	24	21
	D-XVIII-1	30	30
	D-XVIII-2	346	291
	D-XVIII-3-a	870	54
	D-XVIII-3-b	845	221
	D-XVIII-3-c	32	23
	D-XVIII-3-1	382	233
	D-XVIII-3-2-a	88	16
	D-XVIII-3-2-b	148	36
	D-XVIII-3-2-1	211	27
	D-XVIII-4-a	540	66
	D-XVIII-4-b	7	7
	D-XVIII-4-c	92	81
	D-XVIII-4-d	7	5
	D-XVIII-4-e	35	25
	D-XVIII-4-1	570	174
	D-XVIII-4-2	39	36
	D-XVIII-4-3	59	56
	D-XVIII-4-4	89	85
	D-XVIII-5-a	228	117
	D-XVIII-5-b	14	13
	D-XVIII-5-1	18	17
	TOTAL	**6125**	**2800**

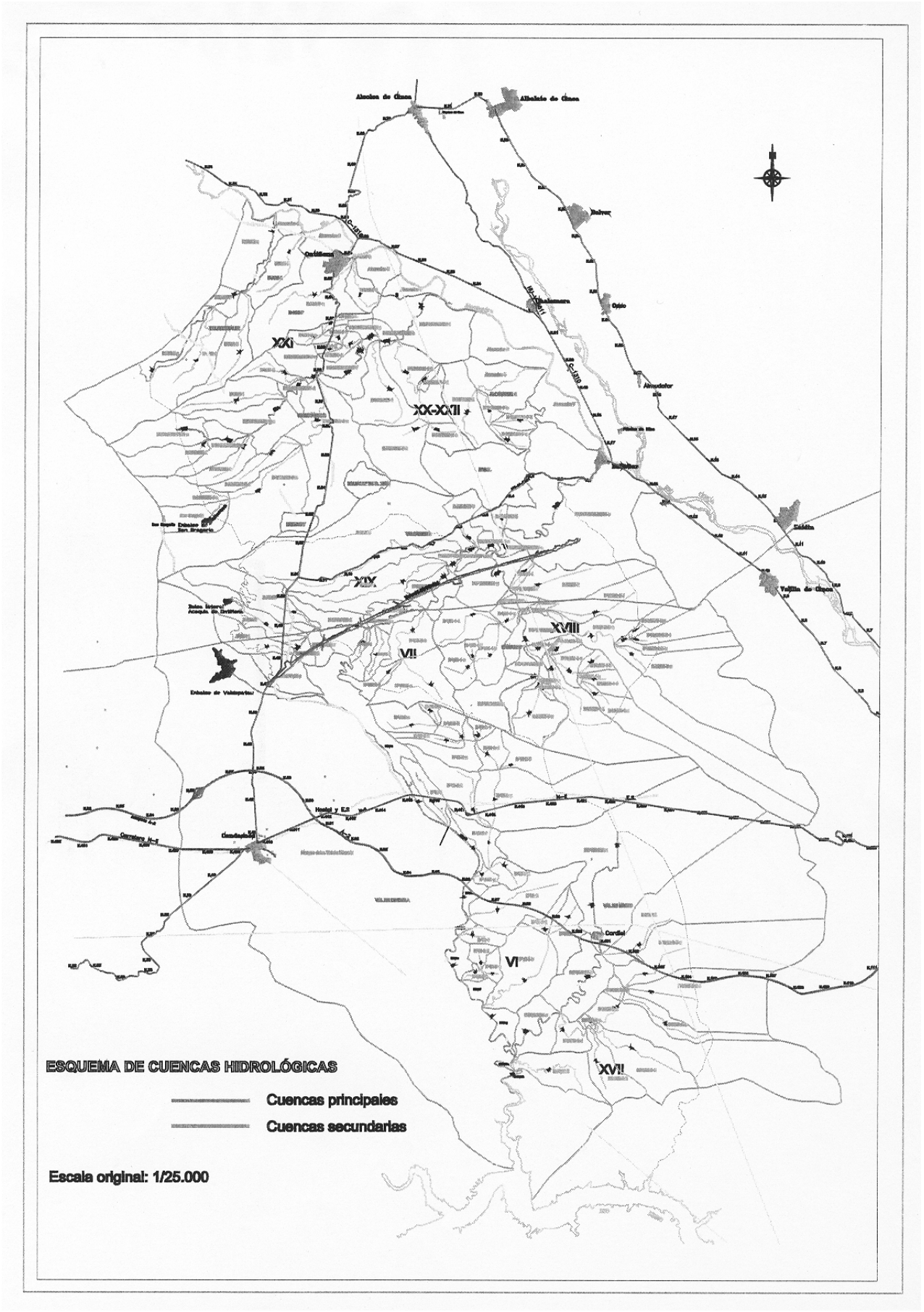
CUENCA	SUBCUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Val de Mateo	DC-VI-XVII-a	2091	535
	DC-VI-XVII-b	344	215
	DC-VI-XVII-c	218	53
	D-XVII-1	1516	127
	D-XVII-2-a	184	137
	D-XVII-2-b	993	324
	D-XVII-2-c	17	8
	D-XVII-2-d	110	53
	D-XVII-2-1	214	199
	D-XVII-2-2	384	354
	D-XVII-2-3-a	942	291
	D-XVII-2-3-b	34	31
	D-XVII-2-3-1	716	240
	TOTAL	**7764**	**2567**
Val de Liberola	D-XVII-3	263	173
	D-VI-1	118	62
	D-VI-2-a	167	127
	D-VI-2-b	78	63
	D-VI-2-c	159	138
	D-VI-2-d	101	99
	D-VI-2-e	1013	113
	D-VI-2-f	124	98
	D-VI-2-g	36	21
	D-VI-2-1	81	73
	D-VI-2-2	243	193
	D-VI-2-3	241	66
	D-VI-2-4	37	34
	D-VI-2-5	55	48
	D-VI-2-6	29	23
	D-VI-3	422	354
	D-VI-4	68	21
	D-VI-5-a	48	29
	D-VI-5-b	27	12
	D-VI-5-1	46	21
	D-VI-6-a	175	167
	D-VI-6-b	424	317
	D-VI-6-1	62	59
	Margen dcha. Val de Liberola (DC-6-a+DC-6-b+DC-6-c+DC-6-d+DC-6-e+DC-6-f+DC-6-g)	11375	298
	DC-VI-XVII-a	2091	535
	DC-VI-XVII-b	344	215
	DC-VI-XVII-c	218	53
	D-XVII-1	1516	127
	D-XVII-2-a	184	137
	D-XVII-2-b	993	324
	D-XVII-2-c	17	8
	D-XVII-2-d	110	53
	D-XVII-2-1	214	199
	D-XVII-2-2	384	354
	D-XVII-2-3-a	942	291
	D-XVII-2-3-b	34	31
	D-XVII-2-3-1	716	240
	TOTAL	**23161**	**5176**

CUENCA	SUBCUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Alcanadre 1	**TOTAL**	**57**	**2**
Alcanadre 2	**TOTAL**	**144**	**7**
Alcanadre 3	**TOTAL**	**141**	**9**
Alcanadre 4	**TOTAL**	**87**	**4**
Alcanadre 5	**TOTAL**	**242**	**9**
Alcanadre 6	Alcanadre 6	287	14
	D-XX-XXII-6	281	171
	D-XX-XXII-7-a	63	51
	D-XX-XXII-7-b	46	12
	D-XX-XXII-7-1	82	74
	TOTAL	**758**	**322**
Alcanadre 7	**TOTAL**	**228**	**25**
Balsalet	**TOTAL**	**67**	**0**
Balsalet de D. Juan	**TOTAL**	**107**	**0**
Basal	**TOTAL**	**539**	**0**

SUPERFICIES DE LAS CUENCAS

CUENCA	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)
Valdecanales	1617	448
D-XXI-1	229	161
D-XXI-7	716	255
Chermanillo	5883	2046
Valcarreta	12186	5146
Campillo	6125	2800
Val de Mateo	7764	2567
Val de Liberola	23161	5176
Alcanadre 1	57	2
Alcanadre 2	144	7
Alcanadre 3	141	9
Alcanadre 4	87	4
Alcanadre 5	242	9
Alcanadre 6	758	322
Alcanadre 7	228	25
Balsalet	67	0
Balsalet de D. Juan	107	0
Basal	539	0
Cuenca directa al Ebro	43	43
TOTAL CUENCAS	**46205**	**13653**


D-300-1
D-300-7
XXI
VALDECANALES
ALCANADRE 6
XX-XXII
CHERMANELLO
BABAL
BALBALET DE D. JUAN
BALBALET
VALCARRETA
XIX
XVIII
VII
CAMPELLO
VAL DE LEBRERA
VAL DE MATEO
VI
XVII
ESQUEMA DE CUENCAS HIDROLÓGICAS
Cuencas principales
Escala original: 1/25.000


ESQUEMA DE CUENCAS HIDROLÓGICAS
Cuencas principales
Cuencas secundarias
Escala original: 1/25.000
XXI
XX-XXII
XIV
XVIII
VII
VI
XVII

ESTUDIO HIDROLÓGICO DE LOS CAUCES

SECTOR	CUENCA	CAUCE	TRAMO	LONGITUD (m)	COTA INICIO	COTA FINAL	PENDIENTE NATURAL (%)	PENDIENTE (m/m)	TIEMPO DE CONCENTRACIÓN (horas)	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	COEFICIENTE DE ESCORRENTÍA	CAUDAL MAX. AVENIDA T=25 años (m^3/sg)	CAUDAL MAX. AVENIDA T=100 años (m^3/sg)	CAUDAL DE RETORNO DE RIEGO (l/sg)
	Valdecanales														
XXI		**D-XXI-3**	**Completo**	**3536**	**338**	**250**	**2,49**	**0,0249**	**1,58**	**800**	**203**	**0,35**	**4,277**	**6,240**	**24,36**
			Inicio D-XXI-3 / A-1	843	338	304	4,03	0,0403	0,48	560	101	0,35	2,994	4,368	12,12
			A-1 / Final D-XXI-3	2693	304	250	2,01	0,0201	1,34	800	203	0,35	4,277	6,240	24,36
XXI		**D-XXI-2**	**Completo**	**3821**	**331**	**228**	**2,70**	**0,0270**	**1,65**	**270**	**214**	**0,35**	**1,443**	**2,106**	**25,68**
XXI		**DC-XXI**	**Completo**	**7885**	**371**	**174**	**2,50**	**0,0250**	**2,90**	**1617**	**448**	**0,35**	**8,644**	**12,613**	**53,76**
			Inicio DC-XXI / Final D-XXI-3	3650	371	250	3,32	0,0332	1,53	156	23	0,35	0,834	1,217	2,76
			Final D-XXI-3 / Final D-XXI-2	1060	250	228	2,08	0,0208	0,65	1027	231	0,35	5,490	8,011	27,72
			Final D-XXI-2 / Final DC-XXI	3175	228	174	1,70	0,0170	1,57	1617	448	0,35	8,644	12,613	53,76
	D-XXI-1														
XXI		**D-XXI-1**	**Completo**	**2850**	**259**	**170**	**3,12**	**0,0312**	**1,28**	**229**	**161**	**0,35**	**1,224**	**1,786**	**19,32**
			Inicio D-XXI-1 / A2	1564	259	220	2,49	0,0249	0,85	92	129	0,35	0,492	0,718	15,48
			A2 / Final D-XXI-1	1286	220	170	3,89	0,0389	0,67	229	161	0,35	1,224	1,786	19,32
	D-XXI-7														
XXI		**D-XXI-7-1**	**Completo**	**2521**	**261**	**169**	**3,65**	**0,0365**	**1,14**	**101**	**44**	**0,35**	**0,540**	**0,788**	**5,28**
			Inicio D-XXI-7-1 / A-4	1621	261	210	3,15	0,0315	0,84	71	38	0,35	0,380	0,554	4,56
			A-4 / Final D-XXI-7-1	900	210	169	4,56	0,0456	0,50	101	44	0,35	0,540	0,788	5,28
XXI		**D-XXI-7**	**Completo**	**4402**	**262**	**166**	**2,18**	**0,0218**	**1,91**	**716**	**255**	**0,35**	**3,828**	**5,585**	**30,6**
			Inicio D-XXI-7 / A3	1610	262	230	1,99	0,0199	0,91	300	81	0,35	1,604	2,340	9,72
			A3 / Final D-XXI-7-1	2629	230	169	2,32	0,0232	1,28	614	211	0,35	3,282	4,789	25,32
			Final D-XXI-7-1 / Final D-XXI-7	163	169	166	1,84	0,0184	0,16	716	255	0,35	3,828	5,585	30,6
	Chermanillo														
XXI		**D-XXI-6-2**	**Completo**	**605**	**239**	**227**	**1,98**	**0,0198**	**0,43**	**25**	**11**	**0,35**	**0,134**	**0,195**	**1,32**
XXI		**D-XXI-6-1**	**Completo**	**1395**	**249**	**240**	**0,65**	**0,0065**	**1,01**	**42**	**41**	**0,35**	**0,225**	**0,328**	**4,92**
XXI		**D-XXI-6**	**Completo**	**2308**	**253**	**205**	**2,08**	**0,0208**	**1,18**	**205**	**131**	**0,35**	**1,096**	**1,599**	**15,72**
			Inicio D-XXI-6 / Final D-XXI-6-1	583	253	240	2,23	0,0223	0,41	44	29	0,35	0,235	0,343	3,48
			Final D-XXI-6-1 / A-5 (Final D-XXI-6-2)	851	240	227	1,53	0,0153	0,59	129	100	0,35	0,690	1,006	12
			A-5 (Final D-XXI-6-2) / Final D-XXI-6	874	227	205	2,52	0,0252	0,55	205	131	0,35	1,096	1,599	15,72
XXI		**D-XXI-5**	**Completo**	**2409**	**307**	**245**	**2,57**	**0,0257**	**1,17**	**105**	**65**	**0,35**	**0,561**	**0,819**	**7,8**
XXI		**D-XXI-4**	**Completo**	**3535**	**364**	**261**	**2,91**	**0,0291**	**1,53**	**243**	**203**	**0,35**	**1,299**	**1,895**	**24,36**
XX-XXII		**D-XX-XXII-5-2**	**Completo**	**925**	**259**	**254**	**0,54**	**0,0054**	**0,76**	**364**	**55**	**0,35**	**1,946**	**2,839**	**6,6**
XX-XXII		**D-XX-XXII-5-1**	**Completo**	**556**	**260**	**235**	**4,50**	**0,0450**	**0,35**	**25**	**21**	**0,35**	**0,134**	**0,195**	**2,52**
XX-XXII		**D-XX-XXII-5**	**Completo**	**4811**	**263**	**187**	**1,58**	**0,0158**	**2,18**	**829**	**350**	**0,35**	**4,432**	**6,466**	**42**
			Inicio D-XX-XXII-5 / Final D-XX-XXII-5-2	953	263	254	0,94	0,0094	0,70	108	82	0,35	0,577	0,842	9,84
			Final D-XX-XXII-5-2 / A-7 (Final D-XX-XXII-5-1)	1228	254	235	1,55	0,0155	0,77	659	310	0,35	3,523	5,140	37,2
			A-7 (Final D-XX-XXII-5-1) / Final D-XX-XXII-5	2630	235	187	1,83	0,0183	1,34	829	350	0,35	4,432	6,466	42
XX-XXII		**D-XX-XXII-4**	**Completo**	**4100**	**275**	**196**	**1,93**	**0,0193**	**1,86**	**322**	**227**	**0,35**	**1,721**	**2,512**	**27,24**
			Inicio D-XX-XXII-4 / A-6	2945	275	240	1,19	0,0119	1,58	257	200	0,35	1,374	2,005	24
			A-6 /Final D-XX-XXII-4	1155	240	196	3,81	0,0381	0,62	322	227	0,35	1,721	2,512	27,24
XX-XXII		**D-XX-XXII-3-1**	**Completo**	**2524**	**330**	**283**	**1,86**	**0,0186**	**1,29**	**153**	**135**	**0,35**	**0,818**	**1,193**	**16,2**
XX-XXII		**Aliviadero S. Gregorio**	**Completo**	**945**	**365**	**328**	**3,92**	**0,0392**	**0,53**	**187**	**0**	**0,35**	**1,000**	**1,459**	**0**
XX-XXII		**D-XX-XXII-3**	**Completo**	**7982**	**350**	**238**	**1,40**	**0,0140**	**3,27**	**2130**	**310**	**0,35**	**11,387**	**16,614**	**37,2**
			Inicio D-XX-XXII-3 / Final Aliviadero S. Gregorio	1050	350	328	2,10	0,0210	0,65	194	7	0,35	1,037	1,513	0,84
			Final Aliviadero S.Gregorio / Final D-XX-XXII-3-1	3172	328	283	1,42	0,0142	1,62	1210	56	0,35	6,469	9,438	6,72
			Final D-XX-XXII-3-1 / B-1 (Final D-XX-XXII-3)	3760	283	238	1,20	0,0120	1,90	2130	310	0,35	11,387	16,614	37,2

SECTOR	CUENCA	CAUCE	TRAMO	LONGITUD (m)	COTA INICIO	COTA FINAL	PENDIENTE NATURAL (%)	PENDIENTE (m/m)	TIEMPO DE CONCENTRACIÓN (horas)	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	COEFICIENTE DE ESCORRENTÍA	CAUDAL MAX. AVENIDA T=25 años (m^3/sg)	CAUDAL MAX. AVENIDA T=100 años (m^3/sg)	CAUDAL DE RETORNO DE RIEGO (l/sg)
XX-XXII		**D-XX-XXII-2**	**Completo**	**1938**	**340**	**292**	**2,48**	**0,0248**	**1,00**	**133**	**105**	**0,35**	**0,711**	**1,037**	**12,6**
XX-XXII		**D-XX-XXII-1**	**Completo**	**411**	**326**	**313**	**3,16**	**0,0316**	**0,29**	**207**	**20**	**0,35**	**1,107**	**1,615**	**2,4**
XXI-XX-XXII		**DC-XXI-XX-XXII**	**Completo**	**13371**	**351**	**161**	**1,42**	**0,0142**	**4,83**	**5883**	**2046**	**0,35**	**31,451**	**45,887**	**245,52**
			Inicio DC-XXI-XX-XXII / Final D-XX-XXII-1	1324	351	313	2,87	0,0287	0,73	255	58	0,35	1,363	1,989	6,96
			Final D-XX-XXII-1 / Final D-XX-XXII-2	1582	313	292	1,33	0,0133	0,97	629	193	0,35	3,363	4,906	23,16
			Final D-XX-XXII-2 / Final D-XXI-4	2001	292	261	1,55	0,0155	1,12	1063	498	0,35	5,683	8,291	59,76
			Final D-XXI-4 / Final D-XXI-5	1247	261	245	1,28	0,0128	0,81	1365	707	0,35	7,297	10,647	84,84
			Final D-XXI-5 / B-1 (Final D-XX-XXII-3)	452	245	238	1,55	0,0155	0,36	1611	818	0,35	8,612	12,566	98,16
			B-1 (Final D-XX-XXII-3) / Final D-XXI-6	2812	238	205	1,17	0,0117	1,53	3929	1220	0,35	21,004	30,646	146,4
			Final D-XXI-6 / Final D-XX-XXII-4	688	205	196	1,31	0,0131	0,51	4190	1369	0,35	22,400	32,682	164,28
			Final D-XX-XXII-4 / Final D-XX-XXII-5	635	196	187	1,42	0,0142	0,48	4556	1609	0,35	24,356	35,537	193,08
			Final D-XX-XXII-5 / Final DC-XXI-XX-XXII	2630	187	161	0,99	0,0099	1,50	5883	2046	0,35	31,451	45,887	245,52
	Alcanadre 6														
XX-XXII		**D-XX-XXII-7-1**	**Completo**	**1517**	**286**	**251**	**2,31**	**0,0231**	**0,84**	**81**	**74**	**0,35**	**0,433**	**0,632**	**8,88**
XX-XXII		**D-XX-XXII-7**	**Completo**	**2841**	**288**	**212**	**2,68**	**0,0268**	**1,32**	**190**	**137**	**0,35**	**1,016**	**1,482**	**16,44**
			Inicio D-XX-XXII-7 / Final D-XX-XXII-7-1	1436	288	251	2,58	0,0258	0,79	63	51	0,35	0,337	0,491	6,12
			Final D-XX-XXII-7-1 / A-8 (Final D-XX-XXII-6 y D-XX-XXII-7)	1405	251	212	2,78	0,0278	0,77	190	137	0,35	1,016	1,482	16,44
XX-XXII		**D-XX-XXII-6**	**Completo**	**2206**	**269**	**212**	**2,58**	**0,0258**	**1,10**	**281**	**171**	**0,35**	**1,502**	**2,192**	**20,52**
XX-XXII		**A-8 (Final D-XX-XXII-6 y Final D-XX-XXII-7) / Río Alcanadre**	**Completo**	**2634**	**212**	**149**	**2,39**	**0,0239**	**1,27**	**758**	**322**	**0,35**	**4,052**	**5,912**	**38,64**
	Valcarreta														
VII		**D-VII-3-1**	**Completo**	**1140**	**311**	**294**	**1,49**	**0,0149**	**0,74**	**85**	**54**	**0,35**	**0,340**	**0,493**	**6,48**
VII		**D-VII-3**	**Completo**	**4360**	**305**	**265**	**0,92**	**0,0092**	**2,24**	**605**	**458**	**0,35**	**2,420**	**3,509**	**54,96**
			Inicio D-VII-3 / Final D-VII-3-1	1931	305	294	0,57	0,0057	1,32	335	274	0,35	1,340	1,943	32,88
			Final D-VII-3-1 / Final D-VII-3	2429	294	265	1,19	0,0119	1,37	605	458	0,35	2,420	3,509	54,96
VII		**D-VII-2**	**Completo**	**1798**	**310**	**281**	**1,61**	**0,0161**	**1,03**	**70**	**53**	**0,35**	**0,280**	**0,406**	**6,36**
VII		**D-VII-1**	**Completo**	**941**	**309**	**283**	**2,76**	**0,0276**	**0,57**	**28**	**19**	**0,35**	**0,112**	**0,162**	**2,28**
XX-XXII		**D-XX-XXII-8**	**Completo**	**697**	**263**	**217**	**6,60**	**0,0660**	**0,38**	**31**	**14**	**0,35**	**0,124**	**0,180**	**1,68**
XX-XXII		**D-XX-XXII-9**	**Completo**	**912**	**246**	**233**	**1,43**	**0,0143**	**0,63**	**119**	**15**	**0,35**	**0,476**	**0,690**	**1,8**
XIX		**D-XIX-5**	**Completo**	**7777**	**339**	**240**	**1,27**	**0,0127**	**3,27**	**1422**	**398**	**0,35**	**5,688**	**8,248**	**47,76**
XIX		**D-XIX-4**	**Completo**	**4587**	**338**	**246**	**2,01**	**0,0201**	**2,01**	**390**	**302**	**0,35**	**1,560**	**2,262**	**36,24**
XIX		**D-XIX-3**	**Completo**	**1758**	**323**	**296**	**1,54**	**0,0154**	**1,02**	**317**	**153**	**0,35**	**1,268**	**1,839**	**18,36**
XIX		**D-XIX-2**	**Completo**	**2907**	**360**	**300**	**2,06**	**0,0206**	**1,41**	**275**	**97**	**0,35**	**1,100**	**1,595**	**11,64**
XIX		**D-XIX-1**	**Completo**	**1202**	**337**	**307**	**2,50**	**0,0250**	**0,70**	**182**	**86**	**0,35**	**0,728**	**1,056**	**10,32**
XVIII		**D-XVIII-5-1**	**Completo**	**466**	**267**	**264**	**0,64**	**0,0064**	**0,44**	**18**	**17**	**0,35**	**0,073**	**0,104**	**2,04**
XVIII		**D-XVIII-5**	**Completo**	**1896**	**279**	**261**	**0,95**	**0,0095**	**1,18**	**261**	**147**	**0,35**	**1,060**	**1,514**	**17,64**
			Inicio D-XVIII-5 / Final D-XVIII-5-1	1541	279	264	0,97	0,0097	1,00	229	117	0,35	0,930	1,328	14,04
			Final D-XVIII-5-1 / Final D-XVIII-5	355	264	261	0,85	0,0085	0,34	261	147	0,35	1,060	1,514	17,64
XVIII		**D-XVIII-4-4**	**Completo**	**776**	**290**	**274**	**2,06**	**0,0206**	**0,52**	**89**	**85**	**0,35**	**0,361**	**0,516**	**10,2**
XVIII		**D-XVIII-4-3**	**Completo**	**952**	**293**	**271**	**2,31**	**0,0231**	**0,59**	**59**	**56**	**0,35**	**0,240**	**0,342**	**6,72**
XVIII		**D-XVIII-4-2**	**Completo**	**501**	**273**	**260**	**2,59**	**0,0259**	**0,36**	**38**	**36**	**0,35**	**0,154**	**0,220**	**4,32**
XVIII		**D-XVIII-4-1**	**Completo**	**2589**	**281**	**258**	**0,89**	**0,0089**	**1,52**	**570**	**174**	**0,35**	**2,314**	**3,306**	**20,88**
XVIII		**D-XVIII-4**	**Completo**	**3707**	**292**	**254**	**1,03**	**0,0103**	**1,94**	**1437**	**535**	**0,35**	**5,834**	**8,335**	**64,2**
			Inicio D-XVIII-4 / Final D-XVIII-4-4	1305	292	274	1,38	0,0138	0,83	541	66	0,35	2,196	3,138	7,92
			Final D-XVIII-4-4 / Final D-XVIII-4-3	232	274	271	1,29	0,0129	0,23	637	158	0,35	2,586	3,695	18,96
			Final D-XVIII-4-3 / Final D-XVIII-4-2	1164	271	260	0,95	0,0095	0,82	788	295	0,35	3,199	4,570	35,4
			Final D-XVIII-4-2 / Final D-XVIII-4-1	198	260	258	1,01	0,0101	0,21	832	336	0,35	3,378	4,826	40,32
			Final D-XVIII-4-1 / Final D-XVIII-4	808	258	254	0,50	0,0050	0,70	1437	535	0,35	5,834	8,335	64,2
XVIII		**D-XVIII-3-2-1**	**Completo**	**590**	**302**	**289**	**2,20**	**0,0220**	**0,41**	**211**	**27**	**0,35**	**0,857**	**1,224**	**3,24**
XVIII		**D-XVIII-3-2**	**Completo**	**1231**	**301**	**280**	**1,71**	**0,0171**	**0,76**	**446**	**79**	**0,35**	**1,811**	**2,587**	**9,48**
			Inicio D-XVIII-3-2 / Final D-XVIII-3-2-1	683	301	289	1,76	0,0176	0,48	87	16	0,35	0,353	0,505	1,92
			Final D-XVIII-3-2-1 / Final D-XVIII-3-2	548	289	280	1,64	0,0164	0,41	446	79	0,35	1,811	2,587	9,48
XVIII		**D-XVIII-3-1**	**Completo**	**3092**	**305**	**254**	**1,65**	**0,0165**	**1,54**	**381**	**233**	**0,35**	**1,547**	**2,210**	**27,96**
XVIII		**D-XVIII-3**	**Completo**	**5863**	**290**	**249**	**0,70**	**0,0070**	**2,95**	**2575**	**610**	**0,35**	**10,455**	**14,935**	**73,2**
			Inicio D-XVIII-3 / Final D-XVIII-3-2	1422	290	280	0,70	0,0070	1,01	870	54	0,35	3,532	5,046	6,48
			Final D-XVIII-3-2 / Final D-XVIII-3-1	3440	280	254	0,76	0,0076	1,94	2162	354	0,35	8,778	12,540	42,48
			Final D-XVIII-3-1 / Final D-XVIII-3	1001	254	249	0,50	0,0050	0,82	2575	610	0,35	10,455	14,935	73,2

SECTOR	CUENCA	CAUCE	TRAMO	LONGITUD (m)	COTA INICIO	COTA FINAL	PENDIENTE NATURAL (%)	PENDIENTE (m/m)	TIEMPO DE CONCENTRACIÓN (horas)	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	COEFICIENTE DE ESCORRENTÍA	CAUDAL MAX. AVENIDA T=25 años (m^3/sg)	CAUDAL MAX. AVENIDA T=100 años (m^3/sg)	CAUDAL DE RETORNO DE RIEGO (l/sg)
XVIII		**D-XVIII-2**	**Completo**	**2639**	**292**	**244**	**1,82**	**0,0182**	**1,34**	**346**	**291**	**0,35**	**1,405**	**2,007**	**34,92**
XVIII		**D-XVIII-1**	**Completo**	**1107**	**252**	**243**	**0,81**	**0,0081**	**0,81**	**30**	**30**	**0,35**	**0,122**	**0,174**	**3,6**
VII		**D-VII-4-2**	**Completo**	**422**	**278**	**275**	**0,71**	**0,0071**	**0,40**	**23**	**21**	**0,35**	**0,093**	**0,133**	**2,52**
VII		**D-VII-4-1**	**Completo**	**2639**	**309**	**257**	**1,97**	**0,0197**	**1,32**	**210**	**159**	**0,35**	**0,853**	**1,218**	**19,08**
VII		**D-VII-4**	**Completo**	**3769**	**297**	**248**	**1,30**	**0,0130**	**1,88**	**589**	**470**	**0,35**	**2,391**	**3,416**	**56,4**
			Inicio D-VII-4 / Final D-VII-4-2	1186	297	275	1,85	0,0185	0,73	136	114	0,35	0,552	0,789	13,68
			Final D-VII-4-2 / Final D-VII-4-1	1780	275	257	1,01	0,0101	1,11	329	271	0,35	1,336	1,908	32,52
			Final D-VII-4-1 / Final D-VII-4	803	257	248	1,12	0,0112	0,60	589	470	0,35	2,391	3,416	56,4
VII-XVIII		**DC-VII-XVIII**	**Completo**	**8224**	**280**	**227**	**0,64**	**0,0064**	**3,88**	**6125**	**2800**	**0,35**	**24,868**	**35,525**	**336**
			Inicio DC-VII-XVIII / Final D-XVIII-5	2736	280	261	0,69	0,0069	1,66	295	239	0,35	1,198	1,711	28,68
			Final D-XVIII-5 / Final D-XVIII-4	1263	261	254	0,55	0,0055	0,96	631	456	0,35	2,562	3,660	54,72
			Final D-XVIII-4 / Final D-XVIII-3	1168	254	249	0,43	0,0043	0,95	2236	1139	0,35	9,078	12,969	136,68
			Final D-XVIII-3 / Final D-VII-4	164	249	248	0,61	0,0061	0,20	4815	1751	0,35	19,549	27,927	210,12
			Final D-VII-4 / Final D-XVIII-2	599	248	244	0,67	0,0067	0,53	5449	2255	0,35	22,123	31,604	270,6
			Final D-XVIII-2 / Final D-XVIII-1	226	244	243	0,44	0,0044	0,27	5804	2552	0,35	23,564	33,663	306,24
			Final D-XVIII-1 / Final DC-VII-XVIII	2068	243	227	0,77	0,0077	1,31	6125	2800	0,35	24,868	35,525	336
XIX-VII		**DC-XIX-VII**	**Completo**	**8890**	**311**	**240**	**0,80**	**0,0080**	**3,95**	**2813**	**1620**	**0,35**	**11,252**	**16,315**	**194,4**
			Inicio DC-XIX-VII / Final D-XIX-1	462	311	307	0,87	0,0087	0,41	191	41	0,35	0,764	1,108	4,92
			Final D-XIX-1 / Final D-XIX-2	733	307	300	0,95	0,0095	0,57	425	156	0,35	1,700	2,465	18,72
			Final D-XIX-2 / Final D-XIX-3	470	300	296	0,85	0,0085	0,42	780	288	0,35	3,120	4,524	34,56
			Final D-XIX-3 / Final D-VII-1	1892	296	283	0,69	0,0069	1,25	1312	589	0,35	5,248	7,610	70,68
			Final D-VII-1 / Final D-VII-2	234	283	281	0,85	0,0085	0,25	1420	660	0,35	5,680	8,236	79,2
			Final D-VII-2 / Final D-VII-3	2009	281	265	0,80	0,0080	1,28	1607	771	0,35	6,428	9,321	92,52
			Final D-VII-3 / Final D-XIX-4	2191	265	246	0,87	0,0087	1,34	2380	1291	0,35	9,520	13,804	154,92
			Final D-XIX-4 / Final DC-XIX-VII	899	246	240	0,67	0,0067	0,72	2813	1620	0,35	11,252	16,315	194,4
XX-XXII-VII		**DC-XX-XXII-VII**	**Completo**	**1301**	**240**	**227**	**1,00**	**0,0100**	**0,88**	**4428**	**2090**	**0,35**	**17,712**	**25,682**	**250,8**
			Inicio DC-XX-XXII-VII / Final D-XX-XXII-9	562	240	233	1,25	0,0125	0,45	4277	2050	0,35	17,108	24,807	246
			Final D-XX-XXII-9 / Final DC-XX-XXII-VII	739	233	227	0,81	0,0081	0,59	4428	2090	0,35	17,712	25,682	250,8
XX-XXII-XVIII		**DC-XX-XXII-XVIII**	**Completo**	**7785**	**227**	**137**	**1,16**	**0,0116**	**3,33**	**12186**	**5145**	**0,35**	**48,744**	**70,679**	**617,4**
			Inicio DC-XX-XXII-XVIII / Final D-XX-XXII-8	1214	227	217	0,82	0,0082	0,87	10652	4942	0,35	42,608	61,782	593,04
			Final D-XX-XXII-8 / Final DC-XX-XXII-XVIII	6571	217	137	1,22	0,0122	2,90	12186	5145	0,35	48,744	70,679	617,4
	Campillo														
XVIII		**D-XVIII-5-1**	**Completo**	**466**	**267**	**264**	**0,64**	**0,0064**	**0,44**	**18**	**17**	**0,35**	0,073	0,104	**2,04**
XVIII		**D-XVIII-5**	**Completo**	**1896**	**279**	**261**	**0,95**	**0,0095**	**1,18**	**261**	**147**	**0,35**	1,060	1,514	**17,64**
			Inicio D-XVIII-5 / Final D-XVIII-5-1	1541	279	264	0,97	0,0097	1,00	229	117	0,35	0,930	1,328	14,04
			Final D-XVIII-5-1 / Final D-XVIII-5	355	264	261	0,85	0,0085	0,34	261	147	0,35	1,060	1,514	17,64
XVIII		**D-XVIII-4-4**	**Completo**	**776**	**290**	**274**	**2,06**	**0,0206**	**0,52**	**89**	**85**	**0,35**	**0,361**	**0,516**	**10,2**
XVIII		**D-XVIII-4-3**	**Completo**	**952**	**293**	**271**	**2,31**	**0,0231**	**0,59**	**59**	**56**	**0,35**	**0,240**	**0,342**	**6,72**
XVIII		**D-XVIII-4-2**	**Completo**	**501**	**273**	**260**	**2,59**	**0,0259**	**0,36**	**38**	**36**	**0,35**	**0,154**	**0,220**	**4,32**
XVIII		**D-XVIII-4-1**	**Completo**	**2589**	**281**	**258**	**0,89**	**0,0089**	**1,52**	**570**	**174**	**0,35**	**2,314**	**3,306**	**20,88**
XVIII		**D-XVIII-4**	**Completo**	**3707**	**292**	**254**	**1,03**	**0,0103**	**1,94**	**1437**	**535**	**0,35**	**5,834**	**8,335**	**64,2**
			Inicio D-XVIII-4 / Final D-XVIII-4-4	1305	292	274	1,38	0,0138	0,83	541	66	0,35	2,196	3,138	7,92
			Final D-XVIII-4-4 / Final D-XVIII-4-3	232	274	271	1,29	0,0129	0,23	637	158	0,35	2,586	3,695	18,96
			Final D-XVIII-4-3 / Final D-XVIII-4-2	1164	271	260	0,95	0,0095	0,82	788	295	0,35	3,199	4,570	35,4
			Final D-XVIII-4-2 / Final D-XVIII-4-1	198	260	258	1,01	0,0101	0,21	832	336	0,35	3,378	4,826	40,32
			Final D-XVIII-4-1 / Final D-XVIII-4	808	258	254	0,50	0,0050	0,70	1437	535	0,35	5,834	8,335	64,2
XVIII		**D-XVIII-3-2-1**	**Completo**	**590**	**302**	**289**	**2,20**	**0,0220**	**0,41**	**211**	**27**	**0,35**	**0,857**	**1,224**	**3,24**
XVIII		**D-XVIII-3-2**	**Completo**	**1231**	**301**	**280**	**1,71**	**0,0171**	**0,76**	**446**	**79**	**0,35**	**1,811**	**2,587**	**9,48**
			Inicio D-XVIII-3-2 / Final D-XVIII-3-2-1	683	301	289	1,76	0,0176	0,48	87	16	0,35	0,353	0,505	1,92
			Final D-XVIII-3-2-1 / Final D-XVIII-3-2	548	289	280	1,64	0,0164	0,41	446	79	0,35	1,811	2,587	9,48
XVIII		**D-XVIII-3-1**	**Completo**	**3092**	**305**	**254**	**1,65**	**0,0165**	**1,54**	**381**	**233**	**0,35**	**1,547**	**2,210**	**27,96**
XVIII		**D-XVIII-3**	**Completo**	**5863**	**290**	**249**	**0,70**	**0,0070**	**2,95**	**2575**	**610**	**0,35**	**10,455**	**14,935**	**73,2**
			Inicio D-XVIII-3 / Final D-XVIII-3-2	1422	290	280	0,70	0,0070	1,01	870	54	0,35	3,532	5,046	6,48
			Final D-XVIII-3-2 / Final D-XVIII-3-1	3440	280	254	0,76	0,0076	1,94	2162	354	0,35	8,778	12,540	42,48
			Final D-XVIII-3-1 / Final D-XVIII-3	1001	254	249	0,50	0,0050	0,82	2575	610	0,35	10,455	14,935	73,2
XVIII		**D-XVIII-2**	**Completo**	**2639**	**292**	**244**	**1,82**	**0,0182**	**1,34**	**346**	**291**	**0,35**	**1,405**	**2,007**	**34,92**
XVIII		**D-XVIII-1**	**Completo**	**1107**	**252**	**243**	**0,81**	**0,0081**	**0,81**	**30**	**30**	**0,35**	**0,122**	**0,174**	**3,6**

SECTOR	CUENCA	CAUCE	TRAMO	LONGITUD (m)	COTA INICIO	COTA FINAL	PENDIENTE NATURAL (%)	PENDIENTE (m/m)	TIEMPO DE CONCENTRACIÓN (horas)	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	COEFICIENTE DE ESCORRENTÍA	CAUDAL MAX. AVENIDA T=25 años (m^3/sg)	CAUDAL MAX. AVENIDA T=100 años (m^3/sg)	CAUDAL DE RETORNO DE RIEGO (l/sg)
VII		**D-VII-4-2**	**Completo**	**422**	**278**	**275**	**0,71**	**0,0071**	**0,40**	**23**	**21**	**0,35**	**0,093**	**0,133**	**2,52**
VII		**D-VII-4-1**	**Completo**	**2639**	**309**	**257**	**1,97**	**0,0197**	**1,32**	**210**	**159**	**0,35**	**0,853**	**1,218**	**19,08**
VII		**D-VII-4**	**Completo**	**3769**	**297**	**248**	**1,30**	**0,0130**	**1,88**	**589**	**470**	**0,35**	**2,391**	**3,416**	**56,4**
			Inicio D-VII-4 / Final D-VII-4-2	1186	297	275	1,85	0,0185	0,73	136	114	0,35	0,552	0,789	13,68
			Final D-VII-4-2 / Final D-VII-4-1	1780	275	257	1,01	0,0101	1,11	329	271	0,35	1,336	1,908	32,52
			Final D-VII-4-1 / Final D-VII-4	803	257	248	1,12	0,0112	0,60	589	470	0,35	2,391	3,416	56,4
VII-XVIII		**DC-VII-XVIII**	**Completo**	**8224**	**280**	**227**	**0,64**	**0,0064**	**3,88**	**6125**	**2800**	**0,35**	**24,868**	**35,525**	**336**
			Inicio DC-VII-XVIII / Final D-XVIII-5	2736	280	261	0,69	0,0069	1,66	295	239	0,35	1,198	1,711	28,68
			Final D-XVIII-5 / Final D-XVIII-4	1263	261	254	0,55	0,0055	0,96	631	456	0,35	2,562	3,660	54,72
			Final D-XVIII-4 / Final D-XVIII-3	1168	254	249	0,43	0,0043	0,95	2236	1139	0,35	9,078	12,969	136,68
			Final D-XVIII-3 / Final D-VII-4	164	249	248	0,61	0,0061	0,20	4815	1751	0,35	19,549	27,927	210,12
			Final D-VII-4 / Final D-XVIII-2	599	248	244	0,67	0,0067	0,53	5449	2255	0,35	22,123	31,604	270,6
			Final D-XVIII-2 / Final D-XVIII-1	226	244	243	0,44	0,0044	0,27	5804	2552	0,35	23,564	33,663	306,24
			Final D-XVIII-1 / Final DC-VII-XVIII	2068	243	227	0,77	0,0077	1,31	6125	2800	0,35	24,868	35,525	336
	Val de Mateo														
XVII		**D-XVII-2-3-1**	**Completo**	**2342**	**290**	**256**	**1,45**	**0,0145**	**1,28**	**717**	**240**	**0,35**	**3,728**	**5,306**	**28,8**
XVII		**D-XVII-2-3**	**Completo**	**3107**	**292**	**254**	**1,22**	**0,0122**	**1,64**	**1693**	**562**	**0,35**	**8,804**	**12,528**	**67,44**
			Inicio D-XVII-2-3 / Final D-XVII-2-3-1	2601	292	256	1,38	0,0138	1,40	942	291	0,35	4,898	6,971	34,92
			Final D-XVII-2-3-1 / Final D-XVII-2-3	506	256	254	0,40	0,0040	0,51	1693	562	0,35	8,804	12,528	67,44
XVII		**D-XVII-2-2**	**Completo**	**3632**	**298**	**232**	**1,82**	**0,0182**	**1,71**	**384**	**354**	**0,35**	**1,997**	**2,842**	**42,48**
XVII		**D-XVII-2-1**	**Completo**	**2370**	**289**	**221**	**2,87**	**0,0287**	**1,13**	**214**	**199**	**0,35**	**1,113**	**1,584**	**23,88**
XVII		**D-XVII-2**	**Completo**	**7753**	**303**	**189**	**1,47**	**0,0147**	**3,17**	**3595**	**1637**	**0,35**	**18,694**	**26,603**	**196,44**
			Inicio D-XVII-2 / Final D-XVII-2-3	3398	303	254	1,44	0,0144	1,70	184	137	0,35	0,957	1,362	16,44
			Final D-XVII-2-3 / A-11	914	254	240	1,53	0,0153	0,62	2771	991	0,35	14,409	20,505	118,92
			A-11 / Final D-XVII-2-2	515	240	232	1,55	0,0155	0,40	2870	1023	0,35	14,924	21,238	122,76
			Final D-XVII-2-2 / Final D-XVII-2-1	783	232	221	1,40	0,0140	0,56	3271	1385	0,35	17,009	24,205	166,2
			Final D-XVII-2-1 / Final D-XVII-2	2143	221	189	1,49	0,0149	1,19	3595	1637	0,35	18,694	26,603	196,44
XVII		**D-XVII-1**	**Completo**	**2818**	**288**	**244**	**1,56**	**0,0156**	**1,45**	**1516**	**127**	**0,35**	**7,883**	**11,218**	**15,24**
VI-XVII		**DC-VI-XVII**	**Completo**	**12383**	**297**	**148**	**1,20**	**0,0120**	**4,70**	**7764**	**2567**	**0,35**	**40,373**	**57,454**	**308,04**
			Inicio DC-VI-XVII / B-4 (Final D-XVII-1)	4939	297	244	1,07	0,0107	2,39	2090	535	0,35	10,868	15,466	64,2
			B-4 (Final D-XVII-1) / Final D-XVII-2	4294	244	189	1,28	0,0128	2,08	3951	877	0,35	20,545	29,237	105,24
			Final D-XVII-2 / Final DC-VI-XVII	3150	189	148	1,30	0,0130	1,64	7764	2567	0,35	40,373	57,454	308,04
	Val de Liberola														
XVII		**D-XVII-3**	**Completo**	**4263**	**288**	**134**	**3,61**	**0,0361**	**1,70**	**263**	**173**	**0,35**	**1,026**	**1,473**	**20,76**
			Inicio D-XVII-3 / A-12	1415	288	255	2,33	0,0233	0,80	105	138	0,35	0,410	0,588	16,56
			A-12 / Final D-XVII-3	2848	255	134	4,25	0,0425	1,21	263	173	0,35	1,026	1,473	20,76
VI		**D-VI-6-1**	**Completo**	**295**	**260**	**257**	**1,02**	**0,0102**	**0,28**	**62**	**59**	**0,35**	**0,242**	**0,347**	**7,08**
VI		**D-VI-6**	**Completo**	**5526**	**280**	**188**	**1,66**	**0,0166**	**2,39**	**661**	**543**	**0,35**	**2,578**	**3,702**	**65,16**
			Inicio D-VI-6 / Final D-VI-6-1	1369	280	257	1,68	0,0168	0,83	175	167	0,35	0,683	0,980	20,04
			Final D-VI-6-1 / A-10	2537	257	225	1,26	0,0126	1,40	576	511	0,35	2,246	3,226	61,32
			A-10 / Final D-VI-6	1620	225	188	2,28	0,0228	0,89	661	543	0,35	2,578	3,702	65,16
VI		**D-VI-5-1**	**Completo**	**497**	**240**	**227**	**2,62**	**0,0262**	**0,35**	**47**	**21**	**0,35**	**0,183**	**0,263**	**2,52**
VI		**D-VI-5**	**Completo**	**1381**	**246**	**200**	**3,33**	**0,0333**	**0,73**	**122**	**62**	**0,35**	**0,476**	**0,683**	**7,44**
			Inicio D-VI-5 / A-9 (Final D-VI-5-1)	561	246	227	3,39	0,0339	0,37	48	29	0,35	0,187	0,269	3,48
			A-9 (Final D-VI-5-1) / Final D-VI-5	820	227	200	3,29	0,0329	0,49	122	62	0,35	0,476	0,683	7,44
VI		**D-VI-4**	**Completo**	**888**	**245**	**218**	**3,04**	**0,0304**	**0,53**	**68**	**21**	**0,35**	**0,265**	**0,381**	**2,52**
VI		**D-VI-3**	**Completo**	**3251**	**282**	**225**	**1,75**	**0,0175**	**1,58**	**423**	**354**	**0,35**	**1,650**	**2,369**	**42,48**
VI		**D-VI-2-6**	**Completo**	**1007**	**331**	**302**	**2,88**	**0,0288**	**0,59**	**29**	**23**	**0,35**	**0,113**	**0,162**	**2,76**
VI		**D-VI-2-5**	**Completo**	**966**	**319**	**292**	**2,80**	**0,0280**	**0,58**	**55**	**48**	**0,35**	**0,215**	**0,308**	**5,76**
VI		**D-VI-2-4**	**Completo**	**416**	**291**	**288**	**0,72**	**0,0072**	**0,39**	**37**	**34**	**0,35**	**0,144**	**0,207**	**4,08**
VI		**D-VI-2-3**	**Completo**	**549**	**288**	**279**	**1,64**	**0,0164**	**0,42**	**241**	**66**	**0,35**	**0,940**	**1,350**	**7,92**
VI		**D-VI-2-2**	**Completo**	**2491**	**309**	**260**	**1,97**	**0,0197**	**1,27**	**243**	**193**	**0,35**	**0,948**	**1,361**	**23,16**
VI		**D-VI-2-1**	**Completo**	**1330**	**261**	**245**	**1,20**	**0,0120**	**0,86**	**81**	**73**	**0,35**	**0,316**	**0,454**	**8,76**
VI		**D-VI-2**	**Completo**	**8352**	**335**	**240**	**1,14**	**0,0114**	**3,52**	**2367**	**1096**	**0,35**	**9,231**	**13,255**	**131,52**
			Inicio D-VI-2 / Final D-VI-2-6	1769	335	302	1,87	0,0187	0,99	168	127	0,35	0,655	0,941	15,24
			Final D-VI-2-6 / Final D-VI-2-5	977	302	292	1,02	0,0102	0,70	275	213	0,35	1,073	1,540	25,56
			Final D-VI-2-5 / Final D-VI-2-4	427	292	288	0,94	0,0094	0,38	489	399	0,35	1,907	2,738	47,88
			Final D-VI-2-4 / Final D-VI-2-3	1242	288	279	0,72	0,0072	0,90	627	532	0,35	2,445	3,511	63,84
			Final D-VI-2-3 / Final D-VI-2-2	1971	279	260	0,96	0,0096	1,21	1881	711	0,35	7,336	10,534	85,32
			Final D-VI-2-2 / Final D-VI-2-1	1381	260	245	1,09	0,0109	0,91	2249	1002	0,35	8,771	12,594	120,24
			Final D-VI-2-1 / Final D-VI-2	585	245	240	0,85	0,0085	0,49	2367	1096	0,35	9,231	13,255	131,52
VI		**D-VI-1**	**Completo**	**2121**	**316**	**270**	**2,17**	**0,0217**	**1,10**	**118**	**62**	**0,35**	**0,460**	**0,661**	**7,44**

