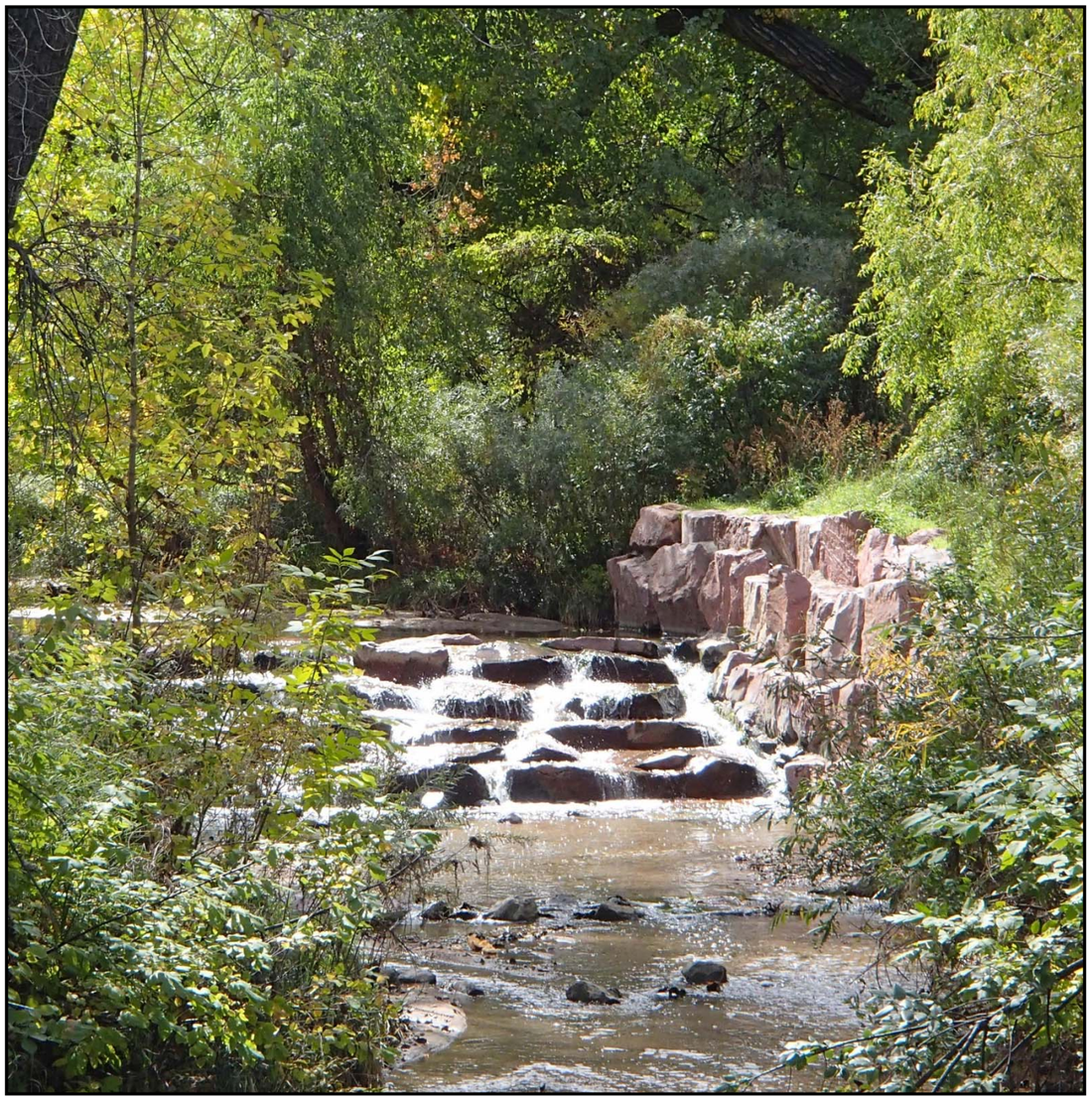

FLOOD HAZARD AREA DELINEATION REPORT
BIG DRY CREEK, DOWNSTREAM OF COUNTY LINE ROAD

Communities Included:

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT

CITY OF CENTENNIAL

SOUTHEAST METRO STORMWATER AUTHORITY

CITY OF LITTLETON

CITY OF ENGLEWOOD

ARAPAHOE COUNTY

CITY OF GREENWOOD VILLAGE

Prepared by:

RESPEC
720 South Colorado Boulevard
Suite 410 S
Denver, Colorado 80246
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February 2018

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February 26, 2018

Morgan Lynch, PE, CFM
Project Manager, Watershed Services
Urban Drainage and Flood Control District
2480 W. 26th Ave. Suite 156-B
Denver CO 80211

Re: Flood Hazard Area Delineation, Big Dry Creek and Tributaries, Downstream of County Line Road
Agreement No. 15-09.06B

Ms. Lynch,

RESPEC Consulting & Services is pleased to submit this report entitled *Flood Hazard Area Delineation Report, Big Dry Creek, Downstream of County Line Road* dated February 26, 2018. We would like to acknowledge the help and support in the preparation of this report that was furnished by the sponsors and stakeholders.

This Flood Hazard Area Delineation (FHAD) report represents the next major step in master planning for Big Dry Creek following the Major Drainageway Report (MDP) completed by Ayres Associates in June 2015. With that in mind, this report includes significant excerpts from that June 2015 report, titled *Big Dry Creek (Downstream of County Line Road) Major Drainageway Plan*. This was done in the interest of maintaining clarity between the work previously completed by Ayres Associates and the work updating modeling from that MDP by RESPEC. Sections excerpted from the 2015 MDP include watermarks throughout this report, while work by RESPEC updating modeling from the MDP are included in Sections 0, 1A, 3A, 4A, etc.

Enclosed is the Digital Flood Hazard Area Delineation Report for Big Dry Creek. This report documents the DFHAD study process from initiation through completion of the final floodplain and floodway delineations. A summary of the project history, description of the study area, field inventory of hydraulic structures, summary of hydrologic and hydraulic analysis, HEC-RAS water surface profile computer modeling results for the 10-, 50-, 100-, and 500-year storm events, and determination of the 0.5-foot rise floodways are provided in this report.

The floodplain and floodway information provided herein should assist Urban Drainage and Flood Control District and other project sponsors in administration of new and existing development in the areas prone to flooding.

Thank you for the opportunity to complete this phase of the project.

Best Regards,
RESPEC Consulting & Services

Alan J. Leak, P.E.
Principal

Michael J. Bannister
Project Engineer

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SECTION 0- BACKGROUND AND REPORT STRUCTURE

The Big Dry Creek Major Drainageway Report (MDP) was completed by Ayres Associates in June 2015 under Agreement No. 13-07-03. RESPEC received a task order to complete the FHAD of Big Dry Creek under Agreement No. 15-09.06B. Portions of the Ayres MDP were used as the basis for the modeling and mapping performed for the FHAD. As such, this report includes significant excerpts from the Ayres MDP report, titled *Big Dry Creek (Downstream of County Line Road) Major Drainageway Plan.* Sections 1, 2, 3, 8, and portions of the appendices are excerpted from the 2015 MDP and are watermarked to indicate their source document. Sections 1A, 3A, 4A, 8A, and portions of the appendices detail work performed by RESPEC. This was done in the interest of distinguishing between the work completed previously by Ayres Associates and the work updating models from that MDP by RESPEC.

SECTION 1 – INTRODUCTION

1.1 Authorization

The Urban Drainage and Flood Control District (UDFCD), in agreement with the City of Greenwood Village, the City of Englewood, and the Southeast Metro Stormwater Authority (SEMSWA), contracted with Ayres Associates Inc to conduct a Major Drainageway Plan (MDP) for Big Dry Creek Downstream of County Line Road. The work is authorized under UDFCD Agreement No. 13-07-03 dated December 17, 2013.

1.2 Purpose and Scope

The Big Dry Creek watershed was last studied and reported in the Big Dry Creek (Arapco) & Tributaries Major Drainageway Planning report, published in April 1998 by WRC Engineering, Inc. The Big Dry Creek regulatory floodplain was established in a 1996 FHAD prepared by WRC Engineering, Inc, that included Big Dry Creek along with the Arapahoe County portions of the Otero and Fillmore Tributaries. Several Letter of Map Revision (LOMR) updates to the floodplain have been incorporated since the 1996 FHAD.

UDFCD periodically updates master plans based on requests and support from local governments. Significant development in the Highlands Ranch area has been completed since the 1998 study, and the watershed is considered fully built out at this point in time. This update is taking place to note improvements since the previous study and to address complex areas, like the High Line Canal/ Big Dry Creek crossing that may need stabilization or repair. This report also provides an opportunity to recommend possible water quality improvements in the study area where there are very few in existence.

The overall scope of work for the MDP includes the following main tasks:

1. Meet periodically with the project sponsors and other stakeholders to exchange information and to solicit input and direction;

2. Set up and maintain a project website to present information and receive input from interested parties;

3. Collect and review available reports and studies related to existing and proposed stormwater facilities, local hydrology, floodplains, current and future land use, and water quality;

4. Review the 1998 hydrologic model results and modify to run on the newest versions of CUHP and SWMM, to reflect current watershed imperviousness conditions and updated projections of future imperviousness based on recent zoning changes, to include current publicly-maintained regional detention facilities, and to reflect other stormwater facilities and watershed conditions that currently exist;

5. Perform hydraulic calculations necessary to assess the adequacy of existing stormwater facilities and to size alternative improvement plans;

6. Identify existing and potential future drainage, erosion, water quality, and flooding problems in the project area, including a general identification of wetland and riparian zones and potential detention/water quality sites;

7. Formulate and evaluate conceptual alternative plans to address drainage, erosion, water quality, and flood hazard problems associated with the drainageway, considering probable costs, water quality effects, and maintenance aspects;

8. Prepare a draft alternatives analysis report to document the formulation and evaluation of alternative plans and to recommend a preferred alternative, review with project sponsors and stakeholders, and revise to address the comments received;

9. Undertake a conceptual design of the selected alternative and prepare drawings and probable cost information for the plan, documenting in a draft, then final conceptual design report; and

10. Participate in formal presentations of the study results at two public meetings.

1.3 Planning Process

Based on input from the project sponsors and on observations of the current condition of various reaches of Big Dry Creek, the following main objectives for this master plan were identified:

- Preserve/establish channel equilibrium by maintaining balance of water flow and sediment movement to the extent possible
- Address floodplain concerns in near the High Line Canal confluence with Big Dry Creek and Nobles Road Tributary and near the Goodson Recreation Center
- Address severely degraded channel reaches
- Develop conceptual design improvements to be implemented
- Improve water quality in the project area where possible
- Maintain a watershed approach to the plan
- Achieve the objectives of project sponsors and numerous project stakeholders while preserving a natural channel character and supporting riparian vegetation communities and resident wildlife habitat

Periodic meetings were held to gather input from project sponsors and stakeholders. A summary of project meetings is shown in Table 1-1; meeting minutes are included in Appendix A.

Public input will be solicited through a public meeting, which is anticipated to be held during the Alternatives Analysis and Conceptual Design phases of the MDP.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Table 1-1
Project Meetings

Meeting	Date	Purpose
Kickoff Meeting	December 13, 2013	Review project scope and project approach, identify information needs
Progress Meeting #2	January 7, 2014	Hydrology status update, review land use assumptions, detention information
Progress Meeting #3	February 11, 2014	Discuss initial baseline hydrology results, discuss calibration
Progress Meeting #4	May 29, 2014	Review client comments on baseline hydrology report
Progress Meeting #5	July 2, 2014	Discuss remaining hydrology comments, begin identifying problem areas and alternatives
Progress Meeting #6	September 23, 2014	Alternatives analysis review
Progress Meeting #7	December 18, 2014	Alternatives analysis review
Progress Meeting #8	April 08, 2015	Conceptual Design Kick-off

1.4 Mapping and Surveys

Mapping data sources used for the Big Dry Creek MDP included the following:

- Color aerial photography was provided by UDFCD. The photography was generated as part of the Denver Region Aerial Photography Project (DRAPP) by the Denver Region Council of Governments (DRCOG). Photographs are from spring 2012, meet 1"=200' horizontal mapping standards, and have a resolution of 1 foot.
- 2-foot interval topography within the project area (north of County Line Road) was provided by UDFCD. The topography was prepared by Ayres Associates, and was based on LiDAR flown by Merrick in 2012.
- 5-foot interval topography in Douglas County was provided by the County and was used to delineate watershed boundaries and define subwatershed and channel properties south of Lincoln Avenue. The source of the mapping was Merrick & Company's 1996 Digital Elevation Model (DEM) "Mass Points."
- Ground survey of stream crossings on main stem Big Dry Creek was provided by UDFCD. Survey was conducted by Accurate EngiSurv, LLC, in December 2013 for the main stem and May 2014 for the tributaries.

All mapping is on the Colorado State Plane Central Zone projection, horizontal datum NAD83, and the vertical datum is NAVD 1988.

Existing parcel boundaries, zoning, jurisdictional boundaries, and Digital Flood Insurance Rate Map (DFIRM) data were provided by Douglas County, Arapahoe County, City of Englewood, City of Centennial and SEMSWA in Geographic Information System (GIS) format. SEMSWA and City of Englewood data also included existing storm infrastructure within their jurisdiction.

1.5 Data Collection

Numerous reports, studies, and design plans were reviewed and utilized in the preparation of this report. A listing of the primary references is as follows; a full listing is included in the References section at the end of this report.

- 1975 Major Drainageway Plan Big Dry Creek (VTN)
- 1996 Flood Hazard Area Delineation Big Dry Creek (Arapco) & Tributaries (WRC Engineering, Inc)
- Big Dry Creek (Arapco) & Tributaries Major Drainageway Planning Phase - B Preliminary Design Report (WRC Engineering, Inc)

1.6 Acknowledgments

This report could not have been prepared without the participation and support of the following project sponsors and stakeholders. We are grateful for their contributions.

Table 1-2
Project Participants

Project Sponsors	Agency
Shea Thomas	Urban Drainage and Flood Control District
Paul Weller	City of Englewood
Justin WIlliams	City of Greenwood Village
Suzanne Moore	City of Greenwood Village
Wanda DeVargas	City of Greenwood VIllage
Paul Danley	Southeast Metro Stormwater Authority
Angela Howard	Southeast Metro Stormwater Authority
Scott Palmer	Southeast Metro Stormwater Authority
Lanae Raymond	Southeast Metro Stormwater Authority
Stacey Thompson	Southeast Metro Stormwater Authority
Project Stake Holders	**Agency**
Brad Robenstein	Douglas County
Brett Collins	South Suburban Parks and Recreation District

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

SECTION 1A - DISCUSSION OF FHAD EFFORT

1A.1 AUTHORIZATION

The Urban Drainage and Flood Control District (UDFCD), in agreement with the City of Greenwood Village, the City of Englewood, and the Southeast Metro Stormwater Authority (SEMSWA), contracted with RESPEC Consulting & Services to conduct a Flood Hazard Area Delineation (FHAD) for Big Dry Creek Downstream of County Line Road. The work is authorized under UDFCD Agreement No. 15-09.06 dated September 17, 2015.

1A.2 PURPOSE & SCOPE

The purpose of this FHAD study is to provide updated hydraulic information for the Big Dry Creek watershed using the updated hydrology from the Big Dry Creek (Downstream of County Line Road) Major Drainageway Planning (MDP) report, published by Ayres Associates in June of 2015. The overall scope of work for this FHAD includes the following main tasks:

1. Gather and assemble information on the existing drainage system including hydraulic structures (bridges and culverts), channel characteristics, and topographic information.
2. Use hydrology developed for the "Big Dry Creek (Downstream of County Line Road) Major Drainageway Plan" June 2015.
3. Determine the 500-year peak flow rate to be used for the project by extrapolating from peak flows provided for other recurrence intervals.
4. Define the water surface profiles for the 10-, 50-, 100-, and 500-year flood return period for future land-use watershed conditions hydrology.
5. Define the flood boundaries for the 100- and 500-year flood events and the 0.5-foot floodway
6. Prepare flood maps and flood profile drawings of Big Dry Creek, Fillmore Tributary, Otero Tributary and Nobles Tributary showing the limits of the 0.5-foot floodway, 100-year and 500-year floodplains, and 10-year, 50-year, 100-year, and 500-year flood profiles.
7. Document the study results in a FHAD report.

1A.3 PLANNING PROCESS

A project kickoff meeting was held on December 10, 2015 to gather input from project sponsors and stakeholders; meeting minutes are included in Appendix A.

1A.4 MAPPING & SURVEYS

Mapping data for the FHAD beyond those sources used for the Big Dry Creek MDP included a survey of the Easter Avenue Bridge, completed by Aztec Engineering and provided by SEMSWA. The survey was dated December 14, 2015. Following the 2015 MDP, all mapping is on the Colorado State Plane Central Zone projection, horizontal datum NAD83, and the vertical datum is NAVD 1988.

1A.5 DATA COLLECTION

Numerous reports, studies, and design plans were reviewed and utilized in the preparation of the 2015 MDP and this FHAD report. The primary reference for this FHAD report was the 2015 MDP by Ayres Associates, which has been discussed previously. A full listing of references is included in Section 8A.

1A.6 ACKNOWLEDGEMENTS

This report could not have been prepared without the participation and support of the project sponsors and stakeholders listed in Table 1A-1. We acknowledge them for their contributions.

Table 1A-1. Project Sponsors and Stakeholders

Role	Agency	Member(s)
Sponsors	Urban Drainage and Flood Control District	Terri Fead
		Morgan Lynch
		Shea Thomas
	City of Englewood	Paul Weller
	City of Greenwood Village	Justin Williams
		Suzanne Moore
		Wanda DeVargas
	Southeast Metro Stormwater Authority	Paul Danley
		Angela Howard
		Scott Palmer
		Cynthia Love
Stakeholders	Douglas County	Brad Robenstein
	South Suburban Parks and Recreation District	Brett Collins

SECTION 2 - STUDY AREA DESCRIPTION

2.1 Project Area

The project study area consists of the Big Dry Creek watershed from County Line Road to the South Platte River. The Nobles Road Tributary, the Fillmore Tributary, and the Otero Tributary up to County Line Road are also included in the project study area.

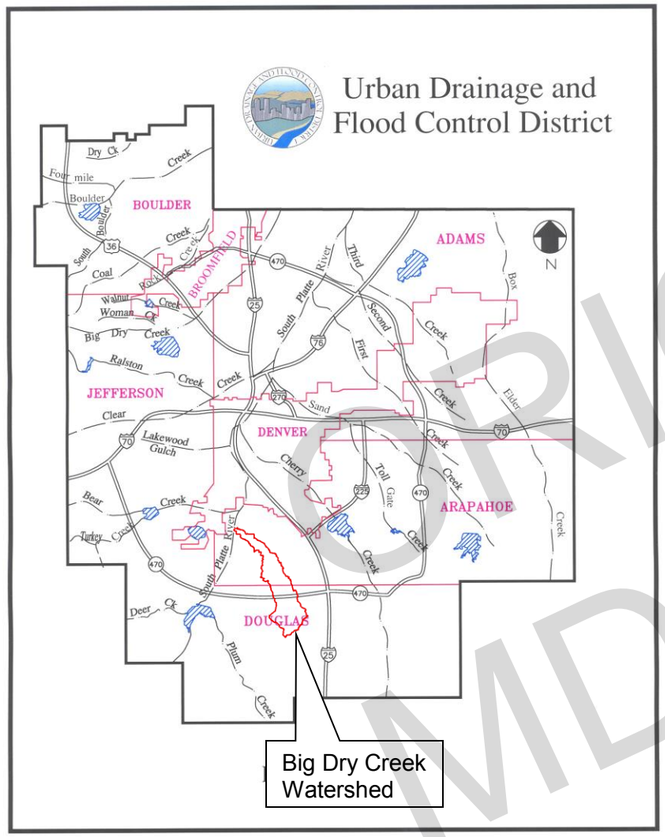


Figure 2-1 - Project Vicinity Map

The upper portion of the Big Dry Creek watershed starts in Douglas County in the City of Castle Pines and flows north through unincorporated Douglas County and Highlands Ranch to the Douglas County and Arapahoe County line. The Wildcat Tributary and the Branch 1 Tributary are both west bank tributaries to Big Dry Creek in Douglas County. The C-470 highway corridor bisects the watershed just south of County Line Road. North of County Line Road, Big Dry Creek flows through the South Suburban Golf Course and continues northwest through the City of Centennial. The Fillmore and Otero Tributaries both start in Douglas County, and join Big Dry Creek as west bank tributaries in the City of Centennial. Just west of University Boulevard, the east bank Nobles Road Tributary joins Big Dry Creek at the High Line Canal at the east end of deKoevend Park. Both Big Dry Creek and the Nobles Road Tributary flow through a small portion of the High Line Canal before passing through a sluice gate structure in the west bank of the High Line Canal back into the stream channel. After crossing the High Line Canal, Big Dry Creek continues northwest out of the deKoevend Park, through multiple private properties and out of the City of Centennial through the cities of Greenwood Village, Littleton and Englewood. Big Dry Creek passes through the Rollin D. Barnard Equestrian Park in Greenwood Village. Near the South Platte River, Big Dry Creek crosses under the City Ditch aerial flume, three Burlington Northern Santa Fe (BNSF) railroad lines, one Regional Transportation District (RTD) Light Rail Bridge, and South Santa Fe Drive before the confluence with the South Platte River. A map of the jurisdictions in the project area is included in Figure 2-2. Parks and open space within the project area is shown in Figure 2-3. A map of the watershed showing the master plan project area is provided in the interactive Hydrology Map, Figure B-1, in Appendix B.

The Big Dry Creek watershed has a drainage area of 19.35 square miles, or 12,384 acres. The watershed is teardrop shaped, with the widest portion at the top end of the watershed. The Big Dry Creek watershed is approximately 12.3 miles long, with an average width of 2.7 miles in the upper portion of the watershed, an average width of 2.0 miles in the middle third of the watershed, and an average width of 0.7 miles in the lower third of the watershed. The highest and lowest points of the watershed are 6585 and 5293 feet, respectively, with an average watershed slope of 2.0%. The watershed is considered fully developed. Natural Resources Conservation Service (NRCS) hydrologic soil types within the watershed are primarily Type C. Type B soils dominate west of the High Line Canal with a swath of Type A soils along Big Dry Creek in this area. There are swaths of Type B soils along Big Dry Creek south of County Line Road, and isolated pockets of Type D soils throughout the watershed. A soils map is provided as a part of the interactive Hydrology Map, Figure B-1, in Appendix B.

Big Dry Creek is UDFCD Project Reuse watershed number 5600. Nobles Road Tributary, Fillmore Tributary and the Otero Tributary are also included in this project, but do not have project reuse watershed numbers.

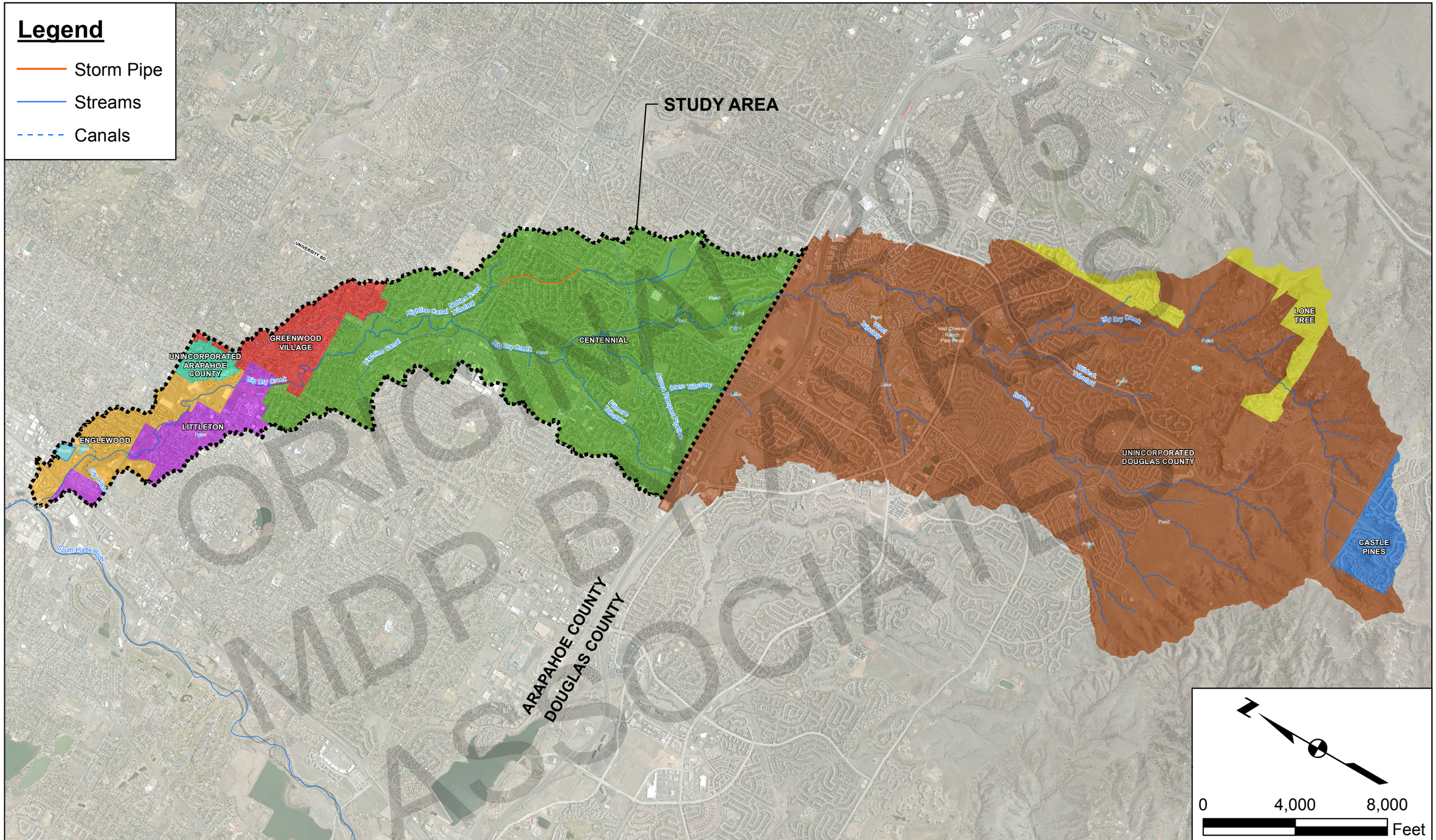
The Big Dry Creek watershed is intersected by two irrigation canals – the High Line Canal near University Boulevard and Arapahoe Road, and the City Ditch just east of Windermere Street. The City Ditch is an elevated flume crossing, and does not directly interact with Big Dry Creek. Big Dry Creek and the Nobles Road Tributary cross University Boulevard and flow directly into the High Line Canal at locations approximately 360 feet apart. Approximately halfway between these two locations, there is an eight sluice gate diversion structure in the west bank of the High Line Canal to regulate flows leaving the High Line Canal back into the downstream channel of Big Dry Creek. Alternatives to separate the High Line Canal flows from Big Dry Creek and Nobles Road Tributary flows will be considered.

2.2 Land Use

Land use and zoning data was provided by Douglas County, Arapahoe County, the City of Centennial, and the City of Englewood. For all other areas within the watershed, land use information was derived from 2012 aerial photography. Because there is no undeveloped land remaining in the watershed, existing land use was assumed to be the same as future land use. A summary of the imperviousness values, as determined for the purposes of hydrologic modeling, is included in Section 3.3.3, Imperviousness. Land use for the watershed is illustrated on the interactive hydrology map, Figure B-1, in Appendix B.

Residential land uses make up a majority of the watershed. A majority of the main stem of Big Dry Creek, and of most of the tributaries, are contained within either parks or open space. There are pockets of commercial land use, primarily along major arterial streets such as Broadway, South Santa Fe Drive, County Line Road, and University Boulevard. There are also some pockets of industrial land use along the South Santa Fe Drive corridor. Just south of County Line Road, the C-470 highway corridor bisects the watershed. The upper portion of the watershed is characterized by open space and natural areas. Land use within the Big Dry Creek watershed is summarized in Table 3-2.

ORIGINAL DRAWINGS MUST BE SIGNED



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Designed by:	MDH
Drawn by:	ABA/MDH
Checked by:	WCP
Project No.:	35-0214.00
Date:	7/1/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Jurisdiction Map

Figure 2-2



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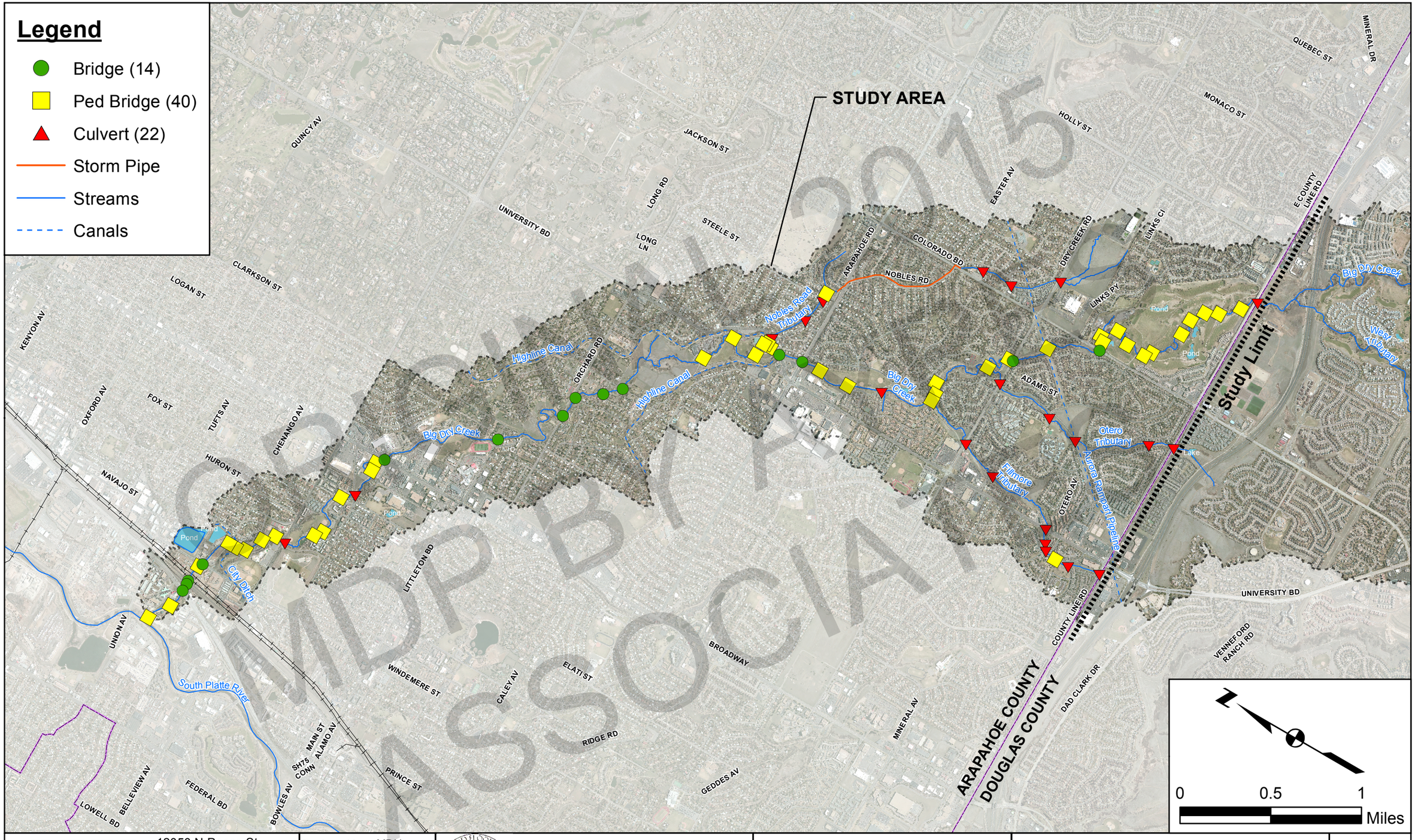
AYRES ASSOCIATES 12050 N Pecos St Suite 150 Westminster, CO 80234 P: 303.938.8874 www.AyresAssociates.com	Designed by: MDH Drawn by: ABA/MDH Checked by: WCP Project No.: 35-0214.00 Date: 7/1/2014	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD	Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)	**Parks and Open Space**	Figure 2-3



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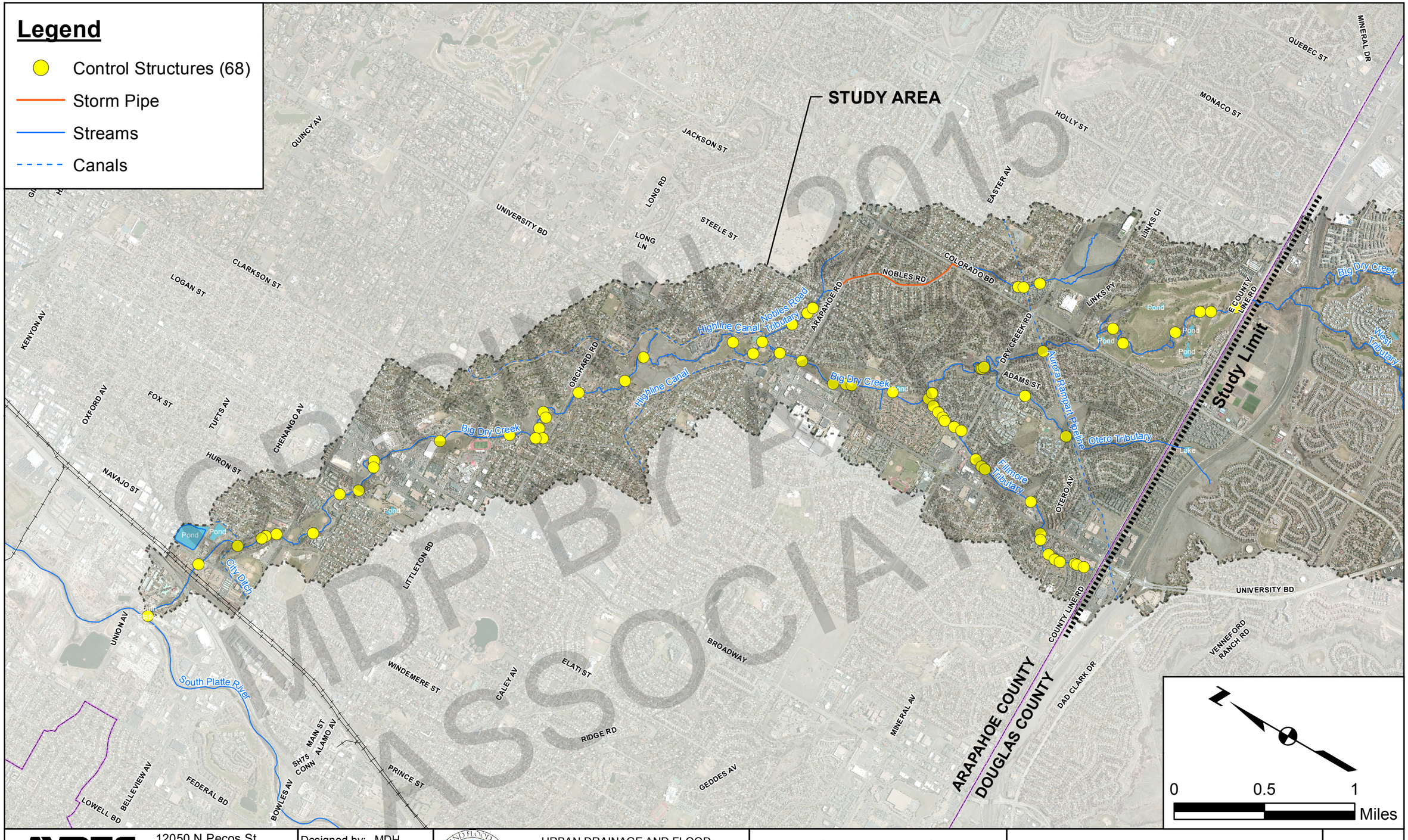

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MDP BY AYRES ASSOCIATES

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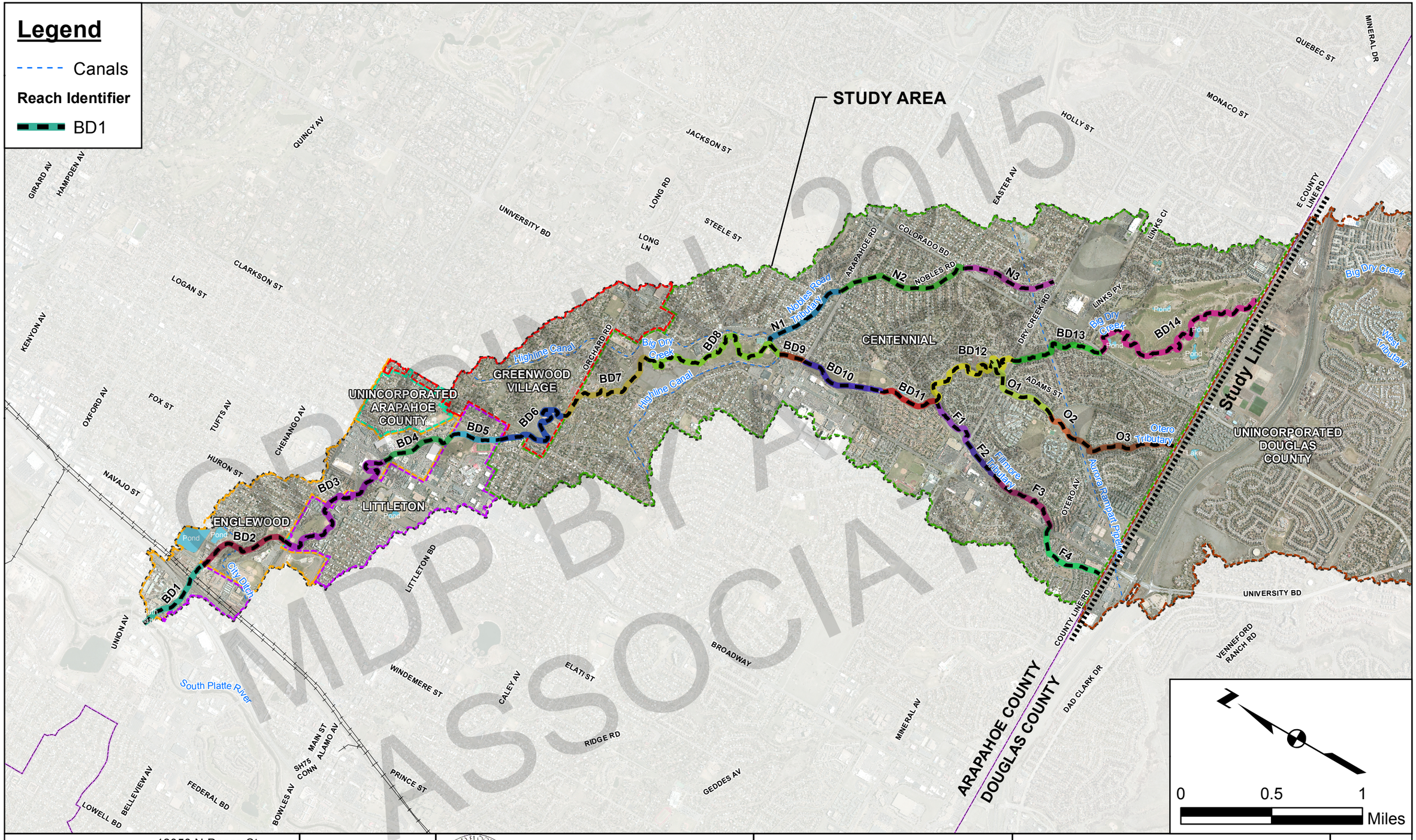

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Checked by:	WCP
Project No.:	35-0214.00
Date:	7/1/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Reach Location Map

Figure 2-6

2.3 Channel Reach Descriptions

The project area was divided up into various channel reaches based on tributary confluences, major road crossings, and jurisdiction boundaries. The locations of the reaches are shown in Figure 2-6.

Big Dry Creek

Reach BD1

Reach BD1 starts at the confluence of Big Dry Creek and the South Platte River. This reach extends approximately 2,500 feet east of the South Platte River to the downstream face of the South Windermere Street Bridge, and is within the City of Englewood. The outfall of Big Dry Creek is a grouted boulder drop structure with 4-5 feet of vertical drop to the South Platte River. Downstream of Santa Fe Drive the channel banks are lined with grouted boulders, and are in good condition. The channel is narrow and shallow, and the channel bottom is sandy gravel. Active sediment transport was observed. The reach is mostly covered by a tree canopy from trees that grow along the banks. The Big Dry Creek Trail runs parallel to the creek along the north bank. The north bank is mostly privately owned land. A pedestrian bridge crosses Big Dry Creek near the confluence.

Upstream of Santa Fe Drive to South Windermere Street, the reach is bounded on both the north and south sides by industrial properties. The stream crosses through the railroad corridor east of South Santa Fe Drive. The channel banks not under a bridge are narrow and well vegetated with a tree canopy covering the creek. Active sediment transport was observed. There are three railroad bridge crossings that are very close to each other, and the oldest, westernmost railroad bridge embankment was modified to provide passage for the Big Dry Creek Trail under the railroad in a concrete box culvert.

In summary, Reach BD1 contains three pedestrian bridges, three railroad bridges, and one major roadway crossing (South Santa Fe Drive). There are two drop structures in this reach.



Figure 2-7 - Light Rail Bridge with the Older BNSF Rail Bridge Directly Behind It, Looking West

Reach BD2

Reach BD2 starts at the downstream side of the South Windermere Street Bridge and extends to the downstream face of the West Belleview Avenue Bridge. This reach is approximately 2,800 feet long and is within the City of Englewood. The lower portion of Reach BD2 is located between the Englewood Canine Corral and the Englewood Water Treatment Plant while the upper portion is located through the center of Belleview Park. The channel bottom for the lower half of the reach is characterized by sandy gravel with some exposed bedrock. The overbanks for the lower half of the reach are heavily vegetated by grass and trees. The dog park has a small surface water quality feature that discharges into the creek at the northwest edge of the park. The upper portion of the reach has grouted boulder channel banks for almost the entire length. The overbanks are a wide open grass field on both sides. Active sediment transport was observed in the entire reach.

In summary, Reach BD2 contains four pedestrian crossings, three low water equestrian crossings, one aerial flume crossing (City Ditch), and one major roadway crossing (South Windermere Street). There are also four drop structures in Reach BD2.



Figure 2-8 - City Ditch Aerial Flume, Looking East

Reach BD3

Reach BD3 starts at the downstream side of the West Belleview Avenue Bridge and extends to the South Broadway Bridge. This reach is approximately 5,650 feet long and passes through unincorporated Arapahoe County and the City of Littleton in the lower half of the reach and the City of Englewood in the upper half of the reach. The channel is highly vegetated with grass and sparsely populated with trees. The channel bottom is sandy gravel with four grade control structures. Signs of active erosion were observed, as was active sediment transport. The lower portion of the reach flows through Progress Park, which includes the Progress Park Pond and Fishing Pier. The downstream reach south overbank is highly vegetated and rises several feet above the edge of bank, and the north bank is generally characterized by ball fields. The middle portion of the reach downstream of Lehow Avenue runs through a narrower corridor bounded on both sides by residential neighborhoods. The south bank is highly vegetated while the north bank is

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dominated by a high cinderblock retaining wall. Directly downstream of Lehow Avenue, the pedestrian trail is protected by grouted boulder edging. The lower row of the grouted boulder edging has failed and fallen into the creek.

The channel upstream of Lehow Avenue has three sections where the banks are lined with grouted boulders. There is one exposed sewer manhole structure on the right bank near Lehow Avenue, and the banks show active signs of erosion is several places. Active sediment transport was observed. Near South Broadway on the right bank there is a very tall retaining wall. The depth below ground of the retaining wall is unknown and the grouted riprap erosion control on this section of the right bank has failed. The property behind this retaining wall is commercial. The upstream left bank is highly vegetated. Midway between Lehow Avenue and South Broadway there is a grouted boulder rundown that appears to be a surface water drainage channel from the commercial lot south of the upstream border of the reach. The grouted boulders are in good condition. The rest of the south overbank in this area is made up of private residential lots. The north overbank is a wide open grass field.

In summary, Reach BD3 contains five pedestrian bridges and two major roadways (West Belleview Avenue and West Lehow Avenue), as well as one low water equestrian crossing. There are five drop structures in this reach.

Reach BD4



Figure 2-9 - Broadway Bridge, Looking West. Note Large Suspended Utility

Reach BD4 starts at the downstream side of the South Broadway Bridge and extends up to an entrance ramp to Big Dry Creek Trail from South Broadway Circle. The reach is approximately 2,000 feet long and flows through the City of Englewood. The channel bottom is sandy gravel. The south bank is highly vegetated with grass but has a low density of trees. The right bank is vegetated with grass and closely bordered by the Big Dry Creek Trail. The north edge of the trail, for the length of the reach, is a concrete retaining wall. There are several sections where the bank is lined with grouted boulders that are all in good repair. The floodplain in this reach is narrow. Under the South Broadway Bridge is a 48-inch pipe that runs under the bridge perpendicular to the creek. The bottom of the pipe is approximately 20 feet above the channel bottom.

In summary, Reach BD4 contains one major roadway (South Broadway Bridge). There is one drop structure in this reach.

Reach BD5

Reach BD5 starts at the entrance ramp to Big Dry Creek Trail from South Broadway Circle and extends to the downstream face of the Littleton Boulevard Bridge. This reach is approximately 1,600 feet long and flows through the City of Littleton. The channel bottom is sandy gravel. The south bank is highly vegetated with grass and trees. The north bank is vegetated with grass. The floodplain in the downstream half on the north bank is a wide open field. The south bank is also wide open; however, the south bank has ball fields surrounded with chain link fences very close to the edge of the creek. The upstream section of the reach is bordered by private property on both sides and has no public or maintenance access.

In summary, Reach BD5 contains one rock step pedestrian foot path and no roadway crossings.

Reach BD6

Reach BD6 starts at the downstream face of the Littleton Boulevard Bridge and ends at the downstream edge of the East Orchard Road Bridge. This reach is approximately 3,600 feet long and flows through the City of Greenwood Village. The channel bottom is sandy gravel, and active sediment transport was observed. The banks are highly vegetated with grass and sparsely with trees. The floodplain for this reach on both sides is an open grassed field. The lower portion of this reach is bounded by private property on both sides of the creek. The lower 700 feet of channel are lined with grouted boulder edging and contains three drop structures.

In summary, Reach BD6 contains eight grouted boulder drop structures in this reach, along with the outdoor fenced riding arena and low water equestrian crossings associated with the Rollin D. Barnard Equestrian Park. One major roadway (East Littleton Boulevard) crosses Big Dry Creek in this reach.

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Figure 2-10 - Rollin D. Barnard Park Riding Arena

Reach BD7

Reach BD7 starts at the East Orchard Road Bridge and extends 3,500 feet upstream to a grouted boulder drop structure at the north edge of the deKoevend Open Space. This reach is within the City of Centennial. The channel bottom is sandy gravel, and the upstream channel banks are highly vegetated with both grass and trees. A short section of the south bank upstream of the South Cherrywood Circle Bridge is a concrete retaining wall in good condition. The entire reach is bounded on both sides by private property and offers no public or maintenance access. This reach has three road crossings and two drop structures. There is a concrete grade control structure at the upstream end of the concrete retaining wall upstream of South Cherrywood Circle. The second drop structure is located upstream of the South Franklin Street bridge, and is a grouted boulder drop structure with approximately three feet of vertical drop. There are many residential structures in the floodplain in the lower half of the reach while the floodplain upstream of South Franklin Street is mostly in open grass fields. The East Lake Place bridge is privately owned and maintained.

In summary, there are four roadways (East Orchard Road, South Cherrywood Circle, East Lake Place & South Franklin Street). There are two drop structures in this reach.

Reach BD8

Reach BD8 starts at the grouted boulder drop structure at the north edge of the deKoevend Open Space and extends upstream to the downstream edge of the South University Boulevard Bridge. This reach is approximately 4,800 feet long and lies entirely within by the deKoevend Park owned by the South Suburban



Figure 2-11 - Downstream Face of High Line Canal Diversion Structure for Big Dry Creek

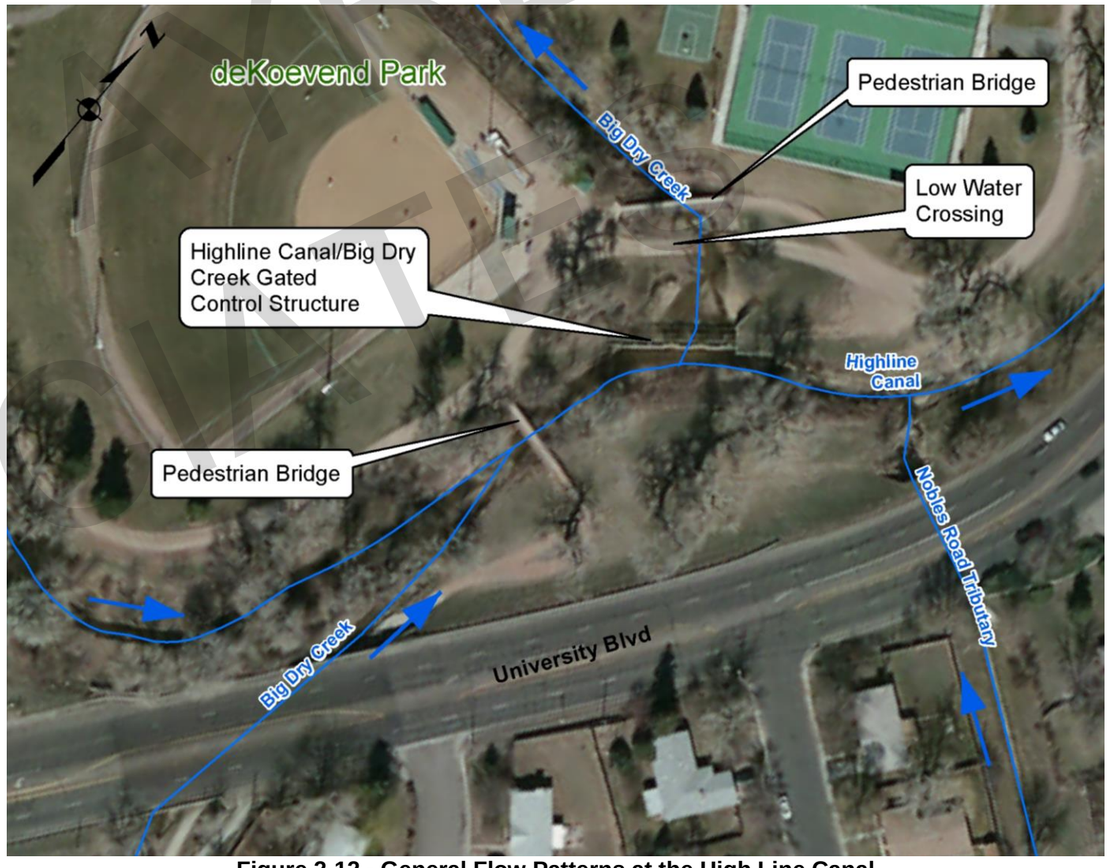

Figure 2-12 - General Flow Patterns at the High Line Canal

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Parks and Recreation District (SSPRD). This reach is within the City of Centennial. The channel bottom is sandy gravel, and the channel banks alternate between being gently sloped and vertical. Where the banks are vertical, active signs of erosion were observed. The floodplain on both sides is open grassed field for the majority of the reach. At approximately mid-reach, the floodplain contains the Goodson Recreation Center and the Highline Community Church Center (the only private property in this reach). A slide gate structure is located in the downstream embankment of the High Line Canal, and is used to regulate the Big Dry Creek flows through the High Line Canal (see Figures 2-11 and 2-12). The High Line Canal is owned and operated by Denver Water, and is located alongside South University Boulevard. Big Dry Creek empties into the High Line Canal upon crossing under South University Boulevard. Big Dry Creek and the High Line Canal share a common channel for approximately 300 feet downstream of South University Boulevard, and is crossed by one pedestrian bridge in this area.

In summary, Reach BD8 contains five pedestrian bridges, two low water crossings, one large diameter sanitary aerial pipe crossing, and one slide gate structure. In addition, there are four drop structures in this reach.

Reach BD9

Reach BD9 starts at the downstream edge of the South University Boulevard Bridge and extends up to the East Arapahoe Road Bridge. The reach is approximately 800 feet long, and is within the City of Centennial. The channel bottom is sandy gravel and active sediment transport was observed. The east channel bank is a grouted boulder wall bounded by the Big Dry Creek Trail. The west bank is well vegetated and includes a small vertical channel edge near the channel bottom. There is one drop structure in the lower end of the reach. The drainageway is narrow, and the creek is bounded closely by private property on the east side and by commercial property on the west side.

In summary, Reach BD9 contains one major roadway (South University Boulevard) and there is one drop structure in this reach.

Reach BD10

Reach BD10 starts at the downstream edge of the East Arapahoe Road Bridge and extends up to the East Easter Avenue Bridge. This reach is approximately 2,600 feet long, flows through property owned by the SSPRD, and is within the City of Centennial. The channel bottom is sandy gravel, and active sediment transport was observed. The banks on both sides are highly vegetated with grass and trees. For most of the reach the banks are gently sloped. There are some sections where the bank is a vertical drop and shows active signs of erosion. The reach is contained entirely inside the Cherry Knolls Park.

In summary, Reach BD10 contains two pedestrian bridge crossings and one major road crossing (East Arapahoe Road). There are three grouted boulder drop structures in this reach.

Reach BD11

Reach BD11 starts at the downstream edge of the East Easter Avenue Bridge and extends up to the confluence of Big Dry Creek and Fillmore Tributary. The reach is approximately 1,800 feet long, flows through land owned by the SSPRD, and is within the City of Centennial. Currently, the Easter Avenue road and crossing structure are on property owned and maintained by the SSPRD. The channel bottom is sandy gravel, and active sediment transport was observed. The banks on both sides are highly vegetated with grass and trees. There is an SSPRD irrigation pond on the right overbank in the lower portion of the reach. For most of the reach the banks are gently sloped. There are some sections where the bank is a vertical drop and shows active signs of erosion. The Fillmore Tributary confluence is just upstream of a pedestrian crossing.

In summary, Reach BD11 contains one pedestrian bridge and one major roadway (East Easter Avenue) crossing the creek in this reach. There are two vertical grade control structures and one sculpted concrete drop structure in this reach.

Reach BD12

Reach BD12 starts at the confluence of Big Dry Creek and Fillmore Tributary and extends up to the East Dry Creek Road Bridge. This reach is approximately 4,500 feet long, flows through land owned by the SSPRD and is within the City of Centennial. The channel bottom is sandy gravel, and active sediment transport was observed. The banks on both sides are highly vegetated with grass and trees. There are several sections where the channel bank is highly eroded with signs of active erosion present. In these sections the banks are vertical with heights ranging from 3 to 25 feet. The rest of the reach below the Otero Tributary has gently sloped banks. Otero Tributary joins Big Dry Creek 150 feet upstream of a pedestrian crossing. Approximately 100 feet upstream of the Otero Tributary confluence, there is a section approximately 300 feet long where the bank is extremely steep and lacking vegetation. Most overbanks on both sides are highly vegetated with grass and trees. Active erosion was observed in this section.

In summary, Reach BD12 contains four pedestrian bridges cross and there are two drop structures.

Reach BD13

Reach BD13 starts at the downstream face of the East Dry Creek Road Bridge and extends up to the downstream side of the South Colorado Boulevard Bridge. This reach is approximately 3,000 feet long, flows through property owned by the SSPRD, and is within the City of Centennial. The channel bottom is sandy gravel and active sediment transport was observed. The banks on both sides are densely vegetated with grass, willows, and trees. The stream corridor is bordered by residential neighborhoods on both the northeast and southwest sides. The downstream banks at the South Colorado Boulevard crossing have extensive riprap revetment.

In summary, Reach BD13 contains two pedestrian bridges and one major roadway (East Dry Creek Road), and there is one drop structure along this reach.

Reach BD14

Reach BD14 starts at the downstream face of the South Colorado Boulevard Bridge and extends up to the downstream side of the East County Line Road concrete box culverts. The reach is approximately 7,140 feet long, flows through the South Suburban Golf Course, and is within the City of Centennial. The channel bottom is mostly sandy gravel with some sections of exposed bed rock and some made up of native river rock. Active sediment transport was observed. The banks alternate between densely vegetated with grass, willows and trees and only grassed. The entire reach is contained within the South Suburban Golf Course. There are multiple locations of vertical, eroded banks, with some locations adjacent to the fairway of some of the holes on the South Suburban Golf Course. The golf course is bordered by residential neighborhoods on both the northeast and southwest boundaries.

In Summary, Reach BD14 contains nine pedestrian bridges, two golf course maintenance road crossings, one low water crossing, and one major roadway (South Colorado Boulevard), and there are four drop structures in this reach.

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Fillmore Tributary

Reach F1

Reach F1 starts at the confluence of Big Dry Creek and Fillmore Tributary. This reach extends approximately 1,700 feet south to the downstream edge of East Dry Creek Road Culvert, flows through property owned by SSPRD, and is within the City of Centennial. The channel is narrow, shallow and has a sandy gravel stream bed. Active sediment transport was observed. There are six large grouted boulder drop structures in this steep reach that appear to be in good condition. The banks are highly vegetated with grass and sparsely by trees.

In summary, Reach F1 contains no bridges and six drop structures.

Reach F2

Reach F2 starts at the downstream edge of the East Dry Creek Road culvert and extends to the downstream edge of the East Jamison Avenue culvert. The reach is approximately 1,300 feet long, flows through land mostly owned by SSPRD, and is within the City of Centennial. The channel is narrow, shallow and has a sandy gravel stream bed. Active sediment transport was observed. The low flow channel is generally incised with vertical banks. There are three grouted boulder drop structures in this reach. The banks are highly vegetated with grass and sparsely by trees. The drainageway is bordered by single family residential properties on the east side and commercial properties on the west side.

In summary, Reach F2 contains one major roadway (East Dry Creek Road). There are three drop structures in this reach.

Reach F3

Reach F3 starts at the downstream edge of the East Jamison Avenue culvert and extends to the downstream edge of the South University Boulevard box culvert. This reach is approximately 2,450 feet long, flows through property owned by SSPRD, and is within the City of Centennial. The channel is narrow, shallow and has a sandy gravel stream bed. Active sediment transport was observed, as well as signs of active low flow channel erosion in the upper portion of the reach. Approximately 700 feet from the downstream end of this reach; SEMSWA's Country Park Pond Improvement Project recently concluded construction and includes improvements to the detention pond adjacent to the channel as well as grouted boulder cutoffs and grouted boulder edging along the low flow channel. Approximately 800 feet downstream of South University Boulevard, there is a grouted boulder drop structure protecting a sanitary sewer crossing. The overbanks in this reach are vegetated with grass and sparsely by trees. The drainageway is bordered by single family residential properties on the east and commercial properties on the west side.

In summary, Reach F3 contains one roadway (East Jamison Avenue) and three drop structures.

Reach F4

Reach F4 starts at the downstream edge of South University Boulevard box culvert and extends up to the edge of County Line Road Culvert. The reach is approximately 2,400 feet long, flows through property owned by the Four Lakes Homeowners Association, and is within the City of Centennial. The low flow channel is narrow, shallow, and boulder-lined for most of the reach. Active sediment transport was observed. The banks in the upper half of the reach are vegetated mostly with grass while the banks in the lower half of the reach are vegetated mostly with dense grass, shrubs and sparsely by trees.

In summary, Reach F4 contains one pedestrian crossing and four roadway crossings (South University Boulevard, East Nichols Place, East Otero Circle and Phillips Circle). There are also eight drop structures in this reach.

Otero Tributary

Reach O1

Reach O1 begins at the confluence with Big Dry Creek and extends approximately 2,700 feet upstream to South Steele Street. The stream flows through property owned by SSPRD and is within the City of Centennial. Just upstream of the confluence, there is a 50 foot section of 5-6 feet vertical bank on the east side of the channel. Near the confluence, the Big Dry Creek trail crosses the Otero Tributary through a single 3.5-foot CMP culvert. Approximately 700 feet upstream of the confluence, the Otero Tributary crosses under Dry Creek Road in an 8.0-foot diameter CMP. The CMP has a 45° horizontal bend approximately 20 feet from the culvert inlet. The channel between the Big Dry Creek confluence and Dry Creek Road is a natural channel with a well defined low flow channel and significant tree and willow growth along the channel banks. Upstream of Dry Creek Road, the drainageway passes through SSPRD open space with an average width of 150 feet. The channel in this portion of the reach has thick willow growth in narrow bands along most of the channel banks, and the overbanks are park grasses. This portion of Reach O1 runs parallel to Adams Street. There is a section of active bank erosion on both banks approximately 550 feet upstream of Dry Creek Road. There is a grouted boulder drop structure about half way between Dry Creek Road and South Steele Street. Between the drop structure and South Steele Street, there are two headcuts in the channel that have potential to cause channel degradation back to South Steele Street.

In summary, Reach O1 contains one pedestrian crossing and one major roadway crossing (East Dry Creek Road). There is also one drop structure in this reach.

Reach O2

Reach O2 begins at the downstream face of the South Steele Street crossing and extends approximately 1,100 feet upstream to the Otero Avenue crossing. This reach flows through property owned by SSPRD and is within the City of Centennial. The South Steele Street crossing is a 7.3-foot by 5.4-foot elliptical CMP with a loose riprap apron at the inlet. The channel in this reach is natural with increasingly dense bank vegetation going upstream. Just downstream of Otero Avenue, there is a loose rock drop structure providing approximately 2 feet of grade control.

In summary, Reach O2 contains one drop structure and one roadway crossing (South Steele Street).

Reach O3

Reach O3 begins at the downstream face of the Otero Avenue crossing and extends approximately 3,100 feet upstream to County Line Road. This reach flows through property owned by the City of Centennial and SSPRD and is within the City of Centennial. The Otero Tributary crosses under Otero Avenue in a 4.8-foot by 10-foot RCBC. Directly upstream of Otero Avenue, the Aurora Water Rampart Parallel Pipeline crosses under the Otero Tributary. The first 300 feet of this reach flows through a relatively wide floodplain with dense willow vegetation and some trees on the banks. This section of reach appears stable. The remainder of this reach up to Phillips Avenue flows through open space approximately 110 feet wide. There are several 1-2 foot headcuts below Phillips Avenue. Beginning about 800 feet downstream of Phillips Avenue, the channel begins to show active vertical degradation of the low flow channel with a 4-6 foot incised low

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flow channel and two active 2-3 foot headcuts. There is exposed claystone bedrock in portions of this degraded section. Directly downstream of the Phillips Avenue culvert outlet, the east bank has been significantly eroded, and is threatening the fence on the adjacent private property. The riprap at this culvert outlet is failing.

Upstream of Phillips Avenue, this portion of the reach flows through open space with an average width of 110 feet, and is generally stable. The Phillips Avenue crossing is a 6-foot diameter CMP with riprap around the inlet. The channel in this reach has a natural low flow channel with willows and trees growing along the channel. At the top end of this reach, the Otero Detention Pond outlet crosses under County Line Road. The outlet is a 6-foot RCP with a low tailwater stilling basin. The only indication of any instability upstream of Phillips Avenue is a 1-foot headcut approximately 50 feet downstream of the low tailwater stilling basin.

In summary, Reach O3 contains two roadway crossings (Otero Avenue and Phillips Avenue). In addition, there are no drop structures in this reach.

Nobles Road Tributary

Reach N1

Reach N1 begins at the High Line Canal directly downstream of the University Boulevard crossing, and extends approximately 2,700 feet upstream to Arapahoe Road. This reach is within the City of Centennial. The lower ¾ of the reach is contained in a prismatic channel with a concrete low flow pan. The channel flows through private single family residential properties in this area. The Nobles Road Tributary is conveyed under University Boulevard, Clayton Street, and Steele Streets in corrugated metal pipe arch pipes. There is one small grouted boulder drop structure between University Boulevard and Clayton Street, and two small grouted boulder drop structures between Clayton Street and Steele Street. Between Steele Street and Arapahoe Road, the Nobles Road Tributary flows through open space owned by Arapahoe Estates Homeowners Association, Inc. There is a pedestrian crossing in this area that consists of two badly rusted, round corrugated metal pipes. This reach ends at the outlet of the Nobles Road impact stilling basin.

In summary, Reach N1 contains one pedestrian crossing and three roadway crossings (South University Boulevard, Clayton Street and Steele Street). There are three grouted boulder drop structures in this reach.

Reach N2

Reach N2 begins at the Nobles Road impact stilling basin just north of Arapahoe Road and continues approximately 4,000 feet upstream to the start of the storm sewer system on the east side of Colorado Boulevard. This reach is within the City of Centennial. The Nobles Road Tributary low flows are contained in a storm sewer system, and outlets from a 54” RCP into the impact stilling basin and a parallel 60” CMP. This reach is characterized by storm sewer under a residential street with inlets along this reach. Major storm events are likely carried in the street section.

This reach flows through storm sewer under Nobles Road.

Reach N3

Reach N3 begins at the inlet of the storm sewer system on the upstream side of Colorado Boulevard. This reach extends approximately 2,800 feet upstream to Geddes Avenue, flows through private property, and is within the City of Centennial. The inlet to the storm sewer system at Colorado Boulevard is in poor condition, and has a trash rack across the entrance. The channel in this reach is fairly prismatic with a deteriorating natural low flow channel in the lower portion of the reach. The Nobles Road Tributary crosses under Easter Place in a culvert approximately half way up the reach. The Geddes Avenue crossing in the upper third of the reach is a culvert that extends about 190 feet upstream of Geddes Avenue. There are three vertical drop structures upstream of Geddes Avenue with approximately 1-2 feet of drop at each grade control structure. The channel upstream of Geddes Avenue is prismatic with single family residences on the right overbank, and single family and multi-unit residences on the left overbank. The Aurora Water Rampart Parallel Pipeline crosses under the Nobles Road Tributary approximately 600 feet upstream of Geddes Avenue.

In summary, Reach N3 contains three drop structures and two roadway crossings (Colorado Court and Geddes Avenue).

2.4 Crossing Structures

There are multiple crossing structures of within the project area. On the main stem of Big Dry Creek, there are 55 crossing structures between the South Platte River and County Line Road. Of these crossing structures, 36 are pedestrian bridges and one is the City Ditch aerial flume. All the major crossings on Big Dry Creek, with the exception of Colorado Boulevard and County Line Road, provide a grade separated pedestrian crossing at those locations. There are also crossing structures on each of the Fillmore, Otero and Nobles Road Tributaries, with only a few of the crossings on the tributaries being pedestrian bridges. Table 2-1 contains the major crossing structures within the project area.

2.5 Flood History

Much of the Big Dry Creek channel is located in parks and open space that generally have adequate flood capacity. There are no records of major flooding events on Big Dry Creek. The gated control structure at the High Line Canal is noted to catch a lot of debris and requires frequent maintenance.

Areas of flood concern are primarily in between the High Line Canal and Arapahoe Road, and through the private residences between the deKoevend Park and Orchard Road. There are no stream gages on Big Dry Creek.

2.6 Environmental Assessment

Wetland and riparian zones are present along much of Big Dry Creek due to the channel being bounded by parks and open space for most of the project area. An inventory of wetland and riparian areas is shown in Appendix E.

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Table 2-1 - Major Crossing Structures

River Station	Location	Reach	Crossing Type	Size
Big Dry Creek				
14+31	Santa Fe	BD1	Bridge	1 - 46.5’ x 12.5’ Opening
16+68	BNSF Railroad	BD1	Bridge/ Culvert	1 - 49’ x 12’ Opening, 1 - 12’ x 9.25’ RCBC
17+85	RTD Lightrail, BNSF Railroad	BD1	Parallel Bridges	3 - 50’ x 16’ Openings
24+57	Windermere Street	BD2	Bridge	1 - 118’ x 15’ Opening
36+93	City Ditch	BD2	Bridge	Aerial Flume
53+17	Belleview Avenue	BD3	Culvert	1 - 9’ x 10’ RCBC, 1 - 12’ x 10’ RCBC, 1 - 9’ x 9.5’ RCBC
88+41	Lehow Avenue	BD3	Culvert	2 - 20’ x 14.3’ RCBC
110+14	Broadway	BD4	Bridge	3 - 23.7’ x 18’ Openings
147+11	Littleton Boulevard	BD5	Bridge	1 - 29.6’ x 11’ Opening
182+48	Orchard Road	BD7	Bridge	1 - 36.8’ x 9’ Opening
189+17	Cherrywood Circle	BD7	Bridge	1 - 28’ x 10’ Opening
199+50	Lake Place	BD7	Bridge	1 - 38.5’ x 10.8’ Opening
206+71	Franklin Street	BD7	Bridge	1 - 28’ x 13.4’ Opening
276+22	University Boulevard	BD9	Bridge	1 - 26.3’ x 12’ Opening
283+57	Arapahoe Road	BD10	Bridge	2 - 18.7’ x 11.5’ Openings
309+11	Easter Avenue	BD11	Culvert	1 - 14’ x 10’ RCBC, 1 - 14’ x 9.5’ RCBC
372+73	Dry Creek Road	BD13	Bridge	1 - 56.8’ x 12.9’ Opening
402+98	Colorado Boulevard	BD14	Bridge	2 - 74’ x 12.3’ Openings
474+80	County Line Road	BD14	Culvert	4 - 10’ x 9’ RCBC
Fillmore Tributary				
18+06	Dry Creek Road	F2	Culvert	2 - 10’ x 6’ RCBC
32+26	Jamison Avenue	F3	Culvert	1 - 2’ RCP
56+55	University Boulevard	F4	Culvert	1 - 10’ x 4’ RCBC
63+14	Otero Circle	F4	Culvert	1 - 6’ RCP
71+14	Phillips Circle	F4	Culvert	1 - 6’ RCP
Otero Tributary				
9+29	Dry Creek Road	O1	Culvert	1 - 8’ CMP
27+70	South Steele Street	O2	Culvert	1 - 87” x 63” Pipe Arch CMP
38+98	Otero Avenue	O3	Culvert	1 - 10’ x 4.8’ RCBC
63+22	Phillips Avenue	O3	Culvert	1 - 90’ CMP
Nobles Road Tributary				
1+29	University Boulevard	N1	Culvert	1 - 112” x 75” Pipe Arch CMP
12+08	Clayton Street	N1	Culvert	1 - 87” x 63” Pipe Arch CMP
19+80	Steele Street	N1	Culvert	1 - 87” x 63” Pipe Arch CMP
30+71	Arapahoe Road	N2		Storm Sewer Outfall
66+35	Colorado Boulevard	N2		Storm Sewer Inlet, 1 - 4’ RCP
72+25	Colorado Court	N3	Culvert	1 - 4.5’ RCP
81+53	Geddes Ave	N3	Culvert	1 - 4.5’ RCP

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SECTION 3 - HYDROLOGIC ANALYSIS

3.1 Overview

The 2-, 5-, 10-, 25-, 50-, and 100-year return period storms were analyzed using UDFCD's Colorado Urban Hydrograph Procedure (CUHP) 2005, version 1.4.2, released October 16, 2013, to generate hydrographs for each sub-basin. Hydrographs for each sub-basin were then routed using the Environmental Protection Agency's (EPA) Storm Water Management Model (SWMM), version 5.0, build 5.0.022, to determine peak discharge rates at select design points. These results were then compared to previous studies. Existing land use conditions are considered to be equal to the future land use conditions, so only the future land use conditions scenario was evaluated. No digital models or electronic drawing files from the 1998 MDP were available from UDFCD. New sub-basin delineations were completed with major design points, road crossings, and detention pond locations placed as closely as possible to the previous study.

3.2 Design Rainfall

One-hour and six-hour point rainfall depths for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events were obtained from the rainfall maps in the Urban Storm Drainage Criteria Manual (USDCM). Point rainfall depths used for the previous study were not available from the 1998 MDP. Without published point rainfall depths, no direct comparison of point rainfall depths between studies was possible. Point rainfall depths for the 1-hour and 6-hour storms used for this study are provided in Table 3-1, were developed from the Highlands Ranch Mansion data in the UD-Rainfall spreadsheet (v.1.01, UDFCD, February 2013). Rainfall distributions for both design storm duration and all return periods are shown in Tables B-1 through B-4, in Appendix B.

Table 3-1 - Point Rainfall Depths

Recurrence Interval	1-Hour Depth (in)	6-Hour Depth (in)
2-Year	0.98	1.5
5-Year	1.41	1.92
10-Year	1.58	2.31
25-Year	1.96	2.81
50-Year	2.26	3.12
100-Year	2.57	3.45

The following table was taken from the 2012 DRAFT of Chapter 4 of the USDCM. This table shows the design storm durations, watershed sizes, and when to apply depth reduction factors (DRFs). This table was used to guide the development of the design storms used for this study.

Table 4-1. Storm Duration and Area Adjustment for CUHP Modeling

Design Storm	Watershed Area (square miles)	Suggested Minimum Storm Duration	Apply DRF?
2-, 5-, and 10-Year	A ≤ 2.0	2 hours	No
	2.0 < A < 15.0	2 hours	Yes - Use Table 4-3
	A ≥ 15.0	6 hours	Yes - Use Table 4-3
25-, 50-, 100-, And 500-Year	A < 15.0	2 hours	No
	A ≥ 15.0	6 hours	Yes - Use Table 4-4

Figure 3-1 - UDFCD Guidance on Application of DRFs

Current depth reduction factors (DRFs) in CUHP and the UD-Rainfall spreadsheet provide more detail than has been used in the past. Under current, revised criteria, DRFs begin to be applied at two square miles for the minor (2-, 5-, and 10-year) storm events. For the major (25-, 50-, and 100-year) storm events, DRFs are now applied starting at 15 square miles. Under the area threshold for both the major (15 square miles) and minor (2 square miles) storm events, the unadjusted 2-hour rainfall distribution is generally used. For both cases, when the area is greater than 15 square miles a 6-hour design storm rainfall distribution is used. The DRFs for both the major and minor storm events can be found in Appendix B, Figure B-2. The areas where the DRFs were applied are shown in Figures 3-2 and 3-3.

The DRFs were applied not based on areas strictly adhering to those presented in the tables, but more based on locations within the watershed where tributaries joined the main stem of Big Dry Creek. The areas draining to these locations are the areas used to calculate the DRF adjusted rainfall distributions, and results are only reported for the CUHP/SWMM model combination of this specific DRF adjusted rainfall distribution within this area.

For studies of larger watersheds, depth reduction factors are used to account for the area that is greater than the average storm cell size for that region. Within the Denver area, this has been found to be about 2 square miles for minor storm events and about 15 square miles for major storm events. Because of the assumption in CUHP that rain is falling on the entire watershed at the same time, DRFs are required to distribute the storm over the larger area. The routing and result reporting is discussed in more detail in Section 3.4.2.

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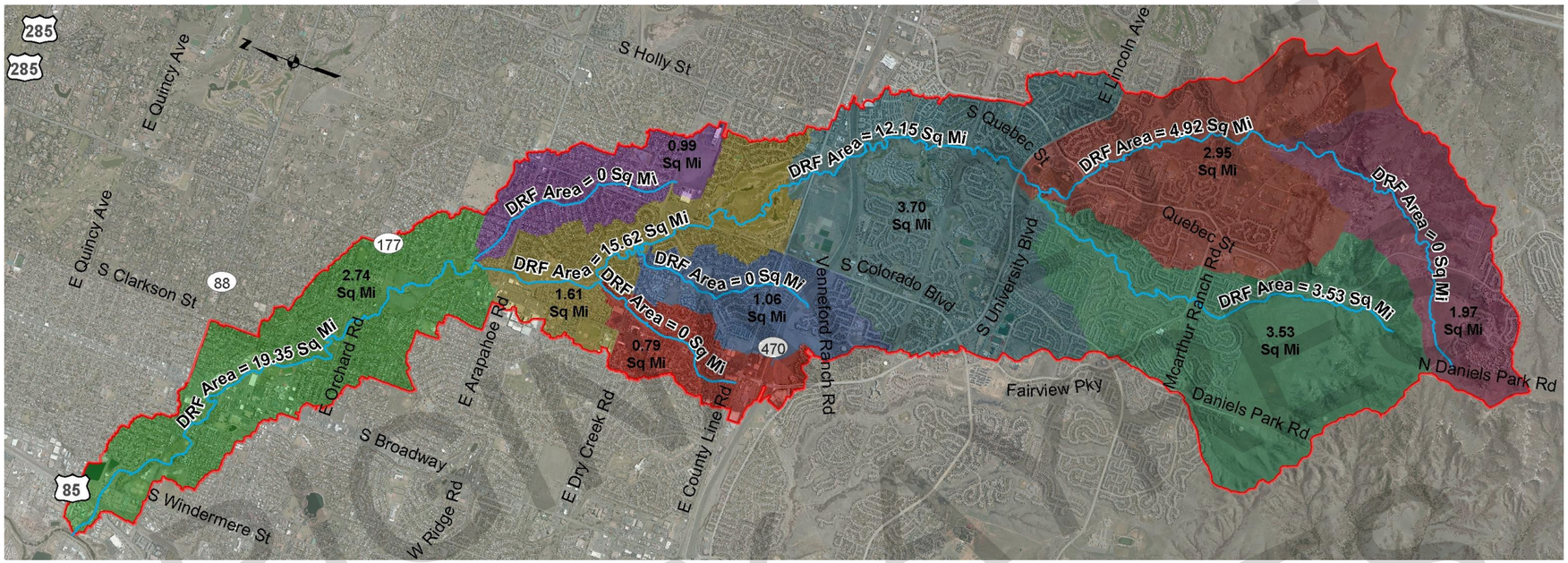

Figure 3-2 - Minor Storm Depth Reduction Factor Areas

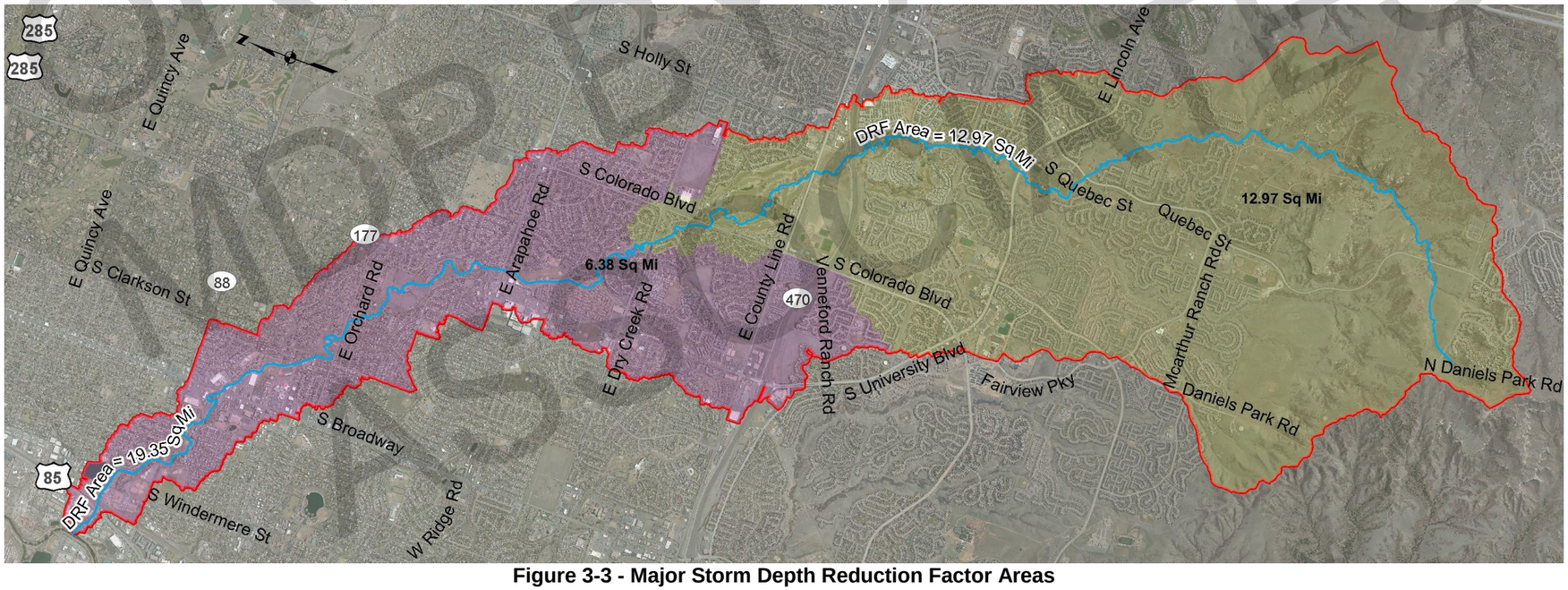

Figure 3-3 - Major Storm Depth Reduction Factor Areas

3.3 Subwatershed Characteristics

This study updates the major drainageway design flood flows for the Big Dry Creek watershed based upon current criteria, more up-to-date mapping and land use information, and current hydrologic and routing models. Because no digital data was available from UDFCD from the 1998 MDP, and due to the availability of better mapping, new watershed delineations were completed. Subwatershed delineations from the 1998 MDP were used as a guideline for major design points within the watershed. New subwatershed delineation was completed based on the more recent topographic mapping, road profiles, curb and gutter, cross pans, and site observations. Mapping used for subwatershed delineation consisted of 2-ft contours for all of the watershed in Arapahoe County to just south of the C-470 highway corridor based on the USGS 2008 Democratic National Convention LiDAR, USGS 3-meter National Elevation Dataset (NED) where applicable in Douglas County, and 5-foot contour information provided by Douglas County for the remaining upper portion of the watershed.

In accordance with UDFCD criteria, subwatershed delineations were completed such that no single subwatershed was more than 130 acres in size, and such that the subwatershed areas averaged less than 100 acres. Flow paths from the highest point of the subwatershed were determined from the mapping defined above. The flow path was used to determine the flow length, and the distance to the centroid for each subwatershed. A length weighted subwatershed slope, where applicable, was calculated based upon guidance in the USDCM.

A total of 169 subwatersheds were defined. Subwatershed areas range from 17 acres to 127 acres, and have an average area of 73 acres. All subwatershed characteristics can be found in Table B-5, CUHP Input Parameters, in Appendix B.

3.3.1 Infiltration

Hydrologic soil group classifications were determined using geospatial soils data from the Natural Resources Conservation Service (NRCS). Section 2.1 provides a general description of the hydrologic soil types and their general location within the Big Dry Creek watershed. Values for Horton's infiltration rates were based upon the dominant hydrologic soil type for each subwatershed. A soils map is included as a part of the interactive Hydrology Map, Figure B-1, in Appendix B. A listing of infiltration parameters for each subwatershed is provided in Appendix B.

3.3.2 Depression Losses

Pervious and impervious depression losses were based on UDFCD criteria and project aerial imagery. Typical values as recommended in the USDCM were used for this study. Table B-5 in Appendix B provides the depression storage values for each subwatershed.

3.3.3 Imperviousness

A Geographic Information System (GIS) based approach was utilized to develop area-weighted composite percent imperviousness for each subwatershed. Land use and zoning data was provided by Douglas County, Arapahoe County, the City of Centennial, and the City of Englewood. All other land use was assigned based on the project aerial imagery. Table RO-3 and Figures RO-3 through RO-5 of the USDCM were used to correlate land use to a percent imperviousness for each land use type. Table 3-2 provides a summary of the percent imperviousness assigned to each land use type for use in the hydrologic modeling. As previously described, the Big Dry Creek watershed is essentially fully developed, so the project sponsors elected to create on a future conditions hydrologic model. Future conditions percent imperviousness is illustrated in the interactive Hydrology Map, Figure B-1, in Appendix B.

Imperviousness values for single family residential dwellings in Table 3-2 were derived based on Figures RO-3 through RO-5. For each neighborhood, average lot sizes and dwelling type (ranch, split level, two-story) were used to develop the dwelling units per acre for that neighborhood. Imperviousness values were then obtained from Figures RO-3 through RO-5. Neighborhoods with similar imperviousness values were then grouped together to provide a range of imperviousness values from 25% to 81% for use in the hydrologic modeling. Dwelling units per acre (DU/AC) for each imperviousness value are not listed due to the number of combinations of average lot size and dwelling type that could produce the same DU/AC, but different imperviousness values.

In the upper portion of the watershed, there are two areas where the imperviousness value was assumed to be the same as the adjacent value from the recently completed Happy Canyon Creek Baseline Hydrology report (Muller Engineering, October 2012). Both values are within the City of Lone Tree planning area.

Table 3-2 - Percent Imperviousness

Land Use Description	Percent Imperviousness
Business, Commercial	95
Business, Neighborhood	85
C-470 Corridor	50
Estate Lot Residential, >5 Acre Lots	10
Greenbelt / Open Space	2
Industrial, Light	80
October 2012 Happy Canyon Creek Baseline Hydrology	10
October 2012 Happy Canyon Creek Baseline Hydrology	15
Parks	5
Railroad Yard	15
Road	100
School / Church	50
Residential	
Multi Unit Attached	75
Multi Unit Detached	60
Single Family Residential (see discussion above)	25 - 81

3.4 Hydrograph Routing

An EPA SWMM model was created to route the hydrographs generated by CUHP. Routing element cross sections were derived from the mapping discussed in Section 3.3. Pipe elements were included along Nobles Road for the Nobles Road Tributary, and for the outlet to the County Line Landfill detention pond near C-470 and Colorado Boulevard. The Nobles Road Tributary was not assumed to convey the entire 100-year design flow, and an overflow conveyance element for surface flow on Nobles Road was provided. The County Line Landfill detention pond outlet pipe conveys the 100-year discharge, and remains piped to Big Dry Creek. Node elevations and conveyance element lengths were taken from the mapping. Manning's

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'n' values were calculated per the guidelines in the USDCM. Manning's 'n' values used for the hydrograph routing are shown in Table 3-3.

Table 3-3 - SWMM Model Manning's 'n' Values

Channel Condition	Manning's n Values for Hydrologic Routing
Main channel - clean bottom with grassy sides and occasional trees	0.050
Main channel – brush or trees on banks	0.075
Roads, curb and gutter	0.020
Overbanks - short grass, few trees	0.044
Overbanks – natural grasses and shrubs, scattered trees	0.080
Buildings	0.100

SWMM input parameters and output results for the 100-year, unadjusted 2-hour design storm event are included in Tables B-18 and B-19, respectively, in Appendix B. SWMM model conveyance elements, subwatershed nodes, design points, and detention ponds are shown in the interactive Hydrology Map, Figure B-1, in Appendix B. SWMM routing schematics are provided as Figures B-3 through B-9 in Appendix B.

3.4.1 Detention Ponds

Twelve detention ponds were modeled as part of the baseline hydrology. All 12 of these ponds are located in Douglas County. Nine detention ponds were originally included in the baseline hydrology of the 1998 MDP. One of the detention ponds (Pond P165) included in the 1998 MDP baseline hydrology is owned and maintained by the Wildcat Ridge Community Association. Although it is typical UDFCD policy to only recognize publicly owned and maintained detention ponds, the decision was made by the project sponsors to include this privately owned and maintained pond in this study since it had been included in the 1998 MDP. Three additional ponds (ponds P69, P135, and P141) were shown as alternatives in the 1998 MDP, and have since been constructed. These three additional detention ponds were included as a part of this baseline hydrology model. All detention pond stage-storage and stage-discharge information was taken from the previous study where applicable, and checked against the design reports and construction drawings for each pond.

During the development of the baseline hydrology, the project sponsors requested an evaluation of the rating curves for Pond P123. This pond has two outlet structures separated by high ground between them. While it was clear that the outlets would operate under the same headwater elevation during major storm events, it was unclear what would happen during minor storm events (see Figure 3-4). There is approximately 41 acres draining to the west outlet structure during minor storm events, and approximately 8 square miles draining to the east outlet structure during minor storm events. Given this disparity in drainage areas per side, an analysis of the east culvert outlet was conducted to determine the flow rate into the pond that would spill over the high ground. Two-year flows remain separate, 5-year flows begin to spill over the high ground, and both outlets are operating under the same headwater at the 10-year event and above. The storage and outflow rating curves were adjusted to reflect these conditions, and a diversion node was placed downstream of the pond outlet to split the flows into their respective outlet channels.

The rating curves for Pond P69 were modified to account for existing site conditions and future pond maintenance. The design report rating curves analyzed up to the crest of the emergency overflow weir while existing conditions provide extra storage between the pond and County Line Rd. The modified rating curve for Pond P69 was extended up to the crest of County Line Rd. The emergency overflow weir was not taken into account as County Line Rd is an obstruction to flow directing all flows through the main outlet structure. The design report included an orifice plate covering on the 66" RCP of the outlet structure. While this plate is acknowledged as an interim condition, it still remains in place. The modified curves include this plate to model the existing conditions.

Pond 162 was revised to account for the emergency overflow weir that was not accounted for in the design report. Refer to the Technical Appendix for pond modification calculations.

