

INDIVIDUAL HYDROLOGIC & HYDRAULIC ASSESSMENT (IHHA) REPORT

Site Name/Facility: Auburn Creek Channel

Master Program Map No.: Maps 70 and 76

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Executive Summary:

This Individual Hydrologic and Hydraulic Assessment (IHHA) report, and the corresponding analyses, concludes that vegetation and sediment removal from portions of the Auburn Creek Channel, mapped in the Master Maintenance Program (MMP) Maps 70 and 76, will affect the capacity as follows:

- Reach 1 (HEC-RAS Cross Sections 4.590 to 141.507) MMP Map 76 – Sediment and vegetation maintenance increase the capacity of the channel from a 25-year storm event to a 100-year storm event.
- Reach 2 (HEC-RAS Cross Section 141.507 to 925.442) MMP Map 76 – Not proposed for maintenance. The capacity of Reach 2 increases to 100-year capacity in the recommended maintenance condition, even though maintenance of Reach 2 is not included in the Recommended Maintenance Condition.
- Reach 3 (HEC-RAS Cross Section 925.442 to 2161.775) MMP Map 70 – Clear of sediment or vegetation. Not proposed for maintenance.
- Reach 4 (HEC-RAS Cross Sections 2161.775 to 2916.303) MMP Map 70 – Not proposed for maintenance. Reach 4 has 100-year capacity in the existing condition.
- Reach 5 (HEC-RAS Cross Sections 2916.303 to 3283.479) MMP Map 70 – Sediment and vegetation maintenance maintains a 25-year storm event capacity from the Current Condition to the Recommended Maintenance Condition.

Reach 4 has 100-year capacity in the current condition and the velocities in Reach 4 are not affected by the maintenance in the surrounding reaches. It should be noted that Reach 4 has erosive velocities that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 5.17 fps (Cross-Section 2709.054) to a maximum of 10.59 fps (Cross-Section 2916.303). However, this is seen in the current condition and is not exacerbated in this Recommended Maintained Condition. It is recommended that appropriate erosion control be implemented to address the current erosive velocities in Reach 4.

The extent of Auburn Creek Channel MMP Map 70 and 76 is from HEC-RAS Cross Section 4.590 to 3283.479 as shown in the Hydraulic Workmap located in Attachment 3.

Auburn Creek Channel MMP Maps 70 and 76 is a concrete and earthen lined, rectangular and trapezoidal channel that has sediment deposition and vegetation establishment through its reach. The Auburn Creek Channel MMP Map 76 includes Reach 1 and Reach 2 bound at the downstream end by Spillman Drive, and upstream by Interstate 805. The Auburn Creek Channel MMP Map 70 includes Reaches 3, 4 and 5, and is bound at the downstream end by Interstate 805, and upstream by a double 74-inch diameter concrete pipe culvert approximately 290 feet (ft) upstream of Fairmount Avenue. The approximate length of Auburn Creek Channel

MMP Map 70 and 76 is 1,520-ft and 960-ft., respectively. The proposed area of maintenance is Reach 1 (MMP Map 76) and Reach 5 (MMP Map 70).

It was observed that Reach 3 contains various sections of broken and undermined gunite rip rap and concrete side slopes. It is recommended that these portions be repaired to prevent dislodging of the concrete and gunite pieces and potential clogging of downstream culverts or side slope failure. These sections of broken concrete have the potential to cause an emergency, however are currently at low risk for causing an emergency

It should be noted that Reach 2 and 4 contain dense arundo with heights that extend above the channel bank elevations. In these areas the arundo above the channel bank can be maintained, such that the height of the arundo is trimmed down to the channel bank elevation, without affecting the hydraulics of the Recommended Maintenance Condition.

Introduction:

The City of San Diego developed the Master Storm Water System Maintenance Program to optimize its business processes and environmental protection practices related to channel operation and maintenance activities. The MMP is intended to integrate operation and maintenance planning, implementation and assessment activities with its water quality protection programs. This document provides a summary of the IHHA activities conducted within Auburn Creek Channel MMP Maps 70 and 76; within the City of San Diego (reference point 32°43'35.28"N; 117°6'2.29"W, Latitude and Longitude), near the intersection of I-805 and Home Avenue, south of Home Avenue.

Based on the IHHA assessment, portions of Auburn Creek Channel MMP Maps 70 and 76 are subject to sediment deposition and vegetation establishment. The establishment of vegetation in the deposited material contributes to the reduction in velocities, and in turn encourages more sediment to deposit. Maintenance will not resolve all of the flooding issues within Auburn Creek Channel MMP Map 70 and 76, but will significantly assist in reducing the flood event occurrence frequency by increasing the capacity of the channel.

The following sections of this IHHA will describe in detail the analysis and results following channel conditions: current vegetated condition, ultimate vegetated condition, maintained condition-vegetation only, maintained condition – sediment and vegetation, and recommended maintenance condition – partial sediment and vegetation removal.

EXISTING CONDITIONS

Description of creek/channel (limits of reach, surrounding land use and area, creek/channel geometry and vegetative condition):

Auburn Creek Channel MMP Maps 70 and 76 is a drainage channel, located within the City of San Diego south of Home Avenue near the intersection with Interstate 805. Auburn Creek Channel MMP Map 70 begins approximately 290-ft. upstream of Fairmount Avenue at the outlet of a double 74-inch diameter concrete pipe culvert. From there an earthen bottom, concrete side slope channel flows in a south-westerly direction crossing underneath Fairmount Avenue through a double 6-ft. wide by 6-ft. high box culvert, then into an earthen channel with one concrete side slope, then into an concrete channel, underneath Interstate 805 through a double 6-ft. wide by 7-ft. high box culvert, and downstream in an earthen channel to the upstream side of the triple 6-ft. wide by 6-ft. high box culvert under Spillman Drive. Auburn Creek Channel continues downstream as part of the Home Avenue Branch of Las Chollas Creek. The Home Avenue Branch confluences with Las Chollas Creek at State Route 94, and ultimately discharges into the San Diego Bay. See Attachment 2 – Vicinity Map for a general project area.

For the purposes of the study, the channel within the area of study has been divided into five reaches: Reach 1, Reach 2, Reach 3, Reach 4, and Reach 5. The five reaches of Auburn Creek Channel study limits have been identified as:

- Reach 1 (HEC-RAS Cross Sections 4.590 to 141.507)
- Reach 2 (HEC-RAS Cross Sections 141.507 to 925.442)

- Reach 3 (HEC-RAS Cross Section 925.442 to 2161.775)
- Reach 4 (HEC-RAS Cross Section 2161.775 to 2916.303)
- Reach 5 (HEC-RAS Cross Sections 2916.303 to 3283.479)

The limits of these Reaches are identified in the hydraulic work maps located in Attachment 3. Unless otherwise stated in the descriptions below, it is the responsibility of the City of San Diego to maintain the channel reaches within their jurisdictional boundaries as identified in the hydraulic work map.

The following text discusses the limits and configuration of each Reach:

Reach 1: (HEC-RAS Cross Sections 4.590 to 141.507) MMP Map 76

Reach 1 is bound from the downstream end by an existing triple 6-ft. wide by 6-ft. high box culvert under Spillman Drive and extends approximately 150-ft. upstream. Reach 1 is earthen and trapezoidal through the reach, having a bottom width of approximately 15-ft., a minimum depth of approximately 11-ft., a grouted rip-rap southern side slope of 1.5-ft. horizontal to 1-ft. vertical (1.5H:1V), and an earthen northern side slope of 1.5H:1V. The dimensions of the channel were determined during the site visit performed on February 3, 2017, in conjunction with the cross sectional geometry based on 2014 LIDAR contours. As observed during the site visit performed on February 3, 2017, Reach 1 contains approximately 1 ft. of sediment deposition. The existing downstream 6-ft. wide by 6-ft. high box culvert under Spillman Drive is approximately 50% clogged by trash, debris, and sediment.

Reach 2: (HEC-RAS Cross Sections 141.507 to 925.442) MMP Map 76

The downstream end of Reach 2 is the upstream end of Reach 1. Reach 2 extends approximately 780-ft. upstream to the downstream end of a double 7-ft. by 6-ft. reinforced concrete box (RCB) culvert that extends beneath Interstate 805. Reach 2 is earthen and trapezoidal through the reach, having a bottom width of approximately 12 to 22-ft., a minimum depth of approximately 11-ft., and side slopes of 1.5H:1V. Please note, as-builts for Reach 2 of the Auburn Creek Channel were not available at the time this IHHA was prepared, the dimensions of the channel were determined during the site visit performed on February 3, 2017, in conjunction with the cross sectional geometry based on 2014 LIDAR contours. As observed during the site visit performed on February 3, 2017, Reach 2 contains dense vegetation and areas of sediment deposition. Reach 2 is not proposed for maintenance.

Reach 3: (HEC-RAS Cross Sections 925.442 to 2161.775) MMP Map 70

Reach 3 is bound at the downstream end by a double 7-ft. by 6-ft. reinforced concrete box (RCB) culvert that extends beneath the 805 freeway, and extends upstream approximately 365-ft. to a transition in channel lining from concrete to earthen. Pursuant to As-Built plan sheet 12728-2-L for Home Avenue in Valle Granado, Prepared by Byrl Phelps, December 11, 1956, Reach 3 is entirely concrete and trapezoidal, having a bottom width of 12-ft., depth of 6-ft. and side slopes of 1.5H:1V. As observed during the site visit performed on February 3, 2017, Reach 3 contains sparse amounts of sediment and vegetation throughout the channel reach. Small patches of vegetation have broken through the concrete and are located on the channel bottom. There are also small portions of vegetation that have overgrown from outside of the channel banks and lay on the side slopes of the channel. Please note the as-builts for the double RCB that extends beneath the 805 freeway were not available at the time this IHHA was prepared, the dimensions of the double RCB were determined during the site visit performed on February 3, 2017. Reach 3 is not proposed for maintenance.

Reach 4: (HEC-RAS Cross Sections 2161.775 to 2916.303) MMP Map 70

The downstream limit of Reach 4 is the upstream limit of Reach 3, the transition in channel lining from concrete to earthen. Reach 4 extends upstream for approximately 765 ft. and is bound by the downstream end of a double 6-ft. wide by 6-ft. high RCB that extends beneath Fairmount Avenue. Reach 4 is an earthen channel on the bottom and left side slope (looking downstream), and concrete lined on the right side slope (looking downstream); however, most of the concrete has been destroyed by thick vegetation and trees. Pursuant to As-Built plan sheet 12728-2-L for Home Avenue in Valle Granado, Prepared by Byrl Phelps, December 11, 1956, the channel has a trapezoidal geometry with a bottom width of 12 ft., depth of 6 ft. and side slopes of 1.5 ft. horizontal to 1 ft. vertical. As observed during the site visit performed on February 3, 2017, Reach 4 contains dense vegetation in the earthen portions of the channel. Please note the As-Builts for the double RCB that extends beneath Fairmount Boulevard were not available at the time this IHHA was prepared, the dimensions of

the double RCB were determined during the site visit performed on February 3, 2017. Reach 4 is not proposed for maintenance.

Reach 5: (HEC-RAS Cross Sections 2916.303 to 3283.479) MMP Map 70

The downstream limit of Reach 5 is the upstream limit of Reach 4, the downstream end of the double 6-ft. wide by 6-ft. high RCB that extends beneath Fairmount Avenue. Reach 5 extends approximately 370 ft. upstream and is bound by a double, 74-inch concrete pipe culvert. Reach 5 is a trapezoidal channel with an earthen bottom. The RCB culvert beneath Fairmount Avenue is approximately 100-ft. long. The downstream most 140-ft. of the channel portion of Reach 5 consists of a concrete side slope on the right (looking downstream), and a shotcrete side slope on the left (looking downstream). The remaining 130-ft. upstream consists of a right (looking downstream) concrete side slope and a vegetated left (looking downstream) side slope. Pursuant to As-Built plan sheet 12728-2-L for Home Avenue in Valle Granado, Prepared by Byrl Phelps, December 11, 1956, the channel geometry consists of a bottom width of 12-ft., depth of 6-ft. and side slopes of 1.5H:1V. The channel appears to be relatively free of vegetation but standing water was observed at the outlet of the double, 74-inch concrete pipe culvert where erosion has occurred. Reach 5 is proposed for sediment and vegetation maintenance.

Hydrologic information (source of hydrologic information, summary of flow rates and return frequencies):

Auburn Creek Channel MMP Maps 70 and 76 is Federal Emergency Management Agency (FEMA) mapped, as seen in the FEMA Firmette and FEMA Flood Insurance Study (FIS) dated May 16, 2016 located in Attachment 6. The hydrologic information used for the Auburn Creek Channel analysis is based on the FEMA’s 2016 FIS for San Diego County. The FIS provided the 10-, 50-, and 100-year flow rate information for the Home Avenue Branch at Las Chollas Creek. This flow rate information was then plotted on log-probability paper to determine a flow rate distribution. From this flow rate distribution, flow rates were determined and equated to a return frequency storm event. See Attachment 6 for a copy the log-probability paper used to extrapolate the return frequency storm events. Table 1 below shows extrapolated and 2016 San Diego FIS Flow Rates:

Table 1: Flow Rates

Storm Event	Q (cfs)	Source
2-Year	120	Extrapolated
5-Year	290	Extrapolated
10-Year	430	2016 San Diego FIS
25-Year	630	Extrapolated
50-Year	950	2016 San Diego FIS
100-Year	1,200	2016 San Diego FIS

Notes:

- 1) cfs = cubic ft. per second
- 2) Noted flowrates were extrapolated from the 2016 FEMA FIS using a log-probability relationship

Hydraulic analyses (description of hydraulic models created for project):

The US Army Corps of Engineers Hydraulic Engineering Center River Analysis System (HEC-RAS) Version 4.1.0 was used to analyze the hydraulic characteristics of Auburn Creek Channel. HEC-RAS has the ability to perform one-dimensional hydraulic calculations for natural and engineered channels, by utilizing the energy equation and the momentum equation. For the purposes of this project, all HEC-RAS modeling was performed using a mixed flow regime.

Hydraulic modeling was prepared for four channel conditions that consist of the Current Vegetated Condition, Ultimate Vegetated Condition, Maintained Condition – Vegetation Only, and Maintained Condition – Sediment and Vegetation removed. All of the analyses are based on the 2014 Lidar data for the City of San Diego, 2-ft. contour topographic information. The topography and the hydraulic modeling performed for Auburn Creek Channel are all on the North American Vertical Datum of 1988 (NAVD 88).

The downstream limit of Auburn Creek Channel MMP Maps 70 and 76 is an existing triple 6-ft. wide by 6-ft. high box culvert under Spillman Drive. The box culverts were observed to be 50% clogged by trash, sediment, and debris. In order to determine the downstream boundary conditions for Auburn Creek Channel, the headwater depth for the triple box culvert was analyzed utilizing the FHWA HDS-Method through the CulvertMaster program for the 2-, 5-, 10-, 25-, 50-, and 100-year storm event. The 50% clogging factor was applied by decreasing the culvert size by half (6-ft. by 3-ft.). The headwater depths were then added to the current channel elevation upstream of the culvert to account for current sediment accumulation. The headwater depths associated with the 50% clogging factor were applied to the Current Vegetated, Ultimate Vegetated, and Maintained Condition – Vegetation only HEC-RAS models. The downstream boundary condition for the Maintained Condition – Sediment and Vegetation HEC-RAS model was based on the headwater depths calculated through Culvert Master for the as-built condition existing triple 6-ft. wide by 6-ft. high box culvert under Spillman Drive. Starting WSEs are summarized in Table 2 below:

Table 2: HEC-RAS Starting WSELs*

Hydraulic Model	Storm Event					
	2-Year (ft.)	5-Year (ft.)	10-Year (ft.)	25-Year (ft.)	50-Year (ft.)	100-Year (ft.)
Current Vegetated	110.11	112.51	113.56	115.98	121.86	128.11
Ultimate Vegetated	110.11	112.51	113.56	115.98	121.86	128.11
Maintained Condition- Vegetation Only Removal	110.11	112.51	113.56	115.98	121.86	128.11
Maintained Condition- Sediment and Vegetation Removal	109.49	111.05	112.10	113.43	115.28	116.59

*At inlet of existing triple 6-ft. wide by 6-ft. high box culvert under Spillman Drive
Elevations are on the NGVD 29 datum
WSEL = Water Surface Elevation

As-builts for the channel were gathered and referenced, when applicable, for the various models created. Table 3 below, lists the as-builts utilized for the Auburn Creek Channel. See Attachment 5 for as-built plans.

Table 3: As-Built Plans

Plan Number	Reach	Description
12728-L, Sheet 2	Reach 3 through 5	Plans For the Improvement of Home Avenue in Valle Granado, City of San Diego, As Built December 11, 1956. Engineer of work Byrl Phelps.
3706-D	Reach 1	Melissa Park Spillman Drive

The following provides general descriptions of hydraulic analyses/models that were prepared for this area of study:

Current Vegetated Condition:

The hydraulic analysis for the Current Vegetated Condition was created to reflect the current vegetation of the channel and determine the actual channel capacity. A field visit was performed on February 3, 2017 to determine and evaluate: the Manning’s Roughness Coefficients, channel conditions, and channel properties within Auburn Creek Channel to include in the model for the Current Vegetated Condition.

Based on the site visit, 2014 Lidar topography, and as-built plans, the following factors for each reach were all incorporated into the Current Vegetated Condition model:

Reach 1:

As observed during the site visit performed on February 3, 2017, Reach 1 contains extensive sediment as well as cobbles along the bottom of the channel. These areas received a Manning's Roughness Coefficient of 0.035 to 0.045 for cobbles and vegetated side slopes, respectively. The inlet of the existing triple 6-ft. wide by 6-ft. high box culvert is 50% blocked by accumulated sediment, trash, and extracted vegetation. Gunite covered rip rap was placed on the left side slope (looking downstream) of the channel curvature and received a Manning's Roughness Coefficient of 0.039.

Reach 2:

As observed during the site visit performed on February 3, 2017, the upstream end of Reach 2 contains dense invasive vegetation such as arundo and palm trees along with large rip rap and cobbles dispersed from flow leaving the existing upstream double 7-ft. wide by 6-ft. high box culvert underneath Interstate 805. These areas received a Manning's Roughness Coefficient of 0.08 to 0.10 for dense vegetation, and 0.035 to 0.045 for cobbles and rip rap, respectively. Downstream, Reach 2 consists primarily of the same invasive vegetation as well as areas of cobbles and erosion. Channel sections with erosion were observed to have fine sediment and received a coefficient of 0.025 to reflect clean earth with no vegetation. Channel side slopes go from densely vegetated upstream to medium density vegetation in the downstream half of the channel and received Manning's Roughness Coefficients of 0.04 to 0.05.

Reach 3:

Reach 3 consists of an entirely concrete lined trapezoidal channel. As observed during the site visit performed on February 3, 2017, Reach 3 is clean of both sediment and vegetation. The concrete side slopes and channel bottom received a Manning's Roughness Coefficient of 0.018. Side slopes outside of the concrete channel consist of low density vegetation and received a Manning's Roughness Coefficient of 0.04.

Reach 4:

Reach 4 extends upstream for approximately 765 ft. and is bound upstream by a double 6-ft. by 6-ft. RCB that extends beneath Fairmount Avenue. As observed during the site visit on February 3, 2017, the upstream portion of Reach 4 has an earthen bottom, a concrete northwest side slope, and a densely vegetated and rip rap lined southeast side slope. The channel bottom at the outlet of the double box culvert is marked by as much as 3-ft. of erosion directly downstream of the culvert apron. Areas of erosion received a Manning's Roughness coefficient of 0.030. The concrete side slope received a Manning's Roughness Coefficient of 0.018 and the rip rap and densely vegetated side slope received a Manning's Roughness Coefficient of 0.10. The concrete lined northwestern side slope along the remaining downstream portion of Reach 4 has been destroyed by thick vegetation and trees and received a Manning's Roughness Coefficient of 0.10. The bottom of the channel is earthen with cobbles and received a Manning's Roughness Coefficient of 0.025 to 0.035. The southeastern side slope is densely vegetated and received a Manning's Roughness Coefficient of 0.10.

Reach 5:

As observed during the site visit February 3, 2017, approximately the upstream half of Reach 5 consists of a concrete lined northwest side slope, earthen bottom with cobbles, and medium vegetated and rip rap lined southeast side slope. Manning's Roughness Coefficients were assigned as 0.018, 0.035, and 0.045, respectively. The downstream half of Reach 5 is the same as the upstream portion with the exception of the gunite covered rip rap southeast side slope which received a Manning's Roughness Coefficient of 0.039. Reach 5 has been recently maintained and does not exhibit excessive sedimentation or vegetation growth.

See the site photos in Attachment 1 for a visual on the site visit observations and determinations listed above.

Ultimate Vegetated Condition:

The hydraulic analysis for the Ultimate Vegetated Condition was created to reflect the ultimate vegetation of the channel and determine the ultimate channel capacity. The Ultimate Vegetated Condition reflects dense vegetation throughout the entire channel reach, which assumes that in absence of maintenance, the vegetation

that currently exists in the channel will become denser. This dense vegetation will reduce velocities. The slower velocities will cause sediment to drop out and ultimately cause deposition and vegetation throughout the channel reach, including the fully concrete lined portions. The vegetation will further decrease the capacity of the channel and potentially cause flooding to occur more frequently. The following factors were incorporated into the Ultimate Vegetation Condition model:

Reach 1:

A Manning's Roughness Coefficient of 0.15 was used to represent the earthen bottom and the side slopes, as the reach contains sediment throughout. The Manning's Roughness Coefficient for the gunite left side slope (looking downstream) remained a 0.039.

Reach 2:

A Manning's Roughness Coefficient of 0.15 was used to represent the earthen bottom and the side slopes, as the reach contains dense vegetation and sediment throughout.

Reach 3:

Since Reach 3 was relatively clear of sediment or vegetation, the concrete side slopes and channel bottom retained a Manning's Roughness Coefficient of 0.018.

Reach 4:

A Manning's Roughness Coefficient of 0.15 was used to for the earthen bottom and the southeast rip rap side slope. The northwest concrete side slope retained a Manning's Roughness Coefficient of 0.018, except in portions of Reach 3 where dense vegetation had destroyed the concrete, in which case a Manning's Roughness Coefficient of 0.15 was used.

Reach 5:

A Manning's Roughness Coefficient of 0.15 was used to represent the earthen bottom in Reach 5. The rip rap side slope on the southeast side of the reach was also assigned a Manning's Roughness Coefficient 0.15. The concrete side slope on the northwest side of the reach retained a Manning's Roughness of 0.018, except in portions where vegetation was present, in which case a Manning's Roughness Coefficient of 0.15 was used.

Additional Note: For the Ultimate Vegetated Condition model prepared, it is important to note that the Manning's Roughness Coefficients for the portions of the cross sections outside of the reach limits of the channel were kept the same as the current vegetated condition.

Maintained Condition-Vegetation Only (No sediment removed):

The hydraulic analysis for the Maintained-Vegetation Only Condition was created to reflect a maintained channel with vegetation removal only to determine the channel capacity. This Maintained condition-vegetation only (no sediment removed) assumes vegetation-only maintenance of the channel. This maintained condition models vegetation currently along the length of the channel to be cut down to just above the sediment level.

Reach 1:

A Manning's Roughness Coefficient of 0.035 was used for the entirety of the earthen cross sections of the reach. The Manning Roughness Coefficient for the gunite left side slope (looking downstream) remained a 0.039. HEC-RAS cross section 925.442 consists of rip rap side slopes and channel bottom; therefore the section was assigned a Manning's Roughness Coefficient of 0.054.

Reach 2:

A Manning's Roughness Coefficient of 0.035 was used for the entirety of the earthen cross sections of the reach. HEC-RAS cross section 925.442 consists of rip rap side slopes and channel bottom; therefore the section was assigned a Manning's Roughness Coefficient of 0.054.

Reach 3:

Portions of the reach that were clear of vegetation and sediment maintained a Manning's Roughness Coefficient of 0.018.

Reach 4:

At the border between Reach 3 and 4, HEC-RAS cross section 2161.775 was assigned a Manning's Roughness Coefficient of 0.035, for the earthen southerly side slope and channel bottom; the concrete lined northerly side slope was assigned a Manning's Roughness Coefficient of 0.018. A Manning's Roughness Coefficient of 0.035 was used for the earthen bottom and the southeast side slope. The northwest concrete side slope retained a Manning's Roughness Coefficient of 0.018, except in portions of Reach 3 where dense vegetation and sediment had destroyed the concrete, in which case a Manning's Roughness Coefficient of 0.035 was used to account for the removal of vegetation.

Reach 5:

A Manning's Roughness Coefficient of 0.035 was used to represent the earthen bottom. The rip rap side slopes on the southeast side of the reach were assigned a Manning's Roughness Coefficient 0.054. The concrete side slope on the northwest side of the reach retained a Manning's Roughness of 0.018, except in portions where vegetation was present, in which case a Manning's Roughness Coefficient of 0.035 was used.

Additional Note: For the Maintained Condition-Vegetation Only (No sediment removed) model prepared, it is important to note that the Manning's Roughness Coefficients for the portions of the cross sections outside of the reach limits of the channel were kept the same as the current vegetated condition.

Maintained Condition-Sediment and Vegetation removed:

In addition to the vegetation-only maintenance, a Maintained Condition was also prepared to model the removal of sediment and vegetation that has deposited over the years, based on review of as-built information, 2014 Lidar topographic information and field reconnaissance. This maintained condition models no vegetation and no sediment deposition along the length of the channel.

Reach 1:

Pursuant to as-built sheet 3706-D titled "Melissa Park Spillman Drive", dated August 16, 1957, Reach 1 was restored to a trapezoidal profile with rip rap side slopes and an earthen bottom. The earthen portions of Reach 1 were assigned a Manning's Roughness Coefficient of 0.03, while the rip rap side slopes were assigned a Manning's Roughness Coefficient of 0.049. The Manning Roughness Coefficient for the gunite left side slope (looking downstream) remained a 0.039. HEC-RAS cross-section 925.4423 was assigned a Manning's Roughness Coefficient of 0.049 to reflect the entirely rip-rap side slopes and channel bottom.

Reach 2:

No as-builts were available for Reach 2. The channel was restored to a trapezoidal cross section with an 11-ft. depth, 22-ft. bottom width, and side slopes varying from 2H:1V to 6H:1V. The earthen portions of Reach 2 were assigned a Manning's Roughness Coefficient of 0.03, while the rip rap area were assigned a Manning's Roughness Coefficient of 0.049. HEC-RAS cross-section 925.4423 was assigned a Manning's Roughness Coefficient of 0.049 to reflect the entirely rip-rap side slopes and channel bottom.

Reach 3:

Reach 3 was kept the same as the current condition, a concrete lined trapezoidal profile with a depth of 6-ft., width of 12-ft. and side slopes of 1.5H:1V. A Manning's Roughness Coefficient of 0.018 was assigned throughout the bottom and side slopes of Reach 3.

Reach 4:

A Manning's Roughness Coefficient of 0.03 was used for the earthen bottom, while the southeast rip rap side slope was assigned a Manning's Roughness Coefficient of 0.049. The northwest concrete side slope retained a Manning's Roughness Coefficient of 0.018 and the dense vegetation and sediment that had destroyed the concrete was removed. The cross-sectional geometry for Reach 4 was restored to a more trapezoidal profile, with a depth of 6-ft., width of 12-ft. and side slopes of 1.5H:1V.

Reach 5:

A Manning’s Roughness Coefficient of 0.035 was used to represent the cobbles along the earthen bottom. The side slope comprised of riprap was assigned a Manning’s Roughness Coefficient of 0.049, while the side slope comprised of concrete retained a Manning’s Roughness Coefficient of 0.018. Sections of Reach 5 that contained a gunite rip rap side slope were assigned a Manning’s Roughness Coefficient of 0.039.

Additional Note: For the Maintained Condition-Vegetation and Sediment Removal model prepared, it is important to note that the Manning’s Roughness Coefficients for the portions of the cross sections outside of the reach limits of the channel were kept the same as the current vegetated condition.

MAINTENANCE IMPACTS

Hydraulics Results (Describe capacity of channel for each condition):

Current Vegetated Condition :

Table 4

Current Vegetated Condition Capacity			
Reach	Channel Capacity (cfs)	Equivalent Storm Event (years)	Approximate 6-Hour Precipitation (inches)
Reach 1	630	25	1.97
Reach 2	630	25	1.97
Reach 3	950	50	2.22
Reach 4	1200	100	2.47
Reach 5	630	25	1.97

The hydraulic model determined that Reach 1, Reach 2, and Reach 5 have a 25-year storm event capacity in the current vegetated condition. The model also determined that Reach 3 has a 50-year storm event capacity in the current vegetated condition, while Reach 4 maintains a 100-year storm event capacity.

Note: Reach 4 has erosive velocities in its current condition that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 5.17 feet per second (fps) (Cross-Section 2709.054) to a maximum of 10.59 fps (Cross-Section 2916.303).

Ultimate Vegetated Condition:

Table 5

Ultimate Vegetated Condition Capacity			
Reach	Channel Capacity (cfs)	Equivalent Storm Event (years)	Approximate 6-Hour Precipitation (inches)
Reach 1	630	25	1.97
Reach 2	630	25	1.97
Reach 3	950	50	2.19
Reach 4	430	10	2.19
Reach 5	430	10	2.19

As expected, the channel capacities decreased in the ultimate vegetated condition. The storm event capacity in Reach 4 decreased from a 100-year storm event to a 10-year storm event, while Reach 5 decreased to 10-year capacity from a 25-year storm event. Water surface elevations also increased throughout the entirety of the Auburn Creek Channel.

Maintained Condition-Vegetation Only (No sediment removed):

Table 6

Maintained Condition – Vegetation Only Capacity			
Reach	Channel Capacity (cfs)	Equivalent Storm Event (years)	Approximate 6-Hour Precipitation (inches)
Reach 1	630	25	1.97
Reach 2	630	25	1.97
Reach 3	950	50	2.22
Reach 4	1200	100	2.47
Reach 5	630	25	1.97

The hydraulic models determined that vegetation maintenance only would have the following effects when compared to the current vegetated condition:

- Reaches 1, 2, 3, and 4 all saw a decrease in water surface elevations when compared to current vegetated condition.
- The overall channel capacities remained similar to the Current Vegetated Condition.

Note: Vegetation removal maintenance will result in increased velocities in earthen sections of the channel, Reaches 1, 3 and 4, that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 4.01 fps (Cross-Section 414.6495) to a maximum of 19.6fps (Cross-Section 2900.962). This maintained condition would require erosion control if conducted.

Maintained Condition-Sediment and Vegetation removed:

Table 7

Maintained Condition – Sediment and Vegetation Capacity			
Reach	Channel Capacity (cfs)	Equivalent Storm Event (years)	Approximate 6-Hour Precipitation (inches)
Reach 1	1200	100	2.47
Reach 2	1200	100	2.47
Reach 3	950	50	2.22
Reach 4	1200	100	2.47
Reach 5	630	25	1.97

The hydraulic models determined that sediment and vegetation removal would have the following benefits when compared to the current vegetated condition:

- Reaches 1, 2, 3, and 4 all saw a decrease in water surface elevations when compared to current vegetated condition.
- The storm event capacities for Reaches 1 and 2 improved greatly, as all HEC RAS cross sections maintained a 100-year storm event capacity, compared to the 25-year storm event capacity in the current condition model. The storm event capacities for the rest of the Auburn Creek Channel remained the same as the current vegetated condition model.

Note: Full vegetation and sediment removal maintenance will result in increased velocities in earthen sections of the channel in all Reaches; however Reaches 1, 3, and 5 do not exceed the permissible velocity for an unlined channel with cobbles. The velocities in Reaches 2 and 4 exceed the recommended permissible velocity for an unlined channel of this type, ranging from a minimum of 6.04 fps (Cross-Section 307.2411) to a maximum of 18.82 fps (Cross-Section 2900.962) in these Reaches. This maintained condition would require erosion control if conducted.

Recommended Maintained Condition – Partial Sediment and Vegetation Removal:

Table 8

Recommended Maintained Condition – Partial Sediment and Vegetation Removal			
Reach	Channel Capacity (cfs)	Equivalent Storm Event (years)	Approximate 6-Hour Precipitation (inches)
Reach 1	1200	100	2.47
Reach 2	1200	100	2.47
Reach 3	950	50	2.22
Reach 4	1200	100	2.47
Reach 5	630	25	1.97

The Recommended Maintained Condition consists of Sediment and Vegetation removal of Reach 1 and Reach 5. Pursuant to the site visit on February 3, 2017 the culvert beneath Fairmont Avenue is clear of sediment or vegetation. This culvert is not included in the proposed maintenance of Reach 5. It is important to note that a considerable hydraulic benefit is gained by cleaning the culvert beneath Spillman Drive, as the current condition shows the inlet to this culvert to be approximately 50% clogged. The clogged culvert entrance causes a backwater effect that drastically raises water surface elevations in Reaches 1 and 2. This Recommended Maintenance Condition includes clearing the entrance of the culvert beneath Spillman Drive and assumes that the culvert is clean.

The hydraulic models determined that sediment and vegetation removal would have the following benefits:

- The storm event capacities for Reaches 1 and 2 improved greatly, as all HEC RAS cross sections maintained a 100-year storm event capacity, compared to the 25-year storm event capacity in the current condition model. The storm event capacities for the rest of the Auburn Creek Channel remained the same as the current vegetated condition model.
- Reach 3 maintained a 50-year capacity from the current condition.
- Reach 4 maintained a 100-year capacity from the current condition.
- Reach 5 maintained a 25-year capacity from the current condition.

The results from this condition are similar to the Maintained Condition-Sediment and Vegetation removed. However, the benefit of this Recommended Maintained Condition is that it does not produce increased velocities above the permissible velocity for an unlined channel with cobbles, like the Maintained Condition-Sediment and Vegetation removed does. In the Maintained Condition-Sediment and Vegetation, Reaches 2 and 4 exhibit velocities above the permissible velocity for an unlined channel of this type. The capacity of Reach 2 is largely dependent on the amount of clogging of the culvert beneath Spillman Drive. Since the Recommended Maintenance is proposing sediment and vegetation removal of Reach 1, which includes unclogging the entrance to the culvert beneath Spillman Drive, this condition is able to increase the capacity of Reach 1 and 2 without increasing the velocity in Reach 2 past the permissible velocity. Additionally, Reach 4 has 100-year capacity in the current condition and the velocities in Reach 4 are not affected by the maintenance in the surrounding reaches. It should be noted that Reach 4 has erosive velocities that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 5.17 fps (Cross-Section 2709.054) to a maximum of 10.59 fps (Cross-Section 2916.303). However, this is seen in the current condition and is not exacerbated in this Recommended Maintained Condition. It is recommended that appropriate erosion control be implemented to address the current erosive velocities in Reach 4.

Table 9 below provides a summary of the hydraulic results from each of the maintenance conditions:

Auburn Creek Channel Maps 70 & 76 Channel Capacity and 100-year Flow Rate Water Surface Elevation

Reach	River Sta	Current Vegetated Condition Storm Event (year)	Current Vegetated Condition Capacity (cfs)	Current Vegetated Condition 100-year WSEL (feet)	Current Condition 100-year Velocity (fps)	Ultimate Condition Storm Event (year)	Ultimate Condition Capacity (cfs)	Ultimate Condition 100-year WSEL (feet)	Ultimate Condition 100-year Velocity (fps)	Vegetation Maintenance Only Storm Event (year)	Vegetation Maintenance Only Capacity (cfs)	Vegetation Maintenance Only 100-year WSEL (feet)	Vegetation Maintenance Only 100-year Velocity (fps)	Vegetation Maintenance Only vs. Current Condition WSEL (feet)	Sediment and Vegetation Removal Storm Event (year)	Sediment and Vegetation Removal Capacity (cfs)	Sediment and Vegetation Removal 100-year WSEL (feet)	Sediment and Vegetation Removal 100-year Velocity (fps)	Sediment and Vegetation Removal vs. Current Condition WSEL (feet)	Recommended Maintenance* Storm Event (year)	Recommended Maintenance* Capacity (cfs)	Recommended Maintenance* 100-year WSEL (feet)	Recommended Maintenance* 100-year Velocity (fps)	Recommended Maintenance* vs. Current Condition WSEL (feet)	
Reach 5	3283.479	25	630	160.47	1.94	10	430	160.97	0.52	25	630	160.36	2.01	-0.11	25	630	160.32	2.86	-0.15	25	630	160.47	1.94	0	
Reach 5	3229.405	25	630	160.46	1.81	10	430	160.96	0.52	25	630	160.35	1.81	-0.11	25	630	160.33	1.92	-0.13	25	630	160.46	1.78	0	
Reach 5	3159.787	25	630	160.43	2.6	10	430	160.96	0.9	25	630	160.31	2.58	-0.12	25	630	160.3	2.44	-0.13	25	630	160.44	2.27	0.01	
Reach 5	3025.628	25	630	160.09	4.7	10	430	160.71	3.87	25	630	159.95	4.78	-0.14	25	630	159.97	4.62	-0.12	25	630	160.1	4.6	0.01	
Reach 5	3000	Culvert																							
Reach 4	2916.303	100	1200	153.49	10.59	25	630	156.29	6.15	100	1200	153.12	11.58	-0.37	100	1200	152.46	11.13	-1.03	100	1200	153.49	10.59	0	
Reach 4	2900.962	100	1200	154.06	5.19	25	630	156.32	3.79	100	1200	147.81	19.55	-6.25	100	1200	147.48	18.82	-6.58	100	1200	154.06	5.19	0	
Reach 4	2709.054	100	1200	153.19	5.17	25	630	154.96	3.27	100	1200	150.18	9.31	-3.01	100	1200	148.79	8.25	-4.4	100	1200	153.19	5.17	0	
Reach 4	2501.489	100	1200	149.45	7.37	25	630	151.9	4.81	100	1200	147.46	11.15	-1.99	100	1200	146.81	9.99	-2.64	100	1200	149.45	7.37	0	
Reach 4	2309.998	100	1200	146.83	6.99	25	630	148.91	3.41	100	1200	145.1	10.73	-1.73	100	1200	144.43	11.13	-2.4	100	1200	146.83	6.99	0	
Reach 4	2161.775	100	1200	143.29	10.94	50	630	146.33	5.3	100	1200	143.22	11.15	-0.07	100	1200	142.42	13.14	-0.87	100	1200	143.29	10.94	0	
Reach 3	1835.094	50	950	143.08	5.46	50	950	143.44	4.91	50	950	143.02	5.5	-0.06	50	950	142.81	5.68	-0.27	50	950	142.81	5.68	-0.27	
Reach 3	1800.703	50	950	143.12	4.77	50	950	143.31	4.51	50	950	143.06	4.81	-0.06	50	950	142.86	4.92	-0.26	50	950	142.86	4.92	-0.26	
Reach 3	1350	Culvert																							
Reach 2	925.4423	25	630	128.35	4.62	25	630	129.36	3.92	25	630	128.03	4.89	-0.32	100	1200	124.59	10.87	-3.76	100	1200	124.78	10.32	-3.57	
Reach 2	797.816	25	630	128.27	2.18	25	630	128.68	2.06	25	630	128.11	2.23	-0.16	100	1200	121.22	12.52	-7.05	100	1200	123.56	4.98	-4.71	
Reach 2	652.2307	25	630	128.17	1.61	25	630	128.37	1.58	25	630	128.11	1.63	-0.06	100	1200	120.34	10.45	-7.83	100	1200	121.92	4.71	-6.25	
Reach 2	513.9224	25	630	128.12	1.45	25	630	128.18	1.44	25	630	128.11	1.45	-0.01	100	1200	118.36	11.57	-9.76	100	1200	120.46	4.98	-7.66	
Reach 2	414.6495	25	630	128.12	0.98	25	630	128.15	0.79	25	630	128.11	1.1	-0.01	100	1200	117.84	7.26	-10.28	100	1200	119.59	4.72	-8.53	
Reach 2	307.2411	25	630	128.12	0.8	25	630	128.12	0.52	25	630	128.11	0.94	-0.01	100	1200	117.69	6.04	-10.43	100	1200	118.69	5.15	-9.43	
Reach 2	195.1298	25	630	128.11	0.79	25	630	128.12	0.54	25	630	128.11	1.03	0	100	1200	116.84	8.11	-11.27	100	1200	117.15	6.79	-10.96	
Reach 1	141.507	25	630	128.11	0.67	25	630	128.11	0.29	25	630	128.11	0.74	0	100	1200	117.02	6.02	-11.09	100	1200	117.01	6.1	-11.1	
Reach 1	65.30157	25	630	128.11	0.62	25	630	128.11	0.36	25	630	128.11	0.84	0	100	1200	116.91	5.49	-11.2	100	1200	116.93	5.34	-11.18	
Reach 1	4.590075	25	630	128.11	0.66	25	630	128.11	0.34	25	630	128.11	0.92	0	100	1200	116.59	6.21	-11.52	100	1200	116.59	6.21	-11.52	

cfs - cubic feet per second
 fps - feet per second
 WSEL - Water Surface Elevation
 *Recommended Maintenance includes sediment and vegetation removal in Reach 1 and Reach 5

Areas within channel that can be avoided:

The primary goal of this IHHA is to identify the benefits of maintenance in terms of hydraulic capacity and flood prevention. The maintenance recommendations in this IHHA are based solely on the hydraulic analysis described in the sections above. However, if biologically sensitive areas in the channel are recommended to be protected by the Individual Biological Assessment (IBA) and do not negatively impact the hydraulic benefit of maintenance, these areas can be avoided. The IBA for Auburn Creek Channel, Maps 70 and 76, did not recommend any sensitive plant species to be protected within the recommended maintenance areas, as described below:

The Individual Biological Assessment (IBA) (HELIX 2017) identified the following vegetation communities within the Auburn Creek Map #70 maintenance boundary: natural flood channel (unvegetated streambed), ornamental, disturbed land, and developed land. No sensitive plant species were observed or detected. As none of the biological resources affected by the proposed maintenance are considered significant, maintenance within the channel will not be required to avoid biological resources.

The Individual Biological Assessment (IBA) (HELIX 2017) identified the following vegetation communities within the Auburn Creek Map #76 maintenance boundary: natural flood channel (unvegetated streambed), chaparral (on adjacent slope), ornamental, disturbed land, and developed land. One sensitive plant species, singlewhorl burrobush (*Ambrosia monogyra*; CNPS List 2B.2), was observed along the northern bank and consisted of 11 scattered individuals. The IBA concluded that the burrobush should be protected. These 11 plants are outside of the maintenance, access, and staging areas and do not impact the hydraulics of the channel. Therefore these 11 plant species can be avoided by the proposed maintenance.

Would the velocity of storm water during a “bank-full” storm event exceed the velocities identified for unlined channels per Table 1-104.10A of the City’s Design Manual? If so, describe the appropriate form of erosion control (e.g., check dam or comparable mechanism).

Reach 4 has erosive velocities that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 5.17 feet per second (fps) (Cross-Section 2709.054) to a maximum of 10.59 fps (Cross-Section 2916.303). However, this is seen in the current condition and is not exacerbated as this reach is not proposed for maintenance in the Recommended Maintained Condition. Additionally, no other reach exhibits erosive velocities in the Recommended Maintained Condition. Although Reaches 1, 2, 3, and 5 all show increased velocities in Recommended Maintained Condition, none increase above the permissible velocity for an unlined channel with cobbles. Additionally it is recommended that appropriate erosion control be implemented to address the current erosive velocities in Reach 4.

MITIGATION

Conclusion/Recommendations (Describe the limits of recommended maintenance, degree to which native vegetation within the facility can be retained, and capacity of maintained channel):

The Program Environmental Impact Report (PEIR) for the Master Maintenance Program lists 4 alternatives that would help reduce the need for regular channel maintenance. The alternatives are listed below, followed by a response applicable to the Auburn Creek Channel. Responses are based solely on the hydrologic and hydraulic analyses completed in this IHHA, additional studies may be necessary to fully assess the feasibility of these alternatives.

Raising the channel banks and constructing walls or berms along the top of the channels:

The Auburn Creek Channel is bound to the South by steep slopes and single family properties and to the North by commercial and single family properties. Auburn Creek Channel MMP Maps 70 and 76 are separated by Interstate 805. Construction of walls or berms along the channel could raise water surface elevations causing additional flooding potential and negative impacts to Interstate 805 and upstream properties.

Diverting storm water in pipes around constrained segments:

The Auburn Creek Channel is bound to the South by steep slopes and single family properties and to the North by commercial and single family properties. Due to the inlet control of the culverts under Fairmount Avenue and Interstate 805, a back water effect raises water surface elevations to overtop the roads and channel banks in larger storm events. Construction of diversion pipes around the existing culverts or upsizing the culverts may be possible to alleviate the back water, but studies would need to be performed to analyze the cost and the feasibility of constructing the diversion pipes. Additionally, the reach downstream of Spillman Drive, would need to be analyzed for hydraulic capacity and performance.

Widening the channels to accommodate vegetation:

The Auburn Creek Channel is bound to the South by steep slopes and single family properties and to the North by commercial and single family properties. There is no room to widen the channel without encroaching on adjacent private properties. Further studies would need to be performed to analyze cost and feasibility of widening Auburn Creek Channel to increase flood capacity and reduce vegetation grown.

Reducing off-site runoff generation through use of low impact development measures:

Low impact development measures are based on the 85th percentile flow and would not impact the flood flow rates in the channel.

Conclusion/Recommendations:

Several hydraulic models were created to determine the limits of maintenance. The recommended maintenance condition was provided to limit erosive velocity in the channel pursuant to the City of San Diego's Drainage Design Manual, while increasing flood capacity of Auburn Creek Channel. As such, it was determined Auburn Creek Channel is proposed for partial vegetation and sediment removal for the following reaches:

- Reach 1 (HEC-RAS Cross Sections 4.590 to 141.507) MMP Map 76 – Sediment and vegetation maintenance.
- Reach 2 (HEC-RAS Cross Section 141.507 to 925.442) MMP Map 76 – Not proposed for maintenance.
- Reach 3 (HEC-RAS Cross Section 925.442 to 2161.775) MMP Map 70 – Not proposed for maintenance.
- Reach 4 (HEC-RAS Cross Sections 2161.775 to 2916.303) MMP Map 70 – Not proposed for maintenance.
- Reach 5 (HEC-RAS Cross Sections 2916.303 to 3283.479) MMP Map 70 – Sediment and vegetation maintenance.

Please see Attachment 15 for the Recommended Maintenance HEC-RAS analysis.

As indicated by the modeled condition, for sediment and vegetation removal locations as listed above it is proposed the Auburn Creek Channel be maintained to its as-built condition, where applicable. Reach 1 was restored to a trapezoidal cross section with rip rap side slopes and an earthen bottom Pursuant to as-built sheet 3706-D titled "Melissa Park Spillman Drive", dated 8/16/1957. The gunite left side slope (looking downstream) remained. Reach 5 was restored to a trapezoidal cross section pursuant to as-built drawing 12728-L, Sheet 2, titled "Plans For the Improvement of Home Avenue in Valle Granado," prepared by Byrl Phelps, on December 11, 1956. Although the storm event capacity of Reach 5 does not change from the current condition to the recommended maintenance condition, Reach 5 will need maintenance in the future and will lose significant capacity if left unmaintained. It is important to note that a considerable hydraulic benefit is gained by cleaning the culvert beneath Spillman Drive, as the current condition shows the inlet to this culvert to be approximately 50% clogged. The clogged culvert entrance causes a backwater effect that drastically raises water surface elevations in Reaches 1 and 2. This Recommended Maintenance Condition includes clearing the entrance of the culvert beneath Spillman Drive and assumes that the culvert is clean.

It was observed that Reach 3 contains various sections of broken and undermined gunite rip rap and concrete side slopes. It is recommended that these portions be repaired to prevent dislodging of the concrete and gunite pieces and potential clogging of downstream culverts or side slope failure. These sections of broken concrete have the potential to cause an emergency, however are currently at low risk for causing an emergency

It should be noted that Reach 4 has erosive velocities that exceed the recommended permissible velocity for an unlined channel of this type. The modeled condition indicates that velocities will range from a minimum of 5.17 feet per second (fps) (Cross-Section 2709.054) to a maximum of 10.59 fps (Cross-Section 2916.303). However, this is seen in the current condition and is not exacerbated as this reach is not proposed for maintenance in the Recommended Maintained Condition. Additionally it is recommended that appropriate erosion control be implemented to address the current erosive velocities in Reach 4.

ADDITIONAL COMMENTS OR RECOMMENDATIONS

Additional Comments:

It should be noted that Reach 2 and 4 contain dense arundo with heights that exceed above the channel banks. In these areas the arundo above the channel bank can be maintained, such that the height of the arundo is trimmed down to the channel bank elevation, without affecting the hydraulics of the Recommended Maintenance Condition.

LIST OF ATTACHMENTS:

- Attachment 1 - Site Photos
- Attachment 2 – Vicinity Map
- Attachment 3 – Hydraulic Workmap
- Attachment 4 – Photo Location Map
- Attachment 5 – As-Built Plans
- Attachment 6 – FEMA Firmette and FEMA FIS
- Attachment 7 - Hydraulic Profiles for Current Vegetated Condition Model
- Attachment 8 - Hydraulic Profiles for Ultimate Vegetated Condition Model
- Attachment 9 - Hydraulic Profiles for Maintained Condition Model – Vegetation Only (No Sediment Removed)
- Attachment 10 – Hydraulic Profiles for Maintained Condition Model – Sediment and Vegetation Removed
- Attachment 11 - Detailed Hydraulic Results for Current Vegetated Condition Model
- Attachment 12 - Detailed Hydraulic Results for Ultimate Vegetated Condition Model
- Attachment 13 - Detailed Hydraulic Results for Maintained Condition Model – Vegetation Only (No Sediment Removed)
- Attachment 14 - Detailed Hydraulic Results for Maintained Condition Model – Sediment and Vegetation Only
- Attachment 15 – Hydraulic Profiles and Detailed Hydraulic Results for Recommended Maintenance Condition

Attachment 1 - SITE PHOTOS:

Date of Site Visit: February 3, 2017. See Hydraulic Workmap in Attachment 3 for picture locations and orientation.

1.



Downstream portion of Reach 1 viewing north-west (downstream) at the triple 6-ft. by 6-ft. box culvert under Spillman Drive. Photo shows 50% clogging of box culvert.

2.



Upstream portion of Reach 1 viewing north-east (upstream) at channel bend. Note dense vegetation and cobble bottom.

3.



Middle portion of Reach 2, viewing north-east (upstream). Note dense vegetation and cobble bottom.

4.



Upstream portion of Reach 2 viewing north-east (upstream) at the vegetation and displaced rip rap downstream of the double 7-ft. by 6-ft. double box culvert.

5.



Upstream end of Reach 2, looking northeast (upstream) at 7 ft. by 6 ft. double box culvert. Note rip rap displacement and erosion at concrete apron.

6.



Downstream portion of Reach 3 viewing south-west at 7 ft. by 6 ft. double box culvert. Note clean channel.

7.



Concrete lined Reach 3, viewing north-east (upstream) at the channel.

8.



Connection of Reach 3 and Reach 4 where channel changes from concrete lined, to earthen bottom and earthen southeast sideslope. Viewing north-east (upstream).

9.



Reach 4 viewing north-east (upstream) at the vegetation compromising northwest concrete side slope

10.



Upstream end of Reach 4 viewing north-east (upstream) at the 6 ft. by 6 ft. double box culvert. Note erosion at culvert apron.

11.



Reach 5 viewing south-west (downstream) at the 6 ft. by 6 ft. double box culvert.

12.



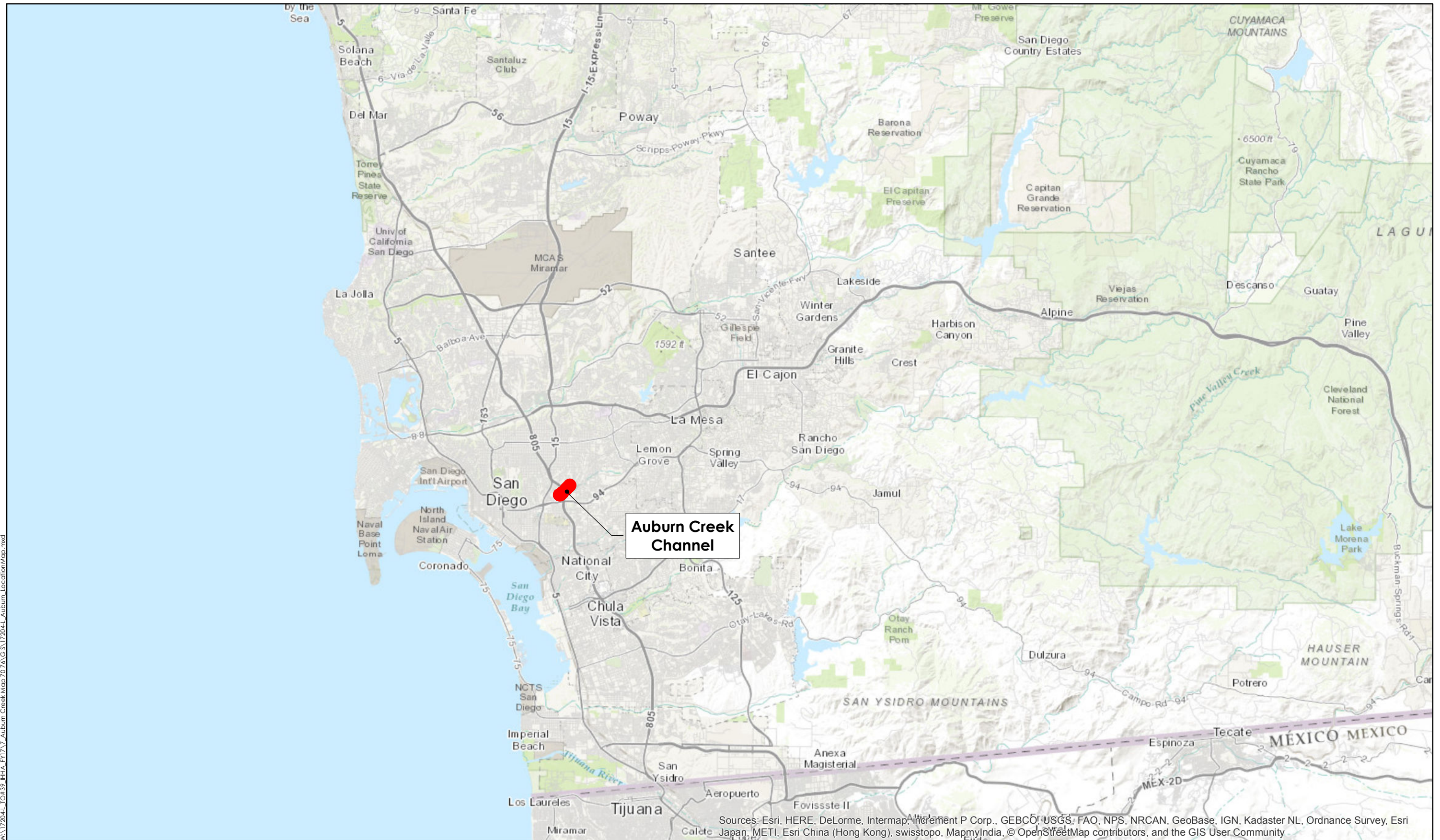
Reach 5 viewing north-east (upstream). Concrete lined side slope on northeast side of channel, and shotcrete side slope on southwest side of channel. Note cobbles, channel is generally clean.

13.



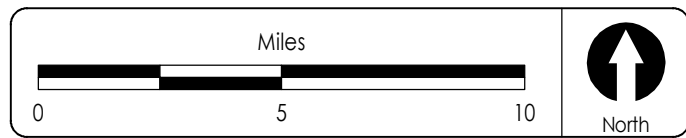
Upstream portion of Reach 5 viewing north-east (upstream) at the 74" double concrete pipe culvert. Note the standing water and erosion at culvert outlet.

Attachment 2 - VICINITY MAP



W:\17204-L\10439_EHA_EY17\7 Auburn Creek.Mxd, 7/16/17, GIS, 17204-L Auburn_LocationMap.mxd

Sources: Esri, HERE, DeLorme, Intermap, Interment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



Date of Exhibit: 2/8/2017
ESRI World Topographic Basemap

Auburn Creek Channel
MMP Map Numbers 70 & 76 - Vicinity Map
J-17204-L

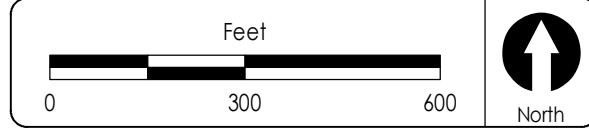
Attachment 3 - HYDRAULIC WORKMAP

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Legend

- Reach 1
- Reach 2
- Reach 3
- Reach 4
- Reach 5
- HEC-RAS Cross Sections
- MMP Map Boundaries





Date of Exhibit: 4/3/2017
ESRI World Topographic Basemap: November 2014

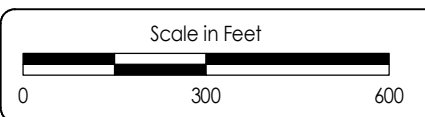
Attachment 4 - PHOTO LOCATION MAP



W:\17204-L\0499_BHA_FY17\7_Auburn_Creek\Map 70 & 76\GIS\17204-L_Auburn_PhotoLocation_v10.1.mxd

Legend

-  Photo_Location
-  MMP Map Area

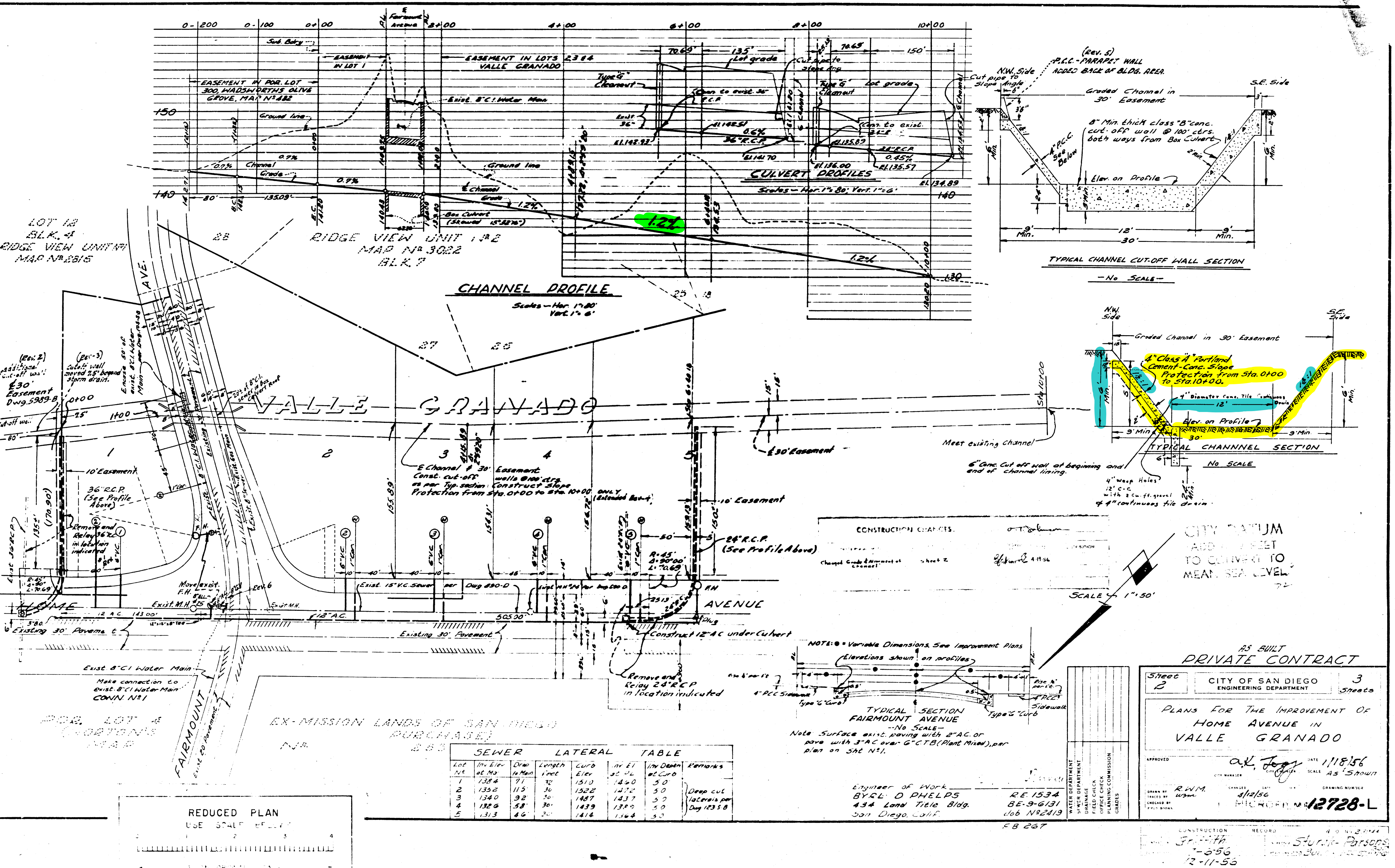


Date of Exhibit: 4/3/2017
 DigitalGlobe Aerial Image: 04.2013

Auburn Channel
 MMP Maps 70 & 76 - Photo Location Map

J-17204-L

Attachment 5 – AS-BUILT PLANS



Lot No.	In. Elev. at Man.	Draw. Length in Feet	Curb Elev.	In. Elev. at Curb	In. Depth of Culvert	Remarks
1	138.4	71	1510	1420	50	Deep cul. Valeris per Dwg. 1235-B
2	135.2	115	1522	1472	50	
3	134.0	92	1487	1437	50	
4	132.6	58	1439	1389	50	
5	131.3	46	1414	1364	50	

Sheet 2 of 3
CITY OF SAN DIEGO
ENGINEERING DEPARTMENT

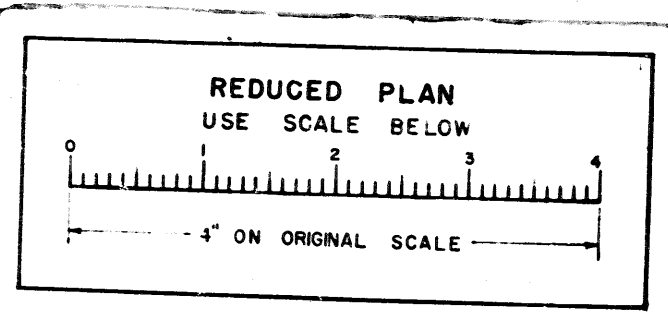
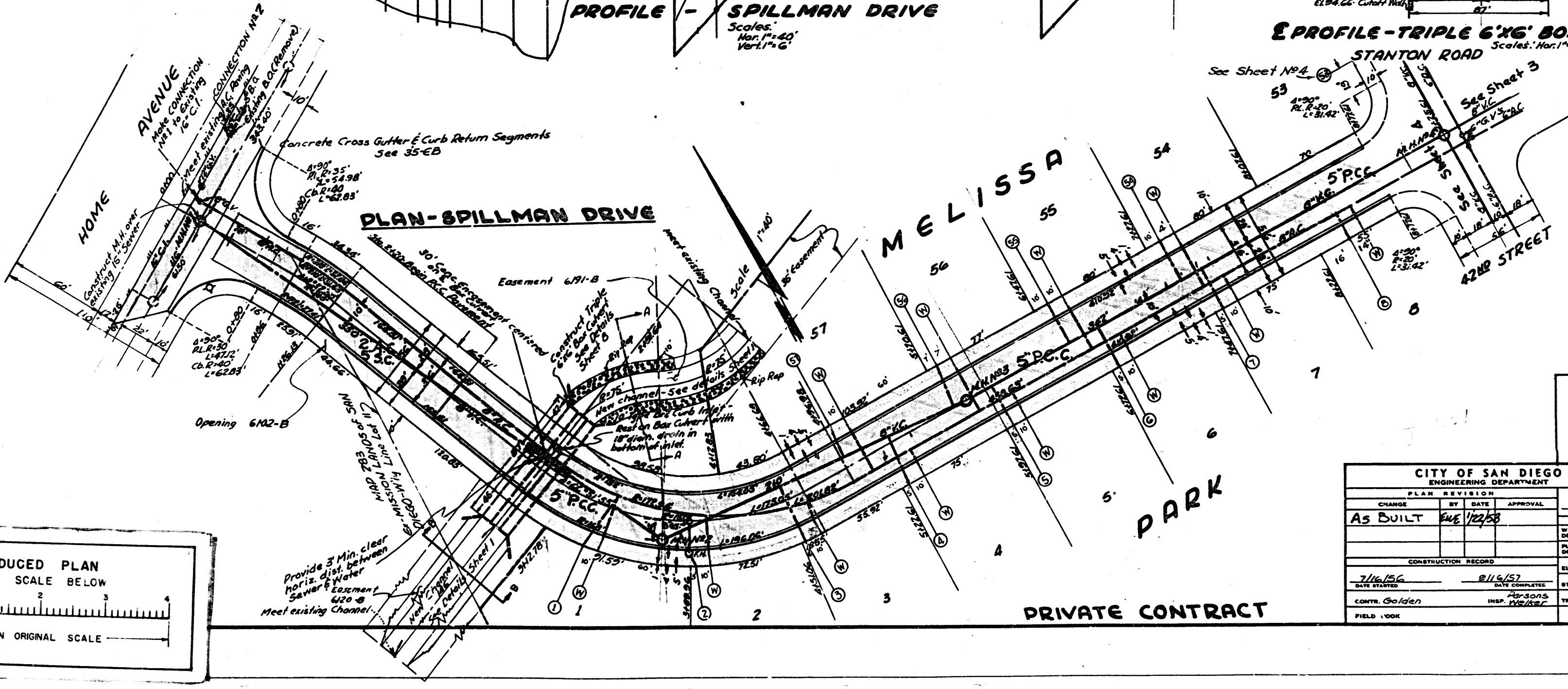
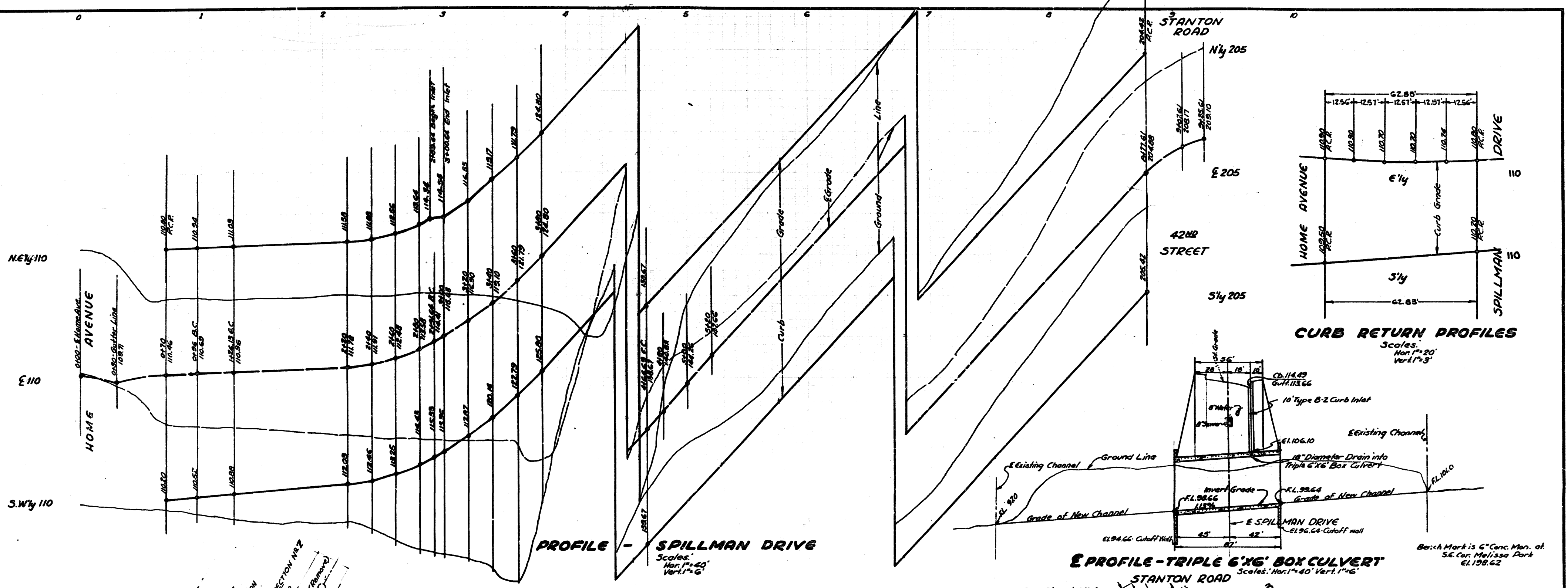
PLANS FOR THE IMPROVEMENT OF
HOME AVENUE IN
VALLE GRANADO

APPROVED: *Carl J. Fogarty* DATE: 11/18/56
CITY ENGINEER

DRAWN BY: R.W.M. DATE: 11/2/56
CHECKED BY: W.M. DATE: 11/2/56
DRAWING NUMBER: 12728-L

WATER DEPARTMENT
SEWER DEPARTMENT
DRAINAGE
FIELD CHECK
OFFICE CHECK
PLANNING COMMISSION
GRADES

RECORD
12-11-56
Sturtevant-Parsons



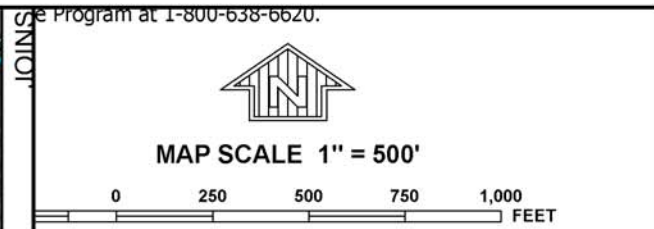
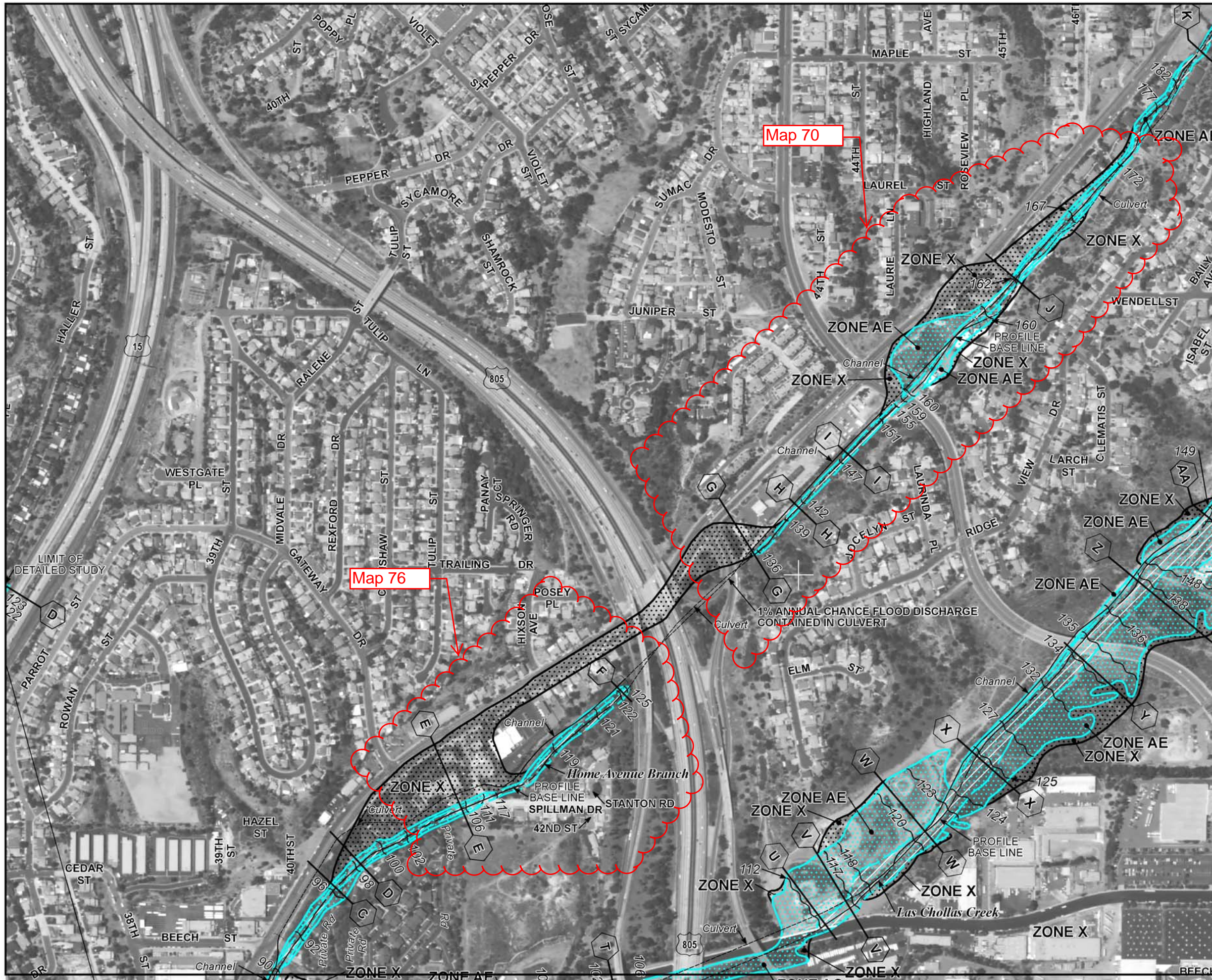
CITY OF SAN DIEGO ENGINEERING DEPARTMENT		SHEET 2 OF 8 SHEETS		W.D. NO. 23782
CHANGE	BY	DATE	APPROVAL	
AS BUILT	EW	1/22/58	<i>A. K. Jorg</i>	6/26/58
CONSTRUCTION RECORD		APPROVALS FOR		ASST. CITY ENGINEER AND OFFICE ENGINEER
WATER DEPT.	PLANNING DEPT.	SEWERAGE DEPT.	HIGHWAY DEPT.	SUPERVISOR
7/16/56	8/19/57	ELECTRICAL	GRADES	CHECKED
DATE STARTED	DATE COMPLETED	STRUCTURAL	CONTROL	DESIGNED
CONTR. Golden	INSPECTION 1/22/58			Chuck - T.E.C.E.
FIELD BOOK				3706-D

Attachment 6 – FEMA FIRMETTE AND FEMA FIS

TABLE 8: SUMMARY OF PEAK DISCHARGES

Flooding Source and Location	Drainage Area (sq. miles)	Peak Discharges (cubic feet per second)			
		10% Annual- Chance	2% Annual- Chance	1% Annual- Chance	0.2% Annual- Chance
Henderson Canyon					
At Apex of Alluvial Fan	4.8	750	2,100	3,500	5,650
Home Avenue Branch					
At Confluence with Las Chollas Creek	2.1	430	950	1,200	2,200
0.8 Mile Above Fairmont Avenue	1.3	260	580	730	1,340
At Euclid Avenue	1.1	220	500	630	1,200
At Auburn Drive	0.8	160	360	450	830
Jesmond Dene Tributary					
Approximately 200 feet upstream of North Broadway	2.32	--	--	1,746	--
Keys Canyon Creek					
Just upstream of Keys Canyon Creek Tributary 2	14.62	--	--	13,044	--
Just upstream of Keys Canyon Creek Tributary 1	14.98	--	--	13,120	--
Just downstream of Keys Canyon Creek Tributary 1	31.58	--	--	22,911	--
Keys Canyon Creek Tributary 1					

– Data Not Available



NFIP PANEL 1901G

FIRM
FLOOD INSURANCE RATE MAP
SAN DIEGO COUNTY,
CALIFORNIA
AND INCORPORATED AREAS


PANEL 1901 OF 2375
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
SAN DIEGO, CITY OF	060295	1901	G

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

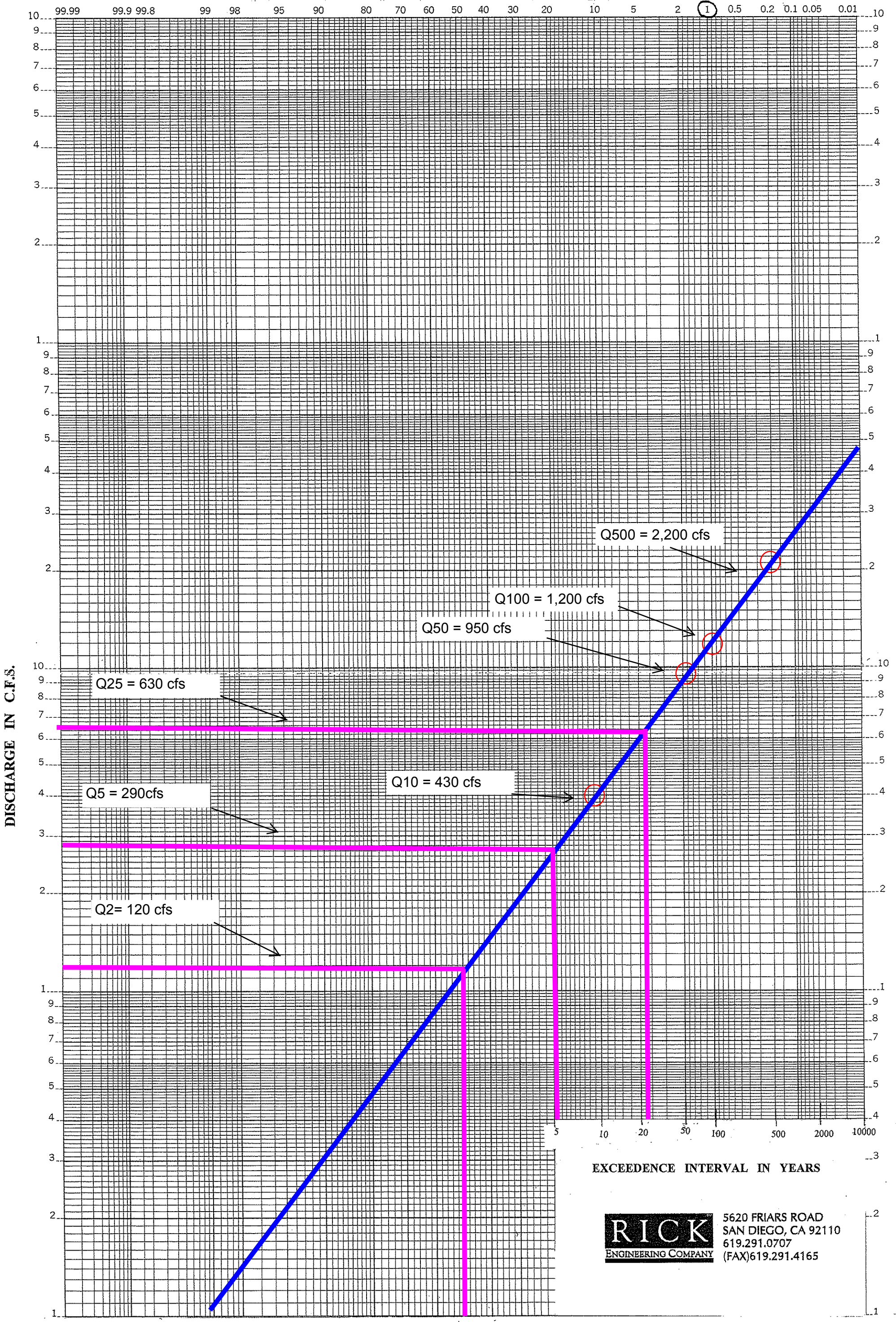
MAP NUMBER
06073C1901G
MAP REVISED
MAY 16, 2012


Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

EXCEEDENCE PER HUNDRED YEARS

% CHANCE A STORM EVENT WILL OCCUR
(IE: THERE IS A 1% CHANCE A 100-YEAR
STORM WILL OCCUR IN A YEAR)



EXCEEDENCE INTERVAL IN YEARS



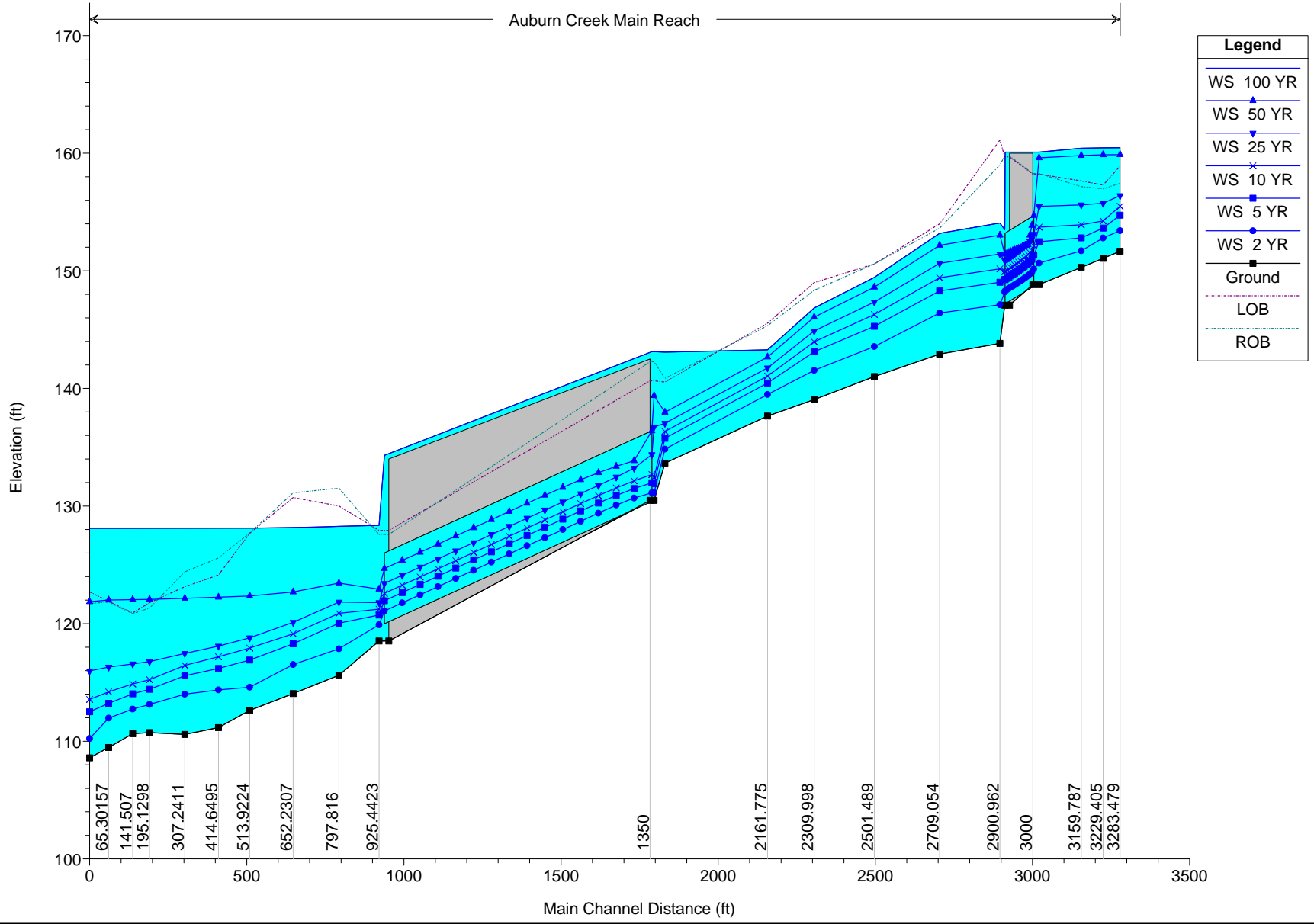
5620 FRIARS ROAD
SAN DIEGO, CA 92110
619.291.0707
(FAX) 619.291.4165

EXCEEDENCE INTERVAL IN YEARS

**Attachment 7 - HYDRAULIC PROFILES FOR CURRENT VEGETATED CONDITION
MODEL**

Auburn-Creek-Channel Plan: Current Condition 2/20/2017

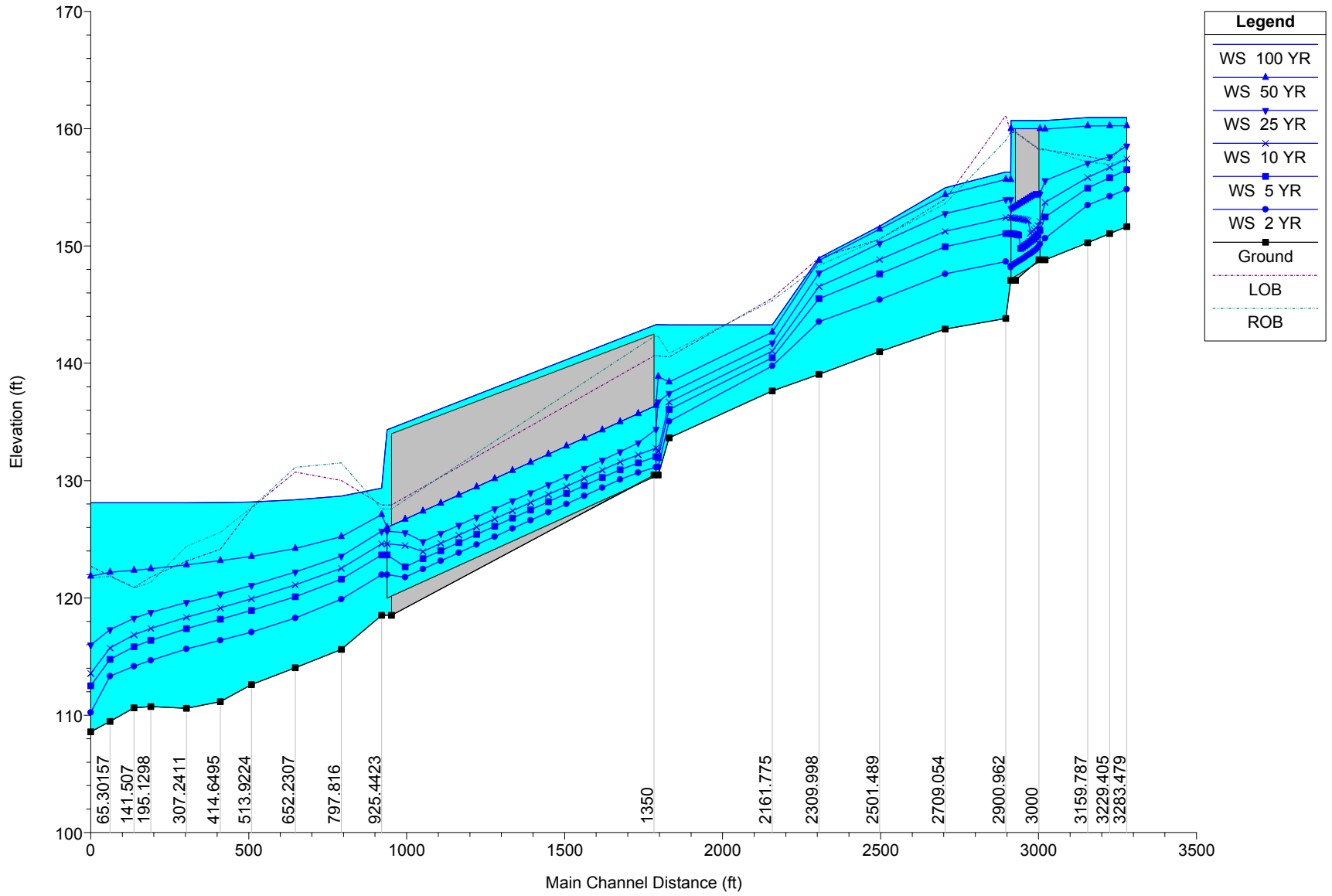
Auburn Creek Main Reach



**Attachment 8 - HYDRAULIC PROFILES FOR ULTIMATE VEGETATED CONDITION
MODEL**

Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

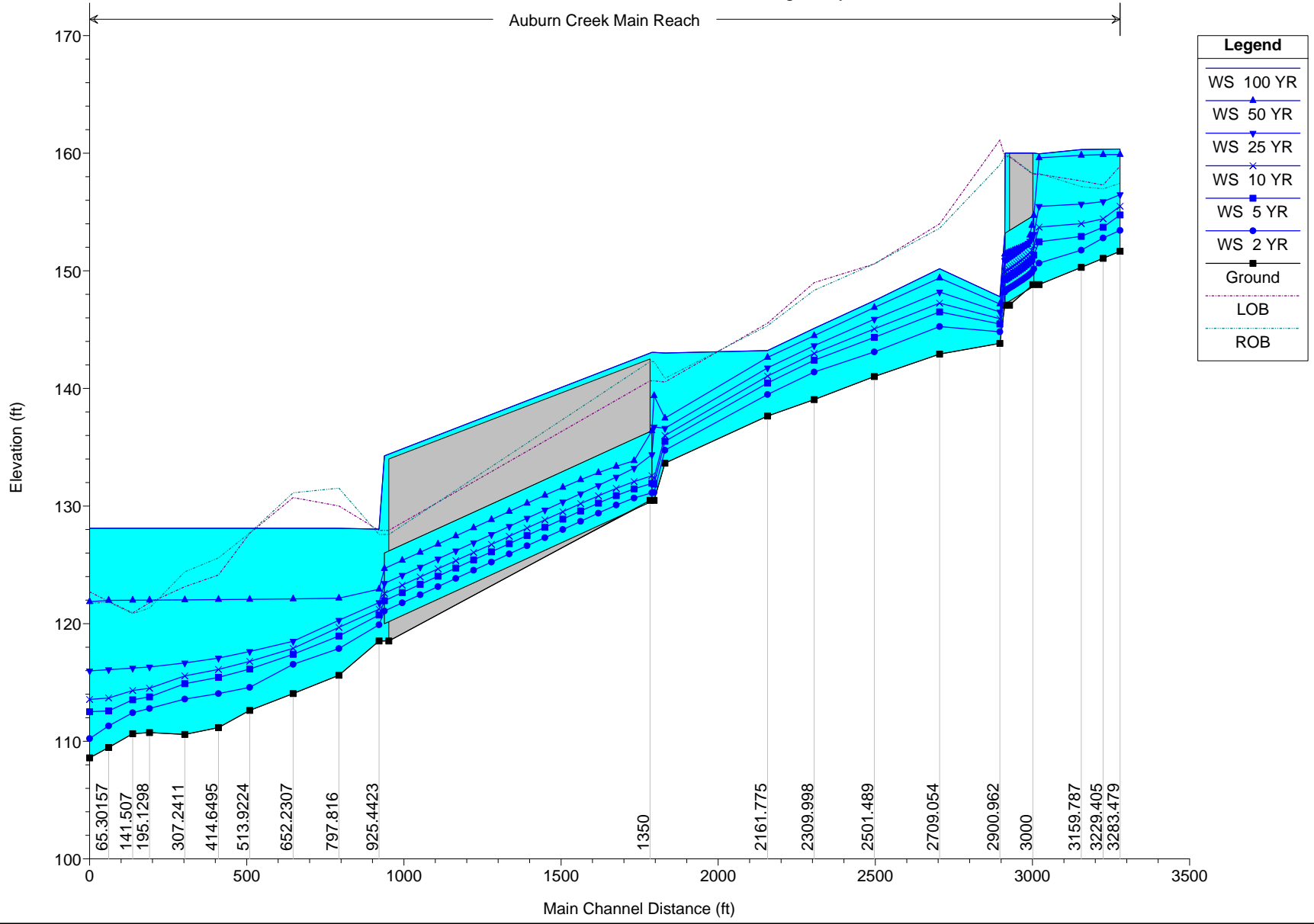
Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates



**Attachment 9 - HYDRAULIC PROFILES FOR MAINTAINED CONDITION MODEL –
VEGETATION ONLY (NO SEDIMENT REMOVED)**

Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017

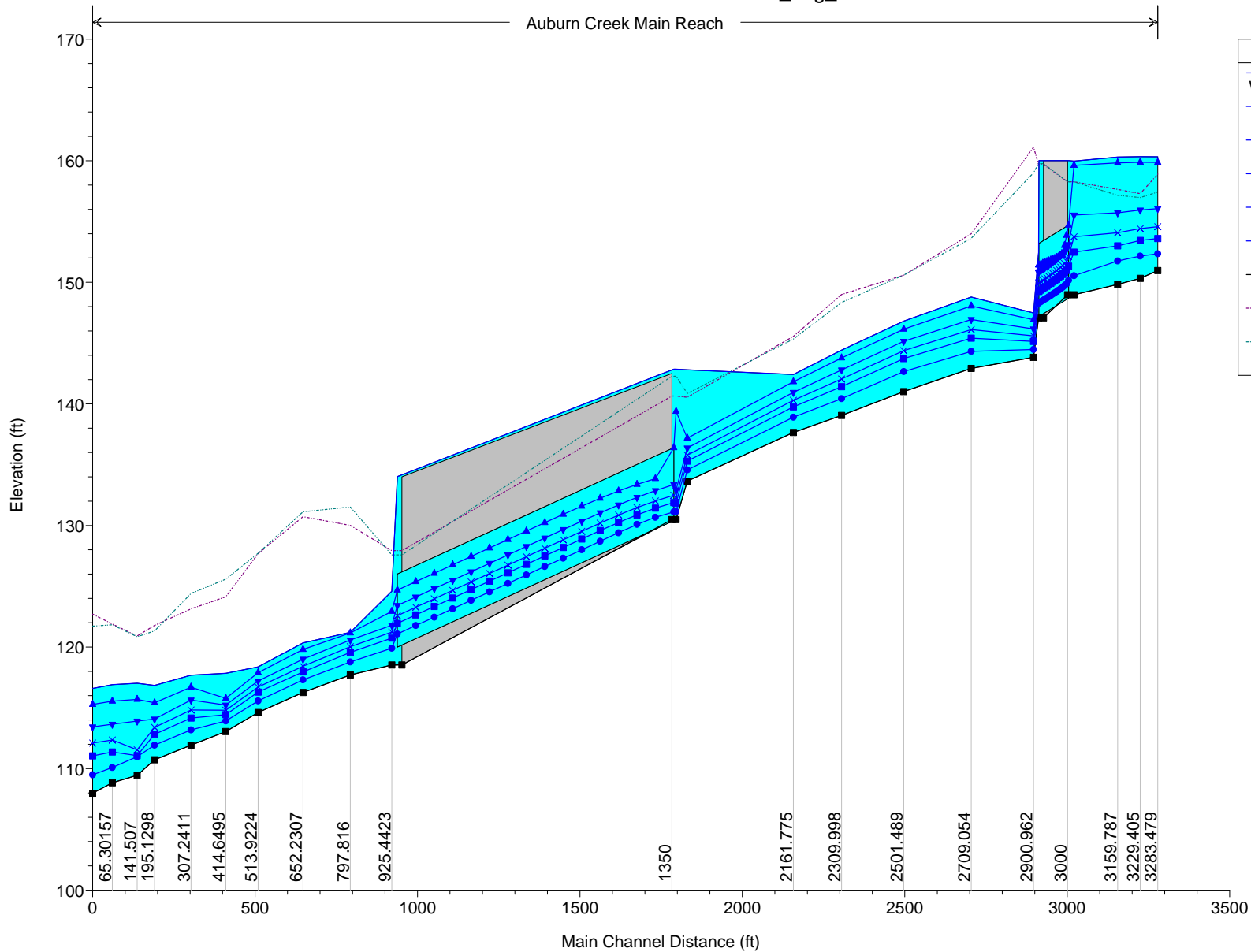
Auburn Creek Main Reach



**Attachment 10 - HYDRAULIC PROFILES FOR MAINTAINED CONDITION MODEL –
SEDIMENT AND VEGETATION REMOVED**

Auburn-Creek-Channel Plan: Maintained_veg_sed 2/17/2017

Auburn Creek Main Reach



Legend

- WS 100 YR
- WS 50 YR
- WS 25 YR
- WS 10 YR
- WS 5 YR
- WS 2 YR
- Ground
- LOB
- ROB

**Attachment 11 - DETAILED HYDRAULIC RESULTS FOR CURRENT VEGETATED
CONDITION MODEL**

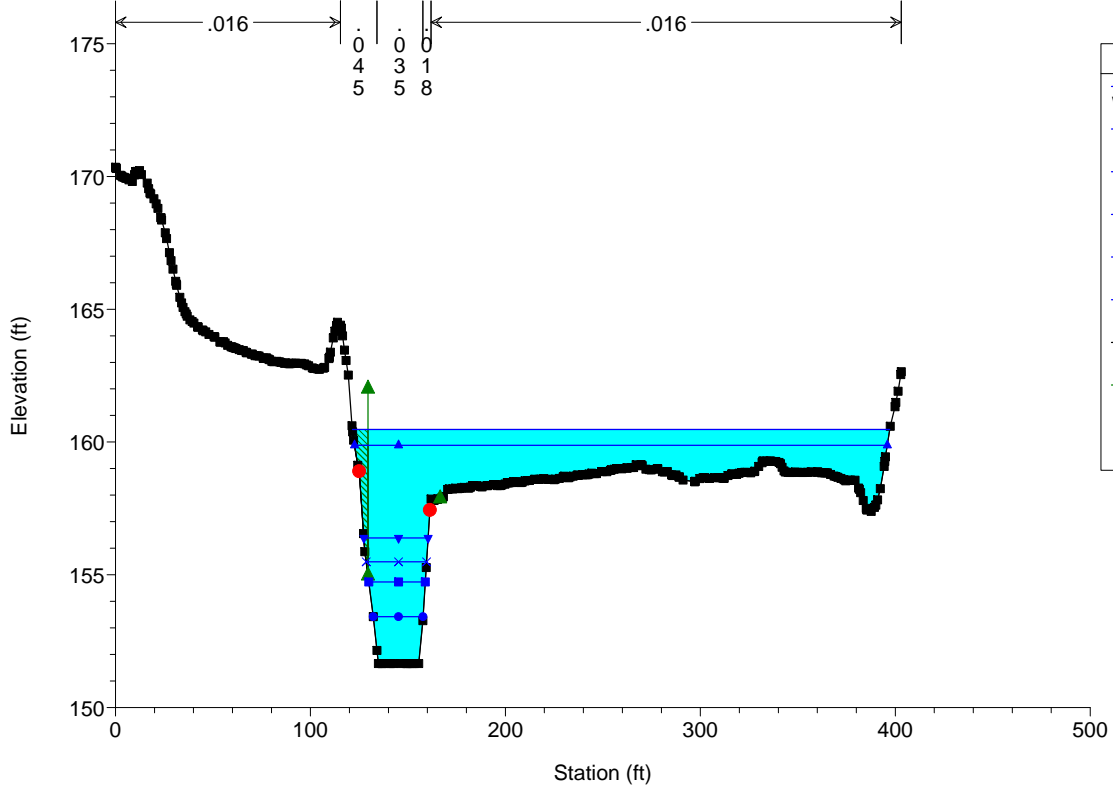
HEC-RAS Plan: Current River: Auburn Creek Reach: Main Reach

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	3283.479	100 YR	1200.00	151.66	160.47	155.88	160.52	0.000143	1.94	683.61	275.67	0.12
Main Reach	3283.479	50 YR	950.00	151.66	159.88	155.32	159.93	0.000200	2.18	524.94	273.32	0.14
Main Reach	3283.479	25 YR	630.00	151.66	156.39	154.52	156.77	0.002361	4.98	126.38	32.96	0.43
Main Reach	3283.479	10 YR	430.00	151.66	155.49	153.91	155.78	0.002443	4.35	98.95	31.01	0.42
Main Reach	3283.479	5 YR	290.00	151.66	154.73	153.40	154.96	0.002508	3.79	76.50	29.01	0.41
Main Reach	3283.479	2 YR	120.00	151.66	153.42	152.65	153.55	0.002872	2.95	40.71	25.54	0.41
Main Reach	3229.405	100 YR	1200.00	151.06	160.46		160.51	0.000158	1.81	698.76	297.53	0.12
Main Reach	3229.405	50 YR	950.00	151.06	159.87		159.92	0.000228	2.05	528.01	277.77	0.14
Main Reach	3229.405	25 YR	630.00	151.06	155.75		156.47	0.006840	6.83	92.25	29.50	0.68
Main Reach	3229.405	10 YR	430.00	151.06	154.24	154.16	155.29	0.015533	8.19	52.50	23.26	0.96
Main Reach	3229.405	5 YR	290.00	151.06	153.64	153.55	154.49	0.016034	7.40	39.19	20.62	0.95
Main Reach	3229.405	2 YR	120.00	151.06	152.79	152.52	153.20	0.011325	5.10	23.51	16.69	0.76
Main Reach	3159.787	100 YR	1200.00	150.29	160.43		160.50	0.000142	2.60	638.49	294.68	0.16
Main Reach	3159.787	50 YR	950.00	150.29	159.80		159.90	0.000201	2.93	459.23	281.87	0.19
Main Reach	3159.787	25 YR	630.00	150.29	155.60		156.18	0.002147	6.11	103.10	25.94	0.54
Main Reach	3159.787	10 YR	430.00	150.29	153.92		154.66	0.004620	6.89	62.36	22.42	0.73
Main Reach	3159.787	5 YR	290.00	150.29	152.81	152.70	153.67	0.008992	7.46	38.86	19.53	0.93
Main Reach	3159.787	2 YR	120.00	150.29	151.71	151.71	152.31	0.013820	6.23	19.26	16.16	1.01
Main Reach	3025.628	100 YR	1200.00	148.83	160.09	154.68	160.44	0.000535	4.70	260.64	58.90	0.29
Main Reach	3025.628	50 YR	950.00	148.83	159.60	153.93	159.85	0.000412	3.96	242.16	39.81	0.25
Main Reach	3025.628	25 YR	630.00	148.83	155.48	152.84	155.91	0.001355	5.28	119.40	24.41	0.42
Main Reach	3025.628	10 YR	430.00	148.83	153.71	152.01	154.17	0.002110	5.41	79.54	20.81	0.49
Main Reach	3025.628	5 YR	290.00	148.83	152.47	151.33	152.90	0.002917	5.26	55.17	18.56	0.54
Main Reach	3025.628	2 YR	120.00	148.83	150.66	150.27	151.03	0.006330	4.91	24.43	15.26	0.68
Main Reach	3000		Culvert									
Main Reach	2916.303	100 YR	1200.00	147.08	153.49	153.12	155.24	0.030148	10.59	113.29	26.59	0.90
Main Reach	2916.303	50 YR	950.00	147.08	151.43	152.24	154.51	0.061480	14.10	67.39	19.44	1.33
Main Reach	2916.303	25 YR	630.00	147.08	150.87	151.13	152.78	0.042271	11.09	56.80	18.64	1.12
Main Reach	2916.303	10 YR	430.00	147.08	149.95	150.33	151.72	0.049487	10.68	40.26	17.37	1.24
Main Reach	2916.303	5 YR	290.00	147.08	149.26	149.67	150.86	0.056926	10.17	28.53	16.29	1.35
Main Reach	2916.303	2 YR	120.00	147.08	148.20	148.61	149.55	0.074283	9.33	12.87	13.63	1.69
Main Reach	2900.962	100 YR	1200.00	143.83	154.06		154.48	0.002465	5.19	231.21	34.57	0.35
Main Reach	2900.962	50 YR	950.00	143.83	153.03	148.92	153.39	0.002347	4.83	196.88	31.81	0.34
Main Reach	2900.962	25 YR	630.00	143.83	151.44	147.93	151.71	0.002089	4.21	149.56	27.72	0.32
Main Reach	2900.962	10 YR	430.00	143.83	150.17	147.18	150.38	0.001866	3.71	116.04	25.14	0.30
Main Reach	2900.962	5 YR	290.00	143.83	149.03	146.54	149.20	0.001763	3.27	88.59	23.25	0.30
Main Reach	2900.962	2 YR	120.00	143.83	147.12	145.55	147.22	0.001661	2.54	47.21	19.93	0.29
Main Reach	2709.054	100 YR	1200.00	142.92	153.19	149.43	153.61	0.011117	5.17	232.28	72.40	0.37
Main Reach	2709.054	50 YR	950.00	142.92	152.17	148.76	152.54	0.011048	4.90	194.04	35.84	0.37
Main Reach	2709.054	25 YR	630.00	142.92	150.64	147.71	150.94	0.010675	4.41	142.76	31.09	0.36
Main Reach	2709.054	10 YR	430.00	142.92	149.41	146.91	149.66	0.010596	4.03	106.74	27.53	0.36
Main Reach	2709.054	5 YR	290.00	142.92	148.29	146.21	148.51	0.010822	3.72	77.88	24.05	0.36
Main Reach	2709.054	2 YR	120.00	142.92	146.42	145.00	146.56	0.010434	3.08	38.95	17.81	0.37
Main Reach	2501.489	100 YR	1200.00	141.01	149.45	147.35	150.29	0.024228	7.37	162.90	157.57	0.56
Main Reach	2501.489	50 YR	950.00	141.01	148.61	146.64	149.34	0.022414	6.85	138.62	150.07	0.54
Main Reach	2501.489	25 YR	630.00	141.01	147.35	145.51	147.91	0.020714	6.02	104.73	73.24	0.53
Main Reach	2501.489	10 YR	430.00	141.01	146.29	144.66	146.75	0.019125	5.44	79.04	22.58	0.51
Main Reach	2501.489	5 YR	290.00	141.01	145.28	143.96	145.67	0.017478	4.99	58.14	19.20	0.51
Main Reach	2501.489	2 YR	120.00	141.01	143.56	142.82	143.83	0.016823	4.20	28.59	15.05	0.54
Main Reach	2309.998	100 YR	1200.00	139.05	146.83	145.10	147.59	0.009040	6.99	171.55	195.41	0.58
Main Reach	2309.998	50 YR	950.00	139.05	146.06	144.48	146.74	0.009002	6.62	143.57	153.88	0.57
Main Reach	2309.998	25 YR	630.00	139.05	144.89	143.52	145.44	0.008761	5.99	105.23	65.90	0.57
Main Reach	2309.998	10 YR	430.00	139.05	143.96	142.77	144.43	0.008369	5.45	78.90	26.76	0.56
Main Reach	2309.998	5 YR	290.00	139.05	143.12	142.11	143.51	0.007882	5.03	57.66	23.17	0.56
Main Reach	2309.998	2 YR	120.00	139.05	141.54	141.04	141.85	0.006962	4.53	26.52	16.41	0.63
Main Reach	2161.775	100 YR	1200.00	137.65	143.29	143.29	145.14	0.034097	10.94	109.67	131.81	1.00
Main Reach	2161.775	50 YR	950.00	137.65	142.67	142.67	144.33	0.033645	10.31	92.12	75.69	1.00
Main Reach	2161.775	25 YR	630.00	137.65	141.75	141.75	143.10	0.033228	9.33	67.54	27.75	1.00
Main Reach	2161.775	10 YR	430.00	137.65	141.05	141.05	142.16	0.032928	8.45	50.89	23.02	1.00
Main Reach	2161.775	5 YR	290.00	137.65	140.46	140.46	141.37	0.031921	7.65	37.90	20.93	1.00
Main Reach	2161.775	2 YR	120.00	137.65	139.48	139.48	140.08	0.023988	6.21	19.32	16.27	1.00
Main Reach	1835.094	100 YR	1200.00	133.65	143.08	139.22	143.54	0.000378	5.46	237.59	296.67	0.36
Main Reach	1835.094	50 YR	950.00	133.65	137.97	138.53	140.48	0.005740	12.71	74.76	97.10	1.24
Main Reach	1835.094	25 YR	630.00	133.65	137.04	137.51	139.11	0.006098	11.54	54.58	39.63	1.24
Main Reach	1835.094	10 YR	430.00	133.65	136.34	136.73	138.06	0.006437	10.50	40.95	24.20	1.25
Main Reach	1835.094	5 YR	290.00	133.65	135.77	136.08	137.16	0.006804	9.48	30.60	17.17	1.25
Main Reach	1835.094	2 YR	120.00	133.65	134.84	135.05	135.74	0.008347	7.60	15.79	14.80	1.30
Main Reach	1800.703	100 YR	1200.00	130.48	143.12	136.59	143.47	0.000272	4.77	267.55	286.82	0.27

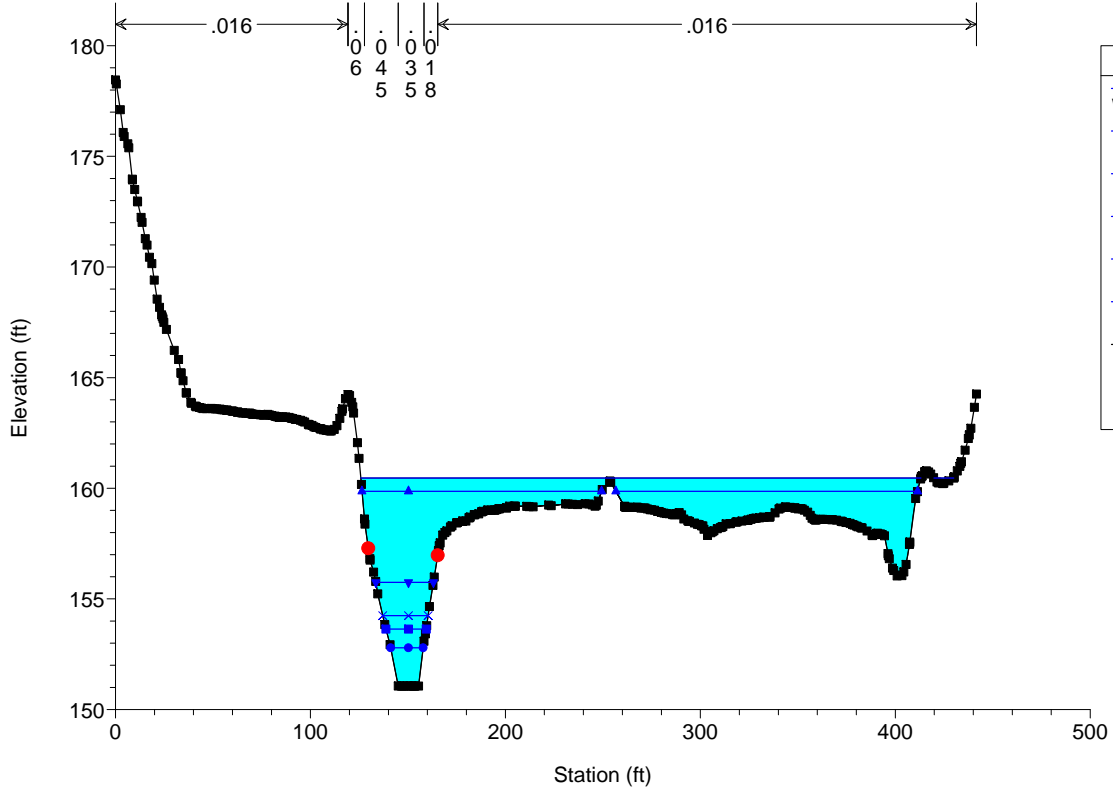
HEC-RAS Plan: Current River: Auburn Creek Reach: Main Reach (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	1800.703	50 YR	950.00	130.48	139.38	135.78	139.96	0.000692	6.11	155.49	152.49	0.42
Main Reach	1800.703	25 YR	630.00	130.48	136.72	134.61	137.36	0.001052	6.40	98.40	19.76	0.51
Main Reach	1800.703	10 YR	430.00	130.48	132.44	133.73	136.86	0.023237	16.87	25.49	14.28	2.22
Main Reach	1800.703	5 YR	290.00	130.48	131.90	133.02	135.94	0.030332	16.12	17.99	13.59	2.47
Main Reach	1800.703	2 YR	120.00	130.48	131.16	131.92	134.41	0.058283	14.48	8.29	12.64	3.15
Main Reach	1350		Culvert									
Main Reach	925.4423	100 YR	1200.00	118.52	128.35	124.59	128.68	0.002114	4.62	260.62	52.49	0.34
Main Reach	925.4423	50 YR	950.00	118.52	122.93	123.93	126.14	0.053453	14.37	66.11	23.48	1.51
Main Reach	925.4423	25 YR	630.00	118.52	121.80	122.94	125.30	0.080966	15.02	41.95	19.23	1.79
Main Reach	925.4423	10 YR	430.00	118.52	121.23	122.15	124.10	0.082892	13.61	31.60	17.22	1.77
Main Reach	925.4423	5 YR	290.00	118.52	120.73	121.49	123.09	0.086413	12.33	23.52	15.47	1.76
Main Reach	925.4423	2 YR	120.00	118.52	119.91	120.40	121.48	0.105614	10.07	11.92	12.60	1.83
Main Reach	797.816	100 YR	1200.00	115.61	128.27		128.35	0.001303	2.18	551.44	77.93	0.14
Main Reach	797.816	50 YR	950.00	115.61	123.46	120.77	123.71	0.007669	4.04	235.20	55.74	0.35
Main Reach	797.816	25 YR	630.00	115.61	121.83	120.01	122.10	0.010847	4.18	150.67	47.43	0.41
Main Reach	797.816	10 YR	430.00	115.61	120.88	119.23	121.13	0.011275	3.96	108.46	41.11	0.43
Main Reach	797.816	5 YR	290.00	115.61	120.04	118.61	120.26	0.011588	3.80	76.24	35.00	0.45
Main Reach	797.816	2 YR	120.00	115.61	117.87	117.67	118.28	0.011604	5.17	23.21	18.41	0.81
Main Reach	652.2307	100 YR	1200.00	114.05	128.17		128.21	0.000595	1.61	743.42	90.33	0.10
Main Reach	652.2307	50 YR	950.00	114.05	122.69		122.84	0.004441	3.11	305.74	68.25	0.26
Main Reach	652.2307	25 YR	630.00	114.05	120.11		120.39	0.012825	4.24	148.58	51.31	0.44
Main Reach	652.2307	10 YR	430.00	114.05	119.14		119.40	0.012444	4.12	104.42	41.09	0.46
Main Reach	652.2307	5 YR	290.00	114.05	118.29		118.54	0.012107	3.99	72.59	33.66	0.48
Main Reach	652.2307	2 YR	120.00	114.05	116.52	116.16	116.86	0.008101	4.66	25.75	19.15	0.71
Main Reach	513.9224	100 YR	1200.00	112.62	128.12	118.12	128.16	0.000291	1.45	828.96	246.08	0.08
Main Reach	513.9224	50 YR	950.00	112.62	122.36	117.61	122.46	0.001799	2.58	368.32	70.64	0.20
Main Reach	513.9224	25 YR	630.00	112.62	118.79	116.84	119.06	0.007436	4.15	151.67	46.12	0.40
Main Reach	513.9224	10 YR	430.00	112.62	117.93	116.25	118.15	0.006804	3.76	114.49	39.89	0.39
Main Reach	513.9224	5 YR	290.00	112.62	116.91	115.74	117.13	0.008572	3.78	76.81	34.12	0.44
Main Reach	513.9224	2 YR	120.00	112.62	114.59	114.59	115.24	0.017378	6.47	18.56	14.20	1.00
Main Reach	414.6495	100 YR	1200.00	111.16	128.12		128.13	0.000109	0.98	1525.28	249.60	0.05
Main Reach	414.6495	50 YR	950.00	111.16	122.24		122.31	0.001063	2.12	448.43	78.61	0.16
Main Reach	414.6495	25 YR	630.00	111.16	118.08		118.32	0.007302	3.90	161.58	54.83	0.40
Main Reach	414.6495	10 YR	430.00	111.16	117.19		117.40	0.008162	3.72	115.51	48.12	0.42
Main Reach	414.6495	5 YR	290.00	111.16	116.19		116.41	0.006149	3.82	75.84	30.65	0.43
Main Reach	414.6495	2 YR	120.00	111.16	114.37		114.55	0.002685	3.44	34.93	16.14	0.41
Main Reach	307.2411	100 YR	1200.00	110.58	128.12		128.12	0.000045	0.80	1632.88	243.92	0.04
Main Reach	307.2411	50 YR	950.00	110.58	122.15		122.22	0.000728	2.08	456.47	75.80	0.15
Main Reach	307.2411	25 YR	630.00	110.58	117.47		117.69	0.004807	3.76	167.50	50.14	0.36
Main Reach	307.2411	10 YR	430.00	110.58	116.45		116.65	0.006044	3.61	118.96	45.35	0.39
Main Reach	307.2411	5 YR	290.00	110.58	115.57		115.76	0.005787	3.49	83.04	35.74	0.40
Main Reach	307.2411	2 YR	120.00	110.58	114.00		114.15	0.005180	3.11	38.52	22.62	0.42
Main Reach	195.1298	100 YR	1200.00	110.73	128.11		128.12	0.000053	0.79	2203.23	334.28	0.04
Main Reach	195.1298	50 YR	950.00	110.73	122.06		122.13	0.000841	2.10	463.99	128.85	0.14
Main Reach	195.1298	25 YR	630.00	110.73	116.77		117.02	0.007446	3.97	158.50	47.62	0.38
Main Reach	195.1298	10 YR	430.00	110.73	115.24		115.60	0.016056	4.80	89.53	38.54	0.56
Main Reach	195.1298	5 YR	290.00	110.73	114.42		114.75	0.015386	4.64	62.46	29.90	0.57
Main Reach	195.1298	2 YR	120.00	110.73	113.13		113.36	0.010044	3.84	31.21	19.21	0.53
Main Reach	141.507	100 YR	1200.00	110.64	128.11		128.12	0.000014	0.67	2359.17	355.33	0.03
Main Reach	141.507	50 YR	950.00	110.64	122.04		122.10	0.000331	2.07	507.78	161.22	0.15
Main Reach	141.507	25 YR	630.00	110.64	116.57		116.82	0.002283	3.95	159.43	38.35	0.34
Main Reach	141.507	10 YR	430.00	110.64	114.87		115.17	0.004480	4.38	98.24	33.52	0.45
Main Reach	141.507	5 YR	290.00	110.64	114.03		114.29	0.005078	4.04	71.70	29.81	0.46
Main Reach	141.507	2 YR	120.00	110.64	112.73		112.90	0.006712	3.31	36.28	24.48	0.48
Main Reach	65.30157	100 YR	1200.00	109.47	128.11		128.12	0.000028	0.62	2522.15	370.27	0.03
Main Reach	65.30157	50 YR	950.00	109.47	122.01		122.07	0.000618	1.94	549.32	143.92	0.13
Main Reach	65.30157	25 YR	630.00	109.47	116.31		116.56	0.005345	4.04	155.99	39.19	0.36
Main Reach	65.30157	10 YR	430.00	109.47	114.20		114.61	0.013238	5.13	83.76	30.18	0.54
Main Reach	65.30157	5 YR	290.00	109.47	113.22		113.63	0.016296	5.15	56.31	24.00	0.59
Main Reach	65.30157	2 YR	120.00	109.47	111.97		112.21	0.012982	3.88	30.90	17.77	0.52
Main Reach	4.590075	100 YR	1200.00	108.59	128.11	114.26	128.11	0.000029	0.66	2526.00	407.77	0.03
Main Reach	4.590075	50 YR	950.00	108.59	121.86	113.63	122.01	0.001049	3.11	305.02	94.97	0.17
Main Reach	4.590075	25 YR	630.00	108.59	115.98	112.63	116.28	0.004066	4.36	144.52	27.52	0.32
Main Reach	4.590075	10 YR	430.00	108.59	113.56	111.88	113.95	0.008957	5.02	85.65	23.70	0.47
Main Reach	4.590075	5 YR	290.00	108.59	112.51	111.25	112.85	0.009921	4.69	61.85	21.58	0.49
Main Reach	4.590075	2 YR	120.00	108.59	110.23	110.23	110.84	0.044055	6.28	19.11	15.64	1.00

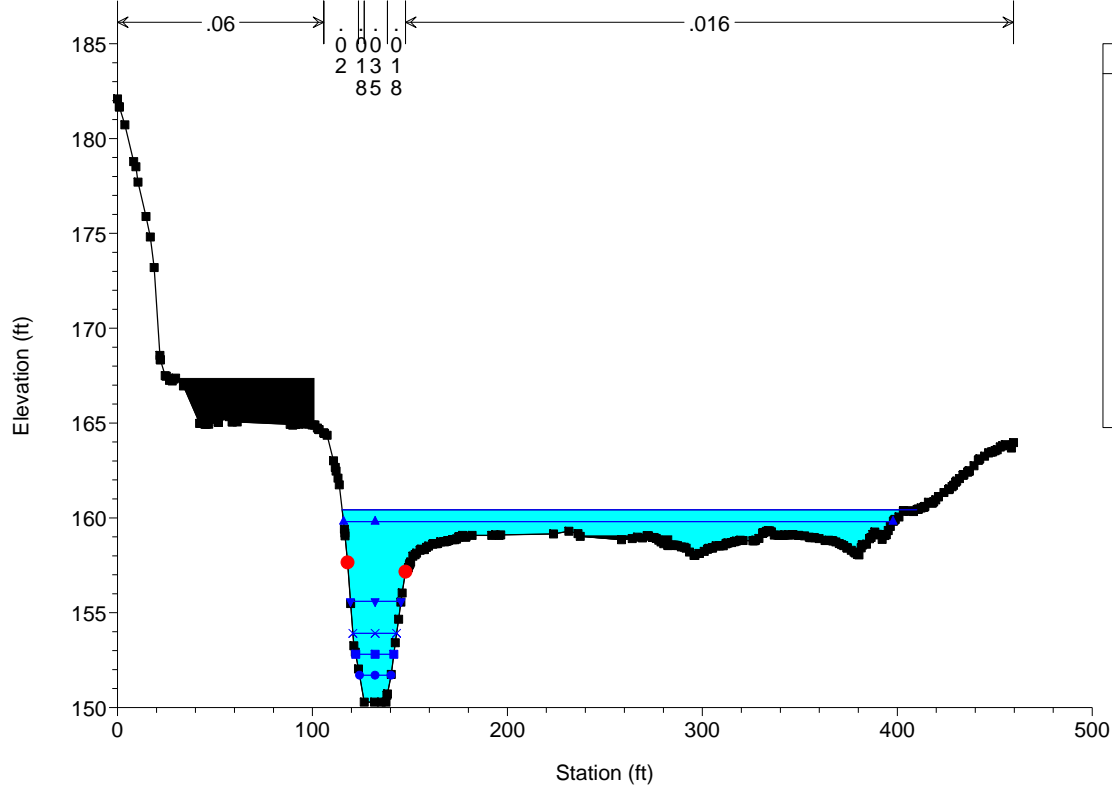
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3283.479



Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3229.405

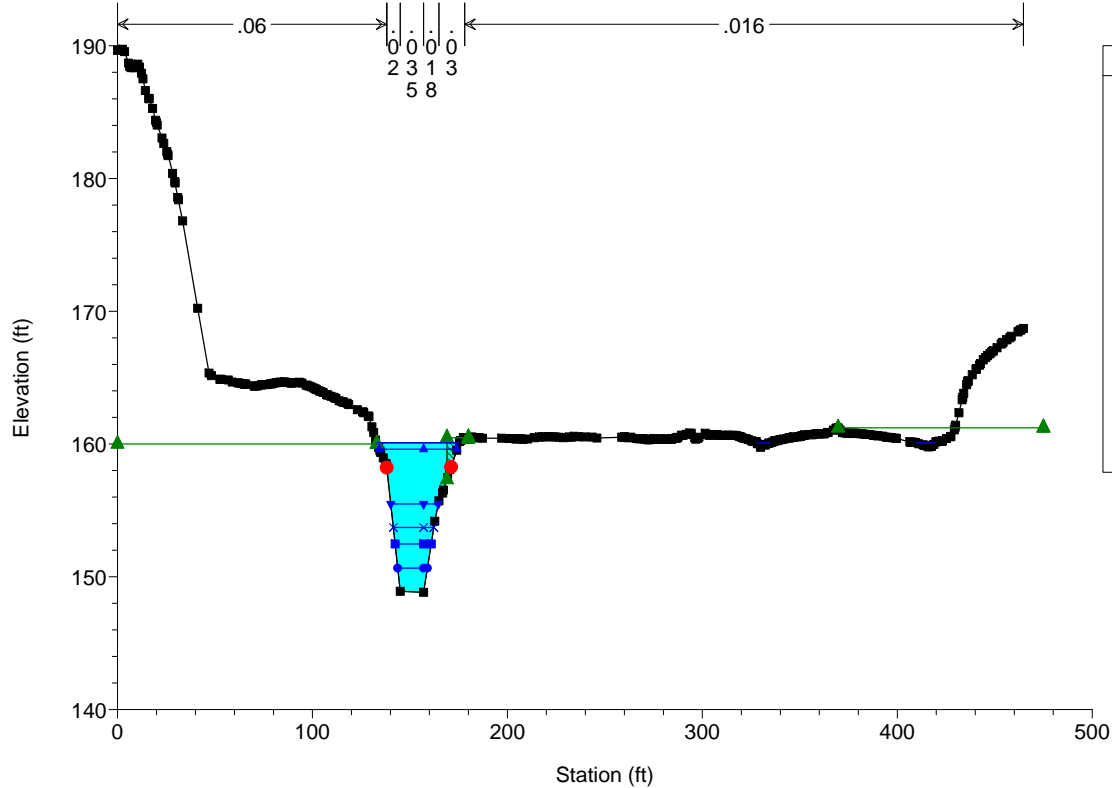


Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3159.787



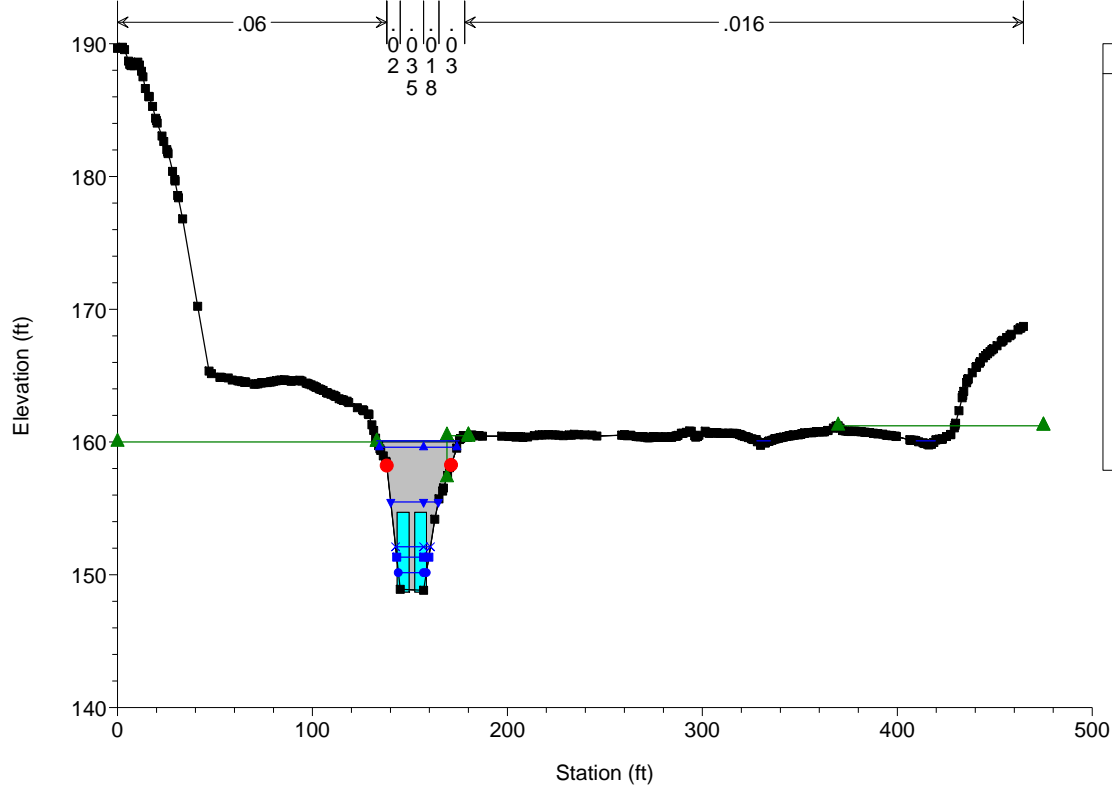
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3025.628



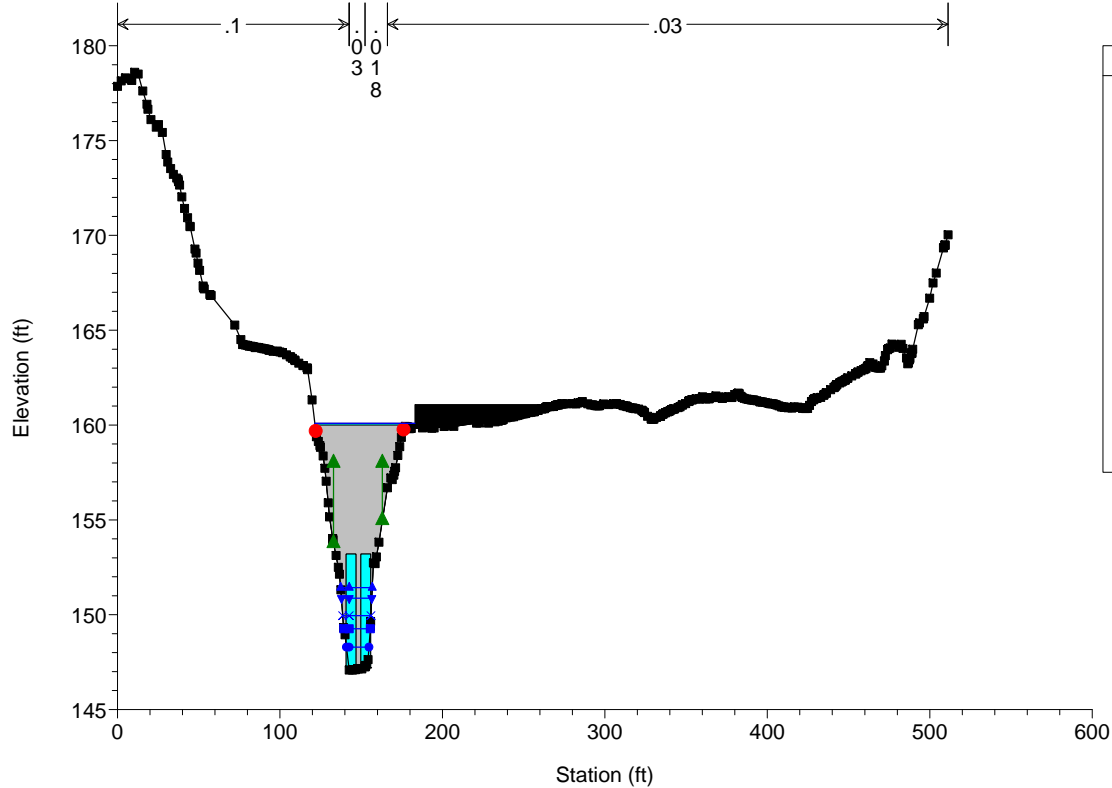
Legend	
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WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	●
Ground	■
Ineff	▲
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3000 Culv



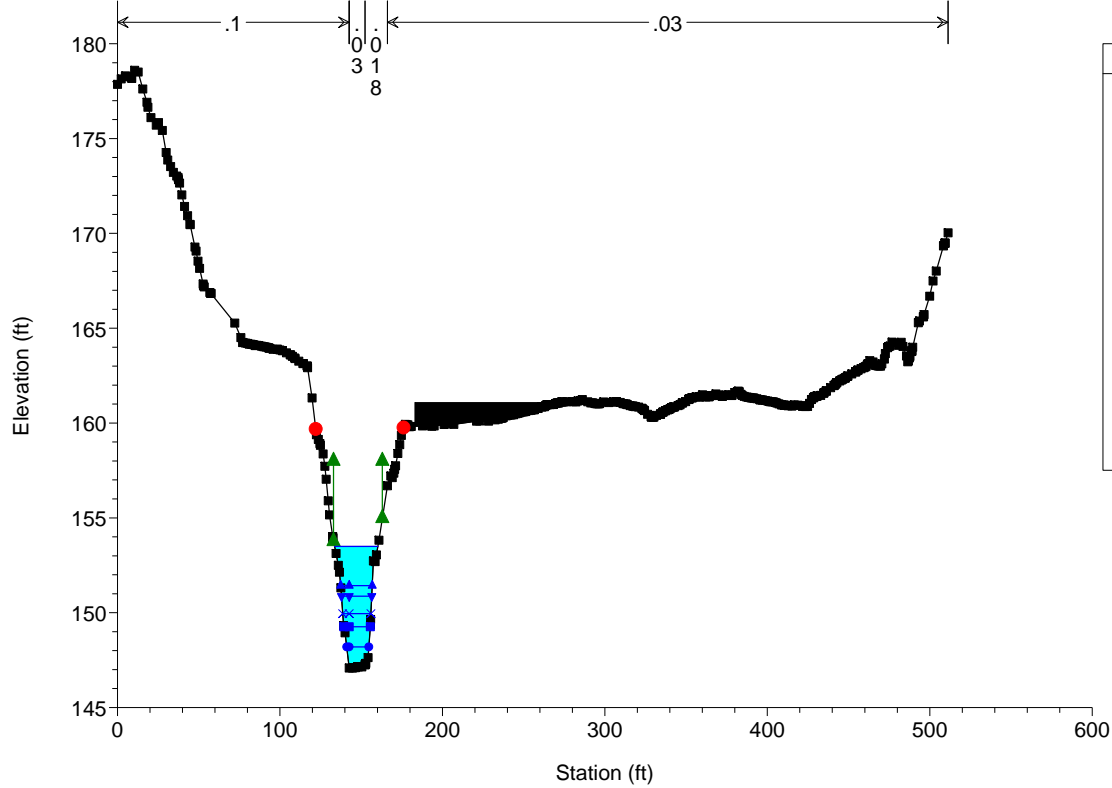
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	✕
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	—
Ineff	▲
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 3000 Culv



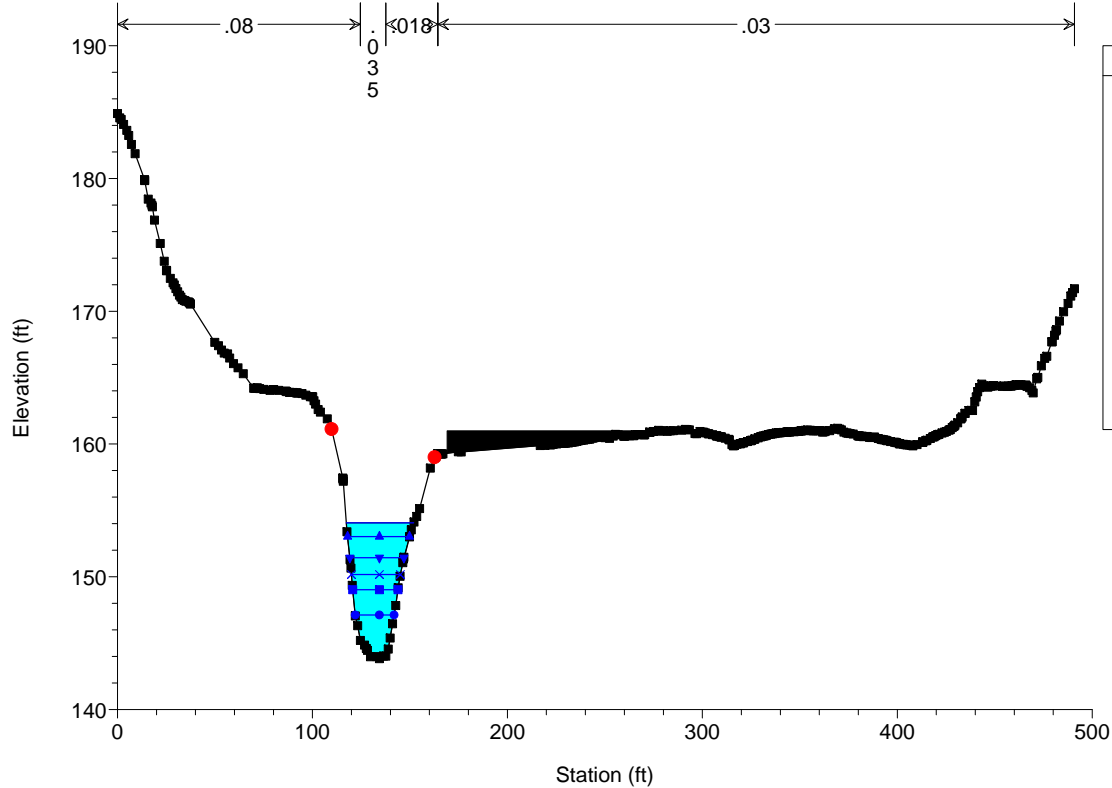
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	✕
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	—
Ineff	▲
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 2916.303

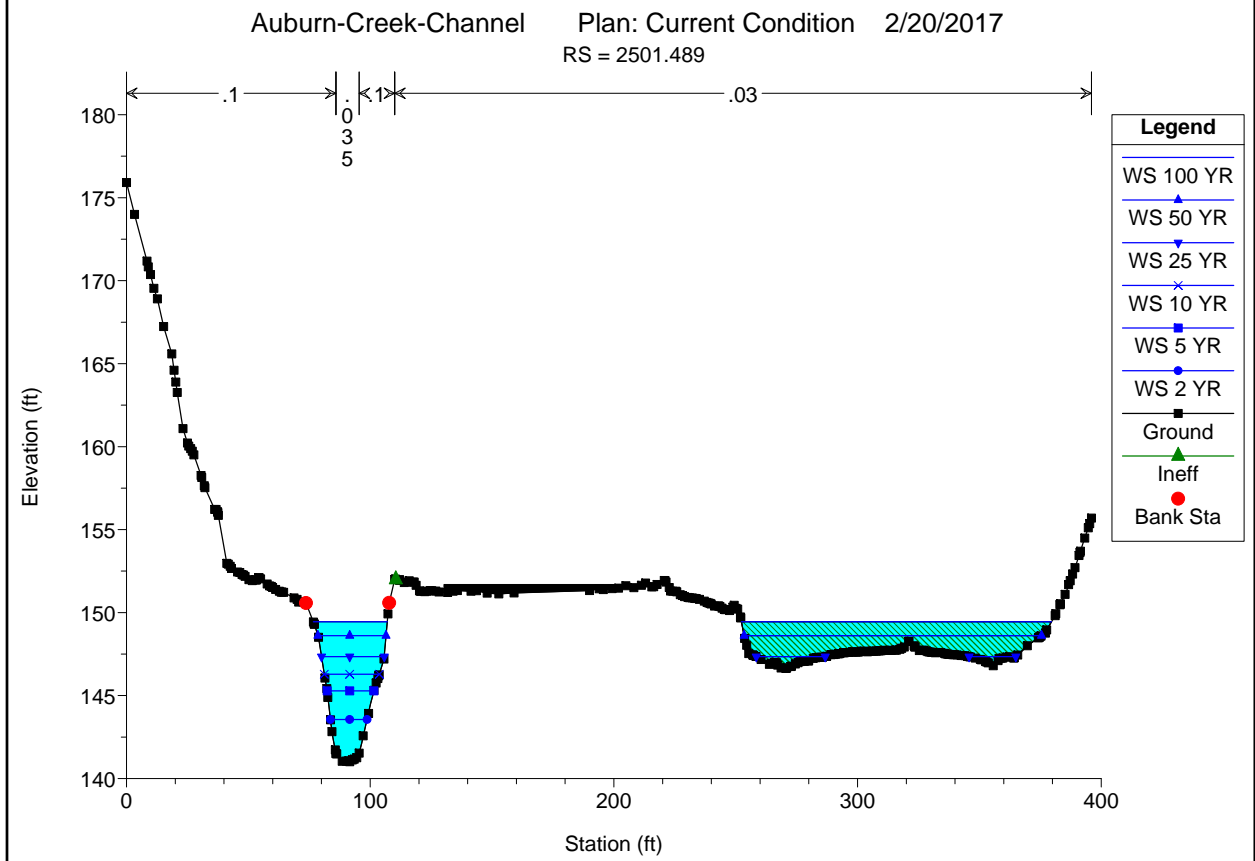
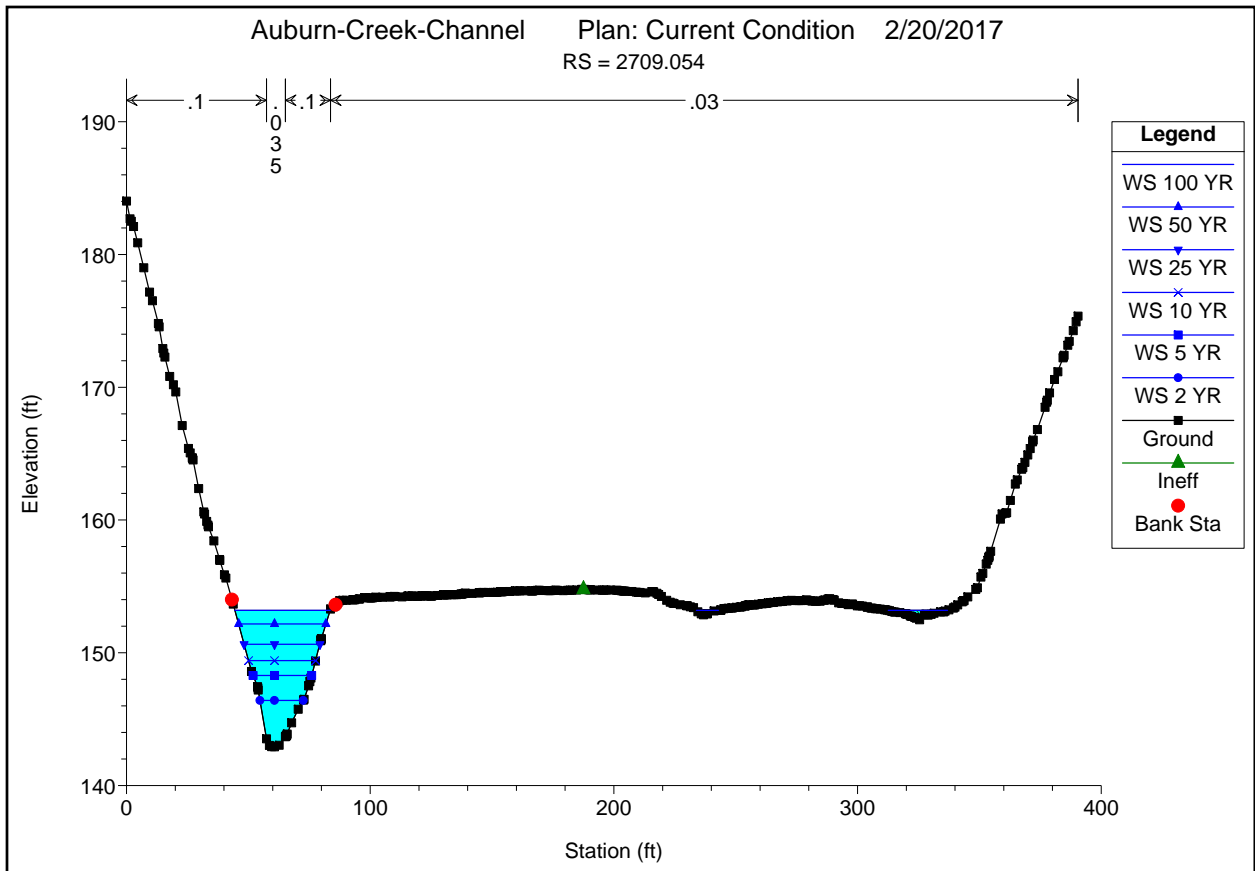


Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	◆
WS 2 YR	●
Ground	—
Ineff	▲
Bank Sta	●

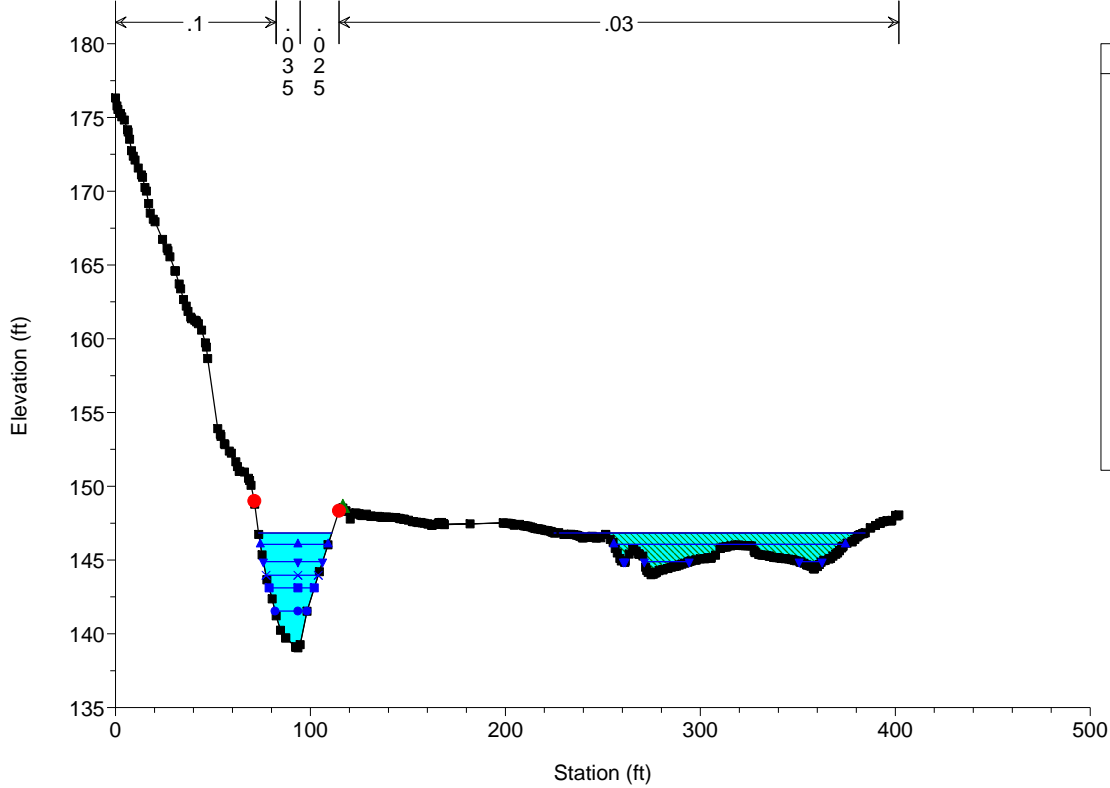
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 2900.962



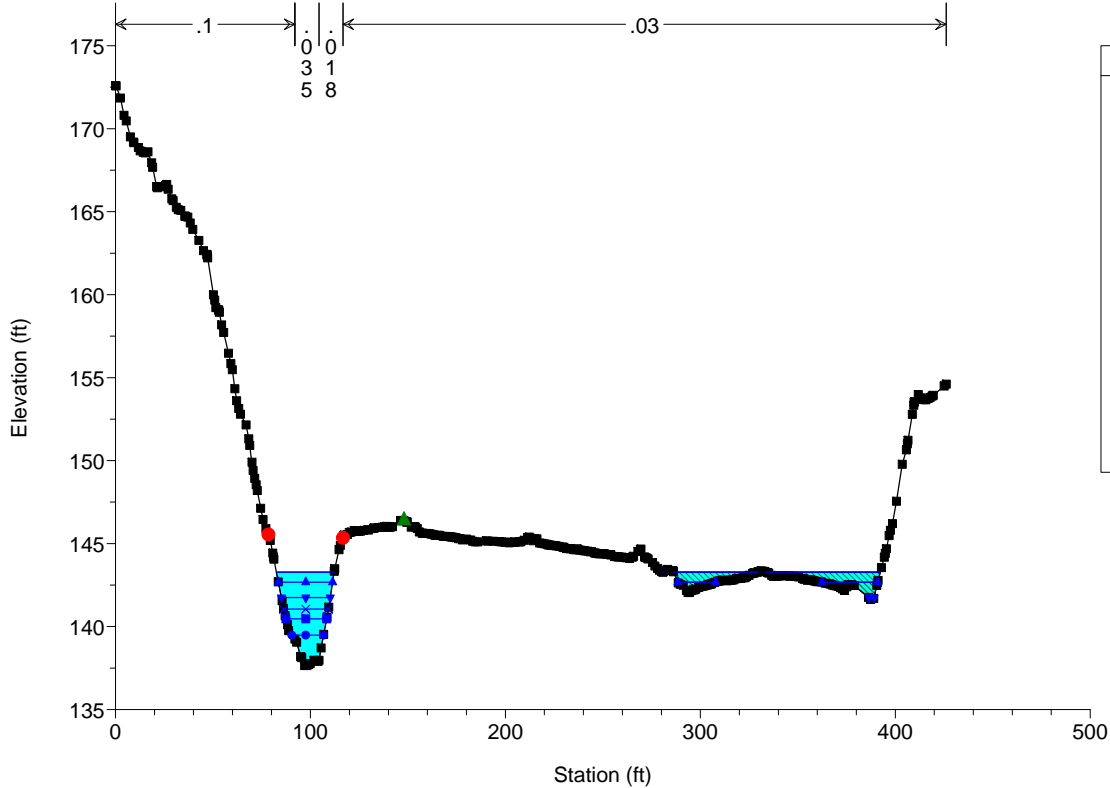
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	◆
WS 2 YR	●
Ground	—
Bank Sta	●



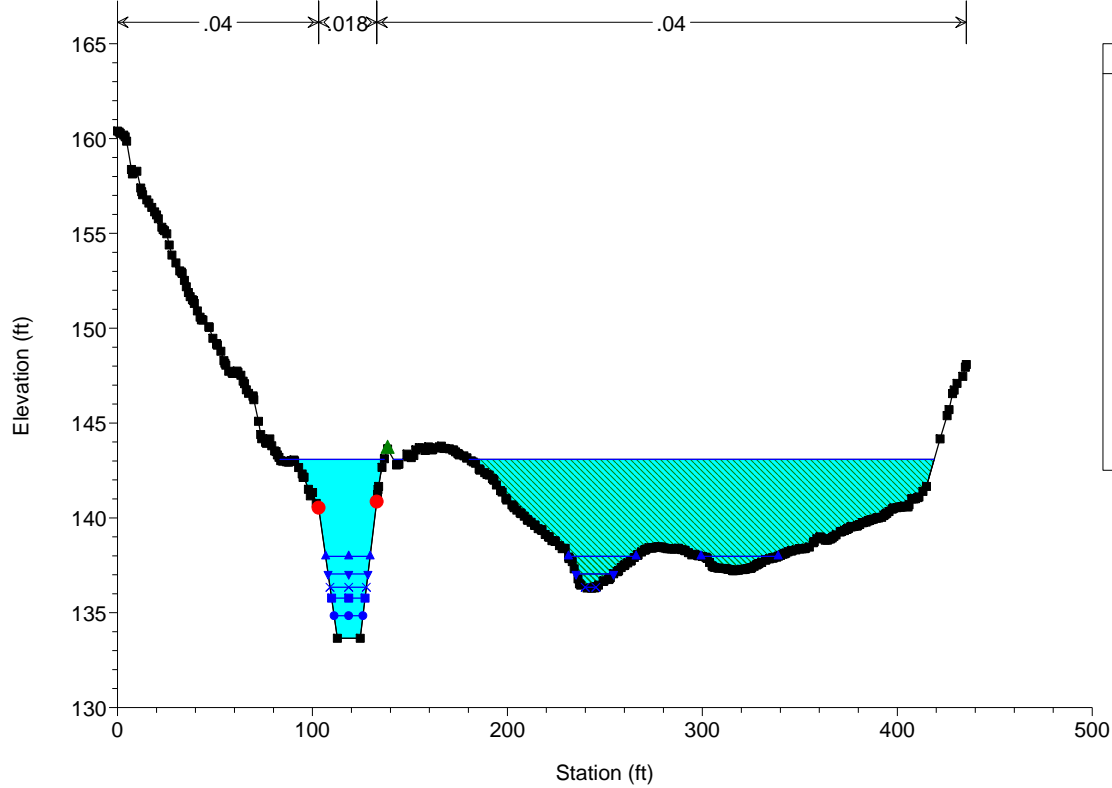
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 2309.998



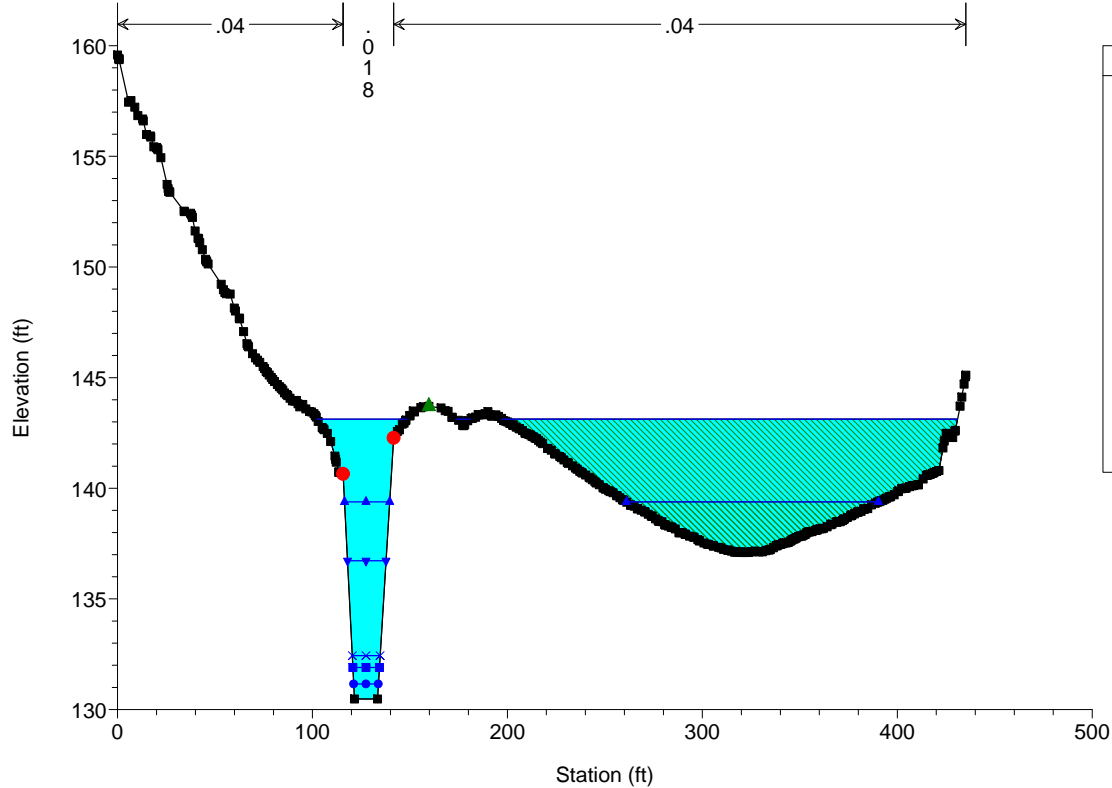
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 2161.775