SECTOR	CUENCA	CAUCE	TRAMO	LONGITUD (m)	COTA INICIO	COTA FINAL	PENDIENTE NATURAL (%)	PENDIENTE (m/m)	TIEMPO DE CONCENTRACIÓN (horas)	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	COEFICIENTE DE ESCORRENTÍA	CAUDAL MAX. AVENIDA T=25 años (m^3/sg)	CAUDAL MAX. AVENIDA T=100 años (m^3/sg)	CAUDAL DE RETORNO DE RIEGO (l/sg)
XVII		**D-XVII-2-3-1**	**Completo**	**2342**	**290**	**256**	**1,45**	**0,0145**	**1,28**	**717**	**240**	**0,35**	**3,728**	**5,306**	**28,8**
XVII		**D-XVII-2-3**	**Completo**	**3107**	**292**	**254**	**1,22**	**0,0122**	**1,64**	**1693**	**562**	**0,35**	**8,804**	**12,528**	**67,44**
			Inicio D-XVII-2-3 / Final D-XVII-2-3-1	2601	292	256	1,38	0,0138	1,40	942	291	0,35	4,898	6,971	34,92
			Final D-XVII-2-3-1 / Final D-XVII-2-3	506	256	254	0,40	0,0040	0,51	1693	562	0,35	8,804	12,528	67,44
XVII		**D-XVII-2-2**	**Completo**	**3632**	**298**	**232**	**1,82**	**0,0182**	**1,71**	**384**	**354**	**0,35**	**1,997**	**2,842**	**42,48**
XVII		**D-XVII-2-1**	**Completo**	**2370**	**289**	**221**	**2,87**	**0,0287**	**1,13**	**214**	**199**	**0,35**	**1,113**	**1,584**	**23,88**
XVII		**D-XVII-2**	**Completo**	**7753**	**303**	**189**	**1,47**	**0,0147**	**3,17**	**3595**	**1637**	**0,35**	**18,694**	**26,603**	**196,44**
			Inicio D-XVII-2 / Final D-XVII-2-3	3398	303	254	1,44	0,0144	1,70	184	137	0,35	0,957	1,362	16,44
			Final D-XVII-2-3 / A-11	914	254	240	1,53	0,0153	0,62	2771	991	0,35	14,409	20,505	118,92
			A-11 / Final D-XVII-2-2	515	240	232	1,55	0,0155	0,40	2870	1023	0,35	14,924	21,238	122,76
			Final D-XVII-2-2 / Final D-XVII-2-1	783	232	221	1,40	0,0140	0,56	3271	1385	0,35	17,009	24,205	166,2
			Final D-XVII-2-1 / Final D-XVII-2	2143	221	189	1,49	0,0149	1,19	3595	1637	0,35	18,694	26,603	196,44
XVII		**D-XVII-1**	**Completo**	**2818**	**288**	**244**	**1,56**	**0,0156**	**1,45**	**1516**	**127**	**0,35**	**7,883**	**11,218**	**15,24**
VI-XVII		**DC-VI-XVII**	**Completo**	**12383**	**297**	**148**	**1,20**	**0,0120**	**4,70**	**7764**	**2567**	**0,35**	**40,373**	**57,454**	**308,04**
			Inicio DC-VI-XVII / B-4 (Final D-XVII-1)	4939	297	244	1,07	0,0107	2,39	2090	535	0,35	10,868	15,466	64,2
			B-4 (Final D-XVII-1) / Final D-XVII-2	4294	244	189	1,28	0,0128	2,08	3951	877	0,35	20,545	29,237	105,24
			Final D-XVII-2 / Final DC-VI-XVII	3150	189	148	1,30	0,0130	1,64	7764	2567	0,35	40,373	57,454	308,04
VI		**DC-VI**	**Completo**	**18882**	**340**	**120**	**1,17**	**0,0117**	**6,52**	**23161**	**5176**	**0,35**	**90,328**	**129,702**	**621,12**
			Inicio DC-VI / B-3	2856	340	300	1,40	0,0140	1,50						
			B-3 / Final D-VI-1	1616	300	270	1,86	0,0186	0,92						
			Final D-VI-1 / Final D-VI-2	2163	270	240	1,39	0,0139	1,22						
			Final D-VI-2 / Final D-VI-3	1508	240	225	0,99	0,0099	0,98						
			Final D-VI-3 / Final D-VI-4	876	225	218	0,80	0,0080	0,68						
			Final D-VI-4 / Final D-VI-5	2036	218	200	0,88	0,0088	1,26						
			Final D-VI-5 / Final D-VI-6	1317	200	188	0,91	0,0091	0,90						
			Final D-VI-6 / Final DC-VI-XVII	3175	188	148	1,26	0,0126	1,66						
			Final DC-VI-XVII / Final D-XVII-3	1573	148	134	0,89	0,0089	1,04						
			Final D-XVII-3 / Final DC-VI	1762	134	120	0,79	0,0079	1,16						

9.- ESTUDIO Y CALCULO DE LOS RETORNOS DE RIEGO

ESTUDIO DE LOS RETORNOS DE RIEGO.

El sistema de aplicación de agua en parcela (aspersión, microaspersión o goteo) unido al sistema de distribución del agua de riego (tuberías enterradas a presión) permite estimar una eficiencia elevada en la utilización del agua. Se entiende por eficiencia la relación entre el volumen de agua aportada y el volumen de agua realmente evapotranspirado por los cultivos objeto de riego. La experiencia obtenida en los sectores de Monegros II en funcionamiento corroboran que las eficiencias de riego son efectivamente elevadas superando ampliamente los valores observados en los sistema de riego tradicional donde

Para el cálculo de las necesidades de riego se han adoptado las siguientes eficiencias (referidas al consumo en el canal o balsa de alimentación), que se entienden moderadas con el fin de quedar del lado de la seguridad:

- Riego por goteo: 90 %
- Riego por aspersión: 80%

En función de la distribución de uno y otro sistema, se obtiene la siguiente eficiencia media global para el conjunto del sistema:

- Goteo: 0,30 x 0,90 = 0,27
- Aspersión: 0,70 x 0,80 = 0,56
- TOTAL EFCICIENCIA MEDIA GLOBAL: 0,27 +0,56 = 0,83

Así pues del cálculo de necesidades se deduce una eficiencia media del 83 %. Se trata de un valor, como ya se ha dicho, moderado en relación con las posibilidades y comportamiento real de este tipo de regadíos.

El agua aportada no utilizada por los cultivos, en función de las cifras anteriores, sería por tanto equivalente al 17% del consumo total. Como dicho consumo se ha calculado que es de 7.552,91 m3/ha/año, el volumen correspondiente a la "ineficiencia" resultaría ser de 1.284 m3/ha/año. Este volumen de agua es necesario, y también suficiente, para asegurar, mediante lavado, la eliminación de las sales que l riego tiende a acumular en el suelo evitando con ello los procesos de salinización. La moderación de estos volúmenes de agua de lavado resulta en todo caso esencial para la limitación y control de aportaciones de sales a la red hidrográfica, ya que se sabe que en Monegros, las aguas de escorrentía de riego aparecen saturadas por lo que la masa de sales vertida al río Ebro resulta directamente proporcional a los volúmenes de agua vertidos.

Así pues, como consecuencia de la eficiencia estimada, aparece un volumen de agua que es necesario evacuar. Ello es imprescindible al objeto de evitar encharcamientos del terreno y consiguiente degradación del mismo. Así mismo se requiere que la evacuación se realice minimizando la alteración del régimen hidrológico natural. Estos volúmenes de agua a evacuar, los llamamos **"Retornos de riego"** ya que son devueltos al ciclo del agua a través de la red hidrográfica.

Dichos retornos hemos visto que se cifran en 1.248 m3/ha/año lo que equivale a 124,8 mm/año. Se trata de una aportación de agua relevante en términos hidrológicos globales dado que equivale al 35-40% de la pluviometría anual de la zona, lo que justifica la necesidad de asegurar su evacuación. No obstante vamos a ver que resulta irrelevante en relación con los caudales de máxima avenida procedentes de las precipitaciones, lo que permite simplificar las obras necesarias para la evacuación.

En una primera aproximación, el caudal medio de retorno sería, considerando que la campaña de riego presenta una duración de unos 150 días, el siguiente:

1.248.000 l/Ha/año :(150díasx24h/díax3.600 seg/h)= 0,096 l/seg/ha.

No obstante, en relación con el dimensionado de la red de evacuación, interesa estimar el caudal máximo que pueden suponen estos retornos. Así consideramos el máximo consumo mensual lo que supone 2.198,39 m3 (julio). Con todo ello, resulta el siguiente caudal máximo de retorno:

2.198.390 l/Ha/mes x0,17 :(31 díasx24 h/díax3.600 seg/h) =0,139 l/seg/ha.

Pero la red de evacuación será capaz de interceptar y conducir una determinada fracción del agua no evapotranspirada por los cultivos. La determinación de dicha fracción resulta compleja teniendo una gran incidencia las condiciones de drenaje que definitivamente se establezcan en las parcelas de cultivo. Considerando una eficiencia del 90% para la red de evacuación de los retornos, lo que representa un valor elevado en la medida que supone interceptar y conducir la práctica totalidad de las aguas no consumidas por los cultivos, resulta el siguiente **caudal unitario de diseño** que se establece con el propósito de disponer de una red adecuadamente dimensionada que garantice la evacuación:

0,139 l/seg/ha x 0,90 = **0,12 l/seg/ha.**

Como ya habíamos anticipado, estos caudales máximos de retorno de riego resultan irrelevantes comparados con los caudales de máxima avenida correspondientes al régimen pluviométrico natural de la zona. En efecto, tales caudales alcanzan valores comprendidos entre 4 y 8 l/seg/ha.

CÁLCULO DE LOS RETORNOS DE RIEGO

SECTOR	CUENCA	CAUCE	TRAMO	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	CAUDAL DE RETORNO DE RIEGO (l/sg)
	Valdecanales					
XXI		**D-XXI-3**	**Completo**	**800**	**203**	**24,36**
			Inicio D-XXI-3 / A-1	560	101	12,12
			A-1 / Final D-XXI-3	800	203	24,36
XXI		**D-XXI-2**	**Completo**	**270**	**214**	**25,68**
XXI		**DC-XXI**	**Completo**	**1617**	**448**	**53,76**
			Inicio DC-XXI / Final D-XXI-3	156	23	2,76
			Final D-XXI-3 / Final D-XXI-2	1027	231	27,72
			Final D-XXI-2 / Final DC-XXI	1617	448	53,76
	D-XXI-1					
XXI		**D-XXI-1**	**Completo**	**229**	**161**	**19,32**
			Inicio D-XXI-1 / A2	92	129	15,48
			A2 / Final D-XXI-1	229	161	19,32
	D-XXI-7					
XXI		**D-XXI-7-1**	**Completo**	**101**	**44**	**5,28**
			Inicio D-XXI-7-1 / A-4	71	38	4,56
			A-4 / Final D-XXI-7-1	101	44	5,28
XXI		**D-XXI-7**	**Completo**	**716**	**255**	**30,6**
			Inicio D-XXI-7 / A3	300	81	9,72
			A3 / Final D-XXI-7-1	614	211	25,32
			Final D-XXI-7-1 / Final D-XXI-7	716	255	30,6
	Chermanillo					
XXI		**D-XXI-6-2**	**Completo**	**25**	**11**	**1,32**
XXI		**D-XXI-6-1**	**Completo**	**42**	**41**	**4,92**
XXI		**D-XXI-6**	**Completo**	**205**	**131**	**15,72**
			Inicio D-XXI-6 / Final D-XXI-6-1	44	29	3,48
			Final D-XXI-6-1 / A-5 (Final D-XXI-6-2)	129	100	12
			A-5 (Final D-XXI-6-2) / Final D-XXI-6	205	131	15,72
XXI		**D-XXI-5**	**Completo**	**105**	**65**	**7,8**
XXI		**D-XXI-4**	**Completo**	**243**	**203**	**24,36**
XX-XXII		**D-XX-XXII-5-2**	**Completo**	**364**	**55**	**6,6**
XX-XXII		**D-XX-XXII-5-1**	**Completo**	**25**	**21**	**2,52**
XX-XXII		**D-XX-XXII-5**	**Completo**	**829**	**350**	**42**
			Inicio D-XX-XXII-5 / Final D-XX-XXII-5-2	108	82	9,84
			Final D-XX-XXII-5-2 / A-7 (Final D-XX-XXII-5-1)	659	310	37,2
			A-7 (Final D-XX-XXII-5-1) / Final D-XX-XXII-5	829	350	42
XX-XXII		**D-XX-XXII-4**	**Completo**	**322**	**227**	**27,24**
			Inicio D-XX-XXII-4 / A-6	257	200	24
			A-6 /Final D-XX-XXII-4	322	227	27,24
XX-XXII		**D-XX-XXII-3-1**	**Completo**	**153**	**135**	**16,2**
XX-XXII		**Aliviadero S. Gregorio**	**Completo**	**187**	**0**	**0**
XX-XXII		**D-XX-XXII-3**	**Completo**	**2130**	**310**	**37,2**
			Inicio D-XX-XXII-3 / Final Aliviadero S. Gregorio	194	7	0,84
			Final Aliviadero S.Gregorio / Final D-XX-XXII-3-1	1210	56	6,72
			Final D-XX-XXII-3-1 / B-1 (Final D-XX-XXII-3)	2130	310	37,2
XX-XXII		**D-XX-XXII-2**	**Completo**	**133**	**105**	**12,6**
XX-XXII		**D-XX-XXII-1**	**Completo**	**207**	**20**	**2,4**
XXI-XX-XXII		**DC-XXI-XX-XXII**	**Completo**	**5883**	**2046**	**245,52**
			Inicio DC-XXI-XX-XXII / Final D-XX-XXII-1	255	58	6,96
			Final D-XX-XXII-1 / Final D-XX-XXII-2	629	193	23,16
			Final D-XX-XXII-2 / Final D-XXI-4	1063	498	59,76
			Final D-XXI-4 / Final D-XXI-5	1365	707	84,84
			Final D-XXI-5 / B-1 (Final D-XX-XXII-3)	1611	818	98,16
			B-1 (Final D-XX-XXII-3) / Final D-XXI-6	3929	1220	146,4
			Final D-XXI-6 / Final D-XX-XXII-4	4190	1369	164,28
			Final D-XX-XXII-4 / Final D-XX-XXII-5	4556	1609	193,08
			Final D-XX-XXII-5 / Final DC-XXI-XX-XXII	5883	2046	245,52

SECTOR	CUENCA	CAUCE	TRAMO	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	CAUDAL DE RETORNO DE RIEGO (l/sg)
	Alcanadre 6					
XX-XXII		**D-XX-XXII-7-1**	**Completo**	**81**	**74**	**8,88**
XX-XXII		**D-XX-XXII-7**	**Completo**	**190**	**137**	**16,44**
			Inicio D-XX-XXII-7 / Final D-XX-XXII-7-1	63	51	6,12
			Final D-XX-XXII-7-1 / A-8 (Final D-XX-XXII-6 y D-XX-XXII-7)	190	137	16,44
XX-XXII		**D-XX-XXII-6**	**Completo**	**281**	**171**	**20,52**
XX-XXII		**A-8 (Final D-XX-XXII-6 y Final D-XX-XXII-7) / Río Alcanadre**	**Completo**	**758**	**322**	**38,64**
	Valcarreta					
VII		**D-VII-3-1**	**Completo**	**85**	**54**	**6,48**
VII		**D-VII-3**	**Completo**	**605**	**458**	**54,96**
			Inicio D-VII-3 / Final D-VII-3-1	335	274	32,88
			Final D-VII-3-1 / Final D-VII-3	605	458	54,96
VII		**D-VII-2**	**Completo**	**70**	**53**	**6,36**
VII		**D-VII-1**	**Completo**	**28**	**19**	**2,28**
XX-XXII		**D-XX-XXII-8**	**Completo**	**31**	**14**	**1,68**
XX-XXII		**D-XX-XXII-9**	**Completo**	**119**	**15**	**1,8**
XIX		**D-XIX-5**	**Completo**	**1422**	**398**	**47,76**
XIX		**D-XIX-4**	**Completo**	**390**	**302**	**36,24**
XIX		**D-XIX-3**	**Completo**	**317**	**153**	**18,36**
XIX		**D-XIX-2**	**Completo**	**275**	**97**	**11,64**
XIX		**D-XIX-1**	**Completo**	**182**	**86**	**10,32**
XVIII		**D-XVIII-5-1**	**Completo**	**18**	**17**	**2,04**
XVIII		**D-XVIII-5**	**Completo**	**261**	**147**	**17,64**
			Inicio D-XVIII-5 / Final D-XVIII-5-1	229	117	14,04
			Final D-XVIII-5-1 / Final D-XVIII-5	261	147	17,64
XVIII		**D-XVIII-4-4**	**Completo**	**89**	**85**	**10,2**
XVIII		**D-XVIII-4-3**	**Completo**	**59**	**56**	**6,72**
XVIII		**D-XVIII-4-2**	**Completo**	**38**	**36**	**4,32**
XVIII		**D-XVIII-4-1**	**Completo**	**570**	**174**	**20,88**
XVIII		**D-XVIII-4**	**Completo**	**1437**	**535**	**64,2**
			Inicio D-XVIII-4 / Final D-XVIII-4-4	541	66	7,92
			Final D-XVIII-4-4 / Final D-XVIII-4-3	637	158	18,96
			Final D-XVIII-4-3 / Final D-XVIII-4-2	788	295	35,4
			Final D-XVIII-4-2 / Final D-XVIII-4-1	832	336	40,32
			Final D-XVIII-4-1 / Final D-XVIII-4	1437	535	64,2
XVIII		**D-XVIII-3-2-1**	**Completo**	**211**	**27**	**3,24**
XVIII		**D-XVIII-3-2**	**Completo**	**446**	**79**	**9,48**
			Inicio D-XVIII-3-2 / Final D-XVIII-3-2-1	87	16	1,92
			Final D-XVIII-3-2-1 / Final D-XVIII-3-2	446	79	9,48
XVIII		**D-XVIII-3-1**	**Completo**	**381**	**233**	**27,96**
XVIII		**D-XVIII-3**	**Completo**	**2575**	**610**	**73,2**
			Inicio D-XVIII-3 / Final D-XVIII-3-2	870	54	6,48
			Final D-XVIII-3-2 / Final D-XVIII-3-1	2162	354	42,48
			Final D-XVIII-3-1 / Final D-XVIII-3	2575	610	73,2
XVIII		**D-XVIII-2**	**Completo**	**346**	**291**	**34,92**
XVIII		**D-XVIII-1**	**Completo**	**30**	**30**	**3,6**
VII		**D-VII-4-2**	**Completo**	**23**	**21**	**2,52**
VII		**D-VII-4-1**	**Completo**	**210**	**159**	**19,08**
VII		**D-VII-4**	**Completo**	**589**	**470**	**56,4**
			Inicio D-VII-4 / Final D-VII-4-2	136	114	13,68
			Final D-VII-4-2 / Final D-VII-4-1	329	271	32,52
			Final D-VII-4-1 / Final D-VII-4	589	470	56,4
VII-XVIII		**DC-VII-XVIII**	**Completo**	**6125**	**2800**	**336**
			Inicio DC-VII-XVIII / Final D-XVIII-5	295	239	28,68
			Final D-XVIII-5 / Final D-XVIII-4	631	456	54,72
			Final D-XVIII-4 / Final D-XVIII-3	2236	1139	136,68
			Final D-XVIII-3 / Final D-VII-4	4815	1751	210,12
			Final D-VII-4 / Final D-XVIII-2	5449	2255	270,6
			Final D-XVIII-2 / Final D-XVIII-1	5804	2552	306,24
			Final D-XVIII-1 / Final DC-VII-XVIII	6125	2800	336
XIX-VII		**DC-XIX-VII**	**Completo**	**2813**	**1620**	**194,4**
			Inicio DC-XIX-VII / Final D-XIX-1	191	41	4,92
			Final D-XIX-1 / Final D-XIX-2	425	156	18,72
			Final D-XIX-2 / Final D-XIX-3	780	288	34,56
			Final D-XIX-3 / Final D-VII-1	1312	589	70,68
			Final D-VII-1 / Final D-VII-2	1420	660	79,2
			Final D-VII-2 / Final D-VII-3	1607	771	92,52
			Final D-VII-3 / Final D-XIX-4	2380	1291	154,92
			Final D-XIX-4 / Final DC-XIX-VII	2813	1620	194,4
XX-XXII-VII		**DC-XX-XXII-VII**	**Completo**	**4428**	**2090**	**250,8**
			Inicio DC-XX-XXII-VII / Final D-XX-XXII-9	4277	2050	246
			Final D-XX-XXII-9 / Final DC-XX-XXII-VII	4428	2090	250,8
XX-XXII-XVIII		**DC-XX-XXII-XVIII**	**Completo**	**12186**	**5145**	**617,4**
			Inicio DC-XX-XXII-XVIII / Final D-XX-XXII-8	10652	4942	593,04
			Final D-XX-XXII-8 / Final DC-XX-XXII-XVIII	12186	5145	617,4

SECTOR	CUENCA	CAUCE	TRAMO	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	CAUDAL DE RETORNO DE RIEGO (l/sg)
	Campillo					
XVIII		**D-XVIII-5-1**	**Completo**	**18**	**17**	**2,04**
XVIII		**D-XVIII-5**	**Completo**	**261**	**147**	**17,64**
			Inicio D-XVIII-5 / Final D-XVIII-5-1	229	117	14,04
			Final D-XVIII-5-1 / Final D-XVIII-5	261	147	17,64
XVIII		**D-XVIII-4-4**	**Completo**	**89**	**85**	**10,2**
XVIII		**D-XVIII-4-3**	**Completo**	**59**	**56**	**6,72**
XVIII		**D-XVIII-4-2**	**Completo**	**38**	**36**	**4,32**
XVIII		**D-XVIII-4-1**	**Completo**	**570**	**174**	**20,88**
XVIII		**D-XVIII-4**	**Completo**	**1437**	**535**	**64,2**
			Inicio D-XVIII-4 / Final D-XVIII-4-4	541	66	7,92
			Final D-XVIII-4-4 / Final D-XVIII-4-3	637	158	18,96
			Final D-XVIII-4-3 / Final D-XVIII-4-2	788	295	35,4
			Final D-XVIII-4-2 / Final D-XVIII-4-1	832	336	40,32
			Final D-XVIII-4-1 / Final D-XVIII-4	1437	535	64,2
XVIII		**D-XVIII-3-2-1**	**Completo**	**211**	**27**	**3,24**
XVIII		**D-XVIII-3-2**	**Completo**	**446**	**79**	**9,48**
			Inicio D-XVIII-3-2 / Final D-XVIII-3-2-1	87	16	1,92
			Final D-XVIII-3-2-1 / Final D-XVIII-3-2	446	79	9,48
XVIII		**D-XVIII-3-1**	**Completo**	**381**	**233**	**27,96**
XVIII		**D-XVIII-3**	**Completo**	**2575**	**610**	**73,2**
			Inicio D-XVIII-3 / Final D-XVIII-3-2	870	54	6,48
			Final D-XVIII-3-2 / Final D-XVIII-3-1	2162	354	42,48
			Final D-XVIII-3-1 / Final D-XVIII-3	2575	610	73,2
XVIII		**D-XVIII-2**	**Completo**	**346**	**291**	**34,92**
XVIII		**D-XVIII-1**	**Completo**	**30**	**30**	**3,6**
VII		**D-VII-4-2**	**Completo**	**23**	**21**	**2,52**
VII		**D-VII-4-1**	**Completo**	**210**	**159**	**19,08**
VII		**D-VII-4**	**Completo**	**589**	**470**	**56,4**
			Inicio D-VII-4 / Final D-VII-4-2	136	114	13,68
			Final D-VII-4-2 / Final D-VII-4-1	329	271	32,52
			Final D-VII-4-1 / Final D-VII-4	589	470	56,4
VII-XVIII		**DC-VII-XVIII**	**Completo**	**6125**	**2800**	**336**
			Inicio DC-VII-XVIII / Final D-XVIII-5	295	239	28,68
			Final D-XVIII-5 / Final D-XVIII-4	631	456	54,72
			Final D-XVIII-4 / Final D-XVIII-3	2236	1139	136,68
			Final D-XVIII-3 / Final D-VII-4	4815	1751	210,12
			Final D-VII-4 / Final D-XVIII-2	5449	2255	270,6
			Final D-XVIII-2 / Final D-XVIII-1	5804	2552	306,24
			Final D-XVIII-1 / Final DC-VII-XVIII	6125	2800	336
	Val de Mateo					
XVII		**D-XVII-2-3-1**	**Completo**	**717**	**240**	**28,8**
XVII		**D-XVII-2-3**	**Completo**	**1693**	**562**	**67,44**
			Inicio D-XVII-2-3 / Final D-XVII-2-3-1	942	291	34,92
			Final D-XVII-2-3-1 / Final D-XVII-2-3	1693	562	67,44
XVII		**D-XVII-2-2**	**Completo**	**384**	**354**	**42,48**
XVII		**D-XVII-2-1**	**Completo**	**214**	**199**	**23,88**
XVII		**D-XVII-2**	**Completo**	**3595**	**1637**	**196,44**
			Inicio D-XVII-2 / Final D-XVII-2-3	184	137	16,44
			Final D-XVII-2-3 / A-11	2771	991	118,92
			A-11 / Final D-XVII-2-2	2870	1023	122,76
			Final D-XVII-2-2 / Final D-XVII-2-1	3271	1385	166,2
			Final D-XVII-2-1 / Final D-XVII-2	3595	1637	196,44
XVII		**D-XVII-1**	**Completo**	**1516**	**127**	**15,24**
VI-XVII		**DC-VI-XVII**	**Completo**	**7764**	**2567**	**308,04**
			Inicio DC-VI-XVII / B-4 (Final D-XVII-1)	2090	535	64,2
			B-4 (Final D-XVII-1) / Final D-XVII-2	3951	877	105,24
			Final D-XVII-2 / Final DC-VI-XVII	7764	2567	308,04
	Val de Liberola					
XVII		**D-XVII-3**	**Completo**	**263**	**173**	**20,76**
			Inicio D-XVII-3 / A-12	105	138	16,56
			A-12 / Final D-XVII-3	263	173	20,76
VI		**D-VI-6-1**	**Completo**	**62**	**59**	**7,08**
VI		**D-VI-6**	**Completo**	**661**	**543**	**65,16**
			Inicio D-VI-6 / Final D-VI-6-1	175	167	20,04
			Final D-VI-6-1 / A-10	576	511	61,32
			A-10 / Final D-VI-6	661	543	65,16
VI		**D-VI-5-1**	**Completo**	**47**	**21**	**2,52**
VI		**D-VI-5**	**Completo**	**122**	**62**	**7,44**
			Inicio D-VI-5 / A-9 (Final D-VI-5-1)	48	29	3,48
			A-9 (Final D-VI-5-1) / Final D-VI-5	122	62	7,44
VI		**D-VI-4**	**Completo**	**68**	**21**	**2,52**
VI		**D-VI-3**	**Completo**	**423**	**354**	**42,48**
VI		**D-VI-2-6**	**Completo**	**29**	**23**	**2,76**
VI		**D-VI-2-5**	**Completo**	**55**	**48**	**5,76**
VI		**D-VI-2-4**	**Completo**	**37**	**34**	**4,08**
VI		**D-VI-2-3**	**Completo**	**241**	**66**	**7,92**
VI		**D-VI-2-2**	**Completo**	**243**	**193**	**23,16**
VI		**D-VI-2-1**	**Completo**	**81**	**73**	**8,76**

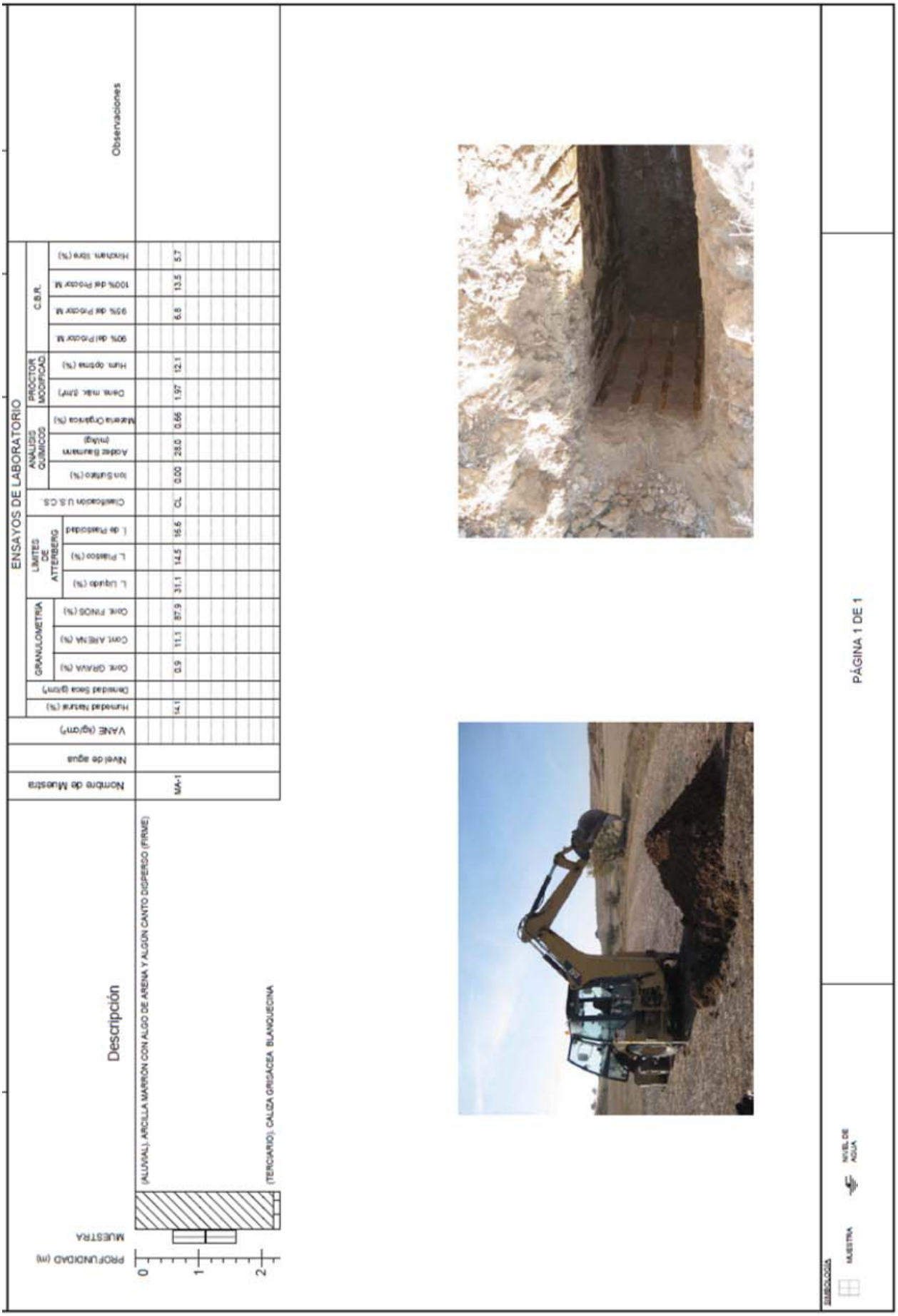
SECTOR	CUENCA	CAUCE	TRAMO	SUPERFICIE TOTAL (Ha)	SUPERFICIE REGABLE (Ha)	CAUDAL DE RETORNO DE RIEGO (l/sg)
VI		**D-VI-2**	**Completo**	**2367**	**1096**	**131,52**
			Inicio D-VI-2 / Final D-VI-2-6	168	127	15,24
			Final D-VI-2-6 / Final D-VI-2-5	275	213	25,56
			Final D-VI-2-5 / Final D-VI-2-4	489	399	47,88
			Final D-VI-2-4 / Final D-VI-2-3	627	532	63,84
			Final D-VI-2-3 / Final D-VI-2-2	1881	711	85,32
			Final D-VI-2-2 / Final D-VI-2-1	2249	1002	120,24
			Final D-VI-2-1 / Final D-VI-2	2367	1096	131,52
VI		**D-VI-1**	**Completo**	**118**	**62**	**7,44**
XVII		**D-XVII-2-3-1**	**Completo**	**717**	**240**	**28,8**
XVII		**D-XVII-2-3**	**Completo**	**1693**	**562**	**67,44**
			Inicio D-XVII-2-3 / Final D-XVII-2-3-1	942	291	34,92
			Final D-XVII-2-3-1 / Final D-XVII-2-3	1693	562	67,44
XVII		**D-XVII-2-2**	**Completo**	**384**	**354**	**42,48**
XVII		**D-XVII-2-1**	**Completo**	**214**	**199**	**23,88**
XVII		**D-XVII-2**	**Completo**	**3595**	**1637**	**196,44**
			Inicio D-XVII-2 / Final D-XVII-2-3	184	137	16,44
			Final D-XVII-2-3 / A-11	2771	991	118,92
			A-11 / Final D-XVII-2-2	2870	1023	122,76
			Final D-XVII-2-2 / Final D-XVII-2-1	3271	1385	166,2
			Final D-XVII-2-1 / Final D-XVII-2	3595	1637	196,44
XVII		**D-XVII-1**	**Completo**	**1516**	**127**	**15,24**
VI-XVII		**DC-VI-XVII**	**Completo**	**7764**	**2567**	**308,04**
			Inicio DC-VI-XVII / B-4 (Final D-XVII-1)	2090	535	64,2
			B-4 (Final D-XVII-1) / Final D-XVII-2	3951	877	105,24
			Final D-XVII-2 / Final DC-VI-XVII	7764	2567	308,04
VI		**DC-VI**	**Completo**	**23161**	**5176**	**621,12**
			Inicio DC-VI / B-3			
			B-3 / Final D-VI-1			
			Final D-VI-1 / Final D-VI-2			
			Final D-VI-2 / Final D-VI-3			
			Final D-VI-3 / Final D-VI-4			
			Final D-VI-4 / Final D-VI-5			
			Final D-VI-5 / Final D-VI-6			
			Final D-VI-6 / Final DC-VI-XVII			
			Final DC-VI-XVII / Final D-XVII-3			
			Final D-XVII-3 / Final DC-VI			

ANEXO 4
GEOLOGÍA

| ENSAYOS DE LABORATORIO | | |

ENSAYOS DE LABORATORIO
Observaciones
Descripción
Nombre de Muestra
Nivel de agua
VANE (kg/cm²)
Humedad Natural (%)
Densidad Seca (g/cm³)
GRANULOMETRIA
Cont GRAVA (%)
Cont ARENA (%)
Cont FINOS (%)
LIMITES DE ATTEBERG
L. Líquido (%)
L. Plástico (%)
I. de Plasticidad
Clasificación U.S.C.S.
ANALISIS QUIMICOS
Ion Sulfato (%)
Acidez Baumann (mk/kg)
Materia Orgánica (%)
PROCTOR MODIFICAD
Dens. máx. (t/m³)
Hum. óptima (%)
C.B.R.
90% del Proctor M
95% del Proctor M
100% del Proctor M
Hinchamiento (%)
MA-1
19.9
1.6
7.2
91.2
43.8
17.8
26.0
CL
0.00
24.0
0.54
1.97
11.6
7.2
14.2
2.6
(ALUVIAL) ARCILLA MARRÓN CON INDICIOS DE ARENA Y ALGÚN CANTO DISPERSO (MODERADAMENTE FIRME)
(TERCIARIO): ARCILLA MARRÓN GRISÁCEO CON TONOS ROJIZOS (MUY DURA)
PROFUNDIDAD (m)
0
1
2
MUESTRA
PÁGINA 1 DE 1
SIMBOLOGÍA
MUESTRA
NIVEL DE AGUA

Nombre de Muestra	Nivel de agua	VANE (kg/cm²)	Humedad Natural (%)	Densidad Seca (g/cm³)	ENSAYOS DE LABORATORIO																		Observaciones
					GRANULOMETRIA			LIMITES DE ATTERBERG				ANALISIS QUIMICOS				PROCTOR MODIFICAD		C.B.R.					
					Cont GRAVA (%)	Cont ARENA (%)	Cont FINOS (%)	L. Liquido (%)	L. Plastico (%)	I. de Plasticidad	Clasificacion U.S.C.S.	Ion Sulfato (%)	Acidez Baumann (ml/kg)	Materia Organica (%)	Dens. max. (g/m³)	Hum. optima (%)	90% del Proctor M	95% del Proctor M	100% del Proctor M	Hincham. total (%)		
MA-1			14.1		0.9	11.1	87.9	31.1	14.5	16.6	CL	0.00	28.0	0.66	1.97	12.1		6.8	13.5	5.7			



Nombre de Muestra	Nivel de agua	VANE (kg/cm²)	ENSAYOS DE LABORATORIO																						Observaciones
			Humedad Natural (%)	Densidad Seca (g/cm³)	GRANULOMETRIA				LIMITES DE ATTERBERG				Clasificación U.S.C.S.	ANALISIS QUIMICOS			PROCTOR MODIFICADO		C.B.R.						
					Cont. GRAVA (%)	Cont. ARENA (%)	Cont. FINOS (%)		L. Líquido (%)	L. Plástico (%)	I. de Plasticidad			Ion Sulfato (%)	Acidez Baumann (ml/kg)	Materia Orgánica (%)	Dens. máx. (t/m³)	Hum. óptima (%)	90% del Proctor M	95% del Proctor M	100% del Proctor M	Hinchamiento (%)			
MA-1			16.4		24.4	10.4	65.1		40.0	19.0	21.0		CL	0.00	28.0	0.84	1.96	13.2		4.5	8.8	0.0			





Nombre de Muestra	Nivel de agua	VANE (kg/cm²)	Humedad Natural (%)	Densidad Seca (g/cm³)	GRANULOMETRIA			LIMITES DE ATTERBERG			Clasificación U.S.C.S.	ANALISIS QUIMICOS			PROCTOR MODIFICADO		C.B.R.			Observaciones
					Cont. GRAVA (%)	Cont. ARENA (%)	Cont. FINOS (%)	L. Liquido (%)	L. Plastico (%)	I. de Plasticidad		Ion Sulfato (%)	Acidez Baumann (ml/kg)	Materia Organica (%)	Dens. máx. (g/cm³)	Hum. optima (%)	90% del Proctor M.	95% del Proctor M	100% del Proctor M	Hincham. libre (%)	
MA-1			17.9		0.0	2.3	97.7	46.1	20.9	25.2	CL										

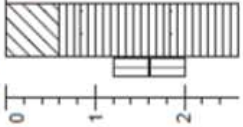




Nombre de Muestra	Nivel de agua	VANE (kg/cm²)	ENSAYOS DE LABORATORIO																							Observaciones
			Humedad Natural (%)	Densidad Seca (g/cm³)	GRANULOMETRIA				LIMITES DE ATTERBERG			Clasificacion U.S.C.S.	ANALISIS QUIMICO			PROCTOR MODIFICADO			C.B.R.					
					Cont. GRAVA (%)	Cont. ARENA (%)	Cont. FINOS (%)	L. Liquido (%)	L. Plastico (%)	I. de Plasticidad			Ion Sulfato (%)	Acidez Baumann (mg/kg)	Materia Organica (%)	Dens. max. (g/m³)	Hum. optima (%)	90% del Proctor M	95% del Proctor M	100% del Proctor M	Hinchan. libre (%)			
MA-1			13.2		0.0	0.1	99.9	26.1	13.9	12.2	CL	0.35	28.0	0.43	1.95	12.6			2.5	4.7	2.8			