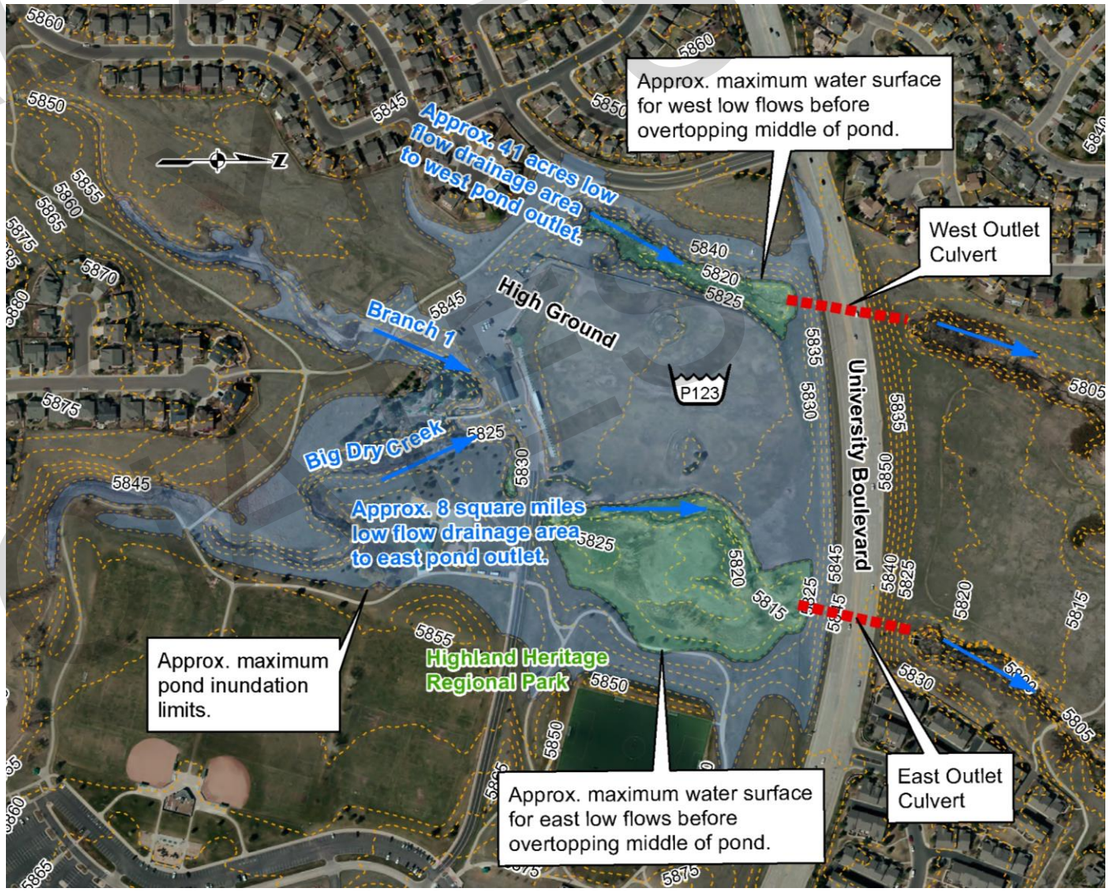

Figure 3-4 - Pond P123 Flow Patterns

Table 3-4 shows the detention ponds included, along with ownership information. Stage-storage and stage-discharge relationships for each pond are included in Tables B-6 through B-17 in Appendix B.

Table 3-4 - Existing Detention Ponds

Pond SWMM Designation		Stream	Location	Ownership
2014 MDP	1998 MDP			
P69	285*	Otero Tributary	South of County Line Road 0.25 miles west of Colorado Boulevard	Highlands Ranch Metro District
P70	281	Otero Tributary	South of C-470 0.33 miles west of Colorado Boulevard	Highlands Ranch Metro District
P88	30	Un-named Tributary	North of C-470 0.33 miles east of Colorado Boulevard	Arapahoe County
P90	248	Un-named Tributary	Southwest of Venneford Ranch Road and Colorado Boulevard	Highlands Ranch Metro District
P101	230	West Tributary	South of Canongate Lane at the north end of The Links at Highland Ranch Golf Course	Gleneagles Village Homeowners Association
P102	224	West Tributary	West of Cresthill Lane just south of Greenwich Drive	Highlands Ranch Metro District
P105	218	West Tributary	South of Lark Sparrow Drive at Falcon Park	Highlands Ranch Metro District
P123	176	Big Dry Creek	South of University Boulevard west of Quebec Street	Douglas County
P135	143*	Branch 1	South of McArthur Ranch Road East of Southridge Rec Center	Highlands Ranch Metro District
P141	125*	Branch 1	South of McArthur Ranch Road West of Heatherton Street	Highlands Ranch Metro District
P162	97	Wildcat Tributary	West of Quebec St, at the north end of Wildcat Ridge Park	South Suburban Parks and Recreation
P165	90	Wildcat Tributary	East of Quebec St, between McArthur Road and Wildcat Ridge	Wildcat Ridge Community Association

*Ponds added in addition to those in the 1998 MDP baseline hydrology.

3.4.2 Routing of CUHP Hydrographs

The DRFs that were applied to the rainfall distributions in the CUHP analysis are based on cumulative areas as shown in Figures 3-2 and 3-3. Because of the way DRFs were developed, routing results are taken based on multiple runs of the SWMM model. Table 3-5 shows which CUHP/SWMM results for each storm event are reported for each DRF area. A total of 24 CUHP/SWMM simulations were run to develop the reported flows based on the locations in Table 3-5.

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AYRES ASSOCIATES 12050 N Pecos St Suite 150 Westminster, CO 80234 P: 303.938.8874 www.AyresAssociates.com	Designed by: MDH Drawn by: ABA/MDH Checked by: WCP Project No.: 35-0214.00 Date: 7/17/2014	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD	Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)	**Detention Pond Locations**	Figure 3-5

Table 3-5 - DRF Areas and Results Locations

Design Storm Event	Cumulative DRF Area (mi²)	Applicable SWMM Nodes
2-, 5-, and 10-Year	Unadjusted	J190 - J205
	3.53	J125 - J152
	4.92	P123, J160 - J189
	12.15	J86 - J123
	15.62	J30 - J85
	19.35	BDCOutfall - J28
25-, 50-, and 100-Year	Unadjusted	J30 - J205
	19.35	BDCOutfall - J28

3.5 Previous Studies

Big Dry Creek was first studied in 1975 by UDFCD (Major Drainageway Master Plan Big Dry Creek, VTN, June 1975). The 1975 study utilized 5 catchments to develop the hydrology for the watershed. There was little development in the upper portion of the watershed at the time of this report. Big Dry Creek was next studied in 1998 in the *Big Dry Creek (Arapco) & Tributaries Major Drainageway Planning* report (WRC Engineering, April 1998). This study utilized rainfall-runoff methodologies more in line with current criteria today. The study delineated 163 catchments within the watershed and utilized CUHPE/PC and UDSWM3. Also, when the 1998 report was developed, far more development had taken place, and Highlands Ranch was almost fully developed. UDFCD did not have copies of the hydrology models available during the development of this MDP.

It is UDFCD practice to calibrate the previous study to the current study by taking the previous study model and running it in the updated versions of CUHP and SWMM. Due to the software updates over the years, this usually results in some calibration being needed to show the same results in the current versions of the software as was shown in the previous study. Because the digital models from the 1998 study were not available, a "2014 Duplicate" CUHP model was created that utilized basin delineations and other characteristics based on current data. The future percent imperviousness and rainfall from the 1998 study was applied to this "duplicate" CUHP model. These results were then routed through the watershed based on an SWMM model based on current conditions. The results from this "2014 Duplicate" CUHP/SWMM run were then compared to the 1998 results. At this time, a major discrepancy in the peak flows was noted between the 1998 study and this "2014 Duplicate" model.

After a little more review of the results published in the 1998 study, it appears that there was some error in the routed flows along Big Dry Creek. Also, there is some minor discrepancy between the 1995 Hydrology report and the subsequent 1998 report as to the peak flows reported. The comparison below in Table 3-6 compares data from the SWMM results printed in the 1998 MDP to the results of the "2014 Duplicate" model. The peak flows from the 1998 report were taken from Table III-4, and the times were taken from the hydrographs shown in Figure III-3A through Figure III-3C in the 1998 report.

Table 3-6 - 1998 and 2014 Studies Time to Peak and Average Velocity Comparisons

1998 WRC Design Point	2014 Duplicate Ayres Design Point	Location	100-Year Peak Discharge (cfs)		Time to Peak (min)		Distance (ft)	Absolute Average Velocity (fps)	
			1998 MDP	2014 Duplicate	1998	2014 Duplicate		1998	2014 Duplicate
398	BDC_ Outfall	South Platte River	8895	5512	75	145	-	-	-
387	J11	Broadway	8878	5543	75	119	11130	74.2	7.1
374	J20	Orchard Road	8491	5417	70	104	7250	24.2	8.1
337	J40	Arapahoe Road	6538	4590	65	112	10174	33.9	21.2
278	J76	Dry Creek Road	4413	3638	70	101	8825	29.4	13.4
240	J95	County Line Road	3558	3036	60	85	10189	17.0	10.6

To look at one example from Table 3-6, it would appear that the average velocity in Big Dry Creek, based on the time to peak, from Broadway to the South Platte River based on the 1998 study is 74.2 feet per second. Average velocities such as those shown in the 1998 velocity column are unsustainable and generally impossible in a natural channel environment. The average velocities shown in the "2014 Duplicate" column are more in line with those generally seen in a natural channel environment, with some discrepancy still in the lower portion of the watershed. Based on the data available and the comparison just shown, it was decided that the previous study results were invalid and no calibration with the previous study would be performed.

3.6 Results of Analysis

Baseline Hydrology Model peak discharges and volumes for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events for selected key SWMM design points are presented in Table 3-7. Peak discharges and runoff volumes for all SWMM design points are provided in Table B-19 in Appendix B.

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Table 3-7 - Peak Discharges and Volumes at Select Design Points

Location	SWMM Node	DRF Area (mi^2)		Cumulative Drainage Area		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
		Minor	Major	Acres	Mi^2	2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
Big Dry Creek																	
Big Dry Creek Outfall to S Platte	BDCOutfall	19.35	19.35	12384	19.35	805	1,226	1,523	2,824	3,607	4,630	373.3	521.6	704.2	1313.0	1598.2	1941.1
BNSF Railroad	J2	19.35	19.35	12339	19.28	804	1,224	1,519	2,814	3,604	4,628	370.1	517.4	699.0	1305.5	1589.7	1931.4
City Ditch	J3	19.35	19.35	12233	19.11	799	1,225	1,515	2,812	3,602	4,625	365.1	510.8	690.6	1292.0	1573.9	1912.8
Belleview Avenue	J5	19.35	19.35	12117	18.93	797	1,225	1,513	2,808	3,598	4,622	362.6	507.3	686.1	1283.7	1563.8	1900.4
Lehow Avenue	J9	19.35	19.35	11942	18.66	792	1,222	1,507	2,798	3,587	4,630	355.5	497.6	673.7	1262.5	1538.4	1870.0
Broadway	J11	19.35	19.35	11702	18.29	786	1,218	1,499	2,782	3,568	4,612	347.9	487.8	661.4	1244.8	1518.3	1847.2
Littleton Boulevard	J16	19.35	19.35	11597	18.12	778	1,214	1,487	2,755	3,527	4,572	336.1	471.9	640.5	1211.2	1478.8	1800.7
Orchard Road	J20	19.35	19.35	11274	17.62	772	1,205	1,476	2,722	3,460	4,486	326.8	458.4	622.3	1177.1	1437.2	1750.1
Cherrywood Circle	J21	19.35	19.35	11158	17.43	768	1,200	1,469	2,712	3,445	4,425	322.5	452.5	614.3	1163.4	1420.8	1730.7
Franklin Street	J211	19.35	19.35	11050	17.27	766	1,199	1,467	2,709	3,438	4,382	319.6	448.3	608.4	1152.3	1407.1	1713.9
High Line Canal	J30	15.62	19.35	10633	16.61	798	1,255	1,526	2,684	3,387	4,247	314.0	452.4	617.2	1104.6	1349.7	1645.1
Arapahoe Road	J40	15.62	19.35	9978	15.59	764	1,203	1,452	2,558	3,208	4,000	286.7	413.8	566.4	1023.7	1253.7	1531.4
Easter Avenue	J44	15.62	19.35	9716	15.18	755	1,193	1,429	2,530	3,157	3,940	274.6	396.9	544.3	989.5	1213.5	1484.3
Fillmore Tributary Confluence	J60	15.62	19.35	9595	14.99	750	1,188	1,418	2,523	3,156	3,952	267.9	387.9	532.6	972.2	1193.4	1460.9
Otero Tributary Confluence	J75	15.62	19.35	8983	14.04	709	1,118	1,330	2,382	2,981	3,662	240.2	349.4	482.3	893.6	1100.7	1352.0
Dry Creek Road	J76	15.62	0	8259	12.9	633	1,006	1,193	2,427	2,925	3,608	209.3	305.9	425.2	846.4	1057.3	1315.8
Colorado Boulevard	J77	15.62	0	8148	12.73	632	1,004	1,185	2,450	2,931	3,609	204.5	299.2	416.4	832.3	1040.3	1295.4
County Line Road	J95	12.15	0	7243	11.32	567	876	1,031	2,137	2,506	3,005	127.5	231.7	311.0	726.4	910.9	1138.1
Glen Eagles Village Parkway	J116	12.15	0	5942	9.28	380	528	621	1,403	1,526	1,759	87.0	162.9	226.9	568.9	719.2	906.4
University Boulevard (Out)	O123	4.92	0	-	-	367	617	1,026	1,367	1,462	1,558	-	-	-	-	-	-
Nobles Road Tributary																	
Steele Street	J31	0	0	582	0.91	350	671	778	1,176	1,423	1,719	22.7	41.4	49.3	70.0	85.2	102.9
Arapahoe Road	J32	0	0	508	0.79	318	606	701	1,051	1,269	1,532	20.1	36.5	43.4	61.5	74.7	90.1
Nobles Road Street= J35-197 cfs	-	0	0	-	-	70	284	353	595	755	941	-	-	-	-	-	-
Colorado Boulevard	J35	0	0	353	0.55	267	481	550	792	952	1,138	15.0	26.5	31.4	43.9	53.2	63.8
Hinsdale Place	J37	0	0	121	0.19	165	263	298	405	480	558	7.2	11.5	13.3	17.5	20.8	24.3
Fillmore Tributary																	
Dry Creek Road	J51	0	0	476	0.74	375	555	600	915	1,151	1,412	20.3	35.8	42.4	59.2	71.7	86.1
Jamison Avenue	J511	0	0	311	0.49	224	406	450	679	827	998	13.9	24.1	28.5	39.5	47.7	57.0
University Boulevard	J55	0	0	209	0.33	147	272	314	461	555	667	8.9	15.8	18.7	26.1	31.6	37.9
County Line Road	J56	0	0	125	0.2	103	181	207	290	343	417	5.7	9.9	11.6	16.1	19.4	23.1
Otero Tributary																	
South Steele Street	J66	0	0	593	0.93	185	362	417	624	760	932	23.6	42.6	50.7	71.8	87.3	105.2
Otero Avenue	J67	0	0	483	0.76	133	242	277	465	553	661	19.9	35.5	42.1	59.2	71.9	86.5
County Line Road	J69	0	0	329	0.51	38	72	89	198	295	421	7.4	14.1	17.0	24.7	30.3	36.9

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SECTION 3A - HYDROLOGIC ANALYSIS FOR FHAD EFFORT

3A.1 OVERVIEW

The 2-, 5-, 10-, 25-, 50-, and 100-year return period storms were analyzed previously by Ayres Associates in the 2015 MDP (see Ayres Section 3.0). These return periods were unmodified for this FHAD report. The 500-year return period storm was analyzed using UDFCD's Colorado Urban Hydrograph Procedure (CUHP) 2005, version 1.4.3, released January 24, 2014, to generate hydrographs for each sub-basin. Hydrographs for each sub-basin were then routed using the Environmental Protection Agency's (EPA) Storm Water Management Model (SWMM), version 5.0, build 5.1.012, to determine peak discharge rates at select design points. For the 500-year return period storm, no new sub-basin delineations were completed beyond those completed for the 2015 MDP.

3A.2 DESIGN RAINFALL

One-hour and six-hour point rainfall depths for the 2-, 5-, 10-, 25-, 50-, and 100-year storm events were completed previously by Ayres Associates in the 2015 MDP (see Ayres Section 3.0). These return periods were unmodified for this FHAD report. Point rainfall depths for the 1-hour and 6-hour durations of the 500-year storm event are provided in Table 3A-1, which were developed from the Highlands Ranch Mansion data in the UD-Rainfall spreadsheet (v.1.01, UDFCD, February 2013). Rainfall distributions for both design storm duration and all return periods are shown in Appendix B.

Table 3A-1. Point Rainfall Depths for 500-Year Storm Event

Recurrence Interval	1-Hour Depth (in)	6-Hour Depth (in)
500-Year	3.18	4.28

The table shown in Figure 3A-1 was taken from the 2012 DRAFT of Chapter 4 of the USDCM. This table shows the design storm durations, watershed sizes, and when to apply depth reduction factors (DRFs). This table was used to guide the development of the 500-year design storm.

Figure 3A-1. UDFCD Guidance on Application of DRFs

Table 4-1. Storm Duration and Area Adjustment for CUHP Modeling

Design Storm	Watershed Area (square miles)	Suggested Minimum Storm Duration	Apply DRF?
2-, 5-, and 10-Year	$A \leq 2.0$	2 hours	No
	$2.0 < A < 15.0$	2 hours	Yes - Use Table 4-3
	$A \geq 15.0$	6 hours	Yes - Use Table 4-3
25-, 50-, 100-, And 500-Year	$A < 15.0$	2 hours	No
	$A \geq 15.0$	6 hours	Yes - Use Table 4-4

For further discussion of DRFs, please refer to Ayres Section 3.2 – Design Rainfall, excerpted from the 2015 MDP.

3A.3 SUBWATERSHED CHARACTERISTICS

General subwatershed characteristics for Big Dry Creek and its tributaries are unchanged for the purposes of this FHAD report since analysis by Ayres Associates in the 2015 MDP (refer to Ayres Section 3.2). Subwatershed characteristics for the 500-year storm event, completed as part of this FHAD report, are included in Appendix B.

3A.4 HYDROGRAPH ROUTING

The EPA-SWMM model from the 2015 MDP was utilized for analysis of the 500-year storm event. Discussion of modifications to that model are detailed below. For a full discussion of the hydrograph routing typical of all return period storms, please refer to Ayres Section 3.4 – Hydrograph Routing.

3A.4.1 DETENTION PONDS

During the development of the 500-year event flows for the FHAD, several of the ponds were exceeding their stage-storage and stage-discharge curves in the 500-year event. Based on available contours and survey information, the curves were extended where necessary to contain the 500-year event. The ponds modified were numbered P70, P102, P123, P141, and P165. In addition to exceeding the curves in the 500-year event, pond 141 was exceeding its discharge curve in the 100-year event. After making the modifications to this pond, the resulting flows were checked against the master plan flows and found that the change in flow was less than 1%. As a result, no modifications to the 100-year flow rates were made from the master plan.

3A.4.2 ROUTING OF CUHP HYDROGRAPHS

The DRFs for the minor and major storms were developed previously for the 2015 MDP, and they were applied similarly for the FHAD effort, including the 500-year storm event. There are two DRFs used for the 100- and 500-year storm events: 0 and 19.35 sq. mi., which are listed in the appropriate tables that follow and in the appendices. The 19.35 sq. mi. DRF is applied at node J75 at the Otero Tributary confluence and at all locations downstream. It was noted that the transition to area correction created a drop in 500-year future conditions peak flows downstream of Dry Creek Road, starting at the Otero Tributary confluence (Node J75) and continuing until the Nobles Road Tributary confluence at University Boulevard (Node J30). In order to maintain a more realistic flow profile, values in this reach were increased to the Dry Creek Road peak flow of 6,054 cfs for the FHAD HEC-RAS model. This assumption is also noted on Figure B-16, which shows the original, area corrected peak flow values for reference.

3A.5 PREVIOUS STUDIES

For discussion of studies previous to the completion of the 2015 MDP, please refer to Ayres Section 3.5 – Previous Studies.

3A.6 RESULTS OF ANALYSIS

Model peak discharges and volumes for the 500-year storm event for selected key SWMM design points are presented in Table 3A-2. Peak discharges and runoff volumes for all SWMM design points are provided in Appendix B.

Table 3A-2. Peak Discharges and Volumes at Select Design Points for 500-Year Storm Event

Stream	Location	SWMM Node	Minor DRF Area (sq. mi.)	Major DRF Area (sq. mi.)	Cumulative Drainage Area (ac)	Cumulative Drainage Area (sq. mi.)	500-Year Future Condition Peak Discharge (cfs)	500-Year Future Condition Runoff Volume (ac-ft)
Big Dry Creek	Big Dry Creek Outfall to S Platte	BDCOutfall	19.35	19.35	12,384	19.35	6,559.0	2,681.7
	BNSF Railroad	J2	19.35	19.35	12,339	19.28	6,559.6	2,669.9
	City Ditch	J3	19.35	19.35	12,233	19.11	6,555.0	2,642.3
	Belleview Avenue	J5	19.35	19.35	12,117	18.93	6,546.5	2,627.0
	Lehow Avenue	J9	19.35	19.35	11,942	18.66	6,549.9	2,584.0
	Broadway	J11	19.35	19.35	11,702	18.29	6,530.1	2,553.3
	Littleton Boulevard	J16	19.35	19.35	11,597	18.12	6,461.5	2,491.9
	Orchard Road	J20	19.35	19.35	11,274	17.62	6,299.1	2,421.3
	Cherrywood Circle	J21	19.35	19.35	11,158	17.43	6,197.3	2,396.8
	Franklin Street	J211	19.35	19.35	11,050	17.27	6,173.9	2,372.2
	High Line Canal	J30	15.62	19.35	10,633	16.61	6,071.4	2,277.1
	Arapahoe Road	J40	15.62	19.35	9,978	15.59	5,638.9	2,123.7
	Easter Avenue	J44	15.62	19.35	9,716	15.18	5,512.6	2,059.2
	Fillmore Tributary Confluence	J60	15.62	19.35	9,595	14.99	5,496.8	2,028.5
	Otero Tributary Confluence	J75	15.62	19.35	8,983	14.04	4,957.6	1,881.2
	Dry Creek Road	J76	15.62	-	8,259	12.9	6,054.2	1,807.6
	Colorado Boulevard	J77	15.62	-	8,148	12.73	6,086.4	1,780.0
	County Line Road	J95	12.15	-	7,243	11.32	5,957.0	1,568.2
	Glen Eagles Village Parkway	J116	12.15	-	5,942	9.28	5,273.2	1,258.2
	University Boulevard (Out)	O123	4.92	-	-	-	5,188.5	1,052.4
Nobles Road Tributary	Steele Street	J31	-	-	582	0.91	2,290.3	137.8
	Arapahoe Road	J32	-	-	508	0.79	2,041.7	120.6
	Colorado Boulevard	J35	-	-	353	0.55	1,503.3	85.0
	Hinsdale Place	J37	-	-	121	0.19	723.0	31.9
Fillmore Tributary	Dry Creek Road	J51	-	-	476	0.74	1,904.6	114.8
	Jamison Avenue	J511	-	-	311	0.49	1,320.6	75.8
	University Boulevard	J55	-	-	209	0.33	876.7	50.6
	County Line Road	J56	-	-	125	0.2	535.5	30.7
Otero Tributary	South Steele Street	J66	-	-	593	0.93	1,253.7	140.9
	Otero Avenue	J67	-	-	483	0.76	858.3	115.7
	County Line Road	J69	-	-	329	0.51	420.7	78.3

SECTION 4A - HYDRAULIC ANALYSIS

4A.1 EVALUATION OF EXISTING FACILITIES

Two one-dimensional (1D) hydraulic models using the U.S. Army Corps of Engineers' river modeling program HEC-RAS (v4.1.0) were developed for Big Dry Creek and the Fillmore, Otero, and Nobles Road Tributaries in the 2015 MDP by Ayres Associates. Because the Big Dry Creek basin is fully built-out, the FHAD uses future conditions discharges for the analysis. All storm events referenced in the FHAD refer to future conditions discharges. Modified versions of MDP models were used as the basis for this study. The models were modified to improve accuracy and to contain the future conditions 500-year event, which was not included in the original models. Specific changes are discussed in the text below, which supersedes Section 4 from the 2015 MDP.

Manning's "n" values were updated and were determined from site visits and using aerial photography. Pictures illustrating typical Manning's "n" values are included in Appendix C.

Table 4A-1 lists the MDP reaches associated with each hydraulic reach in the HEC-RAS model. Descriptions of each MDP reach can be found in Ayres Section 2.3 – Channel Reach Descriptions. Figure 4A-1, below, depicts the locations of the HEC-RAS and MDP reaches.

Table 4A-1. Hydraulic Reach Table

Drainageway	HEC-RAS Reach	MDP Reach
Big Dry Creek	BDC - Lower	BD1
		BD2
		BD3
		BD4
		BD5
		BD6
		BD7
		BD8
	BDC - Middle	BD9
		BD10
		BD11
	BDC - Upper	BD12
		BD13
		BD14
Fillmore Tributary	FilmoreTrib-FilmoreTrib	F1
		F2
		F3
		F4
Otero Tributary	Otero - Otero	O1
		O2
		O3
Nobles Road Tributary	NobleTrib-NobleTrib	N1
		N2
		N3
South Platte River	South Platte - Lower	N/A
South Platte River	South Platte - Upper	N/A

4A.1.1 NOBLES ROAD TRIBUTARY MODEL

The Nobles Road Tributary Model from the MDP by Ayres Associates included a reduction of 197 cfs at cross section 6509 to account for the underground conduit. This approach was replicated for the 500-year flows. Once the pipe is filled, the flows overtop East Arapahoe Road and become overland flow along East Easter Avenue before entering the channel on the east side of South Colorado Boulevard. As previously discussed, this reach is not included in an effective FEMA flood hazard zone and will not be included in future PMR submittals. Therefore, Nobles Road Tributary is included in a separate model from the primary Big Dry Creek model used for this study. Based on discussions with the UDFCD, floodway encroachments on the Nobles Road Tributary were not calculated.

4A.1.2 BIG DRY CREEK MODEL WITH TRIBUTARIES

The Big Dry Creek MDP HEC-RAS model was originally intended to model flows up to and including the 100-year event. As such, many cross sections had to be extended to successfully contain the 500-year peak flows for this study. Additionally, several locations in the model were modified to improve the accuracy of the model.

EASTER AVENUE CULVERTS

Survey of the Easter Avenue Culverts was received from Aztec Engineering, dated December 14, 2015. This survey was used to modify the geometry of cross sections 30981 and 31108 and the internal bridge sections of bridge 31036. The ground and culverts were then edited based on the survey. A skew angle of 40° was set for the Deck/Roadway and Abutments. It should be noted that skewed hydraulic structures in HEC-RAS do not impact culvert dimensions, therefore the cross-sectional dimensions of the culvert were used in the model, rather than the larger opening dimensions.

HIGH LINE CANAL

Numerous modeling iterations were done at the Highline Canal (HLC) area. The first attempt used separate alignments for BDC and the upstream and downstream reaches of the HLC with lateral structures to represent the overtopping of HLC's berm, however HEC-RAS was unable to find a solution to this model. Typically, the upstream berm of the canal would be represented as a single section in HEC-RAS; however, there is a pedestrian bridge between the location where BDC and HLC combine and the headgate structure, which controls flows downstream in BDC. As a result, flow overtopping the HLC berm is modeled in two sections. Cross section 27432 accounts for flow backing up the canal and overtopping the berm and is also the upstream section for the pedestrian bridge. Cross section 27337 is intended to represent flow overtopping the canal downstream of the pedestrian bridge and is the upstream section for the BDC headgate structure. Flows were not reduced in these cross sections as a result of water overtopping the berm. Instead all flows were kept in the channel to conservatively account for modification to the berm that could change flow patterns in the future.

The resulting 100-year water surface elevations are within half a foot of each other at all cross sections upstream of the HLC berm. Flows overtopping the HLC berm and returning to the BDC channel are shown within the 100-year floodplain. It is likely that in a flood event, additional flow would split out of the HLC and cause flooding at locations outside the scope of this study. It was also assumed that the HLC would be full. Therefore, the model does not include conveyance capacity for stormwater runoff within the canal.

FLOODWAY MODELING

The floodway is the portion of the channel that must be reserved for active conveyance to convey the base flood without increasing the water surface elevation more than a designated height. To determine the floodway, encroachments were selected in HEC-RAS that yielded a water surface elevation and energy grade elevation surcharge of no more than 0.5 feet and no less than 0 feet. Encroachments were preferentially selected that yielded a water surface elevation surcharge as close to 0.5 feet as possible.

It should be noted that several cross sections have surcharge values between 0 and -0.04 feet. Best efforts were made to remove the negative surcharges but were ultimately unsuccessful. Further, several of these negative surcharges appear to be artifacts of the floodway calculation process used in HEC-RAS. As an experiment, all floodway encroachments in the model were set to the extents of the 100-year floodplain, effectively removing the encroachments. Even with encroachments removed, negative surcharges remained at several locations. It is therefore assumed that negative surcharges at these locations are due to the floodway calculation process.

4A.2 FLOOD HAZARDS

The drainageways within the project area generally have 100-year capacity with some exceptions. Flooding problems are generally limited to overtopped roadway crossings, and in a few locations, due to limited conveyance in the floodplain. Table C-1 in Appendix C shows major crossings and the general capacity of each. Capacities of minor crossings, such as pedestrian bridges and trail crossings, were not calculated; however, the locations of minor crossings are included in the table for reference.

This study determined a number of residential, commercial and industrial structures lie within the 100-year floodplain. The general locations of these structures are as follows. Due to a very wide floodplain at the confluence with Big Dry Creek and the South Platte River, two buildings are within the 100-year floodplain. Continuing up Big Dry Creek, one structure at Belleview Park Children's Farm, near West Belleview Avenue, is located within the floodplain boundary. At Big Dry Creek and Littleton Boulevard, an undersized crossing causes overtopping and backwater that places two structures in the floodplain. At Big Dry Creek and East Orchard Road, both an undersized crossing and the alignment of the channel that runs parallel with East Orchard Road, result in a floodplain that spreads out upstream of the structure, causing 10 residential buildings to fall within the floodplain. Further upstream, a single structure lies within the floodplain due to its close proximity to Big Dry Creek.

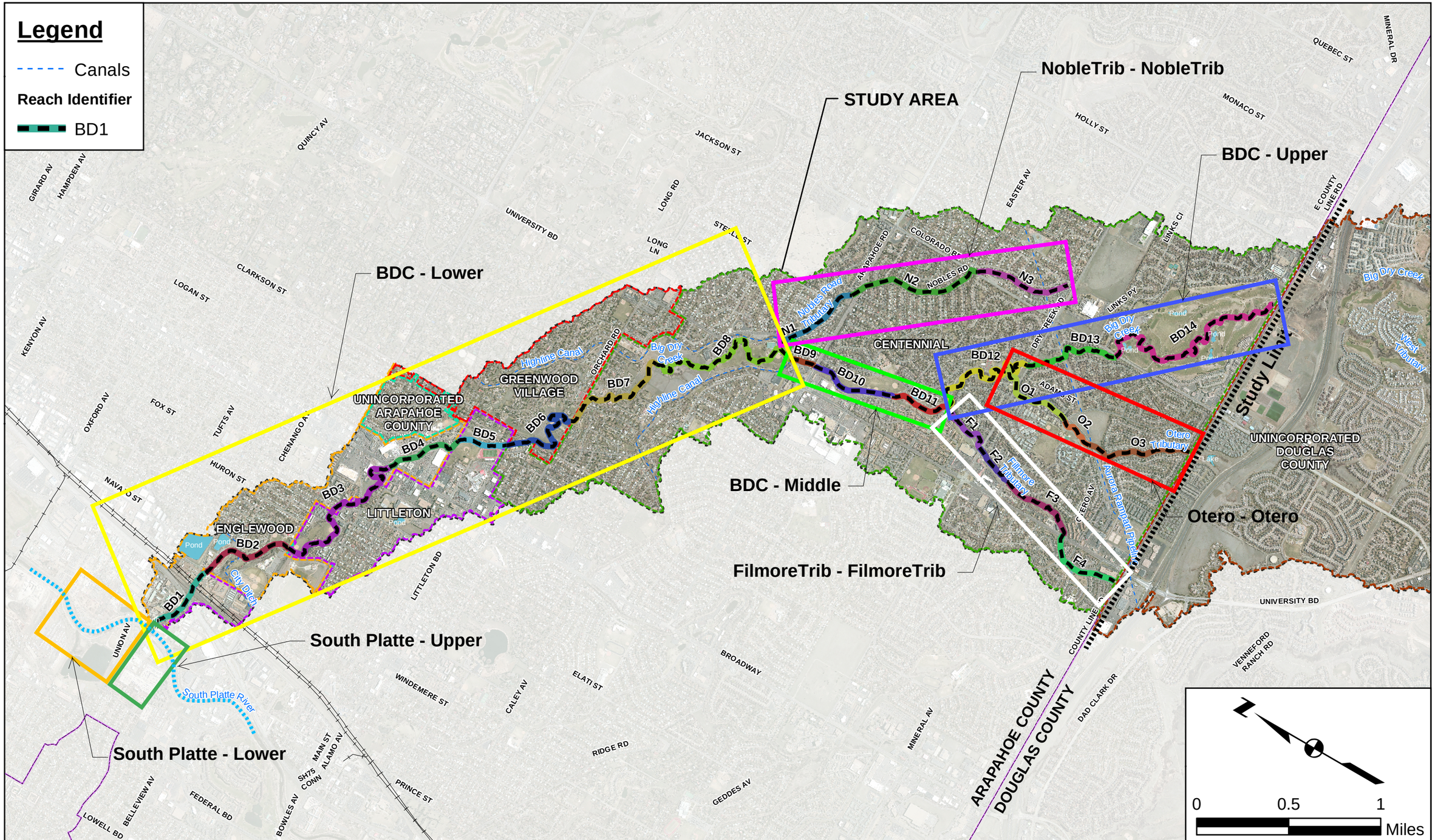
At the confluence of the Highline Canal, Nobles Road Tributary and Big Dry Creek, the 100-year floodplain overtops University Boulevard and causes the floodplain upstream of University Boulevard to expand. In this area there are two structures along Big Dry Creek within the floodplain and nine structures on Nobles Road Tributary within the floodplain. Just downstream of this location, the Cherry Hills Assisted Living center encroaches into the floodplain on the east bank. Twenty-five other structures fall within the floodplain along Nobles Road Tributary because of multiple undersized crossings and backwater effects. Two structures are in the Filmore Tributary floodplain, at Jamison Avenue and University Boulevard. Finally, a total of four structures are in the Otero Tributary floodplain. Three of the structures are impacted by the undersized crossing at East Dry Creek Road in addition to one apartment structure at South Monroe Way.

In total, Big Dry Creek has 19 structures within the floodplain, all located along the Lower reach. Nobles Road Tributary has 34 structures within the floodplain, Otero tributary has four structures in the floodplain and the Fillmore Tributary has two. Structure locations are shown on the FHAD flood maps in Appendix G.

4A.3 PREVIOUS ANALYSES

The last hydraulic analysis that modeled this portion of Big Dry Creek was completed with the 1998 MDP. Various LOMRs and other minor changes have taken place along the drainageway over the years, but the biggest difference between this study and any previous study is that the newly-adopted peak flow rates are less than the results provided in previous studies. As noted previously, the Nobles Road Tributary does not have a regulatory floodplain, and up to this point has not had a formal study completed for this reach. The

Otero Tributary has an effective Zone A designation. This study attempted to incorporate recently-completed LOMRs; however, the Cherry Hills Assisted Living improvements within Reach BD8 have not been incorporated into the study.



AYRES ASSOCIATES 12050 N Pecos St Suite 150 Westminster, CO 80234 P: 303.938.8874 www.AyresAssociates.com	Designed by: MDH Drawn by: ABA/MDH Checked by: WCP Project No.: 35-0214.00 Date: 7/1/2014	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD	Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)	**HEC-RAS Hydraulic Reach Location Map** (Modified by RESPEC)	Figure 4A-1

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ORIGINAL 2015
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SECTION 8A - REFERENCES FOR FHAD EFFORT

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APPENDIX A
PROJECT CORRESPONDENCE

PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
December 13, 2013
9:00 a.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
J. Myles Gardner – Urban Drainage and Flood Control District
Monica Bortolini – Southeast Metro Storm Water Authority (SEMSWA)
Lanae Raymond – Southeast Metro Storm Water Authority
Angela Howard – Southeast Metro Storm Water Authority
Suzanne Moore – Greenwood Village
Dave Henderson – City of Englewood
Larry Nimmo – City of Englewood
Walt Pennington – Ayres Associates (Ayres)
Mathew Hickox – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Matthew Hickox at Ayres Associates.

Discussion Items:

1) Project Coordination
a) Meet monthly – Next meeting scheduled for January 7, 2014 at 1:30pm at SEMSWA offices.
b) Web site will be set up by Ayres
c) Other points of contacts:
i) Douglas County is not a funding participate. Brad Robenstein will be the point of contact for Douglas County.
ii) Brett Collins – South Suburban Park and Recreation District
iii) Jeff Brazel – Centennial Open Space

2) Project Approach
a) The scope of work was reviewed. The following is a summary of scope items discussed:
i) A Flood Hazard Area Delineation (FHAD) is not part of the current scope.
ii) The Major Drainageway Plan (MDP) update only includes previously studied tributaries. Monica will provide an exhibit for more detailed study areas if SEMSWA determines that the previous study subbasins or tributaries lacked sufficient detail.
iii) The MDP will verify the regulatory hydrology. Electronic files from the previous study are not available. Monica will check SEMSWA files to see if the electronic files are available. The hydrology models will be calibrated to address software changes.
iv) A backwater analysis will be conducted.
v) Shea provided bridge crossing information to Ayres. 56 structures cross Big Dry Creek.
vi) Comprehensive plans will be requested from each jurisdiction to reflect future land use conditions. The City of Englewood and Greenwood Village indicated that the existing land use can be used for the future land use.
vii) Detention facilities will be reflected in the updated MDP. Ayres to coordinate with Brad Robenstein (Douglas County) for upstream detention facilities.
viii) The Highline canal has an impact on how flood flows are conveyed. Shea will discuss the Highline canal status and future plans with Ken MacKenzie (UDFCD) and report back.
ix) Alternative Analysis will be developed to review drainageway improvement opportunities.
x) A Conceptual Plan will be developed.
xi) Water quality considerations will be addressed in the MDP. The MDP looks primarily at water quality opportunities associated with detention. SEMSWA is interested in any space and all types of water quality opportunities.
xii) Two public meetings are anticipated. Lanea indicated that SEMSWA is available for more outreach if it can benefit the project.

3) Project Schedule
a) The contract time of performance is 46 weeks. The following are the anticipated submittal dates.

Submit Draft Baseline Hydrology – February 21, 2014

Submit Draft Alternatives Analysis – May 16, 2014

Submit Draft Conceptual Design Report – September 19, 2014

Submit Final Conceptual Design Report – October 31, 2014

4) Action Items:

Action Item	Responsibility
Provide an exhibit for more detailed study areas if needed.	SEMSWA
Project approach/direction with Highline Canal	UDFCD
Provide Ayres comprehensive plan and detention information	Douglas County
Develop project website	Ayres
Provide drainageway inventory data to Ayres	SEMSWA
Review availability of electronic files from previous MDP	SEMSWA

ORIGINAL 2013 MDP BY AYRES ASSOCIATES

PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
January 7, 2014
1:30 p.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
J. Myles Gardner – Urban Drainage and Flood Control District
Monica Bortolini – Southeast Metro Storm Water Authority (SEMSWA)
Stacey Thompson – Southeast Metro Storm Water Authority
Suzanne Moore – Greenwood Village
Dave Henderson – City of Englewood
Brad Robenstein – Douglas County
Walt Pennington – Ayres Associates (Ayres)
Mathew Hickox – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Matthew Hickox at Ayres Associates.

Discussion Items:

1) Project Coordination
a) Meet monthly – Next meeting scheduled for February 11, 2014 at 1:30pm at SEMSWA offices.
b) Project web site has been created by Ayres. Shea will add link on the UDFCD website.

2) Review of Action Item
a) Monica provided UDFCD and Ayres an exhibit defining the major tributaries that SEMSWA would like to have included in the MDP update. The four (4) major tributaries included the Nobles Road tributary, Tributary A, Otero Tributary, and Tributary B. The Nobles Road tributary and the Otero Tributary were not included in previous MDP and will require a change in the scope of work. Shea will review the naming conventions of the major tributaries.
b) Shea indicated that the water quality opportunities for the Highline Canal will be addressed in the MDP. The current UDFCD study on the water quality planning for the Highline Canal will be summarized in the updated MDP. Other potential water quality opportunities in the Big Dry Creek basin will be identified.
c) The Big Dry Creek drainageway inventory being conducted by SEMSWA is almost complete. All information will be provided to Ayres.
d) It has been determined that the electronic files from the previous MDP are not readily available.

3) Project Information/Data Gathering
a) Ayres will be receiving information on land use and detention from SEMSWA, Douglas County, and the City of Englewood within the next few days.

4) Project Approach
a) Baseline Hydrology
i) Preliminary subbasins have been delineated. Subbasins are being reviewed by Ayres and will be adjusted prior to the next meeting.
ii) A general comparison of the number of subbasins between the old MDP and this study should be made.
iii) Design points should be consistent with the previous MDP.
iv) Mapping should show storm sewers and outfalls.
v) The project sponsors agreed that the existing land use and the future land use is the same based on comprehensive plans and zoning maps. Baseline hydrology should only include future land use for this study. Project sponsors are responsible for identifying any areas of future development or redevelopment and provide that information to Ayres.
vi) The next meeting will review baseline hydrology and discuss calibration to the hydrology results.

5) Project Schedule
a) The contract time of performance is 46 weeks. The following are the anticipated submittal dates.

Submit Draft Baseline Hydrology – February 21, 2014

Submit Draft Alternatives Analysis – May 16, 2014

Submit Draft Conceptual Design Report – September 19, 2014

Submit Final Conceptual Design Report – October 31, 2014

6) Action Items:

Action Item	Responsibility
a) Review/revise scope of work to include additional tributaries	UDFCD
b) Develop baseline hydrology model	Ayres

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
February 11, 2014
1:30 p.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
J. Myles Gardner – Urban Drainage and Flood Control District
Monica Bortolini – Southeast Metro Storm Water Authority (SEMSWA)
Stacey Thompson – Southeast Metro Storm Water Authority
Suzanne Moore – Greenwood Village
Dave Henderson – City of Englewood
Brad Robenstein – Douglas County
Mathew Hickox – Ayres Associates (Ayres)
Linsey Chalfant – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Matthew Hickox at Ayres Associates.

Discussion Items:

1) Project Coordination
a) The next meeting will be scheduled after the project sponsors have reviewed the draft baseline hydrology report.

2) Review of Action Item
a) Shea indicated that she had not yet worked on a revised scope of work, and would provide that to Ayres soon for the additional tributary(s) not in the original scope of work.
b) Monica provided UDFCD and Ayres an exhibit defining the major tributaries that SEMSWA would like to have included in the MDP update. The four (4) major tributaries included the Nobles Road tributary, Tributary A, Otero Tributary, and Tributary B. The Nobles Road tributary and the Otero Tributary were not included in previous MDP and will require a change in the scope of work. Shea will review the naming conventions of the major tributaries.
c) Matthew stated that the purpose of this meeting was to discuss the progress by Ayres on the baseline hydrology, and would be discussed fully during the course of the meeting.

3) Review of Watershed/Detention Data
a) Tributary Names

i) Matthew reviewed the tributary names with the project sponsors. In order from downstream to upstream, the tributaries are:
Nobles Road Tributary
Fillmore Tributary
Otero Tributary
Branch 1
Wildcat Tributary

4) Project Approach
a) Exhibits
i) Matthew provided the project sponsors with exhibits showing jurisdictions, parks and open space, existing crossings and drop structures. These exhibits will be included as part of the draft baseline hydrology report.
b) Hydrology Discussion
i) Since the last progress meeting, Ayres has reviewed and revised the sub-basin delineations. The previous study had 163 sub-basins, and Ayres has delineated a total of 169 sub-basins. The upper undeveloped portion of the watershed is nearly identical in delineation to the 1998 study with the most differences in the urbanized areas due to the Highlands Ranch development and more detailed topographic data.
ii) Shea indicated that sub-basin delineations and design points should occur at jurisdiction boundaries, and others may need to be added later to accommodate other sponsor needs.
c) Detenion (Existing and Proposed)
i) Matthew stated that there were 9 detention ponds included in the baseline hydrology from the 1998 MDP. Brad had provided Ayres with copies of the design reports and construction drawings for these ponds, and they have been included in the current baseline hydrology modeling.
ii) Matthew stated that there are 3 future conditions ponds in the 1998 MDP that have since been constructed. Matthew will coordinate getting design reports and construction drawings from Brad for these additional ponds.
iii) Shea stated that Ayres should make sure that the ponds are publicly owned and maintained, and that they have a minimum drainage area of 100 acres before including the current study baseline hydrology.
d) Basin Parameters
i) Matthew stated that basin parameters fall within UDFCD criteria except for a few sub-basins where the shape cannot be broken up any further without too much discretization.
e) Land Use/Zoning Maps
i) Matthew stated that Ayres had received land use and zoning data from Arapahoe County, Douglas County, the City of Centennial and the City of Englewood. All other areas will have percent imperviousness for the baseline hydrology developed from aerial photography.
f) Rainfall Distribution
i) Matthew stated that after review of some nearby rainfall distributions, Ayres had selected a 100-year 6-hour rainfall depth of 3.45 inches.
ii) Matthew stated that the previous study reports a 2-hour design storm with aerial reduction factors for 5-10 square miles. The watershed is 19.3 square miles based on current delineations.
iii) Shea stated current UDFCD criteria require application of the 2-hour design storm for the upper 10 square miles of the watershed, and use of the 3-hour design storm with an area reduction factor for the remainder of the watershed.
iv) Matthew indicated that there appeared to possibly be some discrepancy in the way CUHP and the UD-Rainfall spreadsheet distribute the 3-hour storm. Shea indicated she would coordinate

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with Ayres if the issue didn't resolve itself as both versions of CUHP and the UD-Rainfall spreadsheet should be current.

g) Soil Information
   i) Matthew stated that geospatial soil information had been obtained from the NRCS, and had been used to develop the Horton's infiltration parameters.

h) Calibration
   i) Matthew requested that Shea run through the calibration procedures again to ensure correct application for this study.
   ii) Shea stated that the duplicate hydrology model, when the previous model is not available, is based on current delineations, basin parameters and routing modeling utilizing percent impervious and rainfall from the previous study. If the peak discharges at similar major design points are greater by more than 10%, a calibrated hydrologic model is needed. Calibration generally takes place by adjusted the C_p coefficients in CUHP until the routed peak discharges are within 10% of the previous study. Then, the percent impervious and rainfall are updated to current conditions and standards, and any additional detention built since the previous study is put into the model. This becomes the baseline hydrology model.

i) Preliminary Results
   i) Matthew stated that results from the preliminary models by Ayres, using the previous study percent imperviousness, showed an unexpected decrease at the South Platte River compared to the 1998 MDP. Shea stated that Ayres should run the models with the previous rainfall and see what happens to the results. Shea also asked that Ayres check the cfs/acre of comparable basins.

5) Project Schedule

a) The contract time of performance is 46 weeks. The following are the anticipated submittal dates.

Submit Draft Baseline Hydrology – February 21, 2014

Submit Draft Alternatives Analysis – May 16, 2014

Submit Draft Conceptual Design Report – September 19, 2014

Submit Final Conceptual Design Report – October 31, 2014

6) Action Items:

Action Item	Responsibility
a) Review/revise scope of work to include additional tributaries	UDFCD
b) Submit baseline hydrology report	Ayres

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PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
May 29, 2014
9:00 a.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
Stacey Thompson – Southeast Metro Storm Water Authority
Paul Danley – Southeast Metro Storm Water Authority
Angela Howard – Southeast Metro Storm Water Authority
Lanae Raymond – Southeast Metro Storm Water Authority
Scott Palmer – Southeast Metro Storm Water Authority
Suzanne Moore – Greenwood Village
Brad Robenstein – Douglas County
Mathew Hickox – Ayres Associates (Ayres)
Walt Pennington – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Matthew Hickox at Ayres Associates.

Discussion Items:

1) Project Coordination
a) The next meeting will be scheduled after the project sponsors have reviewed the draft baseline hydrology report.

2) Review of Action Item
a) None

3) Review of Baseline Hydrology Comments
a) Reach Limits
i) UDFCD had noted that some of the reaches seemed short and similar in characteristics to adjacent reaches. Shea indicated that combining some of the reaches may help at the alternatives and conceptual design level. Matthew stated that he would look at the reaches she identified and combine them where it seemed applicable.
b) Pond P123
i) Matthew asked Brad for some clarification of additional information about this pond that Brad had said in the comments he would provide. Brad stated that Pond P123 has two

separate outlets with high ground in between the outlets that causes the outlets to operate separately under low flow conditions. Brad asked that Ayres look at the rating curves for the pond and determine if they were applicable and to recommend any changes to the rating curves to account for this condition.
c) Imperviousness Values
i) Brad stated that an area in the upper portion of the watershed appeared to have the incorrect imperviousness value applied to a neighborhood. Matthew stated that he would look into it and correct it.
ii) SESMWA had a question about the imperviousness values of some of the commercial areas along University Boulevard as they have been noted for future redevelopment. Matthew stated that he would look into the imperviousness values used and their applicability to future redevelopment as activity centers.
iii) SEMSWA requested that the imperviousness colors shown on the interactive hydrology map be changed for clarity. Matthew stated that he would look into this and change them where possible to improve clarity.
iv) SEMSWA asked if dwelling unit per acre (DU/AC) values could be put next to each imperviousness value. Matthew stated that the imperviousness values were calculated based on average lot size and dwelling size and type for each neighborhood. Various combinations provided similar imperviousness values, but different DU/AC. Thus, the single family residential imperviousness values were reported as a single aggregated value. Text will be added to the final baseline hydrology report to clarify this. Shea also recommended that a single color for all single family residential imperviousness values be used.
d) Cumulative pond storage values
i) Brad asked that cumulative pond volumes be added to the rating tables in Appendix B. Shea concurred.
e) Structures
i) SEMSWA noted that the location and number of drop structures shown in Figure 2-5 did not seem accurate. Matthew stated that he would go back through and correct any discrepancies in the figure with the provided data and field notes.
f) Other Items
i) None

4) Alternatives Analysis
a) Problem Areas
i) Matthew asked about known problem areas within the project area as Ayres begins to look at alternatives.
ii) SEMSWA stated that the area around the Highline Canal gate structure is known to catch debris and requires frequent maintenance.
iii) SEMSWA also noted that the church property by the Goodson Recreation Center is currently trying to be redeveloped, and they would like to have as much information about hydraulics and alternatives in this area as soon as possible.
b) Highline Canal
i) Matthew noted that the Highline Canal is slated to become a water quality feature at some point in the future once all water rights on the canal are either gone or delivered by some other method. Matthew asked if the alternatives should look at options for separation of the Highline Canal and Big Dry Creek in the interim. Shea replied that the alternatives should just look at ultimate conditions when the canal is being used as a water quality feature.

5) Project Schedule
a) The contract time of performance is 46 weeks. The following are the anticipated submittal dates.

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~~Submit Draft Baseline Hydrology – February 21, 2014~~

Submit Draft Alternatives Analysis – May 16, 2014

Submit Draft Conceptual Design Report – September 19, 2014

Submit Final Conceptual Design Report – October 31, 2014

6) Other Items

a) SEMSWA Updated Survey Data

i) Matthew noted that SEMSWA had mentioned that they had, or would have soon, updated topography and as-built data on the Fillmore Tributary upstream of Jamison and on the Otero Tributary at Phillips Avenue. Scott replied that they would forward on the data as soon as they had it for use in the alternatives analysis.

7) Action Items:

Action Item	Responsibility
a) Submit final baseline hydrology report	Ayres
b) Begin work on hydraulics/alternatives analysis	Ayres

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PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
September 23, 2014
9:30 a.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
Stacey Thompson – Southeast Metro Storm Water Authority
Paul Danley – Southeast Metro Storm Water Authority
Angela Howard – Southeast Metro Storm Water Authority
Scott Palmer – Southeast Metro Storm Water Authority
Wanda DeVargas – Greenwood Village
Paul Weller – City of Englewood
Brett Collins – South Suburban
Mathew Hickox – Ayres Associates (Ayres)
Walt Pennington – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Matthew Hickox at Ayres Associates.

Discussion Items:

1) Project Coordination

2) Review of Action Item
a) Submittal of Final Baseline Hydrology Report has been completed

3) Floodplain Discussion
a) Ayres presented the preliminary floodplain based on the revised 100-year discharges for Big Dry Creek and each of the tributaries.
   i) The general capacity of each of the crossing structures was discussed. Crossing structures below Littleton Boulevard and above Dry Creek Road generally have 100-year capacity. Most crossings on the tributaries do not have 100-year capacity.
   ii) All roadway crossings across major drainageways will need to have 100-year capacity.
b) The Englewood water treatment plant is out of the floodplain, and the water comes up to the floodwall in a couple of locations.
c) The floodplain around deKoevend Park was discussed, and it was noted that the Highline Canal overtopping was slightly different than the effective mapping, but that the Goodson Rec Center and the neighboring church were out of the floodplain.
d) Nobles Road Tributary is a previously unmapped stream, and will show floodplain impacts to over 30 properties along the drainageway. This is primarily due to an undersized storm sewer under Nobles Road.
   i) SEMSWA asked about the depth of flow outside the right-of-way along Nobles Road, and if an extended curb could be used to contain the flow without impacting structures. Matthew replied that he would have to look, but that flow was approximately 2-feet deep at gutter flowline.

4) Alternatives Analysis
a) Channel Stabilization
   i) Matthew stated that channel stabilization would be placed based on existing erosion and high velocity/shear stress areas. Grade control would also be based on an assumed stable longitudinal slope of 0.3%.
   ii) A few areas were pointed out by SEMSWA for inclusion, and Greenwood Village indicated that they had a site assessment at the Rollin D. Bernard Equestrian Park that they would pass on for use in developing the stabilization alternatives.
b) Structure Improvements
   i) Per the floodplain analysis, crossing structures will be upgraded to convey the 100-year flood where they currently have limited capacity.
   ii) The master plan will include an alternative to remove the Highline Canal diversion structure once the canal is no longer operational and converted to a rain garden.
c) Conveyance Improvements
   i) Matthew stated that conveyance improvements would be needed upstream of Orchard Road in order to remove buildings from the floodplain. This alternative will be included to show what would be necessary to remove these structures from the floodplain.
   ii) Nobles Road will need significant conveyance improvements to pass the 100-year flood without inundation of adjacent houses and to eliminate overtopping of Colorado Boulevard and Arapahoe Road. Matthew asked SEMSWA if the standards of no overtopping of roadways during the 100-year flood would be expected here as it would require a significant storm sewer under Nobles Road to capture and convey the 100-year flood.
      (1) SEMSWA replied that the master plan should reflect current standards.
   iii) SSPRD is designing a park near the confluence of Big Dry Creek with the South Platte River, and would like to coordinate stream corridor improvements with the park improvements where possible. Matthew stated that there would likely need to be some conveyance improvements in this area to remove the two buildings on the north bank from the floodplain.
   iv) Shea requested that an alternative be considered to relocate the sanitary sewer aerial crossing in deKoevend Park to reduce the floodplain further in this area.
d) Detention
   i) Detention alternatives were discussed in both deKoevend Park and along the Nobles Road Tributary. Detention in deKovend Park would likely be near the western end of the park in the open space and SSPRD stated that they would prefer a pond in that location to retain natural looking features and plantings (nothing irrigated in this area). Detention along Nobles Road was to be considered just north of Arapahoe Road.
   ii) Shea Thomas indicated that preliminary pond criteria should follow a 10-foot high berm and 6-feet of ponding depth as a first pass to develop stage-storage-discharge curves.
e) Water Quality
   i) The High Line Canal feasibility study to convert the canal into water quality ponds for the area directly adjacent to the canal has been published and will be incorporated by reference into this master plan.

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ii) Discussion about various water quality improvements were discussed. SEMSWA would prefer to see water quality improvements wherever possible, but improvements will generally be limited to end-of-pipe improvements.

(1) One area noted was the shopping center outfalls southeast of Arapahoe and University. There is likely room between the end of pipe and the creek for water quality improvements, and SSPRD stated that they are no longer irrigating that area.

5) Project Schedule

a) Submit Draft Alternatives Analysis- October 31, 2014

i) 4 weeks out for draft

6) Action Items:

Action Item	Responsibility
a) Submit Draft Alternatives Analysis	Ayres
b)	
c)	

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PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
December 18, 2014
9:00 a.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
Stacey Thompson – Southeast Metro Storm Water Authority
Paul Danley – Southeast Metro Storm Water Authority
Angela Howard – Southeast Metro Storm Water Authority
Scott Palmer – Southeast Metro Storm Water Authority
Wanda DeVargas – Greenwood Village
Justin Williams– Greenwood Village
Paul Weller – City of Englewood
Brett Collins – South Suburban
Mathew Hickox – Ayres Associates (Ayres)
Walt Pennington – Ayres Associates
Matt Jones – Ayres Associates
Kelley Rich – Ayres Associates

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Discussion Items:

1) Project Coordination
a) A public meeting will be held in mid-January discussing updated floodplain and alternatives analysis.

2) Review of Action Item
a) None

3) Review of Alternatives Analysis Comments
a) Belleview Park
i) Matthew explained that the Children's Farm remains in the floodplain and can only be removed with major conveyance improvements. Paul (SEMSWA) stated that these buildings were within the previous floodplain. Shea suggested that Matthew leave the section as is but include a simple channel recommendation that can convey the flows. Brett explained that the planned channel bank play area may provide extra conveyance. Matthew explained that no recommendations were made for the pond at Progress Park because the size doesn't allow for any additional water quality benefit.
b) Water Quality Features
i) Walt asked what level of detail of water quality features at outfalls should be included. Stacy, Angela, and Shea were wondering what were the water quality possibilities and how did Matthew develop them. Matthew explained that the mapped Water Quality Alternatives were developed based upon sufficient available space by the outfall. Stacy asked Matthew to include this description in the report.
c) Cost Opinion
i) Shea asked Matthew to include size of proposed culverts in text. Matthew asked if he should include the cost associated with raising roadways to accommodate larger culverts in the cost opinion. Shea explained the work is associated with improving flood conveyance, it should be included. Paul explained the costs of raising University Blvd and Arapahoe Road would be substantial. Shea concurred and stated that the cost for this intersection should not be included but all others will be case-by-case.
ii) Angela said to remove property acquisition/easements from cost opinion. Shea suggested including a note explaining that property acquisition may be needed and is not included in the cost opinion. ROW/Easement areas should still be illustrated on Alternative Plans.
iii) Shea said that Benefit/Cost Analysisis to be included in Appendix F and to add note clarifying ranking system in Table 5-5.
d) Reach BD8
i) Matthew asked if there were any planned changes near the Cherry Hills Assisted Living Facility. Paul explained that only bank stabilization will be completed. No grade structures are planned at this time. Stacy stated she could send the conceptual plans for this development if needed.
e) Detention
i) Matthew asked if he should analyze detention behind roadway embankment at Jameson Ave. He explained that 2-feet overtopping occurs and that it might not be beneficial at all. Inline detention could provide some water quality. Stacy stated not to include inline detention.
f) Reach F-3 and O-3
i) Angela noted that many grade control features are proposed in both of these reaches and asked if there was any other alternative that should be considered. Matthew will increase the height of drop structures to 3-feet which will reduce the number of structures. Paul explained that Otero seems to be stable upstream of Phillips with only minor vertical degradation. Shea suggested that Matthew add drop structures to places of minor degradation and to not include structures in stable areas. Scott mentioned that there are two buried existing drop structures not included on the maps that are in the provided plans.

4) Other Items
a) Previous Hydrology Report
i) Shea explained that the differing flow rates from the previous report were due to a request to match peak flows at the models downstream boundary condition.
b) Public Meeting
i) Shea explained that a Public Meeting over the alternatives analysis and floodplain will be held in mid-January. Matt is to send floodplain shapefile to Shea.

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5) Action Items:

Action Item	Responsibility
a) Edits to Alternatives Analysis	Ayres
b) Send Shapefile to UDFCD	Ayres
c) Provide information about future Public Meeting	UDFCD

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

PROGRESS MEETING NOTES
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
April 8, 2015
9:30 a.m. at SEMSWA Offices

Attendees:

Shea Thomas – Urban Drainage and Flood Control District (UDFCD)
Stacey Thompson – Southeast Metro Storm Water Authority
Angela Howard – Southeast Metro Storm Water Authority
Scott Palmer – Southeast Metro Storm Water Authority
Justin Williams– Greenwood Village
Paul Weller – City of Englewood
Brett Collins – South Suburban
Mathew Hickox – Ayres Associates (Ayres)
Walt Pennington – Ayres Associates
Kelley Rich – Ayres Associates

The following is a summary of the interactions, comments, and future deliverables discussed. While this summary is not intended to represent a complete or comprehensive account of the meeting, it is intended to reflect the salient points raised or questions to be answered. Should the attendees believe that anything might be misrepresented or misleading, please bring this to the attention of Kelley Rich at Ayres Associates.

Discussion Items:

1) **Project Coordination**
   a) Shea explained that the Selected Plan letter has been sent out. This meeting stands as the Notice to Proceed for The Draft Conceptual Design Report.

2) **Review of Action Item**
   a) None

3) **Review of Final Alternatives Analysis Comments**
   a) Reach BD 6
      i) Walt explained that the Littleton Blvd crossing lies on the border of Greenwood Village, Littleton, and Centennial and that maintenance responsibility should be clarified. Justin explained that he was looking into who maintains the bridge. The note in the report regarding that jurisdiction and cost is to be split between Littleton and Greenwood Village will be clarified. Justin explained that Greenwood Village allows up to one foot of overtopping. Matthew estimated that the overtopping at this bridge to be approximately two feet.

   b) Otero Pond
      i) Walt explained the rating curve used for modeling detention pond P69 was obtained from Douglas County pond rating curve. Upon review, the Douglas County drainage report did not include emergency spillway flows. For master planning purposes, the rating curve was extended to reflect the spillway flows. This modification accounts for the large increase in outlet flows at the end of the rating curve. The flows are included in the hydrologic routing but not in the hydraulic model because County Line Rd is the end of project limits. Angela asked if inadvertent detention behind County Line Rd was accounted for in the hydrologic routing. Shea explained that UDFCD does not account for inadvertent detention. Matthew provided as-built drawings of the detention pond that do not seem to agree with SEMSWA's GIS information. SEMSWA will coordinate with Douglas County to obtain more information.
      ii) Walt stated the Peak Discharge table includes information for detention pond discharges which may cause confusion. Shea explained that pond discharge information can be kept in separate table.
   c) Asphalt Cost Opinion
      i) Kelley explained that the asphalt cost opinion included in the report was obtained from CDOT 2012 data and modified with the same interest rate used within the UD-Cost opinion spreadsheets. SEMSWA provided cost data from recent projects that will be used in the analysis.
   d) Landscaping Reach N2
      i) Scott explained that the cost opinion for replacing landscaping on private property should be greater to reflect the removal of a large quantity of mature trees and replacement of a significant amount of trees and large area of detailed residential landscaping. Matthew explained that the conceptual design will likely involve the abandonment of the existing line in place in order to avoid this disruption to private property. SEMSWA to research water line and sanitary sewer information.
   e) South Suburban comments
      i) Brett explained that South Suburban is planning on filling in a pond on the golf course. Matthew explained that this is a backwater area and should not affect floodplain conditions. Ayres will note this plan in the report and SEMSWA will coordinate permitting.
      ii) South Suburban is planning on replacing pedestrian bridges over the High Line Canal. SEMSWA to coordinate permitting.
   f) Water Quality Improvements
      i) Walt explained that the water quality improvement concepts are generic in the report and most recommendations are for end of pipe solutions. Most benefit would be BMPs within the watershed. Kelley explained the BMPs suggested for Nobles Road. Typical examples for each suggested type can be included in Conceptual Report. Shea will coordinate with Holly Piza for ideas. Shea explained that UDFCD typically does not fund solely water quality projects.
   g) Other
      i) Angela stated that Lake Place is privately owned and should be removed from cost analysis. Shea will reissue the Selected Plan letter with this additional comment.
      ii) Grading will be shown for ponds and conveyance improvements.

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4) Action Items:

Action Item	Responsibility
a) Water Quality ideas from Holly Piza	UDFCD
b) Nobles Rd Water and Sanitary Sewer Information	SEMSWA
c) Littleton Blvd Bridge Ownership	Greenwood Village
d) Information on Otero Detention Pond	SEMSWA, UDFCD, Ayres
e) Verify Littleton Blvd Overtopping	Ayres
f) Update Asphalt Cost Opinion	Ayres
g) Note changes to South Suburban Golf Course pond	Ayres
h) Draft Conceptual Design Report	Ayres

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Responses to client comments on the Draft Baseline Hydrology
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
July 1, 2014

Selected comments from those provided on the Draft Baseline Hydrology Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.

Client Comment	Ayres Response
Page 2-1: (SEMSWA) The City of Centennial Comprehensive Plan and Southglenn Sub-Area Plan identify activity centers planned for revitalization and redevelopment within the Big Dry Creek watershed. University/Arapahoe is identified as a regional activity center. University/Dry Creek is identified as a neighborhood activity center. University/County Line is a community activity center. Strategies for revitalization will vary from retaining existing center format and retrofitting underutilized areas with infill development to complete demolition and redevelopment. Please confirm that the impervious values used for the existing/future land use are conservative to account for future redevelopment of these activity centers.	Ayres has reviewed the imperviousness values for these areas. They are all currently either commercial or neighborhood commercial which have imperviousness values of 85% and 95%. Both of these values seem reasonable for the types of future infill or redevelopment that may take place and were not changed for the final hydrology report.
Figure 2-2 (SEMSWA) Unincorporated Arapahoe County limits appear to be incorrect. See county information for correct limits here.	Corporate limits have been updated with the most current downloadable GIS information from Arapahoe County.
Figure 2-2 (UDFCD) Could you make the Unincorporated Arapahoe County color different? It's too close to the Englewood color.	Colors have been changed for clarity.
Figure 2-3 (SEMSWA) Open Space not included in legend. Do we want to highlight all public owned open space (i.e. South Suburban owned property)?	Land owned by the SSPRD has been added to the map.
Figure 2-5 (SEMSWA) This sheet is also not showing the drop, check, structures accurately. For example, nothing is shown here for Reach 9; there is only one drop in Reach 11 and numerous ones are shown here. This is a typical comment on all reaches for this sheet.	Drop structure locations have been updated to accurately reflect the data provided by the project sponsors and field observations.

Selected comments from those provided on the Draft Baseline Hydrology Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.

Client Comment	Ayres Response
Figure 2-6 (UDFCD) You might want to consider consolidating some of these shorter reaches. In the conceptual design, each reach will have its own section and you might be causing yourself more work. Let's discuss.	Reaches have been consolidated in the areas indicated.
Figure 2-6 (SEMSWA) Provide narrative why Reach stops at N4 in Reach Description.	Reach N4 ends at the culvert outlet downstream of Dry Creek Road. This reach was ended at this location due to the tributary area above that point being approximately 120 acres.
Page 2-7 (SEMSWA) Might not hurt to mention the applicable jurisdiction(s) the reach is in under each Reach Description. From Shea - Agreed, all descriptions should include jurisdiction.	The jurisdiction(s) along each reach have been added to the reach descriptions, and it has also been noted where the reach flows through SSPRD property or private property.
Page 2-7 (SEMSWA) Overall it appears more work or a thorough check is warranted regarding the accurate accounting and type of grade control structures and crossings.	The reach descriptions have been revised to accurately account for the grade control structures and other types of crossings within each reach.
Figure 2-12 (SEMSWA) Might as well add some more drainageway structure call outs here to better explain. (don't need callouts for baseball field or tennis courts)	The figure has been updated for additional clarity.
Page 2-12 (UDFCD) Any flood history for the tributaries?	No flood history on the tributaries was found or provided by the project sponsors.
Page 2-12 (UDFCD) This will be filled in when you do Section 4?	The general capacity of each roadway crossing will be filled in at the alternatives analysis stage.
Page 3-2 (SEMSWA) Residential lot size / density descriptors should be included to explain the variation in imperviousness for single family.	A description has been added to the text to explain how the imperviousness values for single family residential structures were calculated.
Page 3-2 (UDFCD) Let's consolidate this into one Single Family line with a Percent Impervious range from 25-81.	Imperviousness values for single family residential dwellings have been consolidated to a single range from 25%-81%.
Page 3-3 (UDFCD) These (detention ponds) don't show up on any maps. Please add to the Study Area Map in Figure B-1.	The detention ponds are shown as a separate symbol in the SWMM routing view of the Interactive Hydrology Map (Figure B-1).
Page 3-4 (UDFCD) Do we know what versions were used?	CUHPE/PC and UDSWM3 per the 1995 Hydrology report.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Selected comments from those provided on the Draft Baseline Hydrology Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.	
Client Comment	Ayres Response
Page 3-4 (UDFCD) But only incorporating the detention used in the previous model, right?	Correct.
Page 3-5 (UDFCD) Since the hydrology was done for the entire watershed, this table needs to include some design points upstream of County Line Road as well.	A couple of points upstream of the project area are included in this table, and all design points for the entire hydrology model are included in Table B-20.
Page 3-5 (UDFCD) I'm surprised this doesn't jump more at the confluence with the tribs. Is it because those peaks have already passed?	The timing of each of the peaks on the tributaries is approximately 30-45 minutes earlier than the peak on the main stem of Big Dry Creek.
Figure B-1 (UDFCD) Some of the subbasin ID values have duplicate numbers, making it hard to read.	The Interactive Hydrology Map has been updated to correct the readability of subbasin ID values.
Figure B-1 (Douglas County) There is some residential development in Subwatersheds 131, 132, 134, and 136, which is shown as Greenbelt/Open Space.	Imperviousness values for this residential development has been updated and the hydrology models re-run.
Figure B-1 (UDFCD) All of the figures in the report have the north arrow flipped, with the downstream end to the left. Please be consistent.	The Interactive Hydrology Map has been updated to show the downstream direction of Big Dry Creek to the left to be consistent with other figures in the report.
Page B-11 (UDFCD) Be sure to use the exact numbers used in the model, in case someone only looks to these tables in the future.	Rating curves have been updated to reflect the ensure that the values in the tables match those in the model exactly.
Page B-12 (Douglas County) This appears to match the Stage-Discharge relationship from the previous Big Dry Creek MDP. There may have some errors in the original relationship development and I'm not comfortable with the accuracy. I'll try to provide a more detailed comment regarding this issue after reviewing the results and looking at it a bit closer.	Based on the information provided by Douglas County, the rating curves have been slightly adjusted. Pond P123 has two outlet structures separated by high ground in between them. Upon looking into it a little more, the west outlet has approximately 41 acres draining to it under low flow conditions and there is approximately 8.5 square miles draining to the east outlet. It was found that 2-year flows stay separated, 5-year flows start to overflow the middle high ground from east to west, and at the 10-year recurrence intervals and above the outlets operate under the same headwater depths. The rating curves were slightly adjusted to account for the conditions noted above, and a diversion node was added just downstream of pond P123 to separate the flows into the two separate downstream channels.

Selected comments from those provided on the Draft Baseline Hydrology Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.	
Client Comment	Ayres Response
Page B-12 (Douglas County) Could Cumulative Storage in acre-feet be added to these tables? The Area is not typically as useful. From Shea - I usually don't require this, let's discuss.	The area was shown as this is the quantity that SWMM uses for the routing calculations. Per direction from the clients, cumulative storage volumes were added to the rating curves.
Page B-13 (UDFCD) I'm curious why this pond is so large. The 100-yr ponding depth is less than 9 feet. I'm not questioning your model, I'm just curious about the design requirements.	The rating curves are taken straight from the as-built construction plans for the pond. There was no obvious indication why this pond would be so oversized.
Figure B-4 (Douglas County) This will likely need to be adjusted to properly model Pond 123 release. A detailed comment will be included regarding that issue.	The SWMM schematic (and the SWMM model) have been updated to accurately reflect the flow conditions at Pond P123.
Figure B-9 (UDFCD) Model shows D54 connecting 54 and J55, which is correct?	The SWMM schematic is correct and the SWMM model has been updated.
Page B-47 (UDFCD) Let's also include the output from the 100-year, 6-hour design storm. Otherwise it looks as though some of the values in Table B-20 are incorrect.	The 100-year, 6-hour output has also been included in the report.
Page B-47 (UDFCD) This isn't too bad, but if you change Allow Ponding to YES it might make these numbers closer.	This option has been checked in the updated model.
Page B-57 (UDFCD) What is causing this increase? And why does it taper back down in the minor storms? Is this where we hit the 15 sq.mi. point?	This is where the Nobles Road Tributary joins Big Dry Creek. It tapers back down in the minor storms due to the increase in the DRF areas. This seemed like the most logical place to make the change, and there was this difference regardless of the node used.
Page B-57 (UDFCD) These flow profiles need to extend all the way upstream of County Line Road. Also, please add some road labels. Also, a profile is needed for each of the tribs we are studying (Nobles, Fillmore and Otero).	Noted. Flow profiles have been updated, extended and flow profiles for the tributaries have been added.
Page B-60 (UDFCD) Please add a few more hydrographs at key design points upstream of County Line Road.	Additional hydrographs have been added upstream of County Line Road, and on the tributaries as well.

ORIGINAL 2015 MEMO BY AYRES ASSOCIATES

Selected comments from those provided on the Draft Baseline Hydrology Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.	
Client Comment	Ayres Response
Page B-65 (Douglas County) Douglas County would like to see this type of tabulation for the entire watershed, including that portion south of County Line Road. The Highlands Ranch Metro District (HRMD) works cooperatively with the UDFCD on many channel stabilization projects south of County Line Road and it would be helpful to have the various flow rates provided. From Shea - Seems to me they are included? Let's discuss.	This table includes all design points in the hydrologic model and can be used for any planning uses that the County may need in the future.
Page B-65 (Douglas County) A similar tabulation for the detention ponds in the watershed would be very beneficial. Having peak inflow rates, peak release rates, storage volumes, depths, etc. for the 2-year, 5-year, 10-year, 25-year, 50-year and 100-year is valuable. This information is really helpful when considering multi-use options in detention facilities. From Shea: I usually don't require it, but I think I'll add it to the checklist for future studies. Let's add here.	A table has been added to the end of Appendix B that provides the information requested.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Responses to client comments on the Draft Alternatives Analysis
Big Dry Creek Major Drainageway Plan (Downstream of County Line Road)
UDFCD Agreement No. 13-07-03
February 4, 2015

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.
Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 32: (SEMSWA) Was any analysis done of formalizing detention in locations where it currently exists behind undersized crossings?	After discussion at the Alternatives Analysis meeting, it was decided that no on-line detention would be incorporated. Formalizing detention was not included in analysis. The following was added to the report in Section 5.3.4: "Inadvertent detention areas upstream of roadway crossings were not considered viable options for master planning purposes."
Page 32: (SEMSWA) Please include more discussion about the WQ alternatives that were considered. Please include outfall treatment alternatives, SSPRD Golf Course recommendations, etc. Will the conceptual design include WQ outfall improvements? Or typical details for outfall treatment options?	Additional Water Quality discussion was added. Please refer to Section 5.3.5. Typical details for outfall treatment are a conceptual level addition.
Page 33: (UDFCD) Not sure this is a good assumption. If the street has to be raised due to peak flow conveyance, the cost should be included.	The cost of raising the roadway and/or replacing removed roadway associated with structure capacity improvements was added to the cost-analysis. Items included are cost of asphalt, aggregate base course, and curb, gutter and sidewalk.

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.
Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 33: (SEMSWA) In the past SEMSWA has not included costs for property acquisition. What about costs for easement acquisition? (UDFCD) We typically don't show any acquisition costs within SEMSWA.	Cost of ROW/Easements was removed from cost opinion.
Page 33: (SEMSWA) Please also include this information in the WQ section above. The call-outs on the plans describe the WQ improvements at outfalls to be at 'select locations'. What are the factors that were/should be used to determine which locations should be treated?	WQ description added to Section 5.3.5 along with the description of select outfall selection.
Page 35: (UDFCD) Figure 5-1 mentions the Children's Farm in the floodplain. Are there insurable structures associated with that? Please discuss in narrative.	The following was added to report: "The Belleview Park Children's Farm remains in the floodplain. At this time, City of Englewood is not interested in developing conveyance improvements to remove these structures, thus no conveyance improvements are recommended."
Page 35: (UDFCD) What about the dog park? Does it already have water quality?	The following was added to the report: "There is an existing water quality pond located at the off-leash dog park, but does not need improvement. There is little opportunity to provide any water quality improvements elsewhere along the stream corridor in this reach. No improvements are recommended."
Page 36: (UDFCD) Figure 5-2 recommends pond improvements for water quality.	No pond improvements are suggested for water quality. Statement was omitted from Figure 5-2.
Page 39: (UDFCD) What about adjacent to the equestrian park? Is there already water quality there? Also, Figure 5-3 mentions improvements at storm water outfall. Please discuss.	The following was added to the report: "There is opportunity to provide water quality improvements at the storm sewer outfall between the Rollin D. Barnard Equestrian Park and main channel. There is no existing water quality features at the equestrian park."

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

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Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 40: (UDFCD) What is the top width and depth of the channel?	The following was added to the report: "A 90-foot top width, 10-foot deep trapezoidal channel with 2:1 (H:V) side slopes is needed between Orchard Road and Cherrywood Circle. A 78-foot top width, 8-foot deep trapezoidal channel with 3:1 (H:V) side slopes is needed between Cherrywood Circle and Lake Place."
Page 41: (UDFCD) Please discuss this in more detail since you've spent time looking at it already and its concern to both SEMSWA and UDFCD.	Discussion was added to Section 5.6.11.
Page 41: (UDFCD) Discuss the impact the aerial sanitary sewer line has on the floodplain. Is there no recommendation to move it underground to reduce the impact?	Although the aerial sanitary sewer crossing causes backwater, it does not place any structures or roadway crossings in the floodplain. Therefore, no recommendations are made for relocation.
Page 41: (SEMSWA) Online WQ ponds will not be a viable option. Reg. 61 does not allow WQ treatment in Waters of the State.	Although this WQ pond was an alternative option, it was not included in the Recommended Plan.
Page 41: (SEMSWA) Just for clarification- are the High Line Canal water quality ponds the segmented raingardens from the HLC study?	The water quality ponds refer to the HLC study proposed raingardens.
Page 42: (SEMSWA) The City of Centennial will be completing a safety improvement project at E. Arapahoe Road in 2015, including pavement management. The project will consist of sidewalk (removal) and guardrail improvements to the bridge, and will create a new pedestrian connection using the existing trail and construction a new low-water crossing and trail/sidewalk improvements.	This information was added to Section 5.6.13.
Page 42: (SEMSWA) UDFCD Maintenance just completed a project to address this issue. A LOMR was just submitted for SEMSWA review.	This alternative has been removed from analysis
Page 43: (SEMSWA) No outfall locations were shown on the figures for Reach BD11.	Outfalls locations have been added to the map. There are three outfall water quality alternatives.

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.
Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 44: (SEMSWA) This is a great WQ recommendation. We would like to explore and consider conceptual-level alternatives to mitigate the nutrients from the golf course through this study. The golf course maintenance area is located just upstream of Colorado. This area should also be identified as an area for continued mitigation and source control. We would like to request conceptual-level alternatives, to the extent we can through the MDP study.	Conceptual-level alternatives will be included in Phase C Conceptual Design. This has been added to the report.
Page 45: (SEMSWA) The outfall locations are not shown on the plan within this reach.	Outfall locations have been added to the map. There is one located near E. Dry Creek Road.
Page 45: (SEMSWA) These two check structures are installed already. Forest Park Trib B, SEMSWA Case No. C08-2001.	These existing check structures were added to the reach.
Page 46: (SEMSWA) Same comment as the DeKoevend Park WQ pond, but there may be other opportunities in this location.	This proposed detention pond is offline and is located at a storm sewer outfall.
Page 46: (SEMSWA) We have detention already upstream of Jamison from the Jamison road embankment and undersized 24" culvert. Perhaps it makes sense to simply formalize detention vs. giving it up.	After discussion at the Alternatives Analysis meeting, it was decided that no on-line detention would be incorporated. Formalizing detention was not included in analysis.
Page 47: (UDFCD) Size?	Recommended crossing sizes were added to the Recommended Plan section of the report.
Page 48: (SEMSWA) Please include a call-out on the Alternative Plan to highlight the WQ improvements.	A highlight was added to Figure 5-9
Page 49: (UDFCD) Discuss how you looked into detention on the Arapahoe Estates Homeowners Association property, but could not get adequate volume to make it worth pursuing further.	This discussion has been added to the report.
Page 50: (UDFCD) What is the velocity at this location?	Greater than 20ft/sec. More discussion has been added to this section in regards to energy dissipation within this reach.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.
Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 50: (UDFCD) This is awfully vague. I understand a general comment for water quality at the outfall locations, but what did you have in mind for this reach?	The following has been added to the report- "Potential improvements include permeable pavement, sand filter or green gutter curbs, stormwater tree or trench curbs, landscaped curb extensions, landscaped or permeable medians, and street sweeping."
Page 51: (UDFCD) Should this be in the Structure Improvements section? The existing culvert is only undersized if there is no detention, so it doesn't belong in this section.	This section has been moved to the Structure Improvements section.
Page 52: (UDFCD) Include the spreadsheets you used to determine these costs in Appendix F.	These spreadsheets have been added to the report.
Page 54: (SEMSWA) Grade control consists of check and drop structures. Is there a way to distinguish between the checks and drops, or identify on the Recommended Plan?	All proposed grade control structures in the Recommended Plan are drop structures.
Page 56: (SEMSWA) Adjust location of the proposed grade control structures.	Since the proposed grade control structure is a replacement of the existing structure, the two locations overlap.
Page 57: (SEMSWA) Reg. 61 does not allow WQ treatment in Waters of the State.	Although this WQ pond was an alternative option, it was not included in the Recommended Plan.
Page 58: (SEMSWA) Outfall locations are not shown in Reach BD11. Adjust location of the proposed grade control structure.	Outfalls locations added to map.
Page 58: (SEMSWA) Bank stabilization in this location was recently completed by an UDFCD Maintenance Project.	This alternative has been removed from analysis.
Page 58: (SEMSWA) What factors determine which 'select' outfall locations should be treated, or are recommended for WQ treatment? Please include additional discussion in the report.	Potential areas of water quality at outfalls were determined based upon available distance and a flat slope between the outfall and the main channel. This information has been added to Section 5.3.5.
Page 60: (SEMSWA) Golf course maintenance area should also be identified to include continued mitigation and source control.	This has been added to the figure.
Page 60: (SEMSWA) Concepts for WQ improvements?	Concepts for WQ improvements are included in Section 5.3.5.

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here.
Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.

Client Comment	Ayres Response
Page 62: (UDFCD) I don't understand this. Please clarify in text.	A parallel pipe will need to be added under Dry Creek Road to provide conveyance for any emergency detention pond release flows. This has been added to the report.
Page 63: (SEMSWA) Reg. 61 does not allow WQ treatment in Waters of the State. However, there may be other WQ opportunities in this area as discussed in the Alternatives Analysis.	This proposed detention pond is offline and is located at a storm sewer outfall.
Page 63: (SEMSWA) Is this section piped? Or, is this floodplain hidden under the channel/reach line?	This section is completely piped in an culvert extending from E. Otero Circle to E. Nichols Nicols Pl.
Page 63: (SEMSWA) Formalize detention?	After discussion at the Alternatives Analysis meeting, it was decided that no on-line detention would be incorporated. Formalizing detention was not included in analysis.
Page 65: (UDFCD) This is not included anywhere in the report. This could really make a difference in the selection of alternative on Nobles Road Trib and could help justify improvements on BDC in Reach BD7. Please include spreadsheets in appendix and summary of the results here in the text.	A summary of the FEMA Benefit Cost Ratio results is included in Appendix F. The entire output was approximately 250 pages so only the summary sheets were included.
Page 65: (SEMSWA) Is it always true that O&M costs are low if nothing is improved and high if improvements are made?	O&M costs are typically high if no improvements are made due to erosion and reoccurring maintenance. A note clarifying the rating system was added to the table.
Page 67: (SEMSWA) Reach O2 Arapaho Park parking lot outfall improvements?	The O2 Arapaho Park parking lot outfall improvements are included in the select outfalls category.
Page 68: (UDFCD) What about the suggested water quality improvements to the existing pond?	WQ improvements from ponds have been removed from analysis.
Page 69: (UDFCD) What about water quality improvements at storm sewer outfalls?	WQ improvements at the outfalls have been added to the report.
Page 69: (SEMSWA) WQ improvements at outfalls? WQ recommendations?	There is little opportunity for any water quality improvements along this reach. Outfall has been removed from Figure 5-5.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Selected comments from those provided on the Draft Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road report are provided below, along with the responses to those comments. Comments related to minor revisions are not included here. Note: 1) Minor text changes were made but not noted below. 2) Structure Replacement sizes were added to Recommended Plan Section.	
Client Comment	Ayres Response
Page 73: (SEMSWA) Is the online WQ pond included in the Recommended Plan?	The online WQ pond is not in the Recommended Plan and has been removed from figure.
Page 81: (SEMSWA) Include discussion about the recommended WQ improvements.	The following has been added to the report: "Water quality improvements at storm sewer outfalls provide treatment to minor flows before discharging into the main channel, and will ultimately reduce sediment and constituent loading to the South Platte River."
Page 92: (UDFCD) Include responses to baseline hydrology comments that you had in the last report.	These have been added to the report.
Page 183: (UDFCD) I'd really prefer to replace this with a map at a much smaller scale that shows only the effective floodplain and the new floodplain.	These edits have been made to the figures
Page 207: (UDFCD) Please remove the cross sections from the report. They will likely change some in the FHAD and I don't want future readers to be confused by the differences.	These have been removed from the report.
Page 269: (UDFCD) Also provide updated pages of the SWMM schematic to go with this model output.	These have been included in the report.
South Suburban Parks and Recreation What are the plans for mitigation of nutrients from the South Suburban Golf Course into the waterway?	Water quality alternatives include source control and best management practices.
It appears that the 2014 floodplain redirects water through Goodson parking lot. Is this a concern?	The flow through the parking lot is shallow overland flow. The effective floodplain maps already flooding in this zone.
What is the recommended channel stabilization method? Buried rip-rap, boulders or will this be a case-by-case basis?	Drop structures greater than 3-feet were assumed to be grouted sloping boulder drop structures for cost purposes but design would be on a case-by-case basis.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Selected Plan for the Big Dry Creek (Downstream of County Line Road) Major Drainageway Plan

April 1, 2015

The *Selected Plan* for Big Dry Creek agreed upon by the Southeast Metro Stormwater Authority (*SEMSWA*), City of Englewood (*Englewood*), City of Greenwood Village (*Greenwood*) and the Urban Drainage and Flood Control District (*UDFCD*) (hereinafter *SEMSWA, Englewood, Greenwood and UDFCD* shall jointly be referred to as "*Sponsors*") to be shown by Ayres Associates (*Ayres)* in the final *Big Dry Creek (Downstream of County Line Road) Major Drainageway Plan* report (hereinafter called "*Final Report*") is described in general and specific terms below.

SELECTED PLAN AND DIRECTLY RELATED ISSUES

Unless specifically directed otherwise below, this *Selected Plan* to be shown in the *Final Report* essentially follows the recommendations made by *Ayres* in the *FINAL Alternatives Analysis Big Dry Creek in Arapahoe County Downstream of County Line Road* report dated February 2015 (hereinafter called "*Draft*") based on the following principal elements, goals and objectives:

- Minimize stormwater and flood-related damages to drainageways, public infrastructure and private property. Do this with value engineering and practicalities of implementation in mind.
- Institute an approach that balances the development in the watershed with stormwater management implementation that complements drainageway and stream stability solutions, that as a system, provide multiple benefits that include:
  - Water quality protection and enhancement;
  - Water quantity resources protection;
  - Preservation of natural character of the waterways and their terrestrial and aquatic habitat resource;
  - Wherever possible, provide public use and access and/or trails within the corridors of identified waterways in order to provide maintenance access that will also provide for active and passive recreation of the public.
- Consider the needs for new and upgraded roadway crossings when such improvements are practicable, affordable and add significant value in relation to the cost.

Ayres is asked to address all items that are specified to be addressed in the *Final Report* as described in the agreement between *UDFCD* and *Ayres* for this project, which includes developing, describing and showing a conceptual design based on the Recommended Plan in the *Draft*, with the following exceptions:

1. In Reach BD6, the Littleton Boulevard crossing should be coordinated with the City of Greenwood Village as noted, but the City does not maintain that structure. Clarify maintenance responsibility of the Littleton Boulevard bridge.

2. Please be sure to separate out the costs for each individual structure within each reach. This was requested during the alternatives analysis review but not provided in the final document.
3. Verify the peak flow discharges from the pond just upstream of County Line Road on the Otero Tributary. There are conflicting numbers in the model, tables and text. Improvements may not be necessary depending on the discharges used.
4. Use costs for asphalt based on recent SEMSWA CIP projects.
5. Include cost for landscaping replacement where Nobles Tributary storm sewer will affect private front yards.
6. Make edits to the alternatives analysis sections of the report based on comments in attached document.
7. Remove Lake Place bridge replacement in Reach BD7 from the improvements shown in the conceptual design.

Also show and describe all recommended facilities, costs and actions on a reach-by-reach of the drainageway. In general, the *Final Report* shall provide, show, and recommend the following:

1. Under a section in the *Final Report* titled "General Recommendations", recommend:

   a) That the controlling jurisdictions take steps to stabilize all major waterways when their watershed urbanizes, rehabilitate existing degraded reaches of the waterways and their tributaries, and aggressively control erosion and sediment transport during construction activities.

   b) That Sponsors and any other jurisdiction having land use control powers in this watershed require new land development and significant redevelopment and publicly funded projects to provide to the maximum extent practicable runoff volume control practices (i.e., minimize directly connected impervious areas and employ infiltrating BMPs) whenever site conditions permit.

   c) That the controlling jurisdictions take steps to require that all BMPs for all new development, redevelopment, and publicly funded projects provide to the maximum extent practicable a Water Quality Capture Volume (*WQCV*) as recommended in the Urban Storm Drainage Criteria Manual – Volume 3, after accounting for volume reductions achieved using volume control practices as recommended under Item 1.b above.

   d) That all jurisdiction having land use control powers in this watershed continue to implement their floodplain management regulations, including regulation of the 100-year floodway and floodplain.

      Recommend that these jurisdictions adopt a policy, if not already done so, of preserving the defined floodplains as open spaces to the maximum extent possible and that at least 1-foot freeboard be provided for the lowest floor above the 100-year flood elevation shown on the latest flood hazard area delineation or FIRM maps for all human occupied structures built adjacent to, or within, the defined 100-year floodplains.

   e) That all jurisdiction having land use control powers in this watershed continue to participate in FEMA's flood insurance Community Rating System and public education programs.