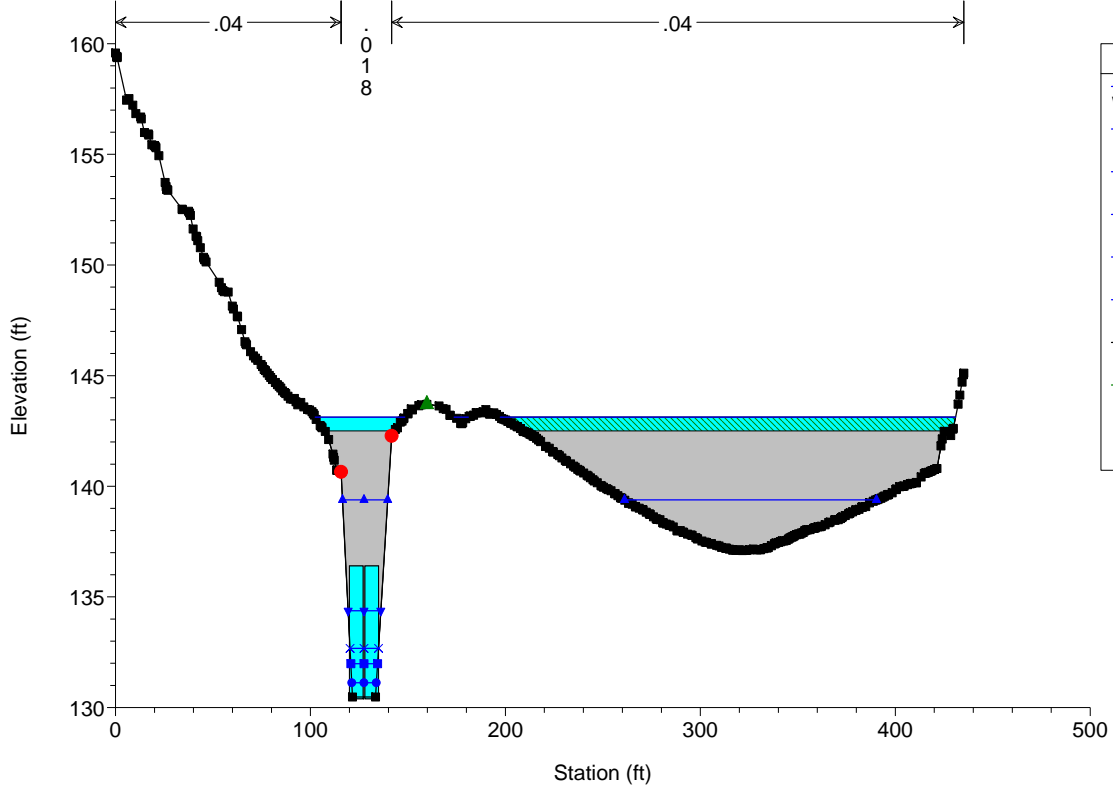
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 1835.094



Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 1800.703

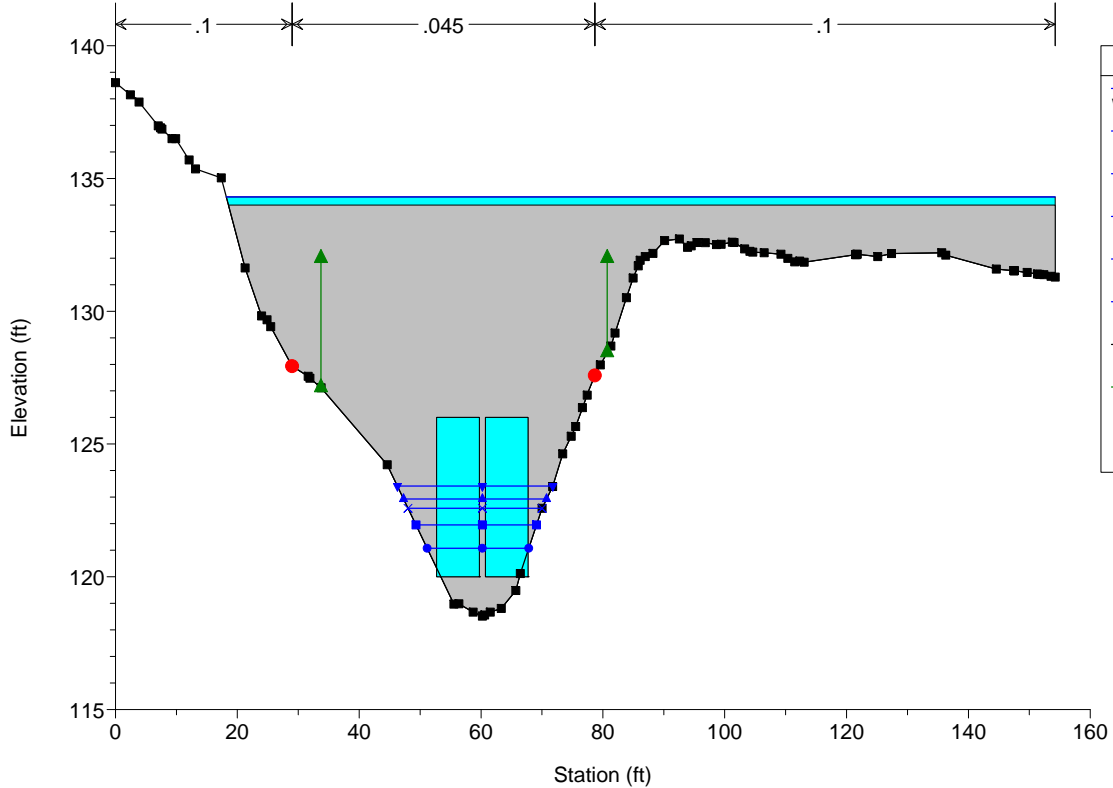


Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 1350 Culv

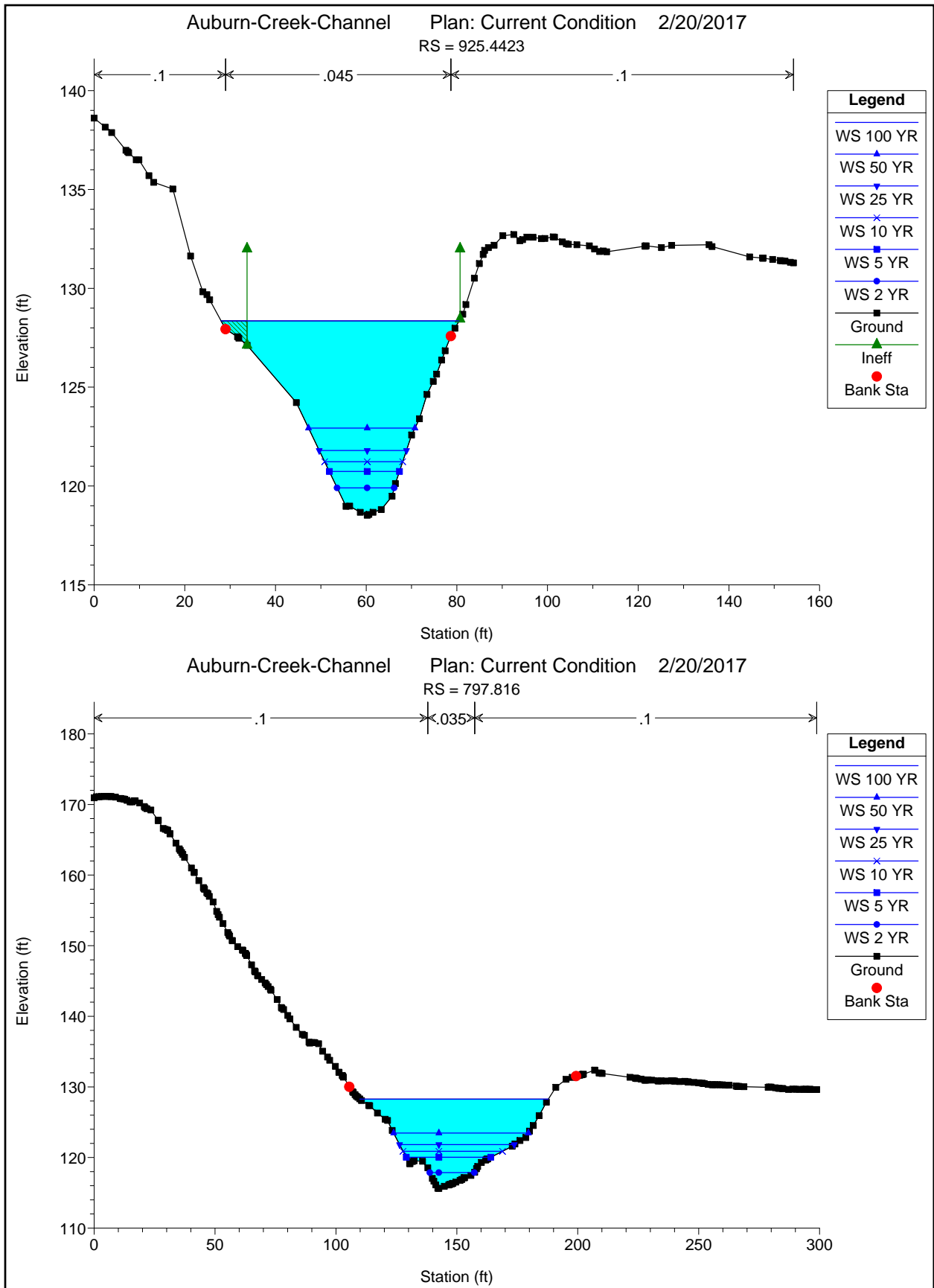


Legend	
WS 100 YR	—
WS 50 YR	▲
WS 25 YR	▼
WS 10 YR	×
WS 5 YR	■
WS 2 YR	●
Ground	■
Ineff	▲
Bank Sta	●

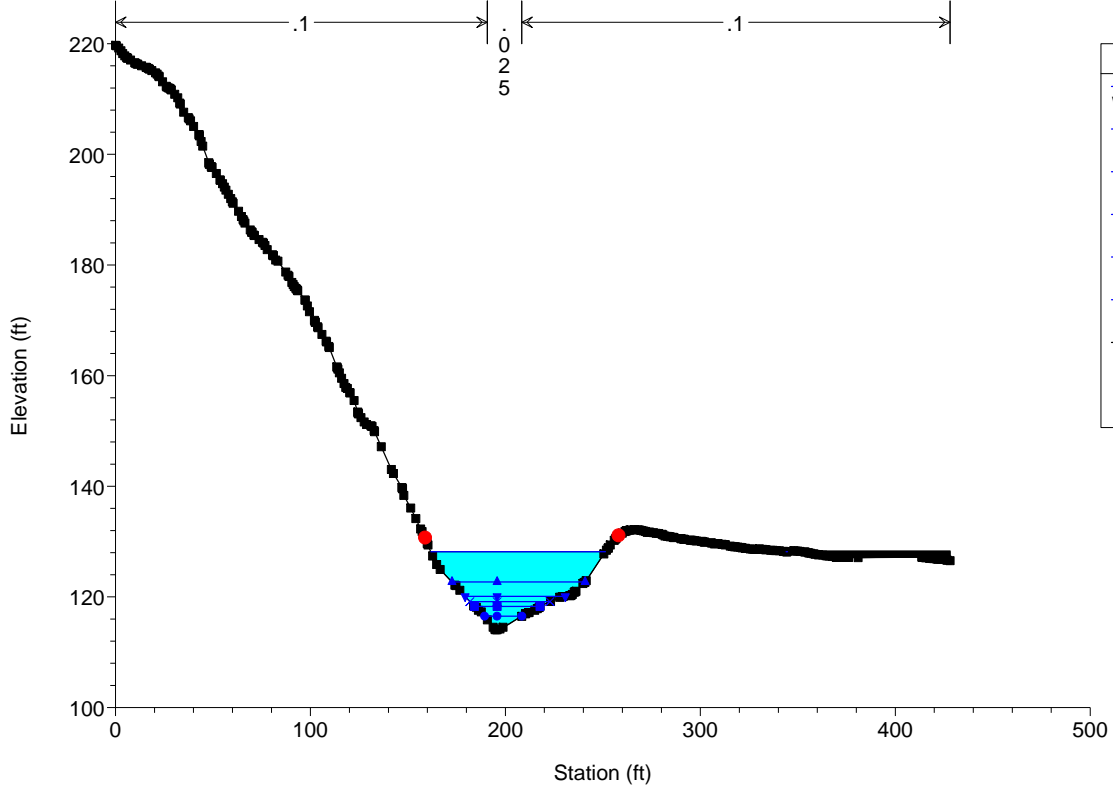
Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 1350 Culv



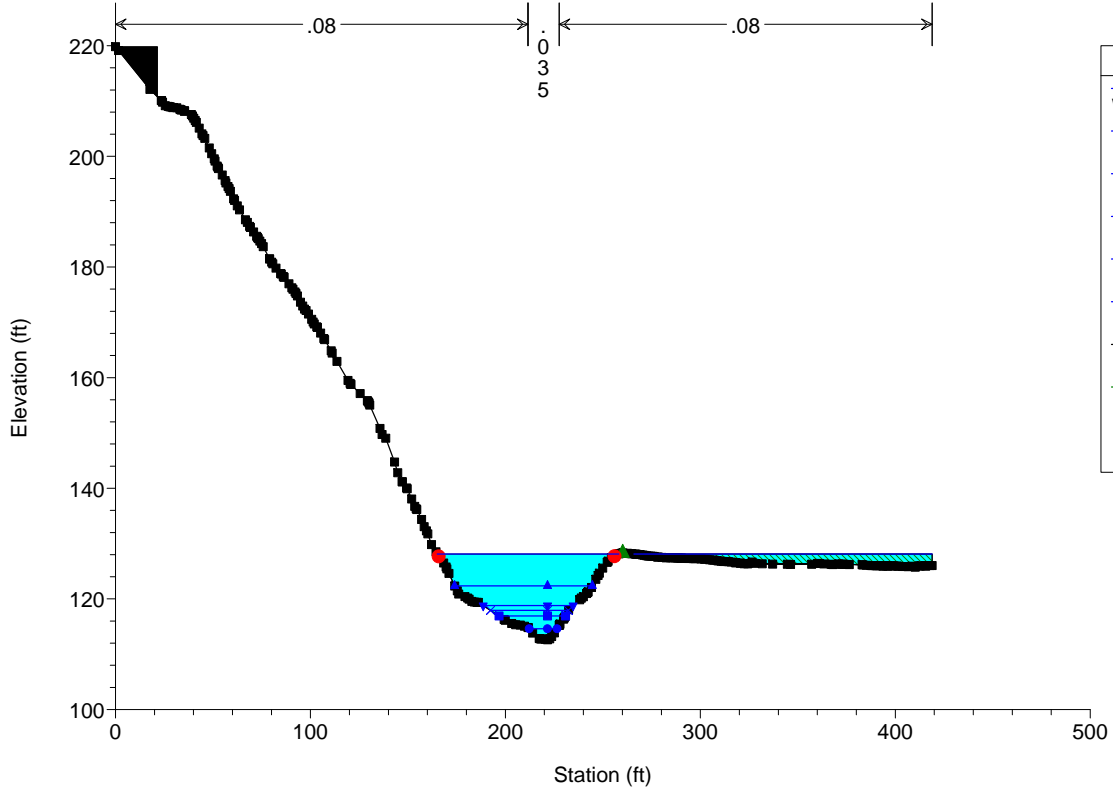
Legend	
WS 100 YR	—
WS 50 YR	▲
WS 25 YR	▼
WS 10 YR	×
WS 5 YR	■
WS 2 YR	●
Ground	■
Ineff	▲
Bank Sta	●

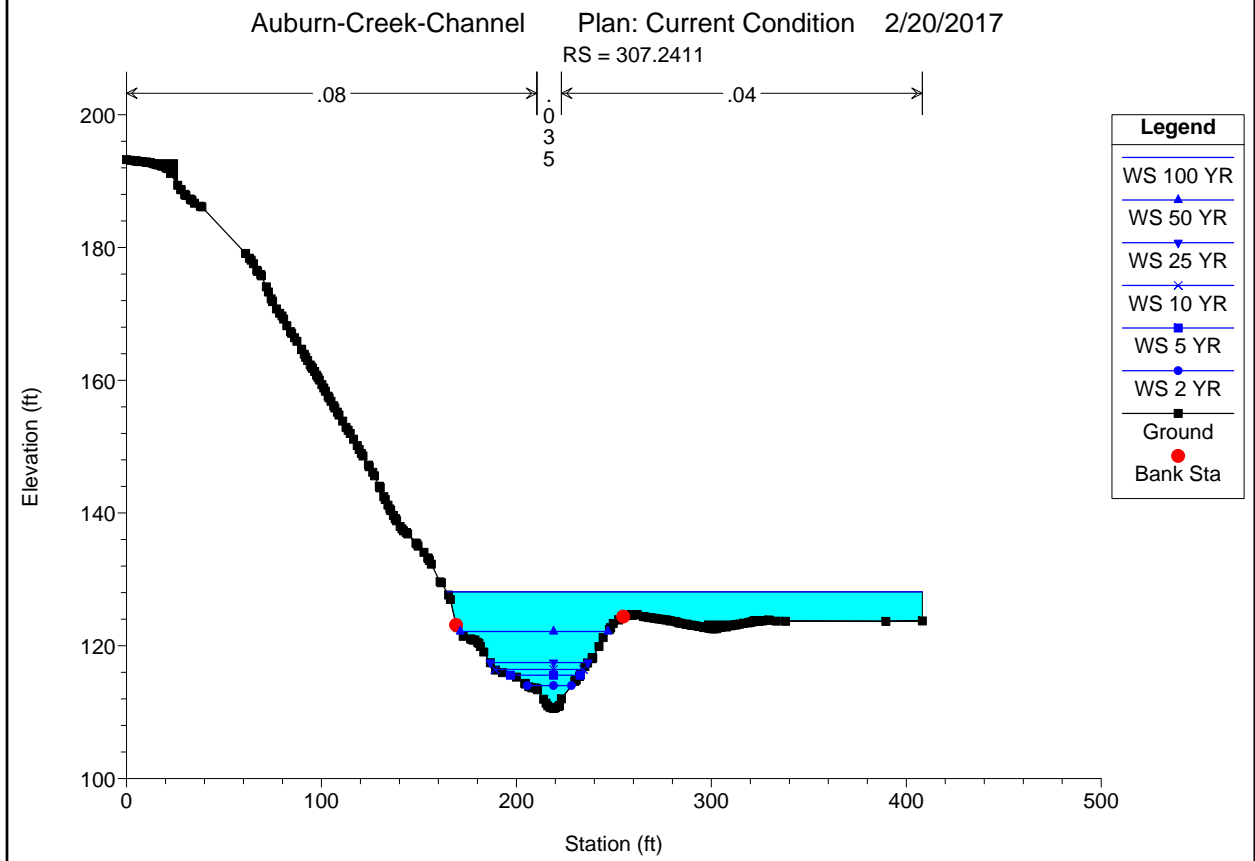
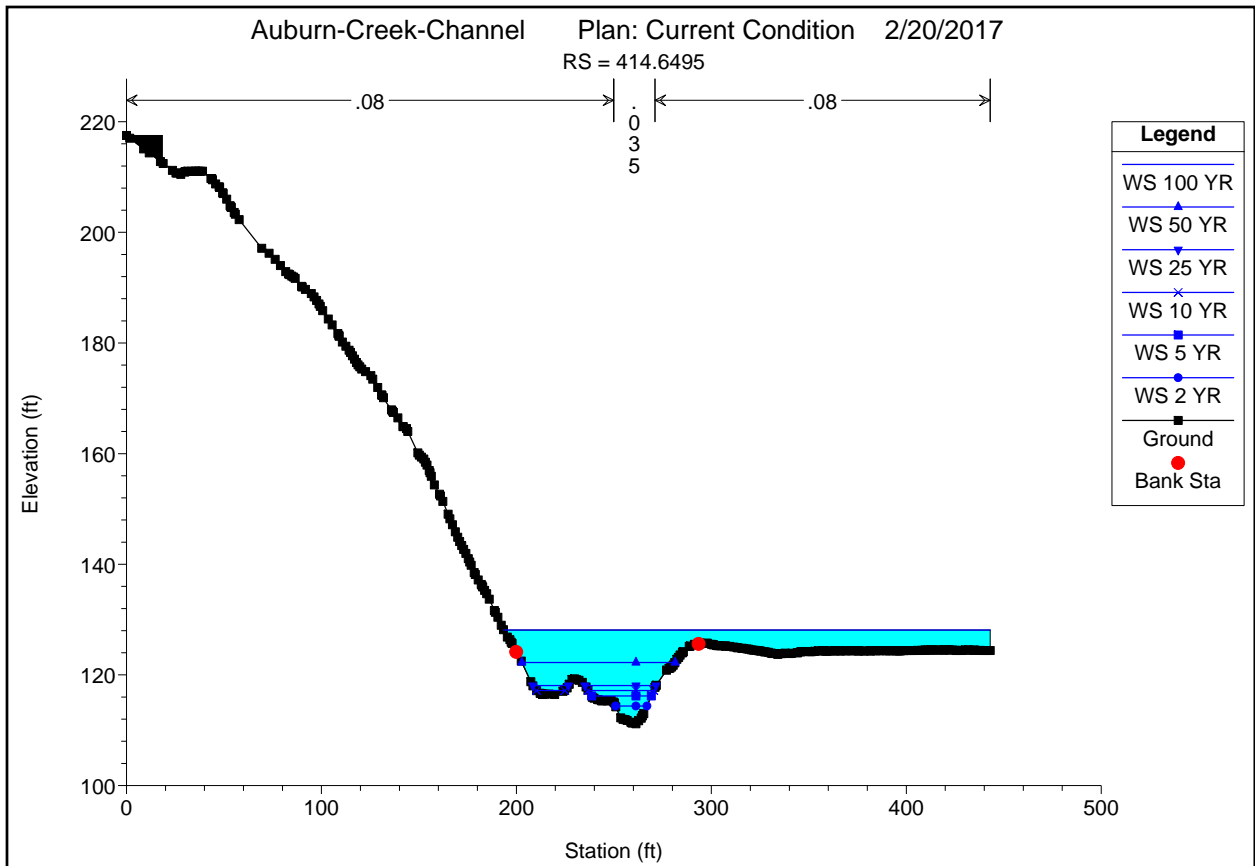


Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 652.2307

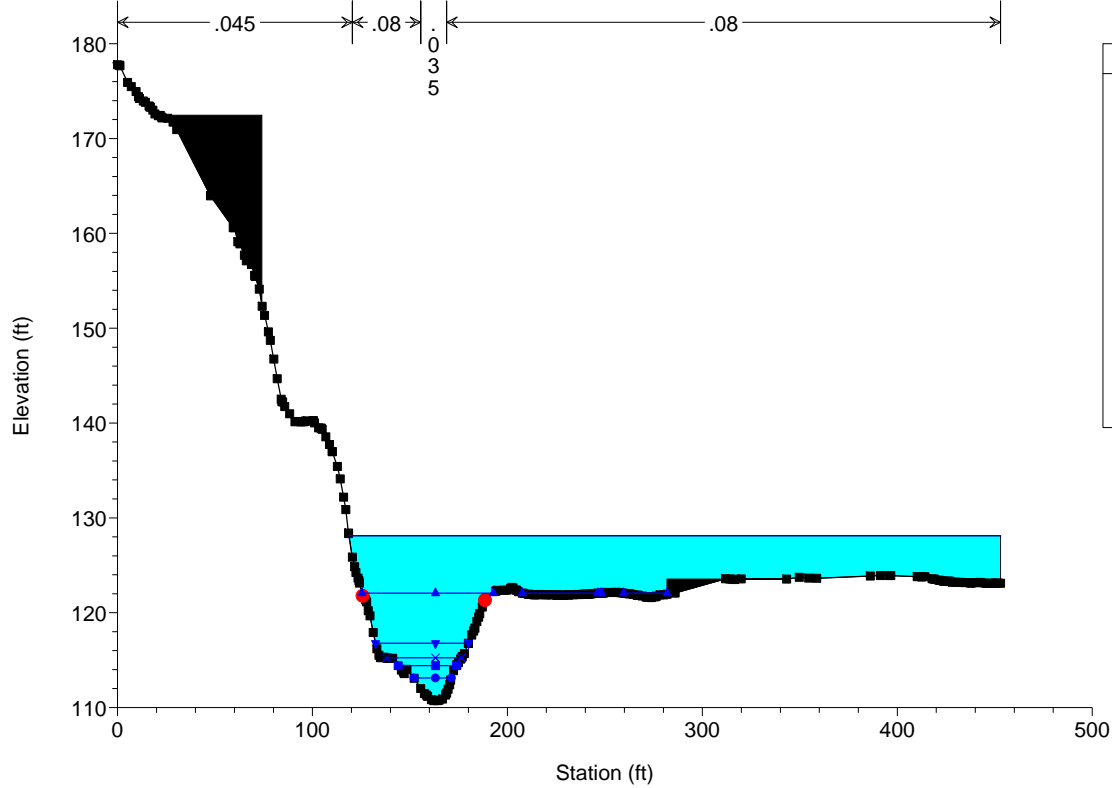


Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 513.9224



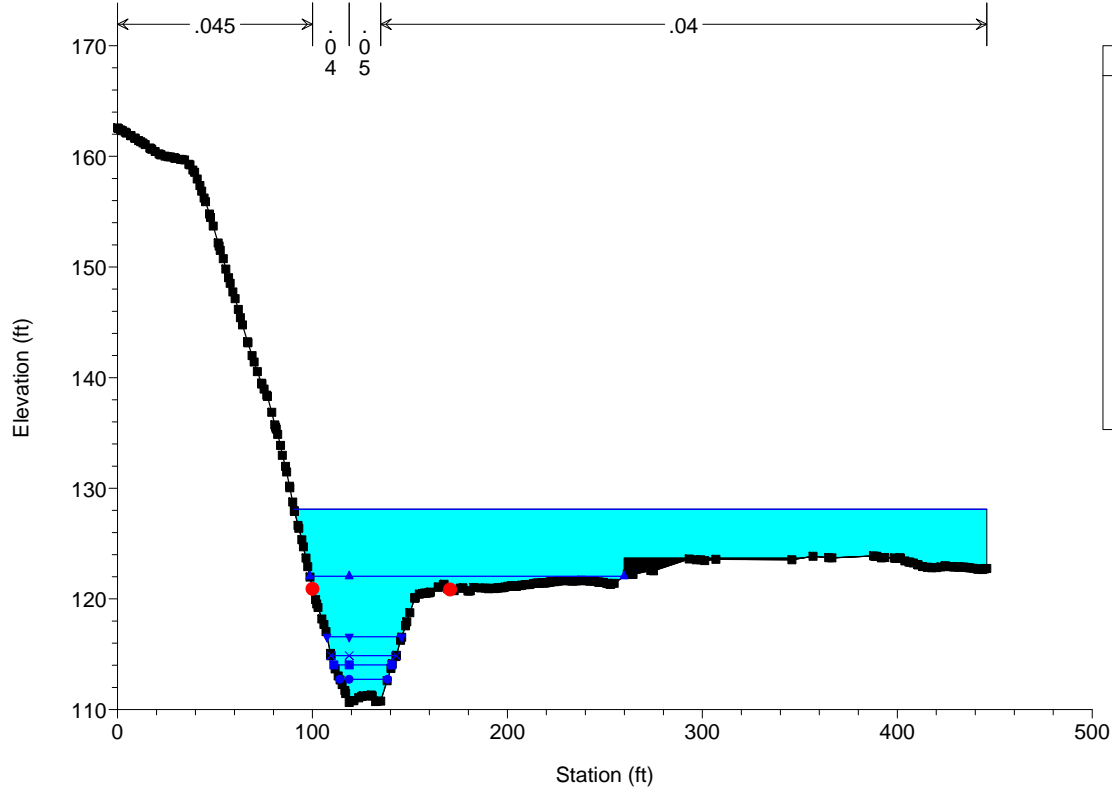


Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 195.1298



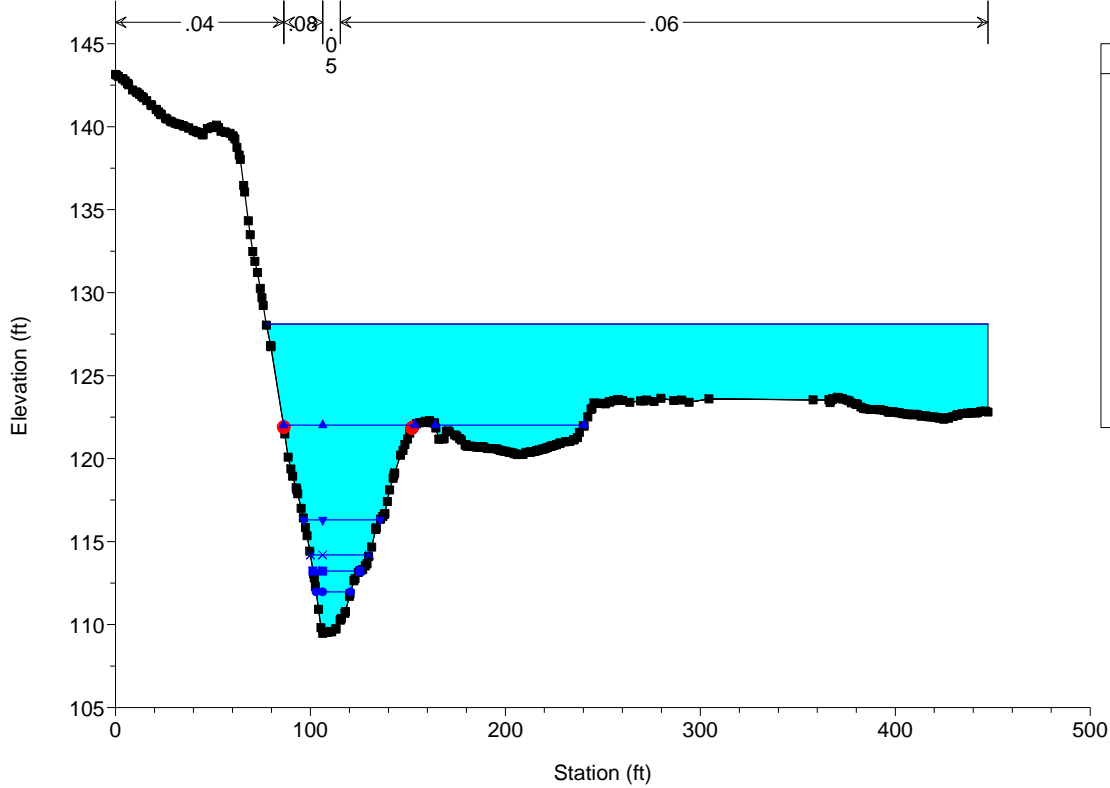
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	*
WS 5 YR	■
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 141.507

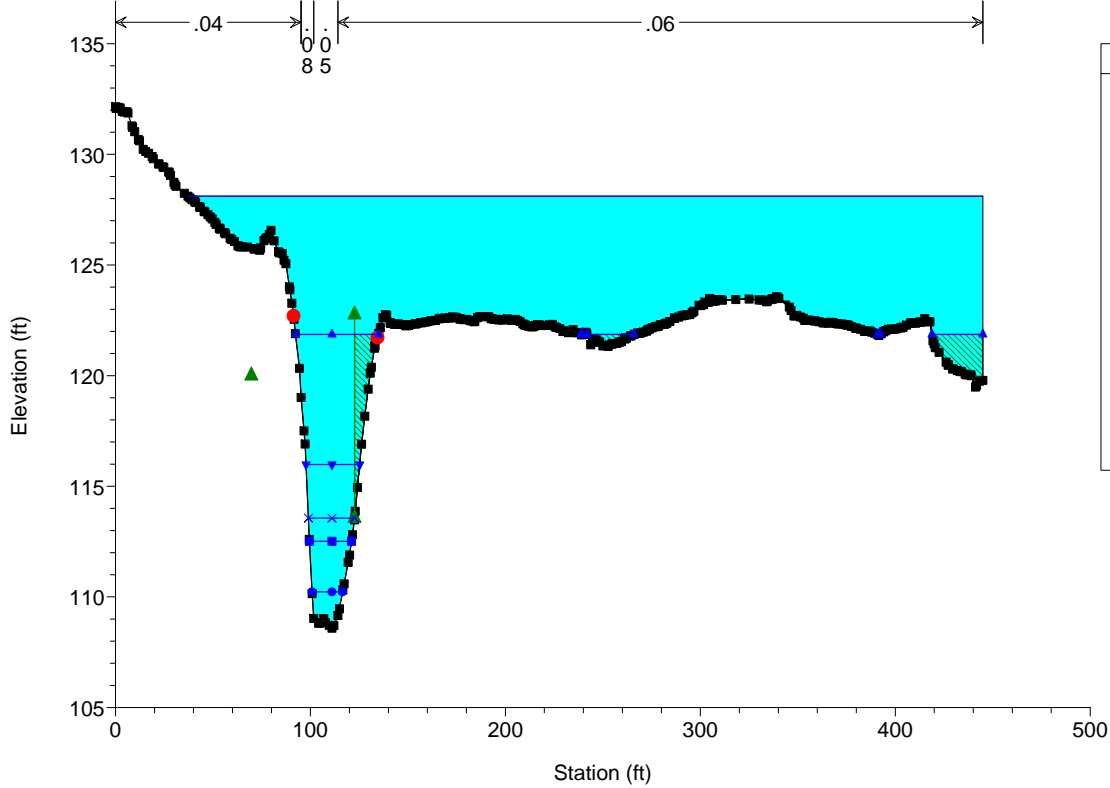


Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	*
WS 5 YR	■
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 65.30157



Auburn-Creek-Channel Plan: Current Condition 2/20/2017
RS = 4.590075



HEC-RAS Version 4.1.0 Jan 2010
 U. S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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X   X   XXXXXX   XXXX   XXXX   XX   XXXX
X   X   X       X   X   X   X   X   X
X   X   X       X       X   X   X   X   X
XXXXXXXX XXXX   X       XXX XXXX XXXXXX XXXX
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PROJECT DATA
 Project Title: Auburn-Creek-Channel
 Project File : AuburnCreek.prj
 Run Date and Time: 2/20/2017 11:34:13 AM

Project in English units

PLAN DATA

Plan Title: Current Condition
 Plan File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.p02

Geometry Title: Existing_Condition
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.g01

Flow Title : FEMA_Flow Rates
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.f01

Plan Summary Information:

Number of: Cross Sections = 22 Multiple Openings = 0
 Culverts = 2 Inline Structures = 0
 Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
 Critical depth calculation tolerance = 0.01
 Maximum number of iterations = 20
 Maximum difference tolerance = 0.3
 Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
 Conveyance Calculation Method: At breaks in n values only
 Friction Slope Method: Average Conveyance
 Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: FEMA_Flow Rates
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.f01

Flow Data (cfs)

River	Reach	RS	100 YR	50 YR	25 YR
10 YR	5 YR	2 YR			
Auburn Creek	Main Reach	3283.479	1200	950	630
430	290	120			

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Auburn Creek	Main Reach	100 YR	Normal S = 0.005	Known WS =
128.11				
Auburn Creek	Main Reach	50 YR	Normal S = 0.005	Known WS =
121.86				
Auburn Creek	Main Reach	25 YR	Normal S = 0.005	Known WS =
115.98				
Auburn Creek	Main Reach	10 YR	Normal S = 0.005	Known WS =
113.56				
Auburn Creek	Main Reach	5 YR	Normal S = 0.005	Known WS =
112.51				
Auburn Creek	Main Reach	2 YR	Normal S = 0.005	Known WS =
110.11				

GEOMETRY DATA

Geometry Title: Existing_Condition
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.g01

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3283.479

INPUT

Description:

Station Elevation Data num= 352									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.35	.15	170.33	.26	170.32	.4	170.3	2.44	170.05
3.01	170.02	3.71	169.98	4.55	169.97	5.23	169.93	5.97	169.93
6.89	169.87	8.64	169.81	9.78	170.06	10.31	170.18	11.17	170.19
12.32	170.22	13.29	170.07	16.22	169.75	16.96	169.54	17.65	169.38
18.05	169.34	19.73	169.16	20.83	168.97	21.71	168.8	23.26	168.45
23.36	168.44	23.63	168.36	25.49	167.88	26.16	167.66	27.62	167.13
28.52	166.83	29.49	166.51	30.9	166.05	31.17	165.95	31.35	165.9
32.96	165.45	33.91	165.24	34.65	165.07	35.65	164.91	36.28	164.82
36.77	164.74	38.16	164.6	39.35	164.54	40.19	164.48	42.11	164.34
42.28	164.33	42.36	164.33	44.56	164.22	44.98	164.19	46.33	164.15
47.95	164.05	50.66	163.97	50.68	163.97	50.96	163.95	53.6	163.77
53.7	163.77	53.89	163.77	55.39	163.78	56.22	163.73	57.55	163.64
59.24	163.59	59.76	163.58	60.42	163.56	61.2	163.54	61.8	163.52
63.46	163.48	64.67	163.45	65.56	163.44	66.97	163.38	67.15	163.37
67.27	163.36	69.65	163.31	70.15	163.31	71.58	163.25	72.72	163.25
73.62	163.24	75.76	163.16	75.94	163.15	76.18	163.16	77.42	163.17
78.33	163.13	79.04	163.1	80.22	163.04	80.85	163.03	81.22	163.03
82.84	163.04	84.04	163.02	84.85	163	86.5	162.97	86.81	162.97
86.96	162.97	88.88	162.95	89.66	162.95	90.75	162.97	92.47	162.96
92.49	162.96	92.51	162.96	95.25	162.96	95.31	162.96	97.03	162.94
98.12	162.9	99.04	162.87	100.94	162.79	101.65	162.77	103.77	162.75
104.6	162.74	106.58	162.78	107.26	162.81	109.5	163.14	109.76	163.19
110.22	163.38	111.69	163.92	112.5	164.17	113.36	164.39	113.84	164.51
115.43	164.4	115.93	164.29	116.48	164	117.43	163.46	118.25	163.07
119.38	162.52	121.32	160.61	121.64	160.38	122.15	160.07	124.28	159.12
125	158.9	127.25	156.55	127.9	155.87	132.24	153.42	134.13	152.15
134.86	151.66	136.53	151.66	136.66	151.66	136.88	151.66	140.71	151.66

Manning's n Values num= 6
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .016 119.27 .06 127.7 .045 145.06 .035 158.25 .018
 165.26 .016

Bank Sta: Left Right Lengths: Left Channel Right
 129.7 165.26 70.8 69.62 68.75
 Coeff Contr. Expan.
 .1 .3

Blocked Obstructions num= 1
 Sta L Sta R Elev
 184.99 288.7158.8851

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3159.787

INPUT

Description:
 Station Elevation Data num= 292

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.09	.91	181.68	.96	181.66	3.74	180.72	8.31	178.78
9.46	178.51	10.5	177.7	14.59	175.89	16.84	174.81	18.77	173.2
21.73	168.57	21.89	168.34	21.97	168.33	24.49	167.5	25	167.47
26.64	167.25	28.07	167.22	29.01	167.32	29.82	167.37	33.78	166.96
42.22	164.98	42.23	164.98	44.83	164.94	45.14	164.94	45.9	164.95
46.77	164.94	51.65	165.06	51.74	165.04	51.79	165.03	57.22	165.34
58.74	165.06	59	165.06	61.42	165.06	88.56	164.93	89.46	164.92
89.84	164.89	90.47	164.95	91.34	164.92	92.97	164.94	96.52	164.95
98.16	164.95	99.84	164.9	100.82	164.9	101.28	164.9	102.52	164.74
103.16	164.66	103.4	164.65	105.83	164.48	105.98	164.47	106.22	164.45
107.53	164.36	110.79	163.01	111.71	162.66	112.14	162.47	113.12	162.1
113.79	161.74	116.38	159.41	116.59	159.2	116.72	159.05	118.02	157.65
119.55	155.48	121.26	153.26	122	152.92	123.62	152.03	126.57	150.29
131.81	150.29	135.35	150.29	137.72	150.29	138.18	150.65	138.43	150.72
140.41	151.75	142.51	153.42	144.17	154.66	145.34	155.56	146.03	156.04
147.72	157.16	149.22	157.37	149.73	157.52	150.04	157.59	150.36	157.67
151.51	157.98	152.63	158.06	153.43	158.14	155.17	158.29	155.69	158.34
155.93	158.34	157.39	158.33	158.45	158.44	159.55	158.51	161.66	158.61
162.15	158.65	162.78	158.65	163.62	158.64	164.25	158.65	165.72	158.73
167.45	158.75	167.94	158.74	168.67	158.76	169.4	158.79	169.88	158.81
171.88	158.85	173.03	158.85	173.89	158.88	175.07	158.98	175.31	159.01
175.48	159.02	176.97	159.08	178.6	158.99	178.63	158.99	178.64	158.99
181.87	159.08	192.01	159.08	193.86	159.1	195.72	159.08	196.54	159.1
223.63	159.15	231.55	159.3	236.18	159.17	237.37	159.03	258.51	158.85
264.04	158.91	266.63	158.98	269.3	158.94	271.67	159.05	271.97	159.05
272.44	159.05	274.41	158.97	275.32	158.97	276.37	158.92	277.66	158.82
278.82	158.73	280.24	158.64	282.24	158.55	282.46	158.55	282.61	158.54
284.15	158.57	285.14	158.57	286.11	158.56	287.24	158.54	289.21	158.47
290.69	158.45	291.67	158.4	293.38	158.2	295.72	158.02	296.21	158.02
298.34	158.12	298.37	158.12	298.42	158.12	301	158.23	302.64	158.34
303.31	158.39	305.11	158.42	305.22	158.42	305.26	158.42	307.08	158.52
308.56	158.53	308.97	158.53	309.49	158.54	310.73	158.53	312.13	158.63
312.58	158.66	313.18	158.67	315.02	158.7	316.43	158.74	317.35	158.77
319.23	158.81	319.5	158.82	320.94	158.81	325.88	158.79	326.63	158.79
326.82	158.81	327.34	158.82	329.05	158.92	330.96	159.18	331.18	159.22
331.47	159.23	332.79	159.29	333.76	159.32	334.66	159.31	335.42	159.26
336.92	159.09	338.61	159.09	339.31	159.08	341.43	159.08	341.98	159.09
342.39	159.09	344.17	159.1	346.27	159.11	346.39	159.11	346.56	159.11
349.4	159.08	349.46	159.08	352.47	159.05	354.82	158.98	355.28	158.96
356.1	158.96	357.14	158.97	357.7	158.95	359.9	158.91	363.05	158.81
363.06	158.81	363.09	158.81	364.84	158.82	366.08	158.81	366.7	158.8
367.07	158.78	368.48	158.73	370.27	158.65	371.51	158.59	372.52	158.54
374.25	158.42	374.26	158.42	374.27	158.42	376.38	158.29	377.8	158.2
378.48	158.15	379.5	158.07	380.34	158.05	381.47	158.42	381.94	158.57
382.28	158.58	384.21	158.61	385.77	158.9	386.56	158.97	387.5	158.93
388.47	159.25	389.93	159.14	390.16	159.12	390.32	159.1	392.27	158.87
393.66	159.07	394.37	159.11	395.36	159.33	396.4	159.55	397.94	159.82
398.5	159.88	398.95	159.92	400.85	160.05	403.14	160.37	403.15	160.37

403.17 160.37 403.32 160.37 405.84 160.36 406.13 160.36 406.35 160.37
 408.31 160.33 410.17 160.44 410.49 160.44 410.89 160.46 412.16 160.52
 413.4 160.55 413.86 160.57 414.16 160.6 415.93 160.82 417.62 160.78
 418.04 160.78 418.65 160.84 419.69 160.95 421.14 161.12 421.15 161.12
 421.16 161.12 423.89 161.34 426.36 161.49 426.5 161.5 426.74 161.52
 428.07 161.64 428.81 161.72 429.87 161.88 430.51 161.94 431.89 162.07
 433.72 162.25 433.9 162.26 434.19 162.28 436.08 162.41 436.71 162.46
 436.83 162.47 436.93 162.48 439.36 162.75 441.53 163.03 441.86 163.07
 442.27 163.11 444.74 163.25 446.83 163.42 448.09 163.46 448.91 163.48
 450.22 163.54 451.23 163.59 452.79 163.73 453.94 163.79 455.38 163.86
 458.52 163.68 459.65 163.97

Manning's n Values num= 6
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .06 105.83 .02 123.62 .018 126.57 .035 138.43 .018
 147.72 .016

Bank Sta: Left Right Lengths: Left Channel Right
 118.02 147.72 126.5 134.16 135.59
 Coeff Contr. Expan.
 .1 .3

Blocked Obstructions num= 2
 Sta L Sta R Elev Sta L Sta R Elev
 181.03 284.29 159.054 29.52 100.8167.3486

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3025.628

INPUT

Description:
 Station Elevation Data num= 361

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85	189.7	2.54	189.73	3.63	189.55	5.69	188.69
6.22	188.45	6.86	188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35	187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	125.72	162.43	126.11	162.39
126.33	162.36	128.58	162.11	128.83	162.09	128.92	162.06	130.51	161.29
131.39	160.87	132.41	160.3	133.96	159.73	134.59	159.49	135.02	159.37
136.33	158.96	137.6	158.55	137.84	158.48	138.16	158.22	145	148.9
157	148.83	162.79	154.19	164.9	155.71	166.78	156.31	167.16	156.54
169.35	157.48	170.34	158.06	171.12	158.27	173.96	159.54	175.43	160.19
176.05	160.26	177.36	160.48	178.11	160.47	179.5	160.36	179.68	160.35
180.43	160.42	181.58	160.52	181.87	160.52	184.26	160.47	185.09	160.48
185.5	160.49	187.18	160.44	197.09	160.44	200.64	160.41	202.78	160.41
204.35	160.37	206.02	160.42	207.95	160.34	210.34	160.38	213.77	160.47
216.29	160.52	217.71	160.54	219.25	160.54	221.15	160.56	223.23	160.53
224.59	160.54	226.36	160.51	228.65	160.48	231.6	160.52	232.74	160.51
234.21	160.58	236.74	160.55	239.22	160.53	243.47	160.52	245.86	160.45
258.58	160.51	259.84	160.51	260.04	160.55	260.21	160.54	261.36	160.49
261.51	160.48	262.25	160.49	263.16	160.51	263.34	160.5	265.94	160.42
267.06	160.4	268.02	160.39	269.26	160.41	269.69	160.4	270.42	160.37
271.9	160.32	272.81	160.32	273.64	160.34	274.77	160.4	275.26	160.39
276.27	160.39	277.77	160.34	278.48	160.37	279.42	160.36	280.55	160.37

280.84 160.38 281.08 160.38 282.53 160.35 284.21 160.38 284.23 160.38
284.25 160.38 284.42 160.38 286.34 160.44 286.75 160.44 287.5 160.5
289.2 160.65 289.58 160.64 290.15 160.65 291.79 160.73 293.45 160.83
294.35 160.81 296.08 160.48 296.61 160.37 297.52 160.41 298.26 160.51
301.43 160.81 302.21 160.73 303.44 160.65 304.31 160.67 305.5 160.69
306.51 160.7 307.38 160.71 308.36 160.66 309.33 160.64 310.38 160.66
311.55 160.65 313.2 160.65 313.88 160.65 314.36 160.64 315.75 160.65
316.51 160.65 317.69 160.63 318.99 160.57 319.75 160.54 320.44 160.48
321.6 160.41 322.44 160.4 323.6 160.33 325.16 160.25 325.8 160.21
326.28 160.19 327.61 160.18 328.24 160.02 329.83 159.75 332.18 159.93
332.23 159.94 332.43 159.95 333.88 160.04 334.33 160.07 335.68 160.13
336.86 160.21 337.51 160.23 338.26 160.26 339.1 160.28 340.22 160.33
340.75 160.34 341.59 160.37 343.32 160.42 344.39 160.45 345.19 160.46
346.39 160.51 346.74 160.52 347.37 160.52 349.35 160.54 350.43 160.57
351.13 160.63 352.34 160.67 352.36 160.67 352.38 160.67 354.33 160.7
356.13 160.7 356.3 160.7 356.49 160.71 357.13 160.73 358.39 160.77
358.94 160.78 360.07 160.77 361.77 160.76 362.58 160.76 364.32 160.86
364.47 160.87 367.23 161.04 368.63 161.18 369.65 161.22 370.61 161.05
371.87 160.86 373.22 160.84 374.11 160.82 374.94 160.8 376.15 160.79
376.85 160.81 378 160.83 378.89 160.81 379.86 160.79 381.15 160.78
381.73 160.78 383.24 160.74 383.76 160.73 384.21 160.72 385.83 160.71
387.7 160.66 387.84 160.66 389.72 160.63 389.88 160.63 390.1 160.62
392.55 160.59 394.24 160.52 394.87 160.5 396.25 160.5 396.79 160.49
397.25 160.48 398.96 160.45 399.58 160.42 406.43 160.16 406.77 160.14
407.24 160.14 407.6 160.13 408.69 160.14 409.45 160.11 410.92 160.02
413.13 159.94 413.75 159.91 414.16 159.89 415.48 159.84 416.18 159.78
417.48 159.83 418.75 159.97 419.78 160.15 420.85 160.19 421.55 160.21
422.79 160.21 422.98 160.22 423.16 160.23 425.24 160.42 427.37 160.55
427.47 160.57 429.27 161.07 429.65 161.26 429.92 161.42 427.37 162.36
433.28 163.33 433.62 163.51 434.11 163.81 435.56 164.46 436.04 164.68
436.21 164.72 436.37 164.76 438.41 165.21 440.38 165.62 440.51 165.65
440.68 165.68 442.12 165.93 442.61 166.04 444.13 166.33 445.35 166.51
446.31 166.65 447.52 166.79 448.55 166.94 449.35 167.02 451.18 167.25
453.33 167.53 453.85 167.61 454.29 167.66 456.16 167.85 456.27 167.86
457.81 168.01 458.43 168.11 461.9 168.44 462.96 168.57 463.41 168.59
464.69 168.7

Manning's n Values num= 6
Sta n Val Sta n Val Sta n Val Sta n Val
0 .06 138.16 .02 145 .035 157 .018 164.9
178.11 .016

Bank Sta: Left Right Lengths: Left Channel Right
138.16 171.12 111.21 109.32 112.92
Coeff Contr. Expan.
.3 .5
Ineffective Flow num= 3
Sta L Sta R Elev Permanent
0 133 160 F
169 180 160.48 F
369.65 475 161.22 F

Blocked Obstructions num= 1
Sta L Sta R Elev
198.37 265.44 160.4352

CULVERT

RIVER: Auburn Creek
REACH: Main Reach RS: 3000

INPUT
Description:
Distance from Upstream XS = 20
Deck/Roadway Width = 74
Weir Coefficient = 2.6
Upstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 160 500 160

Upstream Bridge Cross Section Data

Station Elevation Data num= 361
Sta Elev Sta Elev Sta Elev Sta Elev
0 189.65 1.85 189.7 2.54 189.73 3.63 189.55 5.69 188.69
6.22 188.45 6.86 188.35 8.43 188.34 9.77 188.56 10.43 188.62
11.21 188.4 12.35 187.93 13.04 187.5 14.26 186.63 16.12 186.03
16.15 186.02 16.19 186 18.01 185.27 19.53 184.39 19.91 184.21
20.37 184.02 22.78 183.05 23.75 182.64 25.25 182.02 25.65 181.84
25.95 181.72 28.27 180.38 29.38 179.77 29.54 179.66 30.85 178.56
31.25 178.4 33.39 176.81 41.16 170.22 46.94 165.34 48.2 165.15
52.61 164.87 52.68 164.86 52.74 164.86 52.81 164.86 53.21 164.87
56.8 164.82 58.86 164.67 61.68 164.61 62.46 164.6 63.72 164.55
65.18 164.5 65.34 164.51 65.55 164.52 65.82 164.5 70.08 164.36
70.84 164.37 72.1 164.38 73.68 164.44 74.48 164.48 75.12 164.48
76.8 164.47 78.29 164.51 79.13 164.54 80.09 164.57 81.38 164.61
83 164.64 83.59 164.65 84.04 164.66 85.49 164.68 86.25 164.66
87.3 164.63 88.98 164.6 89.07 164.6 89.24 164.6 90.55 164.61
93.13 164.65 93.65 164.64 94.65 164.59 96.76 164.44 97.3 164.41
98.18 164.67 99.29 164.31 100.63 164.22 101.36 164.16 101.99 164.12
103.4 164.01 104.33 163.96 105.46 163.89 107.17 163.73 107.52 163.7
107.9 163.68 109.51 163.6 110.93 163.52 111.57 163.46 112.02 163.43
113.69 163.26 115 163.2 115.81 163.15 115.85 163.15 115.94 163.14
117.75 163.08 118.56 162.97 123.07 162.58 125.72 162.43 126.11 162.39
126.33 162.36 128.58 162.11 128.83 162.09 128.92 162.06 130.51 161.29
131.39 160.87 132.41 160.3 133.96 159.73 134.59 159.49 135.02 159.37
136.33 158.96 137.6 158.55 137.84 158.48 138.16 158.22 145 148.9
157 148.83 162.79 154.19 164.9 155.71 166.78 156.31 167.16 156.54
169.35 157.48 170.34 158.06 171.12 158.27 173.96 159.54 175.43 160.19
176.05 160.26 177.36 160.48 178.11 160.47 179.5 160.36 179.68 160.35
180.43 160.42 181.58 160.52 181.87 160.52 184.26 160.47 185.09 160.48
185.5 160.49 187.18 160.44 197.09 160.44 200.64 160.41 202.78 160.41
204.35 160.37 206.02 160.42 207.95 160.34 210.34 160.38 213.77 160.47
216.29 160.52 217.71 160.54 219.25 160.54 221.15 160.56 223.23 160.53
224.59 160.54 226.36 160.51 228.65 160.48 231.6 160.52 232.74 160.51
234.21 160.58 236.74 160.55 239.22 160.53 243.47 160.52 245.86 160.45
258.58 160.51 259.84 160.51 260.04 160.55 260.21 160.54 261.36 160.49
261.51 160.48 262.25 160.49 263.16 160.51 263.34 160.5 265.94 160.42
267.06 160.4 268.02 160.39 269.26 160.41 269.69 160.4 270.42 160.37
271.9 160.32 272.81 160.32 273.64 160.34 274.77 160.4 275.26 160.39
276.27 160.39 277.77 160.34 278.48 160.37 279.42 160.36 280.55 160.37
280.84 160.38 281.08 160.38 282.53 160.35 284.21 160.38 284.23 160.38
284.25 160.38 284.42 160.38 286.34 160.44 286.75 160.44 287.5 160.5
289.2 160.65 289.58 160.64 290.15 160.65 291.79 160.73 293.45 160.83
294.35 160.81 296.08 160.48 296.61 160.37 297.52 160.41 298.26 160.51
301.43 160.81 302.21 160.73 303.44 160.65 304.31 160.67 305.5 160.69
306.51 160.7 307.38 160.71 308.36 160.66 309.33 160.64 310.38 160.66
311.55 160.65 313.2 160.65 313.88 160.65 314.36 160.64 315.75 160.65
316.51 160.65 317.69 160.63 318.99 160.57 319.75 160.54 320.44 160.48
321.6 160.41 322.44 160.4 323.6 160.33 325.16 160.25 325.8 160.21
326.28 160.19 327.61 160.18 328.24 160.02 329.83 159.75 332.18 159.93
332.23 159.94 332.43 159.95 333.88 160.04 334.33 160.07 335.68 160.13
336.86 160.21 337.51 160.23 338.26 160.26 339.1 160.28 340.22 160.33
340.75 160.34 341.59 160.37 343.32 160.42 344.39 160.45 345.19 160.46
346.39 160.51 346.74 160.52 347.37 160.52 349.35 160.54 350.43 160.57
351.13 160.63 352.34 160.67 352.36 160.67 352.38 160.67 354.33 160.7
356.13 160.7 356.3 160.7 356.49 160.71 357.13 160.73 358.39 160.77
358.94 160.78 360.07 160.77 361.77 160.76 362.58 160.76 364.32 160.86
364.47 160.87 367.23 161.04 368.63 161.18 369.65 161.22 370.61 161.05
371.87 160.86 373.22 160.84 374.11 160.82 374.94 160.8 376.15 160.79
376.85 160.81 378 160.83 378.89 160.81 379.86 160.79 381.15 160.78
381.73 160.78 383.24 160.74 383.76 160.73 384.21 160.72 385.83 160.71
387.7 160.66 387.84 160.66 389.72 160.63 389.88 160.63 390.1 160.62
392.55 160.59 394.24 160.52 394.87 160.5 396.25 160.5 396.79 160.49
397.25 160.48 398.96 160.45 399.58 160.42 406.43 160.16 406.77 160.14
407.24 160.14 407.6 160.13 408.69 160.14 409.45 160.11 410.92 160.02
413.13 159.94 413.75 159.91 414.16 159.89 415.48 159.84 416.18 159.78
417.48 159.83 418.75 159.97 419.78 160.15 420.85 160.19 421.55 160.21
422.79 160.21 422.98 160.22 423.16 160.23 425.24 160.42 427.37 160.55
427.47 160.57 429.27 161.07 429.65 161.26 429.92 161.42 427.37 162.36
433.28 163.33 433.62 163.51 434.11 163.81 435.56 164.46 436.04 164.68
436.21 164.72 436.37 164.76 438.41 165.21 440.38 165.62 440.51 165.65

440.68 165.68 442.12 165.93 442.61 166.04 444.13 166.33 445.35 166.51
 446.31 166.65 447.52 166.79 448.55 166.94 449.35 167.02 451.18 167.25
 453.33 167.53 453.85 167.61 454.29 167.66 456.16 167.85 456.27 167.86
 457.81 168.01 458.43 168.11 461.9 168.44 462.96 168.57 463.41 168.59
 464.69 168.7

Manning's n Values num= 6
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .06 138.16 .02 145 .035 157 .018 164.9 .03
 178.11 .016

Bank Sta: Left Right Coeff Contr. Expan.
 138.16 171.12 .3 .5

Ineffective Flow num= 3
 Sta L Sta R Elev Permanent
 0 133 160 F
 169 180 160.48 F
 369.65 475 161.22 F

Blocked Obstructions num= 1
 Sta L Sta R Elev
 198.37 265.44 160.4352

Downstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 160 500 160

Downstream Bridge Cross Section Data
 Station Elevation Data num= 417
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 177.86 2.23 178.14 4.81 178.28 4.89 178.3 5.02 178.29
 6.11 178.26 8.47 178.2 8.72 178.17 10.54 178.6 12.69 178.51
 15.61 177.61 18.08 176.91 18.75 176.65 20.54 176.1 23.88 175.71
 25.25 175.84 27.56 175.43 29.98 174.26 30.96 173.87 32.71 173.52
 34.37 173.22 36.46 173.02 37.29 172.94 37.54 172.83 38.18 172.65
 39.55 172.03 41.26 171.42 43.11 170.93 44.64 170.48 44.68 170.46
 47.67 169.28 48.38 169.07 49.51 168.54 50.5 168.16 52.72 167.33
 52.93 167.24 53.34 167.18 56.82 166.88 57.43 166.83 57.44 166.84
 57.47 166.83 72.21 165.27 75.9 164.5 77.04 164.24 77.33 164.25
 78.83 164.22 80.07 164.2 81.08 164.16 82.28 164.16 83.12 164.14
 84.03 164.12 84.9 164.08 85.69 164.1 87.05 164.09 88.51 164.06
 89.5 164.03 90.4 164.02 91.49 164.01 92.73 163.97 93.2 163.96
 93.6 163.94 95.69 163.89 98.35 163.89 98.41 163.89 98.46 163.89
 99.97 163.85 101.49 163.82 101.52 163.82 101.56 163.82 104.03 163.7
 106.31 163.6 106.56 163.59 107.62 163.52 109.03 163.43 109.37 163.4
 111.63 163.26 114.24 163.14 114.27 163.14 114.3 163.14 116.58 163.01
 116.86 163 117 162.92 119.73 161.32 122.01 159.69 122.45 159.38
 123.61 159.14 124.57 158.92 124.93 158.83 126.52 158.37 127.61 157.72
 128.46 157.04 129.67 155.9 130.47 155.16 132.42 154.02 132.54 153.96
 132.59 153.93 134.57 153.12 135.94 152.5 136.58 152.14 137.48 151.31
 139.15 149.32 140.1 148.94 142.59 147.08 144.37 147.09 144.6 147.11
 144.92 147.09 146.43 147.1 147.88 147.15 148.28 147.15 148.58 147.16
 150.43 147.14 152.34 147.25 152.55 147.26 152.82 147.33 154.24 147.63
 155.67 149.35 155.82 149.65 157.51 152.73 158.54 152.69 159.37 153.05
 160.89 153.82 166.11 156.69 168.22 157.21 169.14 157.12 170.08 157.36
 170.62 157.56 171.16 157.75 172.58 158.4 173.73 158.86 174.76 159.35
 176.06 159.76 177.19 159.93 177.77 159.92 178.74 159.91 179.49 159.81
 179.83 159.81 180.04 159.81 180.85 159.82 187.75 159.85 188.77 159.9
 190.65 159.9 193.45 159.83 194.89 159.85 201.05 159.92 203.45 159.96
 207.03 159.93 220.98 160.1 223.01 160.11 228.36 160.1 232.41 160.17
 234.41 160.2 235.95 160.25 236.65 160.26 236.91 160.27 237.46 160.29
 239.37 160.38 239.97 160.4 240.44 160.41 241.76 160.42 242.7 160.44
 243.82 160.44 245.36 160.49 246.56 160.51 247.43 160.54 248.49 160.57
 249.72 160.59 250.32 160.6 251.32 160.61 253.19 160.66 254.33 160.67
 255.16 160.69 256.47 160.71 256.55 160.71 256.6 160.71 258.9 160.77
 261.12 160.85 261.27 160.86 261.42 160.86 262.73 160.86 263.63 160.92
 264.38 160.97 264.92 160.97 266.36 160.97 268.32 160.98 268.33 160.98
 268.34 160.98 269.64 161.03 270.53 161.05 271.2 161.05 271.74 161.07
 273.26 161.1 273.82 161.12 274.48 161.11 276.77 161.12 280.23 161.13
 282.21 161.11 283.44 161.16 285.11 161.19 286.07 161.24 289.51 161.12

291.38 161.06 292.34 161.07 293.8 161.04 294.41 161.02 295.48 161.01
 296.43 161.01 296.89 161.04 299.19 161.11 302.4 161.08 305.14 161.11
 305.41 161.11 307.11 161.13 307.21 161.13 309.46 161.09 311.15 161.03
 311.59 161.02 312.84 161.01 313.33 160.99 313.91 160.97 315.59 160.92
 316.98 160.9 317.41 160.89 318.34 160.88 318.6 160.87 318.71 160.87
 320.78 160.84 322.73 160.78 322.92 160.77 323.54 160.72 324.2 160.67
 324.41 160.66 326.34 160.46 328.6 160.32 328.61 160.32 328.63 160.32
 329.79 160.3 330.2 160.32 331.84 160.4 334.14 160.46 334.23 160.47
 334.3 160.47 335.41 160.56 335.99 160.58 337.18 160.64 338.63 160.69
 339.49 160.72 340.19 160.76 340.95 160.81 341.95 160.83 342.29 160.84
 342.92 160.85 345.14 160.92 346.28 160.96 347.55 161.05 347.87 161.06
 349.7 161.13 351.58 161.24 351.82 161.26 352.04 161.27 353.44 161.32
 353.89 161.34 353.97 161.34 354.04 161.34 356.18 161.38 358.32 161.38
 358.33 161.38 358.39 161.38 359.99 161.46 360.17 161.48 360.32 161.47
 362.14 161.37 363.94 161.39 364.07 161.39 364.23 161.39 365.77 161.45
 365.87 161.45 368.34 161.53 370.43 161.48 370.73 161.45 372.24 161.42
 372.31 161.42 372.36 161.42 374.36 161.47 376.16 161.48 376.39 161.47
 376.65 161.47 377.98 161.45 378.26 161.47 380 161.6 381.55 161.66
 382.13 161.69 382.77 161.65 383.8 161.52 384.49 161.46 385.83 161.41
 387.31 161.37 388.27 161.36 389.12 161.35 389.93 161.32 390.79 161.32
 391.48 161.32 391.99 161.31 393.53 161.28 395.48 161.23 395.49 161.23
 395.52 161.23 396.77 161.21 397.08 161.21 398.79 161.19 400.22 161.16
 401.02 161.14 401.95 161.12 402.87 161.12 403.68 161.12 404.86 161.09
 405.88 161.05 407.14 161.01 408.6 160.96 409.04 160.96 410.29 160.94
 410.38 160.94 410.47 160.94 412.81 160.91 415.07 160.91 415.13 160.91
 415.2 160.91 416.43 160.95 416.83 160.94 418.87 160.94 421.6 160.89
 421.68 160.89 421.73 160.89 422.93 160.91 423.5 160.87 424.81 160.88
 426 161.04 427.15 161.24 428.37 161.32 428.93 161.37 429.93 161.41
 430.41 161.41 430.91 161.43 432.88 161.46 434.66 161.57 434.98 161.59
 436.21 161.69 436.3 161.69 436.39 161.7 438.92 161.86 441.06 161.97
 441.27 161.99 441.98 162.05 442.62 162.12 442.81 162.13 444.55 162.22
 445.7 162.27 446.5 162.31 447.69 162.36 448.12 162.38 449.2 162.46
 449.43 162.47 449.65 162.48 451.97 162.59 454.3 162.7 454.35 162.7
 454.53 162.71 455.58 162.78 455.89 162.79 457.73 162.86 459.37 162.92
 460.1 162.95 460.88 162.99 461.63 163.1 462.36 163.14 463.1 163.29
 463.55 163.18 465.03 163.22 466.59 163.04 466.91 163.05 467.45 163.03
 468.2 163.01 468.88 163.01 469.74 163 470.44 163.12 472.07 163.37
 472.66 163.66 474.02 163.97 474.71 164.03 475.49 164.06 476.76 164.27
 476.93 164.23 480.87 164.1 481.52 164.18 482.37 164.26 483.45 164.04
 485.63 163.53 486.45 163.23 486.79 163.27 487.41 163.43 487.86 163.52
 488.86 163.77 488.92 163.79 488.99 163.82 489.5 164 492.91 165.29
 493.68 165.38 495.99 165.6 496.24 165.61 496.45 165.72 499.93 166.69
 502.01 167.49 503.99 168.01 508.45 169.34 509.32 169.47 509.36 169.48
 509.41 169.5 511.27 170.03

Manning's n Values num= 4
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .1 142.59 .03 152.34 .018 166.11 .03

Bank Sta: Left Right Coeff Contr. Expan.
 122.01 176.06 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 0 133 158 F
 163 511.27 158 F

Blocked Obstructions num= 1
 Sta L Sta R Elev
 183.06 298.09 161.0759

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span

Culvert #1 Box 6 6
 FHWA Chart # 8 - flared wingwalls
 FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
 Solution Criteria = Highest U.S. EG
 Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
 17 91 .018 .018 0 .2 1

Number of Barrels = 2
 Upstream Elevation = 148.7
 Centerline Stations
 Sta. Sta.
 146.5 155.5
 Downstream Elevation = 147.2
 Centerline Stations
 Sta. Sta.
 143.78 152.78

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2916.303

INPUT

Description:
 Station Elevation Data num= 417

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.86	2.23	178.14	4.81	178.28	4.89	178.3	5.02	178.29
6.11	178.26	8.47	178.2	8.72	178.17	10.54	178.6	12.69	178.51
15.61	177.61	18.08	176.91	18.75	176.65	20.54	176.1	23.88	175.71
25.25	175.84	27.56	175.43	29.98	174.26	30.96	173.87	32.71	173.52
34.37	173.22	36.46	173.02	37.29	172.94	37.54	172.83	38.18	172.65
39.55	172.03	41.26	171.42	43.11	170.93	44.64	170.48	44.68	170.46
47.67	169.28	48.38	169.07	49.51	168.54	50.5	168.16	52.72	167.33
52.93	167.24	53.34	167.18	56.82	166.88	57.43	166.83	57.44	166.84
57.47	166.83	72.21	165.27	75.9	164.5	77.04	164.24	77.33	164.25
78.83	164.22	80.07	164.2	81.08	164.16	82.28	164.16	83.12	164.14
84.03	164.12	84.9	164.08	85.69	164.1	87.05	164.09	88.51	164.06
89.5	164.03	90.4	164.02	91.49	164.01	92.73	163.97	93.2	163.96
93.6	163.94	95.69	163.89	98.35	163.89	98.41	163.89	98.46	163.89
99.97	163.85	101.49	163.82	101.52	163.82	101.56	163.82	104.03	163.7
106.31	163.6	106.56	163.59	107.62	163.52	109.03	163.43	109.37	163.4
111.63	163.26	114.24	163.14	114.27	163.14	114.3	163.14	116.58	163.01
116.86	163	117	162.92	119.73	161.32	122.01	159.69	122.45	159.38
123.61	159.14	124.57	158.92	124.93	158.83	126.52	158.37	127.61	157.72
128.46	157.04	129.67	155.9	130.47	155.16	132.42	154.02	132.54	153.96
132.59	153.93	134.57	153.12	135.94	152.5	136.58	152.14	137.48	151.31
139.15	149.32	140.1	148.94	142.59	147.08	144.37	147.09	144.6	147.11
144.92	147.09	146.43	147.1	147.88	147.15	148.28	147.15	148.58	147.16
150.43	147.14	152.34	147.25	152.55	147.26	152.82	147.33	154.24	147.63
155.67	149.35	155.82	149.65	157.51	152.73	158.54	152.69	159.37	153.05
160.89	153.82	166.11	156.69	168.22	157.21	169.14	157.12	170.08	157.36
170.62	157.56	171.16	157.75	172.58	158.4	173.73	158.86	174.76	159.35
176.06	159.76	177.19	159.93	177.77	159.92	178.74	159.91	179.49	159.81
179.83	159.81	180.04	159.81	180.85	159.82	187.75	159.85	188.77	159.9
190.65	159.9	193.45	159.83	194.89	159.85	201.05	159.92	203.45	159.96
207.03	159.93	220.98	160.1	223.01	160.11	228.36	160.1	232.41	160.17
234.41	160.2	235.95	160.25	236.65	160.26	236.91	160.27	237.46	160.29
239.37	160.38	239.97	160.4	240.44	160.41	241.76	160.42	242.7	160.44
243.82	160.44	245.36	160.49	246.56	160.51	247.43	160.54	248.49	160.57
249.72	160.59	250.32	160.6	251.32	160.61	253.19	160.66	254.33	160.67
255.16	160.69	256.47	160.71	256.55	160.71	256.6	160.71	258.9	160.77
261.12	160.85	261.27	160.86	261.42	160.86	262.73	160.86	263.63	160.92
264.38	160.97	264.92	160.97	266.36	160.97	268.32	160.98	268.33	160.98
268.34	160.98	269.64	161.03	270.53	161.05	271.2	161.05	271.74	161.07
273.26	161.1	273.82	161.12	274.48	161.11	276.77	161.12	280.23	161.13
282.21	161.11	283.44	161.16	285.11	161.19	286.07	161.24	289.51	161.12
291.38	161.06	292.34	161.07	293.8	161.04	294.41	161.02	295.48	161.01
296.43	161.01	296.89	161.04	299.19	161.11	302.4	161.08	305.14	161.11
305.41	161.11	307.11	161.13	307.21	161.13	309.46	161.09	311.15	161.03
311.59	161.02	312.84	161.01	313.33	160.99	313.91	160.97	315.59	160.92

316.98	160.9	317.41	160.89	318.34	160.88	318.6	160.87	318.71	160.87
320.78	160.84	322.73	160.78	322.92	160.77	323.54	160.72	324.2	160.67
324.41	160.66	326.34	160.46	328.6	160.32	328.61	160.32	328.63	160.32
329.79	160.3	330.2	160.32	331.84	160.4	334.14	160.46	334.23	160.47
334.3	160.47	335.41	160.56	335.99	160.58	337.18	160.64	338.63	160.69
339.49	160.72	340.19	160.76	340.95	160.81	341.95	160.83	342.29	160.84
342.92	160.85	345.14	160.92	346.28	160.96	347.55	161.05	347.87	161.06
349.7	161.13	351.58	161.24	351.82	161.26	352.04	161.27	353.44	161.32
353.89	161.34	353.97	161.34	354.04	161.34	356.18	161.38	358.32	161.38
358.33	161.38	358.39	161.38	359.99	161.46	360.17	161.48	360.32	161.47
362.14	161.37	363.94	161.39	364.07	161.39	364.23	161.39	365.77	161.45
365.87	161.45	368.34	161.53	370.43	161.48	370.73	161.45	372.24	161.42
372.31	161.42	372.36	161.42	374.36	161.47	376.16	161.48	376.39	161.47
376.65	161.47	377.98	161.45	378.26	161.47	380	161.56	381.55	161.66
382.13	161.69	382.77	161.65	383.8	161.52	384.49	161.46	385.83	161.41
387.31	161.37	388.27	161.36	389.12	161.35	389.93	161.32	390.79	161.32
391.48	161.32	391.99	161.31	393.53	161.28	395.48	161.23	395.49	161.23
395.52	161.23	396.77	161.21	397.08	161.21	398.79	161.19	400.22	161.16
401.02	161.14	401.95	161.12	402.87	161.12	403.68	161.12	404.86	161.09
405.88	161.05	407.14	161.01	408.6	160.96	409.04	160.96	410.29	160.94
410.38	160.94	410.47	160.94	412.81	160.91	415.07	160.91	415.13	160.91
415.2	160.91	416.43	160.95	416.83	160.94	418.87	160.94	421.6	160.89
421.68	160.89	421.73	160.89	422.93	160.91	423.5	160.87	424.81	160.88
426	161.04	427.15	161.24	428.37	161.32	428.93	161.37	429.93	161.41
430.41	161.41	430.91	161.43	432.88	161.46	434.66	161.57	434.98	161.59
436.21	161.69	436.3	161.69	436.39	161.7	438.92	161.86	441.06	161.97
441.27	161.99	441.98	162.05	442.62	162.12	442.81	162.13	444.55	162.22
445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38	449.2	162.46
449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7	454.35	162.7
454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86	459.37	162.92
460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14	463.1	163.29
463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05	467.45	163.03
468.2	163.01	468.88	163.01	469.74	163	470.44	163.12	472.07	163.37
472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06	476.76	164.27
476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26	483.45	164.04
485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43	487.86	163.52
488.86	163.77	488.92	163.79	488.99	163.82	489.5	164	492.91	165.29
493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72	499.93	166.69
502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47	509.36	169.48
509.41	169.5	511.27	170.03						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	142.59	.03	152.34	.018	166.11	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 122.01 176.06 14.15 15.34 16.27 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	133	158	F
163	511.27	158	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
183.06	298.09161	0.759

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2900.962

INPUT

Description:
 Station Elevation Data num= 367

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.89	1.12	184.57	1.86	184.44	3.12	184.07	4.78	183.62
5.78	183.24	7.12	182.56	9.05	181.86	13.86	179.91	13.9	179.88
13.96	179.84	15.77	178.44	17.18	178.15	17.62	177.98	17.91	177.86
18.92	176.86	21.94	175.11	23.99	173.77	25.11	173.08	25.14	173.06
25.16	173.06	27.11	172.48	28.5	172.14	29.1	171.98	29.95	171.71

293.47	153.72	294.32	153.71	296.1	153.63	296.38	153.63	297.67	153.65
297.92	153.66	297.98	153.65	299.9	153.53	300.88	153.54	301.94	153.52
303.96	153.45	304.01	153.45	304.12	153.44	305.54	153.37	306.04	153.36
307.34	153.32	308	153.32	309.35	153.29	311.08	153.25	311.45	153.24
312.19	153.21	313.16	153.17	314.08	153.11	314.94	153.07	315.49	153.06
317.37	153.03	319.61	152.94	319.89	152.93	320.31	152.9	321.62	152.77
322.18	152.74	323.44	152.67	324.1	152.6	325.5	152.49	327.42	152.87
327.7	152.89	328.23	152.91	328.95	152.84	330.22	152.89	331.4	152.98
334.04	153.07	335.32	153.07	335.94	153.13	337.46	153.23	339.32	153.37
339.99	153.44	341.08	153.6	342.91	153.84	343.48	153.91	343.76	153.93
345.22	154.21	348.49	154.77	349.15	154.9	350.61	155.7	351.38	155.98
352.78	156.68	353.46	156.97	353.81	157.16	354.03	157.27	354.64	157.64
358.66	160.06	359.28	160.45	360.7	160.51	361.19	160.55	362.71	161.47
364.74	162.71	365.54	163.02	367.36	163.82	367.85	163.95	368.66	164.34
369.85	164.9	370.83	165.38	371.8	165.89	372.09	166.02	373.81	166.81
376.94	168.49	377.58	168.87	377.88	169.02	378.77	169.57	380.8	170.59
382.23	171.16	384.33	172.21	384.49	172.28	384.75	172.41	386.3	173.16
386.87	173.45	388.48	174.26	389.67	174.92	390.51	175.36		

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .1	57.46 .035	65.22 .1
		83.73 .03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
43.24	85.81	209.38	207.57	205.83	.1	.1	.3
Ineffective Flow	num=	1					
Sta L Sta R Elev	Permanent						
187.5	390.51	154.78	F				

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2501.489

INPUT
Description:

Station Elevation Data	num=	305
Sta Elev	Sta Elev	Sta Elev
0 175.91	3.29 173.99	8.4 171.18
11.22	169.54 12.68 168.9	15.22 167.24 18.55 165.59
20.24	163.89 20.82 163.26	23.19 161.08 25.02 160.22
26.31	159.88 27 159.73	27.62 159.5 30.62 158.26
31.88	157.64 32.2 157.53	36.18 156.22 36.75 156.22
37.49	156.02 37.68 155.86	41.2 152.97 41.76 152.92
43.05	152.66 45.54 152.45	46.46 152.42 47.42 152.29
48.68	152.19 50.21 151.98	51.61 151.93 52.93 151.96
54.24	152.1 54.46 152.1	55.05 152.03 57.74 151.72
59.43	151.58 59.93 151.51	61.22 151.4 62.69 151.29
63.76	151.24 64.45 151.22	68.73 150.88 70.02 150.8
72.33	150.64 73.7 150.58	76.71 149.43 77 149.32
78.76	148.51 81.44 146.05	82.22 145.42 82.63 144.89
84.28	142.82 85.66 141.73	85.93 141.5 86.03 141.5
88.51	141.04 90.28 141.04	91.17 141.07 91.57 141.01
93.46	141.17 94.48 141.25	95.49 141.53 97.13 142.57
101.57	145.31 102.44 145.76	103.14 146.03 103.51 146.19
105.67	147.2 107.3 149.92	107.83 150.59 110.05 151.99
112	151.96 112.03 151.96	112.05 151.96 112.07 151.96
114.8	151.84 116 151.92	117.72 151.84 118.04 151.84
120.23	151.31 120.7 151.28	122.38 151.26 123.25 151.29
125.28	151.32 126.92 151.3	128.23 151.24 131.78 151.21
135.76	151.33 141.34 151.29	143.57 151.32 148.02 151.17
159.04	151.18 189.99 151.33	193.97 151.43 195.64 151.39
201.89	151.47 204.91 151.62	208.18 151.5 211.32 151.65
215.53	151.55 216.37 151.56	217.76 151.69 220.69 151.94
221.4	151.84 222.75 151.51	223.27 151.3 224.14 151.29
225.79	151.25 227.22 151.08	228.17 151.03 229.03 150.96
231.03	150.89 232.17 150.88	233.17 150.86 233.83 150.85
237.11	150.69 238.21 150.61	238.92 150.58 239.52 150.56
241.3	150.39 242.87 150.4	243.14 150.39 243.56 150.36

245.29	150.19	245.62	150.18	245.82	150.18	247.44	150.12	248.84	150.33
249.35	150.44	250.17	150.26	250.85	150.21	251.94	149.74	252	149.7
252.05	149.68	253.64	148.45	254.5	148.03	255.36	147.53	256.96	147.45
257.12	147.43	257.41	147.41	258.3	147.36	260.42	147.17	263.81	146.88
264.54	146.92	265.76	147	266.7	146.98	267.26	146.84	268.63	146.66
270.51	146.65	270.67	146.63	270.92	146.66	272.59	146.75	272.85	146.77
274.49	146.9	275.56	146.98	276.51	147.05	277.95	147.07	278.38	147.08
279.79	147.1	279.88	147.1	279.9	147.1	281.79	147.24	282.93	147.28
283.72	147.3	285.03	147.31	285.6	147.31	287.13	147.36	287.25	147.36
287.32	147.37	289.09	147.46	290.25	147.47	290.95	147.49	292.13	147.51
292.78	147.53	294.22	147.58	294.58	147.59	294.78	147.59	296.49	147.6
297.81	147.63	298.41	147.64	299.43	147.62	300.33	147.62	301.57	147.66
302.18	147.66	302.56	147.67	304.07	147.64	305.65	147.66	305.99	147.67
306.54	147.67	307.69	147.67	308.73	147.69	309.34	147.7	309.7	147.7
311.25	147.73	312.81	147.72	313.21	147.72	313.88	147.72	315.42	147.73
316.05	147.74	317.37	147.79	318.15	147.85	319.2	147.92	321.02	148.26
321.09	148.27	323.17	148	323.45	147.93	323.62	147.92	325.32	147.71
326.61	147.73	327.23	147.73	328.28	147.69	328.85	147.65	329.5	147.63
330.12	147.62	330.62	147.6	331.91	147.58	333.02	147.6	334.19	147.6
335.61	147.55	336.12	147.51	336.88	147.5	337.42	147.48	337.78	147.48
339.07	147.46	339.76	147.46	340.85	147.45	342.51	147.41	342.65	147.41
342.91	147.41	344.09	147.4	345.12	147.36	345.69	147.35	346.26	147.33
348.3	147.26	350.35	147.18	350.84	147.15	352.51	147.05	353.08	147.02
353.67	146.97	355.66	146.8	357.64	147.11	358.06	147.22	358.94	147.25
359.63	147.26	361.24	147.32	362.33	147.34	364.08	147.26	364.37	147.28
365.75	147.44	369.65	148	374.2	148.47	374.68	148.51	374.99	148.57
375.3	148.59	377.1	148.76	377.59	148.96	381.06	149.81	381.38	149.93
383.04	150.47	383.16	150.51	383.24	150.53	385.17	151.1	386.58	151.68
387.23	151.92	388.23	152.32	389.25	152.71	390.9	153.44	391.26	153.61
391.47	153.7	393.26	154.49	394.67	155.11	395.26	155.36	396.01	155.7

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .1	85.93 .035	95.49 .1
		110.05 .03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
73.7	107.83	198.58	191.49	185.3	.1	.1	.3
Ineffective Flow	num=	1					
Sta L Sta R Elev	Permanent						
110.5	396.01	151.99	F				
Blocked Obstructions	num=	1					
Sta L Sta R Elev							
130.29	213.92	151.6969					

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2309.998

INPUT
Description:

Station Elevation Data	num=	329
Sta Elev	Sta Elev	Sta Elev
0 176.32	.76 175.78	1.26 175.54
4.52	174.83 6.12 174.17	6.47 174.01 7.19 173.52
9.13	172.38 10.01 172.11	11.64 171.57 13.31 171.11
15.08	170.25 15.82 170.01	16.96 169.16 17.84 168.51
20.24	167.93 24.17 166.73	26.44 166.14 26.92 165.96
30.6	164.61 30.64 164.59	30.65 164.59 32.7 163.71
34.87	162.66 36.26 162.21	37.15 161.85 38.59 161.46
40.59	161.26 41.31 161.23	41.63 161.14 42.52 161.02
46.16	159.72 46.6 159.44	47.3 158.65 52.42 153.9
54.06	153.38 55.84 152.89	56.12 152.82 58.39 152.39
61.75	151.66 62.57 151.33	63.48 151.01 63.81 151.02
68.19	150.54 68.8 150.39	69.48 150.06 71.21 149
73.47	146.73 75.14 145.35	77.65 143.66 80.38 142.36
84.6	140.24 87.23 139.72	87.3 139.72 92.36 139.12
92.61	139.08 93.58 139.05	94.71 139.26 98.24 141.53
109	146.03 114.68 148.34	114.84 148.37 115.83 148.45

118.01	148.33	118.09	148.32	118.15	148.32	120.4	147.78	122.34	148.11
122.84	148.18	123.47	148.19	124.64	148.15	125.63	148.05	126.4	148.01
127.03	148.02	128.7	148.11	130.79	147.98	130.97	147.97	131.43	147.96
132.61	147.95	133.06	147.95	134.72	147.96	135.97	147.91	137	147.89
138.33	147.9	139.06	147.92	140.47	147.9	141.01	147.89	141.65	147.89
143.76	147.88	145.53	147.83	146.18	147.8	147.72	147.77	148.05	147.77
148.3	147.76	150.27	147.7	152.22	147.61	152.52	147.6	152.91	147.6
154.5	147.57	155.21	147.54	156.43	147.55	157.25	147.52	158.4	147.49
160.13	147.45	160.34	147.44	162.23	147.35	162.28	147.35	162.31	147.35
164.23	147.41	165.53	147.49	166.21	147.54	167.26	147.55	168.37	147.47
168.5	147.41	168.65	147.4	181.87	147.45	198.88	147.52	199.18	147.5
200.63	147.49	201.56	147.49	202.53	147.47	203.28	147.45	204.44	147.39
204.57	147.38	204.66	147.38	207.25	147.42	209.28	147.33	209.68	147.32
210.32	147.31	211.17	147.29	211.69	147.29	213.02	147.24	214.09	147.19
215.09	147.14	216.38	147.12	216.96	147.11	217.91	147.09	218.39	147.07
218.69	147.06	220.11	147.02	221.07	147	221.91	146.98	222.22	146.94
223.61	146.92	224.22	146.88	225.02	146.83	225.54	146.83	227.33	146.85
230.06	146.74	230.15	146.74	230.21	146.74	231.71	146.73	232.6	146.74
233.69	146.75	235.17	146.72	236.35	146.69	237.21	146.66	238.2	146.6
239.45	146.51	239.86	146.5	240.35	146.52	242.5	146.53	244.28	146.6
244.87	146.61	246.3	146.52	246.57	146.5	246.69	146.5	248.96	146.51
251.43	146.74	251.44	146.74	253.81	146.4	255.23	146.19	256.33	145.79
257.39	145.48	258.73	145.73	259.45	144.94	261.09	144.86	261.3	144.85
261.48	144.93	263.44	145.4	265.33	145.7	265.86	145.74	267.09	145.61
268.38	145.42	268.54	145.4	268.65	145.39	270.55	145.27	271.94	144.51
272.47	144.29	273.25	144.16	274.7	144	275.86	144.04	276.84	144.11
277.53	144.16	278.84	144.27	280.75	144.34	280.88	144.34	283.24	144.43
283.28	144.43	283.31	144.43	285.09	144.51	286.27	144.55	286.89	144.57
287.87	144.59	289.16	144.65	290.54	144.72	291.9	144.78	293.65	144.85
294.61	144.91	295.36	144.94	297.4	144.99	297.94	145	299.91	145.08
302.11	145.09	302.38	145.1	302.61	145.1	303.93	145.15	305.28	145.13
305.42	145.13	305.55	145.14	307.8	145.32	310.16	145.78	310.21	145.79
310.27	145.79	311.72	145.87	312.94	145.88	313.36	145.9	313.71	145.9
315.54	145.95	317.72	146	317.74	146	317.79	146	319.59	146.02
320.44	146	321.76	145.98	323.08	145.96	324.24	145.96	325.43	145.96
326.3	145.95	327.58	145.63	327.96	145.52	328.23	145.5	329.93	145.38
331.13	145.35	331.95	145.33	333.1	145.32	333.86	145.31	335.22	145.27
335.56	145.26	335.76	145.25	337.57	145.17	338.81	145.16	339.56	145.16
340.64	145.14	341.54	145.11	343.42	145.1	343.48	145.1	343.52	145.1
345.39	145.07	346.67	145.03	347.31	145.02	348.28	144.98	349.3	144.95
351.07	144.87	351.37	144.86	351.54	144.86	353.19	144.78	354.49	144.68
355	144.65	355.84	144.62	356.71	144.58	357.9	144.43	358.26	144.39
358.52	144.4	360.07	144.56	361.06	144.7	361.96	144.85	363.32	144.96
364.07	144.98	366.01	145.07	366.77	145.11	368.04	145.26	369.51	145.39
370.39	145.48	371.41	145.63	372.48	145.81	372.88	145.89	373.24	145.94
375.24	146.14	377.77	146.24	377.9	146.24	379.3	146.4	380.41	146.56
381.03	146.64	381.86	146.71	383.33	146.78	383.89	146.81	384.63	146.84
387.15	147.17	387.42	147.18	389.85	147.34	391.99	147.48	392.37	147.5
393.71	147.59	394.27	147.61	395.79	147.67	397.76	147.65	398.02	147.66
398.23	147.69	400.08	148.03	400.91	147.98	401.85	148.06		

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0	.1	82.43
	.035	94.71
	.025	114.68
		.03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
71.21	114.68	146.44	148.22	149.95		.1	.3
Ineffective Flow	num=	1					
Sta L	Sta R	Elev	Permanent				
116.61	401.85	148.53	F				
Blocked Obstructions	num=	1					
Sta L	Sta R	Elev					
159.97	209.18	147.4514					

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2161.775

INPUT

Description:

Station Elevation	Data	num=	375						
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	172.59	.32	172.58	2.53	171.85	4.36	170.81	5.47	170.47
7.6	169.5	9.16	169.2	9.41	169.16	11.7	168.87	12.6	168.67
14.16	168.58	15.29	168.54	16.65	168.61	18.54	167.94	19.03	167.67
21.12	166.52	21.4	166.44	23.01	166.5	25.73	166.57	26.27	166.64
27.01	166.35	28.88	165.77	29.58	165.67	31.21	165.26	32.18	165.12
33.47	165.08	35.61	164.73	35.7	164.72	35.81	164.72	37.12	164.67
38.33	164.32	39.65	163.93	42.8	163.27	45.12	162.65	46.86	162.43
46.96	162.41	47.06	162.35	47.26	162.22	50.22	159.99	50.88	159.67
51.45	159.22	52.85	159.09	53.03	159.04	53.25	158.94	54.43	158.18
55.48	157.72	57.92	156.47	59.17	155.84	59.88	155.48	61.22	154.33
62.17	153.61	63.22	153.14	64.13	152.8	66.95	152.15	68.33	151.31
68.87	150.92	70	149.9	70.61	149.4	71.41	148.93	72.17	148.55
72.73	148.2	74.42	147.13	75.71	146.45	77.17	145.9	78.44	145.55
79.36	145.19	80.66	144.43	81	144.2	81.24	144.06	83.5	142.69
85.42	141.56	86.14	141.09	86.99	140.66	88.19	140.11	88.83	139.75
91.97	139.24	92.91	139.06	94.95	138.19	95.2	138.17	95.56	138.12
96.98	137.65	98.27	137.65	99.1	137.72	99.86	137.77	101.8	137.97
103.92	137.9	104.36	137.97	105.43	138.71	106.82	139.53	108.53	140.57
109.41	141.17	112.2	143.33	112.32	143.41	112.43	143.48	114.68	144.63
115.35	144.89	116.7	145.34	117.24	145.51	118.93	145.55	119.88	145.67
120.93	145.69	122.42	145.79	123.79	145.74	124.87	145.74	125.72	145.75
127.35	145.8	129.4	145.83	129.88	145.83	132.38	145.92	132.53	145.93
132.64	145.93	134.89	145.97	136.8	145.98	137.29	145.97	137.94	146
139.04	146.04	140.22	145.99	140.57	146	140.9	145.99	142.05	146.02
146.27	146.38	146.41	146.39	146.45	146.4	146.52	146.39	147.97	146.4
149.4	146.31	149.5	146.3	149.56	146.29	151.69	145.99	153.29	146.03
153.91	146	154.81	145.91	155.87	145.7	157.28	145.63	157.67	145.61
157.95	145.61	159.81	145.61	161.14	145.6	162.06	145.57	163.37	145.53
164.14	145.49	165.43	145.5	166.02	145.5	166.38	145.49	168.01	145.44
169.02	145.43	170.04	145.43	171.68	145.41	172.06	145.4	172.74	145.39
174.01	145.37	174.71	145.35	175.98	145.3	176.76	145.3	178.02	145.22
179.96	145.26	180.01	145.26	180.08	145.26	182.14	145.22	183.17	145.14
184.54	145.1	185.78	145.1	190.19	145.16	191.23	145.15	193.81	145.14
196.67	145.12	197.02	145.12	197.97	145.1	199.53	145.09	199.81	145.07
201.92	145.05	204.2	145.08	204.57	145.09	204.92	145.08	207.06	145.09
207.95	145.11	209.62	145.2	211.35	145.34	212.26	145.39	213.15	145.32
214.11	145.17	215.01	145.3	216.16	145.29	217.54	145.04	218.76	145.02
219.95	144.99	221.3	144.96	221.99	144.92	222.65	144.91	223.51	144.9
224.44	144.88	225.34	144.88	226.07	144.86	227.58	144.83	229.4	144.79
229.73	144.79	230.11	144.76	231.38	144.7	232.48	144.7	233.11	144.7
233.46	144.69	235	144.63	236.39	144.63	236.87	144.69	237.68	144.62
238.65	144.6	239.91	144.58	240.38	144.57	240.75	144.56	242.31	144.54
243.33	144.51	244.24	144.52	245.64	144.44	246.17	144.43	246.91	144.41
248.03	144.38	248.85	144.39	249.98	144.39	250.72	144.39	251.97	144.35
253.87	144.33	253.97	144.33	254.12	144.32	255.92	144.23	256.96	144.21
257.85	144.2	258.41	144.2	259.76	144.19	261.51	144.16	261.66	144.16
261.9	144.15	263.72	144.1	265.08	144.18	265.74	144.24	267.97	144.53
269.21	144.65	269.5	144.67	271.33	144.2	271.78	144.17	272.55	144.13
273.23	144.07	275.46	143.86	276.7	143.65	278.08	143.5	278.97	143.4
280.11	143.31	280.75	143.27	281.25	143.33	283.24	143.45	285.66	143.38
286	143.36	286.28	143.3	288.63	142.63	289.63	142.55	291.17	142.49
292.81									

367.59	142.51	368.53	142.48	369.46	142.45	370.61	142.41	371.88	142.35
372.89	142.27	373.92	142.17	375.08	142.39	375.87	142.52	377.62	142.53
378.94	142.47	386.25	141.76	387.34	141.63	388.01	141.69	388.99	141.7
390.51	142.48	390.92	142.67	391.18	142.78	392.87	143.55	394.39	144.18
394.87	144.41	395.4	144.69	396.8	145.48	397.45	145.8	398.57	146.2
400.61	147.55	403.6	149.78	405.68	150.65	406.18	151.01	406.53	151.23
408.71	152.79	409.45	153.34	409.66	153.5	409.86	153.55	411.74	153.98
413.03	153.78	413.8	153.69	414.53	153.67	415.73	153.66	416.98	153.75
417.87	153.8	418.94	153.89	419.46	153.93	425.09	154.49	426.1	154.61

Manning's n Values											
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.1	91.97	.035	104.36	.018	116.7	.03				

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	78.44	116.7		328.02	326.68	328.75		.1	.3
Ineffective Flow	num=		1						
Sta L	Sta R	Elev	Permanent						
147.97	426.1	146.4	F						

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 1835.094

INPUT

Description:											
Station Elevation Data num= 382											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	160.39	.81	160.34	1.36	160.28	3.18	160.18	3.96	160.09		
4.65	159.86	7.18	158.37	7.61	158.13	8.03	158.18	9.97	158.28		
11.91	157.39	12.41	157.2	12.89	157.04	14.99	156.77	16.11	156.6		
17.55	156.37	19.08	156.13	20.03	155.97	20.94	155.77	22.7	155.32		
23.36	155.2	24.1	155.14	25.28	154.98	26.52	154.39	27.88	153.86		
29.96	153.44	31.94	153.02	32.76	152.96	33.15	152.89	34.31	152.52		
35.29	152.19	36.34	151.88	37.24	151.66	38.38	151.5	38.99	151.46		
39.43	151.31	40.96	150.91	42.36	150.58	43.04	150.44	43.28	150.46		
43.79	150.43	46.9	150.08	47.02	150.04	48.95	149.47	50.78	149.19		
51	149.14	51.24	149.11	53.04	148.79	54.54	148.29	55.07	148.15		
55.55	148.05	57.04	147.73	58.74	147.65	59.07	147.61	59.94	147.67		
61.28	147.74	61.8	147.67	63.27	147.52	64.44	147.21	65.18	147.07		
66.11	146.75	67.25	146.57	69.54	146.43	69.64	146.38	69.96	146.23		
72.34	145.09	73.44	144.39	73.93	144.17	75.93	143.99	76.43	143.94		
76.55	143.95	78.13	144.16	79.16	143.8	80.62	143.53	81.33	143.5		
81.96	143.32	82.79	143.19	83.75	143.02	84.71	142.99	86.55	142.96		
87.37	142.96	87.78	142.94	89.1	143.01	90.43	143.05	90.65	143.02		
90.89	142.98	92.93	142.65	94.75	142.32	95.19	142.13	95.41	142.14		
95.7	142.15	97.91	141.51	98.86	141.16	100.01	141.34	101.93	140.76		
103.18	140.54	112.75	133.65	124.5	133.65	132.96	140.86	133.35	141.22		
133.63	141.49	133.92	141.66	135.7	142.66	136.91	143.12	138.51	143.63		
143.16	142.79	143.39	142.81	144.13	142.83	144.38	142.84	148.45	143.36		
148.98	143.22	149.73	143.25	150.71	143.18	151.99	143.29	152.99	143.58		
154.81	143.7	156.19	143.68	157.71	143.56	157.86	143.56	159.56	143.74		
161.18	143.6	161.35	143.59	161.7	143.6	163.91	143.68	165.05	143.73		
166.09	143.78	167.43	143.66	167.96	143.67	168.36	143.66	170.2	143.64		
171.95	143.57	172.48	143.58	173.4	143.48	174.61	143.4	174.89	143.37		
175.32	143.32	177.71	143.27	179.14	143.16	179.16	143.16	181.48	143.01		
182.43	142.95	183.68	142.88	185.51	142.59	185.8	142.54	186.01	142.52		
188.35	142.38	189.48	142.29	190.68	142.26	192.32	142.08	192.77	142.02		
193.1	141.99	194.39	141.73	196.48	141.44	197.3	141.36	199.2	141.03		
199.68	140.94	202.35	140.69	202.98	140.62	203.48	140.54	204.84	140.41		
206.47	140.27	206.81	140.25	207.1	140.22	208.61	140.09	210.2	139.91		
210.36	139.89	210.52	139.88	212.18	139.77	213.99	139.62	214.07	139.62		
214.14	139.61	215.81	139.43	217.37	139.37	217.57	139.37	217.77	139.34		
219.42	139.13	221.05	139.01	221.25	138.99	221.41	138.98	222.84	138.8		
224.29	138.79	224.42	138.78	224.58	138.76	226.73	138.54	228.09	138.38		
229.09	138.39	229.68	138.39	231.42	137.94	231.59	137.85	231.73	137.86		
233.22	137.69	234.21	137.31	236.22	136.78	236.96	136.52	237.59	136.45		
240.81	136.3	243.21	136.29	244.33	136.34	244.64	136.33	244.88	136.31		

245.68	136.36	246.74	136.45	249.14	136.66	249.22	136.66	249.49	136.67
251.98	136.75	252.31	136.79	252.75	136.85	254.5	137.05	256.38	137.16
256.74	137.19	257.06	137.22	258.4	137.38	259.85	137.48	260.07	137.5
260.26	137.52	261.7	137.63	263.29	137.73	263.35	137.74	263.42	137.74
265.14	137.91	266.83	138.04	266.88	138.04	266.94	138.05	268.82	138.2
270.39	138.3	270.75	138.31	271.12	138.34	272.54	138.42	273.92	138.41
274.33	138.41	274.84	138.43	276.18	138.45	277.29	138.47	278.05	138.46
278.91	138.47	279.97	138.43	280.88	138.41	281.81	138.38	282.86	138.38
283.6	138.38	284.25	138.36	285.58	138.35	287.3	138.37	287.65	138.4
287.93	138.38	289.39	138.33	290.97	138.29	291.07	138.28	291.16	138.27
292.82	138.17	294.58	138.05	296.19	138.08	297.6	138.02	297.79	138.02
298.02	138	300.04	137.96	301.68	137.93	302.15	137.9	302.56	137.86
303.68	137.65	304.98	137.47	305.36	137.42	306.32	137.39	307.87	137.36
308.48	137.35	310.48	137.34	311.89	137.32	312.61	137.31	313.18	137.29
314.18	137.28	315.45	137.22	315.87	137.21	316.99	137.22	318.21	137.25
318.7	137.25	319.96	137.29	321.01	137.27	321.56	137.28	322.24	137.3
323.19	137.32	324.22	137.34	324.83	137.34	325.38	137.37	326.59	137.45
327.79	137.52	328.43	137.56	329.07	137.59	330.43	137.65	332.36	137.78
332.49	137.79	332.63	137.79	334.34	137.84	335.91	137.88	336.2	137.89
336.66	137.9	338.11	137.93	339.03	137.98	340.08	138.02	341.33	138.08
342.13	138.11	342.8	138.14	344	138.21	345.54	138.26	345.81	138.27
346.02	138.27	347.97	138.31	349.78	138.37	350.17	138.37	351.16	138.37
352.5	138.38	353.03	138.4	354.9	138.46	356.91	138.69	357.15	138.72
357.39	138.75	358.79	138.89	360.19	138.98	360.57	138.99	361.2	138.94
363.05	138.82	364.16	138.82	365.04	138.88	365.78	138.89	366.59	138.94
367.55	139.03	368.58	139.1	370.77	139.25	371.25	139.28	371.47	139.29
372.9	139.33	374.07	139.39	374.49	139.42	375	139.45	376.14	139.52
376.91	139.53	377.86	139.55	379.26	139.57	379.69	139.59	380.78	139.65
382.13	139.74	382.67	139.75	384.02	139.78	385.02	139.84	385.77	139.86
386.77	139.9	387.72	139.93	389.32	139.98	390	140.01	390.4	140
391.95	140.03	393.16	140.12	393.79	140.19	394.61	140.24	395.79	140.33
397.41	140.46	397.88	140.5	398.23	140.52	399.84	140.54	401.17	140.56
401.78	140.57	402.54	140.58	403.68	140.62	404.99	140.59	405.54	140.58
406.01	140.69	407.4	141	408.39	141	409.28	141.01	410.51	141.07
411.1	141.1	413.13	141.4	414.94	141.66	421.98	144.16	425.53	145.39
426.55	145.71	428.31	146.55	429.13	146.74	430.68	147.09	433.61	147.46
434.95	147.94	435.44	148.09						

Manning's n Values											
Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.04	103.18	.018	132.96	.04						

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	103.18	132.96		35.26	34.39	34.8		.3	.5
Ineffective Flow	num=		1						
Sta L	Sta R	Elev	Permanent						
138.51	435.44	143.63	F						

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 1800.703

INPUT

Description:											
Station Elevation Data num= 380											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4		
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84		
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87		
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94		
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38		
34.11	152.52	34.29	152.5								

76.26	145.28	76.92	145.23	77.8	145.12	78.87	145.01	79.58	144.92
80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	303.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

115.75 141.69 879.95 875.26 876.36 .3 .5
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 159.7 435.17 143.7 F

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 1350

INPUT

Description:
 Distance from Upstream XS = 13
 Deck/Roadway Width = 831
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 142.5 500 142.5

Upstream Bridge Cross Section Data

Station	Elevation	Data	num=	380					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38
34.11	152.52	34.29	152.5	37.46	152.43	38.03	152.35	38.37	152.24
39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78
59.93	148.14	60.45	148.01	62.47	147.69	62.56	147.67	62.63	147.66
64.7	147.08	66.43	146.53	66.81	146.44	67.26	146.39	69.29	146.08
70.77	145.89	71.8	145.79	72.96	145.69	74.69	145.5	75.45	145.41
76.26	145.28	76.92	145.23	77.8	145.12	78.87	145.01	79.58	144.92
80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24

284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.04	115.75	.018	141.69	.04

Bank Sta: Left	Right	Coeff	Contr.	Expan.
115.75	141.69		.3	.5
Ineffective Flow	num=	1		
Sta L	Sta R	Elev	Permanent	
159.7	435.17	143.7	F	

Downstream Deck/Roadway	Coordinates		
num=	2		
Sta Hi Cord	Lo Cord	Sta Hi Cord	Lo Cord
0	134	500	134

Downstream Bridge Cross Section Data	num=	84							
Station Elevation Data	num=	84							
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.1	29	.045	78.68	.1

Bank Sta: Left	Right	Coeff	Contr.	Expan.
29	78.68		.3	.5
Ineffective Flow	num=	2		
Sta L	Sta R	Elev	Permanent	
0	33.72	132	F	
80.72	154.24	132	F	

Upstream Embankment side slope	=	0	horiz. to 1.0 vertical
Downstream Embankment side slope	=	0	horiz. to 1.0 vertical
Maximum allowable submergence for weir flow	=	.98	
Elevation at which weir flow begins	=		
Energy head used in spillway design	=		
Spillway height used in design	=		
Weir crest shape	=	Broad Crested	

Number of Culverts = 1

Culvert Name	Shape	Rise	Span					
Culvert #1	Box	6	7					
FHWA Chart # 8 - flared wingwalls								
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.								
Solution Criteria = Highest U.S. EG								
Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss	Loss Coef	Exit Loss	Coef
7	851	.018	.018	0	.5		1	

Number of Barrels	=	2
Upstream Elevation	=	130.4
Centerline Stations		
Sta.	Sta.	
123.46	131.46	
Downstream Elevation	=	120
Centerline Stations		
Sta.	Sta.	
56.22	64.22	

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 925.4423

INPUT

Description:

Station Elevation Data	num=	84							
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.1	29	.045	78.68	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
29	78.68	160.4	127.63	131.93		.3	.5
Ineffective Flow	num=	2					

Sta L Sta R Elev Permanent
 0 33.72 132 F
 80.72 154.24 132 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 797.816

INPUT

Description:

Station Elevation Data		num= 238	
Sta	Elev	Sta	Elev
0	170.94	.89	171.07
3.12	171.13	4	171.14
7.06	171.13	8.8	171.04
11.16	170.83	12.1	170.79
15.78	170.36	16.59	170.54
21.07	169.54	21.8	169.41
26.48	167.74	26.5	167.74
30.43	166.33	31.38	165.86
35.6	163.5	36.2	163.19
41.37	160.38	41.38	160.38
45.42	158.09	45.67	157.98
49.19	156.19	50.69	154.86
55.23	151.85	55.67	151.59
59.35	149.87	61.29	149.4
63.08	148.6	65.08	147.28
67.55	145.78	67.7	145.72
71.93	144.21	72.87	143.82
77.68	141.14	78.33	140.96
86.06	137.45	86.95	137.3
90.9	136.29	91.23	136.27
97.39	133.78	99.75	132.91
102.8	131.55	103.07	131.37
107.91	128.91	108.45	128.7
113.56	127.36	113.93	127.35
123.25	123.84	130.45	119.12
135.81	119.46	137.98	118.53
142.12	115.63	142.58	115.61
147.88	116.26	148.38	116.34
152.9	117.12	153.21	117.14
158.62	118.73	160.16	119.3
172.89	121.59	174.01	121.91
181.63	124.53	184.05	125.93
197.73	131.34	199.36	131.52
201.97	131.76	202.33	131.8
209.47	131.96	210.07	131.9
224.1	131.22	224.56	131.18
229.08	131	230.62	130.96
236.36	130.83	238.74	130.86
242.07	130.76	244.25	130.78
245.68	130.7	248.05	130.63
251.87	130.49	252.35	130.46
256.87	130.31	257.76	130.32
262.06	130.24	262.55	130.24
266.7	130.07	268.72	130.03
281.74	129.88	282.89	129.81
287.17	129.64	288.94	129.67
293.36	129.66	294.05	129.66
296.17	129.64	296.21	129.64

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	137.98	.035	157.38	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
105.53	199.36	152.73	145.59	144.95	.1	.3	

Blocked Obstructions num= 1

Sta L Sta R Elev
 291.9 298.82129.6411

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 652.2307

INPUT

Description:

Station Elevation Data		num= 322	
Sta	Elev	Sta	Elev
0	219.72	.41	219.63
4.76	217.8	5.75	217.5
9.87	216.57	10.28	216.48
15.67	215.74	15.94	215.7
20.49	214.73	21.32	214.5
26.05	212.3	26.37	212.15
28.65	211.64	30.37	210.85
34.98	207.62	37.33	206.64
42.82	203.56	42.85	203.54
47.85	198.49	48.03	198.29
49.39	197.67	49.43	197.65
54.87	194.7	55.77	194.09
59.9	191.43	60.35	191.17
65.79	187.95	66.39	187.57
69.99	185.87	70.96	185.4
75.93	183.97	76.68	183.54
80.89	181.7	80.94	181.67
88.48	178.14	88.97	177.93
92.51	175.79	92.98	175.59
97.3	173.63	98.41	172.61
102.5	169.63	103.62	168.83
108.23	166.09	109.37	165.28
114.06	161.16	114.8	160.5
118.91	157.68	120.19	156.96
124.38	153.28	124.53	153.17
128.74	151.17	131	150.94
132.86	149.85	136.29	147.13
147.11	139.64	147.22	139.54
156.48	132.27	157.29	131.81
162.66	127.39	164.74	125.86
176.66	121.21	183.69	118.36
190.77	115.85	193.73	114.53
197.19	114.21	198.81	114.52
211.87	117.15	212.15	117.17
217.85	118.33	223.17	119.19
233.1	120.23	233.41	120.24
235.8	120.9	236.23	121.04
241.43	122.95	250.53	127.76
253.77	129.39	255.83	130.22
258.47	131.21	259.91	131.53
263.61	132.06	264.16	132.1
269.82	132.03	270.79	131.92
274.17	131.69	275.96	131.62
280.88	131.2	281.84	131.01
286.02	130.77	286.26	130.74
290.17	130.52	291.45	130.42
295.32	130.24	295.91	130.22
300.75	130.03	301.27	129.98
305.93	129.73	307.13	129.59
311.24	129.49	311.84	129.46
316.4	129.12	317.39	129.06
321.07	128.91	321.51	128.87
326.8	128.64	327.75	128.6
333.17	128.54	333.69	128.53
339.01	128.36	340.49	128.33
344.29	128.16	344.31	128.16
349.91	128.28	351.11	128.22

355.81	127.95	356.7	127.89	358.1	127.79	358.93	127.72	360.47	127.63
360.76	127.63	362.76	127.55	364.38	127.46	365.2	127.43	366.24	127.39
367.66	127.31	369.71	127.18	369.78	127.17	369.83	127.17	371.09	127.16
371.34	127.16	374.93	127.13	375.97	127.12	380.93	127.11	413.75	127.2
413.78	127.2	413.8	127.2	413.82	127.2	413.87	127.2	415.3	127.11
415.69	127.08	417.63	126.97	419.25	126.94	419.92	126.92	421.27	126.85
421.92	126.82	423.38	126.8	424.38	126.79	424.82	126.78	426.39	126.66
426.73	126.65	428.11	126.56						

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.1	190.77	.025	208.39	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
158.79	258.01	123.04	138.31	136.74	.1	.3	
Blocked Obstructions	num=	1					
Sta L	Sta R	Elev					
347.73	428.11128	3192					

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 513.9224

INPUT	Description:								
Station Elevation Data	num= 297								
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	219.83	1.59	219.13	17.61	212.09	23.51	210.08	23.63	210.08
24.12	209.8	25.5	209.15	27	209.05	27.69	208.99	28.29	208.92
29.39	208.81	29.72	208.85	31.4	208.79	32.97	208.53	33.4	208.43
33.85	208.37	35.32	208.21	35.35	208.21	35.36	208.21	35.46	208.19
38.88	207.55	39.45	207.31	40.15	206.9	40.9	206.48	41.46	206.14
42.9	205.11	44.34	204.06	44.9	203.75	45.76	203.25	48.13	201.52
49.29	200.48	50.61	199.55	51.07	199.16	52.15	198.26	52.46	198.05
52.86	197.79	54.76	196.63	56.19	195.61	56.67	195.18	57.73	194.54
58.31	194.16	58.97	193.67	60.55	192.32	61.03	192.04	62.49	191.05
63.63	190.32	66.65	188.52	67.6	188.06	68.78	187.36	69.2	187.15
70.85	186.33	72.41	185.56	72.82	185.34	73.25	185.12	74.04	184.69
74.92	184.21	75.73	183.67	79	181.47	79.01	181.46	80.14	180.86
80.66	180.57	82.36	179.81	84.73	178.82	85.01	178.72	86.03	178.29
86.31	178.18	86.39	178.14	88.93	176.95	90.48	176.25	91.02	175.97
92.08	175.49	92.58	175.2	93.29	174.77	94.91	173.64	96.06	172.93
96.91	172.39	97.76	172.12	99.02	171.49	100.65	170.55	101.36	170.05
101.93	169.69	103.29	169.18	103.55	169.08	105.23	168.06	106.84	167.08
107.26	166.86	110.6	164.84	111.12	164.44	113.56	162.94	119.23	159.48
120.33	158.98	120.64	158.83	120.72	158.77	125.48	157.13	129.17	155.84
129.42	155.71	129.81	155.55	130.05	155.36	130.45	155.05	135.67	150.81
136.76	149.72	138.62	149.06	143.15	144.73	144.78	142.81	147.08	141.18
147.1	141.17	149.3	140.05	149.6	139.92	151.89	138.05	153.48	136.74
154.19	136.3	154.52	136.15	156.97	134.37	158.34	133.07	159.51	132.3
160.17	131.77	162.12	129.81	164.41	128.52	165.82	127.68	168.37	126.49
169.58	125.77	169.98	125.42	171.07	124.62	173.98	122.32	175.31	121.45
176.06	120.88	179.25	120.43	180.66	120.17	181.39	119.97	182.81	119.56
184.08	119.43	185.41	119.39	186.13	119.38	199.37	116.29	199.94	116.13
203.18	115.55	205.3	115.34	207.61	115.26	209.82	115.07	211.57	114.85
211.78	114.82	213.98	113.83	217.31	112.84	217.62	112.82	217.96	112.79
218.48	112.76	220.43	112.7	221.64	112.62	222.74	112.79	223.74	113.22
225.16	113.85	227.59	115.21	227.72	115.28	227.78	115.32	228.04	115.44
229.84	116.34	230.25	116.55	230.75	116.84	232.42	118.05	238.08	119.84
238.95	120.12	239.98	120.4	241.59	120.96	242.1	121.13	242.42	121.27
244.14	122.07	246.4	123.54	247.51	124.25	248.19	124.63	249.95	125.56
252.21	126.62	252.72	126.82	254.37	127.43	254.4	127.44	254.4	127.44
256.03	127.71	256.47	127.79	258.27	128.15	258.47	128.19	259.32	128.23
260.21	128.29	260.41	128.29	262.63	128.25	264.31	128.18	264.93	128.16
266.52	128.1	266.99	128.08	267.59	128.06	269.13	128.02	270.34	127.95
271.27	127.87	272.49	127.79	273.44	127.75	274.55	127.73	275.54	127.71
276.36	127.67	277.99	127.57	278.51	127.55	280.28	127.51	282.4	127.46
282.47	127.46	284.53	127.46	285.17	127.46	285.86	127.45	287.14	127.43

288.31	127.4	288.87	127.39	289.9	127.37	290.29	127.37	290.5	127.36
293.52	127.31	294.36	127.31	295.45	127.3	296.49	127.27	297.36	127.26
300.16	127.26	300.23	127.26	300.46	127.25	302.02	127.19	302.48	127.18
304.74	127.07	306.3	127.02	307.22	127.01	308.55	126.92	309.27	126.87
310.66	126.82	311.72	126.78	312.27	126.76	313.76	126.74	314.49	126.72
315.91	126.66	317.89	126.56	318.11	126.55	318.27	126.54	320.49	126.46
320.65	126.45	322.51	126.36	324.31	126.35	324.42	126.38	326.58	126.68
327.74	126.44	331.73	126.34	337.07	126.29	344.61	126.25	346.26	126.22
357.1	126.27	360.16	126.41	360.23	126.41	360.24	126.41	360.29	126.41
361.2	126.4	363.35	126.33	367.07	126.25	367.67	126.23	367.96	126.21
370.92	126.28	371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22
376.43	126.2	382.93	126.17	383.46	126.16	385.18	126.08	387.41	126.04
387.95	126.04	388.35	126.04	389.97	126	390.56	125.99	391.9	125.99
393.55	125.97	393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97
396.2	125.97	396.39	125.97	398.42	125.96	399.37	125.98	400.87	125.93
401.59	125.91	403.69	125.85	404.82	125.85	406.48	125.82	406.99	125.85
408.45	125.92	410.14	125.81	410.22	125.81	410.28	125.81	410.48	125.82
412.39	125.95	413.26	125.98	415.57	125.98	415.63	125.98	415.74	125.98
417.87	126.03	418.93	126.03						

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.08	211.57	.035	227.59	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
165.82	256.03	90.74	99.27	101.73	.1	.3	
Ineffective Flow	num=	1					
Sta L	Sta R	Elev	Permanent				
260.21	418.93	128.29	F				
Blocked Obstructions	num=	2					
Sta L	Sta R	Elev	Sta L	Sta R	Elev		
0	21.49219	8.281	328.81	368.34	126.4151		

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 414.6495

INPUT	Description:								
Station Elevation Data	num= 331								
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	217.52	1.65	217.02	8.79	215.09	11.69	214.35	17.38	212.81
18.77	212.45	23.58	211.22	25.39	210.74	25.75	210.71	27.81	210.48
29.86	210.9	30.39	211.01	31.17	211.04	31.56	211.04	33.15	211.04
35.09	211.04	35.48	211.04	35.79	211.04	36.97	211.07	37.89	211.03
39.01	211.07	43.34	209.74	43.5	209.73	43.74	209.69	44.11	209.5
45.74	208.76	47.56	208.22	47.65	208.18	47.75	208.12	49.35	207.15
49.58	207	51.4	205.99	53.14	204.83	53.43	204.65	53.72	204.49
55.27	203.6	55.78	203.29	57.81	202.29	69.37	197.12	73.14	196.23
76.27	195.13	78.99	193.99	81.64	192.89	83.11	192.48	83.69	192.34
84.78	192.08	85.69	191.92	86.49	191.69	89.77	190.24	90.08	190.13
91.74	189.69	94.76	188.93	96.22	188.33	97.52	187.7	98.71	187.05
99.43	186.63	100.61	185.85	103.46	184.34	105.48	183.26	108.42	181.71
108.91	181.4	109.1	181.21	110.71	180.16	112.53	179.42	114.16	178.69
114.94	178.3	115.87	177.69	116.97	177.07	117.97	176.46	118.8	176.04
119.65	175.68	120.65	175.3	122.64	174.83	125.29	174.1	126.32	173.47
128.88	171.96	130.83	170.63	131.1	170.51	131.82	170.12	135.95	167.91
136.43	167.67	136.86	167.46	139.23	166.47	141.81	164.9	141.94	164.88
143.67	164.53	144.32	164	149.43	160.13	150.23	159.72	151.3	159.37
152.46	159.04	153.32	158.46	154.15	157.94	155.28	156.94	155.73	156.54
156.33	155.9	157.92	154.34	160.5	152.68	161.06	152.34	162.23	151.38
164.97	149.05	165.89	148.21	167.17	147.13	168.67	145.87	169.9	144.89
170.9	144.11	171.97	143.39	172.94	142.69	174.07	141.97	175.3	141.01
176.05	140.4	176.75	139.82	178.37	138.49	178.89	138.15	180.4	137.18
181.93	136.37	182.33	136.13	182.73	135.88	183.66	135.29	184.78	134.69
186.1	133.7	188.65	131.65	189.16	131.31	190.48	130.44	192.23	128.97
193.37	128.18	195.35	126.84	196.62	126.39	197.31	125.91	197.81	125.69
199.96	124.14	202.48	122.49	207.42	118.77	208.47	118.01	210.37	117.15

212.17	116.68	212.53	116.63	213.38	116.46	214.63	116.52	216.8	116.54
219.61	116.46	223.9	117.04	224.74	117.17	226.02	117.65	227.08	118.3
228.53	119.19	229.85	119.28	230.84	119.15	232.11	119.03	233.87	118.65
235.73	117.82	236.74	117.23	238.96	115.96	239.81	115.8	241.64	115.55
242.24	115.5	243.54	115.35	243.78	115.33	243.89	115.33	246.51	115.29
247.64	115.32	248.57	115.4	249.88	115.1	250.31	114.92	251.02	114.24
253.54	112.22	254.67	111.97	255.82	111.91	256.81	111.76	258.68	111.44
259.23	111.34	259.52	111.3	261.34	111.16	262.76	111.71	264.05	112.17
264.64	112.59	265.37	113	271.11	117.76	271.5	118.03	271.73	118.14
277.03	120.84	278.32	121.16	278.84	121.22	279.62	121.44	280.44	121.74
281.3	122.17	282.33	122.81	283.27	123.18	283.97	123.58	285.09	123.97
285.4	124.11	285.58	124.19	288.65	125.14	289.19	125.23	291.31	125.5
291.55	125.52	293.48	125.59	294.26	125.62	294.67	125.65	296.4	125.68
297.61	125.74	298.07	125.71	300.08	125.53	300.85	125.45	301.19	125.44
302.7	125.32	303.51	125.27	304.81	125.26	307.13	125.22	307.15	125.22
307.38	125.21	309.35	125.15	309.54	125.14	311.5	125.04	313.13	124.93
313.67	124.89	315.55	124.81	315.99	124.8	316.61	124.78	318.19	124.71
319.26	124.65	320.6	124.54	321.7	124.48	322.83	124.43	324.07	124.39
324.79	124.35	325.44	124.3	327.15	124.17	327.81	124.15	329.22	124.08
330.6	123.94	331.07	123.89	331.56	123.87	334.06	123.74	334.15	123.74
335.94	123.84	337.64	123.89	337.78	123.9	337.93	123.9	338.48	123.89
340.44	123.87	341.3	123.91	344.07	124	344.27	124.02	345.88	124.15
346.78	124.2	348.19	124.24	350.51	124.22	350.85	124.2	351.53	124.21
352.58	124.24	353.1	124.27	354.83	124.34	356.8	124.36	357.18	124.37
358.24	124.32	359.1	124.3	359.41	124.3	361.35	124.33	363.13	124.34
363.63	124.35	365.83	124.35	365.93	124.35	366.57	124.35	369	124.36
369.41	124.36	371.44	124.39	372.05	124.39	373.53	124.36	375.27	124.34
375.49	124.34	375.68	124.34	378.19	124.31	378.37	124.31	381.65	124.36
381.78	124.36	381.92	124.36	384.51	124.37	384.57	124.37	386.3	124.34
387.96	124.4	388.2	124.4	389.62	124.36	390.84	124.38	391.21	124.38
391.57	124.39	393.01	124.39	394.46	124.38	394.76	124.37	395.24	124.35
396.35	124.33	397.05	124.35	398.8	124.38	400.61	124.42	401.33	124.42
402.84	124.41	403.13	124.41	403.27	124.41	405.85	124.44	406.86	124.42
408.02	124.43	409.47	124.47	409.93	124.47	411	124.49	412.31	124.51
412.87	124.52	414.59	124.5	415.69	124.5	416.94	124.49	419.23	124.51
419.39	124.51	420.29	124.52	421.72	124.53	421.97	124.54	423.82	124.54
425.46	124.41	425.95	124.4	428.13	124.42	428.26	124.43	428.42	124.43
430.21	124.49	431.66	124.41	432.36	124.51	434.53	124.47	434.91	124.46
435.3	124.46	437.92	124.44	438.59	124.42	440.66	124.42	441.54	124.42
443.06	124.4								

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .08 249.88 .035 271.11 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 199.96 293.48 119.54 107.41 104.94 .1 .3

Blocked Obstructions num= 1
 Sta L Sta R Elev
 0 18.39217.5225

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 307.2411

INPUT Description:

Station	Elevation	Data	num=	249	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.22	2.03	193.13	4.46	193.04	4.81	193.07	5.57	193			
6.11	192.96	6.36	192.95	8.09	192.95	10.09	192.84	10.19	192.84			
10.26	192.84	11.73	192.82	12.31	192.76	13.62	192.63	15.03	192.52			
15.67	192.49	16.26	192.45	17.47	192.36	18.24	192.25	20.15	192.01			
21.07	191.88	22.6	191.16	26.27	189.37	27.82	188.74	27.95	188.69			
29.85	188	30.04	187.95	30.49	187.84	32.67	187.29	33.03	187.22			
33.53	187.12	34.88	186.68	37.84	186.22	38.64	186.12	61.1	179.1			
63.06	178.37	63.97	178.09	65.08	177.56	66.8	176.57	67.2	176.41			
68.87	175.92	69.17	175.73	71.74	174.07	72.78	173.3	74.22	172.26			

74.86	171.91	74.95	171.85	76.93	170.74	78.55	170.1	79.75	169.68
80.62	169.21	82.2	168.21	84.11	167.32	84.69	167.07	86.2	166.39
87.41	165.87	89.76	164.66	89.77	164.65	89.8	164.64	91.19	163.92
91.96	163.46	92.92	162.97	94.21	162.3	94.93	162	95.44	161.77
96.51	161.32	97.54	160.77	98.14	160.44	98.91	160.03	100.18	159.33
101.16	158.83	102.04	158.35	103.38	157.61	103.88	157.34	104.91	156.83
106.25	156.15	106.9	155.82	108.15	155.19	109.01	154.76	110.85	153.84
112.64	152.91	113.71	152.48	114.77	151.98	116.49	151.13	118.37	150.16
119.33	149.59	120.52	148.97	121.27	148.59	124.07	147.22	124.54	146.98
126.3	146.14	127.22	145.6	129.7	144.04	129.86	143.94	129.91	143.9
130.06	143.79	132.01	142.46	132.68	142.03	134.07	141.2	135.06	140.62
135.52	140.36	136.92	139.64	137.83	139.19	138.11	139.06	138.57	138.83
140.31	137.97	141.35	137.6	142.11	137.31	143.52	137.06	143.55	137.06
144.17	136.86	148.5	135.48	148.95	135.33	149.56	135.03	152.61	134.07
154.55	133.23	154.85	133.13	155.35	132.85	156.36	132.29	160.85	129.63
161.49	129.51	165.23	127.65	166.16	126.98	169.11	123.14	170.01	122.73
172.65	121.43	176.49	121.04	177.16	120.92	177.85	120.87	178.77	120.87
180.14	120.5	180.83	120.35	181.56	119.88	183.28	119.07	186.64	117.45
189.23	116.35	192.81	115.95	200.01	115.29	204.38	114.33	204.43	114.31
204.5	114.27	204.59	114.27	206.34	113.83	207.91	113.67	209.59	113.64
210.55	113.59	210.86	113.38	214.01	111.95	215.16	111.35	216.07	110.94
217.32	110.68	218.81	110.6	219.06	110.58	219.27	110.59	220.04	110.67
221.64	110.85	222.08	111	223.12	112.01	229.95	114.65	230.3	114.77
230.57	114.85	230.64	114.86	232.32	115.38	232.81	115.65	235.17	116.87
236.55	117.41	238.82	118.06	239.03	118.15	239.18	118.23	242.36	119.89
244.53	121.23	247.72	122.43	248.34	122.71	249.71	123.35	252.48	123.88
254.2	124.35	254.82	124.4	256.02	124.5	257.04	124.55	258.96	124.64
259.15	124.65	259.31	124.66	259.42	124.64	261.45	124.67	261.89	124.68
261.91	124.68	265.12	124.42	265.95	124.36	267.55	124.28	269.18	124.22
270.7	124.16	271.92	124.1	273.11	124.04	274.66	123.97	276.36	123.9
277.17	123.88	278.58	123.78	278.81	123.77	278.94	123.76	281.24	123.68
282.05	123.63	283.17	123.46	284.51	123.37	285	123.35	286.86	123.26
287.58	123.23	287.77	123.22	289.58	123.09	290.31	123.09	291.85	123.02
293.53	122.91	294.13	122.89	296.05	122.76	296.12	122.76	296.28	122.75
298.36	122.67	299.25	122.6	300.63	122.53	301.81	122.55	302.88	122.59
305.01	122.8	305.09	122.8	307.52	122.87	307.66	122.87	307.95	122.88
309.72	123.01	310.61	123.03	312.27	123.12	313.19	123.18	314.54	123.27
316.41	123.38	316.7	123.39	318.91	123.46	319.46	123.5	320.17	123.54
321.18	123.59	321.97	123.74	322.8	123.81	324.1	123.75	324.4	123.72
324.59	123.72	326.03	123.73	326.61	123.78	329.27	123.85	329.6	123.85
333.34	123.72	338.08	123.69	389.53	123.67	408.21	123.73		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .08 210.55 .035 223.12 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 169.11 254.82 120.64 112.11 114 .1 .3

Blocked Obstructions num= 2
 Sta L Sta R Elev Sta L Sta R Elev
 296.44 408.21 123.734 0 26.17193.2154

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 195.1298

INPUT Description:

Station	Elevation	Data	num=	255	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.78	1.05	177.74	1.25	177.67	5.17	175.92	7.02	175.47			
9.51	174.96	10.76	174.41	11.26	174.23	13.24	173.96	14.26	173.82			
16.15	173.44	16.59	173.36	16.83	173.3	18.17	172.99	19.21	172.59			
20.92	172.41	21.94	172.44	22.5	172.27	22.91	172.17	25.71	172.14			
28.45	171.73	30.39	170.94	47.65	163.96	59.36	160.59	60	160.6			
61.69	159.11	62.82	158.9	65.08	157.69	66.07	157.1	67.28	157.14			
68.05	157.33	68.69	156.72	70.35	155.57	70.62	155.45	72.69	154.12			
74.16	152.32	75.43	151.36	77.4	149.61	78.38	148.72	80.2	146.74			

81.95	144.67	83.97	142.51	84.33	142.25	84.67	142.22	85.77	141.74
88.33	140.97	91.01	140.13	92.99	140.17	94.18	140.11	95.38	140.14
96.42	140.2	97.35	140.21	100.48	140.26	101.07	140.01	103.17	139.49
104.38	139.46	104.47	139.46	104.95	139.34	106.89	138.55	108.71	137.74
110.12	137	110.16	136.98	112.76	135.42	114.27	134.11	116.01	132.19
117.08	130.87	118.49	128.4	118.54	128.34	120.48	125.86	121.61	124.85
122.29	124.24	123.36	123.65	123.83	123.38	124.13	123.13	125.77	121.78
127.32	121.35	127.77	121.13	128.64	120.2	129.54	119.66	131.16	117.91
133.06	116.2	134.11	115.52	134.84	115.27	135.62	115.27	136.68	115.31
137.96	115.24	138.5	115.19	138.94	115.2	141.18	115.2	145.6	113.94
146.68	113.74	147.11	113.58	148.46	114.04	152.2	113.09	155.54	112.01
157.46	111.49	158.43	111.31	159.1	111.18	161.06	110.82	162.28	110.73
163.95	110.73	164.99	110.77	166.66	110.9	168.29	111.32	168.82	111.52
169.57	111.92	170.36	112.39	170.92	112.89	172.34	113.88	174.07	114.5
174.91	114.76	176.06	115.11	176.88	115.36	177.94	115.69	180.01	116.76
180.03	116.77	181.68	117.65	182.71	118.07	183.39	118.37	184.35	119.06
185.22	119.54	185.82	119.91	187.1	120.59	188.55	121.32	189	121.48
194.04	122.27	194.36	122.31	194.99	122.37	198.48	122.37	199.87	122.39
201.69	122.55	202.38	122.67	202.92	122.61	204.46	122.4	204.8	122.36
205.66	122.22	207.68	122.06	208.56	122.04	210.6	121.95	211.15	121.94
213.45	121.89	214.12	121.87	215.33	121.89	216.76	121.92	217	121.91
218.21	121.91	219.54	121.9	219.81	121.9	221.23	121.89	222.46	121.9
222.99	121.9	225.26	121.86	225.36	121.86	225.38	121.86	227.09	121.88
228.07	121.86	229.07	121.83	231.15	121.87	231.33	121.87	231.71	121.88
233.13	121.91	233.77	121.9	235.13	121.91	236.68	121.93	237.13	121.91
237.8	121.92	238.82	121.92	239.5	121.94	240.71	121.96	240.94	121.95
242.1	121.95	243.47	122	244.25	122.03	244.93	122.03	246.56	122.07
248.18	122.06	248.72	122.07	249.25	122.07	251.05	122.14	252.53	122.13
253.37	122.13	254.22	122.13	255.62	122.14	256.6	122.15	257.78	122.11
258.93	122.08	260.12	122.05	261.59	122.02	262.38	122.01	263.09	121.98
264.68	121.92	266.5	121.85	266.86	121.84	267.21	121.82	269.24	121.76
271.12	121.66	271.42	121.65	271.77	121.64	273.83	121.59	275.36	121.68
275.91	121.7	276.45	121.75	278.22	121.87	280.17	121.88	281.9	121.94
285.76	122.09	286.04	122.08	311.85	123.59	314.02	123.54	315.36	123.55
316.6	123.5	319.96	123.57	343.22	123.55	349.7	123.74	354.54	123.65
358.68	123.64	386.17	123.86	391.37	123.92	395.86	123.92	396.64	123.92
410.21	123.8	412.27	123.79	412.64	123.79	414.14	123.8	417.87	123.59
418.81	123.55	419.3	123.51	421.26	123.43	421.91	123.41	423.55	123.33
424.41	123.3	426.04	123.34	427.03	123.33	428.27	123.21	429.51	123.22
430.68	123.21	432.2	123.2	432.96	123.19	433.67	123.18	435.45	123.17
437.37	123.14	437.69	123.14	438.05	123.13	439.98	123.16	442.02	123.19
442.37	123.19	442.93	123.18	444.8	123.12	445.79	123.1	447.12	123.09
448.56	123.1	449.54	123.11	450.45	123.12	451.8	123.12	453	123.11

Manning's n Values				num=	4
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	120.48	.08	155.54	.035
168.82	.08				

Bank Sta: Left Right Lengths: Left Channel Right				Coeff	Contr.	Expan.
125.77	188.55	91.95	53.62	23.5	.1	.3
Blocked Obstructions				num=	2	
Sta L	Sta R	Elev	Sta L	Sta R	Elev	
281.87	418.71	123.5501	20.51	74.01	172.4521	

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 141.507

INPUT

Description:

Station Elevation Data												num=	279
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	162.56	.44	162.52	1.68	162.4	2.54	162.32	3.94	162.19				
4.57	162.11	6.74	161.88	6.83	161.87	6.85	161.87	8.82	161.66				
9.08	161.63	10.86	161.43	11.89	161.33	13.08	161.21	14.2	161.07				
16.55	160.76	17.01	160.7	17.59	160.64	19.29	160.44	21.3	160.22				
22	160.15	22.31	160.14	24.34	160.02	25.89	159.97	27.18	159.95				
29.05	159.87	29.5	159.84	29.74	159.83	32.24	159.73	33.18	159.72				

34.43	159.67	36.59	159.29	37.22	159.23	38.62	158.77	39.52	158.56
40.9	157.95	42.24	157.36	43.15	156.85	44.44	156.24	45.11	155.9
47.18	154.78	47.72	154.49	49.08	153.7	51.59	152.17	52.1	151.89
52.69	151.51	54.27	150.75	55.59	149.81	56.93	149.03	57.76	148.53
59.17	147.74	60.35	147.13	61.95	146.17	63.02	145.41	64.09	144.76
66.7	143.23	66.76	143.2	66.88	143.14	69.05	141.99	70.11	141.41
71.74	140.54	73.87	139.5	73.95	139.45	74	139.43	75.18	138.96
76.56	138.42	76.89	138.3	79.09	136.87	80.69	135.73	81.11	135.52
81.38	135.35	82.15	134.87	83.62	133.88	84.55	132.98	86.15	131.98
86.73	131.47	88.27	130.19	88.42	130.05	89.86	128.75	90.69	127.98
90.78	127.91	92.59	126.65	92.97	126.38	94.59	125.35	95.41	124.71
96.69	123.69	97.56	122.92	98.72	121.97	100.04	120.91	101.58	119.94
102.22	119.54	102.81	119.23	104.79	118.19	105.86	117.7	106.91	117.04
109.22	115.07	109.4	114.92	109.5	114.86	111.59	113.68	113.2	113.03
114.19	112.68	115.27	112.25	116.66	111.72	117.06	111.45	118.87	110.64
121.12	110.81	121.15	110.81	121.17	110.81	123.73	111.06	125.36	111.19
126.01	111.23	128.35	111.25	128.46	111.24	130.14	111.31	130.7	111.23
132.38	110.72	133.18	110.75	135.05	110.77	138.3	112.61	140.25	113.72
140.92	114.12	142.83	114.78	143.06	114.9	145.22	116.26	145.74	116.54
147.7	117.56	148.38	117.92	149.95	118.75	152.51	120.06	152.59	120.09
152.67	120.1	154.83	120.42	156.55	120.48	157.4	120.51	158.37	120.51
159.69	120.56	160	120.56	160.57	120.61	164.55	121.06	164.58	121.06
167.13	121.27	167.54	121.33	169.41	120.92	170.66	120.85	172.69	120.74
175.82	120.96	177.21	121	179.72	120.72	180.34	120.71	181	120.73
182.79	121.03	186.21	120.99	188.6	120.98	190.21	120.92	190.92	120.96
192.65	120.94	193.15	120.94	193.37	120.93	194.06	120.95	195.2	120.99
195.56	121	196.91	121.01	197.91	121.02	198.68	121.06	200.23	121.14
201.81	121.17	202.35	121.17	202.45	121.18	204.53	121.14	204.66	121.15
206.65	121.21	206.78	121.21	207.49	121.24	209.12	121.29	209.41	121.3
211.21	121.3	211.55	121.31	213.44	121.4	214.89	121.41	215.57	121.43
216.53	121.43	217.91	121.45	219.01	121.43	219.99	121.45	221.4	121.5
222.22	121.54	222.67	121.55	224.43	121.56	225.6	121.6	226.7	121.62
227.56	121.65	228.87	121.65	230.04	121.66	231.16	121.65	232.29	121.63
233.32	121.61	234.35	121.63	235.63	121.62	236.69	121.65	237.99	121.68
239.28	121.66	240.21	121.65	240.99	121.64	242.4	121.6	244.05	121.62
244.71	121.61	246.66	121.52	247	121.51	247.3	121.51	249.28	121.49
250.93	121.41	251.48	121.39	251.59	121.38	252.64	121.33	253.02	121.33
254.73	121.41	261.53	122.24	261.99	122.22	262.8	122.3	264.01	122.22
264.41	122.22	273.54	122.57	274.97	122.54	293.24	123.61	296.9	123.53
299.16	123.54	301.25	123.47	306.93	123.58	345.95	123.54	356.75	123.86
364.82	123.72	366.47	123.71	387.79	123.89	388.68	123.84	389.53	123.85
391.84	123.71	392.53	123.74	393.55	123.74	398.46	123.7	399.12	123.66
401.27	123.71	401.46	123.69	401.6	123.68	403.93	123.44	405.91	123.33
406.48	123.32	408.25	123.25	410.41	123.1	410.69	123.08	412.93	122.93
412.95	122.93	412.98	122.93	415.34	122.85	415.56	122.85	417.65	122.81
419.8	122.82	420.09	122.84	420.4	122.84	422.37	122.88	424.47	122.97
424.64	122.97	424.9	122.97	427.07	122.92	428.58	122.9	429.47	122.89
431.01	122.88	431.83	122.87	432.59	122.88	434.22	122.88	435.9	122.84
436.51	122.82	437.35	122.8	438.9	122.77	440.93	122.71	441.33	122.7
441.93	122.69	443.68	122.66	444.88	122.71	445.88	122.76		

Manning's n Values				num=	4
Sta	n Val	Sta	n Val	Sta	n Val
0	.045	100.04	.04	118.87	.05
135.05	.04				

Bank Sta: Left Right Lengths: Left Channel Right				Coeff	Contr.	Expan.
1						

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	143.15	.48	143.11	1.45	143.03	3.44	142.9	3.82	142.88				
4.93	142.76	6.1	142.62	6.3	142.6	6.76	142.52	8.73	142.21				
10.61	142.1	11.15	142.05	12.25	141.95	13.51	141.82	14.37	141.74				
16.03	141.57	18.1	141.33	18.37	141.3	18.57	141.27	20.84	141.05				
20.98	141.03	22.09	140.89	23.02	140.77	23.14	140.76	23.55	140.72				
25.64	140.52	26.32	140.46	28.04	140.33	28.86	140.29	30.54	140.21				
31.8	140.16	32.87	140.13	34.61	140.06	35.2	140.03	37.45	139.93				
37.58	139.92	39.73	139.78	40.04	139.76	41.34	139.7	42.38	139.66				
42.61	139.64	44.39	139.53	44.7	139.51	44.74	139.51	44.86	139.52				
47.09	139.88	49.09	139.95	49.47	139.95	50.05	140	51.8	140.09				
52.89	139.95	54.09	139.73	56.11	139.68	56.38	139.67	56.58	139.66				
58.79	139.6	60.01	139.46	60.42	139.42	61.19	139.26	62.31	138.75				
63.45	138.29	63.98	138.03	65.76	136.46	66.2	136.06	68.15	134.33				
69.14	133.49	70.46	132.48	71.51	131.89	72.79	131.21	74.26	130.26				
75.06	129.7	75.74	129.23	77.39	128.04	79.6	126.82	79.67	126.77				
79.71	126.74	86.38	121.89	86.85	121.49	88.58	120.09	89.94	119.37				
90.84	118.94	92.67	118.24	92.99	118.11	93.48	117.88	95.23	117				
96.32	116.42	97.42	115.86	98.21	115.35	99.67	114.42	101.53	113.06				
101.91	112.81	102.5	112.3	104.12	110.92	105.42	109.81	106.28	109.47				
108.06	109.53	108.56	109.52	110.3	109.59	110.89	109.56	112.99	109.73				
113.13	109.74	115.29	110.27	115.35	110.28	115.86	110.37	117.69	110.68				
117.92	110.78	119.97	111.7	120.36	111.85	122.3	112.64	122.84	112.76				
124.5	113.14	125.5	113.24	126.78	113.31	128.11	113.53	128.99	113.66				
129.85	114.09	131.41	114.67	133.46	115.73	133.57	115.79	133.75	115.83				
135.9	116.35	137.17	116.5	137.9	116.64	138.2	116.69	139.43	117.42				
140.58	118.11	142.36	118.82	142.82	119	143.24	119.13	143.21	120.2				
147.45	120.49	148.5	120.85	149.75	121.18	150.94	121.53	152.07	121.83				
153.38	122	154.36	122.09	155.93	122.16	156.62	122.17	158.49	122.19				
158.99	122.25	161.08	122.29	161.34	122.16	163.44	122.15	163.62	122.15				
164.32	121.84	165.86	121.17	167.98	121.18	168.6	121.21	169.77	121.63				
170.52	121.67	171.19	121.61	174.02	121.43	175.04	121.36	176.56	121.21				
177.34	121.12	179.35	120.83	179.56	120.81	179.79	120.84	180.3	120.74				
181.86	120.75	182.71	120.74	184.01	120.72	185.02	120.7	186.21	120.68				
187.73	120.71	188.43	120.71	189.14	120.69	190.76	120.61	191.58	120.61				
192.88	120.6	193.72	120.61	195.06	120.61	196.07	120.56	197.25	120.5				
198.12	120.47	199.45	120.44	200.3	120.44	201.74	120.39	202.59	120.38				
203.92	120.34	204.73	120.29	206.11	120.24	207.68	120.25	208.34	120.26				
209.02	120.25	210.64	120.38	212.47	120.39	212.81	120.4	213.14	120.4				
214.99	120.43	216.01	120.47	216.25	120.48	217.28	120.51	218.82	120.56				
219.47	120.57	220.61	120.62	221.72	120.68	223.19	120.73	223.98	120.76				
224.73	120.79	226.2	120.83	227.74	120.91	228.45	120.95	230.84	121.02				
230.86	121.02	230.88	121.02	233.01	121.03	234.94	121.12	235.3	121.15				
236.98	121.26	237.9	121.58	239.89	121.97	240.36	121.96	242.26	122.51				
243.89	122.96	244.39	123.03	245.37	123.35	246.67	123.34	248.44	123.33				
248.96	123.33	249.43	123.32	251.28	123.3	253.23	123.4	253.48	123.41				
253.75	123.43	255.68	123.49	257.62	123.56	257.9	123.55	257.98	123.56				
260.1	123.5	263.82	123.39	269.35	123.47	271.16	123.47	272.6	123.53				
276.29	123.44	279.78	123.64	286.38	123.5	290.45	123.53	294.21	123.39				
304.38	123.6	357.88	123.54	365.95	123.54	366.58	123.38	366.99	123.51				
367.89	123.59	367.9	123.59	367.91	123.59	370.28	123.69	371.03	123.66				
372.71	123.62	373	123.59	375.08	123.53	376.33	123.48	377.46	123.36				
379.59	123.32	379.89	123.27	380.69	123.28	382.36	123.11	383.72	123.03				
384.66	123	386.96	122.96	387.08	122.96	387.19	122.96	389.41	122.96				
391.44	122.95	391.9	122.95	392.29	122.95	394.19	122.9	396.29	122.83				
396.6	122.81	396.88	122.8	398.94	122.83	400.66	122.79	401.34	122.77				
402.15	122.76	403.72	122.71	404.87	122.7	406.06	122.67	407.17	122.67				
408.38	122.63	410.07	122.67	410.75	122.66	411.3	122.65	413.13	122.56				
415.37	122.57	415.46	122.57	415.55	122.57	417.69	122.51	419.25	122.51				
420.19	122.51	421.9	122.47	422.49	122.45	422.76	122.44	424.92	122.37				
427.25	122.45	427.27	122.45	427.3	122.45	429.63	122.54	431.66	122.62				
431.95	122.63	432.21	122.63	434.45	122.72	436.38	122.72	436.74	122.72				
437.15	122.74	439.1	122.76	440.74	122.76	441.43	122.75	442.14	122.77				
443.94	122.84	444.8	122.85	446.2	122.86	447.56	122.81						

Manning's n Values	num=	4
Sta	n Val	Sta n Val
0	.04	86.38
Sta	n Val	Sta n Val
0	.08	106.28
Sta	n Val	Sta n Val
0	.05	115.29
0	.06	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

86.38	152.07	86.42	60.71	46.3	.1	.3
Blocked Obstructions	num=	1				
Sta L	Sta R	Elev				
253.85	377.59123.4293					

CROSS SECTION
 RIVER: Auburn Creek
 REACH: Main Reach RS: 4.590075

Description:		Station Elevation Data		num= 372	
Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	.3	132.07	1.14	132.13
4.32	131.91	5.85	131.93	6.41	131.87
9.88	131.02	11.76	130.67	12.35	130.61
16.97	130.05	18.83	129.9	19.33	129.8
24.3	129.44	24.76	129.4	27.23	129.21
29.97	128.74	30.43	128.63	31.04	128.56
38.19	128.03	39.24	127.95	40.55	127.87
43.36	127.61	43.44	127.6	45.36	127.43
48.62	127.17	49.59	127.08	50.93	126.93
53.49	126.64	53.65	126.62	55.81	126.47
58.73	126.21	59.59	126.15	60.97	126.06
63.98	125.82	65.14	125.82	67.7	125.81
71.56	125.72	73.83	125.67	74.03	125.68
77.15	126.18	77.76	126.23	78.89	126.37
83.65	125.59	84.06	125.55	85.49	125.51
89.19	124.01	89.46	123.88	90.45	123.27
92.27	121.9	94.36	120.33	95.21	119.01
99.43	112.6	100.86	110.15	101.65	109.03
104.66	108.82	106.84	109.02	107.67	108.84
112.07	108.71	114.11	109.16	114.92	109.46
119.34	111.56	120.07	111.89	121.54	112.81
124.08	114.95	126.26	116.9	127.86	118.17
131.2	120.38	132.86	121.24	133.02	121.32
135.11	121.91	135.85	122.17	137.16	122.61
140.86	122.4	141.05	122.37	141.13	122.36
145.09	122.34	146.38	122.31	147.13	122.31
150.25	122.27	151.08	122.31	151.54	122.31
154.73	122.35	156.71	122.39	157.24	122.39
161.84	122.48	163.93	122.49	164.17	122.5
168.95	122.59	169.19	122.59	171.31	122.61
174.24	122.64	174.73	122.63	176.66	122.56
178.49	122.53	179.21	122.54	180.22	122.54
182.64	122.47	183.94	122.43	184.3	122.46
187.47	122.67	188.56	122.67	191.14	122.67
192.99	122.57	194.24	122.54	195.52	122.55
198.53	122.51	200.24	122.54	200.88	122.56
204.06	122.52	205.31	122.54	206.23	122.49
209.76	122.29	210.45	122.28	211.93	122.23
215.36	122.26	216.51	122.31	217.67	122.29
221.01	122.27	222.55	122.29	223.43	122.27
226.38	122.17	227.92	122.13	229.45	121.99
232.46	121.94	232.56	121.95	234.71	122.08
237	121.94	239.1	121.84	241.18	121.96
243.78	121.39	245.3	121.51	246.06	121.62
249.98	121.34	250.56	121.36	251.04	121.37
255.04	121.44	255.51	121.45	257.16	121.46
261.21	121.65	261.65	121.7	262.09	121.69
266.17	121.87	267.71	121.92	268.5	121.91
272.31	122.01				

318.2	123.44	324.99	123.46	330.08	123.42	331.51	123.42	333.3	123.41
334	123.34	334.53	123.37	336.76	123.46	336.9	123.46	337.01	123.47
339.16	123.56	339.67	123.55	340.3	123.48	345.63	123.1	346.49	122.94
348.03	122.7	348.69	122.69	349.54	122.72	351.31	122.65	352.8	122.6
353.58	122.49	354.53	122.5	356.08	122.51	357.77	122.49	358.36	122.48
359.03	122.47	360.85	122.43	362.86	122.39	363.18	122.39	363.57	122.38
365.74	122.37	367.05	122.41	367.94	122.4	369.75	122.36	370.44	122.34
370.94	122.34	372.7	122.33	374.53	122.3	375.27	122.28	375.81	122.29
377.45	122.22	379.55	122.16	379.92	122.14	380.21	122.13	382.19	122.09
384.1	122.01	384.7	122	385.3	122	386.98	122.02	387.89	121.96
389.39	121.92	390.72	121.87	391.62	121.82	392.83	121.89	394.09	121.98
395.15	122.03	396.39	122.09	397.89	122.1	398.8	122.09	399.71	122.1
400.92	122.12	402.78	122.15	403.51	122.18	403.98	122.19	405.73	122.28
407.82	122.37	408.26	122.38	408.65	122.38	410.47	122.37	412.49	122.41
412.94	122.42	413.26	122.42	415.17	122.58	417.25	122.43	417.75	122.43
419.33	121.57	419.91	121.44	420.5	121.26	422.41	121.05	426.08	120.61
427.19	120.48	427.21	120.48	427.23	120.48	429.37	120.31	429.78	120.3
431.83	120.23	433.02	120.2	434.01	120.18	435.8	120.07	436.48	120.03
438.34	120.03	438.73	120.03	438.86	120	441.15	119.48	441.75	119.56
443.31	119.75	444.91	119.79						

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .04	95.21 .08	101.65 .05 114.11 .06

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
91.34	134.44	24.51	4.59	8.5	.3	.5	

Ineffective Flow	num=	2	
Sta L	Sta R	Elev	Permanent
0	69.65	120	F
122.65	444.91	122.76	F

Blocked Obstructions	num=	1	
Sta L	Sta R	Elev	
307.73	345.62	123.37	15

SUMMARY OF MANNING'S N VALUES

River: Auburn Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6
Main Reach	3283.479	.016	.045	.035	.018	.016	
Main Reach	3229.405	.016	.06	.045	.035	.018	.016
Main Reach	3159.787	.06	.02	.018	.035	.018	.016
Main Reach	3025.628	.06	.02	.035	.018	.03	.016
Main Reach	3000	Culvert					
Main Reach	2916.303	.1	.03	.018	.03		
Main Reach	2900.962	.08	.035	.018	.03		
Main Reach	2709.054	.1	.035	.1	.03		
Main Reach	2501.489	.1	.035	.1	.03		
Main Reach	2309.998	.1	.035	.025	.03		
Main Reach	2161.775	.1	.035	.018	.03		
Main Reach	1835.094	.04	.018	.04			
Main Reach	1800.703	.04	.018	.04			
Main Reach	1350	Culvert					
Main Reach	925.4423	.1	.045	.1			
Main Reach	797.816	.1	.035	.1			
Main Reach	652.2307	.1	.025	.1			
Main Reach	513.9224	.08	.035	.08			
Main Reach	414.6495	.08	.035	.08			
Main Reach	307.2411	.08	.035	.04			
Main Reach	195.1298	.045	.08	.035	.08		
Main Reach	141.507	.045	.04	.05	.04		
Main Reach	65.30157	.04	.08	.05	.06		
Main Reach	4.590075	.04	.08	.05	.06		

SUMMARY OF REACH LENGTHS

River: Auburn Creek

Reach	River Sta.	Left	Channel	Right
Main Reach	3283.479	51.96	54.07	55.73
Main Reach	3229.405	70.8	69.62	68.75
Main Reach	3159.787	126.5	134.16	135.59
Main Reach	3025.628	111.21	109.32	112.92
Main Reach	3000	Culvert		
Main Reach	2916.303	14.15	15.34	16.27
Main Reach	2900.962	206.54	191.91	184.83
Main Reach	2709.054	209.38	207.57	205.83
Main Reach	2501.489	198.58	191.49	185.3
Main Reach	2309.998	146.44	148.22	149.95
Main Reach	2161.775	328.02	326.68	328.75
Main Reach	1835.094	35.26	34.39	34.8
Main Reach	1800.703	879.95	875.26	876.36
Main Reach	1350	Culvert		
Main Reach	925.4423	160.4	127.63	131.93
Main Reach	797.816	152.73	145.59	144.95
Main Reach	652.2307	123.04	138.31	136.74
Main Reach	513.9224	90.74	99.27	101.73
Main Reach	414.6495	119.54	107.41	104.94
Main Reach	307.2411	120.64	112.11	114
Main Reach	195.1298	91.95	53.62	23.5
Main Reach	141.507	118.19	76.21	43.65
Main Reach	65.30157	86.42	60.71	46.3
Main Reach	4.590075	24.51	4.59	8.5

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Auburn Creek

Reach	River Sta.	Contr.	Expan.
Main Reach	3283.479	.3	.5
Main Reach	3229.405	.1	.3
Main Reach	3159.787	.1	.3
Main Reach	3025.628	.3	.5
Main Reach	3000	Culvert	
Main Reach	2916.303	.3	.5
Main Reach	2900.962	.1	.3
Main Reach	2709.054	.1	.3
Main Reach	2501.489	.1	.3
Main Reach	2309.998	.1	.3
Main Reach	2161.775	.1	.3
Main Reach	1835.094	.3	.5
Main Reach	1800.703	.3	.5
Main Reach	1350	Culvert	
Main Reach	925.4423	.3	.5
Main Reach	797.816	.1	.3
Main Reach	652.2307	.1	.3
Main Reach	513.9224	.1	.3
Main Reach	414.6495	.1	.3
Main Reach	307.2411	.1	.3
Main Reach	195.1298	.1	.3
Main Reach	141.507	.1	.3
Main Reach	65.30157	.1	.3
Main Reach	4.590075	.3	.5