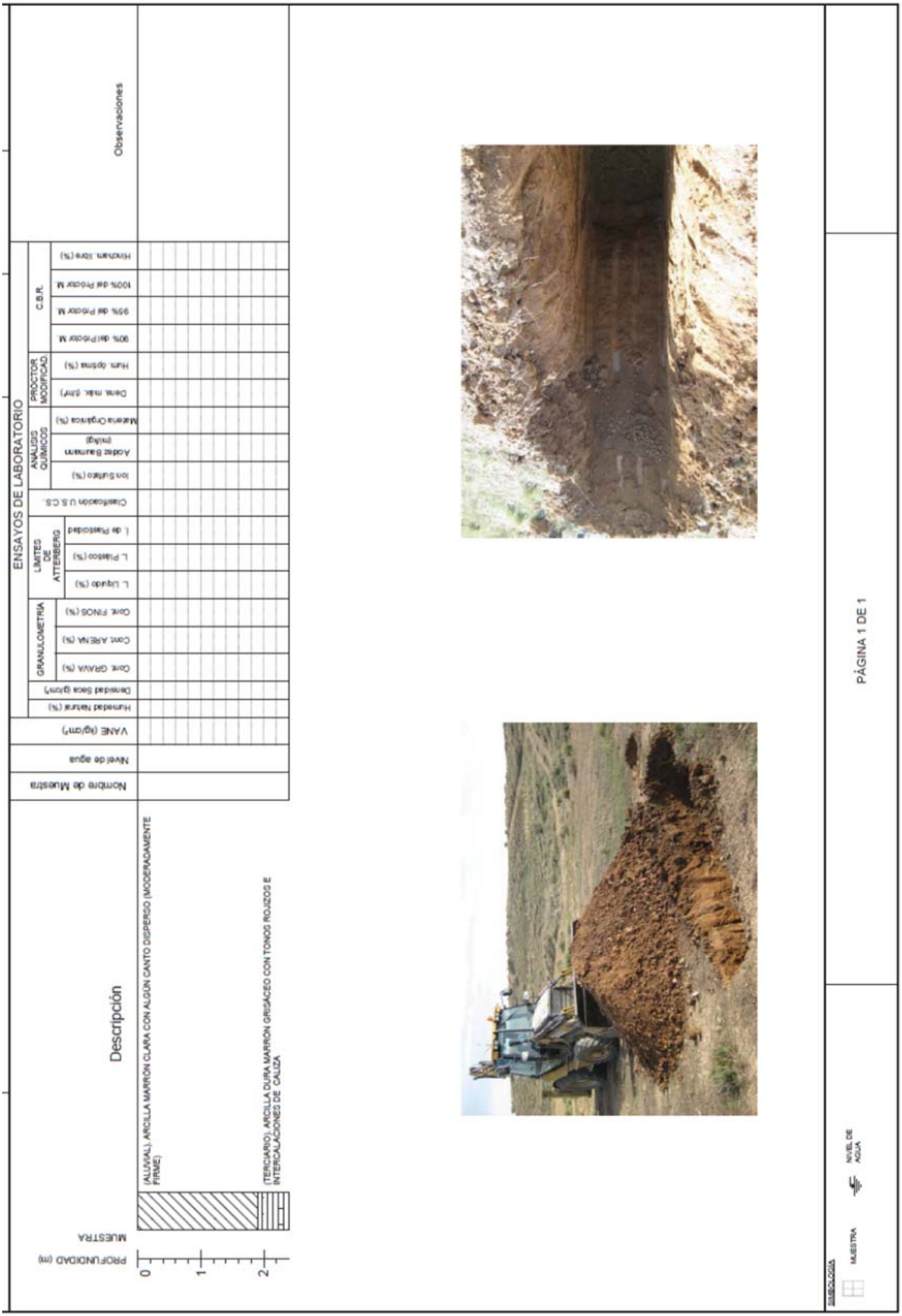






SIMBOLOGIA
MUESTRA
NIVEL DE AGUA

PÁGINA 1 DE 1


PÁGINA 1 DE 1
SIMBOLOGÍA
MUESTRA
NIVEL DE AGUA
ENSAYOS DE LABORATORIO
Nombre de Muestra
Nivel de agua
VANE (kg/cm²)
Humedad Natural (%)
Densidad Seca (g/cm³)
GRANULOMETRÍA
Cont. GRAVA (%)
Cont. ARENA (%)
Cont. FINOS (%)
LÍMITES DE ATTERBERG
L. Líquido (%)
L. Plástico (%)
I. de Plasticidad
Clasificación U.S.C.S.
ANÁLISIS QUÍMICOS
Ion Sulfato (%)
Acidez Baumann (m/kg)
Materia Orgánica (%)
PROCTOR MODIFICADO
Dens. máx. (t/m³)
Hum. óptima (%)
C.B.R.
90% del Proctor M
95% del Proctor M
100% del Proctor M
Hincham. libre (%)
Observaciones
Descripción
PROFUNDIDAD (m)
MUESTRA
0
1
2
(ALUVIAL) ARCILLA MARRÓN CLARA CON ALGÚN CANTO DISPERSO (MODERADAMENTE FIRME)
(TERCIARIO) ARCILLA DURA MARRÓN GRISÁCEO CON TONOS ROJIZOS E INTERCALACIONES DE CALIZA

ENSAYOS DE LABORATORIO
Observaciones
Nombre de Muestra
MA-1
Nivel de agua
VANE (kg/cm²)
Humedad Natural (%)
3.7
Densidad Seca (g/cm³)
GRANULOMETRÍA
Cont. GRAVA (%)
Cont. ARENA (%)
Cont. FINOS (%)
LÍMITES DE ATTERBERG
L. Líquido (%)
49.2
L. Plástico (%)
22.1
I. de Plasticidad
27.1
Clasificación U.S.C.S.
ANÁLISIS QUÍMICOS
Ion Sulfato (%)
Acidez Baumann (mk/g)
Materia Orgánica (%)
PROCTOR MODIFICADO
Dens. máx. (t/m³)
Hum. óptima (%)
C.B.R.
90% del Proctor M
95% del Proctor M
100% del Proctor M
Hinchamiento (%)
Descripción
PROFUNDIDAD (m)
0
MUESTRA
TIERRA VEGETAL
(TERCIARIO), CALIZA METEORIZADA
(TERCIARIO), CALIZA BLANQUECINA GRISACEA SANA
SIMBOLOGÍA
MUESTRA
NIVEL DE AGUA
PÁGINA 1 DE 1

Nombre de Muestra	Nivel de agua	VANE (kg/cm²)	ENSAYOS DE LABORATORIO																						Observaciones
			Humedad Natural (%)	Densidad Seca (g/cm³)	GRANULOMETRIA				LIMITES DE ATTERBERG			Clasificación U.S.C.S.	ANALISIS QUIMICOS			PROCTOR MODIFICADO			C.B.R.						
					Clave GRAVA (%)	Cont. ARENA (%)	Clave FINOS (%)		L. Líquido (%)	L. Plástico (%)	L. de Plasticidad		Ion Sulfato (%)	Acidez Baumann (ml/kg)	Materia Orgánica (%)	Dens. máx. (t/m³)	Hum. óptima (%)	90% del Proctor M	95% del Proctor M	100% del Proctor M	Hinchamiento (%)					
MA-1			12.1						37.7	18.6	19.1														

PÁGINA 1 DE 1

SIMBOLOGÍA

MUESTRA

NIVEL DE AGUA

PROFUNDIDAD (m)

0

MUESTRA

TIERRA VEGETAL
(TERCIARIO): CALIZA METEORIZADA
(TERCIARIO): CALIZA BLANQUECINA SANA

Descripción

ANEXO 5
DEFINICIÓN SECCIONES TIPO

SECCIÓN TRAMO 1

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.025	0.27	0.21	1.50	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.32	0.72	2.93	0.48	0.10	0.68

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.23	0.26	0.49	2.78	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.45	0.50

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE	**n** DE MANNING	CAUDAL (m3/s)	$nQ/\sqrt{I}$
0.0010	0.0250	35.53	28.08

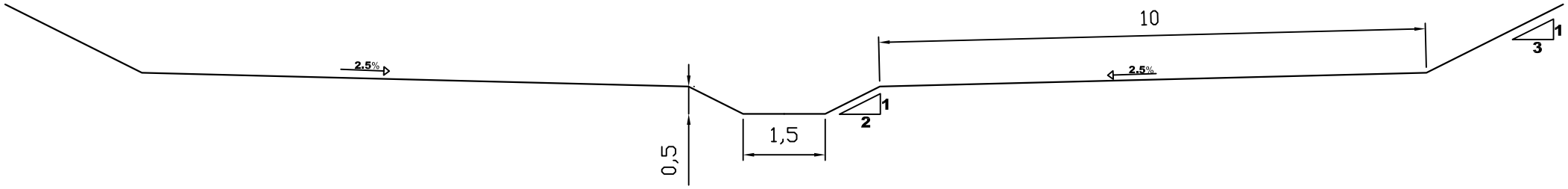
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
1.66	28.96	0.97	28.49

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
27.84	1.25	0.40

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
1.16	0.10	1.76	2.00



PK 0+499 - 3+100	TRAMO 1	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.001		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 2

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.0250	0.31	0.24	1.50	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.30	0.67	2.84	0.45	0.09	0.63

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.22	0.23	0.49	2.70	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.45	0.50

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0010	0.0250	33.66	26.61

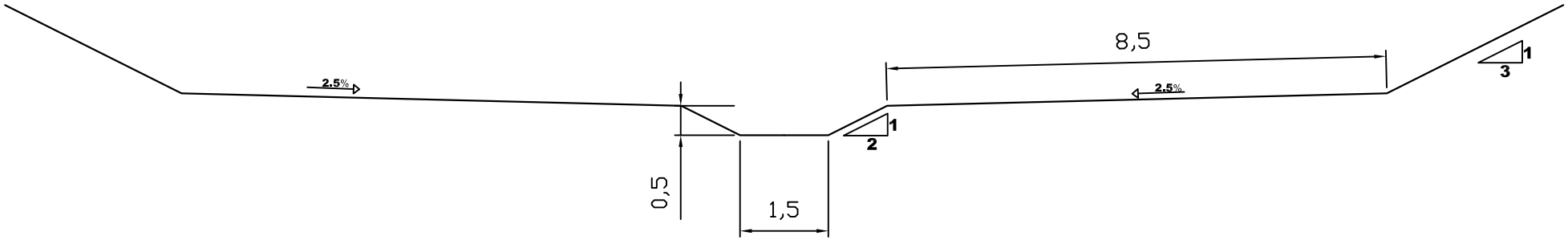
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
1.68	26.32	0.99	26.51

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
26.26	1.27	0.40

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
1.18	0.10	1.79	2.00



PK 1+749 - 2+250	TRAMO 2	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.001		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 3

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.0250	0.27	0.21	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.34	0.76	2.52	0.34	0.12	0.57

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.23	0.21	0.47	2.36	0.31

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.44	0.50

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0010	0.0250	31.60	24.99

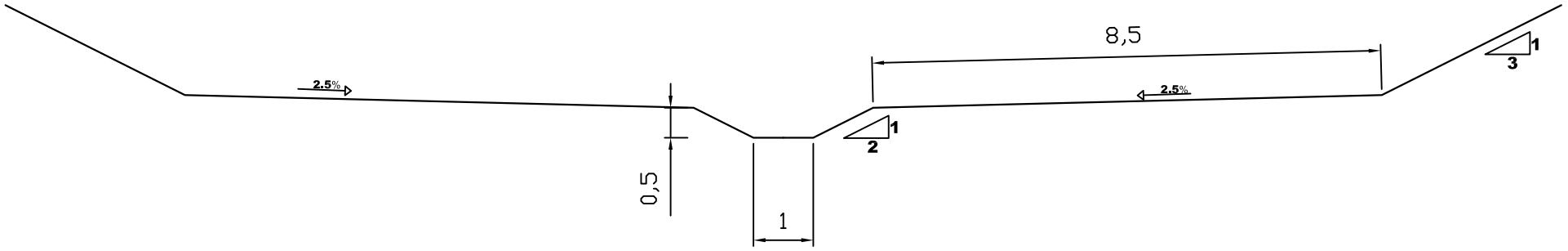
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
1.67	25.76	0.97	25.41

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
24.82	1.24	0.40

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
1.17	0.10	1.78	2.00



PK 2+367 - 2+800	TRAMO 3	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.001		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 4

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.0250	0.21	0.17	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.29	0.65	2.30	0.29	0.08	0.46

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.20	0.16	0.46	2.16	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.39	0.50

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0010	0.0250	27.93	22.08

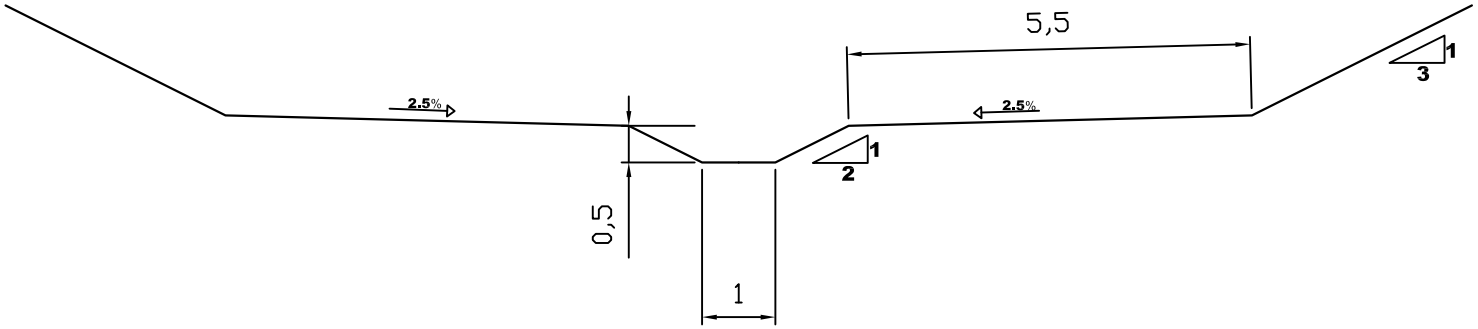
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
1.76	20.72	1.01	21.61

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
21.81	1.29	0.40

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
1.26	0.11	1.87	2.00



PK 2+891 - 2+928	TRAMO 4	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.001		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 5

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0020	0.0250	0.14	0.08	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.19	0.42	1.85	0.19	0.04	0.26

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.14	0.07	0.52	1.76	0.43

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.29	0.50

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0020	0.0250	12.97	7.25

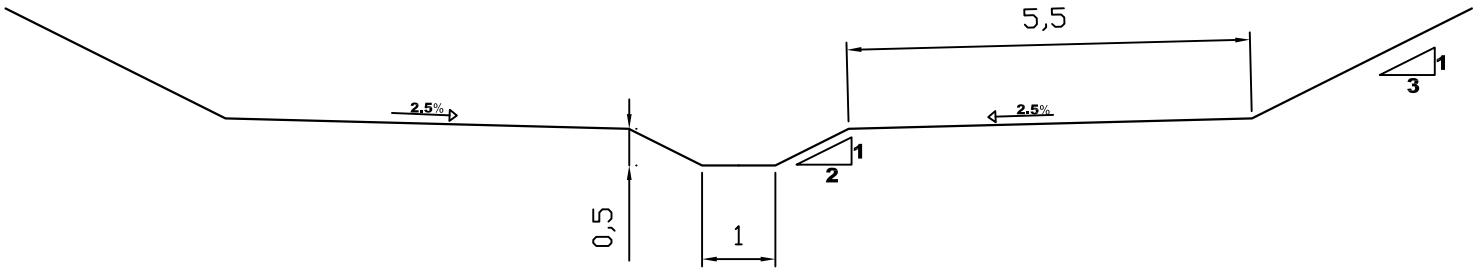
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
1.16	17.12	0.59	10.26

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
7.18	1.26	0.52

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
0.66	0.06	1.22	1.50



PK 3+049 - 4+149	TRAMO 5	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.002		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 6

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0035	0.0250	0.05	0.02	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.10	0.22	1.45	0.100	0.010	0.12

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.08	0.02	0.46	1.40	0.50

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.20	0.30

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0035	0.0250	3.66	1.55

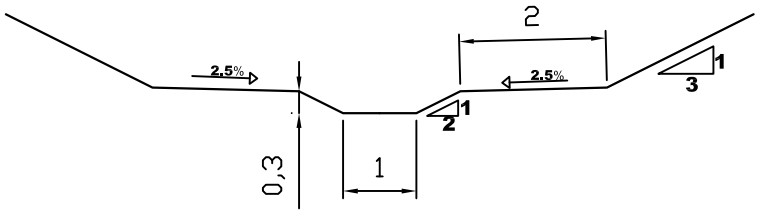
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
0.68	7.52	0.38	2.95

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.54	1.24	0.63

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
0.38	0.03	0.71	0.75



PK 4+222 - 5+200	TRAMO 6	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.0035		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 7

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0030	0.0250	0.03	0.01	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.07	0.16	1.31	0.070	0.005	0.08

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.06	0.01	0.36	1.28	0.46

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.17	0.25

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0030	0.0250	1.71	0.78

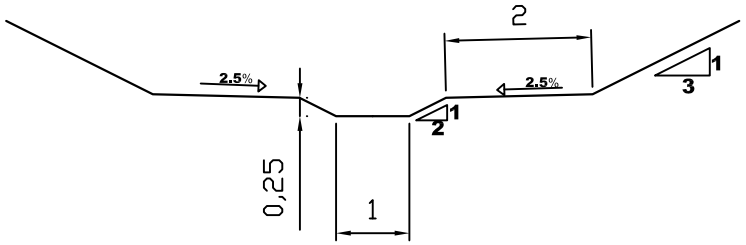
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
0.50	7.20	0.26	1.90

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.77	0.90	0.56

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
0.25	0.02	0.52	0.50



PK 6+850 - 7+300	TRAMO 7	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.003		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 7

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0035	0.0250	0.03	0.01	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.06	0.13	1.27	0.060	0.004	0.07

Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.05	0.01	0.43	1.24	0.59

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.16	0.25

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING ($s/m^{1/3}$)	CAUDAL (m3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)
0.0035	0.0250	1.71	0.72

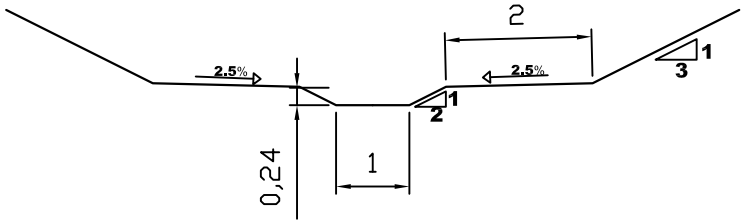
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
0.49	6.76	0.26	1.79

$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.72	0.96	0.59

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
0.24	0.02	0.51	0.50



PK 5+499 - 6+850	TRAMO 7	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.0035		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

SECCIÓN TRAMO 7

CAUCE AGUAS BAJAS (TRAPECIO INFERIOR)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** MANNING (s/m$^{1/3}$)	CAUDAL (m^3/s)	nQ/√I (m$^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0075	0.0250	0.03	0.01	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)
0.05	0.11	1.22	0.050	0.003	0.06

Rh (m)	ARh$^{2/3}$ (m$^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.04	0.01	0.52	1.20	0.78

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.16	0.25

CAUCE DE AVENIDA (SECCIÓN BITRAPECIAL)

DATOS DE PARTIDA

PENDIENTE Z:1000	**n** DE MANNING (s/m$^{1/3}$)	CAUDAL (m3/s)	nQ/√I (m$^{8/3}$)
0.0075	0.0250	1.71	0.49

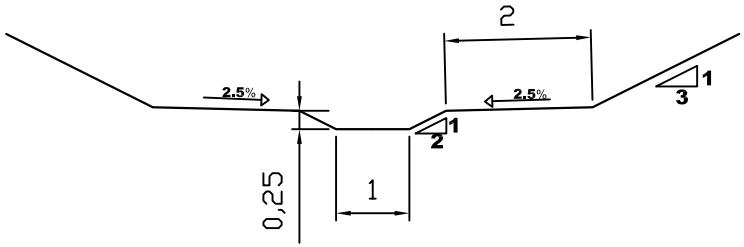
DATOS CALCULADOS SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m^2)
0.43	6.78	0.20	1.41

ARh$^{2/3}$ (m$^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.48	1.22	0.85

DISEÑO SECCIÓN TIPO

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)	REDONDEO CALADO PARA EJECUCIÓN (m)
0.18	0.02	0.45	0.50



PK 5+550 - 6+850 PK 7+300 - 7+649	TRAMO 7	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE 0.0075		
ESCALA 1:100	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

ANEXO 6
CÁLCULO DE SALTOS

CÁLCULO SALTOS TRAMO 1

SECCIÓN TRAMO 1. CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.025	0.336	0.266	1.50	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.32	0.72	2.93	0.48	0.10	0.68	0.23	0.26	0.49	2.78	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.45	0.50

VALORES ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.54	0.02	0.00	0.02	0.01	0.00
0.02	0.04	1.59	0.03	0.00	0.03	0.02	0.00
0.03	0.07	1.63	0.05	0.00	0.05	0.03	0.00
0.04	0.09	1.68	0.06	0.00	0.06	0.04	0.01
0.05	0.11	1.72	0.08	0.00	0.08	0.05	0.01
0.06	0.13	1.77	0.09	0.00	0.10	0.05	0.01
0.07	0.16	1.81	0.11	0.00	0.11	0.06	0.02
0.08	0.18	1.86	0.12	0.01	0.13	0.07	0.02
0.09	0.20	1.90	0.14	0.01	0.15	0.08	0.03
0.10	0.22	1.95	0.15	0.01	0.17	0.09	0.03
0.11	0.25	1.99	0.17	0.01	0.19	0.09	0.04
0.12	0.27	2.04	0.18	0.01	0.21	0.10	0.05
0.13	0.29	2.08	0.20	0.02	0.23	0.11	0.05
0.14	0.31	2.13	0.21	0.02	0.25	0.12	0.06
0.15	0.34	2.17	0.23	0.02	0.27	0.12	0.07
0.16	0.36	2.22	0.24	0.03	0.29	0.13	0.08
0.17	0.38	2.26	0.26	0.03	0.31	0.14	0.08
0.18	0.40	2.30	0.27	0.03	0.33	0.15	0.09
0.19	0.42	2.35	0.29	0.04	0.36	0.15	0.10
0.20	0.45	2.39	0.30	0.04	0.38	0.16	0.11
0.21	0.47	2.44	0.32	0.04	0.40	0.17	0.12
0.22	0.49	2.48	0.33	0.05	0.43	0.17	0.13
0.23	0.51	2.53	0.35	0.05	0.45	0.18	0.14
0.24	0.54	2.57	0.36	0.06	0.48	0.18	0.15
0.25	0.56	2.62	0.38	0.06	0.50	0.19	0.17
0.26	0.58	2.66	0.39	0.07	0.53	0.20	0.18
0.27	0.60	2.71	0.41	0.07	0.55	0.20	0.19
0.28	0.63	2.75	0.42	0.08	0.58	0.21	0.20
0.29	0.65	2.80	0.44	0.08	0.60	0.22	0.22
0.30	0.67	2.84	0.45	0.09	0.63	0.22	0.23
0.31	0.69	2.89	0.47	0.10	0.66	0.23	0.25
0.32	0.72	2.93	0.48	0.10	0.68	0.23	0.26
0.33	0.74	2.98	0.50	0.11	0.71	0.24	0.27
0.34	0.76	3.02	0.51	0.12	0.74	0.25	0.29
0.35	0.78	3.07	0.53	0.12	0.77	0.25	0.31
0.36	0.80	3.11	0.54	0.13	0.80	0.26	0.32
0.37	0.83	3.15	0.56	0.14	0.83	0.26	0.34
0.38	0.85	3.20	0.57	0.14	0.86	0.27	0.36
0.39	0.87	3.24	0.59	0.15	0.89	0.27	0.38
0.40	0.89	3.29	0.60	0.16	0.92	0.28	0.39
0.41	0.92	3.33	0.62	0.17	0.95	0.29	0.41
0.42	0.94	3.38	0.63	0.18	0.98	0.29	0.43
0.43	0.96	3.42	0.65	0.18	1.01	0.30	0.45
0.44	0.98	3.47	0.66	0.19	1.05	0.30	0.47
0.45	1.01	3.51	0.68	0.20	1.08	0.31	0.49
0.46	1.03	3.56	0.69	0.21	1.11	0.31	0.51
0.47	1.05	3.60	0.71	0.22	1.15	0.32	0.53
0.48	1.07	3.65	0.72	0.23	1.18	0.32	0.56
0.49	1.10	3.69	0.74	0.24	1.22	0.33	0.58
0.50	1.12	3.74	0.75	0.25	1.25	0.33	0.60

SECCIÓN TRAMO 1. CALADO CRITICO

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
35.53	9.80	11.35	2.00	3.00	2.50	0.50	10.00

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
1.16	14.76	26.34	0.56	25.96	0.59

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.50	1.00	1.12	1.50	3.50	0.75	0.25	1.25	3.74

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.25	10.00	10.00	3.50	23.50	0.88	1.25	3.38	20.01

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	23.50	23.56	0.24	0.00	0.24	23.81
0.02	0.06	0.06	23.50	23.62	0.47	0.00	0.47	23.87
0.03	0.09	0.09	23.50	23.68	0.71	0.00	0.71	23.93
0.04	0.12	0.13	23.50	23.74	0.94	0.00	0.94	24.00
0.05	0.15	0.16	23.50	23.80	1.18	0.00	1.18	24.06
0.06	0.18	0.19	23.50	23.86	1.41	0.01	1.42	24.12
0.07	0.21	0.22	23.50	23.92	1.65	0.01	1.66	24.19
0.08	0.24	0.25	23.50	23.98	1.88	0.01	1.90	24.25
0.09	0.27	0.28	23.50	24.04	2.12	0.01	2.14	24.31
0.10	0.30	0.32	23.50	24.10	2.35	0.02	2.38	24.37
0.11	0.33	0.35	23.50	24.16	2.59	0.02	2.62	24.44
0.12	0.36	0.38	23.50	24.22	2.82	0.02	2.86	24.50
0.13	0.39	0.41	23.50	24.28	3.06	0.03	3.11	24.56
0.14	0.42	0.44	23.50	24.34	3.29	0.03	3.35	24.63
0.15	0.45	0.47	23.50	24.40	3.53	0.03	3.59	24.69
0.16	0.48	0.51	23.50	24.46	3.76	0.04	3.84	24.75
0.17	0.51	0.54	23.50	24.52	4.00	0.04	4.08	24.82
0.18	0.54	0.57	23.50	24.58	4.23	0.05	4.33	24.88
0.19	0.57	0.60	23.50	24.64	4.47	0.05	4.57	24.94
0.20	0.60	0.63	23.50	24.70	4.70	0.06	4.82	25.01
0.21	0.63	0.66	23.50	24.76	4.94	0.07	5.07	25.07
0.22	0.66	0.70	23.50	24.82	5.17	0.07	5.32	25.13
0.23	0.69	0.73	23.50	24.88	5.41	0.08	5.56	25.20
0.24	0.72	0.76	23.50	24.94	5.64	0.09	5.81	25.26
0.25	0.75	0.79	23.50	25.00	5.88	0.09	6.06	25.32
0.26	0.78	0.82	23.50	25.06	6.11	0.10	6.31	25.39
0.27	0.81	0.85	23.50	25.12	6.35	0.11	6.56	25.45
0.28	0.84	0.89	23.50	25.18	6.58	0.12	6.82	25.51
0.29	0.87	0.92	23.50	25.24	6.82	0.13	7.07	25.58
0.30	0.90	0.95	23.50	25.30	7.05	0.14	7.32	25.64
0.31	0.93	0.98	23.50	25.36	7.29	0.14	7.57	25.70
0.32	0.96	1.01	23.50	25.42	7.52	0.15	7.83	25.77
0.33	0.99	1.04	23.50	25.48	7.76	0.16	8.08	25.83
0.34	1.02	1.08	23.50	25.54	7.99	0.17	8.34	25.89
0.35	1.05	1.11	23.50	25.60	8.23	0.18	8.59	25.96
0.36	1.08	1.14	23.50	25.66	8.46	0.19	8.85	26.02
0.37	1.11	1.17	23.50	25.72	8.70	0.21	9.11	26.08
0.38	1.14	1.20	23.50	25.78	8.93	0.22	9.36	26.15
0.39	1.17	1.23	23.50	25.84	9.17	0.23	9.62	26.21
0.40	1.20	1.26	23.50	25.90	9.40	0.24	9.88	26.27
0.41	1.23	1.30	23.50	25.96	9.64	0.25	10.14	26.34
0.42	1.26	1.33	23.50	26.02	9.87	0.26	10.40	26.40
0.43	1.29	1.36	23.50	26.08	10.11	0.28	10.66	26.46
0.44	1.32	1.39	23.50	26.14	10.34	0.29	10.92	26.53
0.45	1.35	1.42	23.50	26.20	10.58	0.30	11.18	26.59

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
4.86	0.21	2.21	0.76	0.20
5.10	0.22	2.37	0.77	0.21
5.33	0.23	2.53	0.78	0.22
5.57	0.23	2.70	0.79	0.23
5.81	0.24	2.87	0.80	0.24
6.05	0.25	3.04	0.81	0.25
6.28	0.26	3.22	0.82	0.26
6.52	0.27	3.40	0.83	0.27
6.76	0.28	3.59	0.84	0.28
7.01	0.29	3.78	0.85	0.29
7.25	0.30	3.97	0.86	0.30
7.49	0.31	4.16	0.87	0.31
7.73	0.32	4.36	0.88	0.31
7.97	0.33	4.56	0.89	0.32
8.22	0.34	4.77	0.90	0.33
8.46	0.35	4.98	0.91	0.34
8.71	0.36	5.19	0.92	0.35
8.95	0.36	5.40	0.93	0.36
9.20	0.37	5.62	0.94	0.37
9.45	0.38	5.84	0.95	0.38
9.69	0.39	6.06	0.96	0.39
9.94	0.40	6.29	0.97	0.40
10.19	0.41	6.52	0.98	0.40
10.44	0.42	6.75	0.99	0.41
10.69	0.43	6.99	1.00	0.42
10.94	0.44	7.23	1.01	0.43
11.19	0.45	7.47	1.02	0.44
11.44	0.45	7.71	1.03	0.45
11.69	0.46	7.96	1.04	0.46
11.95	0.47	8.21	1.05	0.47
12.20	0.48	8.46	1.06	0.47
12.45	0.49	8.72	1.07	0.48
12.71	0.50	8.97	1.08	0.49
12.96	0.51	9.23	1.09	0.50
13.22	0.52	9.50	1.10	0.51
13.47	0.53	9.76	1.11	0.52
13.73	0.53	10.03	1.12	0.53
13.99	0.54	10.30	1.13	0.54
14.25	0.55	10.58	1.14	0.54
14.51	0.56	10.85	1.15	0.55
14.76	0.57	11.13	1.16	0.56
15.02	0.58	11.42	1.17	0.57
15.28	0.59	11.70	1.18	0.58
15.55	0.59	11.99	1.19	0.59
15.81	0.60	12.28	1.20	0.59

SECCIÓN TRAMO 1. CALADO NORMAL

DATOS DE PARTIDA			
PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0010	0.025	35.53	28.08

DATOS CALCULADOS						
CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	ARh$^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.66	28.96	0.97	28.49	27.84	1.25	0.40

SECCIÓN RECTANGULAR					
CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	ARh$^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.03	0.96	29.83	29.06	1.19	0.37

DISEÑO SECCIÓN TIPO		
CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
1.16	0.10	1.76

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	ARh$^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.76	23.56	0.20	4.86	1.69	7.31
0.77	23.62	0.21	5.10	1.82	6.97
0.78	23.68	0.22	5.33	1.96	6.66
0.79	23.74	0.23	5.57	2.10	6.38
0.80	23.80	0.24	5.81	2.25	6.12
0.81	23.86	0.25	6.05	2.40	5.88
0.82	23.92	0.26	6.28	2.56	5.65
0.83	23.98	0.27	6.52	2.72	5.45
0.84	24.04	0.28	6.76	2.88	5.25
0.85	24.10	0.29	7.01	3.05	5.07
0.86	24.16	0.30	7.25	3.22	4.90
0.87	24.22	0.31	7.49	3.40	4.74
0.88	24.28	0.31	7.73	3.58	4.60
0.89	24.34	0.32	7.97	3.76	4.46
0.90	24.40	0.33	8.22	3.95	4.32
0.91	24.46	0.34	8.46	4.14	4.20
0.92	24.52	0.35	8.71	4.33	4.08
0.93	24.58	0.36	8.95	4.53	3.97
0.94	24.64	0.37	9.20	4.73	3.86
0.95	24.70	0.38	9.45	4.94	3.76
0.96	24.76	0.39	9.69	5.14	3.67
0.97	24.82	0.40	9.94	5.36	3.57
0.98	24.88	0.40	10.19	5.57	3.49
0.99	24.94	0.41	10.44	5.79	3.40
1.00	25.00	0.42	10.69	6.01	3.32
1.01	25.06	0.43	10.94	6.24	3.25
1.02	25.12	0.44	11.19	6.47	3.18
1.03	25.18	0.45	11.44	6.70	3.11
1.04	25.24	0.46	11.69	6.94	3.04
1.05	25.30	0.47	11.95	7.18	2.97
1.06	25.36	0.47	12.20	7.42	2.91
1.07	25.42	0.48	12.45	7.67	2.85
1.08	25.48	0.49	12.71	7.92	2.80
1.09	25.54	0.50	12.96	8.17	2.74
1.10	25.60	0.51	13.22	8.43	2.69
1.11	25.66	0.52	13.47	8.69	2.64
1.12	25.72	0.53	13.73	8.95	2.59
1.13	25.78	0.54	13.99	9.22	2.54
1.14	25.84	0.54	14.25	9.49	2.49
1.15	25.90	0.55	14.51	9.76	2.45
1.16	25.96	0.56	14.76	10.04	2.41
1.17	26.02	0.57	15.02	10.32	2.36
1.18	26.08	0.58	15.28	10.60	2.32
1.19	26.14	0.59	15.55	10.89	2.29
1.20	26.20	0.59	15.81	11.18	2.25
1.21	26.26	0.60	16.07	11.47	2.21
1.22	26.32	0.61	16.33	11.77	2.18
1.23	26.38	0.62	16.60	12.06	2.14
1.24	26.44	0.63	16.86	12.37	2.11
1.25	26.50	0.64	17.13	12.67	2.07
1.26	26.56	0.64	17.39	12.98	2.04
1.27	26.62	0.65	17.66	13.29	2.01
1.28	26.68	0.66	17.92	13.61	1.98
1.29	26.74	0.67	18.19	13.92	1.95
1.30	26.80	0.68	18.46	14.25	1.92
1.31	26.86	0.69	18.73	14.57	1.90
1.32	26.92	0.69	18.99	14.90	1.87
1.33	26.98	0.70	19.26	15.23	1.84
1.34	27.04	0.71	19.53	15.56	1.82
1.35	27.10	0.72	19.81	15.90	1.79
1.36	27.16	0.73	20.08	16.24	1.77
1.37	27.22	0.74	20.35	16.58	1.75
1.38	27.28	0.74	20.62	16.93	1.72
1.39	27.34	0.75	20.89	17.28	1.70
1.40	27.40	0.76	21.17	17.63	1.68
1.41	27.46	0.77	21.44	17.98	1.66
1.42	27.52	0.78	21.72	18.34	1.64
1.43	27.58	0.78	21.99	18.70	1.62
1.44	27.64	0.79	22.27	19.07	1.60
1.45	27.70	0.80	22.55	19.43	1.58
1.46	27.76	0.81	22.82	19.80	1.56
1.47	27.82	0.82	23.10	20.18	1.54
1.48	27.88	0.82	23.38	20.55	1.52
1.49	27.94	0.83	23.66	20.93	1.50
1.50	28.00	0.84	23.94	21.32	1.48
1.51	28.06	0.85	24.22	21.70	1.47
1.52	28.12	0.86	24.50	22.09	1.45
1.53	28.18	0.86	24.78	22.48	1.43
1.54	28.24	0.87	25.06	22.88	1.42
1.55	28.30	0.88	25.35	23.27	1.40
1.56	28.36	0.89	25.63	23.67	1.39
1.57	28.42	0.90	25.91	24.08	1.37
1.58	28.48	0.90	26.20	24.48	1.36
1.59	28.54	0.91	26.48	24.89	1.34
1.60	28.60	0.92	26.77	25.31	1.33
1.61	28.66	0.93	27.05	25.72	1.31
1.62	28.72	0.93	27.34	26.14	1.30
1.63	28.78	0.94	27.63	26.56	1.29
1.64	28.84	0.95	27.92	26.99	1.27
1.65	28.90	0.96	28.21	27.41	1.26
1.66	28.96	0.97	28.49	27.84	1.25
1.67	29.02	0.97	28.78	28.28	1.23
1.68	29.08	0.98	29.07	28.71	1.22
1.69	29.14	0.99	29.37	29.15	1.21
1.70	29.20	1.00	29.66	29.60	1.20
1.71	29.26	1.00	29.95	30.04	1.19
1.72	29.32	1.01	30.24	30.49	1.17
1.73	29.38	1.02	30.54	30.94	1.16
1.74	29.44	1.03	30.83	31.39	1.15
1.75	29.50	1.04	31.13	31.85	1.14
1.76	29.56	1.04	31.42	32.31	1.13
1.77	29.62	1.05	31.72	32.77	1.12
1.78	29.68	1.06	32.01	33.24	1.11
1.79	29.74	1.07	32.31	33.71	1.10
1.80	29.80	1.07	32.61	34.18	1.09
1.81	29.86	1.08	32.91	34.65	1.08
1.82	29.92	1.09	33.20	35.13	1.07
1.83	29.98	1.10	33.50	35.61	1.06
1.84	30.04	1.10	33.80	36.10	1.05
1.85	30.10	1.11	34.11	36.58	1.04

CALADO (m)	Rh (m)	AREA (m2)	ARh$^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.29	0.01	122.67
0.02	0.02	0.58	0.04	61.33
0.03	0.03	0.87	0.08	40.89
0.04	0.04	1.16	0.14	30.67
0.05	0.05	1.45	0.20	24.53
0.06	0.06	1.74	0.27	20.44
0.07	0.07	2.03	0.34	17.52
0.08	0.08	2.32	0.43	15.33
0.09	0.09	2.61	0.52	13.63
0.10	0.10	2.90	0.62	12.27
0.11	0.11	3.19	0.73	11.15
0.12	0.12	3.48	0.84	10.22
0.13	0.13	3.76	0.96	9.44
0.14	0.14	4.05	1.09	8.76
0.15	0.15	4.34	1.22	8.18
0.16	0.16	4.63	1.36	7.67
0.17	0.17	4.92	1.50	7.22
0.18	0.18	5.21	1.65	6.81
0.19	0.19	5.50	1.80	6.46
0.20	0.20	5.79	1.96	6.13
0.21	0.21	6.08	2.13	5.84
0.22	0.22	6.37	2.30	5.58
0.23	0.23	6.66	2.47	5.33
0.24	0.24	6.95	2.65	5.11
0.25	0.25	7.24	2.84	4.91
0.26	0.26	7.53	3.03	4.72
0.27	0.27	7.82	3.23	4.54
0.28	0.27	8.11	3.43	4.38
0.29	0.28	8.40	3.63	4.23
0.30	0.29	8.69	3.84	4.09
0.31	0.30	8.98	4.05	3.96
0.32	0.31	9.27	4.27	3.83
0.33	0.32	9.56	4.50	3.72
0.34	0.33	9.85	4.72	3.61
0.35	0.34	10.14	4.95	3.50
0.36	0.35	10.43	5.19	3.41
0.37	0.36	10.72	5.43	3.32
0.38	0.37	11.00	5.67	3.23
0.39	0.38	11.29	5.92	3.15
0.40	0.39	11.58	6.18	3.07
0.41	0.40	11.87	6.43	2.99
0.42	0.41	12.16	6.69	2.92
0.43	0.42	12.45	6.96	2.85
0.44	0.43	12.74	7.23	2.79
0.45	0.44	13.03	7.50	2.73
0.46	0.45	13.32	7.77	2.67
0.47	0.46	13.61	8.05	2.61
0.48	0.46	13.90	8.34	2.56
0.49	0.47	14.19	8.63	2.50
0.50	0.48	14.48	8.92	2.45
0.51	0.49	14.77	9.21	2.41
0.52	0.50	15.06	9.51	2.36
0.53	0.51	15.35	9.81	2.31
0.54	0.52	15.64	10.12	2.27
0.55	0.53	15.93	10.43	2.23
0.56	0.54	16.22	10.74	2.19
0.57	0.55	16.51	11.06	2.15
0.58	0.56	16.80	11.38	2.11
0.59	0.57	17.09	11.70	2.08
0.60	0.58	17.38	12.03	2.04
0.61	0.59	17.67	12.36	2.01
0.62	0.59	17.96	12.70	1.98
0.63	0.60	18.24	13.03	1.95
0.64	0.61	18.53	13.37	1.92
0.65	0.62	18.82	13.72	1.89
0.66	0.63	19.11	14.06	1.86
0.67	0.64	19.40	14.42	1.83
0.68	0.65	19.69	14.77	1.80
0.69	0.66	19.98	15.13	1.78
0.70	0.67	20.27	15.49	1.75
0.71	0.68	20.56	15.85	1.73
0.72	0.69	20.85	16.22	1.70
0.73	0.69	21.14	16.59	1.68
0.74	0.70	21.43	16.96	1.66
0.75	0.71	21.72	17.34	1.64
0.76	0.72	22.01	17.72	1.61
0.77	0.73	22.30	18.10	1.59
0.78	0.74	22.59	18.48	1.57
0.79	0.75	22.88	18.87	1.55
0.80	0.76	23.17	19.26	1.53
0.81	0.77	23.46	19.66	1.51
0.82	0.78	23.75	20.05	1.50
0.83	0.79	24.04	20.45	1.48
0.84	0.79	24.33	20.86	1.46
0.85	0.80	24.62	21.26	1.44
0.86	0.81	24.91	21.67	1.43
0.87	0.82	25.20	22.09	1.41
0.88	0.83	25.48	22.50	1.39
0.89	0.84	25.77	22.92	1.38
0.90	0.85	26.06	23.34	1.36
0.91	0.86	26.35	23.76	1.35
0.92	0.87	26.64	24.19	1.33
0.93	0.87	26.93	24.62	1.32
0.94	0.88	27.22	25.05	1.30
0.95	0.89	27.51	25.48	1.29
0.96	0.90	27.80	25.92	1.28
0.97	0.91	28.09	26.36	1.26
0.98	0.92	28.38	26.80	1.25
0.99	0.93	28.67	27.25	1.24
1.00	0.94	28.96	27.70	1.23
1.01	0.94	29.25	28.15	1.21
1.02	0.95	29.54	28.60	1.20
1.03	0.96	29.83	29.06	1.19
1.04	0.97	30.12	29.52	1.18
1.05	0.98	30.41	29.98	1.17
1.06	0.99	30.70	30.45	1.16
1.07	1.00	30.99	30.91	1.15
1.08	1.01	31.28	31.38	1.14
1.09	1.01	31.57	31.85	1.13
1.10	1.02	31.86	32.33	1.12

TRAMO 1. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE (z/1000)	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.66
VELOCIDAD NORMAL (m/s)	1.25
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.57
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.03
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.37
Altura del salto "h_0" (m)	1.57
Nd (q^2/gh_0^3)	0.05
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.00
y_1 ($h_0Nd^{0,22}$) (m)	0.81
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.24
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.16
TAIL WATER -CALADO NORMAL- (m)	1.03
TW - y_3 (m)	-0.13

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.26
H_2 = -(H-Y_0) (m)	-0.54
H_0 = H_2-Y_3 (m)	-1.80
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.23
Lf (m)	2.15
Lt (m)	1.34
Ls (m)	2.37
L_1 (m)	2.26
L2 (m)	0.47
L3 (m)	1.03
L_B (m)	3.75

BLOCKS	
Block height (0,8Yc) (m)	0.47
Block width (0,4Yc) (m)	0.23

SILL HEIGTH (0,4Yc) (m)	0.23

TRAMO 1. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE (z/1000)	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.66
VELOCIDAD NORMAL (m/s)	1.25
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.07
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.03
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.37
Altura del salto "h_0" (m)	2.07
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.16
y_1 ($h_0Nd^{0,22}$) (m)	0.89
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.22
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.22
TAIL WATER -CALADO NORMAL- (m)	1.03
TW - y_3 (m)	-0.19

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.26
H_2 = -(H-Y_0) (m)	-1.04
H_0 = H_2-Y_3 (m)	-2.30
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.23
Lf (m)	2.41
Lt (m)	1.70
Ls (m)	2.54
L_1 (m)	2.47
L2 (m)	0.47
L3 (m)	1.03
L_B (m)	3.97