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

2. List on the plan view and profile sheet of the conceptual design, where appropriate, the recommended wetland mitigations that will be needed to implement recommended improvements, if any.
3. Show on appropriate plan and profile sheets facilities to arrest the vertical degradation of the low-flow channel of natural and man-made waterways and to help rehabilitate, as much as possible their stable function and habitat.
4. Recommend rehabilitating eroded and degraded banks where needed and desired to arrest the horizontal erosion along natural waterways using bio-engineered methods that combine buried soil riprap and revegetation with native species of riparian and dryland vegetation.
5. Show on plan view and profile sheet the needed buttressing of critical utilities and other structures that may be endangered by stream erosion.
6. Using the input from stakeholders and the public, work with *Sponsors* and affected other local jurisdictions to prioritize the recommended facilities and actions that are listed in the *Final Report* and clearly articulate them in that document.
7. Describe the recommended type and schedule of maintenance activities for all improved facilities recommended in the *Final Report*.
8. Consider the various functions of all natural waterways in the study watersheds and their floodplain, including flood conveyance, riparian habitat, open space, aesthetics, recreation, urban development, water quality, utility crossing, transportation and other features.
9. Acknowledge in the *Final Report*, that land-use changes to the contributing watersheds affect the flood hazard nature (i.e., runoff rates, volumes and depths), the transport of sediment, and the water quality of the receiving natural waterways. The *Final Report*, under "General Recommendations" shall suggest that Sponsors and any other jurisdiction having land use control powers in these watersheds monitor land-use changes and whenever the land-use changes result in imperviousness ratios that exceed the projections identified in the *Final Report*, these jurisdiction take steps to further limit increases in stormwater runoff through the use of additional on-site detention, infiltrating BMPs and *WQCV* BMPs, thereby reducing the runoff rates, volumes and future damage potentials to the *Final Report* levels.

EXECUTIVE SUMMARY

Include an Executive Summary in the *Final Report* written in plain, non-technical language, which is directed primarily at the general public and elected officials. This summary should, at the minimum, contain the following as well as other items listed in *UDFCD's* checklist for preparation of the final major drainageway plan conceptual design report:

1. A brief summary of the planning process including numbers of progress and public meetings.
2. A brief description of the decisions made by project sponsors during this project.
3. A brief summary of all design criteria specifically developed for this plan.
4. A brief summary of the following sections of the *Final Report*: Purpose and Scope, Study Area Description, Alternative Evaluation, Recommended Plan, and Conceptual Design.
5. A map showing the area and all recommended improvements.

6. Tabular and narrative summaries of costs showing costs for capital improvements, engineering/administrative/contingencies, and land values, all sorted by drainageway, reach, tributary, and by jurisdiction. The reach length (miles), tributary catchment area (square miles), and their totals should also be included in the table.

Incorporate the following notes on each drawing:

> *"This drawing is for master planning purposes and represents preliminary and conceptual engineering. Alternatives to this outfall system will be considered by local agencies and the Urban Drainage and Flood Control District provided the alternative offers an equivalent intent of the plan, including hydraulic capacity, water quality, stream stability and natural waterway features. The alternative must comply with all requirements of the local jurisdiction and the Urban Drainage and Flood Control District. In addition, there may be State and Federal requirements that will need to be considered and met. This drawing does not provide a final design and shall not be used for construction purposes."*

> *"Local Cities, Towns, and Counties manage and regulate all land use change, development and redevelopment activities within and adjacent to the 100-year floodplains in order to prevent, to a maximum extent possible, future flood damages to buildings and structures from the 100-year flood and to minimize damages from larger floods. The recommendations of this plan provide a set of options subscribed to by Cities, Towns and Counties in carrying out their floodplain management and regulatory responsibilities and obligations."*

> *"Many activities that occur in or affect ditches, drainages, creeks, ponds or wetlands require a Section 404 Permit Authorization from the US Army Corps of Engineers. During preliminary design, and prior to final design or starting work, contact the Corps' Denver Regulatory Office at 303-979-4120 for appropriate permit authority to avoid compromising and delaying the completion of the project."*

ADDITIONAL DIRECTION

1. Unit costs should be updated to reflect the most current costs available using the UD-MP Cost worksheet.
2. Include an Acknowledgements section listing all participants and stakeholders in this study. Include in the list their name, organization and function in the planning process.
3. Show all maintenance access routes along all reaches. To the extent feasible, the alignment of these routes shall be coordinated with existing and planned recreational trails identified using input provided by Sponsors, special districts and other local stakeholders.
4. Summarize cost estimates of improvements by jurisdiction where those improvements are located, by the reach in which the improvements are located and overall project totals.
5. Report estimated costs for maintenance of all facilities, including detention ponds, storm sewer outfall points, grade control structures, etc. reported in the *Final Report.*

ORIGINAL 2015 MDP BY ANDERSON ASSOCIATES

720 S. Colorado Boulevard, Suite 410 S
Denver, Colorado 80246
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Big Dry Creek FHAD
Kickoff Meeting Minutes

Date: December 10, 2015
Location: SEMSWA
Distributions: Agenda

Attendees:

NAME	ORGANIZATION	E-MAIL
Shea Thomas	UDFCD	sthomas@udfcd.org
Terri Fead	UDFCD	tfead@udfcd.org
Paul Danley	SEMSWA	pdanley@semwa.org
Scott Palmer	SEMSWA	spalmer@semswa.org
Angela Howard	SEMSWA	ahoward@semswa.org
Cynthia Love	SEMSWA	clove@semswa.org
Walt Pennington	RESPEC	walt.pennington@respec.com
Alan Leak	RESPEC	alan.leak@respec.com
David Delagarza	RESPEC	david.delagarza@respec.com
Krystina Pacheco	RESPEC	krystina.pacheco@respec.com

I. Purpose

The purpose of this meeting was to introduce all project stakeholders, discuss project goals as well as critical areas within the Big Dry Creek floodplain and its tributaries.

II. Study Overview and Goals

The meeting was opened with introductions. Walt Pennington gave a brief overview of the Master Drainageway Plan (MDP) done by Ayres Associates in 2015 and Alan Leak discussed some of the history and background knowledge obtained from his previous 1996 Big Dry Creek FHAD. The project limits are from the downstream face of County Line Rd and continue to the confluence with the South Platte River.

A discussion was held about the Nobles Tributary being entered in as a regulatory FEMA floodplain. Since Nobles Tributary is mostly consisted of a storm sewer network, it was decided to keep Nobles Tributary as a separate model and map to keep it as a non-regulatory FEMA floodplain but to submit it to the Colorado Water Conservation Board (CWCB) to be adopted as the effective floodplain. Further discussion by SEMSWA is needed to determine what Nobles will be regulated too. The Filmore and Otero Tributaries will be a FEMA regulatory floodplain and will include the 500-year floodplain and the floodway.

III. Project Coordination and Schedule

The following people will be the main point of contact from each company

- UDFCD – Shea T.
- SEMSWA – Paul D. and Angela H.
- RESPEC – Walt Pennington and David Delagarza

Other sponsors include Greenwood Village and Englewood. Shea Thomas will be contacting both.

The draft submittal which will include profiles, maps and models will be submitted to Urban Drainage and Flood Control District and Southeast Metro Stormwater Authority by mid-February. No further meetings will be necessary prior to the draft submittal. Once the review has been completed by Terry F. and Scott P., RESPEC will submit a FHAD report using the Ayres 2015 MDP.

IV. FHAD Development

Mr. Delagarza stated that RESPEC will use the 2015 MDP as the basis for modeling the study area will calculate the 500-year floodplain based on extrapolating from smaller events. Ms. Thomas had all structures surveyed for the 2015 MDP by Ayres and can be provided if needed. Because the watershed has been fully developed, it was decided that Ayres would use flows based on existing fully developed model. Shea T. would like RESPEC to add text to the FHAD report to support these flows being used.

There are a number of critical areas that were discussed within the study area. Paul D. discussed the work that has been done on Orchard Road at the Franklin Bridge. The new road shoulder has changed the side ditch which may have an effect on the study area. There are also a number of houses that are in the floodplain at this area.

Another critical area is at Goodsen Park and the Highline Canal. A large sanitary sewer pipe daylights in this area. Paul D. was informed that the sewer pipe was not going to be relocated however, the developers of Cherry Hills Assisted Living has contracted ICON Engineering to submit a CLOMR with the design to protect the sewer pipe using armored embankment. The CLOMR has been approved and when the LOMR is approved the effective floodplain will change. RESPEC will obtain the CLOMR and incorporate into the model.

The Easter Avenue Bridge project consist of moving the current pedestrian trail underpass to an at grade crossing to make the underpass an effective flow area in hopes to remove a house within the current floodplain and to limit the amount of maintenance that is currently needed for the trail. RESPEC will obtain survey from the new structure from Scott P.

A discussion on the modeling of the confluence of the South Platte and Big Dry Creek was brought up by Mr. Delagarza. Terry F. decided RESPEC should use the normal depth method and assume all flows based on the 100-year Big Dry Creek Floodplain since there is not current FHAD for the South Platte.

Cynthia L. reported a project on Big Dry Creek at Cherry Knolls Park where a boulder stacked wall and series of drops had been built. A draft LOMR was submitted to SEMSWA, however, no further action has been taken. RESPEC will verify these structures were surveyed from the previous 2015 MDP and will provide the model.

Other critical areas include:

- University and Arapahoe Road crossings
- 500-year detention modeling rating curves

V. Action Items

- Shea T. will notify Greenwood Village and Englewood of kickoff meeting and progress of FHAD.
- REPEC will obtain Cherry Hills Assisted Living CLOMR from UDFCD
- SEMSWA will discuss Nobles Tributary internally to decide what to regulate too.
- Scott P. will give RESPEC the survey of Easter Avenue Bridge from Aztec
- SEMSWA will provide RESPEC with the Cherry Knolls project model

These minutes are true and accurate to the best of my knowledge based on notes and recollection. Should any attending party have additions or corrections to these minutes, please forward them to David Delagarza of RESPEC Consulting within one week of the date of receipt. The absence of a response will be considered concurrence to the previous information and these minutes will be considered matter of fact.

RESPEC
720 South Colorado Blvd., Suite 410 S | Denver, CO 80246 303.757.3655 303.300.1635 (fax) respec.com

EXTERNAL MEMORANDUM

To: Terri Fead
UDFCD
2480 W. 26th Ave., Denver CO 80211

From: David Delagarza
Project Manager
RESPEC
720 South Colorado Blvd., Suite 410 S
Denver, CO 80246

cc: Shea Thomas
David Mallory

Date: February 16, 2018

Subject: Modeling notes for Big Dry Creek Draft FHAD.

This memo is intended to summarize the modeling process and key decisions for the Big Dry Creek FHAD, as well as discuss specific issues encountered in the modeling process.

The HEC RAS model was developed based on the original model established by Ayres Associates for the master plan. We decided to use this model to maintain consistency with the master plan to the greatest extent possible. During the course of model development, numerous cross sections were modified and realigned and other changes were made to the model including the removal of levees, the addition of IEFAs, and the addition of some split flow paths. Big Cry Creek's Mainstem, and the Filmore and Otero tributaries are all combined into a single model. Nobels tributary is modeled separately as it is not part of a FEMA regulatory floodplain and is likely to be excluded from future PMR submittals.

In the SWMM hydrologic model, several of the ponds were exceeding their stage-storage and stage-discharge curves in the 500 year event. Based on available contours and survey information, we extended these curves where necessary to contain the 500-year event. The ponds modified were numbered 70, 102, 123, 141, and 165. In addition to exceeding the curves in the 500-year event, pond 141 was exceeding its discharge curve in the 100-year event. After making the modifications to this pond, we checked the resulting flows against the master plan flows and found that the change in flow was less than 1%. As a result, we did not make any modifications to the 100-year flow rates from the master plan.

The Ayres model had many flow changes included – significantly more than is typical. To maintain consistency with the published master plan, we kept the flow changes in the model as they were originally entered.

The Nobles model from Ayres included a reduction of 197cfs at XS 6509 to account for the underground conduit. We replicated this for the 500-year flows.

Based on input from the district, we did not tie into an effective elevation at the confluence with the South Platte River. Instead, a short portion of the South Platte is modeled downstream of the project area. As directed by the district, the flow in the South Platte is modeled to match that of Big Dry Creek. The downstream boundary condition for the South Platte has been set to critical depth at the crest of a drop structure in the Union chutes area.

We received a survey of the Easter Ave Bridge from Aztec, dated Dec 14, 2015. This survey was used to modify the geometry of cross sections 30981 and 31108 and the internal bridge sections of bridge 31036. The ground and culverts were then edited based on the survey. The skewed dimensions of the culvert (19.9x10.1) are modeled because the cross sections run parallel to the bridge not perpendicular to the stream. A skew angle of 40 was set for the Deck/Roadway and Abutments skew angle.

We went through numerous modeling iterations at the Highline Canal (HLC) area. Our first try used separate alignments for BDC and the upstream and downstream reaches of the HLC with lateral structures to represent the overtopping of HLC's berm, however RAS was unable to find a solution to this model. Typically, we would try to represent the upstream berm of the canal as a single section in RAS, however there is a pedestrian bridge between the location where BDC and HLC combine and the headgate structure which controls flows downstream in BDC. As a result, flow overtopping the HLC berm is modeled in two sections. XS 27432 accounts for flow backing up the canal and overtopping the berm and is also the upstream section for the pedestrian bridge. XS 27337 is intended to represent flow overtopping the canal downstream of the pedestrian bridge and is the upstream section for the BDC headgate structure. We did not reduce flows in cross sections as a result of water overtopping the berm – we kept all flow in the channel to conservatively account for modifications to the berm that could change flow patterns. The resulting 100-year water surface elevations are within half a foot of each other at all cross sections upstream of the HLC berm. Based on the overtopping locations in the upstream cross sections, shallow flood zones have been delineated to indicate the return flow to BDC. It is likely that in a flood event, additional flow would split to HLC and cause flooding at locations outside the scope of this study.

To map the floodway, we first ran a 'baseline' floodway model, by placing encroachments at the 100-year water surface extents, without additional encroachment. This baseline model revealed several locations with apparent negative floodway surcharges. As these locations are based on a no-encroachment scenario, these negative surcharges appear to be result of HEC-RAS's iterative nature, and are not a result of encroachment into the floodway. These locations are noted where they occur.

Based on discussions with the district, we did not model any floodway encroachments on the Nobels Tributary. As previously discussed, this reach is not included in an effective FEMA flood hazard zone, and will not be included in future PMR submittals.

Please note that we have not yet reviewed the BFE elevations to ensure the profile can be recreated within half a foot. We will review this prior to final submittal.

APPENDIX B
HYDROLOGIC ANALYSIS

Interactive Figures (Select From Below):

Study Area Map
Soils Map
Future Land Use Map
Subwatershed Boundaries Map
Baseline Hydrology SWMM Routing Map

Layer Control Instructions

The Map Controls above set the visibility of the layers automatically for the selected map. Additional layer control is available through the "Layers" Navigation Panel which can be accessed from the View Menu under Navigation Panels. In the Panel, the visibility of layers and layer groups can be changed by clicking the square left of the layer/group. An eye in the square indicates that the layer is on. An empty square indicates that the layer is off. Layer groups can be expanded and reduced by clicking the +/- symbol left of the layer/group.

0 0.25 0.5 1 1.5 2 Miles

LONE TREE
CASTLE PINES
UNINCORPORATED DOUGLAS COUNTY
GREENWOOD VILLAGE
CENTENNIAL
UNINCORPORATED ARAPAHOE COUNTY
LITTLETON
ENGLEWOOD

Legend

Jurisdictions
- CASTLE PINES
- CENTENNIAL
- ENGLEWOOD
- GREENWOOD VILLAGE
- LITTLETON
- LONE TREE
- UNINCORPORATED ARAPAHOE COUNTY
- UNINCORPORATED DOUGLAS COUNTY

- Streams
- Canals
- Storm Sewer
- Watershed Boundary
- Subwatershed Boundaries

NRCS Hydrologic Soil Groups
- A
- B
- C
- D
- Water

SWMM Nodes
- Basin ID, Area, % Impervious
- Design Point
- Outfall
- Detention Pond
- Pipe Conveyance Elements
- Pond Outlets
- Dummy Conveyance Elements
- Channel Conveyance Elements

Future Land Use, % Impervious
- Business, Commercial - 95%
- Business, Neighborhood - 85%
- C-470 - Assumed 50%
- Estate Lot Residential, >5 Acres - 10%
- Greenbelt / Open Space - 2%
- Industrial, Light - 80%
- Multi Unit Attached - 75%
- Multi Unit Detached - 60%
- Oct 2012 Happy Canyon Baseline Hydrology - 10%
- Oct 2012 Happy Canyon Baseline Hydrology - 15%
- Parks - 5%
- Railroad Yard - 15%
- Road - 100%
- School / Church - 50%
- Single Family Residential, 25% - 81%

UNOFFICIAL

Prepared By:
AYRES ASSOCIATES
12050 N. Pecos St.
Suite 150
Westminster, CO 80234

Project Sponsors:
Southeast Metro Stormwater Authority

Big Dry Creek In Arapahoe County Downstream of County Line Road

Hydrology Map

Figure **B-1**

Figure B-2 - DRF Tables from Chapter 4 (2012 DRAFT) of the USDCM.

Table 4-3. DRFs for Design Rainfall Distributions 2-, 5-, and 10-Year Design Rainfall

Time (minutes)	Correction Factor by Watershed Area in Square Miles[1]								
	2	5	10	15	20	30	40	50	75
5	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
15	1.00	0.97	0.94	0.91	0.90	0.85	0.75	0.65	0.56
20	1.00	0.86	0.75	0.68	0.61	0.55	0.48	0.42	0.35
25	1.00	0.86	0.75	0.68	0.61	0.55	0.48	0.42	0.35
30	1.00	0.86	0.75	0.68	0.61	0.55	0.48	0.42	0.42
35	1.00	0.97	0.94	0.91	0.90	0.90	0.90	0.90	0.89
40	1.00	0.97	0.94	0.91	0.90	0.90	0.90	0.90	0.89
45	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
50	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
55	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
60	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
65	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
70	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
75	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
80	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
85	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
90	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
95	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
100	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
105	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
110	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
115	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
120	1.00	1.00	1.00	1.02	1.02	1.01	1.01	1.01	1.00
125-180	N/A	N/A	N/A	1.00	1.00	1.00	1.00	1.00	1.00
185-360	N/A	N/A	N/A	1.23	1.28	1.30	1.32	1.33	1.33

[1]For areas between the values listed in the table, correction factors can be obtained through linear interpolation between columns.

Table 4-4. DRFs for Design Rainfall Distributions 25-, 50-, 100-, and 500-Year Design Rainfall

Time (minutes)	Correction Factor by Watershed Area in Square Miles[1]					
	15	20	30	40	50	75
5	1.15	1.15	1.15	1.15	1.15	1.10
10	1.15	1.15	1.15	1.15	1.15	1.10
15	1.15	1.15	1.15	1.15	1.15	1.10
20	1.25	1.18	1.10	1.05	1.00	0.90
25	0.73	0.69	0.64	0.60	0.58	0.55
30	0.73	0.69	0.64	0.60	0.58	0.55
35	0.73	0.69	0.64	0.60	0.58	0.55
40	1.05	1.02	0.95	0.90	0.85	0.80
45	1.20	1.20	1.20	1.15	1.05	0.95
50	1.15	1.15	1.15	1.15	1.05	0.95
55	1.15	1.15	1.15	1.15	1.15	1.15
60	1.15	1.15	1.15	1.15	1.15	1.15
65	1.08	1.10	1.13	1.15	1.15	1.15
70	1.08	1.10	1.13	1.15	1.15	1.15
75	1.08	1.10	1.13	1.15	1.15	1.15
80	1.08	1.10	1.13	1.15	1.15	1.15
85	1.08	1.10	1.13	1.15	1.15	1.15
90	1.08	1.10	1.13	1.15	1.15	1.15
95	1.08	1.10	1.13	1.15	1.15	1.15
100	1.08	1.10	1.13	1.15	1.15	1.15
105	1.08	1.10	1.13	1.15	1.15	1.15
110	1.08	1.10	1.13	1.15	1.15	1.15
115	1.08	1.10	1.13	1.15	1.15	1.15
120	1.08	1.10	1.13	1.15	1.15	1.15
125-180	1.08	1.10	1.13	1.15	1.25	1.25
185-360	1.05	1.10	1.10	1.10	1.10	1.13

[1]For areas between the values listed in the table, correction factors can be obtained through linear interpolation between columns.

ORIGINAL 2015 MDB BY AMEC ASSOCIATES

Table B-1 - Design Rainfall Distributions, 2-Year Storm Event

Time	DRF Area					
Hr:Min	2 Mi²*	3.53 Mi²	4.92 Mi²	12.15 Mi²	15.62 Mi²	19.35 Mi²
0:00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0:05	0.0196	0.0196	0.0196	0.0196	0.0196	0.0196
0:10	0.0392	0.0392	0.0392	0.0392	0.0392	0.0392
0:15	0.0823	0.0811	0.0799	0.0763	0.0738	0.0732
0:20	0.1568	0.1456	0.1354	0.1129	0.1039	0.0958
0:25	0.2450	0.2275	0.2116	0.1764	0.1623	0.1497
0:30	0.1372	0.1274	0.1185	0.0988	0.0909	0.0838
0:35	0.0617	0.0608	0.0599	0.0572	0.0554	0.0549
0:40	0.0490	0.0483	0.0476	0.0454	0.0445	0.0442
0:45	0.0294	0.0294	0.0294	0.0297	0.0300	0.0300
0:50	0.0294	0.0294	0.0294	0.0297	0.0300	0.0300
0:55	0.0294	0.0294	0.0294	0.0297	0.0300	0.0300
1:00	0.0294	0.0294	0.0294	0.0297	0.0300	0.0300
1:05	0.0294	0.0294	0.0294	0.0297	0.0300	0.0300
1:10	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:15	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:20	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:25	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:30	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:35	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:40	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:45	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:50	0.0196	0.0196	0.0196	0.0198	0.0200	0.0200
1:55	0.0098	0.0098	0.0098	0.0099	0.0156	0.0156
2:00	0.0098	0.0098	0.0098	0.0099	0.0135	0.0135
2:05	-	-	-	-	0.0110	0.0110
2:10	-	-	-	-	0.0110	0.0110
2:15	-	-	-	-	0.0110	0.0110
2:20	-	-	-	-	0.0110	0.0110
2:25	-	-	-	-	0.0110	0.0110
2:30	-	-	-	-	0.0110	0.0110
2:35	-	-	-	-	0.0110	0.0110
2:40	-	-	-	-	0.0110	0.0110
2:45	-	-	-	-	0.0110	0.0110
2:50	-	-	-	-	0.0110	0.0110
2:55	-	-	-	-	0.0110	0.0110
3:00	-	-	-	-	0.0110	0.0110
3:05	-	-	-	-	0.0080	0.0083
3:10	-	-	-	-	0.0080	0.0083
3:15	-	-	-	-	0.0080	0.0083
3:20	-	-	-	-	0.0080	0.0083
3:25	-	-	-	-	0.0080	0.0083
3:30	-	-	-	-	0.0080	0.0083
3:35	-	-	-	-	0.0080	0.0083
3:40	-	-	-	-	0.0080	0.0083
3:45	-	-	-	-	0.0080	0.0083
3:50	-	-	-	-	0.0080	0.0083
3:55	-	-	-	-	0.0080	0.0083
4:00	-	-	-	-	0.0080	0.0083
4:05	-	-	-	-	0.0080	0.0083
4:10	-	-	-	-	0.0080	0.0083
4:15	-	-	-	-	0.0080	0.0083
4:20	-	-	-	-	0.0080	0.0083
4:25	-	-	-	-	0.0080	0.0083
4:30	-	-	-	-	0.0080	0.0083
4:35	-	-	-	-	0.0080	0.0083
4:40	-	-	-	-	0.0080	0.0083
4:45	-	-	-	-	0.0080	0.0083
4:50	-	-	-	-	0.0080	0.0083
4:55	-	-	-	-	0.0080	0.0083
5:00	-	-	-	-	0.0080	0.0083
5:05	-	-	-	-	0.0080	0.0083
5:10	-	-	-	-	0.0080	0.0083
5:15	-	-	-	-	0.0080	0.0083
5:20	-	-	-	-	0.0080	0.0083
5:25	-	-	-	-	0.0080	0.0083
5:30	-	-	-	-	0.0080	0.0083
5:35	-	-	-	-	0.0080	0.0083
5:40	-	-	-	-	0.0080	0.0083
5:45	-	-	-	-	0.0080	0.0083
5:50	-	-	-	-	0.0080	0.0083
5:55	-	-	-	-	0.0080	0.0083
6:00	-	-	-	-	0.0080	0.0083
Depth (inch)	**1.13**	**1.09**	**1.05**	**0.97**	**1.37**	**1.35**
Max 1-Hour Intensity (in/hr)	**0.94**	**0.90**	**0.86**	**0.77**	**0.74**	**0.71**

Depth = Total rainfall depth in inches after areal reduction.
*This is the unadjusted 2-hour rainfall distribution.

UDFCD 2015
MDB BY AYRES
ASSOCIATES

Table B-2 - Design Rainfall Distributions, 5-Year Storm Event

Time	DRF Area					
Hr:Min	2 Mi²*	3.53 Mi²	4.92 Mi²	12.15 Mi²	15.62 Mi²	19.35 Mi²
0:00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0:05	0.0282	0.0282	0.0282	0.0282	0.0282	0.0282
0:10	0.0522	0.0522	0.0522	0.0522	0.0522	0.0522
0:15	0.1227	0.1208	0.1191	0.1137	0.1115	0.1106
0:20	0.2157	0.2003	0.1863	0.1553	0.1448	0.1336
0:25	0.3525	0.3273	0.3045	0.2538	0.2366	0.2182
0:30	0.1833	0.1702	0.1583	0.1320	0.1231	0.1135
0:35	0.0818	0.0805	0.0794	0.0758	0.0743	0.0737
0:40	0.0620	0.0611	0.0602	0.0575	0.0564	0.0559
0:45	0.0508	0.0508	0.0508	0.0512	0.0518	0.0518
0:50	0.0508	0.0508	0.0508	0.0512	0.0518	0.0518
0:55	0.0423	0.0423	0.0423	0.0427	0.0431	0.0431
1:00	0.0423	0.0423	0.0423	0.0427	0.0431	0.0431
1:05	0.0423	0.0423	0.0423	0.0427	0.0431	0.0431
1:10	0.0423	0.0423	0.0423	0.0427	0.0431	0.0431
1:15	0.0352	0.0352	0.0352	0.0356	0.0360	0.0360
1:20	0.0310	0.0310	0.0310	0.0313	0.0316	0.0316
1:25	0.0310	0.0310	0.0310	0.0313	0.0316	0.0316
1:30	0.0310	0.0310	0.0310	0.0313	0.0316	0.0316
1:35	0.0310	0.0310	0.0310	0.0313	0.0316	0.0316
1:40	0.0211	0.0211	0.0211	0.0213	0.0216	0.0216
1:45	0.0211	0.0211	0.0211	0.0213	0.0216	0.0216
1:50	0.0211	0.0211	0.0211	0.0213	0.0216	0.0216
1:55	0.0211	0.0211	0.0211	0.0213	0.0216	0.0216
2:00	0.0183	0.0183	0.0183	0.0185	0.0187	0.0187
2:05	-	-	-	-	0.0108	0.0108
2:10	-	-	-	-	0.0108	0.0108
2:15	-	-	-	-	0.0108	0.0108
2:20	-	-	-	-	0.0108	0.0108
2:25	-	-	-	-	0.0108	0.0108
2:30	-	-	-	-	0.0108	0.0108
2:35	-	-	-	-	0.0108	0.0108
2:40	-	-	-	-	0.0108	0.0108
2:45	-	-	-	-	0.0108	0.0108
2:50	-	-	-	-	0.0108	0.0108
2:55	-	-	-	-	0.0108	0.0108
3:00	-	-	-	-	0.0108	0.0108
3:05	-	-	-	-	0.0054	0.0056
3:10	-	-	-	-	0.0054	0.0056
3:15	-	-	-	-	0.0054	0.0056
3:20	-	-	-	-	0.0054	0.0056
3:25	-	-	-	-	0.0054	0.0056
3:30	-	-	-	-	0.0054	0.0056
3:35	-	-	-	-	0.0054	0.0056
3:40	-	-	-	-	0.0054	0.0056
3:45	-	-	-	-	0.0054	0.0056
3:50	-	-	-	-	0.0054	0.0056
3:55	-	-	-	-	0.0054	0.0056
4:00	-	-	-	-	0.0054	0.0056
4:05	-	-	-	-	0.0054	0.0056
4:10	-	-	-	-	0.0054	0.0056
4:15	-	-	-	-	0.0054	0.0056
4:20	-	-	-	-	0.0054	0.0056
4:25	-	-	-	-	0.0054	0.0056
4:30	-	-	-	-	0.0054	0.0056
4:35	-	-	-	-	0.0054	0.0056
4:40	-	-	-	-	0.0054	0.0056
4:45	-	-	-	-	0.0054	0.0056
4:50	-	-	-	-	0.0054	0.0056
4:55	-	-	-	-	0.0054	0.0056
5:00	-	-	-	-	0.0054	0.0056
5:05	-	-	-	-	0.0054	0.0056
5:10	-	-	-	-	0.0054	0.0056
5:15	-	-	-	-	0.0054	0.0056
5:20	-	-	-	-	0.0054	0.0056
5:25	-	-	-	-	0.0054	0.0056
5:30	-	-	-	-	0.0054	0.0056
5:35	-	-	-	-	0.0054	0.0056
5:40	-	-	-	-	0.0054	0.0056
5:45	-	-	-	-	0.0054	0.0056
5:50	-	-	-	-	0.0054	0.0056
5:55	-	-	-	-	0.0054	0.0056
6:00	-	-	-	-	0.0054	0.0056
Depth (inch)	**1.63**	**1.57**	**1.52**	**1.41**	**1.70**	**1.66**
Max 1-Hour Intensity (in/hr)	**1.34**	**1.28**	**1.23**	**1.11**	**1.07**	**1.03**

Depth = Total rainfall depth in inches after areal reduction.
*This is the unadjusted 2-hour rainfall distribution.

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Table B-3 - Design Rainfall Distributions, 10-Year Storm Event

Time	DRF Area					
Hr:Min	2 Mi²*	3.53 Mi²	4.92 Mi²	12.15 Mi²	15.62 Mi²	19.35 Mi²
0:00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0:05	0.0316	0.0316	0.0316	0.0316	0.0316	0.0316
0:10	0.0585	0.0585	0.0585	0.0585	0.0585	0.0585
0:15	0.1296	0.1276	0.1258	0.1201	0.1177	0.1168
0:20	0.2370	0.2201	0.2047	0.1706	0.1591	0.1467
0:25	0.3950	0.3668	0.3412	0.2844	0.2652	0.2445
0:30	0.1896	0.1761	0.1638	0.1365	0.1273	0.1174
0:35	0.0885	0.0871	0.0859	0.0820	0.0804	0.0797
0:40	0.0679	0.0669	0.0660	0.0630	0.0617	0.0612
0:45	0.0600	0.0600	0.0600	0.0606	0.0612	0.0612
0:50	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
0:55	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
1:00	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
1:05	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
1:10	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
1:15	0.0506	0.0506	0.0506	0.0510	0.0516	0.0516
1:20	0.0395	0.0395	0.0395	0.0398	0.0403	0.0403
1:25	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:30	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:35	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:40	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:45	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:50	0.0300	0.0300	0.0300	0.0303	0.0306	0.0306
1:55	0.0269	0.0269	0.0269	0.0271	0.0274	0.0274
2:00	0.0205	0.0205	0.0205	0.0207	0.0210	0.0210
2:05	-	-	-	-	0.0155	0.0155
2:10	-	-	-	-	0.0155	0.0155
2:15	-	-	-	-	0.0155	0.0155
2:20	-	-	-	-	0.0155	0.0155
2:25	-	-	-	-	0.0155	0.0155
2:30	-	-	-	-	0.0155	0.0155
2:35	-	-	-	-	0.0155	0.0155
2:40	-	-	-	-	0.0155	0.0155
2:45	-	-	-	-	0.0155	0.0155
2:50	-	-	-	-	0.0155	0.0155
2:55	-	-	-	-	0.0155	0.0155
3:00	-	-	-	-	0.0155	0.0155
3:05	-	-	-	-	0.0102	0.0105
3:10	-	-	-	-	0.0102	0.0105
3:15	-	-	-	-	0.0102	0.0105
3:20	-	-	-	-	0.0102	0.0105
3:25	-	-	-	-	0.0102	0.0105
3:30	-	-	-	-	0.0102	0.0105
3:35	-	-	-	-	0.0102	0.0105
3:40	-	-	-	-	0.0102	0.0105
3:45	-	-	-	-	0.0102	0.0105
3:50	-	-	-	-	0.0102	0.0105
3:55	-	-	-	-	0.0102	0.0105
4:00	-	-	-	-	0.0102	0.0105
4:05	-	-	-	-	0.0102	0.0105
4:10	-	-	-	-	0.0102	0.0105
4:15	-	-	-	-	0.0102	0.0105
4:20	-	-	-	-	0.0102	0.0105
4:25	-	-	-	-	0.0102	0.0105
4:30	-	-	-	-	0.0102	0.0105
4:35	-	-	-	-	0.0102	0.0105
4:40	-	-	-	-	0.0102	0.0105
4:45	-	-	-	-	0.0102	0.0105
4:50	-	-	-	-	0.0102	0.0105
4:55	-	-	-	-	0.0102	0.0105
5:00	-	-	-	-	0.0102	0.0105
5:05	-	-	-	-	0.0102	0.0105
5:10	-	-	-	-	0.0102	0.0105
5:15	-	-	-	-	0.0102	0.0105
5:20	-	-	-	-	0.0102	0.0105
5:25	-	-	-	-	0.0102	0.0105
5:30	-	-	-	-	0.0102	0.0105
5:35	-	-	-	-	0.0102	0.0105
5:40	-	-	-	-	0.0102	0.0105
5:45	-	-	-	-	0.0102	0.0105
5:50	-	-	-	-	0.0102	0.0105
5:55	-	-	-	-	0.0102	0.0105
6:00	-	-	-	-	0.0102	0.0105
Depth (inch)	**1.83**	**1.77**	**1.71**	**1.58**	**2.10**	**2.06**
Max 1-Hour Intensity (in/hr)	**1.48**	**1.42**	**1.36**	**1.23**	**1.19**	**1.14**

Depth = Total rainfall depth in inches after areal reduction.
*This is the unadjusted 2-hour rainfall distribution.

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Table B-4 - Design Rainfall Distributions, 25-, 50-, and 100-Year Storm Events

Time	Area = <15 Mi² (Unadjusted 2-Hour Design Storm)			Area = 19.35 Mi² (DRF Adjusted 6-Hour Design Storm)		
Hr:Min	25-Year	50-Year	100-Year	25-Year	50-Year	100-Year
0:00	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0:05	0.0255	0.0294	0.0257	0.0293	0.0338	0.0296
0:10	0.0686	0.0791	0.0771	0.0789	0.0910	0.0887
0:15	0.0980	0.1130	0.1182	0.1127	0.1300	0.1360
0:20	0.1568	0.1808	0.2056	0.1865	0.2150	0.2445
0:25	0.2940	0.3390	0.3598	0.2044	0.2357	0.2501
0:30	0.4900	0.5650	0.6425	0.3406	0.3928	0.4467
0:35	0.2352	0.2712	0.3598	0.1635	0.1885	0.2501
0:40	0.1568	0.1808	0.2056	0.1605	0.1851	0.2105
0:45	0.0980	0.1130	0.1593	0.1176	0.1356	0.1912
0:50	0.0980	0.1130	0.1285	0.1127	0.1300	0.1478
0:55	0.0627	0.0723	0.1028	0.0721	0.0832	0.1182
1:00	0.0627	0.0723	0.1028	0.0721	0.0832	0.1182
1:05	0.0627	0.0723	0.1028	0.0688	0.0794	0.1128
1:10	0.0470	0.0542	0.0514	0.0516	0.0595	0.0564
1:15	0.0470	0.0542	0.0514	0.0516	0.0595	0.0564
1:20	0.0353	0.0407	0.0308	0.0387	0.0446	0.0338
1:25	0.0353	0.0407	0.0308	0.0387	0.0446	0.0338
1:30	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
1:35	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
1:40	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
1:45	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
1:50	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
1:55	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
2:00	0.0274	0.0316	0.0308	0.0301	0.0347	0.0338
2:05	-	-	-	0.0198	0.0201	0.0205
2:10	-	-	-	0.0198	0.0201	0.0205
2:15	-	-	-	0.0198	0.0201	0.0205
2:20	-	-	-	0.0198	0.0201	0.0205
2:25	-	-	-	0.0198	0.0201	0.0205
2:30	-	-	-	0.0198	0.0201	0.0205
2:35	-	-	-	0.0198	0.0201	0.0205
2:40	-	-	-	0.0198	0.0201	0.0205
2:45	-	-	-	0.0198	0.0201	0.0205
2:50	-	-	-	0.0198	0.0201	0.0205
2:55	-	-	-	0.0198	0.0201	0.0205
3:00	-	-	-	0.0198	0.0201	0.0205
3:05	-	-	-	0.0099	0.0088	0.0077
3:10	-	-	-	0.0099	0.0088	0.0077
3:15	-	-	-	0.0099	0.0088	0.0077
3:20	-	-	-	0.0099	0.0088	0.0077
3:25	-	-	-	0.0099	0.0088	0.0077
3:30	-	-	-	0.0099	0.0088	0.0077
3:35	-	-	-	0.0099	0.0088	0.0077
3:40	-	-	-	0.0099	0.0088	0.0077
3:45	-	-	-	0.0099	0.0088	0.0077
3:50	-	-	-	0.0099	0.0088	0.0077
3:55	-	-	-	0.0099	0.0088	0.0077
4:00	-	-	-	0.0099	0.0088	0.0077
4:05	-	-	-	0.0099	0.0088	0.0077
4:10	-	-	-	0.0099	0.0088	0.0077
4:15	-	-	-	0.0099	0.0088	0.0077
4:20	-	-	-	0.0099	0.0088	0.0077
4:25	-	-	-	0.0099	0.0088	0.0077
4:30	-	-	-	0.0099	0.0088	0.0077
4:35	-	-	-	0.0099	0.0088	0.0077
4:40	-	-	-	0.0099	0.0088	0.0077
4:45	-	-	-	0.0099	0.0088	0.0077
4:50	-	-	-	0.0099	0.0088	0.0077
4:55	-	-	-	0.0099	0.0088	0.0077
5:00	-	-	-	0.0099	0.0088	0.0077
5:05	-	-	-	0.0099	0.0088	0.0077
5:10	-	-	-	0.0099	0.0088	0.0077
5:15	-	-	-	0.0099	0.0088	0.0077
5:20	-	-	-	0.0099	0.0088	0.0077
5:25	-	-	-	0.0099	0.0088	0.0077
5:30	-	-	-	0.0099	0.0088	0.0077
5:35	-	-	-	0.0099	0.0088	0.0077
5:40	-	-	-	0.0099	0.0088	0.0077
5:45	-	-	-	0.0099	0.0088	0.0077
5:50	-	-	-	0.0099	0.0088	0.0077
5:55	-	-	-	0.0099	0.0088	0.0077
6:00	-	-	-	0.0099	0.0088	0.0077
Depth (inch)	**2.27**	**2.61**	**2.97**	**2.71**	**2.99**	**3.29**
Max 1-Hour Intensity (in/hr)	**1.93**	**2.23**	**2.62**	**1.74**	**2.01**	**2.37**

Depth = Total rainfall depth in inches.

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Table B-5 - CUHP Input Parameters

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness	Maximum Depression Storage (Watershed inches)		Horton's Infiltration Parameters		
						Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
1	45.48	1285.2	2007.2	0.01384	74.4	0.35	0.1	4.5	0.0018	0.6
2	105.84	933.2	2503.5	0.01644	54.0	0.35	0.1	4.5	0.0018	0.6
3	80.75	2868.6	3414.6	0.01404	39.7	0.35	0.1	4.5	0.0018	0.6
4	35.18	2018.5	2690.9	0.02372	46.6	0.35	0.1	3	0.0018	0.5
5	54.65	1382.9	1628.4	0.02747	23.8	0.4	0.1	4.5	0.0018	0.6
6	64.54	1148.4	2967.5	0.02223	53.1	0.35	0.05	4.5	0.0018	0.6
7	32.91	1333.5	2447.7	0.01420	58.4	0.35	0.1	4.5	0.0018	0.6
8	22.56	1239.0	1946.4	0.02331	82.5	0.35	0.1	3	0.0018	0.5
9	85.26	1759.1	3737.0	0.01344	72.3	0.35	0.1	4.5	0.0018	0.6
10	98.91	2071.5	3684.2	0.01402	40.6	0.35	0.05	3	0.0018	0.5
11	55.57	1341.2	2652.7	0.02589	68.6	0.35	0.1	4.5	0.0018	0.6
12	24.57	1058.3	2034.9	0.00919	75.6	0.35	0.1	3	0.0018	0.5
13	80.49	1539.0	3642.1	0.02197	44.0	0.35	0.1	3	0.0018	0.5
14	73.65	2019.3	3164.3	0.01765	46.2	0.35	0.05	3	0.0018	0.5
15	48.41	1760.2	2906.9	0.02589	28.4	0.35	0.05	3	0.0018	0.5
16	54.20	1782.9	3255.3	0.02275	25.2	0.35	0.05	4.5	0.0018	0.6
17	58.24	2185.3	3264.6	0.02390	39.7	0.35	0.05	3	0.0018	0.5
18	36.17	705.7	1895.2	0.02225	35.2	0.35	0.05	3	0.0018	0.5
19	52.64	748.7	1792.7	0.01400	33.2	0.35	0.05	3	0.0018	0.5
20	115.83	2977.0	4314.6	0.00861	42.6	0.35	0.05	3	0.0018	0.5
21	82.94	1889.2	3134.7	0.02675	27.7	0.35	0.05	3	0.0018	0.5
22	76.67	1637.6	2016.2	0.01427	42.0	0.35	0.05	3	0.0018	0.5
23	25.19	1011.1	1835.6	0.01786	50.3	0.35	0.05	3	0.0018	0.5
24	90.47	1301.3	3296.1	0.02729	48.3	0.35	0.05	3	0.0018	0.5
25	52.57	1679.9	3459.1	0.00976	17.3	0.45	0.05	3	0.0018	0.5
26	28.89	1673.7	2591.9	0.01047	7.9	0.4	0.05	3	0.0018	0.5
27	86.50	1654.5	4022.2	0.01314	57.0	0.35	0.05	3	0.0018	0.5
28	82.41	1252.1	2394.1	0.01399	35.7	0.35	0.05	3	0.0018	0.5
30	73.28	1379.3	3725.6	0.01933	39.5	0.35	0.05	3	0.0018	0.5
31	73.85	2298.0	3440.1	0.03248	42.5	0.35	0.05	3	0.0018	0.5
32	62.03	1201.4	2404.8	0.03329	38.8	0.35	0.05	3	0.0018	0.5
33	92.63	1464.7	3337.3	0.01002	38.3	0.35	0.05	3	0.0018	0.5
34	64.60	1837.9	3175.9	0.01055	38.0	0.35	0.05	3	0.0018	0.5
35	126.86	2368.3	4997.5	0.01957	42.3	0.35	0.05	3	0.0018	0.5
36	40.46	1623.2	2189.0	0.01776	38.1	0.35	0.05	3	0.0018	0.5
37	121.28	1837.9	3782.2	0.02161	74.1	0.4	0.1	3	0.0018	0.5
40	47.03	1393.2	2901.9	0.00644	33.8	0.35	0.1	3	0.0018	0.5
41	40.68	1641.0	2470.0	0.01577	85.0	0.35	0.1	3	0.0018	0.5
42	60.33	2374.2	3185.4	0.02649	38.8	0.35	0.05	3	0.0018	0.5

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Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness	Maximum Depression Storage (Watershed inches)		Horton's Infiltration Parameters		
						Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
43	37.85	657.4	1921.7	0.02398	38.0	0.35	0.05	3	0.0018	0.5
44	121.40	1815.9	3496.6	0.02756	57.6	0.35	0.05	3	0.0018	0.5
45	33.07	1274.5	2320.9	0.01117	75.2	0.35	0.1	3	0.0018	0.5
46	42.32	1401.9	2587.3	0.01183	51.7	0.35	0.1	3	0.0018	0.5
50	28.03	942.8	2786.4	0.03046	58.5	0.35	0.1	3	0.0018	0.5
51	111.91	2320.4	4551.5	0.02102	44.0	0.35	0.05	3	0.0018	0.5
52	52.40	1404.8	2414.8	0.01081	51.9	0.35	0.1	3	0.0018	0.5
53	36.57	916.5	1639.0	0.02459	42.5	0.35	0.05	3	0.0018	0.5
54	65.51	1932.7	3551.9	0.02654	65.5	0.35	0.05	3	0.0018	0.5
55	83.82	1138.5	3436.4	0.02338	45.7	0.35	0.05	3	0.0018	0.5
56	61.70	2085.4	2620.6	0.01842	78.8	0.35	0.1	3	0.0018	0.5
57	63.68	2113.5	2467.8	0.04265	34.9	0.35	0.1	3	0.0018	0.5
60	74.72	2394.0	3257.0	0.03005	32.4	0.35	0.05	3	0.0018	0.5
61	33.59	1062.1	2017.0	0.03005	55.0	0.35	0.05	3	0.0018	0.5
65	88.07	1838.2	3883.2	0.02188	49.8	0.35	0.1	3	0.0018	0.5
66	109.71	1966.6	4493.1	0.02694	41.2	0.35	0.05	3	0.0018	0.5
67	102.17	1531.7	4209.2	0.01907	45.3	0.35	0.05	3	0.0018	0.5
68	52.38	1414.8	2717.1	0.02609	57.6	0.35	0.05	3	0.0018	0.5
69	113.34	1519.4	3028.1	0.02035	62.2	0.35	0.05	3	0.0018	0.5
70	67.61	2022.5	2925.1	0.03502	31.6	0.35	0.05	3	0.0018	0.5
71	33.68	2225.7	2523.2	0.03451	22.3	0.35	0.05	3	0.0018	0.5
72	17.03	1084.6	1984.8	0.03153	31.7	0.35	0.05	3	0.0018	0.5
73	97.01	1875.6	3703.0	0.03266	56.9	0.35	0.05	3	0.0018	0.5
75	42.83	2087.7	3189.8	0.02201	35.4	0.35	0.05	3	0.0018	0.5
76	110.72	2001.7	4085.4	0.01862	45.7	0.35	0.05	3	0.0018	0.5
77	73.10	2260.8	3664.8	0.02980	31.9	0.35	0.05	3	0.0018	0.5
78	24.20	860.4	2044.7	0.01505	65.0	0.35	0.05	3	0.0018	0.5
79	29.13	881.8	2009.7	0.03363	52.0	0.35	0.05	3	0.0018	0.5
80	58.53	1425.6	2596.6	0.03050	5.1	0.35	0.05	3	0.0018	0.5
81	28.28	1380.1	2796.7	0.01444	73.0	0.35	0.1	3	0.0018	0.5
82	32.05	775.7	2310.0	0.03016	18.2	0.35	0.1	3	0.0018	0.5
83	56.46	1231.0	3379.4	0.01867	66.7	0.35	0.05	3	0.0018	0.5
85	67.28	2002.8	3483.7	0.01425	18.1	0.35	0.05	3	0.0018	0.5
86	52.13	1491.9	3060.1	0.03028	33.3	0.35	0.05	3	0.0018	0.5
87	117.98	1934.1	4544.8	0.03139	26.1	0.35	0.1	3	0.0018	0.5
88	115.87	1691.3	3870.6	0.02859	54.6	0.35	0.05	3	0.0018	0.5
89	73.36	2457.4	3738.6	0.03753	37.9	0.35	0.05	3	0.0018	0.5
90	93.88	1042.3	3264.5	0.02230	59.2	0.35	0.05	3	0.0018	0.5
91	82.85	1766.5	2772.5	0.02453	60.3	0.35	0.05	3	0.0018	0.5
95	108.99	1549.7	3404.4	0.02783	35.6	0.35	0.1	3	0.0018	0.5
96	27.23	1113.8	1941.4	0.04108	5.7	0.35	0.1	3	0.0018	0.5

PRELIMINARY
NOT FOR CONSTRUCTION

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness	Maximum Depression Storage (Watershed inches)		Horton's Infiltration Parameters		
						Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
100	82.20	1942.5	3412.4	0.02038	47.8	0.35	0.05	3	0.0018	0.5
101	100.39	2115.7	3880.7	0.02303	35.6	0.35	0.05	3	0.0018	0.5
102	87.15	2349.7	4128.2	0.02646	43.0	0.35	0.05	3	0.0018	0.5
103	83.95	1280.3	3170.8	0.03606	39.6	0.35	0.05	3	0.0018	0.5
104	49.56	964.1	2272.8	0.01849	51.2	0.35	0.05	3	0.0018	0.5
105	75.95	1467.2	3217.7	0.02610	49.0	0.35	0.1	3	0.0018	0.5
106	119.41	1851.3	3048.7	0.03221	61.7	0.35	0.1	3	0.0018	0.5
107	106.82	2018.1	3398.2	0.02158	64.4	0.35	0.05	3	0.0018	0.5
108	72.84	1606.4	2610.7	0.02446	47.0	0.35	0.05	3	0.0018	0.5
110	108.12	4528.7	5581.5	0.01595	30.7	0.35	0.05	4.5	0.0018	0.6
111	49.17	2216.2	3649.8	0.02513	69.9	0.35	0.05	3	0.0018	0.5
112	43.17	1317.8	2276.3	0.04016	67.0	0.35	0.05	3	0.0018	0.5
113	54.30	2158.2	3360.6	0.03408	43.6	0.35	0.05	3	0.0018	0.5
114	92.27	1666.3	4197.2	0.02864	45.7	0.35	0.05	3	0.0018	0.5
115	72.60	2411.5	4580.0	0.03086	47.7	0.35	0.05	3	0.0018	0.5
116	51.54	1684.6	2781.1	0.03421	24.9	0.35	0.05	3	0.0018	0.5
117	74.59	1906.5	3042.8	0.02047	33.7	0.35	0.05	4.5	0.0018	0.6
118	41.08	997.0	2160.9	0.02986	30.2	0.35	0.05	4.5	0.0018	0.6
119	39.79	1775.7	2540.8	0.01008	47.1	0.35	0.05	3	0.0018	0.5
120	106.69	1795.6	3194.3	0.02527	54.6	0.35	0.05	3	0.0018	0.5
121	78.46	1385.8	2786.3	0.03967	54.7	0.35	0.05	3	0.0018	0.5
122	101.39	1558.7	2265.1	0.02757	48.9	0.35	0.05	3	0.0018	0.5
123	97.98	2649.9	3342.8	0.01182	22.4	0.35	0.1	3	0.0018	0.5
125	103.44	2324.6	4862.1	0.01822	37.0	0.35	0.05	4.5	0.0018	0.6
126	123.53	2569.0	3615.4	0.01204	46.6	0.35	0.05	3	0.0018	0.5
127	120.15	2614.6	3030.6	0.02945	54.5	0.35	0.05	3	0.0018	0.5
128	104.69	1530.4	3320.7	0.02268	42.6	0.35	0.05	4.5	0.0018	0.6
130	36.17	1211.9	1995.4	0.03672	38.9	0.35	0.05	3	0.0018	0.5
131	93.70	1473.0	2911.0	0.03826	51.5	0.35	0.05	3	0.0018	0.5
132	54.96	1531.5	2608.8	0.03802	44.7	0.35	0.05	3	0.0018	0.5
133	80.06	2454.0	3761.4	0.04982	7.7	0.4	0.05	3	0.0018	0.5
134	108.08	2631.1	4813.7	0.04708	5.0	0.4	0.05	3	0.0018	0.5
135	62.05	1475.8	3232.3	0.03826	43.4	0.35	0.05	3	0.0018	0.5
136	117.51	2700.5	3213.5	0.05314	19.1	0.4	0.05	3	0.0018	0.5
137	61.86	1743.1	3309.7	0.05212	2.0	0.4	0.05	3	0.0018	0.5
138	89.53	1902.7	3549.1	0.04186	2.0	0.4	0.05	3	0.0018	0.5
140	66.69	1745.3	3829.2	0.02402	42.9	0.35	0.05	4.5	0.0018	0.6
141	119.91	1860.5	3356.8	0.03677	52.5	0.35	0.05	3	0.0018	0.5
142	66.98	1748.9	3083.3	0.03950	11.9	0.4	0.05	3	0.0018	0.5
143	67.76	2072.8	3630.0	0.04506	2.0	0.4	0.05	3	0.0018	0.5
144	73.22	1917.7	3677.8	0.04711	2.0	0.4	0.05	3	0.0018	0.5

ORIGINAL 2015 MDC SUBMITTED

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness	Maximum Depression Storage (Watershed inches)		Horton's Infiltration Parameters		
						Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
145	63.87	1629.0	2944.8	0.04916	2.0	0.4	0.05	3	0.0018	0.5
146	93.49	2500.9	4747.7	0.04095	2.0	0.4	0.05	3	0.0018	0.5
147	123.52	2734.6	4479.9	0.02949	13.4	0.4	0.05	3	0.0018	0.5
148	74.18	1600.5	3643.6	0.05233	5.0	0.4	0.05	3	0.0018	0.5
149	60.38	1114.7	1868.6	0.05314	2.7	0.4	0.05	3	0.0018	0.5
150	119.04	3181.6	5092.1	0.04113	2.0	0.4	0.05	3	0.0018	0.5
151	107.12	1802.0	3979.3	0.04754	2.0	0.4	0.05	4.5	0.0018	0.6
152	71.27	1684.6	2981.9	0.05147	2.0	0.4	0.05	3	0.0018	0.5
160	93.05	2482.7	4303.1	0.02229	50.6	0.4	0.05	3	0.0018	0.5
161	104.00	2459.8	4394.0	0.02296	50.3	0.35	0.05	3	0.0018	0.5
162	65.89	1288.0	3027.3	0.02640	48.2	0.35	0.05	3	0.0018	0.5
163	32.05	1143.9	2150.8	0.03778	52.0	0.35	0.05	3	0.0018	0.5
164	68.56	2558.2	3793.9	0.03775	46.6	0.35	0.1	3	0.0018	0.5
165	76.47	1353.6	3033.3	0.03636	37.9	0.35	0.1	3	0.0018	0.5
166	107.05	2043.2	3891.5	0.05593	32.0	0.35	0.05	3	0.0018	0.5
167	53.70	1958.5	3443.4	0.04982	16.2	0.4	0.05	3	0.0018	0.5
170	121.22	2444.6	3930.7	0.01729	33.2	0.35	0.05	3	0.0018	0.5
171	64.57	1504.5	3290.9	0.03025	41.9	0.35	0.05	3	0.0018	0.5
175	63.82	1938.4	3309.1	0.01912	34.6	0.35	0.05	3	0.0018	0.5
176	75.47	1438.3	2622.9	0.03228	51.3	0.35	0.05	3	0.0018	0.5
177	64.46	1288.1	2260.8	0.03003	10.0	0.4	0.05	3	0.0018	0.5
178	37.38	1293.2	2676.2	0.05083	7.6	0.4	0.05	3	0.0018	0.5
179	98.66	1835.9	4289.9	0.04438	6.3	0.4	0.05	3	0.0018	0.5
180	25.46	1629.2	2657.7	0.03425	29.7	0.35	0.05	3	0.0018	0.5
181	114.97	3125.5	4562.2	0.01585	25.7	0.35	0.05	3	0.0018	0.5
182	96.29	2297.3	3984.7	0.03557	34.8	0.35	0.05	3	0.0018	0.5
183	43.86	1359.4	2765.6	0.04981	10.0	0.4	0.05	3	0.0018	0.5
184	126.84	2655.2	4573.2	0.06698	8.1	0.4	0.05	3	0.0018	0.5
185	73.25	2094.8	3476.7	0.03613	10.0	0.4	0.05	3	0.0018	0.5
186	45.11	1587.2	3224.5	0.05175	13.7	0.4	0.05	3	0.0018	0.5
187	78.16	1869.7	2430.5	0.05197	11.6	0.4	0.05	3	0.0018	0.5
188	61.73	1345.0	2240.6	0.05679	14.8	0.4	0.05	3	0.0018	0.5
190	80.86	1937.9	3966.9	0.02463	10.0	0.4	0.05	3	0.0018	0.5
191	89.54	2950.3	4550.3	0.04864	11.6	0.4	0.05	3	0.0018	0.5
192	96.97	1750.8	3256.6	0.05021	7.2	0.4	0.05	3	0.0018	0.5
193	78.92	2475.0	4408.6	0.03419	8.2	0.4	0.05	3	0.0018	0.5
194	50.75	1211.2	2893.7	0.04297	2.1	0.4	0.05	3	0.0018	0.5
195	109.08	1830.6	2975.4	0.04969	2.5	0.4	0.05	3	0.0018	0.5
196	61.96	2397.1	3008.7	0.03898	2.0	0.4	0.05	3	0.0018	0.5
197	77.59	1894.9	2708.9	0.03208	3.3	0.4	0.05	3	0.0018	0.5
198	74.03	2075.7	3699.0	0.04152	2.0	0.4	0.05	3	0.0018	0.5

PRELIMINARY
NOT FOR CONSTRUCTION

Subcatchment Name	Area (acre)	Length to Centroid (ft)	Length (ft)	Slope (ft/ft)	Percent Imperviousness	Maximum Depression Storage (Watershed inches)		Horton's Infiltration Parameters		
						Pervious	Impervious	Initial Rate (in/hr)	Decay Coefficient (1/seconds)	Final Rate (in/hr)
199	105.89	2278.3	3734.6	0.05114	17.4	0.4	0.05	3	0.0018	0.5
200	56.43	1365.6	2789.2	0.03486	4.5	0.4	0.05	3	0.0018	0.5
201	80.48	1104.2	2689.4	0.03901	9.6	0.4	0.05	3	0.0018	0.5
202	80.15	1191.2	2825.7	0.03897	39.0	0.35	0.05	3	0.0018	0.5
203	70.83	2078.4	4248.1	0.04737	37.2	0.35	0.05	3	0.0018	0.5
204	63.61	1954.6	3133.6	0.03234	11.6	0.4	0.05	3	0.0018	0.5
205	85.39	1773.2	3632.5	0.04420	5.4	0.4	0.05	3	0.0018	0.5

Table B-6 - Detention Pond P69 Curves

SWMM Node P69 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
1	4478	0.05
2	10304	0.22
3	19603	0.57
4	27113	1.1
5	33848	1.8
6	37773	2.63
7	41687	3.54
8	45273	4.54
9	48990	5.62
10	52810	6.79
11	56995	8.05
12	61063	9.40
13	69529	10.90
14	74798	12.56
15	79788	14.33
17	140061	19.38
19	173682	26.58
24	236702	48.05

Stage (ft)	Discharge (cfs)
0	0
1	1.00
2	2.44
3	25.50
4	41.84
5	57.80
6	68.74
7	78.14
8	86.62
9	94.44
9.5	98.20
10	280.42
10.5	289.62
11	298.53
11.5	307.18
12	315.60
13	331.80
13.5	339.60
14	347.24
16	376.22
18	403.13
20	428.35
22	452.16
24	474.78

-1998 MDP SWMM Node 285

Table B-7 - Detention Pond P70 Curves

SWMM Node P70 Detention Pond Curves

Stage	Area (ft^2)	Volume (acre-ft)
0	0	0
0.5	1004.0	0.01
1.5	12990.0	0.31
2.5	33447.0	1.08
3.5	51367.0	2.26
4.5	65229.0	3.75
5.5	77013.0	5.52
6.5	90363.0	7.60
7.5	96692.0	9.82
8.5	100302.0	12.12
9.5	104684.0	14.52
10	209368.0	16.93

Stage (ft)	Discharge (cfs)
0	0.
0.24	0.49
0.86	3.76
1.76	11.77
2.81	24.7
4.2	32.31
5.85	40.34
7.21	84.13
8.03	148.31
8.46	189.24
8.66	209.48
8.71	214.74
9.5	496.00

-1998 MDP SWMM Node 281
-Also referred to as Pond 100 in design reports (Nolte and Associates, Detention Pond in Planning Areas 3 and 74 Final Storm Drainage Report 1993)

Table B-8 - Detention Pond P88 Curves

SWMM Node P88 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
4	0	0
9	0	0
14	0	0
19	0	0
21	8712	0.4
23	8712	0.8
25	95832	5.2
29	94743	13.9
34	150717.6	31.2
39	151588.8	48.6
44	181209.6	69.4

Stage (ft)	Discharge (cfs)
0	0
4	33
9	73
14	95
19	102
21	105
23	108
25	110
29	115
34	120
39	126
44	131

-1998 MDP SWMM Node 30
-(Denver Engineering Corporation, County Line Landfill Conceptual Drainageway Plan, 1984)

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Table B-9 - Detention Pond P90 Curves

SWMM Node P90 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
2	36894	1.69
4	43393	5.68
6	50183	12.59
8	57644	23.18
8.83	60992	35.54
10	65716	50.63
12	74226	71.08
13.46	80785	96.04
14	83231	122.79
16	92644	156.82
18	102786	199.29

Stage (ft)	Discharge (cfs)
0	0
2	36.2
4	51.2
6	62.7
8	72.4
8.83	76.1
10	141.2
12	253.9
13.46	265.9
14	270.3
16	285.7
18	300.4

-1998 MDP SWMM Node 248
-(Nolte and Associates, Inc., Venneford Ranch Road Filing 100 Pond 2 and Culvert 24 Phase III Storm Drainage Report 1993)

Table B-10 - Detention Pond P101 Curves

SWMM Node P101 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
2	1306.8	0.06
4	1306.8	0.12
6	8929.8	0.53
8	16552.8	1.29
10	16552.8	2.05
12	50094	4.35
14	50094.0	6.65
16	71002.8	9.91
18	91911.6	14.13
20	91911.6	18.35
22	78625.8	21.96
24	78625.8	25.57
26	39204	27.37

Stage (ft)	Discharge (cfs)
0	0
2	29
4	115
6	220
8	320
10	425
12	510
14	590
16	610
18	700
20	750
22	780
24	850
26	910

-1998 MDP SWMM Node 230
-Also referred to as Pond 201 in design reports

Table B-11 - Detention Pond P102 Curves

SWMM Node P102 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
2	16552.8	0.38
4	31363.2	1.48
6	49222.8	3.33
8	76665.6	6.22
10	111513.6	10.54

Stage (ft)	Discharge (cfs)
0	0
2	0
4	130
6	280
8	430
10	590
12	710

-1998 MDP SWMM Node 224
-Also referred to as Pond 202 in design reports (Nolte and Associates, Inc. 1992)

Table B-12 - Detention Pond P105 Curves

SWMM Node P105 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0.0	0
2	6098.4	0.14
4	21780.0	0.78
6	52272.0	2.48
8	82328.4	5.57
10	111078.0	10.01
12	156816.0	16.16
14	178596.0	24.56
16	226512.0	33.86
20	409464.0	63.05

Stage (ft)	Discharge (cfs)
0	0
2	0
4	88
6	130
8	190
10	220
12	260
14	290
16	310
20	350

-1998 MDP SWMM Node 218
-Also referred to as Pond 204 in design reports

Ponds P101, P102 and P105 rating curves were all taken from Big Dry Creek West Tributary Detention Study Culverts 28/29 (Nolte and Associates, Inc. 1992)

Table B-13 - Detention Pond P123 Curves

SWMM Node P123 Detention Pond Curves

Stage (ft)	Area (ft^2)	Vol (acre-ft)
0	5663	0
5	69943	3.65
10	181253	17.57
15	289468	44.34
15.1	359857	54.62
20	675847	113.12
25	1066776	212.28
30	1563423	362.33
35	1835395	557.19

Stage (ft)	Discharge (cfs)
0	0.0
0.11	17.9
5	290.2
10	435.3
15	542.9
16	1121.6
20	1264.9
25	1421.6
30	1562.7

-1998 MDP SWMM Node 176
-Also referred to as Pond 10 in design reports (Nolte and Associates, Inc., Big Dry Creek Addendum to Master Plan of Drainage, 1994)

Diversion Curve at J123

Inflow (cfs)	Outflow (cfs)
0	0
17.9	11.5
542.9	11.5
949	438
1121.6	560.81
1264.9	632.45
1421.6	710.8
1562.7	781.35

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Table B-14 - Detention Pond P135 Curves

SWMM Node P135 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
1	6098.4	0.14
2	15681.6	0.5
3	35283.6	1.31
4	59677.2	2.68
5	80586.0	4.53
6	94525.2	6.7
7	101930.4	9.04
8	109771.2	11.56
8.2	110250.36	12.2
9	112167.0	14.26
10	126324.0	17.16
11	134600.4	20.25
12	142005.6	23.51
13	149846.4	26.95
14	158122.8	30.58
15	166399.2	34.4
16	174675.6	38.41
17	183823.2	42.63
18	192535.2	47.05
19	201682.8	51.68
20	210830.4	56.52
21	221284.8	61.6
21.6	221241.24	64.9
22	221067.0	66.93
23	248727.6	72.64
24	266587.2	78.76

Stage (ft)	Discharge (cfs)
0	6
1	24
2	50
3	85
4	125
5	168
6	211
7	249
8	276
8.2	281
9	301
10	324
11	345
12	365
13	384
14	402
15	419
16	436
17	452
18	467
19	482
20	497
21	511
21.6	519
22	524
23	538
24	551
25.6	1038

-1998 MDP SWMM Node 143

-Also referred to as Pond 20 in design plans

Ponds P135 and P141 rating curves were all taken from (Nolte and Associates, Inc., Highlands Ranch Metropolitan District No. 3 Detention Ponds 20 and 21 at Fairview Avenue (McArthur Ranch Road) Improvement Plans, 2000)

Table B-15 - Detention Pond P141 Curves

SWMM Node P141 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
1	435.6	0.01
2	4356.0	0.11
3	13503.6	0.42
4	28314.0	1.07
5	38768.4	1.96
6	43995.6	2.97
7	48787.2	4.09
8	54014.4	5.33
9	59241.6	6.69
10	65340	8.19
11	72309.6	9.85
12	84942.0	11.8
13	104108.4	14.19
13.1	106959.16	14.5
14	132616.0	17.24
15	165092.4	21.03
16	193406.4	25.47
17	219542.4	30.51
18	243064.8	36.09
19	267458	42.23
20	296208.0	49.03
20.1	299402.4	49.7
21	328152.0	56.48
22	349351.2	64.5
23	373309.2	73.07
24	400316.4	82.26
25	437342.4	92.3
26	488743.2	103.52

Stage (ft)	Discharge (cfs)
0	0
1	5
2	18
3	36
4	55
5	64
6	71
7	77
8	83
9	88
10	93
11	98
12	102
13	107
13.1	107
14	245
15	253
16	261
17	268
18	275
19	282
20	289
20.1	290

-1998 MDP SWMM Node 125

-Also referred to as Pond 21 in design plans

Table B-16 - Detention Pond P162 Curves

SWMM Node P162 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
0.5	11402	0.0436
1.5	42230	0.6219
2.5	98193	2.1893
3.5	143317	4.9452
4.5	168934	8.5253
5.5	179794	12.5275
6.5	190304	16.7750
7.5	200945	21.2654
8.5	211717	26.0016
9.5	224712	31.0104
10.5	234350	36.2796

Stage (ft)	Discharge (cfs)
0	0
0.5	11.6
1.5	20.1
2.5	25.9
3.5	28.0
4.5	34.8
5.5	37.0
6.5	41.8
7.5	44.9
8.5	102.2
9.5	168.5
10.5	602.0

-1998 MDP SWMM Node 97

-Also referred to as Pond B in design reports

Table B-17 - Detention Pond P165 Curves

SWMM Node P165 Detention Pond Curves

Stage (ft)	Area (ft^2)	Volume (acre-ft)
0	0	0
2.7	820	0.0169
4.7	2283	0.0854
8.7	7408	0.5079
12.7	15467	1.5357
16.7	26458	3.4382
20.7	40381	6.4846
24.7	57237	10.9441
28.7	77027	17.0863
30.7	88021	20.8724
32.7	99748	25.1602

Stage (ft)	Discharge (cfs)
0	0
8	46.4
12	56.8
16	65.5
20	73.3
24	80.3
28	113.9
30	234.3
32	279.3

-1998 MDP SWMM Node 90

-Also referred to as Pond M in design reports

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Ponds P162 and P165 rating curves were all taken from (Nolte and Associates, Inc., Intravest 320 Filings 1A & 1B Phase III Drainage and Erosion Control Study, 1994)

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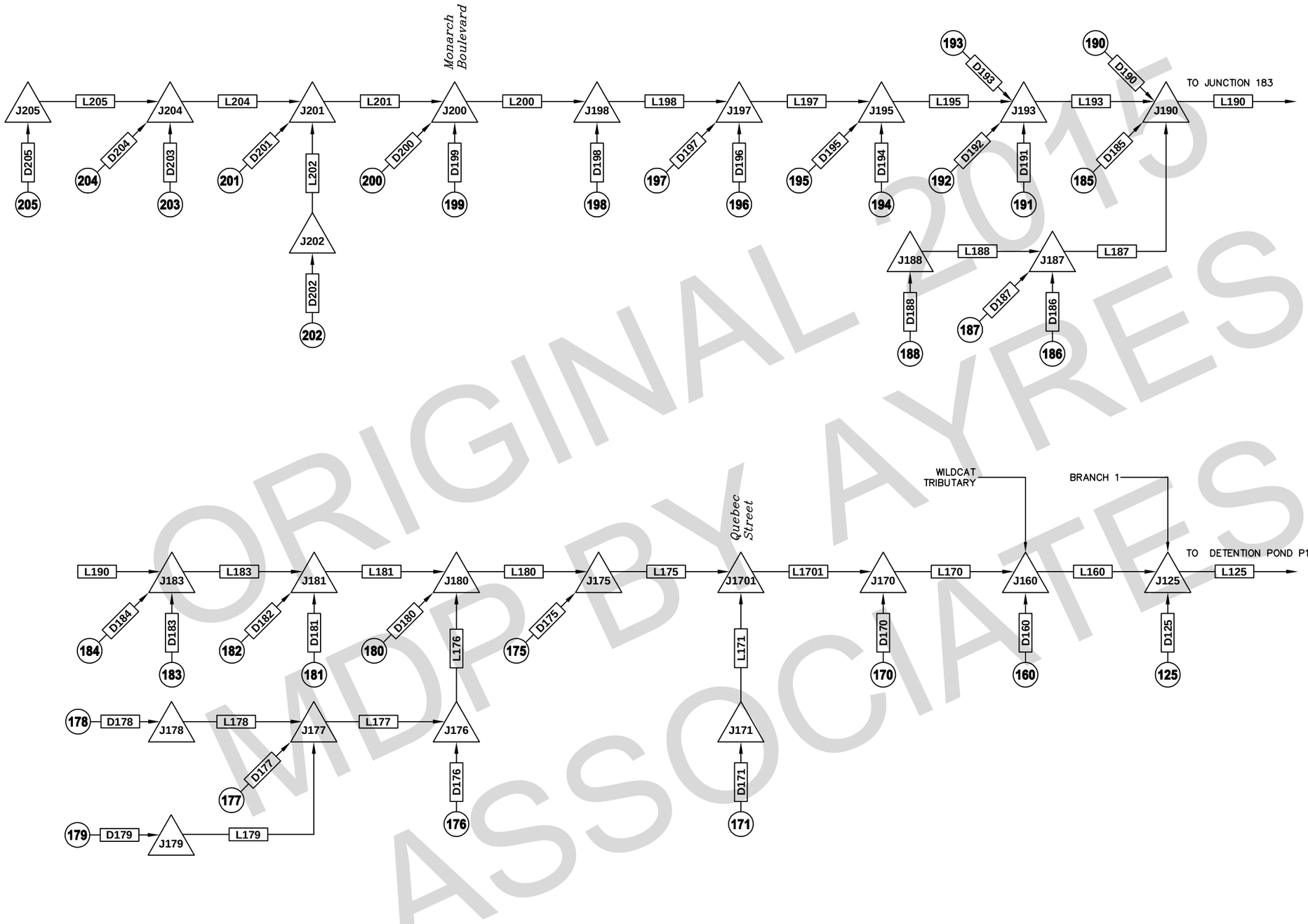

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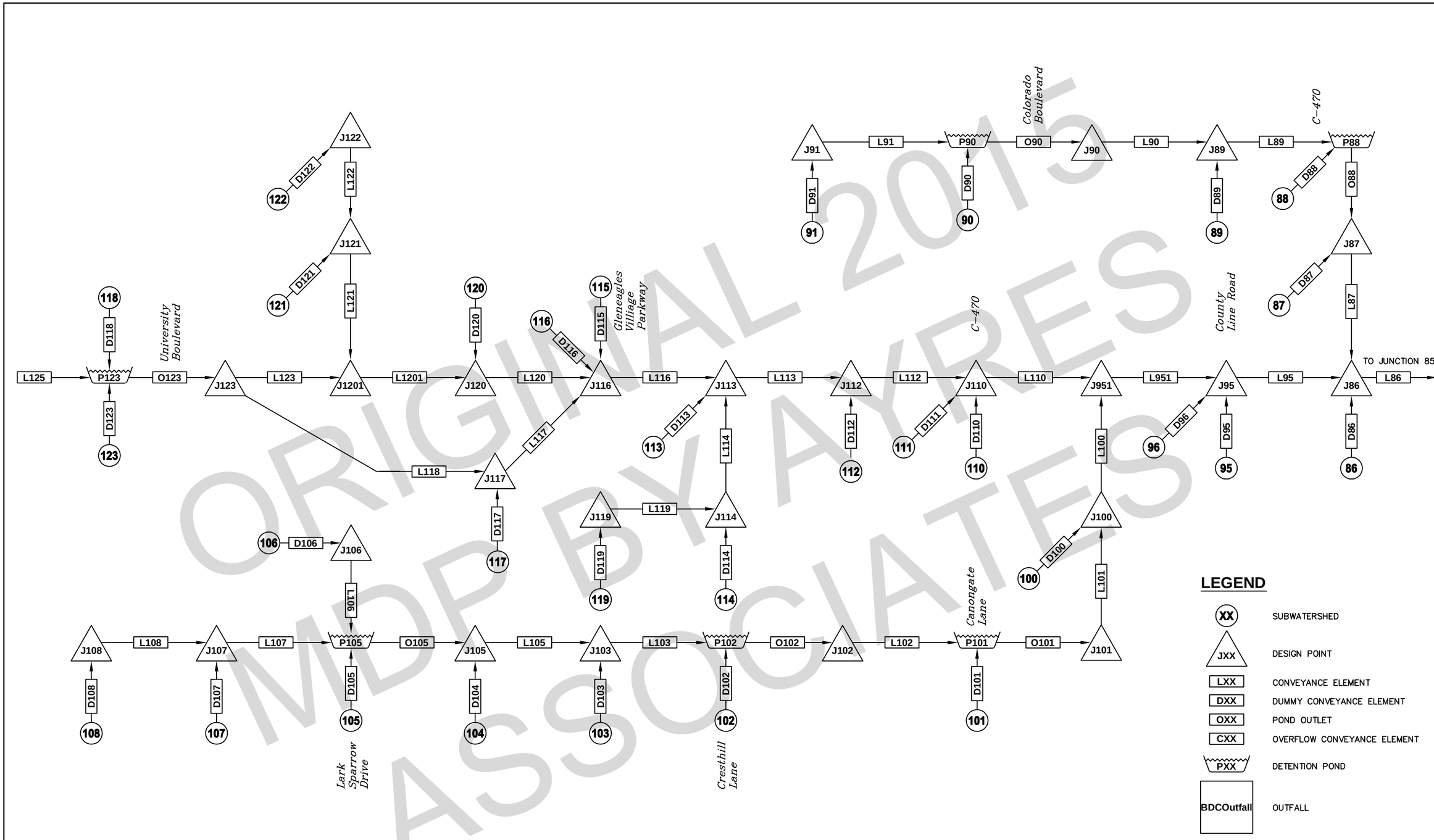
Designed by:	MDH
Drawn by:	JBB
Checked by:	WCP
Project No.:	35-0214.00
Date:	04/07/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

SWMM Routing Schematic

Figure B-3



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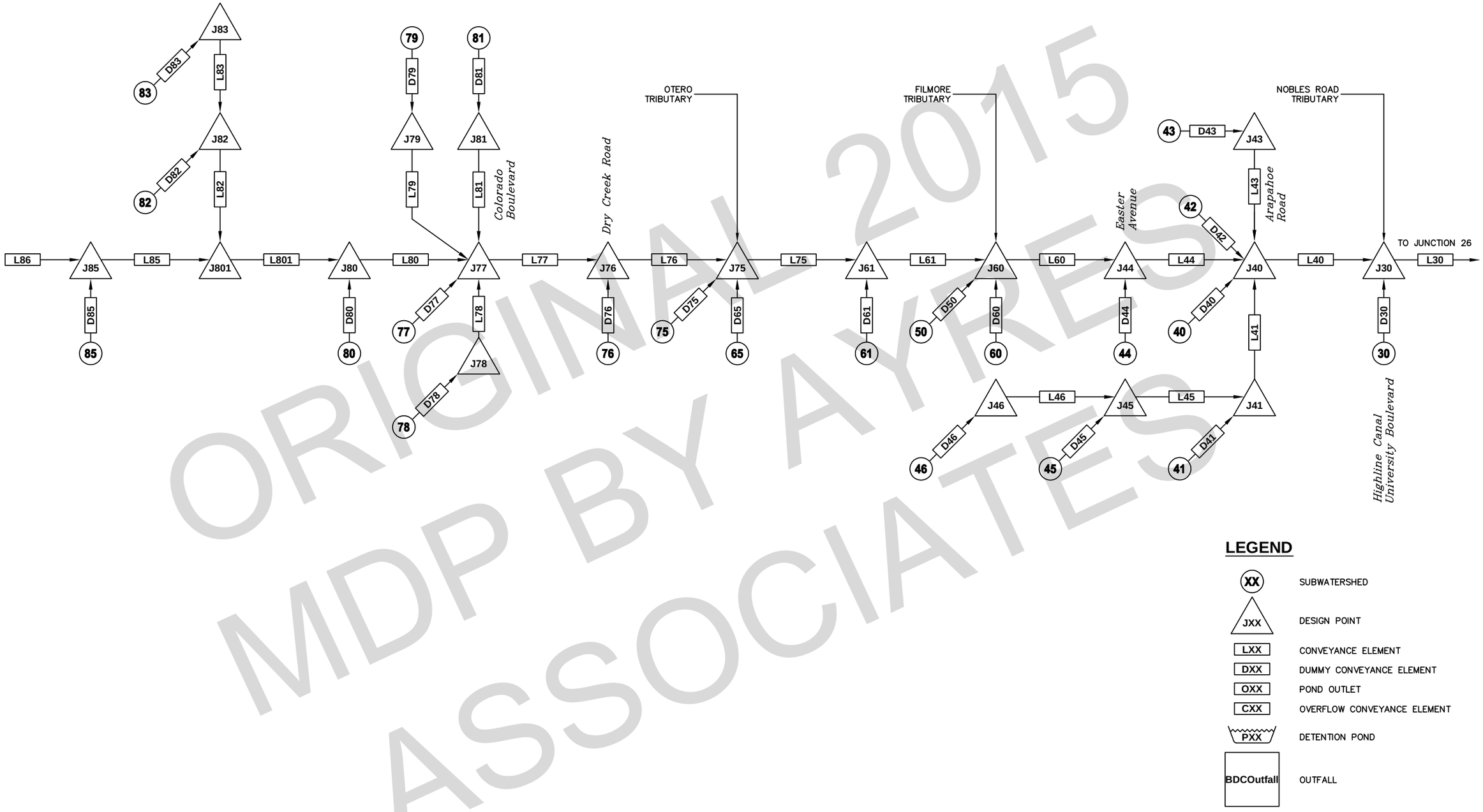
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

SWMM Routing Schematic

Figure B-4



LEGEND

XX	SUBWATERSHED
JXX	DESIGN POINT
LXX	CONVEYANCE ELEMENT
DXX	DUMMY CONVEYANCE ELEMENT
OXX	POND OUTLET
CXX	OVERFLOW CONVEYANCE ELEMENT
PXX	DETENTION POND
BDCOutfall	OUTFALL

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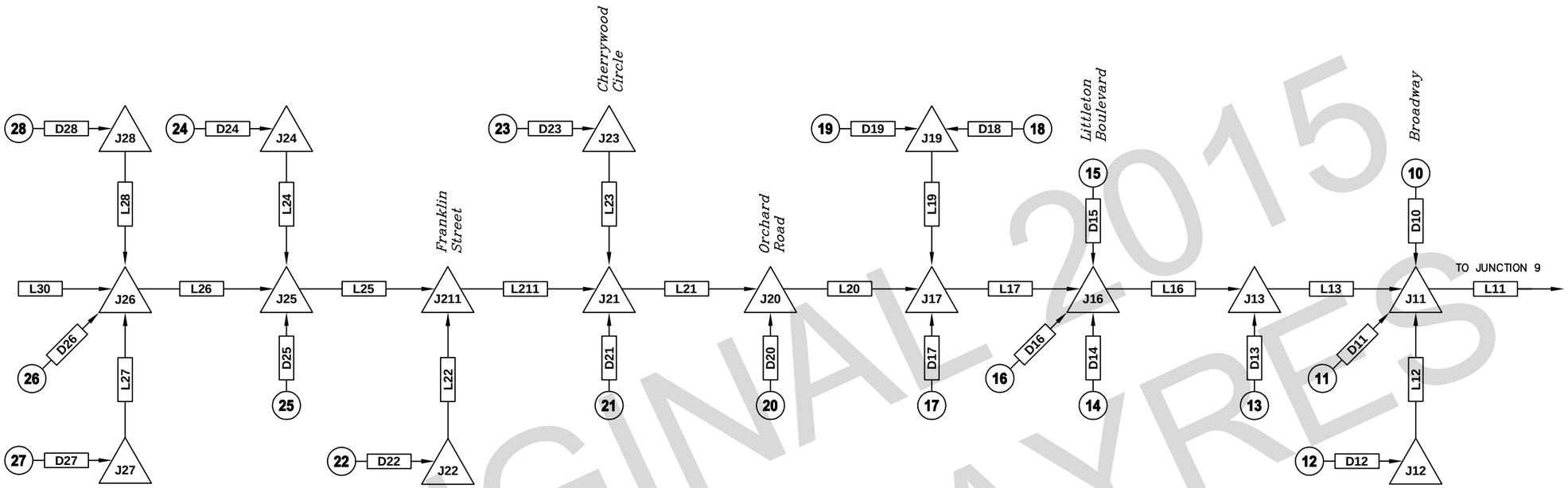
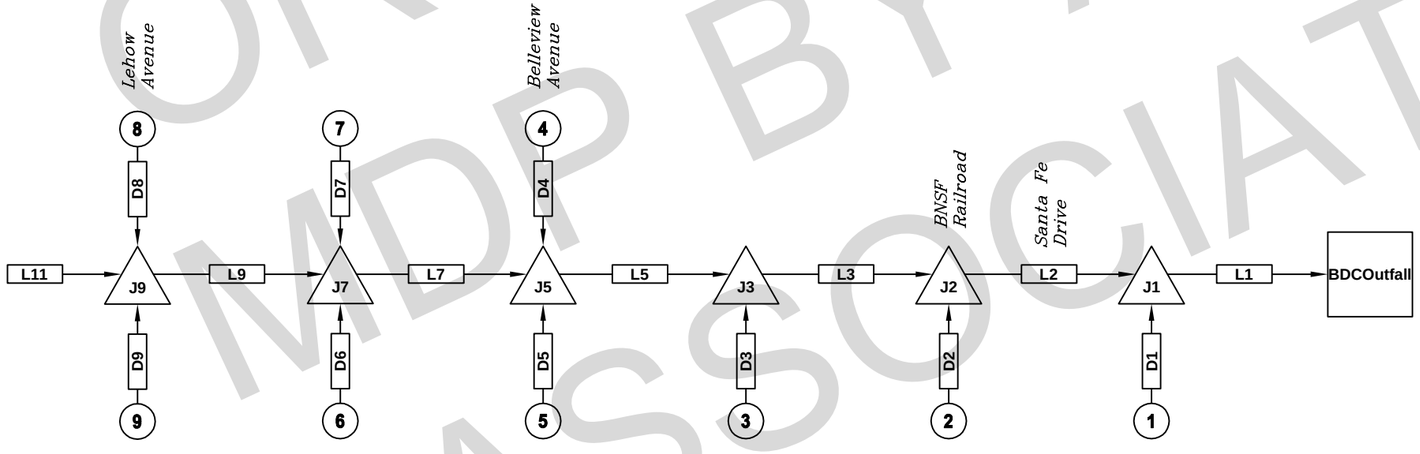
Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

SWMM Routing Schematic

Figure B-5





LEGEND

XX	SUBWATERSHED
JXX	DESIGN POINT
LXX	CONVEYANCE ELEMENT
DXX	DUMMY CONVEYANCE ELEMENT
OXX	POND OUTLET
CXX	OVERFLOW CONVEYANCE ELEMENT
PXX	DETENTION POND
BDCOutfall	OUTFALL

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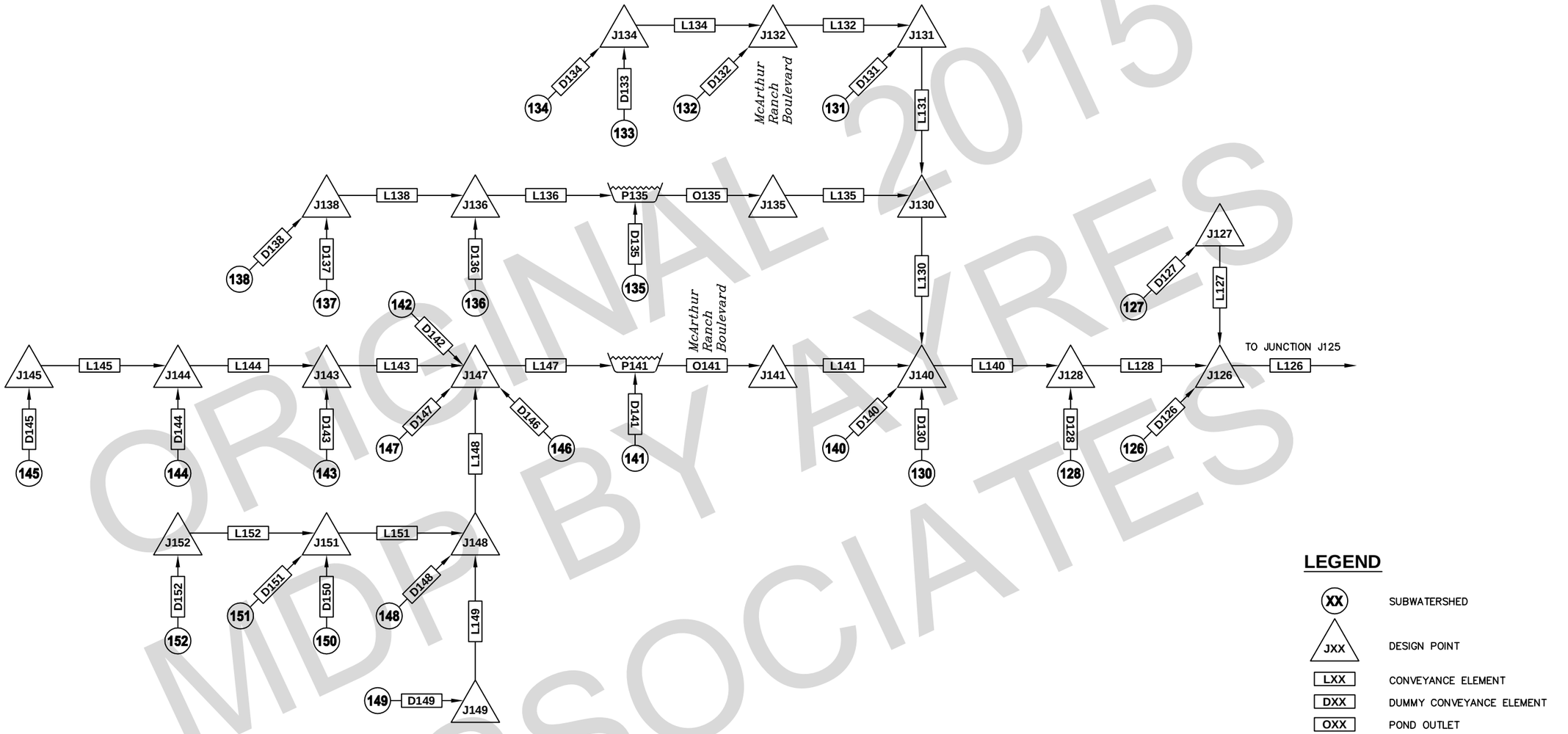
Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

SWMM Routing Schematic

Figure B-6

BRANCH 1



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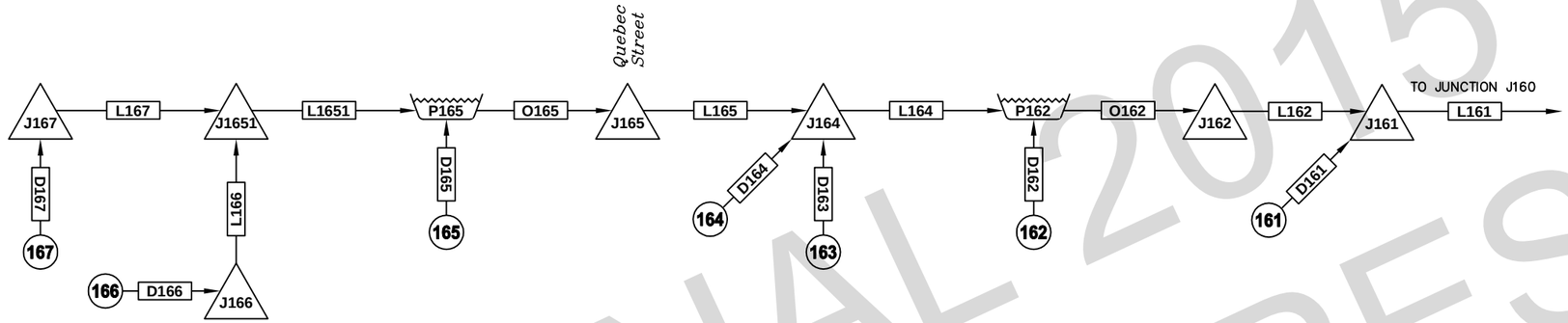
Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