**Attachment 12 - DETAILED HYDRAULIC RESULTS FOR ULTIMATE VEGETATED
CONDITION MODEL**

HEC-RAS Plan: Ultimate_veg River: Auburn Creek Reach: Main Reach

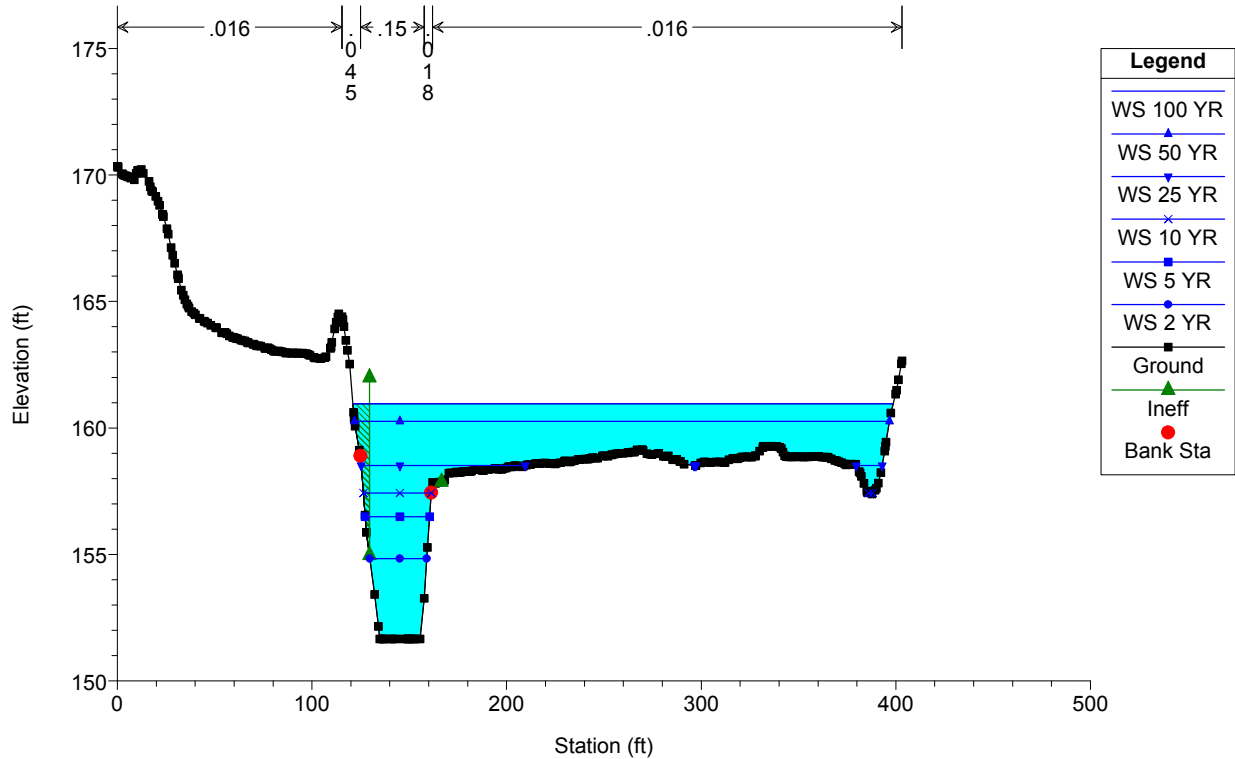
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	3283.479	100 YR	1200.00	151.66	160.96	155.88	161.01	0.000147	0.52	814.41	277.69	0.03
Main Reach	3283.479	50 YR	950.00	151.66	160.27	155.32	160.32	0.000263	0.66	629.23	274.92	0.04
Main Reach	3283.479	25 YR	630.00	151.66	158.52	154.52	158.66	0.006552	2.79	214.84	98.61	0.20
Main Reach	3283.479	10 YR	430.00	151.66	157.43	153.91	157.54	0.008015	2.70	159.01	37.00	0.21
Main Reach	3283.479	5 YR	290.00	151.66	156.49	153.40	156.57	0.007196	2.24	129.58	33.15	0.19
Main Reach	3283.479	2 YR	120.00	151.66	154.83	152.65	154.87	0.006199	1.51	79.41	29.27	0.16
Main Reach	3229.405	100 YR	1200.00	151.06	160.95		161.00	0.000151	0.52	846.84	307.59	0.03
Main Reach	3229.405	50 YR	950.00	151.06	160.25		160.31	0.000268	0.65	636.83	288.88	0.04
Main Reach	3229.405	25 YR	630.00	151.06	157.62		158.09	0.011801	3.16	168.75	50.26	0.27
Main Reach	3229.405	10 YR	430.00	151.06	156.71		156.91	0.016437	3.28	126.67	42.53	0.30
Main Reach	3229.405	5 YR	290.00	151.06	155.82		155.97	0.017820	3.07	94.46	29.79	0.30
Main Reach	3229.405	2 YR	120.00	151.06	154.25		154.33	0.017078	2.28	52.68	23.29	0.27
Main Reach	3159.787	100 YR	1200.00	150.29	160.94		160.99	0.000157	0.91	794.00	304.96	0.05
Main Reach	3159.787	50 YR	950.00	150.29	160.24		160.29	0.000294	1.18	584.12	286.74	0.07
Main Reach	3159.787	25 YR	630.00	150.29	157.08		157.37	0.007925	4.38	143.69	29.17	0.35
Main Reach	3159.787	10 YR	430.00	150.29	155.85		156.08	0.008983	3.93	109.48	26.46	0.34
Main Reach	3159.787	5 YR	290.00	150.29	154.94		155.11	0.008914	3.36	86.32	24.56	0.32
Main Reach	3159.787	2 YR	120.00	150.29	153.49		153.57	0.007648	2.27	52.91	21.51	0.25
Main Reach	3025.628	100 YR	1200.00	148.83	160.69		160.91	0.002764	3.91	335.26	255.28	0.24
Main Reach	3025.628	50 YR	950.00	148.83	159.96		160.18	0.002916	3.77	255.02	51.50	0.23
Main Reach	3025.628	25 YR	630.00	148.83	155.58		152.84	0.013508	5.17	121.95	24.63	0.41
Main Reach	3025.628	10 YR	430.00	148.83	153.71		152.01	0.025504	5.41	79.54	20.81	0.49
Main Reach	3025.628	5 YR	290.00	148.83	152.47		151.33	0.038644	5.26	55.17	18.56	0.54
Main Reach	3025.628	2 YR	120.00	148.83	150.66		150.27	0.097583	4.91	24.43	15.26	0.68
Main Reach	3000		Culvert									
Main Reach	2916.303	100 YR	1200.00	147.08	156.29		153.12	0.021283	6.15	195.13	36.13	0.42
Main Reach	2916.303	50 YR	950.00	147.08	155.67		152.24	0.018701	5.39	176.32	34.32	0.39
Main Reach	2916.303	25 YR	630.00	147.08	153.98		151.13	0.024702	4.98	126.57	28.67	0.41
Main Reach	2916.303	10 YR	430.00	147.08	152.42		150.33	0.031161	4.91	87.56	21.26	0.43
Main Reach	2916.303	5 YR	290.00	147.08	151.06		149.67	0.041553	4.81	60.31	18.90	0.47
Main Reach	2916.303	2 YR	120.00	147.08	148.20		148.61	0.078467	9.33	12.87	13.63	1.69
Main Reach	2900.962	100 YR	1200.00	143.83	156.32		156.54	0.005834	3.79	316.99	40.83	0.24
Main Reach	2900.962	50 YR	950.00	143.83	155.68		155.85	0.004668	3.26	291.35	39.35	0.21
Main Reach	2900.962	25 YR	630.00	143.83	153.98		154.10	0.004160	2.76	228.38	34.33	0.19
Main Reach	2900.962	10 YR	430.00	143.83	152.43		152.52	0.003960	2.41	178.40	30.28	0.17
Main Reach	2900.962	5 YR	290.00	143.83	151.07		151.14	0.003673	2.08	139.53	26.91	0.16
Main Reach	2900.962	2 YR	120.00	143.83	148.67		145.55	0.003250	1.49	80.40	22.66	0.14
Main Reach	2709.054	100 YR	1200.00	142.92	154.95		155.11	0.009650	3.31	389.90	307.45	0.22
Main Reach	2709.054	50 YR	950.00	142.92	154.36		154.53	0.010921	3.32	290.12	215.82	0.23
Main Reach	2709.054	25 YR	630.00	142.92	152.78		152.91	0.010193	2.91	216.32	43.15	0.21
Main Reach	2709.054	10 YR	430.00	142.92	151.26		151.36	0.010203	2.65	162.57	32.94	0.21
Main Reach	2709.054	5 YR	290.00	142.92	149.95		150.03	0.010148	2.38	121.97	29.09	0.20
Main Reach	2709.054	2 YR	120.00	142.92	147.62		147.67	0.010603	1.92	62.51	21.47	0.20
Main Reach	2501.489	100 YR	1200.00	141.01	151.68		152.07	0.024375	4.99	247.41	231.28	0.33
Main Reach	2501.489	50 YR	950.00	141.01	151.43		151.70	0.017488	4.13	234.90	221.94	0.28
Main Reach	2501.489	25 YR	630.00	141.01	150.25		150.42	0.014248	3.35	188.23	168.58	0.25
Main Reach	2501.489	10 YR	430.00	141.01	148.85		148.99	0.012897	2.96	145.45	152.85	0.23
Main Reach	2501.489	5 YR	290.00	141.01	147.63		147.74	0.012077	2.59	112.11	108.47	0.22
Main Reach	2501.489	2 YR	120.00	141.01	145.42		145.48	0.010518	1.97	60.85	19.57	0.20
Main Reach	2309.998	100 YR	1200.00	139.05	149.00		145.09	0.010124	3.06	394.98	330.64	0.22
Main Reach	2309.998	50 YR	950.00	139.05	148.76		144.47	0.012096	3.27	315.23	330.39	0.24
Main Reach	2309.998	25 YR	630.00	139.05	147.71		143.51	0.012529	3.06	205.80	289.03	0.24
Main Reach	2309.998	10 YR	430.00	139.05	146.55		142.75	0.011404	2.67	160.98	171.81	0.22
Main Reach	2309.998	5 YR	290.00	139.05	145.51		145.59	0.010384	2.32	124.77	122.91	0.21
Main Reach	2309.998	2 YR	120.00	139.05	143.56		143.61	0.009111	1.75	68.46	25.16	0.19
Main Reach	2161.775	100 YR	1200.00	137.65	143.28		143.28	0.156877	10.95	109.57	131.55	1.00
Main Reach	2161.775	50 YR	950.00	137.65	142.67		142.67	0.164384	10.34	91.92	75.23	1.00
Main Reach	2161.775	25 YR	630.00	137.65	141.75		141.75	0.179466	9.33	67.55	27.75	1.00
Main Reach	2161.775	10 YR	430.00	137.65	141.04		141.04	0.198060	8.48	50.71	23.00	1.01
Main Reach	2161.775	5 YR	290.00	137.65	140.47		140.45	0.212161	7.61	38.08	20.96	1.00
Main Reach	2161.775	2 YR	120.00	137.65	139.78		139.48	0.138854	4.89	24.53	18.46	0.75
Main Reach	1835.094	100 YR	1200.00	133.65	143.27		139.20	0.000345	5.31	247.94	307.23	0.34
Main Reach	1835.094	50 YR	950.00	133.65	138.41		138.52	0.004041	11.20	84.84	140.49	1.05
Main Reach	1835.094	25 YR	630.00	133.65	137.43		137.49	0.004141	10.06	62.63	67.48	1.04
Main Reach	1835.094	10 YR	430.00	133.65	136.69		136.72	0.004205	9.05	47.53	33.12	1.02
Main Reach	1835.094	5 YR	290.00	133.65	136.07		136.07	0.004269	8.07	35.92	17.95	1.01
Main Reach	1835.094	2 YR	120.00	133.65	135.05		135.05	0.004796	6.32	18.97	15.34	1.00

HEC-RAS Plan: Ultimate_veg River: Auburn Creek Reach: Main Reach (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	1800.703	100 YR	1200.00	130.48	143.31	136.59	143.61	0.003888	4.51	276.21	301.80	0.25
Main Reach	1800.703	50 YR	950.00	130.48	138.87	135.78	139.55	0.017272	6.60	143.89	129.82	0.46
Main Reach	1800.703	25 YR	630.00	130.48	136.72	134.61	137.36	0.026349	6.40	98.40	19.76	0.51
Main Reach	1800.703	10 YR	430.00	130.48	132.51	133.73	136.60	0.933438	16.24	26.47	14.36	2.11
Main Reach	1800.703	5 YR	290.00	130.48	131.94	133.02	135.72	1.371404	15.60	18.59	13.64	2.36
Main Reach	1800.703	2 YR	120.00	130.48	131.17	131.92	134.31	3.235287	14.22	8.44	12.65	3.07
Main Reach	1350		Culvert									
Main Reach	925.4423	100 YR	1200.00	118.52	129.36	124.59	129.60	0.013653	3.92	307.83	56.62	0.26
Main Reach	925.4423	50 YR	950.00	118.52	127.09	123.93	127.43	0.032364	4.67	203.39	43.99	0.38
Main Reach	925.4423	25 YR	630.00	118.52	125.70	122.94	125.98	0.032647	4.28	147.29	36.51	0.38
Main Reach	925.4423	10 YR	430.00	118.52	124.62	122.15	124.85	0.030372	3.86	111.33	30.30	0.36
Main Reach	925.4423	5 YR	290.00	118.52	123.66	121.49	123.85	0.028724	3.44	84.41	26.36	0.34
Main Reach	925.4423	2 YR	120.00	118.52	121.99	120.40	122.09	0.025869	2.83	45.64	19.90	0.31
Main Reach	797.816	100 YR	1200.00	115.61	128.68		128.74	0.003363	2.06	583.31	80.06	0.13
Main Reach	797.816	50 YR	950.00	115.61	125.23		125.35	0.009035	2.80	339.01	61.47	0.21
Main Reach	797.816	25 YR	630.00	115.61	123.57		123.67	0.010767	2.61	241.46	56.10	0.22
Main Reach	797.816	10 YR	430.00	115.61	122.53	119.23	122.62	0.010786	2.32	185.30	51.64	0.22
Main Reach	797.816	5 YR	290.00	115.61	121.60	118.61	121.67	0.010833	2.08	139.73	46.25	0.21
Main Reach	797.816	2 YR	120.00	115.61	119.89	117.67	119.94	0.011593	1.68	71.31	33.97	0.20
Main Reach	652.2307	100 YR	1200.00	114.05	128.37		128.41	0.001596	1.58	766.19	179.67	0.10
Main Reach	652.2307	50 YR	950.00	114.05	124.21		124.29	0.005828	2.29	414.56	75.24	0.17
Main Reach	652.2307	25 YR	630.00	114.05	122.20		122.28	0.008492	2.31	272.73	65.20	0.20
Main Reach	652.2307	10 YR	430.00	114.05	121.10		121.17	0.009096	2.10	204.50	59.46	0.20
Main Reach	652.2307	5 YR	290.00	114.05	120.09		120.15	0.009941	1.96	147.73	50.93	0.20
Main Reach	652.2307	2 YR	120.00	114.05	118.28		118.32	0.010659	1.66	72.22	33.57	0.20
Main Reach	513.9224	100 YR	1200.00	112.62	128.18	118.12	128.22	0.001193	1.44	834.71	248.20	0.08
Main Reach	513.9224	50 YR	950.00	112.62	123.53	117.61	123.60	0.004305	2.10	453.30	73.94	0.15
Main Reach	513.9224	25 YR	630.00	112.62	121.06	116.84	121.14	0.007972	2.25	279.93	66.08	0.19
Main Reach	513.9224	10 YR	430.00	112.62	119.94	116.25	120.00	0.007873	2.04	210.52	56.87	0.19
Main Reach	513.9224	5 YR	290.00	112.62	118.93	115.74	118.98	0.007282	1.83	158.07	47.14	0.18
Main Reach	513.9224	2 YR	120.00	112.62	117.08	114.59	117.11	0.007234	1.45	82.83	35.11	0.17
Main Reach	414.6495	100 YR	1200.00	111.16	128.15		128.15	0.000318	0.79	1531.51	249.64	0.04
Main Reach	414.6495	50 YR	950.00	111.16	123.18		123.23	0.003200	1.82	523.09	81.83	0.13
Main Reach	414.6495	25 YR	630.00	111.16	120.34		120.40	0.006861	2.06	306.04	70.71	0.17
Main Reach	414.6495	10 YR	430.00	111.16	119.16		119.22	0.007851	1.91	225.16	64.55	0.18
Main Reach	414.6495	5 YR	290.00	111.16	118.18		118.23	0.007900	1.74	166.85	55.53	0.18
Main Reach	414.6495	2 YR	120.00	111.16	116.38		116.42	0.006818	1.47	81.91	31.23	0.16
Main Reach	307.2411	100 YR	1200.00	110.58	128.12		128.14	0.000118	0.52	1634.73	243.93	0.03
Main Reach	307.2411	50 YR	950.00	110.58	122.83		122.88	0.003204	1.87	508.89	80.20	0.13
Main Reach	307.2411	25 YR	630.00	110.58	119.60		119.68	0.006640	2.21	285.64	59.67	0.18
Main Reach	307.2411	10 YR	430.00	110.58	118.35		118.41	0.007174	2.01	213.80	54.63	0.18
Main Reach	307.2411	5 YR	290.00	110.58	117.37		117.42	0.007094	1.78	162.85	49.63	0.17
Main Reach	307.2411	2 YR	120.00	110.58	115.65		115.68	0.006880	1.40	85.84	36.72	0.16
Main Reach	195.1298	100 YR	1200.00	110.73	128.12		128.12	0.000104	0.54	2204.57	334.28	0.03
Main Reach	195.1298	50 YR	950.00	110.73	122.49		122.55	0.002810	1.92	526.18	154.19	0.12
Main Reach	195.1298	25 YR	630.00	110.73	118.77		118.86	0.008029	2.43	259.66	53.58	0.19
Main Reach	195.1298	10 YR	430.00	110.73	117.41		117.49	0.009526	2.27	189.16	49.50	0.20
Main Reach	195.1298	5 YR	290.00	110.73	116.39		116.46	0.010567	2.06	140.62	46.46	0.21
Main Reach	195.1298	2 YR	120.00	110.73	114.67		114.72	0.010863	1.70	70.43	31.61	0.20
Main Reach	141.507	100 YR	1200.00	110.64	128.11		128.12	0.000033	0.29	2359.63	355.33	0.01
Main Reach	141.507	50 YR	950.00	110.64	122.37		122.41	0.002484	1.65	560.43	161.62	0.11
Main Reach	141.507	25 YR	630.00	110.64	118.27		118.39	0.009684	2.75	229.33	44.41	0.21
Main Reach	141.507	10 YR	430.00	110.64	116.86		116.96	0.010210	2.52	170.39	39.22	0.21
Main Reach	141.507	5 YR	290.00	110.64	115.85		115.92	0.009600	2.19	132.26	36.25	0.20
Main Reach	141.507	2 YR	120.00	110.64	114.18		114.22	0.008000	1.57	76.21	30.40	0.18
Main Reach	65.30157	100 YR	1200.00	109.47	128.11		128.12	0.000049	0.36	2522.46	370.27	0.02
Main Reach	65.30157	50 YR	950.00	109.47	122.20		122.24	0.002384	1.70	576.03	152.48	0.11
Main Reach	65.30157	25 YR	630.00	109.47	117.30		117.46	0.015740	3.18	198.09	44.59	0.27
Main Reach	65.30157	10 YR	430.00	109.47	115.73		115.89	0.020011	3.20	134.44	35.85	0.29
Main Reach	65.30157	5 YR	290.00	109.47	114.76		114.89	0.020293	2.86	101.32	32.46	0.29
Main Reach	65.30157	2 YR	120.00	109.47	113.34		113.40	0.015220	2.03	59.19	25.79	0.24
Main Reach	4.590075	100 YR	1200.00	108.59	128.11	114.26	128.11	0.000045	0.34	2526.00	407.77	0.02
Main Reach	4.590075	50 YR	950.00	108.59	121.86	113.63	122.01	0.006211	3.11	305.02	94.97	0.17
Main Reach	4.590075	25 YR	630.00	108.59	115.98	112.63	116.28	0.024016	4.36	144.52	27.52	0.32
Main Reach	4.590075	10 YR	430.00	108.59	113.56	111.88	113.95	0.056405	5.02	85.65	23.70	0.47
Main Reach	4.590075	5 YR	290.00	108.59	112.51	111.25	112.85	0.064795	4.69	61.85	21.58	0.49
Main Reach	4.590075	2 YR	120.00	108.59	110.23	110.23	110.84	0.333265	6.28	19.11	15.64	1.00

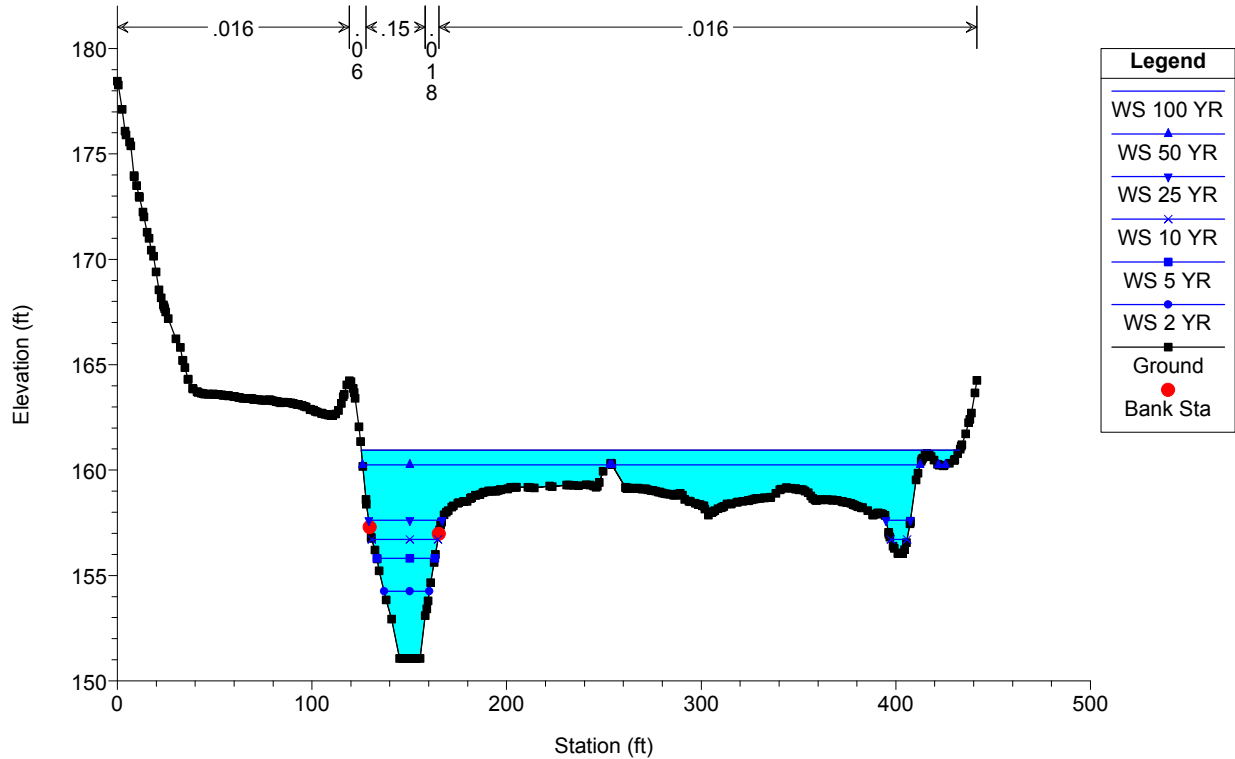
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 3283.479



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

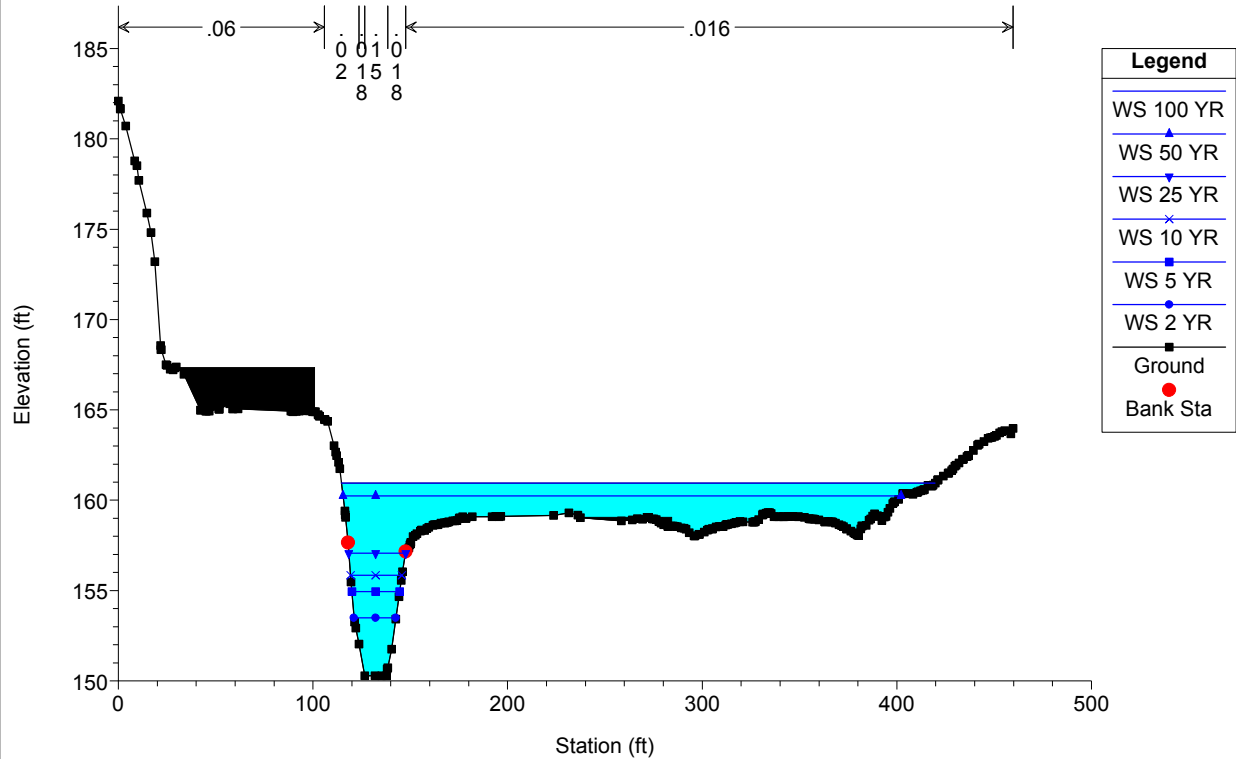
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 River = Auburn Creek Reach = Main Reach RS = 3229.405



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

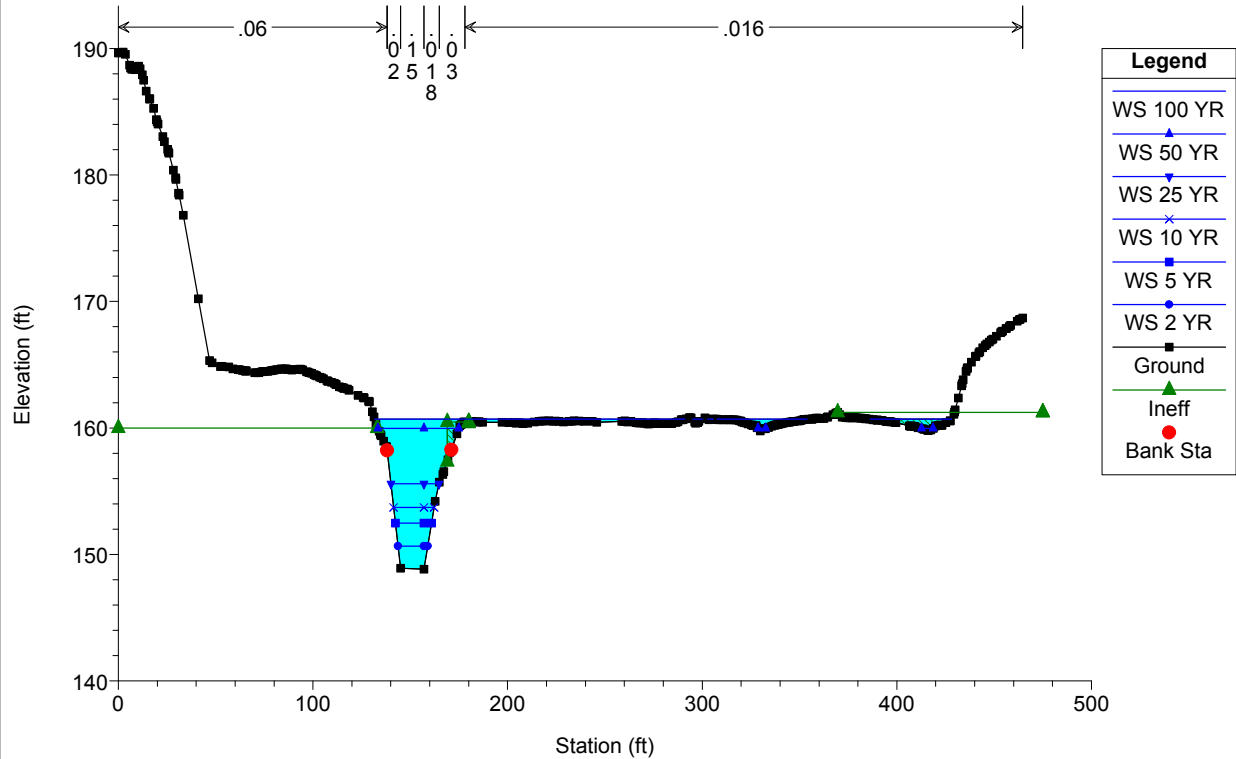
River = Auburn Creek Reach = Main Reach RS = 3159.787



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

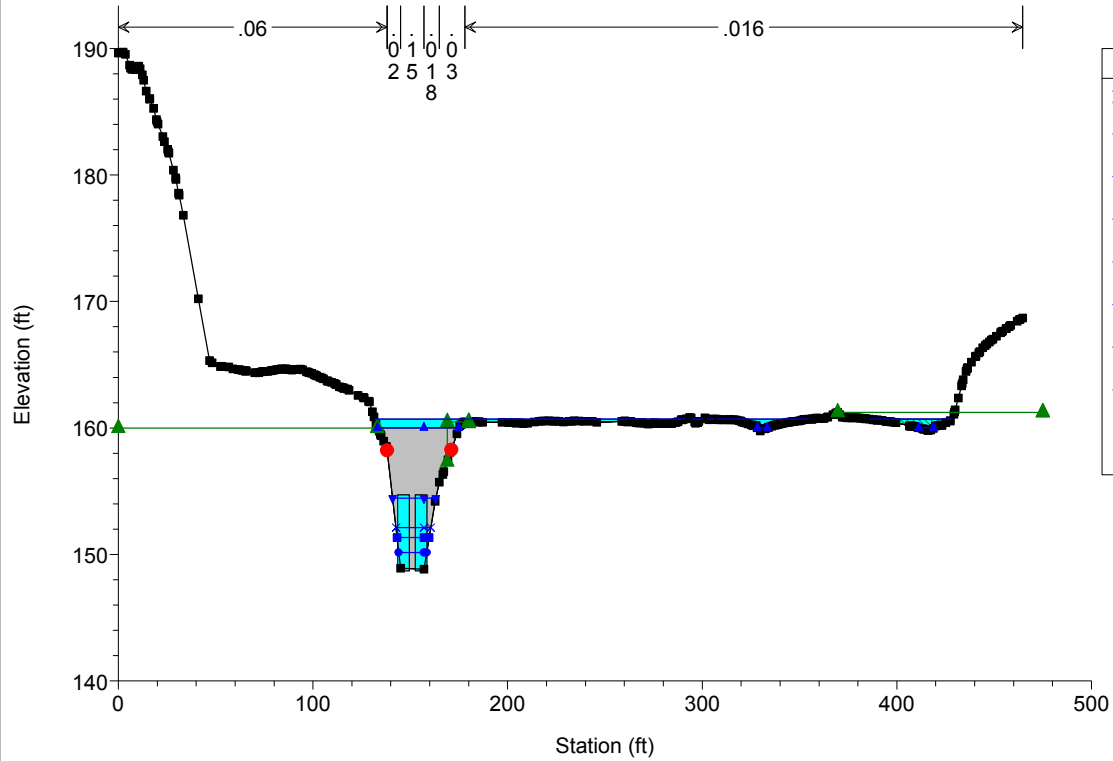
River = Auburn Creek Reach = Main Reach RS = 3025.628



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

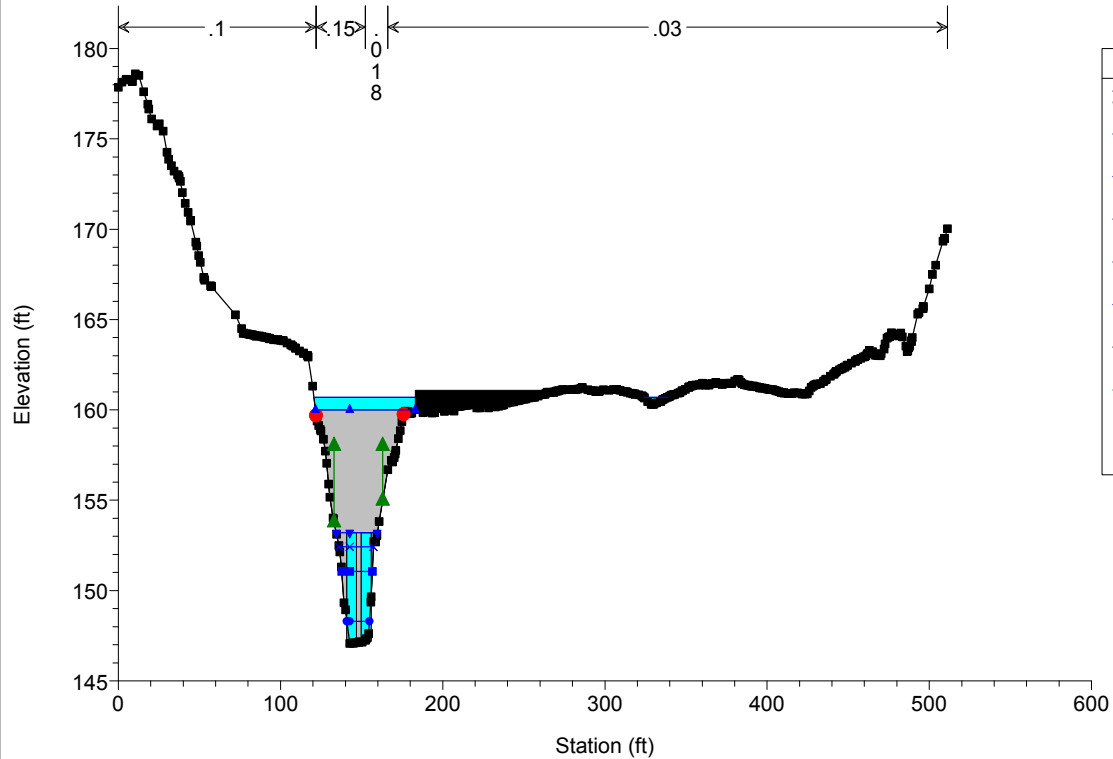
River = Auburn Creek Reach = Main Reach RS = 3000 Culv



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

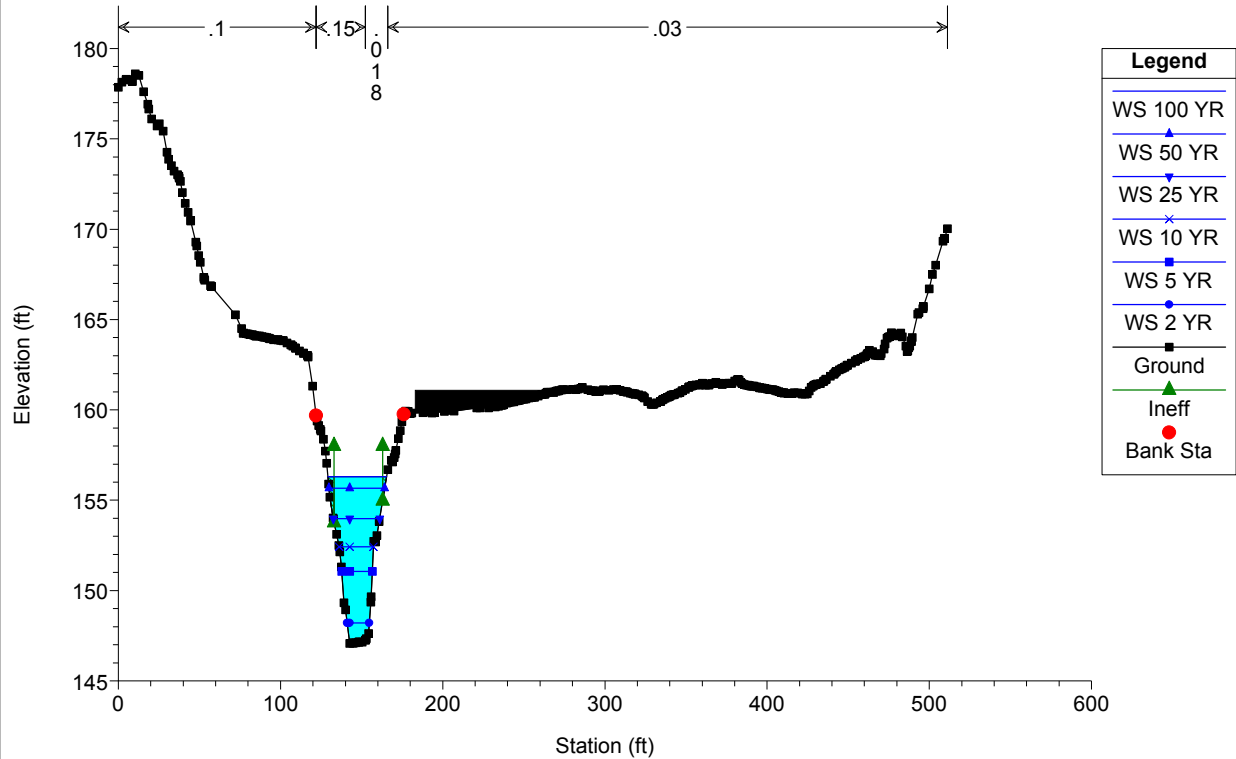
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River = Auburn Creek Reach = Main Reach RS = 3000 Culv



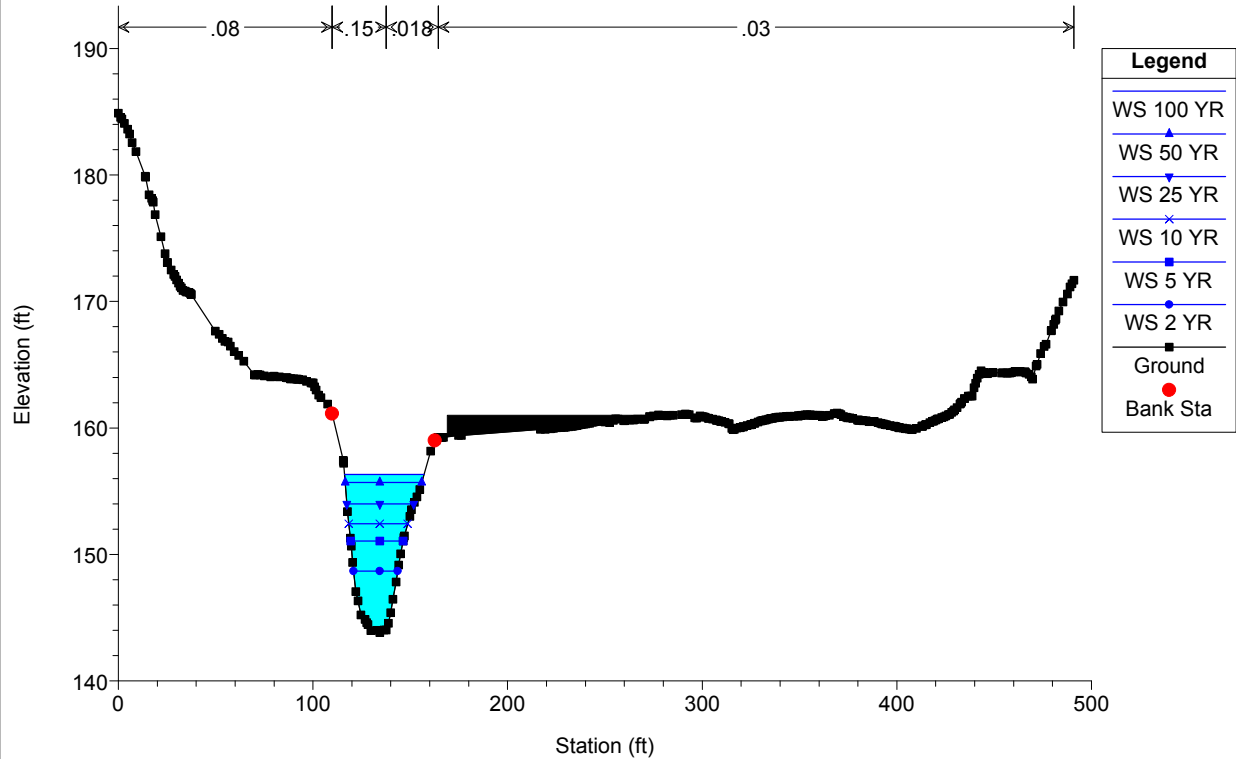
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 2916.303



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

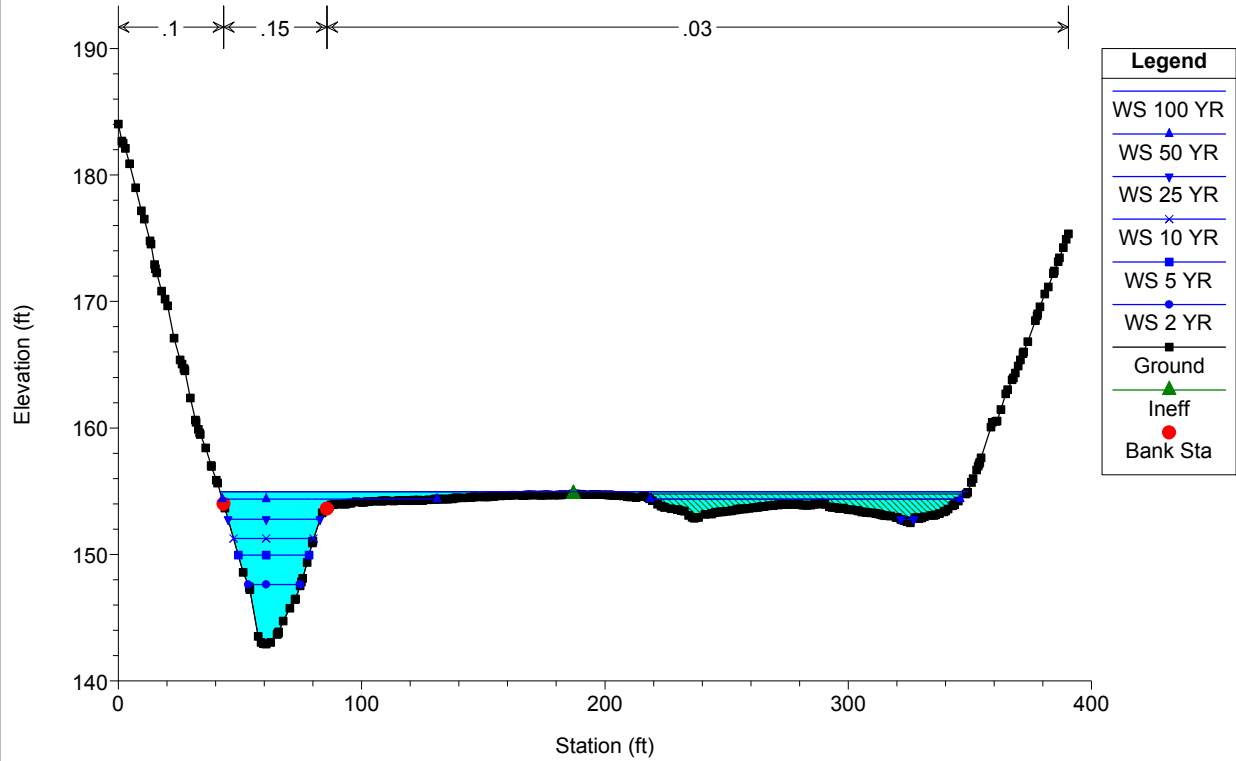
Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 2900.962



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

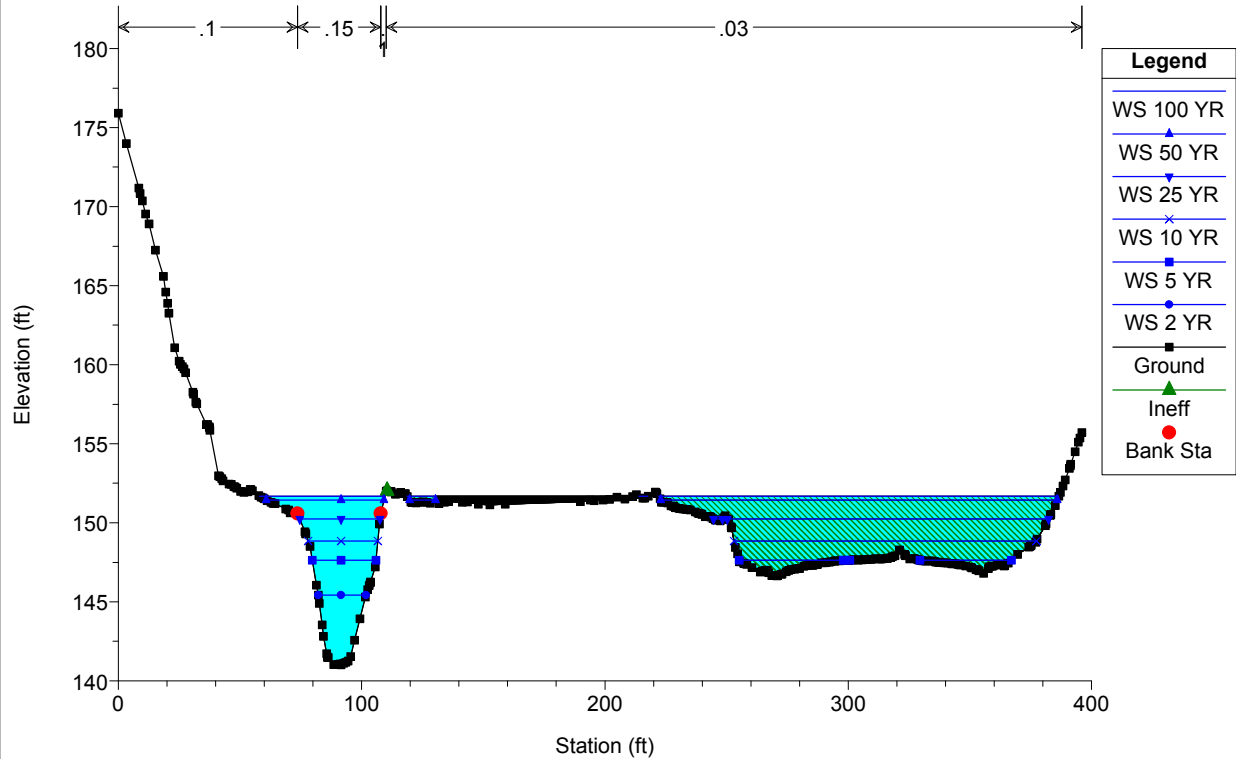
River = Auburn Creek Reach = Main Reach RS = 2709.054



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

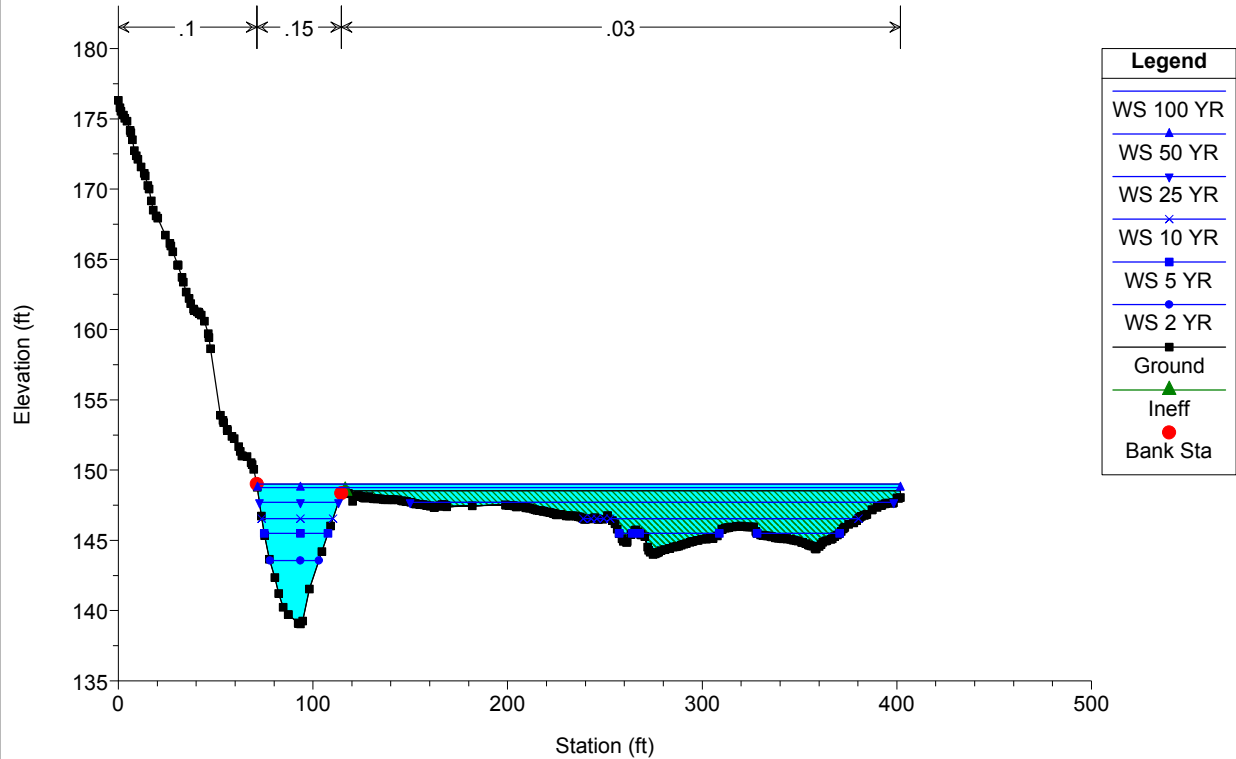
Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

River = Auburn Creek Reach = Main Reach RS = 2501.489



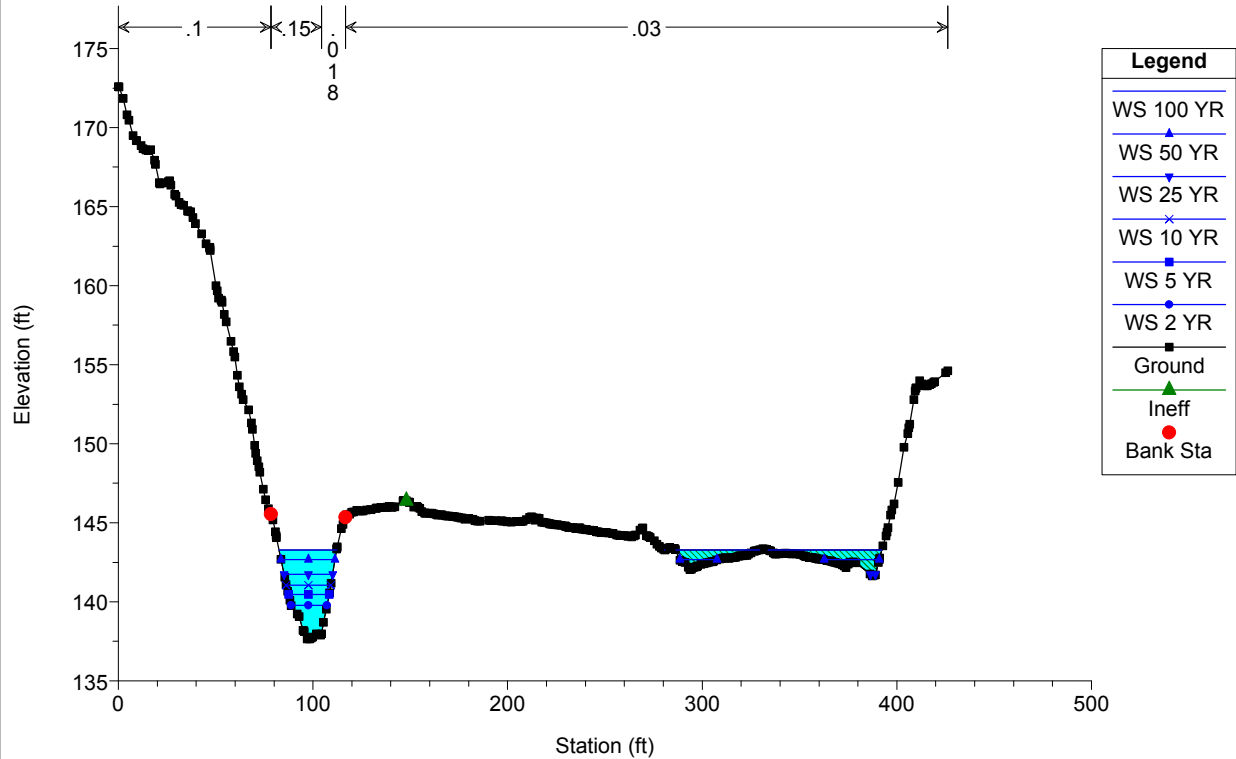
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 2309.998



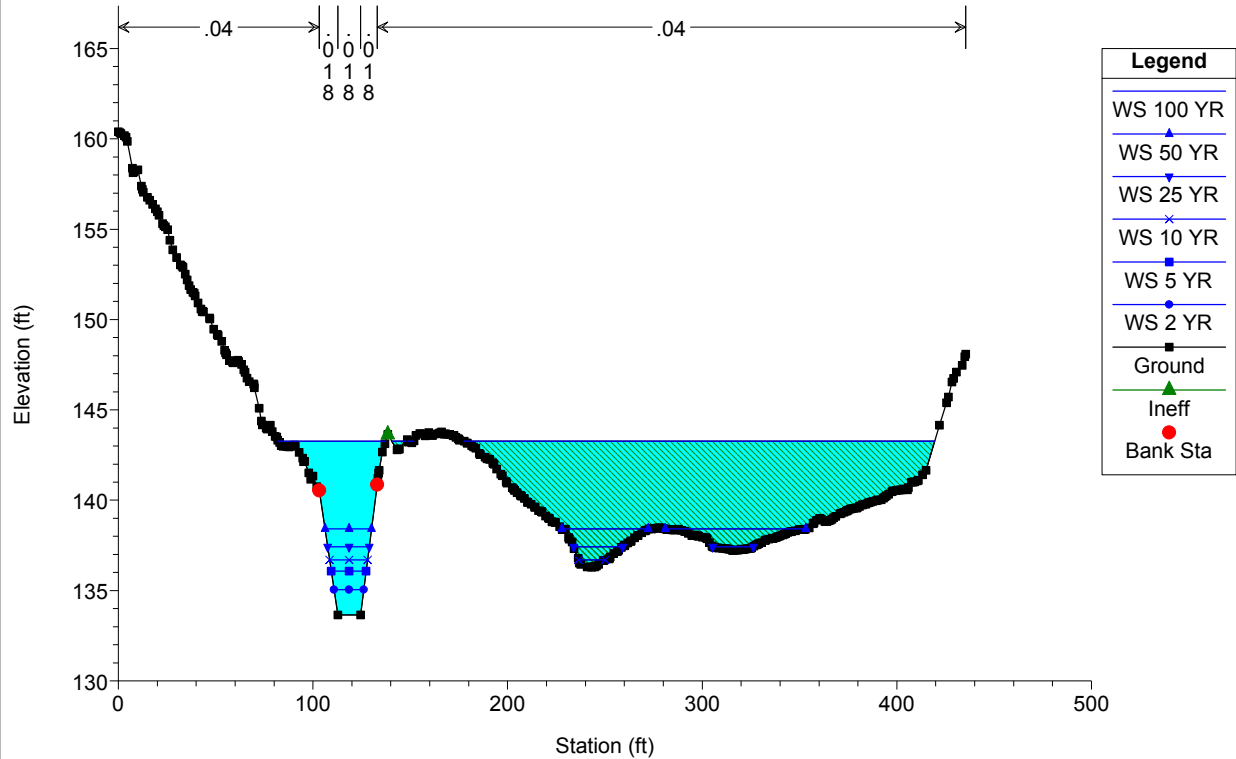
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 2161.775



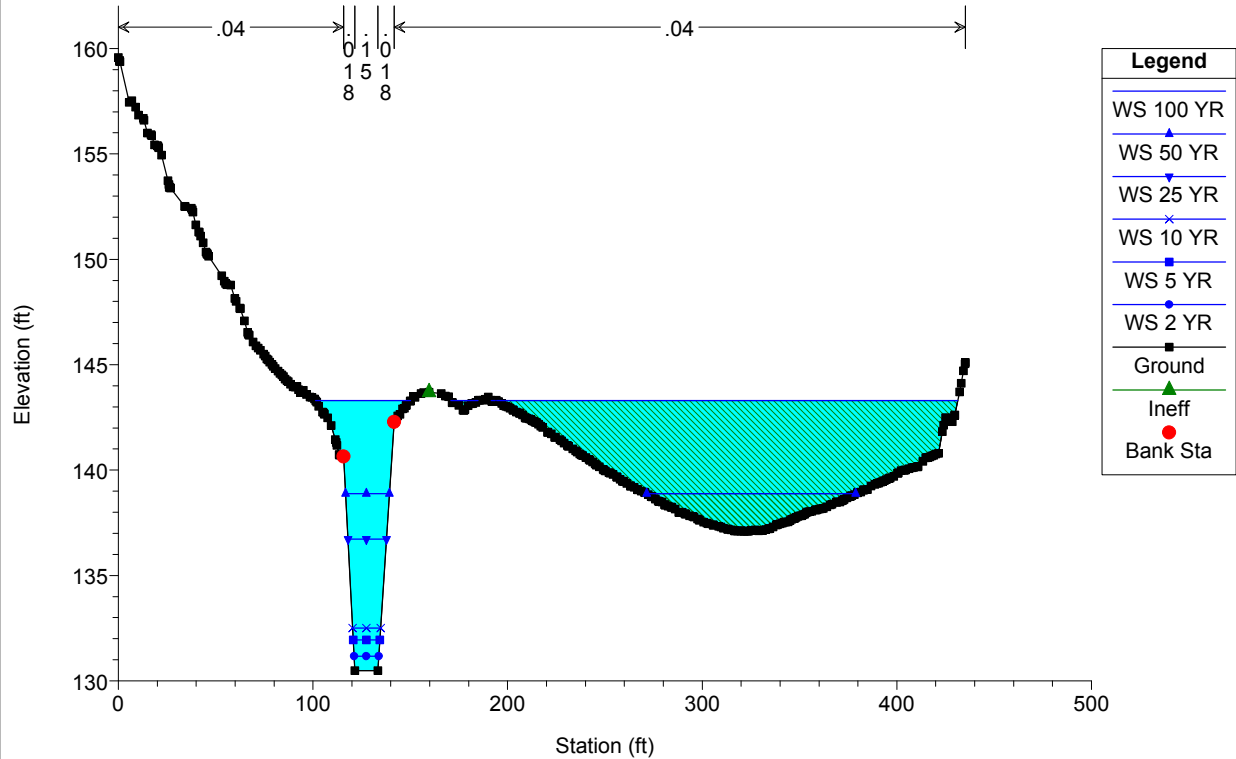
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 1835.094



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

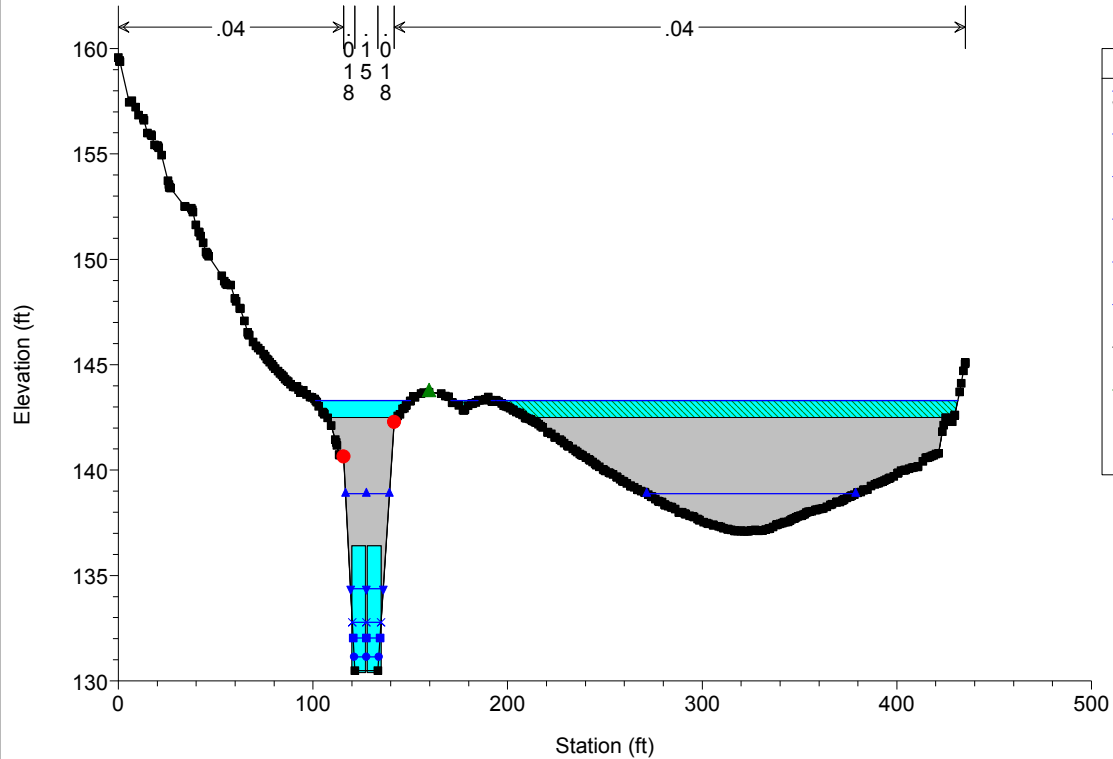
Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 1800.703



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

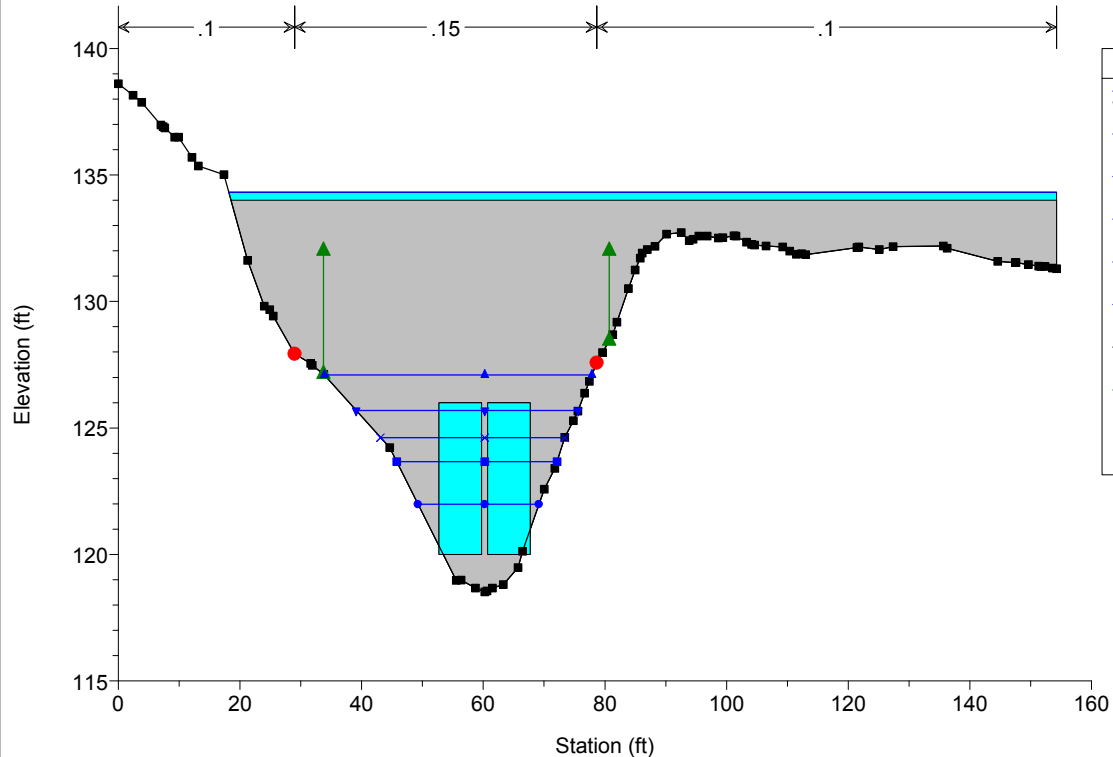
River = Auburn Creek Reach = Main Reach RS = 1350 Culv



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

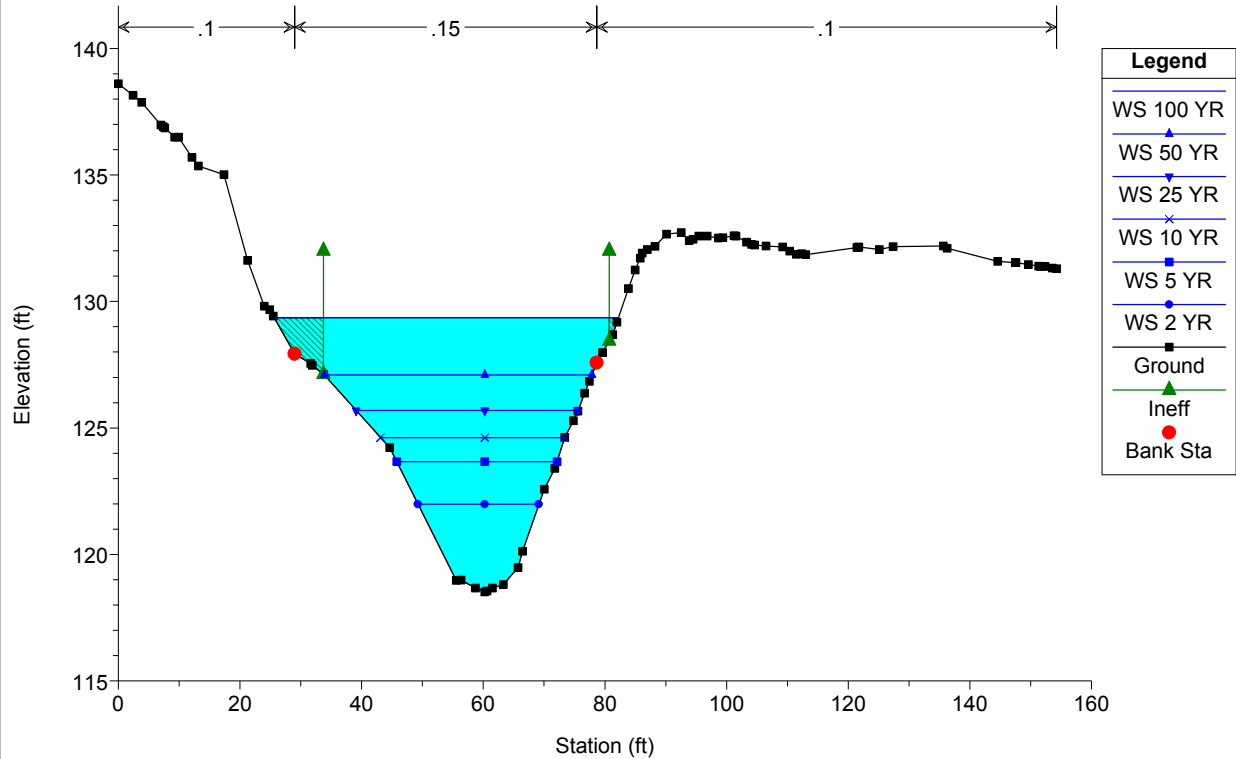
Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates

River = Auburn Creek Reach = Main Reach RS = 1350 Culv



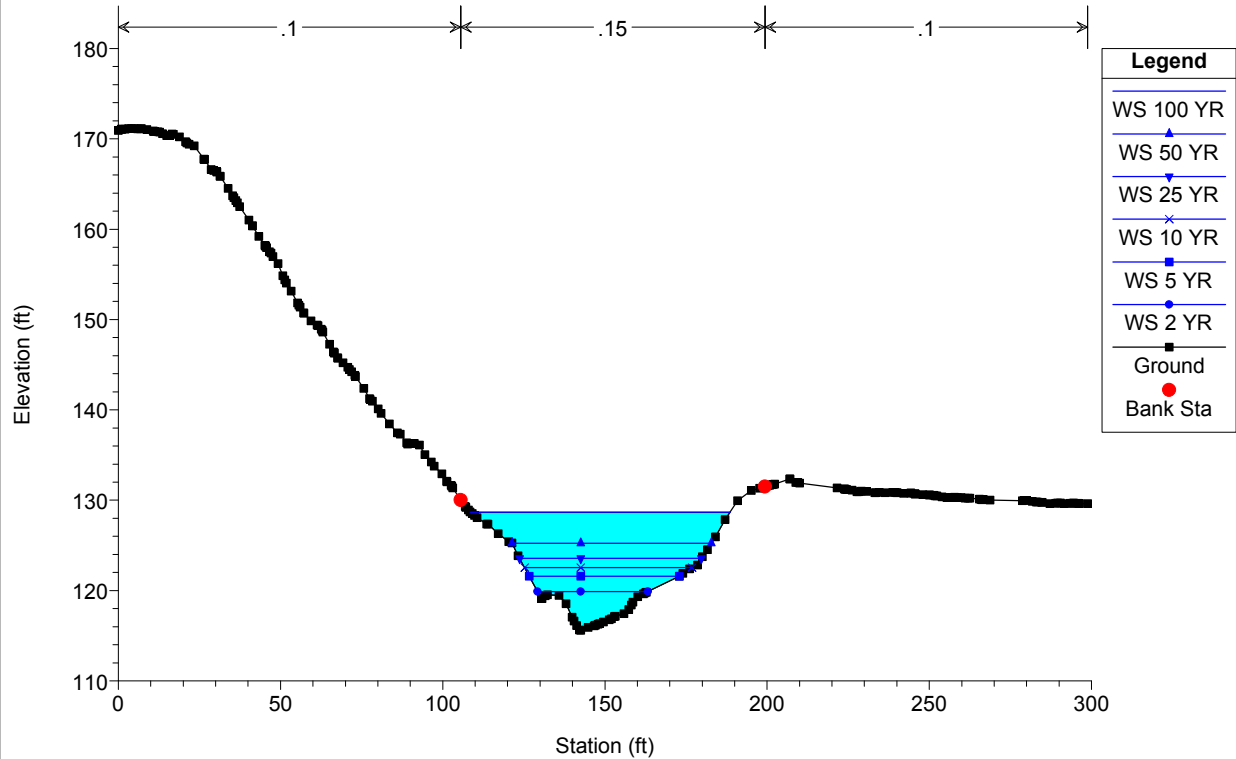
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 925.4423



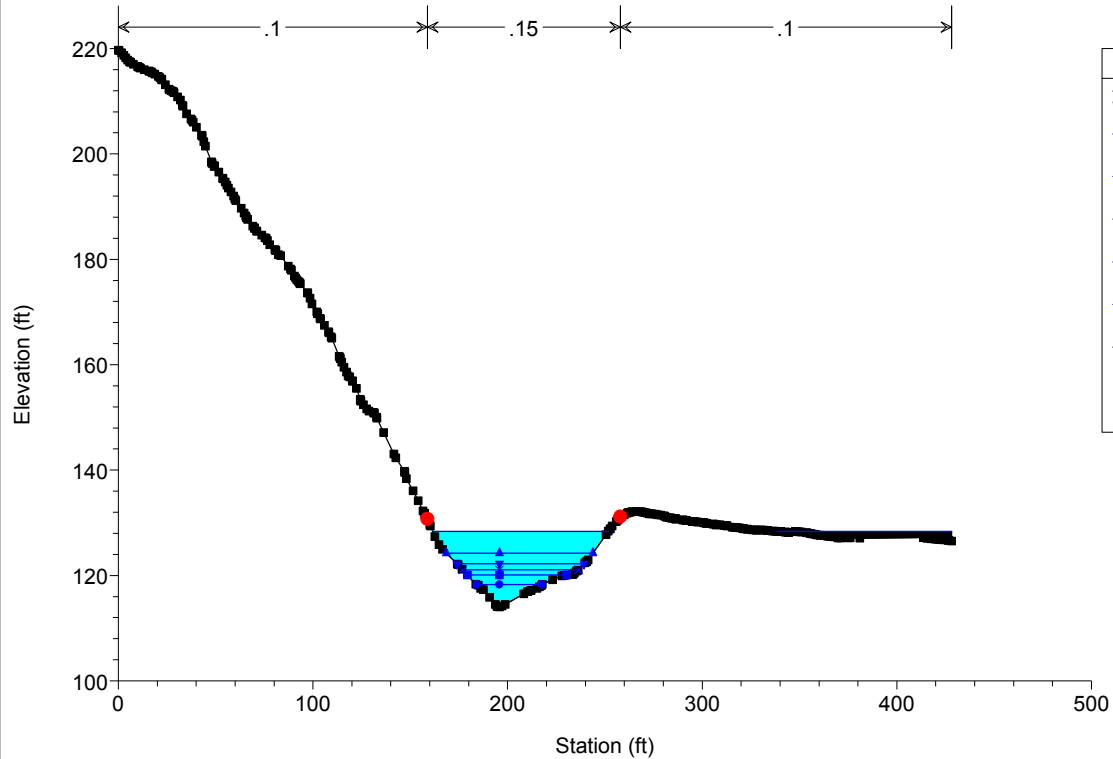
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 797.816



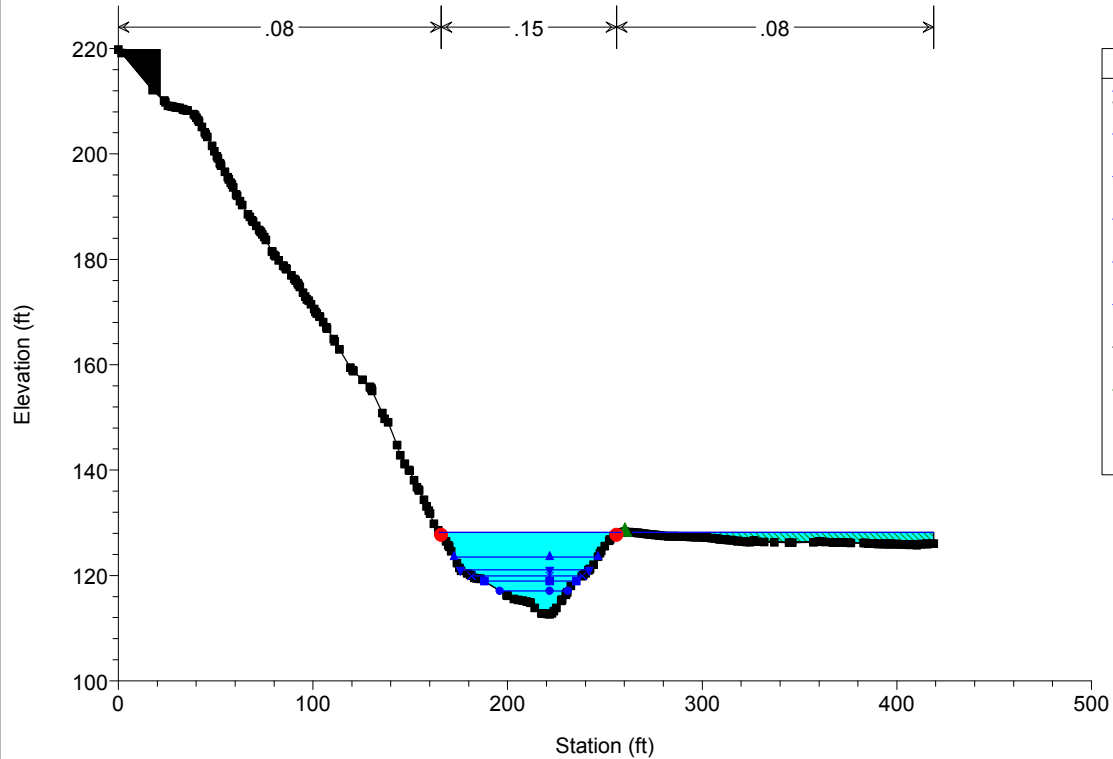
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 652.2307



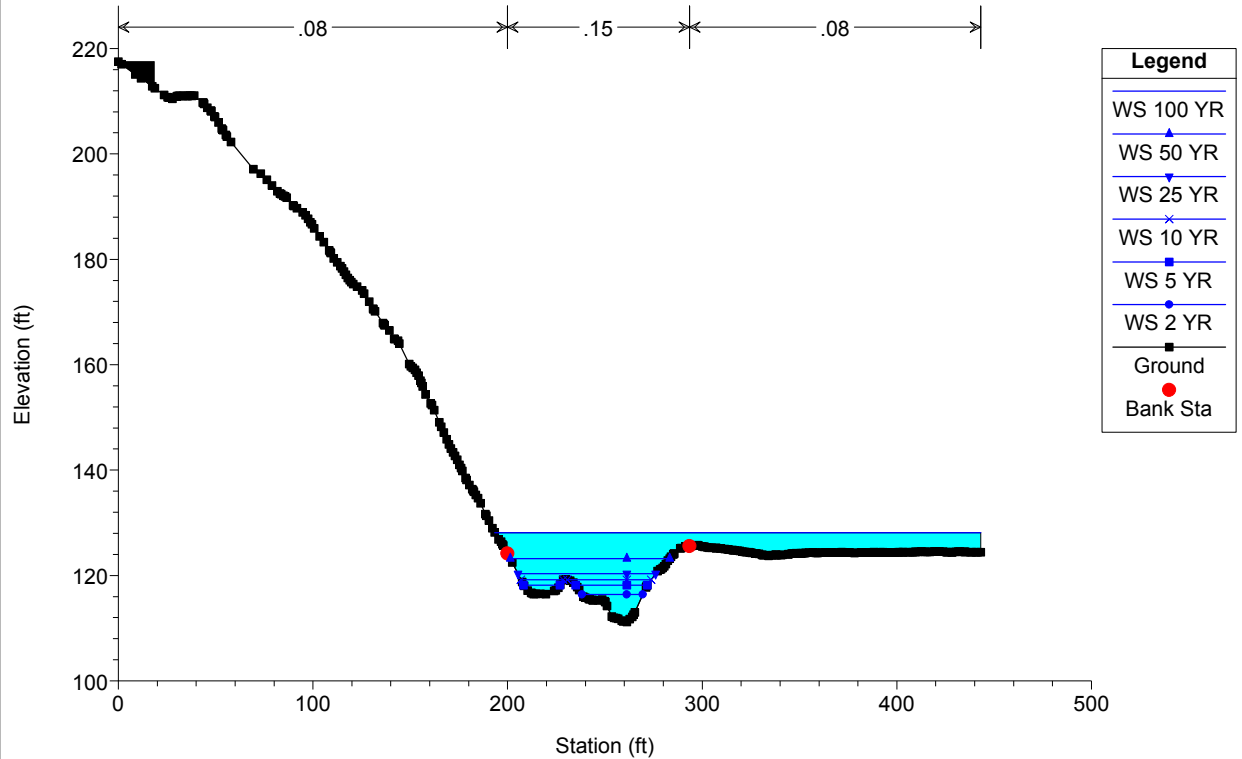
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 513.9224



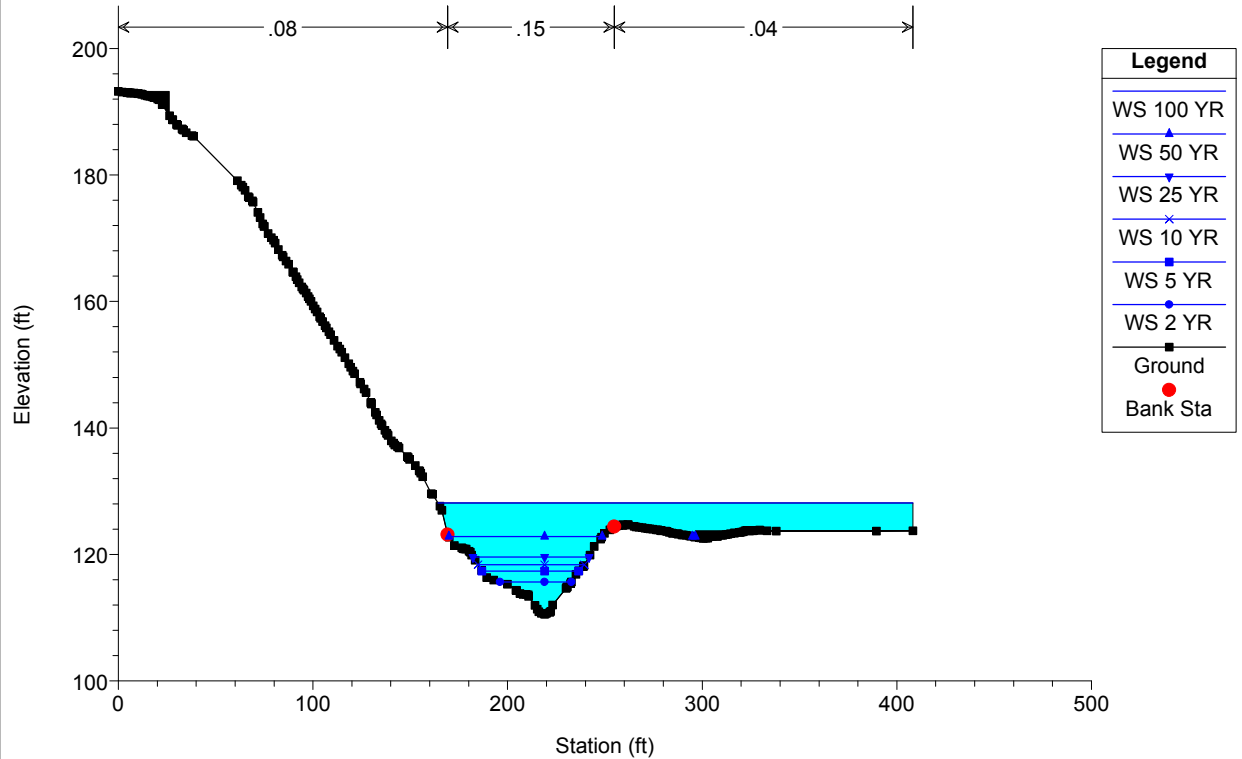
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
River = Auburn Creek Reach = Main Reach RS = 414.6495



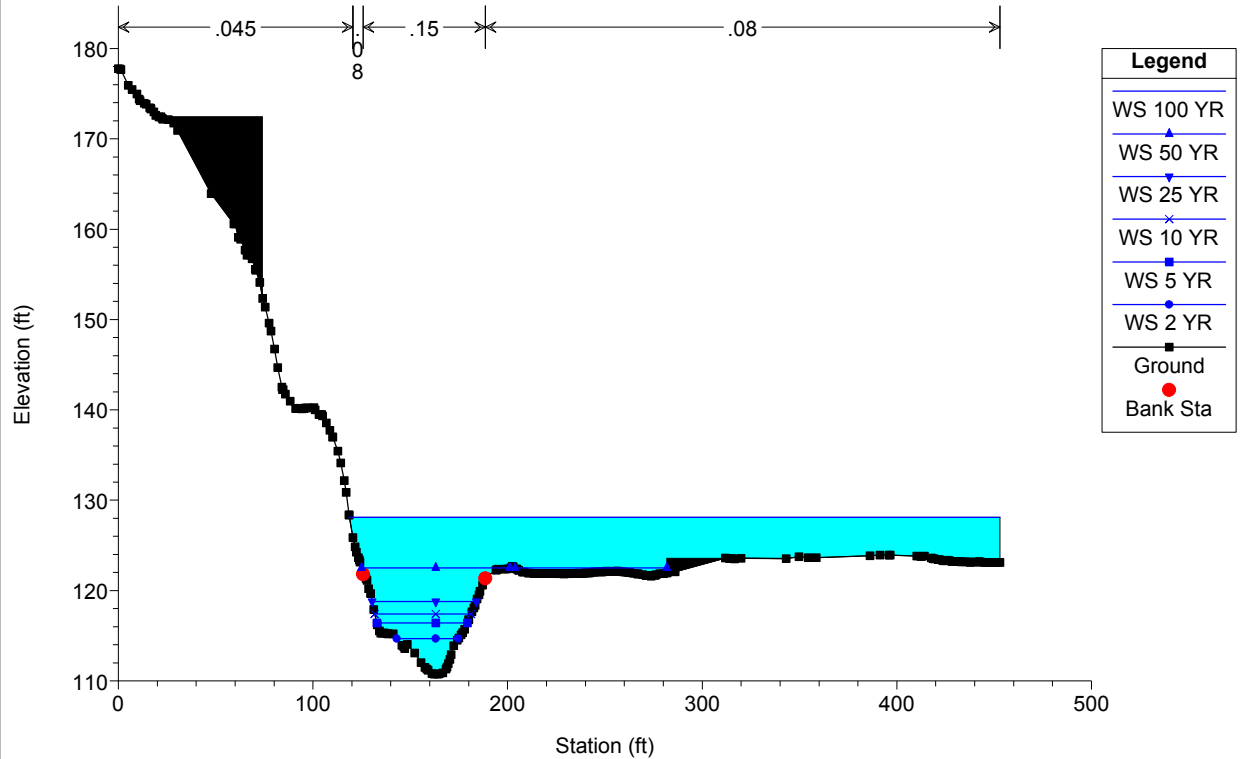
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
River = Auburn Creek Reach = Main Reach RS = 307.2411



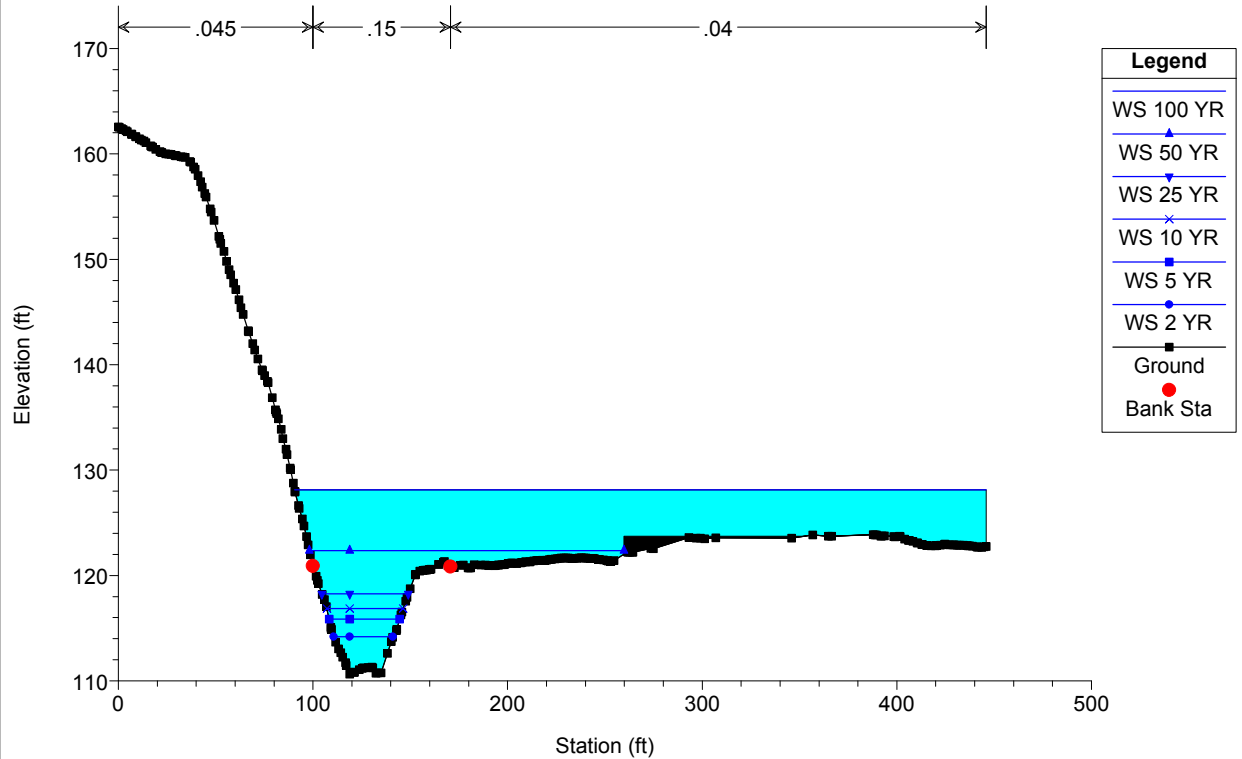
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
River = Auburn Creek Reach = Main Reach RS = 195.1298



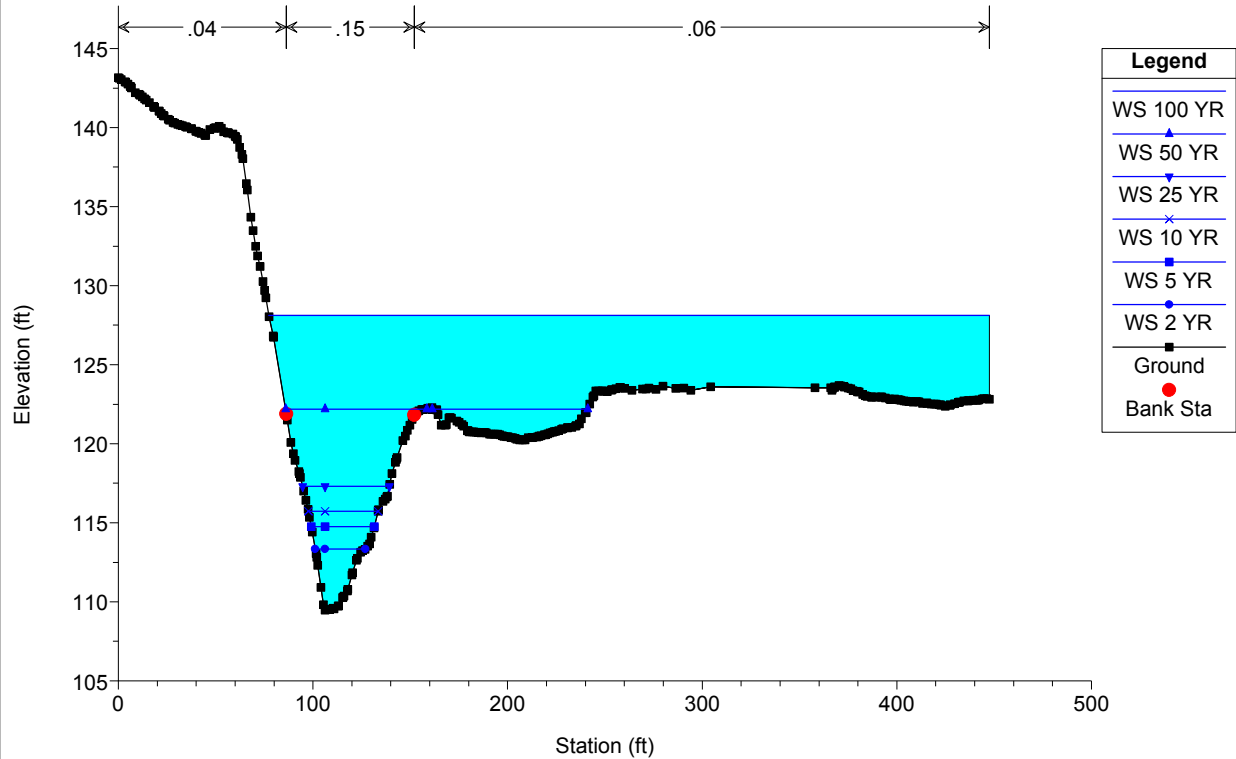
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
River = Auburn Creek Reach = Main Reach RS = 141.507



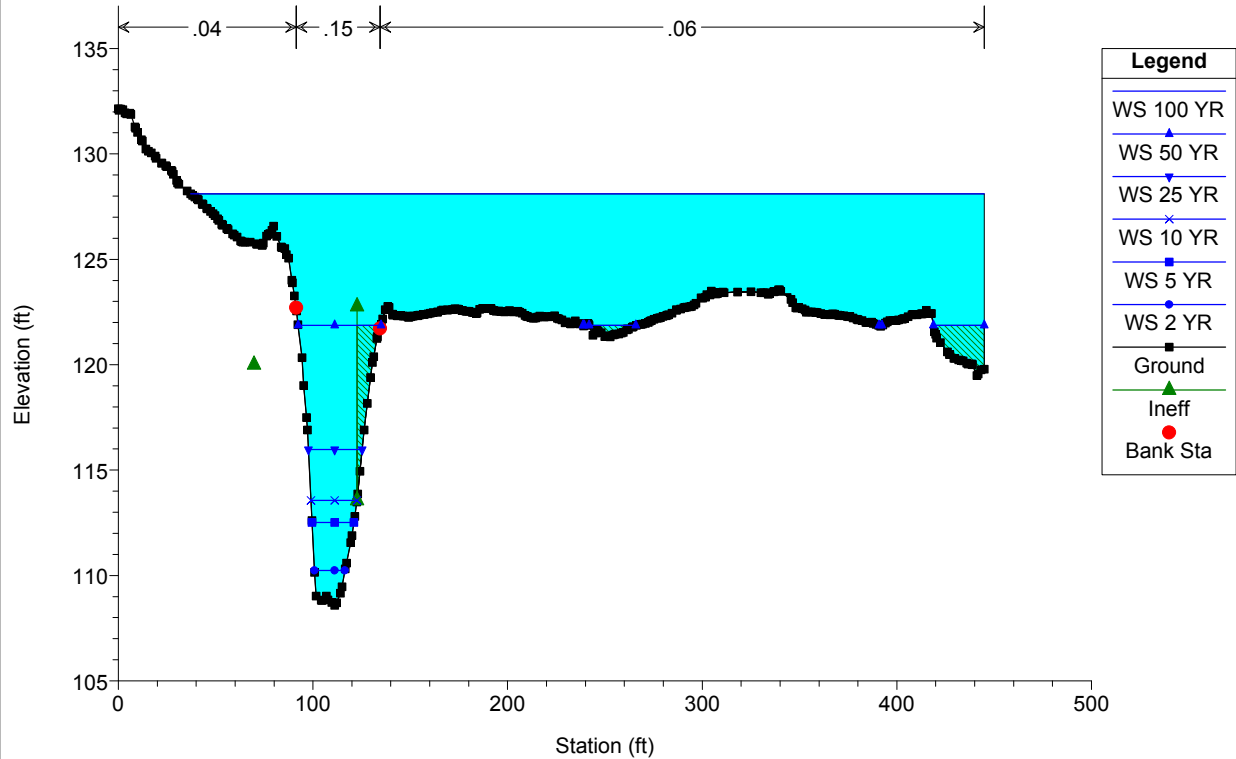
Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 65.30157



Auburn-Creek-Channel Plan: UltimateVeg 4/3/2017

Geom: Ultimate_Veg_Condition Flow: FEMA_Flow Rates
 River = Auburn Creek Reach = Main Reach RS = 4.590075



HEC-RAS Version 4.1.0 Jan 2010
 U.S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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X   X   XXXXXX   XXXX   XXXX   XX   XXXX
X   X   X       X   X   X   X   X   X   X
X   X   X       X       X   X   X   X   X
XXXXXXXX XXXX   X       XXX XXXX   XXXXXX XXXX
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PROJECT DATA

Project Title: Auburn-Creek-Channel
 Project File : AuburnCreek.prj
 Run Date and Time: 4/3/2017 10:59:16 PM

Project in English units

PLAN DATA

Plan Title: UltimateVeg
 Plan File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.p03

Geometry Title: Ultimate_Veg_Condition
 Geometry File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g02

Flow Title : FEMA_Flow Rates
 Flow File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f01

Plan Summary Information:

Number of: Cross Sections = 22 Multiple Openings = 0
 Culverts = 2 Inline Structures = 0
 Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
 Critical depth calculation tolerance = 0.01
 Maximum number of iterations = 20
 Maximum difference tolerance = 0.3
 Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
 Conveyance Calculation Method: At breaks in n values only
 Friction Slope Method: Average Conveyance
 Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: FEMA_Flow Rates
 Flow File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f01

Flow Data (cfs)

River	Reach	RS	100 YR	50 YR
25 YR	10 YR	5 YR	2 YR	
Auburn Creek	Main Reach	3283.479	1200	950
630	430	290	120	

Boundary Conditions

River	Reach	Profile	Upstream
Downstream			
Auburn Creek	Main Reach	100 YR	Normal S = 0.005
Known WS = 128.11			
Auburn Creek	Main Reach	50 YR	Normal S = 0.005
Known WS = 121.86			
Auburn Creek	Main Reach	25 YR	Normal S = 0.005
Known WS = 115.98			
Auburn Creek	Main Reach	10 YR	Normal S = 0.005
Known WS = 113.56			
Auburn Creek	Main Reach	5 YR	Normal S = 0.005
Known WS = 112.51			
Auburn Creek	Main Reach	2 YR	Normal S = 0.005
Known WS = 110.11			

GEOMETRY DATA

Geometry Title: Ultimate_Veg_Condition
 Geometry File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g02

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3283.479

INPUT

Description:

Station	Elevation	Data	num=	352									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.35	.15	170.33	.26	170.32	.4	170.3	2.44	170.05				
3.01	170.02	3.71	169.98	4.55	169.97	5.23	169.93	5.97	169.93				
6.89	169.87	8.64	169.81	9.78	170.06	10.31	170.18	11.17	170.19				
12.32	170.22	13.29	170.07	16.22	169.75	16.96	169.54	17.65	169.38				
18.05	169.34	19.73	169.16	20.83	168.97	21.71	168.8	23.26	168.45				
23.36	168.44	23.63	168.36	25.49	167.88	26.16	167.66	27.62	167.13				
28.52	166.83	29.49	166.51	30.9	166.05	31.17	165.95	31.35	165.9				
32.96	165.45	33.91	165.24	34.65	165.07	35.65	164.91	36.28	164.82				
36.77	164.74	38.16	164.6	39.35	164.54	40.19	164.48	42.11	164.34				
42.28	164.33	42.36	164.33	44.56	164.22	44.98	164.19	46.33	164.15				
47.95	164.05	50.66	163.97	50.68	163.97	50.96	163.95	53.6	163.77				
53.7	163.77	53.89	163.77	55.39	163.78	56.22	163.73	57.55	163.64				

59.24	163.59	59.76	163.58	60.42	163.56	61.2	163.54	61.8	163.52
63.46	163.48	64.67	163.45	65.56	163.44	66.97	163.38	67.15	163.37
67.27	163.36	69.65	163.31	70.15	163.31	71.58	163.25	72.72	163.25
73.62	163.24	75.76	163.16	75.94	163.15	76.18	163.16	77.42	163.17
78.33	163.13	79.04	163.1	80.22	163.04	80.85	163.03	81.22	163.03
82.84	163.04	84.04	163.02	84.85	163	86.5	162.97	86.81	162.97
86.96	162.97	88.88	162.95	89.66	162.95	90.75	162.97	92.47	162.96
92.49	162.96	92.51	162.96	95.25	162.96	95.31	162.96	97.03	162.94
98.12	162.9	99.04	162.87	100.94	162.79	101.65	162.77	103.77	162.75
104.6	162.74	106.58	162.78	107.26	162.81	109.5	163.14	109.76	163.19
110.22	163.38	111.69	163.92	112.5	164.17	113.36	164.39	113.84	164.51
115.43	164.4	115.93	164.29	116.48	164	117.43	163.46	118.25	163.07
119.38	162.52	121.32	160.61	121.64	160.38	122.15	160.07	124.28	159.12
125	158.9	127.25	156.55	127.9	155.87	132.24	153.42	134.13	152.15
134.86	151.66	136.53	151.66	136.66	151.66	136.88	151.66	140.71	151.66
141.24	151.66	142.47	151.66	146.45	151.66	149.16	151.66	149.46	151.66
149.84	151.66	151.23	151.66	152.32	151.66	153.29	151.66	155.53	151.66
157.65	153.27	159.39	155.27	161.29	157.44	161.88	157.85	163.42	157.8
164.87	157.84	165.15	157.84	165.38	157.86	167.04	157.88	167.92	157.92
168.18	157.95	170.4	158.21	171.17	158.23	172.92	158.23	174.36	158.26
175.75	158.24	176.6	158.25	177.42	158.27	178.75	158.29	180.87	158.27
181.31	158.27	182.08	158.3	183.22	158.36	183.87	158.36	185.5	158.36
187.31	158.32	188.07	158.31	190.54	158.36	191.08	158.36	194.09	158.4
194.14	158.4	194.19	158.4	195.9	158.36	197.28	158.36	197.71	158.37
198.26	158.39	199.75	158.41	200.91	158.46	201.59	158.46	202.28	158.47
203.21	158.47	204.13	158.51	205.4	158.5	207.73	158.47	208.13	158.48
208.65	158.49	210.05	158.53	211.14	158.55	212.34	158.55	214.85	158.59
215.05	158.59	215.45	158.59	217.17	158.59	218.06	158.6	219.69	158.62
222.13	158.59	222.4	158.59	223.24	158.59	224.98	158.58	225.56	158.6
227.68	158.63	229.66	158.68	230.24	158.71	231.17	158.68	232.37	158.65
233.14	158.68	234.73	158.71	236.77	158.75	237.2	158.75	237.54	158.75
239.67	158.77	241.13	158.77	242	158.77	242.84	158.79	244.24	158.83
245.73	158.81	246.74	158.81	249.32	158.89	249.67	158.89	250.04	158.89
252.02	158.88	253.89	158.93	254.39	158.95	255.75	158.97	257.11	159
257.61	159	259.74	158.99	262.32	159.02	262.38	159.02	262.5	159.02
264.64	159.04	265.72	159.04	267.05	159.14	268.78	159.11	269.6	159.15
270.22	159.11	272.09	158.98	273.68	158.96	274.82	158.95	277.72	158.98
278.07	159	278.14	158.99	280.52	158.88	281.6	158.87	283.07	158.89
285.24	158.76	285.66	158.75	285.96	158.74	287.47	158.76	289.07	158.68
289.14	158.68	289.2	158.68	291.16	158.57	297.07	158.51	297.14	158.51
297.17	158.51	297.33	158.52	299.77	158.62	301.37	158.66	302.26	158.66
304.56	158.63	304.61	158.63	304.69	158.63	307.28	158.66	309.09	158.66
309.81	158.66	311.51	158.64	312.03	158.63	312.24	158.64	314.22	158.74
316.1	158.79	316.4	158.79	316.73	158.79	318.65	158.78	319.87	158.82
321.08	158.85	322.72	158.86	323.74	158.86	324.47	158.85	325.86	158.84
327.69	158.89	327.79	158.89	327.87	158.9	329.92	159.08	331.66	159.22
332.04	159.28	332.53	159.28	333.96	159.28	335.69	159.28	335.92	159.28
336.26	159.28	338.71	159.27	340.4	159.23	341.09	159.18	341.93	159.05
342.88	158.91	343.66	158.87	344.93	158.86	346	158.85	347.21	158.85
348.66	158.87	349.79	158.86	351.9	158.85	352.64	158.85	353.33	158.86
354.99	158.86	356.79	158.87	357.43	158.87	360.04	158.87	360.21	158.87
360.33	158.87	362.23	158.84	363.69	158.84	364.26	158.84	365.14	158.84
366.83	158.78	368.56	158.72	369.59	158.7	370.58	158.67	372.09	158.63
373.67	158.58	374.61	158.54	376.95	158.56	377.16	158.56	377.31	158.55
379.35	158.56	381.14	158.27	381.6	158.22	382.21	158.09	383.53	157.8
385.13	157.5	385.36	157.45	385.55	157.44	387.67	157.39	389.3	157.54
390.01	157.62	390.93	157.82	392.28	158.24	394.26	159.08	394.61	159.27
394.97	159.44	397.44	160.59	399.9	161.33	400.28	161.49	401.39	161.91
402.84	162.54	403.08	162.65						

Manning's n Values		num=		5	
Sta	n Val	Sta	n Val	Sta	n Val
0	.016	115.43	.045	125	.15
				157.65	.018
				161.88	.016

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
		125	161.29	51.96	54.07	55.73		.3	.5
Ineffective Flow	num=			2					
Sta L	Sta R	Elev	Permanent						
0	129.5	162	F						
166.5	403.08	157.87	F						

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3229.405

INPUT

Description:

Station Elevation Data		num=		367	
Sta	Elev	Sta	Elev	Sta	Elev
0	178.45	.44	178.27	2.5	177.11
6.28	175.57	6.84	175.39	8.59	173.97
11.22	172.98	11.34	172.94	13.17	172.24
16.2	170.99	17.39	170.44	18.64	170.15
22.58	168.18	23.6	167.84	23.99	167.75
26.11	167.18	30.16	166.23	32.35	165.82
34.64	164.86	36.26	164.32	36.34	164.3
40.93	163.72	41.38	163.69	41.47	163.69
44.83	163.6	46.65	163.6	46.7	163.6
49.56	163.6	51.09	163.59	51.96	163.59
55.57	163.54	56.93	163.53	57.11	163.53
59.82	163.49	60.51	163.48	62.53	163.44
64.47	163.41	65.24	163.4	66.77	163.39
69.63	163.37	70.27	163.35	70.76	163.34
74.34	163.32	75.69	163.31	76.01	163.31
79.03	163.31	80.21	163.29	81.77	163.26
83.91	163.2	84.51	163.21	85.66	163.23
87.45	163.21	89.09	163.2	90.15	163.17
92.76	163.11	93.07	163.11	94.88	163.07
98.93	162.89	99.13	162.87	99.4	162.87
102.74	162.75	104.87	162.7	105.13	162.68
107.7	162.64	108.22	162.62	108.91	162.62
112.19	162.66	113.57	162.83	115.03	163.16
117.92	164.04	119.27	164.24	120.1	164.19
122.16	163.4	124.08	162.06	124.88	161.35
127.95	158.38	129.7	157.29	130.46	156.82
133.47	155.79	134.53	155.23	138.14	153.84
146.55	151.06	147.01	151.06	147.85	151.06
151.71	151.06	152.92	151.06	153.37	151.06
158.25	153.09	159.02	153.42	159.6	153.79
163.49	155.99	165.26	156.97	165.61	157.17
167.86	157.88	168.97	158	169.94	158.07
175	158.43	175.36	158.45	178.01	158.51
179.72	158.52	181.38	158.66	181.45	158.67
184.32	158.81	186.3	158.84	187.82	158.93
190.88	159.01	191.01	159.01	192.74	159.01
195.67	159.04	196.75	159.08	196.93	159.07
202.1	159.19	204.34	159.19	204.85	159.19
212.17	159.17	214.19	159.16	222.18	159.24
232.15	159.29	234.44	159.28	236.95	159.26
244.61	159.25	245.96	159.19	246.66	159.23
253.58	160.31	253.67	160.32	253.68	160.32
261.13	159.17	261.27	159.19	261.71	159.13
264.9	159.13	267.2	159.14	267.55	159.14
270.96	159.11	271.67	159.11	272.82	159.07

276.55	159.01	278.07	158.95	278.92	158.95	279.93	158.91	281.37	158.88
282.57	158.86	284.01	158.85	285.77	158.81	286.69	158.8	287.73	158.86
289.14	158.9	290.36	158.8	291.54	158.61	293.61	158.53	293.92	158.51
294.41	158.5	296.92	158.43	298.49	158.37	299.42	158.36	300.63	158.3
301.33	158.3	301.84	158.15	303.65	157.87	305.43	157.99	306.17	158.03
306.93	158.08	308.67	158.17	310.26	158.22	310.99	158.24	311.53	158.27
313.16	158.39	315.34	158.4	315.35	158.4	318.27	158.47	318.83	158.48
321.32	158.52	324.01	158.55	324.25	158.55	324.55	158.56	326.01	158.6
327.18	158.63	328	158.64	328.74	158.65	330.37	158.66	332.21	158.69
332.83	158.69	335.4	158.7	335.56	158.7	335.75	158.72	338.32	158.89
340.38	159.06	341.08	159.1	343.59	159.15	343.74	159.15	343.89	159.15
346.12	159.14	348.44	159.11	348.49	159.11	348.56	159.11	350.22	159.07
351.42	159.08	352.27	159.07	353.33	159.01	355.03	158.92	356.34	158.78
357.25	158.65	358.36	158.6	358.99	158.56	359.49	158.57	360.85	158.59
361.81	158.6	362.8	158.6	364.25	158.59	364.89	158.59	367.19	158.58
367.45	158.58	367.7	158.58	369.89	158.56	372.19	158.51	372.33	158.51
372.94	158.49	374.69	158.45	375.09	158.45	376.81	158.42	378.04	158.36
378.89	158.34	380.05	158.29	380.85	158.26	382.29	158.22	382.71	158.21
382.94	158.21	385.5	158.07	388.01	157.88	388.33	157.86	389.05	157.9
390.4	157.96	391.01	157.97	392.43	157.94	393.29	157.91	394.42	157.85
396.27	157.04	396.46	156.95	396.94	156.82	398.55	156.39	399.18	156.28
400.94	156.04	402.51	156.08	403.41	156.05	404.4	156.22	405.52	156.56
407.27	157.46	407.38	157.51	407.44	157.57	410.44	159.54	411.39	159.85
413	160.42	413.33	160.51	413.79	160.56	415.05	160.74	415.99	160.79
417.13	160.74	418.18	160.64	419.68	160.48	421.35	160.28	422.16	160.24
424.34	160.21	424.61	160.22	424.88	160.23	427.42	160.33	429.98	160.46
430.11	160.48	430.25	160.51	431.8	160.78	433.13	160.99	433.61	161.13
433.91	161.2	435.8	161.72	437.42	162.25	437.94	162.41	438.78	162.71
440.58	163.66	441.61	164.26						

Manning's n Values

num=	5
Sta	n Val
0	.016

Sta	n Val	Sta	n Val	Sta	n Val
119.27	.06	127.7	.15	158.25	.018
				165.26	.016

Bank Sta: Left Right

Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	129.7	165.26	70.8	69.62	68.75	.1

Blocked Obstructions

num=	1	
Sta L	Sta R	Elev
184.99	288.7158	8851

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach

RS: 3159.787

INPUT

Description:

Station	Elevation	Data	num=	292			
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.09	.91	181.68	.96	181.66	3.74	180.72
9.46	178.51	10.5	177.7	14.59	175.89	16.84	174.81
21.73	168.57	21.89	168.34	21.97	168.33	24.49	167.5
26.64	167.25	28.07	167.22	29.01	167.32	29.82	167.37
42.22	164.98	42.23	164.98	44.83	164.94	45.14	164.94
46.77	164.94	51.65	165.06	51.74	165.04	51.79	165.03
58.74	165.06	.59	165.06	61.42	165.06	88.56	164.93
89.84	164.89	90.47	164.95	91.34	164.92	92.97	164.94
98.16	164.95	99.84	164.9	100.82	164.9	101.28	164.9
103.16	164.66	103.4	164.65	105.83	164.48	105.98	164.47
107.53	164.36	110.79	163.01	111.71	162.66	112.14	162.47
113.79	161.74	116.38	159.41	116.59	159.2	116.72	159.05
119.55	155.48	121.26	153.26	122	152.92	123.62	152.03

131.81	150.29	135.35	150.29	137.72	150.29	138.18	150.65	138.43	150.72
140.41	151.75	142.51	153.42	144.17	154.66	145.34	155.56	146.03	156.04
147.72	157.16	149.22	157.37	149.73	157.52	150.04	157.59	150.36	157.67
151.51	157.98	152.63	158.06	153.43	158.14	155.17	158.29	155.69	158.34
155.93	158.34	157.39	158.33	158.45	158.44	159.55	158.51	161.66	158.61
162.15	158.65	162.78	158.65	163.62	158.64	164.25	158.65	165.72	158.73
167.45	158.75	167.94	158.74	168.67	158.76	169.4	158.79	169.88	158.81
171.88	158.85	173.03	158.85	173.89	158.88	175.07	158.98	175.31	159.01
175.48	159.02	176.97	159.08	178.6	158.99	178.63	158.99	178.64	158.99
181.87	159.08	192.01	159.08	193.86	159.1	195.72	159.08	196.54	159.1
223.63	159.15	231.55	159.3	236.18	159.17	237.37	159.03	258.51	158.85
264.04	158.91	266.63	158.98	269.3	158.94	271.67	159.05	271.97	159.05
272.44	159.05	274.41	158.97	275.32	158.97	276.37	158.92	277.66	158.82
278.82	158.73	280.24	158.64	282.24	158.55	282.46	158.55	282.61	158.54
284.15	158.57	285.14	158.57	286.11	158.56	287.24	158.54	289.21	158.47
290.69	158.45	291.67	158.4	293.38	158.2	295.72	158.02	296.21	158.02
298.34	158.12	298.37	158.12	298.42	158.12	301	158.23	302.64	158.34
303.31	158.39	305.11	158.42	305.22	158.42	305.26	158.42	307.08	158.52
308.56	158.53	308.97	158.53	309.49	158.54	310.73	158.53	312.13	158.63
312.58	158.66	313.18	158.67	315.02	158.7	316.43	158.74	317.35	158.77
319.23	158.81	319.5	158.82	320.94	158.81	325.88	158.79	326.63	158.79
326.82	158.81	327.34	158.82	329.05	158.92	330.96	159.18	331.18	159.22
331.47	159.23	332.79	159.29	333.76	159.32	334.66	159.31	335.42	159.26
336.92	159.09	338.61	159.09	339.31	159.08	341.43	159.08	341.98	159.09
342.39	159.09	344.17	159.1	346.27	159.11	346.39	159.11	346.56	159.11
349.4	159.08	349.46	159.08	352.47	159.05	354.82	158.98	355.28	158.96
356.1	158.96	357.14	158.97	357.7	158.95	359.9	158.91	363.05	158.81
363.06	158.81	363.09	158.81	364.84	158.82	366.08	158.81	366.7	158.8
367.07	158.78	368.48	158.73	370.27	158.65	371.51	158.59	372.52	158.54
374.25	158.42	374.26	158.42	374.27	158.42	376.38	158.29	377.8	158.2
378.48	158.15	379.5	158.07	380.34	158.05	381.47	158.42	381.94	158.57
382.28	158.58	384.21	158.61	385.77	158.9	386.56	158.97	387.5	159.13
388.47	159.25	389.93	159.14	390.16	159.12	390.32	159.1	392.27	158.87
393.66	159.07	394.37	159.11	395.36	159.33	396.4	159.55	397.94	159.82
398.5	159.88	398.95	159.92	400.85	160.05	403.14	160.37	403.15	160.37
403.17	160.37	403.32	160.37	405.84	160.36	406.13	160.36	406.35	160.37
408.31	160.33	410.17	160.44	410.49	160.44	410.89	160.46	412.16	160.52
413.4	160.55	413.86	160.57	414.16	160.6	415.93	160.82	417.62	160.78
418.04	160.78	418.65	160.84	419.69	160.95	421.14	161.12	421.15	161.12
421.16	161.12	423.89	161.34	426.36	161.49	426.5	161.5	426.74	161.52
428.07	161.64	428.81	161.72	429.87	161.88	430.51	161.94	431.89	162.07
433.72	162.25	433.9	162.26	434.19	162.28	436.08	162.41	436.71	162.46
436.83	162.47	436.93	162.48	439.36	162.75	441.53	163.03	441.86	163.07
442.27	163.11	444.74	163.25	446.83	163.42	448.09	163.46	448.91	163.48
450.22	163.54	451.23	163.59	452.79	163.73	453.94	163.79	455.38	163.86
458.52	163.68	459.65	163.97						

Manning's n Values

num=	6						
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	105.83	.02	123.62	.018	126.57	.15
147.72	.016					138.43	.018

Bank Sta: Left Right

Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	118.02	147.72	126.5	134.16	135.59	.1

Blocked Obstructions

num=	2	
Sta L	Sta R	Elev
181.03	284.29	159.054
29.52	100.8167	3486

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach

RS: 3025.628

INPUT

Description:

Station	Elevation	Data	num=	361	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85		189.7	3.63	189.55	5.69	188.69		
6.22	188.45	6.86		188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35		187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21	
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84	
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56	
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15	
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87	
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55	
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36	
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48	
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61	
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66	
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61	
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41	
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12	
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7	
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43	
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14	
117.75	163.08	118.56	162.97	123.07	162.58	125.72	162.43	126.11	162.39	
126.33	162.36	128.58	162.11	128.83	162.09	128.92	162.06	130.51	161.29	
131.39	160.87	132.41	160.3	133.96	159.73	134.59	159.49	135.02	159.37	
136.33	158.96	137.6	158.55	137.84	158.48	138.16	158.22	145	148.9	
157	148.83	162.79	154.19	164.9	155.71	166.78	156.31	167.16	156.54	
169.35	157.48	170.34	158.06	171.12	158.27	173.96	159.54	175.43	160.19	
176.05	160.26	177.36	160.48	178.11	160.47	179.5	160.36	179.68	160.35	
180.43	160.42	181.58	160.52	181.87	160.52	184.26	160.47	185.09	160.48	
185.5	160.49	187.18	160.44	197.09	160.44	200.64	160.41	202.78	160.41	
204.35	160.37	206.02	160.42	207.95	160.34	210.34	160.38	213.77	160.47	
216.29	160.52	217.71	160.54	219.25	160.54	221.15	160.56	223.23	160.53	
224.59	160.54	226.36	160.51	228.65	160.48	231.6	160.52	232.74	160.51	
234.21	160.58	236.74	160.55	239.22	160.53	243.47	160.52	245.86	160.45	
258.58	160.51	259.84	160.51	260.04	160.55	260.21	160.54	261.36	160.49	
261.51	160.48	262.25	160.49	263.16	160.51	263.34	160.5	265.94	160.42	
267.06	160.4	268.02	160.39	269.26	160.41	269.69	160.4	270.42	160.37	
271.9	160.32	272.81	160.32	273.64	160.34	274.77	160.4	275.26	160.39	
276.27	160.39	277.77	160.34	278.48	160.37	279.42	160.36	280.55	160.37	
280.84	160.38	281.08	160.38	282.53	160.35	284.21	160.38	284.23	160.38	
284.25	160.38	284.42	160.38	286.34	160.44	286.75	160.44	287.5	160.5	
289.2	160.65	289.58	160.64	290.15	160.65	291.79	160.73	293.45	160.83	
294.35	160.81	296.08	160.48	296.61	160.37	297.52	160.41	298.26	160.51	
301.43	160.81	302.21	160.73	303.44	160.65	304.31	160.67	305.5	160.69	
306.51	160.7	307.38	160.71	308.36	160.66	309.33	160.64	310.38	160.66	
311.55	160.65	313.2	160.65	313.88	160.65	314.36	160.64	315.75	160.65	
316.51	160.65	317.69	160.63	318.99	160.57	319.75	160.54	320.44	160.48	
321.6	160.41	322.44	160.4	323.6	160.33	325.16	160.25	325.8	160.21	
326.28	160.19	327.61	160.18	328.24	160.02	329.83	159.75	332.18	159.93	
332.23	159.94	332.43	159.95	333.88	160.04	334.33	160.07	335.68	160.13	
336.86	160.21	337.51	160.23	338.26	160.26	339.1	160.28	340.22	160.33	
340.75	160.34	341.59	160.37	343.32	160.42	344.39	160.45	345.19	160.46	
346.39	160.51	346.74	160.52	347.37	160.52	349.35	160.54	350.43	160.57	
351.13	160.63	352.34	160.67	352.36	160.67	352.38	160.67	354.33	160.7	
356.13	160.7	356.3	160.7	356.49	160.71	357.13	160.73	358.39	160.77	
358.94	160.78	360.07	160.77	361.77	160.76	362.58	160.76	364.32	160.86	
364.47	160.87	367.23	161.04	368.63	161.18	369.65	161.22	370.61	161.05	
371.87	160.86	373.22	160.84	374.11	160.82	374.94	160.8	376.15	160.79	
376.85	160.81	378	160.83	378.89	160.81	379.86	160.79	381.15	160.78	
381.73	160.78	383.24	160.74	383.76	160.73	384.21	160.72	385.83	160.71	

387.7	160.66	387.84	160.66	389.72	160.63	389.88	160.63	390.1	160.62
392.55	160.59	394.24	160.52	394.87	160.5	396.25	160.5	396.79	160.49
397.25	160.48	398.96	160.45	399.58	160.42	406.43	160.16	406.77	160.14
407.24	160.14	407.6	160.13	408.69	160.14	409.45	160.11	410.92	160.02
413.13	159.94	413.75	159.91	414.16	159.89	415.48	159.84	416.18	159.78
417.48	159.83	418.75	159.97	419.78	160.15	420.85	160.19	421.55	160.21
422.79	160.21	422.98	160.22	423.16	160.23	425.24	160.42	427.37	160.55
427.47	160.57	429.27	161.07	429.65	161.26	429.92	161.42	431.65	162.36
433.28	163.33	433.62	163.51	434.11	163.81	435.56	164.46	436.04	164.68
436.21	164.72	436.37	164.76	438.41	165.21	440.38	165.62	440.51	165.65
440.68	165.68	442.12	165.93	442.61	166.04	444.13	166.33	445.35	166.51
446.31	166.65	447.52	166.79	448.55	166.94	449.35	167.02	451.18	167.25
453.33	167.53	453.85	167.61	454.29	167.66	456.16	167.85	456.27	167.86
457.81	168.01	458.43	168.11	461.9	168.44	462.96	168.57	463.41	168.59
464.69	168.7								

Manning's n Values num= 6

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	138.16	.02	145	.15	157	.018	164.9	.03
178.11	.016								

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

Left	Right	Left	Channel	Right	Coeff	Contr.	Expan.
138.16	171.12	111.21	109.32	112.92	.3		.5

Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	133	160	F
169	180	160.48	F
369.65	475	161.22	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
198.37	265.44	160.4352

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 3000

INPUT Description:

Distance from Upstream XS = 20
 Deck/Roadway Width = 74
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates num= 2

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
0	160			500	160				

Upstream Bridge Cross Section Data

Station	Elevation	Data	num=	361	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85		189.7	2.54	189.73	3.63	189.55	5.69	188.69
6.22	188.45	6.86		188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35		187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21	
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84	
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56	
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15	
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87	
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55	
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36	
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48	
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61	

83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	125.72	162.43	126.11	162.39
126.33	162.36	128.58	162.11	128.83	162.09	128.92	162.06	130.51	161.29
131.39	160.87	132.41	160.3	133.96	159.73	134.59	159.49	135.02	159.37
136.33	158.96	137.6	158.55	137.84	158.48	138.16	158.22	145	148.9
157	148.83	162.79	154.19	164.9	155.71	166.78	156.31	167.16	156.54
169.35	157.48	170.34	158.06	171.12	158.27	173.96	159.54	175.43	160.19
176.05	160.26	177.36	160.48	178.11	160.47	179.5	160.36	179.68	160.35
180.43	160.42	181.58	160.52	181.87	160.52	184.26	160.47	185.09	160.48
185.5	160.49	187.18	160.44	197.09	160.44	200.64	160.41	202.78	160.41
204.35	160.37	206.02	160.42	207.95	160.34	210.34	160.38	213.77	160.47
216.29	160.52	217.71	160.54	219.25	160.54	221.15	160.56	223.23	160.53
224.59	160.54	226.36	160.51	228.65	160.48	231.6	160.52	232.74	160.51
234.21	160.58	236.74	160.55	239.22	160.53	243.47	160.52	245.86	160.45
258.58	160.51	259.84	160.51	260.04	160.55	260.21	160.54	261.36	160.49
261.51	160.48	262.25	160.49	263.16	160.51	263.34	160.5	265.94	160.42
267.06	160.4	268.02	160.39	269.26	160.41	269.69	160.4	270.42	160.37
271.9	160.32	272.81	160.32	273.64	160.34	274.77	160.4	275.26	160.39
276.27	160.39	277.77	160.34	278.48	160.37	279.42	160.36	280.55	160.37
280.84	160.38	281.08	160.38	282.53	160.35	284.21	160.38	284.23	160.38
284.25	160.38	284.42	160.38	286.34	160.44	286.75	160.44	287.5	160.5
289.2	160.65	289.58	160.64	290.15	160.65	291.79	160.73	293.45	160.83
294.35	160.81	296.08	160.48	296.61	160.37	297.52	160.41	298.26	160.51
301.43	160.81	302.21	160.73	303.44	160.65	304.31	160.67	305.5	160.69
306.51	160.7	307.38	160.71	308.36	160.66	309.33	160.64	310.38	160.66
311.55	160.65	313.2	160.65	313.88	160.65	314.36	160.64	315.75	160.65
316.51	160.65	317.69	160.63	318.99	160.57	319.75	160.54	320.44	160.48
321.6	160.41	322.44	160.4	323.6	160.33	325.16	160.25	325.8	160.21
326.28	160.19	327.61	160.18	328.24	160.02	329.83	159.75	332.18	159.93
332.23	159.94	332.43	159.95	333.88	160.04	334.33	160.07	335.68	160.13
336.86	160.21	337.51	160.23	338.26	160.26	339.1	160.28	340.22	160.33
340.75	160.34	341.59	160.37	343.32	160.42	344.39	160.45	345.19	160.46
346.39	160.51	346.74	160.52	347.37	160.52	349.35	160.54	350.43	160.57
351.13	160.63	352.34	160.67	352.36	160.67	352.38	160.67	354.33	160.7
356.13	160.7	356.3	160.7	356.49	160.71	357.13	160.73	358.39	160.77
358.94	160.78	360.07	160.77	361.77	160.76	362.58	160.76	364.32	160.86
364.47	160.87	367.23	161.04	368.63	161.18	369.65	161.22	370.61	161.05
371.87	160.86	373.22	160.84	374.11	160.82	374.94	160.8	376.15	160.79
376.85	160.81	378	160.83	378.89	160.81	379.86	160.79	381.15	160.78
381.73	160.78	383.24	160.74	383.76	160.73	384.21	160.72	385.83	160.71
387.7	160.66	387.84	160.66	389.72	160.63	389.88	160.63	390.1	160.62
392.55	160.59	394.24	160.52	394.87	160.5	396.25	160.5	396.79	160.49
397.25	160.48	398.96	160.45	399.58	160.42	406.43	160.16	406.77	160.14
407.24	160.14	407.6	160.13	408.69	160.14	409.45	160.11	410.92	160.02
413.13	159.94	413.75	159.91	414.16	159.89	415.48	159.84	416.18	159.78
417.48	159.83	418.75	159.97	419.78	160.15	420.85	160.19	421.55	160.21
422.79	160.21	422.98	160.22	423.16	160.23	425.24	160.42	427.37	160.55
427.47	160.57	429.27	161.07	429.65	161.26	429.92	161.42	431.65	162.36
433.28	163.33	433.62	163.51	434.11	163.81	435.56	164.46	436.04	164.68
436.21	164.72	436.37	164.76	438.41	165.21	440.38	165.62	440.51	165.65
440.68	165.68	442.12	165.93	442.61	166.04	444.13	166.33	445.35	166.51
446.31	166.65	447.52	166.79	448.55	166.94	449.35	167.02	451.18	167.25
453.33	167.53	453.85	167.61	454.29	167.66	456.16	167.85	456.27	167.86
457.81	168.01	458.43	168.11	461.9	168.44	462.96	168.57	463.41	168.59
464.69	168.7								

Manning's n Values num= 6

Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.06	138.16	.02	145	.15	157	.018	164.9	.03								
178.11	.016																
Bank Sta:	Left	Right	Coeff	Contr.	Expan.												
	138.16	171.12		.3	.5												
Ineffective Flow	num=	3															
Sta L	Sta R	Elev	Permanent														
0	133	160	F														
169	180	160.48	F														
369.65	475	161.22	F														
Blocked Obstructions	num=	1															
Sta L	Sta R	Elev															
198.37	265.44	160.4352															
Downstream Deck/Roadway	Coordinates																
num=	2																
Sta Hi	Cord Lo	Cord	Sta Hi	Cord Lo	Cord												
0	160	500	160														
Downstream Bridge	Cross Section Data																
Station Elevation Data	num=	417															
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.86	2.23	178.14	4.81	178.28	4.89	178.3	5.02	178.29								
6.11	178.26	8.47	178.2	8.72	178.17	10.54	178.6	12.69	178.51								
15.61	177.61	18.08	176.91	18.75	176.65	20.54	176.1	23.88	175.71								
25.25	175.84	27.56	175.43	29.98	174.26	30.96	173.87	32.71	173.52								
34.37	173.22	36.46	173.02	37.29	172.94	37.54	172.83	38.18	172.65								
39.55	172.03	41.26	171.42	43.11	170.93	44.64	170.48	44.68	170.46								
47.67	169.28	48.38	169.07	49.51	168.54	50.5	168.16	52.72	167.33								
52.93	167.24	53.34	167.18	56.82	166.88	57.43	166.83	57.44	166.84								
57.47	166.83	72.21	165.27	75.9	164.5	77.04	164.24	77.33	164.25								
78.83	164.22	80.07	164.2	81.08	164.16	82.28	164.16	83.12	164.14								
84.03	164.12	84.9	164.08	85.69	164.1	87.05	164.09	88.51	164.06								
89.5	164.03	90.4	164.02	91.49	164.01	92.73	163.97	93.2	163.96								
93.6	163.94	95.69	163.89	98.35	163.89	98.41	163.89	98.46	163.89								
99.97	163.85	101.49	163.82	101.52	163.82	101.56	163.82	104.03	163.7								
106.31	163.6	106.56	163.59	107.62	163.52	109.03	163.43	109.37	163.4								
111.63	163.26	114.24	163.14	114.27	163.14	114.3	163.14	116.58	163.01								
116.86	163	117	162.92	119.73	161.32	122.01	159.69	122.45	159.38								
123.61	159.14	124.57	158.92	124.93	158.83	126.52	158.37	127.61	157.72								
128.46	157.04	129.67	155.9	130.47	155.16	132.42	154.02	132.54	153.96								
132.59	153.93	134.57	153.12	135.94	152.5	136.58	152.14	137.48	151.31								
139.15	149.32	140.1	148.94	142.59	147.08	144.37	147.09	144.6	147.11								
144.92	147.09	146.43	147.1	147.88	147.15	148.28	147.15	148.58	147.16								
150.43	147.14	152.34	147.25	152.55	147.26	152.82	147.33	154.24	147.63								
155.67	149.35	155.82	149.65	157.51	152.73	158.54	152.69	159.37	153.05								
160.89	153.82	166.11	156.69	168.22	157.21												

291.38 161.06 292.34 161.07 293.8 161.04 294.41 161.02 295.48 161.01
296.43 161.01 296.89 161.04 299.19 161.11 302.4 161.08 305.14 161.11
305.41 161.11 307.11 161.13 307.21 161.13 309.46 161.09 311.15 161.03
311.59 161.02 312.84 161.01 313.33 160.99 313.91 160.97 315.59 160.92
316.98 160.9 317.41 160.89 318.34 160.88 318.6 160.87 318.71 160.87
320.78 160.84 322.73 160.78 322.92 160.77 323.54 160.72 324.2 160.67
324.41 160.66 326.34 160.46 328.6 160.32 328.61 160.32 328.63 160.32
329.79 160.3 330.2 160.32 331.84 160.4 334.14 160.46 334.23 160.47
334.3 160.47 335.41 160.56 335.99 160.58 337.18 160.64 338.63 160.69
339.49 160.72 340.19 160.76 340.95 160.81 341.95 160.83 342.29 160.84
342.92 160.85 345.14 160.92 346.28 160.96 347.55 161.05 347.87 161.06
349.7 161.13 351.58 161.24 351.82 161.26 352.04 161.27 353.44 161.32
353.89 161.34 353.97 161.34 354.04 161.34 356.18 161.38 358.32 161.38
358.33 161.38 358.39 161.38 359.99 161.46 360.17 161.48 360.32 161.47
362.14 161.37 363.94 161.39 364.07 161.39 364.23 161.39 365.77 161.45
365.87 161.45 368.34 161.53 370.43 161.48 370.73 161.45 372.24 161.42
372.31 161.42 372.36 161.42 374.36 161.47 376.16 161.48 376.39 161.47
376.65 161.47 377.98 161.45 378.26 161.47 380 161.6 381.55 161.66
382.13 161.69 382.77 161.65 383.8 161.52 384.49 161.46 385.83 161.41
387.31 161.37 388.27 161.36 389.12 161.35 389.93 161.32 390.79 161.32
391.48 161.32 391.99 161.31 393.53 161.28 395.48 161.23 395.49 161.23
395.52 161.23 396.77 161.21 397.08 161.21 398.79 161.19 400.22 161.16
401.02 161.14 401.95 161.12 402.87 161.12 403.68 161.12 404.86 161.09
405.88 161.05 407.14 161.01 408.6 160.96 409.04 160.96 410.29 160.94
410.38 160.94 410.47 160.94 412.81 160.91 415.07 160.91 415.13 160.91
415.2 160.91 416.43 160.95 416.83 160.94 418.87 160.94 421.6 160.89
421.68 160.89 421.73 160.89 422.93 160.91 423.5 160.87 424.81 160.88
426 161.04 427.15 161.24 428.37 161.32 428.93 161.37 429.93 161.41
430.41 161.41 430.91 161.43 432.88 161.46 434.66 161.57 434.98 161.59
436.21 161.69 436.3 161.69 436.39 161.7 438.92 161.86 441.06 161.97
441.27 161.99 441.98 162.05 442.62 162.12 442.81 162.13 444.55 162.22
445.7 162.27 446.5 162.31 447.69 162.36 448.12 162.38 449.2 162.46
449.43 162.47 449.65 162.48 451.97 162.59 454.3 162.7 454.35 162.7
454.53 162.71 455.58 162.78 455.89 162.79 457.73 162.86 459.37 162.92
460.1 162.95 460.88 162.99 461.63 163.1 462.36 163.14 463.1 163.29
463.55 163.18 465.03 163.22 466.59 163.04 466.91 163.05 467.45 163.03
468.2 163.01 468.88 163.01 469.74 163 470.44 163.12 472.07 163.37
472.66 163.66 474.02 163.97 474.71 164.03 475.49 164.06 476.76 164.27
476.93 164.23 480.87 164.1 481.52 164.18 482.37 164.26 483.45 164.04
485.63 163.53 486.45 163.23 486.79 163.27 487.41 163.43 487.86 163.52
488.86 163.77 488.92 163.79 488.99 163.82 489.5 164 492.91 165.29
493.68 165.38 495.99 165.6 496.24 165.61 496.45 165.72 499.93 166.69
502.01 167.49 503.99 168.01 508.45 169.34 509.32 169.47 509.36 169.48
509.41 169.5 511.27 170.03

Manning's n Values num= 4
Sta n Val Sta n Val Sta n Val Sta n Val
0 .1 122.01 .15 152.34 .018 166.11 .03

Bank Sta: Left Right Coeff Contr. Expan.
122.01 176.06 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 133 158 F
163 511.27 158 F

Blocked Obstructions num= 1
Sta L Sta R Elev
183.06 298.09161.0759

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =

Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 6 6
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef
Exit Loss Coef
17 91 .018 .018 0 .2

1
Number of Barrels = 2
Upstream Elevation = 148.7
Centerline Stations
Sta. Sta.
146.5 155.5
Downstream Elevation = 147.2
Centerline Stations
Sta. Sta.
143.78 152.78

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2916.303

INPUT
Description:
Station Elevation Data num= 417
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 177.86 2.23 178.14 4.81 178.28 4.89 178.3 5.02 178.29
6.11 178.26 8.47 178.2 8.72 178.17 10.54 178.6 12.69 178.51
15.61 177.61 18.08 176.91 18.75 176.65 20.54 176.1 23.88 175.71
25.25 175.84 27.56 175.43 29.98 174.26 30.96 173.87 32.71 173.52
34.37 173.22 36.46 173.02 37.29 172.94 37.54 172.83 38.18 172.65
39.55 172.03 41.26 171.42 43.11 170.93 44.64 170.48 44.68 170.46
47.67 169.28 48.38 169.07 49.51 168.54 50.5 168.16 52.72 167.33
52.93 167.24 53.34 167.18 56.82 166.88 57.43 166.83 57.44 166.84
57.47 166.83 72.21 165.27 75.9 164.5 77.04 164.24 77.33 164.25
78.83 164.22 80.07 164.2 81.08 164.16 82.28 164.16 83.12 164.14
84.03 164.12 84.9 164.08 85.69 164.1 87.05 164.09 88.51 164.06
89.5 164.03 90.4 164.02 91.49 164.01 92.73 163.97 93.2 163.96
93.6 163.94 95.69 163.89 98.35 163.89 98.41 163.89 98.46 163.89
99.97 163.85 101.49 163.82 101.52 163.82 101.56 163.82 104.03 163.7
106.31 163.6 106.56 163.59 107.62 163.52 109.03 163.43 109.37 163.4
111.63 163.26 114.24 163.14 114.27 163.14 114.3 163.14 116.58 163.01
116.86 163 117 162.92 119.73 161.32 122.01 159.69 122.45 159.38
123.61 159.14 124.57 158.92 124.93 158.83 126.52 158.37 127.61 157.72
128.46 157.04 129.67 155.9 130.47 155.16 132.42 154.02 132.54 153.96
132.59 153.93 134.57 153.12 135.94 152.5 136.58 152.14 137.48 151.31
139.15 149.32 140.1 148.94 142.59 147.08 144.37 147.09 144.6 147.11
144.92 147.09 146.43 147.1 147.88 147.15 148.28 147.15 148.58 147.16
150.43 147.14 152.34 147.25 152.55 147.26 152.82 147.33 154.24 147.63
155.67 149.35 155.82 149.65 157.51 152.73 158.54 152.69 159.37 153.05
160.89 153.82 166.11 156.69 168.22 157.21 169.14 157.12 170.08 157.36
170.62 157.56 171.16 157.75 172.58 158.4 173.73 158.86 174.76 159.35
176.06 159.76 177.19 159.93 177.77 159.92 178.74 159.91 179.49 159.81
179.83 159.81 180.04 159.81 180.85 159.82 187.75 159.85 188.77 159.9

190.65	159.9	193.45	159.83	194.89	159.85	201.05	159.92	203.45	159.96
207.03	159.93	220.98	160.1	223.01	160.11	228.36	160.1	232.41	160.17
234.41	160.2	235.95	160.25	236.65	160.26	236.91	160.27	237.46	160.29
239.37	160.38	239.97	160.4	240.44	160.41	241.76	160.42	242.7	160.44
243.82	160.44	245.36	160.49	246.56	160.51	247.43	160.54	248.49	160.57
249.72	160.59	250.32	160.6	251.32	160.61	253.19	160.66	254.33	160.67
255.16	160.69	256.47	160.71	256.55	160.71	256.6	160.71	258.9	160.77
261.12	160.85	261.27	160.86	261.42	160.86	262.73	160.86	263.63	160.92
264.38	160.97	264.92	160.97	266.36	160.97	268.32	160.98	268.33	160.98
268.34	160.98	269.64	161.03	270.53	161.05	271.2	161.05	271.74	161.07
273.26	161.1	273.82	161.12	274.48	161.11	276.77	161.12	280.23	161.13
282.21	161.11	283.44	161.16	285.11	161.19	286.07	161.24	289.51	161.12
291.38	161.06	292.34	161.07	293.8	161.04	294.41	161.02	295.48	161.01
296.43	161.01	296.89	161.04	299.19	161.11	302.4	161.08	305.14	161.11
305.41	161.11	307.11	161.13	307.21	161.13	309.46	161.09	311.15	161.03
311.59	161.02	312.84	161.01	313.33	160.99	313.91	160.97	315.59	160.92
316.98	160.9	317.41	160.89	318.34	160.88	318.6	160.87	318.71	160.87
320.78	160.84	322.73	160.78	322.92	160.77	323.54	160.72	324.2	160.67
324.41	160.66	326.34	160.46	328.6	160.32	328.61	160.32	328.63	160.32
329.79	160.3	330.2	160.32	331.84	160.4	334.14	160.46	334.23	160.47
334.3	160.47	335.41	160.56	335.99	160.58	337.18	160.64	338.63	160.69
339.49	160.72	340.19	160.76	340.95	160.81	341.95	160.83	342.29	160.84
342.92	160.85	345.14	160.92	346.28	160.96	347.55	161.05	347.87	161.06
349.7	161.13	351.58	161.24	351.82	161.26	352.04	161.27	353.44	161.32
353.89	161.34	353.97	161.34	354.04	161.34	356.18	161.38	358.32	161.38
358.33	161.38	358.39	161.38	359.99	161.46	360.17	161.48	360.32	161.47
362.14	161.37	363.94	161.39	364.07	161.39	364.23	161.39	365.77	161.45
365.87	161.45	368.34	161.53	370.43	161.48	370.73	161.45	372.24	161.42
372.31	161.42	372.36	161.42	374.36	161.47	376.16	161.48	376.39	161.47
376.65	161.47	377.98	161.45	378.26	161.47	380	161.6	381.55	161.66
382.13	161.69	382.77	161.65	383.8	161.52	384.49	161.46	385.83	161.41
387.31	161.37	388.27	161.36	389.12	161.35	389.93	161.32	390.79	161.32
391.48	161.32	391.99	161.31	393.53	161.28	395.48	161.23	395.49	161.23
395.52	161.23	396.77	161.21	397.08	161.21	398.79	161.19	400.22	161.16
401.02	161.14	401.95	161.12	402.87	161.12	403.68	161.12	404.86	161.09
405.88	161.05	407.14	161.01	408.6	160.96	409.04	160.96	410.29	160.94
410.38	160.94	410.47	160.94	412.81	160.91	415.07	160.91	415.13	160.91
415.2	160.91	416.43	160.95	416.83	160.94	418.87	160.94	421.6	160.89
421.68	160.89	421.73	160.89	422.93	160.91	423.5	160.87	424.81	160.88
426	161.04	427.15	161.24	428.37	161.32	428.93	161.37	429.93	161.41
430.41	161.41	430.91	161.43	432.88	161.46	434.66	161.57	434.98	161.59
436.21	161.69	436.3	161.69	436.39	161.7	438.92	161.86	441.06	161.97
441.27	161.99	441.98	162.05	442.62	162.12	442.81	162.13	444.55	162.22
445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38	449.2	162.46
449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7	454.35	162.7
454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86	459.37	162.92
460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14	463.1	163.29
463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05	467.45	163.03
468.2	163.01	468.88	163.01	469.74	163	470.44	163.12	472.07	163.37
472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06	476.76	164.27
476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26	483.45	164.04
485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43	487.86	163.52
488.86	163.77	488.92	163.79	488.99	163.82	489.5	164	492.91	165.29
493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72	499.93	166.69
502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47	509.36	169.48
509.41	169.5	511.27	170.03						

Manning's n Values		num=	4				
Sta	n Val	Sta	n Val				
0	.1	122.01	.15				
152.34	.018	166.11	.03				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.							
122.01	176.06	14.15	15.34	16.27		.3	.5

Ineffective Flow	num=	2							
Sta L	Sta R	Elev	Permanent						
0	133	158	F						
163	511.27	158	F						
Blocked Obstructions		num=	1						
Sta L	Sta R	Elev							
183.06	298.09	161.0759							
CROSS SECTION									
RIVER: Auburn Creek									
REACH: Main Reach RS: 2900.962									
INPUT									
Description:									
Station	Elevation	Data	num=	367					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	184.89	1.12	184.57	1.86	184.44	3.12	184.07	4.78	183.62
5.78	183.24	7.12	182.56	9.05	181.86	13.86	179.91	13.9	179.88
13.96	179.84	15.77	178.44	17.18	178.15	17.62	177.98	17.91	177.86
18.92	176.86	21.94	175.11	23.99	173.77	25.11	173.08	25.14	173.06
25.16	173.06	27.11	172.48	28.5	172.14	29.1	171.98	29.95	171.71
30.88	171.46	31.73	171.21	32.47	171.07	33.27	170.87	34.31	170.81
35.04	170.75	36.4	170.71	36.96	170.64	37.25	170.56	37.44	170.55
49.9	167.66	51.78	167.4	53.36	167.08	54.71	166.85	56.43	166.79
57.56	166.48	59.5	166.05	61.77	165.74	64.53	165.29	69.81	164.2
70.54	164.2	71.63	164.22	71.74	164.22	72.9	164.18	74.98	164.12
78.23	164.04	79.82	164.1	80.12	164.1	82.65	164.04	86.29	163.99
86.78	163.95	88.39	163.88	88.41	163.88	88.43	163.88	90.12	163.89
91.56	163.86	92	163.85	92.49	163.84	94.64	163.8	96.6	163.68
98.92	163.56	99.65	163.57	100.14	163.56	100.76	163.26	101.58	163
102.94	162.59	104.06	162.4	107.58	161.9	109.81	161.12	115.54	157.44
115.65	157.38	115.69	157.34	115.79	157.2	117.73	153.39	119.27	151.29
119.73	150.65	120.39	149.35	122	147.05	123.22	146.32	124.61	145.21
126.71	144.86	127.61	144.6	128.18	144.46	129.79	143.98	132.89	143.99
134.33	143.83	136.43	144.03	137.65	144.03	138.85	144.55	139.87	145.39
141.11	146.46	142.71	147.83	144	149.17	144.94	150.04	146.33	151.06
146.7	151.34	146.94	151.47	149.76	153	150.65	153.53	152.1	154.12
153.45	154.54	154.93	155.14	160.44	158.18	162.67	159.01	163.24	159.03
164.25	159.26	164.35	159.26	165.81	159.26	166.13	159.25	166.29	159.26
166.98	159.26	174.81	159.41	176.26	159.4	216.84	159.88	219.28	159.9
221.99	159.93	222.19	159.95	222.96	159.98	223.44	159.99	223.75	160
225.28	160.01	226.78	160.04	227.09	160.05	227.58	160.05	229.03	160.05
229.84	160.06	231.3	160.08	232.82	160.12	233.7	160.15	234.52	160.16
235.76	160.2	236.73	160.24	237.88	160.27	239.05	160.3	240.23	160.33
241.35	160.36	242.25	160.37	243.58	160.44	244.15	160.46	244.84	160.49
246.89	160.51	248.6	160.53	249.02	160.54	250.05	160.48	252.37	160.43
254.28	160.59	255.54	160.73	256.88	160.69	259.65	160.58	260.28	160.58
262.75	160.62	264.69	160.62	265.54	160.68	266.61	160.71	270.03	160.68
270.46	160.7	272.89	160.9	273.14	160.87	274.94	160.94	277.59	161.03
278.24	160.97	279.57	161	282.05	160.96	283.6	160.99	285.11	161
289.34	161.04	291.37	161.1	292.22	161.09	293.3	161.06	296.18	160.79
297.04	160.78	298.85	160.94	300.03	160.9	300.77	160.88	301.61	160.84
303.03	160.78	303.36	160.76	305.26	160.7	307.1	160.62	307.37	160.62
307.63	160.6	308.66	160.56	309.43	160.53	309.64	160.53	309.85	160.52
311.76	160.44	313.53	160.35	313.85	160.31	315.16	159.96	315.9	159.86
316.5	159.88	317.82	159.98	319.44	160.02	319.65	160.03	320.89	160.09
321.13	160.1	321.18	160.1	323.1	160.18	324.78	160.25	325.05	160.26
325.36	160.28	326.69	160.36	328.99	160.38	328.62	160.46	329.96	160.54
330.6	160.57	331.37	160.59	332.23	160.62	332.92	160.66	334.05	160.71
335.08	160.74	336.11	160.76	337.2	160.79	337.85	160.82	338.84	160.84
339.48	160.85	340.02	160.85	341.52	160.87	343.22	160.89	343.4	160.9

344.07	160.91	344.77	160.91	344.95	160.92	347.07	160.92	349.42	160.95
349.43	160.95	349.44	160.95	350.53	160.98	351	160.99	352.06	161
352.85	161.03	353.91	161.05	355.29	161.03	355.56	161.03	356.08	161.01
356.73	160.99	357.07	161	358.46	161	359.4	161	360.36	161
361.74	160.9	362.49	160.92	363.01	160.98	363.3	160.98	365.29	161
367.73	161.12	367.94	161.14	369.33	161.19	370.43	161.12	371.33	161.06
372.58	160.9	374.05	160.84	374.77	160.81	375.85	160.79	377.41	160.75
379.8	160.63	380.18	160.61	380.42	160.61	380.84	160.59	382.01	160.59
382.46	160.56	382.75	160.56	384.31	160.57	385.76	160.5	386.71	160.49
388.19	160.52	388.37	160.51	390.29	160.42	391.67	160.36	392.3	160.33
393.16	160.32	394.17	160.28	394.82	160.25	396.59	160.19	398.59	160.14
399.18	160.12	399.68	160.1	400.92	160.04	401.16	160.03	401.24	160.02
401.28	160.02	403.17	159.98	404.32	159.94	405.05	159.93	406.27	159.92
407.23	159.9	407.97	159.86	410.13	159.96	412.93	160.13	412.99	160.14
413.02	160.14	413.14	160.15	414.67	160.25	415.01	160.26	415.22	160.28
416.96	160.42	418.29	160.52	418.87	160.55	419.85	160.63	420.76	160.7
421.36	160.73	422.97	160.83	424.15	160.88	425.16	160.95	426.53	161.04
427.19	161.09	428.19	161.23	429.07	161.33	429.58	161.42	430.96	161.6
432.5	161.89	432.8	161.93	433.3	162.03	434.73	162.31	434.76	162.31
436.7	162.52	437.88	162.53	438.6	162.52	439.74	163.18	440.48	163.53
441.26	163.93	442.21	164.25	443.34	164.51	444.54	164.39	446.36	164.3
446.55	164.3	448	164.36	448.99	164.37	449.41	164.4	453.72	164.34
454.5	164.37	456.36	164.33	456.89	164.35	458.14	164.35	458.9	164.38
460.01	164.41	460.94	164.46	462.38	164.46	463.37	164.46	463.98	164.43
465.85	164.44	465.98	164.43	466.5	164.34	467.87	164.23	469.08	164.03
469.74	163.85	471.55	164.91	472.09	165.02	473.88	165.88	475.63	166.45
476.68	166.61	479.25	167.69	479.45	167.71	480.65	168.19	481.4	168.51
481.69	168.61	483.17	169.26	485.3	169.96	487.6	170.59	489.02	171.14
489.93	171.4	490.91	171.69						

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .08 109.81	.15 137.65	.018 164.35

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
109.81	162.67	206.54	191.91	184.83		.1	.3

Blocked Obstructions	num=	1
Sta L	Sta R	Elev
169.09	284.62	160.9982

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2709.054

INPUT	Description:	num=	339
Station Elevation Data	Sta Elev	Sta Elev	Sta Elev
0 184.02	1.43 182.69	1.97 182.5	2.88 182.11
7.09 179	9.44 177.16	10.61 176.52	13.06 174.8
14.92 172.91	15.28 172.58	15.77 172.27	17.76 170.82
20.21 169.65	22.84 167.11	25.43 165.39	26.14 165.06
27.08 164.64	27.3 164.52	29.6 162.37	31.71 160.61
32.9 159.9	33.45 159.62	33.63 159.49	35.87 158.43
38.3 156.96	40.21 155.87	40.77 155.63	43.24 154
51.3 148.59	53.79 147.45	53.9 147.35	54.05 147.2
58.63 143.03	59.54 142.93	60.72 142.92	62.62 143.04
65.54 143.74	65.62 143.75	65.77 143.8	65.92 143.88
70.48 145.75	72.63 146.43	72.86 146.49	74.71 147.51
75.72 148.1	77.57 149.37	79.74 150.91	79.8 150.97
79.96 151.06	83.73 153.29	84.92 153.46	85.81 153.62

87.53	153.92	88.68	153.95	90.21	153.96	92.82	153.98	93.44	153.99
93.79	154	95.41	154.04	95.81	154.06	97.78	154.16	99.67	154.12
100.32	154.12	100.99	154.13	102.23	154.18	102.91	154.17	105.05	154.19
108.13	154.21	108.24	154.21	108.93	154.23	109.85	154.24	110.01	154.24
113.07	154.21	115.22	154.26	115.73	154.28	117.2	154.27	117.32	154.27
117.4	154.27	119.45	154.25	120.87	154.27	121.53	154.3	122.57	154.28
123.29	154.29	124.6	154.28	124.92	154.27	125.25	154.27	127.64	154.32
130.01	154.35	130.15	154.36	130.54	154.36	131.52	154.37	131.85	154.38
133.46	154.38	134.45	154.38	135.54	154.38	137.26	154.41	137.5	154.41
138.09	154.44	138.89	154.48	139.23	154.48	141.85	154.47	144.71	154.51
144.87	154.52	145.19	154.53	146.11	154.54	146.6	154.54	148.43	154.54
150.4	154.55	151.26	154.55	152.04	154.56	153.5	154.59	153.97	154.59
154.23	154.6	154.51	154.6	157.19	154.62	159.51	154.65	160.14	154.66
161.47	154.67	163.42	154.67	166.15	154.66	166.52	154.66	166.77	154.66
167.86	154.69	168.6	154.7	169.39	154.71	169.89	154.69	172.01	154.69
173.24	154.68	173.94	154.68	174.91	154.69	175.74	154.7	176.3	154.71
176.97	154.7	179.24	154.68	181.05	154.7	181.95	154.71	182.79	154.72
184.73	154.73	186.77	154.77	187.5	154.78	188.19	154.77	189.5	154.75
189.88	154.75	190.1	154.75	190.41	154.74	193.23	154.73	195.2	154.72
195.96	154.72	196.86	154.73	198.73	154.73	201.14	154.71	201.73	154.7
202.17	154.69	203.13	154.67	203.84	154.65	204.2	154.64	204.69	154.64
207.39	154.62	209.22	154.57	210.05	154.54	210.74	154.54	212.88	154.51
215.61	154.61	215.84	154.61	216.02	154.61	216.34	154.59	217.63	154.49
218.39	154.39	219.53	154.25	221.67	153.96	223.08	153.81	224.23	153.74
224.68	153.71	227.22	153.62	229.84	153.54	230.14	153.54	231.4	153.46
232.68	153.4	234.46	153.09	235.82	152.93	236.78	152.86	238.23	152.93
238.42	152.94	241.09	153.15	243.77	153.21	243.89	153.21	243.95	153.22
245.18	153.32	246.28	153.34	247.01	153.35	248.18	153.37	248.7	153.38
250.23	153.42	251.72	153.44	252.35	153.46	253.78	153.51	254.2	153.54
254.93	153.58	255.43	153.6	255.7	153.6	257.2	153.59	257.85	153.61
259.22	153.65	260.77	153.69	261.31	153.7	262.58	153.72	263.32	153.75
264.41	153.79	265.17	153.79	265.51	153.8	267.15	153.84	268.4	153.86
269.21	153.87	271.07	153.91	271.25	153.92	272.8	153.94	272.93	153.94
272.98	153.94	274.93	153.93	275.91	153.93	276.98	153.93	278.92	153.97
279.09	153.97	279.49	153.96	280.84	153.92	281.45	153.9	282.66	153.88
283.22	153.89	284.65	153.88	286.15	153.96	286.68	153.97	287.85	154.04
288.56	154.08	289.78	154.01	290.2	153.98	290.41	153.97	292.23	153.76
293.47	153.72	294.32	153.71	296.1	153.63	296.38	153.63	297.67	153.65
297.92	153.66	297.98	153.65	299.9	153.53	300.88	153.54	301.94	153.52
303.96	153.45	304.01	153.45	304.12	153.44	305.54	153.37	306.04	153.36
307.34	153.32	308	153.32	309.35	153.29	311.08	153.25	311.45	153.24
312.19	153.21	313.16	153.17	314.08	153.11	314.94	153.07	315.49	153.06
317.37	153.03	319.61	152.94	319.89	152.93	320.31	152.9	321.62	152.77
322.18	152.74	323.44	152.67	324.1	152.6	325.5	152.49	327.42	152.87
327.7	152.89	328.23	152.91	328.95	152.84	330.22	152.89	331.4	152.98
334.04	153.07	335.32	153.07	335.94	153.13	337.46	153.23	339.32	153.37
339.99	153.44	341.08	153.6	342.91	153.84	343.48	153.91	343.76	153.93
345.22	154.21	348.49	154.77	349.15	154.9	350.61	155.7	351.38	155.98
352.78	156.68	353.46	156.97	353.81	157.16	354.03	157.27	354.64	157.64
358.66	160.06	359.28	160.45	360.7	160.51	361.19	160.55	362.71	161.47
364.74	162.71	365.54	163.02	367.36	163.82	367.85	163.95	368.66	164.34
369.85	164.9	370.83	165.38	371.8	165.89	372.09	166.02	373.81	166.81
376.94	168.49	377.58	168.87	377.88	169.02	378.77	169.57	380.8	170.59
382.23	171.16	384.33	172.21	384.49	172.28	384.75	172.41	386.3	173.16
386.87	173.45	388.48	174.26	389.67	174.92	390.51	175.36		