BLOCKS	
Block height (0,8Yc) (m)	0.47
Block width (0,4Yc) (m)	0.23

SILL HEIGTH (0,4Yc) (m)	0.23

TRAMO 1. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE (z/1000)	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.66
VELOCIDAD NORMAL (m/s)	1.25
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	35.53
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.57
ANCHURA CAUCE -W- (m)	25.96
PENDIENTE	0.0010
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.03
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario ($m^3/s/m$) "q"	1.37
Altura del salto "h_0" (m)	2.57
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.29
y_1 ($h_0Nd^{0,22}$) (m)	0.96
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.21
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.27
TAIL WATER -CALADO NORMAL- (m)	1.03
TW - y_3 (m)	-0.24

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.26
H_2 = -(H-Y_0) (m)	-1.54
H_0 = H_2-Y_3 (m)	-2.80
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.23
Lf (m)	2.64
Lt (m)	2.01
Ls (m)	2.73
L_1 (m)	2.69
L2 (m)	0.47
L3 (m)	1.03
L_B (m)	4.18

BLOCKS	
Block height (0,8Yc) (m)	0.47
Block width (0,4Yc) (m)	0.23

SILL HEIGTH (0,4Yc) (m)	0.23

CÁLCULO SALTOS TRAMO 2

TRAMO 2. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	$nQ/\sqrt{I}$ ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.025	0.306	0.242	1.50	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.30	0.67	2.84	0.45	0.09	0.63	0.22	0.23	0.49	2.70	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.45	0.50

VALORES PARA LA ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.54	0.02	0.00	0.02	0.01	0.00
0.02	0.04	1.59	0.03	0.00	0.03	0.02	0.00
0.03	0.07	1.63	0.05	0.00	0.05	0.03	0.00
0.04	0.09	1.68	0.06	0.00	0.06	0.04	0.01
0.05	0.11	1.72	0.08	0.00	0.08	0.05	0.01
0.06	0.13	1.77	0.09	0.00	0.10	0.05	0.01
0.07	0.16	1.81	0.11	0.00	0.11	0.06	0.02
0.08	0.18	1.86	0.12	0.01	0.13	0.07	0.02
0.09	0.20	1.90	0.14	0.01	0.15	0.08	0.03
0.10	0.22	1.95	0.15	0.01	0.17	0.09	0.03
0.11	0.25	1.99	0.17	0.01	0.19	0.09	0.04
0.12	0.27	2.04	0.18	0.01	0.21	0.10	0.05
0.13	0.29	2.08	0.20	0.02	0.23	0.11	0.05
0.14	0.31	2.13	0.21	0.02	0.25	0.12	0.06
0.15	0.34	2.17	0.23	0.02	0.27	0.12	0.07
0.16	0.36	2.22	0.24	0.03	0.29	0.13	0.08
0.17	0.38	2.26	0.26	0.03	0.31	0.14	0.08
0.18	0.40	2.30	0.27	0.03	0.33	0.15	0.09
0.19	0.42	2.35	0.29	0.04	0.36	0.15	0.10
0.20	0.45	2.39	0.30	0.04	0.38	0.16	0.11
0.21	0.47	2.44	0.32	0.04	0.40	0.17	0.12
0.22	0.49	2.48	0.33	0.05	0.43	0.17	0.13
0.23	0.51	2.53	0.35	0.05	0.45	0.18	0.14
0.24	0.54	2.57	0.36	0.06	0.48	0.18	0.15
0.25	0.56	2.62	0.38	0.06	0.50	0.19	0.17
0.26	0.58	2.66	0.39	0.07	0.53	0.20	0.18
0.27	0.60	2.71	0.41	0.07	0.55	0.20	0.19
0.28	0.63	2.75	0.42	0.08	0.58	0.21	0.20
0.29	0.65	2.80	0.44	0.08	0.60	0.22	0.22
0.30	0.67	2.84	0.45	0.09	0.63	0.22	0.23
0.31	0.69	2.89	0.47	0.10	0.66	0.23	0.25
0.32	0.72	2.93	0.48	0.10	0.68	0.23	0.26
0.33	0.74	2.98	0.50	0.11	0.71	0.24	0.27
0.34	0.76	3.02	0.51	0.12	0.74	0.25	0.29
0.35	0.78	3.07	0.53	0.12	0.77	0.25	0.31
0.36	0.80	3.11	0.54	0.13	0.80	0.26	0.32
0.37	0.83	3.15	0.56	0.14	0.83	0.26	0.34
0.38	0.85	3.20	0.57	0.14	0.86	0.27	0.36
0.39	0.87	3.24	0.59	0.15	0.89	0.27	0.38
0.40	0.89	3.29	0.60	0.16	0.92	0.28	0.39

TRAMO 2. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
33.66	9.80	10.75	2.00	3.00	2.50	0.50	8.50

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
1.17	13.86	23.65	0.59	23.26	0.62

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.50	1.00	1.12	1.50	3.50	0.75	0.25	1.25	3.74

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.21	8.50	8.50	3.50	20.50	0.74	0.90	2.55	17.01

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	20.50	20.56	0.21	0.00	0.21	20.80
0.02	0.06	0.06	20.50	20.62	0.41	0.00	0.41	20.87
0.03	0.09	0.09	20.50	20.68	0.62	0.00	0.62	20.93
0.04	0.12	0.13	20.50	20.74	0.82	0.00	0.82	20.99
0.05	0.15	0.16	20.50	20.80	1.03	0.00	1.03	21.06
0.06	0.18	0.19	20.50	20.86	1.23	0.01	1.24	21.12
0.07	0.21	0.22	20.50	20.92	1.44	0.01	1.45	21.18
0.08	0.24	0.25	20.50	20.98	1.64	0.01	1.66	21.25
0.09	0.27	0.28	20.50	21.04	1.85	0.01	1.87	21.31
0.10	0.30	0.32	20.50	21.10	2.05	0.02	2.08	21.37
0.11	0.33	0.35	20.50	21.16	2.26	0.02	2.29	21.44
0.12	0.36	0.38	20.50	21.22	2.46	0.02	2.50	21.50
0.13	0.39	0.41	20.50	21.28	2.67	0.03	2.72	21.56
0.14	0.42	0.44	20.50	21.34	2.87	0.03	2.93	21.63
0.15	0.45	0.47	20.50	21.40	3.08	0.03	3.14	21.69
0.16	0.48	0.51	20.50	21.46	3.28	0.04	3.36	21.75
0.17	0.51	0.54	20.50	21.52	3.49	0.04	3.57	21.82
0.18	0.54	0.57	20.50	21.58	3.69	0.05	3.79	21.88
0.19	0.57	0.60	20.50	21.64	3.90	0.05	4.00	21.94
0.20	0.60	0.63	20.50	21.70	4.10	0.06	4.22	22.01
0.21	0.63	0.66	20.50	21.76	4.31	0.07	4.44	22.07
0.22	0.66	0.70	20.50	21.82	4.51	0.07	4.66	22.13
0.23	0.69	0.73	20.50	21.88	4.72	0.08	4.87	22.20
0.24	0.72	0.76	20.50	21.94	4.92	0.09	5.09	22.26
0.25	0.75	0.79	20.50	22.00	5.13	0.09	5.31	22.32
0.26	0.78	0.82	20.50	22.06	5.33	0.10	5.53	22.39
0.27	0.81	0.85	20.50	22.12	5.54	0.11	5.75	22.45
0.28	0.84	0.89	20.50	22.18	5.74	0.12	5.98	22.51
0.29	0.87	0.92	20.50	22.24	5.95	0.13	6.20	22.58
0.30	0.90	0.95	20.50	22.30	6.15	0.14	6.42	22.64
0.31	0.93	0.98	20.50	22.36	6.36	0.14	6.64	22.70
0.32	0.96	1.01	20.50	22.42	6.56	0.15	6.87	22.77
0.33	0.99	1.04	20.50	22.48	6.77	0.16	7.09	22.83
0.34	1.02	1.08	20.50	22.54	6.97	0.17	7.32	22.89
0.35	1.05	1.11	20.50	22.60	7.18	0.18	7.54	22.95
0.36	1.08	1.14	20.50	22.66	7.38	0.19	7.77	23.02
0.37	1.11	1.17	20.50	22.72	7.59	0.21	8.00	23.08
0.38	1.14	1.20	20.50	22.78	7.79	0.22	8.22	23.14
0.39	1.17	1.23	20.50	22.84	8.00	0.23	8.45	23.21
0.40	1.20	1.26	20.50	22.90	8.20	0.24	8.68	23.27
0.41	1.23	1.30	20.50	22.96	8.41	0.25	8.91	23.33
0.42	1.26	1.33	20.50	23.02	8.61	0.26	9.14	23.40
0.43	1.29	1.36	20.50	23.08	8.82	0.28	9.37	23.46
0.44	1.32	1.39	20.50	23.14	9.02	0.29	9.60	23.52
0.45	1.35	1.42	20.50	23.20	9.23	0.30	9.83	23.59
0.46	1.38	1.45	20.50	23.26	9.43	0.32	10.06	23.65
0.47	1.41	1.49	20.50	23.32	9.64	0.33	10.30	23.71
0.48	1.44	1.52	20.50	23.38	9.84	0.35	10.53	23.78
0.49	1.47	1.55	20.50	23.44	10.05	0.36	10.77	23.84
0.50	1.50	1.58	20.50	23.50	10.25	0.38	11.00	23.90

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
4.01	0.19	1.77	0.72	0.19
4.21	0.20	1.90	0.73	0.20
4.42	0.21	2.04	0.74	0.21
4.62	0.22	2.18	0.75	0.22
4.83	0.23	2.33	0.76	0.23
5.04	0.24	2.48	0.77	0.24
5.25	0.25	2.63	0.78	0.25
5.46	0.26	2.78	0.79	0.26
5.67	0.27	2.94	0.80	0.27
5.88	0.28	3.10	0.81	0.28
6.09	0.29	3.27	0.82	0.28
6.30	0.30	3.44	0.83	0.29
6.52	0.31	3.61	0.84	0.30
6.73	0.32	3.78	0.85	0.31
6.94	0.32	3.95	0.86	0.32
7.16	0.33	4.13	0.87	0.33
7.37	0.34	4.31	0.88	0.34
7.59	0.35	4.50	0.89	0.35
7.80	0.36	4.69	0.90	0.36
8.02	0.37	4.88	0.91	0.36
8.24	0.38	5.07	0.92	0.37
8.46	0.39	5.26	0.93	0.38
8.67	0.40	5.46	0.94	0.39
8.89	0.41	5.66	0.95	0.40
9.11	0.41	5.86	0.96	0.41
9.33	0.42	6.07	0.97	0.42
9.55	0.43	6.28	0.98	0.43
9.78	0.44	6.49	0.99	0.43
10.00	0.45	6.70	1.00	0.44
10.22	0.46	6.92	1.01	0.45
10.44	0.47	7.14	1.02	0.46
10.67	0.48	7.36	1.03	0.47
10.89	0.48	7.58	1.04	0.48
11.12	0.49	7.81	1.05	0.49
11.34	0.50	8.04	1.06	0.49
11.57	0.51	8.27	1.07	0.50
11.80	0.52	8.50	1.08	0.51
12.02	0.53	8.73	1.09	0.52
12.25	0.54	8.97	1.10	0.53
12.48	0.54	9.21	1.11	0.54
12.71	0.55	9.46	1.12	0.54
12.94	0.56	9.70	1.13	0.55
13.17	0.57	9.95	1.14	0.56
13.40	0.58	10.20	1.15	0.57
13.63	0.59	10.45	1.16	0.58
13.86	0.60	10.70	1.17	0.59
14.10	0.60	10.96	1.18	0.59
14.33	0.61	11.22	1.19	0.60
14.57	0.62	11.48	1.20	0.61
14.80	0.63	11.75	1.21	0.62

TRAMO 2. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	n DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0010	0.025	33.66	26.61

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.68	26.32	0.99	26.51	26.26	1.27	0.40

SECCIÓN RECTANGULAR

CALADO NORMAL SECCION RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.06	0.98	27.90	27.54	1.21	0.37

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
1.18	0.10	1.79

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.72	20.56	0.19	4.01	1.34	8.40
0.73	20.62	0.20	4.21	1.45	7.99
0.74	20.68	0.21	4.42	1.57	7.62
0.75	20.74	0.22	4.62	1.69	7.28
0.76	20.80	0.23	4.83	1.81	6.97
0.77	20.86	0.24	5.04	1.94	6.68
0.78	20.92	0.25	5.25	2.07	6.41
0.79	20.98	0.26	5.46	2.21	6.17
0.80	21.04	0.27	5.67	2.35	5.94
0.81	21.10	0.28	5.88	2.49	5.73
0.82	21.16	0.28	6.09	2.63	5.53
0.83	21.22	0.29	6.30	2.78	5.34
0.84	21.28	0.30	6.52	2.93	5.17
0.85	21.34	0.31	6.73	3.09	5.00
0.86	21.40	0.32	6.94	3.25	4.85
0.87	21.46	0.33	7.16	3.41	4.70
0.88	21.52	0.34	7.37	3.58	4.57
0.89	21.58	0.35	7.59	3.74	4.44
0.90	21.64	0.36	7.80	3.92	4.31
0.91	21.70	0.36	8.02	4.09	4.20
0.92	21.76	0.37	8.24	4.27	4.09
0.93	21.82	0.38	8.46	4.45	3.98
0.94	21.88	0.39	8.67	4.64	3.88
0.95	21.94	0.40	8.89	4.82	3.79
0.96	22.00	0.41	9.11	5.01	3.69
0.97	22.06	0.42	9.33	5.21	3.61
0.98	22.12	0.43	9.55	5.41	3.52
0.99	22.18	0.43	9.78	5.61	3.44
1.00	22.24	0.44	10.00	5.81	3.37
1.01	22.30	0.45	10.22	6.01	3.29
1.02	22.36	0.46	10.44	6.22	3.22
1.03	22.42	0.47	10.67	6.44	3.16
1.04	22.48	0.48	10.89	6.65	3.09
1.05	22.54	0.49	11.12	6.87	3.03
1.06	22.60	0.49	11.34	7.09	2.97
1.07	22.66	0.50	11.57	7.31	2.91
1.08	22.72	0.51	11.80	7.54	2.85
1.09	22.78	0.52	12.02	7.77	2.80
1.10	22.84	0.53	12.25	8.00	2.75
1.11	22.90	0.54	12.48	8.24	2.70
1.12	22.96	0.54	12.71	8.48	2.65
1.13	23.02	0.55	12.94	8.72	2.60
1.14	23.08	0.56	13.17	8.96	2.56
1.15	23.14	0.57	13.40	9.21	2.51
1.16	23.20	0.58	13.63	9.46	2.47
1.17	23.26	0.59	13.86	9.71	2.43
1.18	23.32	0.59	14.10	9.97	2.39
1.19	23.38	0.60	14.33	10.23	2.35
1.20	23.44	0.61	14.57	10.49	2.31
1.21	23.50	0.62	14.80	10.75	2.27
1.22	23.56	0.63	15.04	11.02	2.24
1.23	23.62	0.64	15.27	11.29	2.20
1.24	23.68	0.64	15.51	11.56	2.17
1.25	23.74	0.65	15.74	11.84	2.14
1.26	23.80	0.66	15.98	12.11	2.11
1.27	23.86	0.67	16.22	12.40	2.08
1.28	23.92	0.68	16.46	12.68	2.05
1.29	23.98	0.68	16.70	12.97	2.02
1.30	24.04	0.69	16.94	13.25	1.99
1.31	24.10	0.70	17.18	13.55	1.96
1.32	24.16	0.71	17.42	13.84	1.93
1.33	24.22	0.72	17.66	14.14	1.91
1.34	24.28	0.72	17.91	14.44	1.88
1.35	24.34	0.73	18.15	14.74	1.85
1.36	24.40	0.74	18.39	15.05	1.83
1.37	24.46	0.75	18.64	15.36	1.81
1.38	24.52	0.76	18.88	15.67	1.78
1.39	24.58	0.76	19.13	15.98	1.76
1.40	24.64	0.77	19.37	16.30	1.74
1.41	24.70	0.78	19.62	16.62	1.72
1.42	24.76	0.79	19.87	16.94	1.69
1.43	24.82	0.80	20.12	17.27	1.67
1.44	24.88	0.80	20.36	17.59	1.65
1.45	24.94	0.81	20.61	17.92	1.63
1.46	25.00	0.82	20.86	18.26	1.61
1.47	25.06	0.83	21.11	18.59	1.59
1.48	25.12	0.83	21.36	18.93	1.58
1.49	25.18	0.84	21.62	19.27	1.56
1.50	25.24	0.85	21.87	19.62	1.54
1.51	25.30	0.86	22.12	19.96	1.52
1.52	25.36	0.87	22.37	20.31	1.50
1.53	25.42	0.87	22.63	20.66	1.49
1.54	25.48	0.88	22.88	21.02	1.47
1.55	25.54	0.89	23.14	21.38	1.45
1.56	25.60	0.90	23.39	21.74	1.44
1.57	25.66	0.90	23.65	22.10	1.42
1.58	25.72	0.91	23.91	22.46	1.41
1.59	25.78	0.92	24.16	22.83	1.39
1.60	25.84	0.93	24.42	23.20	1.38
1.61	25.90	0.93	24.68	23.58	1.36
1.62	25.96	0.94	24.94	23.95	1.35
1.63	26.02	0.95	25.20	24.33	1.34
1.64	26.08	0.96	25.46	24.71	1.32
1.65	26.14	0.96	25.72	25.10	1.31
1.66	26.20	0.97	25.98	25.48	1.30
1.67	26.26	0.98	26.24	25.87	1.28
1.68	26.32	0.99	26.51	26.26	1.27
1.69	26.38	0.99	26.77	26.66	1.26
1.70	26.44	1.00	27.04	27.06	1.25
1.71	26.50	1.01	27.30	27.46	1.23
1.72	26.56	1.02	27.57	27.86	1.22
1.73	26.62	1.02	27.83	28.27	1.21
1.74	26.68	1.03	28.10	28.67	1.20
1.75	26.74	1.04	28.36	29.08	1.19
1.76	26.80	1.05	28.63	29.50	1.18
1.77	26.86	1.05	28.90	29.91	1.16
1.78	26.92	1.06	29.17	30.33	1.15
1.79	26.98	1.07	29.44	30.75	1.14
1.80	27.04	1.08	29.71	31.18	1.13

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.26	0.01	127.90
0.02	0.02	0.53	0.04	63.95
0.03	0.03	0.79	0.08	42.63
0.04	0.04	1.05	0.12	31.97
0.05	0.05	1.32	0.18	25.58
0.06	0.06	1.58	0.24	21.32
0.07	0.07	1.84	0.31	18.27
0.08	0.08	2.11	0.39	15.99
0.09	0.09	2.37	0.47	14.21
0.10	0.10	2.63	0.56	12.79
0.11	0.11	2.90	0.66	11.63
0.12	0.12	3.16	0.76	10.66
0.13	0.13	3.42	0.87	9.84
0.14	0.14	3.68	0.99	9.14
0.15	0.15	3.95	1.11	8.53
0.16	0.16	4.21	1.23	7.99
0.17	0.17	4.47	1.36	7.52
0.18	0.18	4.74	1.50	7.11
0.19	0.19	5.00	1.64	6.73
0.20	0.20	5.26	1.78	6.39
0.21	0.21	5.53	1.93	6.09
0.22	0.22	5.79	2.09	5.81
0.23	0.23	6.05	2.25	5.56
0.24	0.24	6.32	2.41	5.33
0.25	0.25	6.58	2.58	5.12
0.26	0.25	6.84	2.75	4.92
0.27	0.26	7.11	2.93	4.74
0.28	0.27	7.37	3.11	4.57
0.29	0.28	7.63	3.30	4.41
0.30	0.29	7.90	3.49	4.26
0.31	0.30	8.16	3.68	4.13
0.32	0.31	8.42	3.88	4.00
0.33	0.32	8.69	4.08	3.88
0.34	0.33	8.95	4.29	3.76
0.35	0.34	9.21	4.50	3.65
0.36	0.35	9.48	4.71	3.55
0.37	0.36	9.74	4.93	3.46
0.38	0.37	10.00	5.15	3.37
0.39	0.38	10.26	5.37	3.28
0.40	0.39	10.53	5.60	3.20
0.41	0.40	10.79	5.84	3.12
0.42	0.41	11.05	6.07	3.05
0.43	0.42	11.32	6.31	2.97
0.44	0.43	11.58	6.55	2.91
0.45	0.44	11.84	6.80	2.84
0.46	0.44	12.11	7.05	2.78
0.47	0.45	12.37	7.31	2.72
0.48	0.46	12.63	7.56	2.66
0.49	0.47	12.90	7.82	2.61
0.50	0.48	13.16	8.09	2.56
0.51	0.49	13.42	8.35	2.51
0.52	0.50	13.69	8.62	2.46
0.53	0.51	13.95	8.90	2.41
0.54	0.52	14.21	9.18	2.37
0.55	0.53	14.48	9.46	2.33
0.56	0.54	14.74	9.74	2.28
0.57	0.55	15.00	10.03	2.24
0.58	0.56	15.27	10.32	2.21
0.59	0.56	15.53	10.61	2.17
0.60	0.57	15.79	10.91	2.13
0.61	0.58	16.06	11.20	2.10
0.62	0.59	16.32	11.51	2.06
0.63	0.60	16.58	11.81	2.03
0.64	0.61	16.84	12.12	2.00
0.65	0.62	17.11	12.43	1.97
0.66	0.63	17.37	12.75	1.94
0.67	0.64	17.63	13.06	1.91
0.68	0.65	17.90	13.38	1.88
0.69	0.66	18.16	13.71	1.85
0.70	0.66	18.42	14.03	1.83
0.71	0.67	18.69	14.36	1.80
0.72	0.68	18.95	14.69	1.78
0.73	0.69	19.21	15.03	1.75
0.74	0.70	19.48	15.36	1.73
0.75	0.71	19.74	15.70	1.71
0.76	0.72	20.00	16.05	1.68
0.77	0.73	20.27	16.39	1.66
0.78	0.74	20.53	16.74	1.64
0.79	0.75	20.79	17.09	1.62
0.80	0.75	21.06	17.45	1.60
0.81	0.76	21.32	17.80	1.58
0.82	0.77	21.58	18.16	1.56
0.83	0.78	21.85	18.52	1.54
0.84	0.79	22.11	18.89	1.52
0.85	0.80	22.37	19.25	1.50
0.86	0.81	22.64	19.62	1.49
0.87	0.82	22.90	20.00	1.47
0.88	0.82	23.16	20.37	1.45
0.89	0.83	23.42	20.75	1.44
0.90	0.84	23.69	21.13	1.42
0.91	0.85	23.95	21.51	1.41
0.92	0.86	24.21	21.90	1.39
0.93	0.87	24.48	22.28	1.38
0.94	0.88	24.74	22.67	1.36
0.95	0.89	25.00	23.07	1.35
0.96	0.89	25.27	23.46	1.33
0.97	0.90	25.53	23.86	1.32
0.98	0.91	25.79	24.26	1.31
0.99	0.92	26.06	24.66	1.29
1.00	0.93	26.32	25.07	1.28
1.01	0.94	26.58	25.47	1.27
1.02	0.95	26.85	25.88	1.25
1.03	0.96	27.11	26.29	1.24
1.04	0.96	27.37	26.71	1.23
1.05	0.97	27.64	27.13	1.22
1.06	0.98	27.90	27.54	1.21
1.07	0.99	28.16	27.97	1.20
1.08	1.00	28.43	28.39	1.18
1.09	1.01	28.69	28.82	1.17

TRAMO 2. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.68
VELOCIDAD NORMAL (m/s)	1.27
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.17

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.06
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.06
VELOCIDAD NORMAL (m/s)	1.21
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.62

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.45
Altura del salto "h_0" (m)	2.06
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0{,}27}$) (m)	3.25
y_1 ($h_0Nd^{0{,}22}$) (m)	0.91
y_2 ($0{,}54h_0N_d^{0{,}425}$) (m)	0.23
y_3 ($1{,}66h_0N_d^{0{,}27}$) (m)	1.25
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.19

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.33
H_2 = -(H-Y_0) (m)	-1.00
H_0 = H_2-Y_3 (m)	-2.32
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	2.48
Lt (m)	1.72
Ls (m)	2.64
L_1 (m)	2.56
L2 (m)	0.49
L3 (m)	1.08
L_B (m)	4.14

BLOCKS	
Block height (0,8Yc) (m)	0.49
Block width (0,4Yc) (m)	0.25

SILL HEIGTH (0,4Yc) (m)	0.25

TRAMO 2. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.68
VELOCIDAD NORMAL (m/s)	1.27
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.17

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.56
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.06
VELOCIDAD NORMAL (m/s)	1.21
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.62

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.45
Altura del salto "h_0" (m)	1.56
Nd (q^2/gh_0^3)	0.06
L1 ($4{,}3h_0N_d^{0{,}27}$) (m)	3.08
y_1 ($h_0Nd^{0{,}22}$) (m)	0.83
y_2 ($0{,}54h_0N_d^{0{,}425}$) (m)	0.25
y_3 ($1{,}66h_0N_d^{0{,}27}$) (m)	1.19
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.13

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.33
H_2 = -(H-Y_0) (m)	-0.50
H_0 = H_2-Y_3 (m)	-1.82
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	2.23
Lt (m)	1.35
Ls (m)	2.47
L_1 (m)	2.35
L2 (m)	0.49
L3 (m)	1.08
L_B (m)	3.92

BLOCKS	
Block height (0,8Yc) (m)	0.49
Block width (0,4Yc) (m)	0.25

SILL HEIGTH (0,4Yc) (m)	0.25

TRAMO 2. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.68
VELOCIDAD NORMAL (m/s)	1.27
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.17

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	33.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.56
ANCHURA CAUCE -W- (m)	23.26
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.06
VELOCIDAD NORMAL (m/s)	1.21
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.62

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.45
Altura del salto "h_0" (m)	2.56
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.39
y_1 ($h_0Nd^{0,22}$) (m)	0.98
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.22
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.31
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.25

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.33
H_2 = -(H-Y_0) (m)	-1.50
H_0 = H_2-Y_3 (m)	-2.82
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	2.72
Lt (m)	2.04
Ls (m)	2.83
L_1 (m)	2.77
L2 (m)	0.49
L3 (m)	1.08
L_B (m)	4.35

BLOCKS	
Block height (0,8Yc) (m)	0.49
Block width (0,4Yc) (m)	0.25

SILL HEIGTH (0,4Yc) (m)	0.25

TRAMO 3. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.025	0.271	0.214	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.34	0.76	2.52	0.34	0.12	0.57	0.23	0.21	0.47	2.36	0.31

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.44	0.50

VALORES PARA LA ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08
0.21	0.47	1.94	0.21	0.04	0.30	0.15	0.09
0.22	0.49	1.98	0.22	0.05	0.32	0.16	0.09
0.23	0.51	2.03	0.23	0.05	0.34	0.17	0.10
0.24	0.54	2.07	0.24	0.06	0.36	0.17	0.11
0.25	0.56	2.12	0.25	0.06	0.38	0.18	0.12
0.26	0.58	2.16	0.26	0.07	0.40	0.18	0.13
0.27	0.60	2.21	0.27	0.07	0.42	0.19	0.14
0.28	0.63	2.25	0.28	0.08	0.44	0.19	0.15
0.29	0.65	2.30	0.29	0.08	0.46	0.20	0.16
0.30	0.67	2.34	0.30	0.09	0.48	0.20	0.17
0.31	0.69	2.39	0.31	0.10	0.50	0.21	0.18
0.32	0.72	2.43	0.32	0.10	0.52	0.22	0.19
0.33	0.74	2.48	0.33	0.11	0.55	0.22	0.20
0.34	0.76	2.52	0.34	0.12	0.57	0.23	0.21
0.35	0.78	2.57	0.35	0.12	0.60	0.23	0.22
0.36	0.80	2.61	0.36	0.13	0.62	0.24	0.24
0.37	0.83	2.65	0.37	0.14	0.64	0.24	0.25
0.38	0.85	2.70	0.38	0.14	0.67	0.25	0.26
0.39	0.87	2.74	0.39	0.15	0.69	0.25	0.28
0.40	0.89	2.79	0.40	0.16	0.72	0.26	0.29

CÁLCULO SALTOS TRAMO 3

TRAMO 3. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
31.60	9.80	10.10	2.00	3.00	2.50	0.50	8.50

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
1.16	13.05	23.09	0.57	22.70	0.59

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.50	1.00	1.12	1.00	3.00	0.50	0.25	1.00	3.24

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.21	8.50	8.50	3.00	20.00	0.64	0.90	2.44	17.01

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	20.00	20.06	0.20	0.00	0.20	20.30
0.02	0.06	0.06	20.00	20.12	0.40	0.00	0.40	20.37
0.03	0.09	0.09	20.00	20.18	0.60	0.00	0.60	20.43
0.04	0.12	0.13	20.00	20.24	0.80	0.00	0.80	20.49
0.05	0.15	0.16	20.00	20.30	1.00	0.00	1.01	20.56
0.06	0.18	0.19	20.00	20.36	1.20	0.01	1.21	20.62
0.07	0.21	0.22	20.00	20.42	1.40	0.01	1.41	20.68
0.08	0.24	0.25	20.00	20.48	1.60	0.01	1.62	20.75
0.09	0.27	0.28	20.00	20.54	1.80	0.01	1.82	20.81
0.10	0.30	0.32	20.00	20.60	2.00	0.02	2.03	20.87
0.11	0.33	0.35	20.00	20.66	2.20	0.02	2.24	20.94
0.12	0.36	0.38	20.00	20.72	2.40	0.02	2.44	21.00
0.13	0.39	0.41	20.00	20.78	2.60	0.03	2.65	21.06
0.14	0.42	0.44	20.00	20.84	2.80	0.03	2.86	21.13
0.15	0.45	0.47	20.00	20.90	3.00	0.03	3.07	21.19
0.16	0.48	0.51	20.00	20.96	3.20	0.04	3.28	21.25
0.17	0.51	0.54	20.00	21.02	3.40	0.04	3.49	21.32
0.18	0.54	0.57	20.00	21.08	3.60	0.05	3.70	21.38
0.19	0.57	0.60	20.00	21.14	3.80	0.05	3.91	21.44
0.20	0.60	0.63	20.00	21.20	4.00	0.06	4.12	21.51
0.21	0.63	0.66	20.00	21.26	4.20	0.07	4.33	21.57
0.22	0.66	0.70	20.00	21.32	4.40	0.07	4.55	21.63
0.23	0.69	0.73	20.00	21.38	4.60	0.08	4.76	21.70
0.24	0.72	0.76	20.00	21.44	4.80	0.09	4.97	21.76
0.25	0.75	0.79	20.00	21.50	5.00	0.09	5.19	21.82
0.26	0.78	0.82	20.00	21.56	5.20	0.10	5.40	21.89
0.27	0.81	0.85	20.00	21.62	5.40	0.11	5.62	21.95
0.28	0.84	0.89	20.00	21.68	5.60	0.12	5.84	22.01
0.29	0.87	0.92	20.00	21.74	5.80	0.13	6.05	22.08
0.30	0.90	0.95	20.00	21.80	6.00	0.14	6.27	22.14
0.31	0.93	0.98	20.00	21.86	6.20	0.14	6.49	22.20
0.32	0.96	1.01	20.00	21.92	6.40	0.15	6.71	22.27
0.33	0.99	1.04	20.00	21.98	6.60	0.16	6.93	22.33
0.34	1.02	1.08	20.00	22.04	6.80	0.17	7.15	22.39
0.35	1.05	1.11	20.00	22.10	7.00	0.18	7.37	22.45
0.36	1.08	1.14	20.00	22.16	7.20	0.19	7.59	22.52
0.37	1.11	1.17	20.00	22.22	7.40	0.21	7.81	22.58
0.38	1.14	1.20	20.00	22.28	7.60	0.22	8.03	22.64
0.39	1.17	1.23	20.00	22.34	7.80	0.23	8.26	22.71
0.40	1.20	1.26	20.00	22.40	8.00	0.24	8.48	22.77
0.41	1.23	1.30	20.00	22.46	8.20	0.25	8.70	22.83
0.42	1.26	1.33	20.00	22.52	8.40	0.26	8.93	22.90
0.43	1.29	1.36	20.00	22.58	8.60	0.28	9.15	22.96
0.44	1.32	1.39	20.00	22.64	8.80	0.29	9.38	23.02
0.45	1.35	1.42	20.00	22.70	9.00	0.30	9.61	23.09
0.46	1.38	1.45	20.00	22.76	9.20	0.32	9.83	23.15
0.47	1.41	1.49	20.00	22.82	9.40	0.33	10.06	23.21
0.48	1.44	1.52	20.00	22.88	9.60	0.35	10.29	23.28
0.49	1.47	1.55	20.00	22.94	9.80	0.36	10.52	23.34
0.50	1.50	1.58	20.00	23.00	10.00	0.38	10.75	23.40

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
3.64	0.18	1.55	0.72	0.18
3.84	0.19	1.68	0.73	0.19
4.05	0.20	1.81	0.74	0.20
4.25	0.21	1.95	0.75	0.21
4.45	0.22	2.08	0.76	0.22
4.65	0.23	2.23	0.77	0.23
4.86	0.24	2.37	0.78	0.23
5.06	0.25	2.52	0.79	0.24
5.27	0.26	2.67	0.80	0.25
5.47	0.27	2.82	0.81	0.26
5.68	0.27	2.98	0.82	0.27
5.89	0.28	3.14	0.83	0.28
6.09	0.29	3.30	0.84	0.29
6.30	0.30	3.47	0.85	0.30
6.51	0.31	3.63	0.86	0.31
6.72	0.32	3.81	0.87	0.32
6.93	0.33	3.98	0.88	0.33
7.14	0.34	4.16	0.89	0.33
7.35	0.35	4.34	0.90	0.34
7.56	0.36	4.52	0.91	0.35
7.78	0.37	4.70	0.92	0.36
7.99	0.37	4.89	0.93	0.37
8.20	0.38	5.08	0.94	0.38
8.42	0.39	5.27	0.95	0.39
8.63	0.40	5.47	0.96	0.40
8.85	0.41	5.67	0.97	0.40
9.06	0.42	5.87	0.98	0.41
9.28	0.43	6.07	0.99	0.42
9.50	0.44	6.28	1.00	0.43
9.71	0.45	6.48	1.01	0.44
9.93	0.45	6.69	1.02	0.45
10.15	0.46	6.91	1.03	0.46
10.37	0.47	7.12	1.04	0.46
10.59	0.48	7.34	1.05	0.47
10.81	0.49	7.56	1.06	0.48
11.03	0.50	7.78	1.07	0.49
11.25	0.51	8.01	1.08	0.50
11.48	0.52	8.24	1.09	0.51
11.70	0.52	8.47	1.10	0.52
11.92	0.53	8.70	1.11	0.52
12.15	0.54	8.93	1.12	0.53
12.37	0.55	9.17	1.13	0.54
12.60	0.56	9.41	1.14	0.55
12.82	0.57	9.65	1.15	0.56
13.05	0.57	9.90	1.16	0.57
13.28	0.58	10.14	1.17	0.57
13.51	0.59	10.39	1.18	0.58
13.73	0.60	10.64	1.19	0.59
13.96	0.61	10.89	1.20	0.60
14.19	0.62	11.15	1.21	0.61

TRAMO 3. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	n DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0010	0.025	31.60	24.99

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.67	25.76	0.97	25.41	24.82	1.24	0.40

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
1.17	0.10	1.78

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.04	0.96	26.79	26.11	1.18	0.37

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.72	20.06	0.18	3.64	1.16	8.67
0.73	20.12	0.19	3.84	1.27	8.22
0.74	20.18	0.20	4.05	1.37	7.81
0.75	20.24	0.21	4.25	1.49	7.44
0.76	20.30	0.22	4.45	1.61	7.10
0.77	20.36	0.23	4.65	1.73	6.79
0.78	20.42	0.23	4.86	1.85	6.50
0.79	20.48	0.24	5.06	1.98	6.24
0.80	20.54	0.25	5.27	2.11	6.00
0.81	20.60	0.26	5.47	2.24	5.77
0.82	20.66	0.27	5.68	2.38	5.56
0.83	20.72	0.28	5.89	2.52	5.37
0.84	20.78	0.29	6.09	2.67	5.19
0.85	20.84	0.30	6.30	2.81	5.01
0.86	20.90	0.31	6.51	2.96	4.85
0.87	20.96	0.32	6.72	3.12	4.70
0.88	21.02	0.33	6.93	3.28	4.56
0.89	21.08	0.33	7.14	3.44	4.43
0.90	21.14	0.34	7.35	3.60	4.30
0.91	21.20	0.35	7.56	3.77	4.18
0.92	21.26	0.36	7.78	3.94	4.06
0.93	21.32	0.37	7.99	4.11	3.96
0.94	21.38	0.38	8.20	4.29	3.85
0.95	21.44	0.39	8.42	4.47	3.75
0.96	21.50	0.40	8.63	4.65	3.66
0.97	21.56	0.40	8.85	4.84	3.57
0.98	21.62	0.41	9.06	5.02	3.49
0.99	21.68	0.42	9.28	5.22	3.41
1.00	21.74	0.43	9.50	5.41	3.33
1.01	21.80	0.44	9.71	5.61	3.25
1.02	21.86	0.45	9.93	5.81	3.18
1.03	21.92	0.46	10.15	6.01	3.11
1.04	21.98	0.46	10.37	6.22	3.05
1.05	22.04	0.47	10.59	6.43	2.98
1.06	22.10	0.48	10.81	6.64	2.92
1.07	22.16	0.49	11.03	6.86	2.86
1.08	22.22	0.50	11.25	7.07	2.81
1.09	22.28	0.51	11.48	7.30	2.75
1.10	22.34	0.52	11.70	7.52	2.70
1.11	22.40	0.52	11.92	7.75	2.65
1.12	22.46	0.53	12.15	7.98	2.60
1.13	22.52	0.54	12.37	8.21	2.55
1.14	22.58	0.55	12.60	8.44	2.51
1.15	22.64	0.56	12.82	8.68	2.46
1.16	22.70	0.57	13.05	8.92	2.42
1.17	22.76	0.57	13.28	9.17	2.38
1.18	22.82	0.58	13.51	9.41	2.34
1.19	22.88	0.59	13.73	9.66	2.30
1.20	22.94	0.60	13.96	9.91	2.26
1.21	23.00	0.61	14.19	10.17	2.23
1.22	23.06	0.61	14.42	10.43	2.19
1.23	23.12	0.62	14.65	10.69	2.16
1.24	23.18	0.63	14.89	10.95	2.12
1.25	23.24	0.64	15.12	11.22	2.09
1.26	23.30	0.65	15.35	11.49	2.06
1.27	23.36	0.66	15.58	11.76	2.03
1.28	23.42	0.66	15.82	12.03	2.00
1.29	23.48	0.67	16.05	12.31	1.97
1.30	23.54	0.68	16.29	12.59	1.94
1.31	23.60	0.69	16.52	12.87	1.91
1.32	23.66	0.70	16.76	13.16	1.89
1.33	23.72	0.70	17.00	13.44	1.86
1.34	23.78	0.71	17.23	13.73	1.83
1.35	23.84	0.72	17.47	14.03	1.81
1.36	23.90	0.73	17.71	14.32	1.78
1.37	23.96	0.74	17.95	14.62	1.76
1.38	24.02	0.74	18.19	14.92	1.74
1.39	24.08	0.75	18.43	15.23	1.71
1.40	24.14	0.76	18.67	15.53	1.69
1.41	24.20	0.77	18.91	15.84	1.67
1.42	24.26	0.77	19.16	16.16	1.65
1.43	24.32	0.78	19.40	16.47	1.63
1.44	24.38	0.79	19.64	16.79	1.61
1.45	24.44	0.80	19.89	17.11	1.59
1.46	24.50	0.81	20.13	17.43	1.57
1.47	24.56	0.81	20.38	17.76	1.55
1.48	24.62	0.82	20.62	18.09	1.53
1.49	24.68	0.83	20.87	18.42	1.51
1.50	24.74	0.84	21.12	18.75	1.50
1.51	24.80	0.84	21.36	19.09	1.48
1.52	24.86	0.85	21.61	19.42	1.46
1.53	24.92	0.86	21.86	19.77	1.45
1.54	24.98	0.87	22.11	20.11	1.43
1.55	25.04	0.88	22.36	20.46	1.41
1.56	25.10	0.88	22.61	20.81	1.40
1.57	25.16	0.89	22.86	21.16	1.38
1.58	25.22	0.90	23.11	21.51	1.37
1.59	25.28	0.91	23.37	21.87	1.35
1.60	25.34	0.91	23.62	22.23	1.34
1.61	25.40	0.92	23.87	22.59	1.32
1.62	25.46	0.93	24.13	22.96	1.31
1.63	25.52	0.94	24.38	23.33	1.30
1.64	25.58	0.94	24.64	23.70	1.28
1.65	25.64	0.95	24.89	24.07	1.27
1.66	25.70	0.96	25.15	24.44	1.26
1.67	25.76	0.97	25.41	24.82	1.24
1.68	25.82	0.97	25.67	25.20	1.23
1.69	25.88	0.98	25.92	25.59	1.22
1.70	25.94	0.99	26.18	25.97	1.21
1.71	26.00	1.00	26.44	26.36	1.20
1.72	26.06	1.00	26.70	26.75	1.18
1.73	26.12	1.01	26.96	27.15	1.17
1.74	26.18	1.02	27.23	27.54	1.16
1.75	26.24	1.02	27.49	27.94	1.15
1.76	26.30	1.03	27.75	28.35	1.14
1.77	26.36	1.04	28.01	28.75	1.13
1.78	26.42	1.05	28.28	29.16	1.12
1.79	26.48	1.05	28.54	29.57	1.11
1.80	26.54	1.06	28.81	29.98	1.10