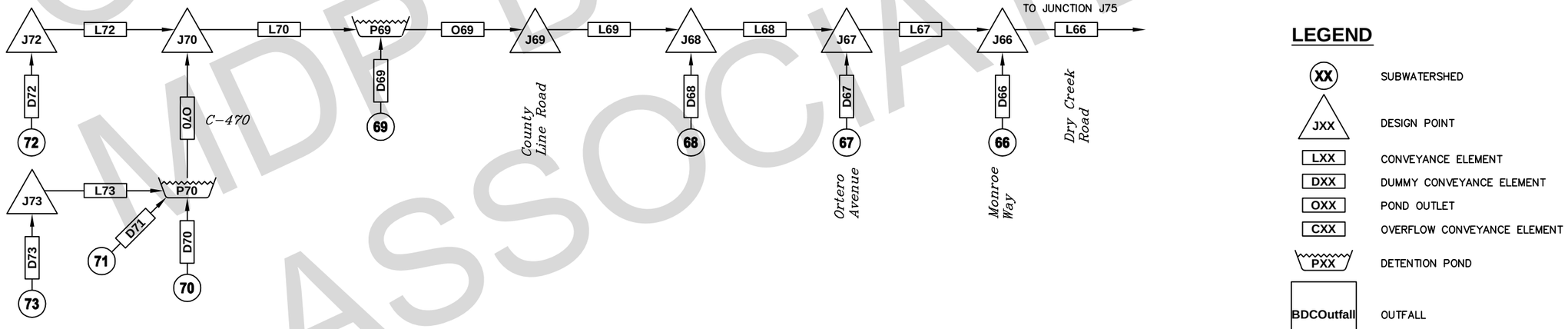
SWMM Routing Schematic

Figure B-7

WILDCAT TRIBUTARY



OTERO TRIBUTARY



LEGEND

XX	SUBWATERSHED
JXX	DESIGN POINT
LXX	CONVEYANCE ELEMENT
DXX	DUMMY CONVEYANCE ELEMENT
OXX	POND OUTLET
CXX	OVERFLOW CONVEYANCE ELEMENT
PXX	DETENTION POND
BDCOutfall	OUTFALL

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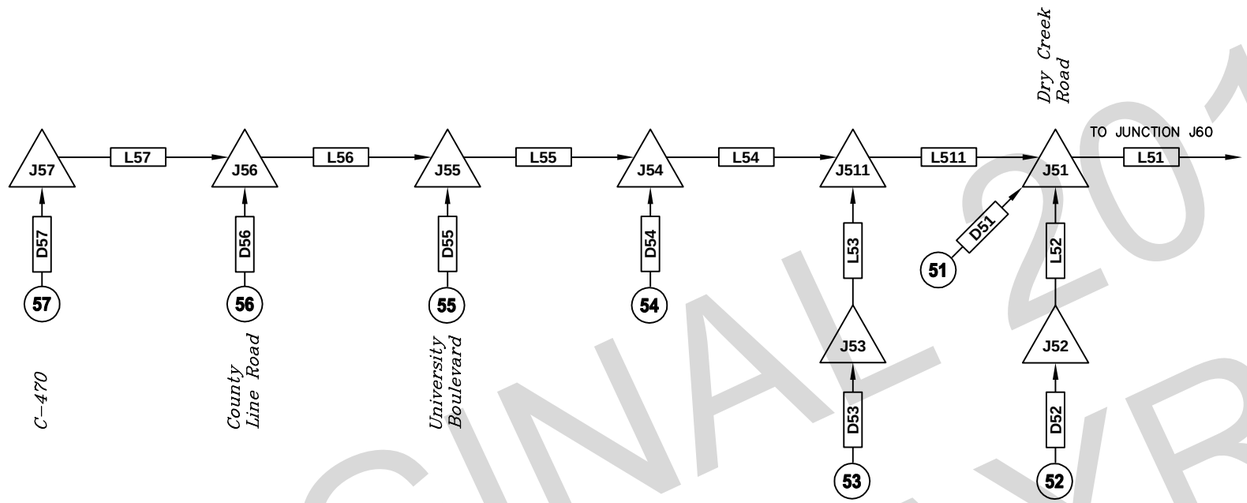
Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

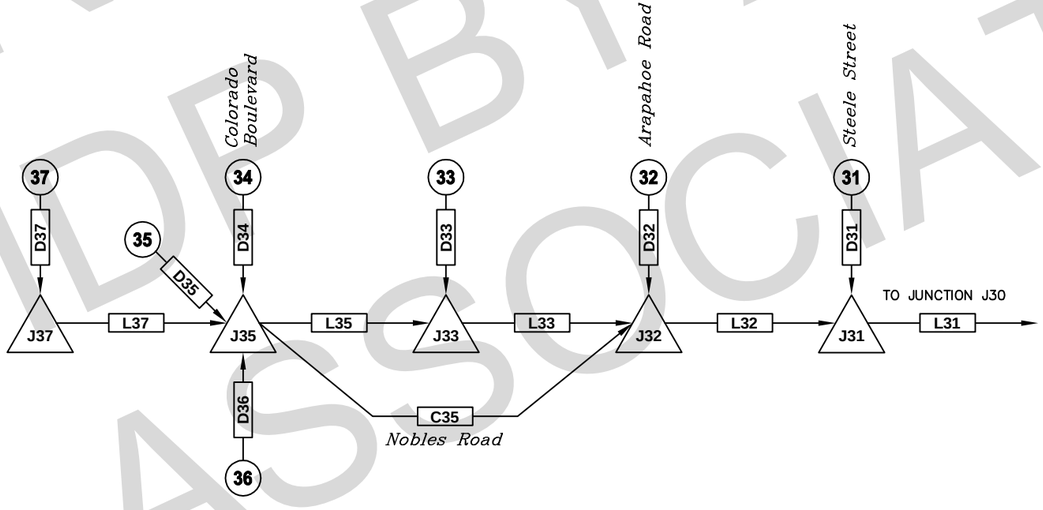
SWMM Routing Schematic

Figure B-8

FILMORE TRIBUTARY



NOBLES ROAD TRIBUTARY



LEGEND

XX	SUBWATERSHED
JXX	DESIGN POINT
LXX	CONVEYANCE ELEMENT
DXX	DUMMY CONVEYANCE ELEMENT
OXX	POND OUTLET
CXX	OVERFLOW CONVEYANCE ELEMENT
PXX	DETENTION POND
BDCOutfall	OUTFALL

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Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

SWMM Routing Schematic

Figure B-9

Table B-18 - Sample SWMM Input

```
[TITLE]

[OPTIONS]
FLOW_UNITS           CFS
INFILTRATION         HORTON
FLOW_ROUTING         KINWAVE
START_DATE           01/01/2014
START_TIME           00:00:00
REPORT_START_DATE    01/01/2014
REPORT_START_TIME    00:00:00
END_DATE             01/02/2014
END_TIME             12:00:00
SWEEP_START          01/01
SWEEP_END            12/31
DRY_DAYS             0
REPORT_STEP          00:01:00
WET_STEP             00:05:00
DRY_STEP             01:00:00
ROUTING_STEP         0:00:05
ALLOW_PONDING        YES
INERTIAL_DAMPING     PARTIAL
VARIABLE_STEP        0.75
LENGTHENING_STEP     0
MIN_SURFAREA         0
NORMAL_FLOW_LIMITED  BOTH
SKIP_STEADY_STATE    NO
FORCE_MAIN_EQUATION  H-W
LINK_OFFSETS         DEPTH
MIN_SLOPE            0

[FILES]
USE_INFLOWS "H:\350214.00_Big_Dry_Creek_MDP\Design\Eng\Hydrology\SWMM\Big Dry Creek
SWMM\1_Fut_2yr_0mi^2_BDC.txt"

[EVAPORATION]
;;Type       Parameters
;;---------- ----------
CONSTANT     0
DRY_ONLY     NO

[JUNCTIONS]
;;               Invert     Max.       Init.      Surcharge  Ponded
;;Name           Elev.      Depth      Depth      Depth      Area
;;-------------- ---------- ---------- ---------- ---------- ----------
1                5231       0          0          0          0
2                5349       0          0          0          0
3                5383       0          0          0          0
4                5421       0          0          0          0
5                5396       0          0          0          0
6                5397       0          0          0          0
7                5410       0          0          0          0
8                5418       0          0          0          0
9                5424       0          0          0          0
10               5444       0          0          0          0
11               5409       0          0          0          0
12               5455       0          0          0          0
13               5441       0          0          0          0
14               5474       0          0          0          0
15               5488       0          0          0          0
16               5457       0          0          0          0
17               5486       0          0          0          0
18               5523       0          0          0          0
19               5527       0          0          0          0
20               5498       0          0          0          0
21               5490       0          0          0          0
22               5526       0          0          0          0
23               5536       0          0          0          0
24               5538       0          0          0          0
25               5482       0          0          0          0
26               5494       0          0          0          0
27               5535       0          0          0          0
28               5555       0          0          0          0
30               5525       0          0          0          0
31               5604       0          0          0          0
32               5586       0          0          0          0
33               5614       0          0          0          0
34               5641       0          0          0          0
35               5671       0          0          0          0
36               5649       0          0          0          0
37               5711       0          0          0          0
40               5563       0          0          0          0
41               5573       0          0          0          0
42               5585       0          0          0          0
43               5596       0          0          0          0
44               5570       0          0          0          0
45               5601       0          0          0          0
46               5621       0          0          0          0
50               5611       0          0          0          0
51               5633       0          0          0          0
52               5646       0          0          0          0
53               5662       0          0          0          0
54               5698       0          0          0          0
55               5714       0          0          0          0
56               5740       0          0          0          0
57               5794       0          0          0          0
60               5617       0          0          0          0
61               5593       0          0          0          0
65               5626       0          0          0          0
66               5656       0          0          0          0
67               5703       0          0          0          0
68               5713       0          0          0          0
69               5746       0          0          0          0
70               5796       0          0          0          0
71               5789       0          0          0          0
72               5790       0          0          0          0
73               5819       0          0          0          0
75               5632       0          0          0          0
76               5646       0          0          0          0
77               5690       0          0          0          0
78               5725       0          0          0          0
79               5666       0          0          0          0
80               5653       0          0          0          0
81               5696       0          0          0          0
82               5700       0          0          0          0
83               5744       0          0          0          0
85               5671       0          0          0          0
86               5744       0          0          0          0
87               5772       0          0          0          0
88               5798       0          0          0          0
89               5845       0          0          0          0
90               5833       0          0          0          0
91               5895       0          0          0          0
95               5754       0          0          0          0
96               5736       0          0          0          0
100              5743       0          0          0          0
101              5772       0          0          0          0
102              5841       0          0          0          0
103              5841       0          0          0          0
104              5868       0          0          0          0
105              5869       0          0          0          0
106              5919       0          0          0          0
107              5900       0          0          0          0
108              5947       0          0          0          0
110              5792       0          0          0          0
111              5777       0          0          0          0
112              5808       0          0          0          0
113              5778       0          0          0          0
114              5820       0          0          0          0
115              5832       0          0          0          0
116              5825       0          0          0          0
117              5802       0          0          0          0
118              5849       0          0          0          0
119              5878       0          0          0          0
120              5867       0          0          0          0
121              5924       0          0          0          0
122              5932       0          0          0          0
123              5870       0          0          0          0
125              5907       0          0          0          0
126              5899       0          0          0          0
127              5955       0          0          0          0
```

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128	5934	0	0	0	0
130	5960	0	0	0	0
131	6012	0	0	0	0
132	6073	0	0	0	0
133	6165	0	0	0	0
134	6185	0	0	0	0
135	6020	0	0	0	0
136	6097	0	0	0	0
137	6188	0	0	0	0
138	6231	0	0	0	0
140	5967	0	0	0	0
141	6035	0	0	0	0
142	6084	0	0	0	0
143	6197	0	0	0	0
144	6199	0	0	0	0
145	6314	0	0	0	0
146	6103	0	0	0	0
147	6120	0	0	0	0
148	6236	0	0	0	0
149	6258	0	0	0	0
150	6293	0	0	0	0
151	6242	0	0	0	0
152	6321	0	0	0	0
160	5888	0	0	0	0
161	5934	0	0	0	0
162	5980	0	0	0	0
163	5996	0	0	0	0
164	6014	0	0	0	0
165	6028	0	0	0	0
166	6116	0	0	0	0
167	6222	0	0	0	0
170	5904	0	0	0	0
171	5970	0	0	0	0
175	5953	0	0	0	0
176	6003	0	0	0	0
177	6024	0	0	0	0
178	6087	0	0	0	0
179	6158	0	0	0	0
180	5961	0	0	0	0
181	5996	0	0	0	0
182	6014	0	0	0	0
183	6059	0	0	0	0
184	6162	0	0	0	0
185	6117	0	0	0	0
186	6283	0	0	0	0
187	6162	0	0	0	0
188	6309	0	0	0	0
190	6056	0	0	0	0
191	6190	0	0	0	0
192	6276	0	0	0	0
193	6293	0	0	0	0
194	6230	0	0	0	0
195	6276	0	0	0	0
196	6256	0	0	0	0
197	6264	0	0	0	0
198	6253	0	0	0	0
199	6353	0	0	0	0
200	6287	0	0	0	0
201	6340	0	0	0	0
202	6412	0	0	0	0
203	6421	0	0	0	0
204	6372	0	0	0	0
205	6468	0	0	0	0
J1	5296	0	0	0	0
J100	5694	0	0	0	0
J101	5711	0	0	0	0
J102	5780	0	0	0	0
J103	5802	0	0	0	0
J105	5826	0	0	0	0
J106	5881	0	0	0	0
J107	5868	0	0	0	0
J108	5916	0	0	0	0
J11	5378	0	0	0	0
J110	5703	0	0	0	0
J112	5737	0	0	0	0
J113	5742	0	0	0	0
J114	5749	0	0	0	0
J116	5749	0	0	0	0
J117	5761	0	0	0	0
J119	5867	0	0	0	0
J12	5446	0	0	0	0
J120	5786	0	0	0	0
J1201	5798	0	0	0	0
J121	5867	0	0	0	0
J122	5884	0	0	0	0
J125	5827	0	0	0	0
J126	5850	0	0	0	0
J127	5912	0	0	0	0
J128	5883	0	0	0	0
J13	5395	0	0	0	0
J130	5946	0	0	0	0
J131	5953	0	0	0	0
J132	6015	0	0	0	0
J134	6047	0	0	0	0
J135	5947	0	0	0	0
J136	6008	0	0	0	0
J138	6096	0	0	0	0
J140	5916	0	0	0	0
J141	5960	0	0	0	0
J143	6090	0	0	0	0
J144	6111	0	0	0	0
J145	6204	0	0	0	0
J147	6003	0	0	0	0
J148	6095	0	0	0	0
J149	6177	0	0	0	0
J151	6106	0	0	0	0
J152	6207	0	0	0	0
J16	5406	0	0	0	0
J160	5841	0	0	0	0
J161	5883	0	0	0	0
J162	5893	0	0	0	0
J164	5918	0	0	0	0
J165	5940	0	0	0	0
J1651	5958	0	0	0	0
J166	6002	0	0	0	0
J167	6031	0	0	0	0
J17	5425	0	0	0	0
J170	5847	0	0	0	0
J1701	5861	0	0	0	0
J171	5890	0	0	0	0
J175	5882	0	0	0	0
J176	5938	0	0	0	0
J177	5986	0	0	0	0
J178	6028	0	0	0	0
J179	6029	0	0	0	0
J180	5891	0	0	0	0
J181	5907	0	0	0	0
J183	5979	0	0	0	0
J187	6071	0	0	0	0
J188	6150	0	0	0	0
J19	5507	0	0	0	0
J190	5999	0	0	0	0
J193	6051	0	0	0	0
J195	6154	0	0	0	0
J197	6167	0	0	0	0
J198	6176	0	0	0	0
J2	5312	0	0	0	0
J20	5431	0	0	0	0
J200	6204	0	0	0	0
J201	6258	0	0	0	0
J202	6322	0	0	0	0
J204	6297	0	0	0	0
J205	6350	0	0	0	0
J21	5434	0	0	0	0
J211	5446	0	0	0	0
J22	5510	0	0	0	0
J23	5509	0	0	0	0
J24	5522	0	0	0	0
J25	5455	0	0	0	0
J26	5475	0	0	0	0
J27	5510	0	0	0	0
J28	5509	0	0	0	0
J3	5326	0	0	0	0
J30	5499	0	0	0	0
J31	5528	0	0	0	0
J32	5536	0	0	0	0

ORIGINAL 2015 MDP BY PLAYRES ASSOCIATES

```
J33             5569        0          0          0          0
J37             5650        0          0          0          0
J40             5507        0          0          0          0
J41             5555        0          0          0          0
J43             5574        0          0          0          0
J44             5526        0          0          0          0
J45             5591        0          0          0          0
J46             5608        0          0          0          0
J5              5336        0          0          0          0
J51             5588        0          0          0          0
J511            5619        0          0          0          0
J52             5637        0          0          0          0
J53             5648        0          0          0          0
J54             5638        0          0          0          0
J55             5656        0          0          0          0
J56             5711        0          0          0          0
J57             5746        0          0          0          0
J60             5540        0          0          0          0
J61             5549        0          0          0          0
J66             5607        0          0          0          0
J67             5630        0          0          0          0
J68             5661        0          0          0          0
J69             5687        0          0          0          0
J7              5348        0          0          0          0
J70             5716        0          0          0          0
J72             5746        0          0          0          0
J73             5771        0          0          0          0
J75             5565        0          0          0          0
J76             5579        0          0          0          0
J77             5601        0          0          0          0
J78             5711        0          0          0          0
J79             5652        0          0          0          0
J80             5617        0          0          0          0
J801            5621        0          0          0          0
J81             5653        0          0          0          0
J82             5668        0          0          0          0
J83             5716        0          0          0          0
J85             5633        0          0          0          0
J86             5656        0          0          0          0
J87             5699        0          0          0          0
J89             5754        0          0          0          0
J9              5363        0          0          0          0
J90             5766        0          0          0          0
J91             5852        0          0          0          0
J95             5670        0          0          0          0
J951            5682        0          0          0          0

[OUTFALLS]
;;              Invert     Outfall    Stage/Table      Tide
;;Name          Elev.      Type       Time Series      Gate
;;--------------- ---------- ---------- ---------------- ----
BDCOutfall      5293       FREE                        NO

[DIVIDERS]
;;              Invert     Diverted         Divider
;;Name          Elev.      Link             Type       Parameters
;;--------------- ---------- ---------------- ---------- ----------
;Flow divider at Nobles Road and Colorado Boulevard.
J35             5613       L35              OVERFLOW   0          0          0          0          0          0
J123            5807       L118             TABULAR    J123            0          0          0          0          0

[STORAGE]
;;              Invert   Max.     Init.    Storage    Curve                    Ponded   Evap.
;;Name          Elev.    Depth    Depth    Curve      Params                   Area     Frac.
Infiltration Parameters
;;--------------- -------- -------- -------- ---------- -------- -------- -------- -------- --------
---------------
P101            5716     30       0        TABULAR    P101                     0        0
P70             5722     30       0        TABULAR    P70                      0        0
P88             5712     50       0        TABULAR    P88                      0        0
P90             5787     30       0        TABULAR    P90                      0        0
P105            5830     30       0        TABULAR    P105                     0        0
P102            5784     30       0        TABULAR    P102                     0        0
P123            5812     50       0        TABULAR    P123                     0        0
P162            5897     50       0        TABULAR    P162                     0        0
P165            5946     32.7     0        TABULAR    P165                     0        0
P69             5691     24       0        TABULAR    P69                      0        0
P135            5949     24       0        TABULAR    P135                     0        0
P141            5963     26       0        TABULAR    P141                     0        0

[CONDUITS]
;;              Inlet           Outlet                      Manning    Inlet      Outlet     Init.
Max.
;;Name          Node            Node             Length     N          Offset     Offset     Flow
Flow
;;--------------- --------------- --------------- ---------- ---------- ---------- ---------- ---------- --
--------
C35             J35             J32              4018       0.016      0          0          0
197
D1              1               J1               400        0.01       0          0          0          0
D10             10              J11              400        0.01       0          0          0          0
D100            100             J100             400        0.01       0          0          0          0
D101            101             P101             400        0.01       0          0          0          0
D102            102             P102             400        0.01       0          0          0          0
D103            103             J103             400        0.01       0          0          0          0
D104            104             J105             400        0.01       0          0          0          0
D105            105             P105             400        0.01       0          0          0          0
D106            106             J106             400        0.01       0          0          0          0
D107            107             J107             400        0.01       0          0          0          0
D108            108             J108             400        0.01       0          0          0          0
D11             11              J11              400        0.01       0          0          0          0
D110            110             J110             400        0.01       0          0          0          0
D111            111             J110             400        0.01       0          0          0          0
D112            112             J112             400        0.01       0          0          0          0
D113            113             J113             400        0.01       0          0          0          0
D114            114             J114             400        0.01       0          0          0          0
D115            115             J116             400        0.01       0          0          0          0
D116            116             J116             400        0.01       0          0          0          0
D117            117             J117             400        0.01       0          0          0          0
D118            118             P123             400        0.01       0          0          0          0
D119            119             J119             400        0.01       0          0          0          0
D12             12              J12              400        0.01       0          0          0          0
D120            120             J120             400        0.01       0          0          0          0
D121            121             J121             400        0.01       0          0          0          0
D122            122             J122             400        0.01       0          0          0          0
D123            123             P123             400        0.01       0          0          0          0
D125            125             J125             400        0.01       0          0          0          0
D126            126             J126             400        0.01       0          0          0          0
D127            127             J127             400        0.01       0          0          0          0
D128            128             J128             400        0.01       0          0          0          0
D13             13              J13              400        0.01       0          0          0          0
D130            130             J140             400        0.01       0          0          0          0
D131            131             J131             400        0.01       0          0          0          0
D132            132             J132             400        0.01       0          0          0          0
D133            133             J134             400        0.01       0          0          0          0
D134            134             J134             400        0.01       0          0          0          0
D135            135             P135             400        0.01       0          0          0          0
D136            136             J136             400        0.01       0          0          0          0
D137            137             J138             400        0.01       0          0          0          0
D138            138             J138             400        0.01       0          0          0          0
D14             14              J16              400        0.01       0          0          0          0
D140            140             J140             400        0.01       0          0          0          0
D141            141             P141             400        0.01       0          0          0          0
D142            142             J147             400        0.01       0          0          0          0
D143            143             J143             400        0.01       0          0          0          0
D144            144             J144             400        0.01       0          0          0          0
D145            145             J145             400        0.01       0          0          0          0
D146            146             J147             400        0.01       0          0          0          0
D147            147             J147             400        0.01       0          0          0          0
D148            148             J148             400        0.01       0          0          0          0
D149            149             J149             400        0.01       0          0          0          0
D15             15              J16              400        0.01       0          0          0          0
D150            150             J151             400        0.01       0          0          0          0
D151            151             J151             400        0.01       0          0          0          0
D152            152             J152             400        0.01       0          0          0          0
D16             16              J16              400        0.01       0          0          0          0
D160            160             J160             400        0.01       0          0          0          0
D161            161             J161             400        0.01       0          0          0          0
D162            162             P162             400        0.01       0          0          0          0
D163            163             J164             400        0.01       0          0          0          0
D164            164             J164             400        0.01       0          0          0          0
D165            165             P165             400        0.01       0          0          0          0
D166            166             J166             400        0.01       0          0          0          0
D167            167             J167             400        0.01       0          0          0          0
D17             17              J17              400        0.01       0          0          0          0
D170            170             J170             400        0.01       0          0          0          0
```

ORIGINAL 2015 MDP BY RESPECTIVE ASSOCIATES

D171	171	J171	400	0.01	0	0	0	0	D70	70	P70	400	0.01	0	0	0	0
D175	175	J175	400	0.01	0	0	0	0	D71	71	P70	400	0.01	0	0	0	0
D176	176	J176	400	0.01	0	0	0	0	D72	72	J72	400	0.01	0	0	0	0
D177	177	J177	400	0.01	0	0	0	0	D73	73	J73	400	0.01	0	0	0	0
D178	178	J178	400	0.01	0	0	0	0	D75	75	J75	400	0.01	0	0	0	0
D179	179	J179	400	0.01	0	0	0	0	D76	76	J76	400	0.01	0	0	0	0
D18	18	J19	400	0.01	0	0	0	0	D77	77	J77	400	0.01	0	0	0	0
D180	180	J180	400	0.01	0	0	0	0	D78	78	J78	400	0.01	0	0	0	0
D181	181	J181	400	0.01	0	0	0	0	D79	79	J79	400	0.01	0	0	0	0
D182	182	J181	400	0.01	0	0	0	0	D8	8	J9	400	0.01	0	0	0	0
D183	183	J183	400	0.01	0	0	0	0	D80	80	J80	400	0.01	0	0	0	0
D184	184	J183	400	0.01	0	0	0	0	D81	81	J81	400	0.01	0	0	0	0
D185	185	J190	400	0.01	0	0	0	0	D82	82	J82	400	0.01	0	0	0	0
D186	186	J187	400	0.01	0	0	0	0	D83	83	J83	400	0.01	0	0	0	0
D187	187	J187	400	0.01	0	0	0	0	D85	85	J85	400	0.01	0	0	0	0
D188	188	J188	400	0.01	0	0	0	0	D86	86	J86	400	0.01	0	0	0	0
D19	19	J19	400	0.01	0	0	0	0	D87	87	J87	400	0.01	0	0	0	0
D190	190	J190	400	0.01	0	0	0	0	D88	88	P88	400	0.01	0	0	0	0
D191	191	J193	400	0.01	0	0	0	0	D89	89	J89	400	0.01	0	0	0	0
D192	192	J193	400	0.01	0	0	0	0	D9	9	J9	400	0.01	0	0	0	0
D193	193	J193	400	0.01	0	0	0	0	D90	90	P90	400	0.01	0	0	0	0
D194	194	J195	400	0.01	0	0	0	0	D91	91	J91	400	0.01	0	0	0	0
D195	195	J195	400	0.01	0	0	0	0	D95	95	J95	400	0.01	0	0	0	0
D196	196	J197	400	0.01	0	0	0	0	D96	96	J95	400	0.01	0	0	0	0
D197	197	J197	400	0.01	0	0	0	0	L1	J1	BDCOutfall	5	0.01	0	0	0	0
D198	198	J198	400	0.01	0	0	0	0	L100	J100	J951	579.22	0.01	0	0	0	0
D199	199	J200	400	0.01	0	0	0	0	L101	J101	J100	720.14	0.01	0	0	0	0
D2	2	J2	400	0.01	0	0	0	0	L102	J102	P101	3284.39	0.01	0	0	0	0
D20	20	J20	400	0.01	0	0	0	0	L103	J103	P102	1089.1	0.01	0	0	0	0
D200	200	J200	400	0.01	0	0	0	0	L105	J105	J103	1665.36	0.01	0	0	0	0
D201	201	J201	400	0.01	0	0	0	0	L106	J106	P105	1935.77	0.01	0	0	0	0
D202	202	J202	400	0.01	0	0	0	0	L107	J107	P105	1699.74	0.01	0	0	0	0
D203	203	J204	400	0.01	0	0	0	0	L108	J108	J107	2273.25	0.01	0	0	0	0
D204	204	J204	400	0.01	0	0	0	0	L11	J11	J9	2151.99	0.01	0	0	0	0
D205	205	J205	400	0.01	0	0	0	0	L110	J110	J951	937.8	0.01	0	0	0	0
D21	21	J21	400	0.01	0	0	0	0	L112	J112	J110	4031.65	0.01	0	0	0	0
D22	22	J22	400	0.01	0	0	0	0	L113	J113	J112	649.26	0.01	0	0	0	0
D23	23	J23	400	0.01	0	0	0	0	L114	J114	J113	2754.69	0.01	0	0	0	0
D24	24	J24	400	0.01	0	0	0	0	L116	J116	J113	567.97	0.01	0	0	0	0
D25	25	J25	400	0.01	0	0	0	0	L117	J117	J116	632.04	0.01	0	0	0	0
D26	26	J26	400	0.01	0	0	0	0	L118	J123	J117	3278.23	0.01	0	0	0	0
D27	27	J27	400	0.01	0	0	0	0	L119	J119	J114	3172.22	0.01	0	0	0	0
D28	28	J28	400	0.01	0	0	0	0	L12	J12	J11	1873.66	0.01	0	0	0	0
D3	3	J3	400	0.01	0	0	0	0	L120	J120	J116	2841.52	0.01	0	0	0	0
D30	30	J30	400	0.01	0	0	0	0	L1201	J1201	J120	787.18	0.01	0	0	0	0
D31	31	J31	400	0.01	0	0	0	0	L121	J121	J1201	2046.48	0.01	0	0	0	0
D32	32	J32	400	0.01	0	0	0	0	L122	J122	J121	955.56	0.01	0	0	0	0
D33	33	J33	400	0.01	0	0	0	0	L123	J123	J1201	726.41	0.01	0	0	0	0
D34	34	J35	400	0.01	0	0	0	0	L125	J125	P123	1153	0.01	0	0	0	0
D35	35	J35	400	0.01	0	0	0	0	L126	J126	J125	1553.14	0.01	0	0	0	0
D36	36	J35	400	0.01	0	0	0	0	L127	J127	J126	3439.48	0.01	0	0	0	0
D37	37	J37	400	0.01	0	0	0	0	L128	J128	J126	2687.51	0.01	0	0	0	0
D4	4	J5	400	0.01	0	0	0	0	L13	J13	J11	1914.93	0.01	0	0	0	0
D40	40	J40	400	0.01	0	0	0	0	L130	J130	J140	1552.27	0.01	0	0	0	0
D41	41	J41	400	0.01	0	0	0	0	L131	J131	J130	433.2	0.01	0	0	0	0
D42	42	J40	400	0.01	0	0	0	0	L132	J132	J131	2371.66	0.01	0	0	0	0
D43	43	J43	400	0.01	0	0	0	0	L134	J134	J132	1748.24	0.01	0	0	0	0
D44	44	J44	400	0.01	0	0	0	0	L135	J135	J130	318.75	0.01	0	0	0	0
D45	45	J45	400	0.01	0	0	0	0	L136	J136	P135	2471.36	0.01	0	0	0	0
D46	46	J46	400	0.01	0	0	0	0	L138	J138	J136	2410.85	0.01	0	0	0	0
D5	5	J5	400	0.01	0	0	0	0	L140	J140	J128	2548.58	0.01	0	0	0	0
D50	50	J60	400	0.01	0	0	0	0	L141	J141	J140	2740.91	0.01	0	0	0	0
D51	51	J51	400	0.01	0	0	0	0	L143	J143	J147	2862.07	0.01	0	0	0	0
D52	52	J52	400	0.01	0	0	0	0	L144	J144	J143	594.67	0.01	0	0	0	0
D53	53	J53	400	0.01	0	0	0	0	L145	J145	J144	2069.6	0.01	0	0	0	0
D54	54	J54	400	0.01	0	0	0	0	L147	J147	P141	2169.73	0.01	0	0	0	0
D55	55	J55	400	0.01	0	0	0	0	L148	J148	J147	4219.59	0.01	0	0	0	0
D56	56	J56	400	0.01	0	0	0	0	L149	J149	J148	1535.05	0.01	0	0	0	0
D57	57	J57	400	0.01	0	0	0	0	L151	J151	J148	379.98	0.01	0	0	0	0
D6	6	J7	400	0.01	0	0	0	0	L152	J152	J151	2386.02	0.01	0	0	0	0
D60	60	J60	400	0.01	0	0	0	0	L16	J16	J13	1755.26	0.01	0	0	0	0
D61	61	J61	400	0.01	0	0	0	0	L160	J160	J125	1479.43	0.01	0	0	0	0
D65	65	J75	400	0.01	0	0	0	0	L161	J161	J160	2838.12	0.01	0	0	0	0
D66	66	J66	400	0.01	0	0	0	0	L162	J162	J161	1103.73	0.01	0	0	0	0
D67	67	J67	400	0.01	0	0	0	0	L164	J164	P162	1347.63	0.01	0	0	0	0
D68	68	J68	400	0.01	0	0	0	0	L165	J165	J164	1060.54	0.01	0	0	0	0
D69	69	P69	400	0.01	0	0	0	0	L1651	J1651	P165	596.85	0.01	0	0	0	0
D7	7	J7	400	0.01	0	0	0	0	L166	J166	J1651	937.95	0.01	0	0	0	0

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L167	J167	J1651	1452.9	0.01	0	0	0	0	
L17	J17	J16	2769.03	0.01	0	0	0	0	
L170	J170	J160	272.4	0.01	0	0	0	0	
L1701	J1701	J170	1072.62	0.01	0	0	0	0	
L171	J171	J1701	2324.36	0.01	0	0	0	0	
L175	J175	J1701	1814.89	0.01	0	0	0	0	
L176	J176	J180	2375.84	0.01	0	0	0	0	
L177	J177	J176	2254.18	0.01	0	0	0	0	
L178	J178	J177	1531.13	0.01	0	0	0	0	
L179	J179	J177	1584.36	0.01	0	0	0	0	
L180	J180	J175	646.5	0.01	0	0	0	0	
L181	J181	J180	1259.32	0.01	0	0	0	0	
L183	J183	J181	4678.61	0.01	0	0	0	0	
L187	J187	J190	2609.74	0.01	0	0	0	0	
L188	J188	J187	1634.47	0.01	0	0	0	0	
L19	J19	J17	1776.42	0.01	0	0	0	0	
L190	J190	J183	935.22	0.01	0	0	0	0	
L193	J193	J190	2965.21	0.01	0	0	0	0	
L195	J195	J193	3865.39	0.01	0	0	0	0	
L197	J197	J195	967.78	0.01	0	0	0	0	
L198	J198	J197	482.98	0.01	0	0	0	0	
L2	J2	J1	1735.25	0.01	0	0	0	0	
L20	J20	J17	818.28	0.01	0	0	0	0	
L200	J200	J198	1632.35	0.01	0	0	0	0	
L201	J201	J200	1892.59	0.01	0	0	0	0	
L202	J202	J201	1875.24	0.01	0	0	0	0	
L204	J204	J201	1669.2	0.01	0	0	0	0	
L205	J205	J204	1993.56	0.01	0	0	0	0	
L21	J21	J20	667.63	0.01	0	0	0	0	
L211	J211	J21	1710.16	0.01	0	0	0	0	
L22	J22	J211	844.48	0.01	0	0	0	0	
L23	J23	J21	1740	0.01	0	0	0	0	
L24	J24	J25	922.73	0.01	0	0	0	0	
L25	J25	J211	1241.94	0.01	0	0	0	0	
L26	J26	J25	2762.23	0.01	0	0	0	0	
L27	J27	J26	480.22	0.01	0	0	0	0	
L28	J28	J26	986.52	0.01	0	0	0	0	
L3	J3	J2	1736.21	0.01	0	0	0	0	
L30	J30	J26	2526.49	0.01	0	0	0	0	
L31	J31	J30	2178.65	0.01	0	0	0	0	
L32	J32	J31	736.9	0.01	0	0	0	0	
L33	J33	J32	1170.26	0.01	0	0	0	0	
L35	J35	J33	2556.61	0.01	0	0	0	0	
L37	J37	J35	2966.45	0.01	0	0	0	0	
L40	J40	J30	1221.71	0.01	0	0	0	0	
L41	J41	J40	689.8	0.01	0	0	0	0	
L43	J43	J40	2599.16	0.01	0	0	0	0	
L44	J44	J40	2542.76	0.01	0	0	0	0	
L45	J45	J41	2231.42	0.01	0	0	0	0	
L46	J46	J45	1345.02	0.01	0	0	0	0	
L5	J5	J3	1806.95	0.01	0	0	0	0	
L51	J51	J60	1796.32	0.01	0	0	0	0	
L511	J511	J51	1912.4	0.01	0	0	0	0	
L52	J52	J51	1006.82	0.01	0	0	0	0	
L53	J53	J511	436.74	0.01	0	0	0	0	
L54	J54	J511	1099.75	0.01	0	0	0	0	
L55	J55	J54	787.02	0.01	0	0	0	0	
L56	J56	J55	2425.3	0.01	0	0	0	0	
L57	J57	J56	1322.72	0.01	0	0	0	0	
L60	J60	J44	1758.52	0.01	0	0	0	0	
L61	J61	J60	1327.79	0.01	0	0	0	0	
L66	J66	J75	2720.39	0.01	0	0	0	0	
L67	J67	J66	1095.61	0.01	0	0	0	0	
L68	J68	J67	655.94	0.01	0	0	0	0	
L69	J69	J68	2513.99	0.01	0	0	0	0	
L7	J7	J5	1589.19	0.01	0	0	0	0	
L70	J70	P69	478.29	0.01	0	0	0	0	
L72	J72	J70	1181.47	0.01	0	0	0	0	
L73	J73	P70	679.2	0.01	0	0	0	0	
L75	J75	J61	1977.7	0.01	0	0	0	0	
L76	J76	J75	1268.19	0.01	0	0	0	0	
L77	J77	J76	2976.98	0.01	0	0	0	0	
L78	J78	J77	3626.59	0.01	0	0	0	0	
L79	J79	J77	943.15	0.01	0	0	0	0	
L80	J80	J77	1310.66	0.01	0	0	0	0	
L801	J801	J80	583.85	0.01	0	0	0	0	
L81	J81	J77	910.33	0.01	0	0	0	0	
L82	J82	J801	1627.91	0.01	0	0	0	0	
L83	J83	J82	1123.08	0.01	0	0	0	0	
L85	J85	J801	1590.26	0.01	0	0	0	0	
L86	J86	J85	2288.07	0.01	0	0	0	0	
L87	J87	J86	1491	.013	0	0	0	0	
L89	J89	P88	935.69	0.01	0	0	0	0	
L9	J9	J7	1978.02	0.01	0	0	0	0	
L90	J90	J89	990.33	0.01	0	0	0	0	
L91	J91	P90	2234.72	0.01	0	0	0	0	
L95	J95	J86	1314.58	0.01	0	0	0	0	
L951	J951	J95	1472.98	0.01	0	0	0	0	

[OUTLETS]

;;Name	Inlet Node	Outlet Node	Outflow Height	Outlet Type	Qcoeff/ QTable	Qexpon	Flap Gate
O101	P101	J101	0	TABULAR/HEAD	O101		NO
O70	P70	J70	0	TABULAR/HEAD	O70		NO
O90	P90	J90	0	TABULAR/HEAD	O90		NO
O105	P105	J105	0	TABULAR/HEAD	O105		NO
O102	P102	J102	0	TABULAR/HEAD	O102		NO
O123	P123	J123	0	TABULAR/HEAD	O123		NO
O162	P162	J162	0	TABULAR/HEAD	O162		NO
O165	P165	J165	0	TABULAR/HEAD	O165		NO
O88	P88	J87	0	TABULAR/HEAD	O88		NO
O69	P69	J69	0	TABULAR/HEAD	O69		NO
O135	P135	J135	0	TABULAR/HEAD	O135		NO
O141	P141	J141	0	TABULAR/HEAD	O141		NO

[XSECTIONS]

;;Link	Shape	Geom1	Geom2	Geom3	Geom4	Barrels
C35	CIRCULAR	4.5	0	0	0	1
D1	DUMMY	0	0	0	0	1
D10	DUMMY	0	0	0	0	1
D100	DUMMY	0	0	0	0	1
D101	DUMMY	0	0	0	0	1
D102	DUMMY	0	0	0	0	1
D103	DUMMY	0	0	0	0	1
D104	DUMMY	0	0	0	0	1
D105	DUMMY	0	0	0	0	1
D106	DUMMY	0	0	0	0	1
D107	DUMMY	0	0	0	0	1
D108	DUMMY	0	0	0	0	1
D11	DUMMY	0	0	0	0	1
D110	DUMMY	0	0	0	0	1
D111	DUMMY	0	0	0	0	1
D112	DUMMY	0	0	0	0	1
D113	DUMMY	0	0	0	0	1
D114	DUMMY	0	0	0	0	1
D115	DUMMY	0	0	0	0	1
D116	DUMMY	0	0	0	0	1
D117	DUMMY	0	0	0	0	1
D118	DUMMY	0	0	0	0	1
D119	DUMMY	0	0	0	0	1
D12	DUMMY	0	0	0	0	1
D120	DUMMY	0	0	0	0	1
D121	DUMMY	0	0	0	0	1
D122	DUMMY	0	0	0	0	1
D123	DUMMY	0	0	0	0	1
D125	DUMMY	0	0	0	0	1
D126	DUMMY	0	0	0	0	1
D127	DUMMY	0	0	0	0	1
D128	DUMMY	0	0	0	0	1
D13	DUMMY	0	0	0	0	1
D130	DUMMY	0	0	0	0	1
D131	DUMMY	0	0	0	0	1
D132	DUMMY	0	0	0	0	1
D133	DUMMY	0	0	0	0	1
D134	DUMMY	0	0	0	0	1
D135	DUMMY	0	0	0	0	1
D136	DUMMY	0	0	0	0	1
D137	DUMMY	0	0	0	0	1
D138	DUMMY	0	0	0	0	1
D14	DUMMY	0	0	0	0	1
D140	DUMMY	0	0	0	0	1

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D141	DUMMY	0	0	0	0	1
D142	DUMMY	0	0	0	0	1
D143	DUMMY	0	0	0	0	1
D144	DUMMY	0	0	0	0	1
D145	DUMMY	0	0	0	0	1
D146	DUMMY	0	0	0	0	1
D147	DUMMY	0	0	0	0	1
D148	DUMMY	0	0	0	0	1
D149	DUMMY	0	0	0	0	1
D15	DUMMY	0	0	0	0	1
D150	DUMMY	0	0	0	0	1
D151	DUMMY	0	0	0	0	1
D152	DUMMY	0	0	0	0	1
D16	DUMMY	0	0	0	0	1
D160	DUMMY	0	0	0	0	1
D161	DUMMY	0	0	0	0	1
D162	DUMMY	0	0	0	0	1
D163	DUMMY	0	0	0	0	1
D164	DUMMY	0	0	0	0	1
D165	DUMMY	0	0	0	0	1
D166	DUMMY	0	0	0	0	1
D167	DUMMY	0	0	0	0	1
D17	DUMMY	0	0	0	0	1
D170	DUMMY	0	0	0	0	1
D171	DUMMY	0	0	0	0	1
D175	DUMMY	0	0	0	0	1
D176	DUMMY	0	0	0	0	1
D177	DUMMY	0	0	0	0	1
D178	DUMMY	0	0	0	0	1
D179	DUMMY	0	0	0	0	1
D18	DUMMY	0	0	0	0	1
D180	DUMMY	0	0	0	0	1
D181	DUMMY	0	0	0	0	1
D182	DUMMY	0	0	0	0	1
D183	DUMMY	0	0	0	0	1
D184	DUMMY	0	0	0	0	1
D185	DUMMY	0	0	0	0	1
D186	DUMMY	0	0	0	0	1
D187	DUMMY	0	0	0	0	1
D188	DUMMY	0	0	0	0	1
D19	DUMMY	0	0	0	0	1
D190	DUMMY	0	0	0	0	1
D191	DUMMY	0	0	0	0	1
D192	DUMMY	0	0	0	0	1
D193	DUMMY	0	0	0	0	1
D194	DUMMY	0	0	0	0	1
D195	DUMMY	0	0	0	0	1
D196	DUMMY	0	0	0	0	1
D197	DUMMY	0	0	0	0	1
D198	DUMMY	0	0	0	0	1
D199	DUMMY	0	0	0	0	1
D2	DUMMY	0	0	0	0	1
D20	DUMMY	0	0	0	0	1
D200	DUMMY	0	0	0	0	1
D201	DUMMY	0	0	0	0	1
D202	DUMMY	0	0	0	0	1
D203	DUMMY	0	0	0	0	1
D204	DUMMY	0	0	0	0	1
D205	DUMMY	0	0	0	0	1
D21	DUMMY	0	0	0	0	1
D22	DUMMY	0	0	0	0	1
D23	DUMMY	0	0	0	0	1
D24	DUMMY	0	0	0	0	1
D25	DUMMY	0	0	0	0	1
D26	DUMMY	0	0	0	0	1
D27	DUMMY	0	0	0	0	1
D28	DUMMY	0	0	0	0	1
D3	DUMMY	0	0	0	0	1
D30	DUMMY	0	0	0	0	1
D31	DUMMY	0	0	0	0	1
D32	DUMMY	0	0	0	0	1
D33	DUMMY	0	0	0	0	1
D34	DUMMY	0	0	0	0	1
D35	DUMMY	0	0	0	0	1
D36	DUMMY	0	0	0	0	1
D37	DUMMY	0	0	0	0	1
D4	DUMMY	0	0	0	0	1
D40	DUMMY	0	0	0	0	1
D41	DUMMY	0	0	0	0	1
D42	DUMMY	0	0	0	0	1
D43	DUMMY	0	0	0	0	1
D44	DUMMY	0	0	0	0	1
D45	DUMMY	0	0	0	0	1
D46	DUMMY	0	0	0	0	1
D5	DUMMY	0	0	0	0	1
D50	DUMMY	0	0	0	0	1
D51	DUMMY	0	0	0	0	1
D52	DUMMY	0	0	0	0	1
D53	DUMMY	0	0	0	0	1
D54	DUMMY	0	0	0	0	1
D55	DUMMY	0	0	0	0	1
D56	DUMMY	0	0	0	0	1
D57	DUMMY	0	0	0	0	1
D6	DUMMY	0	0	0	0	1
D60	DUMMY	0	0	0	0	1
D61	DUMMY	0	0	0	0	1
D65	DUMMY	0	0	0	0	1
D66	DUMMY	0	0	0	0	1
D67	DUMMY	0	0	0	0	1
D68	DUMMY	0	0	0	0	1
D69	DUMMY	0	0	0	0	1
D7	DUMMY	0	0	0	0	1
D70	DUMMY	0	0	0	0	1
D71	DUMMY	0	0	0	0	1
D72	DUMMY	0	0	0	0	1
D73	DUMMY	0	0	0	0	1
D75	DUMMY	0	0	0	0	1
D76	DUMMY	0	0	0	0	1
D77	DUMMY	0	0	0	0	1
D78	DUMMY	0	0	0	0	1
D79	DUMMY	0	0	0	0	1
D8	DUMMY	0	0	0	0	1
D80	DUMMY	0	0	0	0	1
D81	DUMMY	0	0	0	0	1
D82	DUMMY	0	0	0	0	1
D83	DUMMY	0	0	0	0	1
D85	DUMMY	0	0	0	0	1
D86	DUMMY	0	0	0	0	1
D87	DUMMY	0	0	0	0	1
D88	DUMMY	0	0	0	0	1
D89	DUMMY	0	0	0	0	1
D9	DUMMY	0	0	0	0	1
D90	DUMMY	0	0	0	0	1
D91	DUMMY	0	0	0	0	1
D95	DUMMY	0	0	0	0	1
D96	DUMMY	0	0	0	0	1
L1	DUMMY	0	0	0	0	1
L100	IRREGULAR	L100	0	0	0	1
L101	IRREGULAR	L101	0	0	0	1
L102	IRREGULAR	L102	0	0	0	1
L103	IRREGULAR	L103	0	0	0	1
L105	IRREGULAR	L105	0	0	0	1
L106	IRREGULAR	L106	0	0	0	1
L107	IRREGULAR	L107	0	0	0	1
L108	IRREGULAR	L108	0	0	0	1
L11	IRREGULAR	L11	0	0	0	1
L110	IRREGULAR	L110	0	0	0	1
L112	IRREGULAR	L112	0	0	0	1
L113	IRREGULAR	L113	0	0	0	1
L114	IRREGULAR	L114	0	0	0	1
L116	IRREGULAR	L116	0	0	0	1
L117	IRREGULAR	L117	0	0	0	1
L118	IRREGULAR	L118	0	0	0	1
L119	IRREGULAR	L119	0	0	0	1
L12	IRREGULAR	L12	0	0	0	1
L120	IRREGULAR	L120	0	0	0	1
L1201	IRREGULAR	L1201	0	0	0	1
L121	IRREGULAR	L121	0	0	0	1
L122	IRREGULAR	L122	0	0	0	1
L123	IRREGULAR	L123	0	0	0	1
L125	IRREGULAR	L125	0	0	0	1
L126	IRREGULAR	L126	0	0	0	1
L127	IRREGULAR	L127	0	0	0	1
L128	IRREGULAR	L128	0	0	0	1
L13	IRREGULAR	L13	0	0	0	1
L130	IRREGULAR	L130	0	0	0	1

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L131            IRREGULAR   L131            0       0       0       1
L132            IRREGULAR   L132            0       0       0       1
L134            IRREGULAR   L134            0       0       0       1
L135            IRREGULAR   L135            0       0       0       1
L136            IRREGULAR   L136            0       0       0       1
L138            IRREGULAR   L138            0       0       0       1
L140            IRREGULAR   L140            0       0       0       1
L141            IRREGULAR   L141            0       0       0       1
L143            IRREGULAR   L143            0       0       0       1
L144            IRREGULAR   L144            0       0       0       1
L145            IRREGULAR   L145            0       0       0       1
L147            IRREGULAR   L147            0       0       0       1
L148            IRREGULAR   L148            0       0       0       1
L149            IRREGULAR   L149            0       0       0       1
L151            IRREGULAR   L151            0       0       0       1
L152            IRREGULAR   L152            0       0       0       1
L16             IRREGULAR   L16             0       0       0       1
L160            IRREGULAR   L160            0       0       0       1
L161            IRREGULAR   L161            0       0       0       1
L162            IRREGULAR   L162            0       0       0       1
L164            IRREGULAR   L164            0       0       0       1
L165            IRREGULAR   L165            0       0       0       1
L1651           IRREGULAR   L1651           0       0       0       1
L166            IRREGULAR   L166            0       0       0       1
L167            IRREGULAR   L167            0       0       0       1
L17             IRREGULAR   L17             0       0       0       1
L170            IRREGULAR   L170            0       0       0       1
L1701           IRREGULAR   L1701           0       0       0       1
L171            IRREGULAR   L171            0       0       0       1
L175            IRREGULAR   L175            0       0       0       1
L176            IRREGULAR   L176            0       0       0       1
L177            IRREGULAR   L177            0       0       0       1
L178            IRREGULAR   L178            0       0       0       1
L179            IRREGULAR   L179            0       0       0       1
L180            IRREGULAR   L180            0       0       0       1
L181            IRREGULAR   L181            0       0       0       1
L183            IRREGULAR   L183            0       0       0       1
L187            IRREGULAR   L187            0       0       0       1
L188            IRREGULAR   L188            0       0       0       1
L19             IRREGULAR   L19             0       0       0       1
L190            IRREGULAR   L190            0       0       0       1
L193            IRREGULAR   L193            0       0       0       1
L195            IRREGULAR   L195            0       0       0       1
L197            IRREGULAR   L197            0       0       0       1
L198            IRREGULAR   L198            0       0       0       1
L2              IRREGULAR   L2              0       0       0       1
L20             IRREGULAR   L20             0       0       0       1
L200            IRREGULAR   L200            0       0       0       1
L201            IRREGULAR   L201            0       0       0       1
L202            IRREGULAR   L202            0       0       0       1
L204            IRREGULAR   L204            0       0       0       1
L205            IRREGULAR   L205            0       0       0       1
L21             IRREGULAR   L21             0       0       0       1
L211            IRREGULAR   L211            0       0       0       1
L22             IRREGULAR   L22             0       0       0       1
L23             IRREGULAR   L23             0       0       0       1
L24             IRREGULAR   L24             0       0       0       1
L25             IRREGULAR   L25             0       0       0       1
L26             IRREGULAR   L26             0       0       0       1
L27             IRREGULAR   L27             0       0       0       1
L28             IRREGULAR   L28             0       0       0       1
L3              IRREGULAR   L3              0       0       0       1
L30             IRREGULAR   L30             0       0       0       1
L31             IRREGULAR   L31             0       0       0       1
L32             IRREGULAR   L32             0       0       0       1
L33             IRREGULAR   L33             0       0       0       1
L35             IRREGULAR   L35             0       0       0       1
L37             IRREGULAR   L37             0       0       0       1
L40             IRREGULAR   L40             0       0       0       1
L41             IRREGULAR   L41             0       0       0       1
L43             IRREGULAR   L43             0       0       0       1
L44             IRREGULAR   L44             0       0       0       1
L45             IRREGULAR   L45             0       0       0       1
L46             IRREGULAR   L46             0       0       0       1
L5              IRREGULAR   L5              0       0       0       1
L51             IRREGULAR   L51             0       0       0       1
L511            IRREGULAR   L511            0       0       0       1
L52             IRREGULAR   L52             0       0       0       1
L53             IRREGULAR   L53             0       0       0       1
L54             IRREGULAR   L54             0       0       0       1
L55             IRREGULAR   L55             0       0       0       1
L56             IRREGULAR   L56             0       0       0       1
L57             IRREGULAR   L57             0       0       0       1
L60             IRREGULAR   L60             0       0       0       1
L61             IRREGULAR   L61             0       0       0       1
L66             IRREGULAR   L66             0       0       0       1
L67             IRREGULAR   L67             0       0       0       1
L68             IRREGULAR   L68             0       0       0       1
L69             IRREGULAR   L69             0       0       0       1
L7              IRREGULAR   L7              0       0       0       1
L70             IRREGULAR   L70             0       0       0       1
L72             IRREGULAR   L72             0       0       0       1
L73             IRREGULAR   L73             0       0       0       1
L75             IRREGULAR   L75             0       0       0       1
L76             IRREGULAR   L76             0       0       0       1
L77             IRREGULAR   L77             0       0       0       1
L78             IRREGULAR   L78             0       0       0       1
L79             IRREGULAR   L79             0       0       0       1
L80             IRREGULAR   L80             0       0       0       1
L801            IRREGULAR   L801            0       0       0       1
L81             IRREGULAR   L81             0       0       0       1
L82             IRREGULAR   L82             0       0       0       1
L83             IRREGULAR   L83             0       0       0       1
L85             IRREGULAR   L85             0       0       0       1
L86             IRREGULAR   L86             0       0       0       1
L87             CIRCULAR    5               0       0       0       1
L89             IRREGULAR   L89             0       0       0       1
L9              IRREGULAR   L9              0       0       0       1
L90             IRREGULAR   L90             0       0       0       1
L91             IRREGULAR   L91             0       0       0       1
L95             IRREGULAR   L95             0       0       0       1
L951            IRREGULAR   L951            0       0       0       1

[TRANSECTS]

NC 0.08     0.08    0.05
X1 L100                 20      61.482  102.47  0.0     0.0     0       0       0
GR 5703.587 0       5701.234 10.247  5698.385 20.494  5695.375 30.741  5693.124 40.988
GR 5691.431 51.235  5689.954 61.482  5689.54  71.73   5689.957 81.977  5690.566 92.224
GR 5691.463 102.47  5692.613 112.72  5693.858 122.96  5695.26  133.21  5696.669 143.46
GR 5697.862 153.71  5699.183 163.95  5701.027 174.2   5702.816 184.45  5704.544 194.69

NC 0.044    0.044   0.05
X1 L101                 50      84.024  120.04  0.0     0.0     0       0       0
GR 5717.888 0       5718.072 4.001   5718.316 8.002   5718.651 12.003  5718.76  16.005
GR 5718.733 20.006  5718.531 24.007  5718.047 28.008  5717.375 32.009  5716.439 36.01
GR 5715.557 40.012  5714.615 44.013  5713.544 48.014  5712.46  52.015  5711.449 56.016
GR 5710.587 60.017  5710.046 64.019  5709.597 68.02   5709.217 72.021  5709     76.022
GR 5708.72  80.023  5708.269 84.024  5707.605 88.026  5706.735 92.027  5705.544 96.028
GR 5704.919 100.03  5705.292 104.03  5707.303 108.03  5708.969 112.03  5710.521 116.03
GR 5711.98  120.03  5712.979 124.04  5713.806 128.04  5714.468 132.04  5715.016 136.04
GR 5715.486 140.04  5715.848 144.04  5716.126 148.04  5716.378 152.04  5716.611 156.05
GR 5716.985 160.05  5717.383 164.05  5717.782 168.05  5718.181 172.05  5718.579 176.05
GR 5718.977 180.05  5719.469 184.05  5719.941 188.05  5720.341 192.06  5720.724 196.06

NC 0.044    0.044   0.08
X1 L102                 50      147.49  267.32  0.0     0.0     0       0       0
GR 5772.293 0       5771.5   9.218   5770.421 18.436  5769.433 27.654  5768.705 36.872
GR 5768.107 46.09   5767.657 55.308  5767.494 64.526  5767.241 73.744  5767.169 82.962
GR 5766.996 92.18   5766.759 101.4   5766.464 110.62  5766.326 119.83  5766.338 129.05
GR 5766.452 138.27  5766.462 147.49  5765.749 156.71  5763.825 165.92  5761.631 175.14
GR 5761.94  184.36  5762.17  193.58  5759.07  202.8   5756.21  212.01  5755.563 221.23
GR 5755.602 230.45  5758.949 239.67  5761.232 248.89  5764.134 258.1   5764.801 267.32
GR 5764.255 276.54  5764.265 285.76  5764.136 294.98  5763.993 304.19  5764.348 313.41
GR 5764.534 322.63  5764.989 331.85  5765.012 341.07  5765.386 350.28  5766.208 359.5
GR 5767.1   368.72  5768.066 377.94  5768.819 387.16  5769.399 396.37  5770.021 405.59
GR 5770.493 414.81  5770.965 424.03  5771.532 433.25  5771.916 442.46  5772.415 451.68

NC 0.044    0.044   0.05
X1 L103                 50      164.7   221.98  0.0     0.0     0       0       0
GR 5809.964 0       5809.387 7.161   5808.654 14.322  5807.69  21.482  5807.305 28.643
GR 5806.73  35.804  5806.445 42.965  5806.101 50.125  5805.662 57.286  5805.166 64.447
GR 5804.828 71.608  5804.476 78.769  5804.018 85.929  5803.582 93.09   5803.235 100.25
GR 5802.829 107.41  5802.174 114.57  5801.532 121.73  5801.046 128.89  5800.806 136.05
GR 5800.454 143.22  5800.214 150.38  5799.997 157.54  5799.528 164.7   5798.428 171.86
GR 5796.188 179.02  5794.325 186.18  5793.819 193.34  5794.456 200.5   5796.467 207.66
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ORIGINAL 2015 MDP BY AMEC ASSOCIATES

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GR 5798.485 214.82   5799.286 221.98   5799.606 229.15   5799.49  236.31   5798.897 243.47
GR 5798.313 250.63   5797.566 257.79   5796.894 264.95   5796.064 272.11   5795.399 279.27
GR 5795.194 286.43   5795.653 293.59   5796.582 300.75   5797.03  307.91   5797.776 315.07
GR 5798.398 322.24   5799.19  329.4    5799.865 336.56   5800.375 343.72   5801.043 350.88

NC 0.044    0.044    0.05
X1 L105              50       108.18   176.51   0.0      0.0      0        0        0
GR 5824.834 0        5824.732 5.694    5824.334 11.388   5823.922 17.081   5823.495 22.775
GR 5823.018 28.469   5822.643 34.163   5822.375 39.856   5822.051 45.55    5821.488 51.244
GR 5820.294 56.938   5818.939 62.632   5817.923 68.325   5817.452 74.019   5817.286 79.713
GR 5817.004 85.407   5816.535 91.1     5815.888 96.794   5815.364 102.49   5814.586 108.18
GR 5812.778 113.88   5810.949 119.57   5810.114 125.26   5809.633 130.96   5809.895 136.65
GR 5810.098 142.34   5810.112 148.04   5810.563 153.73   5812.574 159.43   5814.493 165.12
GR 5815.788 170.81   5816.744 176.51   5817.232 182.2    5817.138 187.89   5817.046 193.59
GR 5817.191 199.28   5817.253 204.98   5817.336 210.67   5817.774 216.36   5818.15  222.06
GR 5818.705 227.75   5819.138 233.44   5819.383 239.14   5819.683 244.83   5819.975 250.53
GR 5820.387 256.22   5820.916 261.91   5821.468 267.61   5822.167 273.3    5823.141 279

NC 0.044    0.044    0.05
X1 L106              50       51.6     103.2    0.0      0.0      0        0        0
GR 5861.6   0        5861.5   3.035    5861.41  6.071    5861.231 9.106    5861.042 12.141
GR 5860.803 15.176   5860.521 18.212   5860.016 21.247   5859.382 24.282   5858.557 27.318
GR 5857.572 30.353   5856.487 33.388   5855.336 36.423   5854.281 39.459   5853.357 42.494
GR 5852.433 45.529   5851.509 48.565   5850.605 51.6     5849.869 54.635   5849.227 57.67
GR 5849.262 60.706   5849.297 63.741   5849.361 66.776   5849.396 69.812   5849.4   72.847
GR 5849.4   75.882   5849.424 78.917   5849.487 81.953   5849.505 84.988   5849.446 88.023
GR 5849.403 91.059   5849.435 94.094   5849.586 97.129   5849.906 100.16   5850.244 103.2
GR 5850.659 106.23   5851.054 109.27   5851.312 112.31   5851.602 115.34   5851.893 118.38
GR 5852.151 121.41   5852.553 124.45   5852.969 127.48   5853.437 130.52   5853.983 133.55
GR 5854.925 136.59   5856.079 139.62   5857.097 142.66   5857.996 145.69   5858.734 148.73

NC 0.044    0.044    0.05
X1 L107              50       51.124   86.518   0.0      0.0      0        0        0
GR 5850.834 0        5850.765 3.933    5850.675 7.865    5850.483 11.798   5850.336 15.731
GR 5850.208 19.663   5849.075 23.596   5847.878 27.528   5846.721 31.461   5845.44  35.394
GR 5844.073 39.326   5842.534 43.259   5841.226 47.192   5840.162 51.124   5839.859 55.057
GR 5839.564 58.99    5839.333 62.922   5839.501 66.855   5839.623 70.788   5839.645 74.72
GR 5839.716 78.653   5839.846 82.585   5839.974 86.518   5840.665 90.451   5841.426 94.383
GR 5841.947 98.316   5842.647 102.25   5843.343 106.18   5843.677 110.11   5843.861 114.05
GR 5843.982 117.98   5844.382 121.91   5844.726 125.84   5844.983 129.78   5845.157 133.71
GR 5845.341 137.64   5845.573 141.58   5846.112 145.51   5846.661 149.44   5847.021 153.37
GR 5847.332 157.31   5847.639 161.24   5847.896 165.17   5848.23  169.1    5848.616 173.04
GR 5848.987 176.97   5849.23  180.9    5849.387 184.83   5849.639 188.77   5849.962 192.7

NC 0.02     0.02     0.02
X1 L108              20       112.83   206.86   0.0      0.0      0        0        0
GR 5904.569 0        5905.08  18.805   5904.794 37.61    5903.942 56.415   5902.362 75.22
GR 5900.542 94.025   5897.843 112.83   5896.194 131.64   5895.648 150.44   5895.613 169.25
GR 5895.652 188.05   5896.232 206.86   5896.94  225.66   5897.558 244.47   5898.215 263.27
GR 5899.025 282.08   5900.656 300.88   5902.049 319.69   5902.77  338.49   5902.769 357.3

NC 0.08     0.08     0.075
X1 L11               50       124.76   183.47   0.0      0.0      0        0        0
GR 5392.353 0        5391.145 7.339    5389.95  14.677   5388.833 22.016   5387.761 29.355
GR 5386.566 36.693   5385.623 44.032   5384.957 51.37    5382.989 58.709   5382.348 66.048
GR 5381.814 73.386   5379.396 80.725   5377.125 88.064   5373.922 95.402   5372.547 102.74
GR 5371.766 110.08   5371.256 117.42   5370.693 124.76   5369.75  132.1    5368.8   139.43
GR 5367.984 146.77   5366.365 154.11   5364.711 161.45   5365.404 168.79   5369.714 176.13
GR 5372.316 183.47   5373.888 190.8    5374.97  198.14   5375.744 205.48   5376.586 212.82
GR 5377.524 220.16   5378.098 227.5    5378.852 234.84   5380.089 242.17   5380.572 249.51
GR 5380.917 256.85   5381.476 264.19   5382.205 271.53   5382.741 278.87   5383.238 286.21
GR 5383.8   293.55   5384.461 300.88   5385.052 308.22   5385.56  315.56   5386.379 322.9
GR 5387.264 330.24   5387.956 337.58   5388.441 344.92   5388.993 352.25   5390.083 359.59

NC 0.08     0.08     0.075
X1 L110              50       86.111   192.09   0.0      0.0      0        0        0
GR 5706.81  0        5706.877 6.624    5707.225 13.248   5707.462 19.872   5707.748 26.496
GR 5708.096 33.12    5708.381 39.744   5708.462 46.367   5708.536 52.991   5708.41  59.615
GR 5708.112 66.239   5707.165 72.863   5705.741 79.487   5704.233 86.111   5701.738 92.735
GR 5698.193 99.359   5694.547 105.98   5691.701 112.61   5690.099 119.23   5690.448 125.85
GR 5691.56  132.48   5691.699 139.1    5690.959 145.73   5691     152.35   5692.092 158.97
GR 5695.104 165.6    5699.157 172.22   5701.873 178.85   5703.564 185.47   5705.301 192.09
GR 5707.53  198.72   5710.094 205.34   5712.787 211.97   5715.563 218.59   5716.42  225.21
GR 5716.827 231.84   5717.377 238.46   5717.642 245.09   5717.849 251.71   5718.385 258.33
GR 5718.709 264.96   5719.069 271.58   5719.335 278.2    5719.598 284.83   5719.586 291.45
GR 5719.675 298.08   5719.636 304.7    5719.763 311.32   5719.903 317.95   5720.044 324.57

NC 0.044    0.044    0.075
X1 L112              50       295.18   390.06   0.0      0.0      0        0        0
GR 5731.463 0        5730.933 10.542   5730.483 21.084   5730.201 31.627   5730.014 42.169
GR 5729.878 52.711   5729.754 63.253   5729.366 73.795   5728.852 84.338   5728.686 94.88
GR 5727.961 105.42   5726.029 115.96   5724.425 126.51   5723.107 137.05   5723.12  147.59
GR 5723.001 158.13   5722.579 168.68   5722.502 179.22   5724.08  189.76   5725.482 200.3
GR 5725.343 210.84   5723.477 221.39   5722.714 231.93   5723.505 242.47   5723.823 253.01
GR 5723.805 263.55   5724.443 274.1    5725.167 284.64   5725.295 295.18   5724.101 305.72
GR 5722.84  316.27   5722.375 326.81   5722.018 337.35   5718.656 347.89   5716.805 358.43
GR 5719.167 368.98   5724.354 379.52   5728.801 390.06   5731.229 400.6    5732.227 411.15
GR 5733.642 421.69   5734.839 432.23   5736.18  442.77   5736.957 453.31   5737.162 463.86
GR 5737.254 474.4    5737.211 484.94   5736.754 495.48   5736.688 506.03   5737.14  516.57

NC 0.044    0.044    0.075
X1 L113              50       194.57   296.08   0.0      0.0      0        0        0
GR 5760.185 0        5759.459 8.459    5758.889 16.919   5758.032 25.378   5757.17  33.838
GR 5756.572 42.297   5756.058 50.757   5755.525 59.216   5754.896 67.676   5753.871 76.135
GR 5752.327 84.594   5750.915 93.054   5749.74  101.51   5748.89  109.97   5748.66  118.43
GR 5748.613 126.89   5748.718 135.35   5748.628 143.81   5748.718 152.27   5748.754 160.73
GR 5748.789 169.19   5748.52  177.65   5748.579 186.11   5747.77  194.57   5745.761 203.03
GR 5744.103 211.49   5743.6   219.95   5744.124 228.4    5742.719 236.86   5739.864 245.32
GR 5738.75  253.78   5741.81  262.24   5744.929 270.7    5748.232 279.16   5750.888 287.62
GR 5753.065 296.08   5754.185 304.54   5754.421 313      5754.361 321.46   5754.83  329.92
GR 5756.938 338.38   5759.841 346.84   5762.745 355.3    5765.555 363.76   5768.026 372.22
GR 5770.149 380.67   5771.042 389.13   5772.361 397.59   5773.489 406.05   5773.926 414.51

NC 0.044    0.044    0.05
X1 L114              50       52.95    120.61   0.0      0.0      0        0        0
GR 5779.118 0        5778.301 2.942    5777.727 5.883    5777.126 8.825    5776.579 11.767
GR 5776     14.708   5775.625 17.65    5775.312 20.592   5775.116 23.533   5774.936 26.475
GR 5774.743 29.417   5774.595 32.358   5774.447 35.3     5774.299 38.242   5774.2   41.184
GR 5774.431 44.125   5774.64  47.067   5774.682 50.009   5774.717 52.95    5774.752 55.892
GR 5774.788 58.834   5774.77  61.775   5774.713 64.717   5774.64  67.659   5774.519 70.6
GR 5774.342 73.542   5774.067 76.484   5773.942 79.425   5774.293 82.367   5774.58  85.309
GR 5774.81  88.25    5775.065 91.192   5775.093 94.134   5774.977 97.075   5774.9   100.02
GR 5774.819 102.96   5774.699 105.9    5774.551 108.84   5774.471 111.78   5774.641 114.73
GR 5774.778 117.67   5774.967 120.61   5775.132 123.55   5775.266 126.49   5775.462 129.43
GR 5775.685 132.38   5775.918 135.32   5776.086 138.26   5776.163 141.2    5776.233 144.14

NC 0.08     0.08     0.075
X1 L116              50       87.872   191.25   0.0      0.0      0        0        0
GR 5761.604 0        5761.369 5.169    5761.351 10.338   5761.357 15.507   5761.276 20.676
GR 5761.346 25.845   5761.299 31.014   5761.214 36.183   5761.051 41.352   5760.73  46.52
GR 5760.513 51.689   5760.288 56.858   5759.935 62.027   5759.292 67.196   5758.651 72.365
GR 5758.061 77.534   5757.567 82.703   5756.903 87.872   5756.154 93.041   5755.431 98.21
GR 5754.799 103.38   5754.158 108.55   5753.614 113.72   5753.149 118.89   5752.74  124.05
GR 5751.829 129.22   5750.951 134.39   5749.848 139.56   5748.178 144.73   5745.511 149.9
GR 5743.798 155.07   5743.559 160.24   5745.041 165.41   5747.542 170.58   5749.883 175.74
GR 5751.979 180.91   5754.535 186.08   5756.435 191.25   5757.291 196.42   5757.677 201.59
GR 5757.945 206.76   5757.937 211.93   5758.167 217.1    5758.485 222.26   5758.918 227.43
GR 5759.733 232.6    5760.408 237.77   5761.07  242.94   5761.459 248.11   5761.737 253.28

NC 0.08     0.08     0.075
X1 L117              50       32.053   73.534   0.0      0.0      0        0        0
GR 5768.07  0        5767.819 1.885    5767.511 3.771    5767.198 5.656    5766.884 7.542
GR 5766.48  9.427    5766.041 11.313   5765.603 13.198   5765.298 15.084   5765.111 16.969
GR 5764.923 18.855   5764.796 20.74    5764.788 22.626   5764.783 24.511   5764.763 26.397
GR 5764.642 28.282   5764.522 30.168   5764.401 32.053   5763.975 33.939   5763.528 35.824
GR 5763.088 37.71    5762.453 39.595   5761.758 41.481   5761.064 43.366   5760.49  45.252
GR 5760.008 47.137   5759.531 49.023   5759.186 50.908   5759.033 52.794   5758.874 54.679
GR 5758.773 56.565   5758.934 58.45    5759.101 60.335   5759.278 62.221   5760.297 64.106
GR 5761.324 65.992   5762.361 67.877   5763.56  69.763   5764.803 71.648   5766.054 73.534
GR 5766.783 75.419   5767.183 77.305   5767.577 79.19    5767.874 81.076   5768.045 82.961
GR 5768.214 84.847   5768.334 86.732   5768.301 88.618   5768.255 90.503   5768.181 92.389

NC 0.08     0.08     0.075
X1 L118              50       25.83    77.49    0.0      0.0      0        0        0
GR 5782.86  0        5782.911 2.152    5782.906 4.305    5782.817 6.457    5782.741 8.61
GR 5782.667 10.762   5782.539 12.915   5782.386 15.067   5782.21  17.22    5782.088 19.372
GR 5781.969 21.525   5781.85  23.677   5781.631 25.83    5781.162 27.982   5780.537 30.135
GR 5779.728 32.287   5778.665 34.44    5777.531 36.592   5776.541 38.745   5775.637 40.897
GR 5774.663 43.05    5773.593 45.202   5772.798 47.355   5772.663 49.507   5772.481 51.66
GR 5772.248 53.812   5772.19  55.965   5772.252 58.117   5772.652 60.27    5773.535 62.422
GR 5774.554 64.575   5775.598 66.727   5776.571 68.88    5777.338 71.032   5778.055 73.185
GR 5778.723 75.337   5779.333 77.49    5779.918 79.642   5780.52  81.795   5781.089 83.947
GR 5781.671 86.1     5782.277 88.252   5782.924 90.405   5783.566 92.557   5784.184 94.71
GR 5784.778 96.862   5785.147 99.015   5785.433 101.17   5785.641 103.32   5785.782 105.47

NC 0.044    0.044    0.05
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ORIGINAL DOCUMENT SIGNED BY MARK MASSOTH

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X1 L119                 20       70.086   140.17   0.0      0.0      0        0        0
GR 5832.209 0           5831.802 11.681   5830.912 23.362   5830.021 35.043   5828.034 46.724
GR 5825.589 58.405      5823.42  70.086   5822.788 81.767   5822.156 93.448   5821.967 105.13
GR 5822.071 116.81      5822.222 128.49   5823.05  140.17   5823.895 151.85   5825.375 163.53
GR 5827.464 175.22      5829.555 186.9    5830.506 198.58   5831.4   210.26   5831.988 221.94

NC 0.08      0.08       0.075
X1 L120                 50       94.093   188.19   0.0      0.0      0        0        0
GR 5782.933 0           5782.969 5.881    5782.854 11.762   5782.84  17.642   5782.875 23.523
GR 5782.91  29.404      5782.945 35.285   5782.981 41.166   5783.016 47.047   5783.051 52.927
GR 5782.861 58.808      5782.291 64.689   5781.668 70.57    5781.117 76.451   5780.389 82.332
GR 5779.904 88.212      5779.376 94.093   5777.863 99.974   5775.411 105.85   5772.772 111.74
GR 5772.575 117.62      5772.255 123.5    5771.263 129.38   5770.548 135.26   5769.096 141.14
GR 5769.034 147.02      5769.985 152.9    5769.341 158.78   5769.042 164.66   5770.814 170.54
GR 5773.923 176.42      5777.471 182.31   5779.577 188.19   5780.355 194.07   5780.737 199.95
GR 5780.958 205.83      5781.118 211.71   5781.263 217.59   5781.368 223.47   5781.559 229.35
GR 5781.715 235.23      5781.847 241.11   5782.031 246.99   5782.109 252.88   5782.267 258.76
GR 5782.226 264.64      5782.4   270.52   5782.653 276.4    5783.11  282.28   5783.547 288.16

NC 0.08      0.08       0.075
X1 L1201                20       55.261   138.15   0.0      0.0      0        0        0
GR 5807.125 0           5805.576 9.21     5802.849 18.42    5800.192 27.631   5798.151 36.841
GR 5796.488 46.051      5795.93  55.261   5795.774 64.471   5795.354 73.682   5794.638 82.892
GR 5794.256 92.102      5795.917 101.31   5798.44  110.52   5801.945 119.73   5805.088 128.94
GR 5806.399 138.15      5807.233 147.36   5807.647 156.57   5807.428 165.78   5807.025 174.99

NC 0.1       0.1        0.05
X1 L121                 50       54.887   98.796   0.0      0.0      0        0        0
GR 5839.612 0           5839.64  3.659    5839.746 7.318    5839.843 10.977   5839.929 14.636
GR 5839.911 18.296      5839.851 21.955   5839.548 25.614   5839.109 29.273   5838.765 32.932
GR 5838.432 36.591      5838.125 40.25    5837.755 43.909   5837.21  47.568   5836.666 51.227
GR 5836.121 54.887      5835.517 58.546   5834.728 62.205   5833.549 65.864   5832.27  69.523
GR 5831.719 73.182      5832.068 76.841   5832.538 80.5     5833.037 84.159   5833.792 87.819
GR 5834.596 91.478      5835.155 95.137   5835.604 98.796   5835.674 102.45   5835.735 106.11
GR 5835.795 109.77      5835.855 113.43   5835.915 117.09   5836.004 120.75   5836.261 124.41
GR 5836.587 128.07      5836.741 131.73   5836.902 135.39   5837.131 139.05   5837.344 142.71
GR 5837.57  146.36      5837.844 150.02   5838.203 153.68   5838.73  157.34   5839.274 161
GR 5839.766 164.66      5840.333 168.32   5841.084 171.98   5841.916 175.64   5842.747 179.3

NC 0.1       0.1        0.02
X1 L122                 20       87.858   175.72   0.0      0.0      0        0        0
GR 5879.478 0           5878.744 17.572   5878.105 35.143   5877.503 52.715   5876.445 70.286
GR 5875.019 87.858      5874.371 105.43   5874.24  123      5874.304 140.57   5874.301 158.14
GR 5874.686 175.72      5875.917 193.29   5877.749 210.86   5879.764 228.43   5881.16  246
GR 5881.296 263.57      5881.125 281.15   5880.636 298.72   5880.521 316.29   5881.541 333.86

NC 0.044     0.044      0.075
X1 L123                 50       168.52   207.42   0.0      0.0      0        0        0
GR 5813.291 0           5813.421 6.482    5813.656 12.963   5813.8   19.445   5813.742 25.927
GR 5813.76  32.409      5813.796 38.89    5813.632 45.372   5813.717 51.854   5813.745 58.336
GR 5813.822 64.817      5813.8   71.299   5814.002 77.781   5814.052 84.262   5814.175 90.744
GR 5814.377 97.226      5814.6   103.71   5814.541 110.19   5814.277 116.67   5814.496 123.15
GR 5814.783 129.63      5814.705 136.12   5814.468 142.6    5813.927 149.08   5811.665 155.56
GR 5807.359 162.04      5803.719 168.52   5802.312 175.01   5801.151 181.49   5798.847 187.97
GR 5798.103 194.45      5801.597 200.93   5806.912 207.42   5810.133 213.9    5812.27  220.38
GR 5813.052 226.86      5813.949 233.34   5814.651 239.82   5814.851 246.31   5814.884 252.79
GR 5814.952 259.27      5815.438 265.75   5815.691 272.23   5815.8   278.71   5815.8   285.2
GR 5815.8   291.68      5815.952 298.16   5816.214 304.64   5817.287 311.12   5819.257 317.6

NC 0.08      0.08       0.075
X1 L125                 20       70.761   141.52   0.0      0.0      0        0        0
GR 5830.03  0           5829.895 17.69    5829.957 35.381   5830.105 53.071   5830.246 70.761
GR 5829.292 88.451      5826.702 106.14   5822.403 123.83   5818.29  141.52   5818.676 159.21
GR 5820.726 176.9       5823.091 194.59   5824.956 212.28   5826.515 229.97   5827.1   247.66
GR 5826.954 265.35      5826.388 283.04   5825.668 300.73   5824.889 318.42   5824.359 336.12

NC 0.044     0.044      0.075
X1 L126                 20       80.811   134.69   0.0      0.0      0        0        0
GR 5847.207 0           5847.092 8.979    5846.99  17.958   5846.247 26.937   5845.151 35.916
GR 5844.074 44.895      5843.034 53.874   5842.188 62.853   5841.495 71.832   5840.722 80.811
GR 5839.671 89.79       5838.846 98.769   5838.858 107.75   5839.423 116.73   5840.542 125.71
GR 5842.227 134.69      5844.668 143.66   5846.964 152.64   5849.115 161.62   5851.117 170.6

NC 0.1       0.1        0.02
X1 L127                 20       79.797   127.68   0.0      0.0      0        0        0
GR 5896.297 0           5894.784 15.959   5894.51  31.919   5894.357 47.878   5893.997 63.838
GR 5893.425 79.797      5892.282 95.757   5891.702 111.72   5892.189 127.68   5892.877 143.63
GR 5893.827 159.59      5894.242 175.55   5894.211 191.51   5894.388 207.47   5894.632 223.43
GR 5895.535 239.39      5896.602 255.35   5897.117 271.31   5897.473 287.27   5897.232 303.23

NC 0.044     0.044      0.05
X1 L128                 20       79.797   159.59   0.0      0.0      0        0        0
GR 5896.297 0           5894.784 15.959   5894.51  31.919   5894.357 47.878   5893.997 63.838
GR 5893.425 79.797      5892.282 95.757   5891.702 111.72   5892.189 127.68   5892.877 143.63
GR 5893.827 159.59      5894.242 175.55   5894.211 191.51   5894.388 207.47   5894.632 223.43
GR 5895.535 239.39      5896.602 255.35   5897.117 271.31   5897.473 287.27   5897.232 303.23

NC 0.1       0.1        0.075
X1 L13                  50       229.9    334.4    0.0      0.0      0        0        0
GR 5414.134 0           5413.322 10.45    5412.744 20.9     5412.303 31.35    5411.895 41.8
GR 5411.407 52.25       5410.883 62.7     5410.348 73.149   5409.863 83.599   5409.222 94.049
GR 5408.734 104.5       5408.247 114.95   5407.612 125.4    5406.805 135.85   5405.929 146.3
GR 5404.715 156.75      5404.591 167.2    5405.077 177.65   5405.564 188.1    5405.629 198.55
GR 5405.661 209         5405.208 219.45   5403.222 229.9    5396.15  240.35   5389.722 250.8
GR 5387.141 261.25      5384.993 271.7    5383.619 282.15   5388.373 292.6    5390.099 303.05
GR 5396.402 313.5       5402.834 323.95   5406.854 334.4    5406.416 344.85   5405.234 355.3
GR 5405.871 365.75      5408.761 376.2    5410.974 386.65   5411.512 397.1    5412     407.55
GR 5412.299 418         5412.99  428.45   5413.142 438.9    5413.152 449.35   5413.636 459.8
GR 5414.137 470.25      5414.615 480.7    5415.142 491.15   5415.687 501.6    5416.083 512.05

NC 0.044     0.044      0.05
X1 L131                 20       52.993   105.99   0.0      0.0      0        0        0
GR 5943.027 0           5942.463 8.832    5941.896 17.664   5941.199 26.496   5940.42  35.328
GR 5939.637 44.16       5938.95  52.993   5938.578 61.825   5938.21  70.657   5937.846 79.489
GR 5938.179 88.321      5938.629 97.153   5939.085 105.99   5939.721 114.82   5940.537 123.65
GR 5941.352 132.48      5942.146 141.31   5942.784 150.15   5943.42  158.98   5944.055 167.81

NC 0.044     0.044      0.075
X1 L132                 20       141.52   212.28   0.0      0.0      0        0        0
GR 5985.424 0           5984.259 17.69    5983.11  35.381   5982.012 53.071   5980.872 70.761
GR 5979.641 88.452      5978.333 106.14   5976.97  123.83   5975.538 141.52   5974.156 159.21
GR 5973.498 176.9       5973.412 194.59   5974.669 212.28   5976.796 229.97   5979.711 247.66
GR 5982.39  265.35      5984.989 283.05   5987.387 300.74   5989.728 318.43   5991.979 336.12

NC 0.044     0.044      0.075
X1 L134                 20       116.37   213.35   0.0      0.0      0        0        0
GR 6053.795 0           6050.641 19.395   6046.637 38.791   6042.017 58.186   6036.509 77.582
GR 6031.095 96.977      6026.308 116.37   6022.609 135.77   6019.894 155.16   6019.838 174.56
GR 6021.798 193.95      6025.689 213.35   6030.064 232.75   6033.651 252.14   6036.292 271.54
GR 6038.299 290.93      6040.034 310.33   6042.03  329.72   6044.207 349.12   6046.509 368.51

NC 0.044     0.044      0.075
X1 L136                 20       117.54   215.49   0.0      0.0      0        0        0
GR 6008.904 0           6004.719 19.59    6000.818 39.179   5997.856 58.769   5994.823 78.358
GR 5991.687 97.948      5988.226 117.54   5984.73  137.13   5981.32  156.72   5979.674 176.31
GR 5979.893 195.9       5982.046 215.49   5984.566 235.08   5986.94  254.66   5989.055 274.25
GR 5990.733 293.84      5992.279 313.43   5993.701 333.02   5995.186 352.61   5996.76  372.2

NC 0.044     0.044      0.05
X1 L138                 20       79.853   159.71   0.0      0.0      0        0        0
GR 6056.034 0           6053.82  11.408   6052.029 22.815   6050.306 34.223   6048.651 45.63
GR 6046.967 57.038      6045.195 68.445   6043.379 79.853   6041.236 91.261   6039.147 102.67
GR 6037.594 114.08      6038.274 125.48   6039.572 136.89   6041.326 148.3    6043.835 159.71
GR 6046.474 171.11      6049.057 182.52   6051.402 193.93   6053.618 205.34   6055.765 216.74

NC 0.044     0.044      0.05
X1 L141                 20       78.358   156.72   0.0      0.0      0        0        0
GR 5938.97  0           5938.219 13.06    5937.336 26.119   5936.411 39.179   5935.453 52.239
GR 5934.316 65.299      5932.766 78.358   5930.855 91.418   5929.385 104.48   5928.725 117.54
GR 5928.925 130.6       5930.145 143.66   5931.601 156.72   5933.037 169.78   5934.005 182.84
GR 5934.659 195.9       5935.268 208.96   5935.543 222.02   5935.52  235.07   5935.462 248.13

NC 0.044     0.044      0.05
X1 L144                 20       0        0        0.0      0.0      0        0        0
GR 5791.86  0           5791.859 6.844    5791.673 13.689   5791.078 20.533   5790.385 27.378
GR 5789.594 34.222      5788.705 41.067   5787.72  47.911   5786.741 54.755   5785.84  61.6
GR 5785.041 68.444      5784.343 75.289   5784.91  82.133   5785.792 88.978   5786.776 95.822
GR 5787.861 102.67      5788.999 109.51   5789.683 116.36   5790.265 123.2    5790.697 130.04

NC 0.044     0.044      0.05
X1 L145                 20       79.894   125.55   0.0      0.0      0        0        0
GR 6151.345 0           6150.281 11.413   6149.131 22.827   6147.968 34.24    6146.807 45.653
GR 6145.527 57.067      6144.245 68.48    6143.077 79.894   6142.775 91.307   6142.524 102.72
GR 6142.67  114.13      6143.437 125.55   6144.27  136.96   6144.882 148.37   6145.333 159.79
GR 6145.762 171.2       6145.841 182.61   6145.865 194.03   6145.841 205.44   6145.75  216.85
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NC 0.044    0.044    0.05
X1 L147              20       77.679   170.89   0.0      0.0      0        0        0
GR 6001.625 0        6001.972 15.536   6002.784 31.072   6003.884 46.607   6004.177 62.143
GR 6002.753 77.679   5997.527 93.215   5990.771 108.75   5987.012 124.29   5984.807 139.82
GR 5991.167 155.36   6000.169 170.89   6004.606 186.43   6006.522 201.97   6005.974 217.5
GR 6005.652 233.04   6005.774 248.57   6006.33  264.11   6006.819 279.64   6007.602 295.18

NC 0.08     0.08     0.075
X1 L149              20       57.852   138.84   0.0      0.0      0        0        0
GR 6148.13  0        6147.277 11.57    6146.308 23.141   6145.264 34.711   6144.197 46.282
GR 6143.337 57.852   6142.535 69.422   6141.826 80.993   6141.645 92.563   6141.568 104.13
GR 6141.975 115.7    6143.288 127.27   6144.697 138.84   6146.062 150.41   6147.379 161.99
GR 6148.701 173.56   6149.991 185.13   6151.285 196.7    6152.625 208.27   6153.875 219.84

NC 0.08     0.08     0.075
X1 L151              20       87.76    175.52   0.0      0.0      0        0        0
GR 6175.209 0        6174.583 12.537   6173.857 25.074   6172.863 37.611   6171.865 50.148
GR 6170.818 62.685   6169.586 75.223   6168.571 87.76    6167.795 100.3    6167.308 112.83
GR 6167.056 125.37   6167.006 137.91   6167.399 150.45   6168.136 162.98   6169.374 175.52
GR 6172.584 188.06   6175.307 200.59   6177.492 213.13   6178.8   225.67   6180.184 238.2

NC 0.08     0.08     0.075
X1 L152              20       97.353   194.71   0.0      0.0      0        0        0
GR 6272.315 0        6267.865 16.226   6263.332 32.451   6258.53  48.677   6253.475 64.902
GR 6248.064 81.128   6242.882 97.353   6237.867 113.58   6234.158 129.8    6230.889 146.03
GR 6233.095 162.26   6236.072 178.48   6242.013 194.71   6248.129 210.93   6254.788 227.16
GR 6260.614 243.38   6265.268 259.61   6268.179 275.83   6269.852 292.06   6269.747 308.29