Manning's n Values	num=	3					
Sta n Val	Sta n Val	Sta n Val					
0 .1 43.24	.15 85.81	.03					
Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
43.24	85.81	209.38	207.57	205.83		.1	.3
Ineffective Flow	num=	1					

Sta L Sta R Elev Permanent
187 390.51 154.78 T

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2501.489

INPUT

Description:

Station Elevation Data		num= 305	
Sta	Elev	Sta	Elev
0	175.91	3.29	173.99
11.22	169.54	12.68	168.9
20.24	163.89	20.82	163.26
26.31	159.88	27	159.73
31.88	157.64	32.2	157.53
37.49	156.02	37.68	155.86
43.05	152.66	45.54	152.45
48.68	152.19	50.21	151.98
54.24	152.1	54.46	152.1
59.43	151.58	59.93	151.51
63.76	151.24	64.45	151.22
72.33	150.64	73.7	150.58
78.76	148.51	81.44	146.05
84.28	142.82	85.66	141.73
88.51	141.04	90.28	141.04
93.46	141.17	94.48	141.25
101.57	145.31	102.44	145.76
105.67	147.2	107.3	149.92
112	151.96	112.03	151.96
114.8	151.84	116	151.92
120.23	151.31	120.7	151.28
125.28	151.32	126.92	151.3
135.76	151.33	141.34	151.29
159.04	151.18	189.99	151.33
201.89	151.47	204.91	151.62
215.53	151.55	216.37	151.56
221.4	151.84	222.75	151.51
225.79	151.25	227.22	151.08
231.03	150.89	232.17	150.88
237.11	150.69	238.21	150.61
241.3	150.39	242.87	150.4
245.29	150.19	245.62	150.18
249.35	150.44	250.17	150.26
252.05	149.68	253.64	148.45
257.12	147.43	257.41	147.41
264.54	146.92	265.76	147
270.51	146.65	270.67	146.63
274.49	146.9	275.56	146.98
279.79	147.1	279.88	147.1
283.72	147.3	285.03	147.31
287.32	147.37	289.09	147.46
292.78	147.53	294.22	147.58
297.81	147.63	298.41	147.64
302.18	147.66	302.56	147.67
306.54	147.67	307.69	147.67
311.25	147.73	312.81	147.72
316.05	147.74	317.37	147.79
321.09	148.27	323.17	148
326.61	147.73	327.23	147.73
330.12	147.62	330.62	147.6

335.61	147.55	336.12	147.51	336.88	147.5	337.42	147.48	337.78	147.48
339.07	147.46	339.76	147.46	340.85	147.45	342.51	147.41	342.65	147.41
342.91	147.41	344.09	147.4	345.12	147.36	345.69	147.35	346.26	147.33
348.3	147.26	350.35	147.18	350.84	147.15	352.51	147.05	353.08	147.02
353.67	146.97	355.66	146.8	357.64	147.11	358.06	147.22	358.94	147.25
359.63	147.26	361.24	147.32	362.33	147.34	364.08	147.26	364.37	147.28
365.75	147.44	369.65	148	374.2	148.47	374.68	148.51	374.99	148.57
375.3	148.59	377.1	148.76	377.59	148.96	381.06	149.81	381.38	149.93
383.04	150.47	383.16	150.51	383.24	150.53	385.17	151.1	386.58	151.68
387.23	151.92	388.23	152.32	389.25	152.71	390.9	153.44	391.26	153.61
391.47	153.7	393.26	154.49	394.67	155.11	395.26	155.36	396.01	155.7

Manning's n Values		num= 4	
Sta	n Val	Sta	n Val
0	.1	73.7	.15
		107.83	.1
		110.05	.03

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	73.7	107.83	198.58	191.49	185.3	.1	.3	

Ineffective Flow		num= 1	
Sta L	Sta R	Elev	Permanent
110.5	396.01	152.02	T

Blocked Obstructions		num= 1	
Sta L	Sta R	Elev	
130.29	213.92	151.6969	

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2309.998

INPUT

Description:

Station Elevation Data		num= 329	
Sta	Elev	Sta	Elev
0	176.32	.76	175.78
4.52	174.83	6.12	174.17
9.13	172.38	10.01	172.11
15.08	170.25	15.82	170.01
20.24	167.93	24.17	166.73
30.6	164.61	30.64	164.59
34.87	162.66	36.26	162.21
40.59	161.26	41.31	161.23
46.16	159.72	46.6	159.44
54.06	153.38	55.84	152.89
61.75	151.66	62.57	151.33
68.19	150.54	68.8	150.39
73.47	146.73	75.14	145.35
84.6	140.24	87.23	139.72
92.61	139.08	93.58	139.05
109	146.03	114.68	148.34
118.01	148.33	118.09	148.32
122.84	148.18	123.47	148.19
127.03	148.02	128.7	148.11
132.61	147.95	133.06	147.95
138.33	147.9	139.06	147.92
143.76	147.88	145.53	147.83
148.3	147.76	150.27	147.7
154.5	147.57	155.21	147.54
160.13	147.45	160.34	147.44
164.23	147.41	165.53	147.49
168.5	147.41	168.65	147.4
200.63	147.49	201.56	147.49

204.57	147.38	204.66	147.38	207.25	147.42	209.28	147.33	209.68	147.32
210.32	147.31	211.17	147.29	211.69	147.29	213.02	147.24	214.09	147.19
215.09	147.14	216.38	147.12	216.96	147.11	217.91	147.09	218.39	147.07
218.69	147.06	220.11	147.02	221.07	147	221.91	146.98	223.22	146.94
223.61	146.92	224.22	146.88	225.02	146.83	225.54	146.83	227.33	146.85
230.06	146.74	230.15	146.74	230.21	146.74	231.71	146.73	232.6	146.74
233.69	146.75	235.17	146.72	236.35	146.69	237.21	146.66	238.2	146.6
239.45	146.51	239.86	146.5	240.35	146.52	242.5	146.53	244.28	146.6
244.87	146.61	246.3	146.52	246.57	146.5	246.69	146.5	248.96	146.51
251.43	146.74	251.44	146.74	253.81	146.4	255.23	146.19	256.33	145.79
257.39	145.48	258.73	145.11	259.45	144.94	261.09	144.86	261.3	144.85
261.48	144.93	263.44	145.4	265.33	145.7	265.86	145.74	267.09	145.61
268.38	145.42	268.54	145.4	268.65	145.39	270.55	145.27	271.94	144.51
272.47	144.29	273.25	144.16	274.7	144	275.86	144.04	276.84	144.11
277.53	144.16	278.84	144.27	280.75	144.34	280.88	144.34	283.24	144.43
283.28	144.43	283.31	144.43	285.09	144.51	286.27	144.55	286.89	144.57
287.87	144.59	289.16	144.65	290.54	144.72	291.9	144.78	293.65	144.85
294.61	144.91	295.36	144.94	297.4	144.99	297.94	145	299.91	145.08
302.11	145.09	302.38	145.1	302.61	145.1	303.93	145.15	305.28	145.13
305.42	145.13	305.55	145.14	307.8	145.32	310.16	145.78	310.21	145.79
310.27	145.79	311.72	145.87	312.94	145.88	313.36	145.9	313.71	145.9
315.54	145.95	317.72	146	317.74	146	317.79	146	319.59	146.02
320.44	146	321.76	145.98	323.08	145.96	324.24	145.96	325.43	145.96
326.3	145.95	327.58	145.63	327.96	145.52	328.23	145.5	329.93	145.38
331.13	145.35	331.95	145.33	333.1	145.32	333.86	145.31	335.22	145.27
335.56	145.26	335.76	145.25	337.57	145.17	338.81	145.16	339.56	145.16
340.64	145.14	341.54	145.11	343.42	145.1	343.48	145.1	343.52	145.1
345.39	145.07	346.67	145.03	347.31	145.02	348.28	144.98	349.3	144.95
351.07	144.87	351.37	144.86	351.54	144.86	353.19	144.78	354.49	144.68
355	144.65	355.84	144.62	356.71	144.58	357.9	144.43	358.26	144.39
358.52	144.4	360.07	144.56	361.06	144.7	361.96	144.85	363.32	144.96
364.07	144.98	366.01	145.07	366.77	145.11	368.04	145.26	369.51	145.39
370.39	145.48	371.41	145.63	372.48	145.81	372.88	145.89	373.24	145.94
375.24	146.14	377.77	146.24	377.9	146.24	379.3	146.4	380.41	146.56
381.03	146.64	381.86	146.71	383.33	146.78	383.89	146.81	384.63	146.84
387.15	147.17	387.42	147.18	389.85	147.34	391.99	147.48	392.37	147.5
393.71	147.59	394.27	147.61	395.79	147.67	397.76	147.65	398.02	147.66
398.23	147.69	400.08	148.03	400.91	147.98	401.85	148.06		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .1 71.21 .15 114.68 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 71.21 114.68 146.44 148.22 149.95 .1 .3

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 116.61 401.85 148.53 T

Blocked Obstructions num= 1
 Sta L Sta R Elev
 159.97 209.18147.4514

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2161.775

INPUT

Description:
 Station Elevation Data num= 375
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 172.59 .32 172.58 2.53 171.85 4.36 170.81 5.47 170.47
 342.36 143.07 343.39 143.08 345.57 143.05 348.06 143.04 350.41 142.99 353.27 142.86

7.6	169.5	9.16	169.2	9.41	169.16	11.7	168.87	12.6	168.67
14.16	168.58	15.29	168.54	16.65	168.61	18.54	167.94	19.03	167.67
21.12	166.52	21.4	166.44	23.01	166.5	25.73	166.57	26.27	166.64
27.01	166.35	28.88	165.77	29.58	165.67	31.21	165.26	32.18	165.12
33.47	165.08	35.61	164.73	35.7	164.72	35.81	164.72	37.12	164.67
38.33	164.32	39.65	163.93	42.8	163.27	45.12	162.65	46.86	162.43
46.96	162.41	47.06	162.35	47.26	162.22	50.22	159.99	50.88	159.67
51.45	159.22	52.85	159.09	53.03	159.04	53.25	158.94	54.43	158.18
55.48	157.72	57.92	156.47	59.17	155.84	59.88	155.48	61.22	154.33
62.17	153.61	63.22	153.14	64.13	152.8	66.95	152.15	68.33	151.31
68.87	150.92	70	149.9	70.61	149.4	71.41	148.93	72.17	148.55
72.73	148.2	74.42	147.13	75.71	146.45	77.17	145.9	78.44	145.55
79.36	145.19	80.66	144.43	81	144.2	81.24	144.06	83.5	142.69
85.42	141.56	86.14	141.09	86.99	140.66	88.19	140.11	88.83	139.75
91.97	139.24	92.91	139.06	94.95	138.19	95.2	138.17	95.56	138.12
96.98	137.65	98.27	137.65	99.1	137.72	99.86	137.77	101.8	137.97
103.92	137.9	104.36	137.97	105.43	138.71	106.82	139.53	108.53	140.57
109.41	141.17	112.2	143.33	112.32	143.41	112.43	143.48	114.68	144.63
115.35	144.89	116.7	145.34	117.24	145.51	118.93	145.55	119.88	145.67
120.93	145.69	122.42	145.79	123.79	145.74	124.87	145.74	125.72	145.75
127.35	145.8	129.4	145.83	129.88	145.83	132.38	145.92	132.53	145.93
132.64	145.93	134.89	145.97	136.8	145.98	137.29	145.97	137.94	146
139.04	146.04	140.22	145.99	140.57	146	140.9	145.99	142.05	146.02
146.27	146.38	146.41	146.39	146.45	146.4	146.52	146.39	147.97	146.4
149.4	146.31	149.5	146.3	149.56	146.29	151.69	145.99	153.29	146.03
153.91	146	154.81	145.91	155.87	145.7	157.28	145.63	157.67	145.61
157.95	145.61	159.81	145.61	161.14	145.6	162.06	145.57	163.37	145.53
164.14	145.49	165.43	145.5	166.02	145.5	166.38	145.49	168.01	145.44
169.02	145.43	170.04	145.43	171.68	145.41	172.06	145.4	172.74	145.39
174.01	145.37	174.71	145.35	175.98	145.3	176.76	145.3	178.02	145.22
179.96	145.26	180.01	145.26	180.08	145.26	182.14	145.22	183.17	145.14
184.54	145.1	185.78	145.1	190.19	145.16	191.23	145.15	193.81	145.14
196.67	145.12	197.02	145.12	197.97	145.1	199.53	145.09	199.81	145.07
201.92	145.05	204.2	145.08	204.57	145.09	204.92	145.08	207.06	145.09
207.95	145.11	209.62	145.2	211.35	145.34	212.26	145.39	213.15	145.32
214.11	145.17	215.01	145.3	216.16	145.29	217.54	145.04	218.76	145.02
219.95	144.99	221.3	144.96	221.99	144.92	222.65	144.91	223.51	144.9
224.44	144.88	225.34	144.88	226.07	144.86	227.58	144.83	229.4	144.79
229.73	144.79	230.11	144.76	231.38	144.7	232.48	144.7	233.11	144.7
233.46	144.69	235	144.63	236.39	144.63	236.87	144.69	237.68	144.62
238.65	144.6	239.91	144.58	240.38	144.57	240.75	144.56	242.31	144.54
243.33	144.51	244.24	144.52	245.64	144.44	246.17	144.43	246.91	144.41
248.03	144.38	248.85	144.39	249.98	144.39	250.72	144.39	251.97	144.35
253.87	144.33	253.97	144.33	254.12	144.32	255.92	144.23	256.96	144.21
257.85	144.2	258.41	144.2	259.76	144.19	261.51	144.16	261.66	144.16
261.9	144.15	263.72	144.1	265.08	144.18	265.74	144.24	267.97	144.53
269.21	144.65	269.5	144.67	271.33	144.2	271.78	144.17	272.55	144.13
273.23	144.07	275.46	143.86	276.7	143.65	278.08	143.5	278.97	143.4
280.11	143.31	280.75	143.27	281.25	143.33	283.24	143.45	285.66	143.38
286	143.36	286.28	143.3	288.63	142.63	289.63	142.55	291.17	142.49
292.81	142.18	293.66	142.05	294.45	142.06	295.54	142.17	296.57	142.21
297.1	142.22	297.67	142.26	299.21	142.36	300.69	142.41	301.59	142.44
302.52	142.47	303.57	142.5	304.81	142.54	305.32	142.56	305.77	142.58
307.48	142.66	309.03	142.72	309.8	142.74	310.64	142.78	311.79	142.8
313.24	142.78	313.64	142.76	313.96	142.77	315.43	142.79	316.32	142.8
317.22	142.82	318.66	142.89	319.04	142.9	319.56	142.91	320.95	142.91
321.96	142.94	322.93	142.94	323.69	143.02	325.03	143.09	326.71	143.19
327.09	143.21	327.78	143.23	329.18	143.27	329.96	143.3	331.18	143.36
332.13	143.34	333.11	143.32	334.42	143.25	335.15	143.22	336.62	143.09
337.41	143.03	337.81	143.02	339.36	143.03	340.49	143.05	341.27	143.06
342.36	143.07	343.39	143.08	345.57	143.05	345.82	143.04	346.08	143.04
348.06	143.04	350	143.01	350.41	142.99	352.23	142.91	353.08	142.87
353.27	142.86	354.91	142.79	355.97	142.82	356.68	142.82	357.73	142.78

358.33	142.75	358.85	142.74	359.88	142.7	361.07	142.71	361.61	142.7
362.31	142.68	364.04	142.62	365.38	142.6	366.08	142.59	366.73	142.56
367.59	142.51	368.53	142.48	369.46	142.45	370.61	142.41	371.88	142.35
372.89	142.27	373.92	142.17	375.08	142.39	375.87	142.52	377.62	142.53
378.94	142.47	386.25	141.76	387.34	141.63	388.01	141.69	388.99	141.7
390.51	142.48	390.92	142.67	391.18	142.78	392.87	143.55	394.39	144.18
394.87	144.41	395.4	144.69	396.8	145.48	397.45	145.8	398.57	146.2
400.61	147.55	403.6	149.78	405.68	150.65	406.18	151.01	406.53	151.23
408.71	152.79	409.45	153.34	409.66	153.5	409.86	153.55	411.74	153.98
413.03	153.78	413.8	153.69	414.53	153.67	415.73	153.66	416.98	153.75
417.87	153.8	418.94	153.89	419.46	153.93	425.09	154.49	426.1	154.61

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .1	78.44 .15	104.36 .018
		116.7 .03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
78.44	116.7	328.02	326.68	328.75		.1	.3

Ineffective Flow	num=	1
Sta L	Sta R	Elev
147.97	426.1	146.4
		T

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 1835.094

INPUT

Description:	Station	Elevation	Data	num=	382			
	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
	0	160.39	.81	160.34	1.36	160.28	3.18	160.18
	4.65	159.86	7.18	158.37	7.61	158.13	8.03	158.18
	11.91	157.39	12.41	157.2	12.89	157.04	14.99	156.77
	17.55	156.37	19.08	156.13	20.03	155.97	20.94	155.77
	23.36	155.2	24.1	155.14	25.28	154.98	26.52	154.79
	29.96	153.44	31.94	153.02	32.76	152.96	33.15	152.89
	35.29	152.19	36.34	151.88	37.24	151.66	38.38	151.5
	39.43	151.31	40.96	150.91	42.36	150.58	43.04	150.44
	43.79	150.43	46.9	150.08	47.02	150.04	48.95	149.47
	51	149.14	51.24	149.11	53.04	148.79	54.54	148.29
	55.55	148.05	57.04	147.73	58.74	147.65	59.07	147.61
	61.28	147.74	61.8	147.67	63.27	147.52	64.44	147.21
	66.11	146.75	67.25	146.57	69.54	146.43	69.64	146.38
	72.34	145.09	73.44	144.39	73.93	144.17	75.93	143.99
	76.55	143.95	78.13	144.16	79.16	143.8	80.62	143.53
	81.96	143.32	82.79	143.19	83.75	143.02	84.71	142.99
	87.37	142.96	87.78	142.94	89.1	143.01	90.43	143.05
	90.89	142.98	92.93	142.65	94.75	142.32	95.19	142.13
	95.7	142.15	97.91	141.51	98.86	141.16	100.01	141.34
	103.18	140.54	112.75	133.65	124.5	133.65	132.96	140.86
	133.63	141.49	133.92	141.66	135.7	142.66	136.91	143.12
	143.16	142.79	143.39	142.81	144.13	142.83	144.38	142.84
	148.98	143.22	149.73	143.25	150.71	143.18	151.99	143.29
	154.81	143.7	156.19	143.68	157.71	143.56	157.86	143.56
	161.18	143.6	161.35	143.59	161.7	143.6	163.91	143.68
	166.09	143.78	167.43	143.66	167.96	143.67	168.36	143.66
	171.95	143.57	172.48	143.58	173.4	143.48	174.61	143.4
	175.32	143.32	177.71	143.27	179.14	143.16	181.48	143.01
	182.43	142.95	183.68	142.88	185.51	142.59	185.8	142.54
	188.35	142.38	189.48	142.28	190.68	142.26	192.32	142.08
	193.1	141.99	194.39	141.73	196.48	141.44	197.3	141.36

199.68	140.94	202.35	140.69	202.98	140.62	203.48	140.54	204.84	140.41
206.47	140.27	206.81	140.25	207.1	140.22	208.61	140.09	210.2	139.91
210.36	139.89	210.52	139.88	212.18	139.77	213.99	139.62	214.07	139.62
214.14	139.61	215.81	139.43	217.37	139.37	217.57	139.37	217.77	139.34
219.42	139.13	221.05	139.01	221.25	138.99	221.41	138.98	222.84	138.8
224.29	138.79	224.42	138.78	224.58	138.76	224.73	138.54	226.09	138.38
229.09	138.39	229.68	138.39	231.42	137.94	231.59	137.85	231.73	137.86
233.22	137.69	234.21	137.31	236.22	136.78	236.96	136.52	237.59	136.45
240.81	136.3	243.21	136.29	244.33	136.34	244.64	136.33	244.88	136.31
245.68	136.36	246.74	136.45	249.14	136.66	249.22	136.66	249.49	136.67
251.98	136.75	252.31	136.79	252.75	136.85	254.5	137.05	256.38	137.16
256.74	137.19	257.06	137.22	258.4	137.38	259.85	137.48	260.07	137.5
260.26	137.52	261.7	137.63	263.29	137.73	263.35	137.74	263.42	137.74
265.14	137.91	266.83	138.04	266.88	138.04	266.94	138.05	268.82	138.2
270.39	138.3	270.75	138.31	271.12	138.34	272.54	138.42	273.92	138.41
274.33	138.41	274.84	138.43	276.18	138.45	277.29	138.47	278.05	138.46
278.91	138.47	279.97	138.43	280.88	138.41	281.81	138.38	282.86	138.38
283.6	138.38	284.25	138.36	285.58	138.35	287.3	138.37	287.65	138.4
287.93	138.38	289.39	138.33	290.97	138.29	291.07	138.28	291.16	138.27
292.82	138.17	294.58	138.05	296.19	138.08	297.6	138.02	297.79	138.02
298.02	138	300.04	137.96	301.68	137.93	302.15	137.9	302.56	137.86
303.68	137.65	304.98	137.47	305.36	137.42	306.32	137.39	307.87	137.36
308.48	137.35	310.48	137.34	311.89	137.32	312.61	137.31	313.18	137.29
314.18	137.28	315.45	137.22	315.87	137.21	316.99	137.22	318.21	137.25
318.7	137.25	319.96	137.29	321.01	137.27	321.56	137.28	322.24	137.3
323.19	137.32	324.22	137.34	324.83	137.34	325.38	137.37	326.59	137.45
327.79	137.52	328.43	137.56	329.07	137.59	330.43	137.65	332.36	137.78
332.49	137.79	332.63	137.79	334.34	137.84	335.91	137.88	336.2	137.89
336.66	137.9	338.11	137.93	339.03	137.98	340.08	138.02	341.33	138.08
342.13	138.11	342.8	138.14	344	138.21	345.54	138.26	345.81	138.27
346.02	138.27	347.97	138.31	349.78	138.37	350.17	138.37	351.16	138.37
352.5	138.38	353.03	138.4	354.9	138.46	356.91	138.69	357.15	138.72
357.39	138.75	358.79	138.89	360.19	138.98	360.57	138.99	361.2	138.94
363.05	138.82	364.16	138.82	365.04	138.88	365.78	138.89	366.59	138.94
367.55	139.03	368.58	139.1	370.77	139.25	371.25	139.28	371.47	139.29
372.9	139.33	374.07	139.39	374.49	139.42	375	139.45	376.14	139.52
376.91	139.53	377.86	139.55	379.26	139.57	379.69	139.59	380.78	139.65
382.13	139.74	382.67	139.75	384.02	139.78	385.02	139.84	385.77	139.86
386.77	139.9	387.72	139.93	389.32	139.98	390	140.01	390.4	140
391.95	140.03	393.16	140.12	393.79	140.19	394.61	140.24	395.79	140.33
397.41	140.46	397.88	140.5	398.23	140.52	399.84	140.54	401.17	140.56
401.78	140.57	402.54	140.58	403.68	140.62	404.99	140.59	405.54	140.58
406.01	140.69	407.4	141	408.39	141	409.28	141.01	410.51	141.07
411.1	141.1	413.13	141.4	414.94	141.66	421.98	144.16	425.53	145.39
426.55	145.71	428.31	146.55	429.13	146.74	430.68	147.09	433.61	147.46
434.95	147.94	435.44	148.09						

Manning's n Values	num=	5
Sta n Val	Sta n Val	Sta n Val
0 .04	103.18 .018	112.75 .018
		124.5 .018
		132.96 .04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
103.18	132.96	35.26	34.39	34.8		.3	.5

Ineffective Flow	num=	1
Sta L	Sta R	Elev
138.51	435.44	143.63
		T

CROSS SECTION
RIVER: Auburn Creek
REACH: Main Reach RS: 1800.703

INPUT													
Description:													
Station Elevation Data num= 380													
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4				
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84				
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87				
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94				
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38				
34.11	152.52	34.29	152.5	37.46	152.43	38.03	152.35	38.37	152.24				
39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78				
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14				
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78				
59.93	148.14	60.45	148.01	62.47	147.69	62.56	147.67	62.63	147.66				
64.7	147.08	66.43	146.53	66.81	146.44	67.26	146.39	69.29	146.08				
70.77	145.89	71.8	145.79	72.96	145.69	74.69	145.5	75.45	145.41				
76.26	145.28	76.92	145.23	77.8	145.12	78.87	145.01	79.58	144.92				
80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44				
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95				
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74				
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37				
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7				
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31				
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65				
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64				
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27				
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68				
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21				
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87				
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21				
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46				
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25				
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93				
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7				
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47				
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32				
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02				
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57				
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28				
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91				
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6				
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24				
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89				
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67				
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37				
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08				
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94				
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73				
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49				
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24				
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99				
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91				
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63				
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4				
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24				
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12				
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12				
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11				
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12				
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21				
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42				
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53				
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72				
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88				
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04				
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17				
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47				
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58				
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79				
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96				
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25				
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46				
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63				
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98				
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11				
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42				
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67				
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13				
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62				
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11				
Manning's n Values num= 5													
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.04	115.75	.018	121.57	.15	133.34	.018	141.69	.04				
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.													
	115.75	141.69	879.95	875.26	876.36	.3	.5						
Ineffective Flow num= 1													
Sta L	Sta R	Elev	Permanent										
159.7	435.17	143.7	F										
CULVERT													
RIVER: Auburn Creek													
REACH: Main Reach RS: 1350													
INPUT													
Description:													
Distance from Upstream XS = 13													
Deck/Roadway Width = 831													
Weir Coefficient = 2.6													
Upstream Deck/Roadway Coordinates													
num= 2													
Sta Hi	Cord	Lo	Cord	Sta Hi	Cord	Lo	Cord						
0	142.5			500	142.5								
Upstream Bridge Cross Section Data													
Station Elevation Data num= 380													
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4				
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84				
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87				
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94				
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38				
34.11	152.52	34.29	152.5	37.46	152.43	38.03	152.35	38.37	152.24				
39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78				
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14				
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78				
59.93	148.14	60.45	148.01	62.47	147.69	62.56	147.67	62.63	147.66				
64.7	147.08	66.43	146.53	66.81	146.44	67.26	146.39	69.29	146.08				
70.77	145.89	71.8	145.79	72.96	145.								

95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values num= 5
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val

0 .04 115.75 .018 121.57 .15 133.34 .018 141.69 .04

Bank Sta: Left Right Coeff Contr. Expan.
115.75 141.69 .3 .5

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
159.7 435.17 143.7 F

Downstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 134 500 134

Downstream Bridge Cross Section Data
Station Elevation Data num= 84
Sta Elev Sta Elev Sta Elev Sta Elev
0 138.61 2.44 138.15 3.86 137.88 7.02 136.98 7.38 136.91
7.61 136.86 9.26 136.5 9.87 136.5 12.08 135.7 13.13 135.36
17.35 135.02 21.27 131.63 23.99 129.82 24.87 129.68 25.48 129.42
29 127.93 31.62 127.55 31.91 127.48 33.76 127.12 44.6 124.22
55.54 118.97 56.35 118.98 58.7 118.67 60.22 118.52 60.6 118.56
61.51 118.67 63.32 118.81 65.7 119.48 66.44 120.12 70.02 122.58
71.76 123.4 73.41 124.63 74.8 125.29 75.53 125.66 76.64 126.37
77.43 126.84 78.68 127.58 79.58 127.98 81.31 128.69 81.99 129.18
83.87 130.51 84.97 131.25 85.81 131.71 86.13 131.92 86.97 132.06
88.22 132.18 90.14 132.66 92.55 132.72 93.89 132.41 94.51 132.46
95.44 132.59 96.8 132.58 98.64 132.51 99.41 132.52 101.24 132.6
101.53 132.59 103.28 132.35 104.13 132.26 104.62 132.23 106.47 132.2
109.23 132.15 110.36 131.99 111.49 131.86 112.31 131.89 113.03 131.85
121.46 132.13 121.55 132.14 121.63 132.13 121.75 132.15 125.11 132.06
127.38 132.17 135.63 132.2 136.29 132.11 144.59 131.59 147.47 131.53
147.48 131.53 147.51 131.53 147.56 131.53 149.66 131.46 151.34 131.4
151.71 131.39 152.38 131.38 153.56 131.32 154.24 131.29

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .1 29 .15 78.68 .1

Bank Sta: Left Right Coeff Contr. Expan.
29 78.68 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 33.72 132 F
80.72 154.24 132 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 6 7
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef
Exit Loss Coef

1
 7 851 .018 .018 0 .5
 Number of Barrels = 2
 Upstream Elevation = 130.4
 Centerline Stations
 Sta. Sta.
 123.46 131.46
 Downstream Elevation = 120
 Centerline Stations
 Sta. Sta.
 56.22 64.22
 CROSS SECTION
 RIVER: Auburn Creek
 REACH: Main Reach RS: 925.4423
 INPUT
 Description:
 Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

 Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	29	.15	78.68	.1

 Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 29 78.68 160.4 127.63 131.93 .3 .5
 Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	33.72	132	F
80.72	154.24	132	F

 CROSS SECTION
 RIVER: Auburn Creek
 REACH: Main Reach RS: 797.816
 INPUT
 Description:
 Station Elevation Data num= 238

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.94	.89	171.07	.94	171.07	1.07	171.08
3.12	171.13	4	171.14	4.86	171.16	5.92	171.12

7.06	171.13	8.8	171.04	10.72	170.86	10.85	170.85	10.97	170.84
11.16	170.83	12.1	170.79	12.68	170.74	13.57	170.58	14.88	170.37
15.78	170.36	16.59	170.54	16.98	170.51	18.8	170.21	20.75	169.7
21.07	169.54	21.8	169.41	23.42	169.22	26.46	167.76	26.47	167.75
26.48	167.74	26.5	167.74	28.58	166.61	29.42	166.49	30.25	166.38
30.43	166.33	31.38	165.86	31.39	165.85	33.85	164.53	35.21	163.72
35.6	163.5	36.2	163.19	36.68	162.92	37.39	162.51	40.25	161
41.37	160.38	41.38	160.38	43.3	159.21	45.17	158.23	45.29	158.17
45.42	158.09	45.67	157.98	46.57	157.5	47.08	157.35	47.63	156.99
49.19	156.19	50.69	154.86	51.25	154.4	51.81	154.03	53.27	153.14
55.23	151.85	55.67	151.59	56.02	151.37	57.09	150.75	57.18	150.69
59.35	149.87	61.29	149.4	61.52	149.32	62.51	148.93	62.82	148.78
63.08	148.6	65.08	147.28	66.34	146.42	66.46	146.36	66.61	146.29
67.55	145.78	67.7	145.72	69.28	145.21	70.7	144.73	71.26	144.48
71.93	144.21	72.87	143.82	73.14	143.69	75.71	142.37	77.43	141.25
77.68	141.14	78.33	140.96	80.08	140.12	80.98	139.63	83.57	138.43
86.06	137.45	86.95	137.3	88.86	136.34	89.17	136.2	90.11	136.29
90.9	136.29	91.23	136.27	92.81	136.12	94.51	135.05	96.5	134.22
97.39	133.78	99.75	132.91	101.22	132.09	101.3	132.05	102.58	131.63
102.8	131.55	103.07	131.37	105.53	130.01	106.91	129.32	107.17	129.21
107.91	128.91	108.45	128.7	109.09	128.52	109.8	128.31	110.56	128.07
113.56	127.36	113.93	127.35	117.13	126.29	120.34	125.42	121.32	125.26
123.25	123.84	130.45	119.12	130.65	119.12	131.61	119.43	132.31	119.54
135.81	119.46	137.98	118.53	139.86	117.04	140.52	116.64	141.27	116.13
142.12	115.63	142.58	115.61	144.82	115.93	146.65	116.11	147.09	116.18
147.88	116.26	148.38	116.34	149.59	116.51	151.31	116.77	152.01	116.88
152.9	117.12	153.21	117.14	155.83	117.45	157.38	117.91	158.15	118.4
158.62	118.73	160.16	119.3	161.9	119.64	162.35	119.75	162.76	119.81
172.89	121.59	174.01	121.91	176.11	122.4	178.53	122.82	180.05	123.74
181.63	124.53	184.05	125.93	187.04	127.84	190.94	129.94	195.15	131.07
197.73	131.34	199.36	131.52	200.14	131.61	200.8	131.65	201.56	131.72
201.97	131.76	202.33	131.8	206.99	132.37	207.08	132.37	208.81	131.97
209.47	131.96	210.07	131.9	221.62	131.36	223.87	131.24	223.95	131.23
224.1	131.22	224.56	131.18	226.21	131.1	227.72	130.93	228.17	130.93
229.08	131	230.62	130.96	233.17	130.84	233.51	130.84	234.61	130.85
236.36	130.83	238.74	130.86	239.3	130.87	239.91	130.84	240.13	130.82
242.07	130.76	244.25	130.78	244.37	130.79	245.52	130.71	245.67	130.7
245.68	130.7	248.05	130.63	249.92	130.58	250.23	130.57	251.4	130.53
251.87	130.49	252.35	130.46	253.92	130.37	255.41	130.31	255.84	130.29
256.87	130.31	257.76	130.32	258.66	130.3	259.86	130.29	261.01	130.24
262.06	130.24	262.55	130.24	265.49	130.11	265.96	130.07	266.24	130.05
266.7	130.07	268.72	130.03	278.74	129.94	279.27	129.98	279.98	129.97
281.74	129.88	282.89	129.81	283.35	129.79	284.61	129.77	284.82	129.76
287.17	129.64	288.94	129.67	289.51	129.69	290.44	129.68	291.61	129.64
293.36	129.66	294.05	129.66	294.49	129.68	295.84	129.65	296.14	129.64
296.17	129.64	296.21	129.64	298.82	129.63				

 Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	105.53	.15	199.36	.1

 Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 105.53 199.36 152.73 145.59 144.95 .1 .3
 Blocked Obstructions num= 1

Sta L	Sta R	Elev
291.9	298.82	129.6411

 CROSS SECTION
 RIVER: Auburn Creek
 REACH: Main Reach RS: 652.2307

INPUT
Description:

Station	Elevation	Data	num=	322	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.72	.41	219.63	1.68	219.23	2.78	218.73	3.71	218.22			
4.76	217.8	5.75	217.5	5.91	217.44	6.2	217.36	7.69	217.04			
9.87	216.57	10.28	216.48	11.03	216.34	11.4	216.3	13.36	216.02			
15.67	215.74	15.94	215.7	16.86	215.55	17.44	215.41	18.67	215.14			
20.49	214.73	21.32	214.5	22.13	214.16	22.44	214.03	24.13	213.13			
26.05	212.3	26.37	212.15	27.1	212.01	27.83	211.92	28.24	211.8			
28.65	211.64	30.37	210.85	31.91	210.21	32.92	209.28	33.24	209.09			
34.98	207.62	37.33	206.64	37.74	206.4	38.53	206.05	40.08	205.05			
42.82	203.56	42.85	203.54	43.04	203.33	43.89	202.32	44.76	201.48			
47.85	198.49	48.03	198.29	48.17	198.2	49.12	197.79	49.35	197.69			
49.39	197.67	49.43	197.65	51.67	196.53	53.58	195.4	53.8	195.29			
54.87	194.7	55.77	194.09	56.64	193.55	57.87	192.79	59.11	192			
59.9	191.43	60.35	191.17	63.12	189.72	64.56	188.76	65.42	188.22			
65.79	187.95	66.39	187.57	69.09	186.32	69.83	185.98	69.9	185.94			
69.99	185.87	70.96	185.4	71.26	185.31	73.66	184.61	75.38	184.12			
75.93	183.97	76.68	183.54	77.83	182.79	80.48	181.85	80.77	181.73			
80.89	181.7	80.94	181.67	82.15	180.91	83.34	180.69	87.29	178.72			
88.48	178.14	88.97	177.93	90.44	176.85	91.11	176.46	91.69	176.09			
92.51	175.79	92.98	175.59	93.31	175.41	93.47	175.35	97.15	173.66			
97.3	173.63	98.41	172.61	99.47	171.56	101.99	169.99	102.35	169.73			
102.5	169.63	103.62	168.83	103.93	168.66	105.9	167.45	108.01	166.23			
108.23	166.09	109.37	165.28	109.64	165.07	113.47	161.59	113.73	161.42			
114.06	161.16	114.8	160.5	115.95	159.53	117.19	158.58	118.09	157.88			
118.91	157.68	120.19	156.96	120.33	156.86	122.39	155.49	124.25	153.43			
124.38	153.28	124.53	153.17	124.71	153.07	125.9	152.41	127.53	151.64			
128.74	151.17	131	150.94	131.39	150.86	131.53	150.82	132.63	150.07			
132.86	149.85	136.29	147.13	141.51	143.03	142.54	142.32	146.91	139.78			
147.11	139.64	147.22	139.54	147.93	138.36	151.45	136.06	154.03	134.16			
156.48	132.27	157.29	131.81	158.79	130.72	159.92	129.66	160.33	129.38			
162.66	127.39	164.74	125.86	166.57	124.96	174.12	122.14	174.62	122.05			
176.66	121.21	183.69	118.36	185.04	118.13	186.17	117.58	187.61	117.31			
190.77	115.85	193.73	114.53	194.56	114.14	194.89	114.07	195.78	114.05			
197.19	114.21	198.81	114.52	208.39	116.5	210.26	116.95	210.42	116.98			
211.87	117.15	212.15	117.17	215.07	117.58	216.33	117.86	217.37	118.08			
217.85	118.33	223.17	119.19	227.86	119.94	229.09	120.02	229.65	120.06			
233.1	120.23	233.41	120.24	233.68	120.25	234.29	120.45	235.34	120.84			
235.8	120.9	236.23	121.04	239.73	122.42	240.38	122.58	240.79	122.65			
241.43	122.95	250.53	127.76	251.77	128.43	252.71	128.82	252.78	128.85			
253.77	129.39	255.83	130.22	256.46	130.46	256.78	130.59	258.01	131.13			
258.47	131.21	259.91	131.53	261.44	131.81	261.96	131.92	262.43	131.97			
263.61	132.06	264.16	132.1	266.37	132.15	268.17	132.13	268.95	132.08			
269.82	132.03	270.79	131.92	271.81	131.83	272.76	131.68	273.66	131.7			
274.17	131.69	275.96	131.62	277.29	131.49	278.61	131.47	280.35	131.32			
280.88	131.2	281.84	131.01	283.13	130.95	283.98	130.93	284.59	130.87			
286.02	130.77	286.26	130.74	286.36	130.74	286.46	130.73	290.03	130.53			
290.17	130.52	291.45	130.42	291.77	130.4	291.8	130.4	294.76	130.26			
295.32	130.24	295.91	130.22	297.01	130.18	298.02	130.12	300.63	130.04			
300.75	130.03	301.27	129.98	302.07	129.9	302.26	129.9	305.48	129.78			
305.93	129.73	307.13	129.59	307.61	129.63	309.07	129.65	311.17	129.49			
311.24	129.49	311.84	129.46	312.7	129.43	312.8	129.41	315.36	129.18			
316.4	129.12	317.39	129.06	317.98	129.06	319.16	129.02	320.55	128.94			
321.07	128.91	321.51	128.87	323.03	128.78	323.24	128.77	325.62	128.67			
326.8	128.64	327.75	128.6	328.4	128.58	330.28	128.68	331.93	128.6			
333.17	128.54	333.69	128.53	336.06	128.44	337.26	128.42	338.18	128.38			
339.01	128.36	340.49	128.33	342.6	128.22	342.97	128.22	344.21	128.16			
344.29	128.16	344.31	128.16	344.44	128.16	347.99	128.33	348.84	128.3			
349.91	128.28	351.11	128.22	353.45	128.14	353.82	128.12	355.27	127.99			
355.81	127.95	356.7	127.89	358.1	127.79	358.93	127.72	360.47	127.63			
360.76	127.63	362.76	127.55	364.38	127.46	365.2	127.43	366.24	127.39			

367.66	127.31	369.71	127.18	369.78	127.17	369.83	127.17	371.09	127.16
371.34	127.16	374.93	127.13	375.97	127.12	380.93	127.11	413.75	127.2
413.78	127.2	413.8	127.2	413.82	127.2	413.87	127.2	415.3	127.11
415.69	127.08	417.63	126.97	419.25	126.94	419.92	126.92	421.27	126.85
421.92	126.82	423.38	126.8	424.38	126.79	424.82	126.78	426.39	126.66
426.73	126.65	428.11	126.56						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	158.79	.15	258.01	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

158.79	258.01	123.04	138.31	136.74	.1	.3
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Blocked Obstructions num= 1

Sta L	Sta R	Elev
347.73	428.11	28.3192

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 513.9224

INPUT
Description:

Station	Elevation	Data	num=	297	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.83	1.59	219.13	17.61	212.09	23.51	210.08	23.63	210.08			
24.12	209.8	25.5	209.15	27	209.05	27.69	208.99	28.29	208.92			
29.39	208.81	29.72	208.85	31.4	208.79	32.97	208.53	33.4	208.43			
33.85	208.37	35.32	208.21	35.35	208.21	35.36	208.21	35.46	208.19			
38.88	207.55	39.45	207.31	40.15	206.9	40.9	206.48	41.46	206.14			
42.9	205.11	44.34	204.06	44.9	203.75	45.76	203.25	48.13	201.52			
49.29	200.48	50.61	199.55	51.07	199.16	52.15	198.26	52.46	198.05			
52.86	197.79	54.76	196.63	56.19	195.61	56.67	195.18	57.73	194.54			
58.31	194.16	58.97	193.67	60.55	192.32	61.03	192.04	62.49	191.05			
63.63	190.32	66.65	188.52	67.6	188.06	68.78	187.36	69.2	187.15			
70.85	186.33	72.41	185.56	72.82	185.34	73.25	185.12	74.04	184.69			
74.92	184.21	75.73	183.67	79	181.47	79.01	181.46	80.14	180.86			
80.66	180.57	82.36	179.81	84.73	178.82	85.01	178.72	86.03	178.29			
86.31	178.18	86.39	178.14	88.93	176.95	90.48	176.25	91.02	175.97			
92.08	175.49	92.58	175.2	93.29	174.77	94.91	173.64	96.06	172.93			
96.91	172.39	97.76	172.12	99.02	171.49	100.65	170.55	101.36	170.05			
101.93	169.69	103.29	169.18	103.55	169.08	105.23	168.06	106.84	167.08			
107.26	166.86	110.6	164.84	111.12	164.44	113.56	162.94	119.23	159.48			
120.33	158.98	120.64	158.83	120.72	158.77	125.48	157.13	129.17	155.84			
129.42	155.71	129.81	155.55	130.05	155.36	130.45	155.05	135.67	150.81			
136.76	149.72	138.62	149.06	143.15	144.73	144.78	142.81	147.08	141.18			
147.1	141.17	149.3	140.05	149.6	139.92	151.89	138.05	153.48	136.74			
154.19	136.3	154.52	136.15	156.97	134.37	158.34	133.07	159.51	132.3			
160.17	131.77	162.12	129.81	164.41	128.52	165.82	127.68	168.37	126.49			
169.58	125.77	169.98	125.42	171.07	124.62	173.98	122.32	175.31	121.45			
176.06	120.88	179.25	120.43	180.66	120.17	181.39	119.97	182.81	119.56			
184.08	119.43	185.41	119.39	186.13	119.38	199.37	116.29	199.94	116.13			
203.18	115.55	205.3	115.34	207.61</								

260.21	128.29	260.41	128.29	262.63	128.25	264.31	128.18	264.93	128.16
266.52	128.1	266.99	128.08	267.59	128.06	269.13	128.02	270.34	127.95
271.27	127.87	272.49	127.79	273.44	127.75	274.55	127.73	275.54	127.71
276.36	127.67	277.99	127.57	278.51	127.55	280.28	127.51	282.4	127.46
282.47	127.46	284.53	127.46	285.17	127.46	285.86	127.45	287.14	127.43
288.31	127.4	288.87	127.39	289.9	127.37	290.29	127.37	290.5	127.36
293.52	127.31	294.36	127.31	295.45	127.3	296.49	127.27	297.36	127.26
300.16	127.26	300.23	127.26	300.46	127.25	302.02	127.19	302.48	127.18
304.74	127.07	306.3	127.02	307.22	127.01	308.55	126.92	309.27	126.87
310.66	126.82	311.72	126.78	312.27	126.76	313.76	126.74	314.49	126.72
315.91	126.66	317.89	126.56	318.11	126.55	318.27	126.54	320.49	126.46
320.65	126.45	322.51	126.36	324.31	126.35	324.42	126.38	326.58	126.68
327.74	126.44	331.73	126.34	337.07	126.29	344.61	126.25	346.26	126.22
357.1	126.27	360.16	126.41	360.23	126.41	360.24	126.41	360.29	126.41
361.2	126.4	363.35	126.33	367.07	126.25	367.67	126.23	367.96	126.21
370.92	126.28	371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22
376.43	126.2	382.93	126.17	383.46	126.16	385.18	126.08	387.41	126.04
387.95	126.04	388.35	126.04	389.97	126	390.56	125.99	391.9	125.99
393.55	125.97	393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97
396.2	125.97	396.39	125.97	398.42	125.96	399.37	125.98	400.87	125.93
401.59	125.91	403.69	125.85	404.82	125.85	406.48	125.82	406.99	125.85
408.45	125.92	410.14	125.81	410.22	125.81	410.28	125.81	410.48	125.82
412.39	125.95	413.26	125.98	415.57	125.98	415.63	125.98	415.74	125.98
417.87	126.03	418.93	126.03						

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .08 165.82 .15 256.03 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
165.82 256.03 90.74 99.27 101.73 .1 .3

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
260.21 418.93 128.29 F

Blocked Obstructions num= 2
Sta L Sta R Elev Sta L Sta R Elev
0 21.49219.8281 328.81 368.34126.4151

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 414.6495

INPUT

Description:
Station Elevation Data num= 331
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 217.52 1.65 217.02 8.79 215.09 11.69 214.35 17.38 212.81
18.77 212.45 23.58 211.22 25.39 210.74 25.75 210.71 27.81 210.48
29.86 210.9 30.39 211.01 31.17 211.04 31.56 211.04 33.15 211.04
35.09 211.04 35.48 211.04 35.79 211.04 36.97 211.07 37.89 211.03
39.01 211.07 43.34 209.74 43.5 209.73 43.74 209.69 44.11 209.5
45.74 208.76 47.56 208.22 47.65 208.18 47.75 208.12 49.35 207.15
49.58 207 51.4 205.99 53.14 204.83 53.43 204.65 53.72 204.49
55.27 203.6 55.78 203.29 57.81 202.29 69.37 197.12 73.14 196.23
76.27 195.13 78.99 193.99 81.64 192.89 83.11 192.48 83.69 192.34
84.78 192.08 85.69 191.92 86.49 191.69 89.77 190.24 90.08 190.13
91.74 189.69 94.76 188.93 96.22 188.33 97.52 187.7 98.71 187.05
99.43 186.63 100.61 185.85 103.46 184.34 105.48 183.26 108.42 181.71
108.91 181.4 109.1 181.21 110.71 180.16 112.53 179.42 114.16 178.69
114.94 178.3 115.87 177.69 116.97 177.07 117.97 176.46 118.8 176.04
119.65 175.68 120.65 175.3 122.64 174.83 125.29 174.1 126.32 173.47

128.88	171.96	130.83	170.63	131.1	170.51	131.82	170.12	135.95	167.91
136.43	167.67	136.86	167.46	139.23	166.47	141.81	164.9	141.94	164.88
143.67	164.53	144.32	164	149.43	160.13	150.23	159.72	151.3	159.37
152.46	159.04	153.32	158.46	154.15	157.94	155.28	156.94	155.73	156.54
156.33	155.9	157.92	154.34	160.5	152.68	161.06	152.34	162.23	151.38
164.97	149.05	165.89	148.21	167.17	147.13	168.67	145.87	169.9	144.89
170.9	144.11	171.97	143.39	172.94	142.69	174.07	141.97	175.3	141.01
176.05	140.4	176.75	139.82	178.37	138.49	178.89	138.15	180.4	137.18
181.93	136.37	182.33	136.13	182.73	135.88	183.66	135.29	184.78	134.69
186.1	133.7	188.65	131.65	189.16	131.31	190.48	130.44	192.23	128.97
193.37	128.18	195.35	126.84	196.62	126.39	197.31	125.91	197.81	125.69
199.96	124.14	202.48	122.49	207.42	118.77	208.47	118.01	210.37	117.15
212.17	116.68	212.53	116.63	213.38	116.46	214.63	116.52	216.8	116.54
219.61	116.46	223.9	117.04	224.74	117.17	226.02	117.65	227.08	118.3
228.53	119.19	229.85	119.28	230.84	119.15	232.11	119.03	233.87	118.65
235.73	117.82	236.74	117.23	238.96	115.96	239.81	115.8	241.64	115.55
242.24	115.5	243.54	115.35	243.78	115.33	243.89	115.33	246.51	115.29
247.64	115.32	248.57	115.4	249.88	115.1	250.31	114.92	251.02	114.24
253.54	112.22	254.67	111.97	255.82	111.91	256.81	111.76	258.68	111.44
259.23	111.34	259.52	111.3	261.34	111.16	262.76	111.71	264.05	112.17
264.64	112.59	265.37	113	271.11	117.76	271.5	118.03	271.73	118.14
277.03	120.84	278.32	121.16	278.84	121.22	279.62	121.44	280.44	121.74
281.3	122.17	282.33	122.81	283.27	123.18	283.97	123.58	285.09	123.97
285.4	124.11	285.58	124.19	288.65	125.14	289.19	125.23	291.31	125.5
291.55	125.52	293.48	125.59	294.26	125.62	294.67	125.65	296.4	125.68
297.61	125.74	298.07	125.71	300.08	125.53	300.85	125.45	301.19	125.44
302.7	125.32	303.51	125.27	304.81	125.26	307.13	125.22	307.15	125.22
307.38	125.21	309.35	125.15	309.54	125.14	311.5	125.04	313.13	124.93
313.67	124.89	315.55	124.81	315.99	124.8	316.61	124.78	318.19	124.71
319.26	124.65	320.6	124.54	321.7	124.48	322.83	124.43	324.07	124.39
324.79	124.35	325.44	124.3	327.15	124.17	327.81	124.15	329.22	124.08
330.6	123.94	331.07	123.89	331.56	123.87	334.06	123.74	334.15	123.74
335.94	123.84	337.64	123.89	337.78	123.9	337.93	123.9	338.48	123.89
340.44	123.87	341.3	123.91	344.07	124	344.27	124.02	345.88	124.15
346.78	124.2	348.19	124.24	350.51	124.22	350.85	124.2	351.53	124.21
352.58	124.24	353.1	124.27	354.83	124.34	356.8	124.36	357.18	124.37
358.24	124.32	359.1	124.3	359.41	124.3	361.35	124.33	363.13	124.34
363.63	124.35	365.83	124.35	365.93	124.35	366.57	124.35	369	124.36
369.41	124.36	371.44	124.39	372.05	124.39	373.53	124.36	375.27	124.34
375.49	124.34	375.68	124.34	378.19	124.31	378.37	124.31	381.65	124.36
381.78	124.36	381.92	124.36	384.51	124.37	384.57	124.37	386.3	124.34
387.96	124.4	388.2	124.4	389.62	124.36	390.84	124.38	391.21	124.38
391.57	124.39	393.01	124.39	394.46	124.38	394.76	124.37	395.24	124.35
396.35	124.33	397.05	124.35	398.8	124.38	400.61	124.42	401.33	124.42
402.84	124.41	403.13	124.41	403.27	124.41	405.85	124.44	406.86	124.42
408.02	124.43	409.47	124.47	409.93	124.47	411	124.49	412.31	124.51
412.87	124.52	414.59	124.5	415.69	124.5	416.94	124.49	419.23	124.51
419.39	124.51	420.29	124.52	421.72	124.53	421.97	124.54	423.82	124.54
425.46	124.41	425.95	124.4	428.13	124.42	428.26	124.43	428.42	124.43
430.21	124.49	431.66	124.51	432.36	124.51	434.53	124.47	434.91	124.46
435.3	124.46	437.92	124.44	438.59	124.42	440.66	124.42	441.54	124.42
443.06	124.4								

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .08 199.96 .15 293.48 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
199.96 293.48 119.54 107.41 104.94 .1 .3

Blocked Obstructions num= 1
Sta L Sta R Elev
0 18.39217.5225

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 307.2411

INPUT
 Description:
 Station Elevation Data num= 249

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.22	2.03	193.13	4.46	193.04	4.81	193.07	5.57	193
6.11	192.96	6.36	192.95	8.09	192.95	10.09	192.84	10.19	192.84
10.26	192.84	11.73	192.82	12.31	192.76	13.62	192.63	15.03	192.52
15.67	192.49	16.26	192.45	17.47	192.36	18.24	192.25	20.15	192.01
21.07	191.88	22.6	191.16	26.27	189.37	27.82	188.74	27.95	188.69
29.85	188	30.04	187.95	30.49	187.84	32.67	187.29	33.03	187.22
33.53	187.12	34.88	186.68	37.84	186.22	38.64	186.12	61.1	179.1
63.06	178.37	63.97	178.09	65.08	177.56	66.8	176.57	67.2	176.41
68.87	175.92	69.17	175.73	71.74	174.07	72.78	173.3	74.22	172.26
74.86	171.91	74.95	171.85	76.93	170.74	78.55	170.1	79.75	169.68
80.62	169.21	82.2	168.21	84.11	167.32	84.69	167.07	86.2	166.39
87.41	165.87	89.76	164.66	89.77	164.65	89.8	164.64	91.19	163.92
91.96	163.46	92.92	162.97	94.21	162.3	94.93	162	95.44	161.77
96.51	161.32	97.54	160.77	98.14	160.44	98.91	160.03	100.18	159.33
101.16	158.83	102.04	158.35	103.38	157.61	103.88	157.34	104.91	156.83
106.25	156.15	106.9	155.82	108.15	155.19	109.01	154.76	110.85	153.84
112.64	152.91	113.71	152.48	114.77	151.98	116.49	151.13	118.37	150.16
119.33	149.59	120.52	148.97	121.27	148.59	124.07	147.22	124.54	146.98
126.3	146.14	127.22	145.6	129.7	144.04	129.86	143.94	129.91	143.9
130.06	143.79	132.01	142.46	132.68	142.03	134.07	141.2	135.06	140.62
135.52	140.36	136.92	139.64	137.83	139.19	138.11	139.06	138.57	138.83
140.31	137.97	141.35	137.6	142.11	137.31	143.52	137.06	143.55	137.06
144.17	136.86	148.5	135.48	148.95	135.33	149.56	135.03	152.61	134.07
154.55	133.23	154.85	133.13	155.35	132.85	156.36	132.29	160.85	129.63
161.49	129.51	165.23	127.65	166.16	126.98	169.11	123.14	170.01	122.73
172.65	121.43	176.49	121.04	177.16	120.92	177.85	120.87	178.77	120.87
180.14	120.5	180.83	120.35	181.56	119.88	183.28	119.07	186.64	117.45
189.23	116.35	192.81	115.95	200.01	115.29	204.38	114.33	204.43	114.31
204.5	114.27	204.59	114.27	206.34	113.83	207.91	113.67	209.59	113.64
210.55	113.59	210.86	113.38	214.01	111.95	215.16	111.35	216.07	110.94
217.32	110.68	218.81	110.6	219.06	110.58	219.27	110.59	220.04	110.67
221.64	110.85	222.08	111	223.12	112.01	229.95	114.65	230.3	114.77
230.57	114.85	230.64	114.86	232.32	115.38	232.81	115.65	235.17	116.87
236.55	117.41	238.82	118.06	239.03	118.15	239.18	118.23	242.36	119.89
244.53	121.23	247.72	122.43	248.34	122.71	249.71	123.35	252.48	123.88
254.2	124.35	254.82	124.4	256.02	124.5	257.04	124.55	258.96	124.64
259.15	124.65	259.31	124.66	259.42	124.64	261.45	124.67	261.89	124.68
261.91	124.68	265.12	124.42	265.95	124.36	267.55	124.28	269.18	124.22
270.7	124.16	271.92	124.1	273.11	124.04	274.66	123.97	276.36	123.9
277.17	123.88	278.58	123.78	278.81	123.77	278.94	123.76	281.24	123.68
282.05	123.63	283.17	123.46	284.51	123.37	285	123.35	286.86	123.26
287.58	123.23	287.77	123.22	289.58	123.09	290.31	123.09	291.85	123.02
293.53	122.91	294.13	122.89	296.05	122.76	296.12	122.76	296.28	122.75
298.36	122.67	299.25	122.6	300.63	122.53	301.81	122.55	302.88	122.59
305.01	122.8	305.09	122.8	307.52	122.87	307.66	122.87	307.95	122.88
309.72	123.01	310.61	123.03	312.27	123.12	313.19	123.18	314.54	123.27
316.41	123.38	316.7	123.39	318.91	123.46	319.46	123.5	320.17	123.54
321.18	123.59	321.97	123.74	322.8	123.81	324.1	123.75	324.4	123.72
324.59	123.72	326.03	123.73	326.61	123.78	329.27	123.85	329.6	123.85
333.34	123.72	338.08	123.69	339.53	123.67	408.21	123.73		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val

0 .08 169.11 .15 254.82 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 169.11 254.82 120.64 112.11 114 .1 .3
 Blocked Obstructions num= 2
 Sta L Sta R Elev Sta L Sta R Elev
 296.44 408.21 123.734 0 26.17193.2154

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 195.1298

INPUT
 Description:
 Station Elevation Data num= 255

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.78	1.05	177.74	1.25	177.67	5.17	175.92	7.02	175.47
9.51	174.96	10.76	174.41	11.26	174.23	13.24	173.96	14.26	173.82
16.15	173.44	16.59	173.36	16.83	173.3	18.17	172.99	19.21	172.59
20.92	172.41	21.94	172.44	22.5	172.27	22.91	172.17	25.71	172.14
28.45	171.73	30.39	170.94	47.65	163.96	59.36	160.59	60	160.6
61.69	159.11	62.82	158.9	65.08	157.69	66.07	157.1	67.28	157.14
68.05	157.33	68.69	156.72	70.35	155.57	70.62	155.45	72.69	154.12
74.16	152.32	75.43	151.36	77.4	149.61	78.38	148.72	80.2	146.74
81.95	144.67	83.97	142.51	84.33	142.25	84.67	142.22	85.77	141.74
88.33	140.97	91.01	140.13	92.99	140.17	94.18	140.11	95.38	140.14
96.42	140.2	97.35	140.21	100.48	140.26	101.07	140.01	103.17	139.49
104.38	139.46	104.47	139.46	104.95	139.54	106.89	138.55	108.71	137.74
110.12	137	110.16	136.98	112.76	135.42	114.27	134.11	116.01	132.19
117.08	130.87	118.49	128.4	118.54	128.34	120.48	125.86	121.61	124.85
122.29	124.24	123.36	123.65	123.83	123.38	124.13	123.13	125.77	121.78
127.32	121.35	127.77	121.13	128.64	120.2	129.54	119.66	131.16	117.91
133.06	116.2	134.11	115.52	134.84	115.27	135.62	115.27	136.68	115.31
137.96	115.24	138.5	115.19	138.94	115.2	141.18	115.2	145.6	113.94
146.68	113.74	147.11	113.58	148.46	114.04	152.2	113.09	155.54	112.01
157.46	111.49	158.43	111.31	159.1	111.18	161.06	110.82	162.28	110.73
163.95	110.73	164.99	110.77	166.66	110.9	168.29	111.32	168.82	111.52
169.57	111.92	170.36	112.39	170.92	112.89	172.34	113.88	174.07	114.5
174.91	114.76	176.06	115.11	176.88	115.36	177.94	115.69	180.01	116.76
180.03	116.77	181.68	117.65	182.71	118.07	183.39	118.37	184.35	119.06
185.22	119.54	185.82	119.91	187.1	120.59	188.55	121.32	189	121.48
194.04	122.27	194.36	122.31	194.99	122.37	198.48	122.37	199.87	122.39
201.69	122.55	202.38	122.67	202.92	122.61	204.46	122.4	204.8	122.36
205.66	122.22	207.68	122.06	208.56	122.04	210.6	121.95	211.15	121.94
213.45	121.89	214.12	121.87	215.33	121.89	216.76	121.92	217	121.91
218.21	121.91	219.54	121.9	219.81	121.9	221.23	121.89	222.46	121.9
222.99	121.9	225.26	121.86	225.36	121.86	225.38	121.86	227.09	121.88
228.07	121.86	229.07	121.83	231.15	121.87	231.33	121.87	231.71	121.88
233.13	121.91	233.77	121.9	235.13	121.91	236.68	121.93	237.13	121.91
237.8	121.92	238.82	121.92	239.5	121.94	240.71	121.96	240.94	121.95
242.1	121.95	243.47	122	244.25	122.03	244.93	122.03	246.56	122.07
248.18	122.06	248.72	122.07	249.25	122.07	251.05	122.14	252.53	122.13
253.37	122.13	254.22	122.13	255.62	122.14	256.6	122.15	257.78	122.11
258.93	122.08	260.12	122.05	261.59	122.02	262.38	122.01	263.09	121.98
264.68	121.92	266.5	121.85	266.86	121.84	267.21	121.82	269.24	121.76
271.12	121.66	271.42	121.65	271.77	121.64	273.83	121.59	275.36	121.68
275.91	121.7	276.45	121.75	278.22	121.87	280.17	121.88	281.9	121.94
285.76	122.09	286.04	122.08	311.85	123.59	314.02	123.54	315.36	123.55
316.6	123.5	319.96	123.57	343.22	123.55	349.7	123.74	354.54	123.65
358.68	123.64	386.17	123.86	391.37	123.92	395.86	123.92	396.64	123.92
410.21	123.8	412.27	123.79	412.64	123.79	414.14	123.8	417.87	123.59

418.81	123.55	419.3	123.51	421.26	123.43	421.91	123.41	423.55	123.33
424.41	123.3	426.04	123.34	427.03	123.33	428.27	123.21	429.51	123.22
430.68	123.21	432.2	123.2	432.96	123.19	433.67	123.18	435.45	123.17
437.37	123.14	437.69	123.14	438.05	123.13	439.98	123.16	442.02	123.19
442.37	123.19	442.93	123.18	444.8	123.12	445.79	123.1	447.12	123.09
448.56	123.1	449.54	123.11	450.45	123.12	451.8	123.12	453	123.11

Manning's n Values num= 4
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .045 120.48 .08 125.77 .15 188.55 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 125.77 188.55 91.95 53.62 23.5 .1 .3
 Blocked Obstructions num= 2
 Sta L Sta R Elev Sta L Sta R Elev
 281.87 418.71123.5501 20.51 74.01172.4521

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 141.507

INPUT
 Description:
 Station Elevation Data num= 279

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	162.56	.44	162.52	1.68	162.4	2.54	162.32
4.57	162.11	6.74	161.88	6.83	161.87	6.85	161.87
9.08	161.63	10.86	161.43	11.89	161.33	13.08	161.21
16.55	160.76	17.01	160.7	17.59	160.64	19.29	160.44
22	160.15	22.31	160.14	24.34	160.02	25.89	159.97
29.05	159.87	29.5	159.84	29.74	159.83	32.24	159.73
34.43	159.67	36.59	159.29	37.22	159.23	38.62	158.77
40.9	157.95	42.24	157.36	43.15	156.85	44.44	156.24
47.18	154.78	47.72	154.49	49.08	153.7	51.59	152.17
52.69	151.51	54.27	150.75	55.59	149.81	56.93	149.03
59.17	147.74	60.35	147.13	61.95	146.17	63.02	145.41
66.7	143.23	66.76	143.2	66.88	143.14	69.05	141.99
71.74	140.54	73.87	139.5	73.95	139.45	74	139.43
76.56	138.42	76.89	138.3	79.09	136.87	80.69	135.73
81.38	135.35	82.15	134.87	83.62	133.88	84.55	132.98
86.73	131.47	88.27	130.19	88.42	130.05	89.86	128.75
90.78	127.91	92.59	126.65	92.97	126.38	94.59	125.35
96.69	123.69	97.56	122.92	98.72	121.97	100.04	120.91
102.22	119.54	102.81	119.23	104.79	118.19	105.86	117.7
109.22	115.07	109.4	114.92	109.5	114.86	111.59	113.68
114.19	112.68	115.27	112.25	116.66	111.72	117.06	111.45
121.12	110.81	121.15	110.81	121.17	110.81	123.73	111.06
126.01	111.23	128.35	111.25	128.46	111.24	130.14	111.31
132.38	110.72	133.18	110.75	135.05	110.77	138.3	112.61
140.92	114.12	142.83	114.78	143.06	114.9	145.22	116.26
147.7	117.56	148.38	117.92	149.95	118.75	152.51	120.06
152.67	120.1	154.83	120.42	156.55	120.48	157.4	120.51
159.69	120.56	160	120.56	160.57	120.61	164.55	121.06
167.13	121.27	167.54	121.33	169.41	120.92	170.66	120.85
175.82	120.96	177.21	121	179.72	120.72	180.34	120.71
182.79	121.03	186.21	120.99	188.6	120.98	190.21	120.92
192.65	120.94	193.15	120.94	193.37	120.93	194.06	120.95
195.56	121	196.91	121.01	197.91	121.02	198.68	121.06
201.81	121.17	202.35	121.17	202.45	121.18	204.53	121.14
206.65	121.21	206.78	121.21	207.49	121.24	209.12	121.29
211.21	121.3	211.55	121.31	213.44	121.4	214.89	121.41

216.53	121.43	217.91	121.45	219.01	121.43	219.99	121.45	221.4	121.5
222.22	121.54	222.67	121.55	224.43	121.56	225.6	121.6	226.7	121.62
227.56	121.65	228.87	121.65	230.04	121.66	231.16	121.65	232.29	121.63
233.32	121.61	234.35	121.63	235.63	121.62	236.69	121.65	237.99	121.68
239.28	121.66	240.21	121.65	240.99	121.64	242.4	121.6	244.05	121.62
244.71	121.61	246.66	121.52	247	121.51	247.3	121.51	249.28	121.49
250.93	121.41	251.48	121.39	251.59	121.38	252.64	121.33	253.02	121.33
254.73	121.41	261.53	122.24	261.99	122.22	262.8	122.2	264.01	122.22
264.41	122.22	273.54	122.57	274.97	122.54	293.24	123.61	296.9	123.53
299.16	123.54	301.25	123.47	306.93	123.58	345.95	123.54	356.75	123.86
364.82	123.72	366.47	123.71	387.79	123.89	388.68	123.84	389.53	123.85
391.84	123.71	392.53	123.74	393.55	123.74	398.46	123.7	399.12	123.66
401.27	123.71	401.46	123.69	401.6	123.68	403.93	123.44	405.91	123.33
406.48	123.32	408.25	123.25	410.41	123.1	410.69	123.08	412.93	122.93
412.95	122.93	412.98	122.93	415.34	122.85	415.56	122.85	417.65	122.81
419.8	122.82	420.09	122.84	420.4	122.84	422.37	122.88	424.47	122.97
424.64	122.97	424.9	122.97	427.07	122.92	428.58	122.9	429.47	122.89
431.01	122.88	431.83	122.87	432.59	122.88	434.22	122.88	435.9	122.84
436.51	122.82	437.35	122.8	438.9	122.77	440.93	122.71	441.33	122.7
441.93	122.69	443.68	122.66	444.88	122.71	445.88	122.76		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .045 100.04 .15 170.66 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 100.04 170.66 118.19 76.21 43.65 .1 .3
 Blocked Obstructions num= 1
 Sta L Sta R Elev
 259.86 396.96123.7144

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 65.30157

INPUT
 Description:
 Station Elevation Data num= 314

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	143.15	.48	143.11	1.45	143.03	3.44	142.9
4.93	142.76	6.1	142.62	6.3	142.6	6.76	142.52
10.61	142.1	11.15	142.05	12.25	141.95	13.51	141.82
16.03	141.57	18.1	141.33	18.37	141.3	18.57	141.27
20.98	141.03	22.09	140.89	23.02	140.77	23.14	140.76
25.64	140.52	26.32	140.46	28.04	140.33	28.86	140.29
31.8	140.16	32.87	140.13	34.61	140.06	35.2	140.03
37.58	139.92	39.73	139.78	40.04	139.76	41.34	139.7
42.61	139.64	44.39	139.53	44.7	139.51	44.74	139.51
47.09	139.88	49.09	139.95	49.47	139.95	50.05	140
52.89	139.95	54.09	139.73	56.11	139.68	56.38	139.67
58.79	139.6	60.01	139.46	60.42	139.42	61.19	139.26
63.45	138.29	63.98	138.03	65.76	136.46	66.2	136.06
69.14	133.49	70.46	132.48	71.51	131.89	72.79	131.21
75.06	129.7	75.74	129.23	77.39	128.04	79.6	126.82
79.71	126.74	86.38	121.89	86.85	121.49	88.58	120.09
90.84	118.94	92.67	118.24	92.99	118.11	93.48	117.88
96.32	116.42	97.42	115.86	98.21	115.35	99.67	114.42
101.91	112.81	102.5	112.3	104.12	110.92	105.42	109.81
108.06	109.53	108.56	109.52	110.3	109.59	110.89	109.56
113.13	109.74	115.29	110.27	115.35	110.28	115.86	110.37
117.92	110.78	119.97	111.7	120.36	111.85	122.3	112.64

124.5	113.14	125.5	113.24	126.78	113.31	128.11	113.53	128.99	113.66
129.85	114.09	131.41	114.67	133.46	115.73	133.57	115.79	133.75	115.83
135.9	116.35	137.17	116.5	137.9	116.64	138.2	116.69	139.43	117.42
140.58	118.11	142.36	118.82	142.82	119	143.24	119.13	146.21	120.2
147.45	120.49	148.5	120.85	149.75	121.18	150.94	121.53	152.07	121.83
153.38	122	154.36	122.09	155.93	122.16	156.62	122.17	158.49	122.19
158.99	122.25	161.08	122.29	161.34	122.16	163.44	122.15	163.62	122.15
164.32	121.84	165.86	121.17	167.98	121.18	168.6	121.21	169.77	121.63
170.52	121.67	171.19	121.61	174.02	121.43	175.04	121.36	176.56	121.21
177.34	121.12	179.35	120.83	179.56	120.81	179.79	120.84	180.3	120.74
181.86	120.75	182.71	120.74	184.01	120.72	185.02	120.7	186.21	120.68
187.73	120.71	188.43	120.71	189.14	120.69	190.76	120.61	191.58	120.61
192.88	120.6	193.72	120.61	195.06	120.61	196.07	120.56	197.25	120.5
198.12	120.47	199.45	120.44	200.3	120.44	201.74	120.39	202.59	120.38
203.92	120.34	204.73	120.29	206.11	120.24	207.68	120.25	208.34	120.26
209.02	120.25	210.64	120.38	212.47	120.39	212.81	120.4	213.14	120.4
214.99	120.43	216.01	120.47	216.25	120.48	217.28	120.51	218.82	120.56
219.47	120.57	220.61	120.62	221.72	120.68	223.19	120.73	223.98	120.76
224.73	120.79	226.2	120.83	227.74	120.91	228.45	120.95	230.84	121.02
230.86	121.02	230.88	121.02	233.01	121.03	234.94	121.12	235.3	121.15
236.98	121.26	237.9	121.58	239.89	121.97	240.36	121.96	242.26	122.51
243.89	122.96	244.39	123.03	245.37	123.35	246.67	123.34	248.44	123.33
248.96	123.33	249.43	123.32	251.28	123.3	253.23	123.4	253.48	123.41
253.75	123.43	255.68	123.49	257.62	123.56	257.9	123.55	257.98	123.56
260.1	123.5	263.82	123.39	269.35	123.47	271.16	123.47	272.6	123.53
276.29	123.44	279.78	123.64	286.38	123.5	290.45	123.53	294.21	123.39
304.38	123.6	307.88	123.54	309.91	123.54	312.94	123.58	316.99	123.51
324.89	123.59	327.9	123.59	331.91	123.59	335.92	123.59	340.03	123.66
347.71	123.62	350.9	123.59	354.91	123.53	358.92	123.48	363.03	123.36
372.71	123.62	376.0	123.59	379.99	123.58	383.98	123.48	387.99	123.36
397.59	123.32	399.89	123.27	403.88	123.28	407.87	123.11	411.88	123.03
422.47	123.12	424.77	123.12	428.76	123.12	432.75	123.12	436.74	123.03
447.63	122.96	449.96	122.96	453.95	122.96	457.94	122.96	461.93	122.96
472.59	122.96	474.9	122.96	478.89	122.96	482.88	122.96	486.87	122.96
507.55	122.96	509.96	122.96	513.95	122.96	517.94	122.96	521.93	122.96
546.91	122.96	549.32	122.96	553.31	122.96	557.3	122.96	561.29	122.96
590.67	122.96	593.08	122.96	597.07	122.96	601.06	122.96	605.05	122.96
629.43	122.96	631.84	122.96	635.83	122.96	639.82	122.96	643.81	122.96
668.19	122.96	670.6	122.96	674.59	122.96	678.58	122.96	682.57	122.96
707.33	122.96	709.74	122.96	713.73	122.96	717.72	122.96	721.71	122.96
746.47	122.96	748.88	122.96	752.87	122.96	756.86	122.96	760.85	122.96
790.23	122.96	792.64	122.96	796.63	122.96	800.62	122.96	804.61	122.96
829.35	122.96	831.76	122.96	835.75	122.96	839.74	122.96	843.73	122.96
878.49	122.96	880.9	122.96	884.89	122.96	888.88	122.96	892.87	122.96
917.61	122.96	920.02	122.96	924.01	122.96	928.0	122.96	931.99	122.96
960.37	122.96	962.78	122.96	966.77	122.96	970.76	122.96	974.75	122.96
1003.13	122.96	1005.54	122.96	1009.53	122.96	1013.52	122.96	1017.51	122.96
1046.27	122.96	1048.68	122.96	1052.67	122.96	1056.66	122.96	1060.65	122.96
1099.41	122.96	1101.82	122.96	1105.81	122.96	1109.8	122.96	1113.79	122.96
1152.55	122.96	1154.96	122.96	1158.95	122.96	1162.94	122.96	1166.93	122.96
1205.69	122.96	1208.1	122.96	1212.09	122.96	1216.08	122.96	1220.07	122.96
1258.83	122.96	1261.24	122.96	1265.23	122.96	1269.22	122.96	1273.21	122.96
1311.97	122.96	1314.38	122.96	1318.37	122.96	1322.36	122.96	1326.35	122.96
1365.11	122.96	1367.52	122.96	1371.51	122.96	1375.5	122.96	1379.49	122.96
1418.25	122.96	1420.66	122.96	1424.65	122.96	1428.64	122.96	1432.63	122.96
1471.39	122.96	1473.79	122.96	1477.78	122.96	1481.77	122.96	1485.76	122.96
1524.53	122.96	1526.94	122.96	1530.93	122.96	1534.92	122.96	1538.91	122.96
1577.67	122.96	1580.07	122.96	1584.06	122.96	1588.05	122.96	1592.04	122.96
1630.81	122.96	1633.22	122.96	1637.21	122.96	1641.2	122.96	1645.19	122.96
1683.95	122.96	1686.35	122.96	1690.34	122.96	1694.33	122.96	1698.32	122.96
1737.09	122.96	1739.49	122.96	1743.48	122.96	1747.47	122.96	1751.46	122.96
1790.23	122.96	1792.64	122.96	1796.63	122.96	1800.62	122.96	1804.61	122.96
1843.37	122.96	1845.77	122.96	1849.76	122.96	1853.75	122.96	1857.74	122.96
1906.51	122.96	1908.92	122.96	1912.91	122.96	1916.9	122.96	1920.89	122.96
1959.65	122.96	1962.05	122.96	1966.04	122.96	1970.03	122.96	1974.02	122.96
2012.79	122.96	2015.19	122.96	2019.18	122.96	2023.17	122.96	2027.16	122.96
2065.93	122.96	2068.34	122.96	2072.33	122.96	2076.32	122.96	2080.31	122.96
2119.07	122.96	2121.47	122.96	2125.46	122.96	2129.45	122.96	2133.44	122.96
2172.21	122.96	2174.62	122.96	2178.61	122.96	2182.6	122.96	2186.59	122.96
2225.35	122.96	2227.75	122.96	2231.74	122.96	2235.73	122.96	2239.72	122.96
2278.49	122.96	2280.89	122.96	2284.88	122.96	2288.87	122.96	2292.86	122.96
2331.63	122.96	2334.03	122.96	2338.02	122.96	2342.01	122.96	2346.0	122.96
2384.77	122.96	2387.17	122.96	2391.16	122.96	2395.15	122.96	2399.14	122.96
2437.91	122.96	2440.31	122.96	2444.3	122.96	2448.29	122.96	2452.28	122.96
2491.05	122.96	2493.45	122.96	2497.44	122.96	2501.43	122.96	2505.42	122.96
2544.19	122.96	2546.59	122.96	2550.58	122.96	2554.57	122.96	2558.56	122.96
2607.33	122.96	2609.73	122.96	2613.72	122.96	2617.71	122.96	2621.7	122.96
2660.47	122.96	2662.87	122.96	2666.86	122.96	2670.85	122.96	2674.84	122.96
2713.61	122.96	2716.01	122.96	2720.0	122.96	2723.99	122.96	2727.98	122.96
2766.75	122.96	2769.15	122.96	2773.14	122.96	2777.13	122.96	2781.12	122.96
2819.89	122.96	2822.29	122.96	2826.28	122.96	2830.27	122.96	2834.26	122.96
2873.03	122.96	2875.43	122.96	2879.42	122.96	2883.41	122.96	2887.4	122.96
2926.17	122.96	2928.57	122.96	2932.56	122.96	2936.55	122.96	2940.54	122.96
2979.31	122.96	2981.71	122.96	2985.7	122.96	2989.69	122.96	2993.68	122.96
3032.45	122.96	3034.85	122.96	3038.84	122.96	3042.83	122.96	3046.82	122.96
3085.59	122.96	3087.99	122.96	3091.98	122.96	3095.97	122.96	3099.96	122.96
3138.73	122.96	3141.13	122.96	3145.12	122.96	3149.11	122.96	3153.1	122.96
3191.87	122.96	3194.27	122.96	3198.26	122.96	3202.25	122.96	3206.24	122.96
3245.01	122.96	3247.41	122.96	3251.4	122.96	3255.39	122.96	3259.38	122.96
3308.15	122.96	3310.55	122.96	3314.54	122.96	3318.53	122.96	3322.52	122.96
3361.29	122.96	3363.69	122.96	3367.68	122.96	3371.67	122.96	3375.66	122.96
3414.43	122.96	3416.83	122.96	3420.82	122.96	3424.81	122.96	3428.8	122.96
3467.57	122.96	3469.97	122.96	3473.96	122.96	3477.95	122.96	3481.94	122.96
3520.71	122.96	3523.11	122.96	3527.1	122.96	3531.09	122.96	3535.08	122.96
3573.85	122.96	3576.25	122.96	3580.24	122.96	3584.23	122.96	3588.22	122.96
3626.99	122.96	3629.39	122.96	3633.38	122.96	3637.37	122.96	3641.36	122.96
3680.13	122.96	3682.53	122.96	3686.52	122.96	3690.51	122.96	3694.5	122.96
3733.27	122.96	3735.67	122.96	3739.66	122.96	3743.65	122.96	3747.64	122.96
3786.41	122.96	3788.81	122.96	3792.8	122.96	3796.79	122.96	3800.78	122.96
3839.55	122.96	3841.95	122.96	3845.94	122.96	3849.93	122.96	3853.92	122.96
3892.69	122.96	3895.09	122.96	3899.08	122.96	3903.07	122.96	3907.06	122.96
3945.83	122.96	3948.23	122.96	3952.22	122.96	3956.21	122.96	3960.2	122.96
3998.97	122.96	4001.37	122.96	4005.36	122.96	4009.35	122.96	4013.34	122.96
4052.11	122.96	4054.51	122.96	4058.5	122.96	4062.49	122.96	4066.48	122.96
4105.25	122.96	4107.65	122.96	4111.64	122.96	4115.63	122.96	4119.62	122.96
4158.39	122.96	4160.79							

384.1	122.01	384.7	122	385.3	122	386.98	122.02	387.89	121.96
389.39	121.92	390.72	121.87	391.62	121.82	392.83	121.89	394.09	121.98
395.15	122.03	396.39	122.09	397.89	122.1	398.8	122.09	399.71	122.1
400.92	122.12	402.78	122.15	403.51	122.18	403.98	122.19	405.73	122.28
407.82	122.37	408.26	122.38	408.65	122.38	410.47	122.37	412.49	122.41
412.94	122.42	413.26	122.42	415.17	122.58	417.25	122.43	417.75	122.43
419.33	121.57	419.91	121.44	420.5	121.26	422.41	121.05	426.08	120.61
427.19	120.48	427.21	120.48	427.23	120.48	429.37	120.31	429.78	120.3
431.83	120.23	433.02	120.2	434.01	120.18	435.8	120.07	436.48	120.03
438.34	120.03	438.73	120.03	438.86	120	441.15	119.48	441.75	119.56
443.31	119.75	444.91	119.79						

Manning's n Values num= 3

Sta n Val	Sta n Val	Sta n Val
0 .04	91.34 .15	134.44 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

91.34	134.44	24.51	4.59	8.5	.3	.5
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Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	69.65	120	F
122.65	444.91	122.76	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev	
307.73	345.62	123.37	15

SUMMARY OF MANNING'S N VALUES

River: Auburn Creek

Reach	River Sta.	n1	n2	n3	n4	n5
Main Reach	3283.479	.016	.045	.15	.018	.016
Main Reach	3229.405	.016	.06	.15	.018	.016
Main Reach	3159.787	.06	.02	.018	.15	.018
Main Reach	3025.628	.06	.02	.15	.018	.03
Main Reach	3000	Culvert				
Main Reach	2916.303	.1	.15	.018	.03	
Main Reach	2900.962	.08	.15	.018	.03	
Main Reach	2709.054	.1	.15	.03		
Main Reach	2501.489	.1	.15	.1	.03	
Main Reach	2309.998	.1	.15	.03		
Main Reach	2161.775	.1	.15	.018	.03	
Main Reach	1835.094	.04	.018	.018	.018	.04
Main Reach	1800.703	.04	.018	.15	.018	.04
Main Reach	1350	Culvert				
Main Reach	925.4423	.1	.15	.1		
Main Reach	797.816	.1	.15	.1		
Main Reach	652.2307	.1	.15	.1		
Main Reach	513.9224	.08	.15	.08		
Main Reach	414.6495	.08	.15	.08		
Main Reach	307.2411	.08	.15	.04		
Main Reach	195.1298	.045	.08	.15	.08	
Main Reach	141.507	.045	.15	.04		
Main Reach	65.30157	.04	.15	.06		
Main Reach	4.590075	.04	.15	.06		

SUMMARY OF REACH LENGTHS

River: Auburn Creek

Reach	River Sta.	Left	Channel	Right
Main Reach	3283.479	51.96	54.07	55.73
Main Reach	3229.405	70.8	69.62	68.75
Main Reach	3159.787	126.5	134.16	135.59
Main Reach	3025.628	111.21	109.32	112.92
Main Reach	3000	Culvert		
Main Reach	2916.303	14.15	15.34	16.27
Main Reach	2900.962	206.54	191.91	184.83
Main Reach	2709.054	209.38	207.57	205.83
Main Reach	2501.489	198.58	191.49	185.3
Main Reach	2309.998	146.44	148.22	149.95
Main Reach	2161.775	328.02	326.68	328.75
Main Reach	1835.094	35.26	34.39	34.8
Main Reach	1800.703	879.95	875.26	876.36
Main Reach	1350	Culvert		
Main Reach	925.4423	160.4	127.63	131.93
Main Reach	797.816	152.73	145.59	144.95
Main Reach	652.2307	123.04	138.31	136.74
Main Reach	513.9224	90.74	99.27	101.73
Main Reach	414.6495	119.54	107.41	104.94
Main Reach	307.2411	120.64	112.11	114
Main Reach	195.1298	91.95	53.62	23.5
Main Reach	141.507	118.19	76.21	43.65
Main Reach	65.30157	86.42	60.71	46.3
Main Reach	4.590075	24.51	4.59	8.5

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Auburn Creek

Reach	River Sta.	Contr.	Expan.
Main Reach	3283.479	.3	.5
Main Reach	3229.405	.1	.3
Main Reach	3159.787	.1	.3
Main Reach	3025.628	.3	.5
Main Reach	3000	Culvert	
Main Reach	2916.303	.3	.5
Main Reach	2900.962	.1	.3
Main Reach	2709.054	.1	.3
Main Reach	2501.489	.1	.3
Main Reach	2309.998	.1	.3
Main Reach	2161.775	.1	.3
Main Reach	1835.094	.3	.5
Main Reach	1800.703	.3	.5
Main Reach	1350	Culvert	
Main Reach	925.4423	.3	.5
Main Reach	797.816	.1	.3
Main Reach	652.2307	.1	.3
Main Reach	513.9224	.1	.3
Main Reach	414.6495	.1	.3
Main Reach	307.2411	.1	.3
Main Reach	195.1298	.1	.3

Main Reach	141.507	.1	.3
Main Reach	65.30157	.1	.3
Main Reach	4.590075	.3	.5

**Attachment 13 - DETAILED HYDRAULIC RESULTS FOR MAINTAINED CONDITION
MODEL – VEGETATION ONLY (NO SEDIMENT REMOVED)**

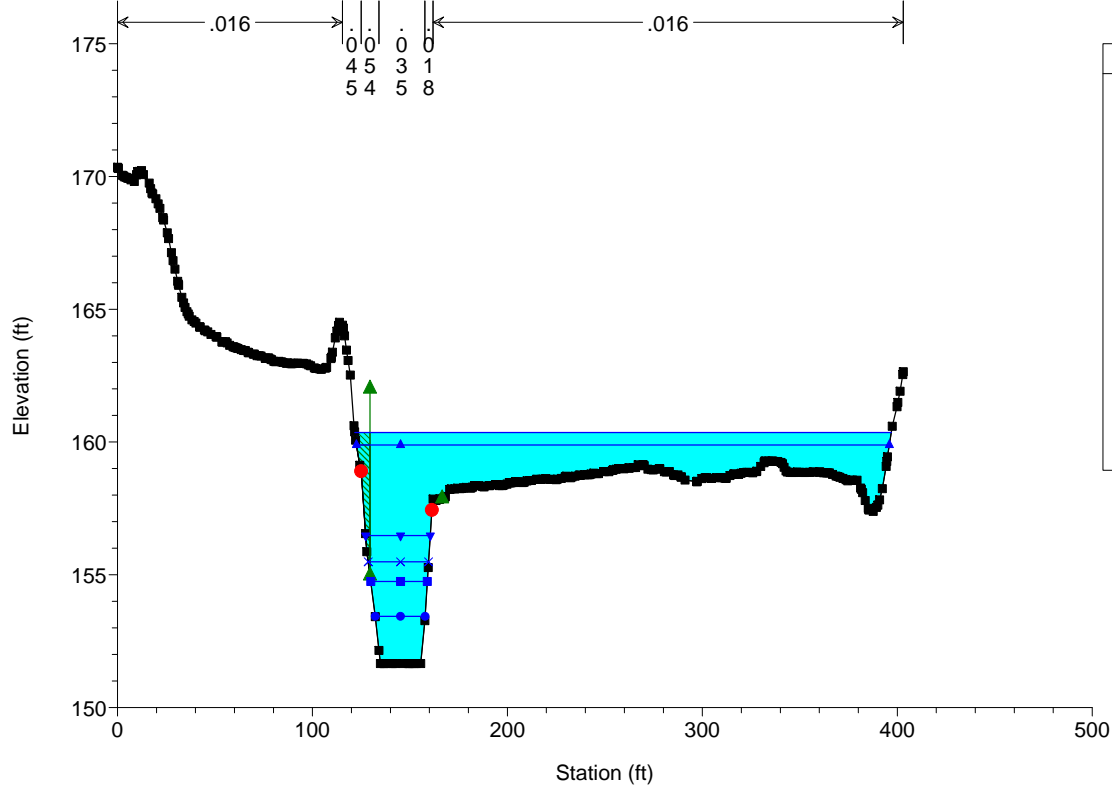
HEC-RAS Plan: Veg_only River: Auburn Creek Reach: Main Reach

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	3283.479	100 YR	1200.00	151.66	160.36	155.88	160.41	0.000171	2.01	653.09	275.26	0.13
Main Reach	3283.479	50 YR	950.00	151.66	159.89	155.32	159.94	0.000206	2.12	528.65	273.38	0.14
Main Reach	3283.479	25 YR	630.00	151.66	156.48	154.52	156.85	0.002420	4.88	129.15	33.13	0.42
Main Reach	3283.479	10 YR	430.00	151.66	155.49	153.91	155.78	0.002688	4.34	98.97	31.01	0.42
Main Reach	3283.479	5 YR	290.00	151.66	154.75	153.40	154.97	0.002697	3.77	76.99	29.05	0.41
Main Reach	3283.479	2 YR	120.00	151.66	153.44	152.65	153.57	0.002919	2.92	41.16	25.59	0.41
Main Reach	3229.405	100 YR	1200.00	151.06	160.35		160.40	0.000202	1.81	664.42	293.82	0.12
Main Reach	3229.405	50 YR	950.00	151.06	159.88		159.93	0.000249	1.92	531.71	277.96	0.13
Main Reach	3229.405	25 YR	630.00	151.06	155.88		156.55	0.007485	6.54	96.26	30.05	0.64
Main Reach	3229.405	10 YR	430.00	151.06	154.42	154.16	155.32	0.015019	7.58	56.75	24.03	0.87
Main Reach	3229.405	5 YR	290.00	151.06	153.70	153.55	154.50	0.017175	7.15	40.56	20.92	0.90
Main Reach	3229.405	2 YR	120.00	151.06	152.79	152.52	153.20	0.012851	5.10	23.52	16.69	0.76
Main Reach	3159.787	100 YR	1200.00	150.29	160.31		160.38	0.000187	2.58	604.57	287.33	0.16
Main Reach	3159.787	50 YR	950.00	150.29	159.82		159.91	0.000233	2.76	465.39	282.03	0.18
Main Reach	3159.787	25 YR	630.00	150.29	155.67		156.23	0.002509	6.00	105.00	26.09	0.53
Main Reach	3159.787	10 YR	430.00	150.29	154.02		154.71	0.004807	6.65	64.69	22.64	0.69
Main Reach	3159.787	5 YR	290.00	150.29	152.93	152.70	153.70	0.008125	7.02	41.34	19.92	0.86
Main Reach	3159.787	2 YR	120.00	150.29	151.75	151.71	152.31	0.012213	5.99	20.03	16.33	0.95
Main Reach	3025.628	100 YR	1200.00	148.83	159.95	154.68	160.31	0.000779	4.78	254.89	51.29	0.30
Main Reach	3025.628	50 YR	950.00	148.83	159.60	153.93	159.85	0.000567	3.96	242.17	39.81	0.25
Main Reach	3025.628	25 YR	630.00	148.83	155.48	152.84	155.91	0.001807	5.28	119.40	24.41	0.42
Main Reach	3025.628	10 YR	430.00	148.83	153.71	152.01	154.17	0.002681	5.41	79.54	20.81	0.49
Main Reach	3025.628	5 YR	290.00	148.83	152.47	151.33	152.90	0.003549	5.26	55.17	18.56	0.54
Main Reach	3025.628	2 YR	120.00	148.83	150.66	150.27	151.03	0.007090	4.91	24.43	15.26	0.68
Main Reach	3000		Culvert									
Main Reach	2916.303	100 YR	1200.00	147.08	153.12	153.12	155.20	0.010385	11.58	103.65	24.94	1.00
Main Reach	2916.303	50 YR	950.00	147.08	151.43	152.24	154.51	0.020482	14.10	67.39	19.44	1.33
Main Reach	2916.303	25 YR	630.00	147.08	150.87	151.13	152.78	0.014847	11.09	56.80	18.64	1.12
Main Reach	2916.303	10 YR	430.00	147.08	149.95	150.33	151.72	0.019278	10.68	40.26	17.37	1.24
Main Reach	2916.303	5 YR	290.00	147.08	149.26	149.67	150.86	0.024799	10.17	28.53	16.29	1.35
Main Reach	2916.303	2 YR	120.00	147.08	148.20	148.61	149.55	0.047033	9.33	12.87	13.63	1.69
Main Reach	2900.962	100 YR	1200.00	143.83	147.81	149.62	153.74	0.046529	19.55	61.38	21.21	2.03
Main Reach	2900.962	50 YR	950.00	143.83	147.18	148.92	153.15	0.059274	19.60	48.46	20.05	2.22
Main Reach	2900.962	25 YR	630.00	143.83	146.49	147.93	151.45	0.066431	17.86	35.28	18.22	2.26
Main Reach	2900.962	10 YR	430.00	143.83	145.93	147.18	150.38	0.083255	16.93	25.40	16.79	2.42
Main Reach	2900.962	5 YR	290.00	143.83	145.48	146.54	149.45	0.106918	15.99	18.14	15.71	2.62
Main Reach	2900.962	2 YR	120.00	143.83	144.82	145.55	147.83	0.159699	13.93	8.61	12.32	2.94
Main Reach	2709.054	100 YR	1200.00	142.92	150.18	149.43	151.53	0.008123	9.31	128.95	29.77	0.79
Main Reach	2709.054	50 YR	950.00	142.92	149.39	148.76	150.63	0.008676	8.95	106.18	27.48	0.80
Main Reach	2709.054	25 YR	630.00	142.92	148.19	147.71	149.27	0.009648	8.34	75.55	23.69	0.82
Main Reach	2709.054	10 YR	430.00	142.92	147.25	146.91	148.20	0.010527	7.83	54.90	20.24	0.84
Main Reach	2709.054	5 YR	290.00	142.92	146.51	146.21	147.30	0.011121	7.13	40.66	18.21	0.84
Main Reach	2709.054	2 YR	120.00	142.92	145.26	145.00	145.77	0.011077	5.70	21.04	13.33	0.80
Main Reach	2501.489	100 YR	1200.00	141.01	147.46	147.35	149.39	0.012654	11.15	107.60	84.18	0.96
Main Reach	2501.489	50 YR	950.00	141.01	146.88	146.64	148.50	0.011837	10.22	92.97	33.07	0.92
Main Reach	2501.489	25 YR	630.00	141.01	145.88	145.51	147.13	0.010859	8.97	70.22	21.12	0.87
Main Reach	2501.489	10 YR	430.00	141.01	145.06	144.66	146.05	0.010234	7.97	53.94	18.68	0.83
Main Reach	2501.489	5 YR	290.00	141.01	144.34	143.96	145.11	0.009967	7.07	41.01	16.94	0.80
Main Reach	2501.489	2 YR	120.00	141.01	143.10	142.82	143.57	0.010088	5.47	21.93	13.94	0.77
Main Reach	2309.998	100 YR	1200.00	139.05	145.10	145.10	146.89	0.013019	10.73	111.88	90.15	1.00
Main Reach	2309.998	50 YR	950.00	139.05	144.48	144.48	146.09	0.013353	10.18	93.30	43.11	1.00
Main Reach	2309.998	25 YR	630.00	139.05	143.63	143.52	144.88	0.012788	8.98	70.19	25.46	0.95
Main Reach	2309.998	10 YR	430.00	139.05	142.98	142.77	143.94	0.011745	7.89	54.50	22.55	0.89
Main Reach	2309.998	5 YR	290.00	139.05	142.40	142.11	143.13	0.010623	6.87	42.21	19.98	0.83
Main Reach	2309.998	2 YR	120.00	139.05	141.39	141.04	141.77	0.008469	4.96	24.19	15.92	0.71
Main Reach	2161.775	100 YR	1200.00	137.65	143.22	143.29	145.15	0.010592	11.15	107.65	127.16	1.03
Main Reach	2161.775	50 YR	950.00	137.65	142.64	142.67	144.33	0.010724	10.43	91.12	73.50	1.01
Main Reach	2161.775	25 YR	630.00	137.65	141.75	141.75	143.10	0.011249	9.33	67.54	27.75	1.00
Main Reach	2161.775	10 YR	430.00	137.65	141.05	141.05	142.16	0.012110	8.45	50.89	23.02	1.00
Main Reach	2161.775	5 YR	290.00	137.65	140.46	140.46	141.37	0.013100	7.65	37.90	20.93	1.00
Main Reach	2161.775	2 YR	120.00	137.65	139.48	139.48	140.08	0.015600	6.21	19.32	16.27	1.00
Main Reach	1835.094	100 YR	1200.00	133.65	143.02	139.22	143.48	0.000388	5.50	234.22	292.72	0.36
Main Reach	1835.094	50 YR	950.00	133.65	137.47	138.53	140.94	0.009035	14.95	63.56	69.35	1.53
Main Reach	1835.094	25 YR	630.00	133.65	136.62	137.51	139.51	0.009821	13.65	46.14	31.32	1.56
Main Reach	1835.094	10 YR	430.00	133.65	136.00	136.73	138.38	0.010348	12.38	34.73	17.78	1.56
Main Reach	1835.094	5 YR	290.00	133.65	135.50	136.08	137.41	0.010750	11.08	26.18	16.50	1.55
Main Reach	1835.094	2 YR	120.00	133.65	134.75	135.05	135.82	0.010868	8.29	14.48	14.57	1.46
Main Reach	1800.703	100 YR	1200.00	130.48	143.06	136.59	143.42	0.000278	4.81	264.66	282.56	0.27

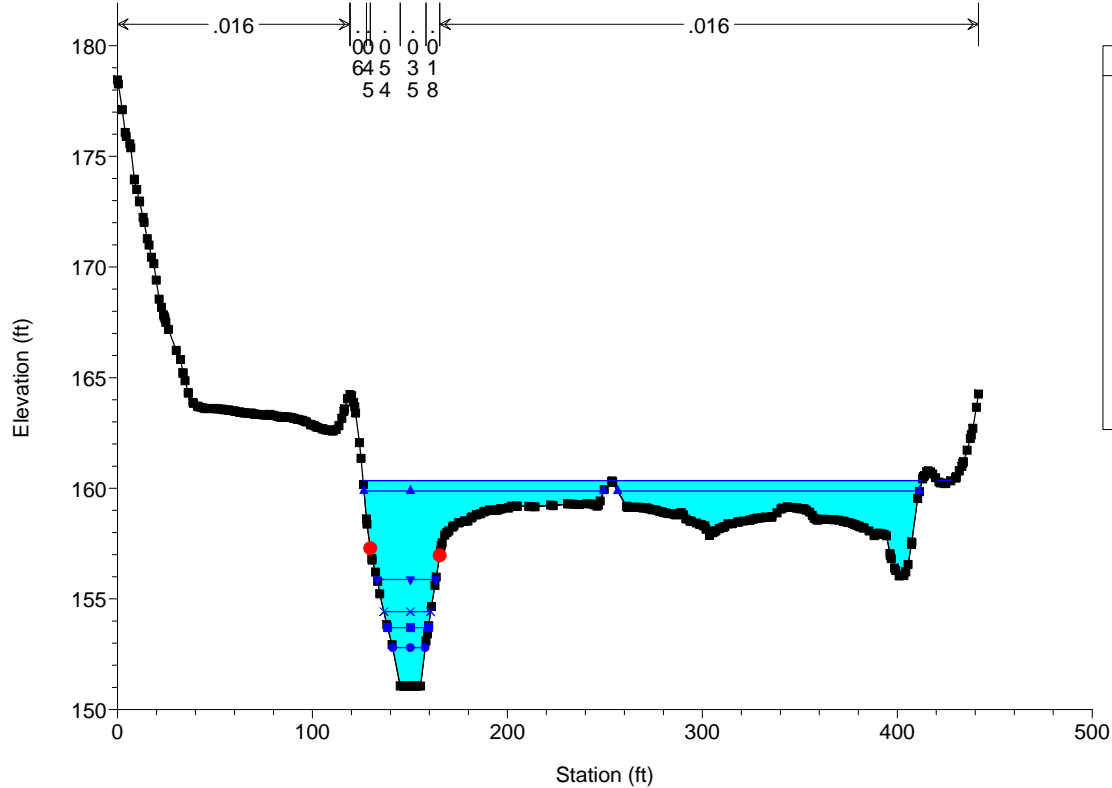
HEC-RAS Plan: Veg_only River: Auburn Creek Reach: Main Reach (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	1800.703	50 YR	950.00	130.48	139.38	135.78	139.96	0.000692	6.11	155.49	152.49	0.42
Main Reach	1800.703	25 YR	630.00	130.48	136.72	134.61	137.36	0.001052	6.40	98.40	19.76	0.51
Main Reach	1800.703	10 YR	430.00	130.48	132.37	133.73	137.13	0.025948	17.50	24.57	14.19	2.34
Main Reach	1800.703	5 YR	290.00	130.48	131.87	133.02	136.11	0.032702	16.53	17.55	13.54	2.56
Main Reach	1800.703	2 YR	120.00	130.48	131.16	131.92	134.42	0.058430	14.49	8.28	12.64	3.15
Main Reach	1350		Culvert									
Main Reach	925.4423	100 YR	1200.00	118.52	128.03	124.59	128.40	0.003683	4.89	245.75	50.95	0.37
Main Reach	925.4423	50 YR	950.00	118.52	122.93	123.93	126.14	0.076973	14.37	66.11	23.48	1.51
Main Reach	925.4423	25 YR	630.00	118.52	121.80	122.94	125.30	0.116591	15.02	41.95	19.23	1.79
Main Reach	925.4423	10 YR	430.00	118.52	121.23	122.15	124.10	0.119365	13.61	31.60	17.22	1.77
Main Reach	925.4423	5 YR	290.00	118.52	120.73	121.49	123.09	0.124435	12.33	23.52	15.47	1.76
Main Reach	925.4423	2 YR	120.00	118.52	119.91	120.40	121.48	0.152085	10.07	11.92	12.60	1.83
Main Reach	797.816	100 YR	1200.00	115.61	128.11		128.18	0.000227	2.23	538.44	77.09	0.15
Main Reach	797.816	50 YR	950.00	115.61	122.16	120.77	122.67	0.003840	5.70	166.58	49.28	0.55
Main Reach	797.816	25 YR	630.00	115.61	120.29	120.01	121.14	0.010619	7.38	85.41	36.84	0.85
Main Reach	797.816	10 YR	430.00	115.61	119.69	119.23	120.38	0.010695	6.67	64.48	32.51	0.83
Main Reach	797.816	5 YR	290.00	115.61	118.95	118.61	119.59	0.009821	6.45	44.97	22.20	0.80
Main Reach	797.816	2 YR	120.00	115.61	117.88	117.67	118.28	0.011273	5.12	23.44	18.47	0.80
Main Reach	652.2307	100 YR	1200.00	114.05	128.11		128.15	0.000095	1.63	737.79	89.36	0.10
Main Reach	652.2307	50 YR	950.00	114.05	122.10		122.30	0.001122	3.57	266.46	64.59	0.31
Main Reach	652.2307	25 YR	630.00	114.05	118.50	118.36	119.47	0.012264	7.87	80.04	35.59	0.92
Main Reach	652.2307	10 YR	430.00	114.05	117.90	117.74	118.70	0.012370	7.16	60.07	31.01	0.91
Main Reach	652.2307	5 YR	290.00	114.05	117.39	117.16	118.03	0.011796	6.41	45.22	26.54	0.87
Main Reach	652.2307	2 YR	120.00	114.05	116.55	116.16	116.87	0.008116	4.57	26.25	19.31	0.69
Main Reach	513.9224	100 YR	1200.00	112.62	128.11	118.12	128.14	0.000067	1.45	827.31	245.49	0.08
Main Reach	513.9224	50 YR	950.00	112.62	122.06	117.61	122.17	0.000520	2.73	347.40	69.73	0.22
Main Reach	513.9224	25 YR	630.00	112.62	117.63	116.84	118.21	0.005910	6.12	102.94	38.22	0.66
Main Reach	513.9224	10 YR	430.00	112.62	116.79	116.25	117.33	0.007277	5.91	72.79	33.43	0.71
Main Reach	513.9224	5 YR	290.00	112.62	116.14	115.74	116.62	0.008361	5.53	52.42	29.55	0.73
Main Reach	513.9224	2 YR	120.00	112.62	114.59	114.59	115.24	0.017558	6.49	18.49	14.18	1.00
Main Reach	414.6495	100 YR	1200.00	111.16	128.11		128.13	0.000033	1.10	1523.16	249.59	0.06
Main Reach	414.6495	50 YR	950.00	111.16	122.05		122.12	0.000305	2.19	433.03	77.99	0.16
Main Reach	414.6495	25 YR	630.00	111.16	117.07		117.58	0.006440	5.74	109.70	46.64	0.66
Main Reach	414.6495	10 YR	430.00	111.16	116.11		116.64	0.006580	5.85	73.50	30.42	0.66
Main Reach	414.6495	5 YR	290.00	111.16	115.43		115.88	0.006563	5.35	54.18	25.46	0.65
Main Reach	414.6495	2 YR	120.00	111.16	114.05	113.22	114.30	0.004168	4.01	29.93	15.39	0.51
Main Reach	307.2411	100 YR	1200.00	110.58	128.11		128.12	0.000021	0.94	1632.16	243.91	0.05
Main Reach	307.2411	50 YR	950.00	110.58	122.02		122.09	0.000253	2.13	446.56	75.18	0.15
Main Reach	307.2411	25 YR	630.00	110.58	116.65		117.03	0.003653	4.91	128.38	46.23	0.52
Main Reach	307.2411	10 YR	430.00	110.58	115.56		115.98	0.005269	5.21	82.46	35.53	0.60
Main Reach	307.2411	5 YR	290.00	110.58	114.89		115.24	0.004926	4.73	61.33	28.92	0.57
Main Reach	307.2411	2 YR	120.00	110.58	113.59		113.84	0.004498	4.00	30.01	16.65	0.52
Main Reach	195.1298	100 YR	1200.00	110.73	128.11		128.12	0.000021	1.03	2202.39	334.28	0.05
Main Reach	195.1298	50 YR	950.00	110.73	122.00		122.07	0.000204	2.12	455.60	119.68	0.14
Main Reach	195.1298	25 YR	630.00	110.73	116.32		116.65	0.002928	4.59	137.15	46.23	0.47
Main Reach	195.1298	10 YR	430.00	110.73	114.51		115.18	0.009367	6.60	65.17	30.47	0.80
Main Reach	195.1298	5 YR	290.00	110.73	113.77		114.42	0.010763	6.48	44.73	23.80	0.83
Main Reach	195.1298	2 YR	120.00	110.73	112.79		113.15	0.008533	4.80	24.97	17.68	0.71
Main Reach	141.507	100 YR	1200.00	110.64	128.11		128.12	0.000012	0.74	2359.63	355.33	0.04
Main Reach	141.507	50 YR	950.00	110.64	121.99		122.05	0.000239	2.11	499.10	160.74	0.15
Main Reach	141.507	25 YR	630.00	110.64	116.22		116.51	0.001846	4.31	146.18	37.30	0.38
Main Reach	141.507	10 YR	430.00	110.64	114.32		114.76	0.004831	5.36	80.29	31.02	0.59
Main Reach	141.507	5 YR	290.00	110.64	113.53		113.93	0.005903	5.08	57.09	27.94	0.63
Main Reach	141.507	2 YR	120.00	110.64	112.43		112.70	0.007399	4.13	29.03	23.16	0.65
Main Reach	65.30157	100 YR	1200.00	109.47	128.11		128.12	0.000014	0.84	2521.92	370.27	0.04
Main Reach	65.30157	50 YR	950.00	109.47	121.97		122.03	0.000190	2.01	543.71	143.30	0.13
Main Reach	65.30157	25 YR	630.00	109.47	116.09		116.37	0.001844	4.27	147.47	37.84	0.38
Main Reach	65.30157	10 YR	430.00	109.47	113.68		114.29	0.007373	6.27	68.59	28.36	0.71
Main Reach	65.30157	5 YR	290.00	109.47	112.59		113.31	0.010463	6.82	42.51	20.00	0.82
Main Reach	65.30157	2 YR	120.00	109.47	111.30	111.24	111.87	0.015726	6.07	19.78	15.41	0.94
Main Reach	4.590075	100 YR	1200.00	108.59	128.11	114.26	128.12	0.000018	0.92	2526.00	407.77	0.04
Main Reach	4.590075	50 YR	950.00	108.59	121.86	113.63	122.01	0.000338	3.11	305.02	94.97	0.17
Main Reach	4.590075	25 YR	630.00	108.59	115.98	112.63	116.28	0.001308	4.36	144.52	27.52	0.32
Main Reach	4.590075	10 YR	430.00	108.59	113.56	111.88	113.95	0.003071	5.02	85.65	23.70	0.47
Main Reach	4.590075	5 YR	290.00	108.59	112.51	111.25	112.85	0.003528	4.69	61.85	21.58	0.49
Main Reach	4.590075	2 YR	120.00	108.59	110.23	110.23	110.84	0.018144	6.28	19.11	15.64	1.00

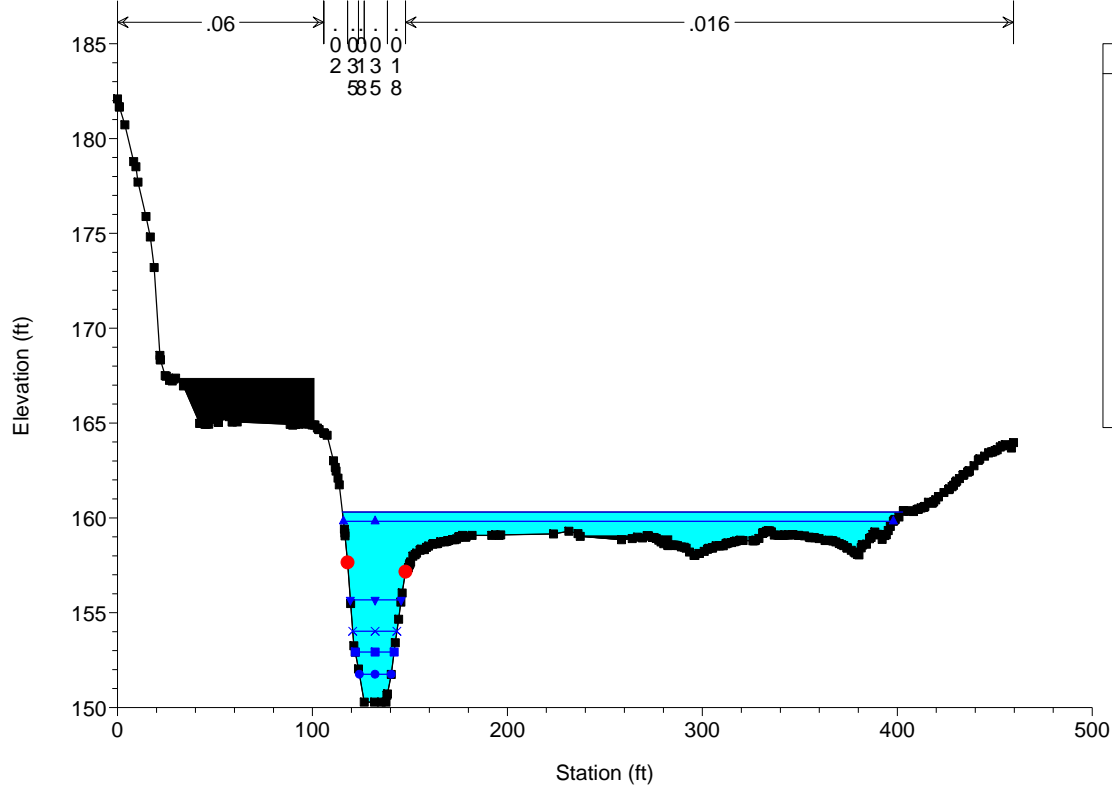
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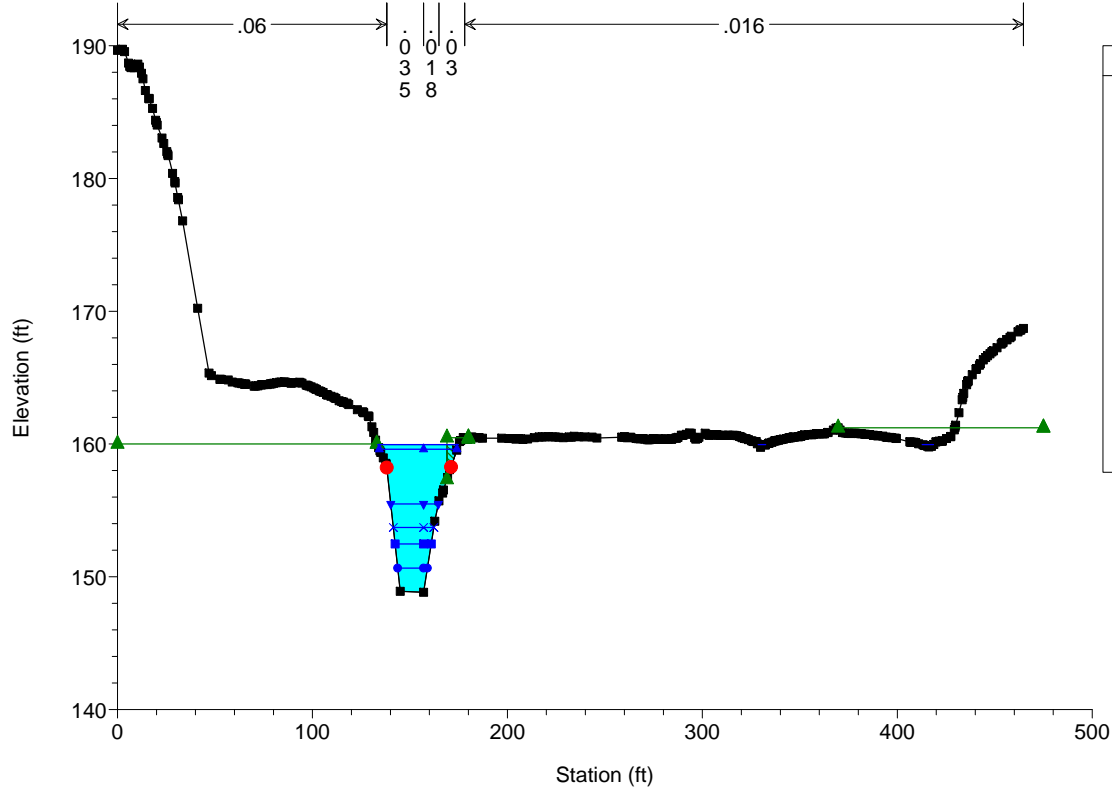
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 3229.405

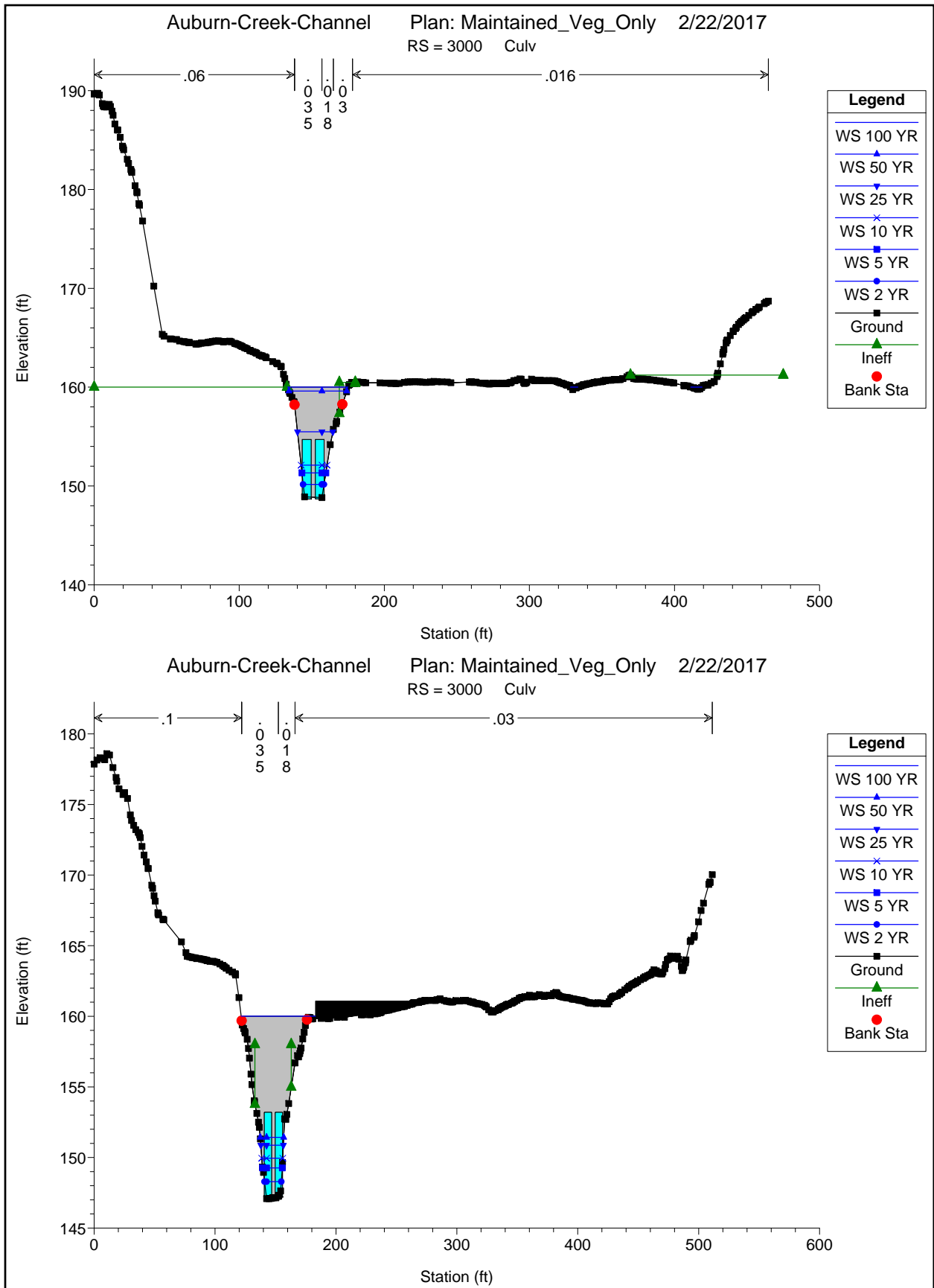


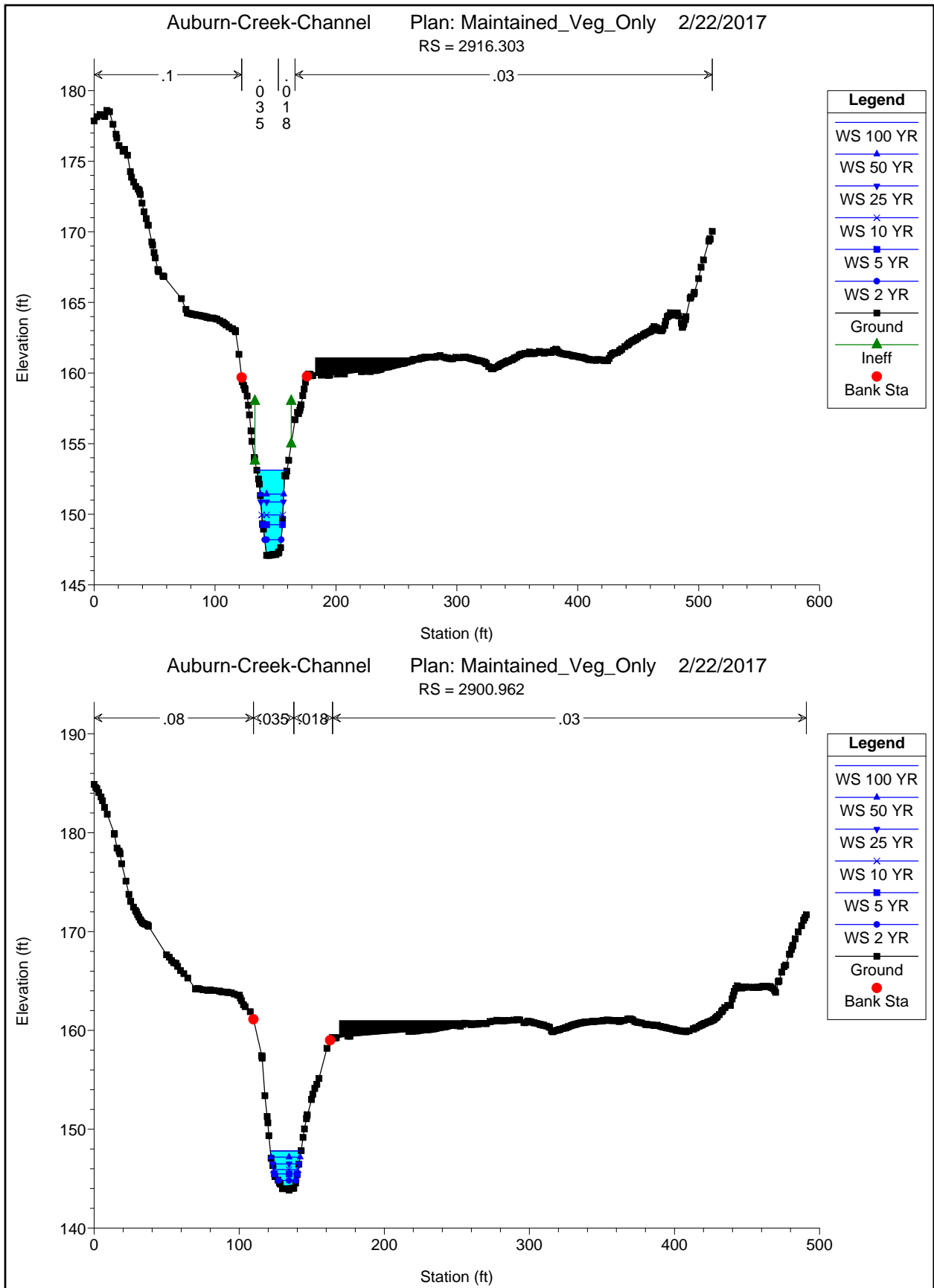
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 3159.787

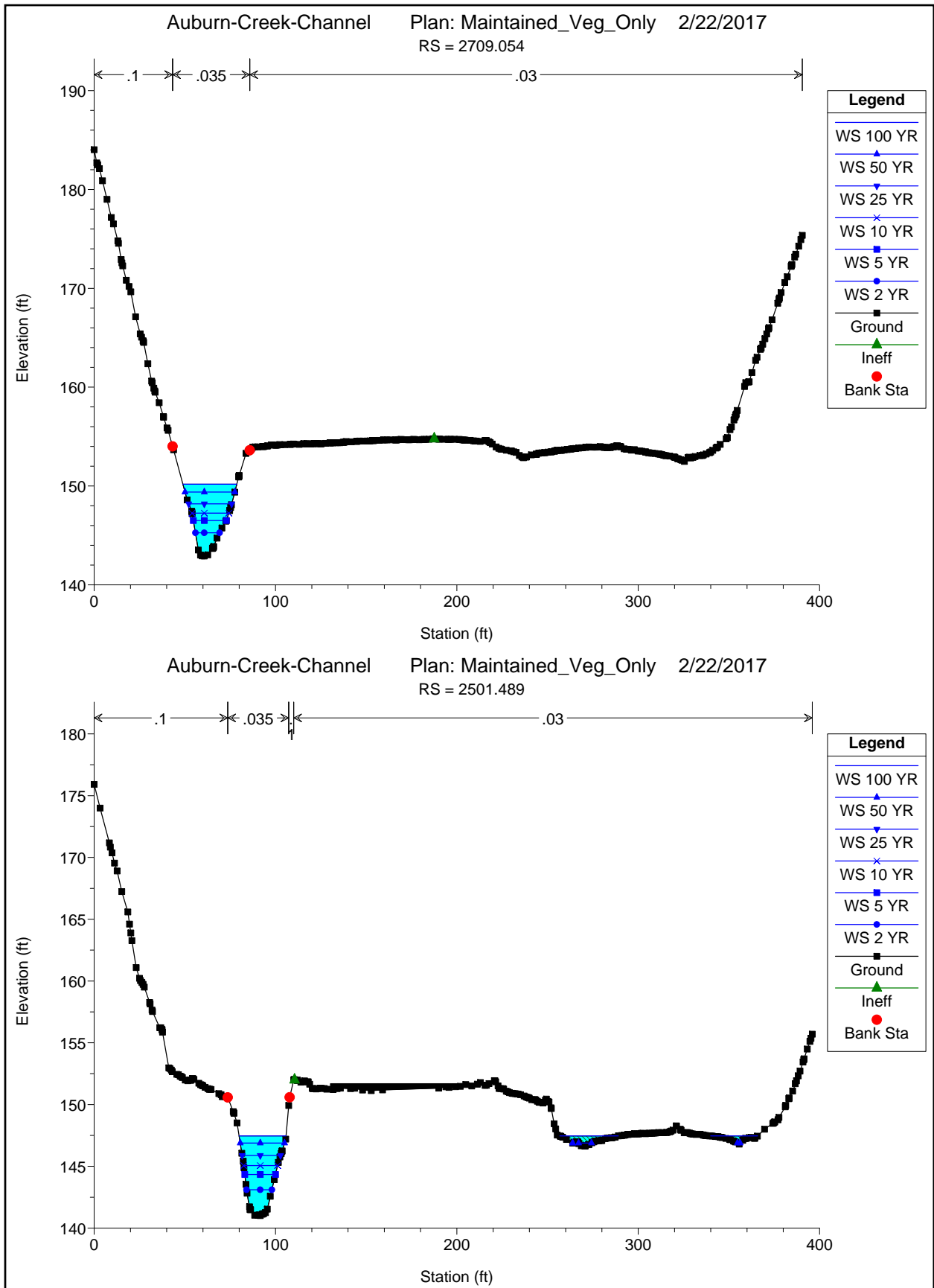


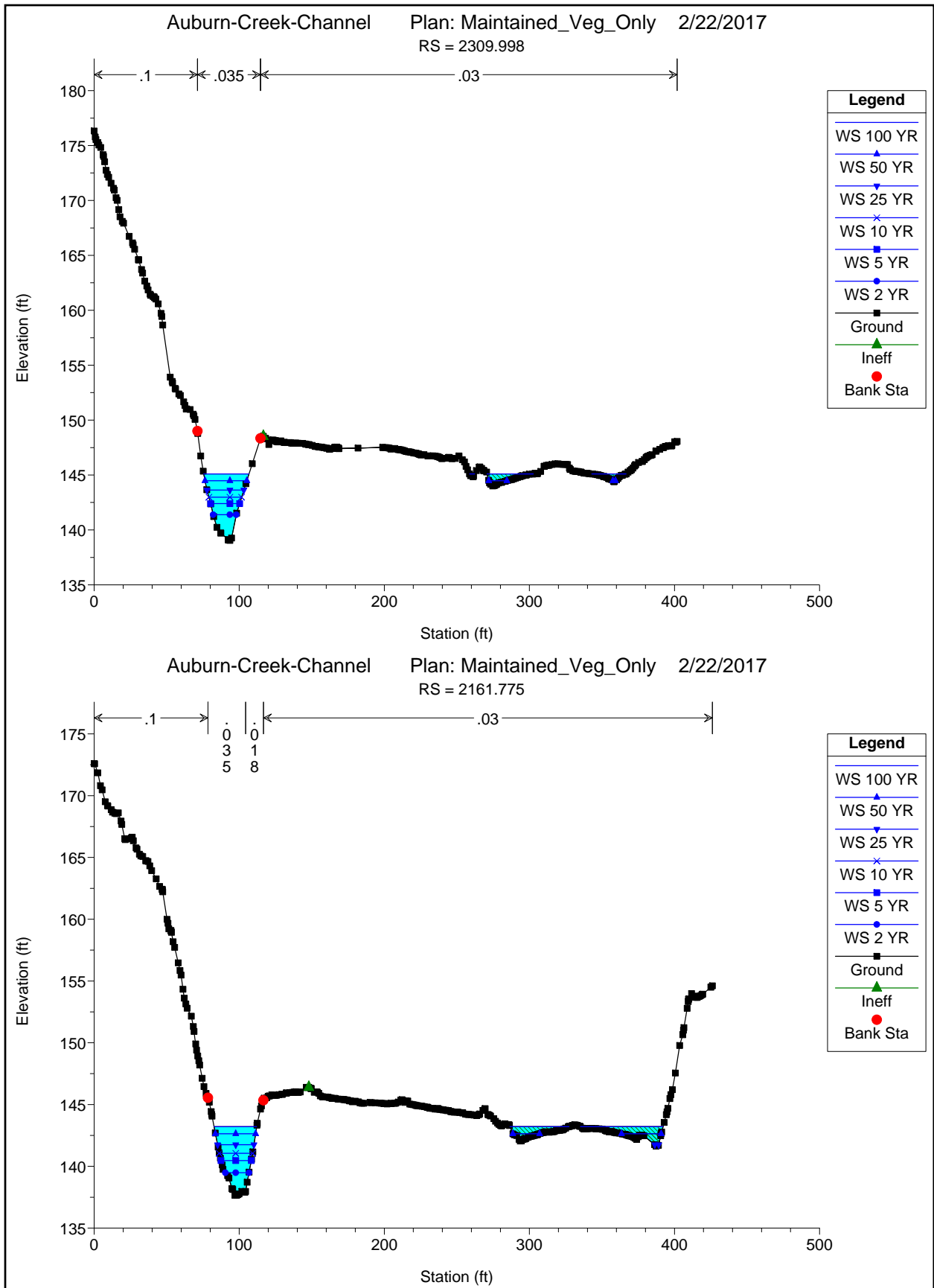
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 3025.628



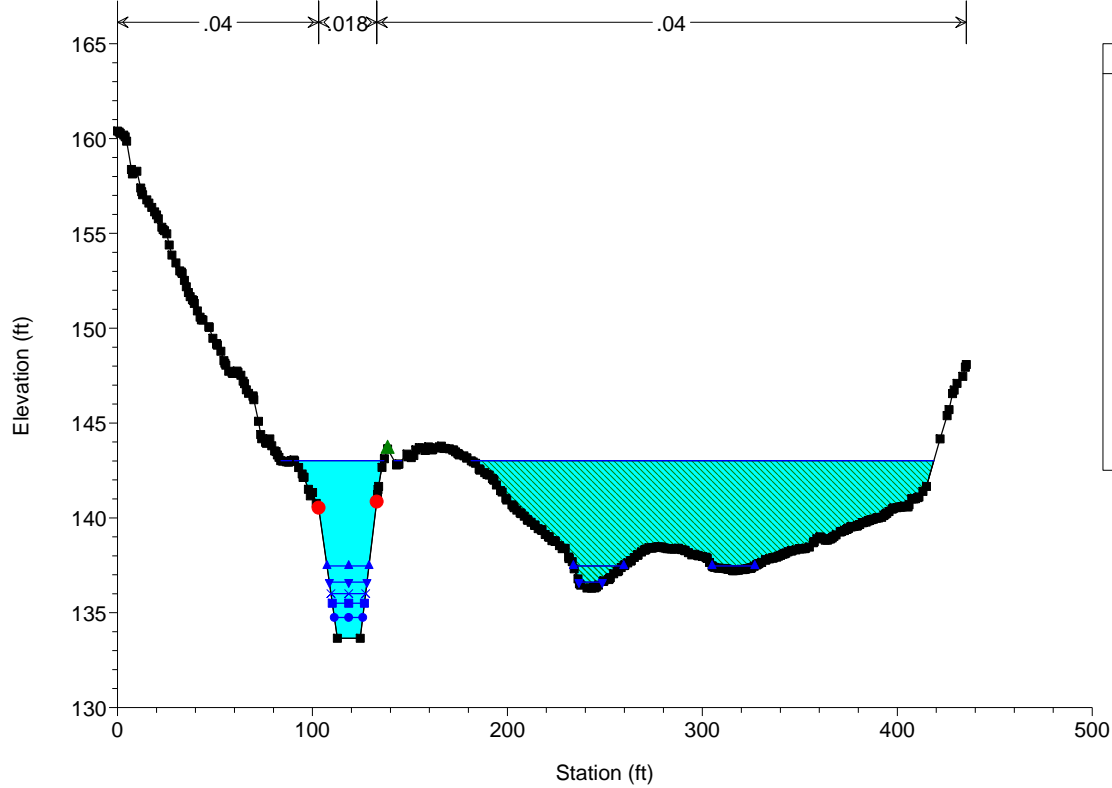




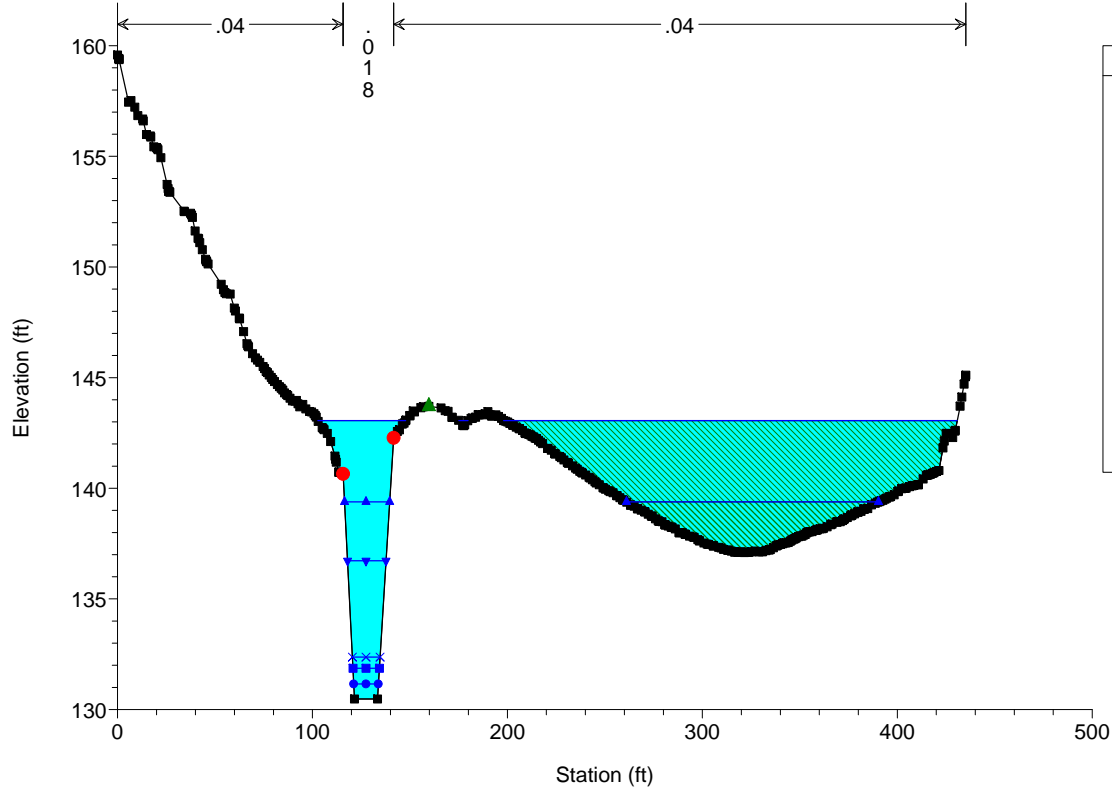


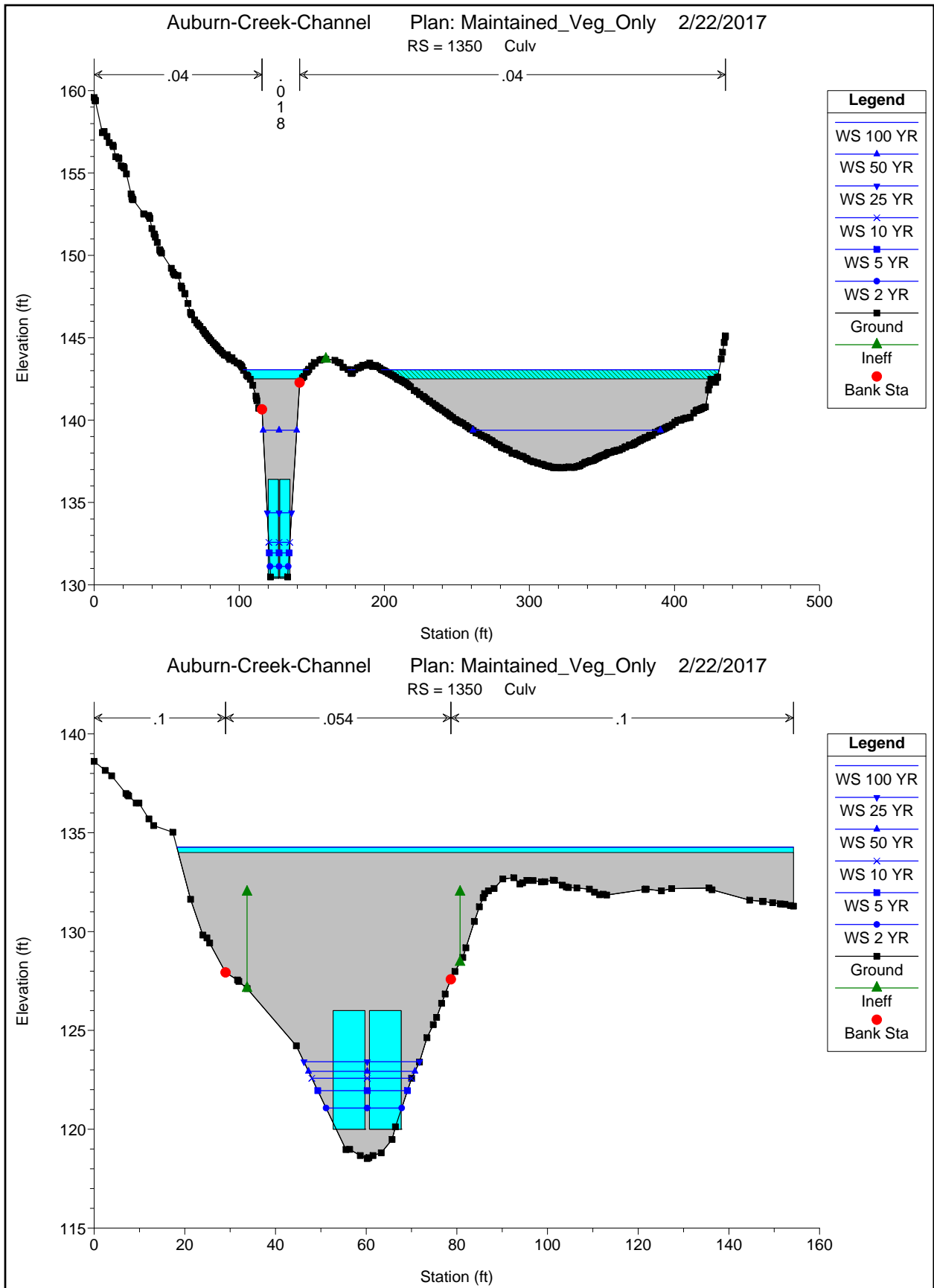


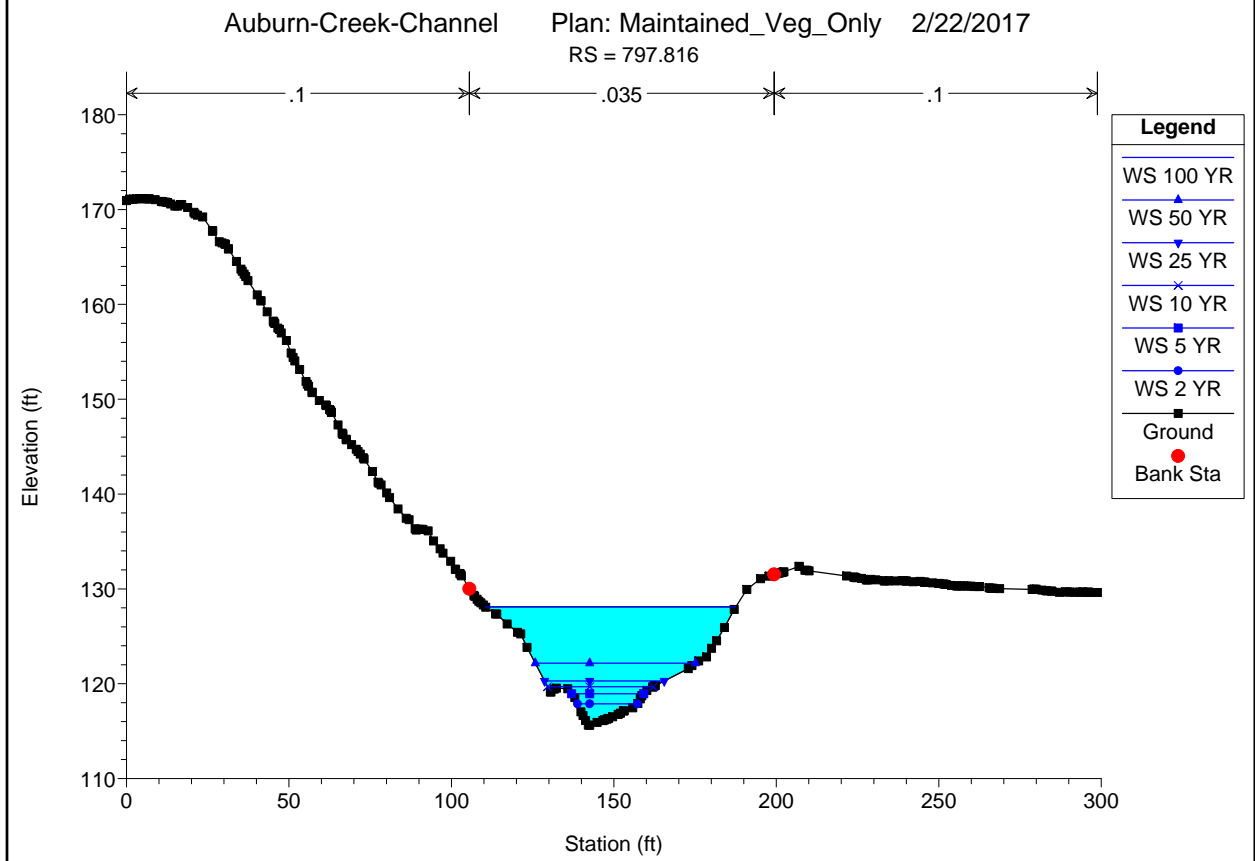
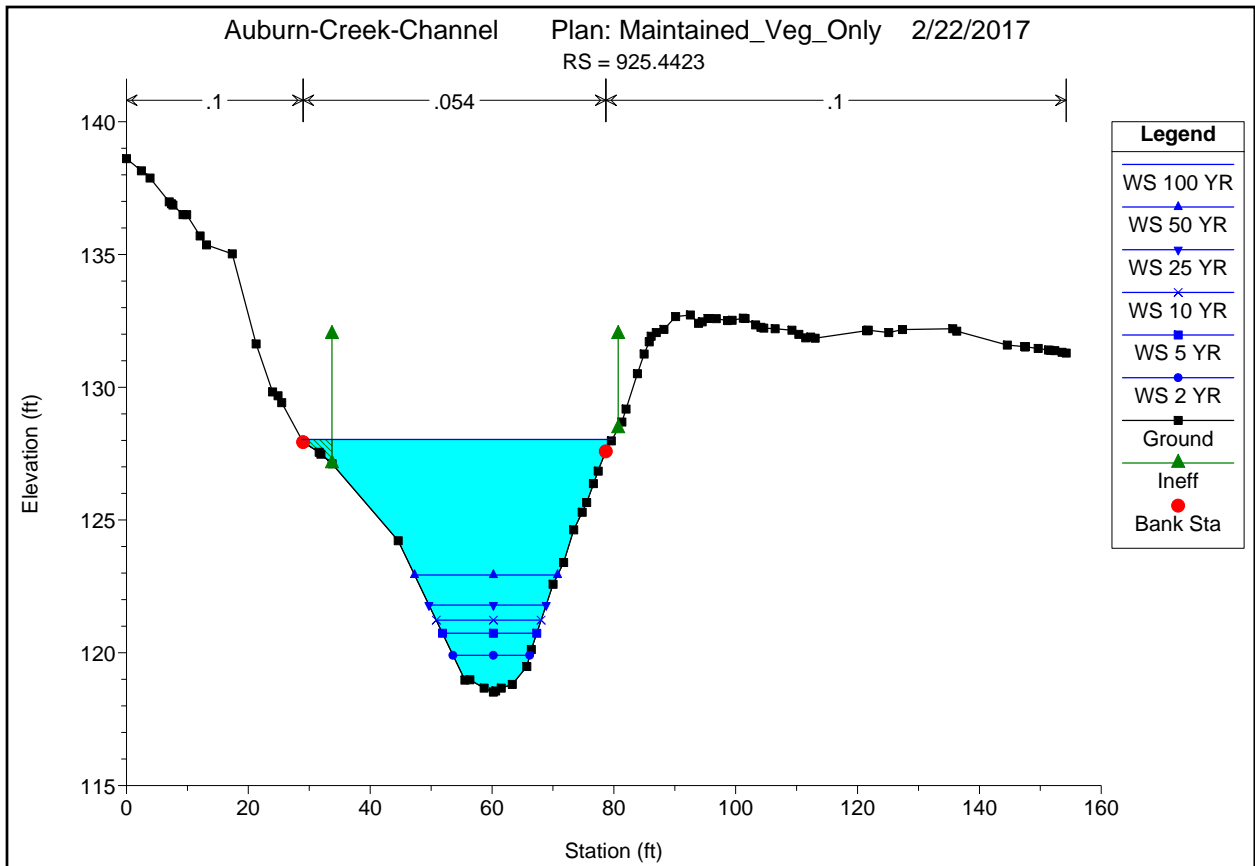
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 1835.094



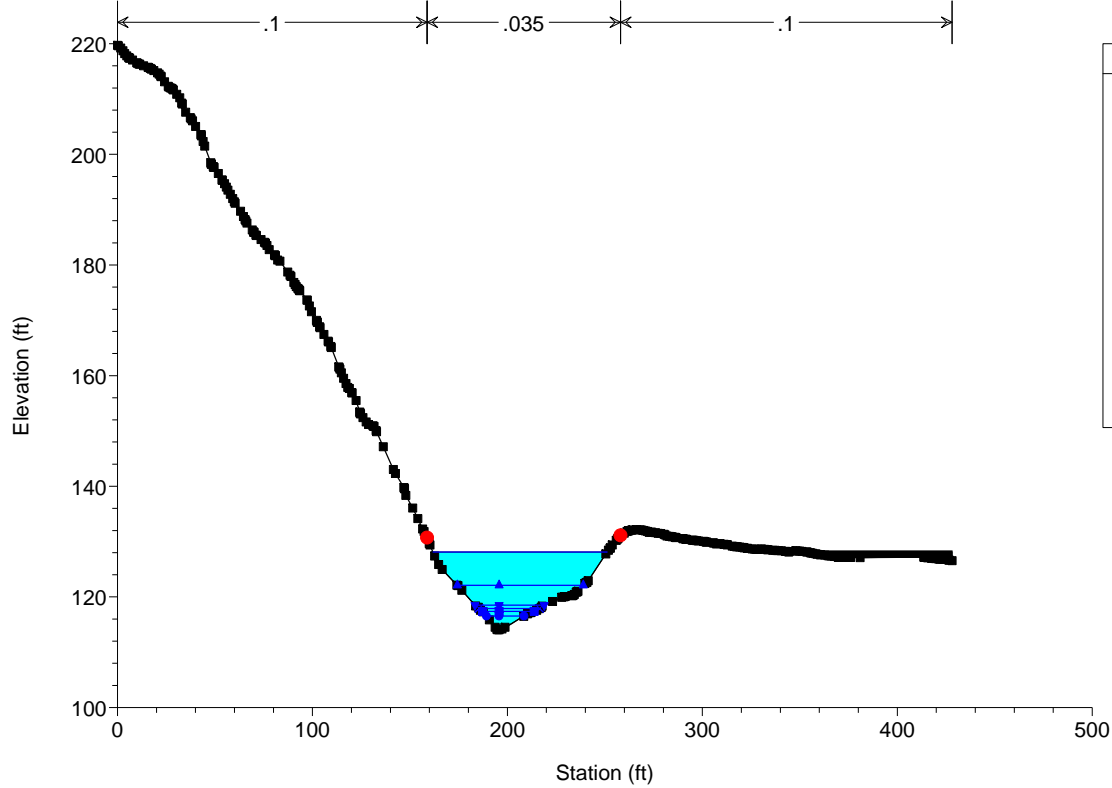
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 1800.703





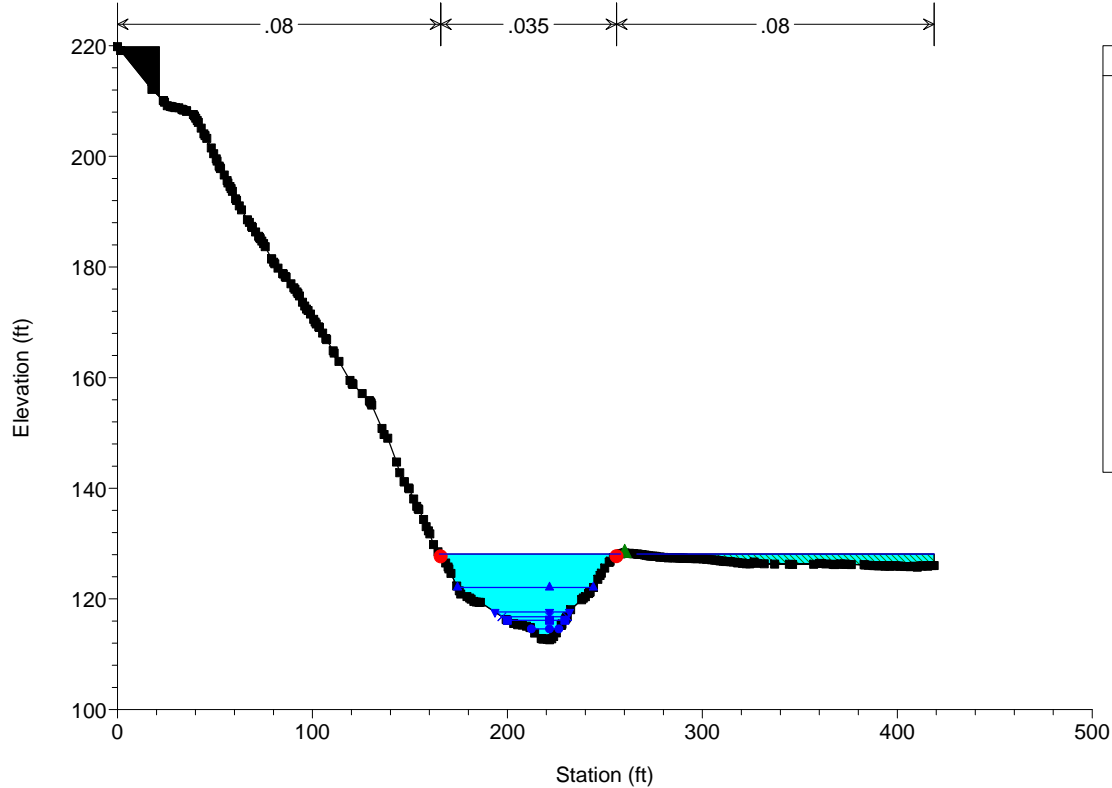


Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 652.2307

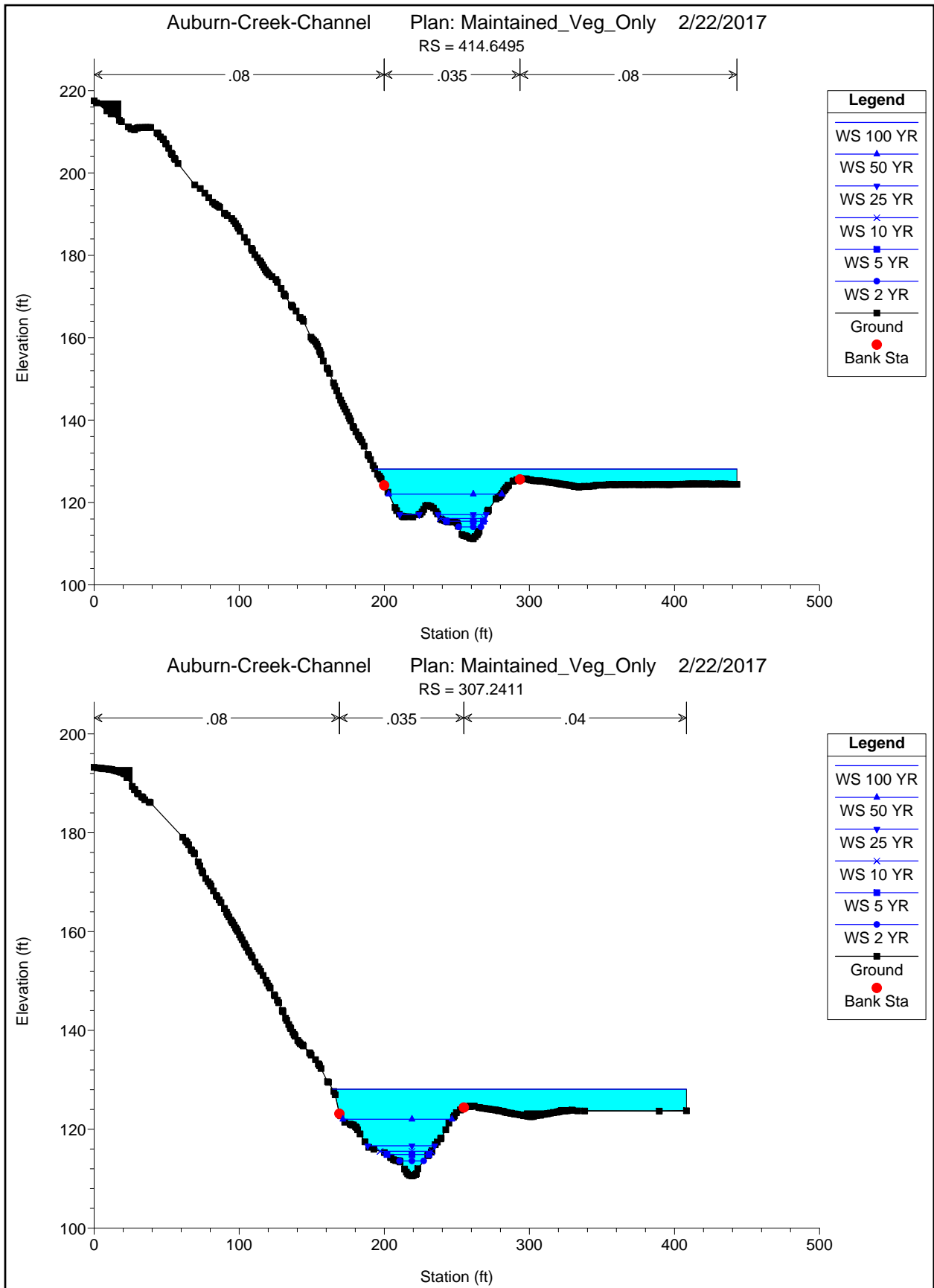


Legend	
WS 100 YR	▲
WS 50 YR	◆
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	●
Ground	■
Bank Sta	●