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.26	0.01	122.69
0.02	0.02	0.52	0.04	61.34
0.03	0.03	0.77	0.07	40.90
0.04	0.04	1.03	0.12	30.67
0.05	0.05	1.29	0.17	24.54
0.06	0.06	1.55	0.24	20.45
0.07	0.07	1.80	0.31	17.53
0.08	0.08	2.06	0.38	15.34
0.09	0.09	2.32	0.46	13.63
0.10	0.10	2.58	0.55	12.27
0.11	0.11	2.83	0.65	11.15
0.12	0.12	3.09	0.75	10.22
0.13	0.13	3.35	0.85	9.44
0.14	0.14	3.61	0.97	8.76
0.15	0.15	3.86	1.08	8.18
0.16	0.16	4.12	1.20	7.67
0.17	0.17	4.38	1.33	7.22
0.18	0.18	4.64	1.46	6.82
0.19	0.19	4.89	1.60	6.46
0.20	0.20	5.15	1.74	6.13
0.21	0.21	5.41	1.89	5.84
0.22	0.22	5.67	2.04	5.58
0.23	0.23	5.92	2.20	5.33
0.24	0.24	6.18	2.36	5.11
0.25	0.25	6.44	2.52	4.91
0.26	0.25	6.70	2.69	4.72
0.27	0.26	6.96	2.87	4.54
0.28	0.27	7.21	3.04	4.38
0.29	0.28	7.47	3.22	4.23
0.30	0.29	7.73	3.41	4.09
0.31	0.30	7.99	3.60	3.96
0.32	0.31	8.24	3.79	3.83
0.33	0.32	8.50	3.99	3.72
0.34	0.33	8.76	4.19	3.61
0.35	0.34	9.02	4.40	3.51
0.36	0.35	9.27	4.61	3.41
0.37	0.36	9.53	4.82	3.32
0.38	0.37	9.79	5.04	3.23
0.39	0.38	10.05	5.26	3.15
0.40	0.39	10.30	5.48	3.07
0.41	0.40	10.56	5.71	2.99
0.42	0.41	10.82	5.94	2.92
0.43	0.42	11.08	6.17	2.85
0.44	0.43	11.33	6.41	2.79
0.45	0.43	11.59	6.65	2.73
0.46	0.44	11.85	6.90	2.67
0.47	0.45	12.11	7.15	2.61
0.48	0.46	12.36	7.40	2.56
0.49	0.47	12.62	7.65	2.50
0.50	0.48	12.88	7.91	2.45
0.51	0.49	13.14	8.17	2.41
0.52	0.50	13.40	8.44	2.36
0.53	0.51	13.65	8.70	2.31
0.54	0.52	13.91	8.98	2.27
0.55	0.53	14.17	9.25	2.23
0.56	0.54	14.43	9.53	2.19
0.57	0.55	14.68	9.81	2.15
0.58	0.56	14.94	10.09	2.12
0.59	0.56	15.20	10.38	2.08
0.60	0.57	15.46	10.67	2.04
0.61	0.58	15.71	10.96	2.01
0.62	0.59	15.97	11.25	1.98
0.63	0.60	16.23	11.55	1.95
0.64	0.61	16.49	11.85	1.92
0.65	0.62	16.74	12.16	1.89
0.66	0.63	17.00	12.47	1.86
0.67	0.64	17.26	12.78	1.83
0.68	0.65	17.52	13.09	1.80
0.69	0.65	17.77	13.40	1.78
0.70	0.66	18.03	13.72	1.75
0.71	0.67	18.29	14.04	1.73
0.72	0.68	18.55	14.37	1.70
0.73	0.69	18.80	14.70	1.68
0.74	0.70	19.06	15.03	1.66
0.75	0.71	19.32	15.36	1.64
0.76	0.72	19.58	15.69	1.61
0.77	0.73	19.84	16.03	1.59
0.78	0.74	20.09	16.37	1.57
0.79	0.74	20.35	16.71	1.55
0.80	0.75	20.61	17.06	1.53
0.81	0.76	20.87	17.41	1.51
0.82	0.77	21.12	17.76	1.50
0.83	0.78	21.38	18.11	1.48
0.84	0.79	21.64	18.47	1.46
0.85	0.80	21.90	18.83	1.44
0.86	0.81	22.15	19.19	1.43
0.87	0.81	22.41	19.55	1.41
0.88	0.82	22.67	19.92	1.39
0.89	0.83	22.93	20.29	1.38
0.90	0.84	23.18	20.66	1.36
0.91	0.85	23.44	21.03	1.35
0.92	0.86	23.70	21.41	1.33
0.93	0.87	23.96	21.79	1.32
0.94	0.88	24.21	22.17	1.31
0.95	0.88	24.47	22.55	1.29
0.96	0.89	24.73	22.94	1.28
0.97	0.90	24.99	23.33	1.26
0.98	0.91	25.24	23.72	1.25
0.99	0.92	25.50	24.11	1.24
1.00	0.93	25.76	24.51	1.23
1.01	0.94	26.02	24.91	1.21
1.02	0.95	26.28	25.31	1.20
1.03	0.95	26.53	25.71	1.19
1.04	0.96	26.79	26.11	1.18
1.05	0.97	27.05	26.52	1.17
1.06	0.98	27.31	26.93	1.16
1.07	0.99	27.56	27.34	1.15
1.08	1.00	27.82	27.75	1.14
1.09	1.00	28.08	28.17	1.13

TRAMO 3. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q	31.60
SALTO (H_B)	1.50
ANCHURA CAUCE (W)	22.70
PENDIENTE	0.00
N Manning	0.03

VALORES CALCULADOS:	
CALADO NORMAL (Y_0)	1.67
VELOCIDAD NORMAL	1.24
FROUDE NORMAL	0.40
CALADO CRITICO (Y_{CB})	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	31.60
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.07
ANCHURA CAUCE -W- (m)	22.70
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.04
VELOCIDAD NORMAL (m/s)	1.18
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.39
Altura del salto "h_0" (m)	2.07
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.19
y_1 ($h_0Nd^{0,22}$) (m)	0.90
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.22
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.23
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.17

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.28
H_2 = -(H-Y_0) (m)	-1.03
H_0 = H_2-Y_3 (m)	-2.31
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.24
Lf (m)	2.43
Lt (m)	1.71
Ls (m)	2.57
L_1 (m)	2.50
L2 (m)	0.48
L3 (m)	1.04
L_B (m)	4.01

BLOCKS	
Block height (0,8Yc) (m)	0.48
Block width (0,4Yc) (m)	0.24

SILL HEIGTH (0,4Yc) (m)	0.24

TRAMO 3. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	31.60
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	22.70
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.67
VELOCIDAD NORMAL (m/s)	1.24
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	31.60
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.57
ANCHURA CAUCE -W- (m)	22.70
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.04
VELOCIDAD NORMAL (m/s)	1.18
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.39
Altura del salto "h_0" (m)	1.57
Nd (q^2/gh_0^3)	0.05
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.02
y_1 ($h_0Nd^{0,22}$) (m)	0.82
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.24
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.17
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.11

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.28
H_2 = -(H-Y_0) (m)	-0.53
H_0 = H_2-Y_3 (m)	-1.81
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.24
Lf (m)	2.17
Lt (m)	1.34
Ls (m)	2.40
L_1 (m)	2.28
L2 (m)	0.48
L3 (m)	1.04
L_B (m)	3.80

BLOCKS	
Block height (0,8Yc) (m)	0.48
Block width (0,4Yc) (m)	0.24

SILL HEIGTH (0,4Yc) (m)	0.24

TRAMO 3. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q	31.60
SALTO (H_B)	2.00
ANCHURA CAUCE (W)	22.70
PENDIENTE	0.00
N Manning	0.03

VALORES CALCULADOS:	
CALADO NORMAL (Y_0)	1.67
VELOCIDAD NORMAL	1.24
FROUDE NORMAL	0.40
CALADO CRITICO (Y_{CB})	1.16

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	31.60
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.57
ANCHURA CAUCE -W- (m)	22.70
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.04
VELOCIDAD NORMAL (m/s)	1.18
FROUDE NORMAL	0.37
CALADO CRITICO -Y_{CR}- (m)	0.59

TIPO DE RESALTO GENERADO	
Caudal unitario ($m^3/s/m$) "q"	1.39
Altura del salto "h_0" (m)	2.57
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.32
y_1 ($h_0Nd^{0,22}$) (m)	0.96
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.21
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.28
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.22

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

LEYENDA:	
PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.28
H_2 = -(H-Y_0) (m)	-1.53
H_0 = H_2-Y_3 (m)	-2.81
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.24
Lf (m)	2.66
Lt (m)	2.02
Ls (m)	2.76
L_1 (m)	2.71
L2 (m)	0.48
L3 (m)	1.04
L_B (m)	4.23

BLOCKS	
Block height (0,8Yc) (m)	0.48
Block width (0,4Yc) (m)	0.24

SILL HEIGTH (0,4Yc) (m)	0.24

CÁLCULO SALTOS TRAMO 4

TRAMO 4. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0010	0.025	0.210	0.166	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.29	0.65	2.30	0.29	0.08	0.46	0.20	0.16	0.46	2.16	0.32

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.39	0.50

VALORES PARA LA ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08
0.21	0.47	1.94	0.21	0.04	0.30	0.15	0.09
0.22	0.49	1.98	0.22	0.05	0.32	0.16	0.09
0.23	0.51	2.03	0.23	0.05	0.34	0.17	0.10
0.24	0.54	2.07	0.24	0.06	0.36	0.17	0.11
0.25	0.56	2.12	0.25	0.06	0.38	0.18	0.12
0.26	0.58	2.16	0.26	0.07	0.40	0.18	0.13
0.27	0.60	2.21	0.27	0.07	0.42	0.19	0.14
0.28	0.63	2.25	0.28	0.08	0.44	0.19	0.15
0.29	0.65	2.30	0.29	0.08	0.46	0.20	0.16
0.30	0.67	2.34	0.30	0.09	0.48	0.20	0.17
0.31	0.69	2.39	0.31	0.10	0.50	0.21	0.18
0.32	0.72	2.43	0.32	0.10	0.52	0.22	0.19
0.33	0.74	2.48	0.33	0.11	0.55	0.22	0.20
0.34	0.76	2.52	0.34	0.12	0.57	0.23	0.21
0.35	0.78	2.57	0.35	0.12	0.60	0.23	0.22
0.36	0.80	2.61	0.36	0.13	0.62	0.24	0.24
0.37	0.83	2.65	0.37	0.14	0.64	0.24	0.25
0.38	0.85	2.70	0.38	0.14	0.67	0.25	0.26
0.39	0.87	2.74	0.39	0.15	0.69	0.25	0.28
0.40	0.89	2.79	0.40	0.16	0.72	0.26	0.29

TRAMO 4. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
27.93	9.80	8.92	2.00	3.00	2.50	0.50	5.50

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
1.21	11.12	17.84	0.62	17.42	0.67

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.50	1.00	1.12	1.00	3.00	0.50	0.25	1.00	3.24

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.14	5.50	5.50	3.00	14.00	0.41	0.38	1.17	11.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	14.00	14.06	0.14	0.00	0.14	14.30
0.02	0.06	0.06	14.00	14.12	0.28	0.00	0.28	14.37
0.03	0.09	0.09	14.00	14.18	0.42	0.00	0.42	14.43
0.04	0.12	0.13	14.00	14.24	0.56	0.00	0.56	14.49
0.05	0.15	0.16	14.00	14.30	0.70	0.00	0.71	14.56
0.06	0.18	0.19	14.00	14.36	0.84	0.01	0.85	14.62
0.07	0.21	0.22	14.00	14.42	0.98	0.01	0.99	14.68
0.08	0.24	0.25	14.00	14.48	1.12	0.01	1.14	14.75
0.09	0.27	0.28	14.00	14.54	1.26	0.01	1.28	14.81
0.10	0.30	0.32	14.00	14.60	1.40	0.02	1.43	14.87
0.11	0.33	0.35	14.00	14.66	1.54	0.02	1.58	14.94
0.12	0.36	0.38	14.00	14.72	1.68	0.02	1.72	15.00
0.13	0.39	0.41	14.00	14.78	1.82	0.03	1.87	15.06
0.14	0.42	0.44	14.00	14.84	1.96	0.03	2.02	15.12
0.15	0.45	0.47	14.00	14.90	2.10	0.03	2.17	15.19
0.16	0.48	0.51	14.00	14.96	2.24	0.04	2.32	15.25
0.17	0.51	0.54	14.00	15.02	2.38	0.04	2.47	15.31
0.18	0.54	0.57	14.00	15.08	2.52	0.05	2.62	15.38
0.19	0.57	0.60	14.00	15.14	2.66	0.05	2.77	15.44
0.20	0.60	0.63	14.00	15.20	2.80	0.06	2.92	15.50
0.21	0.63	0.66	14.00	15.26	2.94	0.07	3.07	15.57
0.22	0.66	0.70	14.00	15.32	3.08	0.07	3.23	15.63
0.23	0.69	0.73	14.00	15.38	3.22	0.08	3.38	15.69
0.24	0.72	0.76	14.00	15.44	3.36	0.09	3.53	15.76
0.25	0.75	0.79	14.00	15.50	3.50	0.09	3.69	15.82
0.26	0.78	0.82	14.00	15.56	3.64	0.10	3.84	15.88
0.27	0.81	0.85	14.00	15.62	3.78	0.11	4.00	15.95
0.28	0.84	0.89	14.00	15.68	3.92	0.12	4.16	16.01
0.29	0.87	0.92	14.00	15.74	4.06	0.13	4.31	16.07
0.30	0.90	0.95	14.00	15.80	4.20	0.14	4.47	16.14
0.31	0.93	0.98	14.00	15.86	4.34	0.14	4.63	16.20
0.32	0.96	1.01	14.00	15.92	4.48	0.15	4.79	16.26
0.33	0.99	1.04	14.00	15.98	4.62	0.16	4.95	16.33
0.34	1.02	1.08	14.00	16.04	4.76	0.17	5.11	16.39
0.35	1.05	1.11	14.00	16.10	4.90	0.18	5.27	16.45
0.36	1.08	1.14	14.00	16.16	5.04	0.19	5.43	16.52
0.37	1.11	1.17	14.00	16.22	5.18	0.21	5.59	16.58
0.38	1.14	1.20	14.00	16.28	5.32	0.22	5.75	16.64
0.39	1.17	1.23	14.00	16.34	5.46	0.23	5.92	16.71
0.40	1.20	1.26	14.00	16.40	5.60	0.24	6.08	16.77
0.41	1.23	1.30	14.00	16.46	5.74	0.25	6.24	16.83
0.42	1.26	1.33	14.00	16.52	5.88	0.26	6.41	16.90
0.43	1.29	1.36	14.00	16.58	6.02	0.28	6.57	16.96
0.44	1.32	1.39	14.00	16.64	6.16	0.29	6.74	17.02
0.45	1.35	1.42	14.00	16.70	6.30	0.30	6.91	17.09
0.46	1.38	1.45	14.00	16.76	6.44	0.32	7.07	17.15
0.47	1.41	1.49	14.00	16.82	6.58	0.33	7.24	17.21
0.48	1.44	1.52	14.00	16.88	6.72	0.35	7.41	17.28
0.49	1.47	1.55	14.00	16.94	6.86	0.36	7.58	17.34
0.50	1.50	1.58	14.00	17.00	7.00	0.38	7.75	17.40
0.51	1.53	1.61	14.00	17.06	7.14	0.39	7.92	17.47
0.52	1.56	1.64	14.00	17.12	7.28	0.41	8.09	17.53
0.53	1.59	1.68	14.00	17.18	7.42	0.42	8.26	17.59
0.54	1.62	1.71	14.00	17.24	7.56	0.44	8.43	17.65
0.55	1.65	1.74	14.00	17.30	7.70	0.45	8.61	17.72
0.56	1.68	1.77	14.00	17.36	7.84	0.47	8.78	17.78
0.57	1.71	1.80	14.00	17.42	7.98	0.49	8.95	17.84
0.58	1.74	1.83	14.00	17.48	8.12	0.50	9.13	17.91
0.59	1.77	1.87	14.00	17.54	8.26	0.52	9.30	17.97
0.60	1.80	1.90	14.00	17.60	8.40	0.54	9.48	18.03

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
2.31	0.16	0.94	0.65	0.16
2.45	0.17	1.02	0.66	0.17
2.59	0.18	1.11	0.67	0.18
2.73	0.19	1.20	0.68	0.19
2.88	0.20	1.29	0.69	0.20
3.02	0.21	1.38	0.70	0.21
3.16	0.22	1.48	0.71	0.22
3.31	0.23	1.58	0.72	0.22
3.45	0.24	1.68	0.73	0.23
3.60	0.25	1.79	0.74	0.24
3.75	0.26	1.89	0.75	0.25
3.89	0.26	2.00	0.76	0.26
4.04	0.27	2.11	0.77	0.27
4.19	0.28	2.22	0.78	0.28
4.34	0.29	2.34	0.79	0.29
4.49	0.30	2.46	0.80	0.29
4.64	0.31	2.58	0.81	0.30
4.79	0.32	2.70	0.82	0.31
4.94	0.33	2.82	0.83	0.32
5.09	0.33	2.94	0.84	0.33
5.24	0.34	3.07	0.85	0.34
5.39	0.35	3.20	0.86	0.35
5.55	0.36	3.33	0.87	0.35
5.70	0.37	3.46	0.88	0.36
5.86	0.38	3.60	0.89	0.37
6.01	0.39	3.74	0.90	0.38
6.17	0.39	3.88	0.91	0.39
6.32	0.40	4.02	0.92	0.39
6.48	0.41	4.16	0.93	0.40
6.64	0.42	4.30	0.94	0.41
6.80	0.43	4.45	0.95	0.42
6.96	0.44	4.60	0.96	0.43
7.12	0.45	4.75	0.97	0.44
7.28	0.45	4.90	0.98	0.44
7.44	0.46	5.05	0.99	0.45
7.60	0.47	5.21	1.00	0.46
7.76	0.48	5.37	1.01	0.47
7.92	0.49	5.53	1.02	0.48
8.09	0.49	5.69	1.03	0.48
8.25	0.50	5.85	1.04	0.49
8.41	0.51	6.01	1.05	0.50
8.58	0.52	6.18	1.06	0.51
8.74	0.53	6.35	1.07	0.52
8.91	0.54	6.52	1.08	0.52
9.08	0.54	6.69	1.09	0.53
9.24	0.55	6.86	1.10	0.54
9.41	0.56	7.04	1.11	0.55
9.58	0.57	7.22	1.12	0.55
9.75	0.58	7.40	1.13	0.56
9.92	0.58	7.58	1.14	0.57
10.09	0.59	7.76	1.15	0.58
10.26	0.60	7.94	1.16	0.59
10.43	0.61	8.13	1.17	0.59
10.60	0.62	8.32	1.18	0.60
10.78	0.62	8.51	1.19	0.61
10.95	0.63	8.70	1.20	0.62
11.12	0.64	8.89	1.21	0.62
11.30	0.65	9.08	1.22	0.63
11.47	0.65	9.28	1.23	0.64
11.65	0.66	9.48	1.24	0.65

TRAMO 4. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	n DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0010	0.025	27.93	22.08

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.76	20.72	1.01	21.61	21.81	1.29	0.40

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
1.26	0.11	1.87

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.12	1.01	23.21	23.37	1.20	0.36

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.65	14.06	0.16	2.31	0.68	12.09
0.66	14.12	0.17	2.45	0.75	11.40
0.67	14.18	0.18	2.59	0.82	10.78
0.68	14.24	0.19	2.73	0.90	10.22
0.69	14.30	0.20	2.88	0.98	9.71
0.70	14.36	0.21	3.02	1.06	9.25
0.71	14.42	0.22	3.16	1.14	8.83
0.72	14.48	0.22	3.31	1.22	8.44
0.73	14.54	0.23	3.45	1.31	8.09
0.74	14.60	0.24	3.60	1.40	7.76
0.75	14.66	0.25	3.75	1.49	7.46
0.76	14.72	0.26	3.89	1.58	7.18
0.77	14.78	0.27	4.04	1.68	6.91
0.78	14.84	0.28	4.19	1.78	6.67
0.79	14.90	0.29	4.34	1.88	6.44
0.80	14.96	0.29	4.49	1.98	6.23
0.81	15.02	0.30	4.64	2.09	6.02
0.82	15.08	0.31	4.79	2.20	5.84
0.83	15.14	0.32	4.94	2.31	5.66
0.84	15.20	0.33	5.09	2.42	5.49
0.85	15.26	0.34	5.24	2.54	5.33
0.86	15.32	0.35	5.39	2.65	5.18
0.87	15.38	0.35	5.55	2.77	5.03
0.88	15.44	0.36	5.70	2.90	4.90
0.89	15.50	0.37	5.86	3.02	4.77
0.90	15.56	0.38	6.01	3.15	4.65
0.91	15.62	0.39	6.17	3.27	4.53
0.92	15.68	0.39	6.32	3.40	4.42
0.93	15.74	0.40	6.48	3.54	4.31
0.94	15.80	0.41	6.64	3.67	4.21
0.95	15.86	0.42	6.80	3.81	4.11
0.96	15.92	0.43	6.96	3.95	4.01
0.97	15.98	0.44	7.12	4.09	3.92
0.98	16.04	0.44	7.28	4.23	3.84
0.99	16.10	0.45	7.44	4.38	3.76
1.00	16.16	0.46	7.60	4.53	3.68
1.01	16.22	0.47	7.76	4.68	3.60
1.02	16.28	0.48	7.92	4.83	3.53
1.03	16.34	0.48	8.09	4.98	3.45
1.04	16.40	0.49	8.25	5.14	3.39
1.05	16.46	0.50	8.41	5.30	3.32
1.06	16.52	0.51	8.58	5.46	3.26
1.07	16.58	0.52	8.74	5.62	3.19
1.08	16.64	0.52	8.91	5.79	3.13
1.09	16.70	0.53	9.08	5.95	3.08
1.10	16.76	0.54	9.24	6.12	3.02
1.11	16.82	0.55	9.41	6.29	2.97
1.12	16.88	0.55	9.58	6.47	2.92
1.13	16.94	0.56	9.75	6.64	2.86
1.14	17.00	0.57	9.92	6.82	2.82
1.15	17.06	0.58	10.09	7.00	2.77
1.16	17.12	0.59	10.26	7.18	2.72
1.17	17.18	0.59	10.43	7.36	2.68
1.18	17.24	0.60	10.60	7.55	2.63
1.19	17.30	0.61	10.78	7.74	2.59
1.20	17.36	0.62	10.95	7.93	2.55
1.21	17.42	0.62	11.12	8.12	2.51
1.22	17.48	0.63	11.30	8.31	2.47
1.23	17.54	0.64	11.47	8.51	2.43
1.24	17.60	0.65	11.65	8.70	2.40
1.25	17.66	0.65	11.83	8.90	2.36
1.26	17.72	0.66	12.00	9.11	2.33
1.27	17.78	0.67	12.18	9.31	2.29
1.28	17.84	0.68	12.36	9.52	2.26
1.29	17.90	0.68	12.54	9.72	2.23
1.30	17.96	0.69	12.72	9.93	2.20
1.31	18.02	0.70	12.90	10.15	2.17
1.32	18.08	0.71	13.08	10.36	2.14
1.33	18.14	0.71	13.26	10.58	2.11
1.34	18.20	0.72	13.44	10.79	2.08
1.35	18.26	0.73	13.62	11.02	2.05
1.36	18.32	0.73	13.80	11.24	2.02
1.37	18.38	0.74	13.99	11.46	2.00
1.38	18.44	0.75	14.17	11.69	1.97
1.39	18.50	0.76	14.36	11.92	1.95
1.40	18.56	0.76	14.54	12.15	1.92
1.41	18.62	0.77	14.73	12.38	1.90
1.42	18.68	0.78	14.91	12.61	1.87
1.43	18.74	0.79	15.10	12.85	1.85
1.44	18.80	0.79	15.29	13.09	1.83
1.45	18.86	0.80	15.48	13.33	1.80
1.46	18.92	0.81	15.67	13.57	1.78
1.47	18.98	0.81	15.86	13.82	1.76
1.48	19.04	0.82	16.05	14.06	1.74
1.49	19.10	0.83	16.24	14.31	1.72
1.50	19.16	0.83	16.43	14.56	1.70
1.51	19.22	0.84	16.62	14.82	1.68
1.52	19.28	0.85	16.81	15.07	1.66
1.53	19.34	0.86	17.01	15.33	1.64
1.54	19.40	0.86	17.20	15.59	1.62
1.55	19.46	0.87	17.39	15.85	1.61
1.56	19.52	0.88	17.59	16.11	1.59
1.57	19.58	0.88	17.78	16.38	1.57
1.58	19.64	0.89	17.98	16.65	1.55
1.59	19.70	0.90	18.18	16.91	1.54
1.60	19.76	0.90	18.37	17.19	1.52
1.61	19.82	0.91	18.57	17.46	1.50
1.62	19.88	0.92	18.77	17.73	1.49
1.63	19.94	0.93	18.97	18.01	1.47
1.64	20.00	0.93	19.17	18.29	1.46
1.65	20.06	0.94	19.37	18.57	1.44
1.66	20.12	0.95	19.57	18.86	1.43
1.67	20.18	0.95	19.77	19.14	1.41
1.68	20.24	0.96	19.97	19.43	1.40
1.69	20.30	0.97	20.18	19.72	1.38
1.70	20.36	0.97	20.38	20.01	1.37
1.71	20.42	0.98	20.58	20.31	1.36
1.72	20.48	0.99	20.79	20.60	1.34
1.73	20.54	0.99	20.99	20.90	1.33
1.74	20.60	1.00	21.20	21.20	1.32
1.75	20.66	1.01	21.41	21.50	1.30
1.76	20.72	1.01	21.61	21.81	1.29
1.77	20.78	1.02	21.82	22.11	1.28
1.78	20.84	1.03	22.03	22.42	1.27
1.79	20.90	1.03	22.24	22.73	1.26
1.80	20.96	1.04	22.45	23.04	1.24

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.21	0.01	134.78
0.02	0.02	0.41	0.03	67.39
0.03	0.03	0.62	0.06	44.93
0.04	0.04	0.83	0.10	33.70
0.05	0.05	1.04	0.14	26.96
0.06	0.06	1.24	0.19	22.46
0.07	0.07	1.45	0.25	19.25
0.08	0.08	1.66	0.31	16.85
0.09	0.09	1.86	0.37	14.98
0.10	0.10	2.07	0.44	13.48
0.11	0.11	2.28	0.52	12.25
0.12	0.12	2.49	0.60	11.23
0.13	0.13	2.69	0.69	10.37
0.14	0.14	2.90	0.78	9.63
0.15	0.15	3.11	0.87	8.99
0.16	0.16	3.32	0.97	8.42
0.17	0.17	3.52	1.07	7.93
0.18	0.18	3.73	1.18	7.49
0.19	0.19	3.94	1.29	7.09
0.20	0.20	4.14	1.40	6.74
0.21	0.21	4.35	1.52	6.42
0.22	0.22	4.56	1.64	6.13
0.23	0.23	4.77	1.76	5.86
0.24	0.23	4.97	1.89	5.62
0.25	0.24	5.18	2.02	5.39
0.26	0.25	5.39	2.16	5.18
0.27	0.26	5.59	2.30	4.99
0.28	0.27	5.80	2.44	4.81
0.29	0.28	6.01	2.58	4.65
0.30	0.29	6.22	2.73	4.49
0.31	0.30	6.42	2.88	4.35
0.32	0.31	6.63	3.04	4.21
0.33	0.32	6.84	3.20	4.08
0.34	0.33	7.04	3.36	3.96
0.35	0.34	7.25	3.52	3.85
0.36	0.35	7.46	3.69	3.74
0.37	0.36	7.67	3.86	3.64
0.38	0.37	7.87	4.03	3.55
0.39	0.38	8.08	4.21	3.46
0.40	0.39	8.29	4.39	3.37
0.41	0.39	8.50	4.57	3.29
0.42	0.40	8.70	4.75	3.21
0.43	0.41	8.91	4.94	3.13
0.44	0.42	9.12	5.13	3.06
0.45	0.43	9.32	5.32	3.00
0.46	0.44	9.53	5.52	2.93
0.47	0.45	9.74	5.72	2.87
0.48	0.46	9.95	5.92	2.81
0.49	0.47	10.15	6.12	2.75
0.50	0.48	10.36	6.32	2.70
0.51	0.49	10.57	6.53	2.64
0.52	0.50	10.77	6.74	2.59
0.53	0.50	10.98	6.96	2.54
0.54	0.51	11.19	7.17	2.50
0.55	0.52	11.40	7.39	2.45
0.56	0.53	11.60	7.61	2.41
0.57	0.54	11.81	7.83	2.36
0.58	0.55	12.02	8.06	2.32
0.59	0.56	12.22	8.29	2.28
0.60	0.57	12.43	8.52	2.25
0.61	0.58	12.64	8.75	2.21
0.62	0.58	12.85	8.99	2.17
0.63	0.59	13.05	9.22	2.14
0.64	0.60	13.26	9.46	2.11
0.65	0.61	13.47	9.70	2.07
0.66	0.62	13.68	9.95	2.04
0.67	0.63	13.88	10.19	2.01
0.68	0.64	14.09	10.44	1.98
0.69	0.65	14.30	10.69	1.95
0.70	0.66	14.50	10.95	1.93
0.71	0.66	14.71	11.20	1.90
0.72	0.67	14.92	11.46	1.87
0.73	0.68	15.13	11.72	1.85
0.74	0.69	15.33	11.98	1.82
0.75	0.70	15.54	12.24	1.80
0.76	0.71	15.75	12.51	1.77
0.77	0.72	15.95	12.78	1.75
0.78	0.73	16.16	13.05	1.73
0.79	0.73	16.37	13.32	1.71
0.80	0.74	16.58	13.59	1.68
0.81	0.75	16.78	13.87	1.66
0.82	0.76	16.99	14.15	1.64
0.83	0.77	17.20	14.43	1.62
0.84	0.78	17.40	14.71	1.60
0.85	0.79	17.61	14.99	1.59
0.86	0.79	17.82	15.28	1.57
0.87	0.80	18.03	15.57	1.55
0.88	0.81	18.23	15.86	1.53
0.89	0.82	18.44	16.15	1.51
0.90	0.83	18.65	16.44	1.50
0.91	0.84	18.86	16.74	1.48
0.92	0.84	19.06	17.04	1.47
0.93	0.85	19.27	17.34	1.45
0.94	0.86	19.48	17.64	1.43
0.95	0.87	19.68	17.94	1.42
0.96	0.88	19.89	18.25	1.40
0.97	0.89	20.10	18.55	1.39
0.98	0.90	20.31	18.86	1.38
0.99	0.90	20.51	19.17	1.36
1.00	0.91	20.72	19.49	1.35
1.01	0.92	20.93	19.80	1.33
1.02	0.93	21.13	20.12	1.32
1.03	0.94	21.34	20.43	1.31
1.04	0.95	21.55	20.75	1.30
1.05	0.95	21.76	21.07	1.28
1.06	0.96	21.96	21.40	1.27
1.07	0.97	22.17	21.72	1.26
1.08	0.98	22.38	22.05	1.25
1.09	0.99	22.58	22.38	1.24
1.10	0.99	22.79	22.71	1.23
1.11	1.00	23.00	23.04	1.21
1.12	1.01	23.21	23.37	1.20
1.13	1.02	23.41	23.71	1.19
1.14	1.03	23.62	24.04	1.18
1.15	1.04	23.83	24.38	1.17
1.16	1.04	24.04	24.72	1.16

TRAMO 4. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	27.93
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	17.42
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.76
VELOCIDAD NORMAL (m/s)	1.29
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.21

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	27.93
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.04
ANCHURA CAUCE -W- (m)	17.42
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.12
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.36
CALADO CRITICO -Y_{CR}- (m)	0.67

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.60
Altura del salto "h_0" (m)	2.04
Nd (q^2/gh_0^3)	0.03
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.43
y_1 ($h_0Nd^{0,22}$) (m)	0.95
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.25
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.32
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.26

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.44
H_2 = -(H-Y_0) (m)	-0.92
H_0 = H_2-Y_3 (m)	-2.36
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.32
Lf (m)	2.62
Lt (m)	1.76
Ls (m)	2.81
L_1 (m)	2.71
L2 (m)	0.54
L3 (m)	1.17
L_B (m)	4.43

BLOCKS	
Block height (0,8Yc) (m)	0.54
Block width (0,4Yc) (m)	0.27

SILL HEIGTH (0,4Yc) (m)	0.27

TRAMO 4. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	27.93
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	17.42
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.76
VELOCIDAD NORMAL (m/s)	1.29
FROUDE NORMAL	0.40
CALADO CRITICO -Y_{CB}- (m)	1.21

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	27.93
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.54
ANCHURA CAUCE -W- (m)	17.42
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.12
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.36
CALADO CRITICO -Y_{CR}- (m)	0.67

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	1.60
Altura del salto "h_0" (m)	1.54
Nd (q^2/gh_0^3)	0.07
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.25
y_1 ($h_0Nd^{0,22}$) (m)	0.86
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.27
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.25
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.19

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.44
H_2 = -(H-Y_0) (m)	-0.42
H_0 = H_2-Y_3 (m)	-1.86
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.32
Lf (m)	2.35
Lt (m)	1.36
Ls (m)	2.66
L_1 (m)	2.51
L2 (m)	0.54
L3 (m)	1.17
L_B (m)	4.22

BLOCKS	
Block height (0,8Yc) (m)	0.54
Block width (0,4Yc) (m)	0.27

SILL HEIGTH (0,4Yc) (m)	0.27

TRAMO 4. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q	27.93
SALTO (H_B)	2.00
ANCHURA CAUCE (W)	17.42
PENDIENTE	0.00
N Manning	0.03

VALORES CALCULADOS:	
CALADO NORMAL (Y_0)	1.76
VELOCIDAD NORMAL	1.29
FROUDE NORMAL	0.40
CALADO CRITICO (Y_{CB})	1.21

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	27.93
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.54
ANCHURA CAUCE -W- (m)	17.42
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.12
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.36
CALADO CRITICO -Y_{CR}- (m)	0.67

TIPO DE RESALTO GENERADO	
Caudal unitario ($m^3/s/m$) "q"	1.60
Altura del salto "h_0" (m)	2.54
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	3.58
y_1 ($h_0Nd^{0,22}$) (m)	1.02
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.24
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	1.38
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	-0.32

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	1.44
H_2 = -(H-Y_0) (m)	-1.42
H_0 = H_2-Y_3 (m)	-2.86
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.32
Lf (m)	2.86
Lt (m)	2.09
Ls (m)	3.00
L_1 (m)	2.93
L2 (m)	0.54
L3 (m)	1.17
L_B (m)	4.64

BLOCKS	
Block height (0,8Yc) (m)	0.54
Block width (0,4Yc) (m)	0.27

SILL HEIGTH (0,4Yc) (m)	0.27

CÁLCULO SALTOS TRAMO 5

TRAMO 5. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0020	0.025	0.137	0.076	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07	0.52	1.76	0.43

DISEÑO SECCIÓN TIPO

ALTURA DE SECCIÓN CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.29	0.50

VALORES PARA LA ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08
0.21	0.47	1.94	0.21	0.04	0.30	0.15	0.09
0.22	0.49	1.98	0.22	0.05	0.32	0.16	0.09
0.23	0.51	2.03	0.23	0.05	0.34	0.17	0.10
0.24	0.54	2.07	0.24	0.06	0.36	0.17	0.11
0.25	0.56	2.12	0.25	0.06	0.38	0.18	0.12
0.26	0.58	2.16	0.26	0.07	0.40	0.18	0.13
0.27	0.60	2.21	0.27	0.07	0.42	0.19	0.14
0.28	0.63	2.25	0.28	0.08	0.44	0.19	0.15
0.29	0.65	2.30	0.29	0.08	0.46	0.20	0.16
0.30	0.67	2.34	0.30	0.09	0.48	0.20	0.17

TRAMO 5. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
12.97	9.80	4.14	2.00	3.00	2.50	0.50	5.50

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
0.92	6.32	16.01	0.39	15.68	0.42

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.50	1.00	1.12	1.00	3.00	0.50	0.25	1.00	3.24

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.14	5.50	5.50	3.00	14.00	0.41	0.38	1.17	11.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	14.00	14.06	0.14	0.00	0.14	14.30
0.02	0.06	0.06	14.00	14.12	0.28	0.00	0.28	14.37
0.03	0.09	0.09	14.00	14.18	0.42	0.00	0.42	14.43
0.04	0.12	0.13	14.00	14.24	0.56	0.00	0.56	14.49
0.05	0.15	0.16	14.00	14.30	0.70	0.00	0.71	14.56
0.06	0.18	0.19	14.00	14.36	0.84	0.01	0.85	14.62
0.07	0.21	0.22	14.00	14.42	0.98	0.01	0.99	14.68
0.08	0.24	0.25	14.00	14.48	1.12	0.01	1.14	14.75
0.09	0.27	0.28	14.00	14.54	1.26	0.01	1.28	14.81
0.10	0.30	0.32	14.00	14.60	1.40	0.02	1.43	14.87
0.11	0.33	0.35	14.00	14.66	1.54	0.02	1.58	14.94
0.12	0.36	0.38	14.00	14.72	1.68	0.02	1.72	15.00
0.13	0.39	0.41	14.00	14.78	1.82	0.03	1.87	15.06
0.14	0.42	0.44	14.00	14.84	1.96	0.03	2.02	15.12
0.15	0.45	0.47	14.00	14.90	2.10	0.03	2.17	15.19
0.16	0.48	0.51	14.00	14.96	2.24	0.04	2.32	15.25
0.17	0.51	0.54	14.00	15.02	2.38	0.04	2.47	15.31
0.18	0.54	0.57	14.00	15.08	2.52	0.05	2.62	15.38
0.19	0.57	0.60	14.00	15.14	2.66	0.05	2.77	15.44
0.20	0.60	0.63	14.00	15.20	2.80	0.06	2.92	15.50
0.21	0.63	0.66	14.00	15.26	2.94	0.07	3.07	15.57
0.22	0.66	0.70	14.00	15.32	3.08	0.07	3.23	15.63
0.23	0.69	0.73	14.00	15.38	3.22	0.08	3.38	15.69
0.24	0.72	0.76	14.00	15.44	3.36	0.09	3.53	15.76
0.25	0.75	0.79	14.00	15.50	3.50	0.09	3.69	15.82
0.26	0.78	0.82	14.00	15.56	3.64	0.10	3.84	15.88
0.27	0.81	0.85	14.00	15.62	3.78	0.11	4.00	15.95
0.28	0.84	0.89	14.00	15.68	3.92	0.12	4.16	16.01
0.29	0.87	0.92	14.00	15.74	4.06	0.13	4.31	16.07
0.30	0.90	0.95	14.00	15.80	4.20	0.14	4.47	16.14
0.31	0.93	0.98	14.00	15.86	4.34	0.14	4.63	16.20
0.32	0.96	1.01	14.00	15.92	4.48	0.15	4.79	16.26
0.33	0.99	1.04	14.00	15.98	4.62	0.16	4.95	16.33
0.34	1.02	1.08	14.00	16.04	4.76	0.17	5.11	16.39
0.35	1.05	1.11	14.00	16.10	4.90	0.18	5.27	16.45

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
2.31	0.16	0.94	0.65	0.16
2.45	0.17	1.02	0.66	0.17
2.59	0.18	1.11	0.67	0.18
2.73	0.19	1.20	0.68	0.19
2.88	0.20	1.29	0.69	0.20
3.02	0.21	1.38	0.70	0.21
3.16	0.22	1.48	0.71	0.22
3.31	0.23	1.58	0.72	0.22
3.45	0.24	1.68	0.73	0.23
3.60	0.25	1.79	0.74	0.24
3.75	0.26	1.89	0.75	0.25
3.89	0.26	2.00	0.76	0.26
4.04	0.27	2.11	0.77	0.27
4.19	0.28	2.22	0.78	0.28
4.34	0.29	2.34	0.79	0.29
4.49	0.30	2.46	0.80	0.29
4.64	0.31	2.58	0.81	0.30
4.79	0.32	2.70	0.82	0.31
4.94	0.33	2.82	0.83	0.32
5.09	0.33	2.94	0.84	0.33
5.24	0.34	3.07	0.85	0.34
5.39	0.35	3.20	0.86	0.35
5.55	0.36	3.33	0.87	0.35
5.70	0.37	3.46	0.88	0.36
5.86	0.38	3.60	0.89	0.37
6.01	0.39	3.74	0.90	0.38
6.17	0.39	3.88	0.91	0.39
6.32	0.40	4.02	0.92	0.39
6.48	0.41	4.16	0.93	0.40
6.64	0.42	4.30	0.94	0.41
6.80	0.43	4.45	0.95	0.42
6.96	0.44	4.60	0.96	0.43
7.12	0.45	4.75	0.97	0.44
7.28	0.45	4.90	0.98	0.44
7.44	0.46	5.05	0.99	0.45

TRAMO 5. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0020	0.025	12.97	7.25

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
1.16	17.12	0.59	10.26	7.18	1.26	0.52

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.62	0.58	10.61	7.37	1.22	0.50

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
0.66	0.06	1.22

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.65	14.06	0.16	2.31	0.68	5.62
0.66	14.12	0.17	2.45	0.75	5.29
0.67	14.18	0.18	2.59	0.82	5.00
0.68	14.24	0.19	2.73	0.90	4.74
0.69	14.30	0.20	2.88	0.98	4.51
0.70	14.36	0.21	3.02	1.06	4.30
0.71	14.42	0.22	3.16	1.14	4.10
0.72	14.48	0.22	3.31	1.22	3.92
0.73	14.54	0.23	3.45	1.31	3.76
0.74	14.60	0.24	3.60	1.40	3.60
0.75	14.66	0.25	3.75	1.49	3.46
0.76	14.72	0.26	3.89	1.58	3.33
0.77	14.78	0.27	4.04	1.68	3.21
0.78	14.84	0.28	4.19	1.78	3.10
0.79	14.90	0.29	4.34	1.88	2.99
0.80	14.96	0.29	4.49	1.98	2.89
0.81	15.02	0.30	4.64	2.09	2.80
0.82	15.08	0.31	4.79	2.20	2.71
0.83	15.14	0.32	4.94	2.31	2.63
0.84	15.20	0.33	5.09	2.42	2.55
0.85	15.26	0.34	5.24	2.54	2.47
0.86	15.32	0.35	5.39	2.65	2.40
0.87	15.38	0.35	5.55	2.77	2.34
0.88	15.44	0.36	5.70	2.90	2.27
0.89	15.50	0.37	5.86	3.02	2.21
0.90	15.56	0.38	6.01	3.15	2.16
0.91	15.62	0.39	6.17	3.27	2.10
0.92	15.68	0.39	6.32	3.40	2.05
0.93	15.74	0.40	6.48	3.54	2.00
0.94	15.80	0.41	6.64	3.67	1.95
0.95	15.86	0.42	6.80	3.81	1.91
0.96	15.92	0.43	6.96	3.95	1.86
0.97	15.98	0.44	7.12	4.09	1.82
0.98	16.04	0.44	7.28	4.23	1.78
0.99	16.10	0.45	7.44	4.38	1.74
1.00	16.16	0.46	7.60	4.53	1.71
1.01	16.22	0.47	7.76	4.68	1.67
1.02	16.28	0.48	7.92	4.83	1.64
1.03	16.34	0.48	8.09	4.98	1.60
1.04	16.40	0.49	8.25	5.14	1.57
1.05	16.46	0.50	8.41	5.30	1.54
1.06	16.52	0.51	8.58	5.46	1.51
1.07	16.58	0.52	8.74	5.62	1.48
1.08	16.64	0.52	8.91	5.79	1.46
1.09	16.70	0.53	9.08	5.95	1.43
1.10	16.76	0.54	9.24	6.12	1.40
1.11	16.82	0.55	9.41	6.29	1.38
1.12	16.88	0.55	9.58	6.47	1.35
1.13	16.94	0.56	9.75	6.64	1.33
1.14	17.00	0.57	9.92	6.82	1.31
1.15	17.06	0.58	10.09	7.00	1.29
1.16	17.12	0.59	10.26	7.18	1.26
1.17	17.18	0.59	10.43	7.36	1.24
1.18	17.24	0.60	10.60	7.55	1.22
1.19	17.30	0.61	10.78	7.74	1.20
1.20	17.36	0.62	10.95	7.93	1.18
1.21	17.42	0.62	11.12	8.12	1.17
1.22	17.48	0.63	11.30	8.31	1.15
1.23	17.54	0.64	11.47	8.51	1.13
1.24	17.60	0.65	11.65	8.70	1.11
1.25	17.66	0.65	11.83	8.90	1.10
1.26	17.72	0.66	12.00	9.11	1.08
1.27	17.78	0.67	12.18	9.31	1.06
1.28	17.84	0.68	12.36	9.52	1.05
1.29	17.90	0.68	12.54	9.72	1.03
1.30	17.96	0.69	12.72	9.93	1.02

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.17	0.01	75.75
0.02	0.02	0.34	0.03	37.88
0.03	0.03	0.51	0.05	25.25
0.04	0.04	0.68	0.08	18.94
0.05	0.05	0.86	0.12	15.15
0.06	0.06	1.03	0.16	12.63
0.07	0.07	1.20	0.20	10.82
0.08	0.08	1.37	0.25	9.47
0.09	0.09	1.54	0.31	8.42
0.10	0.10	1.71	0.37	7.58
0.11	0.11	1.88	0.43	6.89
0.12	0.12	2.05	0.50	6.31
0.13	0.13	2.23	0.57	5.83
0.14	0.14	2.40	0.64	5.41
0.15	0.15	2.57	0.72	5.05
0.16	0.16	2.74	0.80	4.73
0.17	0.17	2.91	0.88	4.46
0.18	0.18	3.08	0.97	4.21
0.19	0.19	3.25	1.06	3.99
0.20	0.20	3.42	1.15	3.79
0.21	0.20	3.60	1.25	3.61
0.22	0.21	3.77	1.35	3.44
0.23	0.22	3.94	1.45	3.29
0.24	0.23	4.11	1.56	3.16
0.25	0.24	4.28	1.67	3.03
0.26	0.25	4.45	1.78	2.91
0.27	0.26	4.62	1.89	2.81
0.28	0.27	4.79	2.01	2.71
0.29	0.28	4.96	2.13	2.61
0.30	0.29	5.14	2.25	2.53
0.31	0.30	5.31	2.37	2.44
0.32	0.31	5.48	2.50	2.37
0.33	0.32	5.65	2.63	2.30
0.34	0.33	5.82	2.76	2.23
0.35	0.34	5.99	2.90	2.16
0.36	0.35	6.16	3.03	2.10
0.37	0.35	6.33	3.17	2.05
0.38	0.36	6.51	3.32	1.99
0.39	0.37	6.68	3.46	1.94
0.40	0.38	6.85	3.61	1.89
0.41	0.39	7.02	3.75	1.85
0.42	0.40	7.19	3.91	1.80
0.43	0.41	7.36	4.06	1.76
0.44	0.42	7.53	4.21	1.72
0.45	0.43	7.70	4.37	1.68
0.46	0.44	7.88	4.53	1.65
0.47	0.45	8.05	4.69	1.61
0.48	0.45	8.22	4.86	1.58
0.49	0.46	8.39	5.02	1.55
0.50	0.47	8.56	5.19	1.52
0.51	0.48	8.73	5.36	1.49
0.52	0.49	8.90	5.53	1.46
0.53	0.50	9.07	5.71	1.43
0.54	0.51	9.24	5.89	1.40
0.55	0.52	9.42	6.06	1.38
0.56	0.53	9.59	6.24	1.35
0.57	0.53	9.76	6.43	1.33
0.58	0.54	9.93	6.61	1.31
0.59	0.55	10.10	6.80	1.28
0.60	0.56	10.27	6.98	1.26
0.61	0.57	10.44	7.17	1.24
0.62	0.58	10.61	7.37	1.22
0.63	0.59	10.79	7.56	1.20
0.64	0.60	10.96	7.76	1.18
0.65	0.60	11.13	7.95	1.17
0.66	0.61	11.30	8.15	1.15