NC 0.044    0.044    0.08
X1 L16               50       430.09   516.11   0.0      0.0      0        0        0
GR 5418.203 0        5413.95  17.204   5411.217 34.408   5410.063 51.611   5409.231 68.815
GR 5408.732 86.019   5408.834 103.22   5409.113 120.43   5408.951 137.63   5408.711 154.83
GR 5408.5   172.04   5408.438 189.24   5408.25  206.45   5408.328 223.65   5408.205 240.85
GR 5408.11  258.06   5408.01  275.26   5408.009 292.46   5407.905 309.67   5407.91  326.87
GR 5407.8   344.08   5407.728 361.28   5407.57  378.48   5407.356 395.69   5407.128 412.89
GR 5407.727 430.09   5406.087 447.3    5400.033 464.5    5404.924 481.71   5406.312 498.91
GR 5408.835 516.11   5409.782 533.32   5410.564 550.52   5411.244 567.72   5411.911 584.93
GR 5414.185 602.13   5417.2   619.34   5416.946 636.54   5416.399 653.74   5416.199 670.95
GR 5416.552 688.15   5415.391 705.35   5416.702 722.56   5416.6   739.76   5416.8   756.97
GR 5417.063 774.17   5417.4   791.37   5417.634 808.58   5418.809 825.78   5421.979 842.98

NC 0.08     0.08     0.075
X1 L160              20       111.33   190.85   0.0      0.0      0        0        0
GR 5842.359 0        5842.4   15.904   5842.473 31.808   5842.391 47.712   5842.22  63.616
GR 5842.266 79.52    5842.332 95.424   5841.314 111.33   5839.569 127.23   5837.31  143.14
GR 5834.794 159.04   5836.336 174.94   5841.965 190.85   5845.457 206.75   5846.23  222.66
GR 5847.115 238.56   5848.211 254.46   5849.053 270.37   5849.591 286.27   5850.057 302.18

NC 0.044    0.044    0.05
X1 L161              20       71.695   215.08   0.0      0.0      0        0        0
GR 5875.098 0        5873.289 14.339   5871.287 28.678   5869.417 43.017   5868.026 57.356
GR 5866.979 71.695   5865.9   86.034   5865.975 100.37   5866.507 114.71   5866.463 129.05
GR 5866.217 143.39   5865.964 157.73   5865.705 172.07   5865.585 186.41   5865.754 200.75
GR 5866.272 215.08   5868.504 229.42   5870.923 243.76   5873.253 258.1    5875.583 272.44

NC 0.044    0.044    0.05
X1 L162              20       57.116   128.51   0.0      0.0      0        0        0
GR 5905.336 0        5901.842 14.279   5898.138 28.558   5894.89  42.837   5891.779 57.116
GR 5889.866 71.395   5888.367 85.674   5888.421 99.953   5889.288 114.23   5890.103 128.51
GR 5890.868 142.79   5891.685 157.07   5892.554 171.35   5893.548 185.63   5894.726 199.91
GR 5896.209 214.18   5898.279 228.46   5900.802 242.74   5904.663 257.02   5907.896 271.3

NC 0.044    0.044    0.05
X1 L164              20       59.354   118.71   0.0      0.0      0        0        0
GR 5910.116 0        5909.007 11.871   5907.893 23.741   5906.762 35.612   5905.608 47.483
GR 5904.454 59.354   5903.3   71.224   5902.703 83.095   5902.601 94.966   5902.778 106.84
GR 5903.487 118.71   5905.784 130.58   5908.28  142.45   5910.949 154.32   5913.182 166.19
GR 5914.754 178.06   5916.111 189.93   5917.332 201.8    5918.284 213.67   5919.033 225.54

NC 0.044    0.044    0.05
X1 L165              20       97.845   163.08   0.0      0.0      0        0        0
GR 5959.417 0        5957.57  10.872   5955.493 21.743   5953.437 32.615   5950.938 43.487
GR 5948.054 54.358   5945.249 65.23    5941.65  76.102   5937.428 86.974   5933.366 97.845
GR 5931.597 108.72   5930.643 119.59   5929.81  130.46   5931.29  141.33   5933.152 152.2
GR 5935.099 163.08   5938.218 173.95   5941.565 184.82   5944.973 195.69   5948.349 206.56

NC 0.044    0.044    0.075
X1 L1651             20       31.467   75.521   0.0      0.0      0        0        0
GR 5958.194 0        5956.579 6.293    5955.304 12.587   5954.126 18.88    5953.14  25.174
GR 5952.346 31.467   5951.654 37.761   5951.256 44.054   5951.412 50.348   5951.662 56.641
GR 5952.008 62.934   5952.448 69.228   5953.078 75.521   5954.123 81.815   5955.605 88.108
GR 5957.184 94.402   5958.859 100.7    5960.632 106.99   5962.502 113.28   5964.515 119.58

NC 0.1      0.1      0.05
X1 L166              20       73.213   118.97   0.0      0.0      0        0        0
GR 5984.076 0        5983.191 9.152    5982.298 18.303   5981.401 27.455   5980.49  36.607
GR 5979.399 45.758   5978.321 54.91    5977.252 64.062   5976.329 73.213   5975.717 82.365
GR 5975.304 91.516   5975.076 100.67   5975.032 109.82   5975.717 118.97   5976.758 128.12
GR 5977.831 137.27   5978.937 146.43   5979.969 155.58   5980.842 164.73   5981.621 173.88

NC 0.1      0.1      0.05
X1 L167              20       86.447   144.08   0.0      0.0      0        0        0
GR 5996.837 0        5996.16  9.605    5995.402 19.211   5994.533 28.816   5993.64  38.421
GR 5992.655 48.026   5991.367 57.632   5990.029 67.237   5988.64  76.842   5987.158 86.447
GR 5985.661 96.053   5984.209 105.66   5983.91  115.26   5984.03  124.87   5984.283 134.47
GR 5985.777 144.08   5988.181 153.68   5990.67  163.29   5992.851 172.89   5994.396 182.5

NC 0.08     0.08     0.075
X1 L17               50       127.93   188.13   0.0      0.0      0        0        0
GR 5432.158 0        5430.913 7.525    5429.548 15.051   5428.247 22.576   5426.972 30.101
GR 5425.769 37.626   5424.599 45.152   5423.861 52.677   5423.235 60.202   5422.919 67.727
GR 5422.476 75.253   5422.288 82.778   5422.208 90.303   5422.083 97.828   5421.317 105.35
GR 5420.026 112.88   5419.413 120.4    5419.192 127.93   5418.465 135.45   5416.284 142.98
GR 5415.196 150.51   5414.744 158.03   5411.568 165.56   5413.081 173.08   5417.318 180.61
GR 5420.215 188.13   5421.244 195.66   5422.714 203.18   5423.089 210.71   5423.521 218.23
GR 5423.919 225.76   5424.256 233.28   5424.959 240.81   5426.507 248.33   5427.695 255.86
GR 5428.341 263.38   5429.134 270.91   5429.723 278.43   5430.294 285.96   5430.772 293.49
GR 5431.125 301.01   5431.537 308.54   5431.973 316.06   5432.402 323.59   5432.813 331.11
GR 5433.466 338.64   5434.264 346.16   5434.862 353.69   5435.273 361.21   5435.869 368.74

NC 0.044    0.044    0.05
X1 L1701             20       27.12    67.8     0.0      0.0      0        0        0
GR 5862.024 0        5860.295 6.78     5858.461 13.56    5856.725 20.34    5855.152 27.12
GR 5853.756 33.9     5852.952 40.68    5853.044 47.46    5853.818 54.24    5854.558 61.02
GR 5855.264 67.8     5855.936 74.58    5856.523 81.36    5857.002 88.14    5857.42  94.92
GR 5857.76  101.7    5858.033 108.48   5858.205 115.26   5858.225 122.04   5858.253 128.82

NC 0.044    0.044    0.05
X1 L171              20       99.077   214.67   0.0      0.0      0        0        0
GR 5881.152 0        5881.487 16.513   5881.765 33.026   5881.964 49.539   5882.056 66.051
GR 5881.967 82.564   5880.635 99.077   5877.958 115.59   5876.054 132.1    5875.389 148.62
GR 5875.236 165.13   5875.922 181.64   5876.955 198.15   5878.2   214.67   5878.956 231.18
GR 5879.195 247.69   5879.466 264.21   5879.714 280.72   5880.358 297.23   5881.522 313.74

NC 0.044    0.044    0.075
X1 L175              20       58.179   135.75   0.0      0.0      0        0        0
GR 5887.478 0        5887.25  9.697    5887.09  19.393   5886.998 29.09    5885.748 38.786
GR 5884.199 48.483   5882.481 58.179   5880.986 67.876   5879.93  77.572   5879.08  87.269
GR 5878.735 96.965   5879.475 106.66   5880.286 116.36   5881.297 126.06   5883.542 135.75
GR 5885.629 145.45   5887.475 155.14   5888.37  164.84   5888.743 174.54   5889.074 184.23

NC 0.044    0.044    0.075
X1 L176              20       43.197   93.593   0.0      0.0      0        0        0
GR 5933.715 0        5933.558 7.199    5933.09  14.399   5932.576 21.598   5932.015 28.798
GR 5931.125 35.997   5930.233 43.197   5929.445 50.396   5928.757 57.595   5928.217 64.795
GR 5928.49  71.994   5929.001 79.194   5929.771 86.393   5930.799 93.593   5931.806 100.79
GR 5932.356 107.99   5932.853 115.19   5933.294 122.39   5933.68  129.59   5933.434 136.79

NC 0.1      0.1      0.02
X1 L177              20       94.571   126.1    0.0      0.0      0        0        0
GR 5975.327 0        5974.793 10.508   5974.22  21.016   5973.647 31.524   5973.075 42.032
GR 5972.501 52.54    5971.926 63.048   5971.403 73.556   5970.937 84.063   5970.473 94.571
GR 5970.358 105.08   5970.43  115.59   5970.508 126.1    5970.875 136.6    5971.302 147.11
GR 5971.732 157.62   5972.334 168.13   5972.937 178.63   5973.572 189.14   5974.369 199.65

NC 0.044    0.044    0.05
X1 L178              20       48.352   106.37   0.0      0.0      0        0        0
GR 6010.138 0        6009.712 9.67     6009.316 19.341   6008.941 29.011   6008.581 38.682
GR 6008.251 48.352   6007.98  58.023   6007.767 67.693   6007.791 77.364   6007.907 87.034
GR 6008.054 96.704   6008.317 106.37   6008.683 116.05   6009.07  125.72   6009.481 135.39
GR 6010.092 145.06   6010.708 154.73   6011.33  164.4    6011.949 174.07   6012.465 183.74

NC 0.044    0.044    0.05
X1 L179              20       43.056   94.724   0.0      0.0      0        0        0
GR 6007.666 0        6006.575 8.611    6005.483 17.223   6004.381 25.834   6003.559 34.445
GR 6003.045 43.056   6002.528 51.668   6002.026 60.279   6002.175 68.89    6002.324 77.501
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GR 6002.473 86.113   6002.872 94.724   6003.46  103.34   6004.049 111.95   6004.658 120.56
GR 6005.401 129.17   6006.146 137.78   6006.892 146.39   6007.633 155      6008.373 163.61

NC 0.08     0.08     0.075
X1 L180              22       10.614   42.457   0.0      0.0      0        0        0
GR 5900     -35      5890.499 0        5890.051 5.307    5889.593 10.614   5889.126 15.921
GR 5888.65  21.228   5888.176 26.535   5888.583 31.843   5889.005 37.15    5889.439 42.457
GR 5889.888 47.764   5890.35  53.071   5890.781 58.378   5891.004 63.685   5891.235 68.992
GR 5891.476 74.299   5891.724 79.606   5891.98  84.913   5892.481 90.221   5893.744 95.528
GR 5895.004 100.83   5900     135

NC 0.08     0.08     0.075
X1 L181              20       75.851   151.7    0.0      0.0      0        0        0
GR 5904.261 0        5904.1   15.17    5904.06  30.34    5904.104 45.51    5903.684 60.681
GR 5902.619 75.851   5900.695 91.021   5898.333 106.19   5897.132 121.36   5899.314 136.53
GR 5902.167 151.7    5905.913 166.87   5909.446 182.04   5911.587 197.21   5913.104 212.38
GR 5914.91  227.55   5916.82  242.72   5918.641 257.89   5920.063 273.06   5921.357 288.23

NC 0.08     0.08     0.075
X1 L183              20       146.78   272.59   0.0      0.0      0        0        0
GR 5982.108 0        5981.392 20.969   5980.64  41.938   5979.585 62.906   5978.321 83.875
GR 5976.932 104.84   5973.311 125.81   5968.408 146.78   5962.515 167.75   5961.016 188.72
GR 5961.644 209.69   5963.942 230.66   5967.299 251.63   5970.437 272.59   5973.12  293.56
GR 5974.814 314.53   5976.152 335.5    5977.501 356.47   5979.01  377.44   5980.46  398.41

NC 0.08     0.08     0.075
X1 L187              20       23.747   102.9    0.0      0.0      0        0        0
GR 6024.981 0        6024.503 7.916    6024.013 15.832   6023.309 23.747   6022.544 31.663
GR 6021.796 39.579   6021.063 47.495   6020.346 55.41    6019.949 63.326   6020.481 71.242
GR 6021.291 79.158   6022.375 87.073   6023.736 94.989   6025.445 102.9    6027.769 110.82
GR 6030.006 118.74   6032.079 126.65   6033.988 134.57   6035.716 142.48   6036.954 150.4

NC 0.08     0.08     0.075
X1 L188              20       40.841   149.75   0.0      0.0      0        0        0
GR 6154.987 0        6153.169 13.614   6151.34  27.228   6149.57  40.841   6147.888 54.455
GR 6146.273 68.069   6145.342 81.683   6144.522 95.296   6144.282 108.91   6145.48  122.52
GR 6152.211 204.21   6153.953 217.82   6156.269 231.43   6158.693 245.05   6161.468 258.66

NC 0.1      0.1      0.075
X1 L19               50       197.53   230.45   0.0      0.0      0        0        0
GR 5496.148 0        5496.024 10.974   5495.458 21.948   5493.745 32.922   5491.797 43.896
GR 5489.363 54.87    5489.013 65.844   5489.209 76.818   5488.978 87.792   5489.047 98.766
GR 5487.787 109.74   5486.495 120.71   5485.513 131.69   5484.704 142.66   5484.559 153.64
GR 5484.565 164.61   5484.343 175.58   5484.264 186.56   5484.342 197.53   5484.133 208.51
GR 5483.359 219.48   5484.356 230.45   5487.627 241.68   5489.031 252.91   5489.054 264.13
GR 5489.036 275.36   5488.653 286.58   5488.49  297.81   5488.201 309.03   5487.626 320.26
GR 5487.049 331.48   5487.158 342.71   5487.2   353.94   5486.745 365.16   5486.341 376.39
GR 5487.382 387.61   5488.357 398.84   5488.232 410.06   5487.798 421.29   5487.53  432.51
GR 5488.169 443.74   5489.329 454.97   5488.748 466.19   5488.995 477.42   5488.564 488.64
GR 5488.925 499.87   5489.625 511.09   5490.381 522.32   5491.098 533.54   5491.267 544.77

NC 0.08     0.08     0.075
X1 L190              20       54.163   176      0.0      0.0      0        0        0
GR 6000.167 0        5999.26  13.541   5998.332 27.082   5997.309 40.622   5996.334 54.163
GR 5995.393 67.704   5994.49  81.245   5993.512 94.785   5992.408 108.33   5991.477 121.87
GR 5991.057 135.41   5991.303 148.95   5991.819 162.49   5993.184 176.03   5994.703 189.57
GR 5996.472 203.11   5998.326 216.65   6000.193 230.19   6002.111 243.73   6003.965 257.27

NC 0.044    0.044    0.075
X1 L193              20       149.54   243.01   0.0      0.0      0        0        0
GR 6034.966 0        6033.122 18.693   6031.087 37.386   6028.892 56.079   6026.793 74.772
GR 6024.738 93.464   6022.851 112.16   6021.032 130.85   6019.245 149.54   6017.581 168.24
GR 6016.196 186.93   6015.415 205.62   6016.805 224.31   6019.296 243.01   6021.244 261.7
GR 6022.687 280.39   6023.222 299.09   6023.643 317.78   6023.973 336.47   6024.559 355.16

NC 0.08     0.08     0.075
X1 L195              20       114.56   261.86   0.0      0.0      0        0        0
GR 6157.376 0        6152.448 16.366   6147.16  32.732   6140.844 49.098   6134.3   65.464
GR 6126.586 81.83    6118.515 98.196   6109.755 114.56   6102.101 130.93   6095.497 147.29
GR 6090.023 163.66   6084.993 180.03   6085.889 196.39   6087.781 212.76   6092.981 229.12
GR 6098.685 245.49   6105.869 261.86   6114.25  278.22   6124.135 294.59   6133.229 310.95

NC 0.08     0.08     0.075
X1 L197              20       108.92   235.99   0.0      0.0      0        0        0
GR 6185.113 0        6183.447 18.153   6181.338 36.306   6179.217 54.459   6176.989 72.612
GR 6174.915 90.766   6172.63  108.92   6170.074 127.07   6167.288 145.22   6164.594 163.38
GR 6162.455 181.53   6162.501 199.68   6163.944 217.84   6167.621 235.99   6172.165 254.14

GR 6176.764 272.3    6181.194 290.45   6184.905 308.6    6188.307 326.76   6191.223 344.91

NC 0.08     0.08     0.075
X1 L198              20       116.05   232.09   0.0      0.0      0        0        0
GR 6209.836 0        6206.692 14.506   6202.98  29.011   6199.294 43.517   6195.874 58.023
GR 6192.583 72.529   6189.472 87.034   6186.292 101.54   6182.386 116.05   6177.305 130.55
GR 6172.462 145.06   6171.285 159.56   6170.578 174.07   6171.785 188.57   6173.437 203.08
GR 6175.637 217.59   6178.083 232.09   6180.686 246.6    6183.577 261.1    6186.522 275.61

NC 0.044    0.044    0.075
X1 L2                50       172.51   224.26   0.0      0.0      0        0        0
GR 5322.834 0        5322.39  8.626    5319.724 17.251   5315.716 25.877   5312.471 34.502
GR 5311.495 43.128   5311.556 51.753   5311.805 60.379   5311.88  69.005   5312.157 77.63
GR 5312.2   86.256   5312.199 94.881   5312.143 103.51   5311.785 112.13   5311.442 120.76
GR 5311.559 129.38   5311.599 138.01   5312.035 146.63   5312.041 155.26   5311.782 163.89
GR 5311.243 172.51   5310.153 181.14   5309.61  189.76   5308.275 198.39   5307.53  207.01
GR 5309.571 215.64   5309.812 224.26   5309.411 232.89   5309.539 241.52   5309.4   250.14
GR 5309.27  258.77   5309.294 267.39   5309.281 276.02   5309.408 284.64   5309.519 293.27
GR 5309.707 301.89   5310.218 310.52   5311.602 319.15   5313.612 327.77   5314.178 336.4
GR 5314.263 345.02   5314.411 353.65   5314.572 362.27   5314.853 370.9    5315.13  379.52
GR 5315.261 388.15   5315.587 396.78   5315.682 405.4    5315.68  414.03   5315.685 422.65

NC 0.08     0.08     0.075
X1 L20               50       109.12   207.33   0.0      0.0      0        0        0
GR 5444.173 0        5444.167 10.912   5443.932 21.824   5443.452 32.736   5443.125 43.648
GR 5442.332 54.561   5441.308 65.473   5440.638 76.385   5440.231 87.297   5439.751 98.209
GR 5439.312 109.12   5438.417 120.03   5437.243 130.95   5434.695 141.86   5433.775 152.77
GR 5432.266 163.68   5429.49  174.59   5432.583 185.51   5434.502 196.42   5434.876 207.33
GR 5436.367 218.24   5437.241 229.15   5437.265 240.07   5437.475 250.98   5437.581 261.89
GR 5437.699 272.8    5437.8   283.72   5437.8   294.63   5437.8   305.54   5438     316.45
GR 5438.247 327.36   5438.488 338.28   5438.814 349.19   5439.215 360.1    5439.579 371.01
GR 5440.084 381.92   5440.402 392.84   5440.86  403.75   5441.234 414.66   5441.607 425.57
GR 5441.784 436.48   5442.17  447.4    5442.477 458.31   5442.746 469.22   5442.943 480.13
GR 5443.57  491.05   5443.969 501.96   5444.267 512.87   5444.96  523.78   5446.574 534.69

NC 0.08     0.08     0.075
X1 L201              20       64.893   113.56   0.0      0.0      0        0        0
GR 6245.023 0        6243.41  8.112    6241.79  16.223   6239.998 24.335   6238.188 32.446
GR 6236.359 40.558   6234.512 48.669   6232.647 56.781   6231.026 64.893   6229.712 73.004
GR 6228.682 81.116   6227.935 89.227   6227.471 97.339   6228.792 105.45   6231.116 113.56
GR 6233.597 121.67   6236.234 129.79   6239.028 137.9    6241.634 146.01   6243.79  154.12

NC 0.08     0.08     0.075
X1 L202              20       38.696   108.35   0.0      0.0      0        0        0
GR 6300.091 0        6298.615 7.739    6297.047 15.478   6295.322 23.218   6293.596 30.957
GR 6291.87  38.696   6290.38  46.435   6289.097 54.174   6287.813 61.914   6286.529 69.653
GR 6286.576 77.392   6287.217 85.131   6287.857 92.87    6288.498 100.61   6289.861 108.35
GR 6291.351 116.09   6292.84  123.83   6294.331 131.57   6295.887 139.31   6297.444 147.04

NC 0.08     0.08     0.075
X1 L204              20       63.016   105.03   0.0      0.0      0        0        0
GR 6294.725 0        6293.306 7.002    6291.852 14.004   6290.307 21.005   6288.768 28.007
GR 6287.235 35.009   6285.71  42.011   6284.46  49.013   6283.233 56.015   6282.013 63.016
GR 6280.8   70.018   6280.58  77.02    6280.841 84.022   6281.132 91.024   6281.451 98.025
GR 6282.156 105.03   6283.43  112.03   6284.717 119.03   6286.018 126.03   6287.363 133.03

NC 0.08     0.08     0.08
X1 L205              20       62.548   116.16   0.0      0.0      0        0        0
GR 6331.599 0        6331.128 8.935    6330.646 17.871   6330.141 26.806   6329.608 35.742
GR 6329.063 44.677   6328.503 53.612   6328.054 62.548   6327.649 71.483   6327.289 80.419
GR 6327.118 89.354   6327.332 98.289   6327.735 107.22   6328.227 116.16   6328.807 125.1
GR 6329.551 134.03   6330.455 142.97   6331.406 151.9    6332.404 160.84   6333.478 169.77

NC 0.1      0.08     0.075
X1 L21               50       205.13   264.96   0.0      0.0      0        0        0
GR 5446.628 0        5446.421 8.547    5446.493 17.094   5446.286 25.641   5446.299 34.188
GR 5445.861 42.735   5445.699 51.282   5445.367 59.829   5445.082 68.376   5444.815 76.923
GR 5444.591 85.469   5444.405 94.016   5444.062 102.56   5443.46  111.11   5442.961 119.66
GR 5442.485 128.2    5442.105 136.75   5441.676 145.3    5441.342 153.85   5441     162.39
GR 5441.319 170.94   5441.706 179.49   5441.873 188.03   5441.647 196.58   5441.251 205.13
GR 5439.245 213.67   5436.422 222.22   5434.162 230.77   5435.345 239.31   5438.583 247.86
GR 5440.601 256.41   5442.049 264.96   5442.836 273.5    5443.125 282.05   5443.374 290.6
GR 5443.242 299.14   5443.242 307.69   5443.016 316.24   5442.907 324.78   5443.998 333.33
GR 5443.842 341.88   5444.453 350.42   5446.704 358.97   5449.422 367.52   5451.804 376.07
GR 5454.799 384.61   5457.763 393.16   5458.077 401.71   5457.188 410.25   5456.486 418.8

NC 0.1      0.1      0.1
X1 L22               50       63.091   140.52   0.0      0.0      0        0        0
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GR 5472.584 0       5472.455 2.868   5472.315 5.736   5471.931 8.603   5471.546 11.471
GR 5471.161 14.339  5470.777 17.207  5470.438 20.074  5470.106 22.942  5469.765 25.81
GR 5469.423 28.678  5469.086 31.546  5468.75  34.413  5468.438 37.281  5468.147 40.149
GR 5467.879 43.017  5467.639 45.885  5467.418 48.752  5467.225 51.62   5467.086 54.488
GR 5467.083 57.356  5467.169 60.223  5467.628 63.091  5468.036 65.959  5467.92  68.827
GR 5467.799 71.695  5467.737 74.562  5467.672 77.43   5468.073 80.298  5468.52  83.166
GR 5468.6   86.034  5468.6   88.901  5468.53  91.769  5468.435 94.637  5468.4   97.505
GR 5468.4   100.37  5468.452 103.24  5468.547 106.11  5468.6   108.98  5468.6   111.84
GR 5468.634 114.71  5468.729 117.58  5468.821 120.45  5468.904 123.31  5468.976 126.18
GR 5468.989 129.05  5469.006 131.92  5469.093 134.79  5469.183 137.65  5469.193 140.52

NC 0.1      0.1     0.02
X1 L23              50       40.997  81.993   0.0     0.0      0       0        0
GR 5484.488 0       5484.41  3.154   5484.344 6.307   5484.318 9.461   5484.264 12.614
GR 5484.159 15.768  5483.912 18.922  5483.492 22.075  5482.841 25.229  5482     28.382
GR 5480.921 31.536  5479.712 34.689  5478.756 37.843  5477.89  40.997  5477.684 44.15
GR 5477.605 47.304  5477.6   50.457  5477.603 53.611  5477.682 56.765  5477.764 59.918
GR 5477.87  63.072  5477.926 66.225  5477.821 69.379  5477.75  72.533  5477.75  75.686
GR 5477.806 78.84   5477.937 81.993  5478.438 85.147  5479.281 88.301  5480.105 91.454
GR 5480.919 94.608  5481.264 97.761  5481.422 100.91  5481.152 104.07  5480.784 107.22
GR 5480.081 110.38  5479.347 113.53  5478.927 116.68  5478.562 119.84  5478.667 122.99
GR 5478.772 126.14  5478.877 129.3   5479.014 132.45  5479.224 135.6   5479.507 138.76
GR 5479.901 141.91  5480.439 145.07  5481.123 148.22  5481.916 151.37  5482.784 154.53

NC 0.044    0.044   0.075
X1 L24              50       154     234      0.0     0.0      0       0        0
GR 5491.331 0       5490.8   9.046   5489.979 18.092  5489.2   27.138  5488.686 36.184
GR 5488.114 45.231  5487.664 54.277  5487.569 63.323  5487.104 72.369  5486.782 81.415
GR 5486.169 90.461  5486.324 99.507  5486.161 108.55  5485.458 117.6   5485.078 126.65
GR 5484.648 135.69  5483.884 144.74  5483.252 153.78  5481.817 162.83  5480.011 171.88
GR 5478.095 180.92  5475.836 189.97  5477.294 199.01  5477.736 208.06  5479.022 217.11
GR 5480.641 226.15  5481.946 235.2   5482.786 244.24  5483.501 253.29  5484.134 262.34
GR 5484.766 271.38  5485.432 280.43  5486.154 289.48  5486.577 298.52  5486.751 307.57
GR 5487.281 316.61  5487.76  325.66  5488.192 334.71  5488.674 343.75  5489.114 352.8
GR 5489.536 361.84  5490.121 370.89  5490.753 379.94  5491.347 388.98  5491.984 398.03
GR 5492.698 407.07  5493.479 416.12  5493.854 425.17  5494.358 434.21  5494.943 443.26

NC 0.044    0.044   0.075
X1 L25              50       252     295      0.0     0.0      0       0        0
GR 5469.4   0       5469.099 10.531  5468.915 21.062  5468.691 31.593  5468.43  42.124
GR 5468.52  52.655  5468.833 63.186  5469.178 73.716  5469.488 84.247  5469.825 94.778
GR 5469.958 105.31  5469.996 115.84  5469.532 126.37  5468.929 136.9   5468.218 147.43
GR 5467.703 157.96  5467.879 168.49  5467.135 179.03  5465.958 189.56  5464.081 200.09
GR 5462.196 210.62  5460.174 221.15  5459.687 231.68  5459.436 242.21  5458.238 252.74
GR 5453.149 263.27  5454.806 273.8   5458.688 284.33  5460.279 294.87  5460.2   305.4
GR 5460.503 315.93  5461.246 326.46  5461.887 336.99  5462.832 347.52  5463.668 358.05
GR 5464.592 368.58  5465.843 379.11  5467.067 389.64  5468.493 400.18  5469.74  410.71
GR 5470.938 421.24  5471.782 431.77  5472.732 442.3   5473.896 452.83  5475.288 463.36
GR 5476.272 473.89  5477.226 484.42  5478.313 494.95  5479.708 505.48  5480.302 516.02

NC 0.044    0.044   0.075
X1 L26              50       283.04  343.69   0.0     0.0      0       0        0
GR 5488.409 0       5487.664 10.109  5486.718 20.217  5485.798 30.326  5485.028 40.434
GR 5484.282 50.543  5483.809 60.652  5483.504 70.76   5483.047 80.869  5481.901 90.978
GR 5480.739 101.09  5480.083 111.19  5479.921 121.3   5479.319 131.41  5478.708 141.52
GR 5478.154 151.63  5477.476 161.74  5477.362 171.85  5477.039 181.96  5476.863 192.06
GR 5476.868 202.17  5476.8   212.28  5476.921 222.39  5476.622 232.5   5476.574 242.61
GR 5476.412 252.72  5476.632 262.82  5476.6   272.93  5476.697 283.04  5476.174 293.15
GR 5470.103 303.26  5468.81  313.37  5471.192 323.48  5471.487 333.58  5474.535 343.69
GR 5475.443 353.8   5475.969 363.91  5476.735 374.02  5477.736 384.13  5479.061 394.24
GR 5480.429 404.35  5481.632 414.45  5482.582 424.56  5483.442 434.67  5484.194 444.78
GR 5484.842 454.89  5485.482 465     5486.03  475.11  5486.369 485.21  5487.047 495.32

NC 0.044    0.044   0.05
X1 L27              50       13      161      0.0     0.0      0       0        0
GR 5508.953 0       5508.819 2.272   5508.69  4.545   5508.525 6.817   5508.187 9.09
GR 5507.834 11.362  5507.359 13.635  5506.758 15.907  5506.143 18.18   5505.476 20.452
GR 5504.779 22.725  5504.066 24.997  5503.295 27.269  5502.524 29.542  5501.744 31.814
GR 5500.952 34.087  5500.174 36.359  5499.375 38.632  5498.551 40.904  5497.727 43.177
GR 5496.973 45.449  5496.248 47.722  5495.556 49.994  5495.047 52.266  5494.51  54.539
GR 5494.117 56.811  5494.048 59.084  5494.008 61.356  5493.955 63.629  5493.87  65.901
GR 5493.777 68.174  5493.701 70.446  5493.64  72.719  5493.589 74.991  5493.516 77.263
GR 5493.442 79.536  5493.377 81.808  5493.313 84.081  5493.233 86.353  5493.243 88.626
GR 5493.296 90.898  5493.35  93.171  5493.52  95.443  5493.723 97.715  5494.01  99.988
GR 5494.494 102.26  5494.964 104.53  5495.313 106.81  5495.535 109.08  5495.742 111.35

NC 0.1      0.1     0.02
X1 L28              52       31      81       0.0     0.0      0       0        0

GR 5517     -50     5515.087 0       5515.063 3.187   5515.094 6.375   5515.173 9.562
GR 5515.191 12.75   5515.168 15.937  5515.167 19.125  5515.194 22.312  5515.289 25.5
GR 5515.393 28.687  5515.4   31.874  5515.4   35.062  5515.503 38.249  5515.6   41.437
GR 5515.6   44.624  5515.595 47.812  5515.544 50.999  5515.439 54.186  5515.208 57.374
GR 5514.95  60.561  5514.615 63.749  5514.386 66.936  5514.361 70.124  5514.338 73.311
GR 5514.314 76.499  5514.254 79.686  5514.165 82.873  5514.149 86.061  5514.189 89.248
GR 5514.165 92.436  5514.112 95.623  5514.18  98.811  5514.307 102     5514.485 105.19
GR 5514.667 108.37  5514.805 111.56  5514.956 114.75  5515.044 117.94  5515.097 121.12
GR 5515.138 124.31  5515.166 127.5   5515.154 130.68  5515.142 133.87  5515.13  137.06
GR 5515.123 140.25  5515.159 143.43  5515.21  146.62  5515.252 149.81  5515.24  153
GR 5515.125 156.18  5517     200

NC 0.075    0.1     0.075
X1 L3               50       322.31  376.03   0.0     0.0      0       0        0
GR 5351.959 0       5346.143 13.43   5340.558 26.859  5336.156 40.289  5336.05  53.719
GR 5333.821 67.148  5331.782 80.578  5330.451 94.008  5330.011 107.44  5329.805 120.87
GR 5329.551 134.3   5329.2   147.73  5328.862 161.16  5329.152 174.59  5328.719 188.02
GR 5328.829 201.44  5328.624 214.87  5328.209 228.3   5327.792 241.73  5325.726 255.16
GR 5324.8   268.59  5324.768 282.02  5324.88  295.45  5328.026 308.88  5327.816 322.31
GR 5321.505 335.74  5321.982 349.17  5326.729 362.6   5332.283 376.03  5334.151 389.46
GR 5333.506 402.89  5333.389 416.32  5334.161 429.75  5334.963 443.18  5335.195 456.61
GR 5335.56  470.04  5335.802 483.47  5336.021 496.9   5335.773 510.33  5335.363 523.76
GR 5334.82  537.19  5334.793 550.62  5334.6   564.05  5334.838 577.48  5334.627 590.91
GR 5334.814 604.34  5335.401 617.76  5334.122 631.19  5332.695 644.62  5332.367 658.05

NC 0.044    0.044   0.075
X1 L30              50       221.88  285.27   0.0     0.0      0       0        0
GR 5509.255 0       5505.669 15.849  5499.773 31.697  5497.501 47.546  5497.189 63.394
GR 5497.733 79.243  5497.875 95.091  5497.851 110.94  5497.621 126.79  5497.6   142.64
GR 5497.4   158.49  5497.51  174.33  5497.472 190.18  5497.691 206.03  5497.337 221.88
GR 5494.394 237.73  5489.733 253.58  5493.06  269.42  5498.046 285.27  5498.411 301.12
GR 5498.556 316.97  5498.203 332.82  5498.099 348.67  5497.966 364.52  5497.819 380.36
GR 5497.552 396.21  5497.39  412.06  5497.202 427.91  5496.944 443.76  5496.542 459.61
GR 5496.3   475.46  5496.073 491.3   5495.8   507.15  5495.7   523     5495.8   538.85
GR 5495.717 554.7   5495.781 570.55  5495.785 586.4   5495.666 602.24  5495.6   618.09
GR 5495.8   633.94  5495.8   649.79  5495.783 665.64  5495.777 681.49  5495.815 697.33
GR 5496.441 713.18  5497.837 729.03  5500.938 744.88  5506.472 760.73  5509.619 776.58

NC 0.1      0.1     0.075
X1 L31              50       174.13  232.18   0.0     0.0      0       0        0
GR 5529.424 0       5528.443 8.292   5527.507 16.584  5526.876 24.876  5526.851 33.168
GR 5526.905 41.46   5526.693 49.752  5526.572 58.044  5527.29  66.336  5527.65  74.629
GR 5528.011 82.921  5528.186 91.213  5528.332 99.505  5528.787 107.8   5529.05  116.09
GR 5528.986 124.38  5528.783 132.67  5528.674 140.96  5528.6   149.26  5528.17  157.55
GR 5527.858 165.84  5526.251 174.13  5522.189 182.43  5519.212 190.72  5516.577 199.01
GR 5517.052 207.3   5519.688 215.59  5522.871 223.89  5524.574 232.18  5525.338 240.47
GR 5525.628 248.76  5525.846 257.05  5525.8   265.35  5525.694 273.64  5525.498 281.93
GR 5525.543 290.22  5525.794 298.51  5525.795 306.81  5525.676 315.1   5525.522 323.39
GR 5525.401 331.68  5525.142 339.97  5525.021 348.27  5525.34  356.56  5525.381 364.85
GR 5524.93  373.14  5524.984 381.43  5525.998 389.73  5527.094 398.02  5528.023 406.31

NC 0.1      0.1     0.075
X1 L32              50       87.635  120.5    0.0     0.0      0       0        0
GR 5557.469 0       5556.845 5.477   5555.957 10.954  5555.304 16.432  5554.977 21.909
GR 5554.815 27.386  5554.442 32.863  5553.651 38.34   5552.496 43.818  5551.11  49.295
GR 5549.661 54.772  5548.072 60.249  5546.301 65.726  5544.621 71.204  5542.949 76.681
GR 5541.358 82.158  5539.991 87.635  5538.518 93.112  5535.568 98.59   5533.859 104.07
GR 5535.589 109.54  5537.563 115.02  5539.224 120.5   5539.975 125.98  5540.251 131.45
GR 5540.724 136.93  5541.529 142.41  5542.006 147.88  5542.424 153.36  5543.056 158.84
GR 5543.541 164.32  5543.714 169.79  5543.685 175.27  5543.794 180.75  5543.827 186.22
GR 5544.059 191.7   5544.54  197.18  5545.211 202.66  5545.811 208.13  5546.307 213.61
GR 5546.775 219.09  5547.157 224.57  5547.654 230.04  5548.244 235.52  5549.008 241
GR 5549.822 246.47  5550.809 251.95  5552.076 257.43  5553.449 262.91  5554.997 268.38

NC 0.1      0.1     0.02
X1 L33              50       56.238  98.417   0.0     0.0      0       0        0
GR 5570.391 0       5570.44  3.515   5570.457 7.03    5570.35  10.545  5570.089 14.06
GR 5569.63  17.574  5569.042 21.089  5568.545 24.604  5568.043 28.119  5567.546 31.634
GR 5567.149 35.149  5566.684 38.664  5566.042 42.179  5565.295 45.693  5564.482 49.208
GR 5563.658 52.723  5563.013 56.238  5562.808 59.753  5562.923 63.268  5563.004 66.783
GR 5563.005 70.298  5563.096 73.812  5563.187 77.327  5563.13  80.842  5563.057 84.357
GR 5562.978 87.872  5562.839 91.387  5562.695 94.902  5562.758 98.417  5562.981 101.93
GR 5563.327 105.45  5563.735 108.96  5564.091 112.48  5564.382 115.99  5564.637 119.51
GR 5564.892 123.02  5565.18  126.54  5565.51  130.05  5565.918 133.57  5566.43  137.08
GR 5566.885 140.6   5567.114 144.11  5567.281 147.62  5567.467 151.14  5567.584 154.65
GR 5567.711 158.17  5567.909 161.68  5567.966 165.2   5567.968 168.71  5568     172.23

NC 0.1      0.1     0.02
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DRAFT
NOT APPROVED BY MHFD BOARD
SOFTWARE

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X1 L35                  50       301.8    338.02   0.0      0.0      0        0        0
GR 5612.833 0           5612.87  12.072   5612.824 24.144   5612.542 36.216   5610.166 48.288
GR 5609.152 60.361      5609     72.433   5608.818 84.505   5608.775 96.577   5607.758 108.65
GR 5606.755 120.72      5605.1   132.79   5603.315 144.87   5602.675 156.94   5601.569 169.01
GR 5600.33  181.08      5599.3   193.15   5599.276 205.23   5595.839 217.3    5594.417 229.37
GR 5594.29  241.44      5593.218 253.51   5592.955 265.59   5592.609 277.66   5590.16  289.73
GR 5587.864 301.8       5587.8   313.88   5587.8   325.95   5587.73  338.02   5588.445 350.09
GR 5589.04  362.16      5589.657 374.24   5590.165 386.31   5590.542 398.38   5590.702 410.45
GR 5590.877 422.52      5590.731 434.6    5590.699 446.67   5590.817 458.74   5590.903 470.81
GR 5592.602 482.88      5595.688 494.96   5596.915 507.03   5598.63  519.1    5601.874 531.17
GR 5603.411 543.25      5604.267 555.32   5606.646 567.39   5609.644 579.46   5611.682 591.53

NC 0.1      0.1         0.02
X1 L37                  50       195.67   247.84   0.0      0.0      0        0        0
GR 5652.359 0           5652.376 6.522    5652.393 13.044   5652.634 19.567   5652.644 26.089
GR 5652.502 32.611      5652.354 39.133   5652.212 45.656   5652.023 52.178   5651.84  58.7
GR 5651.689 65.222      5651.481 71.744   5651.28  78.267   5650.789 84.789   5650.175 91.311
GR 5649.944 97.833      5650.015 104.36   5650.003 110.88   5649.975 117.4    5650.187 123.92
GR 5651.055 130.44      5651.634 136.97   5651.834 143.49   5651.807 150.01   5651.288 156.53
GR 5650.77  163.06      5650.072 169.58   5649.379 176.1    5648.503 182.62   5647.569 189.14
GR 5646.904 195.67      5645.802 202.19   5643.816 208.71   5642.521 215.23   5641.44  221.76
GR 5643.012 228.28      5644.396 234.8    5647.427 241.32   5649.141 247.84   5649.967 254.37
GR 5650.383 260.89      5650.592 267.41   5650.985 273.93   5651.369 280.46   5651.591 286.98
GR 5652.018 293.5       5652.254 300.02   5652.486 306.54   5652.364 313.07   5652.359 319.59

NC 0.08     0.1         0.075
X1 L40                  50       56.264   105.5    0.0      0.0      0        0        0
GR 5530.591 0           5530.063 7.033    5527.8   14.066   5524.611 21.099   5522.046 28.132
GR 5519.915 35.165      5517.542 42.198   5514.709 49.231   5512.011 56.264   5509.968 63.297
GR 5509.411 70.331      5508.256 77.364   5505.675 84.397   5506.072 91.43    5508.656 98.463
GR 5510.461 105.5       5511.787 112.53   5514.637 119.56   5517.19  126.59   5518.972 133.63
GR 5519.754 140.66      5520.427 147.69   5520.724 154.73   5520.798 161.76   5521.017 168.79
GR 5521.104 175.83      5521.027 182.86   5521.131 189.89   5521.276 196.93   5521.399 203.96
GR 5521.325 210.99      5521.256 218.02   5521.323 225.06   5521.514 232.09   5520.919 239.12
GR 5520.198 246.16      5519.519 253.19   5519.169 260.22   5519.271 267.26   5519.495 274.29
GR 5519.549 281.32      5519.458 288.36   5519.18  295.39   5519.836 302.42   5520.821 309.45
GR 5521.779 316.49      5522.661 323.52   5523.372 330.55   5524.032 337.59   5524.501 344.62

NC 0.1      0.1         0.02
X1 L41                  50       89       204      0.0      0.0      0        0        0
GR 5558.538 0           5558.445 2.724    5558.353 5.449    5558.217 8.173    5557.989 10.898
GR 5557.732 13.622      5557.277 16.347   5556.822 19.071   5555.948 21.796   5555.039 24.52
GR 5554.233 27.245      5553.469 29.969   5553.002 32.694   5552.811 35.418   5552.695 38.143
GR 5552.75  40.867      5552.81  43.592   5552.9   46.316   5552.991 49.041   5553.029 51.765
GR 5553.062 54.49       5553.08  57.214   5553.093 59.939   5553.1   62.663   5553.1   65.388
GR 5553.109 68.112      5553.138 70.837   5553.161 73.561   5553.143 76.286   5553.123 79.01
GR 5553.094 81.735      5553.066 84.459   5553.012 87.184   5552.945 89.908   5552.909 92.633
GR 5552.906 95.357      5552.897 98.082   5552.872 100.81   5552.846 103.53   5552.799 106.26
GR 5552.753 108.98      5552.746 111.7    5552.745 114.43   5552.761 117.15   5552.786 119.88
GR 5552.898 122.6       5553.107 125.33   5553.312 128.05   5553.5   130.78   5553.667 133.5

NC 0.1      0.1         0.02
X1 L43                  50       82.435   127.4    0.0      0.0      0        0        0
GR 5542.301 0           5542.236 3.747    5542.162 7.494    5542.083 11.241   5542.056 14.988
GR 5542.011 18.735      5541.987 22.482   5541.985 26.229   5541.862 29.976   5541.796 33.723
GR 5541.719 37.47       5541.246 41.217   5540.752 44.964   5540.157 48.711   5539.702 52.458
GR 5539.424 56.205      5539.192 59.952   5538.997 63.699   5538.712 67.446   5538.458 71.194
GR 5538.25  74.941      5537.997 78.688   5537.649 82.435   5537.595 86.182   5537.643 89.929
GR 5537.762 93.676      5537.88  97.423   5538     101.17   5537.999 104.92   5537.964 108.66
GR 5537.913 112.41      5537.856 116.16   5537.749 119.9    5537.65  123.65   5537.741 127.4
GR 5538.254 131.15      5538.658 134.89   5538.838 138.64   5539.095 142.39   5539.375 146.13
GR 5539.63  149.88      5539.861 153.63   5540.056 157.38   5540.341 161.12   5540.637 164.87
GR 5540.751 168.62      5540.941 172.36   5541.19  176.11   5541.506 179.86   5541.786 183.6

NC 0.044    0.044       0.075
X1 L44                  50       140.87   192.09   0.0      0.0      0        0        0
GR 5559.977 0           5553.231 12.806   5547.643 25.612   5542.907 38.418   5538.143 51.225
GR 5533.723 64.031      5531.052 76.837   5527.79  89.643   5524.153 102.45   5522.53  115.26
GR 5522.022 128.06      5521.906 140.87   5519.108 153.67   5516.002 166.48   5517.83  179.29
GR 5519.964 192.09      5520.739 204.9    5521.2   217.7    5521.092 230.51   5521.1   243.32
GR 5521.022 256.12      5521.2   268.93   5521.305 281.74   5521.4   294.54   5521.4   307.35
GR 5521.456 320.15      5521.5   332.96   5521.575 345.77   5521.662 358.57   5521.708 371.38
GR 5521.73  384.19      5521.795 396.99   5521.9   409.8    5522.086 422.6    5522.279 435.41
GR 5522.452 448.22      5522.577 461.02   5522.648 473.83   5522.8   486.63   5522.851 499.44
GR 5522.8   512.25      5523     525.05   5523.176 537.86   5523.484 550.67   5524     563.47
GR 5525.878 576.28      5528.566 589.08   5531.266 601.89   5533.766 614.7    5535.33  627.5

NC 0.02     0.02        0.02
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X1 L45                  50       29.845   122.09   0.0      0.0      0        0        0
GR 5581.028 0           5580.99  2.713    5580.951 5.426    5580.914 8.14     5580.838 10.853
GR 5580.753 13.566      5580.654 16.279   5580.49  18.992   5580.301 21.705   5579.998 24.419
GR 5579.694 27.132      5579.606 29.845   5579.582 32.558   5579.476 35.271   5579.309 37.984
GR 5579.104 40.698      5578.753 43.411   5578.371 46.124   5578.067 48.837   5577.764 51.55
GR 5577.46  54.263      5577.157 56.977   5576.898 59.69    5576.683 62.403   5576.468 65.116
GR 5576.253 67.829      5576.038 70.542   5575.867 73.256   5575.714 75.969   5576.553 78.682
GR 5577.824 81.395      5579.296 84.108   5580.915 86.821   5582.333 89.535   5582.935 92.248
GR 5583.504 94.961      5583.72  97.674   5583.927 100.39   5584.059 103.1    5584.147 105.81
GR 5584.2   108.53      5584.2   111.24   5584.201 113.95   5584.204 116.67   5584.201 119.38
GR 5584.277 122.09      5584.366 124.81   5584.377 127.52   5584.326 130.23   5584.266 132.95

NC 0.1      0.02        0.02
X1 L46                  50       29.845   122.09   0.0      0.0      0        0        0
GR 5618.028 0           5617.99  2.713    5617.951 5.426    5617.914 8.14     5617.838 10.853
GR 5617.753 13.566      5617.654 16.279   5617.49  18.992   5617.301 21.705   5616.998 24.419
GR 5616.694 27.132      5616.606 29.845   5616.582 32.558   5616.476 35.271   5616.309 37.984
GR 5616.104 40.698      5615.753 43.411   5615.371 46.124   5615.067 48.837   5614.764 51.55
GR 5614.46  54.263      5614.157 56.977   5613.898 59.69    5613.683 62.403   5613.468 65.116
GR 5613.253 67.829      5613.038 70.542   5612.867 73.256   5612.714 75.969   5613.553 78.682
GR 5614.824 81.395      5616.296 84.108   5617.915 86.821   5619.333 89.535   5619.935 92.248
GR 5620.504 94.961      5620.72  97.674   5620.927 100.39   5621.059 103.1    5621.147 105.81
GR 5621.2   108.53      5621.2   111.24   5621.201 113.95   5621.204 116.67   5621.201 119.38
GR 5621.277 122.09      5621.366 124.81   5621.377 127.52   5621.326 130.23   5621.266 132.95

NC 0.08     0.08        0.05
X1 L5                   50       220.53   235.74   0.0      0.0      0        0        0
GR 5378.611 0           5376.191 7.605    5372.968 15.209   5370.082 22.814   5367.768 30.418
GR 5365.125 38.023      5362.907 45.628   5360.717 53.232   5359.901 60.837   5359.958 68.442
GR 5358.93  76.046      5356.424 83.651   5353.367 91.255   5350.733 98.86    5347.861 106.46
GR 5344.846 114.07      5343.231 121.67   5342.711 129.28   5341.464 136.88   5339.835 144.49
GR 5338.277 152.09      5337.038 159.7    5335.976 167.3    5335.036 174.91   5334.433 182.51
GR 5333.662 190.12      5332.648 197.72   5331.692 205.32   5331.253 212.93   5330.209 220.53
GR 5328.835 228.14      5330.719 235.74   5331.225 243.35   5331.814 250.95   5332.759 258.56
GR 5334.094 266.16      5335.332 273.77   5336.54  281.37   5338.11  288.98   5340.223 296.58
GR 5341.813 304.18      5343.985 311.79   5344.961 319.39   5346.375 327      5348.542 334.6
GR 5350.159 342.21      5350.546 349.81   5351.529 357.42   5352.803 365.02   5354.024 372.63

NC 0.08     0.1         0.05
X1 L51                  50       163.94   265.43   0.0      0.0      0        0        0
GR 5585.336 0           5584.702 7.807    5583.934 15.614   5583.286 23.421   5582.653 31.227
GR 5581.783 39.034      5580.865 46.841   5579.751 54.648   5578.275 62.455   5576.809 70.262
GR 5575.122 78.069      5573.462 85.876   5571.823 93.682   5570.426 101.49   5569.217 109.3
GR 5568.1   117.1       5567.283 124.91   5566.486 132.72   5565.934 140.52   5565.642 148.33
GR 5564.81  156.14      5564.028 163.94   5563.485 171.75   5562.83  179.56   5562.046 187.36
GR 5560.573 195.17      5559.466 202.98   5558.194 210.79   5556.373 218.59   5557.079 226.4
GR 5561.44  234.21      5564.524 242.01   5566.642 249.82   5567.892 257.63   5569.013 265.43
GR 5570.039 273.24      5571.542 281.05   5572.914 288.85   5574.458 296.66   5576.182 304.47
GR 5577.813 312.27      5579.022 320.08   5580.163 327.89   5580.688 335.7    5581.66  343.5
GR 5582.868 351.31      5584.07  359.12   5585.282 366.92   5585.662 374.73   5586.046 382.54

NC 0.044    0.1         0.05
X1 L511                 50       100.07   223.96   0.0      0.0      0        0        0
GR 5631.779 0           5631.503 4.765    5630.743 9.53     5629.688 14.295   5628.562 19.06
GR 5627.447 23.825      5626.295 28.59    5624.992 33.355   5623.792 38.12    5622.641 42.885
GR 5621.503 47.65       5620.541 52.415   5619.543 57.18    5618.405 61.945   5617.146 66.71
GR 5615.971 71.475      5614.924 76.24    5614.044 81.006   5612.95  85.771   5611.896 90.536
GR 5610.834 95.301      5609.896 100.07   5609.176 104.83   5608.609 109.6    5607.422 114.36
GR 5605.249 119.13      5603.175 123.89   5603.528 128.66   5605.52  133.42   5607.5   138.19
GR 5608.125 142.95      5608.114 147.72   5608.033 152.48   5607.942 157.25   5607.582 162.01
GR 5607.274 166.78      5607.139 171.54   5607.344 176.31   5607.562 181.07   5608.098 185.84
GR 5608.989 190.6       5610.198 195.37   5611.519 200.13   5612.676 204.9    5613.751 209.66
GR 5614.343 214.43      5614.742 219.19   5614.977 223.96   5615.008 228.72   5615.04  233.49

NC 0.1      0.1         0.02
X1 L52                  201      46.49    137      0.0      0.0      0        0        0
GR 5616.904 0           5616.908 0.75     5616.913 1.5      5616.917 2.25     5616.922 3
GR 5616.926 3.75        5616.931 4.5      5616.935 5.25     5616.939 6        5616.944 6.75
GR 5616.948 7.5         5616.953 8.25     5616.958 9        5616.962 9.75     5616.966 10.5
GR 5616.971 11.25       5616.975 12       5616.979 12.75    5616.984 13.5     5616.988 14.25
GR 5616.993 15          5616.998 15.75    5617.002 16.5     5617.006 17.25    5617.001 18
GR 5616.996 18.75       5616.991 19.5     5616.986 20.25    5616.982 21       5616.977 21.75
GR 5616.972 22.5        5616.967 23.25    5616.962 24       5616.958 24.75    5616.953 25.5
GR 5616.948 26.25       5616.943 27       5616.938 27.75    5616.934 28.5     5616.929 29.25
GR 5616.924 30          5616.919 30.75    5616.915 31.5     5616.91  32.25    5616.905 33
GR 5616.9   33.75       5616.895 34.5     5616.891 35.25    5616.886 36       5616.881 36.75
GR 5616.876 37.5        5616.871 38.25    5616.866 39       5616.861 39.75    5616.857 40.5
GR 5616.852 41.25       5616.847 42       5616.842 42.75    5616.837 43.5     5616.833 44.25
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ORIGINAL DOCUMENTS SCANNED BY UDFCD STAFF

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GR 5616.828 45       5616.823 45.75    5616.818 46.5     5616.803 47.25    5616.775 48
GR 5616.747 48.75    5616.719 49.5     5616.691 50.25    5616.664 51       5616.636 51.75
GR 5616.608 52.5     5616.581 53.25    5616.552 54       5616.525 54.75    5616.497 55.5
GR 5616.469 56.25    5616.441 57       5616.414 57.75    5616.386 58.5     5616.358 59.25
GR 5616.33  60       5616.302 60.75    5616.274 61.5     5616.247 62.25    5616.219 63
GR 5616.191 63.75    5616.164 64.5     5616.135 65.25    5616.108 66       5616.08  66.75
GR 5616.052 67.5     5616.024 68.25    5615.997 69       5615.969 69.75    5615.941 70.5
GR 5615.913 71.25    5615.885 72       5615.857 72.75    5615.83  73.5     5615.802 74.25
GR 5615.774 75       5615.746 75.75    5615.719 76.5     5615.719 77.25    5615.723 78
GR 5615.728 78.75    5615.732 79.5     5615.737 80.25    5615.742 81       5615.746 81.75
GR 5615.75  82.5     5615.755 83.25    5615.76  84       5615.764 84.75    5615.769 85.5
GR 5615.773 86.25    5615.778 87       5615.783 87.75    5615.787 88.5     5615.792 89.25
GR 5615.796 90       5615.801 90.75    5615.805 91.5     5615.81  92.25    5615.814 93
GR 5615.819 93.75    5615.823 94.5     5615.828 95.25    5615.832 96       5615.837 96.75
GR 5615.841 97.5     5615.846 98.25    5615.85  99       5615.854 99.75    5615.859 100.5
GR 5615.863 101.25   5615.868 102      5615.873 102.75   5615.877 103.5    5615.881 104.25
GR 5615.886 105      5615.89  105.75   5615.895 106.5    5615.903 107.25   5615.911 108
GR 5615.918 108.75   5615.926 109.5    5615.934 110.25   5615.941 111      5615.949 111.75
GR 5615.957 112.5    5615.964 113.25   5615.972 114      5615.979 114.75   5615.987 115.5
GR 5615.995 116.25   5616.003 117      5616.011 117.75   5616.018 118.5    5616.026 119.25
GR 5616.033 120      5616.042 120.75   5616.049 121.5    5616.057 122.25   5616.064 123
GR 5616.072 123.75   5616.08  124.5    5616.087 125.25   5616.095 126      5616.103 126.75
GR 5616.11  127.5    5616.118 128.25   5616.125 129      5616.133 129.75   5616.141 130.5
GR 5616.148 131.25   5616.156 132      5616.164 132.75   5616.171 133.5    5616.179 134.25
GR 5616.187 135      5616.194 135.75   5616.191 136.5    5616.182 137.25   5616.172 138
GR 5616.163 138.75   5616.154 139.5    5616.145 140.25   5616.135 141      5616.126 141.75
GR 5616.117 142.5    5616.108 143.25   5616.099 144      5616.09  144.75   5616.081 145.5
GR 5616.071 146.25   5616.062 147      5616.053 147.75   5616.044 148.5    5616.035 149.25
GR 5616.025 150

NC 0.1      0.1      0.06
X1 L53               50       118.8     183.15   0.0      0.0      0        0        0
GR 5630.621 0        5630.496 4.95      5630.278 9.9      5630.02  14.85    5629.872 19.8
GR 5629.69  24.75    5629.574 29.701    5629.503 34.651   5629.447 39.601   5629.394 44.551
GR 5629.274 49.501   5629.055 54.451    5628.705 59.401   5628.564 64.351   5628.635 69.301
GR 5628.441 74.251   5627.516 79.202    5627.165 84.152   5626.743 89.102   5625.925 94.052
GR 5624.785 99.002   5623.801 103.95    5623.129 108.9    5622.59  113.85   5621.737 118.8
GR 5621     123.75   5621.081 128.7     5621.692 133.65   5622.238 138.6    5623.436 143.55
GR 5625.474 148.5    5628.088 153.45    5630.56  158.4    5631.376 163.35   5632.064 168.3
GR 5632.796 173.25   5633.594 178.2     5634.398 183.15   5635.072 188.1    5635.792 193.05
GR 5636.629 198      5637.545 202.95    5638.46  207.9    5639.295 212.85   5640.142 217.8
GR 5640.671 222.75   5640.802 227.7     5640.717 232.65   5640.51  237.6    5640.173 242.55

NC 0.044    0.044    0.06
X1 L54               50       122.75    253.18   0.0      0.0      0        0        0
GR 5653.253 0        5651.6   7.672     5647.827 15.344   5646.271 23.016   5645.818 30.688
GR 5643.913 38.36    5642.41  46.032    5641.6   53.704   5640.978 61.376   5640.351 69.048
GR 5639.573 76.72    5639.044 84.392    5638.533 92.064   5638.021 99.736   5637.511 107.41
GR 5637.199 115.08   5636.744 122.75    5636.154 130.42   5634.475 138.1    5633.179 145.77
GR 5633.027 153.44   5633.303 161.11    5633.632 168.78   5633.717 176.46   5633.77  184.13
GR 5632.725 191.8    5629.667 199.47    5629.734 207.14   5632.021 214.82   5634.212 222.49
GR 5635.19  230.16   5636.601 237.83    5637.721 245.5    5638.767 253.18   5639.519 260.85
GR 5640.208 268.52   5641.087 276.19    5641.897 283.86   5642.76  291.54   5643.517 299.21
GR 5644.344 306.88   5645.118 314.55    5645.892 322.22   5646.982 329.9    5648.427 337.57
GR 5648.875 345.24   5649.022 352.91    5649.384 360.58   5649.731 368.26   5650.308 375.93

NC 0.08     0.08     0.04
X1 L55               50       133.66    267.32   0.0      0.0      0        0        0
GR 5669.569 0        5669.467 7.862     5668.204 15.725   5666.974 23.587   5665.778 31.45
GR 5664.497 39.312   5663.22  47.174    5662.048 55.037   5660.8   62.899   5659.503 70.762
GR 5658.094 78.624   5656.824 86.487    5655.671 94.349   5652.614 102.21   5650.822 110.07
GR 5650.228 117.94   5650.205 125.8     5649.888 133.66   5650.171 141.52   5650.346 149.39
GR 5650.504 157.25   5650.644 165.11    5650.623 172.97   5650.373 180.84   5649.909 188.7
GR 5649.219 196.56   5649.968 204.42    5650.071 212.29   5649.844 220.15   5650.761 228.01
GR 5651.799 235.87   5653.322 243.73    5655.788 251.6    5658.819 259.46   5662.079 267.32
GR 5663.221 275.18   5663.398 283.05    5662.544 290.91   5661.364 298.77   5661.573 306.63
GR 5663.354 314.5    5664.496 322.36    5665.076 330.22   5666.148 338.08   5667.115 345.95
GR 5668.21  353.81   5669.187 361.67    5670.157 369.53   5671.118 377.4    5672.035 385.26

NC 0.044    0.044    0.05
X1 L56               50       53.387    142.37   0.0      0.0      0        0        0
GR 5694.671 0        5694.22  4.449     5693.629 8.898    5692.86  13.347   5691.534 17.796
GR 5690.232 22.245   5688.975 26.694    5687.79  31.142   5686.604 35.591   5685.42  40.04
GR 5684.235 44.489   5683.05  48.938    5682.01  53.387   5680.976 57.836   5679.898 62.285
GR 5678.733 66.734   5677.536 71.183    5676.175 75.632   5674.762 80.081   5673.619 84.529
GR 5673.461 88.978   5674.042 93.427    5675.193 97.876   5676.44  102.33   5677.645 106.77
GR 5678.702 111.22   5679.582 115.67    5680.33  120.12   5681.347 124.57   5682.517 129.02
GR 5683.797 133.47   5684.989 137.92    5686.182 142.37   5687.205 146.81   5687.923 151.26

GR 5687.96  155.71   5687.879 160.16    5687.693 164.61   5687.404 169.06   5687.541 173.51
GR 5687.694 177.96   5687.847 182.41    5687.987 186.85   5687.884 191.3    5687.82  195.75
GR 5687.776 200.2    5687.665 204.65    5687.655 209.1    5687.811 213.55   5688.158 218

NC 0.1      0.1      0.02
X1 L57               201      85        238      0.0      0.0      0        0        0
GR 5728.19  0        5728.209 1.25      5728.228 2.5      5728.247 3.75     5728.265 5
GR 5728.284 6.25     5728.303 7.5       5728.321 8.75     5728.34  10       5728.359 11.25
GR 5728.378 12.5     5728.396 13.75     5728.416 15       5728.434 16.25    5728.453 17.5
GR 5728.472 18.75    5728.491 20        5728.51  21.25    5728.528 22.5     5728.547 23.75
GR 5728.566 25       5728.585 26.25     5728.604 27.5     5728.623 28.75    5728.642 30
GR 5728.66  31.25    5728.679 32.5      5728.698 33.75    5728.717 35       5728.735 36.25
GR 5728.754 37.5     5728.773 38.75     5728.792 40       5728.811 41.25    5728.83  42.5
GR 5728.848 43.75    5728.867 45        5728.886 46.25    5728.904 47.5     5728.923 48.75
GR 5728.942 50       5728.96  51.25     5728.979 52.5     5728.998 53.75    5729.016 55
GR 5729.035 56.25    5729.057 57.5      5729.08  58.75    5729.103 60       5729.126 61.25
GR 5729.149 62.5     5729.172 63.75     5729.196 65       5729.219 66.25    5729.242 67.5
GR 5729.265 68.75    5729.289 70        5729.312 71.25    5729.335 72.5     5729.358 73.75
GR 5729.381 75       5729.405 76.25     5729.428 77.5     5729.451 78.75    5729.475 80
GR 5729.498 81.25    5729.521 82.5      5729.544 83.75    5729.568 85       5729.583 86.25
GR 5729.519 87.5     5729.454 88.75     5729.389 90       5729.324 91.25    5729.26  92.5
GR 5729.195 93.75    5729.13  95        5729.066 96.25    5729.001 97.5     5728.937 98.75
GR 5728.872 100      5728.807 101.25    5728.742 102.5    5728.678 103.75   5728.613 105
GR 5728.548 106.25   5728.483 107.5     5728.419 108.75   5728.354 110      5728.29  111.25
GR 5728.225 112.5    5728.16  113.75    5728.096 115      5728.055 116.25   5728.06  117.5
GR 5728.065 118.75   5728.071 120       5728.076 121.25   5728.082 122.5    5728.087 123.75
GR 5728.093 125      5728.098 126.25    5728.104 127.5    5728.109 128.75   5728.114 130
GR 5728.12  131.25   5728.125 132.5     5728.131 133.75   5728.136 135      5728.142 136.25
GR 5728.147 137.5    5728.153 138.75    5728.158 140      5728.164 141.25   5728.169 142.5
GR 5728.175 143.75   5728.18  145       5728.187 146.25   5728.195 147.5    5728.203 148.75
GR 5728.21  150      5728.218 151.25    5728.226 152.5    5728.233 153.75   5728.241 155
GR 5728.249 156.25   5728.256 157.5     5728.264 158.75   5728.271 160      5728.28  161.25
GR 5728.287 162.5    5728.295 163.75    5728.303 165      5728.311 166.25   5728.318 167.5
GR 5728.326 168.75   5728.334 170       5728.341 171.25   5728.349 172.5    5728.357 173.75
GR 5728.365 175      5728.328 176.25    5728.282 177.5    5728.236 178.75   5728.19  180
GR 5728.144 181.25   5728.098 182.5     5728.052 183.75   5728.006 185      5727.96  186.25
GR 5727.914 187.5    5727.868 188.75    5727.822 190      5727.776 191.25   5727.73  192.5
GR 5727.684 193.75   5727.638 195       5727.592 196.25   5727.546 197.5    5727.5   198.75
GR 5727.454 200      5727.408 201.25    5727.362 202.5    5727.316 203.75   5727.28  205
GR 5727.388 206.25   5727.495 207.5     5727.603 208.75   5727.71  210      5727.817 211.25
GR 5727.925 212.5    5728.032 213.75    5728.14  215      5728.247 216.25   5728.354 217.5
GR 5728.461 218.75   5728.569 220       5728.676 221.25   5728.784 222.5    5728.891 223.75
GR 5728.998 225      5729.105 226.25    5729.213 227.5    5729.32  228.75   5729.428 230
GR 5729.535 231.25   5729.642 232.5     5729.75  233.75   5729.897 235      5730.134 236.25
GR 5730.372 237.5    5730.609 238.75    5730.846 240      5731.083 241.25   5731.321 242.5
GR 5731.558 243.75   5731.795 245       5732.032 246.25   5732.27  247.5    5732.506 248.75
GR 5732.744 250

NC 0.08     0.08     0.06
X1 L60               50       156.45    229.46   0.0      0.0      0        0        0
GR 5562.686 0        5562.765 10.43     5561.671 20.86    5559.551 31.29    5556.51  41.72
GR 5553.086 52.15    5549.798 62.58     5546.578 73.01    5543.784 83.44    5541.705 93.87
GR 5540.398 104.3    5539.735 114.73    5539.397 125.16   5539.226 135.59   5539.771 146.02
GR 5538.515 156.45   5537.912 166.88    5539.048 177.31   5537.115 187.74   5535.407 198.17
GR 5537.556 208.6    5539.26  219.03    5539.216 229.46   5539.68  239.89   5539.613 250.32
GR 5539.579 260.75   5539.4   271.18    5539.396 281.61   5539.59  292.04   5539.66  302.47
GR 5539.499 312.9    5539.802 323.33    5540.276 333.76   5540.489 344.19   5540.824 354.62
GR 5541.287 365.05   5541.712 375.48    5541.778 385.91   5541.712 396.34   5541.909 406.77
GR 5542.272 417.2    5542.199 427.63    5542.614 438.06   5543.458 448.49   5544.336 458.92
GR 5546.817 469.35   5550.385 479.78    5551.498 490.21   5552.184 500.64   5553.099 511.07

NC 0.08     0.08     0.06
X1 L61               50       91.719    183.44   0.0      0.0      0        0        0
GR 5573.171 0        5572.443 6.115     5571.224 12.229   5570.079 18.344   5568.935 24.458
GR 5567.869 30.573   5567.005 36.687    5566.436 42.802   5565.94  48.917   5565.579 55.031
GR 5565.602 61.146   5565.522 67.26     5564.735 73.375   5563.312 79.49    5562.534 85.604
GR 5561.463 91.719   5560.293 97.833    5559.021 103.95   5557.919 110.06   5556.771 116.18
GR 5554.49  122.29   5551.87  128.41    5550.283 134.52   5548.729 140.64   5546.727 146.75
GR 5546.792 152.86   5548.328 158.98    5550.003 165.09   5551.361 171.21   5551.76  177.32
GR 5552.137 183.44   5552.96  189.55    5553.9   195.67   5554.659 201.78   5555.256 207.9
GR 5555.876 214.01   5556.665 220.12    5557.442 226.24   5557.867 232.35   5558.346 238.47
GR 5559.144 244.58   5559.903 250.7     5560.635 256.81   5561.082 262.93   5561.243 269.04
GR 5561.536 275.16   5562.142 281.27    5562.325 287.39   5562.105 293.5    5562.213 299.61

NC 0.08     0.08     0.06
X1 L66               50       59.966    219.87   0.0      0.0      0        0        0
GR 5606.88  0        5605.113 6.663     5602.93  13.326   5601.506 19.989   5601.352 26.651
GR 5601.188 33.314   5601.008 39.977    5600.853 46.64    5600.61  53.303   5600.527 59.966
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ORIGINAL 2015 MBD BY AS SOCIATES

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GR 5600.232 66.629   5599.811 73.292   5598.714 79.954   5596.939 86.617   5595.417 93.28
GR 5594.043 99.943   5592.853 106.61   5591.896 113.27   5590.788 119.93   5590.083 126.59
GR 5589.515 133.26   5588.862 139.92   5588.336 146.58   5588.2   153.25   5588.51  159.91
GR 5589.643 166.57   5590.265 173.23   5590.455 179.9    5591.855 186.56   5593.809 193.22
GR 5596.199 199.89   5598.176 206.55   5599.894 213.21   5601.887 219.87   5603.583 226.54
GR 5604.572 233.2    5604.846 239.86   5605.076 246.53   5605.345 253.19   5605.403 259.85
GR 5605.32  266.51   5605.116 273.18   5604.96  279.84   5605.543 286.5    5606.656 293.17
GR 5607.451 299.83   5607.966 306.49   5608.395 313.16   5609.061 319.82   5609.799 326.48

NC 0.08     0.08     0.06
X1 L67                50       92.825   242.77   0.0      0.0      0        0        0
GR 5637.897 0        5637.676 7.14     5637.586 14.281   5637.62  21.421   5637.698 28.561
GR 5637.561 35.702   5637.106 42.842   5635.915 49.982   5633.53  57.123   5631.006 64.263
GR 5628.533 71.404   5626.247 78.544   5624.17  85.684   5622.768 92.825   5621.783 99.965
GR 5621.766 107.11   5621.739 114.25   5621.405 121.39   5619.374 128.53   5615.843 135.67
GR 5612.348 142.81   5609.846 149.95   5613.63  157.09   5616.873 164.23   5619.339 171.37
GR 5620.254 178.51   5620.514 185.65   5621.204 192.79   5623.628 199.93   5627.776 207.07
GR 5628.817 214.21   5629.027 221.35   5629.106 228.49   5629     235.63   5629.048 242.77
GR 5629.43  249.91   5629.642 257.05   5629.703 264.19   5629.56  271.33   5629.381 278.47
GR 5629.495 285.61   5629.607 292.75   5630.046 299.9    5631.064 307.04   5631.785 314.18
GR 5632.504 321.32   5633.242 328.46   5633.88  335.6    5634.551 342.74   5635.314 349.88

NC 0.044    0.044    0.05
X1 L68                201      0        136      0.0      0.0      0        0        0
GR 5636.606 0        5636.562 0.801    5636.517 1.602    5636.472 2.403    5636.427 3.203
GR 5636.382 4.004    5636.337 4.805    5636.292 5.606    5636.248 6.407    5636.203 7.208
GR 5636.158 8.008    5636.113 8.809    5636.068 9.61     5636.024 10.411   5635.979 11.212
GR 5635.934 12.013   5635.889 12.814   5635.845 13.614   5635.8   14.415   5635.755 15.216
GR 5635.71  16.017   5635.666 16.818   5635.621 17.619   5635.576 18.42    5635.531 19.22
GR 5635.486 20.021   5635.441 20.822   5635.396 21.623   5635.352 22.424   5635.307 23.225
GR 5635.262 24.025   5635.217 24.826   5635.172 25.627   5635.127 26.428   5635.083 27.229
GR 5635.035 28.03    5634.987 28.831   5634.939 29.631   5634.891 30.432   5634.843 31.233
GR 5634.795 32.034   5634.747 32.835   5634.699 33.636   5634.651 34.437   5634.603 35.237
GR 5634.555 36.038   5634.506 36.839   5634.458 37.64    5634.41  38.441   5634.361 39.242
GR 5634.313 40.042   5634.265 40.843   5634.216 41.644   5634.167 42.445   5634.119 43.246
GR 5634.07  44.047   5634.022 44.848   5633.973 45.648   5633.924 46.449   5633.875 47.25
GR 5633.827 48.051   5633.778 48.852   5633.729 49.653   5633.68  50.454   5633.631 51.254
GR 5633.583 52.055   5633.533 52.856   5633.484 53.657   5633.435 54.458   5633.386 55.259
GR 5633.337 56.059   5633.288 56.86    5633.255 57.661   5633.226 58.462   5633.196 59.263
GR 5633.167 60.064   5633.138 60.865   5633.109 61.665   5633.08  62.466   5633.05  63.267
GR 5633.021 64.068   5632.991 64.869   5632.962 65.67    5632.933 66.471   5632.904 67.271
GR 5632.875 68.072   5632.845 68.873   5632.815 69.674   5632.786 70.475   5632.757 71.276
GR 5632.728 72.076   5632.698 72.877   5632.669 73.678   5632.64  74.479   5632.61  75.28
GR 5632.581 76.081   5632.552 76.882   5632.522 77.682   5632.493 78.483   5632.463 79.284
GR 5632.434 80.085   5632.405 80.886   5632.375 81.687   5632.346 82.488   5632.317 83.288
GR 5632.287 84.089   5632.258 84.89    5632.229 85.691   5632.199 86.492   5632.208 87.293
GR 5632.233 88.093   5632.257 88.894   5632.282 89.695   5632.307 90.496   5632.331 91.297
GR 5632.355 92.098   5632.38  92.899   5632.405 93.699   5632.429 94.5     5632.454 95.301
GR 5632.479 96.102   5632.503 96.903   5632.528 97.704   5632.552 98.505   5632.577 99.305
GR 5632.601 100.11   5632.626 100.91   5632.65  101.71   5632.675 102.51   5632.7   103.31
GR 5632.724 104.11   5632.749 104.91   5632.773 105.71   5632.798 106.51   5632.823 107.31
GR 5632.848 108.11   5632.873 108.92   5632.897 109.72   5632.922 110.52   5632.946 111.32
GR 5632.971 112.12   5632.996 112.92   5633.021 113.72   5633.045 114.52   5633.07  115.32
GR 5633.095 116.12   5633.178 116.92   5633.299 117.72   5633.419 118.53   5633.541 119.33
GR 5633.661 120.13   5633.782 120.93   5633.902 121.73   5634.023 122.53   5634.144 123.33
GR 5634.265 124.13   5634.385 124.93   5634.506 125.73   5634.626 126.53   5634.747 127.34
GR 5634.867 128.14   5634.988 128.94   5635.108 129.74   5635.229 130.54   5635.349 131.34
GR 5635.47  132.14   5635.59  132.94   5635.71  133.74   5635.831 134.54   5635.951 135.34
GR 5636.071 136.14   5636.192 136.95   5636.312 137.75   5636.432 138.55   5636.552 139.35
GR 5636.672 140.15   5636.792 140.95   5636.913 141.75   5637.033 142.55   5637.153 143.35
GR 5637.273 144.15   5637.393 144.95   5637.513 145.75   5637.637 146.56   5637.763 147.36
GR 5637.89  148.16   5638.017 148.96   5638.144 149.76   5638.271 150.56   5638.398 151.36
GR 5638.525 152.16   5638.652 152.96   5638.779 153.76   5638.906 154.56   5639.033 155.36
GR 5639.161 156.17   5639.288 156.97   5639.415 157.77   5639.542 158.57   5639.669 159.37
GR 5639.796 160.17

NC 0.1      0.1      0.06
X1 L69                50       95.808   215.57   0.0      0.0      0        0        0
GR 5674.467 0        5673.575 5.988    5672.797 11.976   5671.985 17.964   5671.239 23.952
GR 5670.379 29.94    5669.52  35.928   5668.734 41.916   5668.106 47.904   5667.813 53.892
GR 5667.615 59.88    5667.029 65.868   5666.756 71.856   5666.522 77.844   5666.625 83.832
GR 5666.947 89.82    5666.964 95.808   5666.259 101.8    5665.094 107.78   5663.299 113.77
GR 5661.078 119.76   5659.407 125.75   5658.543 131.74   5657.917 137.72   5657.419 143.71
GR 5657.113 149.7    5656.636 155.69   5653.905 161.68   5651.633 167.66   5651.916 173.65
GR 5652.776 179.64   5654.384 185.63   5656.81  191.62   5659.21  197.6    5661.667 203.59
GR 5663.517 209.58   5665.002 215.57   5666.481 221.56   5668.166 227.54   5670.526 233.53
GR 5671.462 239.52   5671.658 245.51   5671.945 251.5    5672.501 257.48   5673.517 263.47
GR 5675.508 269.46   5676.758 275.45   5677.743 281.44   5678.557 287.42   5679.283 293.41

NC 0.08     0.08     0.06
X1 L7                 50       56.55    248.82   0.0      0.0      0        0        0
GR 5374.642 0        5369.593 11.31    5364.196 22.62    5355.373 33.93    5353.117 45.24
GR 5352.847 56.55    5352.755 67.86    5352.848 79.17    5352.287 90.48    5350.697 101.79
GR 5348.832 113.1    5347.005 124.41   5344.702 135.72   5345.253 147.03   5347.211 158.34
GR 5345.149 169.65   5342.434 180.96   5346.321 192.27   5347.182 203.58   5347.588 214.89
GR 5347.804 226.2    5348.512 237.51   5349.819 248.82   5350.557 260.13   5351.059 271.44
GR 5351.393 283.03   5351.402 294.63   5351.423 306.22   5351.381 317.81   5351.298 329.41
GR 5351.348 341      5351.279 352.59   5351.209 364.19   5351.22  375.78   5351.195 387.37
GR 5351.085 398.97   5351.001 410.56   5351.083 422.16   5351.2   433.75   5351.096 445.34
GR 5351.047 456.94   5351     468.53   5351     480.12   5351.248 491.72   5351.623 503.31
GR 5353.501 514.9    5356.046 526.5    5358.284 538.09   5360.358 549.68   5360.889 561.28

NC 0.044    0.044    0.05
X1 L70                50       8.013    344.57   0.0      0.0      0        0        0
GR 5729.637 0        5727.826 8.013    5725.524 16.027   5722.641 24.04    5719.752 32.053
GR 5717.452 40.066   5715.841 48.08    5714.872 56.093   5713.588 64.106   5712.63  72.12
GR 5711.835 80.133   5711.488 88.146   5710.591 96.159   5710.38  104.17   5710.264 112.19
GR 5710.206 120.2    5710.284 128.21   5710.319 136.23   5710.392 144.24   5710.5   152.25
GR 5710.46  160.27   5710.4   168.28   5710.3   176.29   5710.3   184.31   5710.231 192.32
GR 5710.104 200.33   5709.972 208.35   5709.889 216.36   5709.91  224.37   5709.9   232.39
GR 5710.054 240.4    5710.322 248.41   5710.793 256.43   5711.282 264.44   5711.71  272.45
GR 5712.131 280.46   5712.4   288.48   5712.016 296.49   5712.332 304.5    5714.29  312.52
GR 5716.177 320.53   5718.308 328.54   5720.486 336.56   5723.145 344.57   5725.912 352.58
GR 5729     360.6    5733.15  368.61   5737.079 376.62   5738.203 384.64   5738.4   392.65

NC 0.044    0.044    0.05
X1 L72                50       68.247   152.24   0.0      0.0      0        0        0
GR 5730.837 0        5729.861 5.25     5729.048 10.5     5728.398 15.749   5727.846 20.999
GR 5727.307 26.249   5726.744 31.499   5726.366 36.748   5725.69  41.998   5725.008 47.248
GR 5724.322 52.498   5723.466 57.747   5722.385 62.997   5721.237 68.247   5719.891 73.497
GR 5718.616 78.747   5716.892 83.996   5714.726 89.246   5713.789 94.496   5714.341 99.746
GR 5715.048 105      5715.058 110.25   5714.812 115.49   5715.197 120.74   5717.016 125.99
GR 5718.67  131.24   5719.709 136.49   5720.395 141.74   5721.159 146.99   5722.259 152.24
GR 5723.549 157.49   5725.382 162.74   5727.418 167.99   5729.409 173.24   5731.308 178.49
GR 5733.253 183.74   5735.332 188.99   5737.383 194.24   5738.764 199.49   5739.445 204.74
GR 5740.25  209.99   5741.54  215.24   5743.29  220.49   5745.174 225.74   5746.849 230.99
GR 5748.231 236.24   5749.788 241.49   5751.052 246.74   5751.901 251.99   5752.399 257.24

NC 0.044    0.044    0.05
X1 L73                50       65.217   104.35   0.0      0.0      0        0        0
GR 5772.359 0        5772.35  4.348    5772.373 8.696    5772.27  13.043   5771.949 17.391
GR 5771.503 21.739   5770.926 26.087   5770.341 30.435   5769.876 34.782   5769.548 39.13
GR 5769.404 43.478   5768.68  47.826   5768.194 52.174   5767.887 56.521   5767.703 60.869
GR 5767.758 65.217   5767.884 69.565   5768.011 73.913   5768.284 78.26    5768.474 82.608
GR 5768.6   86.956   5768.6   91.304   5768.65  95.652   5768.862 99.999   5769.239 104.35
GR 5769.914 108.69   5770.657 113.04   5771.444 117.39   5772.308 121.74   5772.526 126.09
GR 5772.811 130.43   5773.096 134.78   5772.963 139.13   5772.959 143.48   5773     147.83
GR 5773     152.17   5773.134 156.52   5773.294 160.87   5773.448 165.22   5773.573 169.56
GR 5773.838 173.91   5774.207 178.26   5774.637 182.61   5775.32  186.96   5776.055 191.3
GR 5776.826 195.65   5777.507 200      5778.078 204.35   5778.46  208.69   5778.587 213.04

NC 0.08     0.08     0.06
X1 L75                50       286.01   396.72   0.0      0.0      0        0        0
GR 5584.348 0        5584.424 9.226    5584.738 18.452   5585.396 27.678   5584.954 36.904
GR 5580.792 46.13    5576.974 55.356   5576.302 64.582   5576.046 73.808   5575.666 83.034
GR 5575.176 92.26    5574.652 101.49   5574.728 110.71   5574.383 119.94   5574.171 129.16
GR 5573.986 138.39   5573.621 147.62   5573.154 156.84   5572.878 166.07   5572.461 175.29
GR 5571.63  184.52   5570.284 193.75   5569.329 202.97   5569.097 212.2    5569.534 221.43
GR 5569.888 230.65   5570.34  239.88   5571.194 249.1    5571.01  258.33   5570.646 267.56
GR 5570.415 276.78   5571.138 286.01   5570.982 295.23   5569.072 304.46   5566.583 313.69
GR 5566.579 322.91   5566.17  332.14   5562.204 341.36   5560.124 350.59   5563.807 359.82
GR 5568.174 369.04   5572.754 378.27   5577.966 387.49   5581     396.72   5581.77  405.95
GR 5583.261 415.17   5584.248 424.4    5584.889 433.62   5585.391 442.85   5585.995 452.08

NC 0.044    0.044    0.05
X1 L76                50       269.4    301.72   0.0      0.0      0        0        0
GR 5591.607 0        5589.541 10.776   5586.975 21.552   5585.393 32.328   5584.824 43.103
GR 5584.6   53.879   5584.459 64.655   5584.364 75.431   5583.985 86.207   5583.832 96.983
GR 5583.689 107.76   5583.507 118.53   5583.68  129.31   5583.555 140.09   5583.371 150.86
GR 5583.4   161.64   5583.288 172.41   5583.2   183.19   5582.901 193.97   5582.86  204.74
GR 5582.768 215.52   5581.858 226.29   5581.288 237.07   5580.507 247.84   5579.164 258.62
GR 5578.609 269.4    5578.458 280.17   5574.479 290.95   5574.477 301.72   5578.159 312.5
GR 5581.47  323.28   5585.83  334.05   5587.342 344.83   5589.06  355.6    5590.906 366.38
GR 5592.582 377.15   5593.956 387.93   5595.052 398.71   5596.051 409.48   5597.058 420.26
GR 5597.507 431.03   5598.315 441.81   5599.29  452.59   5600.15  463.36   5600.665 474.14
GR 5601.104 484.91   5601.69  495.69   5602.164 506.46   5603.453 517.24   5605.812 528.02
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DRAFT
NOT APPROVED
NOT SIGNED BY ANY ASSOCIATES

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NC 0.08     0.08     0.075
X1 L77                50       104.49   169.8    0.0      0.0      0        0        0
GR 5621.437 0        5621.03  6.531    5620.646 13.062   5620.517 19.593   5620.352 26.124
GR 5620.225 32.655   5619.735 39.185   5619.014 45.716   5618.053 52.247   5616.457 58.778
GR 5614.838 65.309   5613.898 71.84    5612.794 78.371   5609.678 84.902   5606.386 91.433
GR 5604.163 97.964   5601.563 104.49   5599.716 111.03   5597.994 117.56   5596.642 124.09
GR 5596.76  130.62   5596.396 137.15   5593.699 143.68   5594.486 150.21   5596.385 156.74
GR 5597.338 163.27   5598.475 169.8    5599.418 176.33   5600.205 182.87   5600.322 189.4
GR 5600.148 195.93   5600.939 202.46   5601.901 208.99   5602.496 215.52   5602.897 222.05
GR 5603.393 228.58   5603.731 235.11   5604.162 241.64   5604.828 248.17   5605.632 254.71
GR 5606.598 261.24   5609.069 267.77   5612.514 274.3    5614.974 280.83   5616.231 287.36
GR 5616.987 293.89   5617.742 300.42   5618.274 306.95   5618.641 313.48   5619.038 320.01

NC 0.044    0.1      0.2
X1 L78                201      7        95       0.0      0.0      0        0        0
GR 5685.661 0        5685.727 0.75     5685.793 1.5      5685.859 2.25     5685.926 3
GR 5685.992 3.75     5686.059 4.5      5686.125 5.25     5686.191 6        5686.225 6.75
GR 5686.187 7.5      5686.149 8.25     5686.111 9        5686.072 9.75     5686.034 10.5
GR 5685.996 11.25    5685.958 12       5685.919 12.75    5685.881 13.5     5685.843 14.25
GR 5685.805 15       5685.767 15.75    5685.729 16.5     5685.69  17.25    5685.652 18
GR 5685.614 18.75    5685.576 19.5     5685.538 20.25    5685.5   21       5685.461 21.75
GR 5685.423 22.5     5685.385 23.25    5685.347 24       5685.309 24.75    5685.271 25.5
GR 5685.232 26.25    5685.194 27       5685.156 27.75    5685.118 28.5     5685.08  29.25
GR 5685.042 30       5685.003 30.75    5684.965 31.5     5684.927 32.25    5684.889 33
GR 5684.851 33.75    5684.813 34.5     5684.774 35.25    5684.736 36       5684.749 36.75
GR 5684.781 37.5     5684.814 38.25    5684.847 39       5684.88  39.75    5684.913 40.5
GR 5684.946 41.25    5684.979 42       5685.011 42.75    5685.044 43.5     5685.077 44.25
GR 5685.109 45       5685.142 45.75    5685.175 46.5     5685.208 47.25    5685.241 48
GR 5685.273 48.75    5685.307 49.5     5685.339 50.25    5685.372 51       5685.405 51.75
GR 5685.438 52.5     5685.471 53.25    5685.503 54       5685.537 54.75    5685.569 55.5
GR 5685.602 56.25    5685.634 57       5685.667 57.75    5685.7   58.5     5685.733 59.25
GR 5685.766 60       5685.799 60.75    5685.832 61.5     5685.864 62.25    5685.897 63
GR 5685.93  63.75    5685.963 64.5     5685.996 65.25    5686.036 66       5686.129 66.75
GR 5686.223 67.5     5686.317 68.25    5686.411 69       5686.504 69.75    5686.598 70.5
GR 5686.692 71.25    5686.786 72       5686.879 72.75    5686.973 73.5     5687.067 74.25
GR 5687.16  75       5687.254 75.75    5687.348 76.5     5687.441 77.25    5687.535 78
GR 5687.629 78.75    5687.723 79.5     5687.817 80.25    5687.911 81       5688.004 81.75
GR 5688.098 82.5     5688.192 83.25    5688.286 84       5688.379 84.75    5688.473 85.5
GR 5688.567 86.25    5688.661 87       5688.755 87.75    5688.849 88.5     5688.942 89.25
GR 5689.036 90       5689.13  90.75    5689.224 91.5     5689.318 92.25    5689.412 93
GR 5689.506 93.75    5689.6   94.5     5689.693 95.25    5689.73  96       5689.715 96.75
GR 5689.7   97.5     5689.685 98.25    5689.67  99       5689.655 99.75    5689.64  100.5
GR 5689.625 101.25   5689.61  102      5689.595 102.75   5689.58  103.5    5689.564 104.25
GR 5689.549 105      5689.534 105.75   5689.519 106.5    5689.504 107.25   5689.489 108
GR 5689.474 108.75   5689.459 109.5    5689.443 110.25   5689.428 111      5689.413 111.75
GR 5689.398 112.5    5689.383 113.25   5689.368 114      5689.353 114.75   5689.337 115.5
GR 5689.322 116.25   5689.307 117      5689.292 117.75   5689.277 118.5    5689.262 119.25
GR 5689.247 120      5689.231 120.75   5689.216 121.5    5689.201 122.25   5689.186 123
GR 5689.17  123.75   5689.155 124.5    5689.14  125.25   5689.163 126      5689.188 126.75
GR 5689.213 127.5    5689.239 128.25   5689.264 129      5689.29  129.75   5689.315 130.5
GR 5689.34  131.25   5689.366 132      5689.391 132.75   5689.417 133.5    5689.441 134.25
GR 5689.467 135      5689.493 135.75   5689.518 136.5    5689.543 137.25   5689.568 138
GR 5689.594 138.75   5689.619 139.5    5689.645 140.25   5689.67  141      5689.695 141.75
GR 5689.72  142.5     5689.746 143.25   5689.771 144      5689.796 144.75   5689.822 145.5
GR 5689.847 146.25   5689.873 147      5689.898 147.75   5689.923 148.5    5689.949 149.25
GR 5689.974 150