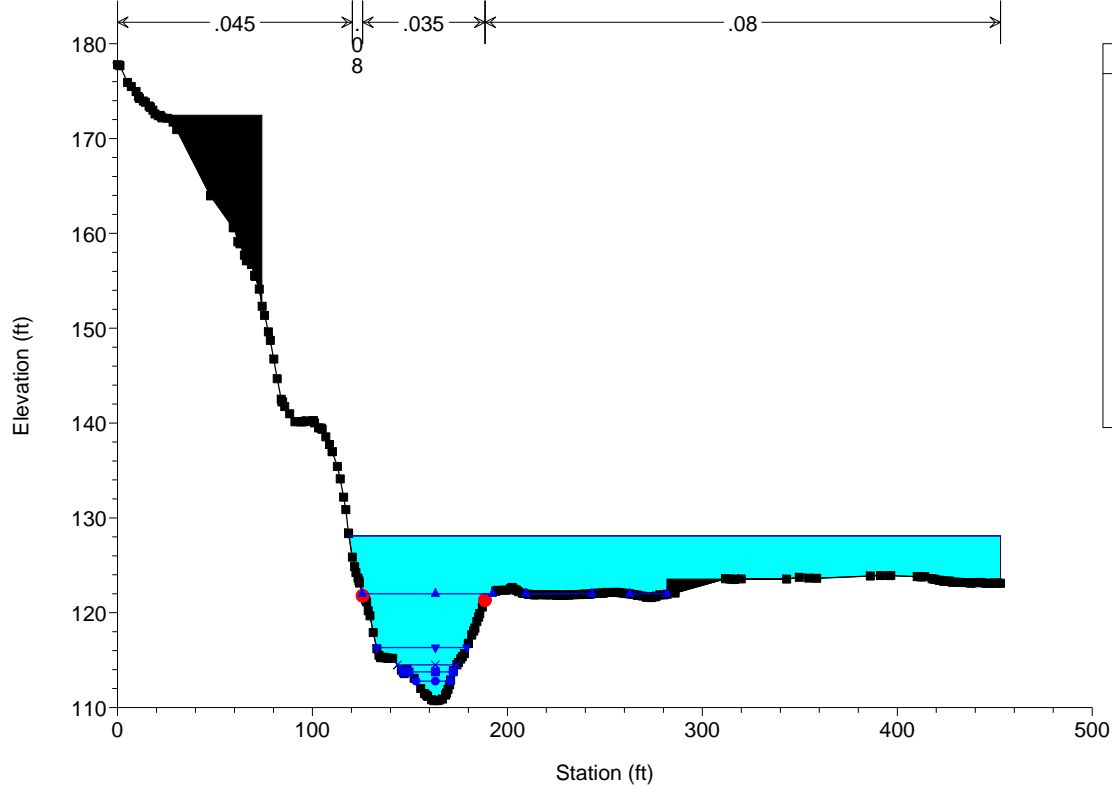
Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 513.9224



Legend	
WS 100 YR	▲
WS 50 YR	◆
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	●
Ground	■
Ineff	▲
Bank Sta	●

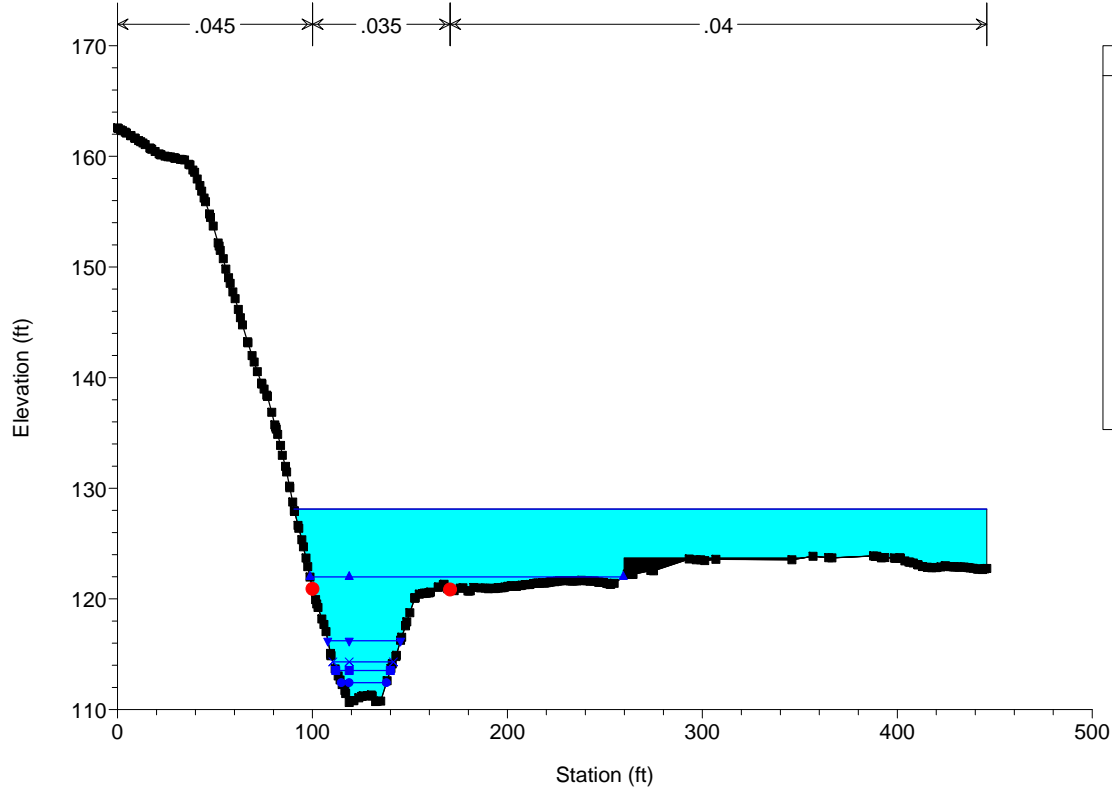


Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 195.1298



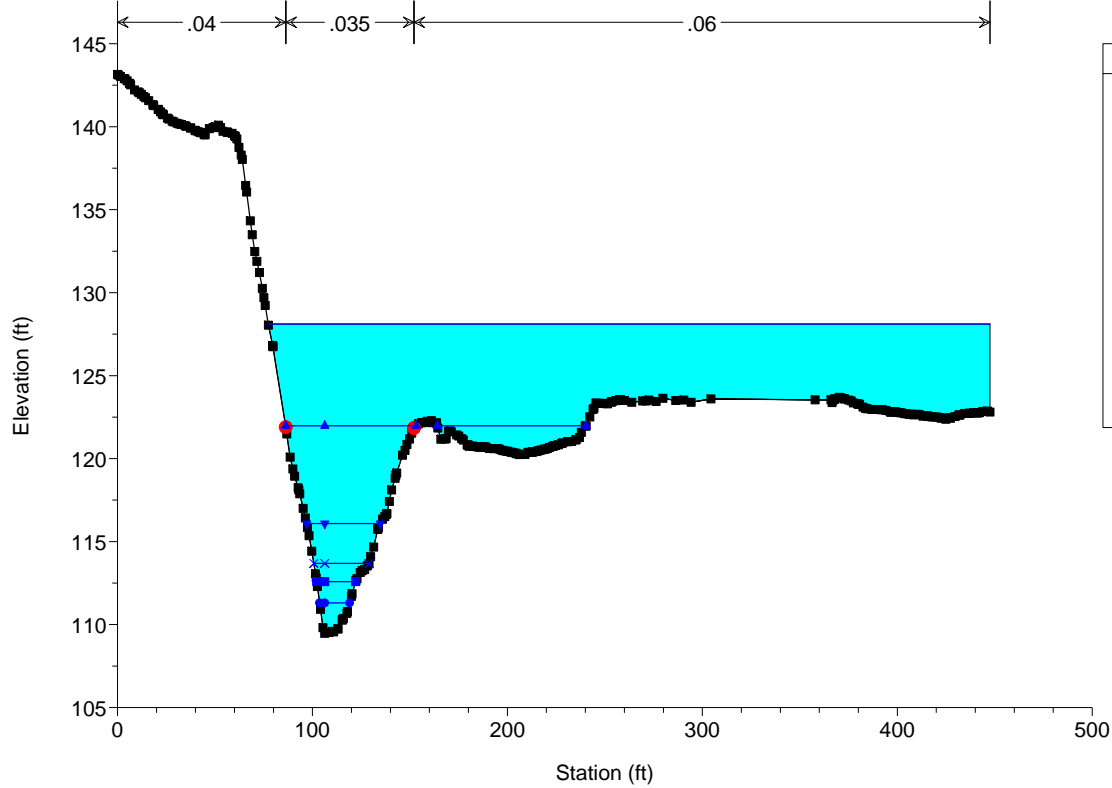
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	*
WS 5 YR	■
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 141.507

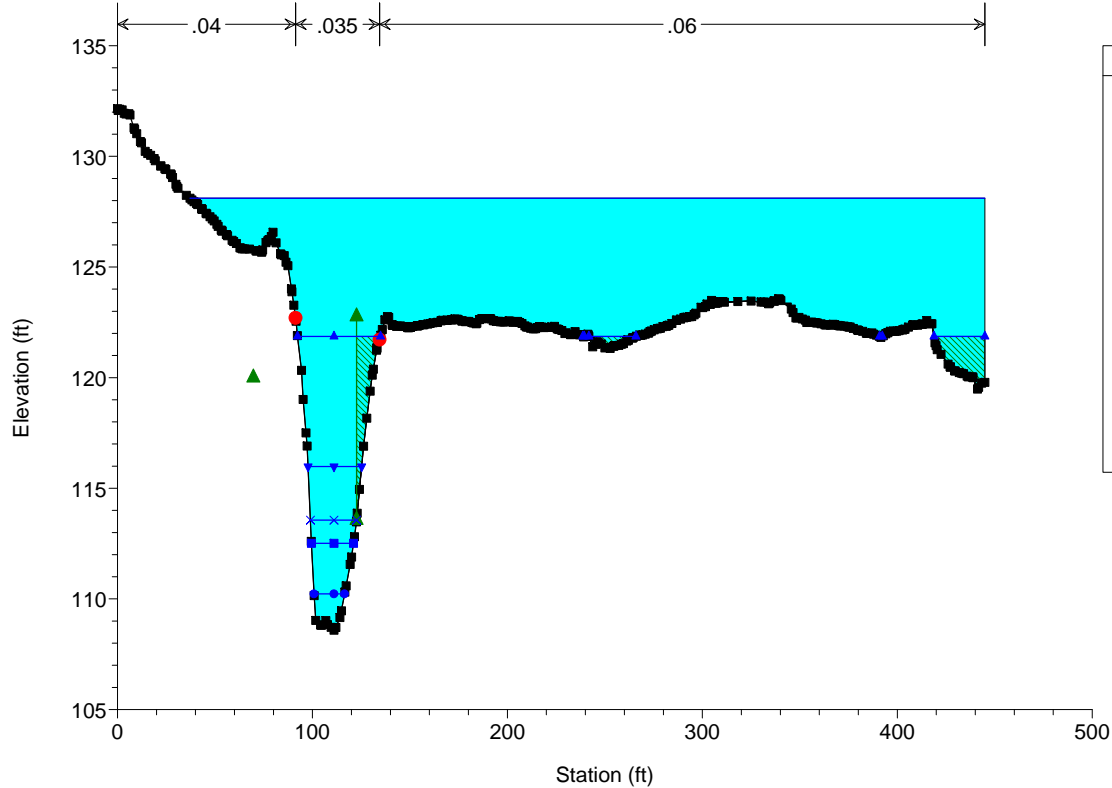


Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	*
WS 5 YR	■
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 65.30157



Auburn-Creek-Channel Plan: Maintained_Veg_Only 2/22/2017
RS = 4.590075



HEC-RAS Version 4.1.0 Jan 2010
 U. S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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X   X   XXXXXX   XXXX   XXXX   XX   XXXX
X   X   X       X   X   X   X   X   X
X   X   X       X       X   X   X   X   X
XXXXXXXX XXXX   X       XXX XXXX XXXXXXX XXXX
X   X   X       X       X   X   X   X   X
X   X   X       X   X   X   X   X   X   X
X   X   XXXXXX   XXXX   X   X   X   X   XXXXX
  
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PROJECT DATA
 Project Title: Auburn-Creek-Channel
 Project File : AuburnCreek.prj
 Run Date and Time: 2/22/2017 9:29:07 AM

Project in English units

PLAN DATA

Plan Title: Maintained_Veg_Only
 Plan File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.p04

Geometry Title: Maintained_Veg_Only
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g06

Flow Title : FEMA_Flow Rates
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f01

Plan Summary Information:

Number of: Cross Sections = 22 Multiple Openings = 0
 Culverts = 2 Inline Structures = 0
 Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
 Critical depth calculation tolerance = 0.01
 Maximum number of iterations = 20
 Maximum difference tolerance = 0.3
 Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
 Conveyance Calculation Method: At breaks in n values only
 Friction Slope Method: Average Conveyance
 Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: FEMA_Flow Rates
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f01

Flow Data (cfs)

River	Reach	RS	100 YR	50 YR	25 YR
10 YR	5 YR	2 YR			
Auburn Creek	Main Reach	3283.479	1200	950	630
430	290	120			

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Auburn Creek	Main Reach	100 YR	Normal S = 0.005	Known WS =
128.11				
Auburn Creek	Main Reach	50 YR	Normal S = 0.005	Known WS =
121.86				
Auburn Creek	Main Reach	25 YR	Normal S = 0.005	Known WS =
115.98				
Auburn Creek	Main Reach	10 YR	Normal S = 0.005	Known WS =
113.56				
Auburn Creek	Main Reach	5 YR	Normal S = 0.005	Known WS =
112.51				
Auburn Creek	Main Reach	2 YR	Normal S = 0.005	Known WS =
110.11				

GEOMETRY DATA

Geometry Title: Maintained_Veg_Only
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g06

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3283.479

INPUT

Description:

Station Elevation Data num= 352									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.35	.15	170.33	.26	170.32	.4	170.3	2.44	170.05
3.01	170.02	3.71	169.98	4.55	169.97	5.23	169.93	5.97	169.93
6.89	169.87	8.64	169.81	9.78	170.06	10.31	170.18	11.17	170.19
12.32	170.22	13.29	170.07	16.22	169.75	16.96	169.54	17.65	169.38
18.05	169.34	19.73	169.16	20.83	168.97	21.71	168.8	23.26	168.45
23.36	168.44	23.63	168.36	25.49	167.88	26.16	167.66	27.62	167.13
28.52	166.83	29.49	166.51	30.9	166.05	31.17	165.95	31.35	165.9
32.96	165.45	33.91	165.24	34.65	165.07	35.65	164.91	36.28	164.82
36.77	164.74	38.16	164.6	39.35	164.54	40.19	164.48	42.11	164.34
42.28	164.33	42.36	164.33	44.56	164.22	44.98	164.19	46.33	164.15
47.95	164.05	50.66	163.97	50.68	163.97	50.96	163.95	53.6	163.77
53.7	163.77	53.89	163.77	55.39	163.78	56.22	163.73	57.55	163.64
59.24	163.59	59.76	163.58	60.42	163.56	61.2	163.54	61.8	163.52
63.46	163.48	64.67	163.45	65.56	163.44	66.97	163.38	67.15	163.37
67.27	163.36	69.65	163.31	70.15	163.31	71.58	163.25	72.72	163.25
73.62	163.24	75.76	163.16	75.94	163.15	76.18	163.16	77.42	163.17
78.33	163.13	79.04	163.1	80.22	163.04	80.85	163.03	81.22	163.03
82.84	163.04	84.04	163.02	84.85	163	86.5	162.97	86.81	162.97
86.96	162.97	88.88	162.95	89.66	162.95	90.75	162.97	92.47	162.96
92.49	162.96	92.51	162.96	95.25	162.96	95.31	162.96	97.03	162.94
98.12	162.9	99.04	162.87	100.94	162.79	101.65	162.77	103.77	162.75
104.6	162.74	106.58	162.78	107.26	162.81	109.5	163.14	109.76	163.19
110.22	163.38	111.69	163.92	112.5	164.17	113.36	164.39	113.84	164.51
115.43	164.4	115.93	164.29	116.48	164	117.43	163.46	118.25	163.07
119.38	162.52	121.32	160.61	121.64	160.38	122.15	160.07	124.28	159.12
125	158.9	127.25	156.55	127.9	155.87	132.24	153.42	134.13	152.15
134.86	151.66	136.53	151.66	136.66	151.66	136.88	151.66	140.71	151.66

141.24	151.66	142.47	151.66	146.45	151.66	149.16	151.66	149.46	151.66
149.84	151.66	151.23	151.66	152.32	151.66	153.29	151.66	155.53	151.66
157.65	153.27	159.39	155.27	161.29	157.44	161.88	157.85	163.42	157.8
164.87	157.84	165.15	157.84	165.38	157.86	167.04	157.88	167.92	157.92
168.18	157.95	170.4	158.21	171.17	158.23	172.92	158.23	174.36	158.26
175.75	158.24	176.6	158.25	177.42	158.27	178.75	158.29	180.87	158.27
181.31	158.27	182.08	158.3	183.22	158.36	183.87	158.36	185.5	158.36
187.31	158.32	188.07	158.31	190.54	158.36	191.08	158.36	194.09	158.4
194.14	158.4	194.19	158.4	195.9	158.36	197.28	158.36	197.71	158.37
198.26	158.39	199.75	158.41	200.91	158.46	201.59	158.46	202.28	158.47
203.21	158.47	204.13	158.51	205.4	158.5	207.73	158.47	208.13	158.48
208.65	158.49	210.05	158.53	211.14	158.55	212.34	158.55	214.85	158.59
215.05	158.59	215.45	158.59	217.17	158.59	218.06	158.6	219.69	158.62
222.13	158.59	222.4	158.59	223.24	158.59	224.98	158.58	225.56	158.6
227.68	158.63	229.66	158.68	230.24	158.71	231.17	158.68	232.37	158.65
233.14	158.68	234.73	158.71	236.77	158.75	237.2	158.75	237.54	158.75
239.67	158.77	241.13	158.77	242	158.77	242.84	158.79	244.24	158.83
245.73	158.81	246.74	158.81	249.32	158.89	249.67	158.89	250.04	158.89
252.02	158.88	253.89	158.93	254.39	158.95	255.75	158.97	257.11	159
257.61	159	259.74	158.99	262.32	159.02	262.38	159.02	262.5	159.02
264.64	159.04	265.72	159.04	267.05	159.14	268.78	159.11	269.6	159.15
270.22	159.11	272.09	158.98	273.68	158.96	274.82	158.95	277.72	158.98
278.07	159	278.14	158.99	280.52	158.88	281.6	158.87	283.07	158.89
285.24	158.76	285.66	158.75	285.96	158.74	287.47	158.76	289.07	158.68
289.14	158.68	289.2	158.68	291.16	158.57	297.07	158.51	297.14	158.51
297.17	158.51	297.33	158.52	299.77	158.62	301.37	158.66	302.26	158.66
304.56	158.63	304.61	158.63	304.69	158.63	307.28	158.66	309.09	158.66
309.81	158.66	311.51	158.64	312.03	158.63	312.24	158.64	314.22	158.74
316.1	158.79	316.4	158.79	316.73	158.79	318.65	158.78	319.87	158.82
321.08	158.85	322.72	158.86	323.74	158.86	324.47	158.85	325.86	158.84
327.69	158.89	327.79	158.89	327.87	158.9	329.92	159.08	331.66	159.22
332.04	159.28	332.53	159.28	333.96	159.28	335.69	159.28	335.92	159.28
336.26	159.28	338.71	159.27	340.4	159.23	341.09	159.18	341.93	159.05
342.88	158.91	343.66	158.87	344.93	158.86	346	158.85	347.21	158.85
348.66	158.87	349.79	158.86	351.9	158.85	352.64	158.85	353.33	158.86
354.99	158.86	356.79	158.87	357.43	158.87	360.04	158.87	360.21	158.87
360.33	158.87	362.23	158.84	363.69	158.84	364.26	158.84	365.14	158.84
366.83	158.78	368.56	158.72	369.59	158.7	370.58	158.67	372.09	158.63
373.67	158.58	374.61	158.54	376.95	158.56	377.16	158.56	377.31	158.55
379.35	158.56	381.14	158.27	381.6	158.22	382.21	158.09	383.53	157.8
385.13	157.5	385.36	157.45	385.55	157.44	387.67	157.39	389.3	157.54
390.01	157.62	390.93	157.82	392.28	158.24	394.26	159.08	394.61	159.27
394.97	159.44	397.44	160.59	399.9	161.33	400.28	161.49	401.39	161.91
402.84	162.54	403.08	162.65						

Manning's n Values num= 6
Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val
0 .016 115.43 .045 125 .054 134.13 .035 157.65 .018
161.88 .016

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
125 161.29 51.96 54.07 55.73 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 129.5 162 F
166.5 403.08 157.87 F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3229.405

INPUT

Description:
Station Elevation Data num= 367
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 178.45 .44 178.27 2.5 177.11 3.97 176.08 4.42 175.9
6.28 175.57 6.84 175.39 8.59 173.97 8.68 173.93 9.82 173.5
11.22 172.98 11.34 172.94 13.17 172.24 13.59 172.02 15.23 171.28

16.2	170.99	17.39	170.44	18.64	170.15	19.87	169.41	21.32	168.55
22.58	168.18	23.6	167.84	23.99	167.75	24.34	167.66	24.77	167.5
26.11	167.18	30.16	166.23	32.35	165.82	33.6	165.22	33.65	165.19
34.64	164.86	36.26	164.32	36.34	164.3	38.62	163.88	39.01	163.84
40.93	163.72	41.38	163.69	41.47	163.69	43.08	163.65	44.08	163.63
44.83	163.6	46.65	163.6	46.7	163.6	49.08	163.61	49.25	163.61
49.56	163.6	51.09	163.59	51.96	163.59	53.58	163.58	54.5	163.55
55.57	163.54	56.93	163.53	57.11	163.53	57.25	163.53	59.78	163.49
59.82	163.49	60.51	163.48	62.53	163.44	62.6	163.44	62.76	163.44
64.47	163.41	65.24	163.4	66.77	163.39	68.19	163.39	68.83	163.4
69.63	163.37	70.27	163.35	70.76	163.34	72.33	163.34	73.47	163.33
74.34	163.32	75.69	163.31	76.01	163.31	76.21	163.31	78.11	163.34
79.03	163.31	80.21	163.29	81.77	163.26	82.2	163.25	82.92	163.23
83.91	163.2	84.51	163.21	85.66	163.23	87.41	163.21	87.42	163.21
87.45	163.21	89.09	163.2	90.15	163.17	90.84	163.15	92.16	163.12
92.76	163.11	93.07	163.11	94.88	163.07	96	163.03	97.04	162.99
98.93	162.89	99.13	162.87	99.4	162.87	100.79	162.84	101.81	162.78
102.74	162.75	104.87	162.7	105.13	162.68	105.43	162.68	106.65	162.64
107.7	162.64	108.22	162.62	108.91	162.62	109.89	162.59	110.63	162.59
112.19	162.66	113.57	162.83	115.03	163.16	116.12	163.48	116.5	163.59
117.92	164.04	119.27	164.24	120.1	164.19	121.14	163.88	121.71	163.68
122.16	163.4	124.08	162.06	124.88	161.35	126.11	160.17	127.7	158.61
127.95	158.38	129.7	157.29	130.46	156.82	130.57	156.75	132.4	156.21
133.47	155.79	134.53	155.23	138.14	153.84	140.85	152.93	145.06	151.06
146.55	151.06	147.01	151.06	147.85	151.06	149.4	151.06	150.95	151.06
151.71	151.06	152.92	151.06	153.37	151.06	153.66	151.06	155.48	151.06
158.25	153.09	159.02	153.42	159.6	153.79	161.04	154.66	162.81	155.61
163.49	155.99	165.26	156.97	165.61	157.17	166.06	157.4	166.57	157.53
167.86	157.88	168.97	158	169.94	158.07	171.76	158.24	172.62	158.3
175	158.43	175.36	158.45	178.01	158.51	178.04	158.51	178.07	158.51
179.72	158.52	181.38	158.66	181.45	158.67	181.95	158.74	184.04	158.8
184.32	158.81	186.3	158.84	187.82	158.93	188.53	158.96	190.77	159
190.88	159.01	191.01	159.01	192.74	159.01	194.3	159.01	194.67	159.01
195.67	159.04	196.75	159.08	196.93	159.07	200.51	159.11	200.61	159.11
202.1	159.19	204.34	159.19	204.85	159.19	205.08	159.19	210.94	159.18
212.17	159.17	214.19	159.16	222.18	159.24	223.5	159.21	230.86	159.29
232.15	159.29	234.44	159.28	236.95	159.26	240.9	159.3	242.86	159.29
244.61	159.25	245.96	159.19	246.66	159.23	247.65	159.42	249.67	159.94
253.58	160.31	253.67	160.32	253.68	160.32	253.73	160.31	254	160.27
261.13	159.17	261.27	159.19	261.71	159.13	262.8	159.15	263.72	159.14
264.9	159.13	267.2	159.14	267.55	159.14	267.74	159.14	269.57	159.1
270.96	159.11	271.67	159.11	272.82	159.07	274.18	159.03	275.05	159.03
276.55	159.01	278.07	158.95	278.92	158.95	279.93	158.91	281.37	158.88
282.57	158.86	284.01	158.85	285.77	158.81	286.69	158.8	287.73	158.86
289.14	158.9	290.36	158.8	291.54	158.61	293.61	158.53	293.92	158.51
294.41	158.5	296.92	158.43	298.49	158.37	299.42	158.36	300.63	158.3
301.33	158.3	301.84	158.15	303.65	157.87	305.43	157.99	306.17	158.03
306.93	158.08	308.67	158.17	310.26	158.22	310.99	158.24	311.53	158.27
313.16	158.39	315.34	158.4	315.35	158.4	318.27	158.47	318.83	158.48
321.32	158.52	324.01	158.55	324.25	158.55	324.55	158.56	326.01	158.6
327.18	158.63	328	158.64	328.74	158.65	330.37	158.66	332.21	158.69
332.83	158.69	335.4	158.7	335.56	158.7	335.75	158.72	338.32	158.89
340.38	159.06	341.08	159.1	343.59	159.15	343.74	159.15	343.89	159.15
346.12	159.14	348.44	159.11	348.49	159.11	348.56	159.11	350.22	159.07
351.42	159.08	352.27	159.07	353.33	159.01	355.03	158.92	356.34	158.78
357.25	158.65	358.36	158.6	358.99	158.56	359.49	158.57	360.85	158.59
361.81	158.6	362.8	158.6	364.25	158.59	364.89	158.59	367.19	158.58
367.45	158.58	367.7	158.58	369.89	158.56	372.19	158.51	372.33	158.51
372.94	158.49	374.69	158.45	375.09	158.45	376.81	158.42	378.04	158.36
378.89	158.34	380.05	158.29	380.85					

440.58 163.66 441.61 164.26

Manning's n Values		num= 7	
Sta	n Val	Sta	n Val
0	.016	119.27	.06
158.25	.018	165.26	.016

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	129.7	165.26		70.8	69.62		68.75	.1
Blocked Obstructions		num= 1						.3
Sta L	Sta R	Elev						
184.99	288.71	158.8851						

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3159.787

INPUT

Description:		num= 292	
Station	Elevation	Data	
Sta	Elev	Sta	Elev
0	182.09	.91	181.68
9.46	178.51	10.5	177.7
21.73	168.57	21.89	168.34
26.64	167.25	28.07	167.22
42.22	164.98	42.23	164.98
46.77	164.94	51.65	165.06
58.74	165.06	59	165.06
89.84	164.89	90.47	164.95
98.16	164.95	99.84	164.9
103.16	164.66	103.4	164.65
107.53	164.36	110.79	163.01
113.79	161.74	116.38	159.41
119.55	155.48	121.26	153.26
131.81	150.29	135.35	150.29
140.41	151.75	142.51	153.42
147.72	157.16	149.22	157.37
151.51	157.98	152.63	158.06
155.93	158.34	157.39	158.33
162.15	158.65	162.78	158.65
167.45	158.75	167.94	158.74
171.88	158.85	173.03	158.85
175.48	159.02	176.97	159.08
181.87	159.08	192.01	159.08
223.63	159.15	231.55	159.3
264.04	158.91	266.63	158.98
272.44	159.05	274.41	158.97
278.82	158.73	280.24	158.64
284.15	158.57	285.14	158.57
290.69	158.45	291.67	158.4
298.34	158.12	298.37	158.12
303.31	158.39	305.11	158.42
308.56	158.53	308.97	158.53
312.58	158.66	313.18	158.67
319.23	158.81	319.5	158.82
326.82	158.81	327.34	158.82
331.47	159.23	332.79	159.29
336.92	159.09	338.61	159.09
342.39	159.09	344.17	159.09
349.4	159.08	349.46	159.08
356.1	158.96	357.14	158.97
363.06	158.81	363.09	158.81
367.07	158.78	368.48	158.73
374.25	158.42	374.26	158.42
378.48	158.15	379.5	158.07
382.28	158.58	384.21	158.61
388.47	159.25	389.93	159.14
393.66	159.07	394.37	159.11

398.5	159.88	398.95	159.92	400.85	160.05	403.14	160.37	403.15	160.37
403.17	160.37	403.32	160.37	405.84	160.36	406.13	160.36	406.35	160.37
408.31	160.33	410.17	160.44	410.49	160.44	410.89	160.46	412.16	160.52
413.4	160.55	413.86	160.57	414.16	160.6	415.93	160.82	417.62	160.78
418.04	160.78	418.65	160.84	419.69	160.95	421.14	161.12	421.15	161.12
421.16	161.12	423.89	161.34	426.36	161.49	426.5	161.5	426.74	161.52
428.07	161.64	428.81	161.72	429.87	161.88	430.51	161.94	431.89	162.07
433.72	162.25	433.9	162.26	434.19	162.28	436.08	162.41	436.71	162.46
436.83	162.47	436.93	162.48	439.36	162.75	441.53	163.03	441.86	163.07
442.27	163.11	444.74	163.25	446.83	163.42	448.09	163.46	448.91	163.48
450.22	163.54	451.23	163.59	452.79	163.73	453.94	163.79	455.38	163.86
458.52	163.68	459.65	163.97						

Manning's n Values		num= 7	
Sta	n Val	Sta	n Val
0	.06	105.83	.02
138.43	.018	147.72	.016

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	118.02	147.72		126.5	134.16		135.59	.1
Blocked Obstructions		num= 2						.3
Sta L	Sta R	Elev	Sta L	Sta R	Elev			
181.03	284.29	159.054	29.52	100.81	167.3486			

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3025.628

INPUT

Description:		num= 361	
Station	Elevation	Data	
Sta	Elev	Sta	Elev
0	189.65	1.85	189.7
6.22	188.45	6.86	188.35
11.21	188.4	12.35	187.93
16.15	186.02	16.19	186
20.37	184.02	22.78	183.05
25.95	181.72	28.27	180.38
31.25	178.4	33.39	176.81
52.61	164.87	52.68	164.86
56.8	164.82	58.86	164.67
65.18	164.5	65.34	164.51
70.84	164.37	72.1	164.38
76.8	164.47	78.29	164.51
83	164.64	83.59	164.65
87.3	164.63	88.98	164.6
93.13	164.65	93.65	164.64
98.18	164.37	99.29	164.31
103.4	164.01	104.33	163.96
107.9	163.68	109.51	163.6
113.69	163.26	115	163.2
117.75	163.08	118.56	162.97
126.33	162.36	128.58	162.11
131.39	160.87	132.41	160.3
136.33	158.96	137.6	158.55
157	148.83	162.79	154.19
169.35	157.48	170.34	158.06
176.05	160.26	177.36	160.48
180.43	160.42	181.58	160.52
185.5	160.49	187.18	160.44
204.35	160.37	206.02	160.42
216.29	160.52	217.71	160.54
224.59	160.54	226.36	160.51
234.21	160.58	236.74	160.55
258.58	160.51	259.84	160.51
261.51	160.48	262.25	160.49
267.06	160.4	268.02	160.39
271.9	160.32	272.81	160.32

276.27	160.39	277.77	160.34	278.48	160.37	279.42	160.36	280.55	160.37
280.84	160.38	281.08	160.38	282.53	160.35	284.21	160.38	284.23	160.38
284.25	160.38	284.42	160.38	286.34	160.44	286.75	160.44	287.5	160.5
289.2	160.65	289.58	160.64	290.15	160.65	291.79	160.73	293.45	160.83
294.35	160.81	296.08	160.48	296.61	160.37	297.52	160.41	298.26	160.51
301.43	160.81	302.21	160.73	303.44	160.65	304.31	160.67	305.5	160.69
306.51	160.7	307.38	160.71	308.36	160.66	309.33	160.64	310.38	160.66
311.55	160.65	313.2	160.65	313.88	160.65	314.36	160.64	315.75	160.65
316.51	160.65	317.69	160.63	318.99	160.57	319.75	160.54	320.44	160.48
321.6	160.41	322.44	160.4	323.6	160.33	325.16	160.25	325.8	160.21
326.28	160.19	327.61	160.18	328.24	160.02	329.83	159.75	332.18	159.93
332.23	159.94	332.43	159.95	333.88	160.04	334.33	160.07	335.68	160.13
336.86	160.21	337.51	160.23	338.26	160.26	339.1	160.28	340.22	160.33
340.75	160.34	341.59	160.37	343.32	160.42	344.39	160.45	345.19	160.46
346.39	160.51	346.74	160.52	347.37	160.52	349.35	160.54	350.43	160.57
351.13	160.63	352.34	160.67	352.36	160.67	352.38	160.67	354.33	160.7
356.13	160.7	356.3	160.7	356.49	160.71	357.13	160.73	358.39	160.77
358.94	160.78	360.07	160.77	361.77	160.76	362.58	160.76	364.32	160.86
364.47	160.87	367.23	161.04	368.63	161.18	369.65	161.22	370.61	161.05
371.87	160.86	373.22	160.84	374.11	160.82	374.94	160.8	376.15	160.79
376.85	160.81	378	160.83	378.89	160.81	379.86	160.79	381.15	160.78
381.73	160.78	383.24	160.74	383.76	160.73	384.21	160.72	385.83	160.71
387.7	160.66	387.84	160.66	389.72	160.63	389.88	160.63	390.1	160.62
392.55	160.59	394.24	160.52	394.87	160.5	396.25	160.5	396.79	160.49
397.25	160.48	398.96	160.45	399.58	160.42	406.43	160.16	406.77	160.14
407.24	160.14	407.6	160.13	408.69	160.14	409.45	160.11	410.92	160.02
413.13	159.94	413.75	159.91	414.16	159.89	415.48	159.84	416.18	159.78
417.48	159.83	418.75	159.97	419.78	160.15	420.85	160.19	421.55	160.21
422.79	160.21	422.98	160.22	423.16	160.23	425.24	160.42	427.37	160.55
427.47	160.57	429.27	161.07	429.65	161.26	429.92	161.42	431.65	162.36
433.28	163.33	433.62	163.51	434.11	163.81	435.56	164.46	436.04	164.68
436.21	164.72	436.37	164.76	438.41	165.21	440.38	165.62	440.51	165.65
440.68	165.68	442.12	165.93	442.61	166.04	444.13	166.33	445.35	166.51
446.31	166.65	447.52	166.79	448.55	166.94	449.35	167.02	451.18	167.25
453.33	167.53	453.85	167.61	454.29	167.66	456.16	167.85	456.27	167.86
457.81	168.01	458.43	168.11	461.9	168.44	462.96	168.57	463.41	168.59
464.69	168.7								

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	138.16	.035	157	.018	164.9	.03	178.11	.016

Bank Sta: Left Right Lengths: Left Channel Right									
138.16	171.12	111.21	109.32	112.92	Coeff	Contr.	Expan.		
Ineffective Flow num= 3									
Sta L	Sta R	Elev	Permanent						
0	133	160	F						
169	180	160.48	F						
369.65	475	161.22	F						
Blocked Obstructions num= 1									
Sta L	Sta R	Elev							
198.37	265.44	160.4352							

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 3000

INPUT
 Description:
 Distance from Upstream XS = 20
 Deck/Roadway Width = 74
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 160 500 160

Upstream Bridge Cross Section Data

Station Elevation Data num= 361									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85	189.7	2.54	189.73	3.63	189.55	5.69	188.69
6.22	188.45	6.86	188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35	187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	125.72	162.43	126.11	162.39
126.33	162.36	128.58	162.11	128.83	162.09	128.92	162.06	130.51	161.29
131.39	160.87	132.41	160.3	133.96	159.73	134.59	159.49	135.02	159.37
136.33	158.96	137.6	158.55	137.84	158.48	138.16	158.22	145	148.9
157	148.83	162.79	154.19	164.9	155.71	166.78	156.31	167.16	156.54
169.35	157.48	170.34	158.06	171.12	158.27	173.96	159.54	175.43	160.19
176.05	160.26	177.36	160.48	178.11	160.47	179.5	160.36	179.68	160.35
180.43	160.42	181.58	160.52	181.87	160.52	184.26	160.47	185.09	160.48
185.5	160.49	187.18	160.44	197.09	160.44	200.64	160.41	202.78	160.41
204.35	160.37	206.02	160.42	207.95	160.34	210.34	160.38	213.77	160.47
216.29	160.52	217.71	160.54	219.25	160.54	221.15	160.56	223.23	160.53
224.59	160.54	226.36	160.51	228.65	160.48	231.6	160.52	232.74	160.51
234.21	160.58	236.74	160.55	239.22	160.53	243.47	160.52	245.86	160.45
258.58	160.51	259.84	160.51	260.04	160.55	260.21	160.54	261.36	160.49
261.51	160.48	262.25	160.49	263.16	160.51	263.34	160.5	265.94	160.42
267.06	160.4	268.02	160.39	269.26	160.41	269.69	160.4	270.42	160.37
271.9	160.32	272.81	160.32	273.64	160.34	274.77	160.4	275.26	160.39
276.27	160.39	277.77	160.34	278.48	160.37	279.42	160.36	280.55	160.37
280.84	160.38	281.08	160.38	282.53	160.35	284.21	160.38	284.23	160.38
284.25	160.38	284.42	160.38	286.34	160.44	286.75	160.44	287.5	160.5
289.2	160.65	289.58	160.64	290.15	160.65	291.79	160.73	293.45	160.83
294.35	160.81	296.08	160.48	296.61	160.37	297.52	160.41	298.26	160.51
301.43	160.81	302.21	160.73	303.44	160.65	304.31	160.67	305.5	160.69
306.51	160.7	307.38	160.71	308.36	160.66	309.33	160.64	310.38	160.66
311.55	160.65	313.2	160.65	313.88	160.65	314.36	160.64	315.75	160.65
316.51	160.65	317.69	160.63	318.99	160.57	319.75	160.54	320.44	160.48
321.6	160.41	322.44	160.4	323.6	160.33	325.16	160.25	325.8	160.21
326.28	160.19	327.61	160.18	328.24	160.02	329.83	159.75	332.18	159.93
332.23	159.94	332.43	159.95	333.88	160.04	334.33	160.07	335.68	160.13
336.86	160.21	337.51	160.23	338.26	160.26	339.1	160.28	340.22	160.33
340.75	160.34	341.59	160.37	343.32	160.42	344.39	160.45	345.19	160.46
346.39	160.51	346.74	160.52	347.37	160.52	349.35	160.54	350.43	160.57
351.13	160.63	352.34	160.67	352.36	160.67	352.38	160.67	354.33	160.7
356.13	160.7	356.3	160.7	356.49	160.71	357.13	160.73	358.39	160.77
358.94	160.78	360.07	160.77	361.77	160.76	362.58	160.76	364.32	160.86
364.47	160.87	367.23	161.04	368.63	161.18	369.65	161.22	370.61	161.05
371.87	160.86	373.22	160.84	374.11	160.82	374.94	160.8	376.15	160.79
376.85	160.81	378	160.83	378.89	160.81	379.86	160.79	381.15	160.78
381.73	160.78	383.24	160.74	383.76	160.73	384.21	160.72	385.83	160.71
387.7	160.66	387.84	160.66	389.72	160.63	389.88	160.63	390.1	160.62
392.55	160.59	394.24	160.52	394.87	160.5	396.25	160.5	396.79	160.49
397.25	160.48	398.96	160.45	399.58	160.42	406.43	160.16	406.77	160.14
407.24	160.14	407.6	160.13	408.69	160.14	409.45	160.11	410.92	160.02
413.13	159.94	413.75	159.9						

440.68 165.68 442.12 165.93 442.61 166.04 444.13 166.33 445.35 166.51
 446.31 166.65 447.52 166.79 448.55 166.94 449.35 167.02 451.18 167.25
 453.33 167.53 453.85 167.61 454.29 167.66 456.16 167.85 456.27 167.86
 457.81 168.01 458.43 168.11 461.9 168.44 462.96 168.57 463.41 168.59
 464.69 168.7

Manning's n Values num= 5
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .06 138.16 .035 157 .018 164.9 .03 178.11 .016

Bank Sta: Left Right Coeff Contr. Expan.
 138.16 171.12 .3 .5

Ineffective Flow num= 3
 Sta L Sta R Elev Permanent
 0 133 160 F
 169 180 160.48 F
 369.65 475 161.22 F

Blocked Obstructions num= 1
 Sta L Sta R Elev
 198.37 265.44 160.4352

Downstream Deck/Roadway Coordinates num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 160 500 160

Downstream Bridge Cross Section Data
 Station Elevation Data num= 417
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 177.86 2.23 178.14 4.81 178.28 4.89 178.3 5.02 178.29
 6.11 178.26 8.47 178.2 8.72 178.17 10.54 178.6 12.69 178.51
 15.61 177.61 18.08 176.91 18.75 176.65 20.54 176.1 23.88 175.71
 25.25 175.84 27.56 175.43 29.98 174.26 30.96 173.87 32.71 173.52
 34.37 173.22 36.46 173.02 37.29 172.94 37.54 172.83 38.18 172.65
 39.55 172.03 41.26 171.42 43.11 170.93 44.64 170.48 44.68 170.46
 47.67 169.28 48.38 169.07 49.51 168.54 50.5 168.16 52.72 167.33
 52.93 167.24 53.34 167.18 56.82 166.88 57.43 166.83 57.44 166.84
 57.47 166.83 72.21 165.27 75.9 164.5 77.04 164.24 77.33 164.25
 78.83 164.22 80.07 164.2 81.08 164.16 82.28 164.16 83.12 164.14
 84.03 164.12 84.9 164.08 85.69 164.1 87.05 164.09 88.51 164.06
 89.5 164.03 90.4 164.02 91.49 164.01 92.73 163.97 93.2 163.96
 93.6 163.94 95.69 163.89 98.35 163.89 98.41 163.89 98.46 163.89
 99.97 163.85 101.49 163.82 101.52 163.82 101.56 163.82 104.03 163.7
 106.31 163.6 106.56 163.59 107.62 163.52 109.03 163.43 109.37 163.4
 111.63 163.26 114.24 163.14 114.27 163.14 114.3 163.14 116.58 163.01
 116.86 163 117 162.92 119.73 161.32 122.01 159.69 122.45 159.38
 123.61 159.14 124.57 158.92 124.93 158.83 126.52 158.37 127.61 157.72
 128.46 157.04 129.67 155.9 130.47 155.16 132.42 154.02 132.54 153.96
 132.59 153.93 134.57 153.12 135.94 152.5 136.58 152.14 137.48 151.31
 139.15 149.32 140.1 148.94 142.59 147.08 144.37 147.09 144.6 147.11
 144.92 147.09 146.43 147.1 147.88 147.15 148.28 147.15 148.58 147.16
 150.43 147.14 152.34 147.25 152.55 147.26 152.82 147.33 154.24 147.63
 155.67 149.35 155.82 149.65 157.51 152.73 158.54 152.69 159.37 153.05
 160.89 153.82 166.11 156.69 168.22 157.21 169.14 157.12 170.08 157.36
 170.62 157.56 171.16 157.75 172.58 158.4 173.73 158.86 174.76 159.35
 176.06 159.76 177.19 159.93 177.77 159.92 178.74 159.91 179.49 159.81
 179.83 159.81 180.04 159.81 180.85 159.82 187.75 159.85 188.77 159.9
 190.65 159.9 193.45 159.83 194.89 159.85 201.05 159.92 203.45 159.96
 207.03 159.93 220.98 160.1 223.01 160.11 228.36 160.1 232.41 160.17
 234.41 160.2 235.95 160.25 236.65 160.26 236.91 160.27 237.46 160.29
 239.37 160.38 239.97 160.4 240.44 160.41 241.76 160.42 242.7 160.44
 243.82 160.44 245.36 160.49 246.56 160.51 247.43 160.54 248.49 160.57
 249.72 160.59 250.32 160.6 251.32 160.61 253.19 160.66 254.33 160.67
 255.16 160.69 256.47 160.71 256.55 160.71 256.6 160.71 258.9 160.77
 261.12 160.85 261.27 160.86 261.42 160.86 262.73 160.86 263.63 160.92
 264.38 160.97 264.92 160.97 266.36 160.97 268.32 160.98 268.33 160.98
 268.34 160.98 269.64 161.03 270.53 161.05 271.2 161.05 271.74 161.07
 273.26 161.1 273.82 161.12 274.48 161.11 276.77 161.12 280.23 161.13
 282.21 161.11 283.44 161.16 285.11 161.19 286.07 161.24 289.51 161.12
 291.38 161.06 292.34 161.07 293.8 161.04 294.41 161.02 295.48 161.01

296.43 161.01 296.89 161.04 299.19 161.11 302.4 161.08 305.14 161.11
 305.41 161.11 307.11 161.13 307.21 161.13 309.46 161.09 311.15 161.03
 311.59 161.02 312.84 161.01 313.33 160.99 313.91 160.97 315.59 160.92
 316.98 160.9 317.41 160.89 318.34 160.88 318.6 160.87 318.71 160.87
 320.78 160.84 322.73 160.78 322.92 160.77 323.54 160.72 324.2 160.67
 324.41 160.66 326.34 160.46 328.6 160.32 328.61 160.32 328.63 160.32
 329.79 160.3 330.2 160.32 331.84 160.4 334.14 160.46 334.23 160.47
 334.3 160.47 335.41 160.56 335.99 160.58 337.18 160.64 338.63 160.69
 339.49 160.72 340.19 160.76 340.95 160.81 341.95 160.83 342.29 160.84
 342.92 160.85 345.14 160.92 346.28 160.96 347.55 161.05 347.87 161.06
 349.7 161.13 351.58 161.24 351.82 161.26 352.04 161.27 353.44 161.32
 353.89 161.34 353.97 161.34 354.04 161.34 356.18 161.38 358.32 161.38
 358.33 161.38 358.39 161.38 359.99 161.46 360.17 161.48 360.32 161.47
 362.14 161.37 363.94 161.39 364.07 161.39 364.23 161.39 365.77 161.45
 365.87 161.45 368.34 161.53 370.43 161.48 370.73 161.45 372.24 161.42
 372.31 161.42 372.36 161.42 374.36 161.47 376.16 161.48 376.39 161.47
 376.65 161.47 377.98 161.45 378.26 161.47 380 161.6 381.55 161.66
 382.13 161.69 382.77 161.65 383.8 161.52 384.49 161.46 385.83 161.41
 387.31 161.37 388.27 161.36 389.12 161.35 389.93 161.32 390.79 161.32
 391.48 161.32 391.99 161.31 393.53 161.28 395.48 161.23 395.49 161.23
 395.52 161.23 396.77 161.21 397.08 161.21 398.79 161.19 400.22 161.16
 401.02 161.14 401.95 161.12 402.87 161.12 403.68 161.12 404.86 161.09
 405.88 161.05 407.14 161.01 408.6 160.96 409.04 160.96 410.29 160.94
 410.38 160.94 410.47 160.94 412.81 160.91 415.07 160.91 415.13 160.91
 415.2 160.91 416.43 160.95 416.83 160.94 418.87 160.94 421.6 160.89
 421.68 160.89 421.73 160.89 422.93 160.91 423.5 160.87 424.81 160.88
 426 161.04 427.15 161.24 428.37 161.32 428.93 161.37 429.93 161.41
 430.41 161.41 430.91 161.43 432.88 161.46 434.66 161.57 434.98 161.59
 436.21 161.69 436.3 161.69 436.39 161.7 438.92 161.86 441.06 161.97
 441.27 161.99 441.98 162.05 442.62 162.12 442.81 162.13 444.55 162.22
 445.7 162.27 446.5 162.31 447.69 162.36 448.12 162.38 449.2 162.46
 449.43 162.47 449.65 162.48 451.97 162.59 454.3 162.7 454.35 162.7
 454.53 162.71 455.58 162.78 455.89 162.79 457.73 162.86 459.37 162.92
 460.1 162.95 460.88 162.99 461.63 163.1 462.36 163.14 463.1 163.29
 463.55 163.18 465.03 163.22 466.59 163.04 466.91 163.05 467.45 163.03
 468.2 163.01 468.88 163.01 469.74 163 470.44 163.12 472.07 163.37
 472.66 163.66 474.02 163.97 474.71 164.03 475.49 164.06 476.76 164.27
 476.93 164.23 480.87 164.1 481.52 164.18 482.37 164.26 483.45 164.04
 485.63 163.53 486.45 163.23 486.79 163.27 487.41 163.43 487.86 163.52
 488.86 163.77 488.92 163.79 488.99 163.82 489.5 164 492.91 165.29
 493.68 165.38 495.99 165.6 496.24 165.61 496.45 165.72 499.93 166.69
 502.01 167.49 503.99 168.01 508.45 169.34 509.32 169.47 509.36 169.48
 509.41 169.5 511.27 170.03

Manning's n Values num= 4
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .1 122.01 .035 152.34 .018 166.11 .03

Bank Sta: Left Right Coeff Contr. Expan.
 122.01 176.06 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 0 133 158 F
 163 511.27 158 F

Blocked Obstructions num= 1
 Sta L Sta R Elev
 183.06 298.09 161.0759

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
 Culvert #1 Box 6 6

FHWA Chart # 8 - flared wingwalls
 FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
 Solution Criteria = Highest U.S. EG
 Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
 17 91 .018 .018 0 .2 1

Number of Barrels = 2
 Upstream Elevation = 148.7
 Centerline Stations
 Sta. Sta.
 146.5 155.5
 Downstream Elevation = 147.2
 Centerline Stations
 Sta. Sta.
 143.78 152.78

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2916.303

INPUT

Description:

Station Elevation Data		num= 417	
Sta	Elev	Sta	Elev
0	177.86	2.23	178.14
6.11	178.26	8.47	178.2
15.61	177.61	18.08	176.91
25.25	175.84	27.56	175.43
34.37	173.22	36.46	173.02
39.55	172.03	41.26	171.42
47.67	169.28	48.38	169.07
52.93	167.24	53.34	167.18
57.47	166.83	72.21	165.27
78.83	164.22	80.07	164.2
84.03	164.12	84.9	164.08
89.5	164.03	90.4	164.02
93.6	163.94	95.69	163.89
99.97	163.85	101.49	163.82
106.31	163.6	106.56	163.59
111.63	163.26	114.24	163.14
116.86	163	117	162.92
123.61	159.14	124.57	158.92
128.46	157.04	129.67	155.9
132.59	153.93	134.57	153.12
139.15	149.32	140.1	148.94
144.92	147.09	146.43	147.1
150.43	147.14	152.34	147.25
155.67	149.35	155.82	149.65
160.89	153.82	166.11	156.69
170.62	157.56	171.16	157.75
176.06	159.76	177.19	159.93
179.83	159.81	180.04	159.81
190.65	159.9	193.45	159.83
207.03	159.93	220.98	160.1
234.41	160.2	235.95	160.25
239.37	160.38	239.97	160.4
243.82	160.44	245.36	160.49
249.72	160.59	250.32	160.6
255.16	160.69	256.47	160.71
261.12	160.85	261.27	160.86
264.38	160.97	264.92	160.97
268.34	160.98	269.64	161.03
273.26	161.1	273.82	161.12
282.21	161.11	283.44	161.16
291.38	161.06	292.34	161.07
296.43	161.01	296.89	161.04
305.41	161.11	307.11	161.13
311.59	161.02	312.84	161.01
316.98	160.9	317.41	160.89

320.78	160.84	322.73	160.78	322.92	160.77	323.54	160.72	324.2	160.67
324.41	160.66	326.34	160.46	328.6	160.32	328.61	160.32	328.63	160.32
329.79	160.3	330.2	160.32	331.84	160.4	334.14	160.46	334.23	160.47
334.3	160.47	335.41	160.56	335.99	160.58	337.18	160.64	338.63	160.69
339.49	160.72	340.19	160.76	340.95	160.81	341.95	160.83	342.29	160.84
342.92	160.85	345.14	160.92	346.28	160.96	347.55	161.05	347.87	161.06
349.7	161.13	351.58	161.24	351.82	161.26	352.04	161.27	353.44	161.32
353.89	161.34	353.97	161.34	354.04	161.34	356.18	161.38	358.32	161.38
358.33	161.38	358.39	161.38	359.99	161.46	360.17	161.48	360.32	161.47
362.14	161.37	363.94	161.39	364.07	161.39	364.23	161.39	365.77	161.45
365.87	161.45	368.34	161.53	370.43	161.48	370.73	161.45	372.24	161.42
372.31	161.42	372.36	161.42	374.36	161.47	376.16	161.48	376.39	161.47
376.65	161.47	377.98	161.45	378.26	161.47	380	161.6	381.55	161.66
382.13	161.69	382.77	161.65	383.8	161.52	384.49	161.46	385.83	161.41
387.31	161.37	388.27	161.36	389.12	161.35	389.93	161.32	390.79	161.32
391.48	161.32	391.99	161.31	393.53	161.28	395.48	161.23	395.49	161.23
395.52	161.23	396.77	161.21	397.08	161.21	398.79	161.19	400.22	161.16
401.02	161.14	401.95	161.12	402.87	161.12	403.68	161.12	404.86	161.09
405.88	161.05	407.14	161.01	408.6	160.96	409.04	160.96	410.29	160.94
410.38	160.94	410.47	160.94	412.81	160.91	415.07	160.91	415.13	160.91
415.2	160.91	416.43	160.95	416.83	160.94	418.87	160.94	421.6	160.89
421.68	160.89	421.73	160.89	422.93	160.91	423.5	160.87	424.81	160.88
426	161.04	427.15	161.24	428.37	161.32	428.93	161.37	429.93	161.41
430.41	161.41	430.91	161.43	432.88	161.46	434.66	161.57	434.98	161.59
436.21	161.69	436.3	161.69	436.39	161.7	438.92	161.86	441.06	161.97
441.27	161.99	441.98	162.05	442.62	162.12	442.81	162.13	444.55	162.22
445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38	449.2	162.46
449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7	454.35	162.7
454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86	459.37	162.92
460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14	463.1	163.29
463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05	467.45	163.03
468.2	163.01	468.88	163.01	469.74	163	470.44	163.12	472.07	163.37
472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06	476.76	164.27
476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26	483.45	164.04
485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43	487.86	163.52
488.86	163.77	488.92	163.79	488.99	163.82	489.5	164	492.91	165.29
493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72	499.93	166.69
502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47	509.36	169.48
509.41	169.5	511.27	170.03						

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	122.01	.035	152.34	.018	166.11	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 122.01 176.06 14.15 15.34 16.27 .3 .5

Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	133	158	F
163	511.27	158	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
183.06	298.09161	0759

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2900.962

INPUT

Description:

Station Elevation Data		num= 367	
Sta	Elev	Sta	Elev
0	184.89	1.12	184.57
5.78	183.24	7.12	182.56
13.96	179.84	15.77	178.44
18.92	176.86	21.94	175.11
25.16	173.06	27.11	172.48
30.88	171.46	31.73	171.21

35.04	170.75	36.4	170.71	36.96	170.64	37.25	170.56	37.44	170.55
49.9	167.66	51.78	167.4	53.36	167.08	54.71	166.85	56.43	166.79
57.56	166.48	59.5	166.05	61.77	165.74	64.53	165.29	69.81	164.2
70.54	164.2	71.63	164.22	71.74	164.22	72.9	164.18	74.98	164.12
78.23	164.04	79.82	164.1	80.12	164.1	82.65	164.04	86.29	163.99
86.78	163.95	88.39	163.88	88.41	163.88	88.43	163.88	90.12	163.89
91.56	163.86	92	163.85	92.49	163.84	94.64	163.8	96.6	163.68
98.92	163.56	99.65	163.57	100.14	163.56	100.76	163.26	101.58	163
102.94	162.59	104.06	162.4	107.58	161.9	109.81	161.12	115.54	157.44
115.65	157.38	115.69	157.34	115.79	157.2	117.73	153.39	119.27	151.29
119.73	150.65	120.39	149.35	122	147.05	123.22	146.32	124.61	145.21
126.71	144.86	127.61	144.6	128.18	144.46	129.79	143.98	132.89	143.99
134.33	143.83	136.43	144.03	137.65	144.03	138.85	144.55	139.87	145.39
141.11	146.46	142.71	147.83	144	149.17	144.94	150.04	146.33	151.06
146.7	151.34	146.94	151.47	149.76	153	150.65	153.53	152.1	154.12
153.45	154.54	154.93	155.14	160.44	158.18	162.67	159.01	163.24	159.03
164.25	159.26	164.35	159.26	165.81	159.26	166.13	159.25	166.29	159.26
166.98	159.26	174.81	159.41	176.26	159.4	216.84	159.88	219.28	159.9
221.99	159.93	222.19	159.95	222.96	159.98	223.44	159.99	223.75	160
225.28	160.01	226.78	160.04	227.09	160.05	227.58	160.05	229.03	160.05
229.84	160.06	231.3	160.08	232.82	160.12	233.7	160.15	234.52	160.16
235.76	160.2	236.73	160.24	237.88	160.27	239.05	160.3	240.23	160.33
241.35	160.36	242.25	160.37	243.58	160.44	244.15	160.46	244.84	160.49
246.89	160.51	248.6	160.53	249.02	160.54	250.05	160.48	252.37	160.43
254.28	160.59	255.54	160.73	256.88	160.69	259.65	160.58	260.28	160.58
262.75	160.62	264.69	160.62	265.54	160.68	266.61	160.71	270.03	160.68
270.46	160.7	272.89	160.9	273.14	160.87	274.94	160.94	277.59	161.03
278.24	160.97	279.57	161	282.05	160.96	283.6	160.99	285.11	161
289.34	161.04	291.37	161.1	292.22	161.09	293.3	161.06	296.18	160.79
297.04	160.78	298.85	160.94	300.03	160.9	300.77	160.88	301.61	160.84
303.03	160.78	303.36	160.76	305.26	160.7	307.1	160.62	307.37	160.62
307.63	160.6	308.66	160.56	309.43	160.53	309.64	160.53	309.85	160.52
311.76	160.44	313.53	160.35	313.85	160.31	315.16	159.96	315.9	159.86
316.5	159.88	317.82	159.98	319.44	160.02	319.65	160.03	320.89	160.09
321.13	160.1	321.18	160.1	323.1	160.18	324.78	160.25	325.05	160.26
325.36	160.28	326.69	160.36	326.99	160.38	328.62	160.46	329.96	160.54
330.6	160.57	331.37	160.59	332.23	160.62	332.92	160.66	334.05	160.71
335.08	160.74	336.11	160.76	337.2	160.79	337.85	160.82	338.84	160.84
339.48	160.85	340.02	160.85	341.52	160.87	343.22	160.89	343.4	160.9
344.07	160.91	344.77	160.91	344.95	160.92	347.07	160.92	349.42	160.95
349.43	160.95	349.44	160.95	350.53	160.98	351	160.99	352.06	161
352.85	161.03	353.91	161.05	355.29	161.03	355.56	161.03	356.08	161.01
356.73	160.99	357.07	161	358.46	161	359.4	161	360.36	161
361.74	160.9	362.49	160.92	363.01	160.98	363.3	160.98	365.29	161
367.73	161.12	367.94	161.14	369.33	161.19	370.43	161.12	371.33	161.06
372.58	160.9	374.05	160.84	374.77	160.81	375.85	160.79	377.41	160.75
379.8	160.63	380.18	160.61	380.42	160.61	380.84	160.59	382.01	160.59
382.46	160.56	382.75	160.56	384.31	160.57	385.76	160.5	386.71	160.49
388.19	160.52	388.37	160.51	390.29	160.42	391.67	160.36	392.3	160.33
393.16	160.32	394.17	160.28	394.82	160.25	396.59	160.19	398.59	160.14
399.18	160.12	399.68	160.1	400.92	160.04	401.16	160.03	401.24	160.02
401.28	160.02	403.17	159.98	404.32	159.94	405.05	159.93	406.27	159.92
407.23	159.9	407.97	159.86	410.13	159.96	412.93	160.13	412.99	160.14
413.02	160.14	413.14	160.15	414.67	160.25	415.01	160.26	415.22	160.28
416.96	160.42	418.29	160.52	418.87	160.55	419.85	160.63	420.76	160.7
421.36	160.73	422.97	160.83	424.15	160.88	425.16	160.95	426.53	161.04
427.19	161.09	428.19	161.23	429.07	161.33	429.58	161.42	430.96	161.6
432.5	161.89	432.8	161.93	433.3	162.03	434.73	162.31	434.76	162.31
436.7	162.52	437.88	162.53	438.6	162.52	439.74	163.18	440.48	163.53
441.26	163.93	442.21	164.25	443.34	164.51	444.54	164.39	446.36	164.3
446.55	164.3	448	164.36	448.99	164.37	449.41	164.4	453.72	164.34
454.5	164.37	456.36	164.33	456.89	164.35	458.14	164.35	458.9	164.38
460.01	164.41	460.94	164.46	462.38	164.46	463.37	164.46	463.98	164.43
465.85	164.44	465.98	164.43	466.5	164.34	467.87	164.23	469.08	164.03
469.74	163.85	471.55	164.91	472.09	165.02	473.88	165.88	475.63	166.45
476.68	166.61	479.25	167.69	479.45	167.71	480.65	168.19	481.4	168.51
481.69	168.61	483.17	169.26	485.3	169.96	487.6	170.59	489.02	171.14
489.93	171.4	490.91	171.69						

Manning's n Values num= 4

Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.08	109.81	.035	137.65	.018	164.35	.03				
Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.		
	109.81	162.67		206.54	191.91	184.83	.1	.3			
Blocked Obstructions	num=	1									
Sta L	Sta R	Elev									
169.09	284.62	160.9982									
CROSS SECTION											
RIVER:	Auburn Creek										
REACH:	Main Reach RS: 2709.054										
INPUT											
Description:											
Station Elevation Data	num=	339									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.02	1.43	182.69	1.97	182.5	2.88	182.11	4.59	180.88		
7.09	179	9.44	177.16	10.61	176.52	13.06	174.8	13.39	174.55		
14.92	172.91	15.28	172.58	15.77	172.27	17.76	170.82	19.21	170.19		
20.21	169.65	22.84	167.11	25.43	165.39	26.14	165.06	26.97	164.69		
27.08	164.64	27.3	164.52	29.6	162.37	31.71	160.61	32.01	160.45		
32.9	159.9	33.45	159.62	33.63	159.49	35.87	158.43	38.21	157.03		
38.3	156.96	40.21	155.87	40.77	155.63	43.24	154	43.79	153.66		
51.3	148.59	53.79	147.45	53.9	147.35	54.05	147.2	57.46	143.52		
58.63	143.03	59.54	142.93	60.72	142.92	62.62	143.04	65.22	143.67		
65.54	143.74	65.62	143.75	65.77	143.8	65.92	143.88	67.77	144.73		
70.48	145.75	72.63	146.43	72.86	146.49	74.71	147.51	75.24	147.82		
75.72	148.1	77.57	149.37	79.74	150.91	79.8	150.97	79.88	151.03		
79.96	151.06	83.73	153.29	84.92	153.46	85.81	153.62	86.72	153.78		
87.53	153.92	88.68	153.95	90.21	153.96	92.82	153.98	93.44	153.99		
93.79	154	95.41	154.04	95.81	154.06	97.78	154.16	99.67	154.12		
100.32	154.12	100.99	154.13	102.23	154.18	102.91	154.17	105.05	154.19		
108.13	154.21	108.24	154.21	108.93	154.23	109.85	154.24	110.01	154.24		
113.07	154.21	115.22	154.26	115.73	154.28	117.2	154.27	117.32	154.27		
117.4	154.27	119.45	154.25	120.87	154.27	121.53	154.3	122.57	154.28		
123.29	154.29	124.6	154.28	124.92	154.27	125.25	154.27	127.64	154.32		
130.01	154.35	130.15	154.36	130.54	154.36	131.52	154.37	131.85	154.38		
133.46	154.38	134.45	154.38	135.54	154.38	137.26	154.41	137.5	154.41		
138.09	154.44	138.89	154.48	139.23	154.48	141.85	154.47	144.71	154.51		
144.87	154.52	145.19	154.53	146.11	154.54	146.6	154.54	148.43	154.54		
150.4	154.55	151.26	154.55	152.04	154.56	153.5	154.59	153.97	154.59		
154.23	154.6	154.51	154.6	157.19	154.62	159.51	154.65	160.14	154.66		
161.47	154.67	163.42	154.67	166.15	154.66	166.52	154.66	166.77	154.66		
167.86	154.69	168.6	154.7	169.39	154.71	169.89	154.69	172.01	154.69		
173.24	154.68	173.94	154.68	174.91	154.69	175.74	154.7	176.3	154.71		
176.97	154.7	179.24	154.68	181.05	154.7	181.95	154.71	182.79	154.72		
184.73	154.73	186.77	154.77	187.5	154.78	188.19	154.77	189.5	154.75		
189.88	154.75	190.									

297.92	153.66	297.98	153.65	299.9	153.53	300.88	153.54	301.94	153.52
303.96	153.45	304.01	153.45	304.12	153.44	305.54	153.37	306.04	153.36
307.34	153.32	308	153.32	309.35	153.29	311.08	153.25	311.45	153.24
312.19	153.21	313.16	153.17	314.08	153.11	314.94	153.07	315.49	153.06
317.37	153.03	319.61	152.94	319.89	152.93	320.31	152.9	321.62	152.77
322.18	152.74	323.44	152.67	324.1	152.6	325.5	152.49	327.42	152.87
327.7	152.89	328.23	152.91	328.95	152.84	330.22	152.89	331.4	152.98
334.04	153.07	335.32	153.07	335.94	153.13	337.46	153.23	339.32	153.37
339.99	153.44	341.08	153.6	342.91	153.84	343.48	153.91	343.76	153.93
345.22	154.21	348.49	154.77	349.15	154.9	350.61	155.7	351.38	155.98
352.78	156.68	353.46	156.97	353.81	157.16	354.03	157.27	354.64	157.64
358.66	160.06	359.28	160.45	360.7	160.51	361.19	160.55	362.71	161.47
364.74	162.71	365.54	163.02	367.36	163.82	367.85	163.95	368.66	164.34
369.85	164.9	370.83	165.38	371.8	165.89	372.09	166.02	373.81	166.81
376.94	168.49	377.58	168.87	377.88	169.02	378.77	169.57	380.8	170.59
382.23	171.16	384.33	172.21	384.49	172.28	384.75	172.41	386.3	173.16
386.87	173.45	388.48	174.26	389.67	174.92	390.51	175.36		

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0	.1	43.24
	.035	85.81
		.03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
43.24	85.81	209.38	207.57	205.83	.1	.3	
Ineffective Flow	num=	1					
Sta L	Sta R	Elev	Permanent				
187.5	390.51	154.78	F				

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2501.489

INPUT	Description:	num=	305				
Station Elevation Data	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	175.91	3.29	173.99	8.4	171.18	8.95	170.83
11.22	169.54	12.68	168.9	15.22	167.24	18.55	165.59
20.24	163.89	20.82	163.26	23.19	161.08	25.02	160.22
26.31	159.88	27	159.73	27.62	159.5	30.62	158.26
31.88	157.64	32.2	157.53	36.18	156.22	36.75	156.22
37.49	156.02	37.68	155.86	41.2	152.97	41.76	152.92
43.05	152.66	45.54	152.45	46.46	152.42	47.42	152.29
48.68	152.19	50.21	151.98	51.61	151.93	52.93	151.96
54.24	152.1	54.46	152.1	55.05	152.03	57.74	151.72
59.43	151.58	59.93	151.51	61.22	151.4	62.69	151.29
63.76	151.24	64.45	151.22	68.73	150.88	70.02	150.8
72.33	150.64	73.7	150.58	76.71	149.43	77	149.32
78.76	148.51	81.44	146.05	82.22	145.42	82.63	144.89
84.28	142.82	85.66	141.73	85.93	141.5	86.03	141.5
88.51	141.04	90.28	141.04	91.17	141.07	91.57	141.01
93.46	141.17	94.48	141.25	95.49	141.53	97.13	142.57
101.57	145.31	102.44	145.76	103.14	146.03	103.51	146.19
105.67	147.2	107.3	149.92	107.83	150.59	110.05	151.99
112	151.96	112.03	151.96	112.05	151.96	112.07	151.96
114.8	151.84	116	151.92	117.72	151.84	118.04	151.84
120.23	151.31	120.7	151.28	122.38	151.26	123.25	151.29
125.28	151.32	126.92	151.3	128.23	151.24	131.78	151.21
135.76	151.33	141.34	151.29	143.57	151.32	148.02	151.17
159.04	151.18	189.99	151.33	193.97	151.43	195.64	151.39
201.89	151.47	204.91	151.62	208.18	151.5	211.32	151.65
215.53	151.55	216.37	151.56	217.76	151.69	220.69	151.94
221.4	151.84	222.75	151.51	223.27	151.3	224.14	151.29
225.79	151.25	227.22	151.08	228.17	151.03	229.03	150.96
231.03	150.89	232.17	150.88	233.17	150.86	233.83	150.85
237.11	150.69	238.21	150.61	238.92	150.58	239.52	150.56
241.3	150.39	242.87	150.4	243.14	150.39	243.56	150.36
245.29	150.19	245.62	150.18	245.82	150.18	247.44	150.12

249.35	150.44	250.17	150.26	250.85	150.21	251.94	149.74	252	149.7
252.05	149.68	253.64	148.45	254.5	148.03	255.36	147.53	256.96	147.45
257.12	147.43	257.41	147.41	258.3	147.36	260.42	147.17	263.81	146.88
264.54	146.92	265.76	147	266.7	146.98	267.26	146.84	268.63	146.66
270.51	146.65	270.67	146.63	270.92	146.66	272.59	146.75	272.85	146.77
274.49	146.9	275.56	146.98	276.51	147.05	277.95	147.07	278.38	147.08
279.79	147.1	279.88	147.1	279.9	147.1	281.79	147.24	282.93	147.28
283.72	147.3	285.03	147.31	285.6	147.31	287.13	147.36	287.25	147.36
287.32	147.37	289.09	147.46	290.25	147.47	290.95	147.49	292.13	147.51
292.78	147.53	294.22	147.58	294.58	147.59	294.78	147.59	296.49	147.6
297.81	147.63	298.41	147.64	299.43	147.62	300.33	147.62	301.57	147.66
302.18	147.66	302.56	147.67	304.07	147.64	305.65	147.66	305.99	147.67
306.54	147.67	307.69	147.67	308.73	147.69	309.34	147.7	309.7	147.7
311.25	147.73	312.81	147.72	313.21	147.72	313.88	147.72	315.42	147.73
316.05	147.74	317.37	147.79	318.15	147.85	319.2	147.92	321.02	148.26
321.09	148.27	323.17	148	323.45	147.93	323.62	147.92	325.32	147.71
326.61	147.73	327.23	147.73	328.28	147.69	328.85	147.65	329.5	147.63
330.12	147.62	330.62	147.6	331.91	147.58	333.02	147.6	334.19	147.6
335.61	147.55	336.12	147.51	336.88	147.5	337.42	147.48	337.78	147.48
339.07	147.46	339.76	147.46	340.85	147.45	342.51	147.41	342.65	147.41
342.91	147.41	344.09	147.4	345.12	147.36	345.69	147.35	346.26	147.33
348.3	147.26	350.35	147.18	350.84	147.15	352.51	147.05	353.08	147.02
353.67	146.97	355.66	146.8	357.64	147.11	358.06	147.22	358.94	147.25
359.63	147.26	361.24	147.32	362.33	147.34	364.08	147.26	364.37	147.28
365.75	147.44	369.65	148	374.2	148.47	374.68	148.51	374.99	148.57
375.3	148.59	377.1	148.76	377.59	148.96	381.06	149.81	381.38	149.93
383.04	150.47	383.16	150.51	383.24	150.53	385.17	151.1	386.58	151.68
387.23	151.92	388.23	152.32	389.25	152.71	390.9	153.44	391.26	153.61
391.47	153.7	393.26	154.49	394.67	155.11	395.26	155.36	396.01	155.7

Manning's n Values	num=	4	
Sta n Val	Sta n Val	Sta n Val	Sta n Val
0	.1	73.7	.035
		107.3	.1
		110.05	.03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
73.7	107.83	198.58	191.49	185.3	.1	.3	
Ineffective Flow	num=	1					
Sta L	Sta R	Elev	Permanent				
110.5	396.01	151.99	F				
Blocked Obstructions	num=	1					
Sta L	Sta R	Elev					
130.29	213.92151.6969						

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2309.998

INPUT	Description:	num=	329				
Station Elevation Data	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev
0	176.32	.76	175.78	1.26	175.54	2.57	175.27
4.52	174.83	6.12	174.17	6.47	174.01	7.19	173.52
9.13	172.38	10.01	172.11	11.64	171.57	13.31	171.11
15.08	170.25	15.82	170.01	16.96	169.16	17.84	168.51
20.24	167.93	24.17	166.73	26.44	166.14	26.92	165.96
30.6	164.61	30.64	164.59	30.65	164.59	32.7	163.71
34.87	162.66	36.26	162.21	37.15	161.85	38.59	161.46
40.59	161.26	41.31	161.23	41.63	161.14	42.52	161.02
46.16	159.72	46.6	159.44	47.3	158.65	52.42	153.9
54.06	153.38	55.84	152.89	56.12	152.82	58.39	152.39
61.75	151.66	62.57	151.33	63.48	151.01	63.81	151.02
68.19	150.54	68.8	150.39	69.48	150.06	71.21	149
73.47	146.73	75.14	145.35	77.65	143.66	80.38	142.36
84.6	140.24	87.23	139.72	87.3	139.72	92.36	139.12
92.61	139.08	93.58	139.05	94.71	139.26	98.24	141.53
109	146.03	114.68	148.34	114.84	148.37	115.83	148.45
118.01	148.33	118.09	148.32	118.15	148.32	120.4	147.78

122.84	148.18	123.47	148.19	124.64	148.15	125.63	148.05	126.4	148.01
127.03	148.02	128.7	148.11	130.79	147.98	130.97	147.97	131.43	147.96
132.61	147.95	133.06	147.95	134.72	147.96	135.97	147.91	137	147.89
138.33	147.9	139.06	147.92	140.47	147.9	141.01	147.89	141.65	147.89
143.76	147.88	145.53	147.83	146.18	147.8	147.72	147.77	148.05	147.77
148.3	147.76	150.27	147.7	152.22	147.61	152.52	147.6	152.91	147.6
154.5	147.57	155.21	147.54	156.43	147.55	157.25	147.52	158.4	147.49
160.13	147.45	160.34	147.44	162.23	147.35	162.28	147.35	162.31	147.35
164.23	147.41	165.53	147.49	166.21	147.54	167.26	147.55	168.37	147.47
168.5	147.41	168.65	147.4	181.87	147.45	198.88	147.52	199.18	147.5
200.63	147.49	201.56	147.49	202.53	147.47	203.28	147.45	204.44	147.39
204.57	147.38	204.66	147.38	207.25	147.42	209.28	147.33	209.68	147.32
210.32	147.31	211.17	147.29	211.69	147.29	213.02	147.24	214.09	147.19
215.09	147.14	216.38	147.12	216.96	147.11	217.91	147.09	218.39	147.07
218.69	147.06	220.11	147.02	221.07	147	221.91	146.98	223.22	146.94
223.61	146.92	224.22	146.88	225.02	146.83	225.54	146.83	227.33	146.85
230.06	146.74	230.15	146.74	230.21	146.74	231.71	146.73	232.6	146.74
233.69	146.75	235.17	146.72	236.35	146.69	237.21	146.66	238.2	146.6
239.45	146.51	239.86	146.5	240.35	146.52	242.5	146.53	244.28	146.6
244.87	146.61	246.3	146.52	246.57	146.5	246.69	146.5	248.96	146.51
251.43	146.74	251.44	146.74	253.81	146.4	255.23	146.19	256.33	145.79
257.39	145.48	258.73	145.11	259.45	144.94	261.09	144.86	261.3	144.85
261.48	144.93	263.44	145.14	265.33	145.7	265.86	145.74	267.09	145.61
268.38	145.42	268.54	145.4	268.65	145.39	270.55	145.27	271.94	144.51
272.47	144.29	273.25	144.16	274.7	144	275.86	144.04	276.84	144.11
277.53	144.16	278.84	144.27	280.75	144.34	280.88	144.34	283.24	144.43
283.28	144.43	283.31	144.43	285.09	144.51	286.27	144.55	286.89	144.57
287.87	144.59	289.16	144.65	290.54	144.72	291.9	144.78	293.65	144.85
294.61	144.91	295.36	144.94	297.4	144.99	297.94	145	299.91	145.08
302.11	145.09	302.38	145.1	302.61	145.1	303.93	145.15	305.28	145.13
305.42	145.13	305.55	145.14	307.8	145.32	310.16	145.78	310.21	145.79
310.27	145.79	311.72	145.87	312.94	145.88	313.36	145.9	313.71	145.9
315.54	145.95	317.72	146	317.74	146	317.79	146	319.59	146.02
320.44	146	321.76	145.98	323.08	145.96	324.24	145.96	325.43	145.96
326.3	145.95	327.58	145.63	327.96	145.52	328.23	145.5	329.93	145.38
331.13	145.35	331.95	145.33	333.1	145.32	333.86	145.31	335.22	145.27
335.56	145.26	335.76	145.25	337.57	145.17	338.81	145.16	339.56	145.16
340.64	145.14	341.54	145.11	343.42	145.1	343.48	145.1	343.52	145.1
345.39	145.07	346.67	145.03	347.31	145.02	348.28	144.98	349.3	144.95
351.07	144.87	351.37	144.86	351.54	144.86	353.19	144.78	354.49	144.68
355	144.65	355.84	144.62	356.71	144.58	357.9	144.43	358.26	144.39
358.52	144.4	360.07	144.56	361.06	144.7	361.96	144.85	363.32	144.96
364.07	144.98	366.01	145.07	366.77	145.11	368.04	145.26	369.51	145.39
370.39	145.48	371.41	145.63	372.48	145.81	372.88	145.89	373.24	145.94
375.24	146.14	377.77	146.24	377.9	146.24	379.3	146.4	380.41	146.56
381.03	146.64	381.86	146.71	383.33	146.78	383.89	146.81	384.63	146.84
387.15	147.17	387.42	147.18	389.85	147.34	391.99	147.48	392.37	147.5
393.71	147.59	394.27	147.61	395.79	147.67	397.76	147.65	398.02	147.66
398.23	147.69	400.08	148.03	400.91	147.98	401.85	148.06		

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0	.1	71.21
	.035	114.68
Bank Sta: Left	Right	Lengths: Left Channel Right
71.21	114.68	146.44 148.22 149.95
Ineffective Flow	num=	1
Sta L	Sta R	Elev Permanent
116.61	401.85	148.53
Blocked Obstructions	num=	1
Sta L	Sta R	Elev
159.97	209.18	147.4514

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2161.775

INPUT

Description:	Station	Elevation	Data	num=	375					
	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
	0	172.59	.32	172.58	2.53	171.85	4.36	170.81	5.47	170.47
	7.6	169.5	9.16	169.2	9.41	169.16	11.7	168.87	12.6	168.67
	14.16	168.58	15.29	168.54	16.65	168.61	18.54	167.94	19.03	167.67
	21.12	166.52	21.4	166.44	23.01	166.5	25.73	166.57	26.27	166.64
	27.01	166.35	28.88	165.77	29.58	165.67	31.21	165.26	32.18	165.12
	33.47	165.08	35.61	164.73	35.7	164.72	35.81	164.72	37.12	164.67
	38.33	164.32	39.65	163.93	42.8	163.27	45.12	162.65	46.86	162.43
	46.96	162.41	47.06	162.35	47.26	162.22	50.22	159.99	50.88	159.67
	51.45	159.22	52.85	159.09	53.03	159.04	53.25	158.94	54.43	158.18
	55.48	157.72	57.92	156.47	59.17	155.84	59.88	155.48	61.22	154.33
	62.17	153.61	63.22	153.14	64.13	152.8	66.95	152.15	68.33	151.31
	68.87	150.92	70	149.9	70.61	149.4	71.41	148.93	72.17	148.55
	72.73	148.2	74.42	147.13	75.71	146.45	77.17	145.9	78.44	145.55
	79.36	145.19	80.66	144.43	81	144.2	81.24	144.06	83.5	142.69
	85.42	141.56	86.14	141.09	86.99	140.66	88.19	140.11	88.83	139.75
	91.97	139.24	92.91	139.06	94.95	138.19	95.2	138.17	95.56	138.12
	96.98	137.65	98.27	137.65	99.1	137.72	99.86	137.77	101.8	137.97
	103.92	137.9	104.36	137.97	105.43	138.71	106.82	139.53	108.53	140.57
	109.41	141.17	112.2	143.33	112.32	143.41	112.43	143.48	114.68	144.63
	115.35	144.89	116.7	145.34	117.24	145.51	118.93	145.55	119.88	145.67
	120.93	145.69	122.42	145.79	123.79	145.74	124.87	145.74	125.72	145.75
	127.35	145.8	129.4	145.83	129.88	145.83	132.38	145.92	132.53	145.93
	132.64	145.93	134.89	145.97	136.8	145.98	137.29	145.97	137.94	146
	139.04	146.04	140.22	145.99	140.57	146	140.9	145.99	142.05	146.02
	146.27	146.38	146.41	146.39	146.45	146.4	146.52	146.39	147.97	146.4
	149.4	146.31	149.5	146.3	149.56	146.29	151.69	145.99	153.29	146.03
	153.91	146	154.81	145.91	155.87	145.7	157.28	145.63	157.67	145.61
	157.95	145.61	159.81	145.61	161.14	145.6	162.06	145.57	163.37	145.53
	164.14	145.49	165.43	145.5	166.02	145.5	166.38	145.49	168.01	145.44
	169.02	145.43	170.04	145.43	171.68	145.41	172.06	145.4	172.74	145.39
	174.01	145.37	174.71	145.35	175.98	145.3	176.76	145.3	178.02	145.22
	179.96	145.26	180.01	145.26	180.08	145.26	182.14	145.22	183.17	145.14
	184.54	145.1	185.78	145.1	190.19	145.16	191.23	145.15	193.81	145.14
	196.67	145.12	197.02	145.12	197.97	145.1	199.53	145.09	199.81	145.07
	201.92	145.05	204.2	145.08	204.57	145.09	204.92	145.08	207.06	145.09
	207.95	145.11	209.62	145.2	211.35	145.34	212.26	145.39	213.15	145.32
	214.11	145.17	215.01	145.3	216.16	145.29	217.54	145.04	218.76	145.02
	219.95	144.99	221.3	144.96	221.99	144.92	222.65	144.91	223.51	144.9
	224.44	144.88	225.34	144.88	226.07	144.86	227.58	144.83	229.4	144.79
	229.73	144.79	230.11	144.76	231.38	144.7	232.48	144.7	233.11	144.7
	233.46	144.69	235	144.63	236.39	144.63	236.87	144.69	237.68	144.62
	238.65	144.6	239.91	144.58	240.38	144.57	240.75	144.56	242.31	144.54
	243.33	144.51	244.24	144.52	245.64	144.44	246.17	144.43	246.91	144.41
	248.03	144.38	248.85	144.39	249.98	144.39	250.72	144.39	251.97	144.35
	253.87	144.33	253.97	144.33	254.12	144.32	255.92	144.23	256.96	144.21
	257.85	144.2	258.41	144.2	259.76	144.19	261.51	144.16	261.66	144.16
	261.9	144.15	263.72	144.1	265.08	144.18	265.74	144.24	267.97	144.53
	269.21	144.65	269.5	144.67	271.33	144.2	271.78	144.17	272.55	144.13
	273.23	144.07	275.46	143.86	276.7	143.65	278.08	143.5	278.97	143.4
	280.11	143.31	280.75	143.27	281.25	143.33	283.24	143.45	285.66	143.38
	286	143.36	286.28	143.3	288.63	142.63	289.63	142.55	291.17	142.49
	292.81	142.18	293.66	142.05	294.45	142.06	295.54	142.17	296.57	142.21
	297.1	142.22	297.67	142.26	299.21	142.36	300.69	142.41	301.59	142.44
	302.52	142.47	303.57							

372.89	142.27	373.92	142.17	375.08	142.39	375.87	142.52	377.62	142.53
378.94	142.47	386.25	141.76	387.34	141.63	388.01	141.69	388.99	141.7
390.51	142.48	390.92	142.67	391.18	142.78	392.87	143.55	394.39	144.18
394.87	144.41	395.4	144.69	396.8	145.48	397.45	145.8	398.57	146.2
400.61	147.55	403.6	149.78	405.68	150.65	406.18	151.01	406.53	151.23
408.71	152.79	409.45	153.34	409.66	153.5	409.86	153.55	411.74	153.98
413.03	153.78	413.8	153.69	414.53	153.67	415.73	153.66	416.98	153.75
417.87	153.8	418.94	153.89	419.46	153.93	425.09	154.49	426.1	154.61

Manning's n Values num= 4

Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.1	78.44	.035	104.36	.018	116.7	.03				

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

78.44	116.7	328.02	326.68	328.75	.1	.3		
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Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
147.97	426.1	146.4	F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 1835.094

INPUT Description:

Station Elevation Data num= 382

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	160.39	.81	160.34	1.36	160.28	3.18	160.18	3.96	160.09		
4.65	159.86	7.18	158.37	7.61	158.13	8.03	158.18	9.97	158.28		
11.91	157.39	12.41	157.2	12.89	157.04	14.99	156.77	16.11	156.6		
17.55	156.37	19.08	156.13	20.03	155.97	20.94	155.77	22.7	155.32		
23.36	155.2	24.1	155.14	25.28	154.98	26.52	154.39	27.88	153.86		
29.96	153.44	31.94	153.02	32.76	152.96	33.15	152.89	34.31	152.52		
35.29	152.19	36.34	151.88	37.24	151.66	38.38	151.5	38.99	151.46		
39.43	151.31	40.96	150.91	42.36	150.58	43.04	150.44	43.28	150.46		
43.79	150.43	46.9	150.08	47.02	150.04	48.95	149.47	50.78	149.19		
51	149.14	51.24	149.11	53.04	148.79	54.54	148.29	55.07	148.15		
55.55	148.05	57.04	147.73	58.74	147.65	59.07	147.61	59.94	147.67		
61.28	147.74	61.8	147.67	63.27	147.52	64.44	147.21	65.18	147.07		
66.11	146.75	67.25	146.57	69.54	146.43	69.64	146.38	69.96	146.23		
72.34	145.09	73.44	144.39	73.93	144.17	75.93	143.99	76.43	143.94		
76.55	143.95	78.13	144.16	79.16	143.8	80.62	143.53	81.33	143.5		
81.96	143.32	82.79	143.19	83.75	143.02	84.71	142.99	86.55	142.96		
87.37	142.96	87.78	142.94	89.1	143.01	90.43	143.05	90.65	143.02		
90.89	142.98	92.93	142.65	94.75	142.32	95.19	142.13	95.41	142.14		
95.7	142.15	97.91	141.51	98.86	141.16	100.01	141.34	101.93	140.76		
103.18	140.54	112.75	133.65	124.5	133.65	132.96	140.86	133.35	141.22		
133.63	141.49	133.92	141.66	135.7	142.66	136.91	143.12	138.51	143.63		
143.16	142.79	143.39	142.81	144.13	142.83	144.38	142.84	148.45	143.36		
148.98	143.22	149.73	143.25	150.71	143.18	151.99	143.29	152.99	143.58		
154.81	143.7	156.19	143.68	157.71	143.56	157.86	143.56	159.56	143.74		
161.18	143.6	161.35	143.59	161.7	143.6	163.91	143.68	165.05	143.73		
166.09	143.78	167.43	143.66	167.96	143.67	168.36	143.66	170.2	143.64		
171.95	143.57	172.48	143.58	173.4	143.48	174.61	143.4	174.89	143.37		
175.32	143.32	177.71	143.27	179.14	143.16	179.16	143.16	181.48	143.01		
182.43	142.95	183.68	142.88	185.51	142.59	185.8	142.54	186.01	142.52		
188.35	142.38	189.48	142.29	190.68	142.26	192.32	142.08	192.77	142.02		
193.1	141.99	194.39	141.73	196.48	141.44	197.3	141.36	199.2	141.03		
199.68	140.94	202.35	140.69	202.98	140.62	203.48	140.54	204.84	140.41		
206.47	140.27	206.81	140.25	207.1	140.22	208.61	140.09	210.2	139.91		
210.36	139.89	210.52	139.88	212.18	139.77	213.99	139.62	214.07	139.62		
214.14	139.61	215.81	139.43	217.37	139.37	217.57	139.37	217.77	139.34		
219.42	139.13	221.05	139.01	221.25	138.99	221.41	138.98	222.84	138.8		
224.29	138.79	224.42	138.78	224.58	138.76	226.73	138.54	228.09	138.38		
229.09	138.39	229.68	138.39	231.42	137.94	231.59	137.85	231.73	137.86		
233.22	137.69	234.21	137.31	236.22	136.78	236.96	136.52	237.59	136.45		
240.81	136.3	243.21	136.29	244.33	136.34	244.64	136.33	244.88	136.31		
245.68	136.36	246.74	136.45	249.14	136.66	249.22	136.66	249.49	136.67		

251.98	136.75	252.31	136.79	252.75	136.85	254.5	137.05	256.38	137.16
256.74	137.19	257.06	137.22	258.4	137.38	259.85	137.48	260.07	137.5
260.26	137.52	261.7	137.63	263.29	137.73	263.35	137.74	263.42	137.74
265.14	137.91	266.83	138.04	266.88	138.04	266.94	138.05	268.82	138.2
270.39	138.3	270.75	138.31	271.12	138.34	272.54	138.42	273.92	138.41
274.33	138.41	274.84	138.43	276.18	138.45	277.29	138.47	278.05	138.46
278.91	138.47	279.97	138.43	280.88	138.41	281.81	138.38	282.86	138.38
283.6	138.38	284.25	138.36	285.58	138.35	287.3	138.37	287.65	138.4
287.93	138.38	289.39	138.33	290.97	138.29	291.07	138.28	291.16	138.27
292.82	138.17	294.58	138.05	296.19	138.08	297.6	138.02	297.79	138.02
298.02	138	300.04	137.96	301.68	137.93	302.15	137.9	302.56	137.86
303.68	137.65	304.98	137.47	305.36	137.42	306.32	137.39	307.87	137.36
308.48	137.35	310.48	137.34	311.89	137.32	312.61	137.31	313.18	137.29
314.18	137.28	315.45	137.22	315.87	137.21	316.99	137.22	318.21	137.25
318.7	137.25	319.96	137.29	321.01	137.27	321.56	137.28	322.24	137.3
323.19	137.32	324.22	137.34	324.83	137.34	325.38	137.37	326.59	137.45
327.79	137.52	328.43	137.56	329.07	137.59	330.43	137.65	332.36	137.78
332.49	137.79	332.63	137.79	334.34	137.84	335.91	137.88	336.2	137.89
336.66	137.9	338.11	137.93	339.03	137.98	340.08	138.02	341.33	138.08
342.13	138.11	342.8	138.14	344	138.21	345.54	138.26	345.81	138.27
346.02	138.27	347.97	138.31	349.78	138.37	350.17	138.37	351.16	138.37
352.5	138.38	353.03	138.4	354.9	138.46	356.91	138.69	357.15	138.72
357.39	138.75	358.79	138.89	360.19	138.98	360.57	138.99	361.2	138.94
363.05	138.82	364.16	138.82	365.04	138.88	365.78	138.89	366.59	138.94
367.55	139.03	368.58	139.1	370.77	139.25	371.25	138.89	371.47	139.29
372.9	139.33	374.07	139.39	374.49	139.42	375	139.45	376.14	139.52
376.91	139.53	377.86	139.55	379.26	139.57	379.69	139.59	380.78	139.65
382.13	139.74	382.67	139.75	384.02	139.78	385.02	139.84	385.77	139.86
386.77	139.9	387.72	139.93	389.32	139.98	390	140.01	390.4	140
391.95	140.03	393.16	140.12	393.79	140.19	394.61	140.24	395.79	140.33
397.41	140.46	397.88	140.5	398.23	140.52	399.84	140.54	401.17	140.56
401.78	140.57	402.54	140.58	403.68	140.62	404.99	140.59	405.54	140.58
406.01	140.69	407.4	141	408.39	141	409.28	141.01	410.51	141.07
411.1	141.1	413.13	141.4	414.94	141.66	421.98	144.16	425.53	145.39
426.55	145.71	428.31	146.55	429.13	146.74	430.68	147.09	433.61	147.46
434.95	147.94	435.44	148.09						

Manning's n Values num= 3

Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.04	103.18	.018	132.96	.04			

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

103.18	132.96	35.26	34.39	34.8	.3	.5		
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Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
138.51	435.44	143.63	F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 1800.703

INPUT Description:

Station Elevation Data num= 380

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4		
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84		
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87		
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94		
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38		
34.11	152.52	34.29	152.5	37.46	152.43	38.03	152.35	38.37	152.24		
39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78		
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14		
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78		
59.93	148.14	60.45	148.01	62.47	147.69	62.56					

80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values num= 3
 Sta n Val Sta n Val
 0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 115.75 141.69 879.95 875.26 876.36 .3 .5

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 159.7 435.17 143.7 F

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 1350

INPUT

Description:
 Distance from Upstream XS = 13
 Deck/Roadway Width = 831
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 142.5 500 142.5

Upstream Bridge Cross Section Data

Station Elevation Data num= 380											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	159.58	.61	159.43	.65	159.42	.66	159.41	.7	159.4		
.78	159.37	5.65	157.45	6.92	157.52	8.84	157.22	10.39	156.84		
12.87	156.69	13.23	156.6	14.89	155.99	16.8	155.92	17.07	155.87		
18.64	155.43	20.03	155.4	20.36	155.36	20.75	155.3	22.26	154.94		
25.42	153.73	25.93	153.54	26.15	153.41	26.49	153.42	26.83	153.38		
34.11	152.52	34.29	152.5	37.46	152.43	38.03	152.35	38.37	152.24		
39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78		
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14		
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78		
59.93	148.14	60.45	148.01	62.47	147.69	62.56	147.67	62.63	147.66		
64.77	147.08	66.43	146.53	66.81	146.44	67.26	146.39	69.29	146.08		
70.77	145.89	71.8	145.79	72.96	145.69	74.69	145.5	75.45	145.41		
76.26	145.28	76.92	145.23	77.8	145.12	78.87	145.01	79.58	144.92		
80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44		
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95		
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74		
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37		
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7		
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31		
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65		
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64		
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27		
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68		
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21		
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87		
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21		
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46		
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25		
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93		
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7		
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47		
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32		
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02		
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57		
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28		
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91		
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6		
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140				

288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0 .04	115.75	.018 141.69 .04

Bank Sta: Left	Right	Coeff Contr.	Expan.
115.75	141.69	.3	.5
Ineffective Flow	num=	1	
Sta L	Sta R	Elev	Permanent
159.7	435.17	143.7	F

Downstream Deck/Roadway	Coordinates		
num=	2		
Sta Hi	Cord Lo Cord	Sta Hi	Cord Lo Cord
0	134	500	134

Downstream Bridge Cross Section Data	Station Elevation Data	num=	84						
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev		
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0 .1	29	.054 78.68 .1

Bank Sta: Left	Right	Coeff Contr.	Expan.
29	78.68	.3	.5
Ineffective Flow	num=	2	
Sta L	Sta R	Elev	Permanent
0	33.72	132	F
80.72	154.24	132	F

Upstream Embankment side slope	=	0	horiz. to 1.0 vertical
Downstream Embankment side slope	=	0	horiz. to 1.0 vertical
Maximum allowable submergence for weir flow	=	.98	
Elevation at which weir flow begins	=		
Energy head used in spillway design	=		
Spillway height used in design	=		
Weir crest shape	=	Broad Crested	

Number of Culverts = 1

Culvert Name	Shape	Rise	Span			
Culvert #1	Box	6	7			
FHWA Chart # 8 - flared wingwalls						
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.						
Solution Criteria = Highest U.S. EG						
Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
7	851	.018	.018	0	.5	1

Number of Barrels =	2
Upstream Elevation =	130.4
Centerline Stations	
Sta.	Sta.
123.46	131.46
Downstream Elevation =	120
Centerline Stations	
Sta.	Sta.
56.22	64.22

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 925.4423

INPUT	Description:								
Station Elevation Data	num=	84							
Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev	Sta Elev		
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0 .1	29	.054 78.68 .1

Bank Sta: Left	Right	Lengths: Left Channel	Right	Coeff Contr.	Expan.
29	78.68	160.4	127.63	131.93	.3 .5
Ineffective Flow	num=	2			
Sta L	Sta R	Elev	Permanent		

0 33.72 132 F
 80.72 154.24 132 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 797.816

INPUT

Description:

Station Elevation Data		num= 238	
Sta	Elev	Sta	Elev
0	170.94	.89	171.07
3.12	171.13	4	171.14
7.06	171.13	8.8	171.04
11.16	170.83	12.1	170.79
15.78	170.36	16.59	170.54
21.07	169.54	21.8	169.41
26.48	167.74	26.5	167.74
30.43	166.33	31.38	165.86
35.6	163.5	36.2	163.19
41.37	160.38	41.38	160.38
45.42	158.09	45.67	157.98
49.19	156.19	50.69	154.86
55.23	151.85	55.67	151.59
59.35	149.87	61.29	149.4
63.08	148.6	65.08	147.28
67.55	145.78	67.7	145.72
71.93	144.21	72.87	143.82
77.68	141.14	78.33	140.96
86.06	137.45	86.95	137.3
90.9	136.29	91.23	136.27
97.39	133.78	99.75	132.91
102.8	131.55	103.07	131.37
107.91	128.91	108.45	128.7
113.56	127.36	113.93	127.35
123.25	123.84	130.45	119.12
135.81	119.46	137.98	118.53
142.12	115.63	142.58	115.61
147.88	116.26	148.38	116.34
152.9	117.12	153.21	117.14
158.62	118.73	160.16	119.3
172.89	121.59	174.01	121.91
181.63	124.53	184.05	125.93
197.73	131.34	199.36	131.52
201.97	131.76	202.33	131.8
209.47	131.96	210.07	131.9
224.1	131.22	224.56	131.18
229.08	131	230.62	130.96
236.36	130.83	238.74	130.86
242.07	130.76	244.25	130.78
245.68	130.7	248.05	130.63
251.87	130.49	252.35	130.46
256.87	130.31	257.76	130.32
262.06	130.24	262.55	130.24
266.7	130.07	268.72	130.03
281.74	129.88	282.89	129.81
287.17	129.64	288.94	129.67
293.36	129.66	294.05	129.66
296.17	129.64	296.21	129.64

Manning's n Values		num= 3	
Sta	n Val	Sta	n Val
0	.1	105.53	.035
		199.36	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 105.53 199.36 152.73 145.59 144.95 .1 .3

Blocked Obstructions		num= 1	
Sta L	Sta R	Elev	

291.9 298.82129.6411

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 652.2307

INPUT

Description:

Station Elevation Data		num= 322	
Sta	Elev	Sta	Elev
0	219.72	.41	219.63
4.76	217.8	5.75	217.5
9.87	216.57	10.28	216.48
15.67	215.74	15.94	215.7
20.49	214.73	21.32	214.5
26.05	212.3	26.37	212.15
28.65	211.64	30.37	210.85
34.98	207.62	37.33	206.64
42.82	203.56	42.85	203.54
47.85	198.49	48.03	198.29
49.39	197.67	49.43	197.65
54.87	194.7	55.77	194.09
59.9	191.43	60.35	191.17
65.79	187.95	66.39	187.57
69.99	185.87	70.96	185.4
75.93	183.97	76.68	183.54
80.89	181.7	80.94	181.67
88.48	178.14	88.97	177.93
92.51	175.79	92.98	175.59
97.3	173.63	98.41	172.61
102.5	169.63	103.62	168.83
108.23	166.09	109.37	165.28
114.06	161.16	114.8	160.5
118.91	157.68	120.19	156.96
124.38	153.28	124.53	153.17
128.74	151.17	131	150.94
132.86	149.85	136.29	147.13
147.11	139.64	147.22	139.54
156.48	132.27	157.29	131.81
162.66	127.39	164.74	125.86
176.66	121.21	183.69	118.36
190.77	115.85	193.73	114.53
197.19	114.21	198.81	114.52
211.87	117.15	212.15	117.17
217.85	118.33	223.17	119.19
233.1	120.23	233.41	120.24
235.8	120.9	236.23	121.04
241.43	122.95	250.53	127.76
253.77	129.39	255.83	130.22
258.47	131.21	259.91	131.53
263.61	132.06	264.16	132.1
269.82	132.03	270.79	131.92
274.17	131.69	275.96	131.62
280.88	131.2	281.84	131.01
286.02	130.77	286.26	130.74
290.17	130.52	291.45	130.42
295.32	130.24	295.91	130.22
300.75	130.03	301.27	129.98
305.93	129.73	307.13	129.59
311.24	129.49	311.84	129.46
316.4	129.12	317.39	129.06
321.07	128.91	321.51	128.87
326.8	128.64	327.75	128.6
333.17	128.54	333.69	128.53
339.01	128.36	340.49	128.33
344.29	128.16	344.31	128.16
349.91	128.28	351.11	128.22
355.81	127.95	356.7	127.89

360.76	127.63	362.76	127.55	364.38	127.46	365.2	127.43	366.24	127.39
367.66	127.31	369.71	127.18	369.78	127.17	369.83	127.17	371.09	127.16
371.34	127.16	374.93	127.13	375.97	127.12	380.93	127.11	413.75	127.2
413.78	127.2	413.8	127.2	413.82	127.2	413.87	127.2	415.3	127.11
415.69	127.08	417.63	126.97	419.25	126.94	419.92	126.92	421.27	126.85
421.92	126.82	423.38	126.8	424.38	126.79	424.82	126.78	426.39	126.66
426.73	126.65	428.11	126.56						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	158.79	.035	258.01	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

158.79	258.01	123.04	138.31	136.74	.1	.3
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Blocked Obstructions num= 1

Sta L	Sta R	Elev
347.73	428.11	28.3192

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 513.9224

INPUT

Description:
Station Elevation Data num= 297

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.83	1.59	219.13	17.61	212.09	23.51	210.08	23.63	210.08
24.12	209.8	25.5	209.15	27	209.05	27.69	208.99	28.29	208.92
29.39	208.81	29.72	208.85	31.4	208.79	32.97	208.53	33.4	208.43
33.85	208.37	35.32	208.21	35.35	208.21	35.36	208.21	35.46	208.19
38.88	207.55	39.45	207.31	40.15	206.9	40.9	206.48	41.46	206.14
42.9	205.11	44.34	204.06	44.9	203.75	45.76	203.25	48.13	201.52
49.29	200.48	50.61	199.55	51.07	199.16	52.15	198.26	52.46	198.05
52.86	197.79	54.76	196.63	56.19	195.61	56.67	195.18	57.73	194.54
58.31	194.16	58.97	193.67	60.55	192.32	61.03	192.04	62.49	191.05
63.63	190.32	66.65	188.52	67.6	188.06	68.78	187.36	69.2	187.15
70.85	186.33	72.41	185.56	72.82	185.34	73.25	185.12	74.04	184.69
74.92	184.21	75.73	183.67	79	181.47	79.01	181.46	80.14	180.86
80.66	180.57	82.36	179.81	84.73	178.82	85.01	178.72	86.03	178.29
86.31	178.18	86.39	178.14	88.93	176.95	90.48	176.25	91.02	175.97
92.08	175.49	92.58	175.2	93.29	174.77	94.91	173.64	96.06	172.93
96.91	172.39	97.76	172.12	99.02	171.49	100.65	170.55	101.36	170.05
101.93	169.69	103.29	169.18	103.55	169.08	105.23	168.06	106.84	167.08
107.26	166.86	110.6	164.84	111.12	164.44	113.56	162.94	119.23	159.48
120.33	158.98	120.64	158.83	120.72	158.77	125.48	157.13	129.17	155.84
129.42	155.71	129.81	155.55	130.05	155.36	130.45	155.05	135.67	150.81
136.76	149.72	138.62	149.06	143.15	144.73	144.78	142.81	147.08	141.18
147.1	141.17	149.3	140.05	149.6	139.92	151.89	138.05	153.48	136.74
154.19	136.3	154.52	136.15	156.97	134.37	158.34	133.07	159.51	132.3
160.17	131.77	162.12	129.81	164.41	128.52	165.82	127.68	168.37	126.49
169.58	125.77	169.98	125.42	171.07	124.62	173.98	122.32	175.31	121.45
176.06	120.88	179.25	120.43	180.66	120.17	181.39	119.97	182.81	119.56
184.08	119.43	185.41	119.39	186.13	119.38	199.37	116.29	199.94	116.13
203.18	115.55	205.3	115.34	207.61	115.26	209.82	115.07	211.57	114.85
211.78	114.82	213.98	113.83	217.31	112.84	217.62	112.82	217.96	112.79
218.48	112.76	220.43	112.7	221.64	112.62	222.74	112.79	223.74	113.22
225.16	113.85	227.59	115.21	227.72	115.28	227.78	115.32	228.04	115.44
229.84	116.34	230.25	116.55	230.75	116.84	232.42	118.05	238.08	119.84
238.95	120.12	239.98	120.4	241.59	120.96	242.1	121.13	242.42	121.27
244.14	122.07	246.4	123.54	247.51	124.25	248.19	124.63	249.95	125.56
252.21	126.62	252.72	126.82	254.37	127.43	254.4	127.44	254.41	127.44
256.03	127.71	256.47	127.79	258.27	128.15	258.47	128.19	259.32	128.23
260.21	128.29	260.41	128.29	262.63	128.25	264.31	128.18	264.93	128.16
266.52	128.1	266.99	128.08	267.59	128.06	269.13	128.02	270.34	127.95
271.27	127.87	272.49	127.79	273.44	127.75	274.55	127.73	275.54	127.71
276.36	127.67	277.99	127.57	278.51	127.55	280.28	127.51	282.4	127.46
282.47	127.46	284.53	127.46	285.17	127.46	285.86	127.45	287.14	127.43
288.31	127.4	288.87	127.39	289.9	127.37	290.29	127.37	290.5	127.36

293.52	127.31	294.36	127.31	295.45	127.3	296.49	127.27	297.36	127.26
300.16	127.26	300.23	127.26	300.46	127.25	302.02	127.19	302.48	127.18
304.74	127.07	306.3	127.02	307.22	127.01	308.55	126.92	309.27	126.87
310.66	126.82	311.72	126.78	312.27	126.76	313.76	126.74	314.49	126.72
315.91	126.66	317.89	126.56	318.11	126.55	318.27	126.54	320.49	126.46
320.65	126.45	322.51	126.36	324.31	126.35	324.42	126.38	326.58	126.68
327.74	126.44	331.73	126.34	337.07	126.29	344.61	126.25	346.26	126.22
357.1	126.27	360.16	126.41	360.23	126.41	360.24	126.41	360.29	126.41
361.2	126.4	363.35	126.33	367.07	126.25	367.67	126.23	367.96	126.21
370.92	126.28	371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22
376.43	126.2	382.93	126.17	383.46	126.16	385.18	126.08	387.41	126.04
387.95	126.04	388.35	126.04	389.97	126	390.56	125.99	391.9	125.99
393.55	125.97	393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97
370.92	126.28	371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22
376.43	126.2	382.93	126.17	383.46	126.16	385.18	126.08	387.41	126.04
387.95	126.04	388.35	126.04	389.97	126	390.56	125.99	391.9	125.99
393.55	125.97	393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97
396.2	125.97	396.39	125.97	398.42	125.96	399.37	125.98	400.87	125.93
401.59	125.91	403.69	125.85	404.82	125.85	406.48	125.82	406.99	125.85
408.45	125.92	410.14	125.81	410.22	125.81	410.28	125.81	410.48	125.82
412.39	125.95	413.26	125.98	415.57	125.98	415.63	125.98	415.74	125.98
417.87	126.03	418.93	126.03						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	165.82	.035	256.03	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

165.82	256.03	90.74	99.27	101.73	.1	.3
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Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
260.21	418.93	128.29	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	21.49	219.8281	328.81	368.34	126.4151

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 414.6495

INPUT

Description:
Station Elevation Data num= 331

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.52	1.65	217.02	8.79	215.09	11.69	214.35	17.38	212.81
18.77	212.45	23.58	211.22	25.39	210.74	25.75	210.71	27.81	210.48
29.86	210.9	30.39	211.01	31.17	211.04	31.56	211.04	33.15	211.04
35.09	211.04	35.48	211.04	35.79	211.04	36.97	211.07	37.89	211.03
39.01	211.07	43.34	209.74	43.5	209.73	43.74	209.69	44.11	209.5
45.74	208.76	47.56	208.22	47.65	208.18	47.75	208.12	49.35	207.15
49.58	207	51.4	205.99	53.14	204.83	53.43	204.65	53.72	204.49
55.27	203.6	55.78	203.29	57.81	202.29	69.37	197.12	73.14	196.23
76.27	195.13	78.99	193.99	81.64	192.89	83.11	192.48	83.69	192.34
84.78	192.08	85.69	191.92	86.49	191.69	89.77	190.24	90.08	190.13
91.74	189.69	94.76	188.93	96.22	188.33	97.52	187.7	98.71	187.05
99.43	186.63	100.61	185.85	103.46	184.34	105.48	183.26	108.42	181.71
108.91	181.4	109.1	181.21	110.71	180.16	112.53	179.42	114.16	178.69
114.94	178.3	115.87	177.69	116.97	177.07	117.97	176.46	118.8	176.04
119.65	175.68	120.65	175.3	122.64	174.83	125.29	174.1	126.32	173.47
128.88	171.96	130.83	170.63	131.1	170.51	131.82	170.12	135.95	167.91
136.43	167.67	136.86	167.46	139.23	166.47	141.81	164.9	141.94	164.88
143.67	164.53	144.32	164	149.43	160.13	150.23	159.72	151.3	159.37
152.46	159.04	153.32	158.46	154.15	157.94	155.28	156.94	155.73	156.54
156.33	155.9	157.92	154.34	160.5	152.68	161.06	152.34	162.23	151.38
164.97	149.05	165.89	148.21	167.17	147.13	168.67	145.87	169.9	144.89
170.9	144.11	171.97	143.39	172.94	142.69	174.07	141.97	175.3	141.01
176.05	140.4	176.75	139.82	178.37	138.49	178.89	138.15	180.4	137.18
181.93	136.37	182.33	136.13	182.73	135.88	183.66	135.29	184.78	134.69
186.1	133.7	188.65	131.65	189.16	131.31	190.48	130.44	192.23	128.97
193.37	128.18	195.3							

219.61	116.46	223.9	117.04	224.74	117.17	226.02	117.65	227.08	118.3
228.53	119.19	229.85	119.28	230.84	119.15	232.11	119.03	233.87	118.65
235.73	117.82	236.74	117.23	238.96	115.96	239.81	115.8	241.64	115.55
242.24	115.5	243.54	115.35	243.78	115.33	243.89	115.33	246.51	115.29
247.64	115.32	248.57	115.4	249.88	115.1	250.31	114.92	251.02	114.24
253.54	112.22	254.67	111.97	255.82	111.91	256.81	111.76	258.68	111.44
259.23	111.34	259.52	111.3	261.34	111.16	262.76	111.71	264.05	112.17
264.64	112.59	265.37	113	271.11	117.76	271.5	118.03	271.73	118.14
277.03	120.84	278.32	121.16	278.84	121.22	279.62	121.44	280.44	121.74
281.3	122.17	282.33	122.81	283.27	123.18	283.97	123.58	285.09	123.97
285.4	124.11	285.58	124.19	288.65	125.14	289.19	125.23	291.31	125.5
291.55	125.52	293.48	125.59	294.26	125.62	294.67	125.65	296.4	125.68
297.61	125.74	298.07	125.71	300.08	125.53	300.85	125.45	301.19	125.44
302.7	125.32	303.51	125.27	304.81	125.26	307.13	125.22	307.15	125.22
307.38	125.21	309.35	125.15	309.54	125.14	311.5	125.04	313.13	124.93
313.67	124.89	315.55	124.81	315.99	124.8	316.61	124.78	318.19	124.71
319.26	124.65	320.6	124.54	321.7	124.48	322.83	124.43	324.07	124.39
324.79	124.35	325.44	124.3	327.15	124.17	327.81	124.15	329.22	124.08
330.6	123.94	331.07	123.89	331.56	123.87	334.06	123.74	334.15	123.74
335.94	123.84	337.64	123.89	337.78	123.9	337.93	123.9	338.48	123.89
340.44	123.87	341.3	123.91	344.07	124	344.27	124.02	345.88	124.15
346.78	124.2	348.19	124.24	350.51	124.22	350.85	124.2	351.53	124.21
352.58	124.24	353.1	124.27	354.83	124.34	356.8	124.36	357.18	124.37
358.24	124.32	359.1	124.3	359.41	124.3	361.35	124.33	363.13	124.34
363.63	124.35	365.83	124.35	365.93	124.35	366.57	124.35	369	124.36
369.41	124.36	371.44	124.39	372.05	124.39	373.53	124.36	375.27	124.34
375.49	124.34	375.68	124.34	378.19	124.31	378.37	124.31	381.65	124.36
381.78	124.36	381.92	124.36	384.51	124.37	384.57	124.37	386.3	124.34
387.96	124.4	388.2	124.4	389.62	124.36	390.84	124.38	391.21	124.38
391.57	124.39	393.01	124.39	394.46	124.38	394.76	124.37	395.24	124.35
396.35	124.33	397.05	124.35	398.8	124.38	400.61	124.42	401.33	124.42
402.84	124.41	403.13	124.41	403.27	124.41	405.85	124.44	406.86	124.42
408.02	124.43	409.47	124.47	409.93	124.47	411	124.49	412.31	124.51
412.87	124.52	414.59	124.5	415.69	124.5	416.94	124.49	419.23	124.51
419.39	124.51	420.29	124.52	421.72	124.53	421.97	124.54	423.82	124.54
425.46	124.41	425.95	124.4	428.13	124.42	428.26	124.43	428.42	124.43
430.21	124.49	431.66	124.51	432.36	124.51	434.53	124.47	434.91	124.46
435.3	124.46	437.92	124.44	438.59	124.42	440.66	124.42	441.54	124.42
443.06	124.4								

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .08 199.96 .035 293.48 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 199.96 293.48 119.54 107.41 104.94 .1 .3
 Blocked Obstructions num= 1
 Sta L Sta R Elev
 0 18.39217.5225

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 307.2411

INPUT
 Description:
 Station Elevation Data num= 249

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.22	2.03	193.13	4.46	193.04	4.81	193.07	5.57	193
6.11	192.96	6.36	192.95	8.09	192.95	10.09	192.84	10.19	192.84
10.26	192.84	11.73	192.82	12.31	192.76	13.62	192.63	15.03	192.52
15.67	192.49	16.26	192.45	17.47	192.36	18.24	192.25	20.15	192.01
21.07	191.88	22.6	191.16	26.27	189.37	27.82	188.74	27.95	188.69
29.85	188	30.04	187.95	30.49	187.84	32.67	187.29	33.03	187.22
33.53	187.12	34.88	186.68	37.84	186.22	38.64	186.12	61.1	179.1
63.06	178.37	63.97	178.09	65.08	177.56	66.8	176.57	67.2	176.41
68.87	175.92	69.17	175.73	71.74	174.07	72.78	173.3	74.22	172.26
74.86	171.91	74.95	171.85	76.93	170.74	78.55	170.1	79.75	169.68

80.62	169.21	82.2	168.21	84.11	167.32	84.69	167.07	86.2	166.39
87.41	165.87	89.76	164.66	89.77	164.65	89.8	164.64	91.19	163.92
91.96	163.46	92.92	162.97	94.21	162.3	94.93	162	95.44	161.77
96.51	161.32	97.54	160.77	98.14	160.44	98.91	160.03	100.18	159.33
101.16	158.83	102.04	158.35	103.38	157.61	103.88	157.34	104.91	156.83
106.25	156.15	106.9	155.82	108.15	155.19	109.01	154.76	110.85	153.84
112.64	152.91	113.71	152.48	114.77	151.98	116.49	151.13	118.37	150.16
119.33	149.59	120.52	148.97	121.27	148.59	124.07	147.22	124.54	146.98
126.3	146.14	127.22	145.6	129.7	144.04	129.86	143.94	129.91	143.9
130.06	143.79	132.01	142.46	132.68	142.03	134.07	141.2	135.06	140.62
135.52	140.36	136.92	139.64	137.83	139.19	138.11	139.06	138.57	138.83
140.31	137.97	141.35	137.6	142.11	137.31	143.52	137.06	143.55	137.06
144.17	136.86	148.5	135.48	148.95	135.33	149.56	135.03	152.61	134.07
154.55	133.23	154.85	133.13	155.35	132.85	156.36	132.29	160.85	129.63
161.49	129.51	165.23	127.65	166.16	126.98	169.11	123.14	170.01	122.73
172.65	121.43	176.49	121.04	177.16	120.92	177.85	120.87	178.77	120.87
180.14	120.5	180.83	120.35	181.56	119.88	183.28	119.07	186.64	117.45
189.23	116.35	192.81	115.95	200.01	115.29	204.38	114.33	204.43	114.31
204.5	114.27	204.59	114.27	206.34	113.83	207.91	113.67	209.59	113.64
210.55	113.59	210.86	113.38	214.01	111.95	215.16	111.35	216.07	110.94
217.32	110.68	218.81	110.6	219.06	110.58	219.27	110.59	220.04	110.67
221.64	110.85	222.08	111	223.12	112.01	229.95	114.65	230.3	114.77
230.57	114.85	230.64	114.86	232.32	115.38	232.81	115.65	235.17	116.87
236.55	117.41	238.82	118.06	239.03	118.15	239.18	118.23	242.36	119.89
244.53	121.23	247.72	122.43	248.34	122.71	249.71	123.35	252.48	123.88
254.2	124.35	254.82	124.4	256.02	124.5	257.04	124.55	258.96	124.64
259.15	124.65	259.31	124.66	259.42	124.64	261.45	124.67	261.89	124.68
261.91	124.68	265.12	124.42	265.95	124.36	267.55	124.28	269.18	124.22
270.7	124.16	271.92	124.1	273.11	124.04	274.66	123.97	276.36	123.9
277.17	123.88	278.58	123.78	278.81	123.77	278.94	123.76	281.24	123.68
282.05	123.63	283.17	123.46	284.51	123.37	285	123.35	286.86	123.26
287.58	123.23	287.77	123.22	289.58	123.09	290.31	123.09	291.85	123.02
293.53	122.91	294.13	122.89	296.05	122.76	296.12	122.76	296.28	122.75
298.36	122.67	299.25	122.6	300.63	122.53	301.81	122.55	302.88	122.59
305.01	122.8	305.09	122.8	307.52	122.87	307.66	122.87	307.95	122.88
309.72	123.01	310.61	123.03	312.27	123.12	313.19	123.18	314.54	123.27
316.41	123.38	316.7	123.39	318.91	123.46	319.46	123.5	320.17	123.54
321.18	123.59	321.97	123.74	322.8	123.81	324.1	123.75	324.4	123.72
324.59	123.72	326.03	123.73	326.61	123.78	329.27	123.85	329.6	123.85
333.34	123.72	338.08	123.69	389.53	123.67	408.21	123.73		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .08 169.11 .035 254.82 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 169.11 254.82 120.64 112.11 114 .1 .3
 Blocked Obstructions num= 2
 Sta L Sta R Elev
 296.44 408.21 123.734 0 26.17193.2154

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 195.1298

INPUT
 Description:
 Station Elevation Data num= 255

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.78	1.05	177.74	1.25	177.67	5.17	175.92	7.02	175.47
9.51	174.96	10.76	174.41	11.26	174.23	13.24	173.96	14.26	173.82
16.15	173.44	16.59	173.36	16.83	173.3	18.17	172.99	19.21	172.59
20.92	172.41	21.94	172.44	22.5	172.27	22.91	172.17	25.71	172.14
28.45	171.73	30.39	170.94	47.65	163.96	59.36	160.59	60	160.6
61.69	159.11	62.82	158.9	65.08	157.69	66.07	157.1	67.28	157.14
68.05	157.33	68.69	156.72	70.35	155.57	70.62	155.45	72.69	154.12
74.16	152.32	75.43	151.36	77.4	149.61	78.38	148.72	80.2	146.74
81.95	144.67	83.97	142.51	84.33	142.25	84.67	142.22	85.77	141.74

88.33	140.97	91.01	140.13	92.99	140.17	94.18	140.11	95.38	140.14
96.42	140.2	97.35	140.21	100.48	140.26	101.07	140.01	103.17	139.49
104.38	139.46	104.47	139.46	104.95	139.34	106.89	138.55	108.71	137.74
110.12	137	110.16	136.98	112.76	135.42	114.27	134.11	116.01	132.19
117.08	130.87	118.49	128.4	118.54	128.34	120.48	125.86	121.61	124.85
122.29	124.24	123.36	123.65	123.83	123.38	124.13	123.13	125.77	121.78
127.32	121.35	127.77	121.13	128.64	120.2	129.54	119.66	131.16	117.91
133.06	116.2	134.11	115.52	134.84	115.27	135.62	115.27	136.68	115.31
137.96	115.24	138.5	115.19	138.94	115.2	141.18	115.2	145.6	113.94
146.68	113.74	147.11	113.58	148.46	114.04	152.2	113.09	155.54	112.01
157.46	111.49	158.43	111.31	159.1	111.18	161.06	110.82	162.28	110.73
163.95	110.73	164.99	110.77	166.66	110.9	168.29	111.32	168.82	111.52
169.57	111.92	170.36	112.39	170.92	112.89	172.34	113.88	174.07	114.5
174.91	114.76	176.06	115.11	176.88	115.36	177.94	115.69	180.01	116.76
180.03	116.77	181.68	117.65	182.71	118.07	183.39	118.37	184.35	119.06
185.22	119.54	185.82	119.91	187.1	120.59	188.55	121.32	189	121.48
194.04	122.27	194.36	122.31	194.99	122.37	198.48	122.37	199.87	122.39
201.69	122.55	202.38	122.67	202.92	122.61	204.46	122.4	204.8	122.36
205.66	122.22	207.68	122.06	208.56	122.04	210.6	121.95	211.15	121.94
213.45	121.89	214.12	121.87	215.33	121.89	216.76	121.92	217	121.91
218.21	121.91	219.54	121.9	219.81	121.9	221.23	121.89	222.46	121.9
222.99	121.9	225.26	121.86	225.36	121.86	225.38	121.86	227.09	121.88
228.07	121.86	229.07	121.83	231.15	121.87	231.33	121.87	231.71	121.88
233.13	121.91	233.77	121.9	235.13	121.91	236.68	121.93	237.13	121.91
237.8	121.92	238.82	121.92	239.5	121.94	240.71	121.96	240.94	121.95
242.1	121.95	243.47	122	244.25	122.03	244.93	122.03	246.56	122.07
248.18	122.06	248.72	122.07	249.25	122.07	251.05	122.14	252.53	122.13
253.37	122.13	254.22	122.13	255.62	122.14	256.6	122.15	257.78	122.11
258.93	122.08	260.12	122.05	261.59	122.02	262.38	122.01	263.09	121.98
264.68	121.92	266.5	121.85	266.86	121.84	267.21	121.82	269.24	121.76
271.12	121.66	271.42	121.65	271.77	121.64	273.83	121.59	275.36	121.68
275.91	121.7	276.45	121.75	278.22	121.87	280.17	121.88	281.9	121.94
285.76	122.09	286.04	122.08	311.85	123.59	314.02	123.54	315.36	123.55
316.6	123.5	319.96	123.57	343.22	123.55	349.7	123.74	354.54	123.65
358.68	123.64	386.17	123.86	391.37	123.92	395.86	123.92	396.64	123.92
410.21	123.8	412.27	123.79	412.64	123.79	414.14	123.8	417.87	123.59
418.81	123.55	419.3	123.51	421.26	123.43	421.91	123.41	423.55	123.33
424.41	123.3	426.04	123.34	427.03	123.33	428.27	123.21	429.51	123.22
430.68	123.21	432.2	123.2	432.96	123.19	433.67	123.18	435.45	123.17
437.37	123.14	437.69	123.14	438.05	123.13	439.98	123.16	442.02	123.19
442.37	123.19	442.93	123.18	444.8	123.12	445.79	123.1	447.12	123.09
448.56	123.1	449.54	123.11	450.45	123.12	451.8	123.12	453	123.11

Manning's n Values	num=	4					
Sta n Val	Sta n Val	Sta n Val	Sta n Val				
0	.045	120.48	.08	125.77	.035	188.55	.08

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
125.77	188.55	91.95	53.62	23.5	.1	.3	

Blocked Obstructions	num=	2			
Sta L	Sta R	Elev	Sta L	Sta R	Elev
281.87	418.71	123.5501	20.51	74.01	172.4521

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 141.507

INPUT	Description:	Station Elevation Data	num=	279					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	162.56	.44	162.52	1.68	162.4	2.54	162.32	3.94	162.19
4.57	162.11	6.74	161.88	6.83	161.87	6.85	161.87	8.82	161.66
9.08	161.63	10.86	161.43	11.89	161.33	13.08	161.21	14.2	161.07
16.55	160.76	17.01	160.7	17.59	160.64	19.29	160.44	21.3	160.22
22	160.15	22.31	160.14	24.34	160.02	25.89	159.97	27.18	159.95
29.05	159.87	29.5	159.84	29.74	159.83	32.24	159.73	33.18	159.72
34.43	159.67	36.59	159.29	37.22	159.23	38.62	158.77	39.52	158.56

40.9	157.95	42.24	157.36	43.15	156.85	44.44	156.24	45.11	155.9
47.18	154.78	47.72	154.49	49.08	153.7	51.59	152.17	52.1	151.89
52.69	151.51	54.27	150.75	55.59	149.81	56.93	149.03	57.76	148.53
59.17	147.74	60.35	147.13	61.95	146.17	63.02	145.41	64.09	144.76
66.7	143.23	66.76	143.2	66.88	143.14	69.05	141.99	70.11	141.41
71.74	140.54	73.87	139.5	73.95	139.45	74	139.43	75.18	138.96
76.56	138.42	76.89	138.3	79.09	136.87	80.69	135.73	81.11	135.52
81.38	135.35	82.15	134.87	83.62	133.88	84.55	132.98	86.15	131.98
86.73	131.47	88.27	130.19	88.42	130.05	89.86	128.75	90.69	127.98
90.78	127.91	92.59	126.65	92.97	126.38	94.59	125.35	95.41	124.71
96.69	123.69	97.56	122.92	98.72	121.97	100.04	120.91	101.58	119.94
102.22	119.54	102.81	119.23	104.79	118.19	105.86	117.7	106.91	117.04
109.22	115.07	109.4	114.92	109.5	114.86	111.59	113.68	113.2	113.03
114.19	112.68	115.27	112.25	116.66	111.72	117.06	111.45	118.87	110.64
121.12	110.81	121.15	110.81	121.17	110.81	123.73	111.06	125.36	111.19
126.01	111.23	128.35	111.25	128.46	111.24	130.14	111.31	130.7	111.23
132.38	110.72	133.18	110.75	135.05	110.77	138.3	112.61	140.25	113.72
140.92	114.12	142.83	114.78	143.06	114.9	145.22	116.26	145.74	116.54
147.7	117.56	148.38	117.92	149.95	118.75	152.51	120.06	152.59	120.09
152.67	120.1	154.83	120.42	156.55	120.48	157.4	120.51	158.37	120.51
159.69	120.56	160	120.56	160.57	120.61	164.55	121.06	164.58	121.06
167.13	121.27	167.54	121.33	169.41	120.92	170.66	120.85	172.69	120.74
175.82	120.96	177.21	121	179.72	120.72	180.34	120.71	181	120.73
182.79	121.03	186.21	120.99	188.6	120.98	190.21	120.92	190.92	120.96
192.65	120.94	193.15	120.94	193.37	120.93	194.06	120.95	195.2	120.99
195.56	121	196.91	121.01	197.91	121.02	198.68	121.06	200.23	121.14
201.81	121.17	202.35	121.17	202.45	121.18	204.53	121.14	204.66	121.15
206.65	121.21	206.78	121.21	207.49	121.24	209.12	121.29	209.41	121.3
211.21	121.3	211.55	121.31	213.44	121.4	214.89	121.41	215.57	121.43
216.53	121.43	217.91	121.45	219.01	121.43	219.99	121.45	221.4	121.5
222.22	121.54	222.67	121.55	224.43	121.56	225.6	121.6	226.7	121.62
227.56	121.65	228.87	121.65	230.04	121.66	231.16	121.65	232.29	121.63
233.32	121.61	234.35	121.63	235.63	121.62	236.69	121.65	237.99	121.68
239.28	121.66	240.21	121.65	240.99	121.64	242.4	121.6	244.05	121.62
244.71	121.61	246.66	121.52	247	121.51	247.3	121.51	249.28	121.49
250.93	121.41	251.48	121.39	251.59	121.38	252.64	121.33	253.02	121.33
254.73	121.41	261.53	122.24	261.99	122.22	262.8	122.2	264.01	122.22
264.41	122.22	273.54	122.57	274.97	122.54	293.24	123.61	296.9	123.53
299.16	123.54	301.25	123.47	306.93	123.58	345.95	123.54	356.75	123.86
364.82	123.72	366.47	123.71	387.79	123.89	388.68	123.84	389.53	123.85
391.84	123.71	392.53	123.74	393.55	123.74	398.46	123.7	399.12	123.66
401.27	123.71	401.46	123.69	401.6	123.68	403.93	123.44	405.91	123.33
406.48	123.32	408.25	123.25	410.41	123.1	410.69	123.08	412.93	122.93
412.95	122.93	412.98	122.93	415.34	122.85	415.56	122.85	417.65	122.81
419.8	122.82	420.09	122.84	420.4	122.84	422.37	122.88	424.47	122.97
424.64	122.97	424.9	122.97	427.07	122.92	428.58	122.9	429.47	122.89
431.01	122.88	431.83	122.87	432.59	122.88	434.22	122.88	435.9	122.84
436.51	122.82	437.35	122.8	438.9	122.77	440.93	122.71	441.33	122.7
441.93	122.69	443.68	122.66	444.88	122.71	445.88	122.76		

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.045	100.04	.035	170.66	.04

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
100.04	170.66	118.19	76.21	43.65	.1	.3	

Blocked Obstructions	num=	1
Sta L	Sta R	Elev
259.86	396.96	123.7144

CROSS SECTION

0	143.15	.48	143.11	1.45	143.03	3.44	142.9	3.82	142.88
4.93	142.76	6.1	142.62	6.3	142.6	6.76	142.52	8.73	142.21
10.61	142.1	11.15	142.05	12.25	141.95	13.51	141.82	14.37	141.74
16.03	141.57	18.1	141.33	18.37	141.3	18.57	141.27	20.84	141.05
20.98	141.03	22.09	140.89	23.02	140.77	23.14	140.76	23.55	140.72
25.64	140.52	26.32	140.46	28.04	140.33	28.86	140.29	30.54	140.21
31.8	140.16	32.87	140.13	34.61	140.06	35.2	140.03	37.45	139.93
37.58	139.92	39.73	139.78	40.04	139.76	41.34	139.7	42.38	139.66
42.61	139.64	44.39	139.53	44.7	139.51	44.74	139.51	44.86	139.52
47.09	139.88	49.09	139.95	49.47	139.95	50.05	140	51.8	140.09
52.89	139.95	54.09	139.73	56.11	139.68	56.38	139.67	56.58	139.66
58.79	139.6	60.01	139.46	60.42	139.42	61.19	139.26	62.31	138.75
63.45	138.29	63.98	138.03	65.76	136.46	66.2	136.06	68.15	134.33
69.14	133.49	70.46	132.48	71.51	131.89	72.79	131.21	74.26	130.26
75.06	129.7	75.74	129.23	77.39	128.04	79.6	126.82	79.67	126.77
79.71	126.74	86.38	121.89	86.85	121.49	88.58	120.09	89.94	119.37
90.84	118.94	92.67	118.24	92.99	118.11	93.48	117.88	95.23	117
96.32	116.42	97.42	115.86	98.21	115.35	99.67	114.42	101.53	113.06
101.91	112.81	102.5	112.3	104.12	110.92	105.42	109.81	106.28	109.47
108.06	109.53	108.56	109.52	110.3	109.59	110.89	109.56	112.99	109.73
113.13	109.74	115.29	110.27	115.35	110.28	115.86	110.37	117.69	110.68
117.92	110.78	119.97	111.7	120.36	111.85	122.3	112.64	122.84	112.76
124.5	113.14	125.5	113.24	126.78	113.31	128.11	113.53	128.99	113.66
129.85	114.09	131.41	114.67	133.46	115.73	133.57	115.79	133.75	115.83
135.9	116.35	137.17	116.5	137.9	116.64	138.2	116.69	139.43	117.42
140.58	118.11	142.36	118.82	142.82	119	143.24	119.13	146.21	120.2
147.45	120.49	148.5	120.85	149.75	121.18	150.94	121.53	152.07	121.83
153.38	122	154.36	122.09	155.93	122.16	156.62	122.17	158.49	122.19
158.99	122.25	161.08	122.29	161.34	122.16	163.44	122.15	163.62	122.15
164.32	121.84	165.86	121.17	167.98	121.18	168.6	121.21	169.77	121.63
170.52	121.67	171.19	121.61	174.02	121.43	175.04	121.36	176.56	121.21
177.34	121.12	179.35	120.83	179.56	120.81	179.79	120.84	180.3	120.74
181.86	120.75	182.71	120.74	184.01	120.72	185.02	120.7	186.21	120.68
187.73	120.71	188.43	120.71	189.14	120.69	190.76	120.61	191.58	120.61
192.88	120.6	193.72	120.61	195.06	120.61	196.07	120.56	197.25	120.5
198.12	120.47	199.45	120.44	200.3	120.44	201.74	120.39	202.59	120.38
203.92	120.34	204.73	120.29	206.11	120.24	207.68	120.25	208.34	120.26
209.02	120.25	210.64	120.38	212.47	120.39	212.81	120.4	213.14	120.4
214.99	120.43	216.01	120.47	216.25	120.48	217.28	120.51	218.82	120.56
219.47	120.57	220.61	120.62	221.72	120.68	223.19	120.73	223.98	120.76
224.73	120.79	226.2	120.83	227.74	120.91	228.45	120.95	230.84	121.02
230.86	121.02	230.88	121.02	233.01	121.03	234.94	121.12	235.3	121.15
236.98	121.26	237.9	121.58	239.89	121.97	240.36	121.96	242.26	122.51
243.89	122.96	244.39	123.03	245.37	123.35	246.67	123.34	248.44	123.33
248.96	123.33	249.43	123.32	251.28	123.3	253.23	123.4	253.48	123.41
253.75	123.43	255.68	123.49	257.62	123.56	257.9	123.55	257.98	123.56
260.1	123.5	263.82	123.39	269.35	123.47	271.16	123.47	272.6	123.53
276.29	123.44	279.78	123.64	286.38	123.5	290.45	123.53	294.21	123.39
304.38	123.6	357.88	123.54	365.95	123.54	366.58	123.38	366.99	123.51
367.89	123.59	367.9	123.59	367.91	123.59	370.28	123.69	371.03	123.66
372.71	123.62	373	123.59	375.08	123.53	376.33	123.48	377.46	123.36
379.59	123.32	379.89	123.27	380.69	123.28	382.36	123.11	383.72	123.03
384.66	123	386.96	122.96	387.08	122.96	387.19	122.96	389.41	122.96
391.44	122.95	391.9	122.95	392.29	122.95	394.19	122.9	396.29	122.83
396.6	122.81	396.88	122.8	398.94	122.83	400.66	122.79	401.34	122.77
402.15	122.76	403.72	122.71	404.87	122.7	406.06	122.67	407.17	122.67
408.38	122.63	410.07	122.67	410.75	122.66	411.3	122.65	413.13	122.56
415.37	122.57	415.46	122.57	415.55	122.57	417.69	122.51	419.25	122.51
420.19	122.51	421.9	122.47	422.49	122.45	422.76	122.44	424.92	122.37
427.25	122.45	427.27	122.45	427.3	122.45	429.63	122.54	431.66	122.62
431.95	122.63	432.21	122.63	434.45	122.72	436.38	122.72	436.74	122.72
437.15	122.74	439.1	122.76	440.74	122.76	441.43	122.75	442.14	122.77
443.94	122.84	444.8	122.85	446.2	122.86	447.56	122.81		

Manning's n Values	num= 3	
Sta	n Val	Sta n Val
0	.04	86.38 .035
		152.07 .06

Bank Sta:	Left	Right	Lengths:	Left Channel	Right	Coeff	Contr.	Expan.
	86.38	152.07		86.42	60.71		.1	.3

Blocked Obstructions num= 1
 Sta L Sta R Elev
 253.85 377.59123.4293

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 4.590075

INPUT

Description:

Station Elevation Data	num= 372											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	
0	132.15	.3	132.07	1.14	132.13	2.35	132.1	3.47	131.95			
4.32	131.91	5.85	131.93	6.41	131.87	8.49	131.28	8.8	131.22			
9.88	131.02	11.76	130.67	12.35	130.61	14.17	130.23	15.5	130.13			
16.97	130.05	18.83	129.9	19.33	129.8	22.2	129.57	22.28	129.56			
24.3	129.44	24.76	129.4	27.23	129.21	27.6	129.17	28.24	129.04			
29.97	128.74	30.43	128.63	31.04	128.56	35.31	128.24	37.14	128.11			
38.19	128.03	39.24	127.95	40.55	127.87	41.13	127.82	43.09	127.64			
43.36	127.61	43.44	127.6	45.36	127.43	45.77	127.4	47.42	127.27			
48.62	127.17	49.59	127.08	50.93	126.93	51.66	126.84	53.16	126.67			
53.49	126.64	53.65	126.62	55.81	126.47	55.96	126.46	56.44	126.41			
58.73	126.21	59.59	126.15	60.97	126.06	62.75	125.87	63.3	125.85			
63.98	125.82	65.14	125.82	67.7	125.81	71.06	125.73	71.14	125.73			
71.56	125.72	73.83	125.67	74.03	125.68	74.44	125.77	76.13	126.1			
77.15	126.18	77.76	126.23	78.89	126.37	79.75	126.57	81.34	126.09			
83.65	125.59	84.06	125.55	85.49	125.51	86.4	125.22	87.41	125.06			
89.19	124.01	89.46	123.88	90.45	123.27	91.34	122.7	91.59	122.55			
92.27	121.9	94.36	120.33	95.21	119.01	96.69	117.5	97.24	116.91			
99.43	112.6	100.86	110.15	101.65	109.03	104.18	108.82	104.6	108.82			
104.66	108.82	106.84	109.02	107.67	108.84	109.61	108.72	111.07	108.59			
112.07	108.71	114.11	109.16	114.92	109.46	116.61	110.31	117.31	110.59			
119.34	111.56	120.07	111.89	121.54	112.81	122.56	113.48	122.98	113.87			
124.08	114.95	126.26	116.9	127.86	118.17	129.61	119.39	130.63	120.11			
131.2	120.38	132.86	121.24	133.02	121.32	133.07	121.34	134.44	121.72			
135.11	121.91	135.85	122.17	137.16	122.61	138.44	122.76	139.12	122.72			
140.86	122.4	141.05	122.37	141.13	122.36	143.15	122.32	143.54	122.33			
145.09	122.34	146.38	122.31	147.13	122.31	148.84	122.26	149.34	122.25			
150.25	122.27	151.08	122.31	151.54	122.31	153.76	122.33	153.96	122.34			
154.73	122.35	156.71	122.39	157.24	122.39	159.11	122.42	160.38	122.45			
161.84	122.48	163.93	122.49	164.17	122.5	165.92	122.56	166.78	122.59			
168.95	122.59	169.19	122.59	171.31	122.61	171.92	122.61	173.05	122.65			
174.24	122.64	174.73	122.63	176.66	122.56	176.78	122.56	176.81	122.56			
178.49	122.53	179.21	122.54	180.22	122.54	181.8	122.49	181.98	122.49			
182.64	122.47	183.94	122.43	184.3	122.46	185.68	122.62	186.9	122.66			
187.47	122.67	188.56	122.67	191.14	122.67	191.48	122.65	192.69	122.58			
192.99	122.57	194.24	122.54	195.52	122.55	196.44	122.52	197.67	122.52			
198.53	122.51	200.24	122.54	200.88	122.56	201.09	122.55	202.97	122.5			
204.06	122.52	205.31	122.54	206.23	122.49	207.47	122.45	208.93	122.34			
209.76	122.29	210.45	122.28	211.93	122.23	213.33	122.2	214.42	122.21			
215.36	122.26	216										

334	123.34	334.53	123.37	336.76	123.46	336.9	123.46	337.01	123.47
339.16	123.56	339.67	123.55	340.3	123.48	345.63	123.1	346.49	122.94
348.03	122.7	348.69	122.69	349.54	122.72	351.31	122.65	352.8	122.6
353.58	122.49	354.53	122.5	356.08	122.51	357.77	122.49	358.36	122.48
359.03	122.47	360.85	122.43	362.86	122.39	363.18	122.39	363.57	122.38
365.74	122.37	367.05	122.41	367.94	122.4	369.75	122.36	370.44	122.34
370.94	122.34	372.7	122.33	374.53	122.3	375.27	122.28	375.81	122.29
377.45	122.22	379.55	122.16	379.92	122.14	380.21	122.13	382.19	122.09
384.1	122.01	384.7	122	385.3	122	386.98	122.02	387.89	121.96
389.39	121.92	390.72	121.87	391.62	121.82	392.83	121.89	394.09	121.98
395.15	122.03	396.39	122.09	397.89	122.1	398.8	122.09	399.71	122.1
400.92	122.12	402.78	122.15	403.51	122.18	403.98	122.19	405.73	122.28
407.82	122.37	408.26	122.38	408.65	122.38	410.47	122.37	412.49	122.41
412.94	122.42	413.26	122.42	415.17	122.58	417.25	122.43	417.75	122.43
419.33	121.57	419.91	121.44	420.5	121.26	422.41	121.05	426.08	120.61
427.19	120.48	427.21	120.48	427.23	120.48	429.37	120.31	429.78	120.3
431.83	120.23	433.02	120.2	434.01	120.18	435.8	120.07	436.48	120.03
438.34	120.03	438.73	120.03	438.86	120	441.15	119.48	441.75	119.56
443.31	119.75	444.91	119.79						

Manning's n Values	num=	3
Sta n Val	Sta n Val	Sta n Val
0 .04	91.34	.035 134.44

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
91.34	134.44	24.51	4.59	8.5	.3	.5	
Ineffective Flow	num=	2					
Sta L	Sta R	Elev	Permanent				
0	69.65	120	F				
122.65	444.91	122.76	F				
Blocked Obstructions	num=	1					
Sta L	Sta R	Elev					
307.73	345.62	123.37	15				

SUMMARY OF MANNING'S N VALUES

River: Auburn Creek

n7	Reach	River Sta.	n1	n2	n3	n4	n5	n6
Main Reach		3283.479	.016	.045	.054	.035	.018	.016
Main Reach		3229.405	.016	.06	.045	.054	.035	.018
.016								
Main Reach		3159.787	.06	.02	.035	.018	.035	.018
.016								
Main Reach		3025.628	.06	.035	.018	.03	.016	
Main Reach		3000						
Main Reach		2916.303	.1	.035	.018	.03		
Main Reach		2900.962	.08	.035	.018	.03		
Main Reach		2709.054	.1	.035	.03			
Main Reach		2501.489	.1	.035	.1	.03		
Main Reach		2309.998	.1	.035	.03			
Main Reach		2161.775	.1	.035	.018	.03		
Main Reach		1835.094	.04	.018	.04			
Main Reach		1800.703	.04	.018	.04			
Main Reach		1350						
Main Reach		925.4423	.1	.054	.1			
Main Reach		797.816	.1	.035	.1			
Main Reach		652.2307	.1	.035	.1			
Main Reach		513.9224	.08	.035	.08			
Main Reach		414.6495	.08	.035	.08			
Main Reach		307.2411	.08	.035	.04			
Main Reach		195.1298	.045	.08	.035	.08		
Main Reach		141.507	.045	.035	.04			
Main Reach		65.30157	.04	.035	.06			
Main Reach		4.590075	.04	.035	.06			

SUMMARY OF REACH LENGTHS

River: Auburn Creek

Reach	River Sta.	Left	Channel	Right
Main Reach	3283.479	51.96	54.07	55.73
Main Reach	3229.405	70.8	69.62	68.75
Main Reach	3159.787	126.5	134.16	135.59
Main Reach	3025.628	111.21	109.32	112.92
Main Reach	3000			
Main Reach	2916.303	14.15	15.34	16.27
Main Reach	2900.962	206.54	191.91	184.83
Main Reach	2709.054	209.38	207.57	205.83
Main Reach	2501.489	198.58	191.49	185.3
Main Reach	2309.998	146.44	148.22	149.95
Main Reach	2161.775	328.02	326.68	328.75
Main Reach	1835.094	35.26	34.39	34.8
Main Reach	1800.703	879.95	875.26	876.36
Main Reach	1350			
Main Reach	925.4423	160.4	127.63	131.93
Main Reach	797.816	152.73	145.59	144.95
Main Reach	652.2307	123.04	138.31	136.74
Main Reach	513.9224	90.74	99.27	101.73
Main Reach	414.6495	119.54	107.41	104.94
Main Reach	307.2411	120.64	112.11	114
Main Reach	195.1298	91.95	53.62	23.5
Main Reach	141.507	118.19	76.21	43.65
Main Reach	65.30157	86.42	60.71	46.3
Main Reach	4.590075	24.51	4.59	8.5

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Auburn Creek

Reach	River Sta.	Contr.	Expan.
Main Reach	3283.479	.3	.5
Main Reach	3229.405	.1	.3
Main Reach	3159.787	.1	.3
Main Reach	3025.628	.3	.5
Main Reach	3000		
Main Reach	2916.303	.3	.5
Main Reach	2900.962	.1	.3
Main Reach	2709.054	.1	.3
Main Reach	2501.489	.1	.3
Main Reach	2309.998	.1	.3
Main Reach	2161.775	.1	.3
Main Reach	1835.094	.3	.5
Main Reach	1800.703	.3	.5
Main Reach	1350		
Main Reach	925.4423	.3	.5
Main Reach	797.816	.1	.3
Main Reach	652.2307	.1	.3
Main Reach	513.9224	.1	.3
Main Reach	414.6495	.1	.3
Main Reach	307.2411	.1	.3
Main Reach	195.1298	.1	.3
Main Reach	141.507	.1	.3
Main Reach	65.30157	.1	.3
Main Reach	4.590075	.3	.5

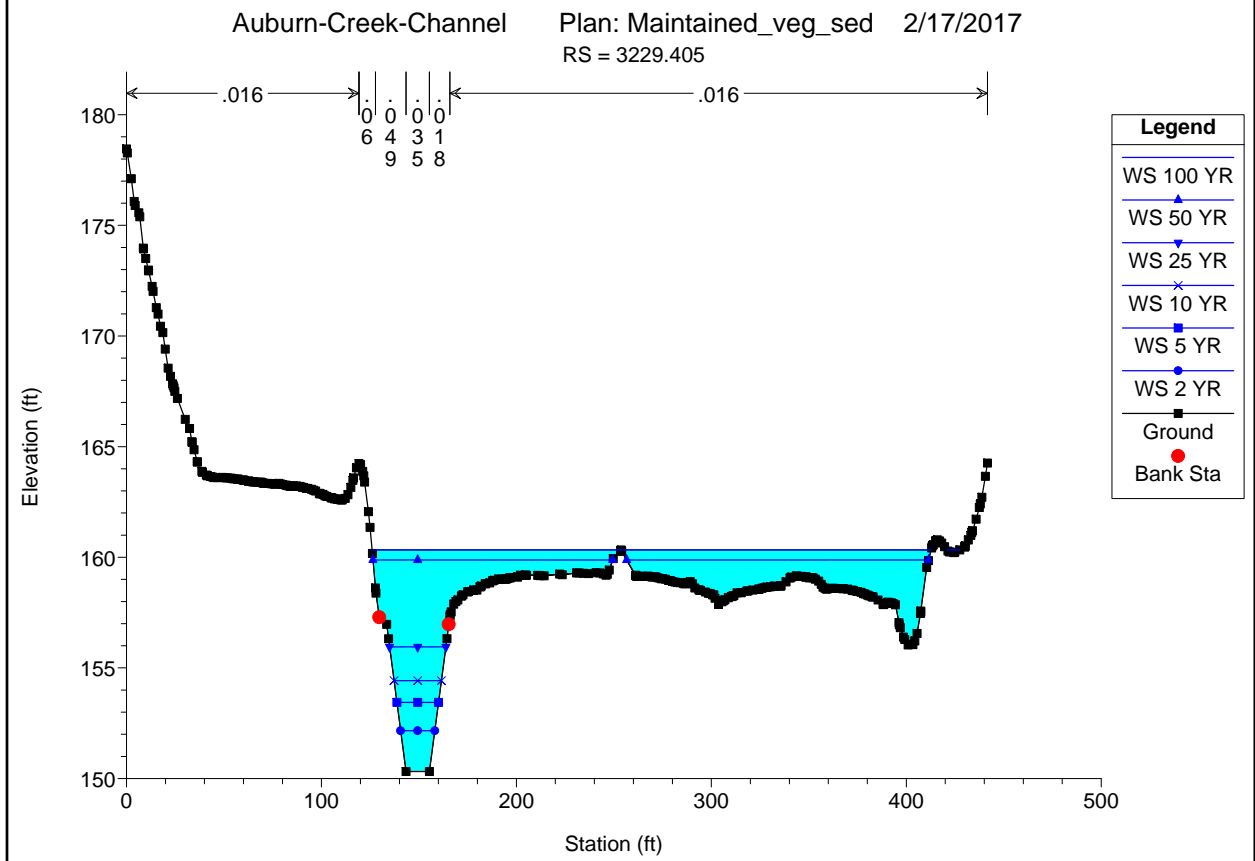
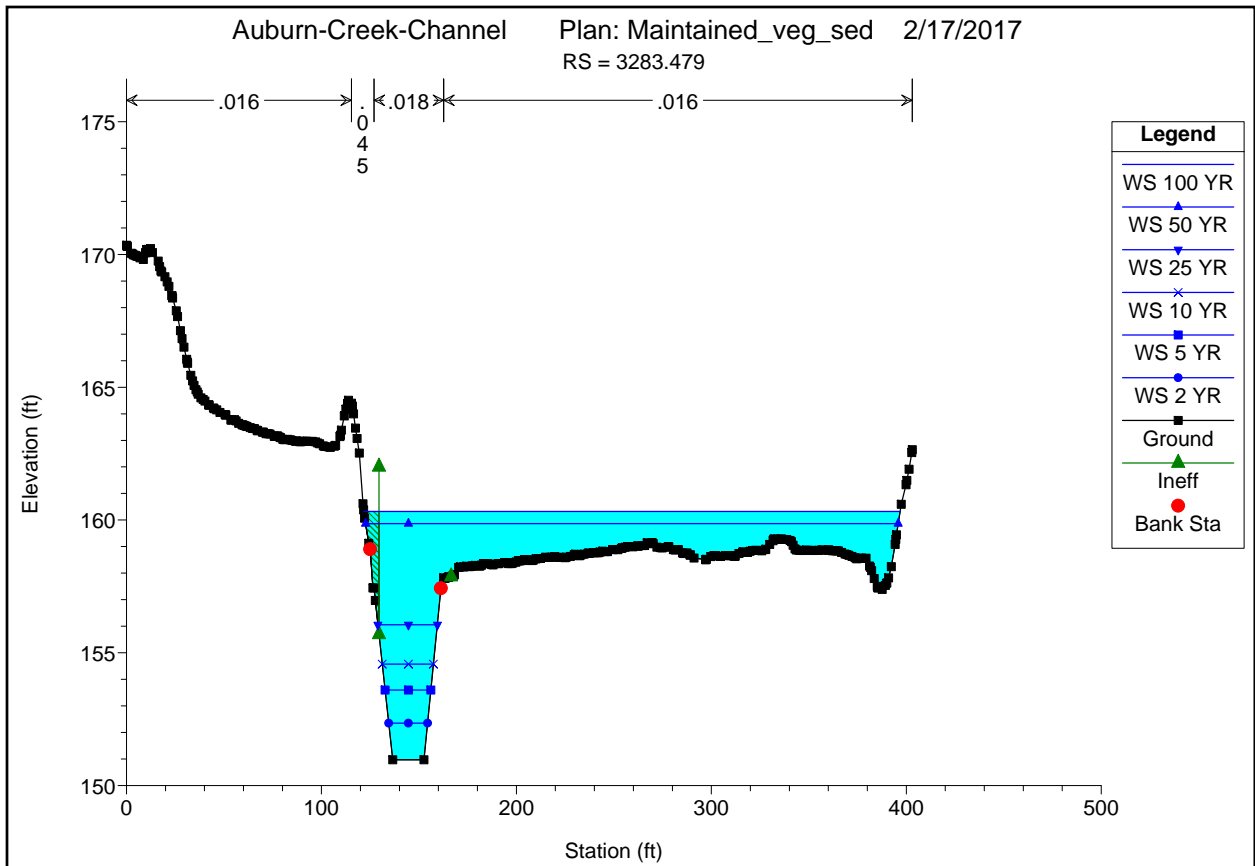
**Attachment 14 - DETAILED HYDRAULIC RESULTS FOR MAINTAINED CONDITION
MODEL – SEDIMENT AND VEGETATION ONLY**