TRAMO 5. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q	12.97
SALTO (H_B)	1.50
ANCHURA CAUCE (W)	15.68
PENDIENTE	0.00
N Manning	0.03

VALORES CALCULADOS:	
CALADO NORMAL (Y_0)	1.16
VELOCIDAD NORMAL	1.26
FROUDE NORMAL	0.52
CALADO CRITICO (Y_{CB})	0.92

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	12.97
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.00
ANCHURA CAUCE -W- (m)	15.68
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.62
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.50
CALADO CRITICO -Y_{CR}- (m)	0.42

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.83
Altura del salto "h_0" (m)	2.00
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	2.39
y_1 ($h_0Nd^{0,22}$) (m)	0.70
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.14
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.92
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.14

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.89
H_2 = -(H-Y_0) (m)	-1.38
H_0 = H_2-Y_3 (m)	-2.28
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	2.00
Lt (m)	1.58
Ls (m)	2.05
L_1 (m)	2.02
L2 (m)	0.33
L3 (m)	0.73
L_B (m)	3.08

BLOCKS	
Block height (0,8Yc) (m)	0.33
Block width (0,4Yc) (m)	0.17

SILL HEIGTH (0,4Yc) (m)	0.17

TRAMO 5. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	12.97
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	15.68
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	1.16
VELOCIDAD NORMAL (m/s)	1.26
FROUDE NORMAL	0.52
CALADO CRITICO -Y_{CB}- (m)	0.92

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	12.97
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.50
ANCHURA CAUCE -W- (m)	15.68
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.62
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.50
CALADO CRITICO -Y_{CR}- (m)	0.42

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.83
Altura del salto "h_0" (m)	1.50
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	2.26
y_1 ($h_0Nd^{0,22}$) (m)	0.64
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.16
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.87
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.19

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.89
H_2 = -(H-Y_0) (m)	-0.88
H_0 = H_2-Y_3 (m)	-1.78
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	1.78
Lt (m)	1.30
Ls (m)	1.86
L_1 (m)	1.82
L2 (m)	0.33
L3 (m)	0.73
L_B (m)	2.88

BLOCKS	
Block height (0,8Yc) (m)	0.33
Block width (0,4Yc) (m)	0.17

SILL HEIGTH (0,4Yc) (m)	0.17

TRAMO 5. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q	12.97
SALTO (H_B)	2.00
ANCHURA CAUCE (W)	15.68
PENDIENTE	0.00
N Manning	0.03

VALORES CALCULADOS:	
CALADO NORMAL (Y_0)	1.16
VELOCIDAD NORMAL	1.26
FROUDE NORMAL	0.52
CALADO CRITICO (Y_{CB})	0.92

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	12.97
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.50
ANCHURA CAUCE -W- (m)	15.68
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.62
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.50
CALADO CRITICO -Y_{CR}- (m)	0.42

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.83
Altura del salto "h_0" (m)	2.50
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	2.49
y_1 ($h_0Nd^{0,22}$) (m)	0.76
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.14
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.96
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.10

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.89
H_2 = -(H-Y_0) (m)	-1.88
H_0 = H_2-Y_3 (m)	-2.78
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.27
Lf (m)	2.20
Lt (m)	1.82
Ls (m)	2.24
L_1 (m)	2.22
L2 (m)	0.33
L3 (m)	0.73
L_B (m)	3.28

BLOCKS	
Block height (0,8Yc) (m)	0.33
Block width (0,4Yc) (m)	0.17

SILL HEIGTH (0,4Yc) (m)	0.17

CÁLCULO SALTOS TRAMO 6

TRAMO 6. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0035	0.025	0.055	0.023	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02	0.46	1.40	0.50

DISEÑO SECCION TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.20	0.30

VALORES PARA LA ITERACION

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08

TRAMO 6. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
3.66	9.80	1.17	2.00	2.00	2.50	0.30	2.00

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
0.56	2.08	7.28	0.29	7.04	0.31

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.30	0.60	0.67	1.00	2.20	0.30	0.09	0.48	2.34

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.05	2.00	2.00	2.20	6.20	0.11	0.05	0.21	4.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.02	0.02	6.20	6.24	0.06	0.00	0.06	6.39
0.02	0.04	0.04	6.20	6.28	0.12	0.00	0.12	6.43
0.03	0.06	0.07	6.20	6.32	0.19	0.00	0.19	6.48
0.04	0.08	0.09	6.20	6.36	0.25	0.00	0.25	6.52
0.05	0.10	0.11	6.20	6.40	0.31	0.00	0.32	6.57
0.06	0.12	0.13	6.20	6.44	0.37	0.00	0.38	6.61
0.07	0.14	0.16	6.20	6.48	0.43	0.00	0.44	6.66
0.08	0.16	0.18	6.20	6.52	0.50	0.01	0.51	6.70
0.09	0.18	0.20	6.20	6.56	0.56	0.01	0.57	6.75
0.10	0.20	0.22	6.20	6.60	0.62	0.01	0.64	6.79
0.11	0.22	0.25	6.20	6.64	0.68	0.01	0.71	6.83
0.12	0.24	0.27	6.20	6.68	0.74	0.01	0.77	6.88
0.13	0.26	0.29	6.20	6.72	0.81	0.02	0.84	6.92
0.14	0.28	0.31	6.20	6.76	0.87	0.02	0.91	6.97
0.15	0.30	0.34	6.20	6.80	0.93	0.02	0.98	7.01
0.16	0.32	0.36	6.20	6.84	0.99	0.03	1.04	7.06
0.17	0.34	0.38	6.20	6.88	1.05	0.03	1.11	7.10
0.18	0.36	0.40	6.20	6.92	1.12	0.03	1.18	7.15
0.19	0.38	0.42	6.20	6.96	1.18	0.04	1.25	7.19
0.20	0.40	0.45	6.20	7.00	1.24	0.04	1.32	7.24
0.21	0.42	0.47	6.20	7.04	1.30	0.04	1.39	7.28
0.22	0.44	0.49	6.20	7.08	1.36	0.05	1.46	7.33
0.23	0.46	0.51	6.20	7.12	1.43	0.05	1.53	7.37
0.24	0.48	0.54	6.20	7.16	1.49	0.06	1.60	7.42
0.25	0.50	0.56	6.20	7.20	1.55	0.06	1.68	7.46

SECCION BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
0.75	0.12	0.26	0.36	0.12
0.81	0.13	0.29	0.37	0.13
0.88	0.14	0.33	0.38	0.14
0.94	0.15	0.36	0.39	0.14
1.01	0.16	0.40	0.40	0.15
1.07	0.17	0.44	0.41	0.16
1.13	0.17	0.47	0.42	0.17
1.20	0.18	0.51	0.43	0.18
1.26	0.19	0.55	0.44	0.19
1.33	0.20	0.60	0.45	0.20
1.40	0.21	0.64	0.46	0.20
1.46	0.22	0.68	0.47	0.21
1.53	0.23	0.73	0.48	0.22
1.60	0.24	0.78	0.49	0.23
1.67	0.24	0.82	0.50	0.24
1.73	0.25	0.87	0.51	0.25
1.80	0.26	0.92	0.52	0.25
1.87	0.27	0.97	0.53	0.26
1.94	0.28	1.02	0.54	0.27
2.01	0.29	1.08	0.55	0.28
2.08	0.30	1.13	0.56	0.29
2.15	0.30	1.19	0.57	0.29
2.22	0.31	1.24	0.58	0.30
2.29	0.32	1.30	0.59	0.31
2.37	0.33	1.36	0.60	0.32

TRAMO 6. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0035	0.025	3.66	1.55

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.68	7.52	0.38	2.95	1.54	1.24	0.63

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.41	0.37	3.08	1.59	1.19	0.59

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
0.38	0.03	0.71

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.36	6.24	0.12	0.75	0.18	4.87
0.37	6.28	0.13	0.81	0.21	4.49
0.38	6.32	0.14	0.88	0.23	4.17
0.39	6.36	0.14	0.94	0.26	3.89
0.40	6.40	0.15	1.01	0.29	3.64
0.41	6.44	0.16	1.07	0.32	3.42
0.42	6.48	0.17	1.13	0.35	3.23
0.43	6.52	0.18	1.20	0.38	3.05
0.44	6.56	0.19	1.26	0.41	2.90
0.45	6.60	0.20	1.33	0.45	2.75
0.46	6.64	0.20	1.40	0.48	2.62
0.47	6.68	0.21	1.46	0.52	2.50
0.48	6.72	0.22	1.53	0.56	2.39
0.49	6.76	0.23	1.60	0.60	2.29
0.50	6.80	0.24	1.67	0.64	2.20
0.51	6.84	0.25	1.73	0.68	2.11
0.52	6.88	0.25	1.80	0.72	2.03
0.53	6.92	0.26	1.87	0.77	1.96
0.54	6.96	0.27	1.94	0.81	1.89
0.55	7.00	0.28	2.01	0.86	1.82
0.56	7.04	0.29	2.08	0.90	1.76
0.57	7.08	0.29	2.15	0.95	1.70
0.58	7.12	0.30	2.22	1.00	1.65
0.59	7.16	0.31	2.29	1.05	1.60
0.60	7.20	0.32	2.37	1.10	1.55
0.61	7.24	0.32	2.44	1.15	1.50
0.62	7.28	0.33	2.51	1.20	1.46
0.63	7.32	0.34	2.58	1.26	1.42
0.64	7.36	0.35	2.66	1.31	1.38
0.65	7.40	0.36	2.73	1.37	1.34
0.66	7.44	0.36	2.80	1.43	1.31
0.67	7.48	0.37	2.88	1.48	1.27
0.68	7.52	0.38	2.95	1.54	1.24
0.69	7.56	0.39	3.03	1.60	1.21
0.70	7.60	0.39	3.11	1.66	1.18
0.71	7.64	0.40	3.18	1.73	1.15
0.72	7.68	0.41	3.26	1.79	1.12
0.73	7.72	0.41	3.33	1.85	1.10
0.74	7.76	0.42	3.41	1.92	1.07
0.75	7.80	0.43	3.49	1.99	1.05
0.76	7.84	0.44	3.57	2.05	1.03
0.77	7.88	0.44	3.65	2.12	1.00
0.78	7.92	0.45	3.73	2.19	0.98
0.79	7.96	0.46	3.81	2.26	0.96
0.80	8.00	0.46	3.89	2.33	0.94

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.08	0.00	48.67
0.02	0.02	0.15	0.01	24.34
0.03	0.03	0.23	0.02	16.22
0.04	0.04	0.30	0.03	12.17
0.05	0.05	0.38	0.05	9.73
0.06	0.06	0.45	0.07	8.11
0.07	0.07	0.53	0.09	6.95
0.08	0.08	0.60	0.11	6.08
0.09	0.09	0.68	0.13	5.41
0.10	0.10	0.75	0.16	4.87
0.11	0.11	0.83	0.19	4.42
0.12	0.12	0.90	0.21	4.06
0.13	0.13	0.98	0.25	3.74
0.14	0.13	1.05	0.28	3.48
0.15	0.14	1.13	0.31	3.24
0.16	0.15	1.20	0.34	3.04
0.17	0.16	1.28	0.38	2.86
0.18	0.17	1.35	0.42	2.70
0.19	0.18	1.43	0.46	2.56
0.20	0.19	1.50	0.50	2.43
0.21	0.20	1.58	0.54	2.32
0.22	0.21	1.65	0.58	2.21
0.23	0.22	1.73	0.62	2.12
0.24	0.23	1.80	0.67	2.03
0.25	0.23	1.88	0.71	1.95
0.26	0.24	1.96	0.76	1.87
0.27	0.25	2.03	0.81	1.80
0.28	0.26	2.11	0.86	1.74
0.29	0.27	2.18	0.91	1.68
0.30	0.28	2.26	0.96	1.62
0.31	0.29	2.33	1.01	1.57
0.32	0.29	2.41	1.07	1.52
0.33	0.30	2.48	1.12	1.47
0.34	0.31	2.56	1.18	1.43
0.35	0.32	2.63	1.23	1.39
0.36	0.33	2.71	1.29	1.35
0.37	0.34	2.78	1.35	1.32
0.38	0.35	2.86	1.41	1.28
0.39	0.35	2.93	1.47	1.25
0.40	0.36	3.01	1.53	1.22
0.41	0.37	3.08	1.59	1.19
0.42	0.38	3.16	1.65	1.16
0.43	0.39	3.23	1.71	1.13
0.44	0.39	3.31	1.78	1.11
0.45	0.40	3.38	1.84	1.08

TRAMO 6. SALTO DE 0.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO -H_B- (m)	0.50
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.68
VELOCIDAD NORMAL (m/s)	1.24
FROUDE NORMAL	0.63
CALADO CRITICO -Y_{CB}- (m)	0.56

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	0.75
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.41
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CR}- (m)	0.31

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.52
Altura del salto "h_0" (m)	0.75
Nd (q^2/gh_0^3)	0.07
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.54
y_1 ($h_0Nd^{0,22}$) (m)	0.41
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.13
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.60
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.46

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.67
H_2 = -(H-Y_0) (m)	-0.34
H_0 = H_2-Y_3 (m)	-1.01
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.26
Lf (m)	1.17
Lt (m)	0.75
Ls (m)	1.27
L_1 (m)	1.22
L2 (m)	0.25
L3 (m)	0.54
L_B (m)	2.01

BLOCKS	
Block height (0,8Yc) (m)	0.25
Block width (0,4Yc) (m)	0.12

SILL HEIGTH (0,4Yc) (m)	0.12

TRAMO 6. SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.68
VELOCIDAD NORMAL (m/s)	1.24
FROUDE NORMAL	0.63
CALADO CRITICO -Y_{CB}- (m)	0.56

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.75
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.41
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CR}- (m)	0.31

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.52
Altura del salto "h_0" (m)	1.75
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.81
y_1 ($h_0Nd^{0,22}$) (m)	0.55
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.10
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.70
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.36

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.67
H_2 = -(H-Y_0) (m)	-1.34
H_0 = H_2-Y_3 (m)	-2.01
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.26
Lf (m)	1.62
Lt (m)	1.33
Ls (m)	1.65
L_1 (m)	1.63
L2 (m)	0.25
L3 (m)	0.54
L_B (m)	2.42

BLOCKS	
Block height (0,8Yc) (m)	0.25
Block width (0,4Yc) (m)	0.12

SILL HEIGTH (0,4Yc) (m)	0.12

TRAMO 6. SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.68
VELOCIDAD NORMAL (m/s)	1.24
FROUDE NORMAL	0.63
CALADO CRITICO -Y_{CB}- (m)	0.56

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.25
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.41
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CR}- (m)	0.31

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.52
Altura del salto "h_0" (m)	1.25
Nd (q^2/gh_0^3)	0.01
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.70
y_1 ($h_0Nd^{0,22}$) (m)	0.49
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.11
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.66
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.40

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.67
H_2 = -(H-Y_0) (m)	-0.84
H_0 = H_2-Y_3 (m)	-1.51
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.26
Lf (m)	1.41
Lt (m)	1.08
Ls (m)	1.46
L_1 (m)	1.43
L2 (m)	0.25
L3 (m)	0.54
L_B (m)	2.23

BLOCKS	
Block height (0,8Yc) (m)	0.25
Block width (0,4Yc) (m)	0.12

SILL HEIGTH (0,4Yc) (m)	0.12

TRAMO 6. SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.68
VELOCIDAD NORMAL (m/s)	1.24
FROUDE NORMAL	0.63
CALADO CRITICO -Y_{CB}- (m)	0.56

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	3.66
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.25
ANCHURA CAUCE -W- (m)	7.04
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.41
VELOCIDAD NORMAL (m/s)	1.19
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CR}- (m)	0.31

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.52
Altura del salto "h_0" (m)	2.25
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.90
y_1 ($h_0Nd^{0,22}$) (m)	0.60
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.09
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.73
TAIL WATER -CALADO NORMAL- (m)	1.06
TW - y_3 (m)	0.33

TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.67
H_2 = -(H-Y_0) (m)	-1.84
H_0 = H_2-Y_3 (m)	-2.51
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.26
Lf (m)	1.80
Lt (m)	1.55
Ls (m)	1.82
L_1 (m)	1.81
L2 (m)	0.25
L3 (m)	0.54
L_B (m)	2.61

BLOCKS	
Block height (0,8Yc) (m)	0.25
Block width (0,4Yc) (m)	0.12

SILL HEIGTH (0,4Yc) (m)	0.12

CÁLCULO SALTOS TRAMO 7

PDTE 0.003

TRAMO 7 PDTE 0.003. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0030	0.025	0.029	0.013	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01	0.36	1.28	0.46

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.17	0.25

VALORES PARA LA ITERACION

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08

TRAMO 7 PDTE 0.003. CALCULO CALADO CRITICO SECCION BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
1.71	9.80	0.55	2.00	3.00	2.50	0.25	2.00

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
0.40	1.21	6.75	0.18	6.60	0.19

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.25	0.50	0.56	1.00	2.00	0.25	0.06	0.38	2.12

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.05	2.00	2.00	2.00	6.00	0.10	0.05	0.20	4.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	6.00	6.06	0.06	0.00	0.06	6.18
0.02	0.06	0.06	6.00	6.12	0.12	0.00	0.12	6.25
0.03	0.09	0.09	6.00	6.18	0.18	0.00	0.18	6.31
0.04	0.12	0.13	6.00	6.24	0.24	0.00	0.24	6.37
0.05	0.15	0.16	6.00	6.30	0.30	0.00	0.31	6.44
0.06	0.18	0.19	6.00	6.36	0.36	0.01	0.37	6.50
0.07	0.21	0.22	6.00	6.42	0.42	0.01	0.43	6.56
0.08	0.24	0.25	6.00	6.48	0.48	0.01	0.50	6.63
0.09	0.27	0.28	6.00	6.54	0.54	0.01	0.56	6.69
0.10	0.30	0.32	6.00	6.60	0.60	0.02	0.63	6.75
0.11	0.33	0.35	6.00	6.66	0.66	0.02	0.70	6.81
0.12	0.36	0.38	6.00	6.72	0.72	0.02	0.76	6.88
0.13	0.39	0.41	6.00	6.78	0.78	0.03	0.83	6.94
0.14	0.42	0.44	6.00	6.84	0.84	0.03	0.90	7.00
0.15	0.45	0.47	6.00	6.90	0.90	0.03	0.97	7.07
0.16	0.48	0.51	6.00	6.96	0.96	0.04	1.04	7.13
0.17	0.51	0.54	6.00	7.02	1.02	0.04	1.11	7.19
0.18	0.54	0.57	6.00	7.08	1.08	0.05	1.18	7.26
0.19	0.57	0.60	6.00	7.14	1.14	0.05	1.25	7.32
0.20	0.60	0.63	6.00	7.20	1.20	0.06	1.32	7.38

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
0.64	0.10	0.21	0.31	0.10
0.70	0.11	0.23	0.32	0.11
0.76	0.12	0.27	0.33	0.12
0.82	0.13	0.30	0.34	0.13
0.88	0.14	0.33	0.35	0.14
0.95	0.15	0.36	0.36	0.15
1.01	0.16	0.40	0.37	0.15
1.07	0.17	0.44	0.38	0.16
1.14	0.17	0.48	0.39	0.17
1.21	0.18	0.51	0.40	0.18
1.27	0.19	0.56	0.41	0.19
1.34	0.20	0.60	0.42	0.19
1.41	0.21	0.64	0.43	0.20
1.47	0.22	0.68	0.44	0.21
1.54	0.22	0.73	0.45	0.22
1.61	0.23	0.78	0.46	0.23
1.68	0.24	0.82	0.47	0.23
1.75	0.25	0.87	0.48	0.24
1.82	0.26	0.92	0.49	0.25
1.90	0.26	0.97	0.50	0.26

TRAMO 7 PDTE 0.003. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0030	0.025	1.71	0.78

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.50	7.20	0.26	1.90	0.77	0.90	0.56

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
0.25	0.02	0.52

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.31	6.06	0.10	0.64	0.14	2.69
0.32	6.12	0.11	0.70	0.16	2.46
0.33	6.18	0.12	0.76	0.18	2.26
0.34	6.24	0.13	0.82	0.21	2.09
0.35	6.30	0.14	0.88	0.23	1.94
0.36	6.36	0.15	0.95	0.26	1.81
0.37	6.42	0.15	1.01	0.29	1.69
0.38	6.48	0.16	1.07	0.32	1.59
0.39	6.54	0.17	1.14	0.35	1.50
0.40	6.60	0.18	1.21	0.38	1.42
0.41	6.66	0.19	1.27	0.42	1.35
0.42	6.72	0.19	1.34	0.45	1.28
0.43	6.78	0.20	1.41	0.48	1.22
0.44	6.84	0.21	1.47	0.52	1.16
0.45	6.90	0.22	1.54	0.56	1.11
0.46	6.96	0.23	1.61	0.60	1.06
0.47	7.02	0.23	1.68	0.64	1.02
0.48	7.08	0.24	1.75	0.68	0.98
0.49	7.14	0.25	1.82	0.72	0.94
0.50	7.20	0.26	1.90	0.77	0.90
0.51	7.26	0.26	1.97	0.81	0.87
0.52	7.32	0.27	2.04	0.86	0.84
0.53	7.38	0.28	2.11	0.90	0.81
0.54	7.44	0.29	2.19	0.95	0.78
0.55	7.50	0.29	2.26	1.00	0.76
0.56	7.56	0.30	2.34	1.05	0.73
0.57	7.62	0.31	2.41	1.10	0.71
0.58	7.68	0.32	2.49	1.15	0.69
0.59	7.74	0.32	2.57	1.21	0.67
0.60	7.80	0.33	2.65	1.26	0.65

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.27	0.25	1.94	0.77	0.88	0.54

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.07	0.00	23.76
0.02	0.02	0.14	0.01	11.88
0.03	0.03	0.22	0.02	7.92
0.04	0.04	0.29	0.03	5.94
0.05	0.05	0.36	0.05	4.75
0.06	0.06	0.43	0.07	3.96
0.07	0.07	0.50	0.08	3.39
0.08	0.08	0.58	0.11	2.97
0.09	0.09	0.65	0.13	2.64
0.10	0.10	0.72	0.15	2.38
0.11	0.11	0.79	0.18	2.16
0.12	0.12	0.86	0.21	1.98
0.13	0.13	0.94	0.23	1.83
0.14	0.13	1.01	0.26	1.70
0.15	0.14	1.08	0.30	1.58
0.16	0.15	1.15	0.33	1.49
0.17	0.16	1.22	0.36	1.40
0.18	0.17	1.30	0.40	1.32
0.19	0.18	1.37	0.44	1.25
0.20	0.19	1.44	0.48	1.19
0.21	0.20	1.51	0.51	1.13
0.22	0.21	1.58	0.55	1.08
0.23	0.22	1.66	0.60	1.03
0.24	0.23	1.73	0.64	0.99
0.25	0.23	1.80	0.68	0.95
0.26	0.24	1.87	0.73	0.91
0.27	0.25	1.94	0.77	0.88
0.28	0.26	2.02	0.82	0.85
0.29	0.27	2.09	0.87	0.82
0.30	0.28	2.16	0.92	0.79

TRAMO 7. PDTE 0.003 SALTO DE 0.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	0.50
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.003
N Manning (s/m1/3)	0.025

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.50
VELOCIDAD NORMAL (m/s)	0.90
FROUDE NORMAL	0.56
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	0.71
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.88
FROUDE NORMAL	0.54
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	0.71
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.05
y_1 ($h_0Nd^{0,22}$) (m)	0.30
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.07
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.41
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.41

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-0.44
H_0 = H_2-Y_3 (m)	-0.85
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	0.82
Lt (m)	0.61
Ls (m)	0.86
L_1 (m)	0.84
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.32

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.003 SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.003
N Manning (s/m1/3)	0.025

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.50
VELOCIDAD NORMAL (m/s)	0.90
FROUDE NORMAL	0.56
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.21
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.88
FROUDE NORMAL	0.54
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	1.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.16
y_1 ($h_0Nd^{0,22}$) (m)	0.36
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.45
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.45

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-0.94
H_0 = H_2-Y_3 (m)	-1.35
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.03
Lt (m)	0.87
Ls (m)	1.05
L_1 (m)	1.04
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.52

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.003 SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.003
N Manning (s/m1/3)	0.025

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.50
VELOCIDAD NORMAL (m/s)	0.90
FROUDE NORMAL	0.56
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.71
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.88
FROUDE NORMAL	0.54
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	1.71
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.24
y_1 ($h_0Nd^{0,22}$) (m)	0.40
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.48
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.48

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.44
H_0 = H_2-Y_3 (m)	-1.85
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.20
Lt (m)	1.06
Ls (m)	1.21
L_1 (m)	1.21
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.69

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.003 SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.003
N Manning (s/m1/3)	0.025

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.50
VELOCIDAD NORMAL (m/s)	0.90
FROUDE NORMAL	0.56
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.21
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.88
FROUDE NORMAL	0.54
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	2.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.30
y_1 ($h_0Nd^{0,22}$) (m)	0.44
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.05
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.50
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.50

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.94
H_0 = H_2-Y_3 (m)	-2.35
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.35
Lt (m)	1.23
Ls (m)	1.36
L_1 (m)	1.36
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.84

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

CÁLCULO SALTOS TRAMO 7

PDTE 0.0035

TRAMO 7 PDTE 0.0035. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0035	0.025	0.029	0.012	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01	0.43	1.24	0.59

DISEÑO SECCION TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.16	0.25

VALORES PARA LA ITERACION

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08

TRAMO 7 PDTE 0.0035. CALCULO CALADO CRITICO SECCIÓN BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
1.71	9.80	0.55	2.00	2.00	2.50	0.25	2.00

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
0.40	1.20	6.57	0.18	6.40	0.19

CALCULO SECCIÓN TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.25	0.50	0.56	1.00	2.00	0.25	0.06	0.38	2.12

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.05	2.00	2.00	2.00	6.00	0.10	0.05	0.20	4.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.02	0.02	6.00	6.04	0.06	0.00	0.06	6.16
0.02	0.04	0.04	6.00	6.08	0.12	0.00	0.12	6.21
0.03	0.06	0.07	6.00	6.12	0.18	0.00	0.18	6.25
0.04	0.08	0.09	6.00	6.16	0.24	0.00	0.24	6.30
0.05	0.10	0.11	6.00	6.20	0.30	0.00	0.31	6.34
0.06	0.12	0.13	6.00	6.24	0.36	0.00	0.37	6.39
0.07	0.14	0.16	6.00	6.28	0.42	0.00	0.43	6.43
0.08	0.16	0.18	6.00	6.32	0.48	0.01	0.49	6.48
0.09	0.18	0.20	6.00	6.36	0.54	0.01	0.56	6.52
0.10	0.20	0.22	6.00	6.40	0.60	0.01	0.62	6.57
0.11	0.22	0.25	6.00	6.44	0.66	0.01	0.68	6.61
0.12	0.24	0.27	6.00	6.48	0.72	0.01	0.75	6.66
0.13	0.26	0.29	6.00	6.52	0.78	0.02	0.81	6.70
0.14	0.28	0.31	6.00	6.56	0.84	0.02	0.88	6.75
0.15	0.30	0.34	6.00	6.60	0.90	0.02	0.95	6.79

SECCIÓN BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
0.64	0.11	0.21	0.31	0.10
0.70	0.11	0.24	0.32	0.11
0.76	0.12	0.27	0.33	0.12
0.82	0.13	0.30	0.34	0.13
0.88	0.14	0.33	0.35	0.14
0.94	0.15	0.37	0.36	0.15
1.00	0.16	0.40	0.37	0.16
1.07	0.17	0.44	0.38	0.16
1.13	0.18	0.48	0.39	0.17
1.20	0.19	0.52	0.40	0.18
1.26	0.20	0.56	0.41	0.19
1.32	0.20	0.60	0.42	0.20
1.39	0.21	0.64	0.43	0.21
1.45	0.22	0.68	0.44	0.22
1.52	0.23	0.73	0.45	0.22

TRAMO 7 PDTE 0.0035. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0035	0.025	1.71	0.72

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.49	6.76	0.26	1.79	0.72	0.96	0.59

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
0.24	0.02	0.51

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.31	6.04	0.10	0.64	0.14	2.69
0.32	6.08	0.11	0.70	0.16	2.46
0.33	6.12	0.12	0.76	0.19	2.26
0.34	6.16	0.13	0.82	0.21	2.09
0.35	6.20	0.14	0.88	0.24	1.94
0.36	6.24	0.15	0.94	0.26	1.82
0.37	6.28	0.16	1.00	0.29	1.70
0.38	6.32	0.16	1.07	0.32	1.60
0.39	6.36	0.17	1.13	0.35	1.51
0.40	6.40	0.18	1.20	0.38	1.43
0.41	6.44	0.19	1.26	0.42	1.36
0.42	6.48	0.20	1.32	0.45	1.29
0.43	6.52	0.21	1.39	0.49	1.23
0.44	6.56	0.22	1.45	0.52	1.18
0.45	6.60	0.22	1.52	0.56	1.13
0.46	6.64	0.23	1.59	0.60	1.08
0.47	6.68	0.24	1.65	0.64	1.04
0.48	6.72	0.25	1.72	0.68	0.99
0.49	6.76	0.26	1.79	0.72	0.96
0.50	6.80	0.26	1.86	0.76	0.92
0.51	6.84	0.27	1.92	0.81	0.89
0.52	6.88	0.28	1.99	0.85	0.86
0.53	6.92	0.29	2.06	0.90	0.83
0.54	6.96	0.30	2.13	0.95	0.80
0.55	7.00	0.30	2.20	0.99	0.78
0.56	7.04	0.31	2.27	1.04	0.75
0.57	7.08	0.32	2.34	1.09	0.73
0.58	7.12	0.33	2.41	1.15	0.71
0.59	7.16	0.33	2.48	1.20	0.69
0.60	7.20	0.34	2.56	1.25	0.67

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.27	0.25	1.83	0.72	0.94	0.58

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.07	0.00	25.31
0.02	0.02	0.14	0.01	12.66
0.03	0.03	0.20	0.02	8.44
0.04	0.04	0.27	0.03	6.33
0.05	0.05	0.34	0.05	5.06
0.06	0.06	0.41	0.06	4.22
0.07	0.07	0.47	0.08	3.62
0.08	0.08	0.54	0.10	3.16
0.09	0.09	0.61	0.12	2.81
0.10	0.10	0.68	0.14	2.53
0.11	0.11	0.74	0.17	2.30
0.12	0.12	0.81	0.19	2.11
0.13	0.13	0.88	0.22	1.95
0.14	0.13	0.95	0.25	1.81
0.15	0.14	1.01	0.28	1.69
0.16	0.15	1.08	0.31	1.58
0.17	0.16	1.15	0.34	1.49
0.18	0.17	1.22	0.37	1.41
0.19	0.18	1.28	0.41	1.33
0.20	0.19	1.35	0.44	1.27
0.21	0.20	1.42	0.48	1.21
0.22	0.21	1.49	0.52	1.15
0.23	0.22	1.55	0.56	1.10
0.24	0.22	1.62	0.60	1.05
0.25	0.23	1.69	0.64	1.01
0.26	0.24	1.76	0.68	0.97
0.27	0.25	1.83	0.72	0.94
0.28	0.26	1.89	0.77	0.90
0.29	0.27	1.96	0.81	0.87
0.30	0.28	2.03	0.86	0.84

TRAMO 7. PDTE 0.0035 SALTO DE 0.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	0.50
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.49
VELOCIDAD NORMAL (m/s)	0.96
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	0.71
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.94
FROUDE NORMAL	0.58
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.27
Altura del salto "h_0" (m)	0.71
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.07
y_1 ($h_0Nd^{0,22}$) (m)	0.30
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.07
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.41
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.41

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-0.44
H_0 = H_2-Y_3 (m)	-0.85
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	0.84
Lt (m)	0.62
Ls (m)	0.87
L_1 (m)	0.85
L2 (m)	0.15
L3 (m)	0.34
L_B (m)	1.35

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0035 SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.49
VELOCIDAD NORMAL (m/s)	0.96
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.21
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.94
FROUDE NORMAL	0.58
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.27
Altura del salto "h_0" (m)	1.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.18
y_1 ($h_0Nd^{0,22}$) (m)	0.36
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.46
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.46

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-0.94
H_0 = H_2-Y_3 (m)	-1.35
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.04
Lt (m)	0.87
Ls (m)	1.06
L_1 (m)	1.05
L2 (m)	0.15
L3 (m)	0.34
L_B (m)	1.54

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0035 SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.49
VELOCIDAD NORMAL (m/s)	0.96
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.71
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.94
FROUDE NORMAL	0.58
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.27
Altura del salto "h_0" (m)	1.71
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.26
y_1 ($h_0Nd^{0,22}$) (m)	0.41
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.49
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.49

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.44
H_0 = H_2-Y_3 (m)	-1.85
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.22
Lt (m)	1.07
Ls (m)	1.23
L_1 (m)	1.22
L2 (m)	0.15
L3 (m)	0.34
L_B (m)	1.72

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0035 SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE (z/1000)	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.49
VELOCIDAD NORMAL (m/s)	0.96
FROUDE NORMAL	0.59
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.21
ANCHURA CAUCE -W- (m)	6.40
PENDIENTE	0.00
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.27
VELOCIDAD NORMAL (m/s)	0.94
FROUDE NORMAL	0.58
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.27
Altura del salto "h_0" (m)	2.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.32
y_1 ($h_0Nd^{0,22}$) (m)	0.44
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.05
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.51
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.51

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.94
H_0 = H_2-Y_3 (m)	-2.35
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.14
Lf (m)	1.37
Lt (m)	1.25
Ls (m)	1.38
L_1 (m)	1.38
L2 (m)	0.15
L3 (m)	0.34
L_B (m)	1.87

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

CÁLCULO SALTOS TRAMO 7

PDTE 0.0075

TRAMO 7 PDTE 0.0075. CALCULO CAUCE AGUAS BAJAS

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** MANNING ($s/m^{1/3}$)	CAUDAL (m^3/s)	nQ/√I ($m^{8/3}$)	BASE CAUCE AGUAS BAJAS (m)	PDTE TALUD LATERAL (Z:1)
0.0075	0.025	0.029	0.008	1.00	2.00

DATOS CALCULADOS

CALADO NORMAL (m)	LONG. TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m^2)	AREA TRIANGULO LATERAL (m^2)	AREA TOTAL (m^2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	TIRANTE (m)	FROUDE
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01	0.52	1.20	0.78

DISEÑO SECCIÓN TIPO

ALTURA DE SECCION CON RESGUARDO (m)	REDONDEO PARA EJECUCIÓN (m)
0.16	0.25

VALORES PARA LA ITERACIÓN

CALADO (m)	TALUD LATERAL (m)	PERIMETRO MOJADO (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL (m2)	Rh (m)	$ARh^{2/3}$ ($m^{8/3}$)
0.01	0.02	1.04	0.01	0.00	0.01	0.01	0.00
0.02	0.04	1.09	0.02	0.00	0.02	0.02	0.00
0.03	0.07	1.13	0.03	0.00	0.03	0.03	0.00
0.04	0.09	1.18	0.04	0.00	0.04	0.04	0.00
0.05	0.11	1.22	0.05	0.00	0.06	0.04	0.01
0.06	0.13	1.27	0.06	0.00	0.07	0.05	0.01
0.07	0.16	1.31	0.07	0.00	0.08	0.06	0.01
0.08	0.18	1.36	0.08	0.01	0.09	0.07	0.02
0.09	0.20	1.40	0.09	0.01	0.11	0.08	0.02
0.10	0.22	1.45	0.10	0.01	0.12	0.08	0.02
0.11	0.25	1.49	0.11	0.01	0.13	0.09	0.03
0.12	0.27	1.54	0.12	0.01	0.15	0.10	0.03
0.13	0.29	1.58	0.13	0.02	0.16	0.10	0.04
0.14	0.31	1.63	0.14	0.02	0.18	0.11	0.04
0.15	0.34	1.67	0.15	0.02	0.20	0.12	0.05
0.16	0.36	1.72	0.16	0.03	0.21	0.12	0.05
0.17	0.38	1.76	0.17	0.03	0.23	0.13	0.06
0.18	0.40	1.80	0.18	0.03	0.24	0.14	0.06
0.19	0.42	1.85	0.19	0.04	0.26	0.14	0.07
0.20	0.45	1.89	0.20	0.04	0.28	0.15	0.08

TRAMO 7 PDTE 0.0075. CALCULO CALADO CRITICO SECCION BITRAPECIAL

DATOS DE PARTIDA

Q (m3/s)	g (m/s2)	Q/√g	PDTE TALUD CAUCE AGUAS BAJAS (Z:1)	PDTE TALUD CAUCE AVENIDA (Z:1)	PDTE TALUD ZONA DRENAJE (%)	PROFUNDIDAD CAUCE AGUAS BAJAS (m)	ANCHURA HORIZONTAL ZONA DE DRENAJE (m)
1.71	9.80	0.55	2.00	3.00	2.50	0.25	2.00

DATOS CALCULADOS

CALADO CRITICO OBTENIDO SECCIÓN BITRAPECIAL (m)	AREA PARA CALADO CRITICO (m2)	PERIMETRO MOJADO PARA CALADO CRITICO (m)	RADIO HIDRAULICO (m)	TIRANTE PARA CALADO CRITICO (m)	CALADO CRITICO SECCIÓN RECTANGULAR EQUIVALENTE (m)
0.40	1.21	6.75	0.18	6.60	0.19

CALCULO SECCION TIPO

CAUCE AGUAS BAJAS

ALTURA CAUCE AGUAS BAJAS (m)	BASE TALUD LATERAL (PDTE Z:1)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.25	0.50	0.56	1.00	2.00	0.25	0.06	0.38	2.12

ZONA DE DRENAJE

ALTURA ZONA DE DRENAJE	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA DE 1 TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO PARCIAL (m)
0.05	2.00	2.00	2.00	6.00	0.10	0.05	0.20	4.00

CAUCE DE AVENIDA

ALTURA CAUCE DE AVENIDA (m)	BASE TALUD LATERAL (m)	TALUD LATERAL (m)	BASE MENOR (m)	BASE MAYOR (m)	AREA RECTANGULO CENTRAL (m2)	AREA TRIANGULO LATERAL (m2)	AREA TOTAL DEL TRAPECIO (m2)	PERIMETRO MOJADO TOTAL (m)
0.01	0.03	0.03	6.00	6.06	0.06	0.00	0.06	6.18
0.02	0.06	0.06	6.00	6.12	0.12	0.00	0.12	6.25
0.03	0.09	0.09	6.00	6.18	0.18	0.00	0.18	6.31
0.04	0.12	0.13	6.00	6.24	0.24	0.00	0.24	6.37
0.05	0.15	0.16	6.00	6.30	0.30	0.00	0.31	6.44
0.06	0.18	0.19	6.00	6.36	0.36	0.01	0.37	6.50
0.07	0.21	0.22	6.00	6.42	0.42	0.01	0.43	6.56
0.08	0.24	0.25	6.00	6.48	0.48	0.01	0.50	6.63
0.09	0.27	0.28	6.00	6.54	0.54	0.01	0.56	6.69
0.10	0.30	0.32	6.00	6.60	0.60	0.02	0.63	6.75
0.11	0.33	0.35	6.00	6.66	0.66	0.02	0.70	6.81
0.12	0.36	0.38	6.00	6.72	0.72	0.02	0.76	6.88
0.13	0.39	0.41	6.00	6.78	0.78	0.03	0.83	6.94
0.14	0.42	0.44	6.00	6.84	0.84	0.03	0.90	7.00
0.15	0.45	0.47	6.00	6.90	0.90	0.03	0.97	7.07
0.16	0.48	0.51	6.00	6.96	0.96	0.04	1.04	7.13
0.17	0.51	0.54	6.00	7.02	1.02	0.04	1.11	7.19
0.18	0.54	0.57	6.00	7.08	1.08	0.05	1.18	7.26
0.19	0.57	0.60	6.00	7.14	1.14	0.05	1.25	7.32
0.20	0.60	0.63	6.00	7.20	1.20	0.06	1.32	7.38

SECCION BITRAPECIAL COMPLETA

AREA TOTAL (m2)	CALADO EQUIVALENTE Y=A/b (m)	A√Y	CALADO TOTAL (m)	Rh (m)
0.64	0.10	0.21	0.31	0.10
0.70	0.11	0.23	0.32	0.11
0.76	0.12	0.27	0.33	0.12
0.82	0.13	0.30	0.34	0.13
0.88	0.14	0.33	0.35	0.14
0.95	0.15	0.36	0.36	0.15
1.01	0.16	0.40	0.37	0.15
1.07	0.17	0.44	0.38	0.16
1.14	0.17	0.48	0.39	0.17
1.21	0.18	0.51	0.40	0.18
1.27	0.19	0.56	0.41	0.19
1.34	0.20	0.60	0.42	0.19
1.41	0.21	0.64	0.43	0.20
1.47	0.22	0.68	0.44	0.21
1.54	0.22	0.73	0.45	0.22
1.61	0.23	0.78	0.46	0.23
1.68	0.24	0.82	0.47	0.23
1.75	0.25	0.87	0.48	0.24
1.82	0.26	0.92	0.49	0.25
1.90	0.26	0.97	0.50	0.26

TRAMO 7 PDTE 0.0075. CALCULO CALADO NORMAL

DATOS DE PARTIDA

PENDIENTE (z/1000)	**n** DE MANNING (s/m1/3)	CAUDAL (m3/s)	nQ/√I ($m^{8/3}$)
0.0075	0.025	1.71	0.49

SECCIÓN BITRAPECIAL

CALADO NORMAL SECC. BITRAPECIAL (m)	TIRANTE CALADO NORMAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.43	6.78	0.20	1.41	0.48	1.22	0.85

CALADO CAUCE AVENIDA (m)	RESGUARDO CAUCE AVENIDA (m)	CALADO DE DISEÑO SECC. BITRAPECIAL (m)
0.18	0.02	0.45

CALADO (m)	TIRANTE CALADO NORMAL SECC. BITRAPECIAL (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)
0.31	6.06	0.10	0.64	0.14	2.69
0.32	6.12	0.11	0.70	0.16	2.46
0.33	6.18	0.12	0.76	0.18	2.26
0.34	6.24	0.13	0.82	0.21	2.09
0.35	6.30	0.14	0.88	0.23	1.94
0.36	6.36	0.15	0.95	0.26	1.81
0.37	6.42	0.15	1.01	0.29	1.69
0.38	6.48	0.16	1.07	0.32	1.59
0.39	6.54	0.17	1.14	0.35	1.50
0.40	6.60	0.18	1.21	0.38	1.42
0.41	6.66	0.19	1.27	0.42	1.35
0.42	6.72	0.19	1.34	0.45	1.28
0.43	6.78	0.20	1.41	0.48	1.22
0.44	6.84	0.21	1.47	0.52	1.16
0.45	6.90	0.22	1.54	0.56	1.11
0.46	6.96	0.23	1.61	0.60	1.06
0.47	7.02	0.23	1.68	0.64	1.02
0.48	7.08	0.24	1.75	0.68	0.98
0.49	7.14	0.25	1.82	0.72	0.94
0.50	7.20	0.26	1.90	0.77	0.90
0.51	7.26	0.26	1.97	0.81	0.87
0.52	7.32	0.27	2.04	0.86	0.84
0.53	7.38	0.28	2.11	0.90	0.81
0.54	7.44	0.29	2.19	0.95	0.78
0.55	7.50	0.29	2.26	1.00	0.76
0.56	7.56	0.30	2.34	1.05	0.73
0.57	7.62	0.31	2.41	1.10	0.71
0.58	7.68	0.32	2.49	1.15	0.69
0.59	7.74	0.32	2.57	1.21	0.67
0.60	7.80	0.33	2.65	1.26	0.65