NC 0.1      0.1      0.02
X1 L79                50       44.045   141.57   0.0      0.0      0        0        0
GR 5650.646 0        5650.358 3.146    5650.157 6.292    5650.065 9.438    5650.217 12.584
GR 5650.283 15.73    5650.215 18.877   5650.031 22.023   5649.728 25.169   5649.393 28.315
GR 5649.034 31.461   5648.671 34.607   5648.305 37.753   5647.907 40.899   5647.5   44.045
GR 5647.084 47.191   5646.668 50.337   5646.35  53.484   5646.049 56.63    5646.052 59.776
GR 5646.054 62.922   5646.057 66.068   5646.071 69.214   5646.125 72.36    5646.175 75.506
GR 5646.212 78.652   5646.22  81.798   5646.188 84.944   5646.128 88.091   5646.038 91.237
GR 5646.148 94.383   5646.401 97.529   5646.728 100.67   5647.091 103.82   5647.501 106.97
GR 5647.926 110.11   5648.392 113.26   5648.867 116.41   5649.643 119.55   5650.409 122.7
GR 5650.584 125.84   5650.704 128.99   5650.502 132.14   5650.319 135.28   5650.2   138.43
GR 5649.961 141.57   5649.501 144.72   5648.938 147.87   5648.232 151.01   5647.735 154.16

NC 0.08     0.08     0.06
X1 L80                50       40.78    89.717   0.0      0.0      0        0        0
GR 5624.54  0        5624.431 4.078    5624.144 8.156    5623.834 12.234   5623.708 16.312
GR 5623.681 20.39    5623.563 24.468   5623.375 28.546   5622.896 32.624   5622.063 36.702
GR 5621     40.78    5620.341 44.858   5619.877 48.936   5619.039 53.014   5617.982 57.092
GR 5616.787 61.17    5615.37  65.248   5613.62  69.326   5612.388 73.404   5612.29  77.482
GR 5613.021 81.561   5614.193 85.639   5615.277 89.717   5616.235 93.795   5616.879 97.873
GR 5617.332 101.95   5617.285 106.03   5617.092 110.11   5617.39  114.18   5618.072 118.26
GR 5619.026 122.34   5620.019 126.42   5620.914 130.5    5621.59  134.57   5622.441 138.65
GR 5623.167 142.73   5623.862 146.81   5624.292 150.89   5624.724 154.96   5625.083 159.04
GR 5625.501 163.12   5625.813 167.2    5626.325 171.28   5626.967 175.36   5627.586 179.43
GR 5628.131 183.51   5628.599 187.59   5629.104 191.67   5629.77  195.75   5630.467 199.82

NC 0.08     0.08     0.06
X1 L81                50       11.858   68.183   0.0      0.0      0        0        0
GR 5647.735 0        5647.439 2.964    5647.11  5.929    5646.752 8.893    5646.443 11.858
GR 5646.185 14.822   5645.955 17.787   5645.757 20.751   5645.542 23.716   5645.307 26.68
GR 5645.062 29.645   5644.803 32.609   5644.569 35.574   5644.372 38.538   5644.136 41.503
GR 5643.84  44.467   5643.579 47.432   5643.381 50.396   5643.171 53.361   5642.936 56.325
GR 5642.743 59.29    5642.644 62.254   5642.527 65.219   5642.367 68.183   5642.188 71.148
GR 5641.953 74.112   5641.712 77.077   5641.454 80.041   5641.262 83.006   5641.323 85.97
GR 5641.398 88.935   5641.534 91.899   5641.654 94.864   5641.692 97.828   5641.724 100.79
GR 5641.724 103.76   5641.713 106.72   5641.614 109.69   5641.507 112.65   5641.309 115.62
GR 5641.132 118.58   5641.255 121.54   5641.42  124.51   5642.544 127.47   5643.674 130.44
GR 5645.119 133.4    5646.563 136.37   5647.555 139.33   5648.543 142.3    5648.034 145.26

NC 0.044    0.044    0.04
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GR 5670.931 0        5671.035 4.44     5671.061 8.879    5671.039 13.319   5671.018 17.758
GR 5670.834 22.198   5670.577 26.637   5670.225 31.077   5669.874 35.516   5669.509 39.956
GR 5669.025 44.395   5668.618 48.835   5668.266 53.275   5667.967 57.714   5667.725 62.154
GR 5667.598 66.593   5667.412 71.033   5667.249 75.472   5667.173 79.912   5667.099 84.351
GR 5667.024 88.791   5666.95  93.23    5666.875 97.67    5666.795 102.11   5666.567 106.55
GR 5666.511 110.99   5666.588 115.43   5666.774 119.87   5666.865 124.31   5666.923 128.75
GR 5666.977 133.19   5667.029 137.63   5667.155 142.07   5667.304 146.5    5667.43  150.94
GR 5667.813 155.38   5668.065 159.82   5668.191 164.26   5668.321 168.7    5668.449 173.14
GR 5668.638 177.58   5668.877 182.02   5669.064 186.46   5669.319 190.9    5669.649 195.34
GR 5670.074 199.78   5670.404 204.22   5670.666 208.66   5670.866 213.1    5671.194 217.54

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GR 5689.22  0        5689.072 1.293    5688.924 2.587    5688.776 3.88     5688.627 5.173
GR 5688.477 6.466    5688.328 7.76     5688.177 9.053    5688.026 10.346   5687.875 11.64
GR 5687.723 12.933   5687.571 14.226   5687.418 15.52    5687.265 16.813   5687.111 18.106
GR 5686.954 19.399   5686.795 20.693   5686.637 21.986   5686.48  23.279   5686.323 24.573
GR 5686.167 25.866   5686.013 27.159   5685.858 28.453   5685.704 29.746   5685.551 31.039
GR 5685.399 32.332   5685.247 33.626   5685.096 34.919   5684.946 36.212   5684.797 37.506
GR 5684.647 38.799   5684.5   40.092   5684.353 41.386   5684.206 42.679   5684.06  43.972
GR 5683.915 45.265   5683.77  46.559   5683.626 47.852   5683.482 49.145   5683.34  50.439
GR 5683.194 51.732   5683.039 53.025   5682.884 54.318   5682.731 55.612   5682.579 56.905
GR 5682.429 58.198   5682.279 59.492   5682.131 60.785   5681.984 62.078   5681.838 63.372
GR 5681.693 64.665   5681.55  65.958   5681.408 67.251   5681.267 68.545   5681.127 69.838
GR 5680.988 71.131   5680.851 72.425   5680.715 73.718   5680.58  75.011   5680.446 76.305
GR 5680.313 77.598   5680.182 78.891   5680.052 80.184   5679.923 81.478   5679.795 82.771
GR 5679.675 84.064   5679.617 85.358   5679.559 86.651   5679.502 87.944   5679.446 89.238
GR 5679.391 90.531   5679.337 91.824   5679.284 93.117   5679.232 94.411   5679.18  95.704
GR 5679.13  96.997   5679.081 98.291   5679.032 99.584   5678.984 100.88   5678.937 102.17
GR 5678.891 103.46   5678.846 104.76   5678.802 106.05   5678.758 107.34   5678.716 108.64
GR 5678.674 109.93   5678.634 111.22   5678.594 112.52   5678.555 113.81   5678.518 115.1
GR 5678.48  116.4    5678.511 117.69   5678.558 118.98   5678.606 120.28   5678.656 121.57
GR 5678.709 122.86   5678.771 124.16   5678.833 125.45   5678.896 126.74   5678.958 128.04
GR 5679.021 129.33   5679.085 130.62   5679.149 131.92   5679.213 133.21   5679.277 134.5
GR 5679.342 135.8    5679.408 137.09   5679.473 138.38   5679.539 139.68   5679.605 140.97
GR 5679.672 142.26   5679.739 143.56   5679.806 144.85   5679.874 146.14   5679.941 147.44
GR 5680.01  148.73   5680.089 150.02   5680.178 151.32   5680.268 152.61   5680.357 153.9
GR 5680.446 155.2    5680.536 156.49   5680.625 157.78   5680.715 159.08   5680.805 160.37
GR 5680.896 161.66   5680.986 162.96   5681.077 164.25   5681.167 165.54   5681.258 166.84
GR 5681.349 168.13   5681.44  169.42   5681.531 170.72   5681.623 172.01   5681.714 173.3
GR 5681.806 174.6    5681.897 175.89   5681.99  177.18   5682.082 178.48   5682.174 179.77
GR 5682.267 181.06   5682.36  182.35   5682.456 183.65   5682.552 184.94   5682.649 186.23
GR 5682.746 187.53   5682.843 188.82   5682.94  190.11   5683.039 191.41   5683.137 192.7
GR 5683.235 193.99   5683.331 195.29   5683.427 196.58   5683.524 197.87   5683.62  199.17
GR 5683.716 200.46   5683.813 201.75   5683.909 203.05   5684.005 204.34   5684.102 205.63
GR 5684.198 206.93   5684.294 208.22   5684.391 209.51   5684.487 210.81   5684.583 212.1
GR 5684.679 213.39   5684.775 214.69   5684.874 215.98   5684.972 217.27   5685.071 218.57
GR 5685.171 219.86   5685.272 221.15   5685.374 222.45   5685.475 223.74   5685.577 225.03
GR 5685.68  226.33   5685.784 227.62   5685.888 228.91   5685.993 230.21   5686.098 231.5
GR 5686.204 232.79   5686.311 234.09   5686.417 235.38   5686.525 236.67   5686.633 237.97
GR 5686.742 239.26   5686.852 240.55   5686.962 241.85   5687.073 243.14   5687.184 244.43
GR 5687.296 245.73   5687.408 247.02   5687.535 248.31   5687.666 249.61   5687.799 250.9
GR 5687.932 252.19   5688.065 253.49   5688.199 254.78   5688.334 256.07   5688.469 257.37
GR 5688.605 258.66

NC 0.08     0.08     0.06
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GR 5644.868 12.792   5644.877 15.35    5644.851 17.909   5644.802 20.467   5644.839 23.026
GR 5644.912 25.584   5644.998 28.143   5644.976 30.701   5644.915 33.259   5644.817 35.818
GR 5644.245 38.376   5643.495 40.935   5642.636 43.493   5641.658 46.051   5640.706 48.61
GR 5639.827 51.168   5639.122 53.727   5638.812 56.285   5638.575 58.843   5638.38  61.402
GR 5638.046 63.96    5637.73  66.519   5637.451 69.077   5637.117 71.636   5636.559 74.194
GR 5635.927 76.752   5635.112 79.311   5634.23  81.869   5633.392 84.428   5632.563 86.986
GR 5631.599 89.544   5630.579 92.103   5629.667 94.661   5629.169 97.22    5629.181 99.778
GR 5629.682 102.34   5630.814 104.89   5632.107 107.45   5633.337 110.01   5634.118 112.57
GR 5634.899 115.13   5635.632 117.69   5636.383 120.25   5637.173 122.8    5638.042 125.36
GR 5639.07  127.92   5640.099 130.48   5641.093 133.04   5641.974 135.6    5642.708 138.15
GR 5643.296 140.71   5643.711 143.27   5643.979 145.83   5644.21  148.39   5644.389 150.95
GR 5644.226 153.5    5644.099 156.06   5644.008 158.62   5644.031 161.18   5644.089 163.74
GR 5644.147 166.3    5644.157 168.86   5644.126 171.41   5644.133 173.97   5644.178 176.53
GR 5644.183 179.09   5644.126 181.65   5644.023 184.21   5643.917 186.76   5643.855 189.32
GR 5643.8   191.88   5643.8   194.44   5643.8   197      5643.8   199.56   5643.741 202.11
GR 5643.673 204.67   5643.61  207.23   5643.6   209.79   5643.6   212.35   5643.606 214.91
GR 5643.582 217.46   5643.521 220.02   5643.44  222.58   5643.4   225.14   5643.4   227.7
GR 5643.4   230.26   5643.397 232.82   5643.36  235.37   5643.287 237.93   5643.201 240.49
GR 5643.2   243.05   5643.2   245.61   5643.2   248.17   5643.2   250.72

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GR 5662.7   0        5662.54  2.058    5662.408 4.116    5662.305 6.174    5662.066 8.231
GR 5661.782 10.289   5661.479 12.347   5661.257 14.405   5661.024 16.463   5660.763 18.521
GR 5660.452 20.578   5660.12  22.636   5659.773 24.694   5659.533 26.752   5659.38  28.81
GR 5659.27  30.868   5659.022 32.925   5658.666 34.983   5658.281 37.041   5657.968 39.099
GR 5657.763 41.157   5657.6   43.215   5657.466 45.272   5657.309 47.33    5657.115 49.388
GR 5656.968 51.446   5656.879 53.504   5656.777 55.562   5656.671 57.619   5656.585 59.677
GR 5656.498 61.735   5656.426 63.793   5656.404 65.851   5656.389 67.909   5656.349 69.967
GR 5656.242 72.024   5656.12  74.082   5655.966 76.14    5655.663 78.198   5655.359 80.256
GR 5655.051 82.314   5654.624 84.371   5654.182 86.429   5653.749 88.487   5653.109 90.545
GR 5652.449 92.603   5651.774 94.661   5651.12  96.718   5650.469 98.776   5649.818 100.83
GR 5649.43  102.89   5649.107 104.95   5648.782 107.01   5648.482 109.07   5648.214 111.12
GR 5647.973 113.18   5648.03  115.24   5648.269 117.3    5648.564 119.35   5649.089 121.41
GR 5649.742 123.47   5650.458 125.53   5651.117 127.59   5651.691 129.64   5652.225 131.7
GR 5652.662 133.76   5653.033 135.82   5653.418 137.88   5653.845 139.93   5654.323 141.99
GR 5654.908 144.05   5655.581 146.11   5656.319 148.16   5657.085 150.22   5657.915 152.28
GR 5658.83  154.34   5659.674 156.4    5660.443 158.45   5661.087 160.51   5661.802 162.57
GR 5662.598 164.63   5663.417 166.68   5664.152 168.74   5664.802 170.8    5665.367 172.86
GR 5665.847 174.92   5666.243 176.97   5666.594 179.03   5666.948 181.09   5667.315 183.15
GR 5667.696 185.21   5668.04  187.26   5668.341 189.32   5668.639 191.38   5668.943 193.44
GR 5669.247 195.49   5669.593 197.55   5669.966 199.61   5670.334 201.67

NC 0.044    0.044    0.05
X1 L89               50       72.707   187.51   0.0      0.0      0        0        0
GR 5755.777 0        5754.938 3.827    5754.269 7.653    5753.579 11.48    5752.87  15.307
GR 5752.122 19.134   5751.391 22.96    5750.701 26.787   5749.969 30.614   5749.164 34.44
GR 5748.462 38.267   5747.783 42.094   5747.275 45.92    5746.689 49.747   5745.966 53.574
GR 5745.212 57.401   5744.526 61.227   5743.781 65.054   5743.034 68.881   5742.417 72.707
GR 5742.08  76.534   5741.915 80.361   5741.733 84.187   5741.61  88.014   5741.802 91.841
GR 5741.978 95.668   5742.008 99.494   5741.906 103.32   5741.759 107.15   5741.592 110.97
GR 5741.474 114.8    5741.426 118.63   5741.325 122.45   5741.27  126.28   5741.247 130.11
GR 5741.277 133.93   5741.54  137.76   5741.951 141.59   5742.401 145.41   5742.852 149.24
GR 5743.333 153.07   5743.941 156.89   5744.639 160.72   5745.374 164.55   5745.905 168.37
GR 5746.424 172.2    5747.041 176.03   5747.633 179.86   5748.113 183.68   5748.765 187.51

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GR 5370.954 0        5371.033 8.817    5371.2   17.634   5371.2   26.451   5371     35.267
GR 5370.848 44.084   5370.767 52.901   5370.167 61.718   5368.857 70.535   5367.223 79.352
GR 5366.089 88.169   5366.2   96.985   5366.2   105.8    5365.868 114.62   5365.779 123.44
GR 5365.828 132.25   5365.918 141.07   5365.894 149.89   5365.522 158.7    5364.464 167.52
GR 5363.305 176.34   5362.949 185.15   5362.894 193.97   5362.912 202.79   5362.458 211.6
GR 5361.756 220.42   5360.962 229.24   5360.298 238.06   5359.444 246.87   5357.262 255.69
GR 5354.511 264.51   5355.416 273.32   5358.512 282.14   5364.659 290.96   5371.993 299.77
GR 5378.665 308.59   5385.886 317.41   5391.837 326.22   5395.299 335.04   5396.313 343.86
GR 5396.233 352.67   5395.667 361.49   5396.545 370.31   5397.146 379.13   5397.35  387.94
GR 5397.732 396.76   5397.97  405.58   5398.067 414.39   5398.127 423.21   5398.186 432.03

NC 0.044    0.044    0.05
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GR 5795.142 0        5794.057 6.542    5792.836 13.083   5791.552 19.625   5788.991 26.166
GR 5786.401 32.708   5783.552 39.249   5781.063 45.791   5778.419 52.332   5775.546 58.874
GR 5772.861 65.415   5770.552 71.957   5768.414 78.498   5766.484 85.04    5765.204 91.581
GR 5763.89  98.123   5762.5   104.66   5761.125 111.21   5760.12  117.75   5759.93  124.29
GR 5760.271 130.83   5760.631 137.37   5760.657 143.91   5760.24  150.46   5759.99  157
GR 5760.795 163.54   5762.101 170.08   5762.78  176.62   5763.71  183.16   5765.219 189.7

GR 5766.679 196.25   5767.823 202.79   5768.793 209.33   5769.889 215.87   5771.694 222.41
GR 5774.195 228.95   5776.698 235.5    5778.916 242.04   5781.05  248.58   5783.276 255.12
GR 5785.766 261.66   5788.12  268.2    5789.997 274.74   5791.46  281.29   5792.218 287.83
GR 5793.075 294.37   5794.231 300.91   5795.289 307.45   5796.287 313.99   5797.374 320.53

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GR 5828.774 0        5828.685 2.497    5828.608 4.995    5828.543 7.492    5828.49  9.99
GR 5828.442 12.487   5828.35  14.984   5828.257 17.482   5828.143 19.979   5828.014 22.477
GR 5827.906 24.974   5827.751 27.471   5827.614 29.969   5827.479 32.466   5827.315 34.964
GR 5827.148 37.461   5826.847 39.958   5826.519 42.456   5826.229 44.953   5826.09  47.451
GR 5825.951 49.948   5825.92  52.445   5825.999 54.943   5826.089 57.44    5826.196 59.938
GR 5826.29  62.435   5826.347 64.932   5826.341 67.43    5826.309 69.927   5826.217 72.425
GR 5826.122 74.922   5826.045 77.42    5825.993 79.917   5825.929 82.414   5825.977 84.912
GR 5826.167 87.409   5826.405 89.907   5826.788 92.404   5827.183 94.901   5827.631 97.399
GR 5828.123 99.896   5828.625 102.39   5829.14  104.89   5829.575 107.39   5829.883 109.89
GR 5829.993 112.38   5830.078 114.88   5830.129 117.38   5830.171 119.88   5830.201 122.37

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GR 5671.937 23.789   5668.866 28.547   5666.351 33.305   5664.674 38.063   5663.569 42.821
GR 5662.622 47.579   5661.902 52.337   5660.599 57.094   5659.233 61.852   5658.757 66.61
GR 5659.356 71.368   5660.982 76.126   5661.664 80.884   5662.518 85.642   5663.719 90.399
GR 5663.744 95.157   5663.83  99.915   5664.125 104.67   5664.541 109.43   5664.526 114.19
GR 5664.097 118.95   5663.884 123.7    5663.8   128.46   5663.868 133.22   5664.167 137.98
GR 5664.384 142.74   5664.709 147.49   5665.147 152.25   5665.688 157.01   5666.471 161.77
GR 5667.506 166.53   5668.741 171.28   5669.757 176.04   5670.785 180.8    5671.468 185.56
GR 5672.207 190.31   5672.924 195.07   5673.497 199.83   5674.114 204.59   5674.657 209.35
GR 5675.211 214.1    5675.773 218.86   5676.353 223.62   5676.867 228.38   5677.215 233.14

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GR 5697.078 0        5695.896 6.261    5694.909 12.521   5694.421 18.782   5693.881 25.042
GR 5693.538 31.303   5693.388 37.563   5693.333 43.824   5693.062 50.084   5692.657 56.345
GR 5691.585 62.606   5688.995 68.866   5686.342 75.127   5684.957 81.387   5684.321 87.648
GR 5684.114 93.908   5684     100.17   5683.763 106.43   5682.896 112.69   5681.766 118.95
GR 5680.79  125.21   5681.19  131.47   5683.064 137.73   5684.445 143.99   5685.582 150.25
GR 5687.903 156.51   5691.113 162.77   5693.598 169.04   5694.589 175.3    5695.215 181.56
GR 5695.678 187.82   5696.117 194.08   5696.664 200.34   5697.249 206.6    5697.938 212.86
GR 5698.532 219.12   5698.982 225.38   5699.132 231.64   5699.182 237.9    5699.233 244.16
GR 5699.284 250.42   5699.334 256.68   5699.244 262.94   5699.235 269.2    5699.129 275.46
GR 5699.137 281.73   5699.025 287.99   5698.873 294.25   5698.888 300.51   5698.77  306.77

NC 0.1      0.1      0.02
X1 L12               22       7.394    73.936   0.0      0.0      0        0        0
GR 5435     -25      5431.317 0        5431.259 7.394    5431.199 14.787   5431.161 22.181
GR 5431.13  29.574   5431.1   36.968   5431.068 44.361   5431.107 51.755   5431.175 59.149
GR 5431.243 66.542   5431.31  73.936   5431.29  81.329   5431.231 88.723   5431.172 96.116
GR 5431.114 103.51   5431.148 110.9    5431.226 118.3    5431.304 125.69   5431.383 133.08
GR 5431.296 140.48   5435     165

NC 0.044    0.044    0.075
X1 L130              20       32.126   96.378   0.0      0.0      0        0        0
GR 5940.505 0        5939.765 8.032    5939.009 16.063   5938.254 24.095   5937.5   32.126
GR 5937.125 40.158   5936.829 48.189   5936.533 56.221   5936.354 64.252   5936.943 72.284
GR 5937.533 80.315   5938.121 88.347   5938.864 96.378   5939.807 104.41   5940.75  112.44
GR 5941.694 120.47   5942.385 128.5    5942.987 136.54   5943.589 144.57   5944.169 152.6

NC 0.044    0.044    0.05
X1 L135              20       40.002   90.004   0.0      0.0      0        0        0
GR 5950.118 0        5949.419 10       5948.892 20.001   5948.375 30.001   5947.87  40.002
GR 5947.752 50.002   5947.723 60.003   5947.783 70.003   5948.356 80.003   5949.154 90.004
GR 5950.025 100      5951.202 110      5952.831 120.01   5954.578 130.01   5956.504 140.01
GR 5958.717 150.01   5960.878 160.01   5962.989 170.01   5964.79  180.01   5966.51  190.01

NC 0.044    0.044    0.05
X1 L140              20       25.244   82.044   0.0      0.0      0        0        0
GR 5905.571 0        5905.219 6.311    5904.854 12.622   5904.474 18.933   5903.76  25.244
GR 5902.245 31.556   5900.736 37.867   5899.236 44.178   5897.745 50.489   5898.035 56.8
GR 5899.667 63.111   5901.299 69.422   5902.931 75.733   5904.563 82.044   5905.184 88.356
GR 5905.628 94.667   5906.07  100.98   5906.51  107.29   5906.985 113.6    5907.698 119.91

NC 0.044    0.044    0.05
X1 L143              20       0        147.72   0.0      0.0      0        0        0
GR 6043.8   0        6042.401 12.31    6041.278 24.621   6040.158 36.931   6039.151 49.241
GR 6038.175 61.552   6037.429 73.862   6037.062 86.173   6036.705 98.483   6037.867 110.79
GR 6039.089 123.1    6040.71  135.41   6042.644 147.72   6044.461 160.03   6045.59  172.35
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ORIGINAL MAPS
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GR 6046.719 184.66   6047.632 196.97   6048.466 209.28   6049.224 221.59   6049.813 233.9

NC 0.08     0.07     0.075
X1 L148              20       107.33   214.66   0.0      0.0      0        0        0
GR 6091.794 0        6089.245 15.333   6086.592 30.666   6083.741 45.999   6080.72  61.332
GR 6077.394 76.665   6073.858 91.998   6070.093 107.33   6066.845 122.66   6064.536 138
GR 6063.869 153.33   6065.554 168.66   6067.775 184      6070.437 199.33   6072.531 214.66
GR 6073.597 230      6074.774 245.33   6076.14  260.66   6077.493 275.99   6078.885 291.33

NC 0.044    0.044    0.05
X1 L170              22       0        62.336   0.0      0.0      0        0        0
GR 5854     -25      5845.878 0        5844.999 4.453    5844.165 8.905    5843.378 13.358
GR 5843.094 17.81    5843.023 22.263   5843.144 26.716   5843.486 31.168   5843.822 35.621
GR 5844.153 40.073   5844.479 44.526   5844.798 48.978   5845.113 53.431   5845.367 57.884
GR 5845.561 62.336   5845.724 66.789   5845.835 71.241   5845.924 75.694   5846.008 80.147
GR 5846.086 84.599   5854     100

NC 0.08     0.08     0.075
X1 L200              20       74.305   334.37   0.0      0.0      0        0        0
GR 6213.871 0        6211.536 18.576   6209.26  37.153   6206.86  55.729   6204.002 74.305
GR 6199.765 92.882   6194.181 111.46   6187.353 130.03   6182.68  148.61   6180.171 167.19
GR 6179.833 185.76   6180.443 204.34   6182.837 222.92   6186.09  241.49   6190.563 260.07
GR 6195.138 278.65   6199.459 297.22   6203.265 315.8    6206.779 334.37   6209.627 352.95

NC 0.08     0.08     0.075
X1 L211              20       194.2    360.66   0.0      0.0      0        0        0
GR 5463.958 0        5463.184 27.743   5461.696 55.487   5460.281 83.23    5458.64  110.97
GR 5457.625 138.72   5455.791 166.46   5454.86  194.2    5452.946 221.95   5449.505 249.69
GR 5446.625 277.43   5448.953 305.18   5454.037 332.92   5455.61  360.66   5456.663 388.41
GR 5457.063 416.15   5457.356 443.89   5458.116 471.64   5459.409 499.38   5460.878 527.12

NC 0.08     0.08     0.075
X1 L801              22       0        82.71    0.0      0.0      0        0        0
GR 5635     -50      5626.972 0        5626.299 5.169    5625.539 10.339   5625.02  15.508
GR 5624.654 20.677   5624.306 25.847   5623.975 31.016   5623.661 36.186   5623.364 41.355
GR 5623.124 46.524   5623.564 51.694   5624.091 56.863   5624.703 62.032   5625.397 67.202
GR 5626.094 72.371   5626.789 77.541   5627.275 82.71    5627.516 87.879   5627.769 93.049
GR 5628.034 98.218   5635     120

[LOSSES]
;;Link           Inlet      Outlet     Average    Flap Gate
;;-------------- ---------- ---------- ---------- ----------
L87              0          1          0          NO

[CURVES]
;;Name           Type       X-Value    Y-Value
;;-------------- ---------- ---------- ----------
;Flow divider downstream of Pond 123 to split outflows into separate downstream channels.
J123             Diversion  0          0
J123                        17.9       11.5
J123                        542.9      11.5
J123                        949        438
J123                        1121.6     560.81
J123                        1264.9     632.45
J123                        1421.6     710.8
J123                        1562.7     781.35

O162             Rating     0          0
O162                        0.5        11.6
O162                        1.5        20.1
O162                        2.5        25.9
O162                        3.5        28.0
O162                        4.5        34.8
O162                        5.5        37.0
O162                        6.5        41.8
O162                        7.5        44.9
O162                        8.5        102.2
O162                        9.5        168.5
O162                        10.5       602

O165             Rating     0          0
O165                        8          46.4
O165                        12         56.8
O165                        16         65.5
O165                        20         73.3
O165                        24         80.3
O165                        28         113.9
O165                        30         234.3
O165                                   32         279.3

O105             Rating     0          0
O105                        2          0
O105                        4          88
O105                        6          130
O105                        8          190
O105                        10         220
O105                        12         260
O105                        14         290
O105                        16         310
O105                        20         350

O102             Rating     0          0
O102                        2          0
O102                        4          130
O102                        6          280
O102                        8          430
O102                        10         590
O102                        12         710

O101             Rating     0          0
O101                        2          29
O101                        4          115
O101                        6          220
O101                        8          320
O101                        10         425
O101                        12         510
O101                        14         590
O101                        16         610
O101                        18         700
O101                        20         750
O101                        22         780
O101                        24         850
O101                        26         910

O90              Rating     0          0
O90                         2          36.2
O90                         4          51.2
O90                         6          62.7
O90                         8          72.4
O90                         8.83       76.1
O90                         10         141.2
O90                         12         253.9
O90                         13.46      265.9
O90                         14         270.3
O90                         16         285.7
O90                         18         300.4

O88              Rating     0          0
O88                         4          33
O88                         9          73
O88                         14         95
O88                         19         102
O88                         21         105
O88                         23         108
O88                         25         110
O88                         29         115
O88                         34         120
O88                         39         126
O88                         44         131

O70              Rating     0          0.0
O70                         0.24       0.49
O70                         0.86       3.76
O70                         1.76       11.77
O70                         2.81       24.7
O70                         4.2        32.31
O70                         5.85       40.34
O70                         7.21       84.13
O70                         8.03       148.31
O70                         8.46       189.24
O70                         8.66       209.48
O70                         8.71       214.74
O70                         9.5        496.00

O123             Rating     0          0
O123                        0.11       17.9
```

ORIGINAL 2015 MDP BY PAYRES ASSOCIATES

O123		5	290.2
O123		10	435.3
O123		15	542.9
O123		16	1121.6
O123		20	1264.9
O123		25	1421.6
O123		30	1562.7
O69	Rating	0	0
O69		1	1
O69		2	2.44
O69		3	25.5
O69		4	41.84
O69		5	57.8
O69		6	68.74
O69		7	78.14
O69		8	86.62
O69		9	94.44
O69		9.5	98.2
O69		10	280.42
O69		10.5	289.62
O69		11	298.53
O69		11.5	307.18
O69		12	315.6
O69		13	331.8
O69		13.5	339.6
O69		14	347.24
O69		16	376.22
O69		18	403.13
O69		20	428.35
O69		22	452.16
O69		24	474.78
O135	Rating	0	6
O135		1	24
O135		2	50
O135		3	85
O135		4	125
O135		5	168
O135		6	211
O135		7	249
O135		8	276
O135		8.2	281
O135		9	301
O135		10	324
O135		11	345
O135		12	365
O135		13	384
O135		14	402
O135		15	419
O135		16	436
O135		17	452
O135		18	467
O135		19	482
O135		20	497
O135		21	511
O135		21.6	519
O135		22	524
O135		23	538
O135		24	551
O135		25.6	1038
O141	Rating	0	0
O141		1	5
O141		2	18
O141		3	36
O141		4	55
O141		5	64
O141		6	71
O141		7	77
O141		8	83
O141		9	88
O141		10	93
O141		11	98
O141		12	102
O141		13	107
O141		13.1	107
O141		14	245

O141		15	253
O141		16	261
O141		17	268
O141		18	275
O141		19	282
O141		20	289
O141		20.1	290
P88	Storage	0	0.0
P88		4	0.0
P88		9	0.0
P88		14	0.0
P88		19	0.0
P88		21	8712
P88		23	8712
P88		25	95832
P88		29	94743
P88		34	150717.6
P88		39	151588.8
P88		44	181209.6
P70	Storage	0	0.0
P70		0.5	1004.0
P70		1.5	12990.0
P70		2.5	33447.0
P70		3.5	51367.0
P70		4.5	65229.0
P70		5.5	77013.0
P70		6.5	90363.0
P70		7.5	96692.0
P70		8.5	100302.0
P70		9.5	104684.0
P70		10	209368.0
P101	Storage	0	0.0
P101		2	1306.8
P101		4	1306.8
P101		6	8929.8
P101		8	16552.8
P101		10	16552.8
P101		12	50094
P101		14	50094.0
P101		16	71002.8
P101		18	91911.6
P101		20	91911.6
P101		22	78625.8
P101		24	78625.8
P101		26	39204
P102	Storage	0	0
P102		2	16552.8
P102		4	31363.2
P102		6	49222.8
P102		8	76665.6
P102		10	111513.6
P165	Storage	0	0
P165		2.7	820
P165		4.7	2283
P165		8.7	7408
P165		12.7	15467
P165		16.7	26458
P165		20.7	40381
P165		24.7	57237
P165		28.7	77027
P165		30.7	88021
P165		32.7	99748
P162	Storage	0	0
P162		0.5	11402
P162		1.5	42230
P162		2.5	98193
P162		3.5	143317
P162		4.5	168934
P162		5.5	179794
P162		6.5	190304
P162		7.5	200945
P162		8.5	211717

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

```
P162                    9.5         224712
P162                    10.5        234350

P90             Storage 0           0
P90                     2           36894
P90                     4           43393
P90                     6           50183
P90                     8           57644
P90                     8.83        60992
P90                     10          65716
P90                     12          74226
P90                     13.46       80785
P90                     14          83231
P90                     16          92644
P90                     18          102786

P105            Storage 0           0
P105                    2           6098.4
P105                    4           21780
P105                    6           52272
P105                    8           82328.4
P105                    10          111078
P105                    12          156816
P105                    14          178596
P105                    16          226512
P105                    20          409464

P123            Storage 0           5663
P123                    5           69943
P123                    10          181253
P123                    15          289468
P123                    15.1        359857
P123                    20          675847
P123                    25          1066776
P123                    30          1563423
P123                    35          1835395

P69             Storage 0           255
P69                     1           4478
P69                     2           10304
P69                     3           19603
P69                     4           27113
P69                     5           33848
P69                     6           37773
P69                     7           41687
P69                     8           45273
P69                     9           48990
P69                     10          52810
P69                     11          56995
P69                     12          61063
P69                     13          69529
P69                     14          74798
P69                     15          79788
P69                     17          140061
P69                     19          173682
P69                     24          200446

P135            Storage 0           0
P135                    1           6098.4
P135                    2           15681.6
P135                    3           35283.6
P135                    4           59677.2
P135                    5           80586
P135                    6           94525.2
P135                    7           101930.4
P135                    8           109771.2
P135                    8.2         110250.36
P135                    9           112167
P135                    10          126324
P135                    11          134600.4
P135                    12          142005.6
P135                    13          149846.4
P135                    14          158122.8
P135                    15          166399.2
P135                    16          174675.6
P135                    17          183823.2
P135                    18          192535.2
P135                    19          201682.8
P135                    20          210830.4
P135                    21          221284.8
P135                    21.6        221241.24
P135                    22          221067
P135                    23          248727.6
P135                    24          266587.2

P141            Storage 0           0
P141                    1           435.6
P141                    2           4356
P141                    3           13503.6
P141                    4           28314
P141                    5           38768.4
P141                    6           43995.6
P141                    7           48787.2
P141                    8           54014.4
P141                    9           59241.6
P141                    10          65340
P141                    11          72309.6
P141                    12          84942
P141                    13          104108.4
P141                    13.1        106959.16
P141                    14          132616
P141                    15          165092.4
P141                    16          193406.4
P141                    17          219542.4
P141                    18          243064.8
P141                    19          267458.4
P141                    20          296208
P141                    20.1        299402.4
P141                    21          328152
P141                    22          349351.2
P141                    23          373309.2
P141                    24          400316.4
P141                    25          437342.4
P141                    26          488743.2
```

```
[REPORT]
INPUT      NO
CONTROLS   NO
SUBCATCHMENTS ALL
NODES ALL
LINKS ALL

[TAGS]

[MAP]
DIMENSIONS 3111204.755 1599798.875 3199349.720 1656766.757
Units      Feet

[COORDINATES]
;;Node           X-Coord           Y-Coord
;;---------------- ------------------ ------------------
1                 3138017.983       1654981.232
2                 3138842.676       1653492.406
3                 3140966.443       1653871.911
4                 3142046.572       1653127.498
5                 3140718.305       1651726.250
6                 3141754.645       1650770.190
7                 3142761.792       1652134.947
8                 3143754.343       1652361.190
9                 3143520.802       1650310.405
10                3146038.670       1652076.562
11                3144849.068       1650346.896
12                3144659.316       1648617.230
13                3146432.771       1649865.217
14                3145878.110       1647507.909
15                3147512.899       1649522.203
16                3147680.757       1648558.845
17                3148811.973       1647974.991
18                3149498.001       1649018.629
19                3151045.213       1647982.290
20                3147680.757       1646150.449
21                3149855.611       1646799.986
22                3149731.542       1644464.573
23                3151599.873       1646887.564
24                3153095.998       1645610.385
25                3150789.777       1645114.110
```

ORIGINAL 2015 MDP BY URS ASSOCIATES

26	3151928.291	1644048.577
27	3151424.717	1642946.554
28	3153511.993	1644355.100
30	3153424.415	1642530.558
31	3156737.783	1642567.049
32	3155343.833	1641465.026
33	3156978.623	1640633.035
34	3158117.137	1640771.700
35	3158781.270	1638772.002
36	3156912.939	1638574.952
37	3160014.661	1636867.180
40	3152417.268	1641114.714
41	3151723.942	1640866.576
42	3154059.356	1641610.989
43	3154927.838	1640217.039
44	3154044.759	1639202.594
45	3151636.364	1639166.103
46	3151643.662	1637604.295
50	3152745.686	1637129.914
51	3153300.346	1635130.216
52	3151329.841	1636173.854
53	3151577.979	1634736.115
54	3152667.862	1632774.136
55	3151042.195	1632601.717
56	3152651.441	1631008.892
57	3152741.756	1629703.432
60	3155467.902	1638567.653
61	3154183.425	1637341.561
65	3154489.948	1635998.698
66	3155986.072	1634261.735
67	3155836.499	1632538.043
68	3153554.589	1632133.722
69	3154818.997	1630918.577
70	3154605.525	1629210.806
71	3154252.477	1630196.059
72	3156961.921	1629531.013
73	3155845.302	1628463.656
75	3156606.416	1637348.859
76	3157511.389	1636254.134
77	3159116.986	1635101.024
78	3160861.248	1635035.340
79	3157066.201	1633422.445
80	3158667.831	1634090.341
81	3157782.965	1632265.089
82	3160270.728	1633373.498
83	3161338.085	1633480.234
85	3159088.425	1632281.510
86	3161543.346	1631936.672
87	3158579.500	1630409.251
88	3159137.687	1628496.498
89	3157944.156	1626918.901
90	3156366.840	1627141.986
91	3156396.103	1624654.644
95	3162536.809	1631140.259
96	3160040.836	1630721.527
100	3162150.918	1628668.917
101	3160795.705	1627780.997
102	3160920.967	1625039.973
103	3159263.090	1625990.490
104	3158120.997	1624826.292
105	3158727.376	1623562.165
106	3157449.565	1621621.063
107	3159293.124	1621835.657
108	3158054.331	1619748.241
110	3164118.827	1629048.352
111	3163927.250	1630256.760
112	3164560.928	1627766.260
113	3162608.317	1626948.374
114	3162107.270	1624951.553
115	3165297.762	1626815.744
116	3164568.296	1625776.808
117	3163234.626	1624981.027
118	3162570.563	1622391.651
119	3160941.598	1622713.542
120	3165312.499	1624597.873
121	3167233.110	1623737.742
122	3167681.807	1621952.708
123	3164384.859	1622576.982
125	3162560.809	1620470.057
126	3160717.249	1620733.423
127	3159078.530	1618080.258
128	3162024.323	1618011.978
130	3160014.941	1616743.922
131	3158610.325	1615719.722
132	3158112.856	1613739.603
133	3155371.903	1611778.992
134	3156630.205	1610793.810
135	3159839.364	1614529.700
136	3159332.142	1612227.689
137	3157420.302	1610130.519
138	3158571.308	1609925.679
140	3161624.398	1616275.716
141	3162151.129	1614441.911
142	3160375.850	1611818.010
143	3160892.827	1609642.805
144	3159585.753	1609086.811
145	3160268.553	1606882.343
146	3162043.832	1610910.861
147	3163331.397	1611603.415
148	3164570.191	1608638.114
149	3165213.973	1609242.879
150	3161351.278	1607526.126
151	3163955.671	1608072.365
152	3162921.717	1606716.520
160	3163682.551	1620538.337
161	3163204.591	1618031.487
162	3165184.710	1617104.830
163	3163516.728	1616100.139
164	3163799.603	1614939.380
165	3165662.670	1614539.454
166	3164180.019	1612500.809
167	3165545.619	1612139.901
170	3165643.162	1621474.748
171	3167672.052	1619943.326
175	3165906.527	1618372.887
176	3166462.521	1616119.648
177	3167515.984	1614754.048
178	3166277.190	1613027.541
179	3166930.727	1612149.655
180	3167266.517	1619288.596
181	3168501.166	1616997.533
182	3169164.457	1617924.190
183	3169593.646	1614880.854
184	3171027.525	1615553.899
185	3169905.783	1613993.214
186	3171290.891	1611437.593
187	3171632.291	1613359.186
188	3172832.067	1611710.713
190	3168276.818	1612969.015
191	3170637.354	1611066.930
192	3169115.686	1610413.393
193	3167437.950	1610813.319
194	3166940.481	1609369.685
195	3169837.503	1608325.977
196	3168754.778	1607243.252
197	3166403.996	1608082.120
198	3168052.469	1606472.663
199	3166862.447	1605263.132
200	3165565.127	1606862.835
201	3164579.945	1605604.532
202	3165018.888	1603283.013
203	3163819.111	1603721.956
204	3162541.300	1605263.132
205	3162287.689	1602746.528
J1	3136901.364	1654871.760
J100	3161581.872	1630111.861
J101	3161428.400	1629555.644
J102	3161185.455	1626732.306
J103	3160287.289	1625916.806
J105	3159108.354	1624818.923
J106	3158064.085	1623074.451
J107	3159302.879	1623015.925
J108	3158737.130	1620860.229
J11	3144265.215	1651200.781
J110	3162224.812	1630072.902
J112	3163566.201	1628016.784

ORIGINAL 2015 CMDP BY RESPEC ASSOCIATES

J113	3163396.730	1627574.683
J114	3162166.216	1626115.751
J116	3163684.095	1627125.214
J117	3163713.568	1626528.379
J119	3161339.759	1623209.070
J12	3144309.004	1649332.451
J120	3164067.249	1625003.132
J1201	3164182.477	1624404.605
J121	3165906.527	1623406.096
J122	3166729.157	1623220.456
J125	3163214.346	1622625.754
J126	3162355.969	1621582.046
J127	3160658.724	1619211.755
J128	3161819.483	1619211.755
J13	3145549.692	1649989.286
J130	3160375.850	1616119.648
J131	3159936.907	1616070.876
J132	3158288.433	1614529.700
J134	3156942.342	1613456.729
J135	3160290.262	1615953.096
J136	3159380.913	1613671.323
J138	3158171.382	1611778.992
J140	3160717.249	1617446.230
J141	3161335.573	1615574.084
J143	3160814.792	1611018.159
J144	3160395.358	1610618.233
J145	3160424.621	1608677.131
J147	3161282.998	1613632.306
J148	3163165.574	1610286.587
J149	3164511.665	1609750.102
J151	3163146.066	1609906.170
J152	3163136.311	1607789.491
J16	3146418.174	1648668.317
J160	3163438.694	1621533.274
J161	3164273.565	1619159.430
J162	3164209.282	1618168.047
J164	3164462.894	1616860.973
J165	3164784.785	1615963.579
J1651	3165074.384	1615333.716
J166	3164560.436	1614529.700
J167	3165399.305	1613915.180
J17	3147775.634	1647967.693
J170	3163711.814	1621484.503
J1701	3164609.208	1621045.560
J171	3166072.350	1620109.149
J175	3165701.687	1619992.098
J176	3166657.607	1617651.070
J177	3166803.921	1615524.637
J178	3166501.539	1614237.071
J179	3167350.161	1613837.146
J180	3166054.790	1619699.985
J181	3166784.413	1618841.092
J183	3168588.955	1615427.094
J187	3170442.268	1613125.083
J188	3171866.393	1612520.318
J19	3149417.721	1648405.583
J190	3168423.132	1614568.717
J193	3168832.812	1612237.444
J195	3168276.818	1609252.634
J197	3167701.315	1608521.062
J198	3167467.212	1608140.645
J2	3138302.612	1654397.379
J20	3147972.684	1647369.243
J200	3166745.396	1607067.674
J201	3165331.025	1606248.315
J202	3165009.133	1604609.595
J204	3163897.145	1605780.109
J205	3162482.774	1604512.053
J21	3148607.625	1647303.560
J211	3149570.375	1646246.851
J22	3149629.368	1645442.527
J23	3150359.185	1647245.175
J24	3151488.825	1646118.009
J25	3150595.119	1646057.084
J26	3151818.818	1644435.380
J27	3151767.883	1643943.073
J28	3152592.424	1644004.788
J3	3139875.503	1653920.053
J30	3152804.071	1643253.077
J31	3154701.595	1642523.260
J32	3155467.902	1642092.668
J33	3156139.334	1641421.237
J37	3158474.747	1637013.144
J40	3152840.562	1642099.966
J41	3152128.441	1642041.602
J43	3154278.301	1640662.227
J44	3153205.470	1639728.062
J45	3152147.418	1639813.731
J46	3152124.646	1638447.405
J5	3140747.498	1652602.030
J51	3153147.085	1636830.689
J511	3152583.677	1634869.012
J52	3152154.534	1636159.258
J53	3152161.832	1634823.693
J54	3152599.722	1634050.088
J55	3152158.815	1633545.918
J56	3151731.872	1631542.571
J57	3152298.392	1630425.951
J60	3153738.236	1638283.025
J61	3154701.595	1638275.727
J66	3155030.012	1635122.918
J67	3154811.067	1634137.666
J68	3154739.643	1633536.220
J69	3156013.938	1631799.724
J7	3141637.875	1651682.460
J70	3156197.058	1631050.265
J72	3156600.943	1630048.762
J73	3155828.881	1629596.697
J75	3155548.182	1637370.754
J76	3155920.389	1636816.093
J77	3157431.109	1634765.308
J78	3160350.376	1635174.005
J79	3157277.848	1633882.230
J80	3158204.715	1634400.400
J801	3158090.938	1634075.160
J81	3157462.758	1633882.546
J82	3159425.053	1633833.283
J83	3160492.410	1633644.443
J85	3158571.167	1632921.924
J86	3160065.467	1632371.825
J87	3158858.533	1631591.833
J89	3158094.962	1628586.813
J9	3142958.843	1651463.515
J90	3157449.565	1628185.694
J91	3156288.806	1625903.192
J95	3160927.563	1631608.254
J951	3161559.767	1630623.001
BDCOutfall	3136704.313	1654908.251
J35	3157457.893	1639509.716
J123	3163723.042	1623788.338
P101	3161272.401	1629301.121
P70	3155791.337	1630117.042
P88	3158619.833	1629472.760
P90	3157225.217	1628019.871
P105	3159000.496	1624479.067
P102	3161000.124	1626595.746
P123	3163760.585	1623503.639
P162	3164228.791	1617904.681
P165	3164950.608	1615807.511
P69	3156080.816	1631526.639
P135	3160190.334	1615752.060
P141	3161322.676	1615243.925

[VERTICES]

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D107	3159450.130	1622572.227
D110	3162748.720	1630074.462
D110	3162352.291	1629962.266
D111	3162890.836	1630485.851
D115	3163975.407	1627277.019
D116	3163863.210	1626917.988
D117	3163369.543	1626192.448
D118	3163402.694	1623345.676
D120	3164169.881	1624816.166
D125	3162673.922	1621412.859

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D125	3163055.392	1622026.202
D125	3163077.831	1622430.111
D126	3161559.432	1621532.535
D128	3162120.417	1618989.405
D13	3145874.300	1650038.038
D130	3160564.620	1617209.213
D133	3156727.484	1613364.598
D138	3158537.595	1611195.457
D14	3146113.653	1648422.402
D140	3161282.680	1617052.137
D140	3160886.251	1617381.248
D141	3161603.827	1615086.584
D142	3160759.094	1613117.765
D144	3160235.509	1610439.998
D146	3161955.862	1611719.043
D146	3161409.837	1612713.856
D146	3161424.796	1613170.123
D146	3161342.518	1613506.714
D147	3162210.175	1613364.598
D147	3161604.311	1613588.992
D148	3163489.220	1609916.412
D15	3146951.391	1648773.953
D150	3162060.579	1609071.195
D151	3163324.664	1609602.260
D16	3147228.143	1648138.170
D161	3163960.447	1619004.364
D163	3163967.927	1616618.309
D164	3164364.356	1616109.683
D165	3164977.699	1615795.532
D167	3165404.048	1613888.184
D170	3164080.124	1621525.055
D171	3166944.886	1620156.253
D171	3166383.901	1619991.697
D171	3166152.027	1620036.576
D175	3165598.522	1619767.303
D176	3166451.219	1617471.006
D181	3167139.360	1618398.501
D181	3166959.845	1618682.733
D181	3166795.290	1618720.132
D184	3168814.835	1615541.219
D185	3168784.916	1614494.047
D186	3170587.546	1612459.542
D186	3170452.910	1612938.249
D187	3170632.425	1613140.204
D190	3168208.971	1614179.896
D191	3169338.420	1612033.194
D191	3168994.350	1612235.149
D192	3169024.269	1611891.078
D192	3168934.511	1612145.391
D193	3168792.395	1611965.876
D194	3167880.611	1608996.075
D198	3167634.719	1607904.929
D200	3166512.837	1607090.411
D202	3164991.379	1604554.649
D204	3163408.449	1605753.373
D22	3149621.678	1645408.045
D25	3150489.334	1645774.555
D31	3155799.989	1642827.515
D33	3156412.127	1641174.104
D4	3141401.382	1652596.129
D42	3153010.025	1642094.495
D44	3153458.813	1639476.566
D5	3140653.402	1652379.215
D50	3153421.414	1637838.491
D55	3151401.869	1633515.169
D55	3151970.334	1633664.765
D60	3154356.389	1638511.673
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D60	3153832.803	1638339.637
D61	3154692.980	1638085.324
D65	3154939.813	1636821.239
D65	3155358.681	1637180.269
D66	3155059.490	1634951.290
D67	3155058.452	1633608.332
D68	3154276.610	1633206.025
D7	3142044.644	1652072.543
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D71	3155156.727	1630418.533
D71	3155747.631	1630313.816
D75	3155627.954	1637457.021
D75	3155560.636	1637442.062
D77	3157834.494	1635078.446
D8	3143338.649	1651691.073
D80	3158235.161	1634196.611
D81	3157460.504	1633589.967
D88	3158574.994	1629236.725
D89	3157871.893	1628122.236
D9	3142957.179	1651436.760
D96	3160272.908	1631533.023
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L101	3161581.872	1629865.028
L102	3161335.039	1626805.792
L102	3161312.599	1627262.059
L102	3161402.357	1627329.377
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L102	3161507.074	1628054.918
L102	3161320.079	1628099.796
L102	3161267.720	1628256.872
L102	3161439.756	1628473.786
L102	3161529.513	1628728.099
L102	3161379.917	1628945.013
L102	3161282.680	1629274.124
L103	3160415.024	1626027.893
L103	3160400.064	1626102.691
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L103	3160744.135	1626327.085
L103	3160863.811	1626506.600
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L105	3159412.731	1625190.156
L105	3159539.887	1625264.954
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L106	3158582.474	1624150.464
L106	3158679.711	1624322.499
L107	3159225.736	1623559.560
L107	3159300.534	1624128.025
L107	3159240.696	1624329.979
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L11	3143779.957	1651653.674
L11	3143735.078	1651519.038
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L11	3143877.194	1651317.084
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L11	3143615.401	1651287.164
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L11	3143069.376	1651391.882
L110	3161970.821	1630493.331
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L112	3163474.260	1628107.276
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L112	3163107.750	1629176.887
L112	3162920.755	1629146.968
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L112	3162958.154	1629505.998
L112	3162816.038	1629595.756
L112	3162606.604	1629580.796
L112	3162606.604	1629722.912
L112	3162786.119	1629812.670
L112	3162786.119	1629969.745
L112	3162614.084	1630014.624
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L112	3162232.614	1629999.665
L113	3163429.381	1627651.009
L113	3163504.179	1627606.130
L113	3163608.897	1627673.448
L113	3163638.816	1627942.721
L114	3162524.326	1626701.074

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L114	3163204.988	1627164.822
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L116	3163414.422	1627493.933
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L118	3163451.821	1625766.100
L118	3163429.381	1625930.655
L118	3163556.538	1626267.246
L118	3163728.573	1626469.201
L120	3164110.043	1625182.676
L120	3164192.321	1625347.231
L120	3164072.644	1625392.110
L120	3164177.361	1625668.863
L120	3164020.285	1625713.741
L120	3163878.169	1625646.423
L120	3163833.290	1625728.701
L120	3163975.407	1625796.019
L120	3164012.806	1626072.772
L120	3163915.568	1626357.004
L120	3163780.932	1626947.908
L1201	3164152.114	1624590.578
L1201	3164076.207	1624670.280
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L1201	3163924.393	1624806.913
L1201	3164026.867	1624909.387
L121	3164588.579	1624222.429
L123	3163878.169	1624060.706
L123	3164169.881	1624344.939
L125	3163496.700	1622796.621
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L126	3162644.003	1621659.692
L126	3162801.079	1621854.166
L126	3162860.917	1622108.480
L126	3163017.993	1622235.636
L126	3163040.432	1622482.469
L127	3161073.246	1620844.394
L127	3161768.867	1621375.460
L128	3161925.942	1619512.990
L128	3161925.942	1619714.945
L128	3162225.134	1620021.616
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L132	3159121.019	1615556.178
L132	3159457.610	1615645.936
L132	3159749.322	1615840.410
L136	3159472.569	1613865.744
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L136	3159607.206	1615084.951
L136	3159779.241	1615436.501
L138	3158447.837	1612384.745
L138	3158432.878	1612504.421
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L138	3158702.150	1612796.133
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L138	3159083.620	1613200.042
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L140	3160863.811	1617717.839
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L140	3161290.160	1618076.869
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L140	3161417.316	1618563.056
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L140	3161694.069	1618817.369
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L140	3161955.862	1618974.445
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L141	3161192.922	1615997.486
L141	3161043.327	1616139.602
L141	3161028.367	1616229.360
L141	3161230.321	1616767.905
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L141	3161148.044	1616850.183
L141	3161043.327	1616723.026
L141	3160908.690	1616850.183
L141	3160916.170	1617014.738
L141	3160908.690	1617239.132
L141	3160833.892	1617366.289
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L143	3160811.453	1611898.558
L143	3160729.175	1612160.351
L143	3160796.493	1612624.098
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L145	3160437.463	1609026.316
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L145	3160534.700	1610125.846
L147	3160998.448	1614022.820
L147	3161002.188	1614217.295
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L147	3161222.842	1614815.678
L147	3161252.761	1615017.633
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L149	3163728.573	1610013.649
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L149	3163354.584	1610215.604
L152	3163399.462	1608330.695
L152	3163391.983	1608682.245
L152	3163145.149	1608891.680
L152	3163212.467	1609527.462
L16	3146061.295	1649319.978
L16	3146038.855	1649686.488
L16	3145874.300	1649903.402
L160	3163466.780	1621839.207
L160	3163608.897	1622123.439
L160	3163608.897	1622273.035
L160	3163436.861	1622235.636
L160	3163377.023	1622557.267
L161	3164394.275	1619602.748
L161	3164386.795	1620059.015
L161	3164125.003	1620507.803
L161	3164139.962	1620859.354
L161	3163825.811	1621188.465
L161	3163646.296	1621397.899
L162	3164162.402	1619026.804
L162	3164267.119	1619131.521
L164	3164349.396	1617628.082
L164	3164177.361	1617807.597
L165	3164626.149	1616117.163
L165	3164633.629	1616236.840
L165	3164491.513	1616528.552
L1651	3165089.565	1615531.074
L1651	3164937.751	1615690.479
L17	3147699.370	1647928.736
L17	3147759.209	1647824.019
L17	3147751.729	1647704.342

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L17	3147654.491	1647689.382
L17	3147519.855	1647786.620
L17	3147504.895	1647846.458
L17	3147392.698	1647861.418
L17	3147205.704	1647592.145
L17	3147190.744	1647494.908
L17	3147071.067	1647472.468
L17	3146943.911	1647749.221
L17	3146951.391	1648025.973
L17	3146891.552	1648138.170
L17	3146809.274	1648160.610
L170	3163511.659	1621487.656
L1701	3164139.962	1621390.419
L171	3166002.431	1620201.132
L171	3166047.310	1620462.924
L171	3165897.714	1620642.440
L171	3165598.522	1620777.076
L171	3165643.401	1620986.510
L171	3165583.563	1621076.268
L171	3165329.250	1621128.626
L171	3165209.573	1621038.869
L175	3165508.765	1620246.010
L175	3165404.048	1620500.323
L175	3165224.533	1620447.965
L175	3165246.972	1620679.838
L175	3165187.134	1620709.758
L175	3165074.937	1620657.399
L175	3164805.664	1620821.955
L176	3166698.052	1617874.915
L176	3166690.573	1618091.829
L176	3166563.416	1618316.223
L176	3166548.456	1618503.218
L176	3166383.901	1618652.814
L176	3166047.310	1619139.000
L176	3166024.871	1619490.551
L176	3165972.512	1619617.707
L177	3167012.204	1616992.299
L177	3166660.653	1617463.526
L180	3165882.755	1619939.339
L180	3165800.477	1619946.818
L180	3165755.598	1619857.061
L180	3165710.719	1619886.980
L181	3166698.052	1618974.445
L181	3166555.936	1618966.965
L181	3166526.017	1619243.718
L181	3166391.381	1619393.314
L181	3166144.547	1619617.707
L183	3168291.249	1615488.860
L183	3168134.173	1615623.496
L183	3167992.057	1615645.936
L183	3167924.739	1615810.491
L183	3168029.456	1616528.552
L183	3167947.178	1616633.269
L183	3167977.098	1616872.622
L183	3167498.391	1617164.334
L183	3167505.870	1617785.157
L183	3167109.441	1618218.986
L183	3167004.724	1618570.536
L183	3166944.886	1618660.294
L183	3166720.492	1618682.733
L187	3169435.658	1613858.264
L187	3168956.951	1614262.173
L188	3170774.541	1613005.568
L190	3168425.885	1614785.759
L190	3168575.481	1614957.794
L190	3168635.320	1615286.905
L193	3168545.562	1612474.502
L193	3168553.042	1612624.098
L193	3168777.436	1613095.325
L193	3168867.193	1613252.401
L193	3168852.234	1613387.037
L193	3168769.956	1613454.355
L193	3168568.001	1613439.396
L193	3168455.805	1613514.194
L193	3168373.527	1613716.148
L193	3168410.926	1613888.184
L193	3168508.163	1614007.860
L193	3168493.203	1614045.259
L193	3168418.406	1614090.138
L193	3168395.966	1614179.896
L193	3168425.885	1614366.891
L195	3168095.767	1609533.964
L195	3168034.294	1609749.119
L195	3168111.135	1609887.434
L195	3168479.973	1610025.748
L195	3168357.027	1610179.431
L195	3168449.237	1610778.793
L195	3168479.973	1611501.101
L195	3168910.285	1611946.780
L197	3167834.507	1608811.656
L198	3167465.669	1608319.872
L2	3137818.559	1654383.800
L2	3137362.292	1654533.396
L2	3137167.817	1654757.790
L20	3147871.405	1647532.307
L20	3147953.683	1647614.584
L20	3147968.643	1647734.261
L20	3147863.926	1647921.256
L200	3166820.202	1607213.357
L200	3166651.151	1607413.144
L200	3166743.360	1607566.827
L200	3167096.830	1607674.405
L200	3167311.986	1607920.297
L202	3165206.535	1605722.636
L204	3164591.805	1606183.684
L205	3162993.506	1605276.957
L21	3148035.961	1647307.913
L211	3149407.175	1646258.237
L211	3149380.607	1646391.075
L211	3149217.407	1646554.275
L211	3149118.728	1646611.205
L211	3149114.933	1646675.726
L211	3149175.658	1646740.247
L211	3149168.067	1646800.972
L211	3149054.207	1646816.154
L211	3148853.053	1647028.693
L211	3148845.463	1647169.121
L24	3151107.492	1646155.763
L24	3150948.087	1646125.400
L24	3150868.385	1646079.856
L25	3150598.915	1646227.874
L25	3150443.305	1646246.851
L25	3150181.426	1646106.423
L25	3149973.228	1646163.504
L25	3149651.597	1646268.221
L26	3151768.379	1644510.469
L26	3151656.182	1644510.469
L26	3151581.384	1644615.186
L26	3151252.273	1644734.863
L26	3151065.278	1645161.211
L26	3151080.238	1645452.923
L26	3150833.405	1645707.236
L26	3150721.208	1645722.196
L26	3150638.930	1645632.439
L26	3150549.172	1645789.514
L26	3150655.845	1645924.246
L27	3151824.813	1644174.589
L28	3152493.919	1644091.600
L28	3152486.440	1644286.075
L28	3152336.844	1644510.469
L3	3139770.786	1654069.649
L3	3138955.488	1654294.042
L3	3138828.332	1654391.280
L30	3152710.834	1643336.141
L30	3152321.884	1643366.060
L30	3152142.369	1643597.934
L30	3152090.010	1643755.010
L30	3152075.051	1643889.646
L30	3152277.005	1644031.762
L30	3152351.803	1644158.919
L30	3152441.561	1644203.797
L30	3152351.803	1644435.671
L30	3151955.374	1644390.792
L31	3154176.874	1642573.202
L31	3153578.490	1642849.954
L31	3152927.748	1643321.181

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L32	3155022.091	1642341.328
L32	3154939.813	1642475.965
L37	3157961.650	1637471.981
L37	3157797.095	1637883.370
L37	3157834.494	1638459.314
L37	3157669.938	1639207.294
L40	3152725.793	1642685.399
L40	3152628.556	1642849.954
L41	3152640.814	1642068.170
L43	3153024.985	1642049.616
L44	3152905.308	1640568.617
L44	3152688.394	1640957.566
L44	3152673.435	1641189.440
L44	3152905.308	1641645.707
L45	3152128.441	1640713.229
L46	3152117.055	1639680.894
L5	3140743.160	1652828.002
L5	3140563.645	1653067.356
L5	3140062.498	1653306.709
L5	3139868.024	1653508.664
L51	3153204.500	1636955.875
L51	3153346.616	1636933.436
L51	3153466.293	1637083.031
L51	3153443.854	1637195.228
L51	3153346.616	1637262.547
L51	3153406.455	1637531.819
L51	3153578.490	1637988.087
L51	3153713.126	1638212.481
L511	3152538.798	1635056.007
L511	3152785.632	1635908.703
L54	3152650.995	1634405.264
L55	3152291.965	1633560.047
L56	3151686.101	1632131.406
L56	3151484.147	1632587.674
L56	3151573.905	1633186.058
L56	3152000.253	1633530.128
L60	3153585.970	1638429.395
L60	3153361.576	1638556.551
L60	3153294.258	1638818.344
L60	3153361.576	1639484.046
L61	3154431.187	1638234.920
L61	3154146.954	1638534.112
L61	3153952.480	1638399.476
L61	3153915.081	1638227.440
L61	3153840.283	1638227.440
L66	3155134.288	1635272.921
L66	3155216.565	1635886.264
L66	3155059.490	1636260.254
L66	3155029.570	1636746.441
L66	3155418.520	1636970.835
L66	3155388.601	1637053.112
L66	3155336.242	1637075.552
L66	3155366.161	1637150.350
L66	3155478.358	1637217.668
L67	3154782.737	1634375.345
L67	3154879.974	1634457.623
L67	3154902.414	1634622.179
L67	3155037.050	1634869.012
L67	3154947.293	1634958.769
L68	3154732.052	1633646.285
L68	3154815.550	1633699.420
L68	3154842.117	1633953.709
L69	3155986.984	1631921.972
L69	3155814.949	1632123.927
L69	3155635.434	1632460.517
L69	3155328.762	1632699.871
L69	3155306.323	1632976.623
L69	3154969.732	1633402.972
L7	3141319.104	1651810.750
L7	3141326.584	1651930.427
L7	3141057.311	1652177.260
L7	3140945.114	1652169.780
L7	3140825.437	1652147.341
L7	3140743.160	1652214.659
L70	3156196.419	1631084.235
L72	3156307.123	1630670.730
L75	3155313.803	1637344.824
L75	3155253.964	1637397.183
L75	3155276.404	1637442.062
L75	3155351.202	1637486.940
L75	3155343.722	1637576.698
L75	3155268.924	1637666.456
L75	3155224.045	1637644.016
L75	3155164.207	1637561.738
L75	3155037.050	1637539.299
L75	3154947.293	1637831.011
L75	3154992.171	1637883.370
L75	3155066.969	1637950.688
L75	3154999.651	1638107.764
L75	3154820.136	1638234.920
L76	3155874.787	1637030.673
L76	3155792.510	1637045.633
L76	3155777.550	1637150.350
L76	3155680.313	1637150.350
L76	3155642.914	1637053.112
L76	3155553.156	1637038.153
L76	3155560.636	1637142.870
L76	3155665.353	1637397.183
L76	3155627.954	1637419.622
L77	3157280.989	1634883.971
L77	3157221.151	1635422.517
L77	3157131.393	1635639.431
L77	3156951.878	1635766.587
L77	3156906.999	1636125.618
L77	3156592.848	1636073.259
L78	3158844.266	1635400.077
L78	3157684.898	1635168.204
L79	3157340.827	1634622.179
L80	3158186.044	1634704.456
L80	3157797.095	1634958.769
L80	3157692.378	1634824.133
L80	3157550.262	1634741.855
L801	3157992.259	1634124.500
L801	3157969.487	1634318.063
L801	3158026.417	1634382.584
L801	3158147.868	1634378.788
L82	3158299.682	1634037.207
L85	3158545.075	1633058.901
L85	3158432.878	1633111.260
L85	3158380.519	1633111.260
L85	3158066.368	1633485.250
L85	3157954.171	1633515.169
L85	3157894.332	1633799.401
L85	3158081.327	1633978.916
L86	3159936.317	1632647.512
L86	3159839.079	1632707.351
L86	3159726.882	1632669.952
L86	3159682.004	1632819.548
L86	3159465.090	1632939.224
L86	3159046.221	1632759.709
L86	3159008.822	1632797.108
L86	3159053.701	1633014.022
L86	3158799.388	1633058.901
L86	3158702.150	1632901.825
L87	3159539.386	1632039.982
L9	3142687.907	1651713.513
L9	3142687.907	1651878.068
L9	3142328.876	1652042.624
L9	3142067.084	1652057.583
L9	3142037.164	1651907.987
L9	3141902.528	1651646.195
L9	3141797.811	1651631.235
L95	3160908.690	1631682.619
L95	3160609.498	1631720.018
L95	3160497.301	1631981.810
L95	3160242.988	1632026.689
L95	3160205.589	1632236.124
L95	3160078.433	1632295.962
L951	3161222.842	1630732.685
L951	3161118.124	1630725.205
L951	3161088.205	1630829.922
L951	3161148.044	1631009.437
L951	3161103.165	1631188.952
L951	3160938.609	1631286.189
L951	3160931.130	1631375.947
L951	3160990.968	1631458.225

ORIGINAL 2015 CMDP BY RESPECTIVE ASSOCIATES

Table B-19 - Sample SWMM Output, 100-Year, 2-Hour Design Storm (DRF = 0 Mi^2)

```
EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.021)
--------------------------------------------------------------


***********************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
***********************************************************

*****************
Analysis Options
*****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Flow Routing Method ...... KINWAVE
Starting Date ............ JAN-01-2014 00:00:00
Ending Date .............. JAN-02-2014 12:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Routing Time Step ........ 5.00 sec


**************************        Volume         Volume
Flow Routing Continuity        acre-feet       10^6 gal
**************************     ---------      ---------
Dry Weather Inflow .......         0.000          0.000
Wet Weather Inflow .......         0.000          0.000
Groundwater Inflow .......         0.000          0.000
RDII Inflow ..............         0.000          0.000
External Inflow ..........      2017.084        657.297
External Outflow .........      2044.128        666.110
Internal Outflow .........         0.000          0.000
Storage Losses ...........         0.000          0.000
Initial Stored Volume ....         0.000          0.000
Final Stored Volume ......         0.790          0.257
Continuity Error (%) .....        -1.380


*********************************
Highest Flow Instability Indexes
*********************************
Link L101 (11)
Link O101 (11)
Link L100 (11)
Link L140 (6)
Link L126 (5)


**************************
Routing Time Step Summary
**************************
Minimum Time Step           :     5.00 sec
Average Time Step           :     5.00 sec
Maximum Time Step           :     5.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     1.00


******************
Node Depth Summary
******************

-------------------------------------------------------------------------
                            Average  Maximum  Maximum  Time of Max
                              Depth    Depth      HGL   Occurrence
Node                 Type      Feet     Feet     Feet  days hr:min
-------------------------------------------------------------------------
1                    JUNCTION  0.00     0.00  5231.00     0  00:00
2                    JUNCTION  0.00     0.00  5349.00     0  00:00
3                    JUNCTION  0.00     0.00  5383.00     0  00:00
4                    JUNCTION  0.00     0.00  5421.00     0  00:00
5                    JUNCTION  0.00     0.00  5396.00     0  00:00
6                    JUNCTION  0.00     0.00  5397.00     0  00:00
7                    JUNCTION  0.00     0.00  5410.00     0  00:00
8                    JUNCTION  0.00     0.00  5418.00     0  00:00
9                    JUNCTION  0.00     0.00  5424.00     0  00:00
10                   JUNCTION  0.00     0.00  5444.00     0  00:00
11                   JUNCTION  0.00     0.00  5409.00     0  00:00
12                   JUNCTION  0.00     0.00  5455.00     0  00:00
13                   JUNCTION  0.00     0.00  5441.00     0  00:00
14                   JUNCTION  0.00     0.00  5474.00     0  00:00
15                   JUNCTION  0.00     0.00  5488.00     0  00:00
16                   JUNCTION  0.00     0.00  5457.00     0  00:00
17                   JUNCTION  0.00     0.00  5486.00     0  00:00
18                   JUNCTION  0.00     0.00  5523.00     0  00:00
19                   JUNCTION  0.00     0.00  5527.00     0  00:00
20                   JUNCTION  0.00     0.00  5498.00     0  00:00
21                   JUNCTION  0.00     0.00  5490.00     0  00:00
22                   JUNCTION  0.00     0.00  5526.00     0  00:00
23                   JUNCTION  0.00     0.00  5536.00     0  00:00
24                   JUNCTION  0.00     0.00  5538.00     0  00:00
25                   JUNCTION  0.00     0.00  5482.00     0  00:00
26                   JUNCTION  0.00     0.00  5494.00     0  00:00
27                   JUNCTION  0.00     0.00  5535.00     0  00:00
28                   JUNCTION  0.00     0.00  5555.00     0  00:00
30                   JUNCTION  0.00     0.00  5525.00     0  00:00
31                   JUNCTION  0.00     0.00  5604.00     0  00:00
32                   JUNCTION  0.00     0.00  5586.00     0  00:00
33                   JUNCTION  0.00     0.00  5614.00     0  00:00
34                   JUNCTION  0.00     0.00  5641.00     0  00:00
35                   JUNCTION  0.00     0.00  5671.00     0  00:00
36                   JUNCTION  0.00     0.00  5649.00     0  00:00
37                   JUNCTION  0.00     0.00  5711.00     0  00:00
40                   JUNCTION  0.00     0.00  5563.00     0  00:00
41                   JUNCTION  0.00     0.00  5573.00     0  00:00
42                   JUNCTION  0.00     0.00  5585.00     0  00:00
43                   JUNCTION  0.00     0.00  5596.00     0  00:00
44                   JUNCTION  0.00     0.00  5570.00     0  00:00
45                   JUNCTION  0.00     0.00  5601.00     0  00:00
46                   JUNCTION  0.00     0.00  5621.00     0  00:00
50                   JUNCTION  0.00     0.00  5611.00     0  00:00
51                   JUNCTION  0.00     0.00  5633.00     0  00:00
52                   JUNCTION  0.00     0.00  5646.00     0  00:00
53                   JUNCTION  0.00     0.00  5662.00     0  00:00
54                   JUNCTION  0.00     0.00  5698.00     0  00:00
55                   JUNCTION  0.00     0.00  5714.00     0  00:00
56                   JUNCTION  0.00     0.00  5740.00     0  00:00
57                   JUNCTION  0.00     0.00  5794.00     0  00:00
60                   JUNCTION  0.00     0.00  5617.00     0  00:00
61                   JUNCTION  0.00     0.00  5593.00     0  00:00
65                   JUNCTION  0.00     0.00  5626.00     0  00:00
66                   JUNCTION  0.00     0.00  5656.00     0  00:00
67                   JUNCTION  0.00     0.00  5703.00     0  00:00
68                   JUNCTION  0.00     0.00  5713.00     0  00:00
69                   JUNCTION  0.00     0.00  5746.00     0  00:00
70                   JUNCTION  0.00     0.00  5796.00     0  00:00
71                   JUNCTION  0.00     0.00  5789.00     0  00:00
72                   JUNCTION  0.00     0.00  5790.00     0  00:00
73                   JUNCTION  0.00     0.00  5819.00     0  00:00
75                   JUNCTION  0.00     0.00  5632.00     0  00:00
76                   JUNCTION  0.00     0.00  5646.00     0  00:00
77                   JUNCTION  0.00     0.00  5690.00     0  00:00
78                   JUNCTION  0.00     0.00  5725.00     0  00:00
79                   JUNCTION  0.00     0.00  5666.00     0  00:00
80                   JUNCTION  0.00     0.00  5653.00     0  00:00
81                   JUNCTION  0.00     0.00  5696.00     0  00:00
82                   JUNCTION  0.00     0.00  5700.00     0  00:00
83                   JUNCTION  0.00     0.00  5744.00     0  00:00
85                   JUNCTION  0.00     0.00  5671.00     0  00:00
86                   JUNCTION  0.00     0.00  5744.00     0  00:00
87                   JUNCTION  0.00     0.00  5772.00     0  00:00
88                   JUNCTION  0.00     0.00  5798.00     0  00:00
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ORIGINAL 2015 MDP BY AMEC ASSOCIATES

89	JUNCTION	0.00	0.00	5845.00	0	00:00
90	JUNCTION	0.00	0.00	5833.00	0	00:00
91	JUNCTION	0.00	0.00	5895.00	0	00:00
95	JUNCTION	0.00	0.00	5754.00	0	00:00
96	JUNCTION	0.00	0.00	5736.00	0	00:00
100	JUNCTION	0.00	0.00	5743.00	0	00:00
101	JUNCTION	0.00	0.00	5772.00	0	00:00
102	JUNCTION	0.00	0.00	5841.00	0	00:00
103	JUNCTION	0.00	0.00	5841.00	0	00:00
104	JUNCTION	0.00	0.00	5868.00	0	00:00
105	JUNCTION	0.00	0.00	5869.00	0	00:00
106	JUNCTION	0.00	0.00	5919.00	0	00:00
107	JUNCTION	0.00	0.00	5900.00	0	00:00
108	JUNCTION	0.00	0.00	5947.00	0	00:00
110	JUNCTION	0.00	0.00	5792.00	0	00:00
111	JUNCTION	0.00	0.00	5777.00	0	00:00
112	JUNCTION	0.00	0.00	5808.00	0	00:00
113	JUNCTION	0.00	0.00	5778.00	0	00:00
114	JUNCTION	0.00	0.00	5820.00	0	00:00
115	JUNCTION	0.00	0.00	5832.00	0	00:00
116	JUNCTION	0.00	0.00	5825.00	0	00:00
117	JUNCTION	0.00	0.00	5802.00	0	00:00
118	JUNCTION	0.00	0.00	5849.00	0	00:00
119	JUNCTION	0.00	0.00	5878.00	0	00:00
120	JUNCTION	0.00	0.00	5867.00	0	00:00
121	JUNCTION	0.00	0.00	5924.00	0	00:00
122	JUNCTION	0.00	0.00	5932.00	0	00:00
123	JUNCTION	0.00	0.00	5870.00	0	00:00
125	JUNCTION	0.00	0.00	5907.00	0	00:00
126	JUNCTION	0.00	0.00	5899.00	0	00:00
127	JUNCTION	0.00	0.00	5955.00	0	00:00
128	JUNCTION	0.00	0.00	5934.00	0	00:00
130	JUNCTION	0.00	0.00	5960.00	0	00:00
131	JUNCTION	0.00	0.00	6012.00	0	00:00
132	JUNCTION	0.00	0.00	6073.00	0	00:00
133	JUNCTION	0.00	0.00	6165.00	0	00:00
134	JUNCTION	0.00	0.00	6185.00	0	00:00
135	JUNCTION	0.00	0.00	6020.00	0	00:00
136	JUNCTION	0.00	0.00	6097.00	0	00:00
137	JUNCTION	0.00	0.00	6188.00	0	00:00
138	JUNCTION	0.00	0.00	6231.00	0	00:00
140	JUNCTION	0.00	0.00	5967.00	0	00:00
141	JUNCTION	0.00	0.00	6035.00	0	00:00
142	JUNCTION	0.00	0.00	6084.00	0	00:00
143	JUNCTION	0.00	0.00	6197.00	0	00:00
144	JUNCTION	0.00	0.00	6199.00	0	00:00
145	JUNCTION	0.00	0.00	6314.00	0	00:00
146	JUNCTION	0.00	0.00	6103.00	0	00:00
147	JUNCTION	0.00	0.00	6120.00	0	00:00
148	JUNCTION	0.00	0.00	6236.00	0	00:00
149	JUNCTION	0.00	0.00	6258.00	0	00:00
150	JUNCTION	0.00	0.00	6293.00	0	00:00
151	JUNCTION	0.00	0.00	6242.00	0	00:00
152	JUNCTION	0.00	0.00	6321.00	0	00:00
160	JUNCTION	0.00	0.00	5888.00	0	00:00
161	JUNCTION	0.00	0.00	5934.00	0	00:00
162	JUNCTION	0.00	0.00	5980.00	0	00:00
163	JUNCTION	0.00	0.00	5996.00	0	00:00
164	JUNCTION	0.00	0.00	6014.00	0	00:00
165	JUNCTION	0.00	0.00	6028.00	0	00:00
166	JUNCTION	0.00	0.00	6116.00	0	00:00
167	JUNCTION	0.00	0.00	6222.00	0	00:00
170	JUNCTION	0.00	0.00	5904.00	0	00:00
171	JUNCTION	0.00	0.00	5970.00	0	00:00
175	JUNCTION	0.00	0.00	5953.00	0	00:00
176	JUNCTION	0.00	0.00	6003.00	0	00:00
177	JUNCTION	0.00	0.00	6024.00	0	00:00
178	JUNCTION	0.00	0.00	6087.00	0	00:00
179	JUNCTION	0.00	0.00	6158.00	0	00:00
180	JUNCTION	0.00	0.00	5961.00	0	00:00
181	JUNCTION	0.00	0.00	5996.00	0	00:00
182	JUNCTION	0.00	0.00	6014.00	0	00:00
183	JUNCTION	0.00	0.00	6059.00	0	00:00
184	JUNCTION	0.00	0.00	6162.00	0	00:00
185	JUNCTION	0.00	0.00	6117.00	0	00:00
186	JUNCTION	0.00	0.00	6283.00	0	00:00
187	JUNCTION	0.00	0.00	6162.00	0	00:00
188	JUNCTION	0.00	0.00	6309.00	0	00:00
190	JUNCTION	0.00	0.00	6056.00	0	00:00
191	JUNCTION	0.00	0.00	6190.00	0	00:00
192	JUNCTION	0.00	0.00	6276.00	0	00:00
193	JUNCTION	0.00	0.00	6293.00	0	00:00
194	JUNCTION	0.00	0.00	6230.00	0	00:00
195	JUNCTION	0.00	0.00	6276.00	0	00:00
196	JUNCTION	0.00	0.00	6256.00	0	00:00
197	JUNCTION	0.00	0.00	6264.00	0	00:00
198	JUNCTION	0.00	0.00	6253.00	0	00:00
199	JUNCTION	0.00	0.00	6353.00	0	00:00
200	JUNCTION	0.00	0.00	6287.00	0	00:00
201	JUNCTION	0.00	0.00	6340.00	0	00:00
202	JUNCTION	0.00	0.00	6412.00	0	00:00
203	JUNCTION	0.00	0.00	6421.00	0	00:00
204	JUNCTION	0.00	0.00	6372.00	0	00:00
205	JUNCTION	0.00	0.00	6468.00	0	00:00
J1	JUNCTION	2.19	6.10	5302.10	0	02:15
J100	JUNCTION	0.42	4.39	5698.39	0	01:34
J101	JUNCTION	0.42	4.39	5715.39	0	01:32
J102	JUNCTION	0.33	4.38	5784.38	0	01:06
J103	JUNCTION	0.26	3.34	5805.34	0	00:42
J105	JUNCTION	0.21	2.63	5828.63	0	00:42
J106	JUNCTION	0.05	1.88	5882.88	0	00:35
J107	JUNCTION	0.09	2.59	5870.59	0	00:38
J108	JUNCTION	0.02	0.68	5916.68	0	00:37
J11	JUNCTION	3.77	14.50	5392.50	0	01:50
J110	JUNCTION	2.26	8.13	5711.13	0	01:24
J112	JUNCTION	2.44	9.61	5746.61	0	01:14
J113	JUNCTION	2.51	9.72	5751.72	0	01:14
J114	JUNCTION	0.12	2.28	5751.28	0	00:42
J116	JUNCTION	2.33	9.73	5758.73	0	01:13
J117	JUNCTION	1.28	6.02	5767.02	0	02:58
J119	JUNCTION	0.03	0.76	5867.76	0	00:42
J12	JUNCTION	0.01	0.33	5446.33	0	00:37
J120	JUNCTION	1.18	5.44	5791.44	0	00:44
J1201	JUNCTION	1.77	6.82	5804.82	0	02:52
J121	JUNCTION	0.12	3.99	5870.99	0	00:36
J122	JUNCTION	0.02	0.83	5884.83	0	00:35
J125	JUNCTION	1.33	9.46	5836.46	0	01:29
J126	JUNCTION	0.67	4.98	5854.98	0	00:52
J127	JUNCTION	0.05	1.50	5913.50	0	00:37
J128	JUNCTION	0.80	5.69	5888.69	0	01:08
J13	JUNCTION	4.03	14.51	5409.51	0	01:48
J130	JUNCTION	0.23	3.01	5949.01	0	00:58
J131	JUNCTION	0.15	2.21	5955.21	0	00:52
J132	JUNCTION	0.12	2.13	6017.13	0	00:58
J134	JUNCTION	0.10	2.15	6049.15	0	00:53
J135	JUNCTION	0.15	2.16	5949.16	0	01:27
J136	JUNCTION	0.12	2.40	6010.40	0	00:51
J138	JUNCTION	0.09	1.87	6097.87	0	00:50
J140	JUNCTION	0.78	5.69	5921.69	0	01:03
J141	JUNCTION	0.36	1.92	5961.92	0	01:13
J143	JUNCTION	0.10	1.77	6091.77	0	00:54
J144	JUNCTION	0.10	1.77	6112.77	0	00:53
J145	JUNCTION	0.04	0.77	6204.77	0	00:49
J147	JUNCTION	0.38	5.75	6008.75	0	01:03
J148	JUNCTION	0.18	3.47	6098.47	0	00:52
J149	JUNCTION	0.03	0.94	6177.94	0	00:42
J151	JUNCTION	0.11	2.14	6108.14	0	00:55
J152	JUNCTION	0.10	2.17	6209.17	0	00:48
J16	JUNCTION	4.10	13.68	5419.68	0	01:43
J160	JUNCTION	1.19	8.92	5849.92	0	01:28
J161	JUNCTION	0.37	1.91	5884.91	0	01:47
J162	JUNCTION	0.36	1.92	5894.92	0	01:43
J164	JUNCTION	0.22	2.23	5920.23	0	01:22
J165	JUNCTION	0.21	2.23	5942.23	0	01:19
J1651	JUNCTION	0.11	2.40	5960.40	0	00:43
J166	JUNCTION	0.05	1.37	6003.37	0	00:39
J167	JUNCTION	0.04	0.76	6031.76	0	00:49
J17	JUNCTION	3.88	13.71	5438.71	0	01:34
J170	JUNCTION	0.53	6.07	5853.07	0	01:31
J1701	JUNCTION	0.60	6.89	5867.89	0	01:27
J171	JUNCTION	0.05	1.45	5891.45	0	00:38
J175	JUNCTION	0.61	6.90	5888.90	0	01:25
J176	JUNCTION	0.17	2.91	5940.91	0	00:50
J177	JUNCTION	0.06	1.09	5987.09	0	00:54
J178	JUNCTION	0.03	0.57	6028.57	0	00:49
J179	JUNCTION	0.06	1.09	6030.09	0	00:49

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J180	JUNCTION	0.64	7.47	5898.47	0	01:22
J181	JUNCTION	0.63	7.44	5914.44	0	01:27
J183	JUNCTION	0.39	6.01	5985.01	0	01:12
J187	JUNCTION	0.11	2.49	6073.49	0	00:47
J188	JUNCTION	0.05	1.27	6151.27	0	00:42
J19	JUNCTION	0.07	1.77	5508.77	0	00:37
J190	JUNCTION	0.34	4.80	6003.80	0	01:11
J193	JUNCTION	0.33	5.36	6056.36	0	01:06
J195	JUNCTION	0.30	5.43	6159.43	0	00:57
J197	JUNCTION	0.24	4.54	6171.54	0	00:56
J198	JUNCTION	0.23	4.27	6180.27	0	00:55
J2	JUNCTION	3.20	10.14	5322.14	0	02:12
J20	JUNCTION	3.73	12.68	5443.68	0	01:35
J200	JUNCTION	0.21	3.87	6207.87	0	00:52
J201	JUNCTION	0.20	3.88	6261.88	0	00:48
J202	JUNCTION	0.06	2.30	6324.30	0	00:36
J204	JUNCTION	0.13	2.37	6299.37	0	00:52
J205	JUNCTION	0.06	1.30	6351.30	0	00:49
J21	JUNCTION	3.66	12.68	5446.68	0	01:32
J211	JUNCTION	3.28	11.00	5457.00	0	01:31
J22	JUNCTION	0.06	1.84	5511.84	0	00:37
J23	JUNCTION	0.01	0.45	5509.45	0	00:47
J24	JUNCTION	0.10	2.94	5524.94	0	00:36
J25	JUNCTION	3.30	10.98	5465.98	0	01:28
J26	JUNCTION	3.10	10.51	5485.51	0	01:23
J27	JUNCTION	0.04	1.32	5511.32	0	00:39
J28	JUNCTION	0.05	1.55	5510.55	0	00:38
J3	JUNCTION	3.29	11.62	5337.62	0	02:08
J30	JUNCTION	3.29	13.48	5512.48	0	01:47
J31	JUNCTION	0.37	9.06	5537.06	0	00:46
J32	JUNCTION	0.39	9.07	5545.07	0	00:44
J33	JUNCTION	0.05	1.84	5570.84	0	00:43
J37	JUNCTION	0.10	3.15	5653.15	0	00:36
J40	JUNCTION	3.19	13.49	5520.49	0	01:44
J41	JUNCTION	0.07	1.81	5556.81	0	00:42
J43	JUNCTION	0.02	0.64	5574.64	0	00:36
J44	JUNCTION	2.52	7.85	5533.85	0	01:39
J45	JUNCTION	0.07	1.82	5592.82	0	00:39
J46	JUNCTION	0.05	1.47	5609.47	0	00:39
J5	JUNCTION	3.42	11.63	5347.63	0	02:04
J51	JUNCTION	0.24	5.84	5593.84	0	00:49
J511	JUNCTION	0.23	5.87	5624.87	0	00:44
J52	JUNCTION	0.03	1.00	5638.00	0	00:38
J53	JUNCTION	0.04	1.47	5649.47	0	00:36
J54	JUNCTION	0.18	5.06	5643.06	0	00:42
J55	JUNCTION	0.12	3.26	5659.26	0	00:43
J56	JUNCTION	0.11	3.31	5714.31	0	00:38
J57	JUNCTION	0.04	1.06	5747.06	0	00:47
J60	JUNCTION	2.77	11.34	5551.34	0	01:39
J61	JUNCTION	3.13	12.15	5561.15	0	01:35
J66	JUNCTION	0.58	6.32	5613.32	0	00:50
J67	JUNCTION	0.59	6.33	5636.33	0	00:48
J68	JUNCTION	0.37	4.12	5665.12	0	01:20
J69	JUNCTION	0.36	4.12	5691.12	0	01:13
J7	JUNCTION	3.92	12.61	5360.61	0	01:58
J70	JUNCTION	0.07	1.13	5717.13	0	00:49
J72	JUNCTION	0.05	1.14	5747.14	0	00:43
J73	JUNCTION	0.04	1.47	5772.47	0	00:37
J75	JUNCTION	3.13	12.16	5577.16	0	01:30
J76	JUNCTION	2.72	10.50	5589.50	0	01:35
J77	JUNCTION	2.69	10.54	5611.54	0	01:21
J78	JUNCTION	0.06	1.83	5712.83	0	00:36
J79	JUNCTION	0.01	0.42	5652.42	0	00:35
J80	JUNCTION	2.27	9.76	5626.76	0	01:28
J801	JUNCTION	2.78	12.03	5633.03	0	01:30
J81	JUNCTION	0.04	1.01	5654.01	0	00:38
J82	JUNCTION	0.05	1.33	5669.33	0	00:39
J83	JUNCTION	0.04	1.34	5717.34	0	00:37
J85	JUNCTION	2.75	12.03	5645.03	0	01:27
J86	JUNCTION	2.36	10.31	5666.31	0	01:24
J87	JUNCTION	0.38	3.42	5702.42	0	00:43
J89	JUNCTION	0.12	1.77	5755.77	0	01:02
J9	JUNCTION	3.84	13.13	5376.13	0	01:54
J90	JUNCTION	0.12	1.77	5767.77	0	01:00
J91	JUNCTION	0.03	0.95	5852.95	0	00:36
J95	JUNCTION	2.14	9.09	5679.09	0	01:26
J951	JUNCTION	2.10	9.09	5691.09	0	01:23
BDCOutfall	OUTFALL	0.00	0.00	5293.00	0	00:00
J35	DIVIDER	0.17	3.31	5616.31	0	00:26
J123	DIVIDER	1.77	6.82	5813.82	0	02:50
P101	STORAGE	1.10	17.31	5733.31	0	01:32
P70	STORAGE	0.74	9.20	5731.20	0	00:55
P88	STORAGE	6.24	37.97	5749.97	0	02:00
P90	STORAGE	0.75	13.72	5800.72	0	01:00
P105	STORAGE	2.95	17.19	5847.19	0	01:17
P102	STORAGE	2.49	11.06	5795.06	0	01:06
P123	STORAGE	5.00	29.84	5841.84	0	02:50
P162	STORAGE	2.12	9.66	5906.66	0	01:43
P165	STORAGE	2.72	30.05	5976.05	0	01:19
P69	STORAGE	1.19	15.84	5706.84	0	01:13
P135	STORAGE	0.48	9.27	5958.27	0	01:27
P141	STORAGE	3.76	24.91	5987.91	0	02:25