HEC-RAS Plan: VegSed River: Auburn Creek Reach: Main Reach

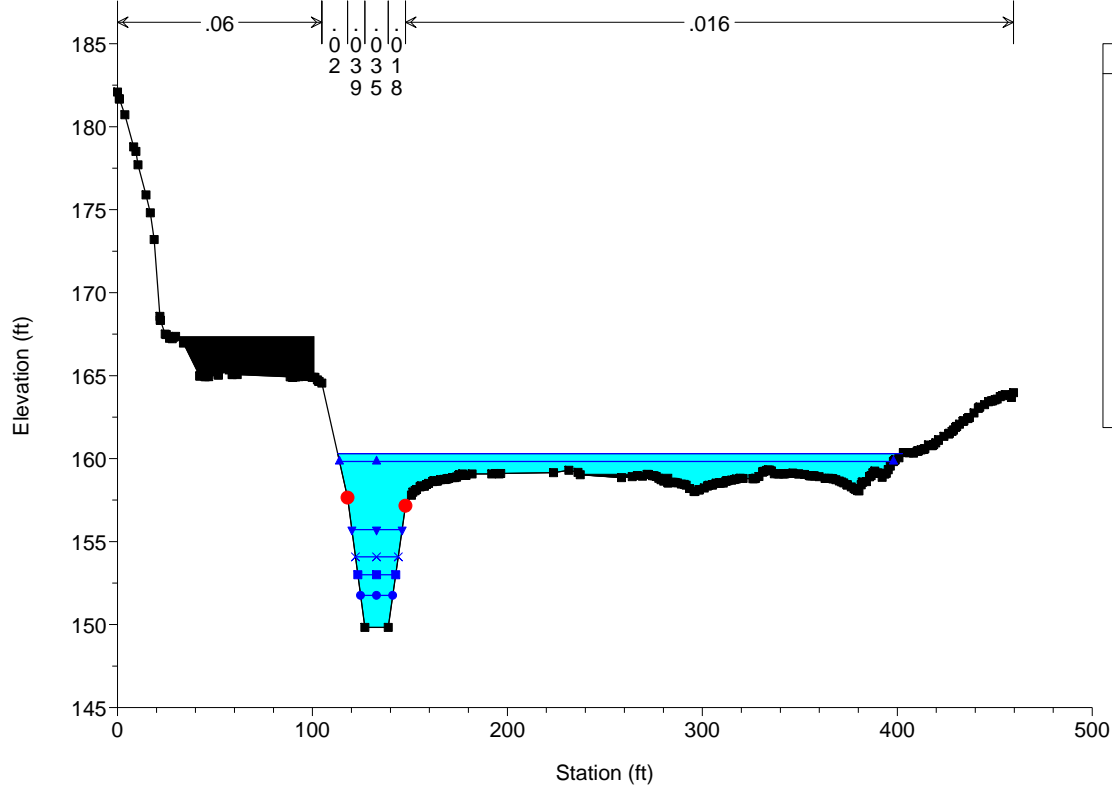
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	3283.479	100 YR	1200.00	150.97	160.32	155.78	160.41	0.000087	2.86	645.85	275.13	0.18
Main Reach	3283.479	50 YR	950.00	150.97	159.87	155.17	159.95	0.000090	2.79	523.90	273.28	0.18
Main Reach	3283.479	25 YR	630.00	150.97	156.06	154.26	156.50	0.000764	5.33	118.14	30.48	0.47
Main Reach	3283.479	10 YR	430.00	150.97	154.57	153.58	155.07	0.001266	5.65	76.11	26.26	0.58
Main Reach	3283.479	5 YR	290.00	150.97	153.60	153.01	154.08	0.001744	5.59	51.90	23.48	0.66
Main Reach	3283.479	2 YR	120.00	150.97	152.35	152.13	152.71	0.002717	4.84	24.80	19.93	0.76
Main Reach	3229.405	100 YR	1200.00	150.32	160.33		160.38	0.000178	1.92	674.30	293.40	0.12
Main Reach	3229.405	50 YR	950.00	150.32	159.88		159.93	0.000207	1.99	545.23	277.95	0.13
Main Reach	3229.405	25 YR	630.00	150.32	155.95		156.42	0.003083	5.47	115.14	28.89	0.48
Main Reach	3229.405	10 YR	430.00	150.32	154.43		154.94	0.004762	5.77	74.55	24.32	0.58
Main Reach	3229.405	5 YR	290.00	150.32	153.44		153.92	0.005915	5.57	52.09	21.37	0.63
Main Reach	3229.405	2 YR	120.00	150.32	152.16		152.47	0.006539	4.41	27.24	17.53	0.62
Main Reach	3159.787	100 YR	1200.00	149.83	160.30		160.37	0.000203	2.44	610.04	289.71	0.15
Main Reach	3159.787	50 YR	950.00	149.83	159.83		159.91	0.000252	2.61	474.72	284.20	0.17
Main Reach	3159.787	25 YR	630.00	149.83	155.72		156.22	0.002544	5.66	111.26	25.78	0.48
Main Reach	3159.787	10 YR	430.00	149.83	154.08		154.63	0.004042	5.96	72.18	21.95	0.58
Main Reach	3159.787	5 YR	290.00	149.83	153.00		153.53	0.005381	5.83	49.79	19.41	0.64
Main Reach	3159.787	2 YR	120.00	149.83	151.75		152.05	0.005416	4.38	27.41	16.50	0.60
Main Reach	3025.628	100 YR	1200.00	148.98	159.97	154.61	160.30	0.000694	4.62	264.31	52.56	0.28
Main Reach	3025.628	50 YR	950.00	148.98	159.62	153.91	159.85	0.000501	3.81	251.62	40.26	0.24
Main Reach	3025.628	25 YR	630.00	148.98	155.53	152.86	155.91	0.001656	4.97	126.73	26.71	0.40
Main Reach	3025.628	10 YR	430.00	148.98	153.75	152.06	154.17	0.002591	5.20	82.71	22.70	0.48
Main Reach	3025.628	5 YR	290.00	148.98	152.48	151.40	152.90	0.003673	5.19	55.84	19.87	0.55
Main Reach	3025.628	2 YR	120.00	148.98	150.54	150.37	151.03	0.011078	5.59	21.46	15.50	0.84
Main Reach	3000		Culvert									
Main Reach	2916.303	100 YR	1200.00	147.08	152.46	152.46	154.38	0.011981	11.13	107.84	28.13	1.00
Main Reach	2916.303	50 YR	950.00	147.08	151.43	151.81	153.59	0.016580	11.80	80.52	25.04	1.16
Main Reach	2916.303	25 YR	630.00	147.08	150.82	150.82	152.24	0.012573	9.55	65.94	23.23	1.00
Main Reach	2916.303	10 YR	430.00	147.08	149.95	150.07	151.26	0.015046	9.18	46.84	20.62	1.07
Main Reach	2916.303	5 YR	290.00	147.08	149.26	149.45	150.44	0.017919	8.73	33.24	18.53	1.15
Main Reach	2916.303	2 YR	120.00	147.08	148.29	148.45	149.09	0.022386	7.17	16.73	15.63	1.22
Main Reach	2900.962	100 YR	1200.00	143.83	147.48	149.20	152.98	0.050018	18.82	63.76	22.95	1.99
Main Reach	2900.962	50 YR	950.00	143.83	146.92	148.55	152.22	0.056636	18.47	51.44	21.27	2.09
Main Reach	2900.962	25 YR	630.00	143.83	146.16	147.56	150.88	0.066657	17.42	36.16	19.00	2.23
Main Reach	2900.962	10 YR	430.00	143.83	145.59	146.82	149.91	0.081470	16.69	25.77	17.28	2.41
Main Reach	2900.962	5 YR	290.00	143.83	145.14	146.19	149.07	0.101606	15.91	18.22	15.92	2.62
Main Reach	2900.962	2 YR	120.00	143.83	144.48	145.20	147.63	0.178658	14.25	8.42	13.95	3.23
Main Reach	2709.054	100 YR	1200.00	142.92	148.79	147.70	149.84	0.005462	8.25	145.45	33.60	0.70
Main Reach	2709.054	50 YR	950.00	142.92	148.05	147.09	149.00	0.005573	7.81	121.62	31.40	0.70
Main Reach	2709.054	25 YR	630.00	142.92	146.95	146.19	147.73	0.005829	7.10	88.77	28.08	0.70
Main Reach	2709.054	10 YR	430.00	142.92	146.11	145.51	146.76	0.006135	6.49	66.30	25.57	0.71
Main Reach	2709.054	5 YR	290.00	142.92	145.41	144.95	145.95	0.006515	5.90	49.19	23.48	0.72
Main Reach	2709.054	2 YR	120.00	142.92	144.32	144.08	144.67	0.007727	4.73	25.39	20.21	0.74
Main Reach	2501.489	100 YR	1200.00	141.01	146.81	146.39	148.36	0.008974	9.99	120.17	35.59	0.87
Main Reach	2501.489	50 YR	950.00	141.01	146.15	145.74	147.52	0.008906	9.38	101.30	27.42	0.86
Main Reach	2501.489	25 YR	630.00	141.01	145.15	144.75	146.23	0.008723	8.36	75.39	24.42	0.84
Main Reach	2501.489	10 YR	430.00	141.01	144.38	144.01	145.25	0.008540	7.48	57.48	22.11	0.82
Main Reach	2501.489	5 YR	290.00	141.01	143.73	143.38	144.41	0.008330	6.64	43.65	20.15	0.80
Main Reach	2501.489	2 YR	120.00	141.01	142.66	142.39	143.05	0.007911	5.03	23.87	16.95	0.75
Main Reach	2309.998	100 YR	1200.00	139.05	144.43	144.43	146.35	0.012002	11.13	107.85	39.93	1.00
Main Reach	2309.998	50 YR	950.00	139.05	143.78	143.78	145.50	0.012175	10.53	90.23	26.18	1.00
Main Reach	2309.998	25 YR	630.00	139.05	142.79	142.79	144.21	0.012604	9.56	65.88	23.22	1.00
Main Reach	2309.998	10 YR	430.00	139.05	142.05	142.05	143.22	0.012966	8.70	49.41	20.99	1.00
Main Reach	2309.998	5 YR	290.00	139.05	141.41	141.41	142.38	0.013502	7.89	36.74	19.09	1.00
Main Reach	2309.998	2 YR	120.00	139.05	140.43	140.43	141.02	0.014547	6.20	19.37	16.13	1.00
Main Reach	2161.775	100 YR	1200.00	137.65	142.42	143.03	145.10	0.005541	13.14	91.31	51.43	1.24
Main Reach	2161.775	50 YR	950.00	137.65	141.82	142.37	144.24	0.005749	12.48	76.12	28.10	1.25
Main Reach	2161.775	25 YR	630.00	137.65	140.95	141.39	142.92	0.005981	11.26	55.97	21.90	1.24
Main Reach	2161.775	10 YR	430.00	137.65	140.30	140.65	141.90	0.006165	10.16	42.31	19.95	1.23
Main Reach	2161.775	5 YR	290.00	137.65	139.76	140.01	141.04	0.006275	9.06	32.00	18.33	1.21
Main Reach	2161.775	2 YR	120.00	137.65	138.91	139.02	139.64	0.006433	6.87	17.47	15.77	1.15
Main Reach	1835.094	100 YR	1200.00	133.65	142.81	139.22	143.30	0.000431	5.68	224.51	278.42	0.38
Main Reach	1835.094	50 YR	950.00	133.65	137.18	138.53	141.43	0.012026	16.55	57.41	42.68	1.75
Main Reach	1835.094	25 YR	630.00	133.65	136.37	137.51	139.96	0.013326	15.19	41.47	25.27	1.80
Main Reach	1835.094	10 YR	430.00	133.65	135.78	136.73	138.80	0.014608	13.94	30.85	17.21	1.83
Main Reach	1835.094	5 YR	290.00	133.65	135.30	136.08	137.80	0.016120	12.70	22.83	15.97	1.87
Main Reach	1835.094	2 YR	120.00	133.65	134.57	135.05	136.15	0.019770	10.07	11.92	14.11	1.93
Main Reach	1800.703	100 YR	1200.00	130.48	142.86	136.59	143.23	0.000300	4.92	255.76	270.12	0.28

HEC-RAS Plan: VegSed River: Auburn Creek Reach: Main Reach (Continued)

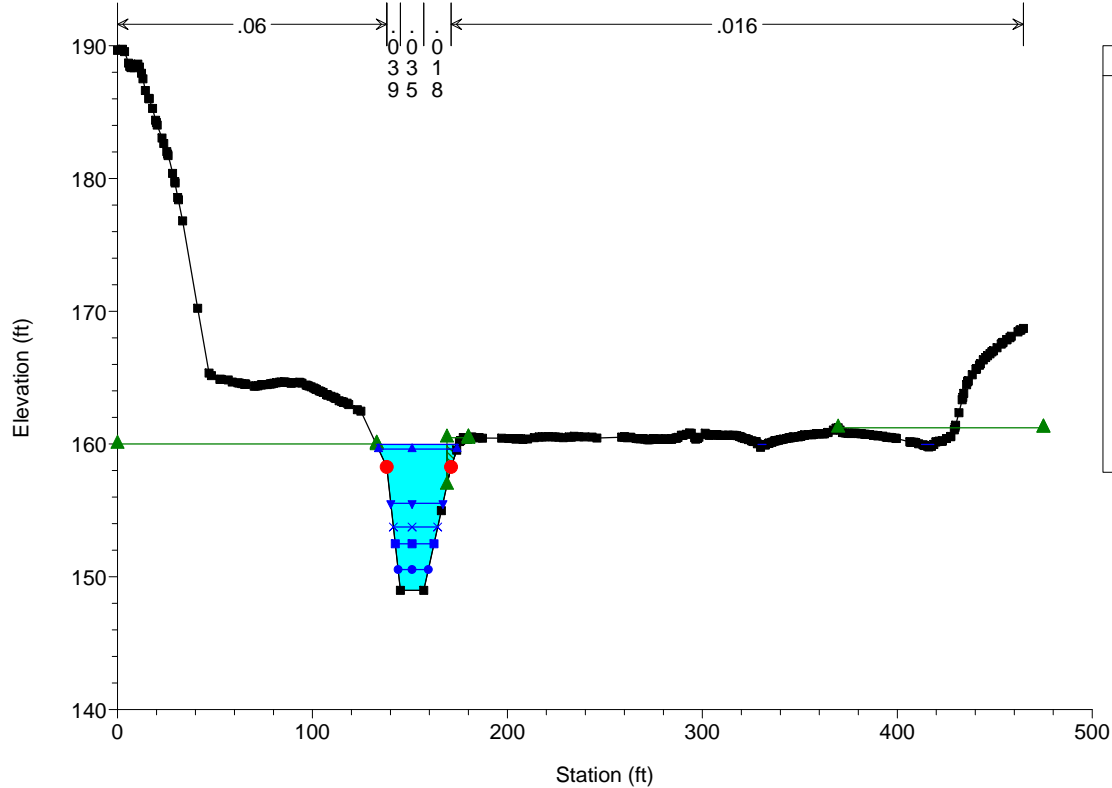
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	1800.703	50 YR	950.00	130.48	139.38	135.78	139.96	0.000692	6.11	155.49	152.49	0.42
Main Reach	1800.703	25 YR	630.00	130.48	132.93	134.61	138.70	0.023869	19.27	32.69	14.91	2.29
Main Reach	1800.703	10 YR	430.00	130.48	132.30	133.73	137.46	0.029278	18.22	23.60	14.10	2.48
Main Reach	1800.703	5 YR	290.00	130.48	131.82	133.02	136.38	0.036605	17.15	16.91	13.48	2.70
Main Reach	1800.703	2 YR	120.00	130.48	131.15	131.92	134.51	0.061280	14.71	8.16	12.63	3.22
Main Reach	1350		Culvert									
Main Reach	925.4423	100 YR	1200.00	118.52	124.59	124.59	126.42	0.025787	10.87	110.39	30.14	1.00
Main Reach	925.4423	50 YR	950.00	118.52	122.93	123.93	126.14	0.063378	14.37	66.11	23.48	1.51
Main Reach	925.4423	25 YR	630.00	118.52	121.80	122.94	125.30	0.096000	15.02	41.95	19.23	1.79
Main Reach	925.4423	10 YR	430.00	118.52	121.23	122.15	124.10	0.098284	13.61	31.60	17.22	1.77
Main Reach	925.4423	5 YR	290.00	118.52	120.73	121.49	123.09	0.102459	12.33	23.52	15.47	1.76
Main Reach	925.4423	2 YR	120.00	118.52	119.91	120.40	121.48	0.125225	10.07	11.92	12.60	1.83
Main Reach	797.816	100 YR	1200.00	117.70	121.22	121.79	123.65	0.016459	12.52	95.87	32.55	1.29
Main Reach	797.816	50 YR	950.00	117.70	121.16	121.24	122.74	0.010884	10.09	94.12	32.38	1.04
Main Reach	797.816	25 YR	630.00	117.70	120.57	120.45	121.65	0.009128	8.33	75.61	30.62	0.93
Main Reach	797.816	10 YR	430.00	117.70	120.03	119.86	120.84	0.008749	7.24	59.39	28.99	0.89
Main Reach	797.816	5 YR	290.00	117.70	119.56	119.38	120.18	0.008498	6.27	46.24	27.59	0.85
Main Reach	797.816	2 YR	120.00	117.70	118.77	118.65	119.12	0.009490	4.75	25.26	25.21	0.84
Main Reach	652.2307	100 YR	1200.00	116.26	120.34	120.34	122.04	0.009738	10.45	114.82	34.25	1.01
Main Reach	652.2307	50 YR	950.00	116.26	119.80	119.80	121.30	0.010060	9.83	96.69	32.62	1.01
Main Reach	652.2307	25 YR	630.00	116.26	119.00	119.00	120.20	0.010692	8.79	71.69	30.23	1.01
Main Reach	652.2307	10 YR	430.00	116.26	118.42	118.42	119.39	0.011329	7.89	54.52	28.48	1.00
Main Reach	652.2307	5 YR	290.00	116.26	117.95	117.94	118.71	0.011855	6.99	41.48	27.07	1.00
Main Reach	652.2307	2 YR	120.00	116.26	117.30	117.21	117.67	0.010447	4.90	24.50	25.12	0.87
Main Reach	513.9224	100 YR	1200.00	114.61	118.36	118.70	120.44	0.013070	11.57	103.75	33.26	1.15
Main Reach	513.9224	50 YR	950.00	114.61	117.89	118.16	119.69	0.013143	10.76	88.26	31.84	1.14
Main Reach	513.9224	25 YR	630.00	114.61	117.21	117.36	118.57	0.012964	9.37	67.20	29.79	1.10
Main Reach	513.9224	10 YR	430.00	114.61	116.71	116.78	117.74	0.012385	8.12	52.93	28.31	1.05
Main Reach	513.9224	5 YR	290.00	114.61	116.30	116.30	117.06	0.011979	7.02	41.34	27.06	1.00
Main Reach	513.9224	2 YR	120.00	114.61	115.57	115.57	116.01	0.013856	5.36	22.41	24.87	0.99
Main Reach	414.6495	100 YR	1200.00	113.05	117.84	116.89	118.66	0.004257	7.26	165.19	46.93	0.68
Main Reach	414.6495	50 YR	950.00	113.05	115.78	116.40	118.00	0.021419	11.97	79.34	36.18	1.43
Main Reach	414.6495	25 YR	630.00	113.05	115.23	115.68	116.93	0.021047	10.46	60.21	33.32	1.37
Main Reach	414.6495	10 YR	430.00	113.05	114.80	115.13	116.13	0.021013	9.24	46.54	31.11	1.33
Main Reach	414.6495	5 YR	290.00	113.05	114.44	114.68	115.47	0.021504	8.16	35.53	29.22	1.30
Main Reach	414.6495	2 YR	120.00	113.05	113.92	113.98	114.42	0.018559	5.72	20.98	26.50	1.13
Main Reach	307.2411	100 YR	1200.00	111.93	117.69	118.25	118.25	0.002349	6.04	198.58	46.99	0.52
Main Reach	307.2411	50 YR	950.00	111.93	116.70	115.35	117.29	0.002980	6.15	154.39	42.71	0.57
Main Reach	307.2411	25 YR	630.00	111.93	115.64	114.60	116.14	0.003301	5.65	111.51	38.11	0.58
Main Reach	307.2411	10 YR	430.00	111.93	114.82	114.04	115.25	0.003776	5.26	81.69	34.54	0.60
Main Reach	307.2411	5 YR	290.00	111.93	114.16	113.58	114.52	0.004298	4.85	59.77	31.67	0.62
Main Reach	307.2411	2 YR	120.00	111.93	113.18	112.87	113.41	0.005434	3.89	30.83	27.42	0.65
Main Reach	195.1298	100 YR	1200.00	110.72	116.84	117.86	117.86	0.004227	8.11	148.05	33.37	0.68
Main Reach	195.1298	50 YR	950.00	110.72	115.41	115.00	116.72	0.007167	9.18	103.45	29.08	0.86
Main Reach	195.1298	25 YR	630.00	110.72	114.08	114.08	115.44	0.010619	9.36	67.32	25.08	1.01
Main Reach	195.1298	10 YR	430.00	110.72	113.39	113.39	114.51	0.011138	8.47	50.78	23.02	1.00
Main Reach	195.1298	5 YR	290.00	110.72	112.82	112.82	113.72	0.011821	7.63	38.02	21.29	1.01
Main Reach	195.1298	2 YR	120.00	110.72	111.92	111.92	112.47	0.013514	5.93	20.23	18.61	1.00
Main Reach	141.507	100 YR	1200.00	109.45	117.02	117.58	117.58	0.001867	6.02	199.40	37.70	0.46
Main Reach	141.507	50 YR	950.00	109.45	115.70	116.30	116.30	0.002452	6.24	152.26	33.74	0.52
Main Reach	141.507	25 YR	630.00	109.45	113.91	112.81	114.57	0.003808	6.51	96.70	28.38	0.62
Main Reach	141.507	10 YR	430.00	109.45	111.54	112.12	113.54	0.026206	11.34	37.91	21.27	1.50
Main Reach	141.507	5 YR	290.00	109.45	111.07	111.55	112.71	0.028653	10.27	28.25	19.86	1.52
Main Reach	141.507	2 YR	120.00	109.45	110.99	110.65	111.30	0.005861	4.51	26.63	19.62	0.68
Main Reach	65.30157	100 YR	1200.00	108.84	116.91	117.37	117.37	0.002989	5.49	218.56	39.20	0.41
Main Reach	65.30157	50 YR	950.00	108.84	115.55	116.04	116.04	0.003707	5.65	168.04	35.12	0.46
Main Reach	65.30157	25 YR	630.00	108.84	113.65	114.19	114.19	0.005305	5.89	106.92	29.44	0.54
Main Reach	65.30157	10 YR	430.00	108.84	112.35	111.51	112.92	0.007253	6.05	71.09	25.53	0.64
Main Reach	65.30157	5 YR	290.00	108.84	111.37	110.94	111.95	0.009745	6.11	47.49	22.58	0.74
Main Reach	65.30157	2 YR	120.00	108.84	110.10	110.04	110.59	0.015812	5.66	21.19	18.77	0.94
Main Reach	4.590075	100 YR	1200.00	107.98	116.59	113.02	117.19	0.002647	6.21	193.17	34.35	0.41
Main Reach	4.590075	50 YR	950.00	107.98	115.28	112.38	115.84	0.002907	5.98	158.78	31.41	0.42
Main Reach	4.590075	25 YR	630.00	107.98	113.43	111.45	113.92	0.003505	5.61	112.39	27.25	0.46
Main Reach	4.590075	10 YR	430.00	107.98	112.10	110.72	112.54	0.004412	5.33	80.62	24.26	0.51
Main Reach	4.590075	5 YR	290.00	107.98	111.05	110.12	111.46	0.005529	5.12	56.64	21.90	0.56
Main Reach	4.590075	2 YR	120.00	107.98	109.49	109.20	109.84	0.008945	4.76	25.21	18.39	0.72

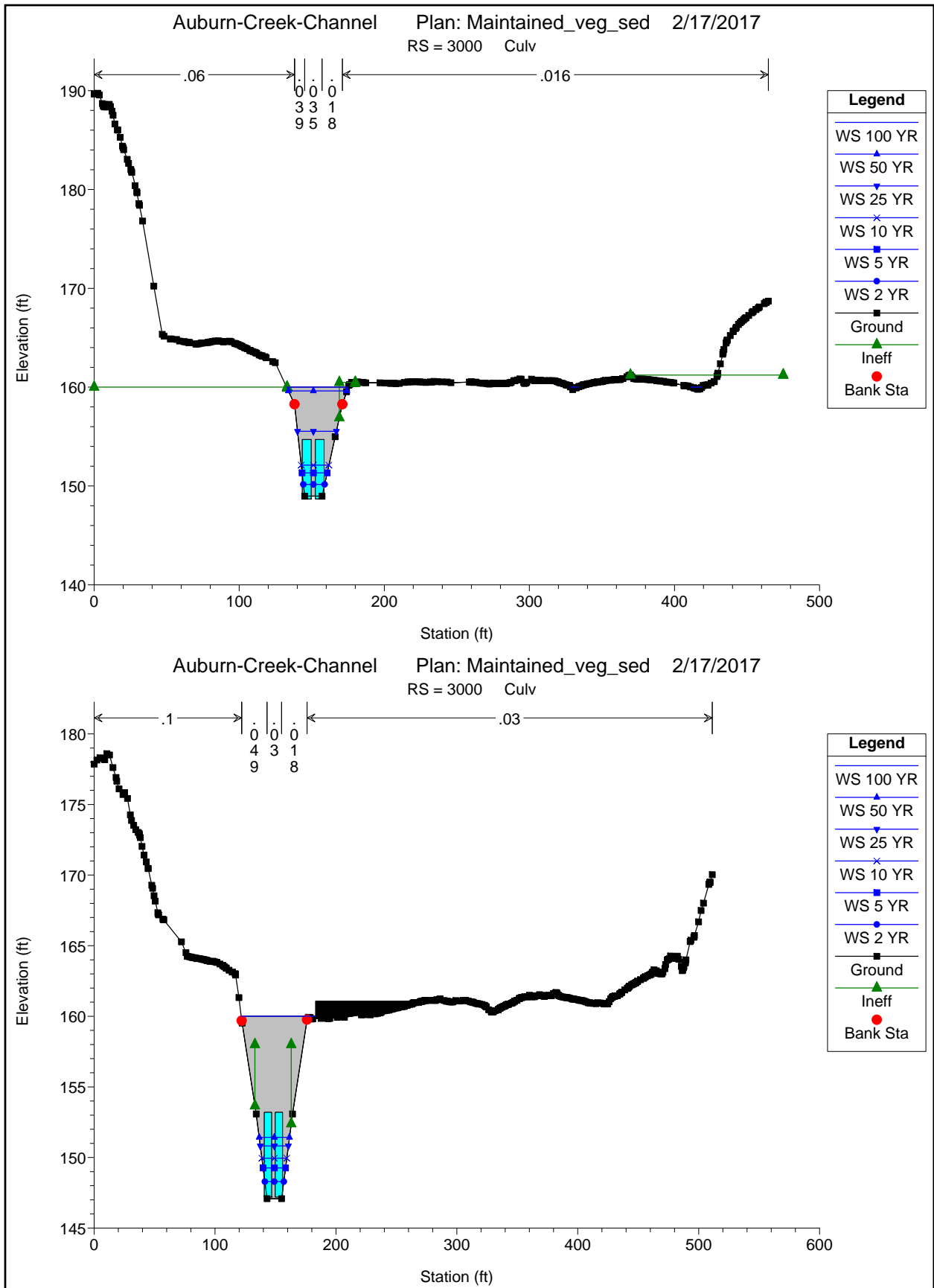


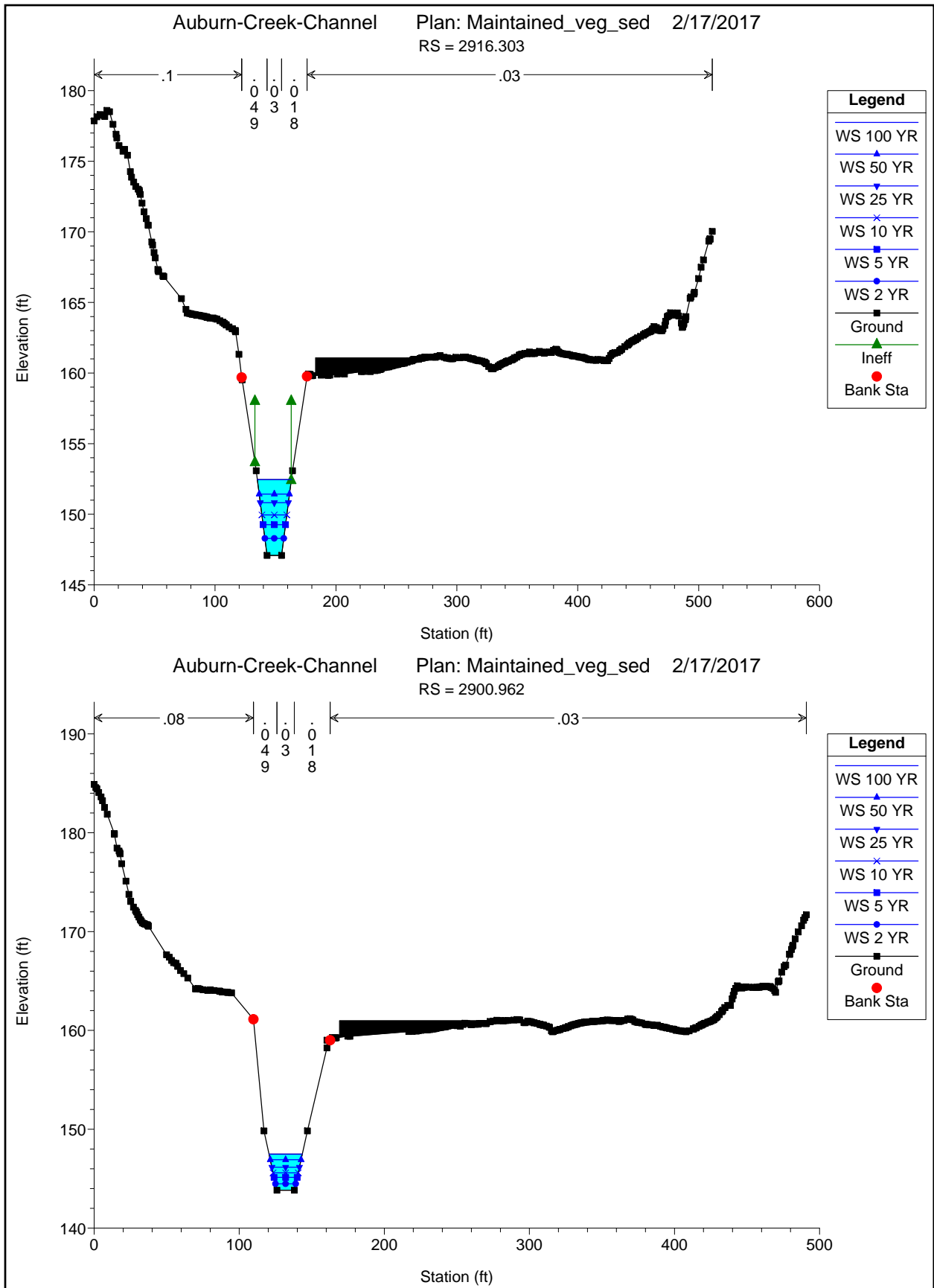
Auburn-Creek-Channel Plan: Maintained_veg_sed 2/17/2017
RS = 3159.787

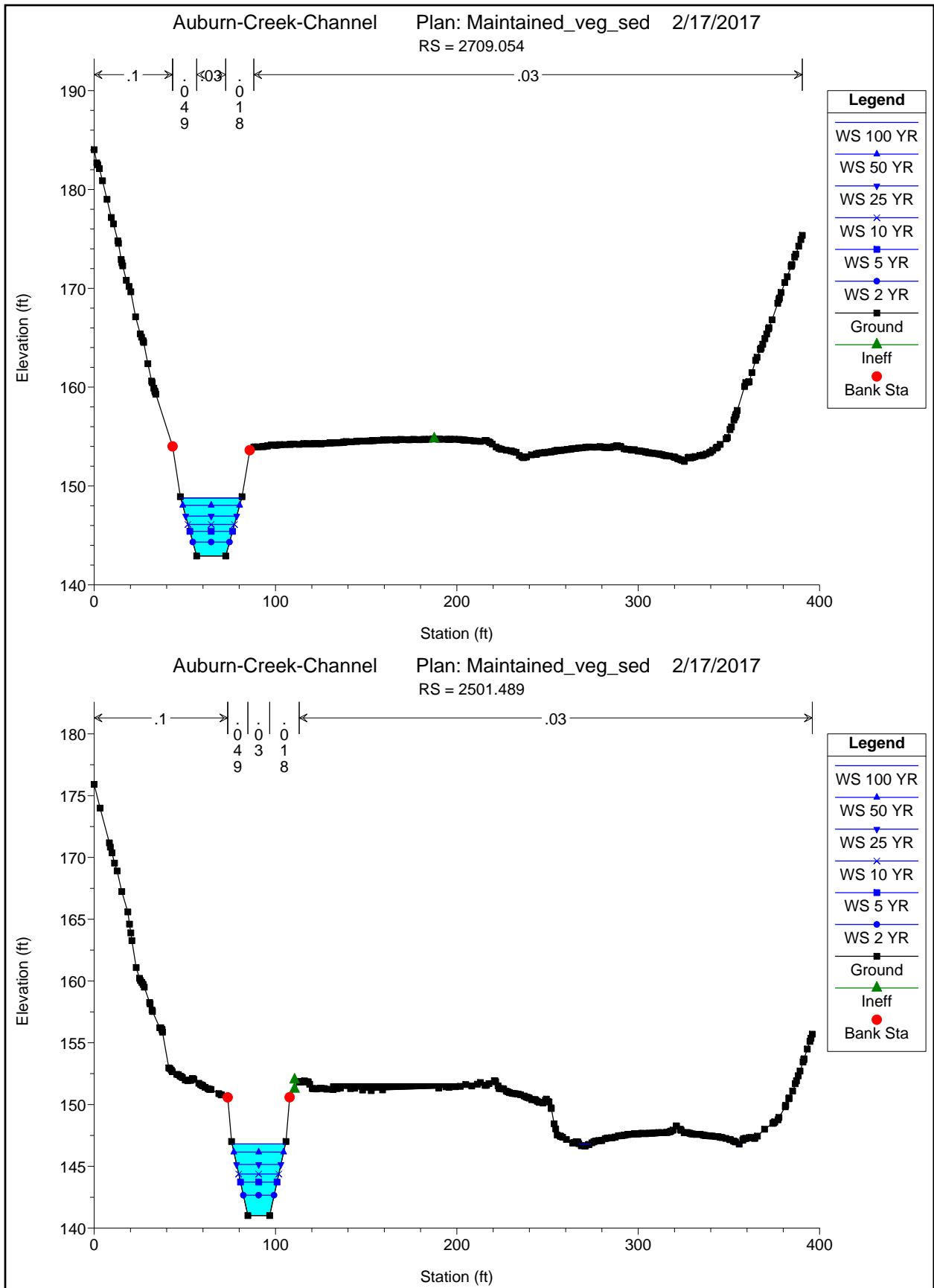


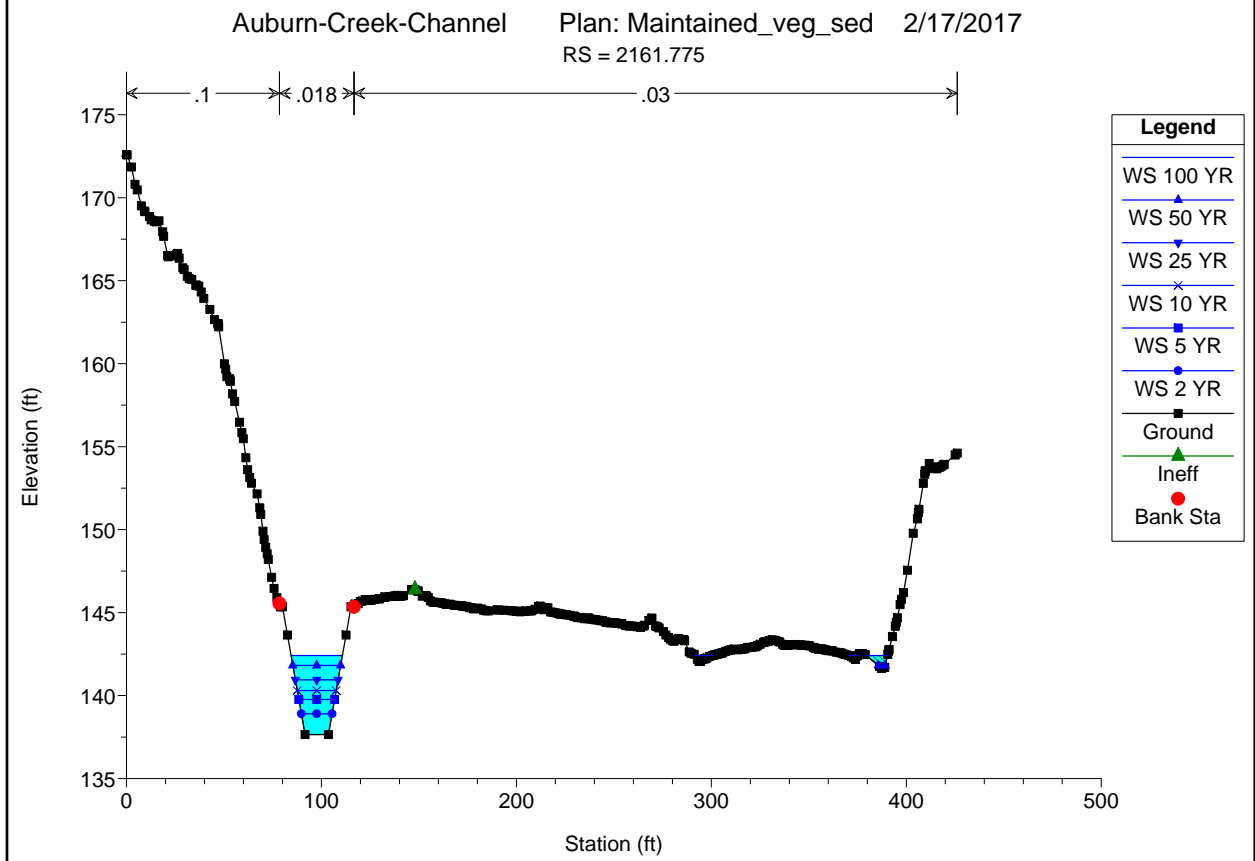
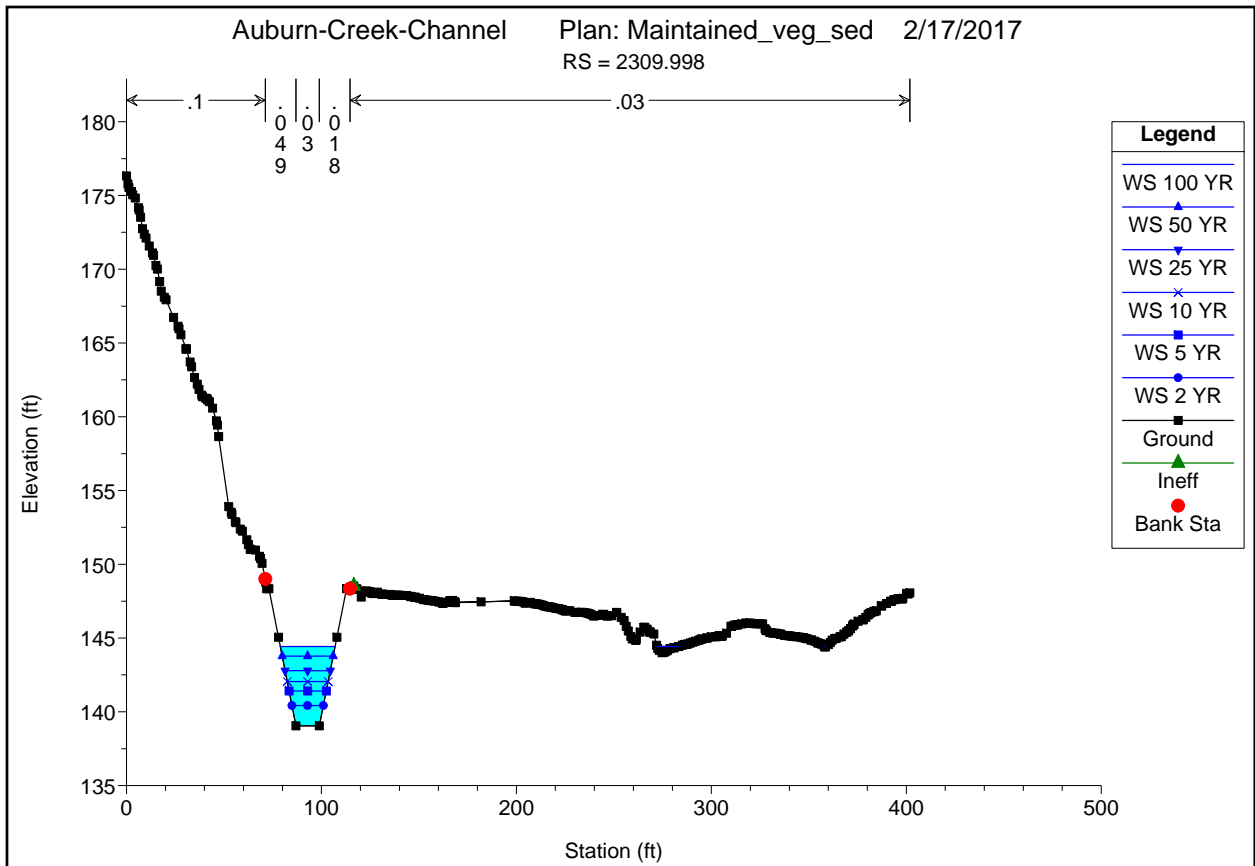
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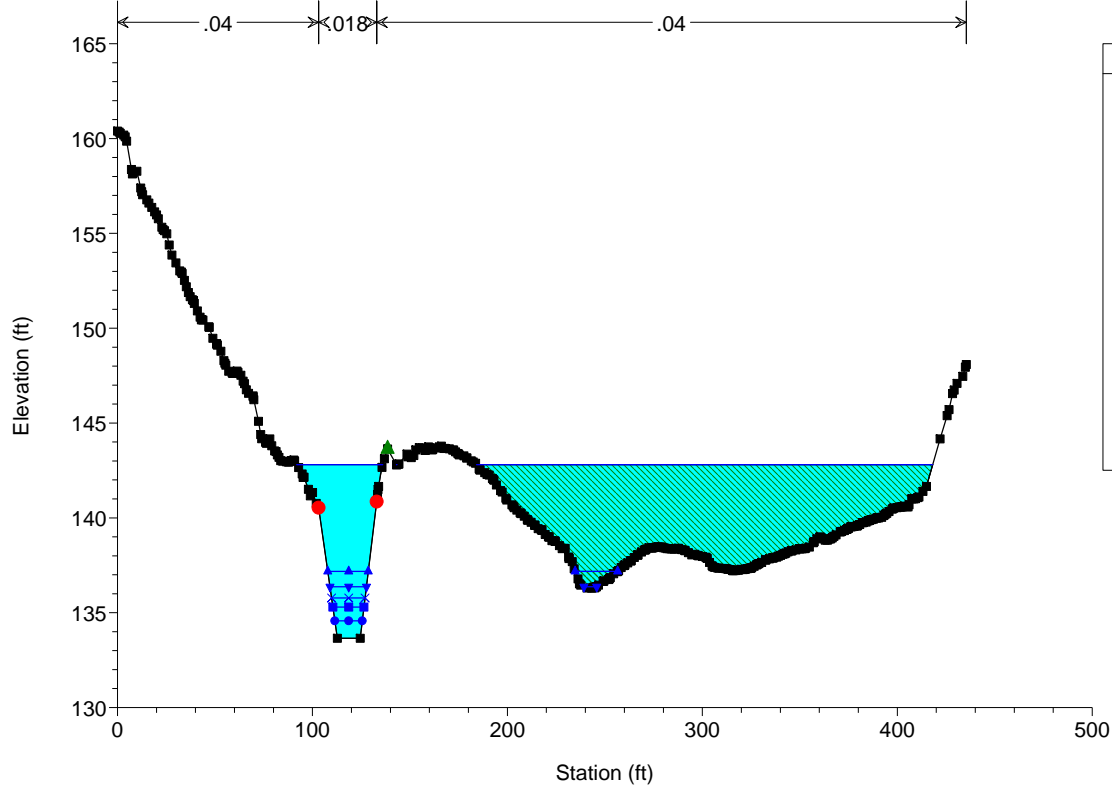




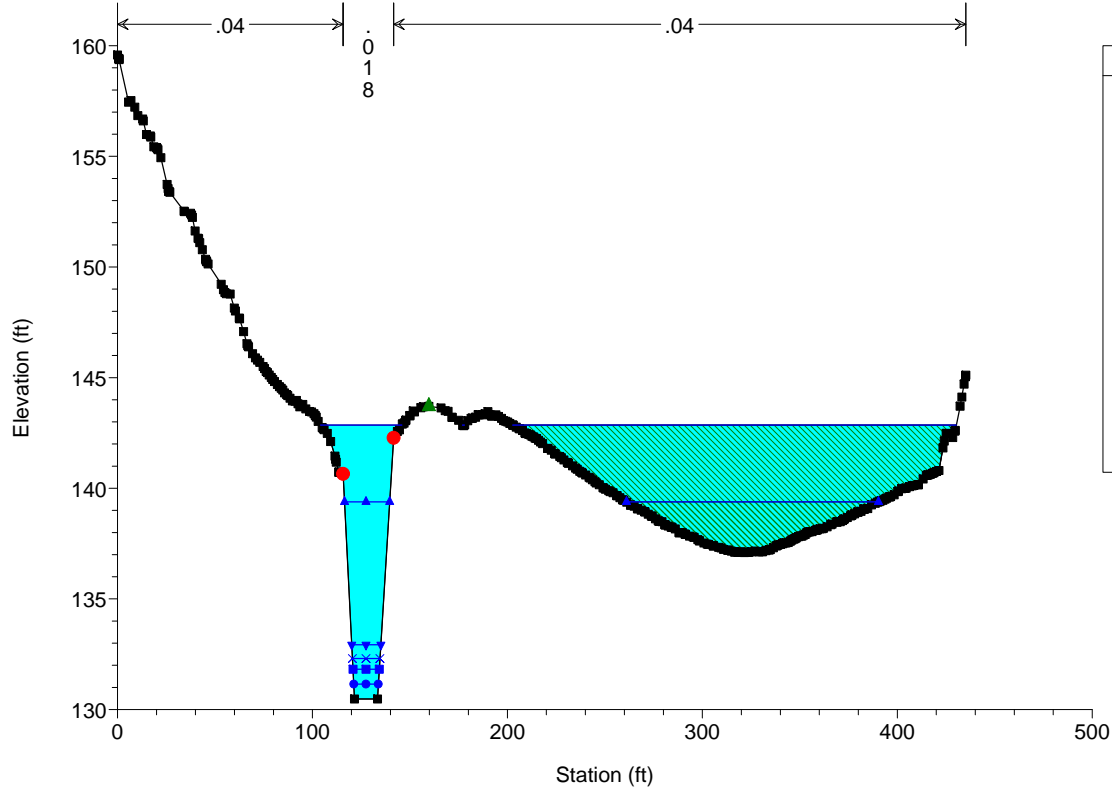


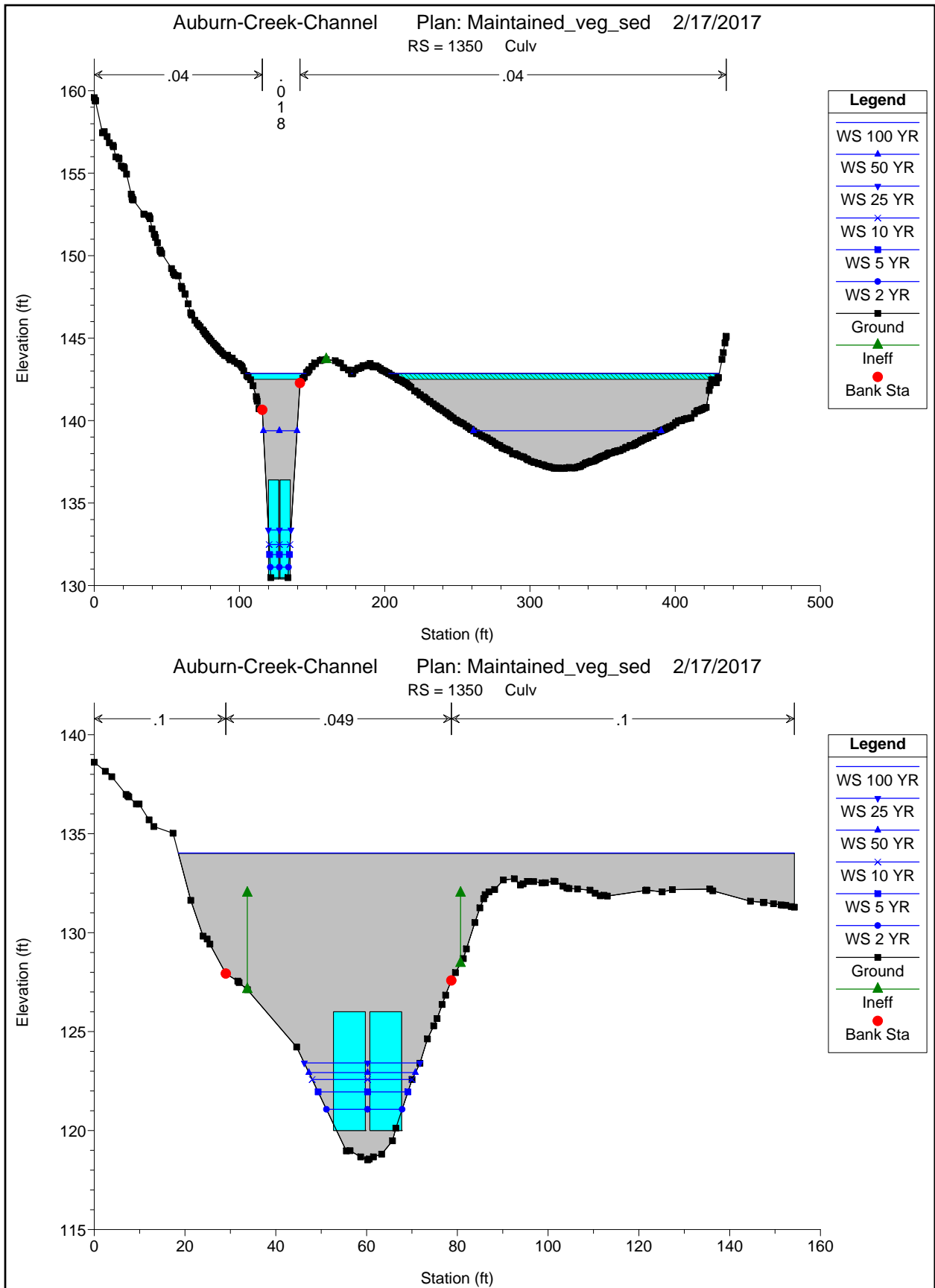


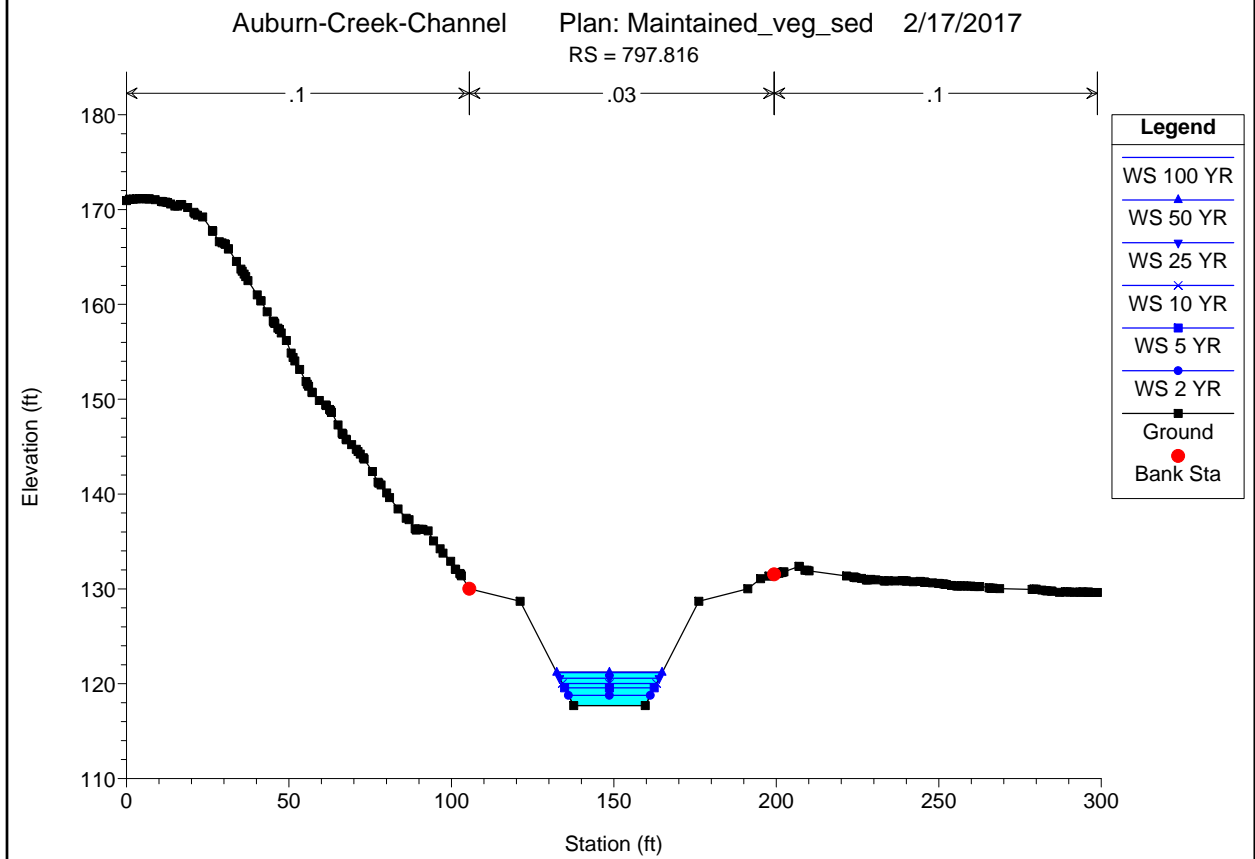
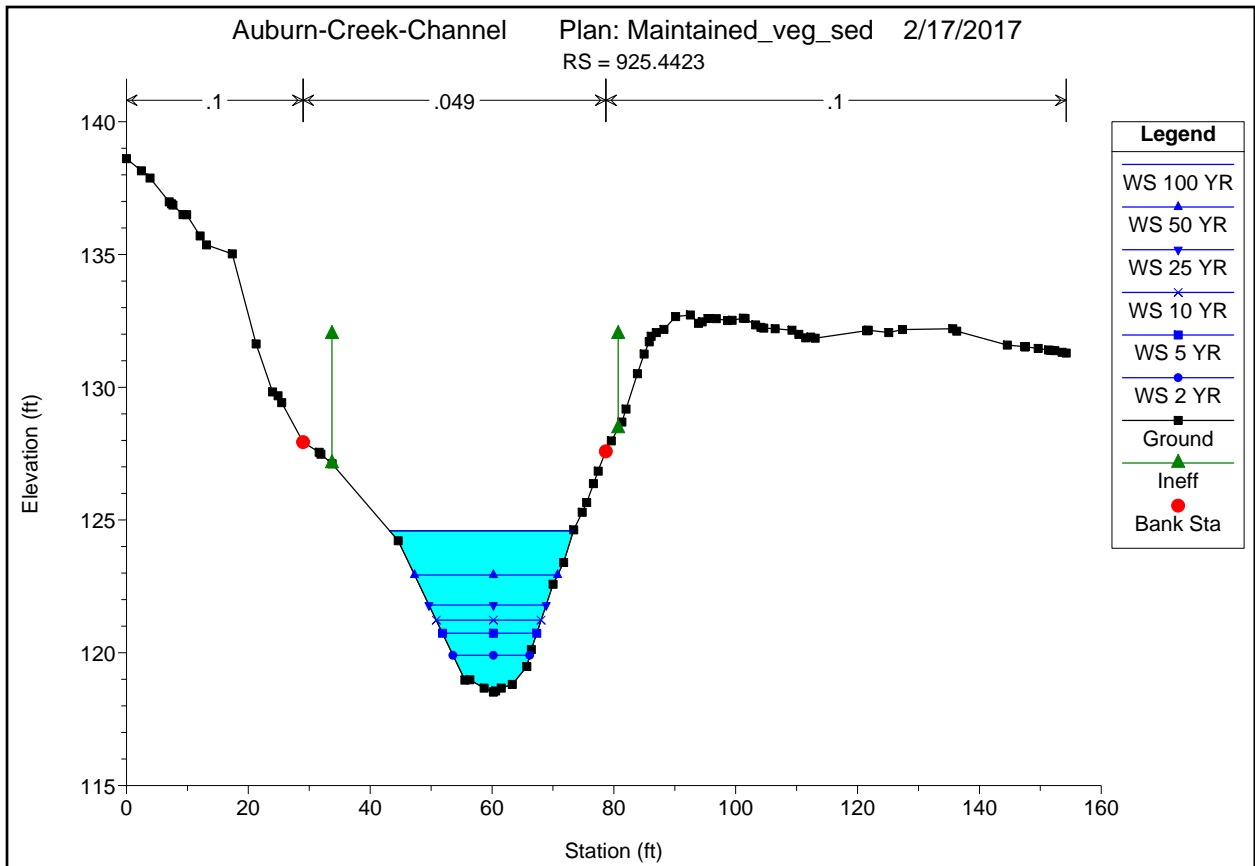
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RS = 1835.094



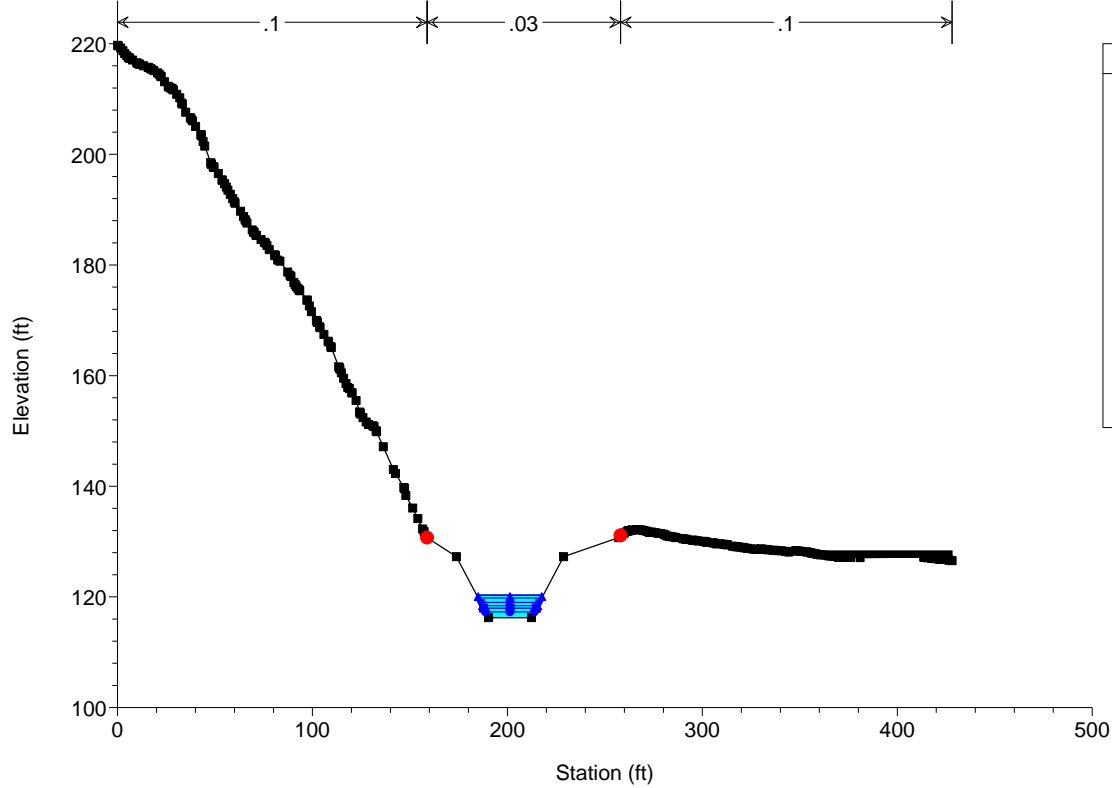
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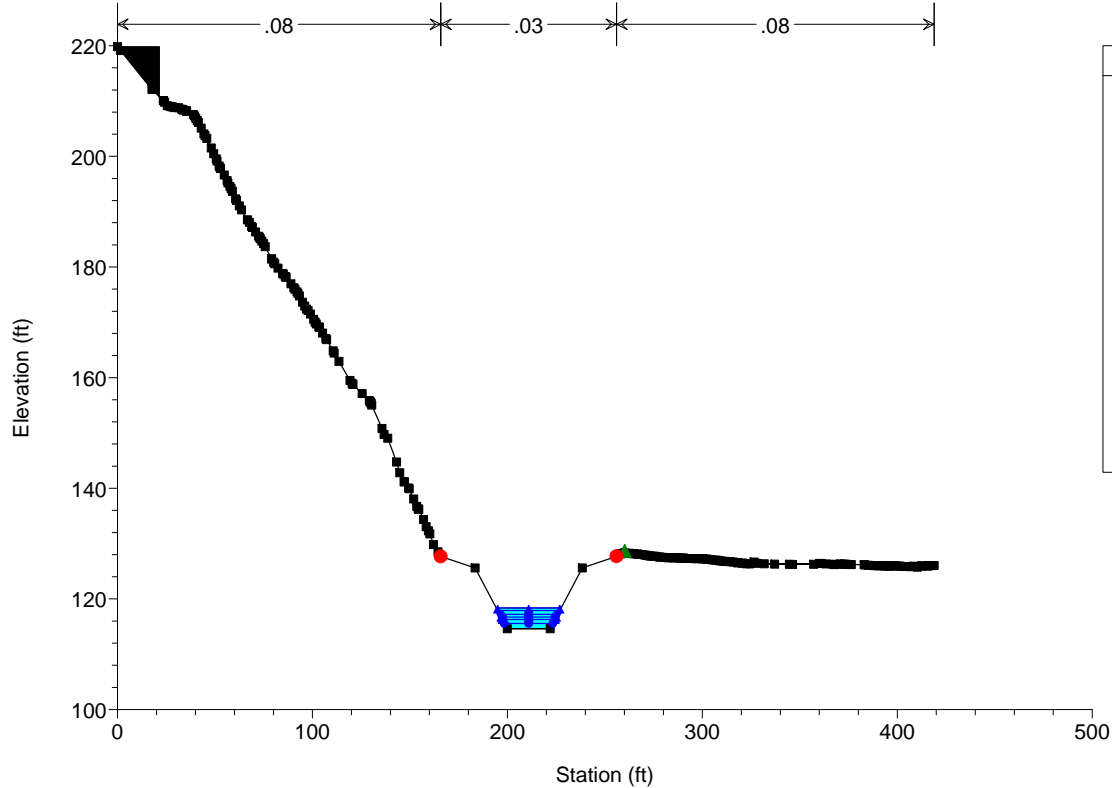


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RS = 652.2307

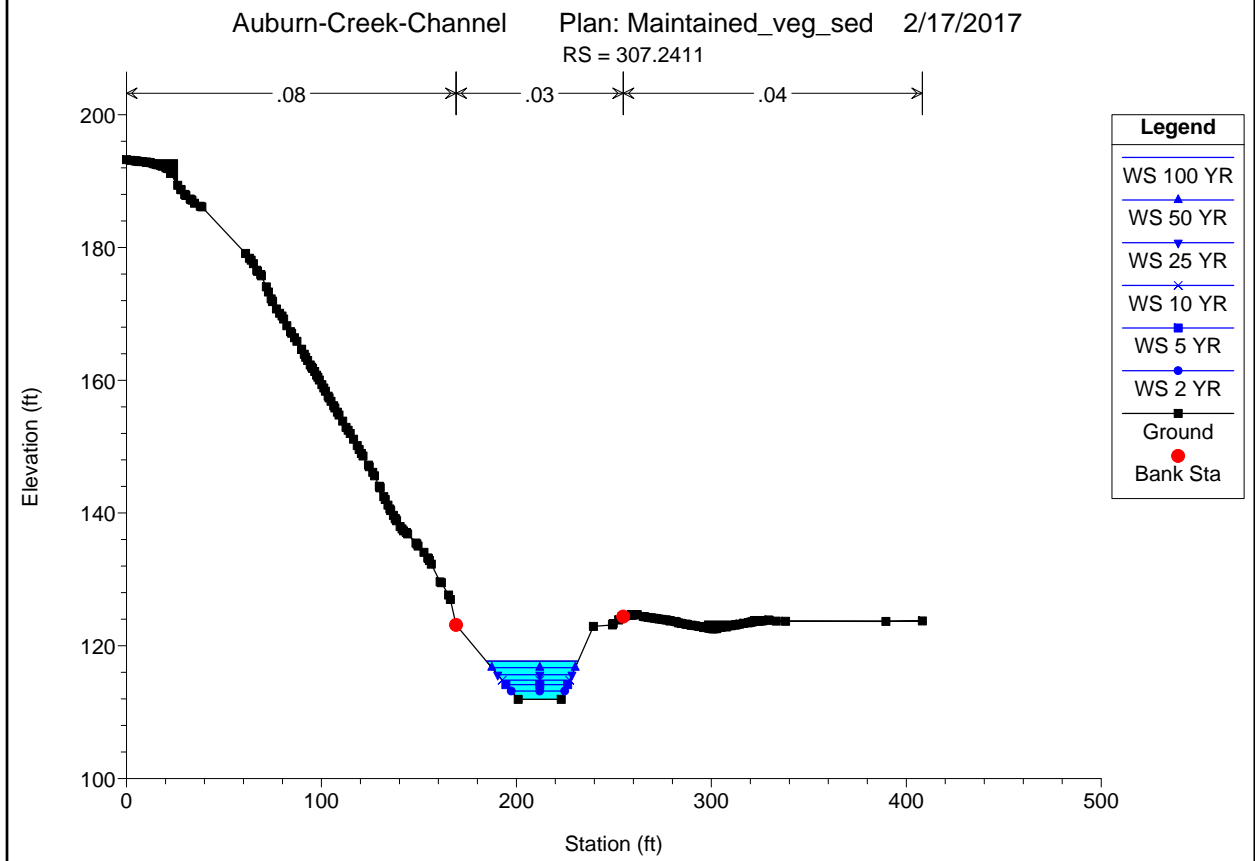
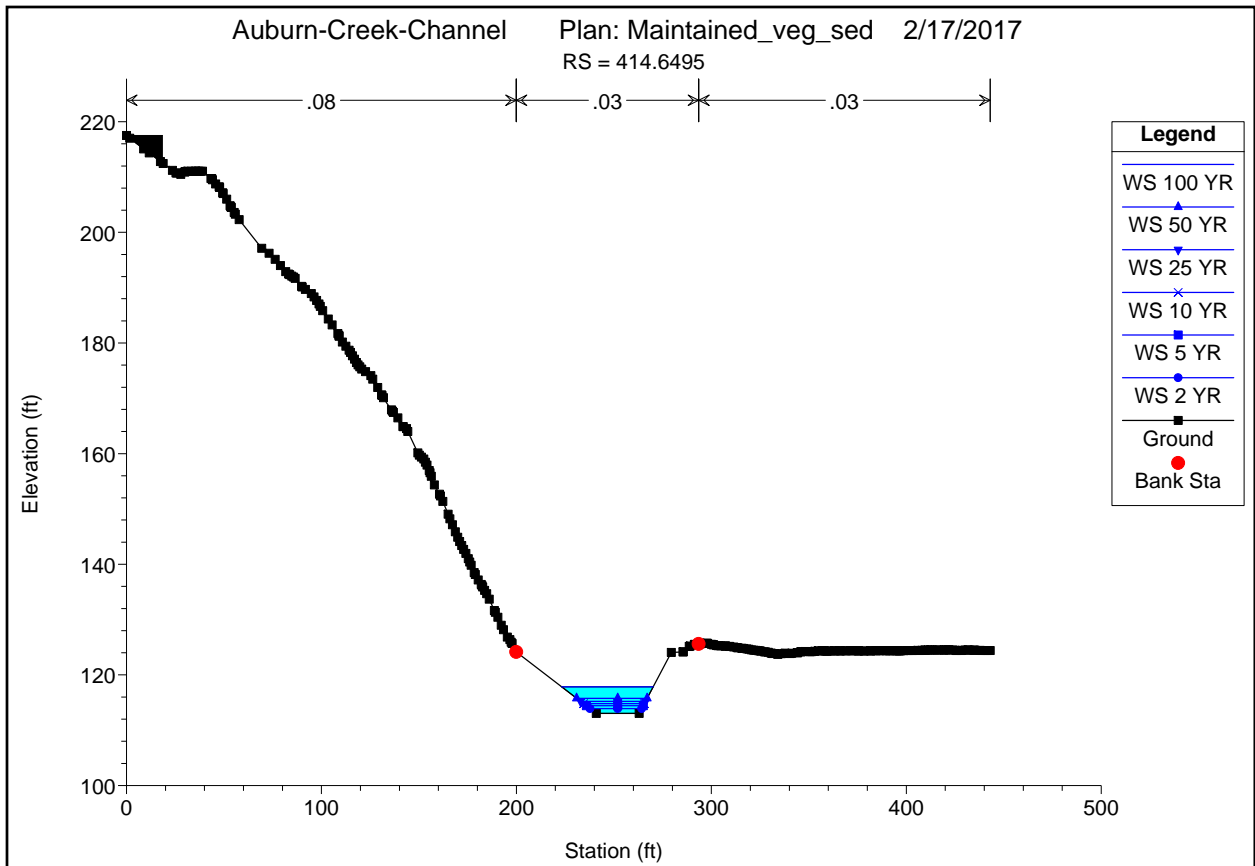


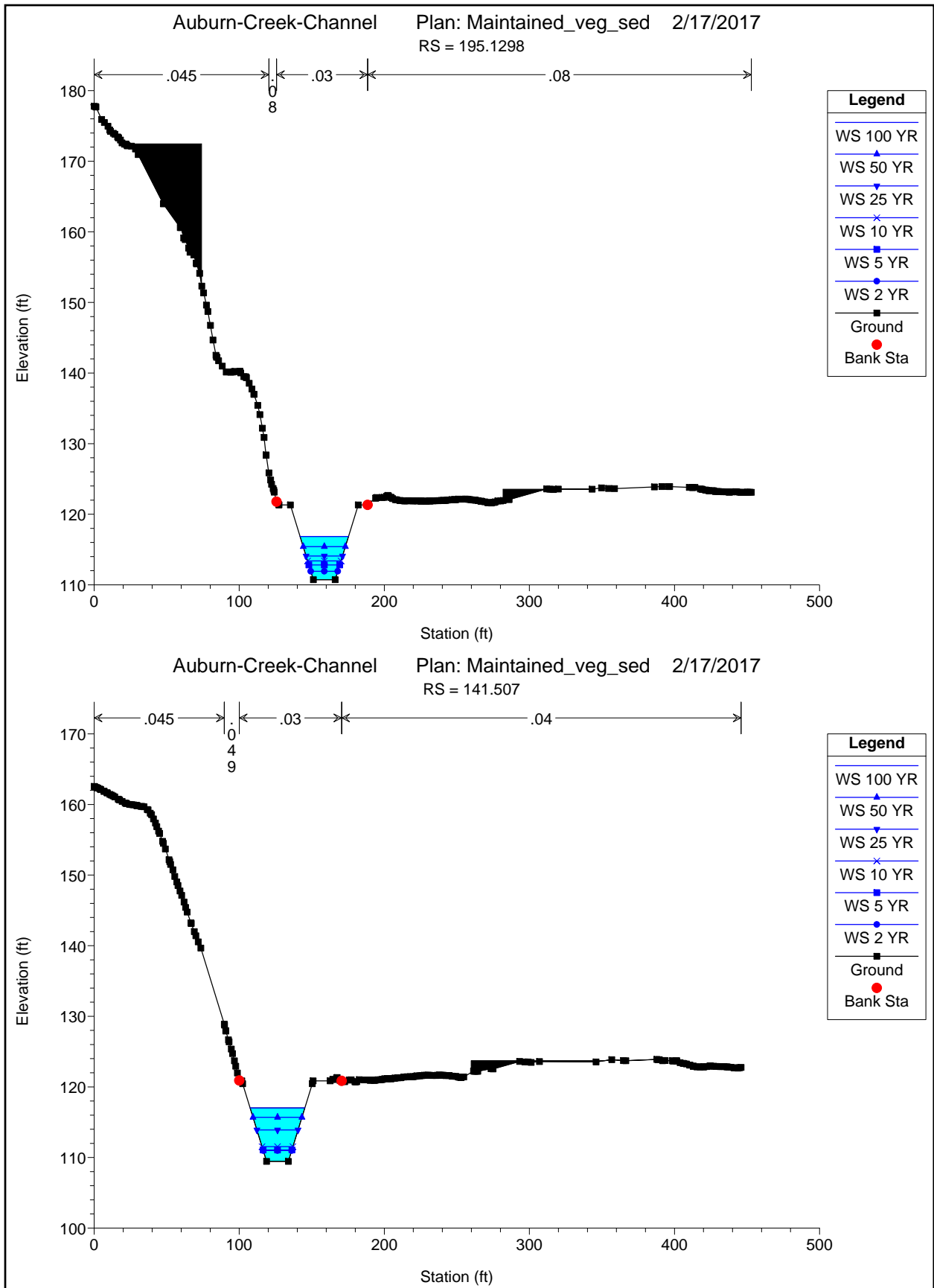
Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Maintained_veg_sed 2/17/2017
RS = 513.9224

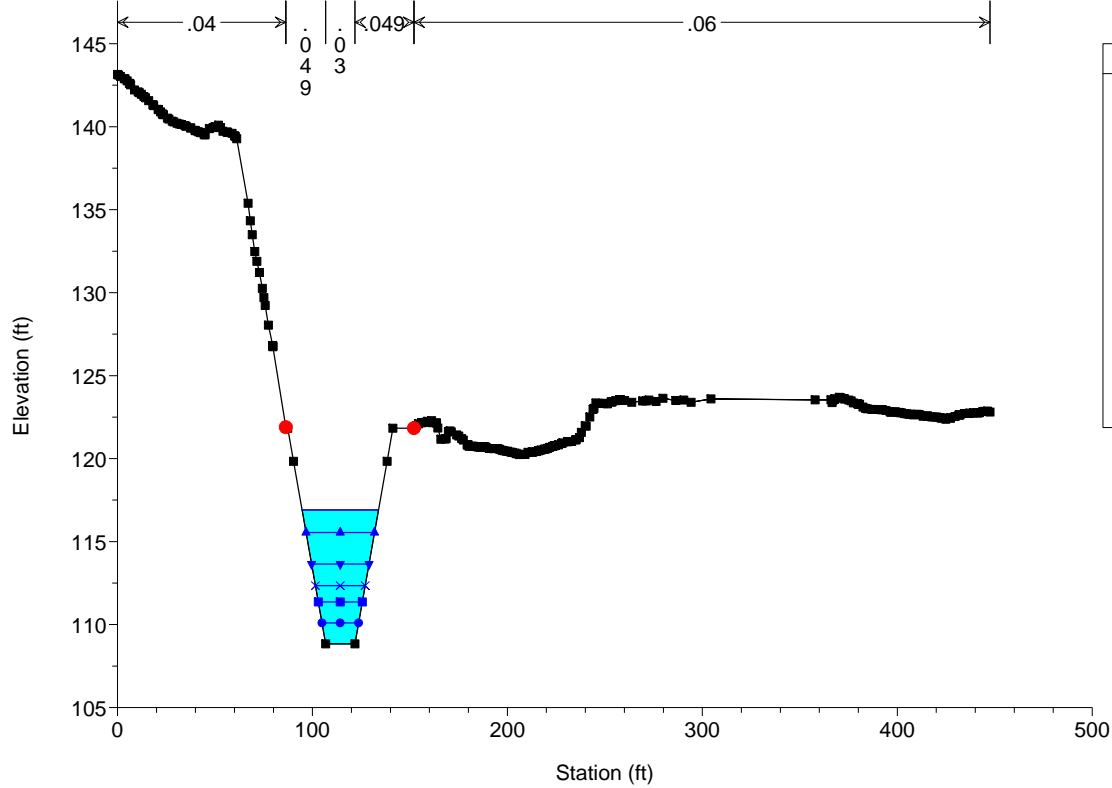


Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	■
Ineff	▲
Bank Sta	●



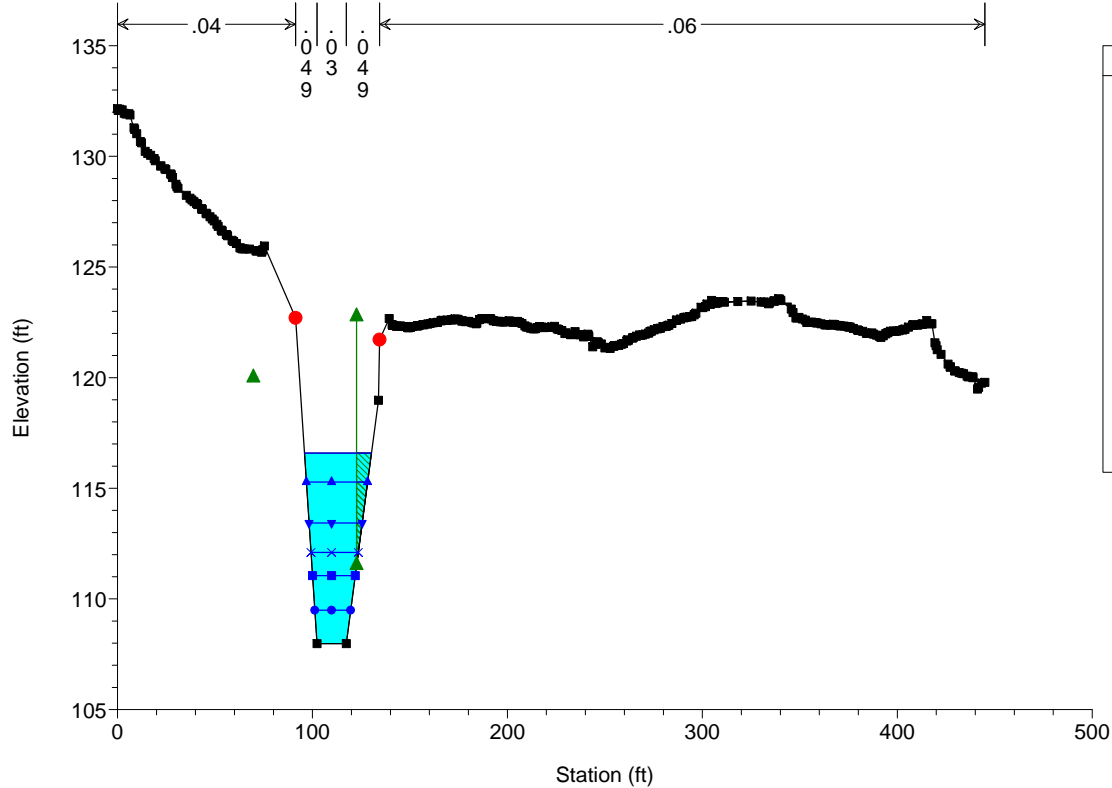


Auburn-Creek-Channel Plan: Maintained_veg_sed 2/17/2017
RS = 65.30157



Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	◆
WS 2 YR	●
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Maintained_veg_sed 2/17/2017
RS = 4.590075



Legend	
WS 100 YR	▲
WS 50 YR	▼
WS 25 YR	×
WS 10 YR	■
WS 5 YR	◆
WS 2 YR	●
Ground	■
Ineff	▲
Bank Sta	●

HEC-RAS Version 4.1.0 Jan 2010
 U. S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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X   X   XXXXXX   XXXX   XXXX   XX   XXXX
X   X   X       X   X       X   X   X   X
X   X   X       X       X   X   X   X   X
XXXXXXXX XXXX   X       XXX XXXX XXXXXX XXXX
X   X   X       X       X   X   X   X   X
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PROJECT DATA
 Project Title: Auburn-Creek-Channel
 Project File : AuburnCreek.prj
 Run Date and Time: 2/17/2017 10:06:04 AM

Project in English units

PLAN DATA

Plan Title: Maintained_veg_sed
 Plan File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.p08

Geometry Title: Maintained_Veg_Sed_Condition_CUT
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.g08

Flow Title : FEMA_Flow Rates_Veg_Sed
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.f02

Plan Summary Information:

Number of: Cross Sections = 22 Multiple Openings = 0
 Culverts = 2 Inline Structures = 0
 Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
 Critical depth calculation tolerance = 0.01
 Maximum number of iterations = 20
 Maximum difference tolerance = 0.3
 Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
 Conveyance Calculation Method: At breaks in n values only
 Friction Slope Method: Average Conveyance
 Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: FEMA_Flow Rates_Veg_Sed
 Flow File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.f02

Flow Data (cfs)

River	Reach	RS	100 YR	50 YR	25 YR
10 YR	5 YR	2 YR			
Auburn Creek	Main Reach	3283.479	1200	950	630
430	290	120			

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Auburn Creek	Main Reach	100 YR	Normal S = 0.005	Known WS =
116.59				
Auburn Creek	Main Reach	50 YR	Normal S = 0.005	Known WS =
115.28				
Auburn Creek	Main Reach	25 YR	Normal S = 0.005	Known WS =
113.43				
Auburn Creek	Main Reach	10 YR	Normal S = 0.005	Known WS =
112.1				
Auburn Creek	Main Reach	5 YR	Normal S = 0.005	Known WS =
111.05				
Auburn Creek	Main Reach	2 YR	Normal S = 0.005	Known WS =
109.49				

GEOMETRY DATA

Geometry Title: Maintained_Veg_Sed_Condition_CUT
 Geometry File : f:\4212_SD_WR\4212B\To_Lindsay\Auburn\7_Auburn Creek Map 70
 76\Administration\Receive\Hoch_2017_02_16\HecRas\HecRas\AuburnCreek.g08

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3283.479

INPUT

Description:

Station Elevation Data num= 336									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.35	.15	170.33	.26	170.32	.4	170.3	2.44	170.05
3.01	170.02	3.71	169.98	4.55	169.97	5.23	169.93	5.97	169.93
6.89	169.87	8.64	169.81	9.78	170.06	10.31	170.18	11.17	170.19
12.32	170.22	13.29	170.07	16.22	169.75	16.96	169.54	17.65	169.38
18.05	169.34	19.73	169.16	20.83	168.97	21.71	168.8	23.26	168.45
23.36	168.44	23.63	168.36	25.49	167.88	26.16	167.66	27.62	167.13
28.52	166.83	29.49	166.51	30.9	166.05	31.17	165.95	31.35	165.9
32.96	165.45	33.91	165.24	34.65	165.07	35.65	164.91	36.28	164.82
36.77	164.74	38.16	164.6	39.35	164.54	40.19	164.48	42.11	164.34
42.28	164.33	42.36	164.33	44.56	164.22	44.98	164.19	46.33	164.15
47.95	164.05	50.66	163.97	50.68	163.97	50.96	163.95	53.6	163.77
53.7	163.77	53.89	163.77	55.39	163.78	56.22	163.73	57.55	163.64
59.24	163.59	59.76	163.58	60.42	163.56	61.2	163.54	61.8	163.52
63.46	163.48	64.67	163.45	65.56	163.44	66.97	163.38	67.15	163.37
67.27	163.36	69.65	163.31	70.15	163.31	71.58	163.25	72.72	163.25
73.62	163.24	75.76	163.16	75.94	163.15	76.18	163.16	77.42	163.17
78.33	163.13	79.04	163.1	80.22	163.04	80.85	163.03	81.22	163.03
82.84	163.04	84.04	163.02	84.85	163	86.5	162.97	86.81	162.97
86.96	162.97	88.88	162.95	89.66	162.95	90.75	162.97	92.47	162.96
92.49	162.96	92.51	162.96	95.25	162.96	95.31	162.96	97.03	162.94
98.12	162.9	99.04	162.87	100.94	162.79	101.65	162.77	103.77	162.75
104.6	162.74	106.58	162.78	107.26	162.81	109.5	163.14	109.76	163.19
110.22	163.38	111.69	163.92	112.5	164.17	113.36	164.39	113.84	164.51
115.43	164.4	115.93	164.29	116.48	164	117.43	163.46	118.25	163.07
119.38	162.52	121.32	160.61	121.64	160.38	122.15	160.07	124.28	159.12
125	158.9	126.4	157.44	126.98	157.44	127.59	156.97	136.59	150.97
152.59	150.97	161.29	157.43	162.7	157.82	163.42	157.8	164.87	157.84

165.15	157.84	165.38	157.86	167.04	157.88	167.92	157.92	168.18	157.95
170.4	158.21	171.17	158.23	172.92	158.23	174.36	158.26	175.75	158.24
176.6	158.25	177.42	158.27	178.75	158.29	180.87	158.27	181.31	158.27
182.08	158.3	183.22	158.36	183.87	158.36	185.5	158.36	187.31	158.32
188.07	158.31	190.54	158.36	191.08	158.36	194.09	158.4	194.14	158.4
194.19	158.4	195.9	158.36	197.28	158.36	197.71	158.37	198.26	158.39
199.75	158.41	200.91	158.46	201.59	158.46	202.28	158.47	203.21	158.47
204.13	158.51	205.4	158.5	207.73	158.47	208.13	158.48	208.65	158.49
210.05	158.53	211.14	158.55	212.34	158.55	214.85	158.59	215.05	158.59
215.45	158.59	217.17	158.59	218.06	158.6	219.69	158.62	222.13	158.59
222.4	158.59	223.24	158.59	224.98	158.58	225.56	158.6	227.68	158.63
229.66	158.68	230.24	158.71	231.17	158.68	232.37	158.65	233.14	158.68
234.73	158.71	236.77	158.75	237.2	158.75	237.54	158.75	239.67	158.77
241.13	158.77	242	158.77	242.84	158.79	244.24	158.83	245.73	158.81
246.74	158.81	249.32	158.89	249.67	158.89	250.04	158.89	252.02	158.88
253.89	158.93	254.39	158.95	255.75	158.97	257.11	159	257.61	159
259.74	158.99	262.32	159.02	262.38	159.02	262.5	159.02	264.64	159.04
265.72	159.04	267.05	159.14	268.78	159.11	269.6	159.15	270.22	159.11
272.09	158.98	273.68	158.96	274.82	158.95	277.72	158.98	278.07	159
278.14	158.99	280.52	158.88	281.6	158.87	283.07	158.89	285.24	158.76
285.66	158.75	285.96	158.74	287.47	158.76	289.07	158.68	289.14	158.68
289.2	158.68	291.16	158.57	297.07	158.51	297.14	158.51	297.17	158.51
297.33	158.52	299.77	158.62	301.37	158.66	302.26	158.66	304.56	158.63
304.61	158.63	304.69	158.63	307.28	158.66	309.09	158.66	309.81	158.66
311.51	158.64	312.03	158.63	312.24	158.64	314.22	158.74	316.1	158.79
316.4	158.79	316.73	158.79	318.65	158.78	319.87	158.82	321.08	158.85
322.72	158.86	323.74	158.86	324.47	158.85	325.86	158.84	327.69	158.89
327.79	158.89	327.87	158.9	329.92	159.08	331.66	159.22	332.04	159.28
332.53	159.28	333.96	159.28	335.69	159.28	335.92	159.28	336.26	159.28
338.71	159.27	340.4	159.23	341.09	159.18	341.93	159.05	342.88	158.91
343.66	158.87	344.93	158.86	346	158.85	347.21	158.85	348.66	158.87
349.79	158.86	351.9	158.85	352.64	158.85	353.33	158.86	354.99	158.86
356.79	158.87	357.43	158.87	360.04	158.87	360.21	158.87	360.33	158.87
362.23	158.84	363.69	158.84	364.26	158.84	365.14	158.84	366.83	158.78
368.56	158.72	369.59	158.7	370.58	158.67	372.09	158.63	373.67	158.58
374.61	158.54	376.95	158.56	377.16	158.56	377.31	158.55	379.35	158.56
381.14	158.27	381.6	158.22	382.21	158.09	383.53	157.8	385.13	157.5
385.36	157.45	385.55	157.44	387.67	157.39	389.3	157.54	390.01	157.62
390.93	157.82	392.28	158.24	394.26	159.08	394.61	159.27	394.97	159.44
397.44	160.59	399.9	161.33	400.28	161.49	401.39	161.91	402.84	162.54
403.08	162.65								

Manning's n Values		num=	4
Sta	n Val	Sta	n Val
0	.016	115.43	.045
		126.98	.018
		162.7	.016

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	125	161.29		51.96	54.07	55.73		.3	.5
Ineffective Flow	num=	2							
Sta L	Sta R	Elev	Permanent						
0	129.5	162	F						
166.5	403.08	157.87	F						

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach

RS: 3229.405

INPUT
 Description:

Station Elevation Data	num=	348					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	178.45	.44	178.27	2.5	177.11	3.97	176.08
6.28	175.57	6.84	175.39	8.59	173.97	8.68	173.93
11.22	172.98	11.34	172.94	13.17	172.24	13.59	172.02
16.2	170.99	17.39	170.44	18.64	170.15	19.87	169.41
22.58	168.18	23.6	167.84	23.99	167.75	24.34	167.66
26.11	167.18	30.16	166.23	32.35	165.82	33.6	165.22
34.64	164.86	36.26	164.32	36.34	164.3	38.62	163.88
						39.01	163.84

40.93	163.72	41.38	163.69	41.47	163.69	43.08	163.65	44.08	163.63
44.83	163.6	46.65	163.6	46.7	163.6	49.08	163.61	49.25	163.61
49.56	163.6	51.09	163.59	51.96	163.59	53.58	163.58	54.5	163.55
55.57	163.54	56.93	163.53	57.11	163.53	57.25	163.53	59.78	163.49
59.82	163.49	60.51	163.48	62.53	163.44	62.6	163.44	62.76	163.44
64.47	163.41	65.24	163.4	66.77	163.39	68.19	163.39	68.83	163.4
69.63	163.37	70.27	163.35	70.76	163.34	72.33	163.34	73.47	163.33
74.34	163.32	75.69	163.31	76.01	163.31	76.21	163.31	78.11	163.34
79.03	163.31	80.21	163.29	81.77	163.26	82.2	163.25	82.92	163.23
83.91	163.2	84.51	163.21	85.66	163.23	87.41	163.21	87.42	163.21
87.45	163.21	89.09	163.2	90.15	163.17	90.84	163.15	92.16	163.12
92.76	163.11	93.07	163.11	94.88	163.07	96	163.03	97.04	162.99
98.93	162.89	99.13	162.87	99.4	162.87	100.79	162.84	101.81	162.78
102.74	162.75	104.87	162.7	105.13	162.68	105.43	162.68	106.65	162.64
107.7	162.64	108.22	162.62	108.91	162.62	109.89	162.59	110.63	162.59
112.19	162.66	113.57	162.83	115.03	163.16	116.12	163.48	116.5	163.59
117.92	164.04	119.27	164.24	120.1	164.19	121.14	163.88	121.71	163.68
122.16	163.4	124.08	162.06	124.88	161.35	126.11	160.17	127.7	158.61
127.95	158.38	129.7	157.29	133.43	156.97	134.4	156.32	143.4	150.32
155.4	150.32	164.4	156.32	165.26	156.97	165.89	157.31	166.06	157.4
166.57	157.53	167.86	157.88	168.97	158	169.94	158.07	171.76	158.24
172.62	158.3	175	158.43	175.36	158.45	178.01	158.51	178.04	158.51
178.07	158.51	179.72	158.52	181.38	158.66	181.45	158.67	181.95	158.7
184.04	158.8	184.32	158.81	186.3	158.84	187.82	158.93	188.53	158.96
190.77	159	190.88	159.01	191.01	159.01	192.74	159.01	194.3	159.01
194.67	159.01	195.67	159.04	196.75	159.08	196.93	159.07	200.51	159.11
200.61	159.11	202.1	159.19	204.34	159.19	204.85	159.19	205.08	159.19
210.94	159.18	212.17	159.17	214.19	159.16	222.18	159.24	223.5	159.21
230.86	159.29	232.15	159.29	234.44	159.28	236.95	159.26	240.9	159.3
242.86	159.29	244.61	159.25	245.96	159.19	246.66	159.23	247.65	159.42
249.67	159.94	253.58	160.31	253.67	160.32	253.68	160.32	253.73	160.31
254	160.27	261.13	159.17	261.27	159.19	261.71	159.13	262.8	159.15
263.72	159.14	264.9	159.13	267.2	159.14	267.55	159.14	267.74	159.14
269.57	159.1	270.96	159.11	271.67	159.11	272.82	159.07	274.18	159.03
275.05	159.03	276.55	159.01	278.07	158.95	278.92	158.95	279.93	158.91
281.37	158.88	282.57	158.86	284.01	158.85	285.77	158.81	286.69	158.8
287.73	158.86	289.14	158.9	290.36	158.8	291.54	158.61	293.61	158.53
293.92	158.51	294.41	158.5	296.92	158.43	298.49	158.37	299.42	158.36
300.63	158.3	301.33	158.3	301.84	158.15	303.65	157.87	305.43	157.99
306.17	158.03	306.93	158.08	308.67	158.17	310.26	158.22	310.99	158.24
311.53	158.27	313.16	158.39	315.34	158.4	315.35	158.4	318.27	158.47
318.83	158.48	321.32	158.52	324.01	158.55	324.25	158.55	324.55	158.56
326.01	158.6	327.18	158.63	328	158.64	328.74	158.65	330.37	158.66
332.21	158.69	332.83	158.69	335.4	158.7	335.56	158.7	335.75	158.72
338.32	158.89	340.38	159.06	341.08	159.1	343.59	159.15	343.74	159.15
343.89	159.15	346.12	159.14	348.44	159.11	348.49	159.11	348.56	159.11
350.22	159.07	351.42	159.08	352.27	159.07	353.33	159.01	355.03	158.92
356.34	158.78	357.25	158.65	358.36	158.6	358.99	158.56	359.49	158.57
360.85	158.59	361.81	158.6	362.8	158.6	364.25	158.59	364.89	158.59
367.19	158.58	367.45	158.58	367.7	158.58	369.89	158.56	372.19	158.51
372.33	158.51	372.94	158.49	374.69	158.45	375.09	158.45	376.81	158.42
378.04	158.36	378.89	158.34	380.05	158.29	380.85	158.26	382.29	158.22
382.71	158.21	382.94	158.21	385.5	158.07	388.01	157.88	388.33	157.86
389.05	157.9	390.4	157.96	391.01	157.97	392.43	157.94	393.29	157.91
394.42	157.85	396.27	157.04						

129.7 165.26 70.8 69.62 68.75 .1 .3
Blocked Obstructions num= 1
Sta L Sta R Elev
184.99 288.7158.8851

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3159.787

INPUT

Description:
Station Elevation Data num= 265
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 182.09 .91 181.68 .96 181.66 3.74 180.72 8.31 178.78
9.46 178.51 10.5 177.7 14.59 175.89 16.84 174.81 18.77 173.2
21.73 168.57 21.89 168.34 21.97 168.33 24.49 167.5 25 167.47
26.64 167.25 28.07 167.22 29.01 167.32 29.82 167.37 33.78 166.96
42.22 164.98 42.23 164.98 44.83 164.94 45.14 164.94 45.9 164.95
46.77 164.94 51.65 165.06 51.74 165.04 51.79 165.03 57.22 165.34
58.74 165.06 59 165.06 61.42 165.06 88.56 164.93 89.46 164.92
89.84 164.89 90.47 164.95 91.34 164.92 92.97 164.94 96.52 164.95
98.16 164.95 99.84 164.9 100.82 164.9 101.28 164.9 102.52 164.74
103.16 164.66 103.4 164.65 104.79 164.55 118.02 157.65 126.87 149.83
138.87 149.83 147.72 157.16 150.81 157.79 151.51 157.98 152.63 158.06
153.43 158.14 155.17 158.29 155.69 158.34 155.93 158.34 157.39 158.33
158.45 158.44 159.55 158.51 161.66 158.61 162.15 158.65 162.78 158.65
163.62 158.64 164.25 158.65 165.72 158.73 167.45 158.75 167.94 158.74
168.67 158.76 169.4 158.79 169.88 158.81 171.88 158.85 173.03 158.85
173.89 158.88 175.07 158.98 175.31 159.01 175.48 159.02 176.97 159.08
178.6 158.99 178.63 158.99 178.64 158.99 181.87 159.08 192.01 159.08
193.86 159.1 195.72 159.08 196.54 159.1 223.63 159.15 231.55 159.3
236.18 159.17 237.37 159.03 258.51 158.85 264.04 158.91 266.63 158.98
269.3 158.94 271.67 159.05 271.97 159.05 272.44 159.05 274.41 158.97
275.32 158.97 276.37 158.92 277.66 158.82 278.82 158.73 280.24 158.64
282.24 158.55 282.46 158.55 282.61 158.54 284.15 158.57 285.14 158.57
286.11 158.56 287.24 158.54 289.21 158.47 290.69 158.45 291.67 158.4
293.38 158.2 295.72 158.02 296.21 158.02 298.34 158.12 298.37 158.12
298.42 158.12 301 158.23 302.64 158.34 303.31 158.39 305.11 158.42
305.22 158.42 305.26 158.42 307.08 158.52 308.56 158.53 308.97 158.53
309.49 158.54 310.73 158.53 312.13 158.63 312.58 158.66 313.18 158.67
315.02 158.7 316.43 158.74 317.35 158.77 319.23 158.81 319.5 158.82
320.94 158.81 325.88 158.79 326.63 158.79 326.82 158.81 327.34 158.82
329.05 158.92 330.96 159.18 331.18 159.22 331.47 159.23 332.79 159.29
333.76 159.32 334.66 159.31 335.42 159.26 336.92 159.09 338.61 159.09
339.31 159.08 341.43 159.08 341.98 159.09 342.39 159.09 344.17 159.1
346.27 159.11 346.39 159.11 346.56 159.11 349.4 159.08 349.46 159.08
352.47 159.05 354.82 158.98 355.28 158.96 356.1 158.96 357.14 158.97
357.7 158.95 359.9 158.91 363.05 158.81 363.06 158.81 363.09 158.81
364.84 158.82 366.08 158.81 366.7 158.8 367.07 158.78 368.48 158.73
370.27 158.65 371.51 158.59 372.52 158.54 374.25 158.42 374.26 158.42
374.27 158.42 376.38 158.29 377.8 158.2 378.48 158.15 379.5 158.07
380.34 158.05 381.47 158.42 381.94 158.57 382.28 158.58 384.21 158.61
385.77 158.9 386.56 158.97 387.5 159.13 388.47 159.25 389.93 159.14
390.16 159.12 390.32 159.1 392.27 158.87 393.66 159.07 394.37 159.11
395.36 159.33 396.4 159.55 397.94 159.82 398.5 159.88 398.95 159.92
400.85 160.05 403.14 160.37 403.15 160.37 403.17 160.37 403.32 160.37
405.84 160.36 406.13 160.36 406.35 160.37 408.31 160.33 410.12 160.44
410.49 160.44 410.89 160.46 412.16 160.52 413.4 160.55 413.86 160.57
414.16 160.6 415.93 160.82 417.62 160.78 418.04 160.78 418.65 160.84
419.69 160.95 421.14 161.12 421.15 161.12 421.16 161.12 423.89 161.34
426.36 161.49 426.5 161.5 426.74 161.52 428.07 161.64 428.81 161.72
429.87 161.88 430.51 161.94 431.89 162.07 433.72 162.25 433.9 162.26
434.19 162.28 436.08 162.41 436.71 162.46 436.83 162.47 436.93 162.48
439.36 162.75 441.53 163.03 441.86 163.07 442.27 163.11 444.74 163.25
446.83 163.42 448.09 163.46 448.91 163.48 450.22 163.54 451.23 163.59
452.79 163.73 453.94 163.79 455.38 163.86 458.52 163.68 459.65 163.97

Manning's n Values num= 6

Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val
0 .06 104.79 .02 118.02 .039 126.87 .035 138.87 .018
147.72 .016

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
118.02 147.72 126.5 134.16 135.59 .1 .3
Blocked Obstructions num= 2
Sta L Sta R Elev Sta L Sta R Elev
181.03 284.29 159.054 29.52 100.8167.3486

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 3025.628

INPUT

Description:
Station Elevation Data num= 343
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 189.65 1.85 189.7 2.54 189.73 3.63 189.55 5.69 188.69
6.22 188.45 6.86 188.35 8.43 188.34 9.77 188.56 10.43 188.62
11.21 188.4 12.35 187.93 13.04 187.5 14.26 186.63 16.12 186.03
16.15 186.02 16.19 186 18.01 185.27 19.53 184.39 19.91 184.21
20.37 184.02 22.78 183.05 23.75 182.64 25.25 182.02 25.65 181.84
25.95 181.72 28.27 180.38 29.38 179.77 29.54 179.66 30.85 178.56
31.25 178.4 33.39 176.81 41.16 170.22 46.94 165.34 48.2 165.15
52.61 164.82 52.68 164.86 52.74 164.86 52.81 164.86 53.21 164.87
56.8 164.82 58.86 164.67 61.68 164.61 62.46 164.6 63.72 164.55
65.18 164.5 65.34 164.51 65.55 164.52 65.82 164.5 70.08 164.36
70.84 164.37 72.1 164.38 73.68 164.44 74.48 164.48 75.12 164.48
76.8 164.47 78.29 164.51 79.13 164.54 80.09 164.57 81.38 164.61
83 164.64 83.59 164.65 84.04 164.66 85.49 164.68 86.25 164.66
87.3 164.63 88.98 164.6 89.07 164.6 89.24 164.6 90.55 164.61
93.13 164.65 93.65 164.64 94.65 164.59 96.76 164.44 97.3 164.41
98.18 164.37 99.29 164.31 100.63 164.22 101.36 164.16 101.99 164.12
103.4 164.01 104.33 163.96 105.46 163.89 107.17 163.73 107.52 163.7
107.9 163.68 109.51 163.6 110.93 163.52 111.57 163.46 112.02 163.43
113.69 163.26 115 163.2 115.81 163.15 115.85 163.15 115.94 163.14
117.75 163.08 118.56 162.97 123.07 162.58 124.84 162.48 138.16 158.27
145.09 148.98 157.09 148.98 166.09 154.98 170.96 158.23 171.12 158.27
173.96 159.54 175.43 160.19 176.05 160.26 177.36 160.48 178.11 160.47
179.5 160.36 179.68 160.35 180.43 160.42 181.58 160.52 181.87 160.52
184.26 160.47 185.09 160.48 185.5 160.49 187.18 160.44 197.09 160.44
200.64 160.41 202.78 160.41 204.35 160.37 206.02 160.42 207.95 160.34
210.34 160.38 213.77 160.47 216.29 160.52 217.71 160.54 219.25 160.54
221.15 160.56 223.23 160.53 224.59 160.54 226.36 160.51 228.65 160.48
231.6 160.52 232.74 160.51 234.21 160.58 236.74 160.55 239.22 160.53
243.47 160.52 245.86 160.45 258.58 160.51 259.84 160.51 260.04 160.55
260.21 160.54 261.36 160.49 261.51 160.48 262.25 160.49 263.16 160.51
263.34 160.5 265.94 160.42 267.06 160.4 268.02 160.39 269.26 160.41
269.69 160.4 270.42 160.37 271.9 160.32 272.81 160.32 273.64 160.34
274.77 160.4 275.26 160.39 276.27 160.39 277.77 160.34 278.48 160.37
279.42 160.36 280.55 160.37 280.84 160.38 281.08 160.38 282.53 160.35
284.21 160.38 284.23 160.38 284.25 160.38 284.42 160.38 286.34 160.44
286.75 160.44 287.5 160.5 289.2 160.65 289.58 160.64 290.15 160.65
291.79 160.73 293.45 160.83 294.35 160.81 296.08 160.48 296.61 160.37
297.52 160.41 298.26 160.51 301.43 160.81 302.21 160.73 303.44 160.65
304.31 160.67 305.5 160.69 306.51 160.7 307.38 160.71 308.36 160.66
309.33 160.64 310.38 160.66 311.55 160.65 313.2 160.65 313.88 160.65
314.36 160.64 315.75 160.65 316.51 160.65 317.69 160.63 318.99 160.57
319.75 160.54 320.44 160.48 321.6 160.41 322.44 160.4 323.6 160.33
325.16 160.25 325.8 160.21 326.28 160.19 327.61 160.18 328.24 160.02
329.83 159.75 332.18 159.93 332.23 159.94 332.43 159.95 333.88 160.04
334.33 160.07 335.68 160.13 336.86 160.21 337.51 160.23 338.26 160.26
339.1 160.28 340.22 160.33 340.75 160.34 341.59 160.37 343.32 160.42
344.39 160.45 345.19 160.46 346.39 160.51 346.74 160.52 347.37 160.52
349.35 160.54 350.43 160.57 351.13 160.63 352.34 160.67 352.36 160.67
352.38 160.67 354.33 160.7 356.13 160.7 356.3 160.7 356.49 160.71
357.13 160.73 358.39 160.77 358.94 160.78 360.07 160.77 361.77 160.76

362.58	160.76	364.32	160.86	364.47	160.87	367.23	161.04	368.63	161.18
369.65	161.22	370.61	161.05	371.87	160.86	373.22	160.84	374.11	160.82
374.94	160.8	376.15	160.79	376.85	160.81	378	160.83	378.89	160.81
379.86	160.79	381.15	160.78	381.73	160.78	383.24	160.74	383.76	160.73
384.21	160.72	385.83	160.71	387.7	160.66	387.84	160.66	389.72	160.63
389.88	160.63	390.1	160.62	392.55	160.59	394.24	160.52	394.87	160.5
396.25	160.5	396.79	160.49	397.25	160.48	398.96	160.45	399.58	160.42
406.43	160.16	406.77	160.14	407.24	160.14	407.6	160.13	408.69	160.14
409.45	160.11	410.92	160.02	413.13	159.94	413.75	159.91	414.16	159.89
415.48	159.84	416.18	159.78	417.48	159.83	418.75	159.97	419.78	160.15
420.85	160.19	421.55	160.21	422.79	160.21	422.98	160.22	423.16	160.23
425.24	160.42	427.37	160.55	427.47	160.57	429.27	161.07	429.65	161.26
429.92	161.42	431.65	162.36	433.28	163.33	433.62	163.51	434.11	163.81
435.56	164.46	436.04	164.68	436.21	164.72	436.37	164.76	438.41	165.21
440.38	165.62	440.51	165.65	440.68	165.68	442.12	165.93	442.61	166.04
444.13	166.33	445.35	166.51	446.31	166.65	447.52	166.79	448.55	166.94
449.35	167.02	451.18	167.25	453.33	167.53	453.85	167.61	454.29	167.66
456.16	167.85	456.27	167.86	457.81	168.01	458.43	168.11	461.9	168.44
462.96	168.57	463.41	168.59	464.69	168.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val		
0	.06	138.16	.039	145.09	.035	157.09	.018	171.12	.016

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

138.16	171.12	111.21	109.32	112.92	.3	.5
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Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	133	160	F
169	180	160.48	F
369.65	475	161.22	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
198.37	265.44	160.4352

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 3000

INPUT
 Description:
 Distance from Upstream XS = 20
 Deck/Roadway Width = 74
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
0		160		500		160			

Upstream Bridge Cross Section Data
 Station Elevation Data num= 343

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85	189.7	2.54	189.73	3.63	189.55	5.69	188.69
6.22	188.45	6.86	188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35	187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12

103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	124.84	162.48	138.16	158.27
145.09	148.98	157.09	148.98	166.09	154.98	170.96	158.23	171.12	158.27
173.96	159.54	175.43	160.19	176.05	160.26	177.36	160.48	178.11	160.47
179.5	160.36	179.68	160.35	180.43	160.42	181.58	160.52	181.87	160.52
184.26	160.47	185.09	160.48	185.5	160.49	187.18	160.44	187.09	160.44
200.64	160.41	202.78	160.41	204.35	160.37	206.02	160.42	207.95	160.34
210.34	160.38	213.77	160.47	216.29	160.52	217.71	160.54	219.25	160.54
221.15	160.56	223.23	160.53	224.59	160.54	226.36	160.51	228.65	160.48
231.6	160.52	232.74	160.51	234.21	160.58	236.74	160.55	239.22	160.53
243.47	160.52	245.86	160.45	258.58	160.51	259.84	160.51	260.04	160.55
260.21	160.54	261.36	160.49	261.51	160.48	262.25	160.49	263.16	160.51
263.34	160.5	265.94	160.42	267.06	160.4	268.02	160.39	269.26	160.41
269.69	160.4	270.42	160.37	271.9	160.32	272.81	160.32	273.64	160.34
274.77	160.4	275.26	160.39	276.27	160.39	277.77	160.34	278.48	160.37
279.42	160.36	280.55	160.37	280.84	160.38	281.08	160.38	282.53	160.35
284.21	160.38	284.23	160.38	284.25	160.38	284.42	160.38	286.34	160.44
286.75	160.44	287.5	160.5	289.2	160.65	289.58	160.64	290.15	160.65
291.79	160.73	293.45	160.83	294.35	160.81	296.08	160.48	296.61	160.37
297.52	160.41	298.26	160.51	301.43	160.81	302.21	160.73	303.44	160.65
304.31	160.67	305.5	160.69	306.51	160.7	307.38	160.71	308.36	160.66
309.33	160.64	310.38	160.66	311.55	160.65	313.2	160.65	313.88	160.65
314.36	160.64	315.75	160.65	316.51	160.65	317.69	160.63	318.99	160.57
319.75	160.54	320.44	160.48	321.6	160.41	322.44	160.4	323.6	160.33
325.16	160.25	325.8	160.21	326.28	160.19	327.61	160.18	328.24	160.02
329.83	159.75	332.18	159.93	332.23	159.94	332.43	159.95	333.88	160.04
334.33	160.07	335.68	160.13	336.86	160.21	337.51	160.23	338.26	160.26
339.1	160.28	340.22	160.33	340.75	160.34	341.59	160.37	343.32	160.42
344.39	160.45	345.19	160.46	346.39	160.51	346.74	160.52	347.37	160.52
349.35	160.54	350.43	160.57	351.13	160.63	352.34	160.67	352.36	160.67
352.38	160.67	354.33	160.7	356.13	160.7	356.3	160.7	356.49	160.71
357.13	160.73	358.39	160.77	358.94	160.78	360.07	160.77	361.77	160.76
362.58	160.76	364.32	160.86	364.47	160.87	367.23	161.04	368.63	161.18
369.65	161.22	370.61	161.05	371.87	160.86	373.22	160.84	374.11	160.82
374.94	160.8	376.15	160.79	376.85	160.81	378	160.83	378.89	160.81
379.86	160.79	381.15	160.78	381.73	160.78	383.24	160.74	383.76	160.73
384.21	160.72	385.83	160.71	387.7	160.66	387.84	160.66	389.72	160.63
389.88	160.63	390.1	160.62	392.55	160.59	394.24	160.52	394.87	160.5
396.25	160.5	396.79	160.49	397.25	160.48	398.96	160.45	399.58	160.42
406.43	160.16	406.77	160.14	407.24	160.14	407.6	160.13	408.69	160.14
409.45	160.11	410.92	160.02	413.13	159.94	413.75	159.91	414.16	159.89
415.48	159.84	416.18	159.78	417.48	159.83	418.75	159.97	419.78	160.15
420.85	160.19	421.55	160.21	422.79	160.21	422.98	160.22	423.16	160.23
425.24	160.42	427.37	160.55	427.47	160.57	429.27	161.07	429.65	161.26
429.92	161.42	431.65	162.36	433.28	163.33	433.62	163.51	434.11	163.81
435.56	164.46	436.04	164.68	436.21	164.72	436.37	164.76	438.41	165.21
440.38	165.62	440.51	165.65	440.68	165.68	442.12	165.93	442.61	166.04
444.13	166.33	445.35	166.51	446.31	166.65	447.52	166.79	448.55	166.94
449.35	167.02	451.18	167.25	453.33	167.53	453.85	167.61	454.29	167.66
456.16	167.85	456.27	167.86	457.81	168.01	458.43	168.11	461.9	168.44
462.96	168.57	463.41	168.59	464.69	168.7				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val		
0	.06	138.16	.039	145.09	.035	157.09	.018	171.12	.016

Bank Sta: Left Right Coeff Contr. Expan.

138.16	171.12	.3	.5
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Ineffective Flow num= 3

Sta L	Sta R	Elev	Permanent
0	133	160	F
169	180	160.48	F
369.65	475	161.22	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
198.37	265.44	160.4352

Downstream Deck/Roadway Coordinates

num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 160 500 160

Downstream Bridge Cross Section Data

Station Elevation Data		num= 378	
Sta	Elev	Sta	Elev
0	177.86	2.23	178.14
6.11	178.26	8.47	178.2
15.61	177.61	18.08	176.91
25.25	175.84	27.56	175.43
34.37	173.22	36.46	173.02
39.55	172.03	41.26	171.42
47.67	169.28	48.38	169.07
52.93	167.24	53.34	167.18
57.47	166.83	72.21	165.27
78.83	164.22	80.07	164.2
84.03	164.12	84.9	164.08
89.5	164.03	90.4	164.02
93.6	163.94	95.69	163.89
99.97	163.85	101.49	163.82
106.31	163.6	106.56	163.59
111.63	163.26	114.24	163.14
116.86	163	117	162.92
122.45	159.52	134.04	153.08
176.06	159.76	176.07	159.76
179.49	159.81	179.83	159.81
188.77	159.9	190.65	159.9
203.45	159.96	207.03	159.93
232.41	160.17	234.41	160.2
237.46	160.29	239.37	160.38
242.7	160.44	243.82	160.44
248.49	160.57	249.72	160.59
254.33	160.67	255.16	160.69
258.9	160.77	261.12	160.85
263.63	160.92	264.38	160.97
268.33	160.98	268.34	160.98
271.74	161.07	273.26	161.1
280.23	161.13	282.21	161.11
289.51	161.12	291.38	161.06
295.48	161.01	296.43	161.01
305.14	161.11	305.41	161.11
311.15	161.03	311.59	161.02
315.59	160.92	316.98	160.9
318.71	160.87	320.78	160.84
324.2	160.67	324.41	160.66
328.63	160.32	329.79	160.3
334.23	160.47	334.3	160.47
338.63	160.69	339.49	160.72
342.29	160.84	342.92	160.85
347.87	161.06	349.7	161.13
353.44	161.32	353.89	161.34
358.32	161.38	358.33	161.38
360.32	161.47	362.14	161.37
365.77	161.45	365.87	161.45
372.24	161.42	372.31	161.42
376.39	161.47	376.65	161.47
381.55	161.66	382.13	161.69
385.83	161.41	387.31	161.37
390.79	161.32	391.48	161.32
395.49	161.23	395.52	161.23
400.22	161.16	401.02	161.14
404.86	161.09	405.88	161.05
410.29	160.94	410.38	160.94
415.13	160.91	415.2	160.91
421.6	160.89	421.68	160.89
424.81	160.88	426	161.04
429.93	161.41	430.41	161.41
434.98	161.59	436.21	161.69
441.06	161.97	441.27	161.99
			162.05
			442.62
			162.12
			442.81
			162.13

444.55	162.22	445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38
449.2	162.46	449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7
454.35	162.7	454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86
459.37	162.92	460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14
463.1	163.29	463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05
467.45	163.03	468.2	163.01	468.88	163.01	469.74	163	470.44	163.12
472.07	163.37	472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06
476.76	164.27	476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26
483.45	164.04	485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43
487.86	163.52	488.86	163.77	488.92	163.79	488.99	163.82	489.5	164
492.91	165.29	493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72
499.93	166.69	502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47
509.36	169.48	509.41	169.5	511.27	170.03				

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	122.01	.049	143.04	.03	155.04	.018
						176.06	.03

Bank Sta: Left Right Coeff Contr. Expan.

	122.01	176.06	.3	.5
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Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	133	158	F
163	511.27	158	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev
183.06	298.09	161.0759

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	6	6
FHWA Chart # 8 - flared wingwalls			
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.			
Solution Criteria = Highest U.S. EG			

Culvert Upstrm Dist	Length	Top n	Bottom n	Depth Blocked	Entrance Loss Coef	Exit Loss Coef
17	91	.018	.018	0	.2	1

Number of Barrels = 2
 Upstream Elevation = 148.7

Centerline Stations

Sta.	Sta.
146.5	155.5

Downstream Elevation = 147.2

Centerline Stations

Sta.	Sta.
143.78	152.78

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2916.303

INPUT

Description:

Station Elevation Data		num= 378	
Sta	Elev	Sta	Elev
0	177.86	2.23	178.14
6.11	178.26	8.47	178.2
15.61	177.61	18.08	176.91
25.25	175.84	27.56	175.43
34.37	173.22	36.46	173.02
			172.94
			37.29
			172.83
			38.18
			172.65

39.55 172.03 41.26 171.42 43.11 170.93 44.64 170.48 44.68 170.46
47.67 169.28 48.38 169.07 49.51 168.54 50.5 168.16 52.72 167.33
52.93 167.24 53.34 167.18 56.82 166.88 57.43 166.83 57.44 166.84
57.47 166.83 72.21 165.27 75.9 164.5 77.04 164.24 77.33 164.25
78.83 164.22 80.07 164.2 81.08 164.16 82.28 164.16 83.12 164.14
84.03 164.12 84.9 164.08 85.69 164.1 87.05 164.09 88.51 164.06
89.5 164.03 90.4 164.02 91.49 164.01 92.73 163.97 93.2 163.96
93.6 163.94 95.69 163.89 98.35 163.89 98.41 163.89 98.46 163.89
99.97 163.85 101.49 163.82 101.52 163.82 101.56 163.82 104.03 163.7
106.31 163.6 106.56 163.59 107.62 163.52 109.03 163.43 109.37 163.4
111.63 163.26 114.24 163.14 114.27 163.14 114.3 163.14 116.58 163.01
116.86 163 117 162.92 119.73 161.32 122.01 159.69 122.45 159.69
122.45 159.52 134.04 153.08 143.04 147.08 155.04 147.08 164.04 153.08
176.06 159.76 176.07 159.76 177.19 159.93 177.77 159.92 178.74 159.91
179.49 159.81 179.83 159.81 180.04 159.81 180.85 159.82 187.75 159.85
188.77 159.9 190.65 159.9 193.45 159.83 194.89 159.85 201.05 159.92
203.45 159.96 207.03 159.93 220.98 160.1 223.01 160.11 228.36 160.1
232.41 160.17 234.41 160.2 235.95 160.25 236.65 160.26 236.91 160.27
237.46 160.29 239.37 160.38 239.97 160.4 240.44 160.41 241.76 160.42
242.7 160.44 243.82 160.44 245.36 160.49 246.56 160.51 247.43 160.54
248.49 160.57 249.72 160.59 250.32 160.6 251.32 160.61 253.19 160.66
254.33 160.67 255.16 160.69 256.47 160.71 256.55 160.71 256.6 160.71
258.9 160.77 261.12 160.85 261.27 160.86 261.42 160.86 262.73 160.86
263.63 160.92 264.38 160.97 264.92 160.97 266.36 160.97 268.32 160.98
268.33 160.98 268.34 160.98 269.64 161.03 270.53 161.05 271.2 161.05
271.74 161.07 273.26 161.1 273.82 161.12 274.48 161.11 276.77 161.12
280.23 161.13 282.21 161.11 283.44 161.16 285.11 161.19 286.07 161.24
289.51 161.12 291.38 161.06 292.34 161.07 293.8 161.04 294.41 161.02
295.48 161.01 296.43 161.01 296.89 161.04 299.19 161.11 302.4 161.08
305.14 161.11 305.41 161.11 307.11 161.13 307.21 161.13 309.46 161.09
311.15 161.03 311.59 161.02 312.84 161.01 313.33 160.99 313.91 160.97
315.59 160.92 316.98 160.9 317.41 160.89 318.34 160.88 318.6 160.87
318.71 160.87 320.78 160.84 322.73 160.78 322.92 160.77 323.54 160.72
324.2 160.67 324.41 160.66 326.34 160.46 328.6 160.32 328.61 160.32
328.63 160.32 329.79 160.3 330.2 160.32 331.84 160.4 334.14 160.46
334.23 160.47 334.3 160.47 335.41 160.56 335.99 160.58 337.18 160.64
338.63 160.69 339.49 160.72 340.19 160.76 340.95 160.81 341.95 160.83
342.29 160.84 342.92 160.85 345.14 160.92 346.28 160.96 347.55 161.05
347.87 161.06 349.7 161.13 351.58 161.24 351.82 161.26 352.04 161.27
353.44 161.32 353.89 161.34 353.97 161.34 354.04 161.34 356.18 161.38
358.32 161.38 358.33 161.38 358.39 161.38 359.99 161.46 360.17 161.48
360.32 161.47 362.14 161.37 363.94 161.39 364.07 161.39 364.23 161.39
365.77 161.45 365.87 161.45 368.34 161.53 370.43 161.48 370.73 161.45
372.24 161.42 372.31 161.42 372.36 161.42 374.36 161.47 376.16 161.48
376.39 161.47 376.65 161.47 377.98 161.45 378.26 161.47 380 161.6
381.55 161.66 382.13 161.69 382.77 161.65 383.8 161.52 384.49 161.46
385.83 161.41 387.31 161.37 388.27 161.36 389.12 161.35 389.93 161.32
390.79 161.32 391.48 161.32 391.99 161.31 393.53 161.28 395.48 161.23
395.49 161.23 395.52 161.23 396.77 161.21 397.08 161.21 398.79 161.19
400.22 161.16 401.02 161.14 401.95 161.12 402.87 161.12 403.68 161.12
404.86 161.09 405.88 161.05 407.14 161.01 408.6 160.96 409.04 160.96
410.29 160.94 410.38 160.94 410.47 160.94 412.81 160.91 415.07 160.91
415.13 160.91 415.2 160.91 416.43 160.95 416.83 160.94 418.87 160.94
421.6 160.89 421.68 160.89 421.73 160.89 422.93 160.91 423.5 160.87
424.81 160.88 426 161.04 427.15 161.24 428.37 161.32 428.93 161.37
429.93 161.41 430.41 161.41 430.91 161.43 432.88 161.46 434.66 161.57
434.98 161.59 436.21 161.69 436.3 161.69 436.39 161.7 438.92 161.86
441.06 161.97 441.27 161.99 441.98 162.05 442.62 162.12 442.81 162.13
444.55 162.22 445.7 162.27 446.5 162.31 447.69 162.36 448.12 162.38
449.2 162.46 449.43 162.47 449.65 162.48 451.97 162.59 454.3 162.7
454.35 162.7 454.53 162.71 455.58 162.78 455.89 162.79 457.73 162.86
459.37 162.92 460.1 162.95 460.88 162.99 461.63 163.1 462.36 163.14
463.1 163.29 463.55 163.18 465.03 163.22 466.59 163.04 466.91 163.05
467.45 163.03 468.2 163.01 468.88 163.01 469.74 163 470.44 163.12
472.07 163.37 472.66 163.66 474.02 163.97 474.71 164.03 475.49 164.06
476.76 164.27 476.93 164.23 480.87 164.1 481.52 164.18 482.37 164.26
483.45 164.04 485.63 163.53 486.45 163.23 486.79 163.27 487.41 163.43
487.86 163.52 488.86 163.77 488.92 163.79 488.99 163.82 489.5 164
492.91 165.29 493.68 165.38 495.99 165.6 496.24 165.61 496.45 165.72
499.93 166.69 502.01 167.49 503.99 168.01 508.45 169.34 509.32 169.47

509.36 169.48 509.41 169.5 511.27 170.03

Manning's n Values num= 5
Sta n Val Sta n Val Sta n Val Sta n Val
0 .1 122.01 .049 143.04 .03 155.04 .018 176.06 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
122.01 176.06 14.15 15.34 16.27 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 133 158 F
163 511.27 158 F

Blocked Obstructions num= 1
Sta L Sta R Elev
183.06 298.09161.0759

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2900.962

INPUT

Description:
Station Elevation Data num= 331
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 184.89 1.12 184.57 1.86 184.44 3.12 184.07 4.78 183.62
5.78 183.24 7.12 182.56 9.05 181.86 13.86 179.91 13.9 179.88
13.96 179.84 15.77 178.44 17.18 178.15 17.62 177.98 17.91 177.86
18.92 176.86 21.94 175.11 23.99 173.77 25.11 173.08 25.14 173.06
25.16 173.06 27.11 172.48 28.5 172.14 29.1 171.98 29.95 171.71
30.88 171.46 31.73 171.21 32.47 171.07 33.27 170.87 34.31 170.81
35.04 170.75 36.4 170.71 36.96 170.64 37.25 170.56 37.44 170.55
49.9 167.66 51.78 167.4 53.36 167.08 54.71 166.85 56.43 166.79
57.56 166.48 59.5 166.05 61.77 165.74 64.53 165.29 69.81 164.2
70.54 164.2 71.63 164.22 71.74 164.22 72.9 164.18 74.98 164.12
78.23 164.04 79.82 164.1 80.12 164.1 82.65 164.04 86.29 163.99
86.78 163.95 88.39 163.88 88.41 163.88 88.43 163.88 90.12 163.89
91.56 163.86 92 163.85 92.49 163.84 94.64 163.8 94.65 163.8
109.81 161.12 117 149.83 126 143.83 138 143.83 147 149.83
160.44 158.23 160.44 159.01 162.67 159.01 163.24 159.03 164.25 159.26
164.35 159.26 165.81 159.26 166.13 159.25 166.29 159.26 166.98 159.26
174.81 159.41 176.26 159.4 216.84 159.88 219.28 159.9 221.99 159.93
222.19 159.95 222.96 159.98 223.44 159.98 223.75 160 225.28 160.01
226.78 160.04 227.09 160.05 227.58 160.05 229.03 160.05 229.84 160.06
231.3 160.08 232.82 160.12 233.7 160.15 234.52 160.16 235.76 160.2
236.73 160.24 237.88 160.27 239.05 160.3 240.23 160.33 241.35 160.36
242.25 160.37 243.58 160.44 244.15 160.46 244.84 160.49 246.89 160.51
248.6 160.53 249.02 160.54 250.05 160.48 252.37 160.43 254.28 160.59
255.54 160.73 256.88 160.69 259.65 160.58 260.28 160.58 262.75 160.62
264.69 160.62 265.54 160.68 266.61 160.71 270.03 160.68 270.46 160.7
272.89 160.9 273.14 160.87 274.94 160.94 277.59 161.03 278.24 160.97
279.57 161 282.05 160.96 283.6 160.99 285.11 161 289.34 161.04
291.37 161.1 292.22 161.09 293.3 161.06 296.18 160.79 297.04 160.78
298.85 160.94 300.03 160.9 300.77 160.88 301.61 160.84 303.03 160.78
303.36 160.76 305.26 160.7 307.1 160.62 307.37 160.62 307.63 160.6
308.66 160.56 309.43 160.53 309.64 160.53 309.85 160.52 311.76 160.44
313.53 160.35 313.85 160.31 315.16 159.96 315.9 159.86 316.5 159.88
317.82 159.98 319.44 160.02 319.65 160.03 320.89 160.09 321.13 160.1
321.18 160.1 323.1 160.18 324.78 160.25 325.05 160.26 325.36 160.28
326.69 160.36 326.99 160.38 328.62 160.46 329.96 160.54 330.6 160.57
331.37 160.59 332.23 160.62 332.92 160.66 334.05 160.71 335.08 160.74
336.11 160.76 337.2 160.79 337.85 160.82 338.84 160.84 339.48 160.85
340.02 160.85 341.52 160.87 343.22 160.89 343.4 160.9 344.07 160.91
344.77 160.91 344.95 160.92 347.07 160.92 349.42 160.95 349.43 160.95
349.44 160.95 350.53 160.98 351 160.99 352.06 161 352.85 161.03
353.91 161.05 355.29 161.03 355.56 161.03 356.08 161.01 356.73 160.99
357.07 161 358.46 161 359.4 161 360.36 161 361.74 160.9
362.49 160.92 363.01 160.98 363.3 160.98 365.29 161 367.73 161.12
367.94 161.14 369.33 161.19 370.43 161.12 371.33 161.06 372.58 160.9

374.05	160.84	374.77	160.81	375.85	160.79	377.41	160.75	379.8	160.63
380.18	160.61	380.42	160.61	380.84	160.59	382.01	160.59	382.46	160.56
382.75	160.56	384.31	160.57	385.76	160.5	386.71	160.49	388.19	160.52
388.37	160.51	390.29	160.42	391.67	160.36	392.3	160.33	393.16	160.32
394.17	160.28	394.82	160.25	396.59	160.19	398.59	160.14	399.18	160.12
399.68	160.1	400.92	160.04	401.16	160.03	401.24	160.02	401.28	160.02
403.17	159.98	404.32	159.94	405.05	159.93	406.27	159.92	407.23	159.9
407.97	159.86	410.13	159.96	412.93	160.13	412.99	160.14	413.02	160.14
413.14	160.15	414.67	160.25	415.01	160.26	415.22	160.28	416.96	160.42
418.29	160.52	418.87	160.55	419.85	160.63	420.76	160.7	421.36	160.73
422.97	160.83	424.15	160.88	425.16	160.95	426.53	161.04	427.19	161.09
428.19	161.23	429.07	161.33	429.58	161.42	430.96	161.6	432.5	161.89
432.8	161.93	433.3	162.03	434.73	162.31	434.76	162.31	436.7	162.52
437.88	162.53	438.6	162.52	439.74	163.18	440.48	163.53	441.26	163.93
442.21	164.25	443.34	164.51	444.54	164.39	446.36	164.3	446.55	164.3
448	164.36	448.99	164.37	449.41	164.4	453.72	164.34	454.5	164.37
456.36	164.33	456.89	164.35	458.14	164.35	458.9	164.38	460.01	164.41
460.94	164.46	462.38	164.46	463.37	164.46	463.98	164.43	465.85	164.44
465.98	164.43	466.5	164.34	467.87	164.23	469.08	164.03	469.74	163.85
471.55	164.91	472.09	165.02	473.88	165.88	475.63	166.45	476.68	166.61
479.25	167.69	479.45	167.71	480.65	168.19	481.4	168.51	481.69	168.61
483.17	169.26	485.3	169.96	487.6	170.59	489.02	171.14	489.93	171.4
490.91	171.69								

Manning's n Values	num=	5							
Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val
0	.08	109.81	.049	126	.03	138	.018	162.67	.03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
109.81	162.67	206.54	191.91	184.83	.1	.3	

Blocked Obstructions	num=	1							
Sta L	Sta R	Elev							
169.09	284.62	160.9982							

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2709.054

INPUT											
Description:											
Station	Elevation	Data	num=	309							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.02	1.43	182.69	1.97	182.5	2.88	182.11	4.59	180.88		
7.09	179	9.44	177.16	10.61	176.52	13.06	174.8	13.39	174.55		
14.92	172.91	15.28	172.58	15.77	172.27	17.76	170.82	19.21	170.19		
20.21	169.65	22.84	167.11	25.43	165.39	26.14	165.06	26.97	164.69		
27.08	164.64	27.3	164.52	29.6	162.37	31.71	160.61	32.01	160.45		
32.9	159.9	33.45	159.62	33.63	159.49	34.04	159.29	43.24	154		
47.53	148.92	56.53	142.92	72.53	142.92	81.53	148.92	85.81	153.62		
88.05	153.93	88.68	153.95	90.21	153.96	92.82	153.98	93.44	153.99		
93.79	154	95.41	154.04	95.81	154.06	97.78	154.16	99.67	154.12		
100.32	154.12	100.99	154.13	102.23	154.18	102.91	154.17	105.05	154.19		
108.13	154.21	108.24	154.21	108.93	154.23	109.85	154.24	110.01	154.24		
113.07	154.21	115.22	154.26	115.73	154.28	117.2	154.27	117.32	154.27		
117.4	154.27	119.45	154.25	120.87	154.27	121.53	154.3	122.57	154.28		
123.29	154.29	124.6	154.28	124.92	154.27	125.25	154.27	127.64	154.32		
130.01	154.35	130.15	154.36	130.54	154.36	131.52	154.37	131.85	154.38		
133.46	154.38	134.45	154.38	135.54	154.38	137.26	154.41	137.5	154.41		
138.09	154.44	138.89	154.48	139.23	154.48	141.85	154.47	144.71	154.51		
144.87	154.52	145.19	154.53	146.11	154.54	146.6	154.54	148.43	154.54		
150.4	154.55	151.26	154.55	152.04	154.56	153.5	154.59	153.97	154.59		
154.23	154.6	154.51	154.6	157.19	154.62	159.51	154.65	160.14	154.66		
161.47	154.67	163.42	154.67	166.15	154.66	166.52	154.66	166.77	154.66		
167.86	154.69	168.6	154.7	169.39	154.71	169.89	154.69	172.01	154.69		
173.24	154.68	173.94	154.68	174.91	154.69	175.74	154.7	176.3	154.71		
176.97	154.7	179.24	154.68	181.05	154.7	181.95	154.71	182.79	154.72		
184.73	154.73	186.77	154.77	187.5	154.78	188.19	154.77	189.5	154.75		
189.88	154.75	190.1	154.75	190.41	154.74	193.23	154.73	195.2	154.72		

195.96	154.72	196.86	154.73	198.73	154.73	201.14	154.71	201.73	154.7
202.17	154.69	203.13	154.67	203.84	154.65	204.2	154.64	204.69	154.64
207.39	154.62	209.22	154.57	210.05	154.54	210.74	154.54	212.88	154.51
215.61	154.61	215.84	154.61	216.02	154.61	216.34	154.59	217.63	154.49
218.39	154.39	219.53	154.25	221.67	153.96	223.08	153.81	224.23	153.74
224.68	153.71	227.22	153.62	229.84	153.54	230.14	153.54	231.4	153.46
232.68	153.4	234.46	153.09	235.82	152.93	236.78	152.86	238.23	152.93
238.42	152.94	241.09	153.15	243.77	153.21	243.89	153.21	243.95	153.22
245.18	153.32	246.28	153.34	247.01	153.35	248.18	153.37	248.7	153.38
250.23	153.42	251.72	153.44	252.35	153.46	253.78	153.51	254.2	153.54
254.93	153.58	255.43	153.6	255.7	153.6	257.2	153.59	257.85	153.61
259.22	153.65	260.77	153.69	261.31	153.7	262.58	153.72	263.32	153.75
264.41	153.79	265.17	153.79	265.51	153.8	267.15	153.84	268.4	153.86
269.21	153.87	271.07	153.91	271.25	153.92	272.8	153.94	272.93	153.94
272.98	153.94	274.93	153.93	275.91	153.93	276.98	153.93	278.92	153.97
279.09	153.97	279.49	153.96	280.84	153.92	281.45	153.92	282.66	153.88
283.22	153.89	284.65	153.88	286.15	153.96	286.68	153.97	287.85	154.04
288.56	154.08	289.78	154.01	290.2	153.98	290.41	153.97	292.23	153.76
293.47	153.72	294.32	153.71	296.1	153.63	296.38	153.63	297.67	153.65
297.92	153.66	297.98	153.65	299.9	153.53	300.88	153.54	301.94	153.52
303.96	153.45	304.01	153.45	304.12	153.44	305.54	153.37	306.04	153.36
307.34	153.32	308	153.32	309.35	153.29	311.08	153.25	311.45	153.24
312.19	153.21	313.16	153.17	314.08	153.11	314.94	153.07	315.49	153.06
317.37	153.03	319.61	152.94	319.89	152.93	320.31	152.9	321.62	152.77
322.18	152.74	323.44	152.67	324.1	152.6	325.5	152.49	327.42	152.87
327.7	152.89	328.23	152.91	328.95	152.84	330.22	152.89	331.4	152.98
334.04	153.07	335.32	153.07	335.94	153.13	337.46	153.23	339.32	153.37
339.99	153.44	341.08	153.6	342.91	153.84	343.48	153.91	343.76	153.93
345.22	154.21	348.49	154.77	349.15	154.9	350.61	155.7	351.38	155.98
352.78	156.68	353.46	156.97	353.81	157.16	354.03	157.27	354.64	157.64
358.66	160.06	359.28	160.45	360.7	160.51	361.19	160.55	362.71	161.47
364.74	162.71	365.54	163.02	367.36	163.82	367.85	163.95	368.66	164.34
369.85	164.9	370.83	165.38	371.8	165.89	372.09	166.02	373.81	166.81
376.94	168.49	377.58	168.87	377.88	169.02	378.77	169.57	380.8	170.59
382.23	171.16	384.33	172.21	384.49	172.28	384.75	172.41	386.3	173.16
386.87	173.45	388.48	174.26	389.67	174.92	390.51	175.36		

Manning's n Values	num=	5							
Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val
0	.1	43.24	.049	56.53	.03	72.53	.018	88.05	.03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
43.24	85.81	209.38	207.57	205.83	.1	.3	

Ineffective Flow	num=	1							
Sta L	Sta R	Elev	Permanent						
187.5	390.51	154.78	F						

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2501.489

INPUT											
Description:											
Station	Elevation	Data	num=	273							
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	175.91	3.29	173.99	8.4	171.18	8.95	170.83	9.84	170.37		
11.22	169.54	12.68	168.9	15.22	167.24	18.55	165.59	19.49	164.6		
20.24	163.89	20.82	163.26	23.19	161.08	25.02	160.22	25.54	160.03		
26.31	159.88	27	159.73	27.62	159.5	30.62	158.26	30.85	158.14		
31.88	157.64	32.2	157.53	36.18	156.22	36.75	156.22	37.39	156.08		
37.49	156.02	37.68	1								

117.72	151.84	118.04	151.84	118.82	151.65	120.23	151.31	120.7	151.28
122.38	151.26	123.25	151.29	124.6	151.32	125.28	151.32	126.92	151.3
128.23	151.24	131.78	151.21	133.98	151.29	135.76	151.33	141.34	151.29
143.57	151.32	148.02	151.17	152.76	151.13	159.04	151.18	189.99	151.33
193.97	151.43	195.64	151.39	199.28	151.44	201.89	151.47	204.91	151.62
208.18	151.5	211.32	151.65	213.02	151.78	215.53	151.55	216.37	151.56
217.76	151.69	220.69	151.94	221	151.93	221.4	151.84	222.75	151.51
223.27	151.3	224.14	151.29	225.39	151.29	225.79	151.25	227.22	151.08
228.17	151.03	229.03	150.96	230.41	150.91	231.03	150.89	232.17	150.88
233.17	150.86	233.83	150.85	235.11	150.8	237.11	150.69	238.21	150.61
238.92	150.58	239.52	150.56	239.89	150.52	241.3	150.39	242.87	150.4
243.14	150.39	243.56	150.36	244.41	150.27	245.29	150.19	245.62	150.18
245.82	150.18	247.44	150.12	248.84	150.33	249.35	150.44	250.17	150.26
250.85	150.21	251.94	149.74	252	149.7	252.05	149.68	253.64	148.45
254.5	148.03	255.36	147.53	256.96	147.45	257.12	147.43	257.41	147.41
258.3	147.36	260.42	147.17	263.81	146.88	264.54	146.92	265.76	147
266.7	146.98	267.26	146.84	268.63	146.66	270.51	146.65	270.67	146.63
270.92	146.66	272.59	146.75	272.85	146.77	274.49	146.9	275.56	146.98
276.51	147.05	277.95	147.07	278.38	147.08	279.79	147.1	279.88	147.1
279.9	147.1	281.79	147.24	282.93	147.28	283.72	147.3	285.03	147.31
285.6	147.31	287.13	147.36	287.25	147.36	287.32	147.37	289.09	147.46
290.25	147.47	290.95	147.49	292.13	147.51	292.78	147.53	294.22	147.58
294.58	147.59	294.78	147.59	296.49	147.6	297.81	147.63	298.41	147.64
299.43	147.62	300.33	147.62	301.57	147.66	302.18	147.66	302.56	147.67
304.07	147.64	305.65	147.66	305.99	147.67	306.54	147.67	307.69	147.67
308.73	147.69	309.34	147.7	309.7	147.7	311.25	147.73	312.81	147.72
313.21	147.72	313.88	147.72	315.42	147.73	316.05	147.74	317.37	147.79
318.15	147.85	319.2	147.92	321.02	148.26	321.09	148.27	323.17	148
323.45	147.93	323.62	147.92	325.32	147.71	326.61	147.73	327.23	147.73
328.28	147.69	328.85	147.65	329.5	147.63	330.12	147.62	330.62	147.6
331.91	147.58	333.02	147.6	334.19	147.6	335.61	147.55	336.12	147.51
336.88	147.5	337.42	147.48	337.78	147.48	339.07	147.46	339.76	147.46
340.85	147.45	342.51	147.41	342.65	147.41	342.91	147.41	344.09	147.4
345.12	147.36	345.69	147.35	346.26	147.33	348.3	147.26	350.35	147.18
350.84	147.15	352.51	147.05	353.08	147.02	353.67	146.97	355.66	146.8
357.64	147.11	358.06	147.22	358.94	147.25	359.63	147.26	361.24	147.32
362.33	147.34	364.08	147.26	364.37	147.28	365.75	147.44	369.65	148
374.2	148.47	374.68	148.51	374.99	148.57	375.3	148.59	377.1	148.76
377.59	148.96	381.06	149.81	381.38	149.93	383.04	150.47	383.16	150.51
383.24	150.53	385.17	151.1	386.58	151.68	387.23	151.92	388.23	151.52
389.25	152.71	390.9	153.44	391.26	153.61	391.47	153.7	393.26	154.49
394.67	155.11	395.26	155.36	396.01	155.7				

Manning's n Values num= 5
 Sta n Val Sta n Val Sta n Val Sta n Val Sta n Val
 0 .1 73.7 .049 84.76 .03 96.76 .018 113.07 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 73.7 107.83 198.58 191.49 185.3 .1 .3

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 110.5 396.01 151.99 F

Blocked Obstructions num= 1
 Sta L Sta R Elev
 130.29 213.92 151.6969 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2309.998

INPUT Description:
 Station Elevation Data num= 320
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 176.32 .76 175.78 1.26 175.54 2.57 175.27 3.21 175.04
 4.52 174.83 6.12 174.17 6.47 174.01 7.19 173.52 8.23 172.74
 9.13 172.38 10.01 172.11 11.64 171.57 13.31 171.11 13.89 170.94
 15.08 170.25 15.82 170.01 16.96 169.16 17.84 168.51 19.39 168.1

20.24	167.93	24.17	166.73	26.44	166.14	26.92	165.96	27.87	165.55
30.6	164.61	30.64	164.59	30.65	164.59	32.7	163.71	33.37	163.38
34.87	162.66	36.26	162.21	37.15	161.85	38.59	161.46	38.97	161.36
40.59	161.26	41.31	161.23	41.63	161.14	42.52	161.02	44.16	160.59
46.16	159.72	46.6	159.44	47.3	158.65	52.42	153.9	53.76	153.53
54.06	153.38	55.84	152.89	56.12	152.82	58.39	152.39	59.45	152.24
61.75	151.66	62.57	151.33	63.48	151.01	63.81	151.02	66.12	150.97
68.19	150.54	68.8	150.39	69.48	150.06	71.21	149	71.44	148.78
71.88	148.34	73.01	148.34	77.94	145.05	86.94	139.05	98.94	139.05
107.94	145.05	112.87	148.34	114.68	148.34	114.84	148.37	115.83	148.45
116.61	148.53	118.01	148.33	118.09	148.32	118.15	148.32	120.4	147.78
122.34	148.11	122.84	148.18	123.47	148.19	124.64	148.15	125.63	148.05
126.4	148.01	127.03	148.02	128.7	148.11	130.79	147.98	130.97	147.97
131.43	147.96	132.61	147.95	133.06	147.95	134.72	147.96	135.97	147.91
137	147.89	138.33	147.9	139.06	147.92	140.47	147.9	141.01	147.89
141.65	147.89	143.76	147.88	145.53	147.83	146.18	147.8	147.72	147.77
148.05	147.77	148.3	147.76	150.27	147.7	152.22	147.61	152.52	147.6
152.91	147.6	154.5	147.57	155.21	147.54	156.43	147.55	157.25	147.52
158.4	147.49	160.13	147.45	160.34	147.44	162.23	147.35	162.28	147.35
162.31	147.35	164.23	147.41	165.53	147.49	166.21	147.54	167.26	147.55
168.37	147.47	168.5	147.41	168.65	147.4	181.87	147.45	198.88	147.52
199.18	147.5	200.63	147.49	201.56	147.49	202.53	147.47	203.28	147.45
204.44	147.39	204.57	147.38	204.66	147.38	207.25	147.42	209.28	147.33
209.68	147.32	210.32	147.31	211.17	147.29	211.69	147.29	213.02	147.24
214.09	147.19	215.09	147.14	216.38	147.12	216.96	147.11	217.91	147.09
218.39	147.07	218.69	147.06	220.11	147.02	221.07	147	221.91	146.98
223.22	146.94	223.61	146.92	224.22	146.88	225.02	146.83	225.54	146.83
227.33	146.85	230.06	146.74	230.15	146.74	230.21	146.74	231.71	146.73
232.6	146.74	233.69	146.75	235.17	146.72	236.35	146.69	237.21	146.66
238.2	146.6	239.45	146.51	239.86	146.5	240.35	146.52	242.5	146.53
244.28	146.6	244.87	146.61	246.3	146.52	246.57	146.5	246.69	146.5
248.96	146.51	251.43	146.74	251.44	146.74	253.81	146.4	255.23	146.19
256.33	145.79	257.39	145.48	258.73	145.11	259.45	144.94	261.09	144.86
261.3	144.85	261.48	144.93	263.44	145.4	265.33	145.7	265.86	145.74
267.09	145.61	268.38	145.42	268.54	145.4	268.65	145.39	270.55	145.27
271.94	144.51	272.47	144.29	273.25	144.16	274.7	144	275.86	144.04
276.84	144.11	277.53	144.16	278.84	144.27	280.75	144.34	280.88	144.34
283.24	144.43	283.28	144.43	283.31	144.43	285.09	144.51	286.27	144.55
286.89	144.57	287.87	144.59	289.16	144.65	290.54	144.72	291.9	144.78
293.65	144.85	294.61	144.91	295.36	144.94	297.4	144.99	297.94	145
299.91	145.08	302.11	145.09	302.38	145.1	302.61	145.1	303.93	145.15
305.28	145.13	305.42	145.13	305.55	145.14	307.8	145.32	310.16	145.78
310.21	145.79	310.27	145.79	311.72	145.87	312.94	145.88	313.36	145.9
313.71	145.9	315.54	145.95	317.72	146	317.74	146	317.79	146
319.59	146.02	320.44	146	321.76	145.98	323.08	145.96	324.24	145.96
325.43	145.96	326.3	145.95	327.58	145.63	327.96	145.52	328.23	145.5
329.93	145.38	331.13	145.35	331.95	145.33	333.1	145.32	333.86	145.31
335.22	145.27	335.56	145.26	335.76	145.25	337.57	145.17	338.81	145.16
339.56	145.16	340.64	145.14	341.54	145.11	343.42	145.1	343.48	145.1
343.52	145.1	345.39	145.07	346.67	145.03	347.31	145.02	348.28	144.98
349.3	144.95	351.07	144.87	351.37	144.86	351.54	144.86	353.19	144.78
354.49	144.68	355	144.65	355.84	144.62	356.71	144.58	357.9	144.43
358.26	144.39	358.52	144.4	360.07	144.56	361.06	144.7	361.96	144.45
363.32	144.96	364.07	144.98	366.01	145.07	366.77	145.11	368.04	145.26
369.51	145.39	370.39	145.48	371.41	145.63	372.48	145.81	372.88	145.89
373.24	145.94	375.24	146.14	377.77	146.24	377.9	146.24	379.3	146.4
380.41	146.56	381.03	146.64	381.86	146.71	383.33	146.78	383.89	146.81
384.63	146.84	387.15	147.17	387.42	147.18	389.85	147.34	391.99	147.48
392.37	147.5	393.71	147.59	394.27	147.61	395.79	147.67	397.76	147.65
398.02	147.66	398.23	147.69	400.08	148.03	400.91	147.98	401.85	148.06

Blocked Obstructions num= 1
Sta L Sta R Elev
159.97 209.18147.4514

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2161.775

INPUT

Description:
Station Elevation Data num= 351

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	172.59	.32	172.58	2.53	171.85	4.36	170.81	5.47	170.47
7.6	169.5	9.16	169.2	9.41	169.16	11.7	168.87	12.6	168.67
14.16	168.58	15.29	168.54	16.65	168.61	18.54	167.94	19.03	167.67
21.12	166.52	21.4	166.44	23.01	166.5	25.73	166.57	26.27	166.64
27.01	166.35	28.88	165.77	29.58	165.67	31.21	165.26	32.18	165.12
33.47	165.08	35.61	164.73	35.7	164.72	35.81	164.72	37.12	164.67
38.33	164.32	39.65	163.93	42.8	163.27	45.12	162.65	46.86	162.43
46.96	162.41	47.06	162.35	47.26	162.22	50.22	159.99	50.88	159.67
51.45	159.22	52.85	159.09	53.03	159.04	53.25	158.94	54.43	158.18
55.48	157.72	57.92	156.47	59.17	155.84	59.88	155.48	61.22	154.33
62.17	153.61	63.22	153.14	64.13	152.8	66.95	152.15	68.33	151.31
68.87	150.92	70	149.9	70.61	149.4	71.41	148.93	72.17	148.55
72.73	148.2	74.42	147.13	75.71	146.45	77.17	145.9	78.44	145.55
78.98	145.34	80.03	145.34	82.57	143.65	91.57	137.65	103.57	137.65
112.57	143.65	115.11	145.34	116.7	145.34	117.24	145.51	118.93	145.55
119.88	145.67	120.93	145.69	122.42	145.79	123.79	145.74	124.87	145.74
125.72	145.75	127.35	145.8	129.4	145.83	129.88	145.83	132.38	145.92
132.53	145.93	132.64	145.93	134.89	145.97	136.8	145.98	137.29	145.97
137.94	146	139.04	146.04	140.22	145.99	140.57	146	140.9	145.99
142.05	146.02	146.27	146.38	146.41	146.39	146.45	146.4	146.52	146.39
147.97	146.4	149.4	146.31	149.5	146.3	149.56	146.29	151.69	145.99
153.29	146.03	153.91	146	154.81	145.91	155.87	145.7	157.28	145.63
157.67	145.61	157.95	145.61	159.81	145.61	161.14	145.6	162.06	145.57
163.37	145.53	164.14	145.49	165.43	145.5	166.02	145.5	166.38	145.49
168.01	145.44	169.02	145.43	170.04	145.43	171.68	145.41	172.06	145.4
172.74	145.39	174.01	145.37	174.71	145.35	175.98	145.3	176.76	145.3
178.02	145.22	179.96	145.26	180.01	145.26	180.08	145.26	182.14	145.22
183.17	145.14	184.54	145.1	185.78	145.1	190.19	145.16	191.23	145.15
193.81	145.14	196.67	145.12	197.02	145.12	197.97	145.1	199.53	145.09
199.81	145.07	201.92	145.05	204.2	145.08	204.57	145.09	204.92	145.08
207.06	145.09	207.95	145.11	209.62	145.2	211.35	145.34	212.26	145.39
213.15	145.32	214.11	145.17	215.01	145.3	216.16	145.29	217.54	145.04
218.76	145.02	219.95	144.99	221.3	144.96	221.99	144.92	222.65	144.91
223.51	144.9	224.44	144.88	225.34	144.88	226.07	144.86	227.58	144.83
229.4	144.79	229.73	144.79	230.11	144.76	231.38	144.7	232.48	144.7
233.11	144.7	233.46	144.69	235	144.63	236.39	144.63	236.87	144.69
237.68	144.62	238.65	144.6	239.91	144.58	240.38	144.57	240.75	144.56
242.31	144.54	243.33	144.51	244.24	144.52	245.64	144.44	246.17	144.43
246.91	144.41	248.03	144.38	248.85	144.39	249.98	144.39	250.72	144.39
251.97	144.35	253.87	144.33	253.97	144.33	254.12	144.32	255.92	144.23
256.96	144.21	257.85	144.2	258.41	144.2	259.76	144.19	261.51	144.16
261.66	144.16	261.9	144.15	263.72	144.1	265.08	144.18	265.74	144.24
267.97	144.53	269.21	144.65	269.5	144.67	271.33	144.2	271.78	144.17
272.55	144.13	273.23	144.07	275.46	143.86	276.7	143.65	278.08	143.5
278.97	143.4	280.11	143.31	280.75	143.27	281.25	143.33	283.24	143.45
285.66	143.38	286	143.36	286.28	143.3	288.63	142.63	289.63	142.55
291.17	142.49	292.81	142.18	293.66	142.05	294.45	142.06	295.54	142.17
296.57	142.21	297.1	142.22	297.67	142.26	299.21	142.36	300.69	142.41
301.59	142.44	302.52	142.47	303.57	142.5	304.81	142.54	305.32	142.56
305.77	142.58	307.48	142.66	309.03	142.72	309.8	142.74	310.64	142.78
311.79	142.8	313.24	142.78	313.64	142.76	313.96	142.77	315.43	142.79
316.32	142.8	317.22	142.82	318.66	142.89	319.04	142.9	319.56	142.91
320.95	142.91	321.96	142.94	322.93	142.94	323.69	143.02	325.03	143.09
326.71	143.19	327.09	143.21	327.78	143.23	329.18	143.27	329.96	143.3
331.18	143.36	332.13	143.34	333.11	143.32	334.42	143.25	335.15	143.22
336.62	143.09	337.41	143.03	337.81	143.02	339.36	143.03	340.49	143.05

341.27	143.06	342.36	143.07	343.39	143.08	345.57	143.05	345.82	143.04
346.08	143.04	348.06	143.04	350	143.01	350.41	142.99	352.23	142.91
353.08	142.87	353.27	142.86	354.91	142.79	355.97	142.82	356.68	142.82
357.73	142.78	358.33	142.75	358.85	142.74	359.88	142.7	361.07	142.71
361.61	142.7	362.31	142.68	364.04	142.62	365.38	142.6	366.08	142.59
366.73	142.56	367.59	142.51	368.53	142.48	369.46	142.45	370.61	142.41
371.88	142.35	372.89	142.27	373.92	142.17	375.08	142.39	375.87	142.52
377.62	142.53	378.94	142.47	386.25	141.76	387.34	141.63	388.01	141.69
388.99	141.7	390.51	142.48	390.92	142.67	391.18	142.78	392.87	143.55
394.39	144.18	394.87	144.41	395.4	144.69	396.8	145.48	397.45	145.8
398.57	146.2	400.61	147.55	403.6	149.78	405.68	150.65	406.18	151.01
406.53	151.23	408.71	152.79	409.45	153.34	409.66	153.5	409.86	153.55
411.74	153.98	413.03	153.78	413.8	153.69	414.53	153.67	415.73	153.66
416.98	153.75	417.87	153.8	418.94	153.89	419.46	153.93	425.09	154.49
426.1	154.61								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	78.44	.018	116.7	.03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
78.44 116.7 328.02 326.68 328.75 .1 .3

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
147.97 426.1 146.4 F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 1835.094