SECCIÓN RECTANGULAR

CALADO NORMAL SECCIÓN RECTANGULAR (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$ ($m^{8/3}$)	VELOCIDAD (m/s)	FROUDE
0.21	0.20	1.42	0.48	1.20	0.84

CALADO (m)	Rh (m)	AREA (m2)	$ARh^{2/3}$	VELOCIDAD (m/s)
0.01	0.01	0.07	0.00	25.24
0.02	0.02	0.14	0.01	12.62
0.03	0.03	0.20	0.02	8.41
0.04	0.04	0.27	0.03	6.31
0.05	0.05	0.34	0.05	5.05
0.06	0.06	0.41	0.06	4.21
0.07	0.07	0.47	0.08	3.61
0.08	0.08	0.54	0.10	3.15
0.09	0.09	0.61	0.12	2.80
0.10	0.10	0.68	0.14	2.52
0.11	0.11	0.75	0.17	2.29
0.12	0.12	0.81	0.19	2.10
0.13	0.13	0.88	0.22	1.94
0.14	0.13	0.95	0.25	1.80
0.15	0.14	1.02	0.28	1.68
0.16	0.15	1.08	0.31	1.58
0.17	0.16	1.15	0.34	1.48
0.18	0.17	1.22	0.38	1.40
0.19	0.18	1.29	0.41	1.33
0.20	0.19	1.36	0.45	1.26
0.21	0.20	1.42	0.48	1.20
0.22	0.21	1.49	0.52	1.15
0.23	0.22	1.56	0.56	1.10
0.24	0.22	1.63	0.60	1.05
0.25	0.23	1.70	0.64	1.01
0.26	0.24	1.76	0.68	0.97
0.27	0.25	1.83	0.73	0.93
0.28	0.26	1.90	0.77	0.90
0.29	0.27	1.97	0.82	0.87
0.30	0.28	2.03	0.86	0.84

TRAMO 7. PDTE 0.0075 SALTO DE 0.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	0.50
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.43
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.85
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	0.71
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.21
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.84
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	0.71
Nd (q^2/gh_0^3)	0.02
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.05
y_1 ($h_0Nd^{0,22}$) (m)	0.30
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.07
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.41
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.41

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-0.50
H_0 = H_2-Y_3 (m)	-0.91
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.20
Lf (m)	0.85
Lt (m)	0.65
Ls (m)	0.88
L_1 (m)	0.87
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.35

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0075 SALTO DE 1 METRO DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.00
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.43
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.85
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.21
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.21
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.84
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	1.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.16
y_1 ($h_0Nd^{0,22}$) (m)	0.36
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.45
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.45

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.00
H_0 = H_2-Y_3 (m)	-1.41
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.20
Lf (m)	1.05
Lt (m)	0.89
Ls (m)	1.07
L_1 (m)	1.06
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.54

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0075 SALTO DE 1.5 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	1.50
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.43
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.85
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	1.71
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.21
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.84
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	1.71
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.24
y_1 ($h_0Nd^{0,22}$) (m)	0.40
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.06
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.48
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.48

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-1.50
H_0 = H_2-Y_3 (m)	-1.91
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.20
Lf (m)	1.22
Lt (m)	1.09
Ls (m)	1.23
L_1 (m)	1.23
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.71

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

TRAMO 7. PDTE 0.0075 SALTO DE 2 METROS DE ALTURA

SECCIÓN BITRAPECIAL

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO -H_B- (m)	2.00
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE (z/1000)	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.43
VELOCIDAD NORMAL (m/s)	1.22
FROUDE NORMAL	0.85
CALADO CRITICO -Y_{CB}- (m)	0.40

SECCIÓN RECTANGULAR

DATOS DE PARTIDA:	
Q (m3/s)	1.71
SALTO (H_R) = (H_B+Y_{CB}) - Y_{CR} (m)	2.21
ANCHURA CAUCE -W- (m)	6.60
PENDIENTE	0.01
N Manning (s/m1/3)	0.03

VALORES CALCULADOS:	
CALADO NORMAL -Y_0- (m)	0.21
VELOCIDAD NORMAL (m/s)	1.20
FROUDE NORMAL	0.84
CALADO CRITICO -Y_{CR}- (m)	0.19

TIPO DE RESALTO GENERADO	
Caudal unitario (m^3/s/m) "q"	0.26
Altura del salto "h_0" (m)	2.21
Nd (q^2/gh_0^3)	0.00
L1 ($4{,}3h_0N_d^{0,27}$) (m)	1.30
y_1 ($h_0Nd^{0,22}$) (m)	0.44
y_2 ($0{,}54h_0N_d^{0,425}$) (m)	0.05
y_3 ($1{,}66h_0N_d^{0,27}$) (m)	0.50
TAIL WATER -CALADO NORMAL- (m)	0.00
TW - y_3 (m)	-0.50

LEYENDA:	
TW > y_3 RESALTO AHOGADO	
TW = y_3 RESALTO COMIENZA EN PUNTO Y2	
TW < y_3 RESALTO SE MUEVE AGUAS ABAJO	

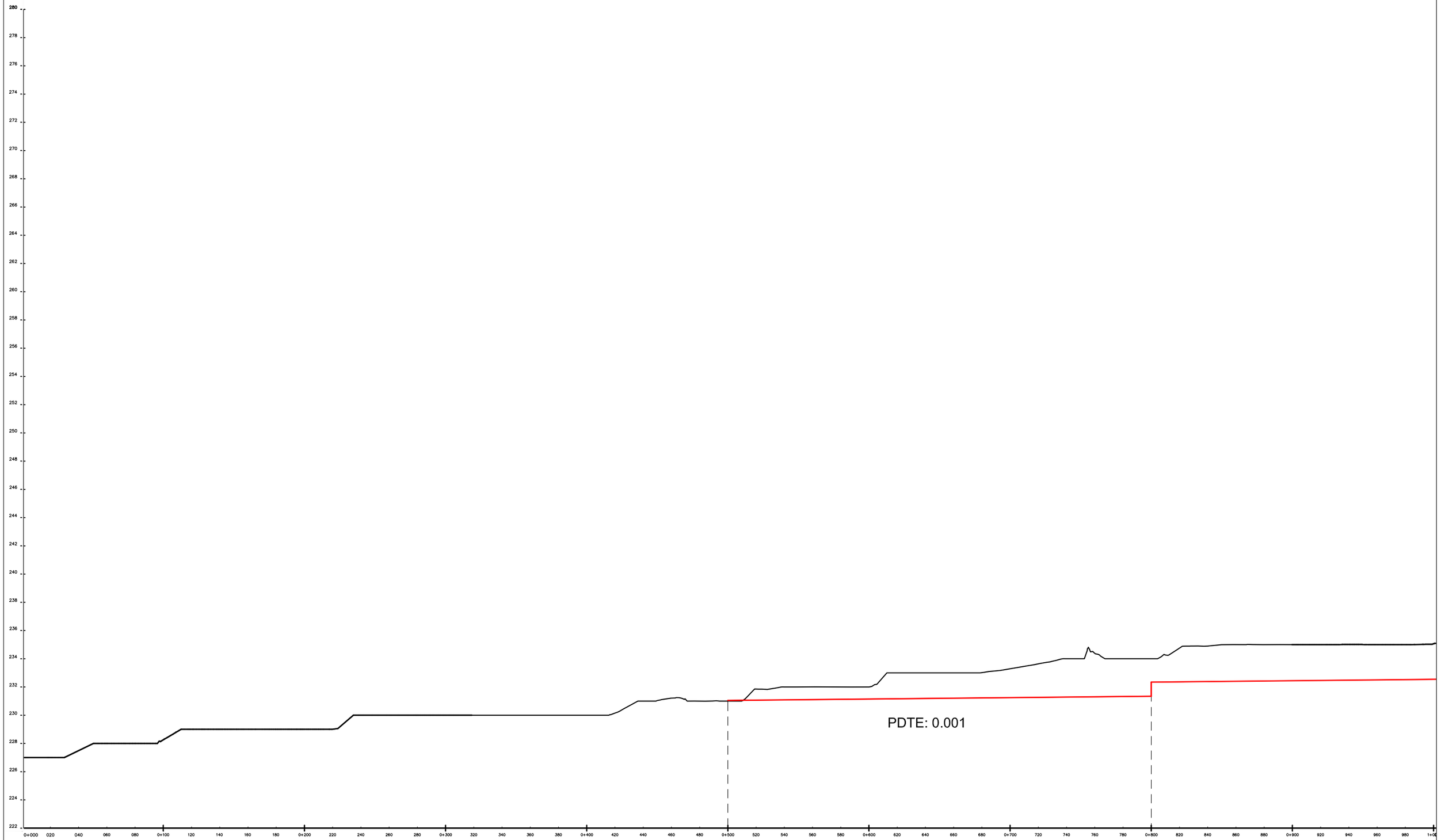
PARAMETROS DEL SALTO:	
Y_3 = 2.15Yc (m)	0.41
H_2 = -(H-Y_0) (m)	-2.00
H_0 = H_2-Y_3 (m)	-2.41
CUENCO AMORTIGUADOR (=H_0+H) (m)	-0.20
Lf (m)	1.37
Lt (m)	1.25
Ls (m)	1.38
L_1 (m)	1.38
L2 (m)	0.15
L3 (m)	0.33
L_B (m)	1.86

BLOCKS	
Block height (0,8Yc) (m)	0.15
Block width (0,4Yc) (m)	0.08

SILL HEIGTH (0,4Yc) (m)	0.08

ANEXO 7

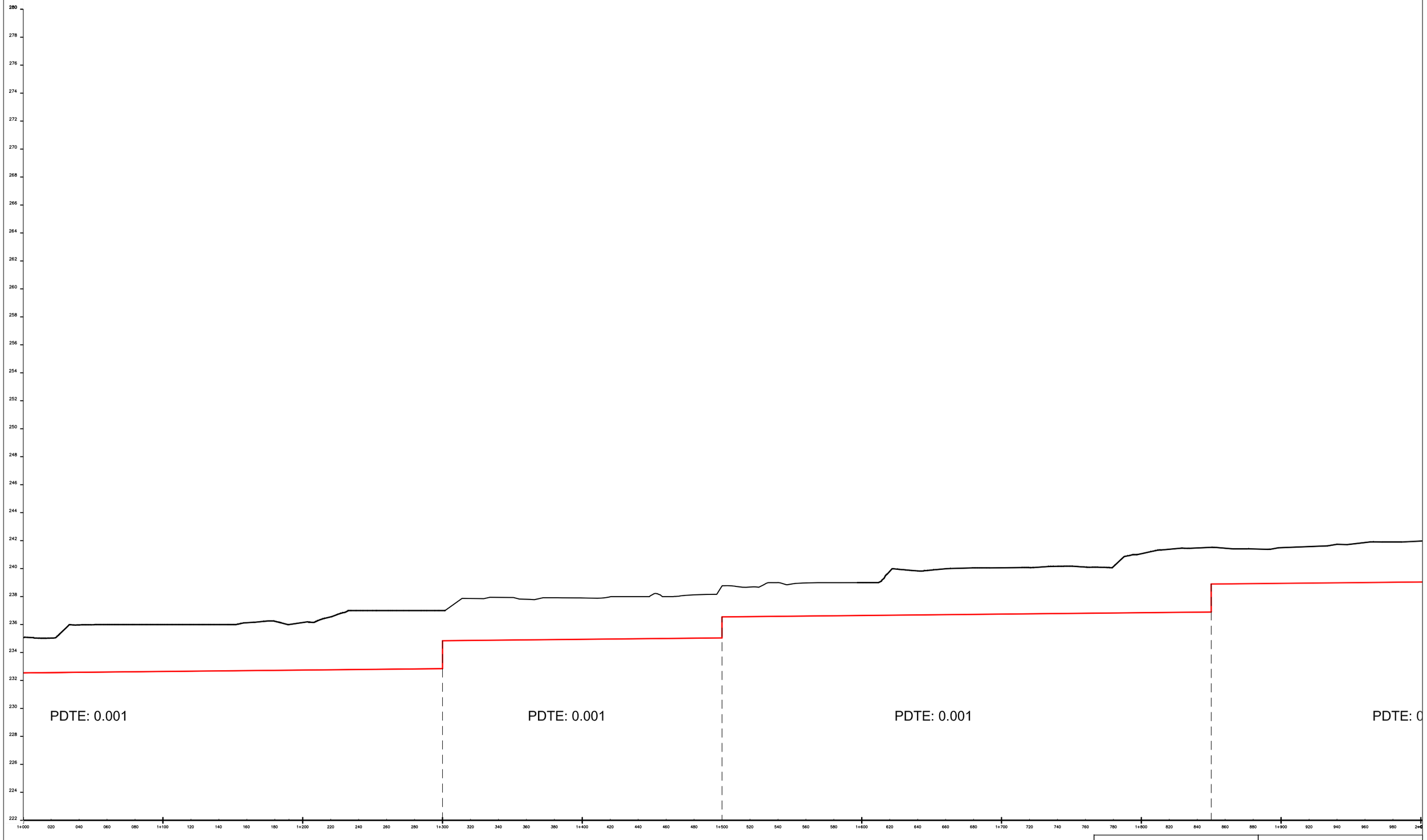
PERFIL LONGITUDINAL



TERRENO NATURAL

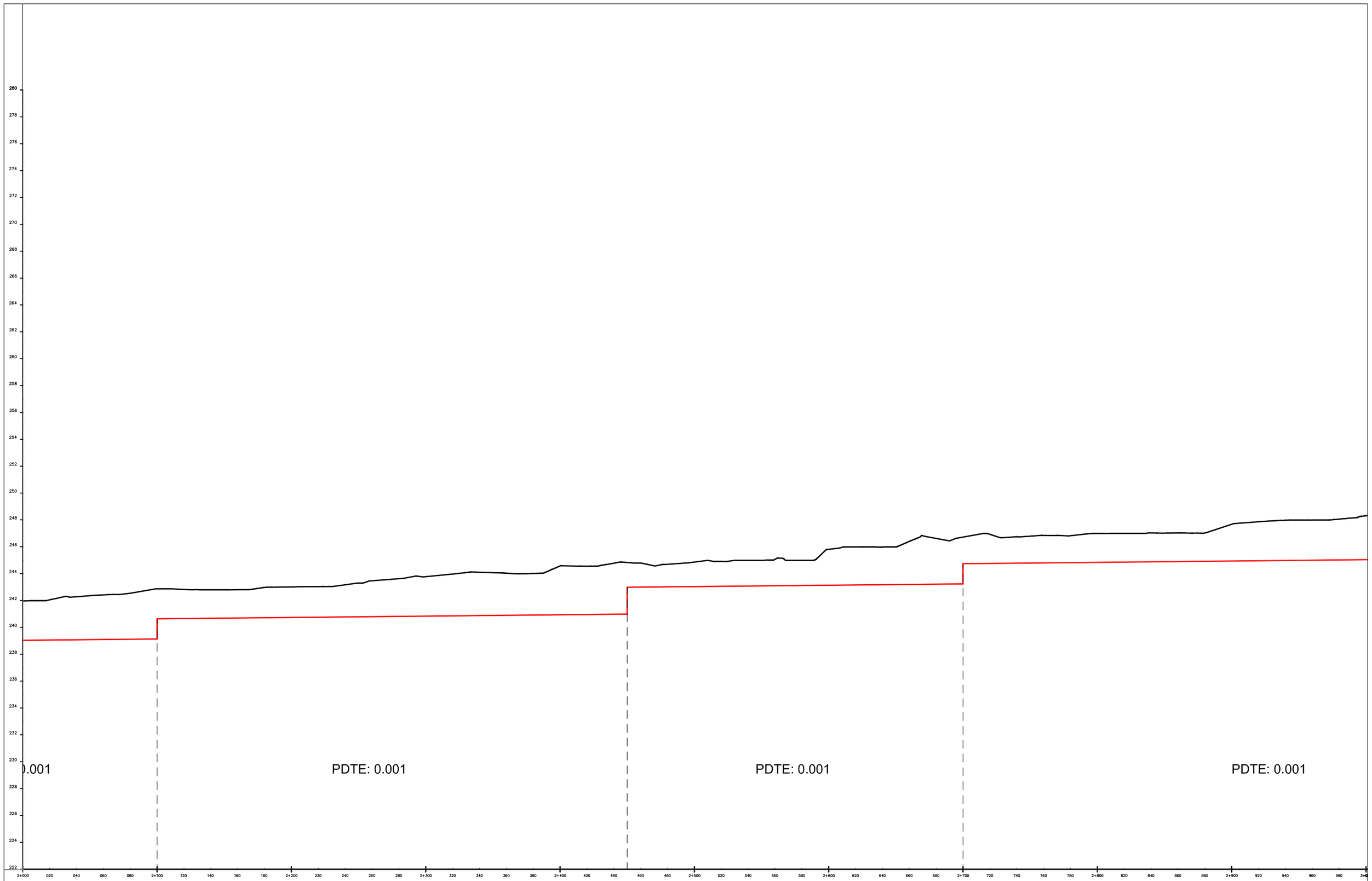
COTA ROJA ENCAUZAMIENTO

PK 0+000 - 1+000		PERFIL LONGITUDINAL DE ENCAUZAMIENTO
PDTE INDICADAS		
ESCALA H 1:250 ESCALA V 1:25	Escuela Politécnica Superior - Huesca Universidad Zaragoza	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS



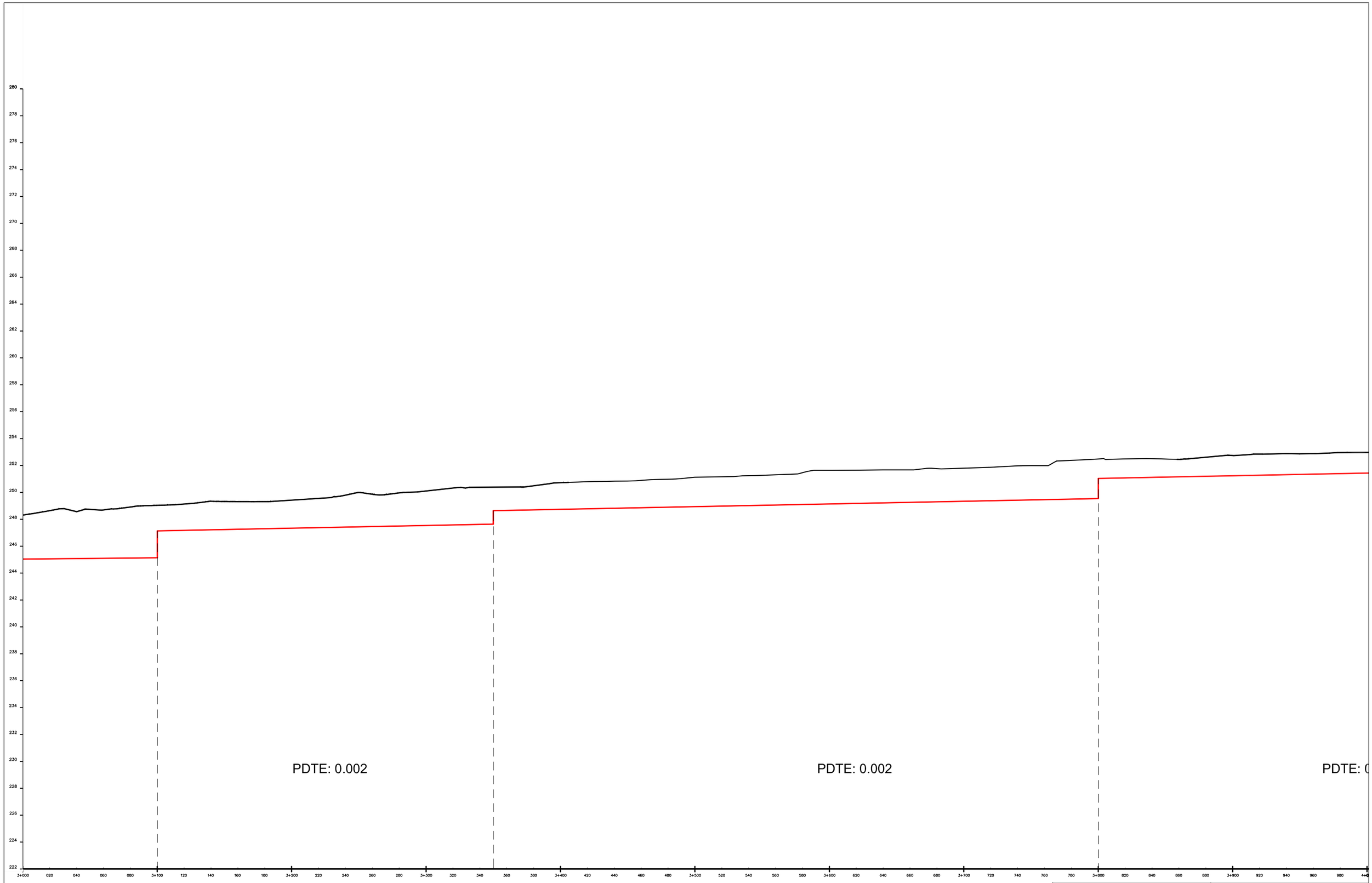
PK 1+000 - 2+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza



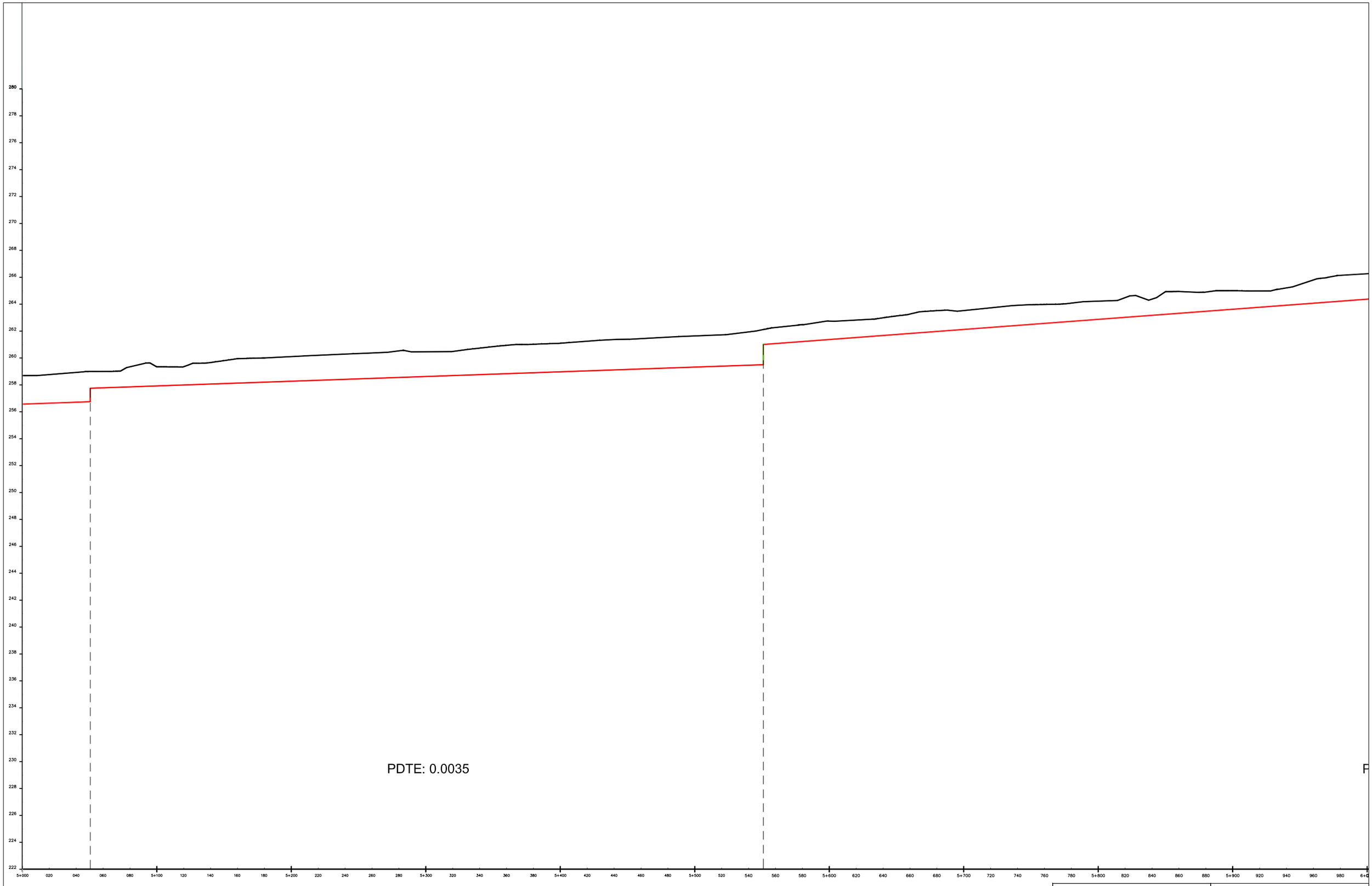
PK 2+000 - 3+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza



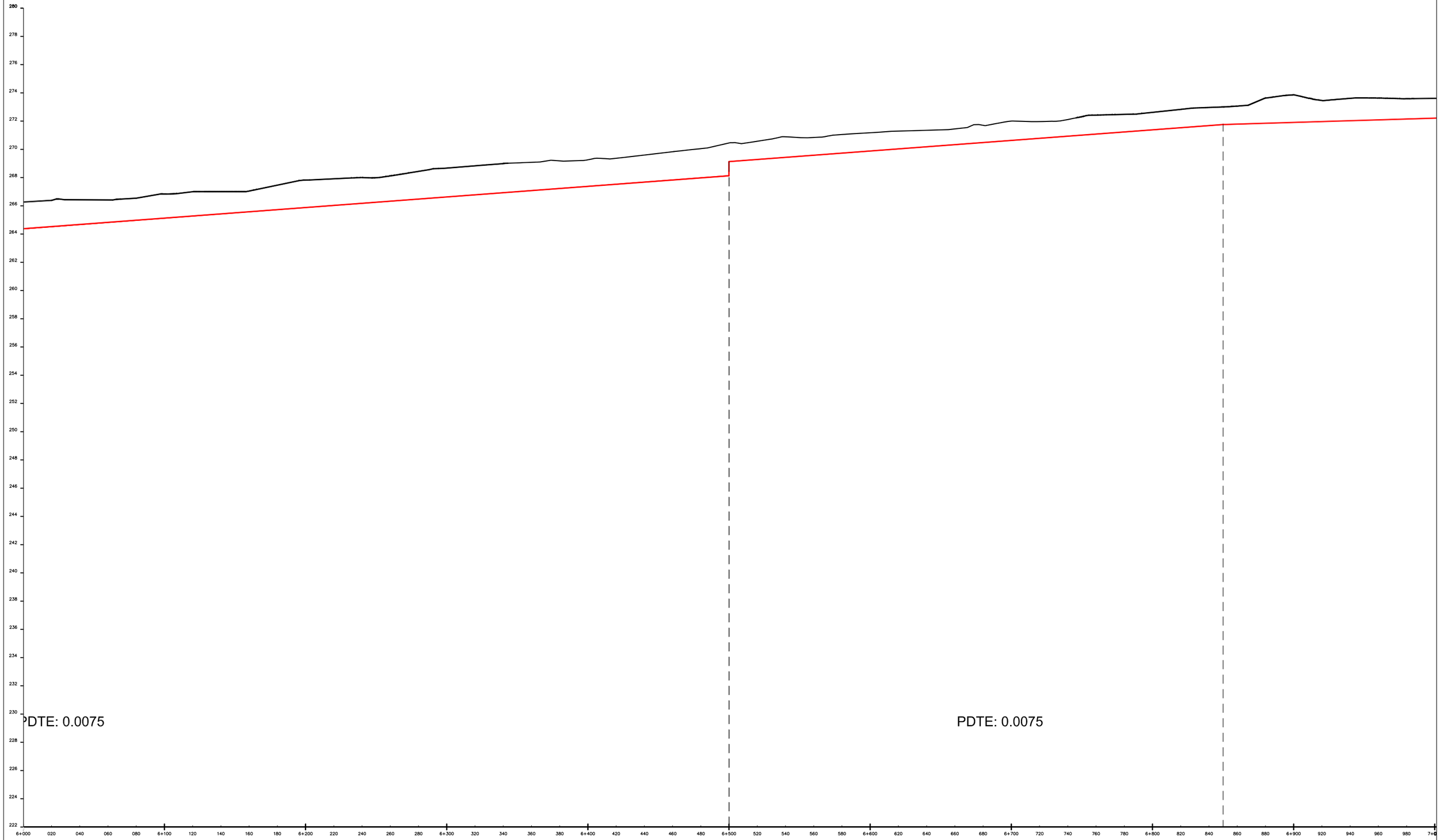
PK 3+000 - 4+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza



PK 5+000 - 6+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza

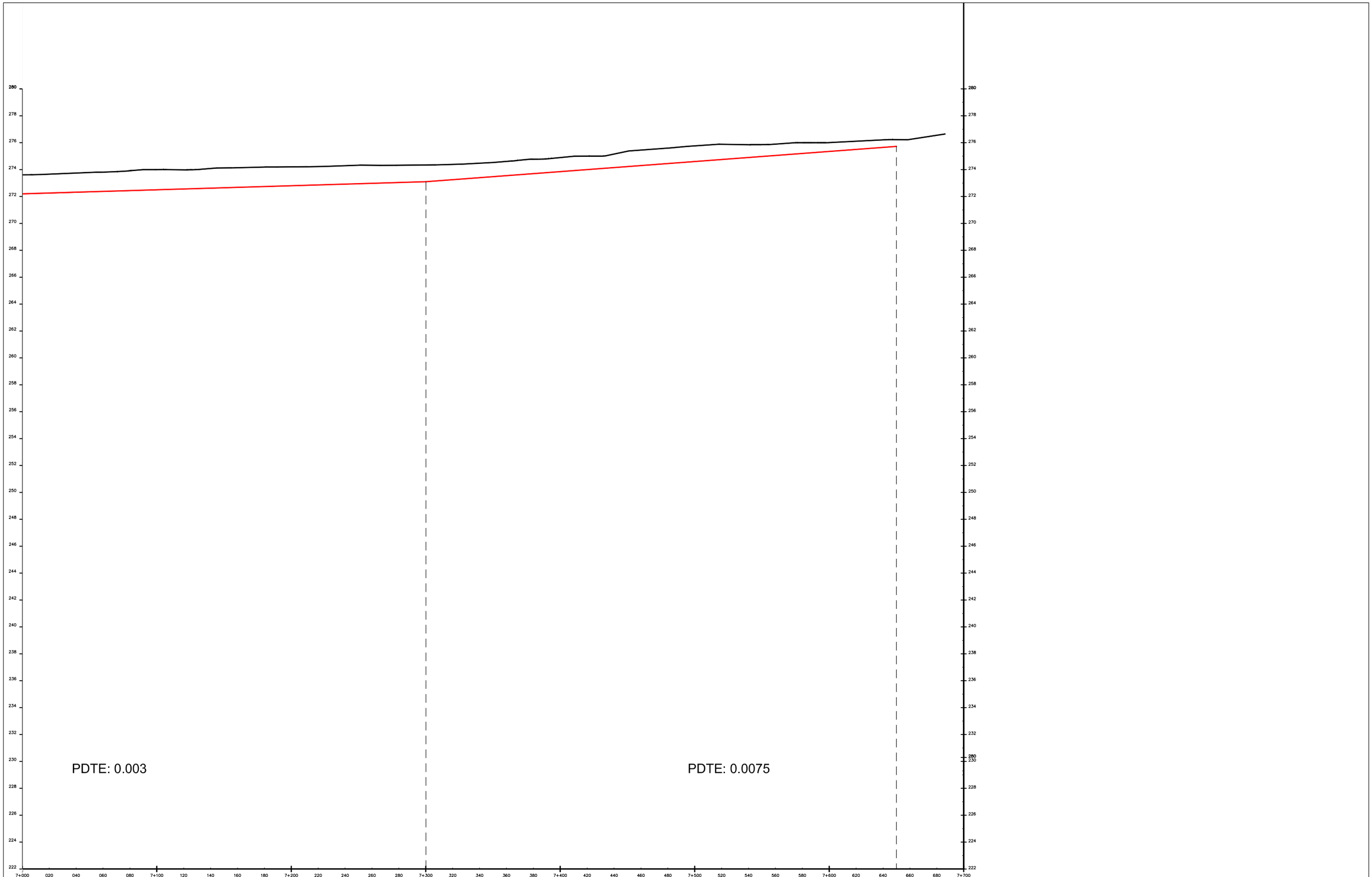


TERRENO NATURAL

COTA ROJA ENCAUZAMIENTO

PK 6+000 - 7+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

Escuela Politécnica Superior - Huesca
Universidad Zaragoza



TERRENO NATURAL

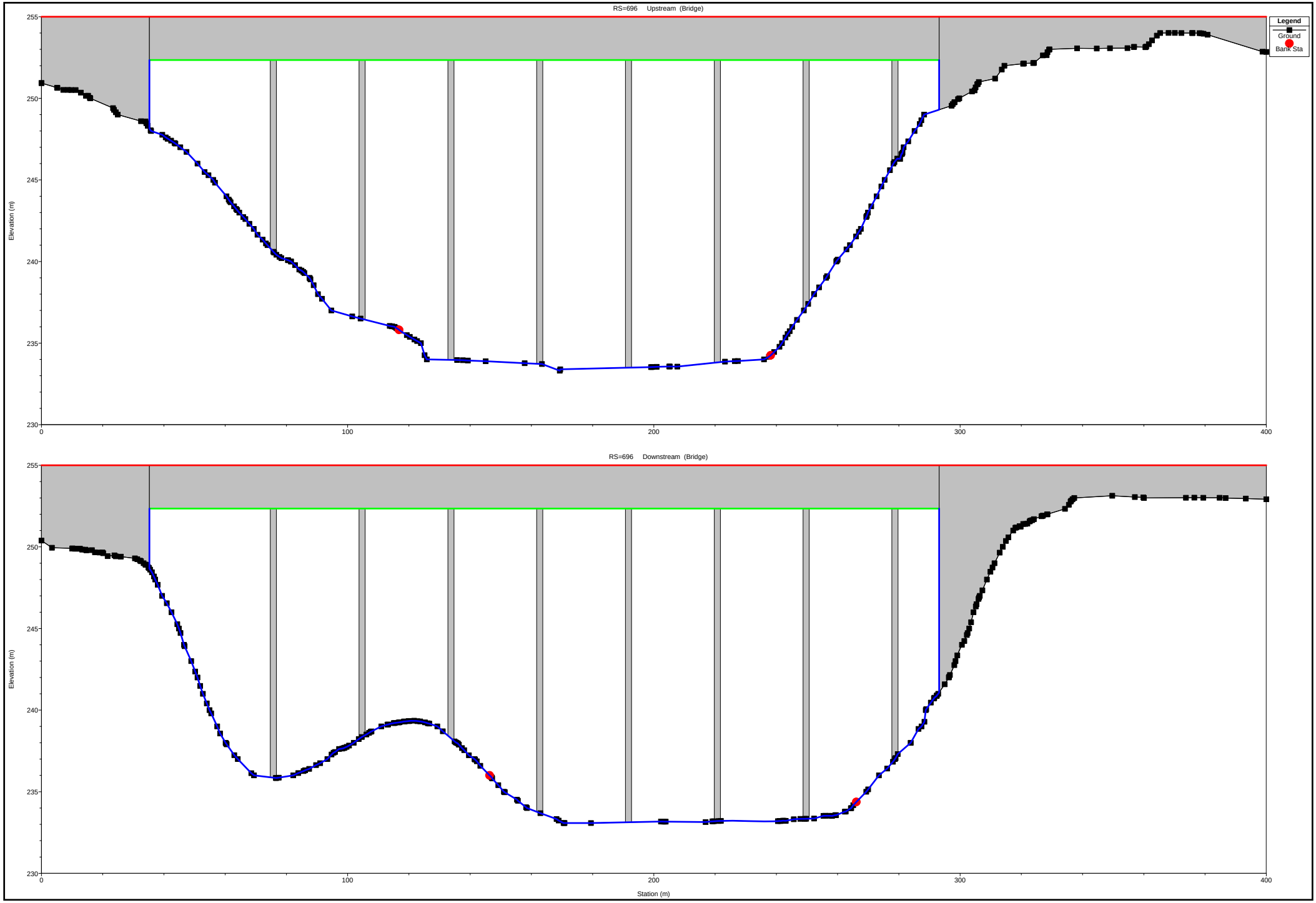
COTA ROJA ENCAUZAMIENTO

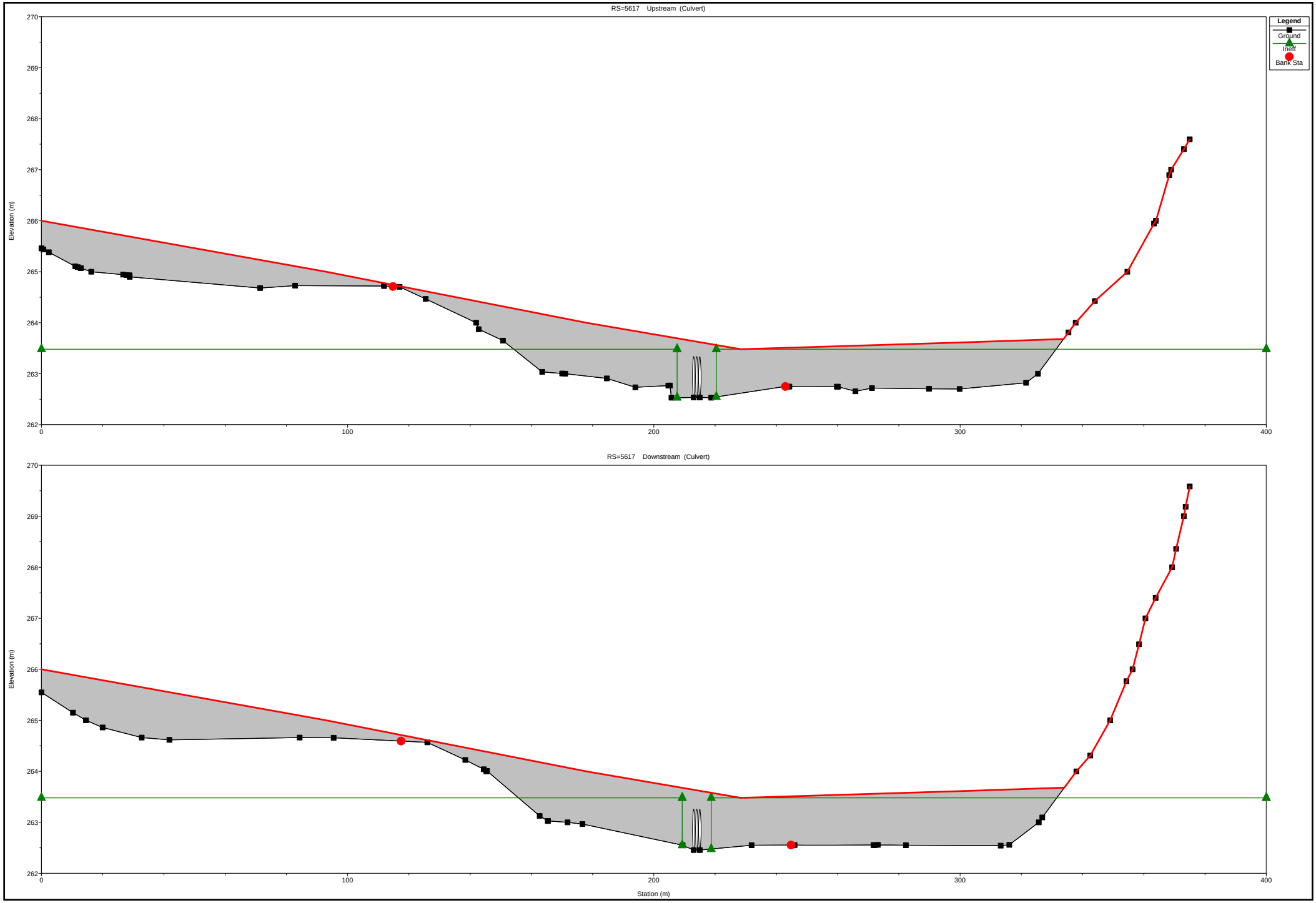
PK 6+000 - 7+000	SECCIÓN TIPO DE ENCAUZAMIENTO
PDTE INDICADAS	
ESCALA 1:250	SIMULACIÓN HIDRAULICA DEL CAUCE NATURAL DEL BARRANCO DE CAMPILLO Y POSTERIOR ENCAUZAMIENTO CON HEC-RAS

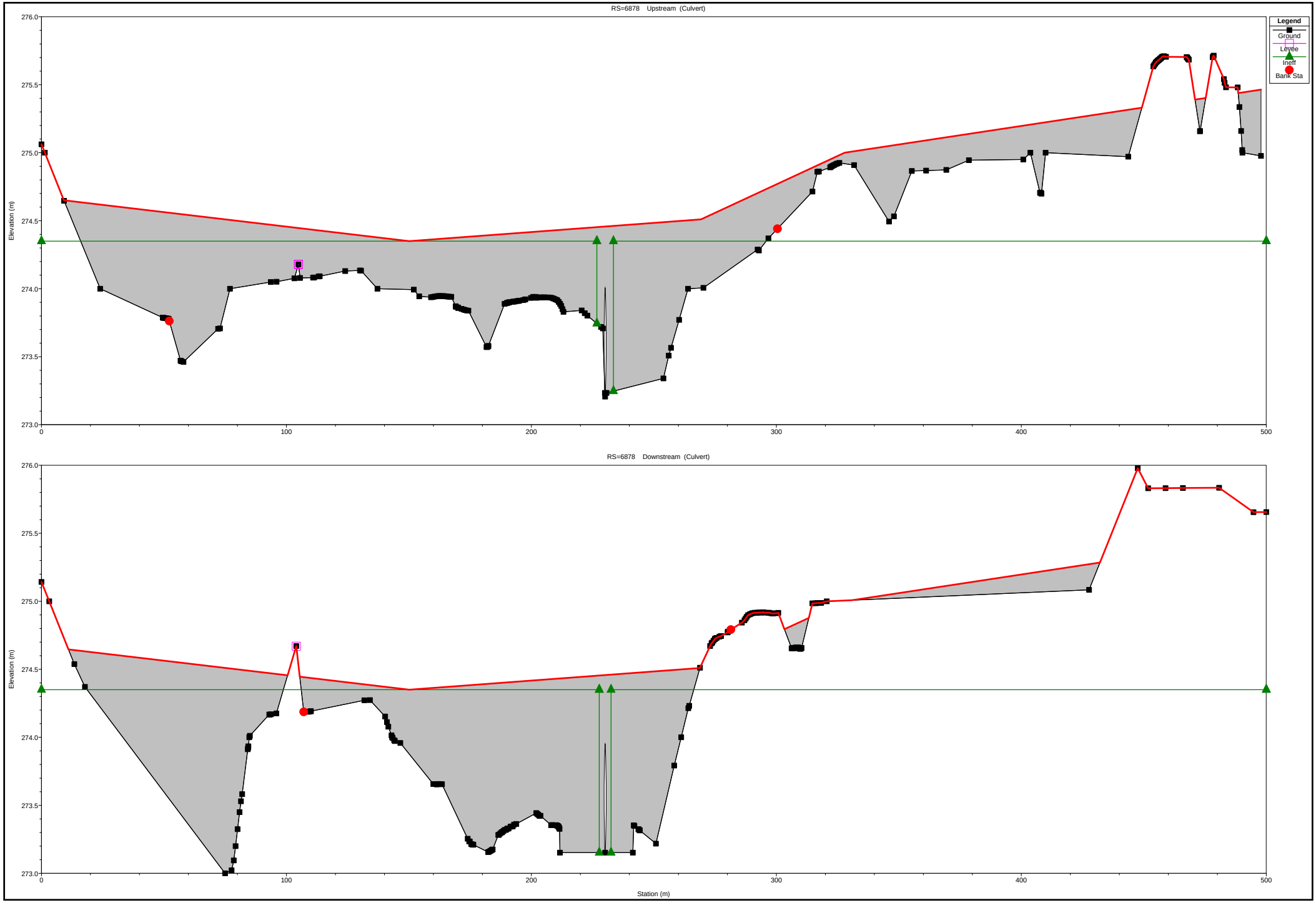
Escuela Politécnica Superior - Huesca
Universidad Zaragoza