****
Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
1	JUNCTION	198.80	198.80	0 00:36	2.932	2.932
2	JUNCTION	476.67	476.67	0 00:34	6.029	6.029
3	JUNCTION	176.25	176.25	0 00:44	4.179	4.179
4	JUNCTION	94.29	94.29	0 00:41	2.002	2.002
5	JUNCTION	116.05	116.05	0 00:40	2.461	2.461
6	JUNCTION	245.15	245.15	0 00:36	3.690	3.690
7	JUNCTION	107.68	107.68	0 00:38	1.928	1.928
8	JUNCTION	97.56	97.56	0 00:36	1.543	1.543
9	JUNCTION	339.67	339.67	0 00:38	5.425	5.425
10	JUNCTION	265.53	265.53	0 00:41	5.483	5.483
11	JUNCTION	241.44	241.44	0 00:35	3.462	3.462
12	JUNCTION	95.25	95.25	0 00:37	1.626	1.626
13	JUNCTION	254.56	254.56	0 00:38	4.515	4.515
14	JUNCTION	222.07	222.07	0 00:39	4.220	4.220
15	JUNCTION	93.74	93.74	0 00:44	2.491	2.491
16	JUNCTION	87.78	87.78	0 00:47	2.533	2.533
17	JUNCTION	145.31	145.31	0 00:42	3.213	3.213
18	JUNCTION	113.16	113.16	0 00:37	1.942	1.942
19	JUNCTION	162.62	162.62	0 00:37	2.790	2.790
20	JUNCTION	272.20	272.20	0 00:44	6.501	6.501
21	JUNCTION	179.24	179.24	0 00:42	4.249	4.249
22	JUNCTION	251.34	251.34	0 00:37	4.285	4.285
23	JUNCTION	85.07	85.07	0 00:37	1.477	1.477
24	JUNCTION	350.40	350.40	0 00:36	5.244	5.244
25	JUNCTION	60.48	60.48	0 00:56	2.399	2.399
26	JUNCTION	26.16	26.16	0 01:05	1.261	1.261
27	JUNCTION	303.26	303.26	0 00:39	5.264	5.264
28	JUNCTION	244.37	244.37	0 00:38	4.437	4.437
30	JUNCTION	207.35	207.35	0 00:39	4.037	4.037
31	JUNCTION	212.65	212.65	0 00:40	4.141	4.141
32	JUNCTION	209.25	209.25	0 00:37	3.404	3.404
33	JUNCTION	251.06	251.06	0 00:40	5.067	5.067
34	JUNCTION	148.88	148.88	0 00:43	3.527	3.527
35	JUNCTION	352.65	352.65	0 00:41	7.105	7.105
36	JUNCTION	102.17	102.17	0 00:41	2.210	2.210
37	JUNCTION	558.45	558.45	0 00:36	7.926	7.926
40	JUNCTION	90.23	90.23	0 00:46	2.488	2.488
41	JUNCTION	173.16	173.16	0 00:37	2.813	2.813
42	JUNCTION	148.00	148.00	0 00:42	3.309	3.309
43	JUNCTION	131.26	131.26	0 00:36	2.067	2.067
44	JUNCTION	514.65	514.65	0 00:36	7.412	7.412
45	JUNCTION	130.07	130.07	0 00:37	2.184	2.184
46	JUNCTION	131.96	131.96	0 00:39	2.477	2.477
50	JUNCTION	105.87	105.87	0 00:36	1.701	1.701
51	JUNCTION	324.30	324.30	0 00:40	6.330	6.330
52	JUNCTION	175.14	175.14	0 00:38	3.071	3.071
53	JUNCTION	132.56	132.56	0 00:36	2.050	2.050
54	JUNCTION	254.18	254.18	0 00:38	4.172	4.172
55	JUNCTION	307.61	307.61	0 00:36	4.788	4.788
56	JUNCTION	263.78	263.78	0 00:37	4.143	4.143
57	JUNCTION	171.22	171.22	0 00:39	3.390	3.390
60	JUNCTION	166.01	166.01	0 00:43	3.943	3.943

ORIGINAL 2016 DRAFT
NOT SIGNED BY ANY ASSOCIATES

61	JUNCTION	133.74	133.74	0	00:36	2.021	2.021	161	JUNCTION	330.93	330.93	0	00:40	6.100	6.100
65	JUNCTION	294.42	294.42	0	00:38	5.101	5.101	162	JUNCTION	240.49	240.49	0	00:37	3.818	3.818
66	JUNCTION	325.44	325.44	0	00:39	6.106	6.106	163	JUNCTION	121.02	121.02	0	00:36	1.898	1.898
67	JUNCTION	335.52	335.52	0	00:38	5.825	5.825	164	JUNCTION	201.03	201.03	0	00:40	3.903	3.903
68	JUNCTION	204.30	204.30	0	00:36	3.199	3.199	165	JUNCTION	244.38	244.38	0	00:37	4.142	4.142
69	JUNCTION	513.34	513.34	0	00:35	7.089	7.089	166	JUNCTION	286.09	286.09	0	00:39	5.632	5.632
70	JUNCTION	158.93	158.93	0	00:41	3.548	3.548	167	JUNCTION	78.40	78.40	0	00:49	2.491	2.491
71	JUNCTION	50.00	50.00	0	00:50	1.666	1.666	170	JUNCTION	274.30	274.30	0	00:43	6.426	6.426
72	JUNCTION	35.48	35.48	0	00:43	0.895	0.895	171	JUNCTION	201.21	201.21	0	00:38	3.609	3.609
73	JUNCTION	387.44	387.44	0	00:37	5.904	5.904	175	JUNCTION	142.13	142.13	0	00:43	3.413	3.413
75	JUNCTION	87.06	87.06	0	00:45	2.302	2.302	176	JUNCTION	306.05	306.05	0	00:36	4.448	4.448
76	JUNCTION	349.39	349.39	0	00:39	6.327	6.327	177	JUNCTION	108.50	108.50	0	00:45	2.856	2.856
77	JUNCTION	155.87	155.87	0	00:43	3.845	3.845	178	JUNCTION	52.73	52.73	0	00:49	1.628	1.628
78	JUNCTION	95.80	95.80	0	00:36	1.537	1.537	179	JUNCTION	140.43	140.43	0	00:49	4.258	4.258
79	JUNCTION	114.34	114.34	0	00:35	1.724	1.724	180	JUNCTION	46.06	46.06	0	00:46	1.321	1.321
80	JUNCTION	86.73	86.73	0	00:48	2.579	2.579	181	JUNCTION	180.17	180.17	0	00:50	5.817	5.817
81	JUNCTION	101.51	101.51	0	00:38	1.847	1.847	182	JUNCTION	240.93	240.93	0	00:41	5.156	5.156
82	JUNCTION	60.40	60.40	0	00:43	1.539	1.539	183	JUNCTION	65.10	65.10	0	00:48	1.943	1.943
83	JUNCTION	231.06	231.06	0	00:37	3.618	3.618	184	JUNCTION	185.07	185.07	0	00:49	5.546	5.546
85	JUNCTION	90.52	90.52	0	00:52	3.239	3.239	185	JUNCTION	97.54	97.54	0	00:51	3.245	3.245
86	JUNCTION	125.55	125.55	0	00:41	2.765	2.765	186	JUNCTION	65.20	65.20	0	00:49	2.054	2.054
87	JUNCTION	245.63	245.63	0	00:43	5.953	5.953	187	JUNCTION	135.53	135.53	0	00:44	3.505	3.505
88	JUNCTION	468.77	468.77	0	00:36	6.959	6.959	188	JUNCTION	121.81	121.81	0	00:42	2.834	2.834
89	JUNCTION	185.09	185.09	0	00:41	4.002	4.002	190	JUNCTION	102.26	102.26	0	00:53	3.582	3.582
90	JUNCTION	427.65	427.65	0	00:35	5.781	5.781	191	JUNCTION	111.53	111.53	0	00:53	4.017	4.017
91	JUNCTION	347.02	347.02	0	00:36	5.135	5.135	192	JUNCTION	157.35	157.35	0	00:46	4.212	4.212
95	JUNCTION	326.61	326.61	0	00:38	5.828	5.828	193	JUNCTION	90.58	90.58	0	00:56	3.453	3.453
96	JUNCTION	39.64	39.64	0	00:48	1.204	1.204	194	JUNCTION	73.93	73.93	0	00:48	2.124	2.124
100	JUNCTION	265.57	265.57	0	00:39	4.754	4.754	195	JUNCTION	180.64	180.64	0	00:46	4.580	4.580
101	JUNCTION	251.51	251.51	0	00:41	5.402	5.402	196	JUNCTION	74.04	74.04	0	00:54	2.592	2.592
102	JUNCTION	243.92	243.92	0	00:40	4.903	4.903	197	JUNCTION	109.33	109.33	0	00:49	3.276	3.276
103	JUNCTION	287.86	287.86	0	00:37	4.628	4.628	198	JUNCTION	93.04	93.04	0	00:53	3.096	3.096
104	JUNCTION	194.21	194.21	0	00:36	2.922	2.922	199	JUNCTION	184.13	184.13	0	00:45	4.955	4.955
105	JUNCTION	275.89	275.89	0	00:37	4.382	4.382	200	JUNCTION	80.78	80.78	0	00:49	2.404	2.404
106	JUNCTION	546.82	546.82	0	00:35	7.368	7.368	201	JUNCTION	149.88	149.88	0	00:43	3.554	3.554
107	JUNCTION	448.62	448.62	0	00:37	6.764	6.764	202	JUNCTION	284.30	284.30	0	00:36	4.403	4.403
108	JUNCTION	260.32	260.32	0	00:37	4.194	4.194	203	JUNCTION	181.81	181.81	0	00:41	3.847	3.847
110	JUNCTION	148.35	148.35	0	00:55	5.273	5.273	204	JUNCTION	86.21	86.21	0	00:51	2.852	2.852
111	JUNCTION	176.62	176.62	0	00:39	3.203	3.203	205	JUNCTION	123.03	123.03	0	00:49	3.661	3.661
112	JUNCTION	195.49	195.49	0	00:35	2.772	2.772	J1	JUNCTION	0.00	5346.85	0	02:15	0.000	666.060
113	JUNCTION	151.88	151.88	0	00:40	3.065	3.065	J100	JUNCTION	0.00	726.59	0	01:03	0.000	45.465
114	JUNCTION	306.57	306.57	0	00:38	5.271	5.271	J101	JUNCTION	0.00	669.16	0	01:32	0.000	40.710
115	JUNCTION	207.42	207.42	0	00:41	4.195	4.195	J102	JUNCTION	0.00	653.52	0	01:06	0.000	35.098
116	JUNCTION	99.86	99.86	0	00:44	2.594	2.594	J103	JUNCTION	0.00	676.94	0	00:42	0.000	30.322
117	JUNCTION	144.77	144.77	0	00:45	3.720	3.720	J105	JUNCTION	0.00	431.62	0	00:42	0.000	25.674
118	JUNCTION	93.29	93.29	0	00:40	1.995	1.995	J106	JUNCTION	0.00	546.82	0	00:35	0.000	7.368
119	JUNCTION	103.81	103.81	0	00:42	2.292	2.292	J107	JUNCTION	0.00	678.34	0	00:38	0.000	10.973
120	JUNCTION	430.62	430.62	0	00:36	6.409	6.409	J108	JUNCTION	0.00	260.32	0	00:37	0.000	4.194
121	JUNCTION	340.87	340.87	0	00:35	4.718	4.718	J11	JUNCTION	0.00	5360.31	0	01:50	0.000	635.583
122	JUNCTION	425.62	425.62	0	00:35	5.899	5.899	J110	JUNCTION	0.00	2223.15	0	01:22	0.000	318.292
123	JUNCTION	148.04	148.04	0	00:50	4.832	4.832	J112	JUNCTION	0.00	2118.53	0	01:13	0.000	309.289
125	JUNCTION	225.30	225.30	0	00:43	5.289	5.289	J113	JUNCTION	0.00	2088.02	0	01:12	0.000	306.527
126	JUNCTION	370.11	370.11	0	00:40	7.093	7.093	J114	JUNCTION	0.00	343.77	0	00:42	0.000	7.606
127	JUNCTION	469.35	469.35	0	00:37	7.207	7.207	J116	JUNCTION	0.00	1759.43	0	01:13	0.000	295.320
128	JUNCTION	343.38	343.38	0	00:37	5.574	5.574	J117	JUNCTION	0.00	779.96	0	02:54	0.000	124.801
130	JUNCTION	112.39	112.39	0	00:37	1.986	1.986	J119	JUNCTION	0.00	103.81	0	00:42	0.000	2.292
131	JUNCTION	396.86	396.86	0	00:35	5.533	5.533	J12	JUNCTION	0.00	95.25	0	00:37	0.000	1.626
132	JUNCTION	188.11	188.11	0	00:37	3.121	3.121	J120	JUNCTION	0.00	1300.20	0	00:44	0.000	163.603
133	JUNCTION	104.00	104.00	0	00:52	3.489	3.489	J1201	JUNCTION	0.00	965.94	0	00:43	0.000	157.182
134	JUNCTION	134.69	134.69	0	00:53	4.621	4.621	J121	JUNCTION	0.00	760.14	0	00:35	0.000	10.624
135	JUNCTION	204.20	204.20	0	00:37	3.497	3.497	J122	JUNCTION	0.00	425.62	0	00:35	0.000	5.899
136	JUNCTION	219.55	219.55	0	00:44	5.566	5.566	J125	JUNCTION	0.00	4532.19	0	01:29	0.000	260.144
137	JUNCTION	83.97	83.97	0	00:50	2.587	2.587	J126	JUNCTION	0.00	1647.39	0	00:52	0.000	104.681
138	JUNCTION	125.58	125.58	0	00:50	3.744	3.744	J127	JUNCTION	0.00	469.35	0	00:37	0.000	7.207
140	JUNCTION	181.10	181.10	0	00:40	3.559	3.559	J128	JUNCTION	0.00	1266.73	0	01:04	0.000	90.253
141	JUNCTION	496.73	496.73	0	00:36	7.120	7.120	J13	JUNCTION	0.00	5321.46	0	01:48	0.000	624.961
142	JUNCTION	100.33	100.33	0	00:48	3.011	3.011	J130	JUNCTION	0.00	723.04	0	00:58	0.000	32.427
143	JUNCTION	84.40	84.40	0	00:53	2.834	2.834	J131	JUNCTION	0.00	494.91	0	00:52	0.000	16.883
144	JUNCTION	96.49	96.49	0	00:51	3.062	3.062	J132	JUNCTION	0.00	344.08	0	00:52	0.000	11.299
145	JUNCTION	92.33	92.33	0	00:49	2.671	2.671	J134	JUNCTION	0.00	238.53	0	00:53	0.000	8.110
146	JUNCTION	108.95	108.95	0	00:56	3.910	3.910	J135	JUNCTION	0.00	307.13	0	01:27	0.000	15.536
147	JUNCTION	167.74	167.74	0	00:51	5.614	5.614	J136	JUNCTION	0.00	410.05	0	00:51	0.000	11.937
148	JUNCTION	108.23	108.23	0	00:48	3.172	3.172	J138	JUNCTION	0.00	209.55	0	00:50	0.000	6.332
149	JUNCTION	114.46	114.46	0	00:42	2.539	2.539	J140	JUNCTION	0.00	1131.57	0	01:03	0.000	84.654
150	JUNCTION	135.26	135.26	0	00:57	4.979	4.979	J141	JUNCTION	0.00	290.00	0	01:13	0.000	46.587
151	JUNCTION	146.36	146.36	0	00:48	4.005	4.005	J143	JUNCTION	0.00	269.87	0	00:54	0.000	8.599
152	JUNCTION	106.05	106.05	0	00:48	2.981	2.981	J144	JUNCTION	0.00	185.78	0	00:53	0.000	5.764
160	JUNCTION	284.26	284.26	0	00:40	5.403	5.403	J145	JUNCTION	0.00	92.33	0	00:49	0.000	2.671

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ASSOCIATES

J147	JUNCTION	0.00	1163.97	0	01:03	0.000	39.434
J148	JUNCTION	0.00	591.66	0	00:52	0.000	17.750
J149	JUNCTION	0.00	114.46	0	00:42	0.000	2.539
J151	JUNCTION	0.00	378.25	0	00:54	0.000	11.999
J152	JUNCTION	0.00	106.05	0	00:48	0.000	2.981
J16	JUNCTION	0.00	5309.14	0	01:43	0.000	620.417
J160	JUNCTION	0.00	3197.52	0	01:28	0.000	150.110
J161	JUNCTION	0.00	354.04	0	00:40	0.000	28.019
J162	JUNCTION	0.00	236.02	0	01:43	0.000	21.911
J164	JUNCTION	0.00	378.09	0	00:39	0.000	18.079
J165	JUNCTION	0.00	235.38	0	01:19	0.000	12.276
J1651	JUNCTION	0.00	347.92	0	00:43	0.000	8.133
J166	JUNCTION	0.00	286.09	0	00:39	0.000	5.632
J167	JUNCTION	0.00	78.40	0	00:49	0.000	2.491
J17	JUNCTION	0.00	5270.98	0	01:34	0.000	610.863
J170	JUNCTION	0.00	2950.22	0	01:28	0.000	116.485
J1701	JUNCTION	0.00	2860.45	0	01:27	0.000	110.041
J171	JUNCTION	0.00	201.21	0	00:38	0.000	3.609
J175	JUNCTION	0.00	2800.86	0	01:25	0.000	106.293
J176	JUNCTION	0.00	437.14	0	00:50	0.000	13.265
J177	JUNCTION	0.00	291.91	0	00:52	0.000	8.796
J178	JUNCTION	0.00	52.73	0	00:49	0.000	1.628
J179	JUNCTION	0.00	140.43	0	00:49	0.000	4.258
J180	JUNCTION	0.00	2744.05	0	01:24	0.000	102.878
J181	JUNCTION	0.00	2452.94	0	01:21	0.000	88.226
J183	JUNCTION	0.00	2322.08	0	01:12	0.000	76.642
J187	JUNCTION	0.00	316.42	0	00:47	0.000	8.415
J188	JUNCTION	0.00	121.81	0	00:42	0.000	2.834
J19	JUNCTION	0.00	275.78	0	00:37	0.000	4.732
J190	JUNCTION	0.00	2127.61	0	01:11	0.000	69.132
J193	JUNCTION	0.00	1715.66	0	01:05	0.000	53.498
J195	JUNCTION	0.00	1436.41	0	00:57	0.000	41.607
J197	JUNCTION	0.00	1211.01	0	00:56	0.000	34.875
J198	JUNCTION	0.00	1032.75	0	00:55	0.000	29.007
J2	JUNCTION	0.00	5351.71	0	02:12	0.000	663.057
J20	JUNCTION	0.00	5198.36	0	01:35	0.000	602.903
J200	JUNCTION	0.00	948.73	0	00:51	0.000	25.849
J201	JUNCTION	0.00	695.03	0	00:48	0.000	18.434
J202	JUNCTION	0.00	284.30	0	00:36	0.000	4.403
J204	JUNCTION	0.00	343.03	0	00:52	0.000	10.444
J205	JUNCTION	0.00	123.03	0	00:49	0.000	3.661
J21	JUNCTION	0.00	5119.35	0	01:32	0.000	596.399
J211	JUNCTION	0.00	5086.58	0	01:31	0.000	590.517
J22	JUNCTION	0.00	251.34	0	00:37	0.000	4.285
J23	JUNCTION	0.00	85.07	0	00:37	0.000	1.477
J24	JUNCTION	0.00	350.40	0	00:36	0.000	5.244
J25	JUNCTION	0.00	5012.04	0	01:28	0.000	586.210
J26	JUNCTION	0.00	4977.92	0	01:23	0.000	578.332
J27	JUNCTION	0.00	303.26	0	00:39	0.000	5.264
J28	JUNCTION	0.00	244.37	0	00:38	0.000	4.437
J3	JUNCTION	0.00	5361.77	0	02:08	0.000	657.013
J30	JUNCTION	0.00	4927.23	0	01:45	0.000	566.888
J31	JUNCTION	0.00	1718.75	0	00:46	0.000	33.515
J32	JUNCTION	0.00	1531.54	0	00:44	0.000	29.372
J33	JUNCTION	0.00	1159.17	0	00:43	0.000	17.693
J37	JUNCTION	0.00	558.45	0	00:36	0.000	7.926
J40	JUNCTION	0.00	4617.26	0	01:44	0.000	529.247
J41	JUNCTION	0.00	408.84	0	00:41	0.000	7.481
J43	JUNCTION	0.00	131.26	0	00:36	0.000	2.067
J44	JUNCTION	0.00	4550.24	0	01:39	0.000	513.874
J45	JUNCTION	0.00	255.79	0	00:39	0.000	4.663
J46	JUNCTION	0.00	131.96	0	00:39	0.000	2.477
J5	JUNCTION	0.00	5362.74	0	02:04	0.000	652.817
J51	JUNCTION	0.00	1412.03	0	00:47	0.000	28.069
J511	JUNCTION	0.00	997.76	0	00:44	0.000	18.579
J52	JUNCTION	0.00	175.14	0	00:38	0.000	3.071
J53	JUNCTION	0.00	132.56	0	00:36	0.000	2.050
J54	JUNCTION	0.00	894.46	0	00:42	0.000	16.522
J55	JUNCTION	0.00	667.31	0	00:41	0.000	12.350
J56	JUNCTION	0.00	416.76	0	00:38	0.000	7.534
J57	JUNCTION	0.00	171.22	0	00:39	0.000	3.390
J60	JUNCTION	0.00	4554.32	0	01:35	0.000	506.273
J61	JUNCTION	0.00	4182.88	0	01:35	0.000	472.541
J66	JUNCTION	0.00	932.22	0	00:48	0.000	34.281
J67	JUNCTION	0.00	661.17	0	00:48	0.000	28.173
J68	JUNCTION	0.00	426.69	0	01:04	0.000	22.346
J69	JUNCTION	0.00	373.86	0	01:13	0.000	19.093
J7	JUNCTION	0.00	5374.41	0	01:58	0.000	648.340
J70	JUNCTION	0.00	421.10	0	00:55	0.000	12.008
J72	JUNCTION	0.00	35.48	0	00:43	0.000	0.895
J73	JUNCTION	0.00	387.44	0	00:37	0.000	5.904
J75	JUNCTION	0.00	4191.02	0	01:30	0.000	470.481
J76	JUNCTION	0.00	3608.05	0	01:33	0.000	428.733
J77	JUNCTION	0.00	3609.03	0	01:21	0.000	422.071
J78	JUNCTION	0.00	95.80	0	00:36	0.000	1.537
J79	JUNCTION	0.00	114.34	0	00:35	0.000	1.724
J80	JUNCTION	0.00	3448.08	0	01:28	0.000	412.621
J801	JUNCTION	0.00	3400.78	0	01:28	0.000	410.034
J81	JUNCTION	0.00	101.51	0	00:38	0.000	1.847
J82	JUNCTION	0.00	286.14	0	00:40	0.000	5.163
J83	JUNCTION	0.00	231.06	0	00:37	0.000	3.618
J85	JUNCTION	0.00	3334.10	0	01:27	0.000	404.817
J86	JUNCTION	0.00	3275.18	0	01:24	0.000	401.466
J87	JUNCTION	0.00	359.37	0	00:43	0.000	27.861
J89	JUNCTION	0.00	421.61	0	00:50	0.000	14.940
J9	JUNCTION	0.00	5374.33	0	01:54	0.000	642.628
J90	JUNCTION	0.00	267.99	0	01:00	0.000	10.926
J91	JUNCTION	0.00	347.02	0	00:36	0.000	5.135
J95	JUNCTION	0.00	3004.95	0	01:24	0.000	370.840
J951	JUNCTION	0.00	2928.97	0	01:23	0.000	363.763
BDCoutfall	OUTFALL	0.00	5346.85	0	02:15	0.000	666.060
J35	DIVIDER	0.00	1138.46	0	00:40	0.000	20.791
J123	DIVIDER	0.00	1558.15	0	02:50	0.000	266.974
P101	STORAGE	0.00	794.10	0	01:06	0.000	40.715
P70	STORAGE	0.00	580.67	0	00:38	0.000	11.120
P88	STORAGE	0.00	718.36	0	00:47	0.000	21.902
P90	STORAGE	0.00	744.72	0	00:36	0.000	10.928
P105	STORAGE	0.00	1446.01	0	00:40	0.000	22.799
P102	STORAGE	0.00	909.03	0	00:43	0.000	35.229
P123	STORAGE	0.00	4637.06	0	01:31	0.000	266.984
P162	STORAGE	0.00	589.48	0	00:41	0.000	21.913
P165	STORAGE	0.00	565.92	0	00:42	0.000	12.278
P69	STORAGE	0.00	629.42	0	00:52	0.000	19.097
P135	STORAGE	0.00	512.61	0	00:56	0.000	15.540
P141	STORAGE	0.00	1298.02	0	01:03	0.000	46.589

****
Node Surcharge Summary
****

Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
1	JUNCTION	36.00	0.000	0.000
2	JUNCTION	36.00	0.000	0.000
3	JUNCTION	36.00	0.000	0.000
4	JUNCTION	36.00	0.000	0.000
5	JUNCTION	36.00	0.000	0.000
6	JUNCTION	36.00	0.000	0.000
7	JUNCTION	36.00	0.000	0.000
8	JUNCTION	36.00	0.000	0.000
9	JUNCTION	36.00	0.000	0.000
10	JUNCTION	36.00	0.000	0.000
11	JUNCTION	36.00	0.000	0.000
12	JUNCTION	36.00	0.000	0.000
13	JUNCTION	36.00	0.000	0.000
14	JUNCTION	36.00	0.000	0.000
15	JUNCTION	36.00	0.000	0.000
16	JUNCTION	36.00	0.000	0.000
17	JUNCTION	36.00	0.000	0.000
18	JUNCTION	36.00	0.000	0.000
19	JUNCTION	36.00	0.000	0.000
20	JUNCTION	36.00	0.000	0.000
21	JUNCTION	36.00	0.000	0.000
22	JUNCTION	36.00	0.000	0.000
23	JUNCTION	36.00	0.000	0.000
24	JUNCTION	36.00	0.000	0.000
25	JUNCTION	36.00	0.000	0.000
26	JUNCTION	36.00	0.000	0.000
27	JUNCTION	36.00	0.000	0.000
28	JUNCTION	36.00	0.000	0.000
30	JUNCTION	36.00	0.000	0.000

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31	JUNCTION	36.00	0.000	0.000
32	JUNCTION	36.00	0.000	0.000
33	JUNCTION	36.00	0.000	0.000
34	JUNCTION	36.00	0.000	0.000
35	JUNCTION	36.00	0.000	0.000
36	JUNCTION	36.00	0.000	0.000
37	JUNCTION	36.00	0.000	0.000
40	JUNCTION	36.00	0.000	0.000
41	JUNCTION	36.00	0.000	0.000
42	JUNCTION	36.00	0.000	0.000
43	JUNCTION	36.00	0.000	0.000
44	JUNCTION	36.00	0.000	0.000
45	JUNCTION	36.00	0.000	0.000
46	JUNCTION	36.00	0.000	0.000
50	JUNCTION	36.00	0.000	0.000
51	JUNCTION	36.00	0.000	0.000
52	JUNCTION	36.00	0.000	0.000
53	JUNCTION	36.00	0.000	0.000
54	JUNCTION	36.00	0.000	0.000
55	JUNCTION	36.00	0.000	0.000
56	JUNCTION	36.00	0.000	0.000
57	JUNCTION	36.00	0.000	0.000
60	JUNCTION	36.00	0.000	0.000
61	JUNCTION	36.00	0.000	0.000
65	JUNCTION	36.00	0.000	0.000
66	JUNCTION	36.00	0.000	0.000
67	JUNCTION	36.00	0.000	0.000
68	JUNCTION	36.00	0.000	0.000
69	JUNCTION	36.00	0.000	0.000
70	JUNCTION	36.00	0.000	0.000
71	JUNCTION	36.00	0.000	0.000
72	JUNCTION	36.00	0.000	0.000
73	JUNCTION	36.00	0.000	0.000
75	JUNCTION	36.00	0.000	0.000
76	JUNCTION	36.00	0.000	0.000
77	JUNCTION	36.00	0.000	0.000
78	JUNCTION	36.00	0.000	0.000
79	JUNCTION	36.00	0.000	0.000
80	JUNCTION	36.00	0.000	0.000
81	JUNCTION	36.00	0.000	0.000
82	JUNCTION	36.00	0.000	0.000
83	JUNCTION	36.00	0.000	0.000
85	JUNCTION	36.00	0.000	0.000
86	JUNCTION	36.00	0.000	0.000
87	JUNCTION	36.00	0.000	0.000
88	JUNCTION	36.00	0.000	0.000
89	JUNCTION	36.00	0.000	0.000
90	JUNCTION	36.00	0.000	0.000
91	JUNCTION	36.00	0.000	0.000
95	JUNCTION	36.00	0.000	0.000
96	JUNCTION	36.00	0.000	0.000
100	JUNCTION	36.00	0.000	0.000
101	JUNCTION	36.00	0.000	0.000
102	JUNCTION	36.00	0.000	0.000
103	JUNCTION	36.00	0.000	0.000
104	JUNCTION	36.00	0.000	0.000
105	JUNCTION	36.00	0.000	0.000
106	JUNCTION	36.00	0.000	0.000
107	JUNCTION	36.00	0.000	0.000
108	JUNCTION	36.00	0.000	0.000
110	JUNCTION	36.00	0.000	0.000
111	JUNCTION	36.00	0.000	0.000
112	JUNCTION	36.00	0.000	0.000
113	JUNCTION	36.00	0.000	0.000
114	JUNCTION	36.00	0.000	0.000
115	JUNCTION	36.00	0.000	0.000
116	JUNCTION	36.00	0.000	0.000
117	JUNCTION	36.00	0.000	0.000
118	JUNCTION	36.00	0.000	0.000
119	JUNCTION	36.00	0.000	0.000
120	JUNCTION	36.00	0.000	0.000
121	JUNCTION	36.00	0.000	0.000
122	JUNCTION	36.00	0.000	0.000
123	JUNCTION	36.00	0.000	0.000
125	JUNCTION	36.00	0.000	0.000
126	JUNCTION	36.00	0.000	0.000
127	JUNCTION	36.00	0.000	0.000
128	JUNCTION	36.00	0.000	0.000
130	JUNCTION	36.00	0.000	0.000
131	JUNCTION	36.00	0.000	0.000
132	JUNCTION	36.00	0.000	0.000
133	JUNCTION	36.00	0.000	0.000
134	JUNCTION	36.00	0.000	0.000
135	JUNCTION	36.00	0.000	0.000
136	JUNCTION	36.00	0.000	0.000
137	JUNCTION	36.00	0.000	0.000
138	JUNCTION	36.00	0.000	0.000
140	JUNCTION	36.00	0.000	0.000
141	JUNCTION	36.00	0.000	0.000
142	JUNCTION	36.00	0.000	0.000
143	JUNCTION	36.00	0.000	0.000
144	JUNCTION	36.00	0.000	0.000
145	JUNCTION	36.00	0.000	0.000
146	JUNCTION	36.00	0.000	0.000
147	JUNCTION	36.00	0.000	0.000
148	JUNCTION	36.00	0.000	0.000
149	JUNCTION	36.00	0.000	0.000
150	JUNCTION	36.00	0.000	0.000
151	JUNCTION	36.00	0.000	0.000
152	JUNCTION	36.00	0.000	0.000
160	JUNCTION	36.00	0.000	0.000
161	JUNCTION	36.00	0.000	0.000
162	JUNCTION	36.00	0.000	0.000
163	JUNCTION	36.00	0.000	0.000
164	JUNCTION	36.00	0.000	0.000
165	JUNCTION	36.00	0.000	0.000
166	JUNCTION	36.00	0.000	0.000
167	JUNCTION	36.00	0.000	0.000
170	JUNCTION	36.00	0.000	0.000
171	JUNCTION	36.00	0.000	0.000
175	JUNCTION	36.00	0.000	0.000
176	JUNCTION	36.00	0.000	0.000
177	JUNCTION	36.00	0.000	0.000
178	JUNCTION	36.00	0.000	0.000
179	JUNCTION	36.00	0.000	0.000
180	JUNCTION	36.00	0.000	0.000
181	JUNCTION	36.00	0.000	0.000
182	JUNCTION	36.00	0.000	0.000
183	JUNCTION	36.00	0.000	0.000
184	JUNCTION	36.00	0.000	0.000
185	JUNCTION	36.00	0.000	0.000
186	JUNCTION	36.00	0.000	0.000
187	JUNCTION	36.00	0.000	0.000
188	JUNCTION	36.00	0.000	0.000
190	JUNCTION	36.00	0.000	0.000
191	JUNCTION	36.00	0.000	0.000
192	JUNCTION	36.00	0.000	0.000
193	JUNCTION	36.00	0.000	0.000
194	JUNCTION	36.00	0.000	0.000
195	JUNCTION	36.00	0.000	0.000
196	JUNCTION	36.00	0.000	0.000
197	JUNCTION	36.00	0.000	0.000
198	JUNCTION	36.00	0.000	0.000
199	JUNCTION	36.00	0.000	0.000
200	JUNCTION	36.00	0.000	0.000
201	JUNCTION	36.00	0.000	0.000
202	JUNCTION	36.00	0.000	0.000
203	JUNCTION	36.00	0.000	0.000
204	JUNCTION	36.00	0.000	0.000
205	JUNCTION	36.00	0.000	0.000
P101	STORAGE	0.43	0.463	12.685
P88	STORAGE	6.91	23.444	12.026
P90	STORAGE	2.61	9.435	16.284
P105	STORAGE	1.91	4.816	12.811
P123	STORAGE	6.96	17.883	20.161
P165	STORAGE	3.83	16.789	2.652
P141	STORAGE	2.28	2.113	1.092

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Node Flooding Summary
****

No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
P101	15.595	1	0	463.059	40	0 01:32	669.16
P70	31.048	0	0	548.807	1	0 00:55	387.51
P88	191.202	5	0	1725.795	44	0 01:59	124.77
P90	31.577	1	0	715.900	26	0 00:59	267.99
P105	90.254	1	0	1746.040	19	0 01:17	321.89
P102	39.171	1	0	586.948	10	0 01:06	653.52
P123	1732.939	3	0	15245.218	26	0 02:50	1558.15
P162	241.264	1	0	1391.459	8	0 01:43	236.02
P165	53.071	5	0	859.467	78	0 01:19	235.38
P69	32.776	2	0	701.668	34	0 01:13	373.86
P135	22.598	1	0	590.056	18	0 01:27	307.13
P141	390.354	9	0	3765.270	88	0 02:25	290.00

****
Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
BDCOutfall	99.58	689.93	5346.85	666.060
System	99.58	689.93	5346.85	666.060

****
Link Flow Summary
****

Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
C35	CONDUIT	200.10	0 01:32	16.52	0.90	0.74
D1	DUMMY	198.80	0 00:36			
D10	DUMMY	265.53	0 00:41			
D100	DUMMY	265.57	0 00:39			
D101	DUMMY	251.51	0 00:41			
D102	DUMMY	243.92	0 00:40			
D103	DUMMY	287.86	0 00:37			
D104	DUMMY	194.21	0 00:36			
D105	DUMMY	275.89	0 00:37			
D106	DUMMY	546.82	0 00:35			
D107	DUMMY	448.62	0 00:37			
D108	DUMMY	260.32	0 00:37			
D11	DUMMY	241.44	0 00:35			
D110	DUMMY	148.35	0 00:55			
D111	DUMMY	176.62	0 00:39			
D112	DUMMY	195.49	0 00:35			
D113	DUMMY	151.88	0 00:40			
D114	DUMMY	306.57	0 00:38			
D115	DUMMY	207.42	0 00:41			
D116	DUMMY	99.86	0 00:44			
D117	DUMMY	144.77	0 00:45			
D118	DUMMY	93.29	0 00:40			
D119	DUMMY	103.81	0 00:42			
D12	DUMMY	95.25	0 00:37			
D120	DUMMY	430.62	0 00:36			
D121	DUMMY	340.87	0 00:35			
D122	DUMMY	425.62	0 00:35			
D123	DUMMY	148.04	0 00:50			
D125	DUMMY	225.30	0 00:43			
D126	DUMMY	370.11	0 00:40			
D127	DUMMY	469.35	0 00:37			
D128	DUMMY	343.38	0 00:37			
D13	DUMMY	254.56	0 00:38			
D130	DUMMY	112.39	0 00:37			
D131	DUMMY	396.86	0 00:35			
D132	DUMMY	188.11	0 00:37			
D133	DUMMY	104.00	0 00:52			
D134	DUMMY	134.69	0 00:53			
D135	DUMMY	204.20	0 00:37			
D136	DUMMY	219.55	0 00:44			
D137	DUMMY	83.97	0 00:50			
D138	DUMMY	125.58	0 00:50			
D14	DUMMY	222.07	0 00:39			
D140	DUMMY	181.10	0 00:40			
D141	DUMMY	496.73	0 00:36			
D142	DUMMY	100.33	0 00:48			
D143	DUMMY	84.40	0 00:53			
D144	DUMMY	96.49	0 00:51			
D145	DUMMY	92.33	0 00:49			
D146	DUMMY	108.95	0 00:56			
D147	DUMMY	167.74	0 00:51			
D148	DUMMY	108.23	0 00:48			
D149	DUMMY	114.46	0 00:42			
D15	DUMMY	93.74	0 00:44			
D150	DUMMY	135.26	0 00:57			
D151	DUMMY	146.36	0 00:48			
D152	DUMMY	106.05	0 00:48			
D16	DUMMY	87.78	0 00:47			
D160	DUMMY	284.26	0 00:40			
D161	DUMMY	330.93	0 00:40			
D162	DUMMY	240.49	0 00:37			
D163	DUMMY	121.02	0 00:36			
D164	DUMMY	201.03	0 00:40			
D165	DUMMY	244.38	0 00:37			
D166	DUMMY	286.09	0 00:39			
D167	DUMMY	78.40	0 00:49			
D17	DUMMY	145.31	0 00:42			
D170	DUMMY	274.30	0 00:43			
D171	DUMMY	201.21	0 00:38			
D175	DUMMY	142.13	0 00:43			
D176	DUMMY	306.05	0 00:36			
D177	DUMMY	108.50	0 00:45			
D178	DUMMY	52.73	0 00:49			
D179	DUMMY	140.43	0 00:49			
D18	DUMMY	113.16	0 00:37			
D180	DUMMY	46.06	0 00:46			
D181	DUMMY	180.17	0 00:50			
D182	DUMMY	240.93	0 00:41			
D183	DUMMY	65.10	0 00:48			
D184	DUMMY	185.07	0 00:49			
D185	DUMMY	97.54	0 00:51			
D186	DUMMY	65.20	0 00:49			
D187	DUMMY	135.53	0 00:44			
D188	DUMMY	121.81	0 00:42			
D19	DUMMY	162.62	0 00:37			
D190	DUMMY	102.26	0 00:53			
D191	DUMMY	111.53	0 00:53			
D192	DUMMY	157.35	0 00:46			
D193	DUMMY	90.58	0 00:56			
D194	DUMMY	73.93	0 00:48			
D195	DUMMY	180.64	0 00:46			
D196	DUMMY	74.04	0 00:54			
D197	DUMMY	109.33	0 00:49			
D198	DUMMY	93.04	0 00:53			
D199	DUMMY	184.13	0 00:45			
D2	DUMMY	476.67	0 00:34			
D20	DUMMY	272.20	0 00:44			
D200	DUMMY	80.78	0 00:49			
D201	DUMMY	149.88	0 00:43			
D202	DUMMY	284.30	0 00:36			
D203	DUMMY	181.81	0 00:41			
D204	DUMMY	86.21	0 00:51			
D205	DUMMY	123.03	0 00:49			
D21	DUMMY	179.24	0 00:42			
D22	DUMMY	251.34	0 00:37			
D23	DUMMY	85.07	0 00:37			
D24	DUMMY	350.40	0 00:36			
D25	DUMMY	60.48	0 00:56			
D26	DUMMY	26.16	0 01:05			
D27	DUMMY	303.26	0 00:39			

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D28	DUMMY	244.37	0	00:38			
D3	DUMMY	176.25	0	00:44			
D30	DUMMY	207.35	0	00:39			
D31	DUMMY	212.65	0	00:40			
D32	DUMMY	209.25	0	00:37			
D33	DUMMY	251.06	0	00:40			
D34	DUMMY	148.88	0	00:43			
D35	DUMMY	352.65	0	00:41			
D36	DUMMY	102.17	0	00:41			
D37	DUMMY	558.45	0	00:36			
D4	DUMMY	94.29	0	00:41			
D40	DUMMY	90.23	0	00:46			
D41	DUMMY	173.16	0	00:37			
D42	DUMMY	148.00	0	00:42			
D43	DUMMY	131.26	0	00:36			
D44	DUMMY	514.65	0	00:36			
D45	DUMMY	130.07	0	00:37			
D46	DUMMY	131.96	0	00:39			
D5	DUMMY	116.05	0	00:40			
D50	DUMMY	105.87	0	00:36			
D51	DUMMY	324.30	0	00:40			
D52	DUMMY	175.14	0	00:38			
D53	DUMMY	132.56	0	00:36			
D54	DUMMY	254.18	0	00:38			
D55	DUMMY	307.61	0	00:36			
D56	DUMMY	263.78	0	00:37			
D57	DUMMY	171.22	0	00:39			
D6	DUMMY	245.15	0	00:36			
D60	DUMMY	166.01	0	00:43			
D61	DUMMY	133.74	0	00:36			
D65	DUMMY	294.42	0	00:38			
D66	DUMMY	325.44	0	00:39			
D67	DUMMY	335.52	0	00:38			
D68	DUMMY	204.30	0	00:36			
D69	DUMMY	513.34	0	00:35			
D7	DUMMY	107.68	0	00:38			
D70	DUMMY	158.93	0	00:41			
D71	DUMMY	50.00	0	00:50			
D72	DUMMY	35.48	0	00:43			
D73	DUMMY	387.44	0	00:37			
D75	DUMMY	87.06	0	00:45			
D76	DUMMY	349.39	0	00:39			
D77	DUMMY	155.87	0	00:43			
D78	DUMMY	95.80	0	00:36			
D79	DUMMY	114.34	0	00:35			
D8	DUMMY	97.56	0	00:36			
D80	DUMMY	86.73	0	00:48			
D81	DUMMY	101.51	0	00:38			
D82	DUMMY	60.40	0	00:43			
D83	DUMMY	231.06	0	00:37			
D85	DUMMY	90.52	0	00:52			
D86	DUMMY	125.55	0	00:41			
D87	DUMMY	245.63	0	00:43			
D88	DUMMY	468.77	0	00:36			
D89	DUMMY	185.09	0	00:41			
D9	DUMMY	339.67	0	00:38			
D90	DUMMY	427.65	0	00:35			
D91	DUMMY	347.02	0	00:36			
D95	DUMMY	326.61	0	00:38			
D96	DUMMY	39.64	0	00:48			
L1	DUMMY	5346.85	0	02:15			
L100	CHANNEL	726.19	0	01:04	6.31	0.03	0.19
L101	CHANNEL	669.12	0	01:34	8.10	0.03	0.28
L102	CHANNEL	650.64	0	01:15	5.22	0.02	0.26
L103	CHANNEL	673.61	0	00:44	5.52	0.01	0.21
L105	CHANNEL	430.41	0	00:47	>50.00	0.01	0.17
L106	CHANNEL	526.73	0	00:38	>50.00	0.02	0.15
L107	CHANNEL	669.75	0	00:41	>50.00	0.04	0.22
L108	CHANNEL	250.93	0	00:41	6.80	0.00	0.07
L11	CHANNEL	5347.65	0	01:54	6.23	0.13	0.47
L110	CHANNEL	2222.69	0	01:24	9.34	0.03	0.21
L112	CHANNEL	2080.25	0	01:24	4.33	0.03	0.40
L113	CHANNEL	2087.24	0	01:14	4.92	0.01	0.27
L114	CHANNEL	286.61	0	01:00	2.07	0.13	0.41
L116	CHANNEL	1758.50	0	01:14	5.88	0.14	0.53
L117	CHANNEL	779.96	0	02:55	5.95	0.24	0.58
L118	CHANNEL	778.99	0	02:58	10.21	0.13	0.44
L119	CHANNEL	92.63	0	00:54	3.75	0.00	0.07
L12	CHANNEL	87.56	0	00:44	>50.00	0.01	0.08
L120	CHANNEL	1230.52	0	00:51	5.19	0.10	0.36
L1201	CHANNEL	962.83	0	00:46	4.78	0.08	0.32
L121	CHANNEL	741.77	0	00:39	9.01	0.05	0.36
L122	CHANNEL	423.50	0	00:36	7.30	0.02	0.11
L123	CHANNEL	779.07	0	02:52	5.27	0.03	0.32
L125	CHANNEL	4527.55	0	01:31	5.67	0.44	0.79
L126	CHANNEL	1638.43	0	00:55	5.94	0.10	0.40
L127	CHANNEL	441.08	0	00:43	10.66	0.04	0.25
L128	CHANNEL	1255.31	0	01:11	4.92	0.17	0.54
L13	CHANNEL	5317.09	0	01:50	7.60	0.11	0.45
L130	CHANNEL	720.64	0	01:02	4.56	0.09	0.38
L131	CHANNEL	494.76	0	00:53	4.90	0.08	0.36
L132	CHANNEL	336.41	0	01:00	3.84	0.00	0.10
L134	CHANNEL	235.38	0	00:58	3.03	0.00	0.06
L135	CHANNEL	307.11	0	01:29	2.27	0.01	0.12
L136	CHANNEL	398.75	0	00:59	4.14	0.00	0.08
L138	CHANNEL	206.76	0	00:55	14.43	0.00	0.10
L140	CHANNEL	1128.83	0	01:08	7.13	0.20	0.57
L141	CHANNEL	290.38	0	04:45	6.55	0.02	0.19
L143	CHANNEL	262.65	0	01:03	10.78	0.01	0.13
L144	CHANNEL	185.70	0	00:54	8.81	0.03	0.24
L145	CHANNEL	90.36	0	00:55	4.04	0.00	0.09
L147	CHANNEL	1158.68	0	01:07	12.07	0.03	0.25
L148	CHANNEL	555.40	0	01:06	4.73	0.01	0.12
L149	CHANNEL	111.38	0	00:49	3.47	0.00	0.08
L151	CHANNEL	378.15	0	00:55	3.81	0.01	0.13
L152	CHANNEL	103.11	0	00:55	5.49	0.00	0.05
L16	CHANNEL	5306.77	0	01:48	4.29	0.05	0.47
L160	CHANNEL	3184.75	0	01:33	5.19	0.19	0.58
L161	CHANNEL	306.88	0	00:56	3.03	0.01	0.12
L162	CHANNEL	234.64	0	01:47	3.67	0.00	0.10
L164	CHANNEL	373.41	0	00:43	4.52	0.01	0.11
L165	CHANNEL	235.21	0	01:22	9.73	0.00	0.08
L1651	CHANNEL	347.43	0	00:46	4.06	0.02	0.18
L166	CHANNEL	285.25	0	00:41	6.12	0.02	0.15
L167	CHANNEL	78.04	0	00:52	4.19	0.00	0.06
L17	CHANNEL	5232.77	0	01:43	5.54	0.16	0.56
L170	CHANNEL	2949.85	0	01:28	10.02	0.17	0.45
L1701	CHANNEL	2853.86	0	01:31	8.31	0.34	0.67
L171	CHANNEL	177.18	0	00:49	3.23	0.02	0.20
L175	CHANNEL	2797.93	0	01:27	6.30	0.36	0.67
L176	CHANNEL	431.14	0	00:57	4.33	0.19	0.53
L177	CHANNEL	289.04	0	00:57	6.71	0.04	0.19
L178	CHANNEL	51.33	0	00:57	2.45	0.01	0.12
L179	CHANNEL	139.03	0	00:54	5.75	0.02	0.17
L180	CHANNEL	2743.08	0	01:25	5.94	0.27	0.56
L181	CHANNEL	2447.89	0	01:27	7.11	0.05	0.31
L183	CHANNEL	2235.59	0	01:23	6.20	0.05	0.28
L187	CHANNEL	304.01	0	00:57	4.16	0.01	0.14
L188	CHANNEL	118.23	0	00:49	3.62	0.00	0.07
L19	CHANNEL	255.04	0	00:44	7.43	0.00	0.13
L190	CHANNEL	2124.33	0	01:12	5.45	0.09	0.37
L193	CHANNEL	1685.69	0	01:12	6.96	0.02	0.24
L195	CHANNEL	1395.76	0	01:06	7.22	0.00	0.07
L197	CHANNEL	1207.84	0	00:58	4.74	0.01	0.16
L198	CHANNEL	1032.33	0	00:56	5.13	0.01	0.11
L2	CHANNEL	5344.37	0	02:15	6.20	0.08	0.40
L20	CHANNEL	5193.10	0	01:34	4.47	0.21	0.66
L200	CHANNEL	940.55	0	00:55	4.72	0.01	0.11
L201	CHANNEL	691.19	0	00:52	5.94	0.03	0.22
L202	CHANNEL	267.44	0	00:42	4.54	0.01	0.16
L204	CHANNEL	341.18	0	00:56	4.32	0.02	0.17
L205	CHANNEL	116.42	0	01:01	2.55	0.02	0.20
L21	CHANNEL	5115.91	0	01:35	3.55	0.13	0.53
L211	CHANNEL	5050.21	0	01:32	5.01	0.18	0.59
L22	CHANNEL	247.07	0	00:40	3.79	0.05	0.33
L23	CHANNEL	83.08	0	00:40	6.86	0.00	0.07
L24	CHANNEL	348.01	0	00:37	10.87	0.00	0.15
L25	CHANNEL	5053.84	0	01:31	7.44	0.05	0.40
L26	CHANNEL	4936.83	0	01:28	5.59	0.10	0.53
L27	CHANNEL	303.02	0	00:39	7.27	0.01	0.08
L28	CHANNEL	282.51	0	00:46	>50.00	0.18	0.50
L3	CHANNEL	5347.67	0	02:12	4.50	0.03	0.33
L30	CHANNEL	4904.00	0	01:56	4.66	0.03	0.42
L31	CHANNEL	1678.12	0	00:51	6.39	0.20	0.65
L32	CHANNEL	1524.77	0	00:46	5.41	0.06	0.38
L33	CHANNEL	1157.48	0	00:44	>50.00	0.06	0.24

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L35	CHANNEL	916.14	0	00:44	10.80	0.01	0.07
L37	CHANNEL	542.38	0	00:39	15.28	0.04	0.28
L40	CHANNEL	4612.39	0	01:47	6.41	0.15	0.54
L41	CHANNEL	408.57	0	00:41	10.51	0.01	0.11
L43	CHANNEL	123.49	0	00:42	6.27	0.02	0.13
L44	CHANNEL	4518.11	0	01:45	4.37	0.01	0.18
L45	CHANNEL	252.48	0	00:42	9.46	0.02	0.21
L46	CHANNEL	130.96	0	00:41	7.42	0.01	0.17
L5	CHANNEL	5348.39	0	02:08	5.45	0.03	0.23
L51	CHANNEL	1403.31	0	00:50	9.94	0.01	0.19
L511	CHANNEL	974.08	0	00:49	9.40	0.01	0.20
L52	CHANNEL	164.55	0	00:44	11.60	0.63	0.75
L53	CHANNEL	132.23	0	00:36	5.99	0.00	0.07
L54	CHANNEL	887.95	0	00:44	5.86	0.01	0.21
L55	CHANNEL	665.48	0	00:43	>50.00	0.00	0.09
L56	CHANNEL	401.16	0	00:43	7.34	0.01	0.15
L57	CHANNEL	169.47	0	00:43	7.24	0.03	0.19
L60	CHANNEL	4525.51	0	01:39	6.04	0.04	0.28
L61	CHANNEL	4178.07	0	01:39	6.37	0.09	0.43
L66	CHANNEL	918.85	0	00:53	5.39	0.02	0.18
L67	CHANNEL	660.24	0	00:50	7.36	0.01	0.23
L68	CHANNEL	426.69	0	01:05	6.22	0.02	0.21
L69	CHANNEL	373.23	0	01:20	5.45	0.01	0.15
L7	CHANNEL	5351.46	0	02:04	5.43	0.03	0.31
L70	CHANNEL	420.66	0	00:56	4.71	0.00	0.03
L72	CHANNEL	34.53	0	00:49	>50.00	0.00	0.03
L73	CHANNEL	386.76	0	00:37	7.74	0.01	0.13
L75	CHANNEL	4175.29	0	01:35	6.00	0.08	0.47
L76	CHANNEL	3607.11	0	01:36	8.73	0.02	0.26
L77	CHANNEL	3572.15	0	01:35	5.34	0.08	0.38
L78	CHANNEL	56.79	0	01:11	2.73	0.03	0.28
L79	CHANNEL	114.10	0	00:36	7.99	0.01	0.09
L80	CHANNEL	3447.90	0	01:30	7.29	0.17	0.54
L801	CHANNEL	3400.56	0	01:29	5.10	0.42	0.69
L81	CHANNEL	99.83	0	00:41	>50.00	0.01	0.13
L82	CHANNEL	278.46	0	00:44	4.86	0.04	0.25
L83	CHANNEL	227.04	0	00:39	5.06	0.01	0.12
L85	CHANNEL	3333.15	0	01:30	6.71	0.45	0.76
L86	CHANNEL	3272.96	0	01:28	6.23	0.12	0.46
L87	CONDUIT	359.24	0	00:44	>50.00	0.81	0.68
L89	CHANNEL	421.06	0	00:52	5.99	0.01	0.10
L9	CHANNEL	5357.66	0	01:58	5.82	0.04	0.29
L90	CHANNEL	267.91	0	01:02	3.65	0.00	0.05
L91	CHANNEL	341.33	0	00:38	9.77	0.04	0.22
L95	CHANNEL	3003.97	0	01:26	6.85	0.09	0.43
L951	CHANNEL	2926.61	0	01:26	5.62	0.19	0.49
O101	DUMMY	669.16	0	01:32			
O70	DUMMY	387.51	0	00:55			
O90	DUMMY	267.99	0	01:00			
O105	DUMMY	321.89	0	01:17			
O102	DUMMY	653.52	0	01:06			
O123	DUMMY	1558.15	0	02:50			
O162	DUMMY	236.02	0	01:43			
O165	DUMMY	235.38	0	01:19			
O88	DUMMY	124.77	0	02:00			
O69	DUMMY	373.86	0	01:13			
O135	DUMMY	307.13	0	01:27			
O141	DUMMY	290.00	0	01:13			

****
Conduit Surcharge Summary
****

Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
D1	0.01	0.01	0.01	36.00	0.01
D10	0.01	0.01	0.01	36.00	0.01
D100	0.01	0.01	0.01	36.00	0.01
D101	0.01	0.01	0.01	36.00	0.01
D102	0.01	0.01	0.01	36.00	0.01
D103	0.01	0.01	0.01	36.00	0.01
D104	0.01	0.01	0.01	36.00	0.01
D105	0.01	0.01	0.01	36.00	0.01
D106	0.01	0.01	0.01	36.00	0.01
D107	0.01	0.01	0.01	36.00	0.01
D108	0.01	0.01	0.01	36.00	0.01
D11	0.01	0.01	0.01	36.00	0.01
D110	0.01	0.01	0.01	36.00	0.01
D111	0.01	0.01	0.01	36.00	0.01
D112	0.01	0.01	0.01	36.00	0.01
D113	0.01	0.01	0.01	36.00	0.01
D114	0.01	0.01	0.01	36.00	0.01
D115	0.01	0.01	0.01	36.00	0.01
D116	0.01	0.01	0.01	36.00	0.01
D117	0.01	0.01	0.01	36.00	0.01
D118	0.01	0.01	0.01	36.00	0.01
D119	0.01	0.01	0.01	36.00	0.01
D12	0.01	0.01	0.01	36.00	0.01
D120	0.01	0.01	0.01	36.00	0.01
D121	0.01	0.01	0.01	36.00	0.01
D122	0.01	0.01	0.01	36.00	0.01
D123	0.01	0.01	0.01	36.00	0.01
D125	0.01	0.01	0.01	36.00	0.01
D126	0.01	0.01	0.01	36.00	0.01
D127	0.01	0.01	0.01	36.00	0.01
D128	0.01	0.01	0.01	36.00	0.01
D13	0.01	0.01	0.01	36.00	0.01
D130	0.01	0.01	0.01	36.00	0.01
D131	0.01	0.01	0.01	36.00	0.01
D132	0.01	0.01	0.01	36.00	0.01
D133	0.01	0.01	0.01	36.00	0.01
D134	0.01	0.01	0.01	36.00	0.01
D135	0.01	0.01	0.01	36.00	0.01
D136	0.01	0.01	0.01	36.00	0.01
D137	0.01	0.01	0.01	36.00	0.01
D138	0.01	0.01	0.01	36.00	0.01
D14	0.01	0.01	0.01	36.00	0.01
D140	0.01	0.01	0.01	36.00	0.01
D141	0.01	0.01	0.01	36.00	0.01
D142	0.01	0.01	0.01	36.00	0.01
D143	0.01	0.01	0.01	36.00	0.01
D144	0.01	0.01	0.01	36.00	0.01
D145	0.01	0.01	0.01	36.00	0.01
D146	0.01	0.01	0.01	36.00	0.01
D147	0.01	0.01	0.01	36.00	0.01
D148	0.01	0.01	0.01	36.00	0.01
D149	0.01	0.01	0.01	36.00	0.01
D15	0.01	0.01	0.01	36.00	0.01
D150	0.01	0.01	0.01	36.00	0.01
D151	0.01	0.01	0.01	36.00	0.01
D152	0.01	0.01	0.01	36.00	0.01
D16	0.01	0.01	0.01	36.00	0.01
D160	0.01	0.01	0.01	36.00	0.01
D161	0.01	0.01	0.01	36.00	0.01
D162	0.01	0.01	0.01	36.00	0.01
D163	0.01	0.01	0.01	36.00	0.01
D164	0.01	0.01	0.01	36.00	0.01
D165	0.01	0.01	0.01	36.00	0.01
D166	0.01	0.01	0.01	36.00	0.01
D167	0.01	0.01	0.01	36.00	0.01
D17	0.01	0.01	0.01	36.00	0.01
D170	0.01	0.01	0.01	36.00	0.01
D171	0.01	0.01	0.01	36.00	0.01
D175	0.01	0.01	0.01	36.00	0.01
D176	0.01	0.01	0.01	36.00	0.01
D177	0.01	0.01	0.01	36.00	0.01
D178	0.01	0.01	0.01	36.00	0.01
D179	0.01	0.01	0.01	36.00	0.01
D18	0.01	0.01	0.01	36.00	0.01
D180	0.01	0.01	0.01	36.00	0.01
D181	0.01	0.01	0.01	36.00	0.01
D182	0.01	0.01	0.01	36.00	0.01
D183	0.01	0.01	0.01	36.00	0.01
D184	0.01	0.01	0.01	36.00	0.01
D185	0.01	0.01	0.01	36.00	0.01
D186	0.01	0.01	0.01	36.00	0.01
D187	0.01	0.01	0.01	36.00	0.01
D188	0.01	0.01	0.01	36.00	0.01
D19	0.01	0.01	0.01	36.00	0.01
D190	0.01	0.01	0.01	36.00	0.01
D191	0.01	0.01	0.01	36.00	0.01
D192	0.01	0.01	0.01	36.00	0.01

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D193	0.01	0.01	0.01	36.00	0.01
D194	0.01	0.01	0.01	36.00	0.01
D195	0.01	0.01	0.01	36.00	0.01
D196	0.01	0.01	0.01	36.00	0.01
D197	0.01	0.01	0.01	36.00	0.01
D198	0.01	0.01	0.01	36.00	0.01
D199	0.01	0.01	0.01	36.00	0.01
D2	0.01	0.01	0.01	36.00	0.01
D20	0.01	0.01	0.01	36.00	0.01
D200	0.01	0.01	0.01	36.00	0.01
D201	0.01	0.01	0.01	36.00	0.01
D202	0.01	0.01	0.01	36.00	0.01
D203	0.01	0.01	0.01	36.00	0.01
D204	0.01	0.01	0.01	36.00	0.01
D205	0.01	0.01	0.01	36.00	0.01
D21	0.01	0.01	0.01	36.00	0.01
D22	0.01	0.01	0.01	36.00	0.01
D23	0.01	0.01	0.01	36.00	0.01
D24	0.01	0.01	0.01	36.00	0.01
D25	0.01	0.01	0.01	36.00	0.01
D26	0.01	0.01	0.01	36.00	0.01
D27	0.01	0.01	0.01	36.00	0.01
D28	0.01	0.01	0.01	36.00	0.01
D3	0.01	0.01	0.01	36.00	0.01
D30	0.01	0.01	0.01	36.00	0.01
D31	0.01	0.01	0.01	36.00	0.01
D32	0.01	0.01	0.01	36.00	0.01
D33	0.01	0.01	0.01	36.00	0.01
D34	0.01	0.01	0.01	36.00	0.01
D35	0.01	0.01	0.01	36.00	0.01
D36	0.01	0.01	0.01	36.00	0.01
D37	0.01	0.01	0.01	36.00	0.01
D4	0.01	0.01	0.01	36.00	0.01
D40	0.01	0.01	0.01	36.00	0.01
D41	0.01	0.01	0.01	36.00	0.01
D42	0.01	0.01	0.01	36.00	0.01
D43	0.01	0.01	0.01	36.00	0.01
D44	0.01	0.01	0.01	36.00	0.01
D45	0.01	0.01	0.01	36.00	0.01
D46	0.01	0.01	0.01	36.00	0.01
D5	0.01	0.01	0.01	36.00	0.01
D50	0.01	0.01	0.01	36.00	0.01
D51	0.01	0.01	0.01	36.00	0.01
D52	0.01	0.01	0.01	36.00	0.01
D53	0.01	0.01	0.01	36.00	0.01
D54	0.01	0.01	0.01	36.00	0.01
D55	0.01	0.01	0.01	36.00	0.01
D56	0.01	0.01	0.01	36.00	0.01
D57	0.01	0.01	0.01	36.00	0.01
D6	0.01	0.01	0.01	36.00	0.01
D60	0.01	0.01	0.01	36.00	0.01
D61	0.01	0.01	0.01	36.00	0.01
D65	0.01	0.01	0.01	36.00	0.01
D66	0.01	0.01	0.01	36.00	0.01
D67	0.01	0.01	0.01	36.00	0.01
D68	0.01	0.01	0.01	36.00	0.01
D69	0.01	0.01	0.01	36.00	0.01
D7	0.01	0.01	0.01	36.00	0.01
D70	0.01	0.01	0.01	36.00	0.01
D71	0.01	0.01	0.01	36.00	0.01
D72	0.01	0.01	0.01	36.00	0.01
D73	0.01	0.01	0.01	36.00	0.01
D75	0.01	0.01	0.01	36.00	0.01
D76	0.01	0.01	0.01	36.00	0.01
D77	0.01	0.01	0.01	36.00	0.01
D78	0.01	0.01	0.01	36.00	0.01
D79	0.01	0.01	0.01	36.00	0.01
D8	0.01	0.01	0.01	36.00	0.01
D80	0.01	0.01	0.01	36.00	0.01
D81	0.01	0.01	0.01	36.00	0.01
D82	0.01	0.01	0.01	36.00	0.01
D83	0.01	0.01	0.01	36.00	0.01
D85	0.01	0.01	0.01	36.00	0.01
D86	0.01	0.01	0.01	36.00	0.01
D87	0.01	0.01	0.01	36.00	0.01
D88	0.01	0.01	0.01	36.00	0.01
D89	0.01	0.01	0.01	36.00	0.01
D9	0.01	0.01	0.01	36.00	0.01
D90	0.01	0.01	0.01	36.00	0.01
D91	0.01	0.01	0.01	36.00	0.01
D95	0.01	0.01	0.01	36.00	0.01
D96	0.01	0.01	0.01	36.00	0.01
L1	0.01	0.01	0.01	36.00	0.01

Analysis begun on: Fri May 22 09:16:55 2015
Analysis ended on: Fri May 22 09:17:03 2015
Total elapsed time: 00:00:08me: 00:00:08

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Table B-19 - Sample SWMM Output, 100-Year, 2-Hour Design Storm (DRF = 19.35 Mi^2)

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EPA STORM WATER MANAGEMENT MODEL - VERSION 5.0 (Build 5.0.021)
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************************************************************
NOTE: The summary statistics displayed in this report are
based on results found at every computational time step,
not just on results from each reporting time step.
************************************************************

*****************
Analysis Options
*****************
Flow Units ............... CFS
Process Models:
  Rainfall/Runoff ........ NO
  Snowmelt ............... NO
  Groundwater ............ NO
  Flow Routing ........... YES
  Ponding Allowed ........ YES
  Water Quality .......... NO
Flow Routing Method ...... KINWAVE
Starting Date ............ JAN-01-2014 00:00:00
Ending Date .............. JAN-02-2014 12:00:00
Antecedent Dry Days ...... 0.0
Report Time Step ......... 00:01:00
Routing Time Step ........ 5.00 sec


**************************        Volume         Volume
Flow Routing Continuity        acre-feet       10^6 gal
**************************     ---------      ---------
Dry Weather Inflow .......         0.000          0.000
Wet Weather Inflow .......         0.000          0.000
Groundwater Inflow .......         0.000          0.000
RDII Inflow ..............         0.000          0.000
External Inflow ..........      1920.900        625.954
External Outflow .........      1941.020        632.510
Internal Outflow .........         0.000          0.000
Storage Losses ...........         0.000          0.000
Initial Stored Volume ....         0.000          0.000
Final Stored Volume ......         0.829          0.270
Continuity Error (%) .....        -1.091


*********************************
Highest Flow Instability Indexes
*********************************
Link L101 (12)
Link O101 (12)
Link L100 (12)
Link L140 (9)
Link L126 (7)


*************************
Routing Time Step Summary
*************************
Minimum Time Step           :     5.00 sec
Average Time Step           :     5.00 sec
Maximum Time Step           :     5.00 sec
Percent in Steady State     :     0.00
Average Iterations per Step :     1.00