INPUT

Description:
Station Elevation Data num= 382

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	160.39	.81	160.34	1.36	160.28	3.18	160.18	3.96	160.09
4.65	159.86	7.18	158.37	7.61	158.13	8.03	158.18	9.97	158.28
11.91	157.39	12.41	157.2	12.89	157.04	14.99	156.77	16.11	156.6
17.55	156.37	19.08	156.13	20.03	155.97	20.94	155.77	22.7	155.32
23.36	155.2	24.1	155.14	25.28	154.98	26.52	154.39	27.88	153.86
29.96	153.44	31.94	153.02	32.76	152.96	33.15	152.89	34.31	152.52
35.29	152.19	36.34	151.88	37.24	151.66	38.38	151.5	38.99	151.46
39.43	151.31	40.96	150.91	42.36	150.58	43.04	150.44	43.28	150.46
43.79	150.43	46.9	150.08	47.02	150.04	48.95	149.47	50.78	149.19
51	149.14	51.24	149.11	53.04	148.79	54.54	148.29	55.07	148.15
55.55	148.05	57.04	147.73	58.74	147.65	59.07	147.61	59.94	147.67
61.28	147.74	61.8	147.67	63.27	147.52	64.44	147.21	65.18	147.07
66.11	146.75	67.25	146.57	69.54	146.43	69.64	146.38	69.96	146.23
72.34	145.09	73.44	144.39	73.93	144.17	75.93	143.99	76.43	143.94
76.55	143.95	78.13	144.16	79.16	143.8	80.62	143.53	81.33	143.5
81.96	143.32	82.79	143.19	83.75	143.02	84.71	142.99	86.55	142.96
87.37	142.96	87.78	142.94	89.1	143.01	90.43	143.05	90.65	143.02
90.89	142.98	92.93	142.65	94.75	142.32	95.19	142.13	95.41	142.14
95.7	142.15	97.91	141.51	98.86	141.16	100.01	141.34	101.93	140.76
103.18	140.54	112.75	133.65	124.5	133.65	132.96	140.86	133.35	141.22
133.63	141.49	133.92	141.66	135.7	142.66	136.91	143.12	138.51	143.63
143.16	142.79	143.39	142.81	144.13	142.83	144.38	142.84	148.45	143.36
148.98	143.22	149.73	143.25	150.71	143.18	151.99	143.29	152.99	143.58
154.81	143.7	156.19	143.68	157.71	143.56	157.86	143.56	159.56	143.74
161.18	143.6	161.35	143.59	161.7	143.6	163.91	143.68	165.05	143.73
166.09	143.78	167.43	143.66	167.96	143.67	168.36	143.66	170.2	143.64
171.95	143.57	172.48	143.58	173.4	143.48	174.61	143.4	174.89	143.37
175.32	143.32	177.71	143.27	179.14	143.16	179.16	143.16	181.48	143.01
182.43	142.95	183.68	142.88	185.51	142.59	185.8	142.54	186.01	142.52
188.35	142.38	189.48	142.29	190.68	142.26	192.32	142.08	192.77	142.02
193.1	141.99	194.39	141.73	196.48	141.44	197.3	141.36	199.2	141.03
199.68	140.94	202.35	140.69	202.98	140.62	203.48	140.54	204.84	140.41
206.47	140.27	206.81	140.25	207.1	140.22	208.61	140.09	210.2	139.91
210.36	139.89	210.52	139.88						

214.14	139.61	215.81	139.43	217.37	139.37	217.57	139.37	217.77	139.34
219.42	139.13	221.05	139.01	221.25	138.99	221.41	138.98	222.84	138.8
224.29	138.79	224.42	138.78	224.58	138.76	226.73	138.54	228.09	138.38
229.09	138.39	229.68	138.39	231.42	137.94	231.59	137.85	231.73	137.86
233.22	137.69	234.21	137.31	236.22	136.78	236.96	136.52	237.59	136.45
240.81	136.3	243.21	136.29	244.33	136.34	244.64	136.33	244.88	136.31
245.68	136.36	246.74	136.45	249.14	136.66	249.22	136.66	249.49	136.67
251.98	136.75	252.31	136.79	252.75	136.85	254.5	137.05	256.38	137.16
256.74	137.19	257.06	137.22	258.4	137.38	259.85	137.48	260.07	137.5
260.26	137.52	261.7	137.63	263.29	137.73	263.35	137.74	263.42	137.74
265.14	137.91	266.83	138.04	266.88	138.04	266.94	138.05	268.82	138.2
270.39	138.3	270.75	138.31	271.12	138.34	272.54	138.42	273.92	138.41
274.33	138.41	274.84	138.43	276.18	138.45	277.29	138.47	278.05	138.46
278.91	138.47	279.97	138.43	280.88	138.41	281.81	138.38	282.86	138.38
283.6	138.38	284.25	138.36	285.58	138.35	287.3	138.37	287.65	138.4
287.93	138.38	289.39	138.33	290.97	138.29	291.07	138.28	291.16	138.27
292.82	138.17	294.58	138.05	296.19	138.08	297.6	138.02	297.79	138.02
298.02	138	300.04	137.96	301.68	137.93	302.15	137.9	302.56	137.86
303.68	137.65	304.98	137.47	305.36	137.42	306.32	137.39	307.87	137.36
308.48	137.35	310.48	137.34	311.89	137.32	312.61	137.31	313.18	137.29
314.18	137.28	315.45	137.22	315.87	137.21	316.99	137.22	318.21	137.25
318.7	137.25	319.96	137.29	321.01	137.27	321.56	137.28	322.24	137.3
323.19	137.32	324.22	137.34	324.83	137.34	325.38	137.37	326.59	137.45
327.79	137.52	328.43	137.56	329.07	137.59	330.43	137.65	332.36	137.78
332.49	137.79	332.63	137.79	334.34	137.84	335.91	137.88	336.2	137.89
336.66	137.9	338.11	137.93	339.03	137.98	340.08	138.02	341.33	138.08
342.13	138.11	342.8	138.14	344	138.21	345.54	138.26	345.81	138.27
346.02	138.27	347.97	138.31	349.78	138.37	350.17	138.37	351.16	138.37
352.5	138.38	353.03	138.4	354.9	138.46	356.91	138.69	357.15	138.72
357.39	138.75	358.79	138.89	360.19	138.98	360.57	138.99	361.2	138.94
363.05	138.82	364.16	138.82	365.04	138.88	365.78	138.89	366.59	138.94
367.55	139.03	368.58	139.1	370.77	139.25	371.25	139.28	371.47	139.29
372.9	139.33	374.07	139.39	374.49	139.42	375	139.45	376.14	139.52
376.91	139.53	377.86	139.55	379.26	139.57	379.69	139.59	380.78	139.65
382.13	139.74	382.67	139.75	384.02	139.78	385.02	139.84	385.77	139.86
386.77	139.9	387.72	139.93	389.32	139.98	390	140.01	390.4	140
391.95	140.03	393.16	140.12	393.79	140.19	394.61	140.24	395.79	140.33
397.41	140.46	397.88	140.5	398.23	140.52	399.84	140.54	401.17	140.56
401.78	140.57	402.54	140.58	403.68	140.62	404.99	140.59	405.54	140.58
406.01	140.69	407.4	141	408.39	141	409.28	141.01	410.51	141.07
411.1	141.1	413.13	141.4	414.94	141.66	421.98	144.16	425.53	145.39
426.55	145.71	428.31	146.55	429.13	146.74	430.68	147.09	433.61	147.46
434.95	147.94	435.44	148.09						

Manning's n Values num= 3
 Sta n Val Sta n Val
 0 .04 103.18 .018 132.96 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 103.18 132.96 35.26 34.39 34.8 .3 .5
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 138.51 435.44 143.63 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 1800.703

INPUT

Description:
 Station Elevation Data num= 380
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 159.58 .61 159.43 .65 159.42 .66 159.41 .7 159.4
 .78 159.37 5.65 157.45 6.92 157.52 8.84 157.22 10.39 156.84
 12.87 156.69 13.23 156.6 14.89 155.99 16.8 155.92 17.07 155.87
 18.64 155.43 20.03 155.4 20.36 155.36 20.75 155.3 22.26 154.94
 25.42 153.73 25.93 153.54 26.15 153.41 26.49 153.42 26.83 153.38
 34.11 152.52 34.29 152.5 37.46 152.43 38.03 152.35 38.37 152.24

39.83	151.63	41.27	151.3	41.64	151.28	42.2	151.1	43.52	150.78
45.12	150.35	45.5	150.28	45.61	150.25	45.81	150.23	46.42	150.14
53.16	149.22	54.35	148.97	55.09	148.85	55.81	148.79	57.77	148.78
59.93	148.14	60.45	148.01	62.47	147.69	62.56	147.67	62.63	147.66
64.7	147.08	66.43	146.53	66.81	146.44	67.26	146.39	69.29	146.08
70.77	145.89	71.8	145.79	72.96	145.69	74.69	145.5	75.45	145.41
76.26	145.28	76.92	145.23	77.8	145.12	78.87	145.01	79.58	144.92
80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77</		

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 115.75 141.69 879.95 875.26 876.36 .3 .5
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 159.7 435.17 143.7 F

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 1350

INPUT
 Description:
 Distance from Upstream XS = 13
 Deck/Roadway Width = 831
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 142.5 500 142.5

Upstream Bridge Cross Section Data
 Station Elevation Data num= 380
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 159.58 .61 159.43 .65 159.42 .66 159.41 .7 159.4
 .78 159.37 5.65 157.45 6.92 157.52 8.84 157.22 10.39 156.84
 12.87 156.69 13.23 156.6 14.89 155.99 16.8 155.92 17.07 155.87
 18.64 155.43 20.03 155.4 20.36 155.36 20.75 155.3 22.26 154.94
 25.42 153.73 25.93 153.54 26.15 153.41 26.49 153.42 26.83 153.38
 34.11 152.52 34.29 152.5 37.46 152.43 38.03 152.35 38.37 152.24
 39.83 151.63 41.27 151.3 41.64 151.28 42.2 151.1 43.52 150.78
 45.12 150.35 45.5 150.28 45.61 150.25 45.81 150.23 46.42 150.14
 53.16 149.22 54.35 148.97 55.09 148.85 55.81 148.79 57.77 148.78
 59.93 148.14 60.45 148.01 62.47 147.69 62.56 147.67 62.63 147.66
 64.7 147.08 66.43 146.53 66.81 146.44 67.26 146.39 69.29 146.08
 70.77 145.89 71.8 145.79 72.96 145.69 74.69 145.5 75.45 145.41
 76.26 145.28 76.92 145.23 77.8 145.12 78.87 145.01 79.58 144.92
 80.52 144.82 81.97 144.69 83.08 144.59 83.98 144.52 84.78 144.44
 85.68 144.31 86.73 144.24 87.31 144.19 88.45 144.07 89.71 143.95
 90.98 143.93 91.73 143.97 92.6 143.82 93.52 143.68 94.31 143.74
 95.08 143.79 96.64 143.59 98.47 143.47 99.54 143.45 100.81 143.37
 101.41 143.29 101.92 143.22 102.93 143.02 104.98 142.75 105.48 142.7
 105.96 142.65 107.56 142.48 109.29 142.11 111.55 141.45 111.9 141.31
 112.22 141.18 113.52 140.73 113.56 140.72 113.64 140.72 115.75 140.65
 121.57 130.48 133.34 130.48 141.69 142.28 143.51 142.57 144.65 142.64
 146.07 142.9 146.97 142.94 147.74 143.05 147.97 143.08 149.94 143.27
 150.06 143.29 151.66 143.49 152.36 143.45 155.58 143.64 156.84 143.68
 159.7 143.7 165.96 143.63 168.07 143.51 169.6 143.48 171.57 143.21
 171.72 143.2 174.99 143.07 177.07 142.84 177.58 142.83 178.08 142.87
 179.68 143.05 181.42 143.15 181.77 143.17 182.16 143.17 183.66 143.21
 185 143.32 185.61 143.32 187.2 143.32 188.56 143.36 190.02 143.46
 191.59 143.31 191.82 143.27 192.04 143.26 194.14 143.32 195.41 143.25
 197.01 143.16 198.03 143.06 199.14 143.03 200.18 142.99 201.28 142.93
 202.69 142.86 202.83 142.85 202.96 142.85 204.49 142.76 206 142.7
 206.13 142.7 206.27 142.69 207.74 142.61 208.95 142.5 209.33 142.47
 209.77 142.47 210.93 142.44 211.86 142.41 212.55 142.35 213.45 142.32
 214.22 142.26 214.93 142.25 215.95 142.17 217.04 142.09 218.05 142.02
 220.66 141.8 220.69 141.8 220.7 141.8 222.51 141.72 224.26 141.57
 224.35 141.56 224.59 141.55 226.84 141.44 227.7 141.38 229.02 141.28
 230.73 141.17 231.07 141.15 231.33 141.13 233.41 141.01 234.96 140.91
 235.77 140.86 237.11 140.77 237.99 140.72 238.52 140.69 240.17 140.6
 241.85 140.5 242.43 140.46 243.59 140.38 244.91 140.3 245.59 140.24
 247.16 140.16 249.02 140.03 249.4 140.01 250.32 139.96 251.98 139.89
 252.67 139.85 254.16 139.8 256.12 139.67 256.14 139.67 256.15 139.67

257.74 139.57 259.03 139.48 259.34 139.47 259.74 139.46 261.25 139.37
 263.15 139.24 263.23 139.24 263.3 139.24 264.98 139.19 266.67 139.08
 266.76 139.08 266.85 139.07 268.61 139.01 270.32 138.95 270.47 138.94
 270.63 138.93 272.24 138.83 273.82 138.75 274.03 138.74 274.28 138.73
 275.9 138.62 277.3 138.53 277.68 138.51 277.97 138.5 279.28 138.49
 280.73 138.36 280.88 138.35 281.06 138.34 282.53 138.29 283.97 138.24
 284.22 138.24 284.46 138.23 286.14 138.16 288.05 138 288.13 137.99
 288.19 137.99 289.69 138 291.11 137.93 291.26 137.92 291.44 137.91
 293.44 137.84 295.21 137.8 295.8 137.78 297.65 137.68 298.39 137.63
 298.62 137.62 300.77 137.53 302.42 137.48 303.16 137.46 305.61 137.4
 305.66 137.4 305.68 137.4 308.37 137.33 309.55 137.3 310.93 137.24
 312.98 137.2 313.23 137.2 313.44 137.2 314.92 137.16 316.5 137.12
 316.61 137.12 316.74 137.12 318.22 137.1 319.65 137.12 319.81 137.12
 319.98 137.11 321.58 137.09 322.91 137.1 323.36 137.1 323.91 137.11
 325.26 137.13 327.16 137.15 327.18 137.15 327.19 137.15 329.02 137.12
 330.76 137.14 330.85 137.14 330.95 137.14 332.67 137.18 334.15 137.21
 334.49 137.22 334.84 137.23 336.46 137.31 338 137.39 338.36 137.42
 338.8 137.43 340.1 137.46 341.17 137.49 341.97 137.53 342.88 137.53
 344.05 137.55 345.1 137.61 345.94 137.66 346.89 137.7 347.58 137.72
 348.16 137.76 349.29 137.81 350.36 137.84 351.08 137.84 351.86 137.88
 352.73 137.91 353.55 137.98 354.3 138.02 355.11 138.03 356.27 138.04
 358.14 138.1 358.68 138.11 359.03 138.12 360.3 138.16 361.43 138.17
 362.15 138.19 364.03 138.26 365.89 138.35 366.58 138.38 368.97 138.47
 369.12 138.48 369.16 138.48 370.74 138.49 371.88 138.54 372.34 138.58
 372.96 138.61 374.38 138.68 376.04 138.75 376.49 138.77 376.84 138.79
 378.14 138.84 379.77 138.92 379.79 138.92 379.82 138.92 381.39 138.96
 382.82 139.05 383.01 139.06 383.18 139.06 384.88 139.08 386.76 139.25
 388.74 139.32 389.88 139.37 390.72 139.39 391.59 139.43 392.65 139.46
 393.7 139.51 394.53 139.55 395.84 139.6 396.32 139.62 396.61 139.63
 398.38 139.7 400.31 139.85 400.48 139.86 400.63 139.87 402.24 139.98
 403.68 139.99 404.05 140 404.53 140.01 406.3 140.07 407.69 140.11
 408.55 140.13 410.78 140.16 410.8 140.16 410.84 140.17 413.27 140.42
 414.91 140.58 415.4 140.59 415.9 140.6 416.97 140.63 417.98 140.67
 418.86 140.7 420.17 140.76 421.41 140.8 423.41 141.82 424.06 142.13
 425.1 142.48 425.51 142.48 428.46 142.29 429.62 142.58 429.72 142.62
 432.19 143.71 433.07 144.12 434.24 144.71 435 145.04 435.17 145.11

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Coeff Contr. Expan.
 115.75 141.69 879.95 875.26 876.36 .3 .5
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 159.7 435.17 143.7 F

Downstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 134 500 134

Downstream Bridge Cross Section Data
 Station Elevation Data num= 84
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 138.61 2.44 138.15 3.86 137.88 7.02 136.98 7.38 136.91
 7.61 136.86 9.26 136.5 9.87 136.5 12.08 135.7 13.13 135.36
 17.35 135.02 21.27 131.63 23.99 129.82 24.87 129.68 25.48 129.42
 29 127.93 31.62 127.55 31.91 127.48 33.76 127.12 44.6 124.22
 55.54 118.97 56.35 118.98 58.7 118.67 60.22 118.52 60.6 118.56
 61.51 118.67 63.32 118.81 65.7 119.48 66.44 120.12 70.02 122.58
 71.76 123.4 73.41 124.63 74.8 125.29 75.53 125.66 76.64 126.37
 77.43 126.84 78.68 127.58 79.58 127.98 81.31 128.69 81.99 129.18
 83.87 130.51 84.97 131.25 85.81 131.71 86.13 131.92 86.97 132.06
 88.22 132.18 90.14 132.66 92.55 132.72 93.89 132.41 94.51 132.46
 95.44 132.59 96.8 132.58 98.64 132.51 99.41 132.52 101.24 132.6
 101.53 132.59 103.28 132.35 104.13 132.26 104.62 132.23 106.47 132.2
 109.23 132.15 110.36 131.99 111.49 131.86 112.31 131.89 113.03 131.85
 121.46 132.13 121.55 132.14 121.63 132.13 121.75 132.15 125.11 132.06
 127.38 132.17 135.63 132.2 136.29 132.11 144.59 131.59 147.47 131.53

147.48 131.53 147.51 131.53 147.56 131.53 149.66 131.46 151.34 131.4
151.71 131.39 152.38 131.38 153.56 131.32 154.24 131.29

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .1 29 .049 78.68 .1

Bank Sta: Left Right Coeff Contr. Expan.
29 78.68 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 33.72 132 F
80.72 154.24 132 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 6 7
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef Exit Loss Coef
7 851 .018 .018 0 .5 1

Number of Barrels = 2
Upstream Elevation = 130.4

Centerline Stations
Sta. Sta.
123.46 131.46
Downstream Elevation = 120
Centerline Stations
Sta. Sta.
56.22 64.22

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 925.4423

INPUT
Description:
Station Elevation Data num= 84
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 138.61 2.44 138.15 3.86 137.88 7.02 136.98 7.38 136.91
7.61 136.86 9.26 136.5 9.87 136.5 12.08 135.7 13.13 135.36
17.35 135.02 21.27 131.63 23.99 129.82 24.87 129.68 25.48 129.42
29 127.93 31.62 127.55 31.91 127.48 33.76 127.12 44.6 124.22
55.54 118.97 56.35 118.98 58.7 118.67 60.22 118.52 60.6 118.56
61.51 118.67 63.32 118.81 65.7 119.48 66.44 120.12 70.02 122.58
71.76 123.4 73.41 124.63 74.8 125.29 75.53 125.66 76.64 126.37
77.43 126.84 78.68 127.58 79.58 127.98 81.31 128.69 81.99 129.18
83.87 130.51 84.97 131.25 85.81 131.71 86.13 131.92 86.97 132.06
88.22 132.18 90.14 132.66 92.55 132.72 93.89 132.41 94.51 132.46
95.44 132.59 96.8 132.58 98.64 132.51 99.41 132.52 101.24 132.6
101.53 132.59 103.28 132.35 104.13 132.26 104.62 132.23 106.47 132.2
109.23 132.15 110.36 131.99 111.49 131.86 112.31 131.89 113.03 131.85
121.46 132.13 121.55 132.14 121.63 132.13 121.75 132.15 125.11 132.06
127.38 132.17 135.63 132.2 136.29 132.11 144.59 131.59 147.47 131.53
147.48 131.53 147.51 131.53 147.56 131.53 149.66 131.46 151.34 131.4
151.71 131.39 152.38 131.38 153.56 131.32 154.24 131.29

Manning's n Values num= 3

Sta n Val Sta n Val Sta n Val
0 .1 29 .049 78.68 .1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
29 78.68 160.4 127.63 131.93 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 33.72 132 F
80.72 154.24 132 F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 797.816

INPUT
Description:
Station Elevation Data num= 192
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 170.94 .89 171.07 .94 171.07 1.07 171.08 2.08 171.09
3.12 171.13 4 171.14 4.86 171.16 5.92 171.12 6.8 171.12
7.06 171.13 8.8 171.04 10.72 170.86 10.85 170.85 10.97 170.84
11.16 170.83 12.1 170.79 12.68 170.74 13.57 170.58 14.88 170.37
15.78 170.36 16.59 170.54 16.98 170.51 18.8 170.21 20.75 169.7
21.07 169.54 21.8 169.41 23.42 169.22 26.46 167.76 26.47 167.75
26.48 167.74 26.5 167.74 28.58 166.61 29.42 166.49 30.25 166.38
30.43 166.33 31.38 165.86 31.39 165.85 33.85 164.53 35.21 163.72
35.6 163.5 36.2 163.19 36.68 162.92 37.39 162.51 40.25 161
41.37 160.38 41.38 160.38 43.3 159.21 45.17 158.23 45.29 158.17
45.42 158.09 45.67 157.98 46.57 157.5 47.08 157.35 47.63 156.99
49.19 156.19 50.69 154.86 51.25 154.4 51.81 154.03 53.27 153.14
55.23 151.85 55.67 151.59 56.02 151.37 57.09 150.75 57.18 150.69
59.35 149.87 61.29 149.4 61.52 149.32 62.51 148.93 62.82 148.78
63.08 148.6 65.08 147.28 66.34 146.42 66.46 146.36 66.61 146.29
67.55 145.78 67.7 145.72 69.28 145.21 70.7 144.73 71.26 144.48
71.93 144.21 72.87 143.82 73.14 143.69 75.71 142.37 77.43 141.25
77.68 141.14 78.33 140.96 80.08 140.12 80.98 139.63 83.57 138.43
86.06 137.45 86.95 137.3 88.86 136.34 89.17 136.2 90.11 136.29
90.9 136.29 91.23 136.27 92.81 136.12 94.51 135.05 96.5 134.22
97.39 133.78 99.75 132.91 101.22 132.09 101.3 132.05 102.58 131.63
102.8 131.55 103.07 131.37 105.53 130.01 121.13 128.7 137.63 117.7
159.63 117.7 176.13 128.7 191.2 130.01 195.15 131.07 197.73 131.34
199.36 131.52 200.14 131.61 200.8 131.65 201.56 131.72 201.97 131.76
202.33 131.8 206.99 132.37 207.08 132.37 208.81 131.97 209.47 131.96
210.07 131.9 221.62 131.36 223.87 131.24 223.95 131.23 224.1 131.22
224.56 131.18 226.21 131.1 227.72 130.93 228.17 130.93 229.08 131
230.62 130.96 233.17 130.84 233.51 130.84 234.61 130.85 236.36 130.83
238.74 130.86 239.3 130.87 239.91 130.84 240.13 130.82 242.07 130.76
244.25 130.78 244.37 130.79 245.52 130.71 245.67 130.7 245.68 130.7
248.05 130.63 249.92 130.58 250.23 130.57 251.4 130.53 251.87 130.49
252.35 130.46 253.92 130.37 255.41 130.31 255.84 130.29 256.87 130.31
257.76 130.32 258.66 130.3 259.86 130.29 261.01 130.24 262.06 130.24
262.55 130.24 265.49 130.11 265.96 130.07 266.24 130.05 266.7 130.07
268.72 130.03 278.74 129.94 279.27 129.98 279.98 129.97 281.74 129.88
282.89 129.81 283.35 129.79 284.61 129.77 284.82 129.76 287.17 129.64
288.94 129.67 289.51 129.69 290.44 129.68 291.61 129.64 293.36 129.66
294.05 129.66 294.49 129.68 295.84 129.65 296.14 129.64 296.17 129.64
296.21 129.64 298.82 129.63

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .1 105.53 .03 199.36 .1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
105.53 199.36 152.73 145.59 144.95 .1 .3
Blocked Obstructions num= 1
Sta L Sta R Elev
291.9 298.82 129.6411

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach

RS: 652.2307

INPUT

Description:

Station		Elevation		Data		num=		276	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.72	.41	219.63	1.68	219.23	2.78	218.73	3.71	218.22
4.76	217.8	5.75	217.5	5.91	217.44	6.2	217.36	7.69	217.04
9.87	216.57	10.28	216.48	11.03	216.34	11.4	216.3	13.36	216.02
15.67	215.74	15.94	215.7	16.86	215.55	17.44	215.41	18.67	215.14
20.49	214.73	21.32	214.5	22.13	214.16	22.44	214.03	24.13	213.13
26.05	212.3	26.37	212.15	27.1	212.01	27.83	211.92	28.24	211.8
28.65	211.64	30.37	210.85	31.91	210.21	32.92	209.28	33.24	209.09
34.98	207.62	37.33	206.64	37.74	206.4	38.53	206.05	40.08	205.05
42.82	203.56	42.85	203.54	43.04	203.33	43.89	202.32	44.76	201.48
47.85	198.49	48.03	198.29	48.17	198.2	49.12	197.79	49.35	197.69
49.39	197.67	49.43	197.65	51.67	196.53	53.58	195.4	53.8	195.29
54.87	194.7	55.77	194.09	56.64	193.55	57.87	192.79	59.11	192
59.9	191.43	60.35	191.17	63.12	189.72	64.56	188.76	65.42	188.22
65.79	187.95	66.39	187.57	69.09	186.32	69.83	185.98	69.9	185.94
69.99	185.87	70.96	185.4	71.26	185.31	73.66	184.61	75.38	184.12
75.93	183.97	76.68	183.54	77.83	182.79	80.48	181.85	80.77	181.73
80.89	181.7	80.94	181.67	82.15	180.91	83.34	180.69	87.29	178.72
88.48	178.14	88.97	177.93	90.44	176.85	91.11	176.46	91.69	176.09
92.51	175.79	92.98	175.59	93.31	175.41	93.47	175.35	97.15	173.66
97.3	173.63	98.41	172.61	99.47	171.56	101.99	169.99	102.35	169.73
102.5	169.63	103.62	168.83	103.93	168.66	105.9	167.45	108.01	166.23
108.23	166.09	109.37	165.28	109.64	165.07	113.47	161.59	113.73	161.42
114.06	161.16	114.8	160.5	115.95	159.53	117.19	158.58	118.09	157.88
118.91	157.68	120.19	156.96	120.33	156.86	122.39	155.49	124.25	153.43
124.38	153.28	124.53	153.17	124.71	153.07	125.9	152.41	127.53	151.64
128.74	151.17	131	150.94	131.39	150.86	131.53	150.82	132.63	150.07
132.86	149.85	136.29	147.13	141.51	143.03	142.54	142.32	146.91	139.78
147.11	139.64	147.22	139.54	147.93	138.36	151.45	136.06	154.03	134.16
156.48	132.27	157.29	131.81	158.79	130.72	173.84	127.26	190.34	116.26
212.34	116.26	228.84	131.81	228.84	130.72	258.01	131.13	258.47	131.21
259.91	131.53	261.44	131.81	261.96	131.92	262.43	131.97	263.61	132.06
264.16	132.1	266.37	132.15	268.17	132.13	268.95	132.08	269.82	132.03
270.79	131.92	271.81	131.83	272.76	131.68	273.66	131.7	274.17	131.69
275.96	131.62	277.29	131.49	278.61	131.47	280.35	131.32	280.88	131.2
281.84	131.01	283.13	130.95	283.98	130.93	284.59	130.87	286.02	130.77
286.26	130.74	286.36	130.74	286.46	130.73	290.03	130.53	290.17	130.52
291.45	130.42	291.77	130.4	291.8	130.4	294.76	130.26	295.32	130.24
295.91	130.22	297.01	130.18	298.02	130.12	300.63	130.04	300.75	130.03
301.27	129.98	302.07	129.9	302.26	129.9	305.48	129.78	305.93	129.73
307.13	129.59	307.61	129.63	309.07	129.65	311.17	129.49	311.24	129.49
311.84	129.46	312.7	129.43	312.8	129.41	315.36	129.18	316.4	129.12
317.39	129.06	317.98	129.06	319.16	129.02	320.55	128.94	321.07	128.91
321.51	128.87	323.03	128.78	323.24	128.77	325.62	128.67	326.8	128.64
327.75	128.6	328.4	128.58	330.28	128.68	331.93	128.6	333.17	128.54
333.69	128.53	336.06	128.44	337.26	128.42	338.18	128.38	339.01	128.36
340.49	128.33	342.6	128.22	342.97	128.22	344.21	128.16	344.29	128.16
344.31	128.16	344.44	128.16	347.99	128.33	348.84	128.3	349.99	128.28
351.11	128.22	353.45	128.14	353.82	128.12	355.27	127.99	355.81	127.95
356.7	127.89	358.1	127.79	358.93	127.72	360.47	127.63	360.76	127.63
362.76	127.55	364.38	127.46	365.2	127.43	366.24	127.39	367.66	127.31
369.71	127.18	369.78	127.17	369.83	127.17	371.09	127.16	371.34	127.16
374.93	127.13	375.97	127.12	380.93	127.11	413.75	127.2	413.78	127.2
413.8	127.2	413.82	127.2	413.87	127.2	415.3	127.11	415.69	127.08
417.63	126.97	419.25	126.94	419.92	126.92	421.27	126.85	421.92	126.82
423.38	126.8	424.38	126.79	424.82	126.78	426.39	126.66	426.73	126.65
428.11	126.56								

Manning's n Values

num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	158.79	.03	258.01	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
158.79 258.01 123.04 138.31 136.74 .1 .3
Blocked Obstructions num= 1
Sta L Sta R Elev
347.73 428.11128.3192

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach

RS: 513.9224

INPUT

Description:

Station		Elevation		Data		num=		246	
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.83	1.59	219.13	17.61	212.09	23.51	210.08	23.63	210.08
24.12	209.8	25.5	209.15	27	209.05	27.69	208.99	28.29	208.92
29.39	208.81	29.72	208.85	31.4	208.79	32.97	208.53	33.4	208.43
33.85	208.37	35.32	208.21	35.35	208.21	35.36	208.21	35.46	208.19
38.88	207.55	39.45	207.31	40.15	206.9	40.9	206.48	41.46	206.14
42.9	205.11	44.34	204.06	44.9	203.75	45.76	203.25	48.13	201.52
49.29	200.48	50.61	199.55	51.07	199.16	52.15	198.26	52.46	198.05
52.86	197.79	54.76	196.63	56.19	195.61	56.67	195.18	57.73	194.54
58.31	194.16	58.97	193.67	60.55	192.32	61.03	192.04	62.49	191.05
63.63	190.32	66.65	188.52	67.6	188.06	68.78	187.36	69.2	187.15
70.85	186.33	72.41	185.56	72.82	185.34	73.25	185.12	74.04	184.69
74.92	184.21	75.73	183.67	79	181.47	79.01	181.46	80.14	180.86
80.66	180.57	82.36	179.81	84.73	178.82	85.01	178.72	86.03	178.29
86.31	178.18	86.39	178.14	88.93	176.95	90.48	176.25	91.02	175.97
92.08	175.49	92.58	175.2	93.29	174.77	94.91	173.64	96.06	172.93
96.91	172.39	97.76	172.12	99.02	171.49	100.65	170.55	101.36	170.05
101.93	169.69	103.29	169.18	103.55	169.08	105.23	168.06	106.84	167.08
107.26	166.86	110.6	164.84	111.12	164.44	113.56	162.94	119.23	159.48
120.33	158.98	120.64	158.83	120.72	158.77	125.48	157.13	129.17	155.84
129.42	155.71	129.81	155.55	130.05	155.36	130.45	155.05	135.67	150.81
136.76	149.72	138.62	149.06	143.15	144.73	144.78	142.81	147.08	141.18
147.1	141.17	149.3	140.05	149.6	139.92	151.89	138.05	153.48	136.74
154.19	136.3	154.52	136.15	156.97	134.37	158.34	133.07	159.51	132.3
160.17	131.77	162.12	129.81	164.41	128.52	165.82	127.68	183.43	125.61
199.93	114.61	221.93	114.61	238.43	125.61	255.85	127.68	256.03	127.71
256.47	127.79	258.27	128.15	258.47	128.19	259.32	128.23	260.21	128.29
260.41	128.29	262.63	128.25	264.31	128.18	264.93	128.16	266.52	128.1
266.99	128.08	267.59	128.06	269.13	128.02	270.34	127.95	271.27	127.87
272.49	127.79	273.44	127.75	274.55	127.73	275.54	127.71	276.36	127.67
277.99	127.57	278.51	127.55	280.28	127.51	282.4	127.46	282.47	127.46
284.53	127.46	285.17	127.46	285.86	127.45	287.14	127.43	288.31	127.4
288.87	127.39	289.9	127.37	290.29	127.37	290.5	127.36	293.52	127.31
294.36	127.31	295.45	127.3	296.49	127.27	297.36	127.26	300.16	127.26
300.23	127.26	300.46	127.25	302.02	127.19	302.48	127.18	304.74	127.07
306.3	127.02	307.22	127.01	308.55	126.92	309.27	126.87	310.66	126.82
311.72	126.78	312.27	126.76	313.76	126.74	314.49	126.72	315.91	126.66
317.89	126.56	318.11	126.55	318.27	126.54	320.49	126.46	320.65	126.45
322.51	126.36	324.31	126.35	324.42	126.38	326.58	126.68	327.74	126.44
331.73	126.34	337.07	126.29	344.61	126.25	346.26	126.22	357.1	126.27
360.16	126.41	360.23	126.41	360.24	126.41	360.29	126.41	361.2	126.4
363.35	126.33	367.07	126.25	367.67	126.23	367.96	126.21	370.92	126.28
371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22	376.43	126.2
382.93	126.17	383.46	126.16	385.18	126.08	387.41	126.04	387.95	126.04
388.35	126.04	389.97	126	390.56	125.99	391.9	125.99	393.55	125.97
393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97	396.2	125.97
396.39	125.97	398.42	125.96	399.37	125.98	400.87	125.93	401.59	125.91
403.69	125.85	404.82	125.85	406.48	125.82	406			

0 .08 165.82 .03 256.03 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
165.82 256.03 90.74 99.27 101.73 .1 .3

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
260.21 418.93 128.29 F
Blocked Obstructions num= 2
Sta L Sta R Elev Sta L Sta R Elev
0 21.49219.8281 328.81 368.34126.4151

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 414.6495

INPUT

Description:

Station Elevation Data num= 275

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	217.52	1.65	217.02	8.79	215.09	11.69	214.35	17.38	212.81		
18.77	212.45	23.58	211.22	25.39	210.74	25.75	210.71	27.81	210.48		
29.86	210.9	30.39	211.01	31.17	211.04	31.56	211.04	33.15	211.04		
35.09	211.04	35.48	211.04	35.79	211.04	36.97	211.07	37.89	211.03		
39.01	211.07	43.34	209.74	43.5	209.73	43.74	209.69	44.11	209.5		
45.74	208.76	47.56	208.22	47.65	208.18	47.75	208.12	49.35	207.15		
49.58	207	51.4	205.99	53.14	204.83	53.43	204.65	53.72	204.49		
55.27	203.6	55.78	203.29	57.81	202.29	69.37	197.12	73.14	196.23		
76.27	195.13	78.99	193.99	81.64	192.89	83.11	192.48	83.69	192.34		
84.78	192.08	85.69	191.92	86.49	191.69	89.77	190.24	90.08	190.13		
91.74	189.69	94.76	188.93	96.22	188.33	97.52	187.7	98.71	187.05		
99.43	186.63	100.61	185.85	103.46	184.34	105.48	183.26	108.42	181.71		
108.91	181.4	109.1	181.21	110.71	180.16	112.53	179.42	114.16	178.69		
114.94	178.3	115.87	177.69	116.97	177.07	117.97	176.46	118.8	176.04		
119.65	175.68	120.65	175.3	122.64	174.83	125.29	174.1	126.32	173.47		
128.88	171.96	130.83	170.63	131.1	170.51	131.82	170.12	135.95	167.91		
136.43	167.67	136.86	167.46	139.23	166.47	141.81	164.9	141.94	164.88		
143.67	164.53	144.32	164	149.43	160.13	150.23	159.72	151.3	159.37		
152.46	159.04	153.32	158.46	154.15	157.94	155.28	156.94	155.73	156.54		
156.33	155.9	157.92	154.34	160.5	152.68	161.06	152.34	162.23	151.38		
164.97	149.05	165.89	148.21	167.17	147.13	168.67	145.87	169.9	144.89		
170.9	144.11	171.97	143.39	172.94	142.69	174.07	141.97	175.3	141.01		
176.05	140.4	176.75	139.82	178.37	138.49	178.89	138.15	180.4	137.18		
181.93	136.37	182.33	136.13	182.73	135.88	183.66	135.29	184.78	134.69		
186.1	133.7	188.65	131.65	189.16	131.31	190.48	130.44	192.23	128.97		
193.37	128.18	195.35	126.84	196.62	126.39	197.31	125.91	197.81	125.69		
199.96	124.14	241	113.05	263	113.05	279.5	124.05	285.47	124.14		
285.58	124.19	288.65	125.14	289.19	125.23	291.31	125.5	291.55	125.52		
293.48	125.59	294.26	125.62	294.67	125.65	296.4	125.68	297.61	125.74		
298.07	125.71	300.08	125.53	300.85	125.45	301.19	125.44	302.7	125.32		
303.51	125.27	304.81	125.26	307.13	125.22	307.15	125.22	307.38	125.21		
309.35	125.15	309.54	125.14	311.5	125.04	313.13	124.93	313.67	124.89		
315.55	124.81	315.99	124.8	316.61	124.78	318.19	124.71	319.26	124.65		
320.6	124.54	321.7	124.48	322.83	124.43	324.07	124.39	324.79	124.35		
325.44	124.3	327.15	124.17	327.81	124.15	329.22	124.08	330.6	123.94		
331.07	123.89	331.56	123.87	334.06	123.74	334.15	123.74	335.94	123.84		
337.64	123.89	337.78	123.9	337.93	123.9	338.48	123.89	340.44	123.87		
341.3	123.91	344.07	124	344.27	124.02	345.88	124.15	346.78	124.2		
348.19	124.24	350.51	124.22	350.85	124.2	351.53	124.21	352.58	124.24		
353.1	124.27	354.83	124.34	356.8	124.36	357.18	124.37	358.24	124.32		
359.1	124.3	359.41	124.3	361.35	124.33	363.13	124.34	363.63	124.35		
365.83	124.35	365.93	124.35	366.57	124.35	369	124.36	369.41	124.36		
371.44	124.39	372.05	124.39	373.53	124.36	375.27	124.34	375.49	124.34		
375.68	124.34	378.19	124.31	378.37	124.31	381.65	124.36	381.78	124.36		
381.92	124.36	384.51	124.37	384.57	124.37	386.3	124.34	387.96	124.4		
388.2	124.4	389.62	124.36	390.84	124.38	391.21	124.38	391.57	124.39		
393.01	124.39	394.46	124.38	394.76	124.37	395.24	124.35	396.55	124.33		
397.05	124.35	398.8	124.38	400.61	124.42	401.33	124.42	402.84	124.41		
403.13	124.41	403.27	124.41	405.85	124.44	406.86	124.42	408.02	124.43		

409.47	124.47	409.93	124.47	411	124.49	412.31	124.51	412.87	124.52
414.59	124.5	415.69	124.5	416.94	124.49	419.23	124.51	419.39	124.51
420.29	124.52	421.72	124.53	421.97	124.54	423.82	124.54	425.46	124.41
425.95	124.4	428.13	124.42	428.26	124.43	428.42	124.43	430.21	124.49
431.66	124.51	432.36	124.51	434.53	124.47	434.91	124.46	435.3	124.46
437.92	124.44	438.59	124.42	440.66	124.42	441.54	124.42	443.06	124.4

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .08 199.96 .03 293.48 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
199.96 293.48 119.54 107.41 104.94 .1 .3

Blocked Obstructions num= 1
Sta L Sta R Elev
0 18.39217.5225

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 307.2411

INPUT

Description:

Station Elevation Data num= 204

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.22	2.03	193.13	4.46	193.04	4.81	193.07	5.57	193		
6.11	192.96	6.36	192.95	8.09	192.95	10.09	192.84	10.19	192.84		
10.26	192.84	11.73	192.82	12.31	192.76	13.62	192.63	15.03	192.52		
15.67	192.49	16.26	192.45	17.47	192.36	18.24	192.25	20.15	192.01		
21.07	191.88	22.6	191.16	26.27	189.37	27.82	188.74	27.95	188.69		
29.85	188	30.04	187.95	30.49	187.84	32.67	187.29	33.03	187.22		
33.53	187.12	34.88	186.68	37.84	186.22	38.64	186.12	61.1	179.1		
63.06	178.37	63.97	178.09	65.08	177.56	66.8	176.57	67.2	176.41		
68.87	175.92	69.17	175.73	71.74	174.07	72.78	173.3	74.22	172.26		
74.86	171.91	74.95	171.85	76.93	170.74	78.55	170.1	79.75	169.68		
80.62	169.21	82.2	168.21	84.11	167.32	84.69	167.07	86.2	166.39		
87.41	165.87	89.76	164.66	89.77	164.65	89.8	164.64	91.19	163.92		
91.96	163.46	92.92	162.97	94.21	162.3	94.93	162	95.44	161.77		
96.51	161.32	97.54	160.77	98.14	160.44	98.91	160.03	100.18	159.33		
101.16	158.83	102.04	158.35	103.38	157.61	103.88	157.34	104.91	156.83		
106.25	156.15	106.9	155.82	108.15	155.19	109.01	154.76	110.85	153.84		
112.64	152.91	113.71	152.48	114.77	151.98	116.49	151.13	118.37	150.16		
119.33	149.59	120.52	148.97	121.27	148.59	124.07	147.22	124.54	146.98		
126.3	146.14	127.22	145.6	129.7	144.04	129.86	143.94	129.91	143.9		
130.06	143.79	132.01	142.46	132.68	142.03	134.07	141.2	135.06	140.62		
135.52	140.36	136.92	139.64	137.83	139.19	138.11	139.06	138.57	138.83		
140.31	137.97	141.35	137.6	142.11	137.31	143.52	137.06	143.55	137.06		
144.17	136.86	148.5	135.48	148.95	135.33	149.56	135.03	152.61	134.07		
154.55	133.23	154.85	133.13	155.35	132.85	156.36	132.29	160.85	129.63		
161.49	129.51	165.23	127.65	166.16	126.98	169.11	123.14	200.96	111.93		
222.96	111.93	239.46	122.93	249.26	123.14	249.71	123.35	252.48	123.88		
254.2	124.35	254.82	124.4	256.02	124.5	257.04	124.55	258.96	124.64		
259.15	124.65	259.31	124.66	259.42	124.64	261.45	124.67	261.89	124.68		
261.91	124.68	265.12	124.42	265.95	124.36	267.55	124.28	269.18	124.22		
270.7	124.16	271.92	124.21	273.11	124.04	274.66	123.97	276.36	123.9		
277.17	123.88	278.58	123.78	278.81	123.77	278.94	123.76	281.24	123.68		
282.05	123.63	283.17	123.46	284.51	123.37	285	123.35	286.86	123.26		
287.58	123.23	287.77	123.22	289.58	123.09	290.31	123.09	291.85	123.02		
293.53	122.91	294.13	122.89	296.05	122.76	296.12	122.76	296.28	122.75		
298.36	122.67	299.25	122.6	300.63	122.53	301.81	122.55	302.88	122.59		
305.01	122.8	305.09	122.8	307.52	122.87	307.66	122.87	307.95	122.88		
309.72	123.01	310.61	123.03	312.27	123.12	313.19	123.18	314.54	123.27		
316.41	123.38	316.7	123.39	318.91	123.46	319.46	123.5	320.17	123.54		
321.18	123.59	321.97	123.74	322.8	123.81	324.1	123.75	324.4	123.72		
324.59	123.72	326.03	123.73	326.61	123.78	329.27	12				

Sta n Val Sta n Val Sta n Val
0 .08 169.11 .03 254.82 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
169.11 254.82 120.64 112.11 114 .1 .3

Blocked Obstructions num= 2
Sta L Sta R Elev Sta L Sta R Elev
296.44 408.21 123.734 0 26.17193.2154

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 195.1298

INPUT

Description:
Station Elevation Data num= 213
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 177.78 1.05 177.74 1.25 177.67 5.17 175.92 7.02 175.47
9.51 174.96 10.76 174.41 11.26 174.23 13.24 173.96 14.26 173.82
16.15 173.44 16.59 173.36 16.83 173.3 18.17 172.99 19.21 172.59
20.92 172.41 21.94 172.44 22.5 172.27 22.91 172.17 25.71 172.14
28.45 171.73 30.39 170.94 47.65 163.96 59.36 160.59 60 160.6
61.69 159.11 62.82 158.9 65.08 157.69 66.07 157.1 67.28 157.14
68.05 157.33 68.69 156.72 70.35 155.57 70.62 155.45 72.69 154.12
74.16 152.32 75.43 151.36 77.4 149.61 78.38 148.72 80.2 146.74
81.95 144.67 83.97 142.51 84.33 142.25 84.67 142.22 85.77 141.74
88.33 140.97 91.01 140.13 92.99 140.17 94.18 140.11 95.38 140.14
96.42 140.2 97.35 140.21 100.48 140.26 101.07 140.01 103.17 139.49
104.38 139.46 104.47 139.46 104.95 139.34 106.89 138.55 108.71 137.74
110.12 137 110.16 136.98 112.76 135.42 114.27 134.11 116.01 132.19
117.08 130.87 118.49 128.4 118.54 128.34 120.48 125.86 121.61 124.85
122.29 124.24 123.36 123.65 123.83 123.38 124.13 123.13 125.77 121.78
127.32 121.35 127.38 121.32 135.23 121.32 151.13 110.72 166.13 110.72
182.03 121.32 188.55 121.32 189 121.48 194.04 122.27 194.36 122.31
194.99 122.37 198.48 122.37 199.87 122.39 201.69 122.55 202.38 122.67
202.92 122.61 204.46 122.4 204.8 122.36 205.66 122.22 207.68 122.06
208.56 122.04 210.6 121.95 211.15 121.94 213.45 121.89 214.12 121.87
215.33 121.89 216.76 121.92 217 121.91 218.21 121.91 219.54 121.9
219.81 121.9 221.23 121.89 222.46 121.9 222.99 121.9 225.26 121.86
225.36 121.86 225.38 121.86 227.09 121.88 228.07 121.86 229.07 121.83
231.15 121.87 231.33 121.87 231.71 121.88 233.13 121.91 233.77 121.9
235.13 121.91 236.68 121.93 237.13 121.91 237.8 121.92 238.82 121.92
239.5 121.94 240.71 121.96 240.94 121.95 242.1 121.95 243.47 122
244.25 122.03 244.93 122.03 246.56 122.07 248.18 122.06 248.72 122.07
249.25 122.07 251.05 122.14 252.53 122.13 253.37 122.13 254.22 122.13
255.62 122.14 256.6 122.15 257.78 122.11 258.93 122.08 260.12 122.05
261.59 122.02 262.38 122.01 263.09 121.98 264.68 121.92 266.5 121.85
266.86 121.84 267.21 121.82 269.24 121.76 271.12 121.66 271.42 121.65
271.77 121.64 273.83 121.59 275.36 121.68 275.91 121.7 276.45 121.75
278.22 121.87 280.17 121.88 281.9 121.94 285.76 122.09 286.04 122.08
311.85 123.59 314.02 123.54 315.36 123.55 316.6 123.5 319.96 123.57
343.22 123.55 349.7 123.74 354.54 123.65 358.68 123.64 386.17 123.86
391.37 123.92 395.86 123.92 396.64 123.92 410.21 123.8 412.27 123.79
412.64 123.79 414.14 123.8 417.87 123.59 418.81 123.55 419.3 123.51
421.26 123.43 421.91 123.41 423.55 123.33 424.41 123.3 426.04 123.34
427.03 123.33 428.27 123.21 429.51 123.22 430.68 123.21 432.2 123.2
432.96 123.19 433.67 123.18 435.45 123.17 437.37 123.14 437.69 123.14
438.05 123.13 439.98 123.16 442.02 123.19 442.37 123.19 442.93 123.18
444.8 123.12 445.79 123.1 447.12 123.09 448.56 123.1 449.54 123.11
450.45 123.12 451.8 123.12 453 123.11

Manning's n Values num= 4
Sta n Val Sta n Val Sta n Val
0 .045 120.48 .08 125.77 .03 188.55 .08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
125.77 188.55 91.95 53.62 23.5 .1 .3

Blocked Obstructions num= 2

Sta L Sta R Elev Sta L Sta R Elev
281.87 418.71123.5501 20.51 74.01172.4521

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 141.507

INPUT

Description:
Station Elevation Data num= 223
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 162.56 .44 162.52 1.68 162.4 2.54 162.32 3.94 162.19
4.57 162.11 6.74 161.88 6.83 161.87 6.85 161.87 8.82 161.66
9.08 161.63 10.86 161.43 11.89 161.33 13.08 161.21 14.2 161.07
16.55 160.76 17.01 160.7 17.59 160.64 19.29 160.44 21.3 160.22
22 160.15 22.31 160.14 24.34 160.02 25.89 159.97 27.18 159.95
29.05 159.87 29.5 159.84 29.74 159.83 32.24 159.73 33.18 159.72
34.43 159.67 36.59 159.29 37.22 159.23 38.62 158.77 39.52 158.56
40.9 157.95 42.24 157.36 43.15 156.85 44.44 156.24 45.11 155.9
47.18 154.78 47.72 154.49 49.08 153.7 51.59 152.17 52.1 151.89
52.69 151.51 54.27 150.75 55.59 149.81 56.93 149.03 57.76 148.53
59.17 147.74 60.35 147.13 61.95 146.17 63.02 145.41 64.09 144.76
66.7 143.23 66.76 143.2 66.88 143.14 69.05 141.99 70.11 141.41
71.74 140.54 73.55 139.66 89.72 128.88 89.86 128.75 90.69 127.98
90.78 127.91 92.59 126.65 92.97 126.38 94.59 125.35 95.41 124.71
96.69 123.69 97.56 122.92 98.72 121.97 100.04 120.91 100.14 120.85
101.76 120.85 102.36 120.45 118.86 109.45 133.86 109.45 150.36 120.45
150.96 120.85 162.69 120.85 164.55 121.06 164.58 121.06 167.13 121.27
167.54 121.33 169.41 120.92 170.66 120.85 172.69 120.74 175.82 120.96
177.21 121 179.72 120.72 180.34 120.71 181 120.73 182.79 121.03
186.21 120.99 188.6 120.98 190.21 120.92 190.92 120.96 192.65 120.94
193.15 120.94 193.37 120.93 194.06 120.95 195.2 120.99 195.56 121
196.91 121.01 197.91 121.02 198.68 121.06 200.23 121.14 201.81 121.17
202.35 121.17 202.45 121.18 204.53 121.14 204.66 121.15 206.65 121.21
206.78 121.21 207.49 121.24 209.12 121.29 209.41 121.3 211.21 121.3
211.55 121.31 213.44 121.4 214.89 121.41 215.57 121.43 216.53 121.43
217.91 121.45 219.01 121.43 219.99 121.45 221.4 121.5 222.22 121.54
222.67 121.55 224.43 121.56 225.6 121.6 226.7 121.62 227.56 121.65
228.87 121.65 230.04 121.66 231.16 121.65 232.29 121.63 233.32 121.61
234.35 121.63 235.63 121.62 236.69 121.65 237.99 121.68 239.28 121.66
240.21 121.65 240.99 121.64 242.4 121.6 244.05 121.62 244.71 121.61
246.66 121.52 247 121.51 247.3 121.51 249.28 121.49 250.93 121.41
251.48 121.39 251.59 121.38 252.64 121.33 253.02 121.33 254.73 121.41
261.53 122.24 261.99 122.22 262.8 122.2 264.01 122.22 264.41 122.22
273.54 122.57 274.97 122.54 293.24 123.61 296.9 123.53 299.16 123.54
301.25 123.47 306.93 123.58 345.95 123.54 356.75 123.86 364.82 123.72
366.47 123.71 387.79 123.89 388.68 123.84 389.53 123.85 391.84 123.71
392.53 123.74 393.55 123.74 398.46 123.7 399.12 123.66 401.27 123.71
401.46 123.69 401.6 123.68 403.93 123.44 405.91 123.33 406.48 123.32
408.25 123.25 410.41 123.1 410.69 123.08 412.93 122.93 412.95 122.93
412.98 122.93 415.34 122.85 415.56 122.85 417.65 122.81 419.8 122.82
420.09 122.84 420.4 122.84 422.37 122.88 424.47 122.97 424.64 122.97
424.9 122.97 427.07 122.92 428.58 122.9 429.47 122.89 431.01 122.88
431.83 122.87 432.59 122.88 434.22 122.88 435.9 122.84 436.51 122.82
437.35 122.8 438.9 122.77 440.93 122.71 441.33 122.7 441.93 122.69
443.68 122.66 444.88 122.71 445.88 122.76

Manning's n Values num= 4
Sta n Val Sta n Val Sta n Val
0 .045 89.72 .049 100.04 .03 170.66 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
100.04 170.66 118.19 76.21 43.65 .1 .3

Blocked Obstructions num= 1
Sta L Sta R Elev
259.86 396.96123.7144

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 65.30157

INPUT
 Description:
 Station Elevation Data num= 260

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	143.15	.48	143.11	1.45	143.03	3.44	142.9	3.82	142.88
4.93	142.76	6.1	142.62	6.3	142.6	6.76	142.52	8.73	142.21
10.61	142.1	11.15	142.05	12.25	141.95	13.51	141.82	14.37	141.74
16.03	141.57	18.1	141.33	18.37	141.3	18.57	141.27	20.84	141.05
20.98	141.03	22.09	140.89	23.02	140.77	23.14	140.76	23.55	140.72
25.64	140.52	26.32	140.46	28.04	140.33	28.86	140.29	30.54	140.21
31.8	140.16	32.87	140.13	34.61	140.06	35.2	140.03	37.45	139.93
37.58	139.92	39.73	139.78	40.04	139.76	41.34	139.7	42.38	139.66
42.61	139.64	44.39	139.53	44.7	139.51	44.74	139.51	44.86	139.52
47.09	139.88	49.09	139.95	49.47	139.95	50.05	140	51.8	140.09
52.89	139.95	54.09	139.73	56.11	139.68	56.38	139.67	56.58	139.66
58.79	139.6	60.01	139.46	60.42	139.42	61.13	139.27	66.96	135.39
68.15	134.33	69.14	133.49	70.46	132.48	71.51	131.89	72.79	131.21
74.26	130.26	75.06	129.7	75.74	129.23	77.39	128.04	79.6	126.82
79.67	126.77	79.71	126.74	86.38	121.89	86.45	121.83	87.29	121.83
90.28	119.84	106.78	108.84	121.78	108.84	138.28	119.84	141.26	121.83
152.07	121.83	153.38	122	154.36	122.09	155.93	122.16	156.62	122.17
158.49	122.19	158.99	122.25	161.08	122.29	161.34	122.16	163.44	122.15
163.62	122.15	164.32	121.84	165.86	121.17	167.98	121.18	168.6	121.21
169.77	121.63	170.52	121.67	171.19	121.61	174.02	121.43	175.04	121.36
176.56	121.21	177.34	121.12	179.35	120.83	179.56	120.81	179.79	120.84
180.3	120.74	181.86	120.75	182.71	120.74	184.01	120.72	185.02	120.7
186.21	120.68	187.73	120.71	188.43	120.71	189.14	120.69	190.76	120.61
191.58	120.61	192.88	120.6	193.72	120.61	195.06	120.61	196.07	120.56
197.25	120.5	198.12	120.47	199.45	120.44	200.3	120.44	201.74	120.39
202.59	120.38	203.92	120.34	204.73	120.29	206.11	120.24	207.68	120.25
208.34	120.26	209.02	120.25	210.64	120.38	212.47	120.39	212.81	120.4
213.14	120.4	214.99	120.43	216.01	120.47	216.25	120.48	217.28	120.51
218.82	120.56	219.47	120.57	220.61	120.62	221.72	120.68	223.19	120.73
223.98	120.76	224.73	120.79	226.2	120.83	227.74	120.91	228.45	120.95
230.84	121.02	230.86	121.02	230.88	121.02	233.01	121.03	234.94	121.12
235.3	121.15	236.98	121.26	237.9	121.58	239.89	121.97	240.36	121.96
242.26	122.51	243.89	122.96	244.39	123.03	245.37	123.35	246.67	123.34
248.44	123.33	248.96	123.33	249.43	123.32	251.28	123.3	253.23	123.4
253.48	123.41	253.75	123.43	255.68	123.49	257.62	123.56	257.9	123.55
257.98	123.56	260.1	123.5	263.82	123.39	269.35	123.47	271.16	123.47
272.6	123.53	276.29	123.44	279.78	123.64	286.38	123.5	290.45	123.53
294.21	123.39	304.38	123.6	357.88	123.54	365.95	123.54	366.58	123.38
366.99	123.51	367.89	123.59	367.9	123.59	367.91	123.59	370.28	123.69
371.03	123.66	372.71	123.62	373	123.59	375.08	123.53	376.33	123.48
377.46	123.36	379.59	123.32	379.89	123.27	380.69	123.28	382.36	123.11
383.72	123.03	384.66	123	386.96	122.96	387.08	122.96	387.19	122.96
389.41	122.96	391.44	122.95	391.9	122.95	392.29	122.95	394.19	122.9
396.29	122.83	396.6	122.81	396.88	122.8	398.94	122.83	400.66	122.79
401.34	122.77	402.15	122.76	403.72	122.71	404.87	122.7	406.06	122.67
407.17	122.67	408.38	122.63	410.07	122.67	410.75	122.66	411.3	122.65
413.13	122.56	415.37	122.57	415.46	122.57	415.55	122.57	417.69	122.51
419.25	122.51	420.19	122.51	421.9	122.47	422.49	122.45	422.76	122.44
424.92	122.37	427.25	122.45	427.27	122.45	427.3	122.45	429.63	122.54
431.66	122.62	431.95	122.63	432.21	122.63	434.45	122.72	436.38	122.72
436.74	122.72	437.15	122.74	439.1	122.76	440.74	122.76	441.43	122.75
442.14	122.77	443.94	122.84	444.8	122.85	446.2	122.86	447.56	122.81

Manning's n Values num= 5

Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.04	86.38	.049	106.78	.03	121.78	.049	152.07	.06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 86.38 152.07 86.42 60.71 46.3 .1 .3

Blocked Obstructions num= 1
 Sta L Sta R Elev

253.85 377.59123.4293

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 4.590075

INPUT
 Description:
 Station Elevation Data num= 323

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	.3	132.07	1.14	132.13	2.35	132.1	3.47	131.95
4.32	131.91	5.85	131.93	6.41	131.87	8.49	131.28	8.8	131.22
9.88	131.02	11.76	130.67	12.35	130.61	14.17	130.23	15.5	130.13
16.97	130.05	18.83	129.9	19.33	129.8	22.2	129.57	22.28	129.56
24.3	129.44	24.76	129.4	27.23	129.21	27.6	129.17	28.24	129.04
29.97	128.74	30.43	128.63	31.04	128.56	35.31	128.24	37.14	128.11
38.19	128.03	39.24	127.95	40.55	127.87	41.13	127.82	43.09	127.64
43.36	127.61	43.44	127.6	45.36	127.43	45.77	127.4	47.42	127.27
48.62	127.17	49.59	127.08	50.93	126.93	51.66	126.84	53.16	126.67
53.49	126.64	53.65	126.62	55.81	126.47	55.96	126.46	56.44	126.41
58.73	126.21	59.59	126.15	60.97	126.06	62.75	125.87	63.3	125.85
63.98	125.82	65.14	125.82	67.7	125.81	71.06	125.73	71.14	125.73
71.56	125.72	73.83	125.67	74.03	125.68	74.44	125.77	75.38	125.95
91.34	122.7	102.34	107.98	117.34	107.98	133.84	118.98	134.44	121.72
139.38	122.67	140.86	122.4	141.05	122.37	141.13	122.36	143.15	122.32
143.54	122.33	145.09	122.34	146.38	122.31	147.13	122.31	148.84	122.26
149.34	122.25	150.25	122.27	151.08	122.31	151.54	122.31	153.76	122.33
153.96	122.34	154.73	122.35	156.71	122.39	157.24	122.39	159.11	122.42
160.38	122.45	161.84	122.48	163.93	122.49	164.17	122.5	165.92	122.56
166.78	122.59	168.95	122.59	169.19	122.59	171.31	122.61	171.92	122.61
173.05	122.65	174.24	122.64	174.73	122.63	176.66	122.56	176.78	122.56
176.81	122.56	178.49	122.53	179.21	122.54	180.22	122.54	181.8	122.49
181.98	122.49	182.64	122.47	183.94	122.43	184.3	122.46	185.68	122.62
186.9	122.66	187.47	122.67	188.56	122.67	191.14	122.67	191.48	122.65
192.69	122.58	192.99	122.57	194.24	122.54	195.52	122.55	196.44	122.52
197.67	122.52	198.53	122.51	200.24	122.54	200.88	122.56	201.09	122.55
202.97	122.5	204.06	122.52	205.31	122.54	206.23	122.49	207.47	122.45
208.93	122.34	209.76	122.29	210.45	122.28	211.93	122.23	213.33	122.2
214.42	122.21	215.36	122.26	216.51	122.31	217.67	122.29	218.83	122.26
219.98	122.27	221.01	122.27	222.55	122.29	223.43	122.27	224.13	122.32
225.56	122.2	226.38	122.17	227.92	122.13	229.45	121.99	230.11	122.03
232.35	121.95	232.46	121.94	232.56	121.95	234.71	122.08	236.96	121.94
236.98	121.94	237	121.94	239.1	121.84	241.18	121.96	241.48	121.93
241.83	121.86	243.78	121.39	245.3	121.51	246.06	121.62	246.62	121.58
248.19	121.52	249.98	121.34	250.56	121.36	251.04	121.37	252.7	121.32
254.42	121.41	255.04	121.44	255.51	121.45	257.16	121.46	258.45	121.51
259.49	121.54	261.21	121.65	261.65	121.7	262.09	121.69	264.08	121.78
264.53	121.81	266.17	121.87	267.71	121.92	268.5	121.91	269.4	121.93
270.72	121.96	272.31	122.01	273.12	122.07	273.89	122.1	275.29	122.16
276.88	122.2	277.65	122.22	278.47	122.23	279.83	122.3	281.55	122.32
282.22	122.35	282.79	122.37	284.41	122.45	286.7	122.59	286.75	122.59
286.8	122.59	288.84	122.64	290.51	122.7	291.22	122.72	292.04	122.73
293.45	122.75	294.53	122.76	295.76	122.84	296.73	122.91	299.34	123.18
300.27	123.16	301.63	123.21	302.38	123.32	304.06	123.31	304.75	123.49
305.36	123.43	306.89	123.36	307.79	123.37	309.28	123.43	310.57	123.44
311.27	123.41	318.2	123.44	324.99	123.46	330.08	123.42	331.51	123.42
333.3	123.41	334	123.34	334.53	123.37	336.76	123.46	336.9	123.46
337.01	123.47	339.16	123.56	339.67	123.55	340.3	123.48	345.63	123.1
346.49	122.94	348.03	122.7	348.69	122.69	349.54	122.72	351.31	122.65
352.8	122.6	353.58	122.49	354.53	122.5	356.08	122.51	357.77	122

405.73	122.28	407.82	122.37	408.26	122.38	408.65	122.38	410.47	122.37
412.49	122.41	412.94	122.42	413.26	122.42	415.17	122.58	417.25	122.43
417.75	122.43	419.33	121.57	419.91	121.44	420.5	121.26	422.41	121.05
426.08	120.61	427.19	120.48	427.21	120.48	427.23	120.48	429.37	120.31
429.78	120.3	431.83	120.23	433.02	120.2	434.01	120.18	435.8	120.07
436.48	120.03	438.34	120.03	438.73	120.03	438.86	120	441.15	119.48
441.75	119.56	443.31	119.75	444.91	119.79				

Manning's n Values num= 5

Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val	Sta n Val
0 .04	91.34 .049	102.34 .03	117.34 .049	134.44 .06	

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

91.34	134.44	24.51	4.59	8.5	.3	.5
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Ineffective Flow num= 2

Sta L	Sta R	Elev	Permanent
0	69.65	120	F
122.65	444.91	122.76	F

Blocked Obstructions num= 1

Sta L	Sta R	Elev	
307.73	345.62	123.37	15

SUMMARY OF MANNING'S N VALUES

River: Auburn Creek

Reach	River Sta.	n1	n2	n3	n4	n5	n6
Main Reach	3283.479	.016	.045	.018	.016		
Main Reach	3229.405	.016	.06	.049	.035	.018	.016
Main Reach	3159.787	.06	.02	.039	.035	.018	.016
Main Reach	3025.628	.06	.039	.035	.018	.016	
Main Reach	3000	Culvert					
Main Reach	2916.303	.1	.049	.03	.018	.03	
Main Reach	2900.962	.08	.049	.03	.018	.03	
Main Reach	2709.054	.1	.049	.03	.018	.03	
Main Reach	2501.489	.1	.049	.03	.018	.03	
Main Reach	2309.998	.1	.049	.03	.018	.03	
Main Reach	2161.775	.1	.018	.03			
Main Reach	1835.094	.04	.018	.04			
Main Reach	1800.703	.04	.018	.04			
Main Reach	1350	Culvert					
Main Reach	925.4423	.1	.049	.1			
Main Reach	797.816	.1	.03	.1			
Main Reach	652.2307	.1	.03	.1			
Main Reach	513.9224	.08	.03	.08			
Main Reach	414.6495	.08	.03	.03			
Main Reach	307.2411	.08	.03	.04			
Main Reach	195.1298	.045	.08	.03	.08		
Main Reach	141.507	.045	.049	.03	.04		
Main Reach	65.30157	.04	.049	.03	.049	.06	
Main Reach	4.590075	.04	.049	.03	.049	.06	

SUMMARY OF REACH LENGTHS

River: Auburn Creek

Reach	River Sta.	Left	Channel	Right
Main Reach	3283.479	51.96	54.07	55.73
Main Reach	3229.405	70.8	69.62	68.75
Main Reach	3159.787	126.5	134.16	135.59
Main Reach	3025.628	111.21	109.32	112.92
Main Reach	3000	Culvert		
Main Reach	2916.303	14.15	15.34	16.27

Main Reach	2900.962	206.54	191.91	184.83
Main Reach	2709.054	209.38	207.57	205.83
Main Reach	2501.489	198.58	191.49	185.3
Main Reach	2309.998	146.44	148.22	149.95
Main Reach	2161.775	328.02	326.68	328.75
Main Reach	1835.094	35.26	34.39	34.8
Main Reach	1800.703	879.95	875.26	876.36
Main Reach	1350	Culvert		
Main Reach	925.4423	160.4	127.63	131.93
Main Reach	797.816	152.73	145.59	144.95
Main Reach	652.2307	123.04	138.31	136.74
Main Reach	513.9224	90.74	99.27	101.73
Main Reach	414.6495	119.54	107.41	104.94
Main Reach	307.2411	120.64	112.11	114
Main Reach	195.1298	91.95	53.62	23.5
Main Reach	141.507	118.19	76.21	43.65
Main Reach	65.30157	86.42	60.71	46.3
Main Reach	4.590075	24.51	4.59	8.5

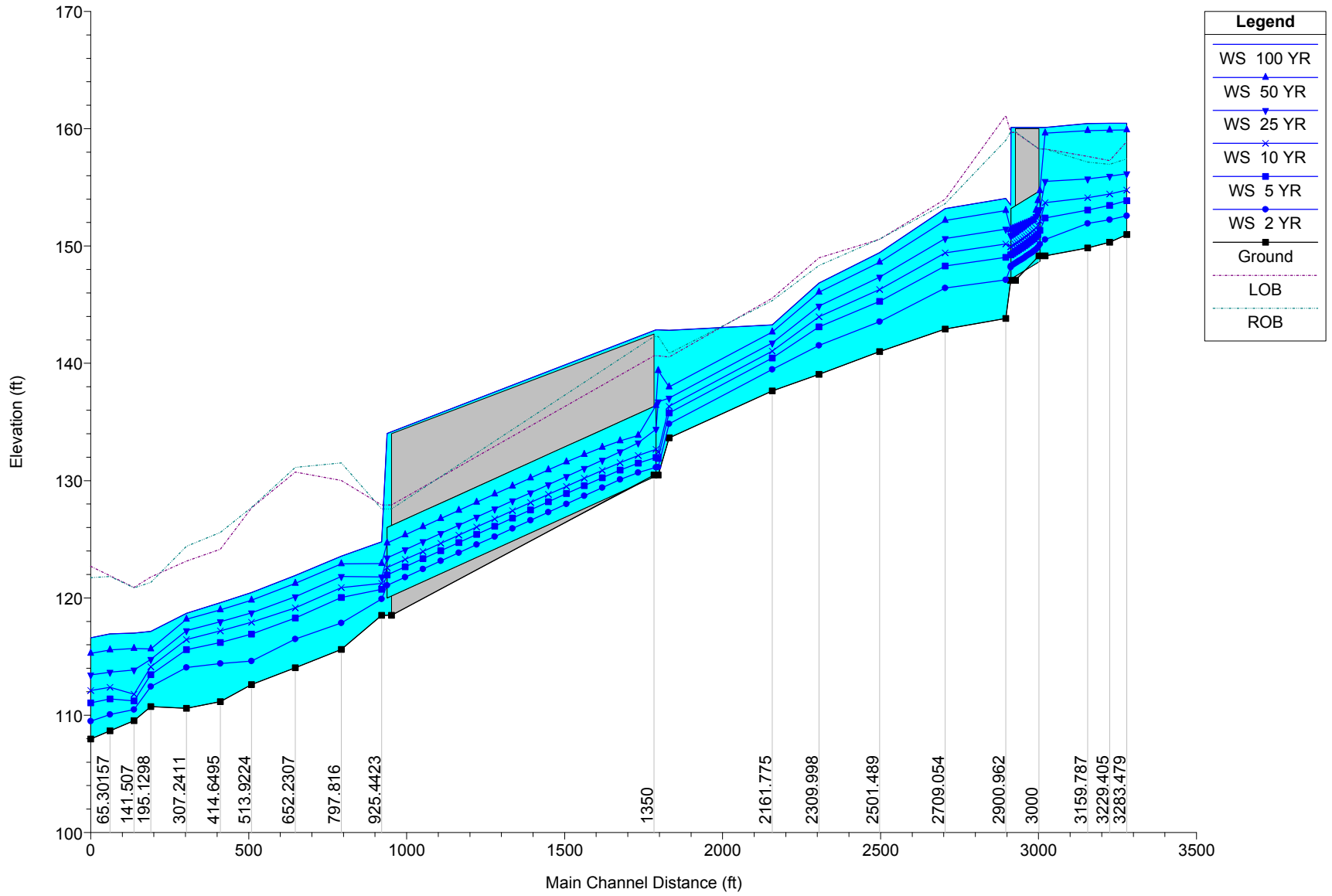
SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
River: Auburn Creek

Reach	River Sta.	Contr.	Expan.
Main Reach	3283.479	.3	.5
Main Reach	3229.405	.1	.3
Main Reach	3159.787	.1	.3
Main Reach	3025.628	.3	.5
Main Reach	3000	Culvert	
Main Reach	2916.303	.3	.5
Main Reach	2900.962	.1	.3
Main Reach	2709.054	.1	.3
Main Reach	2501.489	.1	.3
Main Reach	2309.998	.1	.3
Main Reach	2161.775	.1	.3
Main Reach	1835.094	.3	.5
Main Reach	1800.703	.3	.5
Main Reach	1350	Culvert	
Main Reach	925.4423	.3	.5
Main Reach	797.816	.1	.3
Main Reach	652.2307	.1	.3
Main Reach	513.9224	.1	.3
Main Reach	414.6495	.1	.3
Main Reach	307.2411	.1	.3
Main Reach	195.1298	.1	.3
Main Reach	141.507	.1	.3
Main Reach	65.30157	.1	.3
Main Reach	4.590075	.3	.5

**Attachment 15 – HYDRAULIC PROFILES AND DETAILED HYDRAULIC RESULTS
FOR RECOMMENDED MAINTENANCE CONDITION**

Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed



HEC-RAS Plan: recommended River: Auburn Creek Reach: Main Reach

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	3283.479	100 YR	1200.00	150.97	160.47	155.78	160.52	0.000141	1.94	685.33	275.67	0.12
Main Reach	3283.479	50 YR	950.00	150.97	159.89	155.17	159.94	0.000194	2.16	529.86	273.37	0.14
Main Reach	3283.479	25 YR	630.00	150.97	156.17	154.26	156.59	0.002650	5.18	121.63	30.81	0.45
Main Reach	3283.479	10 YR	430.00	150.97	154.78	153.58	155.21	0.003966	5.26	81.69	26.85	0.53
Main Reach	3283.479	5 YR	290.00	150.97	153.86	153.01	154.25	0.004800	4.98	58.23	24.24	0.57
Main Reach	3283.479	2 YR	120.00	150.97	152.58	152.13	152.84	0.006156	4.07	29.47	20.59	0.60
Main Reach	3229.405	100 YR	1200.00	150.32	160.46		160.51	0.000150	1.78	712.91	297.55	0.11
Main Reach	3229.405	50 YR	950.00	150.32	159.88		159.93	0.000207	1.99	545.69	277.97	0.13
Main Reach	3229.405	25 YR	630.00	150.32	155.96		156.42	0.003069	5.46	115.33	28.91	0.48
Main Reach	3229.405	10 YR	430.00	150.32	154.44		154.95	0.004687	5.73	74.98	24.37	0.58
Main Reach	3229.405	5 YR	290.00	150.32	153.47		153.94	0.005742	5.51	52.65	21.44	0.62
Main Reach	3229.405	2 YR	120.00	150.32	152.24		152.51	0.005721	4.21	28.51	17.75	0.59
Main Reach	3159.787	100 YR	1200.00	149.83	160.44		160.50	0.000172	2.27	650.19	297.46	0.14
Main Reach	3159.787	50 YR	950.00	149.83	159.83		159.91	0.000251	2.61	475.24	284.22	0.17
Main Reach	3159.787	25 YR	630.00	149.83	155.73		156.22	0.002530	5.65	111.46	25.80	0.48
Main Reach	3159.787	10 YR	430.00	149.83	154.11		154.65	0.003949	5.91	72.77	22.01	0.57
Main Reach	3159.787	5 YR	290.00	149.83	153.06		153.56	0.005032	5.69	50.94	19.55	0.62
Main Reach	3159.787	2 YR	120.00	149.83	151.93	151.22	152.17	0.003989	3.95	30.35	16.91	0.52
Main Reach	3025.628	100 YR	1200.00	149.16	160.10		160.43	0.000681	4.60	266.38	59.84	0.28
Main Reach	3025.628	50 YR	950.00	149.16	159.61		159.85	0.000523	3.87	247.76	40.22	0.24
Main Reach	3025.628	25 YR	630.00	149.16	155.50		153.03	0.001828	5.14	122.47	26.60	0.42
Main Reach	3025.628	10 YR	430.00	149.16	153.70		152.24	0.003057	5.50	78.16	22.46	0.52
Main Reach	3025.628	5 YR	290.00	149.16	152.40		151.58	0.004816	5.69	50.96	19.47	0.62
Main Reach	3025.628	2 YR	120.00	149.16	150.55		150.55	0.016306	6.33	18.95	15.21	1.00
Main Reach	3000		Culvert									
Main Reach	2916.303	100 YR	1200.00	147.08	153.49		153.12	0.030148	10.59	113.29	26.59	0.90
Main Reach	2916.303	50 YR	950.00	147.08	151.43		152.24	0.061480	14.10	67.39	19.44	1.33
Main Reach	2916.303	25 YR	630.00	147.08	150.87		151.13	0.042271	11.09	56.80	18.64	1.12
Main Reach	2916.303	10 YR	430.00	147.08	149.95		150.33	0.049487	10.68	40.26	17.37	1.24
Main Reach	2916.303	5 YR	290.00	147.08	149.26		149.67	0.056926	10.17	28.53	16.29	1.35
Main Reach	2916.303	2 YR	120.00	147.08	148.20		148.61	0.074283	9.33	12.87	13.63	1.69
Main Reach	2900.962	100 YR	1200.00	143.83	154.06		154.48	0.002465	5.19	231.21	34.57	0.35
Main Reach	2900.962	50 YR	950.00	143.83	153.03		148.92	0.002347	4.83	196.88	31.81	0.34
Main Reach	2900.962	25 YR	630.00	143.83	151.44		147.93	0.002089	4.21	149.56	27.72	0.32
Main Reach	2900.962	10 YR	430.00	143.83	150.17		147.18	0.001886	3.71	116.04	25.14	0.30
Main Reach	2900.962	5 YR	290.00	143.83	149.03		146.54	0.001763	3.27	88.59	23.25	0.30
Main Reach	2900.962	2 YR	120.00	143.83	147.12		145.55	0.001661	2.54	47.21	19.93	0.29
Main Reach	2709.054	100 YR	1200.00	142.92	153.19		149.43	0.011117	5.17	232.28	72.40	0.37
Main Reach	2709.054	50 YR	950.00	142.92	152.17		148.76	0.011048	4.90	194.04	35.84	0.37
Main Reach	2709.054	25 YR	630.00	142.92	150.64		147.71	0.010675	4.41	142.76	31.09	0.36
Main Reach	2709.054	10 YR	430.00	142.92	149.41		146.91	0.010596	4.03	106.74	27.53	0.36
Main Reach	2709.054	5 YR	290.00	142.92	148.29		146.21	0.010822	3.72	77.88	24.05	0.36
Main Reach	2709.054	2 YR	120.00	142.92	146.42		145.00	0.010434	3.08	38.95	17.81	0.37
Main Reach	2501.489	100 YR	1200.00	141.01	149.45		147.35	0.024228	7.37	162.90	157.57	0.56
Main Reach	2501.489	50 YR	950.00	141.01	148.61		146.64	0.022414	6.85	138.62	150.07	0.54
Main Reach	2501.489	25 YR	630.00	141.01	147.35		145.51	0.020714	6.02	104.73	73.24	0.53
Main Reach	2501.489	10 YR	430.00	141.01	146.29		144.66	0.019125	5.44	79.04	22.58	0.51
Main Reach	2501.489	5 YR	290.00	141.01	145.28		143.96	0.017478	4.99	58.14	19.20	0.51
Main Reach	2501.489	2 YR	120.00	141.01	143.56		142.82	0.016823	4.20	28.59	15.05	0.54
Main Reach	2309.998	100 YR	1200.00	139.05	146.83		145.10	0.009040	6.99	171.55	195.41	0.58
Main Reach	2309.998	50 YR	950.00	139.05	146.06		144.48	0.009002	6.62	143.57	153.68	0.57
Main Reach	2309.998	25 YR	630.00	139.05	144.89		143.52	0.008761	5.99	105.23	65.90	0.57
Main Reach	2309.998	10 YR	430.00	139.05	143.96		142.77	0.008369	5.45	78.90	26.76	0.56
Main Reach	2309.998	5 YR	290.00	139.05	143.12		142.11	0.007882	5.03	57.66	23.17	0.56
Main Reach	2309.998	2 YR	120.00	139.05	141.54		141.04	0.006962	4.53	26.52	16.41	0.63
Main Reach	2161.775	100 YR	1200.00	137.65	143.29		143.29	0.034097	10.94	109.67	131.81	1.00
Main Reach	2161.775	50 YR	950.00	137.65	142.67		142.67	0.033645	10.31	92.12	75.69	1.00
Main Reach	2161.775	25 YR	630.00	137.65	141.75		141.75	0.033228	9.33	67.54	27.75	1.00
Main Reach	2161.775	10 YR	430.00	137.65	141.05		141.05	0.032928	8.45	50.89	23.02	1.00
Main Reach	2161.775	5 YR	290.00	137.65	140.46		140.46	0.031921	7.65	37.90	20.93	1.00
Main Reach	2161.775	2 YR	120.00	137.65	139.48		139.48	0.023988	6.21	19.32	16.27	1.00
Main Reach	1835.094	100 YR	1200.00	133.65	142.81		139.22	0.000431	5.68	224.51	278.42	0.38
Main Reach	1835.094	50 YR	950.00	133.65	137.97		138.53	0.005740	12.71	74.76	97.10	1.24
Main Reach	1835.094	25 YR	630.00	133.65	137.04		137.51	0.006098	11.54	54.58	39.63	1.24
Main Reach	1835.094	10 YR	430.00	133.65	136.34		136.73	0.006437	10.50	40.95	24.20	1.25
Main Reach	1835.094	5 YR	290.00	133.65	135.77		136.08	0.006804	9.48	30.60	17.17	1.25
Main Reach	1835.094	2 YR	120.00	133.65	134.84		135.05	0.008347	7.60	15.79	14.80	1.30

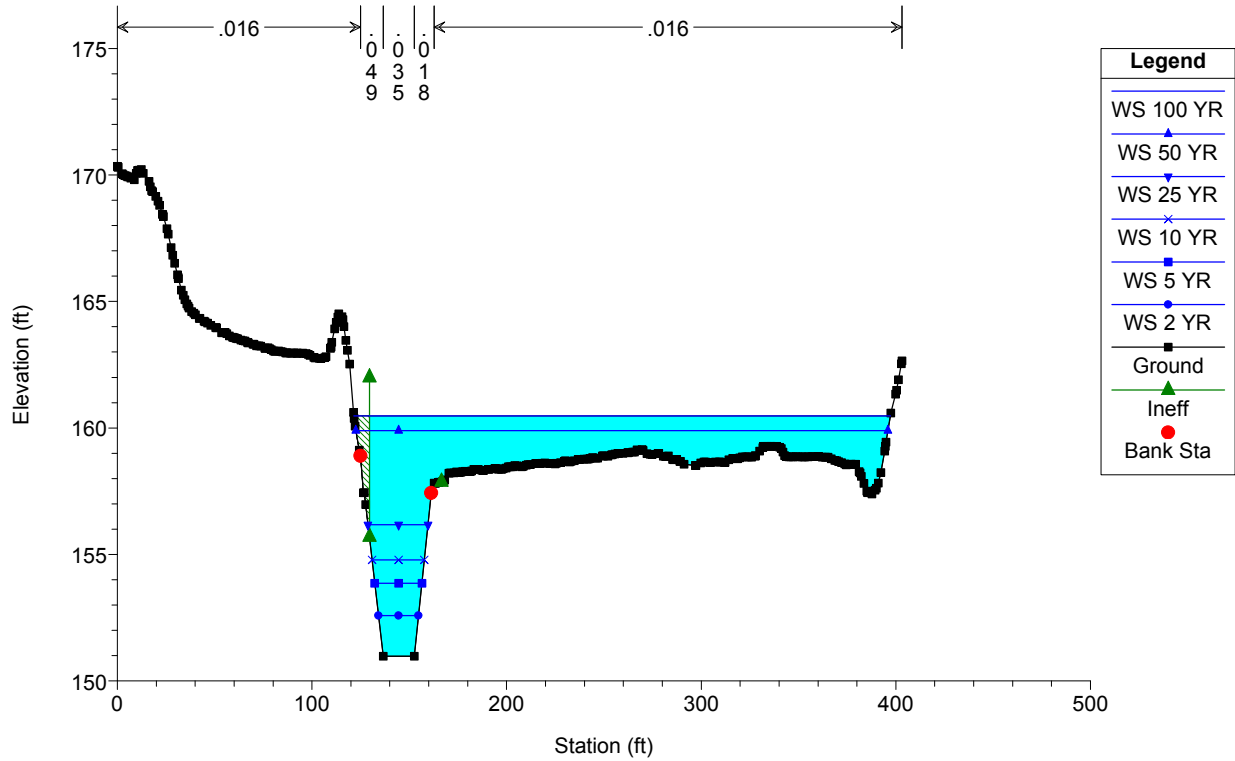
HEC-RAS Plan: recommended River: Auburn Creek Reach: Main Reach (Continued)

Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Main Reach	1800.703	100 YR	1200.00	130.48	142.86	136.59	143.23	0.000300	4.92	255.76	270.12	0.28
Main Reach	1800.703	50 YR	950.00	130.48	139.38	135.78	139.96	0.000692	6.11	155.49	152.49	0.42
Main Reach	1800.703	25 YR	630.00	130.48	136.72	134.61	137.36	0.001052	6.40	98.40	19.76	0.51
Main Reach	1800.703	10 YR	430.00	130.48	132.44	133.73	136.86	0.023237	16.87	25.49	14.28	2.22
Main Reach	1800.703	5 YR	290.00	130.48	131.90	133.02	135.94	0.030332	16.12	17.99	13.59	2.47
Main Reach	1800.703	2 YR	120.00	130.48	131.16	131.92	134.41	0.058283	14.48	8.29	12.64	3.15
Main Reach	1350		Culvert									
Main Reach	925.4423	100 YR	1200.00	118.52	124.78	124.59	126.44	0.019165	10.32	116.24	31.22	0.94
Main Reach	925.4423	50 YR	950.00	118.52	122.93	123.93	126.14	0.053453	14.37	66.11	23.48	1.51
Main Reach	925.4423	25 YR	630.00	118.52	121.80	122.94	125.30	0.080966	15.02	41.95	19.23	1.79
Main Reach	925.4423	10 YR	430.00	118.52	121.23	122.15	124.10	0.082892	13.61	31.60	17.22	1.77
Main Reach	925.4423	5 YR	290.00	118.52	120.73	121.49	123.09	0.086413	12.33	23.52	15.47	1.76
Main Reach	925.4423	2 YR	120.00	118.52	119.91	120.40	121.48	0.105614	10.07	11.92	12.60	1.83
Main Reach	797.816	100 YR	1200.00	115.61	123.56		123.94	0.011434	4.98	240.88	56.07	0.42
Main Reach	797.816	50 YR	950.00	115.61	122.91	120.77	123.24	0.011339	4.63	205.10	54.00	0.42
Main Reach	797.816	25 YR	630.00	115.61	121.83	120.01	122.10	0.010902	4.19	150.38	47.40	0.41
Main Reach	797.816	10 YR	430.00	115.61	120.88	119.23	121.13	0.011274	3.96	108.46	41.11	0.43
Main Reach	797.816	5 YR	290.00	115.61	120.04	118.61	120.26	0.011588	3.80	76.24	35.00	0.45
Main Reach	797.816	2 YR	120.00	115.61	117.86	117.67	118.28	0.011660	5.18	23.17	18.40	0.81
Main Reach	652.2307	100 YR	1200.00	114.05	121.92		122.26	0.011465	4.71	254.76	63.52	0.41
Main Reach	652.2307	50 YR	950.00	114.05	121.25		121.56	0.011783	4.46	213.16	60.18	0.42
Main Reach	652.2307	25 YR	630.00	114.05	120.09		120.38	0.012899	4.27	147.66	50.90	0.44
Main Reach	652.2307	10 YR	430.00	114.05	119.14		119.40	0.012441	4.12	104.44	41.09	0.46
Main Reach	652.2307	5 YR	290.00	114.05	118.29		118.54	0.012109	4.00	72.59	33.66	0.48
Main Reach	652.2307	2 YR	120.00	114.05	116.49	116.16	116.84	0.008265	4.77	25.17	18.95	0.73
Main Reach	513.9224	100 YR	1200.00	112.62	120.46	118.12	120.84	0.009220	4.98	241.08	61.07	0.44
Main Reach	513.9224	50 YR	950.00	112.62	119.80	117.61	120.14	0.008881	4.68	203.04	56.00	0.43
Main Reach	513.9224	25 YR	630.00	112.62	118.73	116.84	119.01	0.007759	4.23	149.00	45.69	0.41
Main Reach	513.9224	10 YR	430.00	112.62	117.93	116.25	118.15	0.006795	3.75	114.55	39.90	0.39
Main Reach	513.9224	5 YR	290.00	112.62	116.91	115.74	117.13	0.008543	3.77	76.91	34.14	0.44
Main Reach	513.9224	2 YR	120.00	112.62	114.61	114.59	115.24	0.016661	6.37	18.84	14.28	0.98
Main Reach	414.6495	100 YR	1200.00	111.16	119.59		119.94	0.008764	4.72	254.02	68.25	0.43
Main Reach	414.6495	50 YR	950.00	111.16	118.97		119.28	0.008320	4.45	213.33	62.02	0.42
Main Reach	414.6495	25 YR	630.00	111.16	117.96		118.22	0.008133	4.07	154.90	53.93	0.42
Main Reach	414.6495	10 YR	430.00	111.16	117.19		117.41	0.008128	3.72	115.69	48.15	0.42
Main Reach	414.6495	5 YR	290.00	111.16	116.20		116.42	0.006080	3.81	76.13	30.68	0.43
Main Reach	414.6495	2 YR	120.00	111.16	114.40		114.58	0.002572	3.38	35.46	16.21	0.40
Main Reach	307.2411	100 YR	1200.00	110.58	118.69		119.11	0.006768	5.15	232.97	56.01	0.45
Main Reach	307.2411	50 YR	950.00	110.58	118.18		118.51	0.006179	4.64	204.57	53.95	0.42
Main Reach	307.2411	25 YR	630.00	110.58	117.22		117.47	0.005987	4.06	155.14	48.87	0.40
Main Reach	307.2411	10 YR	430.00	110.58	116.46		116.66	0.005984	3.60	119.36	45.39	0.39
Main Reach	307.2411	5 YR	290.00	110.58	115.59		115.78	0.005712	3.46	83.70	35.97	0.40
Main Reach	307.2411	2 YR	120.00	110.58	114.06		114.20	0.004795	3.01	39.86	23.00	0.40
Main Reach	195.1298	100 YR	1200.00	110.73	117.15		117.87	0.019685	6.79	176.60	48.74	0.63
Main Reach	195.1298	50 YR	950.00	110.73	115.65	115.65	116.88	0.053933	8.88	106.99	43.91	1.00
Main Reach	195.1298	25 YR	630.00	110.73	114.77	114.77	115.91	0.048750	8.58	73.46	32.25	1.00
Main Reach	195.1298	10 YR	430.00	110.73	114.12	114.12	115.11	0.048543	7.96	54.01	28.07	1.01
Main Reach	195.1298	5 YR	290.00	110.73	113.46	113.46	114.37	0.038437	7.65	37.91	21.00	1.00
Main Reach	195.1298	2 YR	120.00	110.73	112.45	112.45	113.06	0.030408	6.23	19.25	16.26	1.01
Main Reach	141.507	100 YR	1200.00	109.53	117.01		117.59	0.001944	6.10	196.64	37.60	0.47
Main Reach	141.507	50 YR	950.00	109.53	115.68	113.81	116.31	0.002587	6.36	149.46	33.59	0.53
Main Reach	141.507	25 YR	630.00	109.53	113.86	112.89	114.57	0.004226	6.76	93.26	28.08	0.65
Main Reach	141.507	10 YR	430.00	109.53	111.78	112.20	113.45	0.020110	10.36	41.51	21.81	1.32
Main Reach	141.507	5 YR	290.00	109.53	111.23	111.62	112.70	0.024371	9.72	29.83	20.13	1.41
Main Reach	141.507	2 YR	120.00	109.53	110.48	110.73	111.40	0.030260	7.70	15.58	17.87	1.45
Main Reach	65.30157	100 YR	1200.00	108.67	116.93		117.37	0.002770	5.34	224.52	39.39	0.39
Main Reach	65.30157	50 YR	950.00	108.67	115.57		116.04	0.003370	5.46	173.89	35.39	0.43
Main Reach	65.30157	25 YR	630.00	108.67	113.67		114.16	0.004669	5.63	111.98	29.78	0.51
Main Reach	65.30157	10 YR	430.00	108.67	112.37	111.34	112.87	0.006088	5.68	75.76	25.94	0.59
Main Reach	65.30157	5 YR	290.00	108.67	111.39	110.77	111.88	0.007718	5.62	51.64	23.03	0.66
Main Reach	65.30157	2 YR	120.00	108.67	110.07	109.87	110.46	0.011246	5.03	23.84	19.13	0.79
Main Reach	4.590075	100 YR	1200.00	107.98	116.59	113.02	117.19	0.002647	6.21	193.17	34.35	0.41
Main Reach	4.590075	50 YR	950.00	107.98	115.28	112.38	115.84	0.002907	5.98	158.78	31.41	0.42
Main Reach	4.590075	25 YR	630.00	107.98	113.43	111.45	113.92	0.003505	5.61	112.39	27.25	0.46
Main Reach	4.590075	10 YR	430.00	107.98	112.10	110.72	112.54	0.004412	5.33	80.62	24.26	0.51
Main Reach	4.590075	5 YR	290.00	107.98	111.05	110.12	111.46	0.005529	5.12	56.64	21.90	0.56
Main Reach	4.590075	2 YR	120.00	107.98	109.49	109.20	109.84	0.008945	4.76	25.21	18.39	0.72

Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

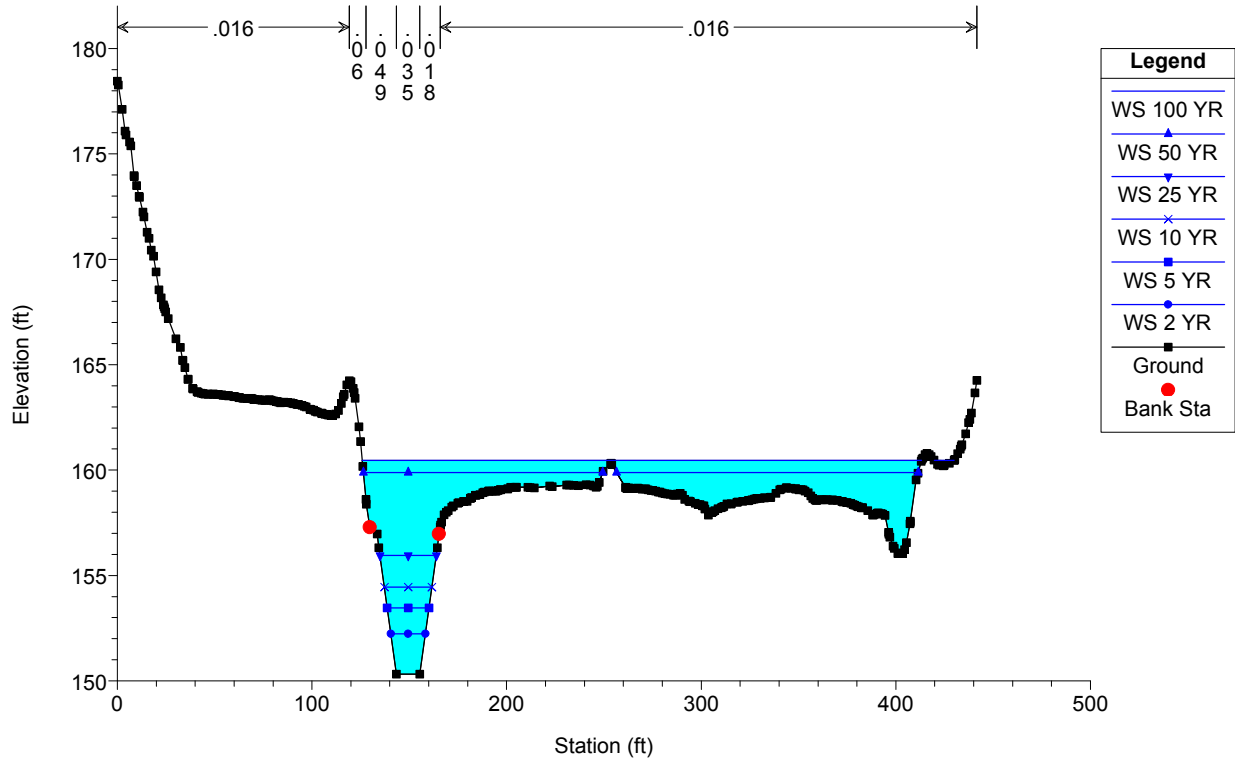
River = Auburn Creek Reach = Main Reach RS = 3283.479



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

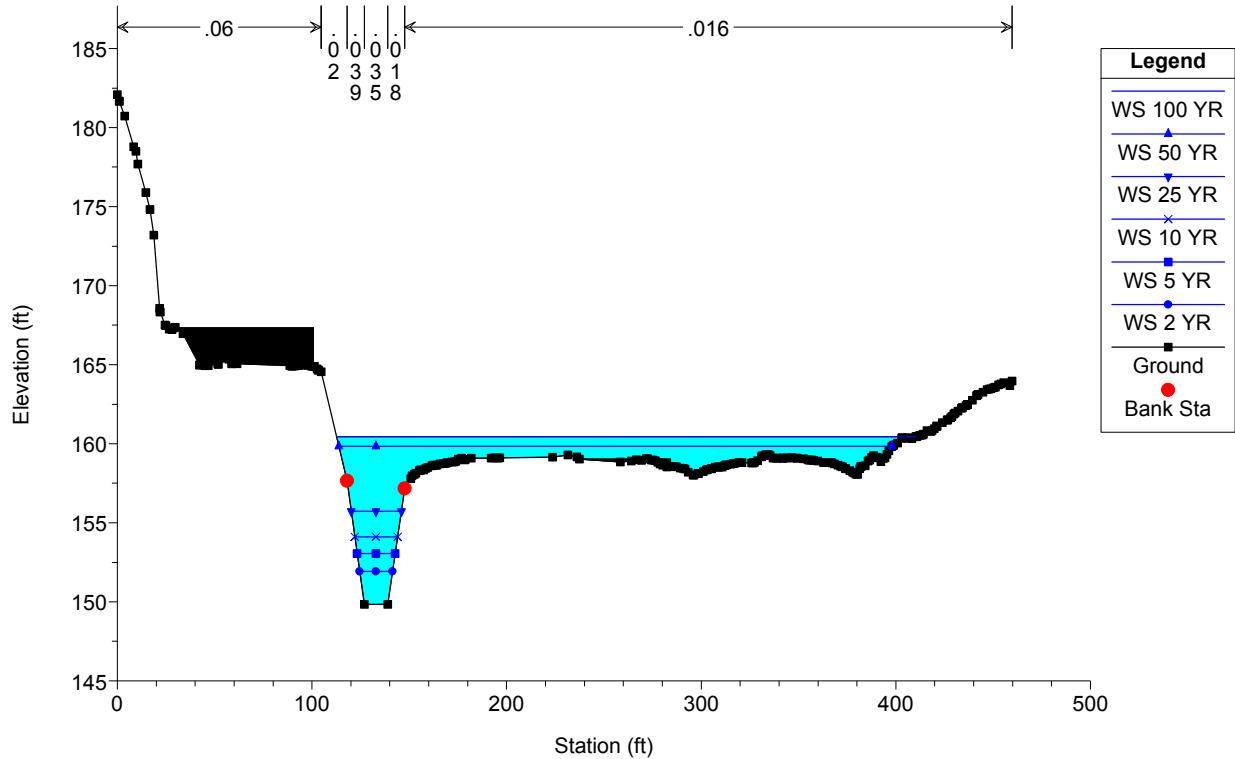
River = Auburn Creek Reach = Main Reach RS = 3229.405



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

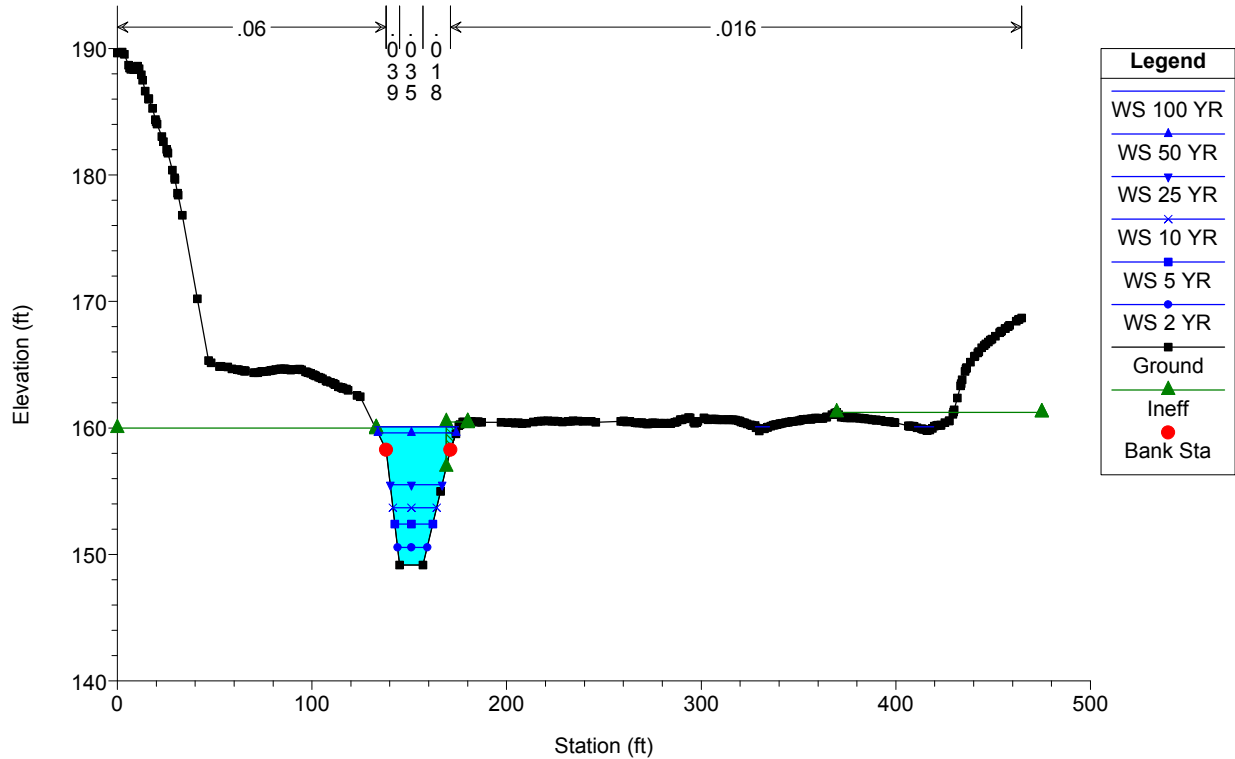
River = Auburn Creek Reach = Main Reach RS = 3159.787



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

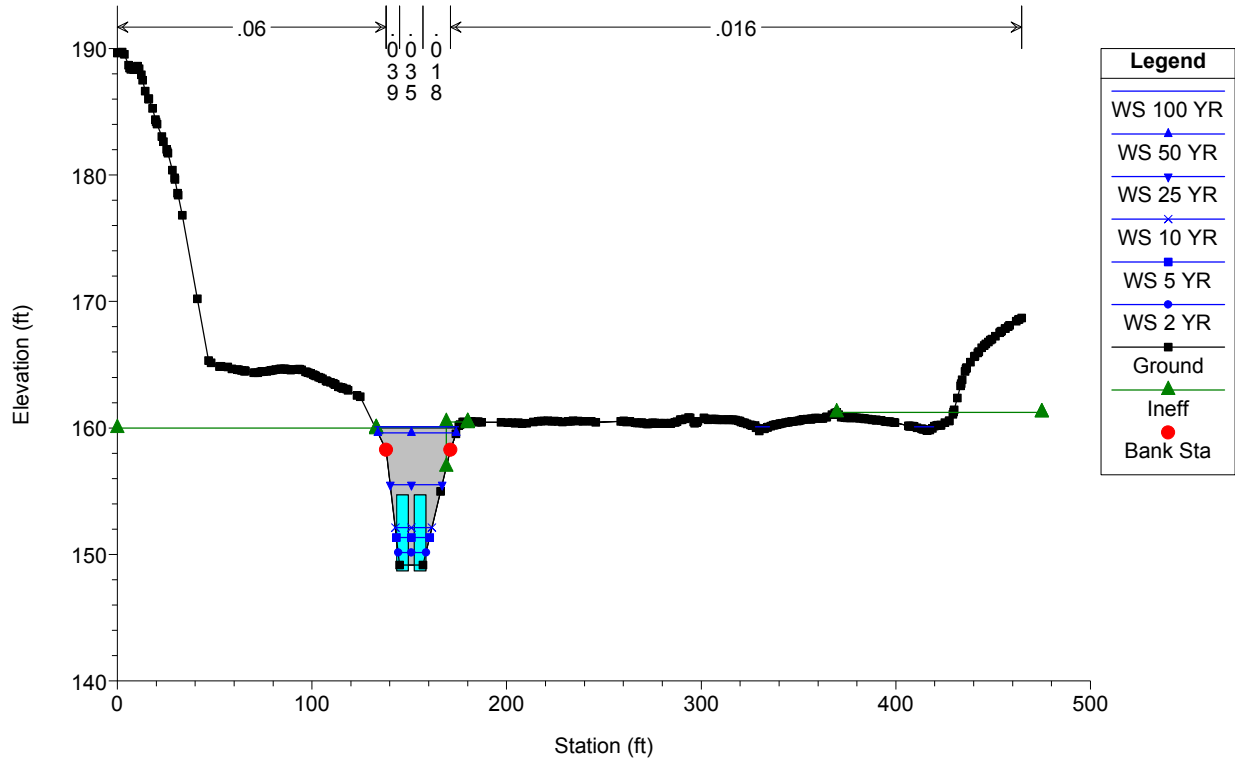
River = Auburn Creek Reach = Main Reach RS = 3025.628



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

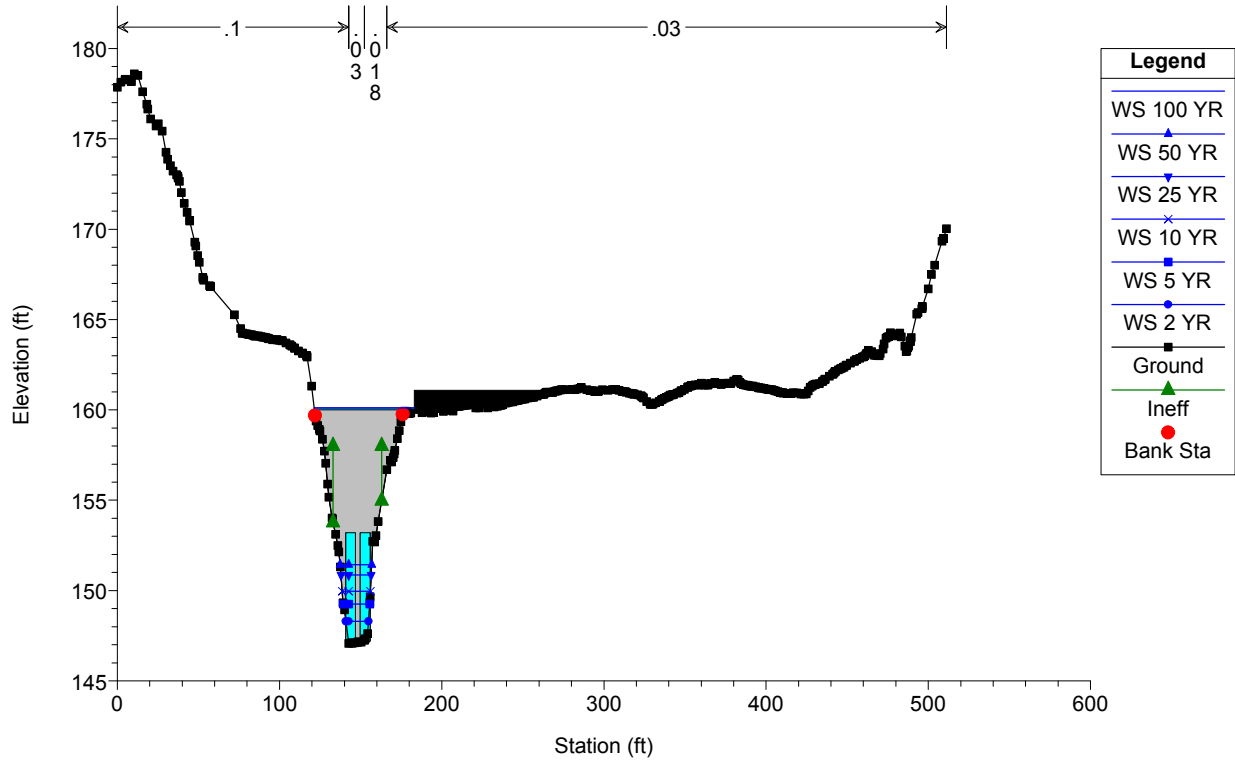
River = Auburn Creek Reach = Main Reach RS = 3000 Culv



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

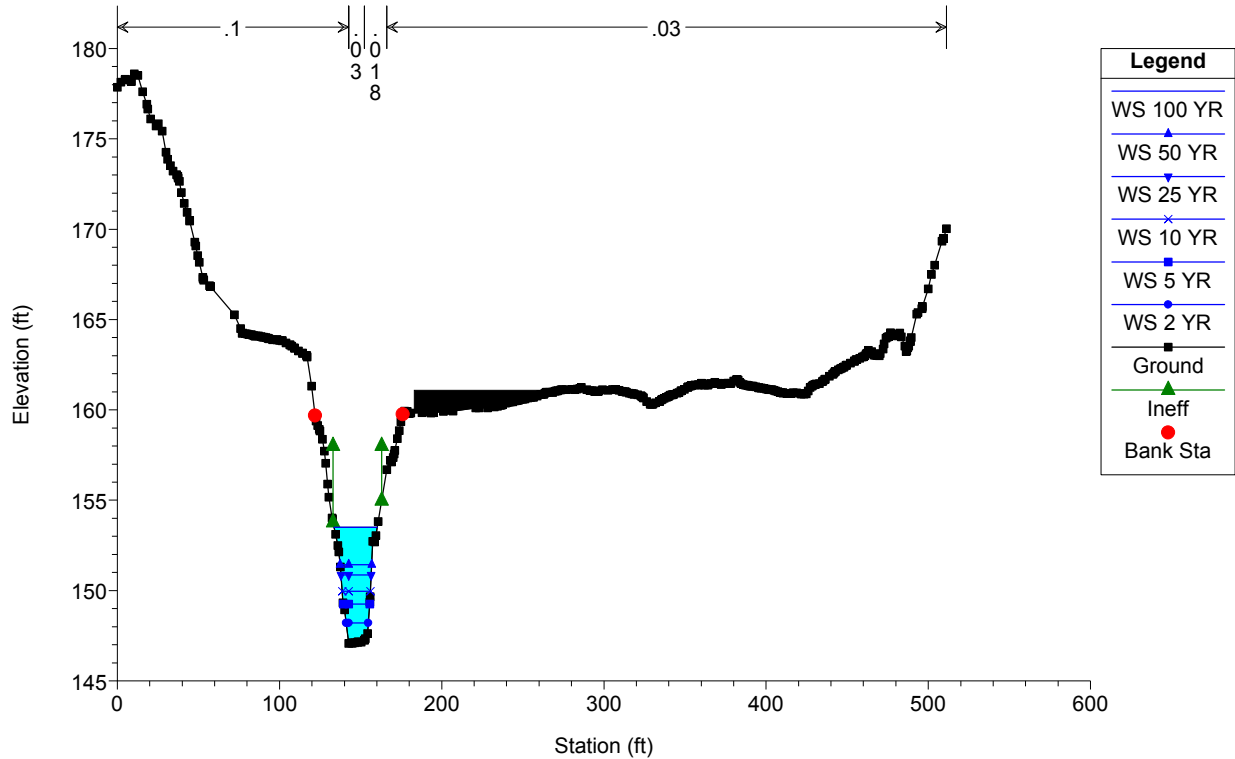
River = Auburn Creek Reach = Main Reach RS = 3000 Culv



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

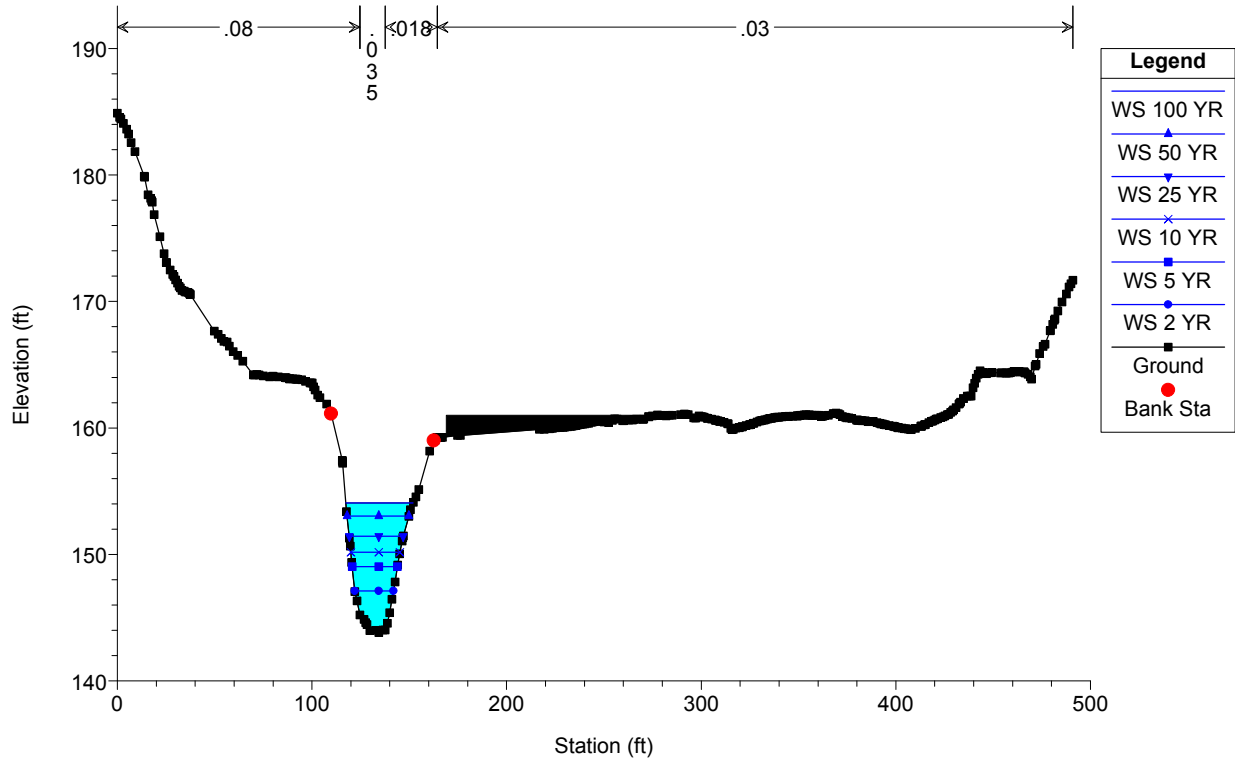
River = Auburn Creek Reach = Main Reach RS = 2916.303



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

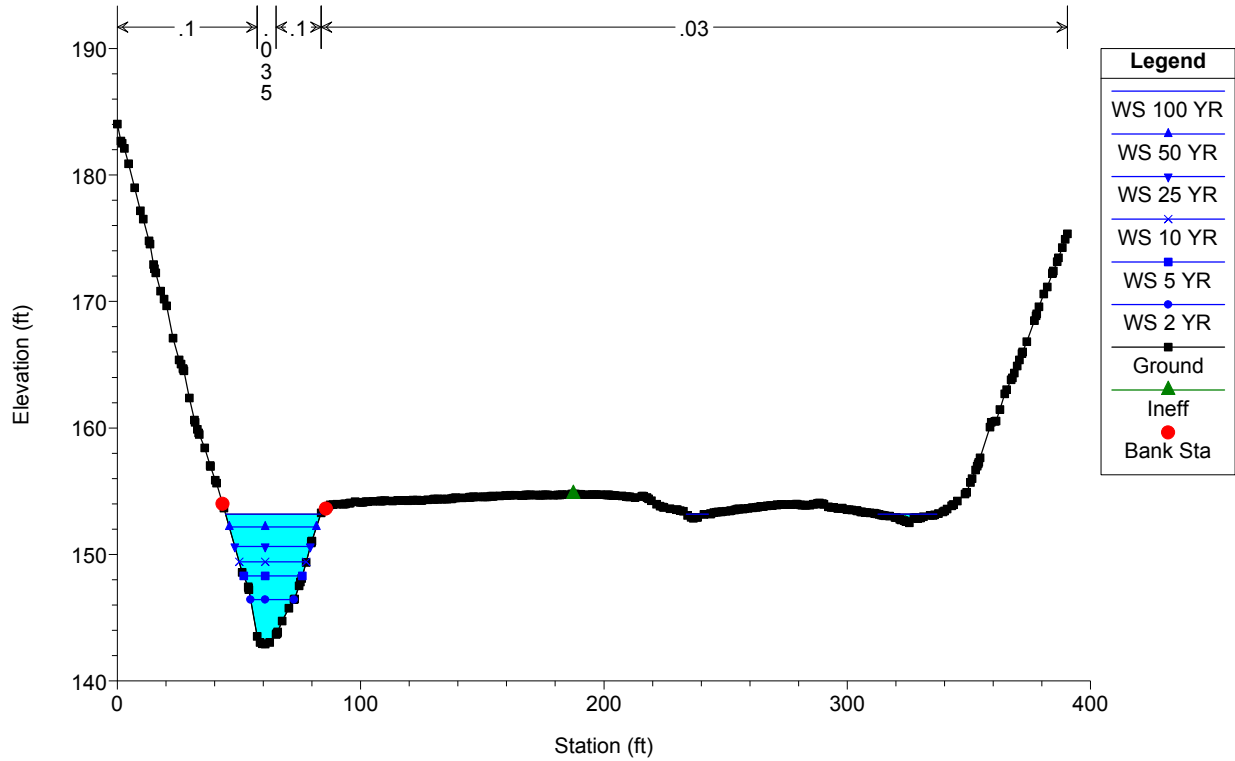
River = Auburn Creek Reach = Main Reach RS = 2900.962



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

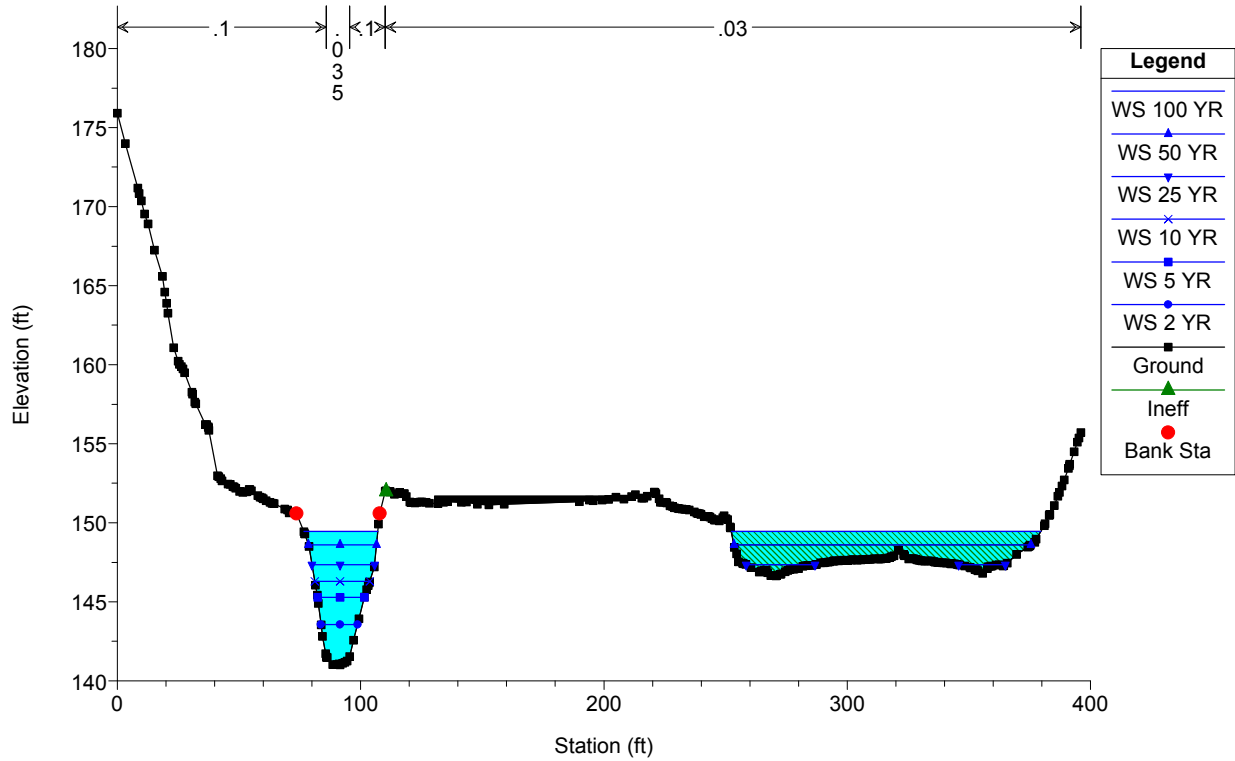
River = Auburn Creek Reach = Main Reach RS = 2709.054



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

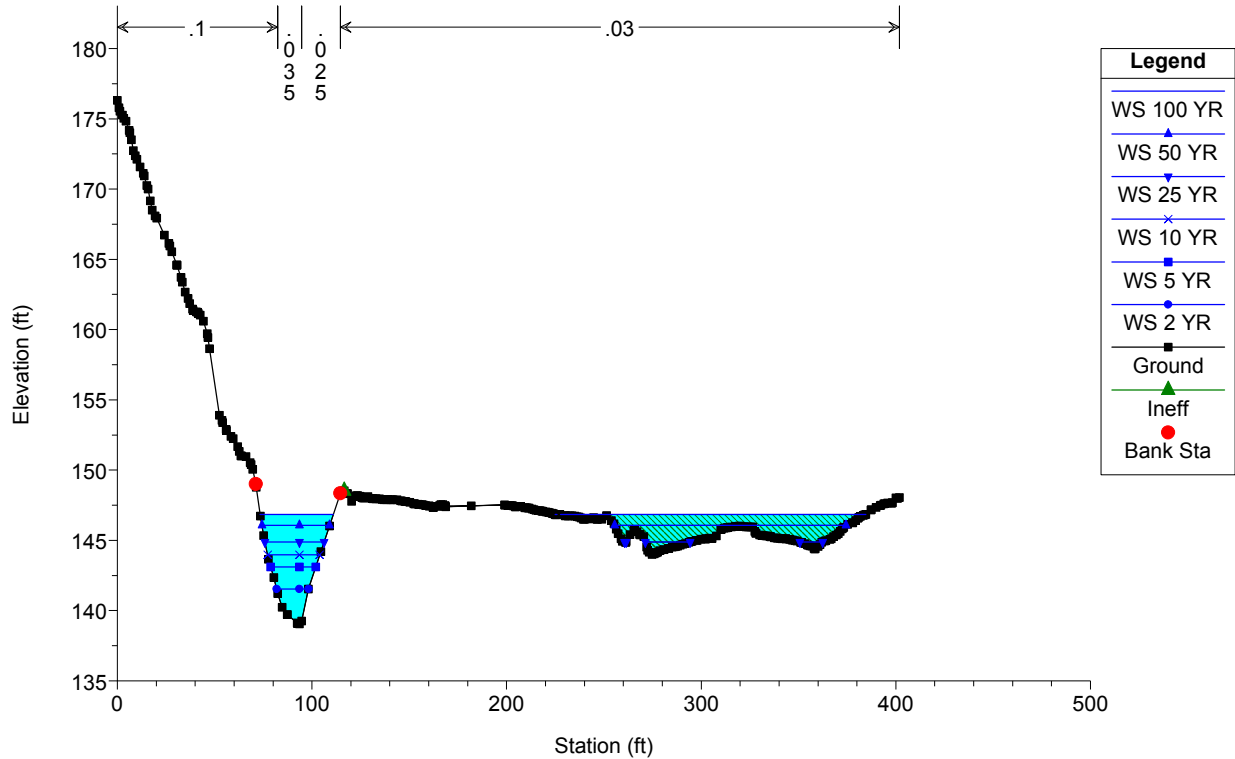
River = Auburn Creek Reach = Main Reach RS = 2501.489



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

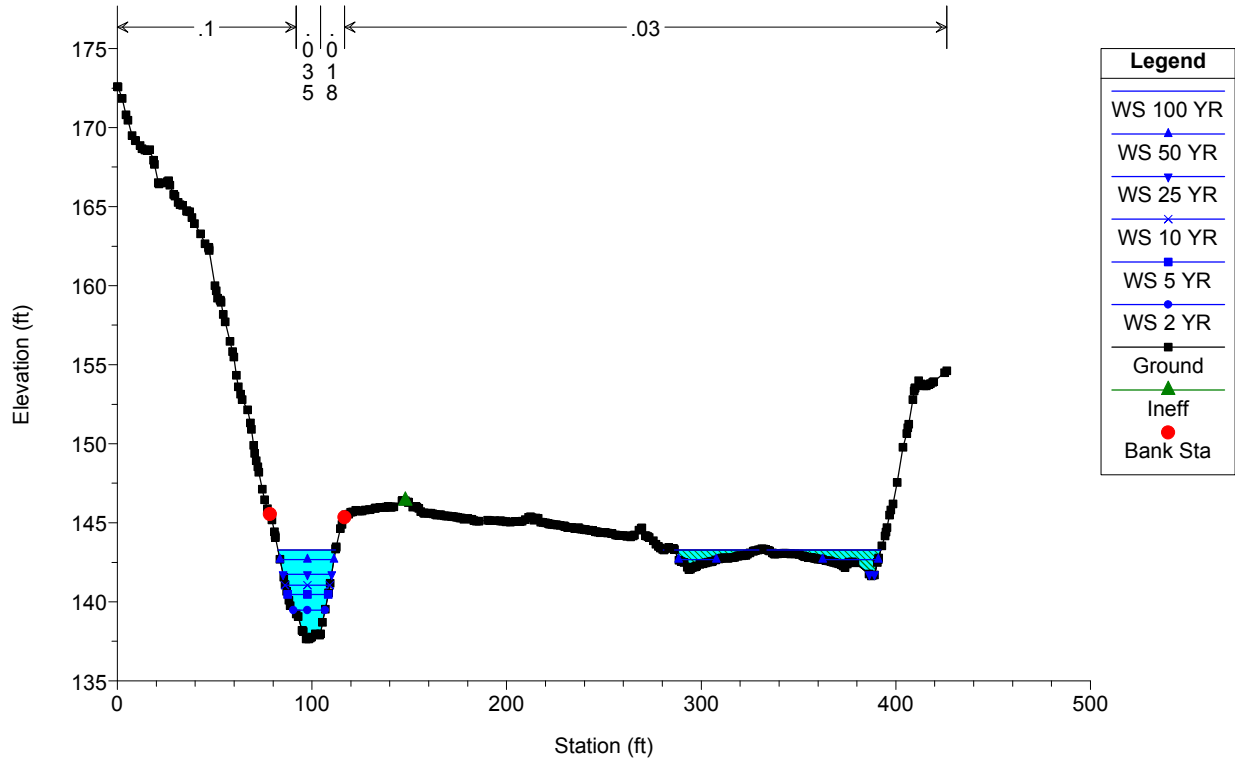
River = Auburn Creek Reach = Main Reach RS = 2309.998



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

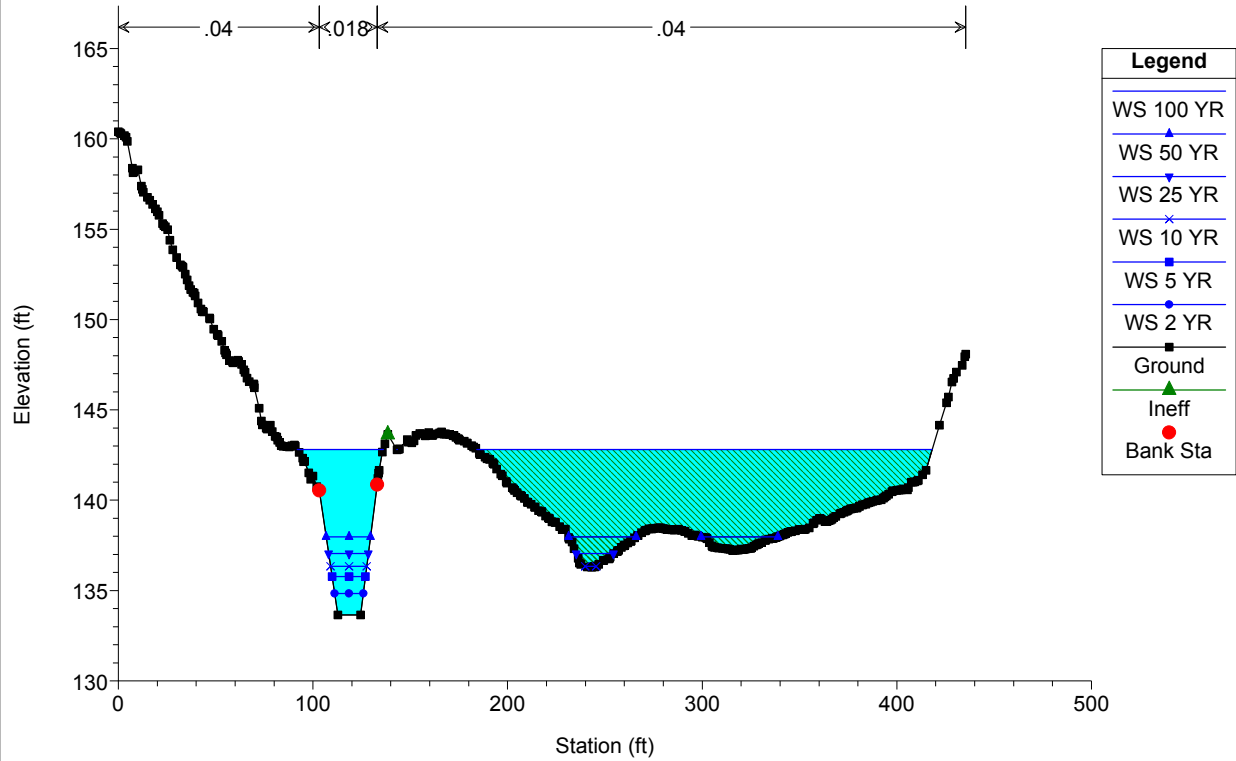
River = Auburn Creek Reach = Main Reach RS = 2161.775



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

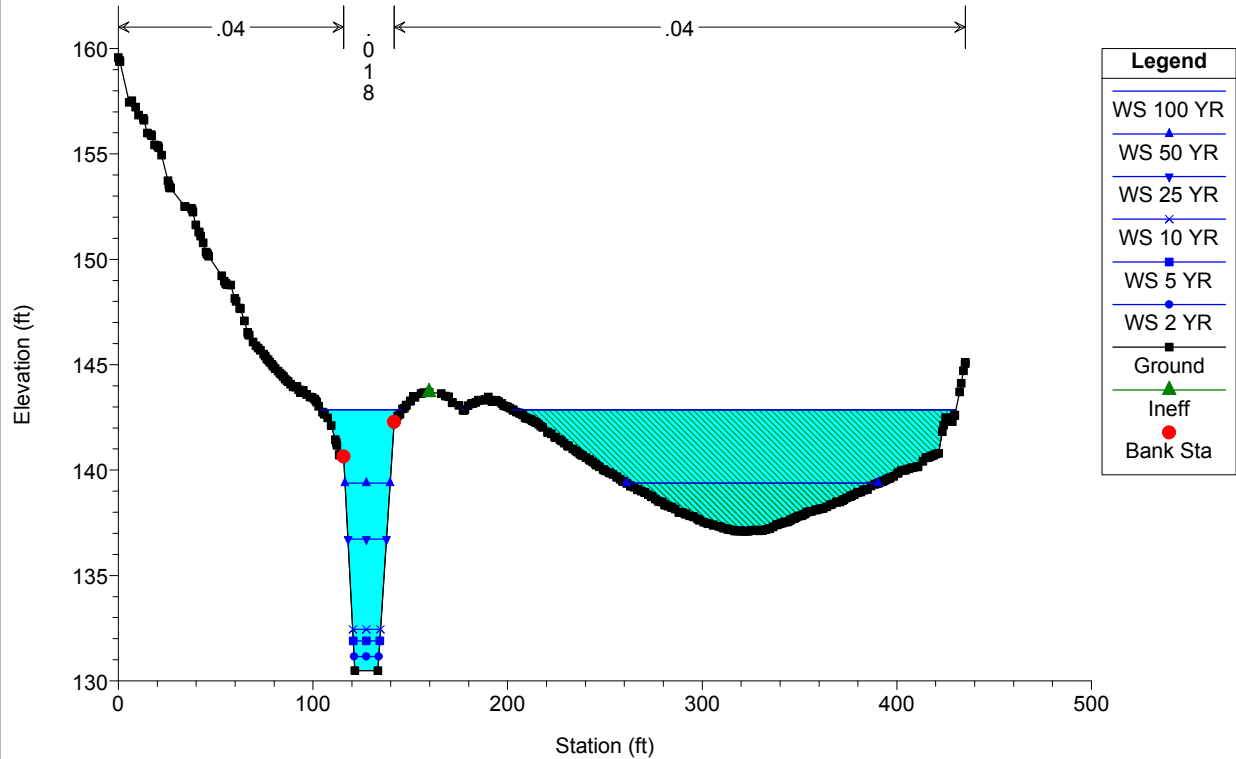
River = Auburn Creek Reach = Main Reach RS = 1835.094



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

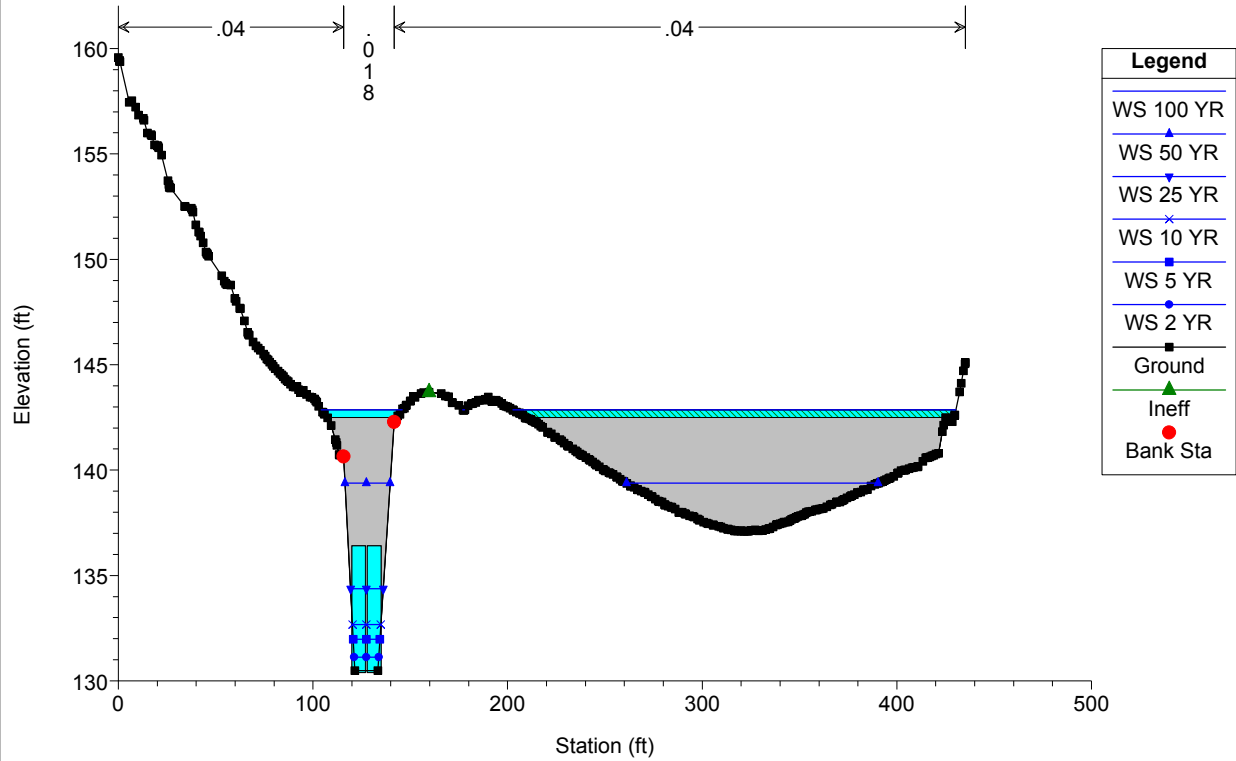
River = Auburn Creek Reach = Main Reach RS = 1800.703



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

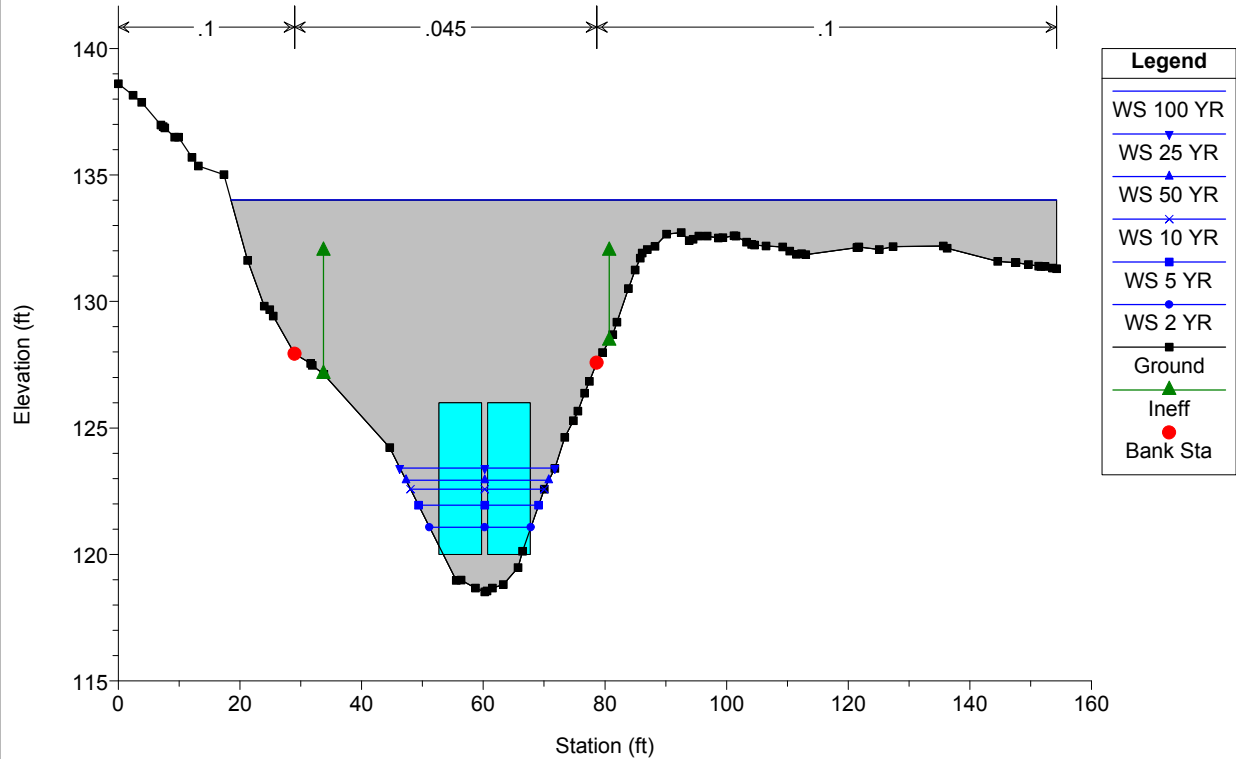
River = Auburn Creek Reach = Main Reach RS = 1350 Culv



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

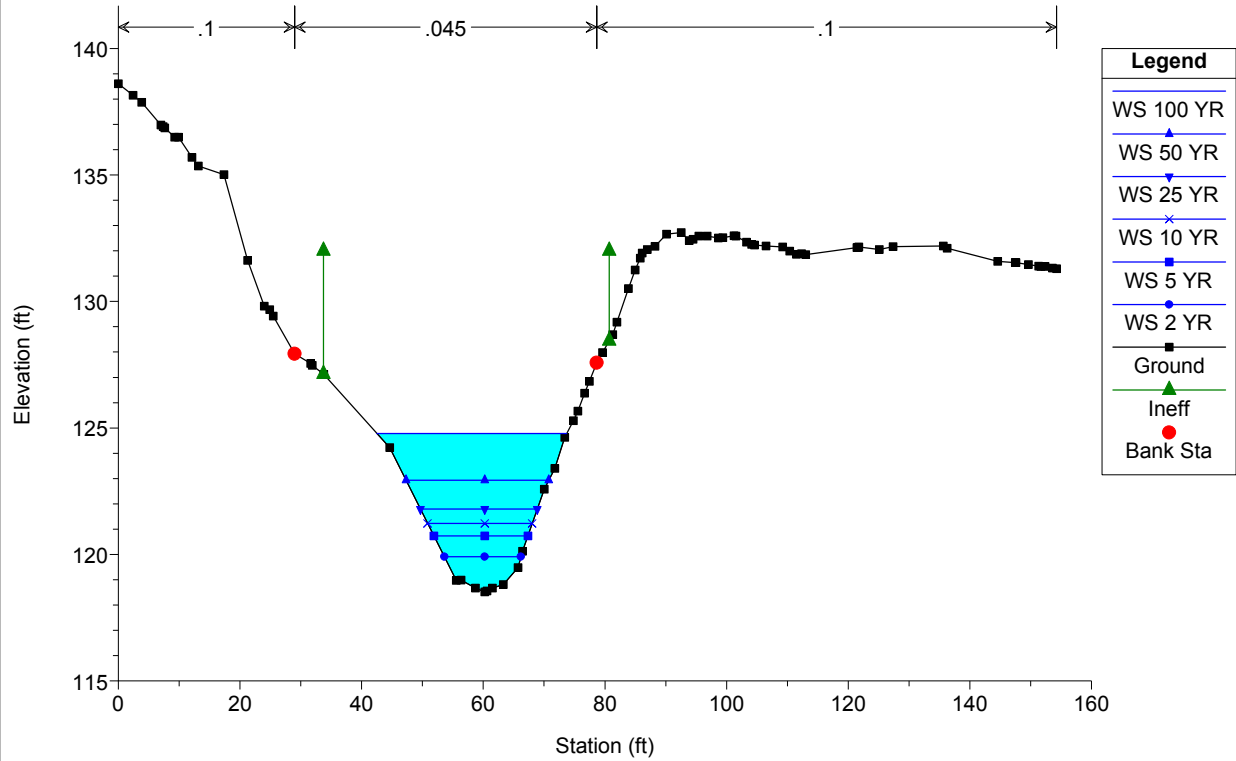
River = Auburn Creek Reach = Main Reach RS = 1350 Culv



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

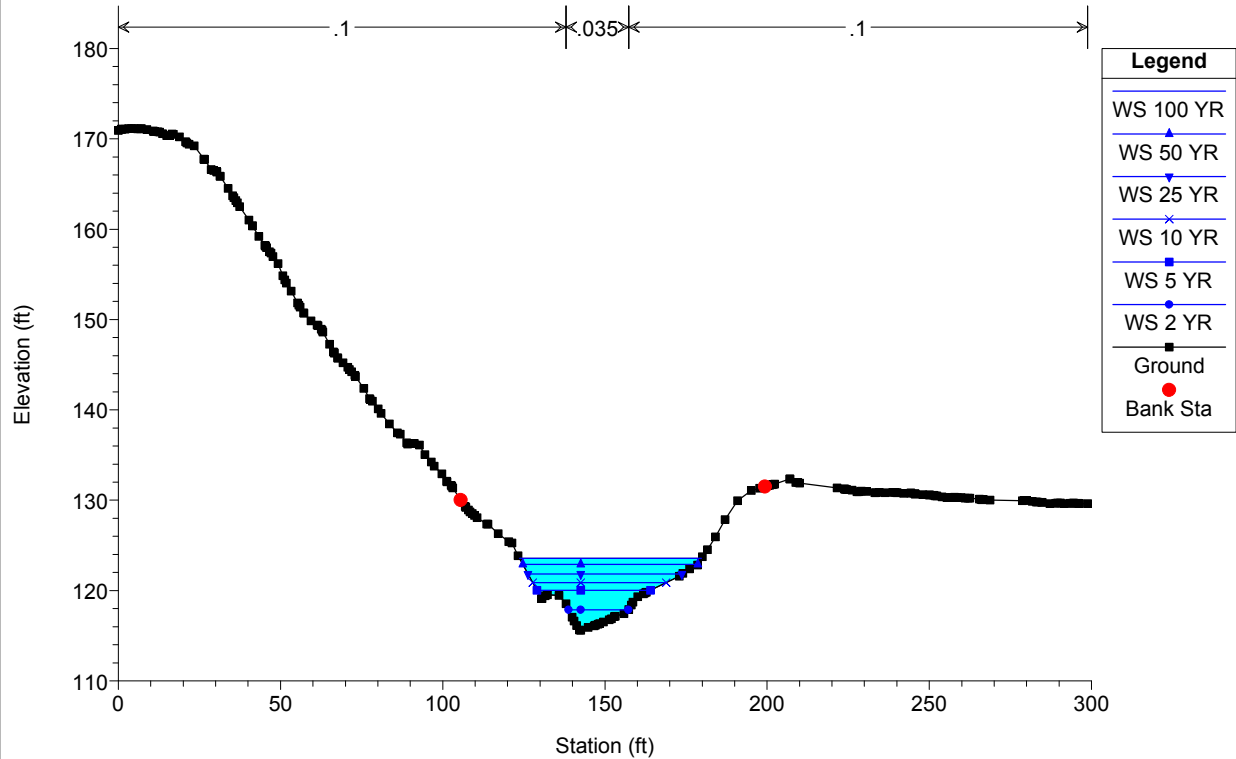
River = Auburn Creek Reach = Main Reach RS = 925.4423



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

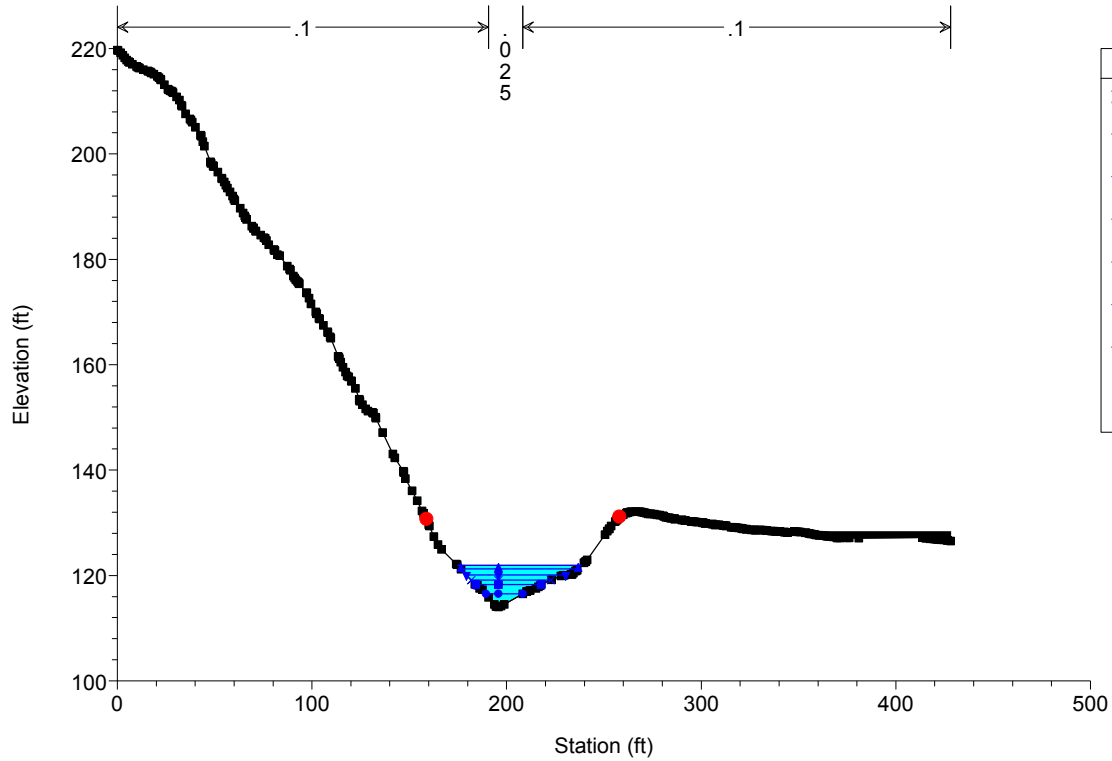
River = Auburn Creek Reach = Main Reach RS = 797.816



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

River = Auburn Creek Reach = Main Reach RS = 652.2307

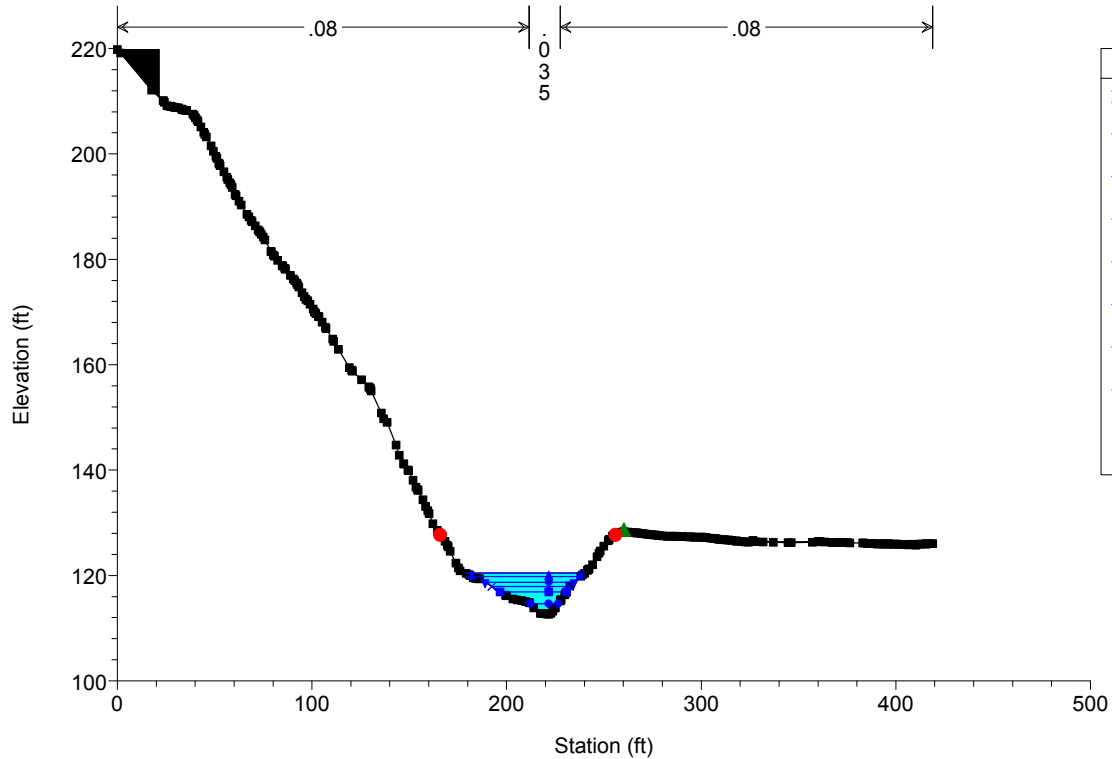


Legend	
WS 100 YR	▲
WS 50 YR	◆
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	■
Bank Sta	●

Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

River = Auburn Creek Reach = Main Reach RS = 513.9224

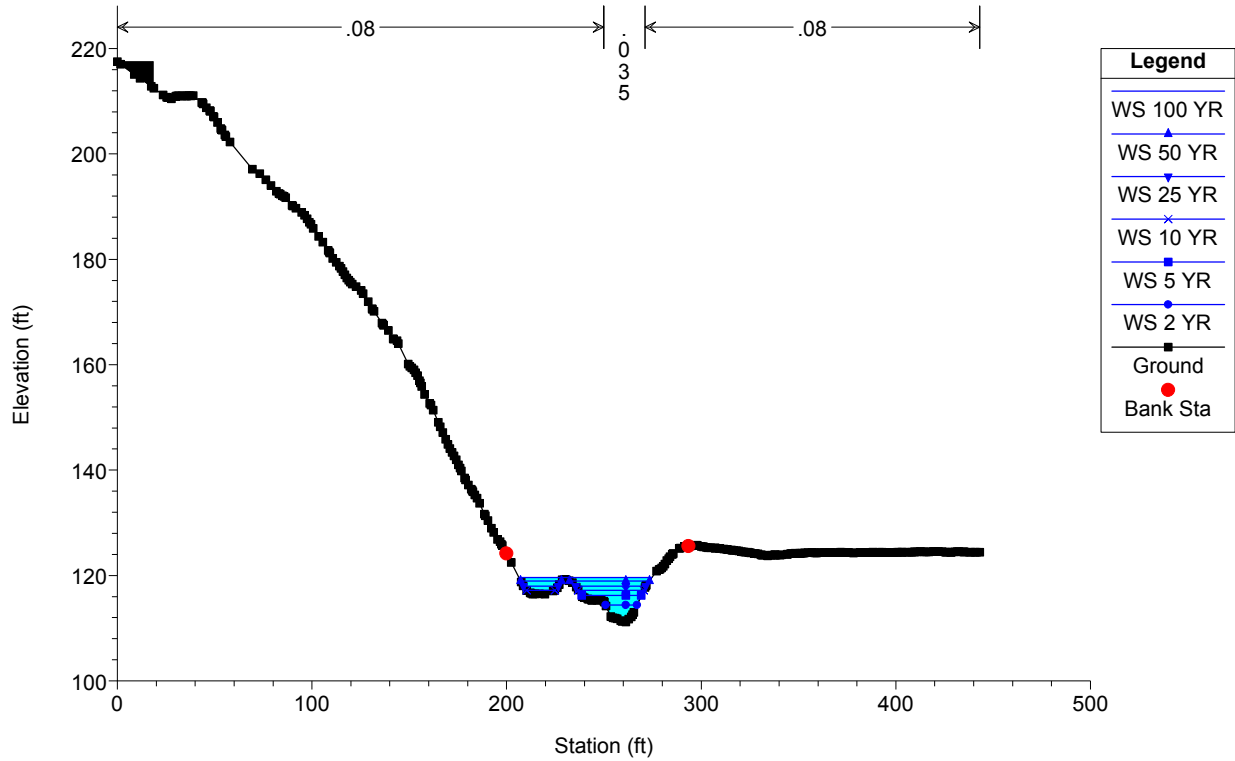


Legend	
WS 100 YR	▲
WS 50 YR	◆
WS 25 YR	×
WS 10 YR	■
WS 5 YR	●
WS 2 YR	■
Ground	■
Ineff	▲
Bank Sta	●

Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

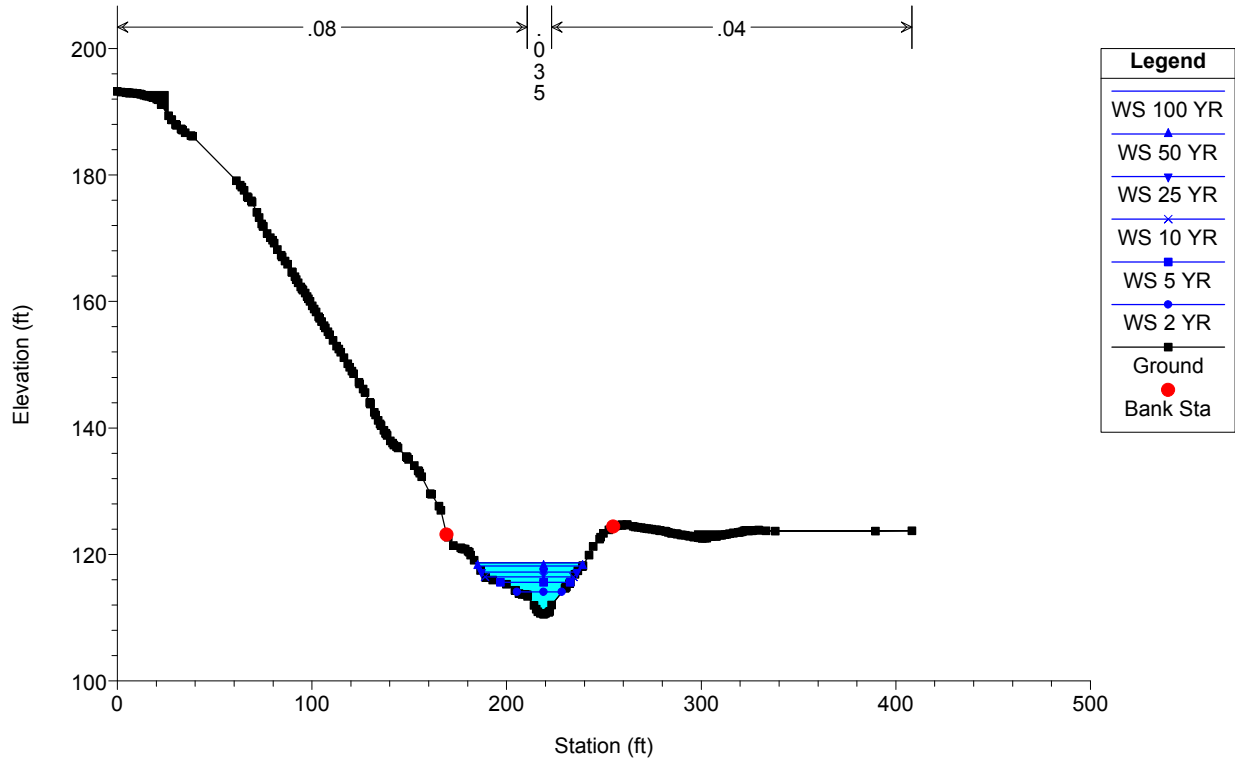
River = Auburn Creek Reach = Main Reach RS = 414.6495



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

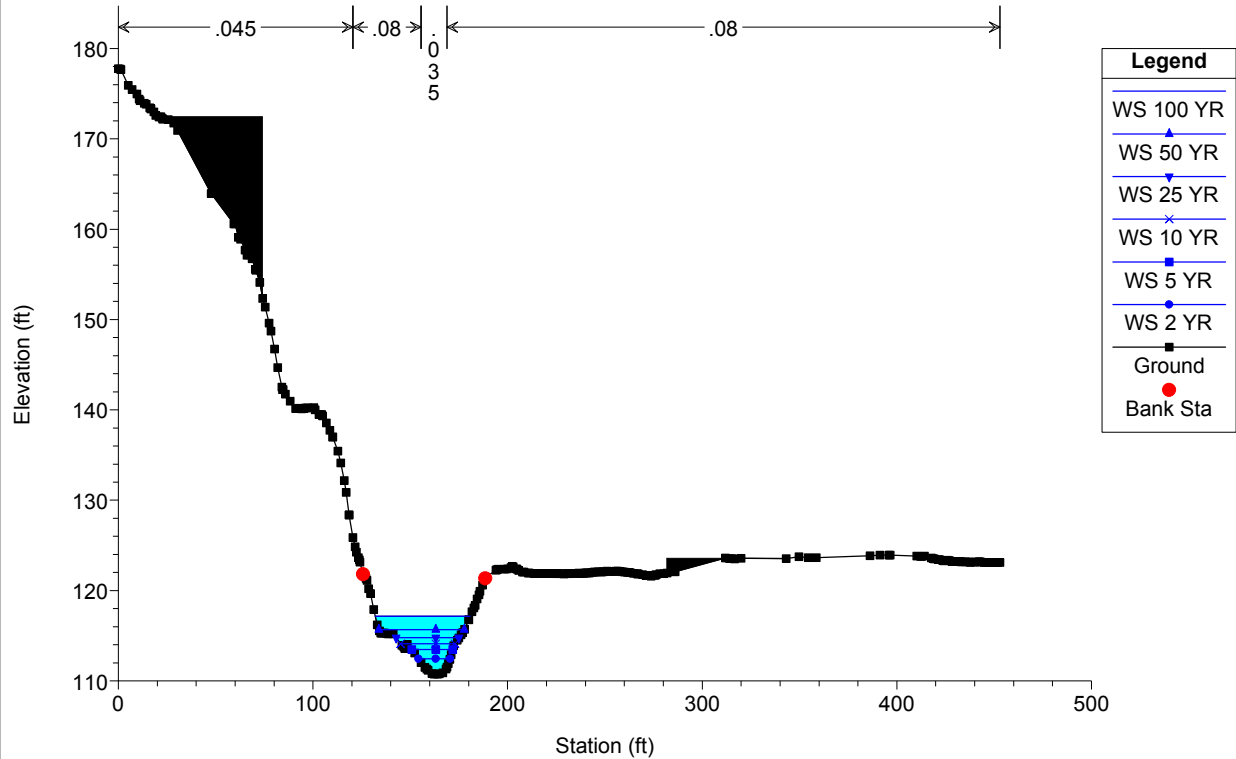
River = Auburn Creek Reach = Main Reach RS = 307.2411



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

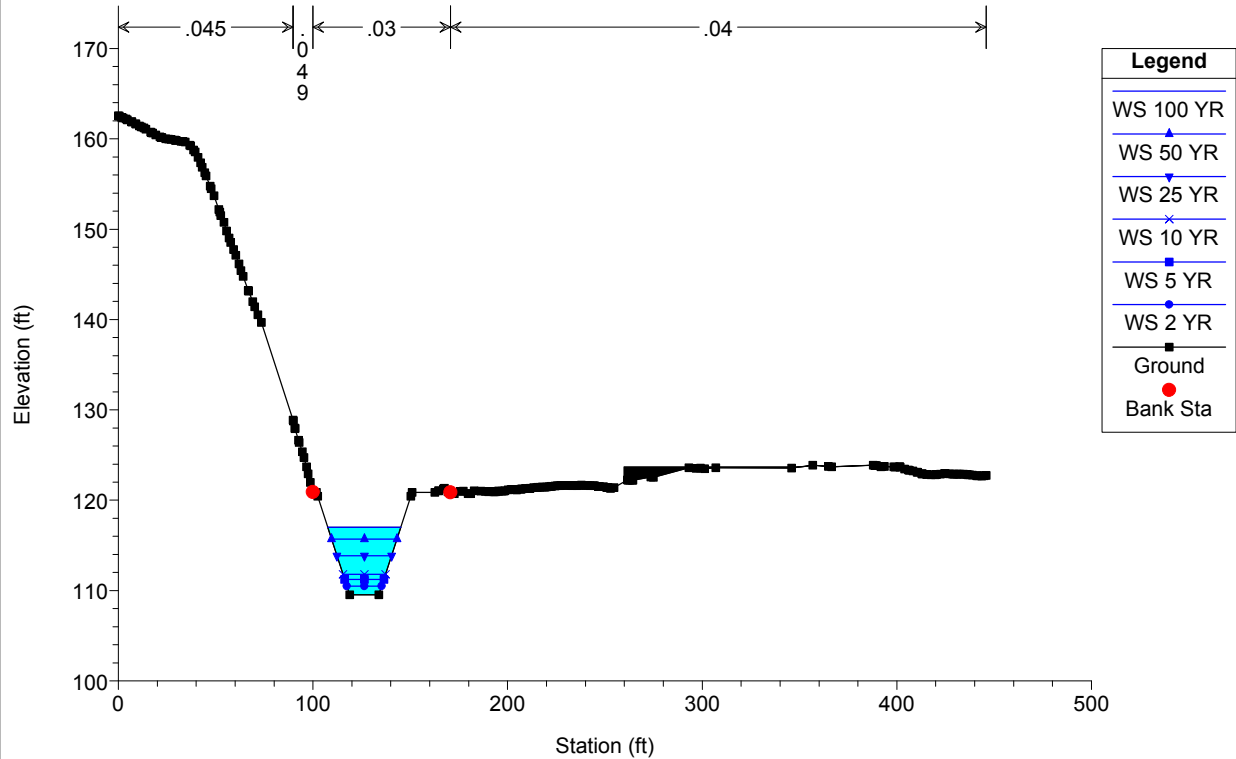
River = Auburn Creek Reach = Main Reach RS = 195.1298



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

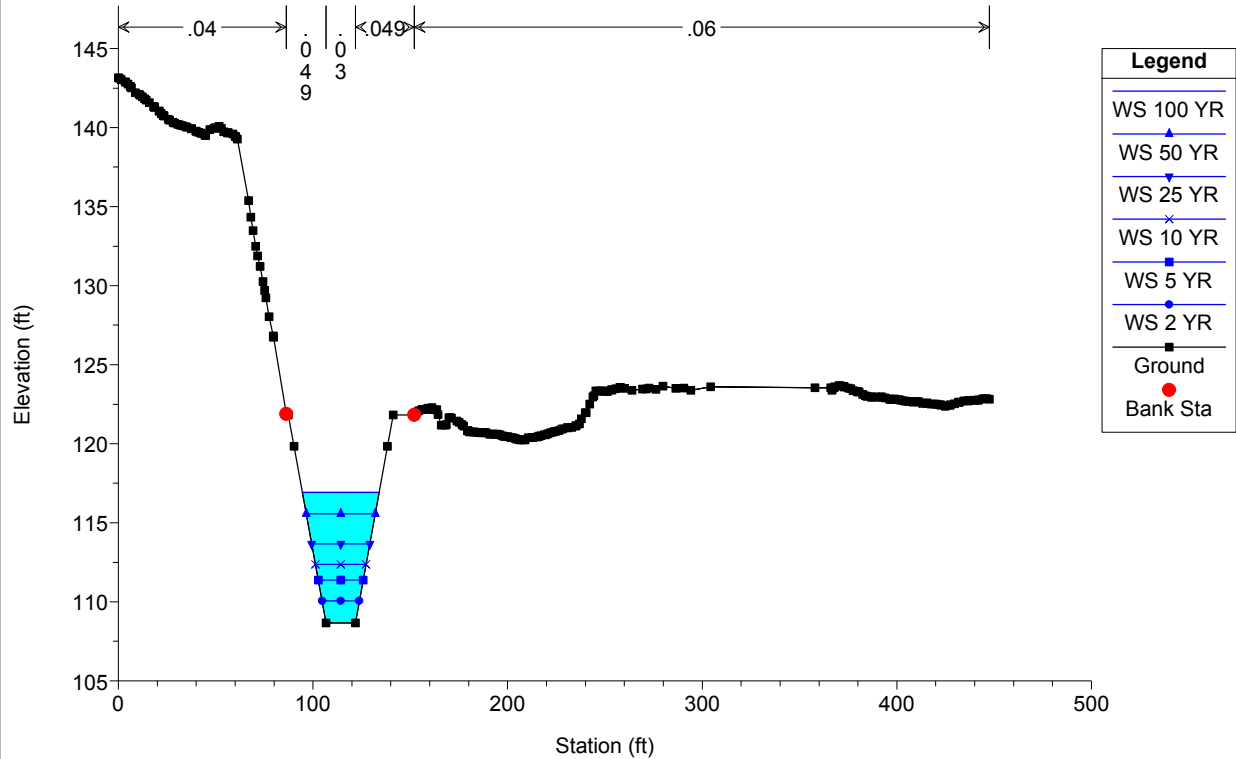
River = Auburn Creek Reach = Main Reach RS = 141.507



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

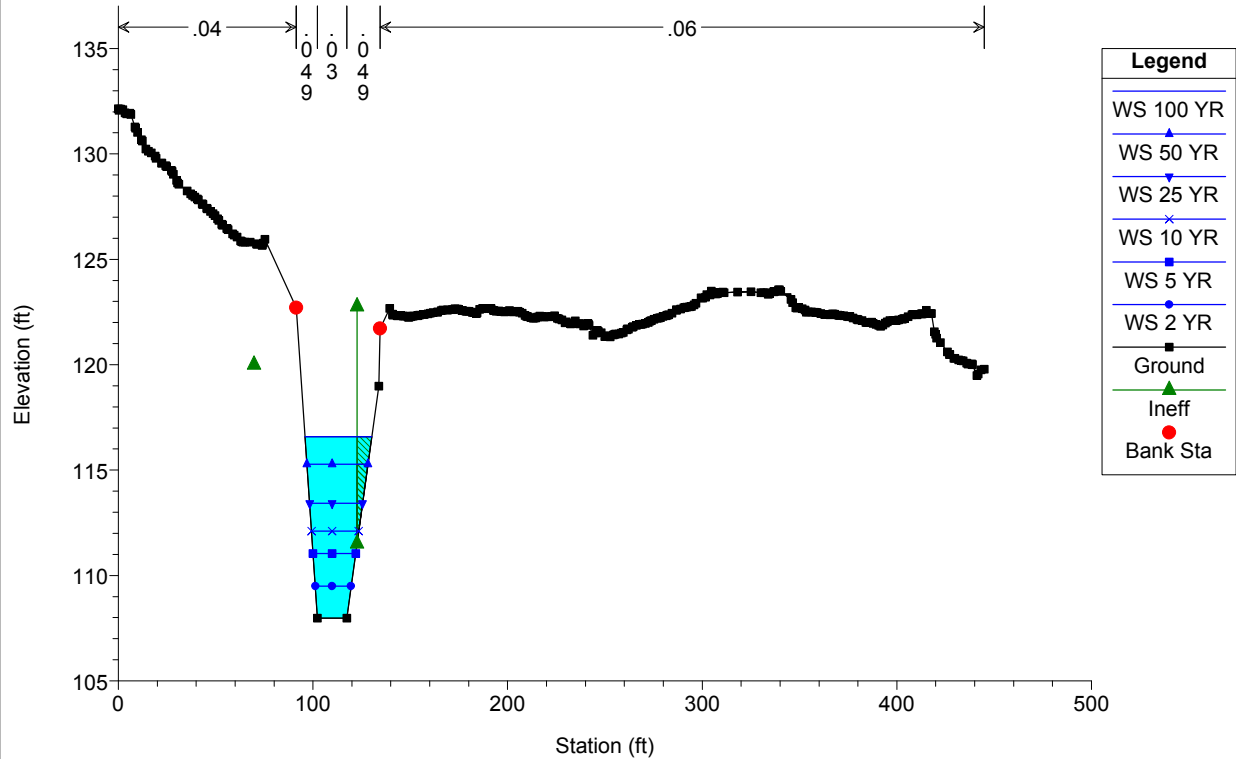
River = Auburn Creek Reach = Main Reach RS = 65.30157



Auburn-Creek-Channel Plan: Recommended_Maintenance 4/3/2017

Geom: Recommended_Maintenance_Condition Flow: FEMA_Flow Rates_Veg_Sed

River = Auburn Creek Reach = Main Reach RS = 4.590075



HEC-RAS Version 4.1.0 Jan 2010
 U.S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

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X   X  XXXXXX   XXXX   XXXX   XX   XXXX
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Computational Flow Regime: Mixed Flow

FLOW DATA

Flow Title: FEMA_Flow Rates_Veg_Sed
 Flow File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f02

Flow Data (cfs)

River	Reach	RS	100 YR	50 YR
25 YR	10 YR	5 YR	2 YR	
Auburn Creek	Main Reach	3283.479	1200	950
630	430	290	120	

Boundary Conditions

River	Reach	Profile	Upstream
Downstream			
Auburn Creek	Main Reach	100 YR	Normal S = 0.005
Known WS = 116.59			
Auburn Creek	Main Reach	50 YR	Normal S = 0.005
Known WS = 115.28			
Auburn Creek	Main Reach	25 YR	Normal S = 0.005
Known WS = 113.43			
Auburn Creek	Main Reach	10 YR	Normal S = 0.005
Known WS = 112.1			
Auburn Creek	Main Reach	5 YR	Normal S = 0.005
Known WS = 111.05			
Auburn Creek	Main Reach	2 YR	Normal S = 0.005
Known WS = 109.49			

GEOMETRY DATA

Geometry Title: Recommended_Maintenance_Condition
 Geometry File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g04

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 3283.479

INPUT

Description:

Station	Elevation	Data	num=	336	Sta	Elev	Sta	Elev	Sta	Elev
0	170.35	.15	170.33	.26	170.32	.4	170.3	2.44	170.05	
3.01	170.02	3.71	169.98	4.55	169.97	5.23	169.93	5.97	169.93	
6.89	169.87	8.64	169.81	9.78	170.06	10.31	170.18	11.17	170.19	
12.32	170.22	13.29	170.07	16.22	169.75	16.96	169.54	17.65	169.38	
18.05	169.34	19.73	169.16	20.83	168.97	21.71	168.8	23.26	168.45	
23.36	168.44	23.63	168.36	25.49	167.88	26.16	167.66	27.62	167.13	
28.52	166.83	29.49	166.51	30.9	166.05	31.17	165.95	31.35	165.9	

PROJECT DATA

Project Title: Auburn-Creek-Channel
 Project File : AuburnCreek.prj
 Run Date and Time: 4/3/2017 10:51:48 PM

Project in English units

PLAN DATA

Plan Title: Recommended_Maintenance
 Plan File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.p06

Geometry Title: Recommended_Maintenance_Condition
 Geometry File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.g04

Flow Title : FEMA_Flow Rates_Veg_Sed
 Flow File : w:\17204-L_TO#39_IHHA_FY17\7_Auburn Creek Map 70
 76\WaterResources\Hydraulics\HecRas\AuburnCreek.f02

Plan Description:

Veg and sed maintenance only in cross sections 4.590075, 65.30157, 141.507, 3159.787, 3229.405, 3283.479

Plan Summary Information:

Number of: Cross Sections = 22 Multiple Openings = 0
 Culverts = 2 Inline Structures = 0
 Bridges = 0 Lateral Structures = 0

Computational Information

Water surface calculation tolerance = 0.01
 Critical depth calculation tolerance = 0.01
 Maximum number of iterations = 20
 Maximum difference tolerance = 0.3
 Flow tolerance factor = 0.001

Computation Options

Critical depth computed only where necessary
 Conveyance Calculation Method: At breaks in n values only
 Friction Slope Method: Average Conveyance

32.96	165.45	33.91	165.24	34.65	165.07	35.65	164.91	36.28	164.82
36.77	164.74	38.16	164.6	39.35	164.54	40.19	164.48	42.11	164.34
42.28	164.33	42.36	164.33	44.56	164.22	44.98	164.19	46.33	164.15
47.95	164.05	50.66	163.97	50.68	163.97	50.96	163.95	53.6	163.77
53.7	163.77	53.89	163.77	55.39	163.78	56.22	163.73	57.55	163.64
59.24	163.59	59.76	163.58	60.42	163.56	61.2	163.54	61.8	163.52
63.46	163.48	64.67	163.45	65.56	163.44	66.97	163.38	67.15	163.37
67.27	163.36	69.65	163.31	70.15	163.31	71.58	163.25	72.72	163.25
73.62	163.24	75.76	163.16	75.94	163.15	76.18	163.16	77.42	163.17
78.33	163.13	79.04	163.1	80.22	163.04	80.85	163.03	81.22	163.03
82.84	163.04	84.04	163.02	84.85	163	86.5	162.97	86.81	162.97
86.96	162.97	88.88	162.95	89.66	162.95	90.75	162.97	92.47	162.96
92.49	162.96	92.51	162.96	95.25	162.96	95.31	162.96	97.03	162.94
98.12	162.9	99.04	162.87	100.94	162.79	101.65	162.77	103.77	162.75
104.6	162.74	106.58	162.78	107.26	162.81	109.5	163.14	109.76	163.19
110.22	163.38	111.69	163.92	112.5	164.17	113.36	164.39	113.84	164.51
115.43	164.4	115.93	164.29	116.48	164	117.43	163.46	118.25	163.07
119.38	162.52	121.32	160.61	121.64	160.38	122.15	160.07	124.28	159.12
125	158.9	126.4	157.44	126.98	157.44	127.59	156.97	136.59	150.97
152.59	150.97	161.29	157.43	162.7	157.82	163.42	157.8	164.87	157.84
165.15	157.84	165.38	157.86	167.04	157.88	167.92	157.92	168.18	157.95
170.4	158.21	171.17	158.23	172.92	158.23	174.36	158.26	175.75	158.24
176.6	158.25	177.42	158.27	178.75	158.29	180.87	158.27	181.31	158.27
182.08	158.3	183.22	158.36	183.87	158.36	185.5	158.36	187.31	158.32
188.07	158.31	190.54	158.36	191.08	158.36	194.09	158.4	194.14	158.4
194.19	158.4	195.9	158.36	197.28	158.36	197.71	158.37	198.26	158.39
199.75	158.41	200.91	158.46	201.59	158.46	202.28	158.47	203.21	158.47
204.13	158.51	205.4	158.5	207.73	158.47	208.13	158.48	208.65	158.49
210.05	158.53	211.14	158.55	212.34	158.55	214.85	158.59	215.05	158.59
215.45	158.59	217.17	158.59	218.06	158.6	219.69	158.62	222.13	158.59
222.4	158.59	223.24	158.59	224.98	158.58	225.56	158.6	227.68	158.63
229.66	158.68	230.24	158.71	231.17	158.68	232.37	158.65	233.14	158.68
234.73	158.71	236.77	158.75	237.2	158.75	237.54	158.75	239.67	158.77
241.13	158.77	242	158.77	242.84	158.79	244.24	158.83	245.73	158.81
246.74	158.81	249.32	158.89	249.67	158.89	250.04	158.89	252.02	158.88
253.89	158.93	254.39	158.95	255.75	158.97	257.11	159	257.61	159
259.74	158.99	262.32	159.02	262.38	159.02	262.5	159.02	264.64	159.04
265.72	159.04	267.05	159.14	268.78	159.11	269.6	159.15	270.22	159.11
272.09	159.08	273.68	159.96	274.82	158.95	277.72	158.98	278.07	159
278.14	158.99	280.52	158.88	281.6	158.87	283.07	158.89	285.24	158.76
285.66	158.75	285.96	158.74	287.47	158.76	289.07	158.68	289.14	158.68
289.2	158.68	291.16	158.57	297.07	158.51	297.14	158.51	297.17	158.51
297.33	158.52	299.77	158.62	301.37	158.66	302.26	158.66	304.56	158.63
304.61	158.63	304.69	158.63	307.28	158.66	309.09	158.66	309.81	158.66
311.51	158.64	312.03	158.63	312.24	158.64	314.22	158.74	316.1	158.79
316.4	158.79	316.73	158.79	318.65	158.78	319.87	158.82	321.08	158.85
322.72	158.86	323.74	158.86	324.47	158.85	325.86	158.84	327.69	158.89
327.79	158.89	327.87	158.9	329.92	159.08	331.66	159.22	332.04	159.28
332.53	159.28	333.96	159.28	335.69	159.28	335.92	159.28	336.26	159.28
338.71	159.27	340.4	159.23	341.09	159.18	341.93	159.05	342.88	158.91
343.66	158.87	344.93	158.86	346	158.85	347.21	158.85	348.66	158.87
349.79	158.86	351.9	158.85	352.64	158.85	353.33	158.86	354.99	158.86
356.79	158.87	357.43	158.87	360.04	158.87	360.21	158.87	360.33	158.87
362.23	158.84	363.69	158.84	364.26	158.84	365.14	158.84	366.83	158.78
368.56	158.72	369.59	158.7	370.58	158.67	372.09	158.63	373.67	158.58
374.61	158.54	376.95	158.56	377.16	158.56	377.31	158.55	379.35	158.56
381.14	158.27	381.6	158.22	382.21	158.09	383.53	157.8	385.13	157.5
385.36	157.45	385.55	157.44	387.67	157.39	389.3	157.54	390.01	157.62
390.93	157.82	392.28	158.24	394.26	159.08	394.61	159.27	394.97	159.44
397.44	160.59	399.9	161.33	400.28	161.49	401.39	161.91	402.84	162.54
403.08	162.65								

Manning's n Values num= 5

Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val	Sta	n	Val
0	.016	125	.049	136.59	.035	152.59	.018	162.7	.016					
Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.					
	125	161.29		51.96	54.07	55.73		.3	.5					
Ineffective Flow	num=													
Sta L	Sta R	Elev	Permanent											
0	129.5	162	F											
166.5	403.08	157.87	F											
CROSS SECTION														
RIVER: Auburn Creek														
REACH: Main Reach RS: 3229.405														
INPUT														
Description:														
Station	Elevation	Data	num=	348										
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	178.45	.44	178.27	2.5	177.11	3.97	176.08	4.42	175.9					
6.28	175.57	6.84	175.39	8.59	173.97	8.68	173.93	9.82	173.5					
11.22	172.98	11.34	172.94	13.17	172.24	13.59	172.02	15.23	171.28					
16.2	170.99	17.39	170.44	18.64	170.15	19.87	169.41	21.32	168.55					
22.58	168.18	23.6	167.84	23.99	167.75	24.34	167.66	24.77	167.5					
26.11	167.18	30.16	166.23	32.35	165.82	33.6	165.22	33.65	165.19					
34.64	164.86	36.26	164.32	36.34	164.3	38.62	163.88	39.01	163.84					
40.93	163.72	41.38	163.69	41.47	163.69	43.08	163.65	44.08	163.63					
44.83	163.6	46.65	163.6	46.7	163.6	49.08	163.61	49.25	163.61					
49.56	163.6	51.09	163.59	51.96	163.59	53.58	163.58	54.5	163.55					
55.57	163.54	56.93	163.53	57.11	163.53	57.25	163.53	59.78	163.49					
59.82	163.49	60.51	163.48	62.53	163.44	62.6	163.44	62.76	163.44					
64.47	163.41	65.24	163.4	66.77	163.39	68.19	163.39	68.83	163.4					
69.63	163.37	70.27	163.35	70.76	163.34	72.33	163.34	73.47	163.33					
74.34	163.32	75.69	163.31	76.01	163.31	76.21	163.31	78.11	163.34					
79.03	163.31	80.21	163.29	81.77	163.26	82.2	163.25	82.92	163.23					
83.91	163.2	84.51	163.21	85.66	163.23	87.41	163.21	87.42	163.21					
87.45	163.21	89.09	163.2	90.15	163.17	90.84	163.15	92.16	163.12					
92.76	163.11	93.07	163.11	94.88	163.07	96	163.03	97.04	162.99					
98.93	162.89	99.13	162.87	99.4	162.87	100.79	162.84	101.81	162.78					
102.74	162.75	104.87	162.7	105.13	162.68	105.43	162.68	106.65	162.64					
107.7	162.64	108.22	162.62	108.91	162.62	109.89	162.59	110.63	162.59					
112.19	162.66	113.57	162.83	115.03	163.16	116.12	163.48	116.5	163.59					
117.92	164.04	119.27	164.24	120.1	164.19	121.14	163.88	121.71	163.68					
122.16	163.4	124.08	162.06	124.88	161.35	126.11	160.17	127.7	158.61					
127.95	158.38	129.7	157.29	133.43	156.97	134.4	156.32	143.4	150.32					
155.4	150.32	164.4	156.32	165.26	156.97	165.89	157.31	166.06	157.4					
166.57	157.53	167.86	157.88	168.97	158	169.94	158.07	171.76	158.24					
172.62	158.3	175	158.43	175.36	158.45	178.01	158.51	178.04	158.51					
178.07	158.51	179.72	158.52	181.38	158.66	181.45	158.67	181.95	158.7					
184.04	158.8	184.32	158.81	186.3	158.84	187.82	158.93	188.53	158.96					
190.77	159	190.88	159.01	191.01	159.01	192.74	159.01	194.3	159.01					
194.67	159.01	195.67	159.04	196.75	159.08	196.93	159.07	200.51	159.11					
200.61	159.11	202.1	159.19	204.34	159.19	204.85</								

287.73	158.86	289.14	158.9	290.36	158.8	291.54	158.61	293.61	158.53
293.92	158.51	294.41	158.5	296.92	158.43	298.49	158.37	299.42	158.36
300.63	158.3	301.33	158.3	301.84	158.15	303.65	157.87	305.43	157.99
306.17	158.03	306.93	158.08	308.67	158.17	310.26	158.22	310.99	158.24
311.53	158.27	313.16	158.39	315.34	158.4	315.35	158.4	318.27	158.47
318.83	158.48	321.32	158.52	324.01	158.55	324.25	158.55	324.55	158.56
326.01	158.6	327.18	158.63	328	158.64	328.74	158.65	330.37	158.66
332.21	158.69	332.83	158.69	335.4	158.7	335.56	158.7	335.75	158.72
338.32	158.89	340.38	159.06	341.08	159.1	343.59	159.15	343.74	159.15
343.89	159.15	346.12	159.14	348.44	159.11	348.49	159.11	348.56	159.11
350.22	159.07	351.42	159.08	352.27	159.07	353.33	159.01	355.03	158.92
356.34	158.78	357.25	158.65	358.36	158.6	358.99	158.56	359.49	158.57
360.85	158.59	361.81	158.6	362.8	158.6	364.25	158.59	364.89	158.59
367.19	158.58	367.45	158.58	367.7	158.58	369.89	158.56	372.19	158.51
372.33	158.51	372.94	158.49	374.69	158.45	375.09	158.45	376.81	158.42
378.04	158.36	378.89	158.34	380.05	158.29	380.85	158.26	382.29	158.22
382.71	158.21	382.94	158.21	385.5	158.07	388.01	157.88	388.33	157.86
389.05	157.9	390.4	157.96	391.01	157.97	392.43	157.94	393.29	157.91
394.42	157.85	396.27	157.04	396.46	156.95	396.94	156.82	398.55	156.39
399.18	156.28	400.94	156.04	402.51	156.08	403.41	156.05	404.4	156.22
405.52	156.56	407.27	157.46	407.38	157.51	407.44	157.57	410.44	159.54
411.39	159.85	413	160.42	413.33	160.51	413.79	160.56	415.05	160.74
415.99	160.79	417.13	160.74	418.18	160.64	419.68	160.48	421.35	160.28
422.16	160.24	424.34	160.21	424.61	160.22	424.88	160.23	427.42	160.33
429.98	160.46	430.11	160.48	430.25	160.51	431.8	160.78	433.13	160.99
433.61	161.13	433.91	161.2	435.8	161.72	437.42	162.25	437.94	162.41
438.78	162.71	440.58	163.66	441.61	164.26				

Manning's n Values	num=	6							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.016	119.27	.06	127.7	.049	143.4	.035	155.4	.018
165.89	.016								

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	129.7	165.26		70.8	69.62	68.75		.1	.3
Blocked Obstructions	num=	1							
Sta L	Sta R	Elev							
184.99	288.7158	8851							

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach
 RS: 3159.787

INPUT											
Description:											
Station Elevation Data	num=	265									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	182.09	.91	181.68	.96	181.66	3.74	180.72	8.31	178.78		
9.46	178.51	10.5	177.7	14.59	175.89	16.84	174.81	18.77	173.2		
21.73	168.57	21.89	168.34	21.97	168.33	24.49	167.5	25	167.47		
26.64	167.25	28.07	167.22	29.01	167.32	29.82	167.37	33.78	166.96		
42.22	164.98	42.23	164.98	44.83	164.94	45.14	164.94	45.9	164.95		
46.77	164.94	51.65	165.06	51.74	165.04	51.79	165.03	57.22	165.34		
58.74	165.06	59	165.06	61.42	165.06	88.56	164.93	89.46	164.92		
89.84	164.89	90.47	164.95	91.34	164.92	92.97	164.94	96.52	164.95		
98.16	164.95	99.84	164.9	100.82	164.9	101.28	164.9	102.52	164.74		
103.16	164.66	103.4	164.65	104.79	164.55	118.02	157.65	126.87	149.83		
138.87	149.83	147.72	157.16	150.81	157.79	151.51	157.98	152.63	158.06		
153.43	158.14	155.17	158.29	155.69	158.34	155.93	158.34	157.39	158.33		
158.45	158.44	159.55	158.51	161.66	158.61	162.15	158.65	162.78	158.65		
163.62	158.64	164.25	158.65	165.72	158.73	167.45	158.75	167.94	158.74		

168.67	158.76	169.4	158.79	169.88	158.81	171.88	158.85	173.03	158.85
173.89	158.88	175.07	158.98	175.31	159.01	175.48	159.02	176.97	159.08
178.6	158.99	178.63	158.99	178.64	158.99	181.87	159.08	192.01	159.08
193.86	159.1	195.72	159.08	196.54	159.1	223.63	159.15	231.55	159.3
236.18	159.17	237.37	159.03	258.51	158.85	264.04	158.91	266.63	158.98
269.3	158.94	271.67	159.05	271.97	159.05	272.44	159.05	274.41	158.97
275.32	158.97	276.37	158.92	277.66	158.82	278.82	158.73	280.24	158.64
282.24	158.55	282.46	158.55	282.61	158.54	284.15	158.57	285.14	158.57
286.11	158.56	287.24	158.54	289.21	158.47	290.69	158.45	291.67	158.4
293.38	158.2	295.72	158.02	296.21	158.02	298.34	158.12	298.37	158.12
298.42	158.12	301	158.23	302.64	158.34	303.31	158.39	305.11	158.42
305.22	158.42	305.26	158.42	307.08	158.52	308.56	158.53	308.97	158.53
309.49	158.54	310.73	158.53	312.13	158.63	312.58	158.66	313.18	158.67
315.02	158.7	316.43	158.74	317.35	158.77	319.23	158.81	319.5	158.82
320.94	158.81	325.88	158.79	326.63	158.79	326.82	158.81	327.34	158.82
329.05	158.92	330.96	159.18	331.18	159.22	331.47	159.23	332.79	159.29
333.76	159.32	334.66	159.31	335.42	159.26	336.92	159.09	338.61	159.09
339.31	159.08	341.43	159.08	341.98	159.09	342.39	159.09	344.17	159.1
346.27	159.11	346.39	159.11	346.56	159.11	349.4	159.08	349.46	159.08
352.47	159.05	354.82	158.98	355.28	158.96	356.1	158.96	357.14	158.97
357.7	158.95	359.9	158.91	363.05	158.81	363.06	158.81	363.09	158.81
364.84	158.82	366.08	158.81	366.7	158.8	367.07	158.78	368.48	158.73
370.27	158.65	371.51	158.59	372.52	158.54	374.25	158.42	374.26	158.42
374.27	158.42	376.38	158.29	377.8	158.2	378.48	158.15	379.5	158.07
380.34	158.05	381.47	158.42	381.94	158.57	382.28	158.58	384.21	158.61
385.77	158.9	386.56	158.97	387.5	159.13	388.47	159.25	389.93	159.14
390.16	159.12	390.32	159.1	392.27	158.87	393.66	159.07	394.37	159.11
395.36	159.33	396.4	159.55	397.94	159.82	398.5	159.88	398.95	159.92
400.85	160.05	403.14	160.37	403.15	160.37	403.17	160.37	403.32	160.37
405.84	160.36	406.13	160.36	406.35	160.37	408.31	160.33	410.17	160.44
410.49	160.44	410.89	160.46	412.16	160.52	413.4	160.55	413.86	160.57
414.16	160.6	415.93	160.82	417.62	160.78	418.04	160.78	418.65	160.84
419.69	160.95	421.14	161.12	421.15	161.12	421.16	161.12	423.89	161.34
426.36	161.49	426.5	161.5	426.74	161.52	428.07	161.64	428.81	161.72
429.87	161.88	430.51	161.94	431.89	162.07	433.72	162.25	433.9	162.26
434.19	162.28	436.08	162.41	436.71	162.46	436.83	162.47	436.93	162.48
439.36	162.75	441.53	163.03	441.86	163.07	442.27	163.11	444.74	163.25
446.83	163.42	448.09	163.46	448.91	163.48	450.22	163.54	451.23	163.59
452.79	163.73	453.94	163.79	455.38	163.86	458.52	163.68	459.65	163.97

Manning's n Values	num=	6							
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	104.79	.02	118.02	.039	126.87	.035	138.87	.018
147.72	.016								

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	118.02	147.72		126.5	134.16	135.59		.1	.3
Blocked Obstructions	num=	2							
Sta L	Sta R	Elev	Sta L	Sta R	Elev				
181.03	284.29	159.054	29.52	100.8167	3486				

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach
 RS: 3025.628

INPUT											
Description:											
Station Elevation Data	num=	343									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85	189.7	2.54	189.73	3.63	189.55	5.69	188.69		
6.22	188.45	6.86	188.35	8.43	188.34	9.77	188.56	10.43	188.62		

11.21	188.4	12.35	187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	124.84	162.48	138.16	158.27
145.09	149.16	157.09	149.16	166.09	154.98	170.96	158.23	171.12	158.27
173.96	159.54	175.43	160.19	176.05	160.26	177.36	160.48	178.11	160.47
179.5	160.36	179.68	160.35	180.43	160.42	181.58	160.52	181.87	160.52
184.26	160.47	185.09	160.48	185.5	160.49	187.18	160.44	197.09	160.44
200.64	160.41	202.78	160.41	204.35	160.37	206.02	160.42	207.95	160.34
210.34	160.38	213.77	160.47	216.29	160.52	217.71	160.54	219.25	160.54
221.15	160.56	223.23	160.53	224.59	160.54	226.36	160.51	228.65	160.48
231.6	160.52	232.74	160.51	234.21	160.58	236.74	160.55	239.22	160.53
243.47	160.52	245.86	160.45	258.58	160.51	259.84	160.51	260.04	160.55
260.21	160.54	261.36	160.49	261.51	160.48	262.25	160.49	263.16	160.51
263.34	160.5	265.94	160.42	267.06	160.4	268.02	160.39	269.26	160.41
269.69	160.4	270.42	160.37	271.9	160.32	272.81	160.32	273.64	160.34
274.77	160.4	275.26	160.39	276.27	160.39	277.77	160.34	278.48	160.37
279.42	160.36	280.55	160.37	280.84	160.38	281.08	160.38	282.53	160.35
284.21	160.38	284.23	160.38	284.25	160.38	284.42	160.38	286.34	160.44
286.75	160.44	287.5	160.5	289.2	160.65	289.58	160.64	290.15	160.65
291.79	160.73	293.45	160.83	294.35	160.81	296.08	160.48	296.61	160.37
297.52	160.41	298.26	160.51	301.43	160.81	302.21	160.73	303.44	160.65
304.31	160.67	305.5	160.69	306.51	160.7	307.38	160.71	308.36	160.66
309.33	160.64	310.38	160.66	311.55	160.65	313.2	160.65	313.88	160.65
314.36	160.64	315.75	160.65	316.51	160.65	317.69	160.63	318.99	160.57
319.75	160.54	320.44	160.48	321.6	160.41	322.44	160.4	323.6	160.33
325.16	160.25	325.8	160.21	326.28	160.19	327.61	160.18	328.24	160.02
329.83	159.75	332.18	159.93	332.23	159.94	332.43	159.95	333.88	160.04
334.33	160.07	335.68	160.13	336.86	160.21	337.51	160.23	338.26	160.26
339.1	160.28	340.22	160.33	340.75	160.34	341.59	160.37	343.32	160.42
344.39	160.45	345.19	160.46	346.39	160.51	346.74	160.52	347.37	160.52
349.35	160.54	350.43	160.57	351.13	160.63	352.34	160.67	352.36	160.67
352.38	160.67	354.33	160.7	356.13	160.7	356.3	160.7	356.49	160.71
357.13	160.73	358.39	160.77	358.94	160.78	360.07	160.77	361.77	160.76
362.58	160.76	364.32	160.86	364.47	160.87	367.23	161.04	368.63	161.18
369.65	161.22	370.61	161.05	371.87	160.86	373.22	160.84	374.11	160.82
374.94	160.8	376.15	160.79	376.85	160.81	378	160.83	378.89	160.81
379.86	160.79	381.15	160.78	381.73	160.78	383.24	160.74	383.76	160.73
384.21	160.72	385.83	160.71	387.7	160.66	387.84	160.66	389.72	160.63
389.88	160.63	390.1	160.62	392.55	160.59	394.24	160.52	394.87	160.5
396.25	160.5	396.79	160.49	397.25	160.48	398.96	160.45	399.58	160.42
406.43	160.16	406.77	160.14	407.24	160.14	407.6	160.13	408.69	160.14
409.45	160.11	410.92	160.02	413.13	159.94	413.75	159.91	414.16	159.89
415.48	159.84	416.18	159.78	417.48	159.83	418.75	159.97	419.78	160.15
420.85	160.19	421.55	160.21	422.79	160.21	422.98	160.22	423.16	160.23
425.24	160.42	427.37	160.55	427.47	160.57	429.27	161.07	429.65	161.26
429.92	161.42	431.65	162.36	433.28	163.33	433.62	163.51	434.11	163.81
435.56	164.46	436.04	164.68	436.21	164.72	436.37	164.76	438.41	165.21
440.38	165.62	440.51	165.65	440.68	165.68	442.12	165.93	442.61	166.04

444.13	166.33	445.35	166.51	446.31	166.65	447.52	166.79	448.55	166.94
449.35	167.02	451.18	167.25	453.33	167.53	453.85	167.61	454.29	167.66
456.16	167.85	456.27	167.86	457.81	168.01	458.43	168.11	461.9	168.44
462.96	168.57	463.41	168.59	464.69	168.7				
Manning's n Values num= 5									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.06	138.16	.039	145.09	.035	157.09	.018	171.12	.016
Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.									
	138.16	171.12		111.21	109.32	112.92		.3	.5
Ineffective Flow num= 3									
Sta L	Sta R	Elev	Permanent						
0	133	160	F						
169	180	160.48	F						
369.65	475	161.22	F						
Blocked Obstructions num= 1									
Sta L	Sta R	Elev							
198.37	265.44	160.4352							
CULVERT									
RIVER: Auburn Creek									
REACH: Main Reach RS: 3000									
INPUT									
Description:									
Distance from Upstream XS =	20								
Deck/Roadway Width =	74								
Weir Coefficient =	2.6								
Upstream Deck/Roadway Coordinates									
num=	2								
Sta Hi	Cord Lo	Cord	Sta Hi	Cord Lo	Cord				
0	160		500	160					
Upstream Bridge Cross Section Data									
Station Elevation Data num= 343									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	189.65	1.85	189.7	2.54	189.73	3.63	189.55	5.69	188.69
6.22	188.45	6.86	188.35	8.43	188.34	9.77	188.56	10.43	188.62
11.21	188.4	12.35	187.93	13.04	187.5	14.26	186.63	16.12	186.03
16.15	186.02	16.19	186	18.01	185.27	19.53	184.39	19.91	184.21
20.37	184.02	22.78	183.05	23.75	182.64	25.25	182.02	25.65	181.84
25.95	181.72	28.27	180.38	29.38	179.77	29.54	179.66	30.85	178.56
31.25	178.4	33.39	176.81	41.16	170.22	46.94	165.34	48.2	165.15
52.61	164.87	52.68	164.86	52.74	164.86	52.81	164.86	53.21	164.87
56.8	164.82	58.86	164.67	61.68	164.61	62.46	164.6	63.72	164.55
65.18	164.5	65.34	164.51	65.55	164.52	65.82	164.5	70.08	164.36
70.84	164.37	72.1	164.38	73.68	164.44	74.48	164.48	75.12	164.48
76.8	164.47	78.29	164.51	79.13	164.54	80.09	164.57	81.38	164.61
83	164.64	83.59	164.65	84.04	164.66	85.49	164.68	86.25	164.66
87.3	164.63	88.98	164.6	89.07	164.6	89.24	164.6	90.55	164.61
93.13	164.65	93.65	164.64	94.65	164.59	96.76	164.44	97.3	164.41
98.18	164.37	99.29	164.31	100.63	164.22	101.36	164.16	101.99	164.12
103.4	164.01	104.33	163.96	105.46	163.89	107.17	163.73	107.52	163.7
107.9	163.68	109.51	163.6	110.93	163.52	111.57	163.46	112.02	163.43
113.69	163.26	115	163.2	115.81	163.15	115.85	163.15	115.94	163.14
117.75	163.08	118.56	162.97	123.07	162.58	124.84	162.48	138.16	158.27
145.09	149.16	157.09	149.16	166.09	154.98	170.96	158.23	171.12	158.27
173.96	159.54	175.43	160.19	176.05	160.26	177.36	160.48	178.11	160.47
179.5	160.36	179.68	160.35	180.43	160.42	181.58	160.52	181.87	160.52
184.26	160.47	185.09	160.48	185.5	160.49	187.18	160.44	197.09	160.44
200.64	160.41	202.78	160.41	204.35	160.37	206.02	160.42	207.95	160.34
210.34	160.38	213.77	160.47	216.29	160.52	217.71	160.54	219.25	160.54
221.15	160.56	223.23	160.53	224.59	160.54	226.36	160.51	228.65	160.48
231.6	160.52	232.74	160.51	234.21	160.58	236.74	160.55	239.22	160.53
243.47	160.52	245.86	160.45	258.58	160.51	259.84	160.51	260.04	160.55
260.21	160.54	261.36	160.49	261.51	160.48	262.25	160.49	263.16	160.51
263.34	160.5	265.94	160.42	267.06	160.4	268.02	160.39	269.26	160.41
269.69	160.4	270.							

200.64	160.41	202.78	160.41	204.35	160.37	206.02	160.42	207.95	160.34
210.34	160.38	213.77	160.47	216.29	160.52	217.71	160.54	219.25	160.54
221.15	160.56	223.23	160.53	224.59	160.54	226.36	160.51	228.65	160.48
231.6	160.52	232.74	160.51	234.21	160.58	236.74	160.55	239.22	160.53
243.47	160.52	245.86	160.45	258.58	160.51	259.84	160.51	260.04	160.55
260.21	160.54	261.36	160.49	261.51	160.48	262.25	160.49	263.16	160.51
263.34	160.5	265.94	160.42	267.06	160.4	268.02	160.39	269.26	160.41
269.69	160.4	270.42	160.37	271.9	160.32	272.81	160.32	273.64	160.34
274.77	160.4	275.26	160.39	276.27	160.39	277.77	160.34	278.48	160.37
279.42	160.36	280.55	160.37	280.84	160.38	281.08	160.38	282.53	160.35
284.21	160.38	284.23	160.38	284.25	160.38	284.42	160.38	286.34	160.44
286.75	160.44	287.5	160.5	289.2	160.65	289.58	160.64	290.15	160.65
291.79	160.73	293.45	160.83	294.35	160.81	296.08	160.48	296.61	160.37
297.52	160.41	298.26	160.51	301.43	160.81	302.21	160.73	303.44	160.65
304.31	160.67	305.5	160.69	306.51	160.7	307.38	160.71	308.36	160.66
309.33	160.64	310.38	160.66	311.55	160.65	313.2	160.65	313.88	160.65
314.36	160.64	315.75	160.65	316.51	160.65	317.69	160.63	318.99	160.57
319.75	160.54	320.44	160.48	321.6	160.41	322.44	160.4	323.6	160.33
325.16	160.25	325.8	160.21	326.28	160.19	327.61	160.18	328.24	160.02
329.83	159.75	332.18	159.93	332.23	159.94	332.43	159.95	333.88	160.04
334.33	160.07	335.68	160.13	336.86	160.21	337.51	160.23	338.26	160.26
339.1	160.28	340.22	160.33	340.75	160.34	341.59	160.37	343.32	160.42
344.39	160.45	345.19	160.46	346.39	160.51	346.74	160.52	347.37	160.52
349.35	160.54	350.43	160.57	351.13	160.63	352.34	160.67	352.36	160.67
352.38	160.67	354.33	160.7	356.13	160.7	356.3	160.7	356.49	160.71
357.13	160.73	358.39	160.77	358.94	160.78	360.07	160.77	361.77	160.76
362.58	160.76	364.32	160.86	364.47	160.87	367.23	161.04	368.63	161.18
369.65	161.22	370.61	161.05	371.87	160.86	373.22	160.84	374.11	160.82
374.94	160.8	376.15	160.79	376.85	160.81	378	160.83	378.89	160.81
379.86	160.79	381.15	160.78	381.73	160.78	383.24	160.74	383.76	160.73
384.21	160.72	385.83	160.71	387.7	160.66	387.84	160.66	389.72	160.63
389.88	160.63	390.1	160.62	392.55	160.59	394.24	160.52	394.87	160.5
396.25	160.5	396.79	160.49	397.25	160.48	398.96	160.45	399.58	160.42
406.43	160.16	406.77	160.14	407.24	160.14	407.6	160.13	408.69	160.14
409.45	160.11	410.92	160.02	413.13	159.94	413.75	159.91	414.16	159.89
415.48	159.84	416.18	159.78	417.48	159.83	418.75	159.97	419.78	160.15
420.85	160.19	421.55	160.21	422.79	160.21	422.98	160.22	423.16	160.23
425.24	160.42	427.37	160.55	427.47	160.57	429.27	161.07	429.65	161.26
429.92	161.42	431.65	162.36	433.28	163.33	433.62	163.51	434.11	163.81
435.56	164.46	436.04	164.68	436.21	164.72	436.37	164.76	438.41	165.21
440.38	165.62	440.51	165.65	440.68	165.68	442.12	165.93	442.61	166.04
444.13	166.33	445.35	166.51	446.31	166.65	447.52	166.79	448.55	166.94
449.35	167.02	451.18	167.25	453.33	167.53	453.85	167.61	454.29	167.66
456.16	167.85	456.27	167.86	457.81	168.01	458.43	168.11	461.9	168.44
462.96	168.57	463.41	168.59	464.69	168.7				

Manning's n Values		num=	5
Sta	n Val	Sta	n Val
0	.06	138.16	.039
		145.09	.035
		157.09	.018
		171.12	.016

Bank Sta: Left	Right	Coeff	Contr.	Expan.
138.16	171.12		.3	.5
Ineffective Flow		num=	3	
Sta L	Sta R	Elev	Permanent	
0	133	160	F	
169	180	160.48	F	
369.65	475	161.22	F	
Blocked Obstructions		num=	1	
Sta L	Sta R	Elev		
198.37	265.44	160.4352		

Downstream	Deck/Roadway	Coordinates
num=	2	

Sta	Hi	Cord	Lo	Cord	Sta	Hi	Cord	Lo	Cord
0		160			500		160		
Downstream Bridge Cross Section Data									
Station		Elevation	Data	num=	417				
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.86	2.23	178.14	4.81	178.28	4.89	178.3	5.02	178.29
6.11	178.26	8.47	178.2	8.72	178.17	10.54	178.6	12.69	178.51
15.61	177.61	18.08	176.91	18.75	176.65	20.54	176.1	23.88	175.71
25.25	175.84	27.56	175.43	29.98	174.26	30.96	173.87	32.71	173.52
34.37	173.22	36.56	173.02	37.29	172.94	37.54	172.83	38.18	172.65
39.55	172.03	41.26	171.42	43.11	170.93	44.64	170.48	44.68	170.46
47.67	169.28	48.38	169.07	49.51	168.54	50.5	168.16	52.72	167.33
52.93	167.24	53.34	167.18	56.82	166.88	57.43	166.83	57.44	166.84
57.47	166.83	72.21	165.27	75.9	164.5	77.04	164.24	77.33	164.25
78.83	164.22	80.07	164.2	81.08	164.16	82.28	164.16	83.12	164.14
84.03	164.12	84.9	164.08	85.69	164.1	87.05	164.09	88.51	164.06
89.5	164.03	90.4	164.02	91.49	164.01	92.73	163.97	93.2	163.96
93.6	163.94	95.69	163.89	98.35	163.89	98.41	163.89	98.46	163.89
99.97	163.85	101.49	163.82	101.52	163.82	101.56	163.82	104.03	163.7
106.31	163.6	106.56	163.59	107.62	163.52	109.03	163.43	109.37	163.4
111.63	163.26	114.24	163.14	114.27	163.14	114.3	163.14	116.58	163.01
116.86	163	117	162.92	119.73	161.32	122.01	159.69	122.45	159.38
123.61	159.14	124.57	158.92	124.93	158.83	126.52	158.37	127.61	157.72
128.46	157.04	129.67	155.9	130.47	155.16	132.42	154.02	132.54	153.96
132.59	153.93	134.57	153.12	135.94	152.5	136.58	152.14	137.48	151.31
139.15	149.32	140.1	148.94	142.59	147.08	144.37	147.09	144.6	147.11
144.92	147.09	146.43	147.1	147.88	147.15	148.28	147.15	148.58	147.16
150.43	147.14	152.34	147.25	152.55	147.26	152.82	147.33	154.24	147.63
155.67	149.35	155.82	149.65	157.51	152.73	158.54	152.69	159.37	153.05
160.89	153.82	166.11	156.69	168.22	157.21	169.14	157.12	170.08	157.36
170.62	157.56	171.16	157.75	172.58	158.4	173.73	158.86	174.76	159.35
176.06	159.76	177.19	159.93	177.77	159.92	178.74	159.91	179.49	159.81
179.83	159.81	180.04	159.81	180.85	159.82	187.75	159.85	188.77	159.9
190.65	159.9	193.45	159.83	194.89	159.85	201.05	159.92	203.45	159.96
207.03	159.93	220.98	160.1	223.01	160.11	228.36	160.1	232.41	160.17
234.41	160.2	235.95	160.25	236.65	160.26	236.91	160.27	237.46	160.29
239.37	160.38	239.97	160.4	240.44	160.41	241.76	160.42	242.7	160.44
243.82	160.44	245.36	160.49	246.56	160.51	247.43	160.54	248.49	160.57
249.72	160.59	250.32	160.6	251.32	160.61	253.19	160.66	254.33	160.67
255.16	160.69	256.47	160.71	256.55	160.71	256.6	160.71	258.9	160.77
261.12	160.85	261.27	160.86	261.42	160.86	262.73	160.86	263.63	160.92
264.38	160.97	264.92	160.97	266.36	160.97	268.32	160.98	268.33	160.98
268.34	160.98	269.64	161.03	270.53	161.05	271.2	161.05	271.74	161.07
273.26	161.1	273.82	161.12	274.48	161.11	276.77	161.12	280.23	161.13
282.21	161.11	283.44	161.16	285.11	161.19	286.07	161.24	289.51	161.12
291.38	161.06	292.34	161.07	293.8	161.04	294.41	161.02	295.48	161.01
296.43	161.01	296.89	161.04	299.19	161.11	302.4	161.08	305.14	161.11
305.41	161.11	307.11	161.13	307.21	161.13	309.46	161.09	311.15	161.03
311.59	161.02	312.84	161.01	313.33	160.99	313.91	160.97	315.59	160.92
316.98	160.9	317.41	160.89	318.34	160.88	318.6	160.87	318.71	160.87
320.78	160.84	322.73	160.78	322.92	160.77	323.54	160.72	324.2	160.67
324.41	160.66	326.34	160.46	328.6	160.32	328.61	160.32	328.63	160.32
329.79	160.3	330.2	160.32	331.84	160.4	334.14	160.46	334.23	160.47
334.3	160.47	335.41	160.56	335.99	160.58	337.18	160.64	338.63	160.69
339.49	160.72	340.19	160.76	340.95	160.81	341.95	160.83	342.29	160.84
342.92	160.85	345.14	160.92	346.28	160.96	347.55	161.05	347.87	161.06
349.7	161.13	351.58	161.24	351.82	161.26	352.04	161.27	353.44	161.32
353.89	161.34	353.97	161.34	354.04	161.34	356.18	161.38	358.32	161.38
358.33	161.38	358.39	161.38	359.99	161.46	360.17	161.48	360.32	161.47
362.14	161.37	363.94	161.39	364.07	161.39	364.23	161.39	365.77	161.45

376.65	161.47	377.98	161.45	378.26	161.27	380	161.6	381.55	161.66
382.13	161.69	382.77	161.65	383.8	161.52	384.49	161.46	385.83	161.41
387.31	161.37	388.27	161.36	389.12	161.35	389.93	161.32	390.79	161.32
391.48	161.32	391.99	161.31	393.53	161.28	395.48	161.23	395.49	161.23
395.52	161.23	396.77	161.21	397.08	161.21	398.79	161.19	400.22	161.16
401.02	161.14	401.95	161.12	402.87	161.12	403.68	161.12	404.86	161.09
405.88	161.05	407.14	161.01	408.6	160.96	409.04	160.96	410.29	160.94
410.38	160.94	410.47	160.94	412.81	160.91	415.07	160.91	415.13	160.91
415.2	160.91	416.43	160.95	416.83	160.94	418.87	160.94	421.6	160.89
421.68	160.89	421.73	160.89	422.93	160.91	423.5	160.87	424.81	160.88
426	161.04	427.15	161.24	428.37	161.32	428.93	161.37	429.93	161.41
430.41	161.41	430.91	161.43	432.88	161.46	434.66	161.57	434.98	161.59
436.21	161.69	436.3	161.69	436.39	161.7	438.92	161.86	441.06	161.97
441.27	161.99	441.98	162.05	442.62	162.12	442.81	162.13	444.55	162.22
445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38	449.2	162.46
449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7	454.35	162.7
454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86	459.37	162.92
460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14	463.1	163.29
463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05	467.45	163.03
468.2	163.01	468.88	163.01	469.74	163	470.44	163.12	472.07	163.37
472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06	476.76	164.27
476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26	483.45	164.04
485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43	487.86	163.52
488.86	163.77	488.92	163.79	488.99	163.82	489.5	164	492.91	165.29
493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72	499.93	166.69
502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47	509.36	169.48
509.41	169.5	511.27	170.03						

Centerline Stations
Sta. Sta.
146.5 155.5
Downstream Elevation = 147.2
Centerline Stations
Sta. Sta.
143.78 152.78

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 2916.303

INPUT

Description:
Station Elevation Data num= 417

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	177.86	2.23	178.14	4.81	178.28	4.89	178.3	5.02	178.29
6.11	178.26	8.47	178.2	8.72	178.17	10.54	178.6	12.69	178.51
15.61	177.61	18.08	176.91	18.75	176.65	20.54	176.1	23.88	175.71
25.25	175.84	27.56	175.43	29.98	174.26	30.96	173.87	32.71	173.52
34.37	173.22	36.46	173.02	37.29	172.94	37.54	172.83	38.18	172.65
39.55	172.03	41.26	171.42	43.11	170.93	44.64	170.48	44.68	170.46
47.67	169.28	48.38	169.07	49.51	168.54	50.5	168.16	52.72	167.33
52.93	167.24	53.34	167.18	56.82	166.88	57.43	166.83	57.44	166.84
57.47	166.83	72.21	165.27	75.9	164.5	77.04	164.24	77.33	164.25
78.83	164.22	80.07	164.2	81.08	164.16	82.28	164.16	83.12	164.14
84.03	164.12	84.9	164.08	85.69	164.1	87.05	164.09	88.51	164.06
89.5	164.03	90.4	164.02	91.49	164.01	92.73	163.97	93.2	163.96
93.6	163.94	95.69	163.89	98.35	163.89	98.41	163.89	98.46	163.89
99.97	163.85	101.49	163.82	101.52	163.82	101.56	163.82	104.03	163.7
106.31	163.6	106.56	163.59	107.62	163.52	109.03	163.43	109.37	163.4
111.63	163.26	114.24	163.14	114.27	163.14	114.3	163.14	116.58	163.01
116.86	163	117	162.92	119.73	161.32	122.01	159.69	122.45	159.38
123.61	159.14	124.57	158.92	124.93	158.83	126.52	158.37	127.61	157.72
128.46	157.04	129.67	155.9	130.47	155.16	132.42	154.02	132.54	153.96
132.59	153.93	134.57	153.12	135.94	152.5	136.58	152.14	137.48	151.31
139.15	149.32	140.1	148.94	142.59	147.08	144.37	147.09	144.6	147.11
144.92	147.09	146.43	147.1	147.88	147.15	148.28	147.15	148.58	147.16
150.43	147.14	152.34	147.25	152.55	147.26	152.82	147.33	154.24	147.63
155.67	149.35	155.82	149.65	157.51	152.73	158.54	152.69	159.37	153.05
160.89	153.82	166.11	156.69	168.22	157.21	169.14	157.12	170.08	157.36
170.62	157.56	171.16	157.75	172.58	158.4	173.73	158.86	174.76	159.35
176.06	159.76	177.19	159.93	177.77	159.92	178.74	159.91	179.49	159.81
179.83	159.81	180.04	159.81	180.85	159.82	187.75	159.85	188.77	159.9
190.65	159.9	193.45	159.83	194.89	159.85	201.05	159.92	203.45	159.96
207.03	159.93	220.98	160.1	223.01	160.11	228.36	160.1	232.41	160.17
234.41	160.2	235.95	160.25	236.65	160.26	236.91	160.27	237.46	160.29
239.37	160.38	239.97	160.4	240.44	160.41	241.76	160.42	242.7	160.44
243.82	160.44	245.36	160.49	246.56	160.51	247.43	160.54	248.49	160.57
249.72	160.59	250.32	160.6	251.32	160.61	253.19	160.66	254.33	160.67
255.16	160.69	256.47	160.71	256.55	160.71	256.6	160.71	258.9	160.77
261.12	160.85	261.27	160.86	261.42	160.86	262.73	160.86	263.63	160.92
264.38	160.97	264.92	160.97	266.36	160.97	268.32	160.98	268.33	160.98
268.34	160.98	269.64	161.03	270.53	161.05	271.2	161.05	271.74	161.07
273.26	161.1	273.82	161.12	274.48	161.11	276.77	161.12	280.23	161.13
282.21	161.11	283.44	161.16	285.11	161.19	286.07	161.24	289.51	161.12
291.38	161.06	292.34	161.07	293.8	161.04	294.41	161.02	295.48	161.01
296.43	161.01	296.89	161.04	299.19	161.11	302.4	161.08	305.14	161.11
305.41	161.11	307.11	161.13	307.21	161.13	309.46	161.09	311.15	161.03
311.59	161.02	312.84	161.01	313.33	160.99	313.91	160.97	315.59	160.92
316.98	160.9	317.41	160.89	318.34	160.88	318.6	160.87	318.71	160.87

Manning's n Values num= 4

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	142.59	.03	152.34	.018
166.11	.03				

Bank Sta: Left Right Coeff Contr. Expan.
122.01 176.06 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 133 158 F
163 511.27 158 F

Blocked Obstructions num= 1
Sta L Sta R Elev
183.06 298.09161.0759

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name	Shape	Rise	Span
Culvert #1	Box	6	6
FHWA Chart # 8 - flared wingwalls			
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.			
Solution Criteria = Highest U.S. EG			
Culvert Upstrm Dist	Length	Top n	Bottom n
Exit Loss Coef	Depth Blocked	Entrance Loss Coef	
1	17	91	.018
		.018	.018
		0	.2

Number of Barrels = 2
Upstream Elevation = 148.7

320.78	160.84	322.73	160.78	322.92	160.77	323.54	160.72	324.2	160.67
324.41	160.66	326.34	160.46	328.6	160.32	328.61	160.32	328.63	160.32
329.79	160.3	330.2	160.32	331.84	160.4	334.14	160.46	334.23	160.47
334.3	160.47	335.41	160.56	335.99	160.58	337.18	160.64	338.63	160.69
339.49	160.72	340.19	160.76	340.95	160.81	341.95	160.83	342.29	160.84
342.92	160.85	345.14	160.92	346.28	160.96	347.55	161.05	347.87	161.06
349.7	161.13	351.58	161.24	351.82	161.26	352.04	161.27	353.44	161.32
353.89	161.34	353.97	161.34	354.04	161.34	356.18	161.38	358.32	161.38
358.33	161.38	358.39	161.38	359.99	161.46	360.17	161.48	360.32	161.47
362.14	161.37	363.94	161.39	364.07	161.39	364.23	161.39	365.77	161.45
365.87	161.45	368.34	161.53	370.43	161.48	370.73	161.45	372.24	161.42
372.31	161.42	372.36	161.42	374.36	161.47	376.16	161.48	376.39	161.47
376.65	161.47	377.98	161.45	378.26	161.47	380	161.6	381.55	161.66
382.13	161.69	382.77	161.65	383.8	161.52	384.49	161.46	385.83	161.41
387.31	161.37	388.27	161.36	389.12	161.35	389.93	161.32	390.79	161.32
391.48	161.32	391.99	161.31	393.53	161.28	395.48	161.23	395.49	161.23
395.52	161.23	396.77	161.21	397.08	161.21	398.79	161.19	400.22	161.16
401.02	161.14	401.95	161.12	402.87	161.12	403.68	161.12	404.86	161.09
405.88	161.05	407.14	161.01	408.6	160.96	409.04	160.96	410.29	160.94
410.38	160.94	410.47	160.94	412.81	160.91	415.07	160.91	415.13	160.91
415.2	160.91	416.43	160.95	416.83	160.94	418.87	160.94	421.6	160.89
421.68	160.89	421.73	160.89	422.93	160.91	423.5	160.87	424.81	160.88
426	161.04	427.15	161.24	428.37	161.32	428.93	161.37	429.93	161.41
430.41	161.41	430.91	161.43	432.88	161.46	434.66	161.57	434.98	161.59
436.21	161.69	436.3	161.69	436.39	161.7	438.92	161.86	441.06	161.97
441.27	161.99	441.98	162.05	442.62	162.12	442.81	162.13	444.55	162.22
445.7	162.27	446.5	162.31	447.69	162.36	448.12	162.38	449.2	162.46
449.43	162.47	449.65	162.48	451.97	162.59	454.3	162.7	454.35	162.7
454.53	162.71	455.58	162.78	455.89	162.79	457.73	162.86	459.37	162.92
460.1	162.95	460.88	162.99	461.63	163.1	462.36	163.14	463.1	163.29
463.55	163.18	465.03	163.22	466.59	163.04	466.91	163.05	467.45	163.03
468.2	163.01	468.88	163.01	469.74	163	470.44	163.12	472.07	163.37
472.66	163.66	474.02	163.97	474.71	164.03	475.49	164.06	476.76	164.27
476.93	164.23	480.87	164.1	481.52	164.18	482.37	164.26	483.45	164.04
485.63	163.53	486.45	163.23	486.79	163.27	487.41	163.43	487.86	163.52
488.86	163.77	488.92	163.79	488.99	163.82	489.5	164	492.91	165.29
493.68	165.38	495.99	165.6	496.24	165.61	496.45	165.72	499.93	166.69
502.01	167.49	503.99	168.01	508.45	169.34	509.32	169.47	509.36	169.48
509.41	169.5	511.27	170.03						

Manning's n Values	num=	4
Sta n Val	Sta n Val	Sta n Val
0 .1	142.59	.03 152.34 .018 166.11 .03

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
122.01	176.06	14.15	15.34	16.27		.3	.5

Ineffective Flow	num=	2	
Sta L	Sta R	Elev	Permanent
0	133	158	F
163	511.27	158	F

Blocked Obstructions	num=	1
Sta L	Sta R	Elev
183.06	298.09	161.0759

CROSS SECTION

RIVER: Auburn Creek	
REACH: Main Reach	RS: 2900.962

INPUT	
Description:	
Station Elevation Data	num= 367

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.89	1.12	184.57	1.86	184.44	3.12	184.07	4.78	183.62
5.78	183.24	7.12	182.56	9.05	181.86	13.86	179.91	13.9	179.88
13.96	179.84	15.77	178.44	17.18	178.15	17.62	177.98	17.91	177.86
18.92	176.86	21.94	175.11	23.99	173.77	25.11	173.08	25.14	173.06
25.16	173.06	27.11	172.48	28.5	172.14	29.1	171.98	29.95	171.71
30.88	171.46	31.73	171.21	32.47	171.07	33.27	170.87	34.31	170.81
35.04	170.75	36.4	170.71	36.96	170.64	37.25	170.56	37.44	170.55
49.9	167.66	51.78	167.4	53.36	167.08	54.71	166.85	56.43	166.79
57.56	166.48	59.5	166.05	61.77	165.74	64.53	165.29	69.81	164.2
70.54	164.2	71.63	164.22	71.74	164.22	72.9	164.18	74.98	164.12
78.23	164.04	79.82	164.1	80.12	164.1	82.65	164.04	86.29	163.99
86.78	163.95	88.39	163.88	88.41	163.88	88.43	163.88	90.12	163.89
91.56	163.86	92	163.85	92.49	163.84	94.64	163.8	96.6	163.68
98.92	163.56	99.65	163.57	100.14	163.56	100.76	163.26	101.58	163
102.94	162.59	104.06	162.4	107.58	161.9	109.81	161.12	115.54	157.44
115.65	157.38	115.69	157.34	115.79	157.2	117.73	153.39	119.27	151.29
119.73	150.65	120.39	149.35	122	147.05	123.22	146.32	124.61	145.21
126.71	144.86	127.61	144.6	128.18	144.46	129.79	143.98	132.89	143.99
134.33	143.83	136.43	144.03	137.65	144.03	138.85	144.55	139.87	145.39
141.11	146.46	142.71	147.83	144	149.17	144.94	150.04	146.33	151.06
146.7	151.34	146.94	151.47	149.76	153	150.65	153.53	152.1	154.12
153.45	154.54	154.93	155.14	160.44	158.18	162.67	159.01	163.24	159.03
164.25	159.26	164.35	159.26	165.81	159.26	166.13	159.25	166.29	159.26
166.98	159.26	174.81	159.41	176.26	159.4	216.84	159.88	219.28	159.9
221.99	159.93	222.19	159.95	222.96	159.98	223.44	159.99	223.75	160
225.28	160.01	226.78	160.04	227.09	160.05	227.58	160.05	229.03	160.05
229.84	160.06	231.3	160.08	232.82	160.12	233.7	160.15	234.52	160.16
235.76	160.2	236.73	160.24	237.88	160.27	239.05	160.3	240.23	160.33
241.35	160.36	242.25	160.37	243.58	160.44	244.15	160.46	244.84	160.49
246.89	160.51	248.6	160.53	249.02	160.54	250.05	160.48	252.37	160.43
254.28	160.59	255.54	160.73	256.88	160.69	259.65	160.58	260.28	160.58
262.75	160.62	264.69	160.62	265.54	160.68	266.61	160.71	270.03	160.68
270.46	160.7	272.89	160.9	273.14	160.87	274.94	160.94	277.59	161.03
278.24	160.97	279.57	161	282.05	160.96	283.6	160.99	285.11	161
289.34	161.04	291.37	161.1	292.22	161.09	293.3	161.06	296.18	160.79
297.04	160.78	298.85	160.94	300.03	160.9	300.77	160.88	301.61	160.84
303.03	160.78	303.36	160.76	305.26	160.7	307.1	160.62	307.37	160.62
307.63	160.6	308.66	160.56	309.43	160.53	309.64	160.53	309.85	160.52
311.76	160.44	313.53	160.35	313.85	160.31	315.16	159.96	315.9	159.86
316.5	159.88	317.82	159.98	319.44	160.02	319.65	160.03	320.89	160.09
321.13	160.1	321.18	160.1	323.1	160.18	324.78	160.25	325.05	160.26
325.36	160.28	326.69	160.36	326.99	160.38	328.62	160.46	329.96	160.54
330.6	160.57	331.37	160.59	332.23	160.62	332.92	160.66	334.05	160.71
335.08	160.74	336.11	160.76	337.2	160.79	337.85	160.82	338.84	160.84
339.48	160.85	340.02	160.85	341.52	160.87	343.22	160.89	343.4	160.9
344.07	160.91	344.77	160.91	344.95	160.92	347.07	160.92	349.42	160.95
349.43	160.95	349.44	160.95	350.53	160.98	351	160.99	352.06	161
352.85	161.03	353.91	161.05	355.29	161.03	355.56	161.03	356.08	161.01
356.73	160.99	357.07	161	358.46	161	359.4	161	360.36	161
361.74	160.9	362.49	160.92	363.01	160.98	363.3	160.98	365.29	161
367.73	161.12	367.94	161.14	369.33	161.19	370.43	161.12	371.33	161.06
372.58	160.9	374.05	160.84	374.77	160.81	375.85	160.79	377.41	160.75
379.8	160.63	380.18	160.61	380.42	160.61	380.84	160.59	382.01	160.59
382.46	160.56	382.75	160.56	384.31	160.57	385.76	160.5	386.71	160.49
388.19	160.52	388.37	160.51	390.29	160.42	391.67	160.36	392.3	160.33
393.16	160.32	394.17	160.28	394.82	160.25	396.59	160.19	398.59	160.14
399.18	160.12	399.68	160.1	400.92	160.04	401.16	160.03	401.24	160.02
401.28	160.02	403.17	159.98	404.32	159.94	405.05	159.93	406.27	159.92
407.23	159.9	407.97	159.86	410.13	159.86	412.93	160.13	412.99	160.14
413.02	160.14	413.14	160.15	414.67	160.25	415.01	160.26	415.22	160.28
416.96	160.42	418.29	160.52	418.87	160.55	419.85	160.63	420.76	160.7
421.36	160.73	422.97	160.83	424.15	160.88	425.16	160.95	426.53	161.04

427.19	161.09	428.19	161.23	429.07	161.33	429.58	161.42	430.96	161.6
432.5	161.89	432.8	161.93	433.3	162.03	434.73	162.31	434.76	162.31
436.7	162.52	437.88	162.53	438.6	162.52	439.74	163.18	440.48	163.53
441.26	163.93	442.21	164.25	443.34	164.51	444.54	164.39	446.36	164.3
446.55	164.3	448	164.36	448.99	164.37	449.41	164.4	453.72	164.34
454.5	164.37	456.36	164.33	456.89	164.35	458.14	164.35	458.9	164.38
460.01	164.41	460.94	164.46	462.38	164.46	463.37	164.46	463.98	164.43
465.85	164.44	465.98	164.43	466.5	164.34	467.87	164.23	469.08	164.03
469.74	163.85	471.55	164.91	472.09	165.02	473.88	165.88	475.63	166.45
476.68	166.61	479.25	167.69	479.45	167.71	480.65	168.19	481.4	168.51
481.69	168.61	483.17	169.26	485.3	169.96	487.6	170.59	489.02	171.14
489.93	171.4	490.91	171.69						

Manning's n Values				num=	4		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.08	124.61	.035	137.65	.018	164.35	.03

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	109.81	162.67		206.54	191.91	184.83		.1	.3

Blocked Obstructions				num=	1
Sta L	Sta R	Elev			
169.09	284.62	160.9982			

CROSS SECTION

RIVER:	Auburn Creek				
REACH:	Main Reach	RS:	2709.054		

INPUT

Description:											
Station Elevation Data											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	184.02	1.43	182.69	1.97	182.5	2.88	182.11	4.59	180.88		
7.09	179	9.44	177.16	10.61	176.52	13.06	174.8	13.39	174.55		
14.92	172.91	15.28	172.58	15.77	172.27	17.76	170.82	19.21	170.19		
20.21	169.65	22.84	167.11	25.43	165.39	26.14	165.06	26.97	164.69		
27.08	164.64	27.3	164.52	29.6	162.37	31.71	160.61	32.01	160.45		
32.9	159.9	33.45	159.62	33.63	159.49	35.87	158.43	38.21	157.03		
38.3	156.96	40.21	155.87	40.77	155.63	43.24	154	43.79	153.66		
51.3	148.59	53.79	147.45	53.9	147.35	54.05	147.2	57.46	143.52		
58.63	143.03	59.54	142.93	60.72	142.92	62.62	143.04	65.22	143.67		
65.54	143.74	65.62	143.75	65.77	143.8	65.92	143.88	67.77	144.73		
70.48	145.75	72.63	146.43	72.86	146.49	74.71	147.51	75.24	147.82		
75.72	148.1	77.57	149.37	79.74	150.91	79.8	150.97	79.88	151.03		
79.96	151.06	83.73	153.29	84.92	153.46	85.81	153.62	86.72	153.78		
87.53	153.92	88.68	153.95	90.21	153.96	92.82	153.98	93.44	153.99		
93.79	154	95.41	154.04	95.81	154.06	97.78	154.16	99.67	154.12		
100.32	154.12	100.99	154.13	102.23	154.18	102.91	154.17	105.05	154.19		
108.13	154.21	108.24	154.21	108.93	154.23	109.85	154.24	110.01	154.24		
113.07	154.21	115.22	154.26	115.73	154.28	117.2	154.27	117.32	154.27		
117.4	154.27	119.45	154.25	120.87	154.27	121.53	154.3	122.57	154.28		
123.29	154.29	124.6	154.28	124.92	154.27	125.25	154.27	127.64	154.32		
130.01	154.35	130.15	154.36	130.54	154.36	131.52	154.37	131.85	154.38		
133.46	154.38	134.45	154.38	135.54	154.38	137.26	154.41	137.5	154.41		
138.09	154.44	138.89	154.48	139.23	154.48	141.85	154.47	144.71	154.51		
144.87	154.52	145.19	154.53	146.11	154.54	146.6	154.54	148.43	154.54		
150.4	154.55	151.26	154.55	152.04	154.56	153.5	154.59	153.97	154.59		
154.23	154.6	154.51	154.6	157.19	154.62	159.51	154.65	160.14	154.66		
161.47	154.67	163.42	154.67	166.15	154.66	166.52	154.66	166.77	154.66		
167.86	154.69	168.6	154.7	169.39	154.71	169.89	154.69	172.01	154.69		
173.24	154.68	173.94	154.68	174.91	154.69	175.74	154.7	176.3	154.71		
176.97	154.7	179.24	154.68	181.05	154.7	181.95	154.71	182.79	154.72		

184.73	154.73	186.77	154.77	187.5	154.78	188.19	154.77	189.5	154.75
189.88	154.75	190.1	154.75	190.41	154.74	193.23	154.73	195.2	154.72
195.96	154.72	196.86	154.73	198.73	154.73	201.14	154.71	201.73	154.7
202.17	154.69	203.13	154.67	203.84	154.65	204.2	154.64	204.69	154.64
207.39	154.62	209.22	154.57	210.05	154.54	210.74	154.54	212.88	154.51
215.61	154.61	215.84	154.61	216.02	154.61	216.34	154.59	217.63	154.49
218.39	154.39	219.53	154.25	221.67	153.96	223.08	153.81	224.23	153.74
224.68	153.71	227.22	153.62	229.84	153.54	230.14	153.54	231.4	153.46
232.68	153.4	234.46	153.09	235.82	152.93	236.78	152.86	238.23	152.93
238.42	152.94	241.09	153.15	243.77	153.21	243.89	153.21	243.95	153.22
245.18	153.32	246.28	153.34	247.01	153.35	248.18	153.37	248.7	153.38
250.23	153.42	251.72	153.44	252.35	153.46	253.78	153.51	254.2	153.54
254.93	153.58	255.43	153.6	255.7	153.6	257.2	153.59	257.85	153.61
259.22	153.65	260.77	153.69	261.31	153.7	262.58	153.72	263.32	153.75
264.41	153.79	265.17	153.79	265.51	153.8	267.15	153.84	268.4	153.86
269.21	153.87	271.07	153.91	271.25	153.92	272.8	153.94	272.93	153.94
272.98	153.94	274.93	153.93	275.91	153.93	276.98	153.93	278.92	153.97
279.09	153.97	279.49	153.96	280.84	153.92	281.45	153.9	282.66	153.88
283.22	153.89	284.65	153.88	286.15	153.96	286.68	153.97	287.85	154.04
288.56	154.08	289.78	154.01	290.2	153.98	290.41	153.97	292.23	153.76
293.47	153.72	294.32	153.71	296.1	153.63	296.38	153.63	297.67	153.65
297.92	153.66	297.98	153.65	299.9	153.53	300.88	153.54	301.94	153.52
303.96	153.45	304.01	153.45	304.12	153.44	305.54	153.37	306.04	153.36
307.34	153.32	308	153.32	309.35	153.29	311.08	153.25	311.45	153.24
312.19	153.21	313.16	153.17	314.08	153.11	314.94	153.07	315.49	153.06
317.37	153.03	319.61	152.94	319.89	152.93	320.31	152.9	321.62	152.77
322.18	152.74	323.44	152.67	324.1	152.6	325.5	152.49	327.42	152.87
327.7	152.89	328.23	152.91	328.95	152.84	330.22	152.89	331.4	152.98
334.04	153.07	335.32	153.07	335.94	153.13	337.46	153.23	339.32	153.37
339.99	153.44	341.08	153.6	342.91	153.84	343.48	153.91	343.76	153.93
345.22	154.21	348.49	154.77	349.15	154.9	350.61	155.7	351.38	155.98
352.78	156.68	353.46	156.97	353.81	157.16	354.03	157.27	354.64	157.64
358.66	160.06	359.28	160.45	360.7	160.51	361.19	160.55	362.71	161.47
364.74	162.71	365.54	163.02	367.36	163.82	367.85	163.95	368.66	164.34
369.85	164.9	370.83	165.38	371.8	165.89	372.09	166.02	373.81	166.81
376.94	168.49	377.58	168.87	377.88	169.02	378.77	169.57	380.8	170.59
382.23	171.16	384.33	172.21	384.49	172.28	384.75	172.41	386.3	173.16
386.87	173.45	388.48	174.26	389.67	174.92	390.51	175.36		

Manning's n Values				num=	4		
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	57.46	.035	65.22	.1	83.73	.03

Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.
	43.24	85.81		209.38	207.57	205.83		.1	.3

Ineffective Flow				num=	1
Sta L	Sta R	Elev			
187.5	390.51	154.78			
			Permanent		
			F		

CROSS SECTION

RIVER:	Auburn Creek				
REACH:	Main Reach	RS:	2501.489		

INPUT

Description:											
Station Elevation Data											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	175.91	3.29	173.99	8.4	171.18	8.95	170.83	9.84	170.37		
11.22	169.54	12.68	168.9	15.22	167.24	18.55	165.59	19.49	164.6		
20.24	163.89	20.82	163.26	23.19	161.08	25.02	160.22	25.54	160.03		
26.31	159.88	27	159.73	27.62	159.5	30.62	158.26	30.85	158.14		

31.88	157.64	32.2	157.53	36.18	156.22	36.75	156.22	37.39	156.08
37.49	156.02	37.68	155.86	41.2	152.97	41.76	152.92	42.55	152.79
43.05	152.66	45.54	152.45	46.46	152.42	47.42	152.29	47.98	152.26
48.68	152.19	50.21	151.98	51.61	151.93	52.93	151.96	53.29	151.96
54.24	152.1	54.46	152.1	55.05	152.03	57.74	151.72	58.69	151.61
59.43	151.58	59.93	151.51	61.22	151.4	62.69	151.29	63.51	151.23
63.76	151.24	64.45	151.22	68.73	150.88	70.02	150.8	70.68	150.63
72.33	150.64	73.7	150.58	76.71	149.43	77	149.32	77.09	149.29
78.76	148.51	81.44	146.05	82.22	145.42	82.63	144.89	83.73	143.54
84.28	142.82	85.66	141.73	85.93	141.5	86.03	141.5	86.25	141.48
88.51	141.04	90.28	141.04	91.17	141.07	91.57	141.01	92.65	141.12
93.46	141.17	94.48	141.25	95.49	141.53	97.13	142.57	99.36	143.92
101.57	145.31	102.44	145.76	103.14	146.03	103.51	146.19	103.68	146.25
105.67	147.2	107.3	149.92	107.83	150.59	110.05	151.99	110.4	152.02
112	151.96	112.03	151.96	112.05	151.96	112.07	151.96	113.96	151.81
114.8	151.84	116	151.92	117.72	151.84	118.04	151.84	118.82	151.65
120.23	151.31	120.7	151.28	122.38	151.26	123.25	151.29	124.6	151.32
125.28	151.32	126.92	151.3	128.23	151.24	131.78	151.21	133.98	151.29
135.76	151.33	141.34	151.29	143.57	151.32	148.02	151.17	152.76	151.13
159.04	151.18	189.99	151.33	193.97	151.43	195.64	151.39	199.28	151.44
201.89	151.47	204.91	151.62	208.18	151.5	211.32	151.65	213.02	151.78
215.53	151.55	216.37	151.56	217.76	151.69	220.69	151.94	221	151.93
221.4	151.84	222.75	151.51	223.27	151.3	224.14	151.29	225.39	151.29
225.79	151.25	227.22	151.08	228.17	151.03	229.03	150.96	230.41	150.91
231.03	150.89	232.17	150.88	233.17	150.86	233.83	150.85	235.11	150.8
237.11	150.69	238.21	150.61	238.92	150.58	239.52	150.56	239.89	150.52
241.3	150.39	242.87	150.4	243.14	150.39	243.56	150.36	244.41	150.27
245.29	150.19	245.62	150.18	245.82	150.18	247.44	150.12	248.84	150.33
249.35	150.44	250.17	150.26	250.85	150.21	251.94	149.74	252	149.7
252.05	149.68	253.64	148.45	254.5	148.03	255.36	147.53	256.96	147.45
257.12	147.43	257.41	147.41	258.3	147.36	260.42	147.17	263.81	146.88
264.54	146.92	265.76	147	266.7	146.98	267.26	146.84	268.63	146.66
270.51	146.65	270.67	146.63	270.92	146.66	272.59	146.75	272.85	146.77
274.49	146.9	275.56	146.98	276.51	147.05	277.95	147.07	278.38	147.08
279.79	147.1	279.88	147.1	279.9	147.1	281.79	147.24	282.93	147.28
283.72	147.3	285.03	147.31	285.6	147.31	287.13	147.36	287.25	147.36
287.32	147.37	289.09	147.46	290.25	147.47	290.95	147.49	292.13	147.51
292.78	147.53	294.22	147.58	294.58	147.59	294.78	147.59	296.49	147.6
297.81	147.63	298.41	147.64	299.43	147.62	300.33	147.62	301.57	147.66
302.18	147.66	302.56	147.67	304.07	147.64	305.65	147.66	305.99	147.67
306.54	147.67	307.69	147.67	308.73	147.69	309.34	147.7	309.7	147.7
311.25	147.73	312.81	147.72	313.21	147.72	313.88	147.72	315.42	147.73
316.05	147.74	317.37	147.79	318.15	147.85	319.2	147.92	321.02	148.26
321.09	148.27	323.17	148	323.45	147.93	323.62	147.92	325.32	147.71
326.61	147.73	327.23	147.73	328.28	147.69	328.85	147.65	329.5	147.63
330.12	147.62	330.62	147.6	331.91	147.58	333.02	147.6	334.19	147.6
335.61	147.55	336.12	147.51	336.88	147.5	337.42	147.48	337.78	147.48
339.07	147.46	339.76	147.46	340.85	147.45	342.51	147.41	342.65	147.41
342.91	147.41	344.09	147.4	345.12	147.36	345.69	147.35	346.26	147.33
348.3	147.26	350.35	147.18	350.84	147.15	352.51	147.05	353.08	147.02
353.67	146.97	355.66	146.8	357.64	147.11	358.06	147.22	358.94	147.25
359.63	147.26	361.24	147.32	362.33	147.34	364.08	147.26	364.37	147.28
365.75	147.44	369.65	148	374.2	148.47	374.68	148.51	374.99	148.57
375.3	148.59	377.1	148.76	377.59	148.96	381.06	149.81	381.38	149.93
383.04	150.47	383.16	150.51	383.24	150.53	385.17	151.1	386.58	151.68
387.23	151.92	388.23	152.32	389.25	152.71	390.9	153.44	391.26	153.61
391.47	153.7	393.26	154.49	394.67	155.11	395.26	155.36	396.01	155.7

Manning's n Values									
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.1	85.93	.035	95.49	.1	110.05	.03		
Bank Sta:	Left	Right	Lengths:	Left	Channel	Right	Coeff	Contr.	Expan.

73.7	107.83	198.58	191.49	185.3	.1	.3
Ineffective Flow	num=	1				
Sta L	Sta R	Elev	Permanent			
110.5	396.01	151.99	F			
Blocked Obstructions	num=	1				
Sta L	Sta R	Elev				
130.29	213.92	151.6969				
CROSS SECTION						
RIVER: Auburn Creek						
REACH: Main Reach RS: 2309.998						
INPUT						
Description:						
Station	Elevation	Data	num=	329		
Sta	Elev	Sta	Elev	Sta	Elev	Sta
0	176.32	.76	175.78	1.26	175.54	2.57
4.52	174.83	6.12	174.17	6.47	174.01	7.19
9.13	172.38	10.01	172.11	11.64	171.57	13.31
15.08	170.25	15.82	170.01	16.96	169.16	17.84
20.24	167.93	24.17	166.73	26.44	166.14	26.92
30.6	164.61	30.64	164.59	30.65	164.59	32.7
34.87	162.66	36.26	162.21	37.15	161.85	38.59
40.59	161.26	41.31	161.23	41.63	161.14	42.52
46.16	159.72	46.6	159.44	47.3	158.65	52.42
54.06	153.38	55.84	152.89	56.12	152.82	58.39
61.75	151.66	62.57	151.33	63.48	151.01	63.81
68.19	150.54	68.8	150.39	69.48	150.06	71.21
73.47	146.73	75.14	145.35	77.65	143.66	80.38
84.6	140.24	87.23	139.72	87.3	139.72	92.36
92.61	139.08	93.58	139.05	94.71	139.26	98.24
109	146.03	114.68	148.34	114.84	148.37	115.83
118.01	148.33	118.09	148.32	118.15	148.32	120.4
122.84	148.18	123.47	148.19	124.64	148.15	125.63
127.03	148.02	128.7	148.11	130.79	147.98	130.97
132.61	147.95	133.06	147.95	134.72	147.96	135.97
138.33	147.9	139.06	147.92	140.47	147.9	141.01
143.76	147.88	145.53	147.83	146.18	147.8	147.72
148.3	147.76	150.27	147.7	152.22	147.61	152.52
154.5	147.57	155.21	147.54	156.43	147.55	157.25
160.13	147.45	160.34	147.44	162.23	147.35	162.28
164.23	147.41	165.53	147.49	166.21	147.54	167.26
168.5	147.41	168.65	147.4	181.87	147.45	198.88
200.63	147.49	201.56	147.49	202.53	147.47	203.28
204.57	147.38	204.66	147.38	207.25	147.42	209.28
210.32	147.31	211.17	147.29	211.69	147.29	213.02
215.09	147.14	216.38	147.12	216.96	147.11	217.91
218.69	147.06	220.11	147.02	221.07	147	221.91
223.61	146.92	224.22	146.88	225.02	146.83	225.54
230.06	146.74	230.15	146.74	230.21	146.74	231.71
233.69	146.75	235.17	146.72	236.35	146.69	237.21
239.45	146.51	239.86	146.5	240.35	146.52	242.5
244.87	146.61	246.3	146.52	246.57	146.5	246.69
251.43	146.74	251.44	146.74	253.81	146.4	255.23
257.39	145.48	258.73	145.11	259.45	144.94	261.09
261.48	144.93	263.44	145.4	265.33	145.7	265.86
268.38	145.42	268.54	145.4	268.65	145.39	270.55
272.47	144.29	273.25	144.16	274.7	144	275.86
277.53	144.16	278.84	144.27	280.75	144.34	280.88
283.28	144.43	283.31	144.43	285.09	144.51	286.27
287.87	144.59	289.16	144.65	290.54	144.72	291.9

294.61	144.91	295.36	144.94	297.4	144.99	297.94	145	299.91	145.08
302.11	145.09	302.38	145.1	302.61	145.1	303.93	145.15	305.28	145.13
305.42	145.13	305.55	145.14	307.8	145.32	310.16	145.78	310.21	145.79
310.27	145.79	311.72	145.87	312.94	145.88	313.36	145.9	313.71	145.9
315.54	145.95	317.72	146	317.74	146	317.79	146	319.59	146.02
320.44	146	321.76	145.98	323.08	145.96	324.24	145.96	325.43	145.96
326.3	145.95	327.58	145.63	327.96	145.52	328.23	145.5	329.93	145.38
331.13	145.35	331.95	145.33	333.1	145.32	333.86	145.31	335.22	145.27
335.56	145.26	335.76	145.25	337.57	145.17	338.81	145.16	339.56	145.16
340.64	145.14	341.54	145.11	343.42	145.1	343.48	145.1	343.52	145.1
345.39	145.07	346.67	145.03	347.31	145.02	348.28	144.98	349.3	144.95
351.07	144.87	351.37	144.86	351.54	144.86	353.19	144.78	354.49	144.68
355	144.65	355.84	144.62	356.71	144.58	357.9	144.43	358.26	144.39
358.52	144.4	360.07	144.56	361.06	144.7	361.96	144.85	363.32	144.96
364.07	144.98	366.01	145.07	366.77	145.11	368.04	145.26	369.51	145.39
370.39	145.48	371.41	145.63	372.48	145.81	372.88	145.89	373.24	145.94
375.24	146.14	377.77	146.24	377.9	146.24	379.3	146.4	380.41	146.56
381.03	146.64	381.86	146.71	383.33	146.78	383.89	146.81	384.63	146.84
387.15	147.17	387.42	147.18	389.85	147.34	391.99	147.48	392.37	147.5
393.71	147.59	394.27	147.61	395.79	147.67	397.76	147.65	398.02	147.66
398.23	147.69	400.08	148.03	400.91	147.98	401.85	148.06		

Manning's n Values num= 4
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .1 82.43 .035 94.71 .025 114.68 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 71.21 114.68 146.44 148.22 149.95 .1 .3
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 116.61 401.85 148.53 F
 Blocked Obstructions num= 1
 Sta L Sta R Elev
 159.97 209.18147.4514

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 2161.775

INPUT

Description:
 Station Elevation Data num= 375
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 172.59 .32 172.58 2.53 171.85 4.36 170.81 5.47 170.47
 7.6 169.5 9.16 169.2 9.41 169.16 11.7 168.87 12.6 168.67
 14.16 168.58 15.29 168.54 16.65 168.61 18.54 167.94 19.03 167.67
 21.12 166.52 21.4 166.44 23.01 166.5 25.73 166.57 26.27 166.64
 27.01 166.35 28.88 165.77 29.58 165.67 31.21 165.26 32.18 165.12
 33.47 165.08 35.61 164.73 35.7 164.72 35.81 164.72 37.12 164.67
 38.33 164.32 39.65 163.93 42.8 163.27 45.12 162.65 46.86 162.43
 46.96 162.41 47.06 162.35 47.26 162.22 50.22 159.99 50.88 159.67
 51.45 159.22 52.85 159.09 53.03 159.04 53.25 158.94 54.43 158.18
 55.48 157.72 57.92 156.47 59.17 155.84 59.88 155.48 61.22 154.33
 62.17 153.61 63.22 153.14 64.13 152.8 66.95 152.15 68.33 151.31
 68.87 150.92 70 149.9 70.61 149.4 71.41 148.93 72.17 148.55
 72.73 148.2 74.42 147.13 75.71 146.45 77.17 145.9 78.44 145.55
 79.36 145.19 80.66 144.43 81 144.2 81.24 144.06 83.5 142.69
 85.42 141.56 86.14 141.09 86.99 140.66 88.19 140.11 88.83 139.75
 91.97 139.24 92.91 139.06 94.95 138.19 95.2 138.17 95.56 138.12
 96.98 137.65 98.27 137.65 99.1 137.72 99.86 137.77 101.8 137.97
 103.92 137.9 104.36 137.97 105.43 138.71 106.82 139.53 108.53 140.57

109.41	141.17	112.2	143.33	112.32	143.41	112.43	143.48	114.68	144.63
115.35	144.89	116.7	145.34	117.24	145.51	118.93	145.55	119.88	145.67
120.93	145.69	122.42	145.79	123.79	145.74	124.87	145.74	125.72	145.75
127.35	145.8	129.4	145.83	129.88	145.83	132.38	145.92	132.53	145.93
132.64	145.93	134.89	145.97	136.8	145.98	137.29	145.97	137.94	146
139.04	146.04	140.22	145.99	140.57	146	140.9	145.99	142.05	146.02
146.27	146.38	146.41	146.39	146.45	146.4	146.52	146.39	147.97	146.4
149.4	146.31	149.5	146.3	149.56	146.29	151.69	145.99	153.29	146.03
153.91	146	154.81	145.91	155.87	145.7	157.28	145.63	157.67	145.61
157.95	145.61	159.81	145.61	161.14	145.6	162.06	145.57	163.37	145.53
164.14	145.49	165.43	145.5	166.02	145.5	166.38	145.49	168.01	145.44
169.02	145.43	170.04	145.43	171.68	145.41	172.06	145.4	172.74	145.39
174.01	145.37	174.71	145.35	175.98	145.3	176.76	145.3	178.02	145.22
179.96	145.26	180.01	145.26	180.08	145.26	182.14	145.22	183.17	145.14
184.54	145.1	185.78	145.1	190.19	145.16	191.23	145.15	193.81	145.14
196.67	145.12	197.02	145.12	197.97	145.1	199.53	145.09	199.81	145.07
201.92	145.05	204.2	145.08	204.57	145.09	204.92	145.08	207.06	145.09
207.95	145.11	209.62	145.2	211.35	145.34	212.26	145.39	213.15	145.32
214.11	145.17	215.01	145.3	216.16	145.29	217.54	145.04	218.76	145.02
219.95	144.99	221.3	144.96	221.99	144.92	222.65	144.91	223.51	144.9
224.44	144.88	225.34	144.88	226.07	144.86	227.58	144.83	229.4	144.79
229.73	144.79	230.11	144.76	231.38	144.7	232.48	144.7	233.11	144.7
233.46	144.69	235	144.63	236.39	144.63	236.87	144.69	237.68	144.62
238.65	144.6	239.91	144.58	240.38	144.57	240.75	144.56	242.31	144.54
243.33	144.51	244.24	144.52	245.64	144.44	246.17	144.43	246.91	144.41
248.03	144.38	248.85	144.39	249.98	144.39	250.72	144.39	251.97	144.35
253.87	144.33	253.97	144.33	254.12	144.32	255.92	144.23	256.96	144.21
257.85	144.2	258.41	144.2	259.76	144.19	261.51	144.16	261.66	144.16
261.9	144.15	263.72	144.1	265.08	144.18	265.74	144.24	267.97	144.53
269.21	144.65	269.5	144.67	271.33	144.2	271.78	144.17	272.55	144.13
273.23	144.07	275.46	143.86	276.7	143.65	278.08	143.5	278.97	143.4
280.11	143.31	280.75	143.27	281.25	143.33	283.24	143.45	285.66	143.38
286	143.36	286.28	143.3	288.63	142.63	289.63	142.55	291.17	142.49
292.81	142.18	293.66	142.05	294.45	142.06	295.54	142.17	296.57	142.21
297.1	142.22	297.67	142.26	299.21	142.36	300.69	142.41	301.59	142.44
302.52	142.47	303.57	142.5	304.81	142.54	305.32	142.56	305.77	142.58
307.48	142.66	309.03	142.72	309.8	142.74	310.64	142.78	311.79	142.8
313.24	142.78	313.64	142.76	313.96	142.77	315.43	142.79	316.32	142.8
317.22	142.82	318.66	142.89	319.04	142.9	319.56	142.91	320.95	142.91
321.96	142.94	322.93	142.94	323.69	143.02	325.03	143.09	326.71	143.19
327.09	143.21	327.78	143.23	329.18	143.27	329.96	143.3	331.18	143.36
332.13	143.34	333.11	143.32	334.42	143.25	335.15	143.22	336.62	143.09
337.41	143.03	337.81	143.02	339.36	143.03	340.49	143.05	341.27	143.06
342.36	143.07	343.39	143.08	345.57	143.05	345.82	143.04	346.08	143.04
348.06	143.04	350	143.01	350.41	142.99	352.23	142.91	353.08	142.87
353.27	142.86	354.91	142.79	355.97	142.82	356.68	142.82	357.73	142.78
358.33	142.75	358.85	142.74	359.88	142.7	361.07	142.71	361.61	142.7
362.31	142.68	364.04	142.62	365.38	142.6	366.08	142.59	366.73	142.56
367.59	142.51	368.53	142.48	369.46	142.45	370.61	142.41	371.88	142.35
372.89	142.27	373.92	142.17	375.08	142.39	375.87	142.52	377.62	142.53
378.94	142.47	386.25	141.76	387.34	141.63	388.01	141.69	388.99	141.7
390.51	142.48	390.92	142.67	391.18	142.78	392.87	143.55	394.39	144.18
394.87	144.41	395.4	144.69	396.8	145.48	397.45	145.8	398.57	146.2
400.61	147.55	403.6	149.78	405.68	150.65	406.18	151.01	406.53	151.23
408.71	152.79	409.45	153.34	409.66	153.5	409.86	153.55	411.74	153.98
413.03	153.78	413.8	153.69	414.53	153.67	415.73	153.66	416.98	153.75
417.87	153.8	418.94	153.89	419.46	153.93	425.09	154.49	426.1	154.61

Manning's n Values num= 4
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .1 91.97 .035 104.36 .018 116.7 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

78.44 116.7 328.02 326.68 328.75 .1 .3
 Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 147.97 426.1 146.4 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 1835.094

INPUT

Description:

Station Elevation Data		num= 382	
Sta	Elev	Sta	Elev
0	160.39	.81	160.34
4.65	159.86	7.18	158.37
11.91	157.39	12.41	157.2
17.55	156.37	19.08	156.13
23.36	155.2	24.1	155.14
29.96	153.44	31.94	153.02
35.29	152.19	36.34	151.88
39.43	151.31	40.96	150.91
43.79	150.43	46.9	150.08
51	149.14	51.24	149.11
55.55	148.05	57.04	147.73
61.28	147.74	61.8	147.67
66.11	146.75	67.25	146.57
72.34	145.09	73.44	144.39
76.55	143.95	78.13	144.16
81.96	143.32	82.79	143.19
87.37	142.96	87.78	142.94
90.89	142.98	92.93	142.65
95.7	142.15	97.91	141.51
103.18	140.54	112.75	133.65
133.63	141.49	133.92	141.66
143.16	142.79	143.39	142.81
148.98	143.22	149.73	143.25
154.81	143.7	156.19	143.68
161.18	143.6	161.35	143.59
166.09	143.78	167.43	143.66
171.95	143.57	172.48	143.58
175.32	143.32	177.71	143.27
182.43	142.95	183.68	142.88
188.35	142.38	189.48	142.29
193.1	141.99	194.39	141.73
199.68	140.94	202.35	140.69
206.47	140.27	206.81	140.25
210.36	139.89	210.52	139.88
214.14	139.61	215.81	139.43
219.42	139.13	221.05	139.01
224.29	138.79	224.42	138.78
229.09	138.39	229.68	138.39
233.22	137.69	234.21	137.31
240.81	136.3	243.21	136.29
245.68	136.36	246.74	136.45
251.98	136.75	252.31	136.79
256.74	137.19	257.06	137.22
260.26	137.52	261.7	137.63
265.14	137.91	266.83	138.04
270.39	138.3	270.75	138.31
274.33	138.41	274.84	138.43
278.91	138.47	279.97	138.43

283.6	138.38	284.25	138.36	285.58	138.35	287.3	138.37	287.65	138.4
287.93	138.38	289.39	138.33	290.97	138.29	291.07	138.28	291.16	138.27
292.82	138.17	294.58	138.05	296.19	138.08	297.6	138.02	297.79	138.02
298.02	138	300.04	137.96	301.68	137.93	302.15	137.9	302.56	137.86
303.68	137.65	304.98	137.47	305.36	137.42	306.32	137.39	307.87	137.36
308.48	137.35	310.48	137.34	311.89	137.32	312.61	137.31	313.18	137.29
314.18	137.28	315.45	137.22	315.87	137.21	316.99	137.22	318.21	137.25
318.7	137.25	319.96	137.29	321.01	137.27	321.56	137.28	322.24	137.23
323.19	137.32	324.22	137.34	324.83	137.34	325.38	137.37	326.59	137.45
327.79	137.52	328.43	137.56	329.07	137.59	330.43	137.65	332.36	137.78
332.49	137.79	332.63	137.79	334.34	137.84	335.91	137.88	336.2	137.89
336.66	137.9	338.11	137.93	339.03	137.98	340.08	138.02	341.33	138.08
342.13	138.11	342.8	138.14	344	138.21	345.54	138.26	345.81	138.27
346.02	138.27	347.97	138.31	349.78	138.37	350.17	138.37	351.16	138.37
352.5	138.38	353.03	138.4	354.9	138.46	356.91	138.69	357.15	138.72
357.39	138.75	358.79	138.89	360.19	138.98	360.57	138.99	361.2	138.94
363.05	138.82	364.16	138.82	365.04	138.88	365.78	138.89	366.59	138.94
367.55	139.03	368.58	139.1	370.77	139.25	371.25	139.28	371.47	139.29
372.9	139.33	374.07	139.39	374.49	139.42	375	139.45	376.14	139.52
376.91	139.53	377.86	139.55	379.26	139.57	379.69	139.59	380.78	139.65
382.13	139.74	382.67	139.75	384.02	139.78	385.02	139.84	385.77	139.86
386.77	139.9	387.72	139.93	389.32	139.98	390	140.01	390.4	140
391.95	140.03	393.16	140.12	393.79	140.19	394.61	140.24	395.79	140.33
397.41	140.46	397.88	140.5	398.23	140.52	399.84	140.54	401.17	140.56
401.78	140.57	402.54	140.58	403.68	140.62	404.99	140.59	405.54	140.58
406.01	140.69	407.4	141	408.39	141	409.28	141.01	410.51	141.07
411.1	141.1	413.13	141.4	414.94	141.66	421.98	144.16	425.53	145.39
426.55	145.71	428.31	146.55	429.13	146.74	430.68	147.09	433.61	147.46
434.95	147.94	435.44	148.09						

Manning's n Values num= 3
 Sta n Val Sta n Val
 0 .04 103.18 .018 132.96 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 103.18 132.96 35.26 34.39 34.8 .3 .5

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 138.51 435.44 143.63 F

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 1800.703

INPUT

Description:

Station Elevation Data		num= 380	
Sta	Elev	Sta	Elev
0	159.58	.61	159.43
.78	159.37	5.65	157.45
12.87	156.69	13.23	156.6
18.64	155.43	20.03	155.4
25.42	153.73	25.93	153.54
34.11	152.52	34.29	152.5
39.83	151.63	41.27	151.3
45.12	150.35	45.5	150.28
53.16	149.22	54.35	148.97
59.93	148.14	60.45	148.01
64.7	147.08	66.43	146.53
70.77	145.89	71.8	145.79
76.26	145.28	76.92	145.23

80.52	144.82	81.97	144.69	83.08	144.59	83.98	144.52	84.78	144.44
85.68	144.31	86.73	144.24	87.31	144.19	88.45	144.07	89.71	143.95
90.98	143.93	91.73	143.97	92.6	143.82	93.52	143.68	94.31	143.74
95.08	143.79	96.64	143.59	98.47	143.47	99.54	143.45	100.81	143.37
101.41	143.29	101.92	143.22	102.93	143.02	104.98	142.75	105.48	142.7
105.96	142.65	107.56	142.48	109.29	142.11	111.55	141.45	111.9	141.31
112.22	141.18	113.52	140.73	113.56	140.72	113.64	140.72	115.75	140.65
121.57	130.48	133.34	130.48	141.69	142.28	143.51	142.57	144.65	142.64
146.07	142.9	146.97	142.94	147.74	143.05	147.97	143.08	149.94	143.27
150.06	143.29	151.66	143.49	152.36	143.45	155.58	143.64	156.84	143.68
159.7	143.7	165.96	143.63	168.07	143.51	169.6	143.48	171.57	143.21
171.72	143.2	174.99	143.07	177.07	142.84	177.58	142.83	178.08	142.87
179.68	143.05	181.42	143.15	181.77	143.17	182.16	143.17	183.66	143.21
185	143.32	185.61	143.32	187.2	143.32	188.56	143.36	190.02	143.46
191.59	143.31	191.82	143.27	192.04	143.26	194.14	143.32	195.41	143.25
197.01	143.16	198.03	143.06	199.14	143.03	200.18	142.99	201.28	142.93
202.69	142.86	202.83	142.85	202.96	142.85	204.49	142.76	206	142.7
206.13	142.7	206.27	142.69	207.74	142.61	208.95	142.5	209.33	142.47
209.77	142.47	210.93	142.44	211.86	142.41	212.55	142.35	213.45	142.32
214.22	142.26	214.93	142.25	215.95	142.17	217.04	142.09	218.05	142.02
220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 115.75 141.69 879.95 875.26 876.36 .3 .5

Ineffective Flow num= 1
 Sta L Sta R Elev Permanent
 159.7 435.17 143.7 F

CULVERT

RIVER: Auburn Creek
 REACH: Main Reach RS: 1350

INPUT
 Description:
 Distance from Upstream XS = 13
 Deck/Roadway Width = 831
 Weir Coefficient = 2.6
 Upstream Deck/Roadway Coordinates
 num= 2
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 0 142.5 500 142.5

Upstream Bridge Cross Section Data
 Station Elevation Data num= 380
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 0 159.58 .61 159.43 .65 159.42 .66 159.41 .7 159.4
 .78 159.37 5.65 157.45 6.92 157.52 8.84 157.22 10.39 156.84
 12.87 156.69 13.23 156.6 14.89 155.99 16.8 155.92 17.07 155.87
 18.64 155.43 20.03 155.4 20.36 155.36 20.75 155.3 22.26 154.94
 25.42 153.73 25.93 153.54 26.15 153.41 26.49 153.42 26.83 153.38
 34.11 152.52 34.29 152.5 37.46 152.43 38.03 152.35 38.37 152.24
 39.83 151.63 41.27 151.3 41.64 151.28 42.2 151.1 43.52 150.78
 45.12 150.35 45.5 150.28 45.61 150.25 45.81 150.23 46.42 150.14
 53.16 149.22 54.35 148.97 55.09 148.85 55.81 148.79 57.77 148.78
 59.93 148.14 60.45 148.01 62.47 147.69 62.56 147.67 62.63 147.66
 64.7 147.08 66.43 146.53 66.81 146.44 67.26 146.39 69.29 146.08
 70.77 145.89 71.8 145.79 72.96 145.69 74.69 145.5 75.45 145.41
 76.26 145.28 76.92 145.23 77.8 145.12 78.87 145.01 79.58 144.92
 80.52 144.82 81.97 144.69 83.08 144.59 83.98 144.52 84.78 144.44
 85.68 144.31 86.73 144.24 87.31 144.19 88.45 144.07 89.71 143.95
 90.98 143.93 91.73 143.97 92.6 143.82 93.52 143.68 94.31 143.74
 95.08 143.79 96.64 143.59 98.47 143.47 99.54 143.45 100.81 143.37
 101.41 143.29 101.92 143.22 102.93 143.02 104.98 142.75 105.48 142.7
 105.96 142.65 107.56 142.48 109.29 142.11 111.55 141.45 111.9 141.31
 112.22 141.18 113.52 140.73 113.56 140.72 113.64 140.72 115.75 140.65
 121.57 130.48 133.34 130.48 141.69 142.28 143.51 142.57 144.65 142.64
 146.07 142.9 146.97 142.94 147.74 143.05 147.97 143.08 149.94 143.27
 150.06 143.29 151.66 143.49 152.36 143.45 155.58 143.64 156.84 143.68
 159.7 143.7 165.96 143.63 168.07 143.51 169.6 143.48 171.57 143.21
 171.72 143.2 174.99 143.07 177.07 142.84 177.58 142.83 178.08 142.87
 179.68 143.05 181.42 143.15 181.77 143.17 182.16 143.17 183.66 143.21
 185 143.32 185.61 143.32 187.2 143.32 188.56 143.36 190.02 143.46
 191.59 143.31 191.82 143.27 192.04 143.26 194.14 143.32 195.41 143.25
 197.01 143.16 198.03 143.06 199.14 143.03 200.18 142.99 201.28 142.93
 202.69 142.86 202.83 142.85 202.96 142.85 204.49 142.76 206 142.7
 206.13 142.7 206.27 142.69 207.74 142.61 208.95 142.5 209.33 142.47
 209.77 142.47 210.93 142.44 211.86 142.41 212.55 142.35 213.45 142.32
 214.22 142.26 214.93 142.25 215.95 142.17 217.04 142.09 218.05 142.02

220.66	141.8	220.69	141.8	220.7	141.8	222.51	141.72	224.26	141.57
224.35	141.56	224.59	141.55	226.84	141.44	227.7	141.38	229.02	141.28
230.73	141.17	231.07	141.15	231.33	141.13	233.41	141.01	234.96	140.91
235.77	140.86	237.11	140.77	237.99	140.72	238.52	140.69	240.17	140.6
241.85	140.5	242.43	140.46	243.59	140.38	244.91	140.3	245.59	140.24
247.16	140.16	249.02	140.03	249.4	140.01	250.32	139.96	251.98	139.89
252.67	139.85	254.16	139.8	256.12	139.67	256.14	139.67	256.15	139.67
257.74	139.57	259.03	139.48	259.34	139.47	259.74	139.46	261.25	139.37
263.15	139.24	263.23	139.24	263.3	139.24	264.98	139.19	266.67	139.08
266.76	139.08	266.85	139.07	268.61	139.01	270.32	138.95	270.47	138.94
270.63	138.93	272.24	138.83	273.82	138.75	274.03	138.74	274.28	138.73
275.9	138.62	277.3	138.53	277.68	138.51	277.97	138.5	279.28	138.49
280.73	138.36	280.88	138.35	281.06	138.34	282.53	138.29	283.97	138.24
284.22	138.24	284.46	138.23	286.14	138.16	288.05	138	288.13	137.99
288.19	137.99	289.69	138	291.11	137.93	291.26	137.92	291.44	137.91
293.44	137.84	295.21	137.8	295.8	137.78	297.65	137.68	298.39	137.63
298.62	137.62	300.77	137.53	302.42	137.48	303.16	137.46	305.61	137.4
305.66	137.4	305.68	137.4	308.37	137.33	309.55	137.3	310.93	137.24
312.98	137.2	313.23	137.2	313.44	137.2	314.92	137.16	316.5	137.12
316.61	137.12	316.74	137.12	318.22	137.1	319.65	137.12	319.81	137.12
319.98	137.11	321.58	137.09	322.91	137.1	323.36	137.1	323.91	137.11
325.26	137.13	327.16	137.15	327.18	137.15	327.19	137.15	329.02	137.12
330.76	137.14	330.85	137.14	330.95	137.14	332.67	137.18	334.15	137.21
334.49	137.22	334.84	137.23	336.46	137.31	338	137.39	338.36	137.42
338.8	137.43	340.1	137.46	341.17	137.49	341.97	137.53	342.88	137.53
344.05	137.55	345.1	137.61	345.94	137.66	346.89	137.7	347.58	137.72
348.16	137.76	349.29	137.81	350.36	137.84	351.08	137.84	351.86	137.88
352.73	137.91	353.55	137.98	354.3	138.02	355.11	138.03	356.27	138.04
358.14	138.1	358.68	138.11	359.03	138.12	360.3	138.16	361.43	138.17
362.15	138.19	364.03	138.26	365.89	138.35	366.58	138.38	368.97	138.47
369.12	138.48	369.16	138.48	370.74	138.49	371.88	138.54	372.34	138.58
372.96	138.61	374.38	138.68	376.04	138.75	376.49	138.77	376.84	138.79
378.14	138.84	379.77	138.92	379.79	138.92	379.82	138.92	381.39	138.96
382.82	139.05	383.01	139.06	383.18	139.06	384.88	139.08	386.76	139.25
388.74	139.32	389.88	139.37	390.72	139.39	391.59	139.43	392.65	139.46
393.7	139.51	394.53	139.55	395.84	139.6	396.32	139.62	396.61	139.63
398.38	139.7	400.31	139.85	400.48	139.86	400.63	139.87	402.24	139.98
403.68	139.99	404.05	140	404.53	140.01	406.3	140.07	407.69	140.11
408.55	140.13	410.78	140.16	410.8	140.16	410.84	140.17	413.27	140.42
414.91	140.58	415.4	140.59	415.9	140.6	416.97	140.63	417.98	140.67
418.86	140.7	420.17	140.76	421.41	140.8	423.41	141.82	424.06	142.13
425.1	142.48	425.51	142.48	428.46	142.29	429.62	142.58	429.72	142.62
432.19	143.71	433.07	144.12	434.24	144.71	435	145.04	435.17	145.11

7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values num= 3
Sta n Val Sta n Val
0 .1 29 .045 78.68 .1

Bank Sta: Left Right Coeff Contr. Expan.
29 78.68 .3 .5
Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 33.72 132 F
80.72 154.24 132 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
Downstream Embankment side slope = 0 horiz. to 1.0 vertical
Maximum allowable submergence for weir flow = .98
Elevation at which weir flow begins =
Energy head used in spillway design =
Spillway height used in design =
Weir crest shape = Broad Crested

Number of Culverts = 1

Culvert Name Shape Rise Span
Culvert #1 Box 6 7
FHWA Chart # 8 - flared wingwalls
FHWA Scale # 1 - Wingwall flared 30 to 75 deg.
Solution Criteria = Highest U.S. EG
Culvert Upstrm Dist Length Top n Bottom n Depth Blocked Entrance Loss Coef

Exit Loss Coef
7 851 .018 .018 0 .5

Number of Barrels = 2
Upstream Elevation = 130.4

Centerline Stations
Sta. Sta.
123.46 131.46

Downstream Elevation = 120
Centerline Stations
Sta. Sta.
56.22 64.22

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 925.4423

Manning's n Values num= 3
Sta n Val Sta n Val
0 .04 115.75 .018 141.69 .04

Bank Sta: Left Right Coeff Contr. Expan.
115.75 141.69 .3 .5

Ineffective Flow num= 1
Sta L Sta R Elev Permanent
159.7 435.17 143.7 F

Downstream Deck/Roadway Coordinates
num= 2
Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
0 134 500 134

Downstream Bridge Cross Section Data
Station Elevation Data num= 84
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
0 138.61 2.44 138.15 3.86 137.88 7.02 136.98 7.38 136.91

INPUT
Description:
Station Elevation Data num= 84

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	138.61	2.44	138.15	3.86	137.88	7.02	136.98	7.38	136.91
7.61	136.86	9.26	136.5	9.87	136.5	12.08	135.7	13.13	135.36
17.35	135.02	21.27	131.63	23.99	129.82	24.87	129.68	25.48	129.42
29	127.93	31.62	127.55	31.91	127.48	33.76	127.12	44.6	124.22
55.54	118.97	56.35	118.98	58.7	118.67	60.22	118.52	60.6	118.56
61.51	118.67	63.32	118.81	65.7	119.48	66.44	120.12	70.02	122.58
71.76	123.4	73.41	124.63	74.8	125.29	75.53	125.66	76.64	126.37
77.43	126.84	78.68	127.58	79.58	127.98	81.31	128.69	81.99	129.18
83.87	130.51	84.97	131.25	85.81	131.71	86.13	131.92	86.97	132.06
88.22	132.18	90.14	132.66	92.55	132.72	93.89	132.41	94.51	132.46
95.44	132.59	96.8	132.58	98.64	132.51	99.41	132.52	101.24	132.6
101.53	132.59	103.28	132.35	104.13	132.26	104.62	132.23	106.47	132.2
109.23	132.15	110.36	131.99	111.49	131.86	112.31	131.89	113.03	131.85
121.46	132.13	121.55	132.14	121.63	132.13	121.75	132.15	125.11	132.06
127.38	132.17	135.63	132.2	136.29	132.11	144.59	131.59	147.47	131.53
147.48	131.53	147.51	131.53	147.56	131.53	149.66	131.46	151.34	131.4
151.71	131.39	152.38	131.38	153.56	131.32	154.24	131.29		

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.1	29	.045	78.68	.1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
29 78.68 160.4 127.63 131.93 .3 .5

Ineffective Flow num= 2
Sta L Sta R Elev Permanent
0 33.72 132 F
80.72 154.24 132 F

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 797.816

INPUT
Description:
Station Elevation Data num= 238

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	170.94	.89	171.07	.94	171.07	1.07	171.08	2.08	171.09
3.12	171.13	4	171.14	4.86	171.16	5.92	171.12	6.8	171.12
7.06	171.13	8.8	171.04	10.72	170.86	10.85	170.85	10.97	170.84
11.16	170.83	12.1	170.79	12.68	170.74	13.57	170.58	14.88	170.37
15.78	170.36	16.59	170.54	16.98	170.51	18.8	170.21	20.75	169.7
21.07	169.54	21.8	169.41	23.42	169.22	26.46	167.76	26.47	167.75
26.48	167.74	26.5	167.74	28.58	166.61	29.42	166.49	30.25	166.38
30.43	166.33	31.38	165.86	31.39	165.85	33.85	164.53	35.21	163.72
35.6	163.5	36.2	163.19	36.68	162.92	37.39	162.51	40.25	161
41.37	160.38	41.38	160.38	43.3	159.21	45.17	158.23	45.29	158.17
45.42	158.09	45.67	157.98	46.57	157.5	47.08	157.35	47.63	156.99
49.19	156.19	50.69	154.86	51.25	154.4	51.81	154.03	53.27	153.14
55.23	151.85	55.67	151.59	56.02	151.37	57.09	150.75	57.18	150.69
59.35	149.87	61.29	149.4	61.52	149.32	62.51	148.93	62.82	148.78
63.08	148.6	65.08	147.28	66.34	146.42	66.46	146.36	66.61	146.29
67.55	145.78	67.7	145.72	69.28	145.21	70.7	144.73	71.26	144.48
71.93	144.21	72.87	143.82	73.14	143.69	75.71	142.37	77.43	141.25
77.68	141.14	78.33	140.96	80.08	140.12	80.98	139.63	83.57	138.43
86.06	137.45	86.95	137.3	88.86	136.34	89.17	136.2	90.11	136.29
90.9	136.29	91.23	136.27	92.81	136.12	94.51	135.05	96.5	134.22

97.39	133.78	99.75	132.91	101.22	132.09	101.3	132.05	102.58	131.63
102.8	131.55	103.07	131.37	105.53	130.01	106.91	129.32	107.17	129.21
107.91	128.91	108.45	128.7	109.09	128.52	109.8	128.31	110.56	128.07
113.56	127.36	113.93	127.35	117.13	126.29	120.34	125.42	121.32	125.26
123.25	123.84	130.45	119.12	130.65	119.12	131.61	119.43	132.31	119.54
135.81	119.46	137.98	118.53	139.86	117.04	140.52	116.64	141.27	116.13
142.12	115.63	142.58	115.61	144.82	115.93	146.65	116.11	147.09	116.18
147.88	116.26	148.38	116.34	149.59	116.51	151.31	116.77	152.01	116.88
152.9	117.12	153.21	117.14	155.83	117.45	157.38	117.91	158.15	118.4
158.62	118.73	160.16	119.3	161.9	119.64	162.35	119.75	162.76	119.81
172.89	121.59	174.01	121.91	176.11	122.4	178.53	122.82	180.05	123.74
181.63	124.53	184.05	125.93	187.04	127.84	190.94	129.94	195.15	131.07
197.73	131.34	199.36	131.52	200.14	131.61	200.8	131.65	201.56	131.72
201.97	131.76	202.33	131.8	206.99	132.37	207.08	132.37	208.81	131.97
209.47	131.96	210.07	131.9	221.62	131.36	223.87	131.24	223.95	131.23
224.1	131.22	224.56	131.18	226.21	131.1	227.72	130.93	228.17	130.93
229.08	131	230.62	130.96	233.17	130.84	233.51	130.84	234.61	130.85
236.36	130.83	238.74	130.86	239.3	130.87	239.91	130.84	240.13	130.82
242.07	130.76	244.25	130.78	244.37	130.79	245.52	130.71	245.67	130.7
245.68	130.7	248.05	130.63	249.92	130.58	250.23	130.57	251.4	130.53
251.87	130.49	252.35	130.46	253.92	130.37	255.41	130.31	255.84	130.29
256.87	130.31	257.76	130.32	258.66	130.3	259.86	130.29	261.01	130.24
262.06	130.24	262.55	130.24	265.49	130.11	265.96	130.07	266.24	130.05
266.7	130.07	268.72	130.03	278.74	129.94	279.27	129.98	279.98	129.97
281.74	129.88	282.89	129.81	283.35	129.79	284.61	129.77	284.82	129.76
287.17	129.64	288.94	129.67	289.51	129.69	290.44	129.68	291.61	129.64
293.36	129.66	294.05	129.66	294.49	129.68	295.84	129.65	296.14	129.64
296.17	129.64	296.21	129.64	298.82	129.63				

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
0 .1 137.98 .035 157.38 .1

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
105.53 199.36 152.73 145.59 144.95 .1 .3

Blocked Obstructions num= 1
Sta L Sta R Elev
291.9 298.82 129.6411

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 652.2307

INPUT
Description:
Station Elevation Data num= 322

Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.72	.41	219.63	1.68	219.23	2.78	218.73	3.71	218.22
4.76	217.8	5.75	217.5	5.91	217.44	6.2	217.36	7.69	217.04
9.87	216.57	10.28	216.48	11.03	216.34	11.4	216.3	13.36	216.02
15.67	215.74	15.94	215.7	16.86	215.55	17.44	215.41	18.67	215.14
20.49	214.73	21.32	214.5	22.13	214.16	22.44	214.03	24.13	213.13
26.05	212.3	26.37	212.15	27.1	212.01	27.83	211.92	28.24	211.8
28.65	211.64	30.37	210.85	31.91	210.21	32.92	209.28	33.24	209.09
34.98	207.62	37.33	206.64	37.74	206.4	38.53	206.05	40.08	205.05
42.82	203.56	42.85	203.54	43.04	203.33	43.89	202.32	44.76	201.48
47.85	198.49	48.03	198.29	48.17	198.2	49.12	197.79	49.35	197.69
49.39	197.67	49.43	197.65	51.67	196.53	53.58	195.4	53.8	195.29
54.87	194.7	55.77	194.09	56.64	193.55	57.87	192.79	59.11	192
59.9	191.43	60.35	191.17	63.12	189.72	64.56	188.76	65.42	188.22
65.79	187.95	66.39	187.57	69.09	186.32	69.83	185.98	69.9	185.94

69.99	185.87	70.96	185.4	71.26	185.31	73.66	184.61	75.38	184.12
75.93	183.97	76.68	183.54	77.83	182.79	80.48	181.85	80.77	181.73
80.89	181.7	80.94	181.67	82.15	180.91	83.34	180.69	87.29	178.72
88.48	178.14	88.97	177.93	90.44	176.85	91.11	176.46	91.69	176.09
92.51	175.79	92.98	175.59	93.31	175.41	93.47	175.35	97.15	173.66
97.3	173.63	98.41	172.61	99.47	171.56	101.99	169.99	102.35	169.73
102.5	169.63	103.62	168.83	103.93	168.66	105.9	167.45	108.01	166.23
108.23	166.09	109.37	165.28	109.64	165.07	113.47	161.59	113.73	161.42
114.06	161.16	114.8	160.5	115.95	159.53	117.19	158.58	118.09	157.88
118.91	157.68	120.19	156.96	120.33	156.86	122.39	155.49	124.25	153.43
124.38	153.28	124.53	153.17	124.71	153.07	125.9	152.41	127.53	151.64
128.74	151.17	131	150.94	131.39	150.86	131.53	150.82	132.63	150.07
132.86	149.85	136.29	147.13	141.51	143.03	142.54	142.32	146.91	139.78
147.11	139.64	147.22	139.54	147.93	138.36	151.45	136.06	154.03	134.16
156.48	132.27	157.29	131.81	158.79	130.72	159.92	129.66	160.33	129.38
162.66	127.39	164.74	125.86	166.57	124.96	174.12	122.14	174.62	122.05
176.66	121.21	183.69	118.36	185.04	118.13	186.17	117.58	187.61	117.31
190.77	115.85	193.73	114.53	194.56	114.14	194.89	114.07	195.78	114.05
197.19	114.21	198.81	114.52	208.39	116.5	210.26	116.95	210.42	116.98
211.87	117.15	212.15	117.17	215.07	117.58	216.33	117.86	217.37	118.08
217.85	118.33	223.17	119.19	227.86	119.94	229.09	120.02	229.65	120.06
233.1	120.23	233.41	120.24	233.68	120.25	234.29	120.45	235.34	120.84
235.8	120.9	236.23	121.04	239.73	122.42	240.38	122.58	240.79	122.65
241.43	122.95	250.53	127.76	251.77	128.43	252.71	128.82	252.78	128.85
253.77	129.39	255.83	130.22	256.46	130.46	256.78	130.59	258.01	131.13
258.47	131.21	259.91	131.53	261.44	131.81	261.96	131.92	262.43	131.97
263.61	132.06	264.16	132.1	266.37	132.15	268.17	132.13	268.95	132.08
269.82	132.03	270.79	131.92	271.81	131.83	272.76	131.68	273.66	131.7
274.17	131.69	275.96	131.62	277.29	131.49	278.61	131.47	280.35	131.32
280.88	131.2	281.84	131.01	283.13	130.95	283.98	130.93	284.59	130.87
286.02	130.77	286.26	130.74	286.36	130.74	286.46	130.73	290.03	130.53
290.17	130.52	291.45	130.42	291.77	130.4	291.8	130.4	294.76	130.26
295.32	130.24	295.91	130.22	297.01	130.18	298.02	130.12	300.63	130.04
300.75	130.03	301.27	129.98	302.07	129.9	302.26	129.9	305.48	129.78
305.93	129.73	307.13	129.59	307.61	129.63	309.07	129.65	311.17	129.49
311.24	129.49	311.84	129.46	312.7	129.43	312.8	129.41	315.36	129.18
316.4	129.12	317.39	129.06	317.98	129.06	319.16	129.02	320.55	128.94
321.07	128.91	321.51	128.87	323.03	128.78	323.24	128.77	325.62	128.67
326.8	128.64	327.75	128.6	328.4	128.58	330.28	128.68	331.93	128.6
333.17	128.54	333.69	128.53	336.06	128.44	337.26	128.42	338.18	128.38
339.01	128.36	340.49	128.33	342.6	128.22	342.97	128.22	344.21	128.16
344.29	128.16	344.31	128.16	344.44	128.16	347.99	128.33	348.84	128.3
349.91	128.28	351.11	128.22	353.45	128.14	353.82	128.12	355.27	127.99
355.81	127.95	356.7	127.89	358.1	127.79	358.93	127.72	360.47	127.63
360.76	127.63	362.76	127.55	364.38	127.46	365.2	127.43	366.24	127.39
367.66	127.31	369.71	127.18	369.78	127.17	369.83	127.17	371.09	127.16
371.34	127.16	374.93	127.13	375.97	127.12	380.93	127.11	413.75	127.2
413.78	127.2	413.8	127.2	413.82	127.2	413.87	127.2	415.3	127.11
415.69	127.08	417.63	126.97	419.25	126.94	419.92	126.92	421.27	126.85
421.92	126.82	423.38	126.8	424.38	126.79	424.82	126.78	426.39	126.66
426.73	126.65	428.11	126.56						

Manning's n Values	num=	3			
Sta n Val	Sta n Val	Sta n Val			
0	.1	190.77	.025	208.39	.1

Bank Sta: Left	Right	Lengths: Left	Channel	Right	Coeff	Contr.	Expan.
158.79	258.01	123.04	138.31	136.74	.1	.3	

Blocked Obstructions	num=	1
Sta L	Sta R	Elev
347.73	428.11128	3192

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 513.9224

INPUT									
Description:									
Station Elevation Data num= 297									
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	219.83	1.59	219.13	17.61	212.09	23.51	210.08	23.63	210.08
24.12	209.8	25.5	209.15	27	209.05	27.69	208.99	28.29	208.92
29.39	208.81	29.72	208.85	31.4	208.79	32.97	208.53	33.4	208.43
33.85	208.37	35.32	208.21	35.35	208.21	35.36	208.21	35.46	208.19
38.88	207.55	39.45	207.31	40.15	206.9	40.9	206.48	41.46	206.14
42.9	205.11	44.34	204.06	44.9	203.75	45.76	203.25	48.13	201.52
49.29	200.48	50.61	199.55	51.07	199.16	52.15	198.26	52.46	198.05
52.86	197.79	54.76	196.63	56.19	195.61	56.67	195.18	57.73	194.54
58.31	194.16	58.97	193.67	60.55	192.32	61.03	192.04	62.49	191.05
63.63	190.32	66.65	188.52	67.6	188.06	68.78	187.36	69.2	187.15
70.85	186.33	72.41	185.56	72.82	185.34	73.25	185.12	74.04	184.69
74.92	184.21	75.73	183.67	79	181.47	79.01	181.46	80.14	180.86
80.66	180.57	82.36	179.81	84.73	178.82	85.01	178.72	86.03	178.29
86.31	178.18	86.39	178.14	88.93	176.95	90.48	176.25	91.02	175.97
92.08	175.49	92.58	175.2	93.29	174.77	94.91	173.64	96.06	172.93
96.91	172.39	97.76	172.12	99.02	171.49	100.65	170.55	101.36	170.05
101.93	169.69	103.29	169.18	103.55	169.08	105.23	168.06	106.84	167.08
107.26	166.86	110.6	164.84	111.12	164.44	113.56	162.94	119.23	159.48
120.33	158.98	120.64	158.83	120.72	158.77	125.48	157.13	129.17	155.84
129.42	155.71	129.81	155.55	130.05	155.36	130.45	155.05	135.67	150.81
136.76	149.72	138.62	149.06	143.15	144.73	144.78	142.81	147.08	141.18
147.1	141.17	149.3	140.05	149.6	139.92	151.89	138.05	153.48	136.74
154.19	136.3	154.52	136.15	156.97	134.37	158.34	133.07	159.51	132.3
160.17	131.77	162.12	129.81	164.41	128.52	165.82	127.68	168.37	129.49
169.58	125.77	169.98	125.42	171.07	124.62	173.98	122.32	175.31	121.45
176.06	120.88	179.25	120.43	180.66	120.17	181.39	119.97	182.81	119.56
184.08	119.43	185.41	119.39	186.13	119.38	199.37	116.29	199.94	116.13
203.18	115.55	205.3	115.34	207.61	115.26	209.82	115.07	211.57	114.85
211.78	114.82	213.98	113.83	217.31	112.84	217.62	112.82	217.96	112.79
218.48	112.76	220.43	112.7	221.64	112.62	222.74	112.79	223.74	113.22
225.16	113.85	227.59	115.21	227.72	115.28	227.78	115.32	228.04	115.44
229.84	116.34	230.25	116.55	230.75	116.84	232.42	118.05	238.08	119.84
238.95	120.12	239.98	120.4	241.59	120.96	242.1	121.13	242.42	121.27
244.14	122.07	246.4	123.54	247.51	124.25	248.19	124.63	249.95	125.56
252.21	126.62	252.72	126.82	254.37	127.43	254.4	127.44	254.41	127.44
256.03	127.71	256.47	127.79	258.27	128.15	258.47	128.19	259.32	128.23
260.21	128.29	260.41	128.29	262.63	128.25	264.31	128.18	264.93	128.16
266.52	128.1	266.99	128.08	267.59	128.06	269.13	128.02	270.34	127.95
271.27	127.87	272.49	127.79	273.44	127.75	274.55	127.73	275.54	127.71
276.36	127.67	277.99	127.57	278.51	127.55	280.28	127.51	282.44	127.46
282.47	127.46	284.53	127.46	285.17	127.46	285.86	127.45	287.14	127.43
288.31	127.4	288.87	127.39	289.9	127.37	290.29	127.37	290.5	127.36
293.52	127.31	294.36	127.31	295.45	127.3	296.49	127.27	297.36	127.26
300.16	127.26	300.23	127.26	300.46	127.25	302.02	127.19	302.48	127.18
304.74	127.07	306.3	127.02	307.22	127.01	308.55	126.92	309.27	126.87
310.66	126.82	311.72	126.78	312.27	126.76	313.76	126.74	314.49	126.72
315.91	126.66	317.89	126.56	318.11	126.55	318.27	126.54	320.49	126.46
320.65	126.45	322.51	126.36	324.31	126.35	324.42	126.38	326.58	126.68
327.74	126.44	331.73	126.34	337.07	126.29	344.61	126.25	346.26	126.22
357.1	126.27	360.16	126.41	360.23	126.41	360.24	126.41	360.29	126.41
361.2	126.4	363.35	126.33	367.07	126.25	367.67	126.23	367.96	126.21
370.92	126.28	371.13	126.29	372.82	126.29	373.8	126.26	375.18	126.22
376.43	126.2								

393.55	125.97	393.72	125.97	393.86	125.97	395.3	125.97	396.11	125.97
396.2	125.97	396.39	125.97	398.42	125.96	399.37	125.98	400.87	125.93
401.59	125.91	403.69	125.85	404.82	125.85	406.48	125.82	406.99	125.85
408.45	125.92	410.14	125.81	410.22	125.81	410.28	125.81	410.48	125.82
412.39	125.95	413.26	125.98	415.57	125.98	415.63	125.98	415.74	125.98
417.87	126.03	418.93	126.03						

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	211.57	.035	227.59	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

165.82	256.03	90.74	99.27	101.73	.1	.3		
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Ineffective Flow num= 1

Sta L	Sta R	Elev	Permanent
260.21	418.93	128.29	F

Blocked Obstructions num= 2

Sta L	Sta R	Elev	Sta L	Sta R	Elev
0	21.49	219.8281	328.81	368.34	126.4151

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 414.6495

INPUT Description:

Station	Elevation	Data	num=	331					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev		
0	217.52	1.65	217.02	8.79	215.09	11.69	214.35	17.38	212.81
18.77	212.45	23.58	211.22	25.39	210.74	25.75	210.71	27.81	210.48
29.86	210.9	30.39	211.01	31.17	211.04	31.56	211.04	33.15	211.04
35.09	211.04	35.48	211.04	35.79	211.04	36.97	211.07	37.89	211.03
39.01	211.07	43.34	209.74	43.5	209.73	43.74	209.69	44.11	209.5
45.74	208.76	47.56	208.22	47.65	208.18	47.75	208.12	49.35	207.15
49.58	207	51.4	205.99	53.14	204.83	53.43	204.65	53.72	204.49
55.27	203.6	55.78	203.29	57.81	202.29	69.37	197.12	73.14	196.23
76.27	195.13	78.99	193.99	81.64	192.89	83.11	192.48	83.69	192.34
84.78	192.08	85.69	191.92	86.49	191.69	89.77	190.24	90.08	190.13
91.74	189.69	94.76	188.93	96.22	188.33	97.52	187.7	98.71	187.05
99.43	186.63	100.61	185.85	103.46	184.34	105.48	183.26	108.42	181.71
108.91	181.4	109.1	181.21	110.71	180.16	112.53	179.42	114.16	178.69
114.94	178.3	115.87	177.69	116.97	177.07	117.97	176.46	118.8	176.04
119.65	175.68	120.65	175.3	122.64	174.83	125.29	174.1	126.32	173.47
128.88	171.96	130.83	170.63	131.1	170.51	131.82	170.12	135.95	167.91
136.43	167.67	136.86	167.46	139.23	166.47	141.81	164.9	141.94	164.88
143.67	164.53	144.32	164	149.43	160.13	150.23	159.72	151.3	159.37
152.46	159.04	153.32	158.46	154.15	157.94	155.28	156.94	155.73	156.54
156.33	155.9	157.92	154.34	160.5	152.68	161.06	152.34	162.23	151.38
164.97	149.05	165.89	148.21	167.17	147.13	168.67	145.87	169.9	144.89
170.9	144.11	171.97	143.39	172.94	142.69	174.07	141.97	175.3	141.01
176.05	140.4	176.75	139.82	178.37	138.49	178.89	138.15	180.4	137.18
181.93	136.37	182.33	136.13	182.73	135.88	183.66	135.29	184.78	134.69
186.1	133.7	188.65	131.65	189.16	131.31	190.48	130.44	192.23	128.97
193.37	128.18	195.35	126.84	196.62	126.39	197.31	125.91	197.81	125.69
199.96	124.14	202.48	122.49	207.42	118.77	208.47	118.01	210.37	117.15
212.17	116.68	212.53	116.63	213.38	116.46	214.63	116.52	216.8	116.54
219.61	116.46	223.9	117.04	224.74	117.17	226.02	117.65	227.08	118.3
228.53	119.19	229.85	119.28	230.84	119.15	232.11	119.03	233.87	118.65
235.73	117.82	236.74	117.23	238.96	115.96	239.81	115.8	241.64	115.55
242.24	115.5	243.54	115.35	243.78	115.33	243.89	115.33	246.51	115.29
247.64	115.32	248.57	115.4	249.88	115.1	250.31	114.92	251.02	114.24

253.54	112.22	254.67	111.97	255.82	111.91	256.81	111.76	258.68	111.44
259.23	111.34	259.52	111.3	261.34	111.16	262.76	111.71	264.05	112.17
264.64	112.59	265.37	113	271.11	117.76	271.5	118.03	271.73	118.14
277.03	120.84	278.32	121.16	278.84	121.22	279.62	121.44	280.44	121.74
281.3	122.17	282.33	122.81	283.27	123.18	283.97	123.58	285.09	123.97
285.4	124.11	285.58	124.19	288.65	125.14	289.19	125.23	291.31	125.5
291.55	125.52	293.48	125.59	294.26	125.62	294.67	125.65	296.4	125.68
297.61	125.74	298.07	125.71	300.08	125.53	300.85	125.45	301.19	125.44
302.7	125.32	303.51	125.27	304.81	125.26	307.13	125.22	307.15	125.22
307.38	125.21	309.35	125.15	309.54	125.14	311.5	125.04	313.13	124.93
313.67	124.89	315.55	124.81	315.99	124.8	316.61	124.78	318.19	124.71
319.26	124.65	320.6	124.54	321.7	124.48	322.83	124.43	324.07	124.39
324.79	124.35	325.44	124.3	327.15	124.17	327.81	124.15	329.22	124.08
330.6	123.94	331.07	123.89	331.56	123.87	334.06	123.74	334.15	123.74
335.94	123.84	337.64	123.89	337.78	123.9	337.93	123.9	338.48	123.89
340.44	123.87	341.3	123.91	344.07	124	344.27	124.02	345.88	124.15
346.78	124.2	348.19	124.24	350.51	124.22	350.85	124.2	351.53	124.21
352.58	124.24	353.1	124.27	354.83	124.34	356.8	124.36	357.18	124.37
358.24	124.32	359.1	124.3	359.41	124.3	361.35	124.33	363.13	124.34
363.63	124.35	365.83	124.35	365.93	124.35	366.57	124.35	369	124.36
369.41	124.36	371.44	124.39	372.05	124.39	373.53	124.36	375.27	124.34
375.49	124.34	375.68	124.34	378.19	124.31	378.37	124.31	381.65	124.36
381.78	124.36	381.92	124.36	384.51	124.37	384.57	124.37	386.3	124.34
387.96	124.4	388.2	124.4	389.62	124.36	390.84	124.38	391.21	124.38
391.57	124.39	393.01	124.39	394.46	124.38	394.76	124.37	395.24	124.35
396.35	124.33	397.05	124.35	398.8	124.38	400.61	124.42	401.33	124.42
402.84	124.41	403.13	124.41	403.27	124.41	405.85	124.44	406.86	124.42
408.02	124.43	409.47	124.47	409.93	124.47	411	124.49	412.31	124.51
412.87	124.52	414.59	124.5	415.69	124.5	416.94	124.49	419.23	124.51
419.39	124.51	420.29	124.52	421.72	124.53	421.97	124.54	423.82	124.54
425.46	124.41	425.95	124.4	428.13	124.42	428.26	124.43	428.42	124.43
430.21	124.49	431.66	124.51	432.36	124.51	434.53	124.47	434.91	124.46
435.3	124.46	437.92	124.44	438.59	124.42	440.66	124.42	441.54	124.42
443.06	124.4								

Manning's n Values num= 3

Sta	n Val	Sta	n Val	Sta	n Val
0	.08	249.88	.035	271.11	.08

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

199.96	293.48	119.54	107.41	104.94	.1	.3		
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Blocked Obstructions num= 1

Sta L	Sta R	Elev
0	18.392	17.5225

CROSS SECTION

RIVER: Auburn Creek
REACH: Main Reach RS: 307.2411

INPUT Description:

Station	Elevation	Data	num=	249					
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	193.22	2.03	193.13	4.46	193.04	4.81	193.07	5.57	193
6.11	192.96	6.36	192.95	8.09	192.95	10.09	192.84	10.19	192.84
10.26	192.84	11.73	192.82	12.31	192.76	13.62	192.63	15.03	192.52
15.67	192.49	16.26	192.45	17.47	192.36	18.24	192.25	20.15	192.01
21.07	191.88	22.6	191.16	26.27	189.37	27.82	188.74	27.95	188.69
29.85	188	30.04	187.95	30.49	187.84	32.67	187.29	33.03	187.22
33.53	187.12	34.88	186.68	37.84	186.22	38.64	186.12	61.1	179.1
63.06	178.37	63.97	178.09	65.08	177.56	66.8	176.57	67.2	176.41

442.14 122.77 443.94 122.84 444.8 122.85 446.2 122.86 447.56 122.81

Manning's n Values num= 5
 Sta n Val Sta n Val Sta n Val Sta n Val
 0 .04 86.38 .049 106.78 .03 121.78 .049 152.07 .06

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 86.38 152.07 86.42 60.71 46.3 .1 .3

Blocked Obstructions num= 1
 Sta L Sta R Elev
 253.85 377.59 123.4293

CROSS SECTION

RIVER: Auburn Creek
 REACH: Main Reach RS: 4.590075

INPUT

Description:

Station Elevation Data num= 323											
Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev	Sta	Elev
0	132.15	.3	132.07	1.14	132.13	2.35	132.1	3.47	131.95		
4.32	131.91	5.85	131.93	6.41	131.87	8.49	131.28	8.8	131.22		
9.88	131.02	11.76	130.67	12.35	130.61	14.17	130.23	15.5	130.13		
16.97	130.05	18.83	129.9	19.33	129.8	22.2	129.57	22.28	129.56		
24.3	129.44	24.76	129.4	27.23	129.21	27.6	129.17	28.24	129.04		
29.97	128.74	30.43	128.63	31.04	128.56	35.31	128.24	37.14	128.11		
38.19	128.03	39.24	127.95	40.55	127.87	41.13	127.82	43.09	127.64		
43.36	127.61	43.44	127.6	45.36	127.43	45.77	127.4	47.42	127.27		
48.62	127.17	49.59	127.08	50.93	126.93	51.66	126.84	53.16	126.67		
53.49	126.64	53.65	126.62	55.81	126.47	55.96	126.46	56.44	126.41		
58.73	126.21	59.59	126.15	60.97	126.06	62.75	125.87	63.3	125.85		
63.98	125.82	65.14	125.82	67.7	125.81	71.06	125.73	71.14	125.73		
71.56	125.72	73.83	125.67	74.03	125.68	74.44	125.77	75.38	125.95		
91.34	122.7	102.34	107.98	117.34	107.98	133.84	118.98	134.44	121.72		
139.38	122.67	140.86	122.4	141.05	122.37	141.13	122.36	143.15	122.32		
143.54	122.33	145.09	122.34	146.38	122.31	147.13	122.31	148.84	122.26		
149.34	122.25	150.25	122.27	151.08	122.31	151.54	122.31	153.76	122.33		
153.96	122.34	154.73	122.35	156.71	122.39	157.24	122.39	159.11	122.42		
160.38	122.45	161.84	122.48	163.93	122.49	164.17	122.5	165.92	122.56		
166.78	122.59	168.95	122.59	169.19	122.59	171.31	122.61	171.92	122.61		
173.05	122.65	174.24	122.64	174.73	122.63	176.66	122.56	176.78	122.56		
176.81	122.56	178.49	122.53	179.21	122.54	180.22	122.54	181.8	122.49		
181.98	122.49	182.64	122.47	183.94	122.43	184.3	122.46	185.68	122.62		
186.9	122.66	187.47	122.67	188.56	122.67	191.14	122.67	191.48	122.65		
192.69	122.58	192.99	122.57	194.24	122.54	195.52	122.55	196.44	122.52		
197.67	122.52	198.53	122.51	200.24	122.54	200.88	122.56	201.09	122.55		
202.97	122.5	204.06	122.52	205.31	122.54	206.23	122.49	207.47	122.45		
208.93	122.34	209.76	122.29	210.45	122.28	211.93	122.23	213.33	122.2		
214.42	122.21	215.36	122.26	216.51	122.31	217.67	122.29	218.83	122.26		
219.98	122.27	221.01	122.27	222.55	122.29	223.43	122.27	224.13	122.32		
225.56	122.2	226.38	122.17	227.92	122.13	229.45	121.99	230.11	122.03		
232.35	121.95	232.46	121.94	232.56	121.95	234.71	122.08	236.96	121.94		
236.98	121.94	237	121.94	239.1	121.84	241.18	121.96	241.48	121.93		
241.83	121.86	243.78	121.39	245.3	121.51	246.06	121.62	246.62	121.58		
248.19	121.52	249.98	121.34	250.56	121.36	251.04	121.37	252.7	121.32		
254.42	121.41	255.04	121.44	255.51	121.45	257.16	121.46	258.45	121.51		
259.49	121.54	261.21	121.65	261.65	121.7	262.09	121.69	264.08	121.78		
264.53	121.81	266.17	121.87	267.71	121.92	268.5	121.91	269.4	121.93		
270.72	121.96	272.31	122.01	273.12	122.07	273.89	122.1	275.29	122.16		
276.88	122.2	277.65	122.22	278.47	122.23	279.83	122.3	281.55	122.32		
282.22	122.35	282.79	122.37	284.41	122.45	286.7	122.59	286.75	122.59		

286.8	122.59	288.84	122.64	290.51	122.7	291.22	122.72	292.04	122.73		
293.45	122.75	294.53	122.76	295.76	122.84	296.73	122.91	299.34	123.18		
300.27	123.16	301.63	123.21	302.38	123.32	304.06	123.31	304.75	123.49		
305.36	123.43	306.89	123.36	307.79	123.37	309.28	123.43	310.57	123.44		
311.27	123.41	318.2	123.44	324.99	123.46	330.08	123.42	331.51	123.42		
333.3	123.41	334	123.34	334.53	123.37	336.76	123.46	336.9	123.46		
337.01	123.47	339.16	123.56	339.67	123.55	340.3	123.48	345.63	123.1		
346.49	122.94	348.03	122.7	348.69	122.69	349.54	122.72	351.31	122.65		
352.8	122.6	353.58	122.49	354.53	122.5	356.08	122.51	357.77	122.49		
358.36	122.48	359.03	122.47	360.85	122.43	362.86	122.39	363.18	122.39		
363.57	122.38	365.74	122.37	367.05	122.41	367.94	122.4	369.75	122.36		
370.44	122.34	370.94	122.34	372.7	122.33	374.53	122.3	375.27	122.28		
375.81	122.29	377.45	122.22	379.55	122.16	379.92	122.14	380.21	122.13		
382.19	122.09	384.1	122.01	384.7	122	385.3	122	386.98	122.02		
387.89	121.96	389.39	121.92	390.72	121.87	391.62	121.82	392.83	121.89		
394.09	121.98	395.15	122.03	396.39	122.09	397.89	122.1	398.8	122.09		
399.71	122.1	400.92	122.12	402.78	122.15	403.51	122.18	403.98	122.19		
405.73	122.28	407.82	122.37	408.26	122.38	408.65	122.38	410.47	122.37		
412.49	122.41	412.94	122.42	413.26	122.42	415.17	122.58	417.25	122.43		
417.75	122.43	419.33	121.57	419.91	121.44	420.5	121.26	422.41	121.05		
426.08	120.61	427.19	120.48	427.21	120.48	427.23	120.48	429.37	120.31		
429.78	120.3	431.83	120.23	433.02	120.2	434.01	120.18	435.8	120.07		
436.48	120.03	438.34	120.03	438.73	120.03	438.86	120	441.15	119.48		
441.75	119.56	443.31	119.75	444.91	119.79						

Manning's n Values num= 5											
Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val	Sta	n Val
0	.04	91.34	.049	102.34	.03	117.34	.049	134.44	.06		

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.											
Sta L	Sta R	Elev	Permanent	num=	2						
0	69.65	120	F								
122.65	444.91	122.76	F								

Blocked Obstructions num= 1											
Sta L	Sta R	Elev									
307.73	345.62	123.3715									

SUMMARY OF MANNING'S N VALUES

River: Auburn Creek

n6	Reach	River Sta.	n1	n2	n3	n4	n5
Main Reach		3283.479	.016	.049	.035	.018	.016
Main Reach		3229.405	.016	.06	.049	.035	.018
.016							
Main Reach		3159.787	.06	.02	.039	.035	.018
.016							
Main Reach		3025.628	.06	.039	.035	.018	.016
Main Reach	Culvert	3000					
Main Reach		2916.303	.1	.03	.018	.03	
Main Reach		2900.962	.08	.035	.018	.03	
Main Reach		2709.054	.1	.035	.1	.03	
Main Reach		2501.489	.1	.035	.1	.03	
Main Reach		2309.998	.1	.035	.025	.03	
Main Reach		2161.775	.1	.035	.018	.03	
Main Reach		1835.094	.04	.018	.04		
Main Reach		1800.703	.04	.018	.04		

Main Reach	1350	Culvert							
Main Reach	925.4423	.1	.045	.1					
Main Reach	797.816	.1	.035	.1					
Main Reach	652.2307	.1	.025	.1					
Main Reach	513.9224	.08	.035	.08					
Main Reach	414.6495	.08	.035	.08					
Main Reach	307.2411	.08	.035	.04					
Main Reach	195.1298	.045	.08	.035	.08				
Main Reach	141.507	.045	.049	.03	.04				
Main Reach	65.30157	.04	.049	.03	.049	.06			
Main Reach	4.590075	.04	.049	.03	.049	.06			

Main Reach	2501.489	.1	.3						
Main Reach	2309.998	.1	.3						
Main Reach	2161.775	.1	.3						
Main Reach	1835.094	.3	.5						
Main Reach	1800.703	.3	.5						
Main Reach	1350	Culvert							
Main Reach	925.4423	.3	.5						
Main Reach	797.816	.1	.3						
Main Reach	652.2307	.1	.3						
Main Reach	513.9224	.1	.3						
Main Reach	414.6495	.1	.3						
Main Reach	307.2411	.1	.3						
Main Reach	195.1298	.1	.3						
Main Reach	141.507	.1	.3						
Main Reach	65.30157	.1	.3						
Main Reach	4.590075	.3	.5						

SUMMARY OF REACH LENGTHS

River: Auburn Creek

Reach	River Sta.	Left	Channel	Right
Main Reach	3283.479	51.96	54.07	55.73
Main Reach	3229.405	70.8	69.62	68.75
Main Reach	3159.787	126.5	134.16	135.59
Main Reach	3025.628	111.21	109.32	112.92
Main Reach	3000	Culvert		
Main Reach	2916.303	14.15	15.34	16.27
Main Reach	2900.962	206.54	191.91	184.83
Main Reach	2709.054	209.38	207.57	205.83
Main Reach	2501.489	198.58	191.49	185.3
Main Reach	2309.998	146.44	148.22	149.95
Main Reach	2161.775	328.02	326.68	328.75
Main Reach	1835.094	35.26	34.39	34.8
Main Reach	1800.703	879.95	875.26	876.36
Main Reach	1350	Culvert		
Main Reach	925.4423	160.4	127.63	131.93
Main Reach	797.816	152.73	145.59	144.95
Main Reach	652.2307	123.04	138.31	136.74
Main Reach	513.9224	90.74	99.27	101.73
Main Reach	414.6495	119.54	107.41	104.94
Main Reach	307.2411	120.64	112.11	114
Main Reach	195.1298	91.95	53.62	23.5
Main Reach	141.507	118.19	76.21	43.65
Main Reach	65.30157	86.42	60.71	46.3
Main Reach	4.590075	24.51	4.59	8.5

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS

River: Auburn Creek

Reach	River Sta.	Contr.	Expan.
Main Reach	3283.479	.3	.5
Main Reach	3229.405	.1	.3
Main Reach	3159.787	.1	.3
Main Reach	3025.628	.3	.5
Main Reach	3000	Culvert	
Main Reach	2916.303	.3	.5
Main Reach	2900.962	.1	.3
Main Reach	2709.054	.1	.3