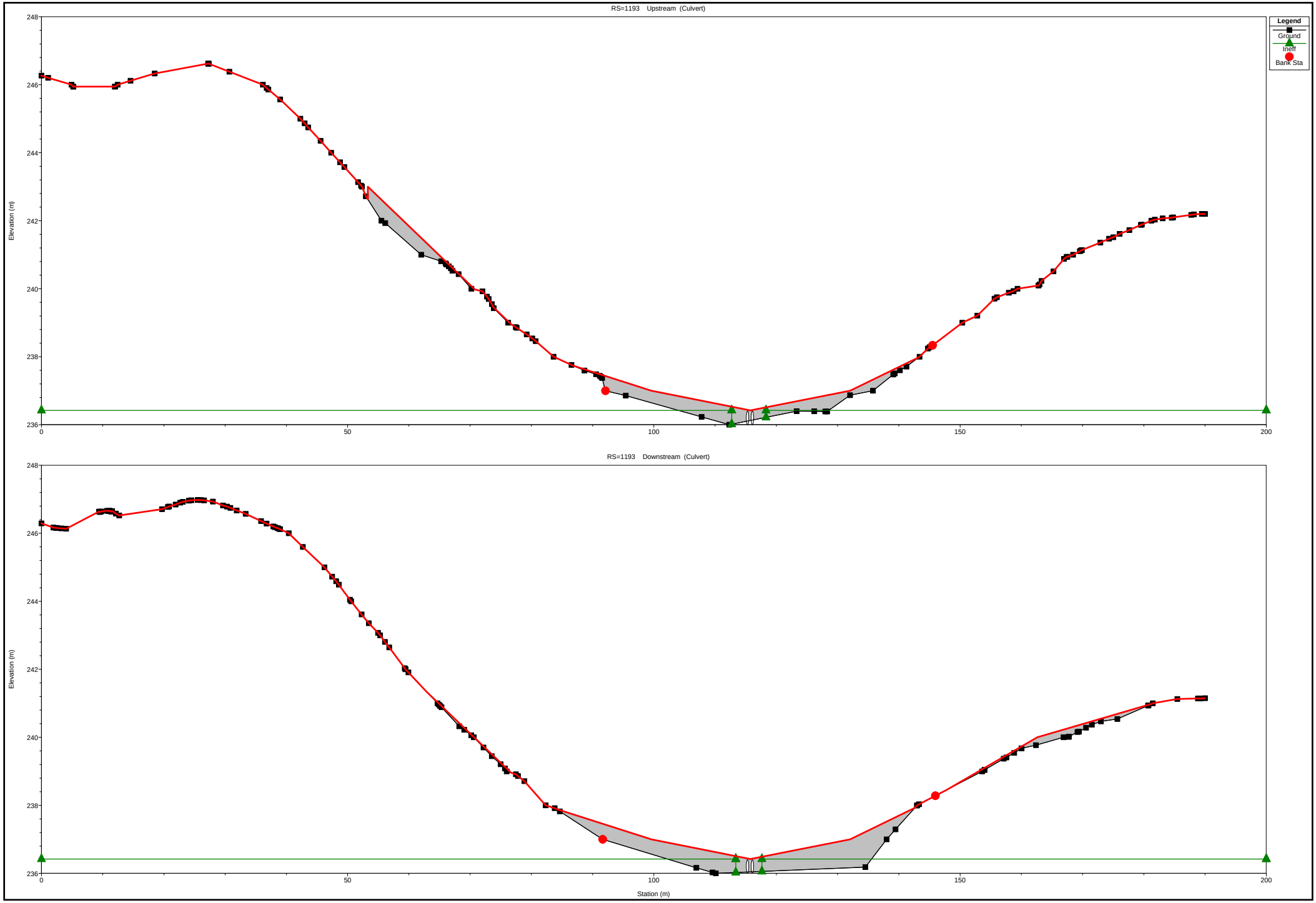
ANEXO 8
DEFINICIÓN DE CRUCES

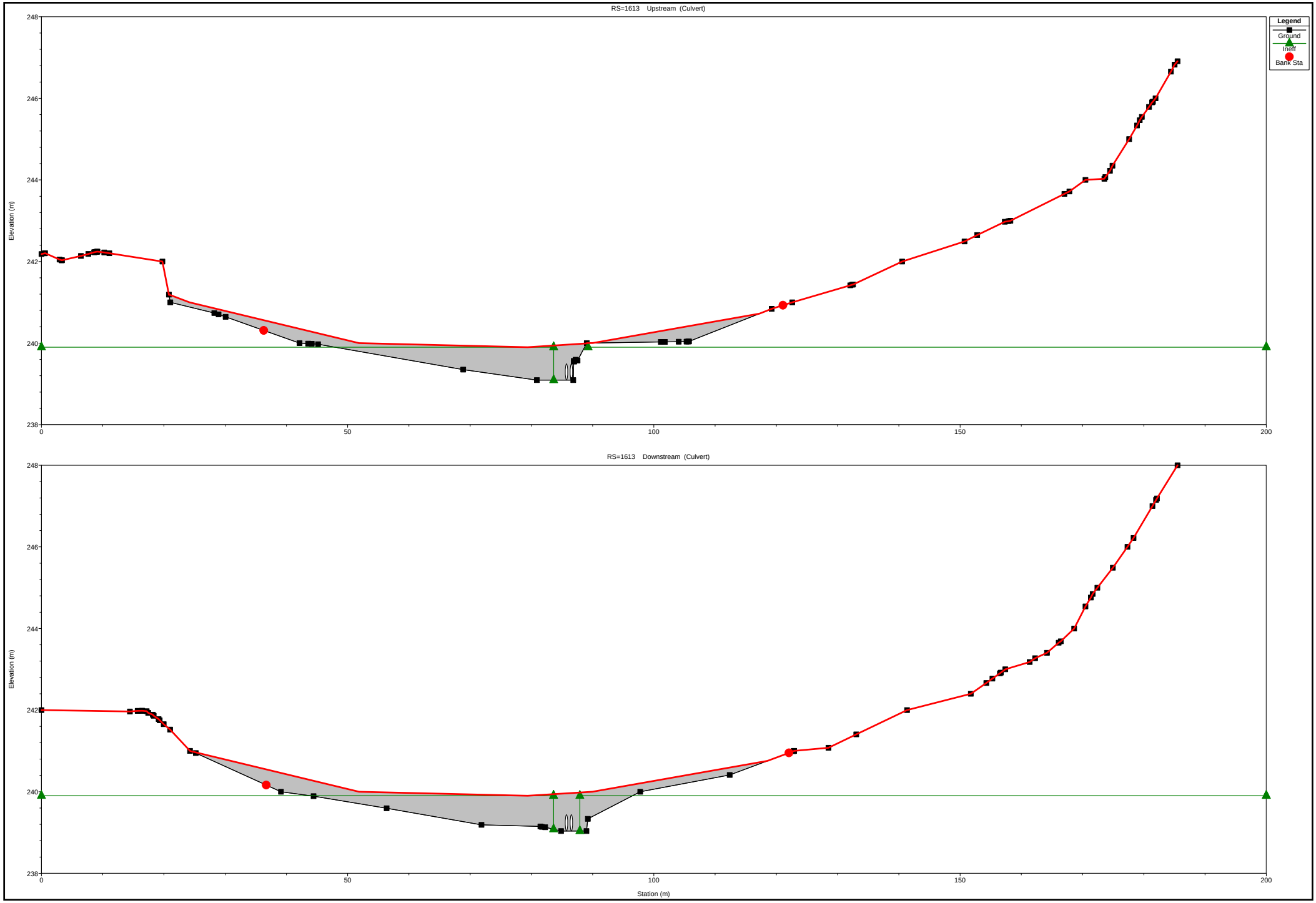
CRUCES SITUACIÓN INICIAL

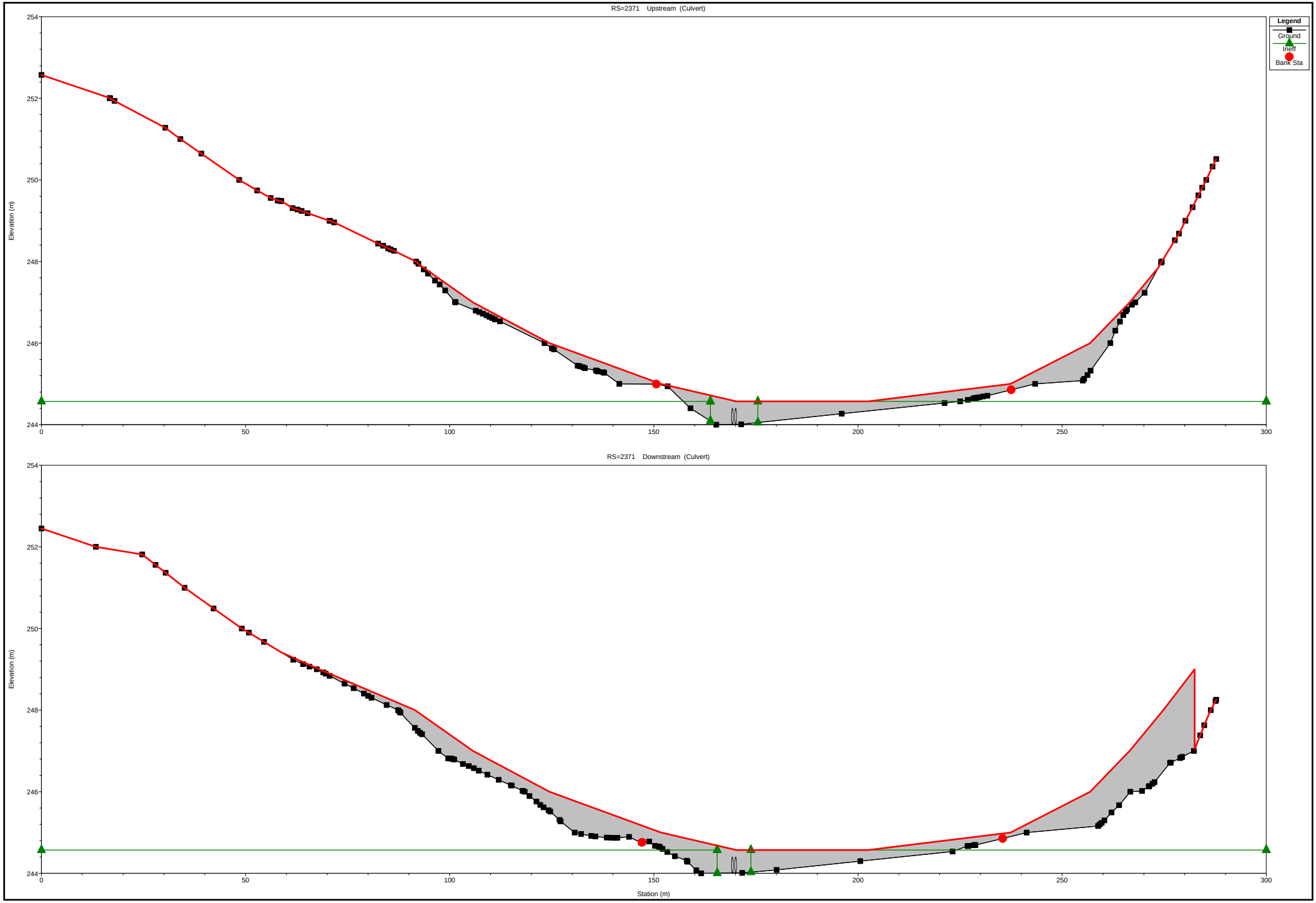

RS=696 Upstream (Bridge)
Legend
Ground
Bank Sta
Elevation (m)
255
250
245
240
235
230
0
100
200
300
400
RS=696 Downstream (Bridge)
Elevation (m)
Station (m)

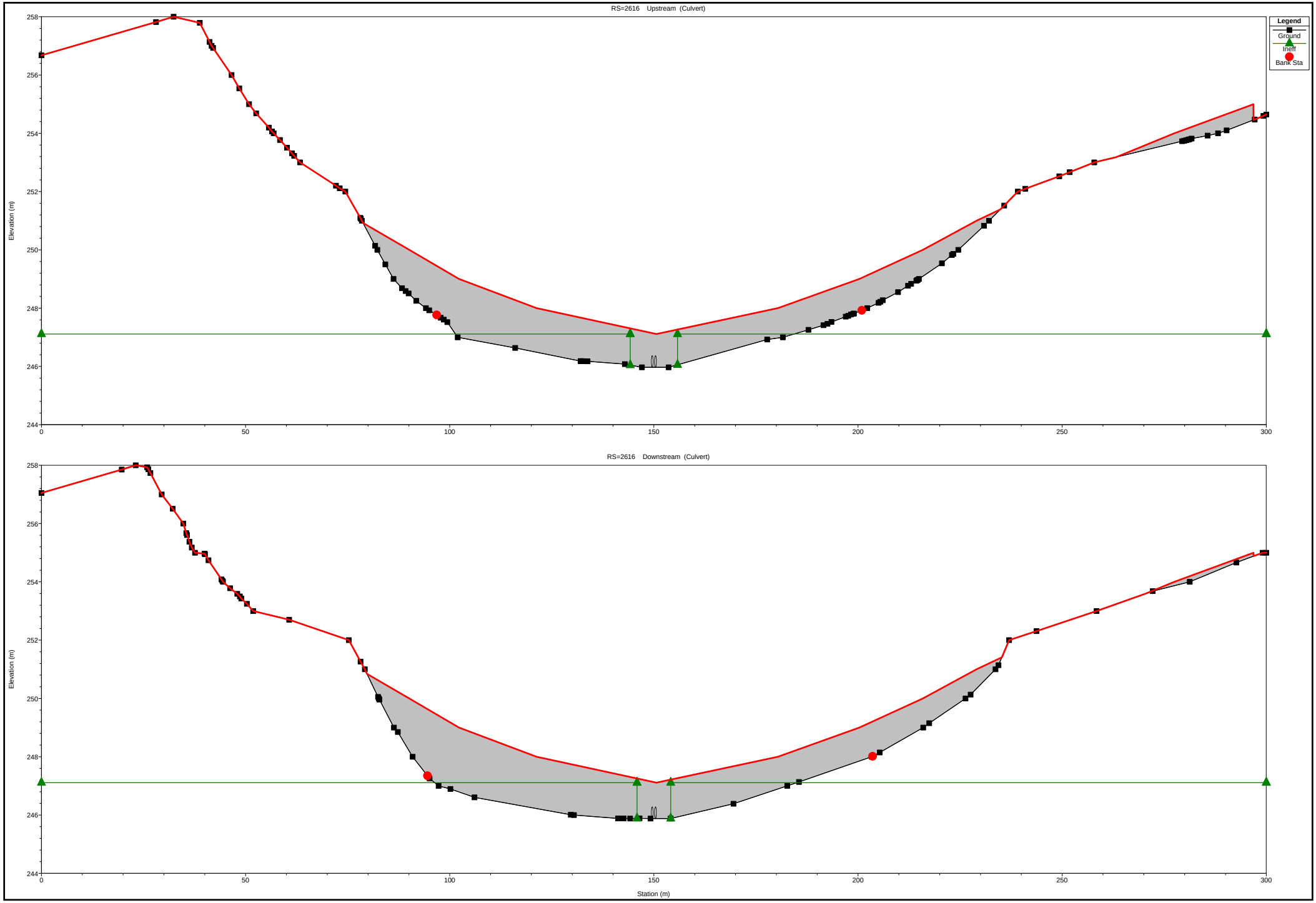

RS=5617 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
270
269
268
267
266
265
264
263
262
0
100
200
300
400
RS=5617 Downstream (Culvert)
Elevation (m)
Station (m)


RS=6878 Upstream (Culvert)
Legend
Ground
Levee
Ineff
Bank Sta
Elevation (m)
276.0
275.5
275.0
274.5
274.0
273.5
273.0
0
100
200
300
400
500
RS=6878 Downstream (Culvert)
Elevation (m)
276.0
275.5
275.0
274.5
274.0
273.5
273.0
0
100
200
300
400
500
Station (m)

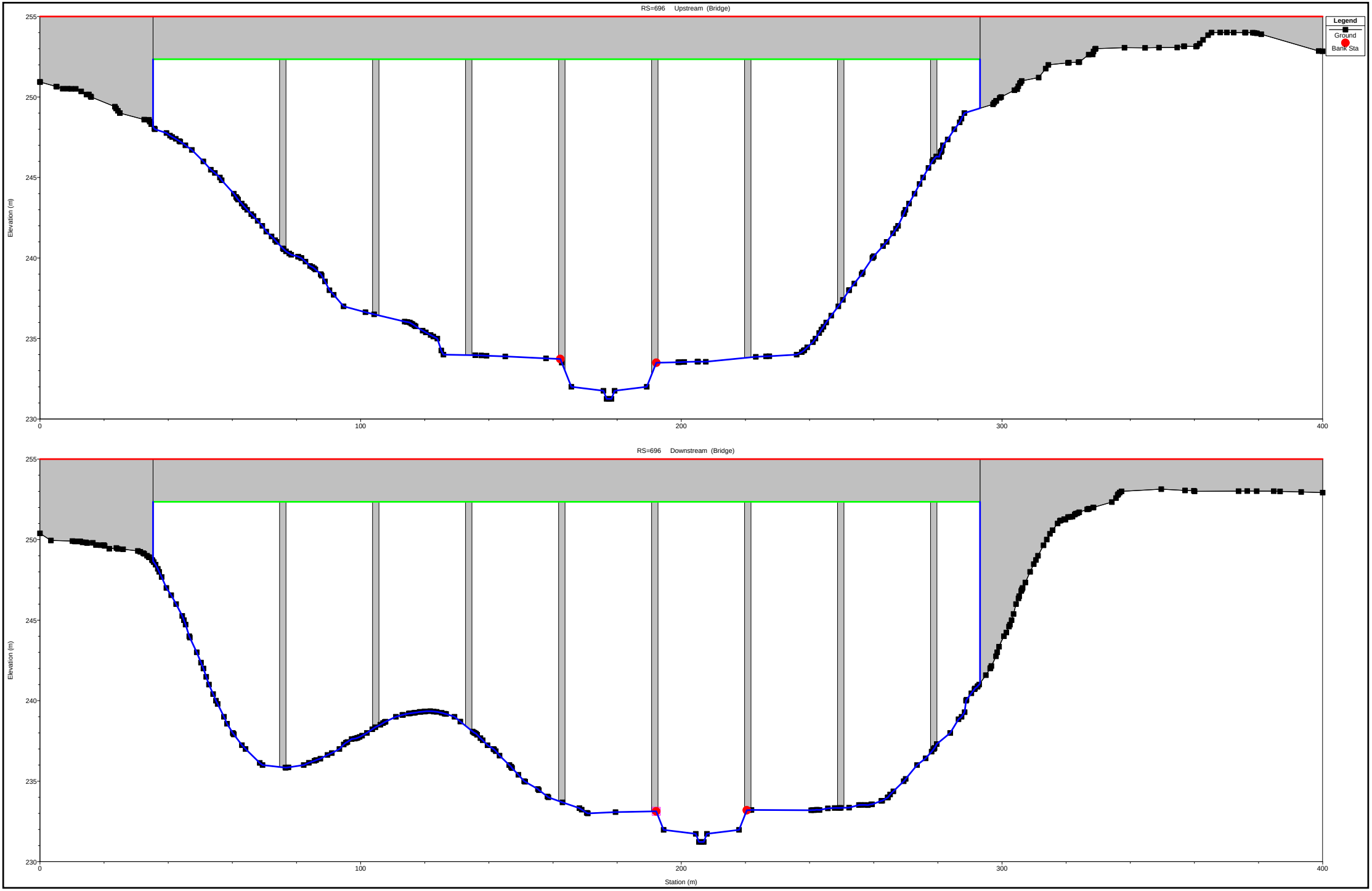

RS=1193 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
248
246
244
242
240
238
236
0
50
100
150
200
RS=1193 Downstream (Culvert)
Elevation (m)
248
246
244
242
240
238
236
0
50
100
150
200
Station (m)

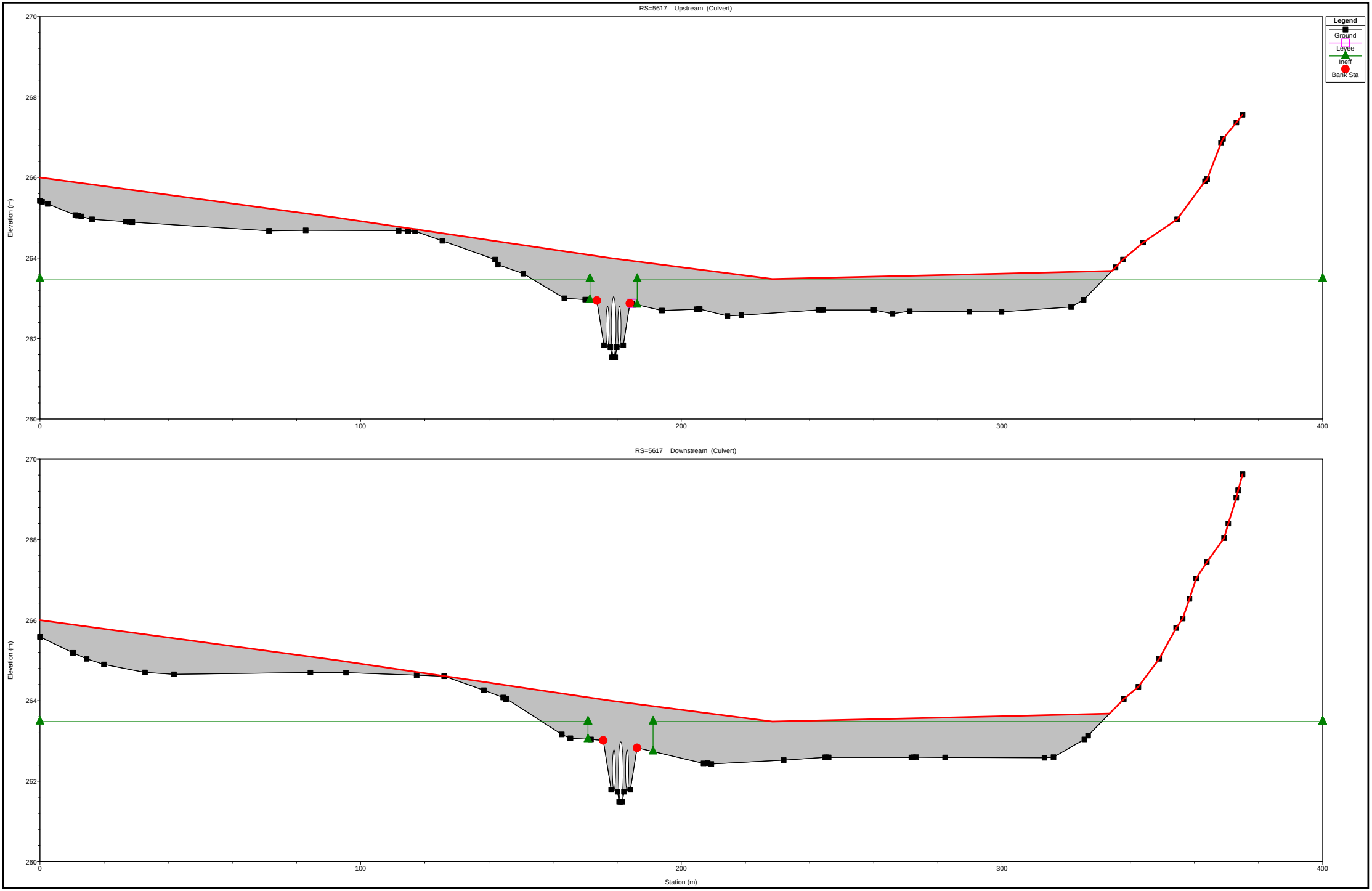

RS=1613 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
248
246
244
242
240
238
0
50
100
150
200
RS=1613 Downstream (Culvert)
Elevation (m)
Station (m)

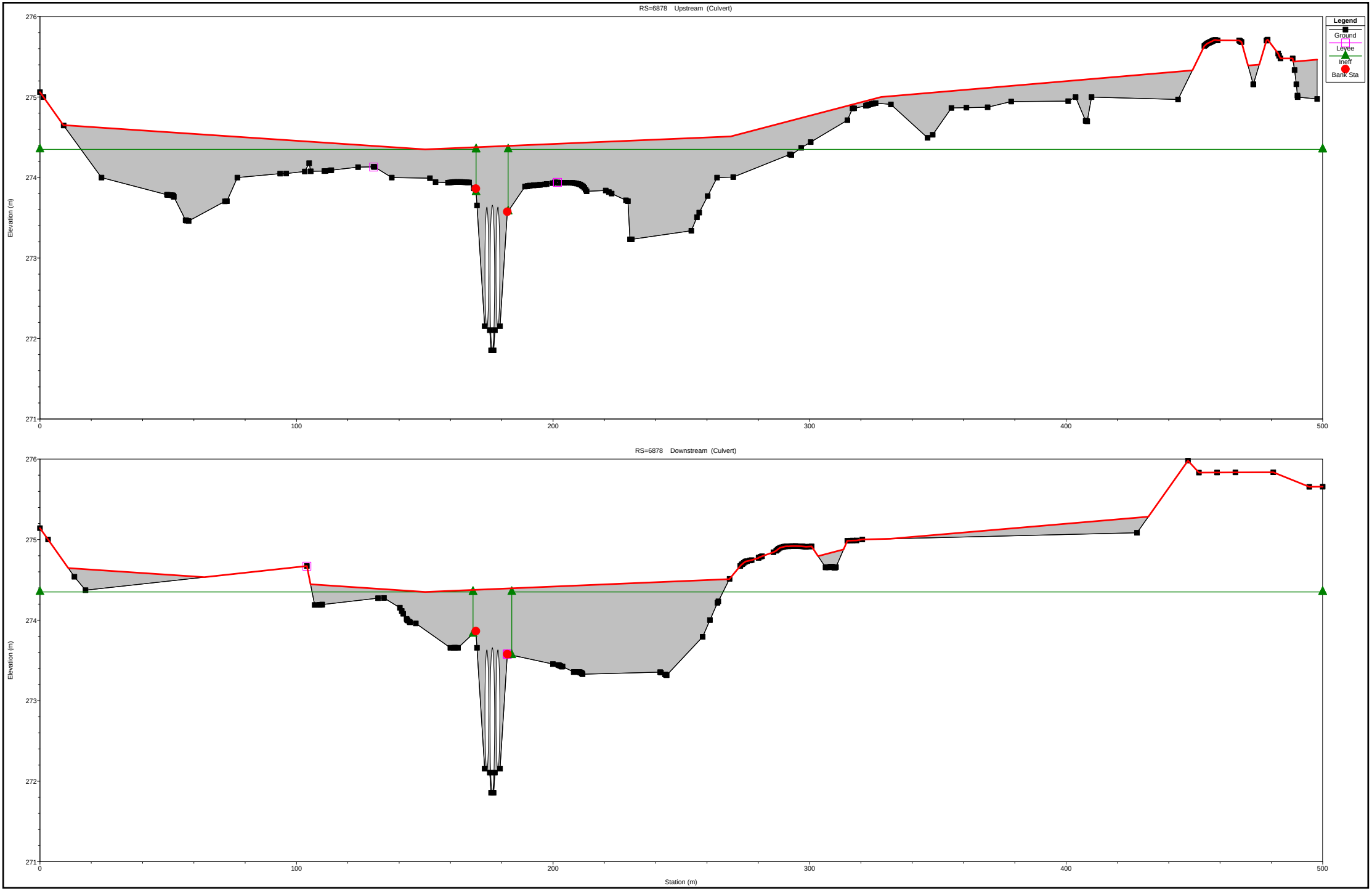

RS=2371 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
254
252
250
248
246
244
0
50
100
150
200
250
300
RS=2371 Downstream (Culvert)
Elevation (m)
Station (m)

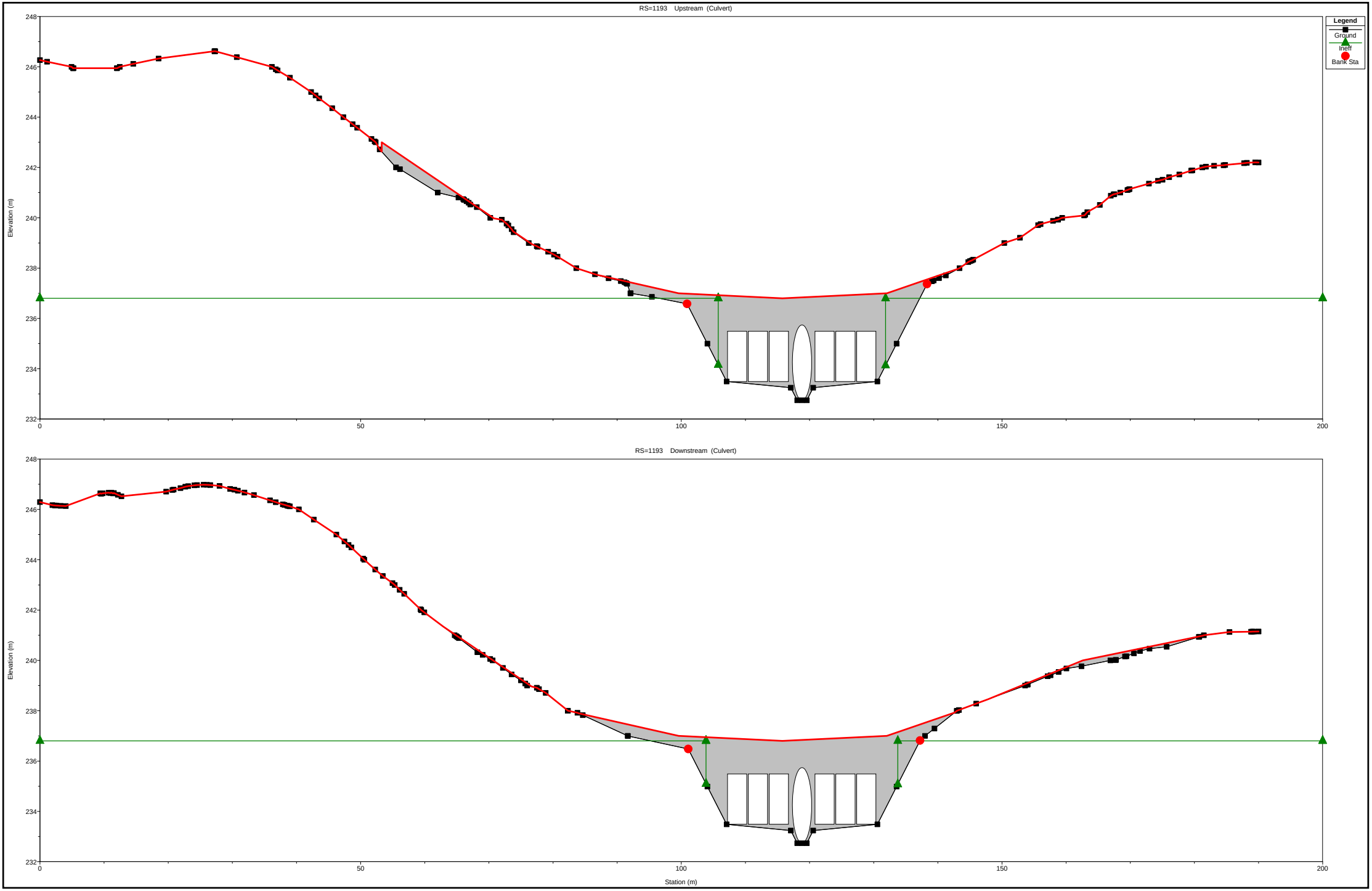

RS=2616 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
258
256
254
252
250
248
246
244
0
50
100
150
200
250
300
RS=2616 Downstream (Culvert)
Elevation (m)
Station (m)

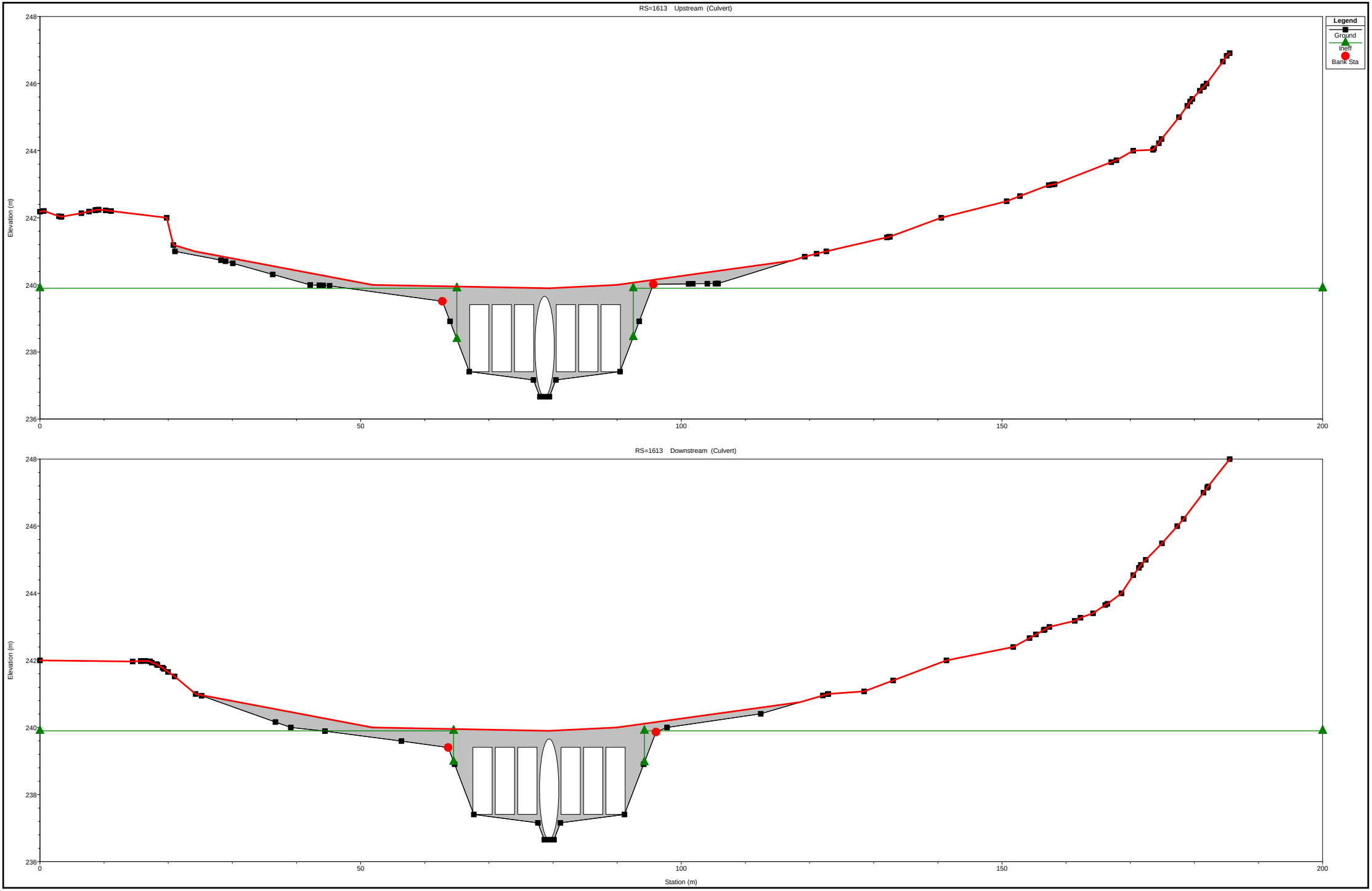
CRUCES MODIFICADOS

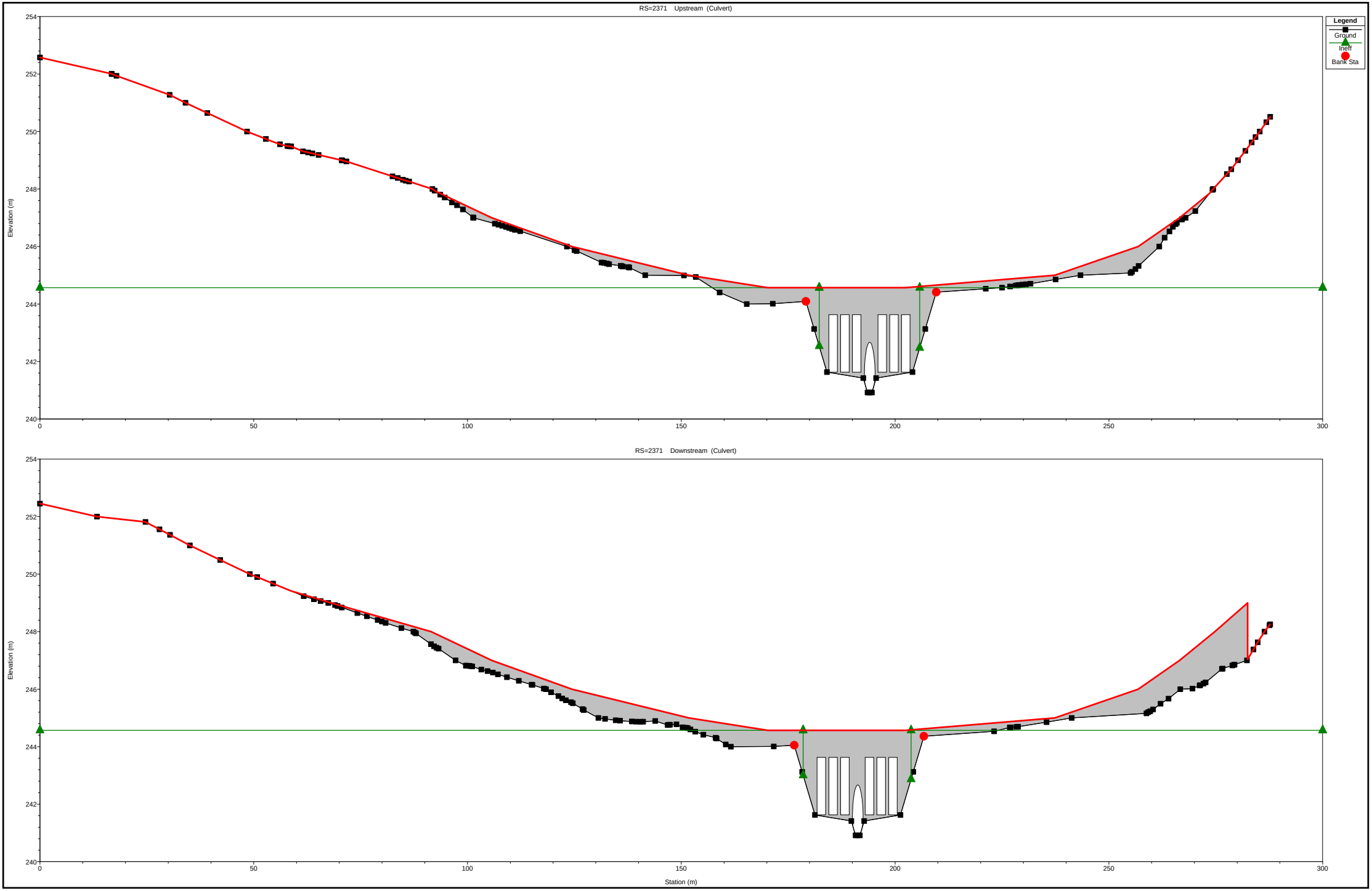

RS=696 Upstream (Bridge)
Legend
Ground
Bank Sta
Elevation (m)
255
250
245
240
235
230
0
100
200
300
400
RS=696 Downstream (Bridge)
Elevation (m)
Station (m)

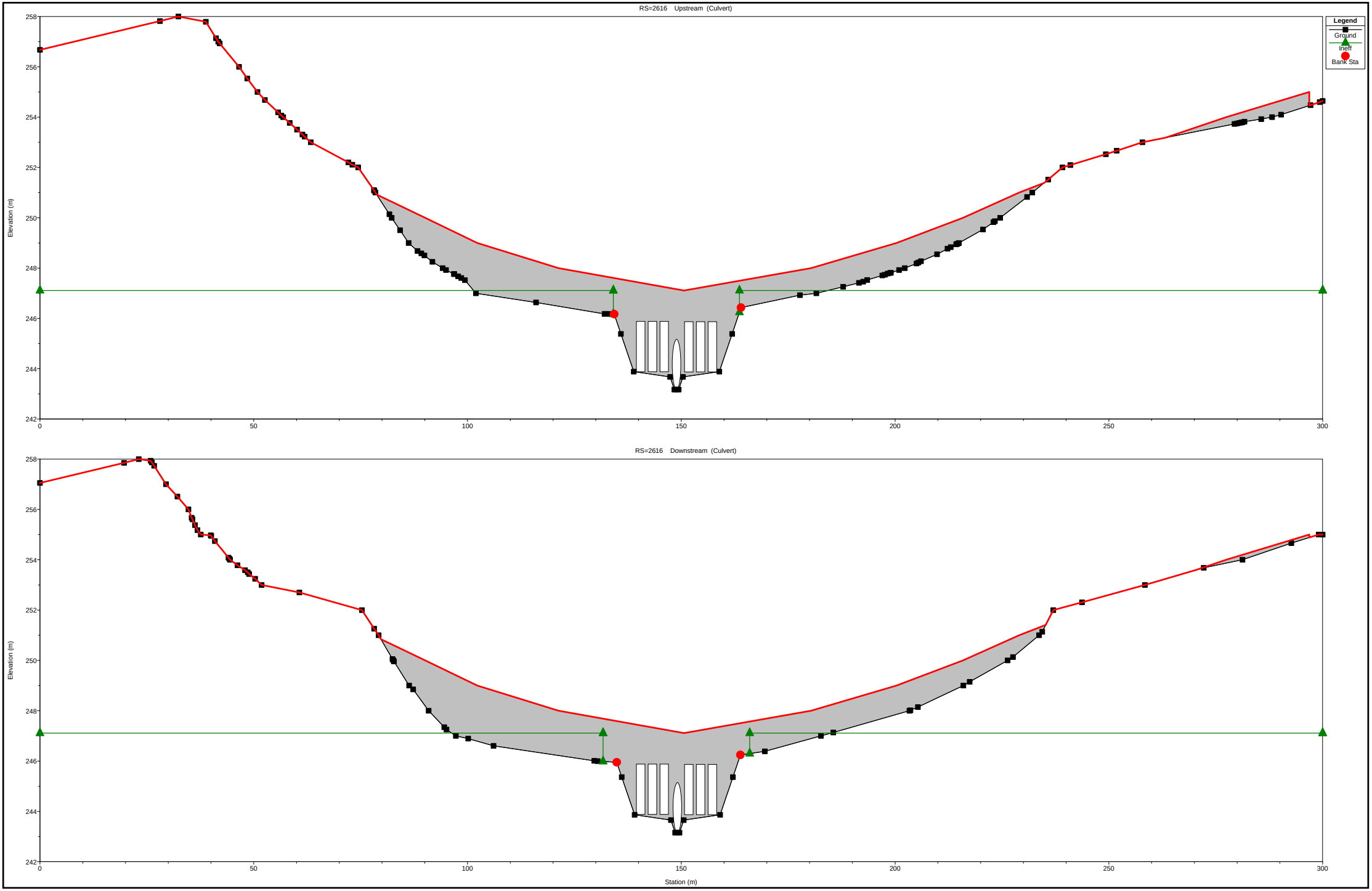

RS=5617 Upstream (Culvert)
Legend
Ground
Levee
Ineff
Bank Sta
Elevation (m)
270
268
266
264
262
260
0
100
200
300
400
RS=5617 Downstream (Culvert)
Elevation (m)
Station (m)


RS=6878 Upstream (Culvert)
Legend
Ground
Levee
Ineff
Bank Sta
Elevation (m)
276
275
274
273
272
271
0
100
200
300
400
500
RS=6878 Downstream (Culvert)
Elevation (m)
Station (m)


RS=1193 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
248
246
244
242
240
238
236
234
232
0
50
100
150
200
RS=1193 Downstream (Culvert)
Elevation (m)
248
246
244
242
240
238
236
234
232
0
50
100
150
200
Station (m)


RS=1613 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
248
246
244
242
240
238
236
0
50
100
150
200
RS=1613 Downstream (Culvert)
Elevation (m)
248
246
244
242
240
238
236
0
50
100
150
200
Station (m)


RS=2371 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
254
252
250
248
246
244
242
240
0
50
100
150
200
250
300
RS=2371 Downstream (Culvert)
Elevation (m)
Station (m)


RS=2616 Upstream (Culvert)
Legend
Ground
Ineff
Bank Sta
Elevation (m)
258
256
254
252
250
248
246
244
242
0
50
100
150
200
250
300
RS=2616 Downstream (Culvert)
Elevation (m)
Station (m)