******************
Node Depth Summary
******************

------------------------------------------------------------------------
                            Average  Maximum  Maximum  Time of Max
                              Depth    Depth      HGL   Occurrence
Node                 Type      Feet     Feet     Feet  days hr:min
------------------------------------------------------------------------
1                    JUNCTION  0.00     0.00  5231.00     0  00:00
2                    JUNCTION  0.00     0.00  5349.00     0  00:00
3                    JUNCTION  0.00     0.00  5383.00     0  00:00
4                    JUNCTION  0.00     0.00  5421.00     0  00:00
5                    JUNCTION  0.00     0.00  5396.00     0  00:00
6                    JUNCTION  0.00     0.00  5397.00     0  00:00
7                    JUNCTION  0.00     0.00  5410.00     0  00:00
8                    JUNCTION  0.00     0.00  5418.00     0  00:00
9                    JUNCTION  0.00     0.00  5424.00     0  00:00
10                   JUNCTION  0.00     0.00  5444.00     0  00:00
11                   JUNCTION  0.00     0.00  5409.00     0  00:00
12                   JUNCTION  0.00     0.00  5455.00     0  00:00
13                   JUNCTION  0.00     0.00  5441.00     0  00:00
14                   JUNCTION  0.00     0.00  5474.00     0  00:00
15                   JUNCTION  0.00     0.00  5488.00     0  00:00
16                   JUNCTION  0.00     0.00  5457.00     0  00:00
17                   JUNCTION  0.00     0.00  5486.00     0  00:00
18                   JUNCTION  0.00     0.00  5523.00     0  00:00
19                   JUNCTION  0.00     0.00  5527.00     0  00:00
20                   JUNCTION  0.00     0.00  5498.00     0  00:00
21                   JUNCTION  0.00     0.00  5490.00     0  00:00
22                   JUNCTION  0.00     0.00  5526.00     0  00:00
23                   JUNCTION  0.00     0.00  5536.00     0  00:00
24                   JUNCTION  0.00     0.00  5538.00     0  00:00
25                   JUNCTION  0.00     0.00  5482.00     0  00:00
26                   JUNCTION  0.00     0.00  5494.00     0  00:00
27                   JUNCTION  0.00     0.00  5535.00     0  00:00
28                   JUNCTION  0.00     0.00  5555.00     0  00:00
30                   JUNCTION  0.00     0.00  5525.00     0  00:00
31                   JUNCTION  0.00     0.00  5604.00     0  00:00
32                   JUNCTION  0.00     0.00  5586.00     0  00:00
33                   JUNCTION  0.00     0.00  5614.00     0  00:00
34                   JUNCTION  0.00     0.00  5641.00     0  00:00
35                   JUNCTION  0.00     0.00  5671.00     0  00:00
36                   JUNCTION  0.00     0.00  5649.00     0  00:00
37                   JUNCTION  0.00     0.00  5711.00     0  00:00
40                   JUNCTION  0.00     0.00  5563.00     0  00:00
41                   JUNCTION  0.00     0.00  5573.00     0  00:00
42                   JUNCTION  0.00     0.00  5585.00     0  00:00
43                   JUNCTION  0.00     0.00  5596.00     0  00:00
44                   JUNCTION  0.00     0.00  5570.00     0  00:00
45                   JUNCTION  0.00     0.00  5601.00     0  00:00
46                   JUNCTION  0.00     0.00  5621.00     0  00:00
50                   JUNCTION  0.00     0.00  5611.00     0  00:00
51                   JUNCTION  0.00     0.00  5633.00     0  00:00
52                   JUNCTION  0.00     0.00  5646.00     0  00:00
53                   JUNCTION  0.00     0.00  5662.00     0  00:00
54                   JUNCTION  0.00     0.00  5698.00     0  00:00
55                   JUNCTION  0.00     0.00  5714.00     0  00:00
56                   JUNCTION  0.00     0.00  5740.00     0  00:00
57                   JUNCTION  0.00     0.00  5794.00     0  00:00
60                   JUNCTION  0.00     0.00  5617.00     0  00:00
61                   JUNCTION  0.00     0.00  5593.00     0  00:00
65                   JUNCTION  0.00     0.00  5626.00     0  00:00
66                   JUNCTION  0.00     0.00  5656.00     0  00:00
67                   JUNCTION  0.00     0.00  5703.00     0  00:00
68                   JUNCTION  0.00     0.00  5713.00     0  00:00
69                   JUNCTION  0.00     0.00  5746.00     0  00:00
70                   JUNCTION  0.00     0.00  5796.00     0  00:00
71                   JUNCTION  0.00     0.00  5789.00     0  00:00
72                   JUNCTION  0.00     0.00  5790.00     0  00:00
73                   JUNCTION  0.00     0.00  5819.00     0  00:00
75                   JUNCTION  0.00     0.00  5632.00     0  00:00
76                   JUNCTION  0.00     0.00  5646.00     0  00:00
77                   JUNCTION  0.00     0.00  5690.00     0  00:00
78                   JUNCTION  0.00     0.00  5725.00     0  00:00
79                   JUNCTION  0.00     0.00  5666.00     0  00:00
80                   JUNCTION  0.00     0.00  5653.00     0  00:00
81                   JUNCTION  0.00     0.00  5696.00     0  00:00
82                   JUNCTION  0.00     0.00  5700.00     0  00:00
83                   JUNCTION  0.00     0.00  5744.00     0  00:00
85                   JUNCTION  0.00     0.00  5671.00     0  00:00
86                   JUNCTION  0.00     0.00  5744.00     0  00:00
87                   JUNCTION  0.00     0.00  5772.00     0  00:00
```

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88	JUNCTION	0.00	0.00	5798.00	0	00:00
89	JUNCTION	0.00	0.00	5845.00	0	00:00
90	JUNCTION	0.00	0.00	5833.00	0	00:00
91	JUNCTION	0.00	0.00	5895.00	0	00:00
95	JUNCTION	0.00	0.00	5754.00	0	00:00
96	JUNCTION	0.00	0.00	5736.00	0	00:00
100	JUNCTION	0.00	0.00	5743.00	0	00:00
101	JUNCTION	0.00	0.00	5772.00	0	00:00
102	JUNCTION	0.00	0.00	5841.00	0	00:00
103	JUNCTION	0.00	0.00	5841.00	0	00:00
104	JUNCTION	0.00	0.00	5868.00	0	00:00
105	JUNCTION	0.00	0.00	5869.00	0	00:00
106	JUNCTION	0.00	0.00	5919.00	0	00:00
107	JUNCTION	0.00	0.00	5900.00	0	00:00
108	JUNCTION	0.00	0.00	5947.00	0	00:00
110	JUNCTION	0.00	0.00	5792.00	0	00:00
111	JUNCTION	0.00	0.00	5777.00	0	00:00
112	JUNCTION	0.00	0.00	5808.00	0	00:00
113	JUNCTION	0.00	0.00	5778.00	0	00:00
114	JUNCTION	0.00	0.00	5820.00	0	00:00
115	JUNCTION	0.00	0.00	5832.00	0	00:00
116	JUNCTION	0.00	0.00	5825.00	0	00:00
117	JUNCTION	0.00	0.00	5802.00	0	00:00
118	JUNCTION	0.00	0.00	5849.00	0	00:00
119	JUNCTION	0.00	0.00	5878.00	0	00:00
120	JUNCTION	0.00	0.00	5867.00	0	00:00
121	JUNCTION	0.00	0.00	5924.00	0	00:00
122	JUNCTION	0.00	0.00	5932.00	0	00:00
123	JUNCTION	0.00	0.00	5870.00	0	00:00
125	JUNCTION	0.00	0.00	5907.00	0	00:00
126	JUNCTION	0.00	0.00	5899.00	0	00:00
127	JUNCTION	0.00	0.00	5955.00	0	00:00
128	JUNCTION	0.00	0.00	5934.00	0	00:00
130	JUNCTION	0.00	0.00	5960.00	0	00:00
131	JUNCTION	0.00	0.00	6012.00	0	00:00
132	JUNCTION	0.00	0.00	6073.00	0	00:00
133	JUNCTION	0.00	0.00	6165.00	0	00:00
134	JUNCTION	0.00	0.00	6185.00	0	00:00
135	JUNCTION	0.00	0.00	6020.00	0	00:00
136	JUNCTION	0.00	0.00	6097.00	0	00:00
137	JUNCTION	0.00	0.00	6188.00	0	00:00
138	JUNCTION	0.00	0.00	6231.00	0	00:00
140	JUNCTION	0.00	0.00	5967.00	0	00:00
141	JUNCTION	0.00	0.00	6035.00	0	00:00
142	JUNCTION	0.00	0.00	6084.00	0	00:00
143	JUNCTION	0.00	0.00	6197.00	0	00:00
144	JUNCTION	0.00	0.00	6199.00	0	00:00
145	JUNCTION	0.00	0.00	6314.00	0	00:00
146	JUNCTION	0.00	0.00	6103.00	0	00:00
147	JUNCTION	0.00	0.00	6120.00	0	00:00
148	JUNCTION	0.00	0.00	6236.00	0	00:00
149	JUNCTION	0.00	0.00	6258.00	0	00:00
150	JUNCTION	0.00	0.00	6293.00	0	00:00
151	JUNCTION	0.00	0.00	6242.00	0	00:00
152	JUNCTION	0.00	0.00	6321.00	0	00:00
160	JUNCTION	0.00	0.00	5888.00	0	00:00
161	JUNCTION	0.00	0.00	5934.00	0	00:00
162	JUNCTION	0.00	0.00	5980.00	0	00:00
163	JUNCTION	0.00	0.00	5996.00	0	00:00
164	JUNCTION	0.00	0.00	6014.00	0	00:00
165	JUNCTION	0.00	0.00	6028.00	0	00:00
166	JUNCTION	0.00	0.00	6116.00	0	00:00
167	JUNCTION	0.00	0.00	6222.00	0	00:00
170	JUNCTION	0.00	0.00	5904.00	0	00:00
171	JUNCTION	0.00	0.00	5970.00	0	00:00
175	JUNCTION	0.00	0.00	5953.00	0	00:00
176	JUNCTION	0.00	0.00	6003.00	0	00:00
177	JUNCTION	0.00	0.00	6024.00	0	00:00
178	JUNCTION	0.00	0.00	6087.00	0	00:00
179	JUNCTION	0.00	0.00	6158.00	0	00:00
180	JUNCTION	0.00	0.00	5961.00	0	00:00
181	JUNCTION	0.00	0.00	5996.00	0	00:00
182	JUNCTION	0.00	0.00	6014.00	0	00:00
183	JUNCTION	0.00	0.00	6059.00	0	00:00
184	JUNCTION	0.00	0.00	6162.00	0	00:00
185	JUNCTION	0.00	0.00	6117.00	0	00:00
186	JUNCTION	0.00	0.00	6283.00	0	00:00
187	JUNCTION	0.00	0.00	6162.00	0	00:00
188	JUNCTION	0.00	0.00	6309.00	0	00:00
190	JUNCTION	0.00	0.00	6056.00	0	00:00
191	JUNCTION	0.00	0.00	6190.00	0	00:00
192	JUNCTION	0.00	0.00	6276.00	0	00:00
193	JUNCTION	0.00	0.00	6293.00	0	00:00
194	JUNCTION	0.00	0.00	6230.00	0	00:00
195	JUNCTION	0.00	0.00	6276.00	0	00:00
196	JUNCTION	0.00	0.00	6256.00	0	00:00
197	JUNCTION	0.00	0.00	6264.00	0	00:00
198	JUNCTION	0.00	0.00	6253.00	0	00:00
199	JUNCTION	0.00	0.00	6353.00	0	00:00
200	JUNCTION	0.00	0.00	6287.00	0	00:00
201	JUNCTION	0.00	0.00	6340.00	0	00:00
202	JUNCTION	0.00	0.00	6412.00	0	00:00
203	JUNCTION	0.00	0.00	6421.00	0	00:00
204	JUNCTION	0.00	0.00	6372.00	0	00:00
205	JUNCTION	0.00	0.00	6468.00	0	00:00
J1	JUNCTION	2.18	5.83	5301.83	0	02:25
J100	JUNCTION	0.50	4.25	5698.25	0	01:36
J101	JUNCTION	0.50	4.25	5715.25	0	01:35
J102	JUNCTION	0.39	4.21	5784.21	0	01:10
J103	JUNCTION	0.34	3.13	5805.13	0	00:48
J105	JUNCTION	0.27	2.50	5828.50	0	00:51
J106	JUNCTION	0.08	1.59	5882.59	0	00:35
J107	JUNCTION	0.14	2.22	5870.22	0	00:39
J108	JUNCTION	0.02	0.60	5916.60	0	00:39
J11	JUNCTION	3.71	13.59	5391.59	0	01:58
J110	JUNCTION	2.21	7.98	5710.98	0	01:30
J112	JUNCTION	2.38	9.37	5746.37	0	01:19
J113	JUNCTION	2.45	9.48	5751.48	0	01:19
J114	JUNCTION	0.19	2.07	5751.07	0	00:48
J116	JUNCTION	2.25	9.48	5758.48	0	01:18
J117	JUNCTION	1.21	5.92	5766.92	0	03:02
J119	JUNCTION	0.04	0.67	5867.67	0	00:47
J12	JUNCTION	0.02	0.29	5446.29	0	00:37
J120	JUNCTION	1.16	4.95	5790.95	0	00:48
J1201	JUNCTION	1.73	6.73	5804.73	0	02:55
J121	JUNCTION	0.19	3.41	5870.41	0	00:35
J122	JUNCTION	0.03	0.69	5884.69	0	00:35
J125	JUNCTION	1.34	9.05	5836.05	0	01:34
J126	JUNCTION	0.63	4.64	5854.64	0	01:12
J127	JUNCTION	0.08	1.29	5913.29	0	00:37
J128	JUNCTION	0.74	5.41	5888.41	0	01:15
J13	JUNCTION	3.99	13.59	5408.59	0	01:54
J130	JUNCTION	0.25	2.85	5948.85	0	01:08
J131	JUNCTION	0.17	2.02	5955.02	0	00:56
J132	JUNCTION	0.12	1.89	6016.89	0	01:10
J134	JUNCTION	0.10	1.89	6048.89	0	01:03
J135	JUNCTION	0.15	2.05	5949.05	0	01:30
J136	JUNCTION	0.12	2.16	6010.16	0	00:58
J138	JUNCTION	0.10	1.69	6097.69	0	00:58
J140	JUNCTION	0.72	5.42	5921.42	0	01:10
J141	JUNCTION	0.33	1.92	5961.92	0	01:26
J143	JUNCTION	0.10	1.61	6091.61	0	01:04
J144	JUNCTION	0.09	1.61	6112.61	0	01:02
J145	JUNCTION	0.04	0.70	6204.70	0	00:56
J147	JUNCTION	0.37	5.30	6008.30	0	01:12
J148	JUNCTION	0.18	3.16	6098.16	0	01:01
J149	JUNCTION	0.03	0.82	6177.82	0	00:50
J151	JUNCTION	0.10	1.91	6107.91	0	01:04
J152	JUNCTION	0.11	1.92	6208.92	0	00:56
J16	JUNCTION	4.07	13.12	5419.12	0	01:51
J160	JUNCTION	1.24	8.43	5849.43	0	01:34
J161	JUNCTION	0.38	1.57	5884.57	0	02:10
J162	JUNCTION	0.37	1.57	5894.57	0	02:05
J164	JUNCTION	0.24	2.14	5920.14	0	01:17
J165	JUNCTION	0.24	2.14	5942.14	0	01:51
J1651	JUNCTION	0.13	2.16	5960.16	0	00:50
J166	JUNCTION	0.06	1.20	6003.20	0	00:46
J167	JUNCTION	0.04	0.68	6031.68	0	00:57
J17	JUNCTION	3.84	13.15	5438.15	0	01:43
J170	JUNCTION	0.57	5.68	5852.68	0	01:35
J1701	JUNCTION	0.63	6.36	5867.36	0	01:34
J171	JUNCTION	0.07	1.25	5891.25	0	00:41
J175	JUNCTION	0.65	6.37	5888.37	0	01:31
J176	JUNCTION	0.20	2.67	5940.67	0	00:55
J177	JUNCTION	0.06	0.99	5986.99	0	01:03
J178	JUNCTION	0.03	0.51	6028.51	0	00:57

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J179	JUNCTION	0.06	0.99	6029.99	0	00:57
J180	JUNCTION	0.69	6.84	5897.84	0	01:31
J181	JUNCTION	0.67	6.84	5913.84	0	01:29
J183	JUNCTION	0.41	5.46	5984.46	0	01:19
J187	JUNCTION	0.13	2.25	6073.25	0	00:54
J188	JUNCTION	0.05	1.17	6151.17	0	00:36
J19	JUNCTION	0.11	1.59	5508.59	0	00:52
J190	JUNCTION	0.37	4.45	6003.45	0	01:19
J193	JUNCTION	0.36	4.87	6055.87	0	01:00
J195	JUNCTION	0.32	4.90	6158.90	0	01:05
J197	JUNCTION	0.27	4.07	6171.07	0	01:03
J198	JUNCTION	0.26	3.83	6179.83	0	01:02
J2	JUNCTION	3.16	9.77	5321.77	0	02:22
J20	JUNCTION	3.69	12.20	5443.20	0	01:42
J200	JUNCTION	0.25	3.53	6207.53	0	00:58
J201	JUNCTION	0.24	3.53	6261.53	0	00:54
J202	JUNCTION	0.09	1.98	6323.98	0	00:37
J204	JUNCTION	0.15	2.15	6299.15	0	00:58
J205	JUNCTION	0.06	1.18	6351.18	0	00:57
J21	JUNCTION	3.61	12.20	5446.20	0	01:39
J211	JUNCTION	3.25	10.55	5456.55	0	01:35
J22	JUNCTION	0.09	1.67	5511.67	0	00:39
J23	JUNCTION	0.02	0.43	5509.43	0	00:38
J24	JUNCTION	0.16	2.61	5524.61	0	00:36
J25	JUNCTION	3.26	10.56	5465.56	0	01:32
J26	JUNCTION	3.06	10.18	5485.18	0	01:29
J27	JUNCTION	0.07	1.15	5511.15	0	00:40
J28	JUNCTION	0.07	1.31	5510.31	0	00:43
J3	JUNCTION	3.24	10.93	5336.93	0	02:17
J30	JUNCTION	3.24	12.69	5511.69	0	01:54
J31	JUNCTION	0.58	8.22	5536.22	0	00:48
J32	JUNCTION	0.59	8.23	5544.23	0	00:46
J33	JUNCTION	0.07	1.53	5570.53	0	00:45
J37	JUNCTION	0.18	2.78	5652.78	0	00:35
J40	JUNCTION	3.14	12.69	5519.69	0	01:51
J41	JUNCTION	0.11	1.60	5556.60	0	00:45
J43	JUNCTION	0.03	0.56	5574.56	0	00:37
J44	JUNCTION	2.50	7.62	5533.62	0	01:44
J45	JUNCTION	0.11	1.60	5592.60	0	00:41
J46	JUNCTION	0.08	1.30	5609.30	0	00:41
J5	JUNCTION	3.38	10.94	5346.94	0	02:13
J51	JUNCTION	0.35	5.52	5593.52	0	01:11
J511	JUNCTION	0.34	5.50	5624.50	0	00:47
J52	JUNCTION	0.04	0.86	5637.86	0	00:39
J53	JUNCTION	0.06	1.37	5649.37	0	00:49
J54	JUNCTION	0.26	4.70	5642.70	0	00:45
J55	JUNCTION	0.18	2.83	5658.83	0	00:46
J56	JUNCTION	0.16	2.85	5713.85	0	00:40
J57	JUNCTION	0.06	0.94	5746.94	0	00:45
J60	JUNCTION	2.72	10.73	5550.73	0	01:50
J61	JUNCTION	3.08	11.77	5560.77	0	01:47
J66	JUNCTION	0.66	5.98	5612.98	0	00:56
J67	JUNCTION	0.67	5.98	5635.98	0	00:54
J68	JUNCTION	0.42	3.96	5664.96	0	01:23
J69	JUNCTION	0.41	3.96	5690.96	0	01:16
J7	JUNCTION	3.86	12.07	5360.07	0	02:07
J70	JUNCTION	0.08	1.03	5717.03	0	00:56
J72	JUNCTION	0.06	1.04	5747.04	0	00:50
J73	JUNCTION	0.07	1.30	5772.30	0	00:37
J75	JUNCTION	3.08	11.79	5576.79	0	01:36
J76	JUNCTION	2.67	10.06	5589.06	0	01:49
J77	JUNCTION	2.64	10.07	5611.07	0	01:40
J78	JUNCTION	0.11	1.63	5712.63	0	00:36
J79	JUNCTION	0.02	0.36	5652.36	0	00:35
J80	JUNCTION	2.21	9.38	5626.38	0	01:39
J801	JUNCTION	2.70	11.60	5632.60	0	01:39
J81	JUNCTION	0.07	0.90	5653.90	0	00:39
J82	JUNCTION	0.07	1.18	5669.18	0	00:39
J83	JUNCTION	0.07	1.19	5717.19	0	00:36
J85	JUNCTION	2.68	11.60	5644.60	0	01:36
J86	JUNCTION	2.30	9.97	5665.97	0	01:33
J87	JUNCTION	0.39	3.05	5702.05	0	00:51
J89	JUNCTION	0.15	1.73	5755.73	0	01:06
J9	JUNCTION	3.78	12.43	5375.43	0	02:02
J90	JUNCTION	0.15	1.73	5767.73	0	01:03
J91	JUNCTION	0.05	0.81	5852.81	0	00:36
J95	JUNCTION	2.09	8.73	5678.73	0	01:33
J951	JUNCTION	2.05	8.74	5690.74	0	01:30
BDCOutfall	OUTFALL	0.00	0.00	5293.00	0	00:00
J35	DIVIDER	0.27	3.31	5616.31	0	00:25
J123	DIVIDER	1.73	6.73	5813.73	0	02:54
P101	STORAGE	1.17	16.06	5732.06	0	01:35
P70	STORAGE	0.85	8.94	5730.94	0	01:03
P88	STORAGE	6.45	36.06	5748.06	0	01:59
P90	STORAGE	0.82	12.27	5799.27	0	01:03
P105	STORAGE	2.90	15.99	5845.99	0	01:20
P102	STORAGE	2.50	10.23	5794.23	0	01:10
P123	STORAGE	4.44	27.77	5839.77	0	02:54
P162	STORAGE	2.21	9.15	5906.15	0	02:05
P165	STORAGE	2.81	29.03	5975.03	0	01:26
P69	STORAGE	1.30	13.68	5704.68	0	01:16
P135	STORAGE	0.42	7.95	5956.95	0	01:30
P141	STORAGE	3.13	22.82	5985.82	0	02:24

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Node Inflow Summary
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Node	Type	Maximum Lateral Inflow CFS	Maximum Total Inflow CFS	Time of Max Occurrence days	hr:min	Lateral Inflow Volume 10^6 gal	Total Inflow Volume 10^6 gal
1	JUNCTION	141.57	141.57	0	00:35	3.095	3.095
2	JUNCTION	326.13	326.13	0	00:34	6.052	6.052
3	JUNCTION	133.67	133.67	0	00:51	4.010	4.010
4	JUNCTION	70.63	70.63	0	00:47	1.973	1.973
5	JUNCTION	85.67	85.67	0	00:48	2.180	2.180
6	JUNCTION	169.80	169.80	0	00:36	3.695	3.695
7	JUNCTION	77.07	77.07	0	00:40	1.960	1.960
8	JUNCTION	70.88	70.88	0	00:35	1.654	1.654
9	JUNCTION	243.58	243.58	0	00:38	5.701	5.701
10	JUNCTION	197.51	197.51	0	00:46	5.310	5.310
11	JUNCTION	170.20	170.20	0	00:35	3.607	3.607
12	JUNCTION	69.44	69.44	0	00:37	1.720	1.720
13	JUNCTION	182.16	182.16	0	00:40	4.415	4.415
14	JUNCTION	161.48	161.48	0	00:42	4.154	4.154
15	JUNCTION	73.58	73.58	0	00:52	2.290	2.290
16	JUNCTION	68.37	68.37	0	00:54	2.267	2.267
17	JUNCTION	109.86	109.86	0	00:48	3.103	3.103
18	JUNCTION	79.93	79.93	0	00:41	1.838	1.838
19	JUNCTION	114.87	114.87	0	00:41	2.618	2.618
20	JUNCTION	209.28	209.28	0	00:50	6.334	6.334
21	JUNCTION	137.63	137.63	0	00:49	3.895	3.895
22	JUNCTION	178.34	178.34	0	00:39	4.167	4.167
23	JUNCTION	60.81	60.81	0	00:38	1.471	1.471
24	JUNCTION	245.96	245.96	0	00:36	5.194	5.194
25	JUNCTION	49.91	49.91	0	01:07	2.102	2.102
26	JUNCTION	21.93	21.93	0	01:10	1.074	1.074
27	JUNCTION	219.10	219.10	0	00:40	5.341	5.341
28	JUNCTION	175.17	175.17	0	00:43	4.208	4.208
30	JUNCTION	151.59	151.59	0	00:45	3.893	3.893
31	JUNCTION	155.62	155.62	0	00:45	4.032	4.032
32	JUNCTION	146.73	146.73	0	00:38	3.274	3.274
33	JUNCTION	185.38	185.38	0	00:46	4.862	4.862
34	JUNCTION	114.25	114.25	0	00:50	3.379	3.379
35	JUNCTION	260.34	260.34	0	00:46	6.916	6.916
36	JUNCTION	76.90	76.90	0	00:47	2.118	2.118
37	JUNCTION	397.71	397.71	0	00:35	8.362	8.362
40	JUNCTION	71.24	71.24	0	00:53	2.339	2.339
41	JUNCTION	126.54	126.54	0	00:37	3.030	3.030
42	JUNCTION	112.18	112.18	0	00:48	3.182	3.182
43	JUNCTION	91.50	91.50	0	00:37	1.980	1.980
44	JUNCTION	363.52	363.52	0	00:36	7.532	7.532
45	JUNCTION	94.68	94.68	0	00:37	2.308	2.308
46	JUNCTION	95.93	95.93	0	00:41	2.476	2.476
50	JUNCTION	75.48	75.48	0	00:37	1.733	1.733
51	JUNCTION	237.26	237.26	0	00:45	6.192	6.192
52	JUNCTION	125.82	125.82	0	00:39	3.072	3.072
53	JUNCTION	92.58	92.58	0	00:36	1.997	1.997
54	JUNCTION	183.53	183.53	0	00:38	4.320	4.320
55	JUNCTION	216.32	216.32	0	00:37	4.708	4.708
56	JUNCTION	191.21	191.21	0	00:37	4.411	4.411
57	JUNCTION	125.98	125.98	0	00:45	3.202	3.202

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60	JUNCTION	127.55	127.55	0	00:50	3.687	3.687	160	JUNCTION	207.03	207.03	0	00:43	5.386	5.386
61	JUNCTION	94.53	94.53	0	00:35	2.039	2.039	161	JUNCTION	240.45	240.45	0	00:41	6.075	6.075
65	JUNCTION	211.22	211.22	0	00:40	5.073	5.073	162	JUNCTION	169.94	169.94	0	00:37	3.780	3.780
66	JUNCTION	235.61	235.61	0	00:44	5.924	5.924	163	JUNCTION	85.53	85.53	0	00:36	1.900	1.900
67	JUNCTION	239.74	239.74	0	00:40	5.721	5.721	164	JUNCTION	147.07	147.07	0	00:44	3.846	3.846
68	JUNCTION	145.40	145.40	0	00:37	3.252	3.252	165	JUNCTION	172.45	172.45	0	00:39	3.964	3.964
69	JUNCTION	362.90	362.90	0	00:35	7.286	7.286	166	JUNCTION	210.07	210.07	0	00:46	5.256	5.256
70	JUNCTION	120.53	120.53	0	00:48	3.306	3.306	167	JUNCTION	62.54	62.54	0	00:57	2.180	2.180
71	JUNCTION	40.32	40.32	0	00:57	1.497	1.497	170	JUNCTION	209.91	209.91	0	00:50	6.028	6.028
72	JUNCTION	27.66	27.66	0	00:50	0.834	0.834	171	JUNCTION	144.01	144.01	0	00:41	3.509	3.509
73	JUNCTION	275.11	275.11	0	00:37	5.990	5.990	175	JUNCTION	109.43	109.43	0	00:50	3.222	3.222
75	JUNCTION	68.30	68.30	0	00:52	2.181	2.181	176	JUNCTION	215.04	215.04	0	00:35	4.443	4.443
76	JUNCTION	251.96	251.96	0	00:41	6.221	6.221	177	JUNCTION	84.39	84.39	0	00:52	2.446	2.446
77	JUNCTION	120.66	120.66	0	00:50	3.588	3.588	178	JUNCTION	41.66	41.66	0	00:57	1.384	1.384
78	JUNCTION	68.74	68.74	0	00:36	1.590	1.590	179	JUNCTION	110.49	110.49	0	00:57	3.609	3.609
79	JUNCTION	80.58	80.58	0	00:35	1.726	1.726	180	JUNCTION	36.61	36.61	0	00:53	1.221	1.221
80	JUNCTION	68.19	68.19	0	00:56	2.190	2.190	181	JUNCTION	144.86	144.86	0	00:57	5.292	5.292
81	JUNCTION	74.63	74.63	0	00:39	1.943	1.943	182	JUNCTION	180.72	180.72	0	00:47	4.871	4.871
82	JUNCTION	47.01	47.01	0	00:51	1.360	1.360	183	JUNCTION	51.38	51.38	0	00:55	1.665	1.665
83	JUNCTION	165.93	165.93	0	00:36	3.756	3.756	184	JUNCTION	145.60	145.60	0	00:57	4.724	4.724
85	JUNCTION	73.50	73.50	0	01:02	2.864	2.864	185	JUNCTION	77.89	77.89	0	01:00	2.780	2.780
86	JUNCTION	94.91	94.91	0	00:48	2.595	2.595	186	JUNCTION	51.88	51.88	0	00:57	1.781	1.781
87	JUNCTION	189.33	189.33	0	00:50	5.417	5.417	187	JUNCTION	105.27	105.27	0	00:52	3.018	3.018
88	JUNCTION	331.34	331.34	0	00:36	7.016	7.016	188	JUNCTION	93.11	93.11	0	00:50	2.466	2.466
89	JUNCTION	139.14	139.14	0	00:47	3.833	3.833	190	JUNCTION	82.32	82.32	0	01:04	3.069	3.069
90	JUNCTION	301.28	301.28	0	00:34	5.900	5.900	191	JUNCTION	90.30	90.30	0	01:05	3.459	3.459
91	JUNCTION	246.33	246.33	0	00:36	5.256	5.256	192	JUNCTION	122.20	122.20	0	00:53	3.578	3.578
95	JUNCTION	233.17	233.17	0	00:42	5.522	5.522	193	JUNCTION	73.85	73.85	0	01:07	2.942	2.942
96	JUNCTION	31.28	31.28	0	00:56	1.023	1.023	194	JUNCTION	57.60	57.60	0	00:56	1.780	1.780
100	JUNCTION	191.34	191.34	0	00:40	4.702	4.702	195	JUNCTION	138.77	138.77	0	00:53	3.843	3.843
101	JUNCTION	188.76	188.76	0	00:47	5.121	5.121	196	JUNCTION	59.25	59.25	0	01:05	2.172	2.172
102	JUNCTION	179.99	179.99	0	00:46	4.782	4.782	197	JUNCTION	85.66	85.66	0	00:58	2.754	2.754
103	JUNCTION	201.67	201.67	0	00:38	4.465	4.465	198	JUNCTION	73.83	73.83	0	01:03	2.594	2.594
104	JUNCTION	136.69	136.69	0	00:36	2.918	2.918	199	JUNCTION	144.04	144.04	0	00:53	4.357	4.357
105	JUNCTION	194.88	194.88	0	00:37	4.348	4.348	200	JUNCTION	63.35	63.35	0	00:57	2.027	2.027
106	JUNCTION	385.35	385.35	0	00:35	7.567	7.567	201	JUNCTION	114.74	114.74	0	00:51	3.041	3.041
107	JUNCTION	320.60	320.60	0	00:36	6.985	6.985	202	JUNCTION	198.14	198.14	0	00:37	4.238	4.238
108	JUNCTION	183.87	183.87	0	00:37	4.139	4.139	203	JUNCTION	136.03	136.03	0	00:47	3.673	3.673
110	JUNCTION	119.33	119.33	0	01:01	4.844	4.844	204	JUNCTION	68.89	68.89	0	00:59	2.456	2.456
111	JUNCTION	129.67	129.67	0	00:40	3.348	3.348	205	JUNCTION	96.50	96.50	0	00:57	3.095	3.095
112	JUNCTION	139.11	139.11	0	00:34	2.879	2.879	J1	JUNCTION	0.00	4630.44	0	02:25	0.000	632.463
113	JUNCTION	112.07	112.07	0	00:45	2.994	2.994	J100	JUNCTION	0.00	699.47	0	01:10	0.000	45.144
114	JUNCTION	218.66	218.66	0	00:39	5.182	5.182	J101	JUNCTION	0.00	612.85	0	01:35	0.000	40.441
115	JUNCTION	153.29	153.29	0	00:45	4.148	4.148	J102	JUNCTION	0.00	603.70	0	01:10	0.000	35.149
116	JUNCTION	78.06	78.06	0	00:51	2.353	2.353	J103	JUNCTION	0.00	564.26	0	00:48	0.000	30.493
117	JUNCTION	111.27	111.27	0	00:52	3.466	3.466	J105	JUNCTION	0.00	387.13	0	00:51	0.000	26.006
118	JUNCTION	69.12	69.12	0	00:48	1.828	1.828	J106	JUNCTION	0.00	385.35	0	00:35	0.000	7.567
119	JUNCTION	78.60	78.60	0	00:47	2.262	2.262	J107	JUNCTION	0.00	490.07	0	00:39	0.000	11.141
120	JUNCTION	304.39	304.39	0	00:36	6.461	6.461	J108	JUNCTION	0.00	183.87	0	00:37	0.000	4.139
121	JUNCTION	239.15	239.15	0	00:35	4.757	4.757	J11	JUNCTION	0.00	4611.62	0	01:58	0.000	601.857
122	JUNCTION	297.16	297.16	0	00:35	5.853	5.853	J110	JUNCTION	0.00	2016.07	0	01:29	0.000	291.503
123	JUNCTION	118.95	118.95	0	00:57	4.337	4.337	J112	JUNCTION	0.00	1961.21	0	01:19	0.000	283.071
125	JUNCTION	170.35	170.35	0	00:50	5.009	5.009	J113	JUNCTION	0.00	1936.91	0	01:18	0.000	280.207
126	JUNCTION	270.51	270.51	0	00:43	6.990	6.990	J114	JUNCTION	0.00	267.79	0	00:48	0.000	7.478
127	JUNCTION	332.86	332.86	0	00:37	7.263	7.263	J116	JUNCTION	0.00	1663.40	0	01:18	0.000	269.337
128	JUNCTION	236.98	236.98	0	00:39	5.404	5.404	J117	JUNCTION	0.00	754.22	0	03:00	0.000	110.840
130	JUNCTION	80.08	80.08	0	00:41	1.910	1.910	J119	JUNCTION	0.00	78.60	0	00:47	0.000	2.262
131	JUNCTION	278.01	278.01	0	00:35	5.530	5.530	J12	JUNCTION	0.00	69.44	0	00:37	0.000	1.720
132	JUNCTION	133.01	133.01	0	00:38	3.060	3.060	J120	JUNCTION	0.00	1041.62	0	00:48	0.000	151.875
133	JUNCTION	82.99	82.99	0	01:02	2.968	2.968	J1201	JUNCTION	0.00	828.65	0	00:54	0.000	145.402
134	JUNCTION	107.68	107.68	0	01:04	3.902	3.902	J121	JUNCTION	0.00	530.84	0	00:35	0.000	10.617
135	JUNCTION	145.12	145.12	0	00:39	3.415	3.415	J122	JUNCTION	0.00	297.16	0	00:35	0.000	5.853
136	JUNCTION	170.31	170.31	0	00:52	4.926	4.926	J125	JUNCTION	0.00	3773.50	0	01:34	0.000	235.386
137	JUNCTION	65.93	65.93	0	00:59	2.168	2.168	J126	JUNCTION	0.00	1379.50	0	01:12	0.000	94.837
138	JUNCTION	98.16	98.16	0	00:58	3.138	3.138	J127	JUNCTION	0.00	332.86	0	00:37	0.000	7.263
140	JUNCTION	131.40	131.40	0	00:46	3.454	3.454	J128	JUNCTION	0.00	1100.77	0	01:11	0.000	80.474
141	JUNCTION	348.92	348.92	0	00:36	7.136	7.136	J13	JUNCTION	0.00	4574.05	0	01:54	0.000	591.170
142	JUNCTION	79.27	79.27	0	00:55	2.595	2.595	J130	JUNCTION	0.00	624.90	0	01:08	0.000	29.292
143	JUNCTION	67.06	67.06	0	01:03	2.375	2.375	J131	JUNCTION	0.00	396.32	0	00:56	0.000	15.546
144	JUNCTION	76.04	76.04	0	01:01	2.566	2.566	J132	JUNCTION	0.00	274.84	0	00:58	0.000	9.970
145	JUNCTION	71.98	71.98	0	00:56	2.238	2.238	J134	JUNCTION	0.00	190.62	0	01:03	0.000	6.870
146	JUNCTION	87.54	87.54	0	01:06	3.276	3.276	J135	JUNCTION	0.00	274.75	0	01:30	0.000	13.737
147	JUNCTION	134.37	134.37	0	01:00	4.863	4.863	J136	JUNCTION	0.00	324.05	0	00:58	0.000	10.261
148	JUNCTION	84.75	84.75	0	00:56	2.679	2.679	J138	JUNCTION	0.00	164.06	0	00:58	0.000	5.306
149	JUNCTION	86.25	86.25	0	00:50	2.131	2.131	J140	JUNCTION	0.00	1005.54	0	01:10	0.000	75.043
150	JUNCTION	109.09	109.09	0	01:07	4.172	4.172	J141	JUNCTION	0.00	290.00	0	01:26	0.000	40.287
151	JUNCTION	109.72	109.72	0	00:56	3.245	3.245	J143	JUNCTION	0.00	214.29	0	01:04	0.000	7.203
152	JUNCTION	82.38	82.38	0	00:56	2.498	2.498	J144	JUNCTION	0.00	147.25	0	01:02	0.000	4.828

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J145	JUNCTION	0.00	71.98	0	00:56	0.000	2.238
J147	JUNCTION	0.00	943.59	0	01:12	0.000	33.133
J148	JUNCTION	0.00	464.05	0	01:01	0.000	14.778
J149	JUNCTION	0.00	86.25	0	00:50	0.000	2.131
J151	JUNCTION	0.00	297.86	0	01:01	0.000	9.940
J152	JUNCTION	0.00	82.38	0	00:56	0.000	2.498
J16	JUNCTION	0.00	4571.66	0	01:51	0.000	586.724
J160	JUNCTION	0.00	2614.23	0	01:34	0.000	135.473
J161	JUNCTION	0.00	265.28	0	00:45	0.000	27.035
J162	JUNCTION	0.00	145.54	0	02:05	0.000	20.951
J164	JUNCTION	0.00	294.39	0	00:45	0.000	17.154
J165	JUNCTION	0.00	176.19	0	01:26	0.000	11.407
J1651	JUNCTION	0.00	265.49	0	00:50	0.000	7.442
J166	JUNCTION	0.00	210.07	0	00:46	0.000	5.256
J167	JUNCTION	0.00	62.54	0	00:57	0.000	2.180
J17	JUNCTION	0.00	4537.24	0	01:43	0.000	577.813
J170	JUNCTION	0.00	2423.13	0	01:34	0.000	102.915
J1701	JUNCTION	0.00	2346.85	0	01:33	0.000	96.876
J171	JUNCTION	0.00	144.01	0	00:41	0.000	3.509
J175	JUNCTION	0.00	2300.47	0	01:31	0.000	93.266
J176	JUNCTION	0.00	346.68	0	00:55	0.000	11.938
J177	JUNCTION	0.00	231.34	0	01:00	0.000	7.480
J178	JUNCTION	0.00	41.66	0	00:57	0.000	1.384
J179	JUNCTION	0.00	110.49	0	00:57	0.000	3.609
J180	JUNCTION	0.00	2256.14	0	01:28	0.000	90.041
J181	JUNCTION	0.00	2004.91	0	01:29	0.000	76.812
J183	JUNCTION	0.00	1892.44	0	01:19	0.000	66.163
J187	JUNCTION	0.00	247.68	0	00:54	0.000	7.275
J188	JUNCTION	0.00	93.11	0	00:50	0.000	2.466
J19	JUNCTION	0.00	194.79	0	00:41	0.000	4.455
J190	JUNCTION	0.00	1735.92	0	01:18	0.000	59.763
J193	JUNCTION	0.00	1387.31	0	01:12	0.000	46.345
J195	JUNCTION	0.00	1141.66	0	01:05	0.000	36.217
J197	JUNCTION	0.00	957.78	0	01:03	0.000	30.572
J198	JUNCTION	0.00	814.11	0	01:02	0.000	25.647
J2	JUNCTION	0.00	4627.94	0	02:22	0.000	629.298
J20	JUNCTION	0.00	4485.84	0	01:42	0.000	570.239
J200	JUNCTION	0.00	744.39	0	00:58	0.000	23.013
J201	JUNCTION	0.00	542.78	0	00:54	0.000	16.600
J202	JUNCTION	0.00	198.14	0	00:37	0.000	4.238
J204	JUNCTION	0.00	275.45	0	00:58	0.000	9.288
J205	JUNCTION	0.00	96.50	0	00:57	0.000	3.095
J21	JUNCTION	0.00	4424.96	0	01:39	0.000	563.901
J211	JUNCTION	0.00	4382.37	0	01:35	0.000	558.449
J22	JUNCTION	0.00	178.34	0	00:39	0.000	4.167
J23	JUNCTION	0.00	60.81	0	00:38	0.000	1.471
J24	JUNCTION	0.00	245.96	0	00:36	0.000	5.194
J25	JUNCTION	0.00	4356.95	0	01:32	0.000	554.258
J26	JUNCTION	0.00	4309.79	0	01:29	0.000	546.804
J27	JUNCTION	0.00	219.10	0	00:40	0.000	5.341
J28	JUNCTION	0.00	175.17	0	00:43	0.000	4.208
J3	JUNCTION	0.00	4625.16	0	02:17	0.000	623.236
J30	JUNCTION	0.00	4247.45	0	01:51	0.000	536.013
J31	JUNCTION	0.00	1285.56	0	00:48	0.000	33.055
J32	JUNCTION	0.00	1134.93	0	00:46	0.000	29.020
J33	JUNCTION	0.00	799.00	0	00:45	0.000	15.049
J37	JUNCTION	0.00	397.71	0	00:35	0.000	8.362
J40	JUNCTION	0.00	4000.46	0	01:51	0.000	498.981
J41	JUNCTION	0.00	299.98	0	00:42	0.000	7.823
J43	JUNCTION	0.00	91.50	0	00:37	0.000	1.980
J44	JUNCTION	0.00	3939.97	0	01:44	0.000	483.623
J45	JUNCTION	0.00	186.14	0	00:41	0.000	4.787
J46	JUNCTION	0.00	95.93	0	00:41	0.000	2.476
J5	JUNCTION	0.00	4622.03	0	02:13	0.000	619.207
J51	JUNCTION	0.00	1073.88	0	00:52	0.000	27.978
J511	JUNCTION	0.00	746.20	0	00:47	0.000	18.671
J52	JUNCTION	0.00	125.82	0	00:39	0.000	3.072
J53	JUNCTION	0.00	92.58	0	00:36	0.000	1.997
J54	JUNCTION	0.00	664.12	0	00:45	0.000	16.669
J55	JUNCTION	0.00	495.32	0	00:44	0.000	12.349
J56	JUNCTION	0.00	298.83	0	00:40	0.000	7.614
J57	JUNCTION	0.00	125.98	0	00:45	0.000	3.202
J60	JUNCTION	0.00	3951.96	0	01:39	0.000	476.016
J61	JUNCTION	0.00	3648.28	0	01:42	0.000	442.598
J66	JUNCTION	0.00	783.06	0	00:54	0.000	33.857
J67	JUNCTION	0.00	573.79	0	00:54	0.000	27.930
J68	JUNCTION	0.00	390.65	0	01:06	0.000	22.208
J69	JUNCTION	0.00	342.41	0	01:16	0.000	18.901
J7	JUNCTION	0.00	4632.15	0	02:07	0.000	615.040
J70	JUNCTION	0.00	323.67	0	01:03	0.000	11.621
J72	JUNCTION	0.00	27.66	0	00:50	0.000	0.834
J73	JUNCTION	0.00	275.11	0	00:37	0.000	5.990
J75	JUNCTION	0.00	3661.62	0	01:36	0.000	440.517
J76	JUNCTION	0.00	3180.79	0	01:47	0.000	399.334
J77	JUNCTION	0.00	3160.53	0	01:40	0.000	392.887
J78	JUNCTION	0.00	68.74	0	00:36	0.000	1.590
J79	JUNCTION	0.00	80.58	0	00:35	0.000	1.726
J80	JUNCTION	0.00	3068.98	0	01:39	0.000	383.649
J801	JUNCTION	0.00	3037.06	0	01:38	0.000	381.451
J81	JUNCTION	0.00	74.63	0	00:39	0.000	1.943
J82	JUNCTION	0.00	205.18	0	00:40	0.000	5.122
J83	JUNCTION	0.00	165.93	0	00:36	0.000	3.756
J85	JUNCTION	0.00	2992.38	0	01:36	0.000	376.273
J86	JUNCTION	0.00	2949.98	0	01:33	0.000	373.290
J87	JUNCTION	0.00	303.91	0	00:51	0.000	27.450
J89	JUNCTION	0.00	377.76	0	00:58	0.000	15.007
J9	JUNCTION	0.00	4630.10	0	02:02	0.000	609.287
J90	JUNCTION	0.00	256.11	0	01:03	0.000	11.167
J91	JUNCTION	0.00	246.33	0	00:36	0.000	5.256
J95	JUNCTION	0.00	2719.18	0	01:32	0.000	343.246
J951	JUNCTION	0.00	2663.84	0	01:30	0.000	336.653
BDCOutfall	OUTFALL	0.00	4630.44	0	02:25	0.000	632.463
J35	DIVIDER	0.00	819.87	0	00:41	0.000	20.800
J123	DIVIDER	0.00	1499.69	0	02:54	0.000	241.555
P101	STORAGE	0.00	724.87	0	01:09	0.000	40.446
P70	STORAGE	0.00	414.01	0	00:40	0.000	10.794
P88	STORAGE	0.00	579.44	0	00:54	0.000	22.026
P90	STORAGE	0.00	524.93	0	00:37	0.000	11.169
P105	STORAGE	0.00	1030.74	0	00:42	0.000	23.136
P102	STORAGE	0.00	738.94	0	00:49	0.000	35.280
P123	STORAGE	0.00	4034.12	0	01:48	0.000	241.563
P162	STORAGE	0.00	448.96	0	00:45	0.000	20.951
P165	STORAGE	0.00	425.35	0	00:48	0.000	11.409
P69	STORAGE	0.00	477.04	0	01:02	0.000	18.905
P135	STORAGE	0.00	411.73	0	01:03	0.000	13.747
P141	STORAGE	0.00	1055.94	0	01:09	0.000	40.289

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Node Surcharge Summary
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Surcharging occurs when water rises above the top of the highest conduit.

Node	Type	Hours Surcharged	Max. Height Above Crown Feet	Min. Depth Below Rim Feet
1	JUNCTION	36.00	0.000	0.000
2	JUNCTION	36.00	0.000	0.000
3	JUNCTION	36.00	0.000	0.000
4	JUNCTION	36.00	0.000	0.000
5	JUNCTION	36.00	0.000	0.000
6	JUNCTION	36.00	0.000	0.000
7	JUNCTION	36.00	0.000	0.000
8	JUNCTION	36.00	0.000	0.000
9	JUNCTION	36.00	0.000	0.000
10	JUNCTION	36.00	0.000	0.000
11	JUNCTION	36.00	0.000	0.000
12	JUNCTION	36.00	0.000	0.000
13	JUNCTION	36.00	0.000	0.000
14	JUNCTION	36.00	0.000	0.000
15	JUNCTION	36.00	0.000	0.000
16	JUNCTION	36.00	0.000	0.000
17	JUNCTION	36.00	0.000	0.000
18	JUNCTION	36.00	0.000	0.000
19	JUNCTION	36.00	0.000	0.000
20	JUNCTION	36.00	0.000	0.000
21	JUNCTION	36.00	0.000	0.000
22	JUNCTION	36.00	0.000	0.000
23	JUNCTION	36.00	0.000	0.000
24	JUNCTION	36.00	0.000	0.000
25	JUNCTION	36.00	0.000	0.000
26	JUNCTION	36.00	0.000	0.000
27	JUNCTION	36.00	0.000	0.000
28	JUNCTION	36.00	0.000	0.000

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30	JUNCTION	36.00	0.000	0.000
31	JUNCTION	36.00	0.000	0.000
32	JUNCTION	36.00	0.000	0.000
33	JUNCTION	36.00	0.000	0.000
34	JUNCTION	36.00	0.000	0.000
35	JUNCTION	36.00	0.000	0.000
36	JUNCTION	36.00	0.000	0.000
37	JUNCTION	36.00	0.000	0.000
40	JUNCTION	36.00	0.000	0.000
41	JUNCTION	36.00	0.000	0.000
42	JUNCTION	36.00	0.000	0.000
43	JUNCTION	36.00	0.000	0.000
44	JUNCTION	36.00	0.000	0.000
45	JUNCTION	36.00	0.000	0.000
46	JUNCTION	36.00	0.000	0.000
50	JUNCTION	36.00	0.000	0.000
51	JUNCTION	36.00	0.000	0.000
52	JUNCTION	36.00	0.000	0.000
53	JUNCTION	36.00	0.000	0.000
54	JUNCTION	36.00	0.000	0.000
55	JUNCTION	36.00	0.000	0.000
56	JUNCTION	36.00	0.000	0.000
57	JUNCTION	36.00	0.000	0.000
60	JUNCTION	36.00	0.000	0.000
61	JUNCTION	36.00	0.000	0.000
65	JUNCTION	36.00	0.000	0.000
66	JUNCTION	36.00	0.000	0.000
67	JUNCTION	36.00	0.000	0.000
68	JUNCTION	36.00	0.000	0.000
69	JUNCTION	36.00	0.000	0.000
70	JUNCTION	36.00	0.000	0.000
71	JUNCTION	36.00	0.000	0.000
72	JUNCTION	36.00	0.000	0.000
73	JUNCTION	36.00	0.000	0.000
75	JUNCTION	36.00	0.000	0.000
76	JUNCTION	36.00	0.000	0.000
77	JUNCTION	36.00	0.000	0.000
78	JUNCTION	36.00	0.000	0.000
79	JUNCTION	36.00	0.000	0.000
80	JUNCTION	36.00	0.000	0.000
81	JUNCTION	36.00	0.000	0.000
82	JUNCTION	36.00	0.000	0.000
83	JUNCTION	36.00	0.000	0.000
85	JUNCTION	36.00	0.000	0.000
86	JUNCTION	36.00	0.000	0.000
87	JUNCTION	36.00	0.000	0.000
88	JUNCTION	36.00	0.000	0.000
89	JUNCTION	36.00	0.000	0.000
90	JUNCTION	36.00	0.000	0.000
91	JUNCTION	36.00	0.000	0.000
95	JUNCTION	36.00	0.000	0.000
96	JUNCTION	36.00	0.000	0.000
100	JUNCTION	36.00	0.000	0.000
101	JUNCTION	36.00	0.000	0.000
102	JUNCTION	36.00	0.000	0.000
103	JUNCTION	36.00	0.000	0.000
104	JUNCTION	36.00	0.000	0.000
105	JUNCTION	36.00	0.000	0.000
106	JUNCTION	36.00	0.000	0.000
107	JUNCTION	36.00	0.000	0.000
108	JUNCTION	36.00	0.000	0.000
110	JUNCTION	36.00	0.000	0.000
111	JUNCTION	36.00	0.000	0.000
112	JUNCTION	36.00	0.000	0.000
113	JUNCTION	36.00	0.000	0.000
114	JUNCTION	36.00	0.000	0.000
115	JUNCTION	36.00	0.000	0.000
116	JUNCTION	36.00	0.000	0.000
117	JUNCTION	36.00	0.000	0.000
118	JUNCTION	36.00	0.000	0.000
119	JUNCTION	36.00	0.000	0.000
120	JUNCTION	36.00	0.000	0.000
121	JUNCTION	36.00	0.000	0.000
122	JUNCTION	36.00	0.000	0.000
123	JUNCTION	36.00	0.000	0.000
125	JUNCTION	36.00	0.000	0.000
126	JUNCTION	36.00	0.000	0.000
127	JUNCTION	36.00	0.000	0.000
128	JUNCTION	36.00	0.000	0.000
130	JUNCTION	36.00	0.000	0.000
131	JUNCTION	36.00	0.000	0.000
132	JUNCTION	36.00	0.000	0.000
133	JUNCTION	36.00	0.000	0.000
134	JUNCTION	36.00	0.000	0.000
135	JUNCTION	36.00	0.000	0.000
136	JUNCTION	36.00	0.000	0.000
137	JUNCTION	36.00	0.000	0.000
138	JUNCTION	36.00	0.000	0.000
140	JUNCTION	36.00	0.000	0.000
141	JUNCTION	36.00	0.000	0.000
142	JUNCTION	36.00	0.000	0.000
143	JUNCTION	36.00	0.000	0.000
144	JUNCTION	36.00	0.000	0.000
145	JUNCTION	36.00	0.000	0.000
146	JUNCTION	36.00	0.000	0.000
147	JUNCTION	36.00	0.000	0.000
148	JUNCTION	36.00	0.000	0.000
149	JUNCTION	36.00	0.000	0.000
150	JUNCTION	36.00	0.000	0.000
151	JUNCTION	36.00	0.000	0.000
152	JUNCTION	36.00	0.000	0.000
160	JUNCTION	36.00	0.000	0.000
161	JUNCTION	36.00	0.000	0.000
162	JUNCTION	36.00	0.000	0.000
163	JUNCTION	36.00	0.000	0.000
164	JUNCTION	36.00	0.000	0.000
165	JUNCTION	36.00	0.000	0.000
166	JUNCTION	36.00	0.000	0.000
167	JUNCTION	36.00	0.000	0.000
170	JUNCTION	36.00	0.000	0.000
171	JUNCTION	36.00	0.000	0.000
175	JUNCTION	36.00	0.000	0.000
176	JUNCTION	36.00	0.000	0.000
177	JUNCTION	36.00	0.000	0.000
178	JUNCTION	36.00	0.000	0.000
179	JUNCTION	36.00	0.000	0.000
180	JUNCTION	36.00	0.000	0.000
181	JUNCTION	36.00	0.000	0.000
182	JUNCTION	36.00	0.000	0.000
183	JUNCTION	36.00	0.000	0.000
184	JUNCTION	36.00	0.000	0.000
185	JUNCTION	36.00	0.000	0.000
186	JUNCTION	36.00	0.000	0.000
187	JUNCTION	36.00	0.000	0.000
188	JUNCTION	36.00	0.000	0.000
190	JUNCTION	36.00	0.000	0.000
191	JUNCTION	36.00	0.000	0.000
192	JUNCTION	36.00	0.000	0.000
193	JUNCTION	36.00	0.000	0.000
194	JUNCTION	36.00	0.000	0.000
195	JUNCTION	36.00	0.000	0.000
196	JUNCTION	36.00	0.000	0.000
197	JUNCTION	36.00	0.000	0.000
198	JUNCTION	36.00	0.000	0.000
199	JUNCTION	36.00	0.000	0.000
200	JUNCTION	36.00	0.000	0.000
201	JUNCTION	36.00	0.000	0.000
202	JUNCTION	36.00	0.000	0.000
203	JUNCTION	36.00	0.000	0.000
204	JUNCTION	36.00	0.000	0.000
205	JUNCTION	36.00	0.000	0.000
P88	STORAGE	7.44	21.529	13.941
P90	STORAGE	2.97	7.988	17.731
P105	STORAGE	1.62	3.612	14.015
P123	STORAGE	6.44	15.811	22.233
P165	STORAGE	3.97	15.776	3.665
P141	STORAGE	0.25	0.027	3.178

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Node Flooding Summary
****

No nodes were flooded.

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Storage Volume Summary
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Storage Unit	Average Volume 1000 ft3	Avg Pcnt Full	E&I Pcnt Loss	Maximum Volume 1000 ft3	Max Pcnt Full	Time of Max Occurrence days hr:min	Maximum Outflow CFS
P101	11.997	1	0	365.197	32	0 01:35	612.85
P70	33.726	0	0	522.738	1	0 01:03	297.23
P88	166.779	4	0	1436.251	37	0 01:59	122.47
P90	31.623	1	0	601.997	22	0 01:03	256.11
P105	74.349	1	0	1441.169	16	0 01:20	309.85
P102	36.976	1	0	485.034	8	0 01:10	603.70
P123	1331.104	2	0	12252.727	21	0 02:54	1499.69
P162	249.181	1	0	1279.304	7	0 02:05	145.54
P165	51.063	5	0	776.725	70	0 01:26	176.19
P69	31.143	1	0	523.623	25	0 01:16	342.41
P135	16.365	0	0	443.590	14	0 01:30	274.75
P141	274.230	6	0	2933.569	69	0 02:24	290.00

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Outfall Loading Summary
****

Outfall Node	Flow Freq. Pcnt.	Avg. Flow CFS	Max. Flow CFS	Total Volume 10^6 gal
BDCOutfall	99.62	654.87	4630.44	632.463
System	99.62	654.87	4630.44	632.463

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Link Flow Summary
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Link	Type	Maximum |Flow| CFS	Time of Max Occurrence days hr:min	Maximum |Veloc| ft/sec	Max/ Full Flow	Max/ Full Depth
C35	CONDUIT	199.92	0 01:33	16.46	0.90	0.74
D1	DUMMY	141.57	0 00:35			
D10	DUMMY	197.51	0 00:46			
D100	DUMMY	191.34	0 00:40			
D101	DUMMY	188.76	0 00:47			
D102	DUMMY	179.99	0 00:46			
D103	DUMMY	201.67	0 00:38			
D104	DUMMY	136.69	0 00:36			
D105	DUMMY	194.88	0 00:37			
D106	DUMMY	385.35	0 00:35			
D107	DUMMY	320.60	0 00:36			
D108	DUMMY	183.87	0 00:37			
D11	DUMMY	170.20	0 00:35			
D110	DUMMY	119.33	0 01:01			
D111	DUMMY	129.67	0 00:40			
D112	DUMMY	139.11	0 00:34			
D113	DUMMY	112.07	0 00:45			
D114	DUMMY	218.66	0 00:39			
D115	DUMMY	153.29	0 00:45			
D116	DUMMY	78.06	0 00:51			
D117	DUMMY	111.27	0 00:52			
D118	DUMMY	69.12	0 00:48			
D119	DUMMY	78.60	0 00:47			
D12	DUMMY	69.44	0 00:37			
D120	DUMMY	304.39	0 00:36			
D121	DUMMY	239.15	0 00:35			
D122	DUMMY	297.16	0 00:35			
D123	DUMMY	118.95	0 00:57			
D125	DUMMY	170.35	0 00:50			
D126	DUMMY	270.51	0 00:43			
D127	DUMMY	332.86	0 00:37			
D128	DUMMY	236.98	0 00:39			
D13	DUMMY	182.16	0 00:40			
D130	DUMMY	80.08	0 00:41			
D131	DUMMY	278.01	0 00:35			
D132	DUMMY	133.01	0 00:38			
D133	DUMMY	82.99	0 01:02			
D134	DUMMY	107.68	0 01:04			
D135	DUMMY	145.12	0 00:39			
D136	DUMMY	170.31	0 00:52			
D137	DUMMY	65.93	0 00:59			
D138	DUMMY	98.16	0 00:58			
D14	DUMMY	161.48	0 00:42			
D140	DUMMY	131.40	0 00:46			
D141	DUMMY	348.92	0 00:36			
D142	DUMMY	79.27	0 00:55			
D143	DUMMY	67.06	0 01:03			
D144	DUMMY	76.04	0 01:01			
D145	DUMMY	71.98	0 00:56			
D146	DUMMY	87.54	0 01:06			
D147	DUMMY	134.37	0 01:00			
D148	DUMMY	84.75	0 00:56			
D149	DUMMY	86.25	0 00:50			
D15	DUMMY	73.58	0 00:52			
D150	DUMMY	109.09	0 01:07			
D151	DUMMY	109.72	0 00:56			
D152	DUMMY	82.38	0 00:56			
D16	DUMMY	68.37	0 00:54			
D160	DUMMY	207.03	0 00:43			
D161	DUMMY	240.45	0 00:41			
D162	DUMMY	169.94	0 00:37			
D163	DUMMY	85.53	0 00:36			
D164	DUMMY	147.07	0 00:44			
D165	DUMMY	172.45	0 00:39			
D166	DUMMY	210.07	0 00:46			
D167	DUMMY	62.54	0 00:57			
D17	DUMMY	109.86	0 00:48			
D170	DUMMY	209.91	0 00:50			
D171	DUMMY	144.01	0 00:41			
D175	DUMMY	109.43	0 00:50			
D176	DUMMY	215.04	0 00:35			
D177	DUMMY	84.39	0 00:52			
D178	DUMMY	41.66	0 00:57			
D179	DUMMY	110.49	0 00:57			
D18	DUMMY	79.93	0 00:41			
D180	DUMMY	36.61	0 00:53			
D181	DUMMY	144.86	0 00:57			
D182	DUMMY	180.72	0 00:47			
D183	DUMMY	51.38	0 00:55			
D184	DUMMY	145.60	0 00:57			
D185	DUMMY	77.89	0 01:00			
D186	DUMMY	51.88	0 00:57			
D187	DUMMY	105.27	0 00:52			
D188	DUMMY	93.11	0 00:50			
D19	DUMMY	114.87	0 00:41			
D190	DUMMY	82.32	0 01:04			
D191	DUMMY	90.30	0 01:05			
D192	DUMMY	122.20	0 00:53			
D193	DUMMY	73.85	0 01:07			
D194	DUMMY	57.60	0 00:56			
D195	DUMMY	138.77	0 00:53			
D196	DUMMY	59.25	0 01:05			
D197	DUMMY	85.66	0 00:58			
D198	DUMMY	73.83	0 01:03			
D199	DUMMY	144.04	0 00:53			
D2	DUMMY	326.13	0 00:34			
D20	DUMMY	209.28	0 00:50			
D200	DUMMY	63.35	0 00:57			
D201	DUMMY	114.74	0 00:51			
D202	DUMMY	198.14	0 00:37			
D203	DUMMY	136.03	0 00:47			
D204	DUMMY	68.89	0 00:59			
D205	DUMMY	96.50	0 00:57			
D21	DUMMY	137.63	0 00:49			
D22	DUMMY	178.34	0 00:39			
D23	DUMMY	60.81	0 00:38			
D24	DUMMY	245.96	0 00:36			
D25	DUMMY	49.91	0 01:07			
D26	DUMMY	21.93	0 01:10			
D27	DUMMY	219.10	0 00:40			

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D28	DUMMY	175.17	0	00:43			
D3	DUMMY	133.67	0	00:51			
D30	DUMMY	151.59	0	00:45			
D31	DUMMY	155.62	0	00:45			
D32	DUMMY	146.73	0	00:38			
D33	DUMMY	185.38	0	00:46			
D34	DUMMY	114.25	0	00:50			
D35	DUMMY	260.34	0	00:46			
D36	DUMMY	76.90	0	00:47			
D37	DUMMY	397.71	0	00:35			
D4	DUMMY	70.63	0	00:47			
D40	DUMMY	71.24	0	00:53			
D41	DUMMY	126.54	0	00:37			
D42	DUMMY	112.18	0	00:48			
D43	DUMMY	91.50	0	00:37			
D44	DUMMY	363.52	0	00:36			
D45	DUMMY	94.68	0	00:37			
D46	DUMMY	95.93	0	00:41			
D5	DUMMY	85.67	0	00:48			
D50	DUMMY	75.48	0	00:37			
D51	DUMMY	237.26	0	00:45			
D52	DUMMY	125.82	0	00:39			
D53	DUMMY	92.58	0	00:36			
D54	DUMMY	183.53	0	00:38			
D55	DUMMY	216.32	0	00:37			
D56	DUMMY	191.21	0	00:37			
D57	DUMMY	125.98	0	00:45			
D6	DUMMY	169.80	0	00:36			
D60	DUMMY	127.55	0	00:50			
D61	DUMMY	94.53	0	00:35			
D65	DUMMY	211.22	0	00:40			
D66	DUMMY	235.61	0	00:44			
D67	DUMMY	239.74	0	00:40			
D68	DUMMY	145.40	0	00:37			
D69	DUMMY	362.90	0	00:35			
D7	DUMMY	77.07	0	00:40			
D70	DUMMY	120.53	0	00:48			
D71	DUMMY	40.32	0	00:57			
D72	DUMMY	27.66	0	00:50			
D73	DUMMY	275.11	0	00:37			
D75	DUMMY	68.30	0	00:52			
D76	DUMMY	251.96	0	00:41			
D77	DUMMY	120.66	0	00:50			
D78	DUMMY	68.74	0	00:36			
D79	DUMMY	80.58	0	00:35			
D8	DUMMY	70.88	0	00:35			
D80	DUMMY	68.19	0	00:56			
D81	DUMMY	74.63	0	00:39			
D82	DUMMY	47.01	0	00:51			
D83	DUMMY	165.93	0	00:36			
D85	DUMMY	73.50	0	01:02			
D86	DUMMY	94.91	0	00:48			
D87	DUMMY	189.33	0	00:50			
D88	DUMMY	331.34	0	00:36			
D89	DUMMY	139.14	0	00:47			
D9	DUMMY	243.58	0	00:38			
D90	DUMMY	301.28	0	00:34			
D91	DUMMY	246.33	0	00:36			
D95	DUMMY	233.17	0	00:42			
D96	DUMMY	31.28	0	00:56			
L1	DUMMY	4630.44	0	02:25			
L100	CHANNEL	698.95	0	01:11	6.24	0.03	0.19
L101	CHANNEL	612.82	0	01:36	7.96	0.03	0.27
L102	CHANNEL	601.11	0	01:19	5.14	0.02	0.25
L103	CHANNEL	562.83	0	00:50	5.30	0.01	0.19
L105	CHANNEL	386.92	0	00:55	>50.00	0.01	0.16
L106	CHANNEL	368.63	0	00:39	>50.00	0.01	0.13
L107	CHANNEL	482.08	0	00:42	>50.00	0.03	0.19
L108	CHANNEL	181.75	0	00:41	5.69	0.00	0.06
L11	CHANNEL	4600.75	0	02:02	6.01	0.11	0.45
L110	CHANNEL	2015.65	0	01:31	9.34	0.03	0.20
L112	CHANNEL	1900.99	0	01:30	4.32	0.03	0.39
L113	CHANNEL	1935.70	0	01:19	4.80	0.01	0.27
L114	CHANNEL	232.90	0	01:10	1.96	0.10	0.37
L116	CHANNEL	1662.32	0	01:19	5.84	0.13	0.52
L117	CHANNEL	754.22	0	03:01	5.90	0.23	0.57
L118	CHANNEL	749.77	0	03:02	10.03	0.12	0.44
L119	CHANNEL	75.08	0	01:03	3.45	0.00	0.06
L12	CHANNEL	65.06	0	00:48	>50.00	0.01	0.07
L120	CHANNEL	1027.01	0	00:58	4.88	0.08	0.34
L1201	CHANNEL	827.94	0	00:57	4.59	0.07	0.30
L121	CHANNEL	517.53	0	00:39	8.24	0.04	0.31
L122	CHANNEL	295.12	0	00:36	6.45	0.01	0.09
L123	CHANNEL	749.84	0	02:55	5.20	0.03	0.32
L125	CHANNEL	3969.85	0	01:48	5.66	0.39	0.76
L126	CHANNEL	1378.07	0	01:15	5.61	0.08	0.38
L127	CHANNEL	316.07	0	00:44	10.65	0.03	0.22
L128	CHANNEL	1088.25	0	01:19	4.82	0.15	0.52
L13	CHANNEL	4569.58	0	01:58	7.26	0.09	0.42
L130	CHANNEL	623.63	0	01:11	4.35	0.08	0.36
L131	CHANNEL	396.24	0	00:57	4.57	0.07	0.33
L132	CHANNEL	271.57	0	01:08	3.60	0.00	0.09
L134	CHANNEL	190.33	0	01:10	2.93	0.00	0.06
L135	CHANNEL	274.74	0	01:32	2.20	0.01	0.11
L136	CHANNEL	320.15	0	01:09	3.90	0.00	0.07
L138	CHANNEL	163.33	0	01:04	5.45	0.00	0.09
L140	CHANNEL	1000.99	0	01:15	6.92	0.18	0.54
L141	CHANNEL	290.36	0	03:57	6.34	0.02	0.19
L143	CHANNEL	212.89	0	01:12	4.65	0.01	0.12
L144	CHANNEL	147.23	0	01:04	5.75	0.02	0.21
L145	CHANNEL	71.36	0	01:03	3.73	0.00	0.08
L147	CHANNEL	942.21	0	01:15	12.07	0.02	0.23
L148	CHANNEL	451.13	0	01:15	4.56	0.00	0.11
L149	CHANNEL	84.95	0	00:55	3.16	0.00	0.07
L151	CHANNEL	297.79	0	01:03	3.50	0.01	0.12
L152	CHANNEL	81.32	0	01:04	5.50	0.00	0.05
L16	CHANNEL	4559.73	0	01:55	4.03	0.04	0.46
L160	CHANNEL	2604.31	0	01:39	5.16	0.16	0.55
L161	CHANNEL	247.52	0	00:58	2.80	0.01	0.11
L162	CHANNEL	145.42	0	02:10	3.66	0.00	0.08
L164	CHANNEL	293.58	0	00:48	4.18	0.01	0.10
L165	CHANNEL	175.85	0	01:29	4.44	0.00	0.07
L1651	CHANNEL	265.30	0	00:52	3.68	0.01	0.16
L166	CHANNEL	209.92	0	00:47	5.54	0.01	0.13
L167	CHANNEL	62.43	0	01:00	3.90	0.00	0.05
L17	CHANNEL	4508.81	0	01:51	5.38	0.14	0.54
L170	CHANNEL	2423.07	0	01:35	9.36	0.14	0.42
L1701	CHANNEL	2345.99	0	01:35	7.88	0.28	0.63
L171	CHANNEL	136.98	0	00:54	2.94	0.02	0.18
L175	CHANNEL	2297.62	0	01:34	5.89	0.29	0.61
L176	CHANNEL	341.83	0	01:02	3.98	0.15	0.48
L177	CHANNEL	230.61	0	01:06	6.44	0.03	0.17
L178	CHANNEL	41.27	0	01:07	2.32	0.01	0.11
L179	CHANNEL	110.03	0	01:03	5.75	0.01	0.16
L180	CHANNEL	2253.46	0	01:31	5.60	0.22	0.51
L181	CHANNEL	2000.68	0	01:31	7.11	0.04	0.28
L183	CHANNEL	1837.45	0	01:29	5.87	0.04	0.25
L187	CHANNEL	241.07	0	01:05	3.96	0.01	0.13
L188	CHANNEL	91.55	0	00:56	3.37	0.00	0.07
L19	CHANNEL	193.49	0	00:52	7.43	0.00	0.13
L190	CHANNEL	1733.88	0	01:19	5.19	0.07	0.34
L193	CHANNEL	1369.50	0	01:19	6.96	0.02	0.23
L195	CHANNEL	1123.89	0	01:13	6.79	0.00	0.07
L197	CHANNEL	956.58	0	01:06	4.43	0.01	0.14
L198	CHANNEL	813.90	0	01:03	4.81	0.00	0.10
L2	CHANNEL	4622.79	0	02:25	5.91	0.07	0.38
L20	CHANNEL	4482.94	0	01:44	4.32	0.18	0.64
L200	CHANNEL	740.29	0	01:02	4.39	0.01	0.10
L201	CHANNEL	540.21	0	00:58	5.43	0.02	0.20
L202	CHANNEL	190.72	0	00:46	4.10	0.01	0.14
L204	CHANNEL	274.52	0	01:02	4.01	0.02	0.15
L205	CHANNEL	94.81	0	01:10	2.43	0.02	0.18
L21	CHANNEL	4420.89	0	01:42	3.55	0.12	0.51
L211	CHANNEL	4371.47	0	01:39	4.82	0.16	0.57
L22	CHANNEL	177.07	0	00:46	3.75	0.04	0.30
L23	CHANNEL	60.50	0	00:42	5.33	0.00	0.06
L24	CHANNEL	244.37	0	00:38	6.01	0.00	0.14
L25	CHANNEL	4353.09	0	01:35	7.09	0.04	0.39
L26	CHANNEL	4290.65	0	01:33	5.31	0.09	0.52
L27	CHANNEL	219.05	0	00:40	6.46	0.00	0.07
L28	CHANNEL	174.44	0	00:46	>50.00	0.11	0.45
L3	CHANNEL	4615.96	0	02:22	4.27	0.03	0.32
L30	CHANNEL	4225.48	0	01:57	4.49	0.03	0.42
L31	CHANNEL	1263.63	0	00:54	5.91	0.15	0.58
L32	CHANNEL	1132.30	0	00:48	5.12	0.04	0.35
L33	CHANNEL	798.33	0	00:47	>50.00	0.04	0.20

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L35	CHANNEL	613.67	0	00:45	10.67	0.00	0.06	D107	0.01	0.01	0.01	36.00	0.01
L37	CHANNEL	384.72	0	00:39	15.28	0.03	0.24	D108	0.01	0.01	0.01	36.00	0.01
L40	CHANNEL	3997.96	0	01:54	6.19	0.13	0.51	D11	0.01	0.01	0.01	36.00	0.01
L41	CHANNEL	299.90	0	00:43	9.36	0.01	0.10	D110	0.01	0.01	0.01	36.00	0.01
L43	CHANNEL	88.60	0	00:46	6.21	0.01	0.12	D111	0.01	0.01	0.01	36.00	0.01
L44	CHANNEL	3914.06	0	01:52	4.20	0.01	0.17	D112	0.01	0.01	0.01	36.00	0.01
L45	CHANNEL	184.75	0	00:45	8.59	0.02	0.18	D113	0.01	0.01	0.01	36.00	0.01
L46	CHANNEL	95.67	0	00:44	7.42	0.01	0.15	D114	0.01	0.01	0.01	36.00	0.01
L5	CHANNEL	4613.56	0	02:17	5.26	0.03	0.22	D115	0.01	0.01	0.01	36.00	0.01
L51	CHANNEL	1068.21	0	00:54	9.18	0.01	0.17	D116	0.01	0.01	0.01	36.00	0.01
L511	CHANNEL	730.60	0	00:52	9.32	0.01	0.19	D117	0.01	0.01	0.01	36.00	0.01
L52	CHANNEL	121.43	0	00:39	11.46	0.47	0.65	D118	0.01	0.01	0.01	36.00	0.01
L53	CHANNEL	92.49	0	00:37	5.39	0.00	0.07	D119	0.01	0.01	0.01	36.00	0.01
L54	CHANNEL	661.61	0	00:48	5.79	0.01	0.20	D12	0.01	0.01	0.01	36.00	0.01
L55	CHANNEL	494.76	0	00:46	>50.00	0.00	0.09	D120	0.01	0.01	0.01	36.00	0.01
L56	CHANNEL	294.40	0	00:46	6.45	0.01	0.13	D121	0.01	0.01	0.01	36.00	0.01
L57	CHANNEL	125.64	0	00:48	7.24	0.02	0.17	D122	0.01	0.01	0.01	36.00	0.01
L60	CHANNEL	3913.55	0	01:45	6.04	0.03	0.26	D123	0.01	0.01	0.01	36.00	0.01
L61	CHANNEL	3648.60	0	01:50	6.28	0.08	0.41	D125	0.01	0.01	0.01	36.00	0.01
L66	CHANNEL	768.70	0	01:00	5.08	0.01	0.16	D126	0.01	0.01	0.01	36.00	0.01
L67	CHANNEL	572.88	0	00:56	7.11	0.01	0.21	D127	0.01	0.01	0.01	36.00	0.01
L68	CHANNEL	390.60	0	01:07	6.05	0.02	0.20	D128	0.01	0.01	0.01	36.00	0.01
L69	CHANNEL	341.54	0	01:23	5.15	0.01	0.14	D13	0.01	0.01	0.01	36.00	0.01
L7	CHANNEL	4612.88	0	02:13	5.40	0.02	0.29	D130	0.01	0.01	0.01	36.00	0.01
L70	CHANNEL	323.38	0	01:04	4.30	0.00	0.03	D131	0.01	0.01	0.01	36.00	0.01
L72	CHANNEL	27.33	0	00:56	>50.00	0.00	0.03	D132	0.01	0.01	0.01	36.00	0.01
L73	CHANNEL	274.64	0	00:37	6.79	0.01	0.12	D133	0.01	0.01	0.01	36.00	0.01
L75	CHANNEL	3641.21	0	01:47	6.00	0.07	0.46	D134	0.01	0.01	0.01	36.00	0.01
L76	CHANNEL	3180.35	0	01:48	8.50	0.01	0.25	D135	0.01	0.01	0.01	36.00	0.01
L77	CHANNEL	3155.46	0	01:49	5.19	0.07	0.36	D136	0.01	0.01	0.01	36.00	0.01
L78	CHANNEL	47.91	0	01:14	1.75	0.03	0.26	D137	0.01	0.01	0.01	36.00	0.01
L79	CHANNEL	80.31	0	00:36	7.01	0.01	0.08	D138	0.01	0.01	0.01	36.00	0.01
L80	CHANNEL	3068.47	0	01:42	7.04	0.16	0.52	D14	0.01	0.01	0.01	36.00	0.01
L801	CHANNEL	3036.63	0	01:40	4.93	0.38	0.66	D140	0.01	0.01	0.01	36.00	0.01
L81	CHANNEL	73.83	0	00:43	>50.00	0.01	0.12	D141	0.01	0.01	0.01	36.00	0.01
L82	CHANNEL	201.22	0	00:46	4.31	0.03	0.22	D142	0.01	0.01	0.01	36.00	0.01
L83	CHANNEL	163.36	0	00:39	4.85	0.00	0.11	D143	0.01	0.01	0.01	36.00	0.01
L85	CHANNEL	2990.45	0	01:39	6.51	0.41	0.73	D144	0.01	0.01	0.01	36.00	0.01
L86	CHANNEL	2945.01	0	01:37	6.06	0.10	0.45	D145	0.01	0.01	0.01	36.00	0.01
L87	CONDUIT	303.85	0	00:52	>50.00	0.69	0.61	D146	0.01	0.01	0.01	36.00	0.01
L89	CHANNEL	377.29	0	01:00	5.75	0.01	0.09	D147	0.01	0.01	0.01	36.00	0.01
L9	CHANNEL	4615.97	0	02:07	5.73	0.03	0.28	D148	0.01	0.01	0.01	36.00	0.01
L90	CHANNEL	256.04	0	01:06	3.60	0.00	0.05	D149	0.01	0.01	0.01	36.00	0.01
L91	CHANNEL	241.73	0	00:39	8.58	0.03	0.19	D15	0.01	0.01	0.01	36.00	0.01
L95	CHANNEL	2717.74	0	01:34	6.60	0.08	0.41	D150	0.01	0.01	0.01	36.00	0.01
L951	CHANNEL	2660.86	0	01:33	5.45	0.17	0.47	D151	0.01	0.01	0.01	36.00	0.01
O101	DUMMY	612.85	0	01:35				D152	0.01	0.01	0.01	36.00	0.01
O70	DUMMY	297.23	0	01:03				D16	0.01	0.01	0.01	36.00	0.01
O90	DUMMY	256.11	0	01:03				D160	0.01	0.01	0.01	36.00	0.01
O105	DUMMY	309.85	0	01:20				D161	0.01	0.01	0.01	36.00	0.01
O102	DUMMY	603.70	0	01:10				D162	0.01	0.01	0.01	36.00	0.01
O123	DUMMY	1499.69	0	02:54				D163	0.01	0.01	0.01	36.00	0.01
O162	DUMMY	145.54	0	02:05				D164	0.01	0.01	0.01	36.00	0.01
O165	DUMMY	176.19	0	01:26				D165	0.01	0.01	0.01	36.00	0.01
O88	DUMMY	122.47	0	01:59				D166	0.01	0.01	0.01	36.00	0.01
O69	DUMMY	342.41	0	01:16				D167	0.01	0.01	0.01	36.00	0.01
O135	DUMMY	274.75	0	01:30				D17	0.01	0.01	0.01	36.00	0.01
O141	DUMMY	290.00	0	01:26				D170	0.01	0.01	0.01	36.00	0.01
								D171	0.01	0.01	0.01	36.00	0.01
								D175	0.01	0.01	0.01	36.00	0.01
								D176	0.01	0.01	0.01	36.00	0.01
								D177	0.01	0.01	0.01	36.00	0.01
								D178	0.01	0.01	0.01	36.00	0.01
								D179	0.01	0.01	0.01	36.00	0.01
								D18	0.01	0.01	0.01	36.00	0.01
								D180	0.01	0.01	0.01	36.00	0.01
								D181	0.01	0.01	0.01	36.00	0.01
								D182	0.01	0.01	0.01	36.00	0.01
								D183	0.01	0.01	0.01	36.00	0.01
								D184	0.01	0.01	0.01	36.00	0.01
								D185	0.01	0.01	0.01	36.00	0.01
								D186	0.01	0.01	0.01	36.00	0.01
								D187	0.01	0.01	0.01	36.00	0.01
								D188	0.01	0.01	0.01	36.00	0.01
								D19	0.01	0.01	0.01	36.00	0.01
								D190	0.01	0.01	0.01	36.00	0.01
								D191	0.01	0.01	0.01	36.00	0.01
								D192	0.01	0.01	0.01	36.00	0.01

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Conduit Surcharge Summary
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Conduit	Hours Full: Both Ends	Hours Full: Upstream	Hours Full: Dnstream	Hours Above Full Normal Flow	Hours Capacity Limited
D1	0.01	0.01	0.01	36.00	0.01
D10	0.01	0.01	0.01	36.00	0.01
D100	0.01	0.01	0.01	36.00	0.01
D101	0.01	0.01	0.01	36.00	0.01
D102	0.01	0.01	0.01	36.00	0.01
D103	0.01	0.01	0.01	36.00	0.01
D104	0.01	0.01	0.01	36.00	0.01
D105	0.01	0.01	0.01	36.00	0.01
D106	0.01	0.01	0.01	36.00	0.01

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D193	0.01	0.01	0.01	36.00	0.01
D194	0.01	0.01	0.01	36.00	0.01
D195	0.01	0.01	0.01	36.00	0.01
D196	0.01	0.01	0.01	36.00	0.01
D197	0.01	0.01	0.01	36.00	0.01
D198	0.01	0.01	0.01	36.00	0.01
D199	0.01	0.01	0.01	36.00	0.01
D2	0.01	0.01	0.01	36.00	0.01
D20	0.01	0.01	0.01	36.00	0.01
D200	0.01	0.01	0.01	36.00	0.01
D201	0.01	0.01	0.01	36.00	0.01
D202	0.01	0.01	0.01	36.00	0.01
D203	0.01	0.01	0.01	36.00	0.01
D204	0.01	0.01	0.01	36.00	0.01
D205	0.01	0.01	0.01	36.00	0.01
D21	0.01	0.01	0.01	36.00	0.01
D22	0.01	0.01	0.01	36.00	0.01
D23	0.01	0.01	0.01	36.00	0.01
D24	0.01	0.01	0.01	36.00	0.01
D25	0.01	0.01	0.01	36.00	0.01
D26	0.01	0.01	0.01	36.00	0.01
D27	0.01	0.01	0.01	36.00	0.01
D28	0.01	0.01	0.01	36.00	0.01
D3	0.01	0.01	0.01	36.00	0.01
D30	0.01	0.01	0.01	36.00	0.01
D31	0.01	0.01	0.01	36.00	0.01
D32	0.01	0.01	0.01	36.00	0.01
D33	0.01	0.01	0.01	36.00	0.01
D34	0.01	0.01	0.01	36.00	0.01
D35	0.01	0.01	0.01	36.00	0.01
D36	0.01	0.01	0.01	36.00	0.01
D37	0.01	0.01	0.01	36.00	0.01
D4	0.01	0.01	0.01	36.00	0.01
D40	0.01	0.01	0.01	36.00	0.01
D41	0.01	0.01	0.01	36.00	0.01
D42	0.01	0.01	0.01	36.00	0.01
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D46	0.01	0.01	0.01	36.00	0.01
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D65	0.01	0.01	0.01	36.00	0.01
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D67	0.01	0.01	0.01	36.00	0.01
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D77	0.01	0.01	0.01	36.00	0.01
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D80	0.01	0.01	0.01	36.00	0.01
D81	0.01	0.01	0.01	36.00	0.01
D82	0.01	0.01	0.01	36.00	0.01
D83	0.01	0.01	0.01	36.00	0.01
D85	0.01	0.01	0.01	36.00	0.01
D86	0.01	0.01	0.01	36.00	0.01
D87	0.01	0.01	0.01	36.00	0.01
D88	0.01	0.01	0.01	36.00	0.01
D89	0.01	0.01	0.01	36.00	0.01
D9	0.01	0.01	0.01	36.00	0.01
D90	0.01	0.01	0.01	36.00	0.01
D91	0.01	0.01	0.01	36.00	0.01
D95	0.01	0.01	0.01	36.00	0.01
D96	0.01	0.01	0.01	36.00	0.01
L1	0.01	0.01	0.01	36.00	0.01

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Analysis begun on:  Fri May 22 09:18:44 2015
Analysis ended on:  Fri May 22 09:18:53 2015
Total elapsed time: 00:00:09
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ORIGINAL 2015
MDP BY AYRES
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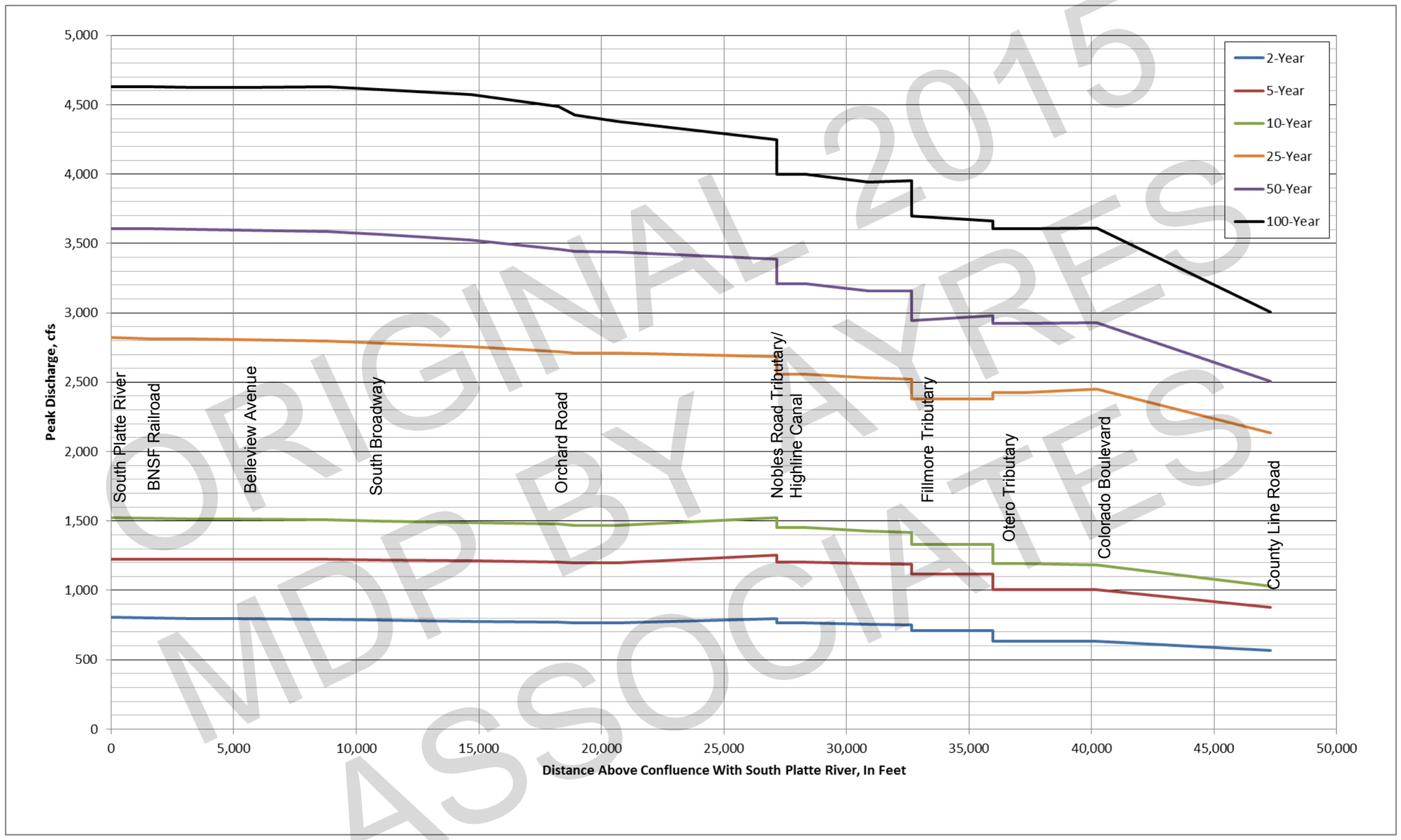
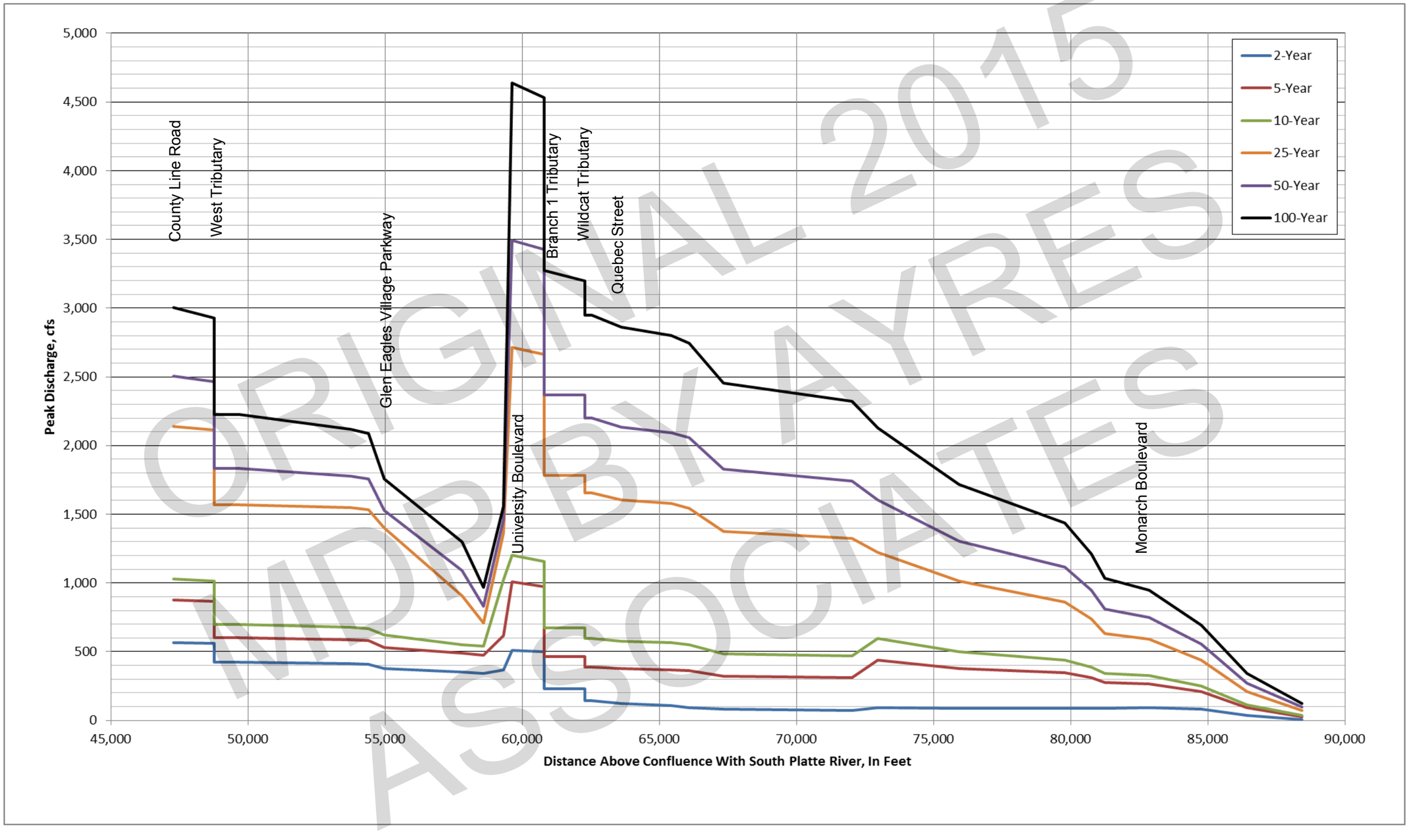


Figure B-10 - Peak Flow Discharges Along Big Dry Creek (North of County Line Road)

ORIGINAL 2015 MDP BY AYRES ASSOCIATES



ORIGINAL 2015
MDB BY AYRES
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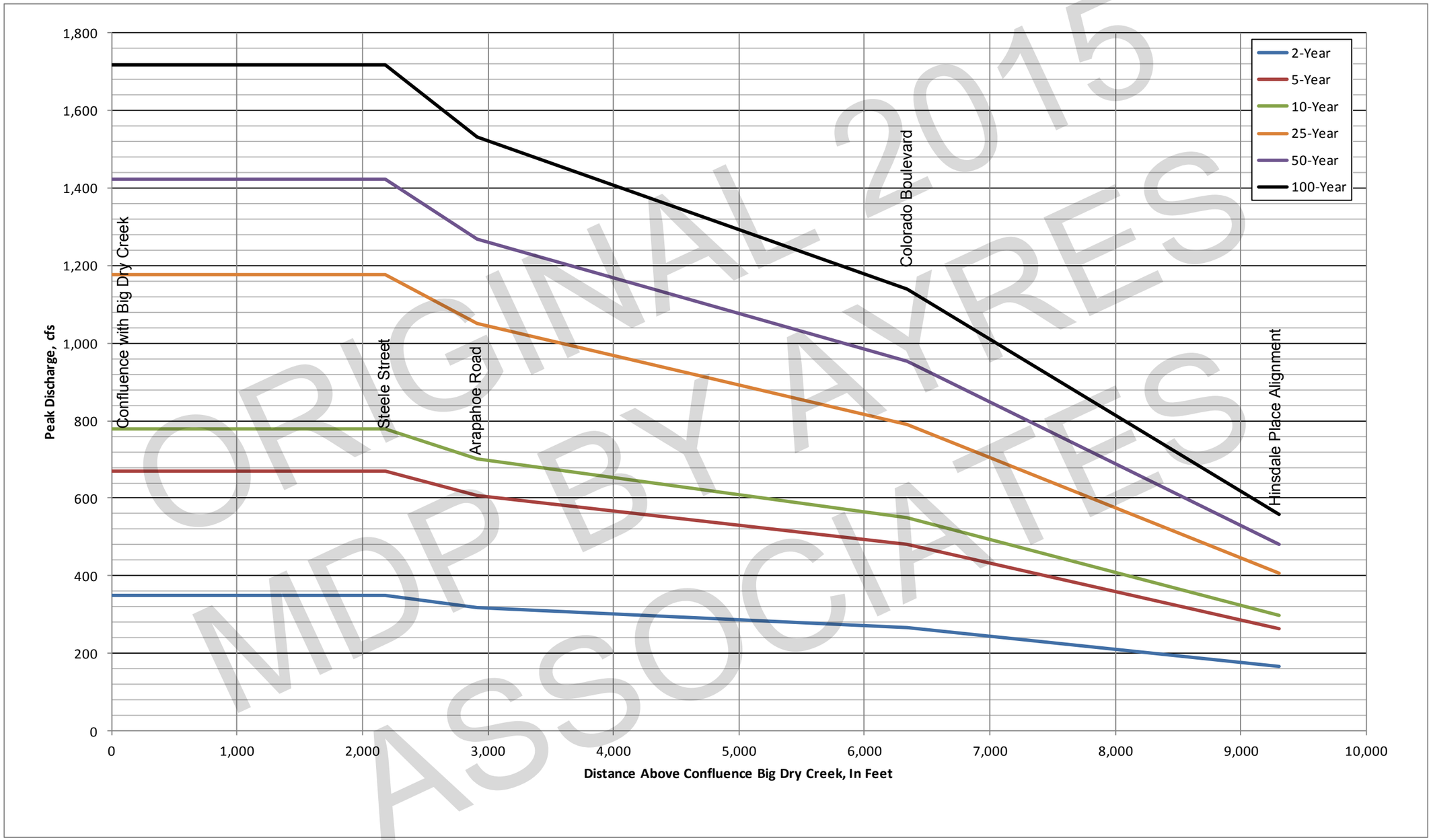
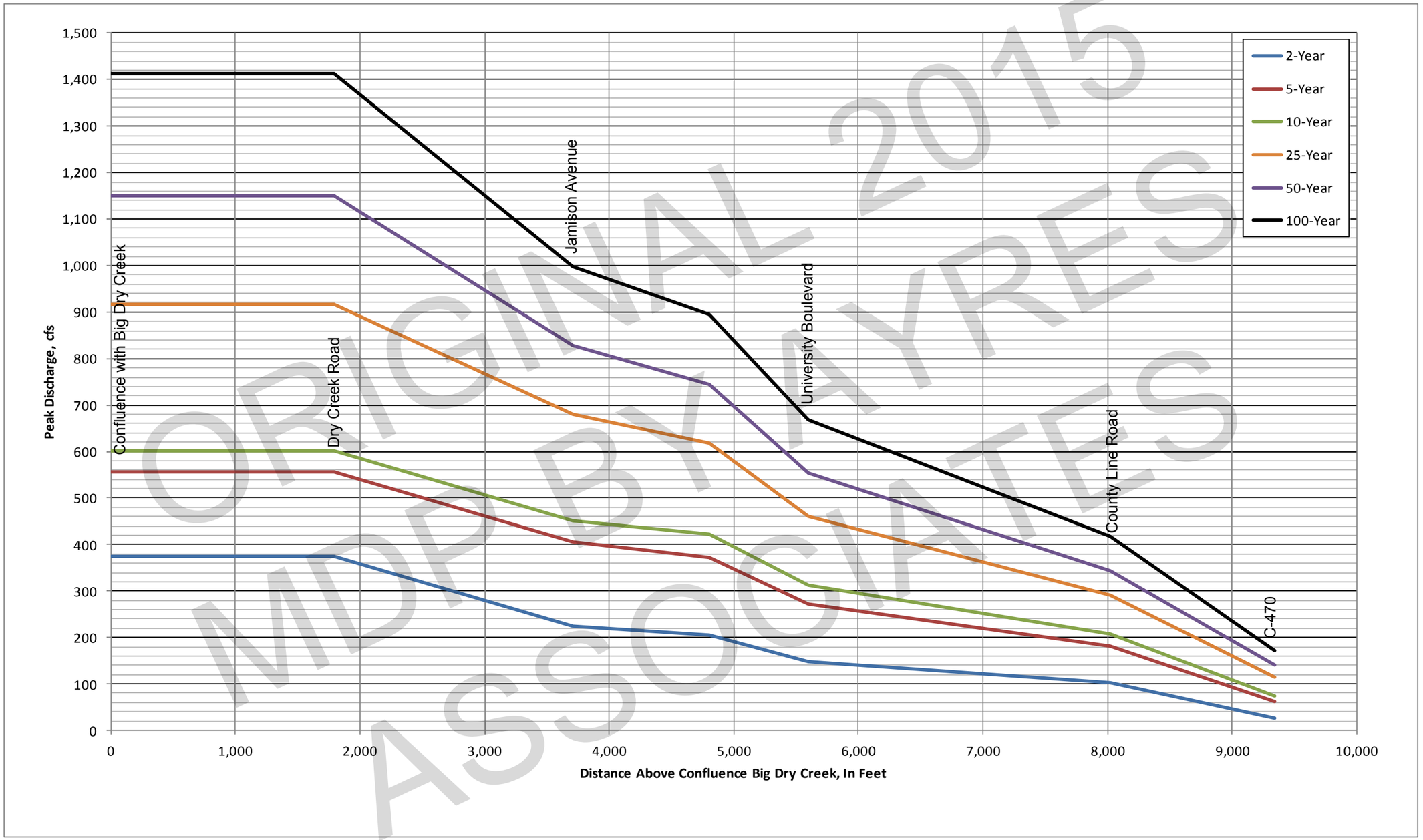
Figure B-11 - Peak Flow Discharges Along Big Dry Creek (South of County Line Road)



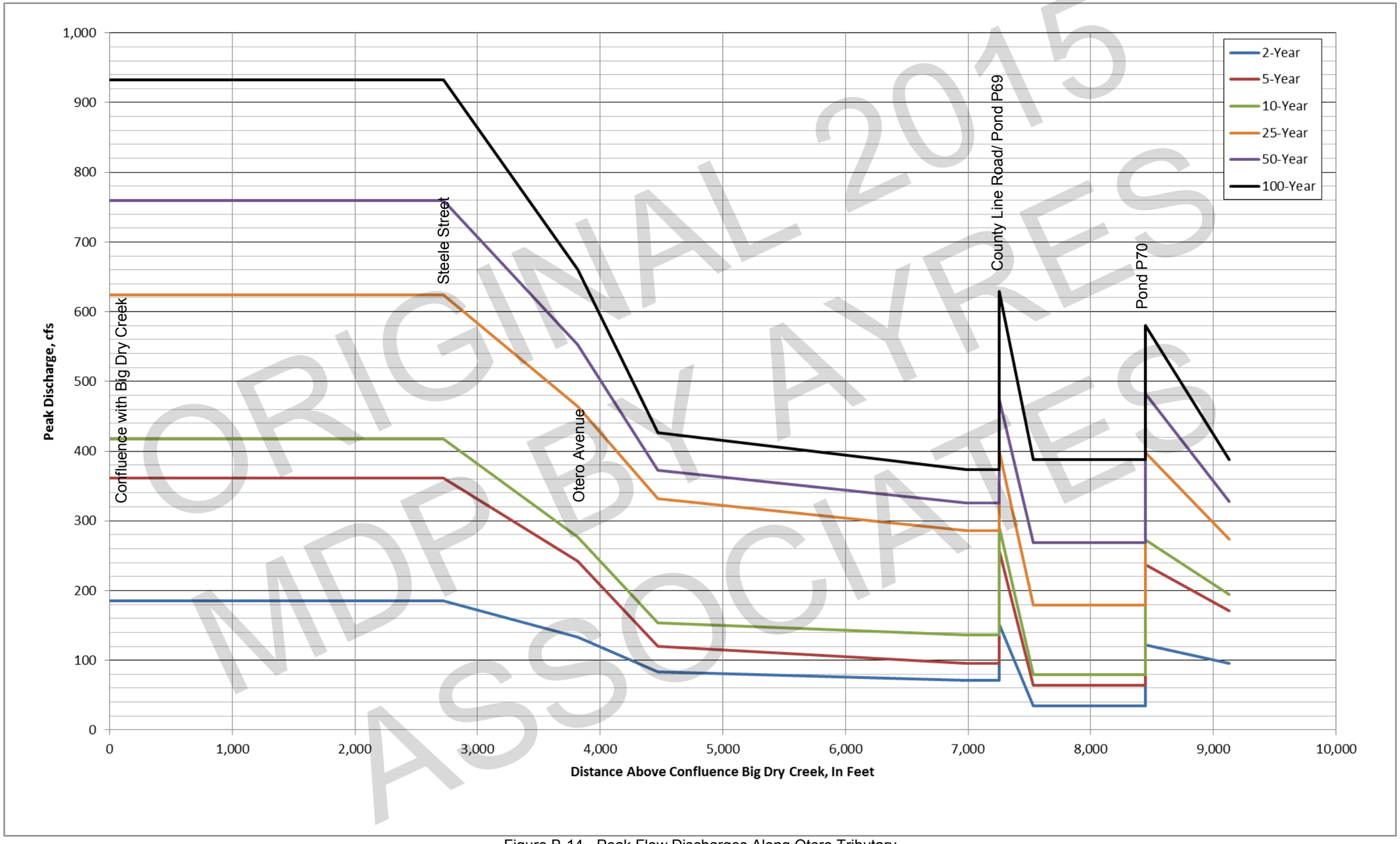
ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Figure B-12 - Peak Flow Discharges Along Nobles Road Tributary



ORIGINAL 2015 MDB BY AYRES ASSOCIATES

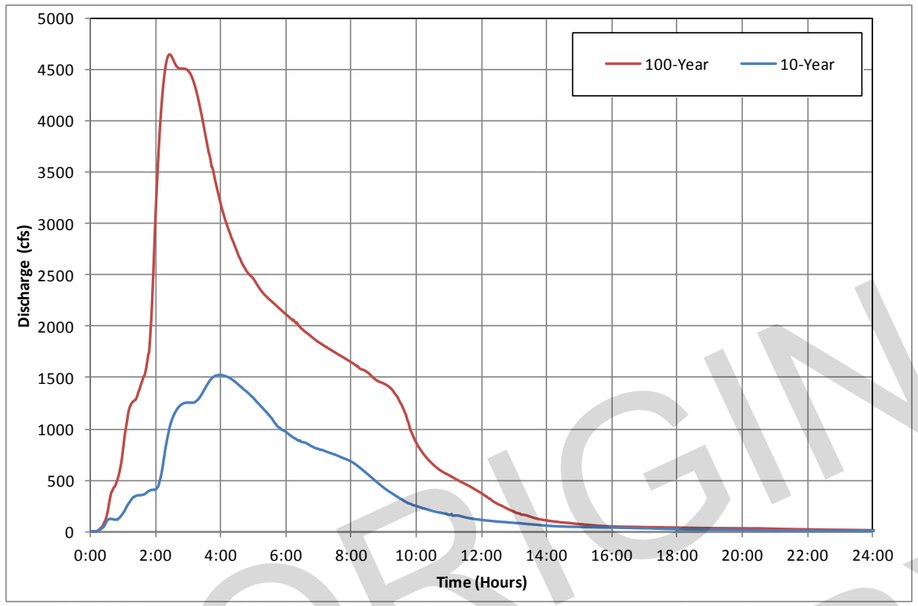
Figure B-13 - Peak Flow Discharges Along Fillmore Tributary



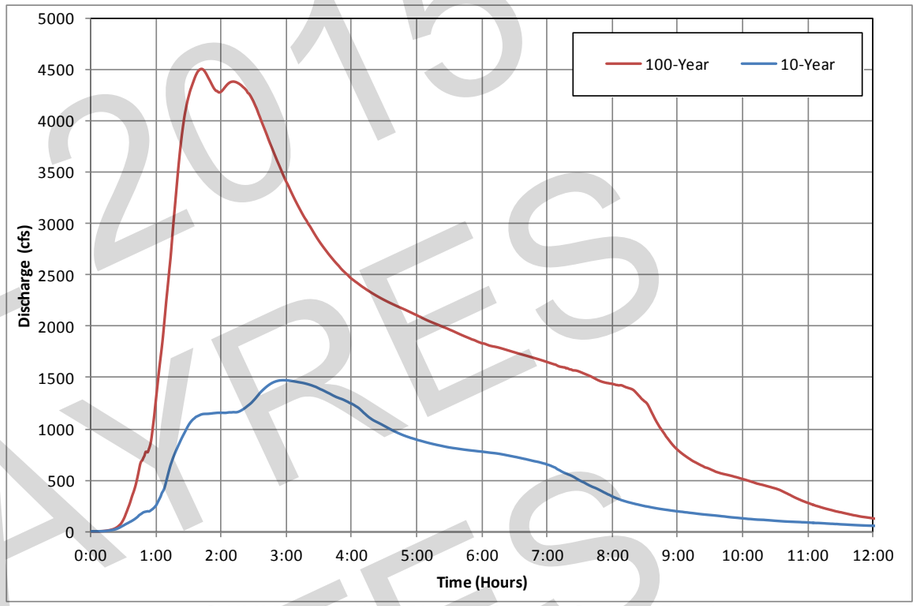
ORIGINAL 2015 MDP BY ALYRES ASSOCIATES

Figure B-14 - Peak Flow Discharges Along Otero Tributary

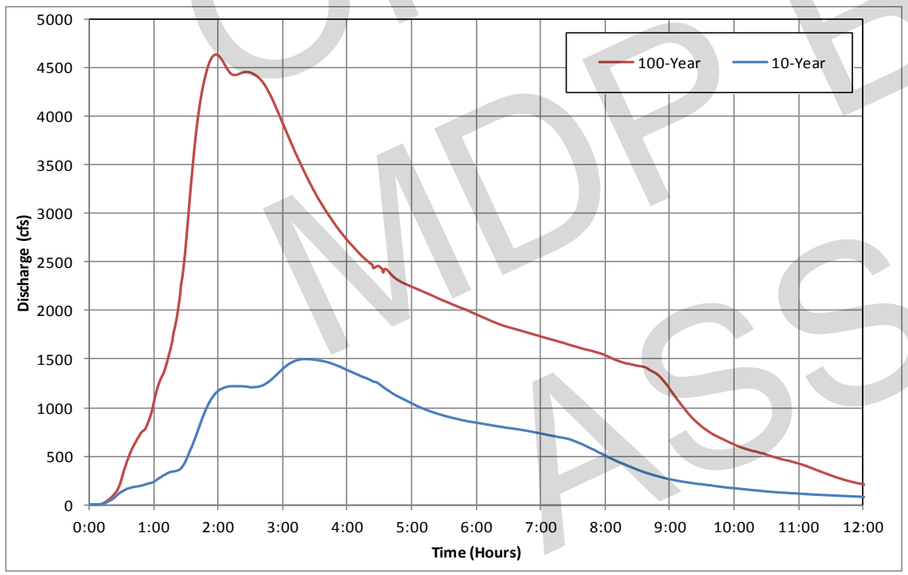
Figure B-15 - Hydrographs at Selected Locations



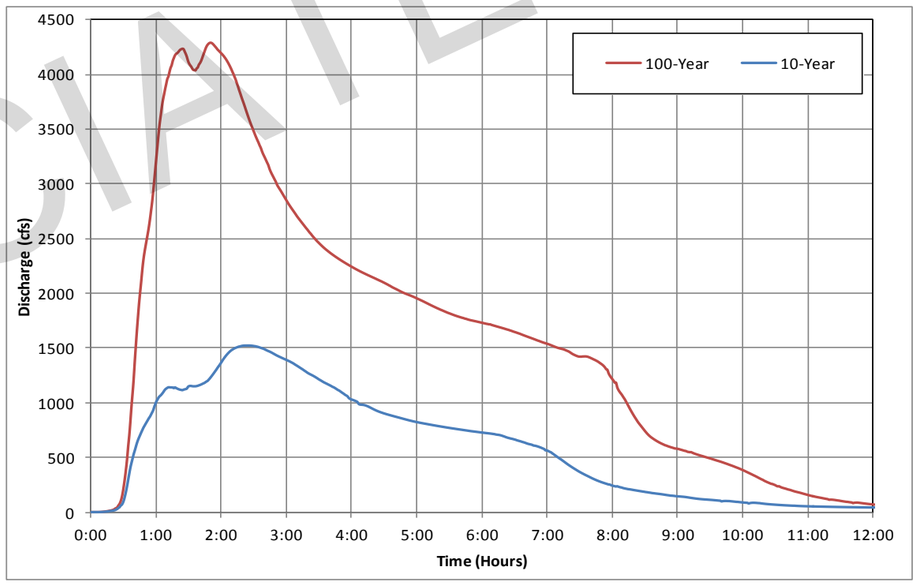
SWMM Node BDCOutfall - Big Dry Creek - Confluence with South Platte River



SWMM Node J20 - Big Dry Creek - Orchard Road

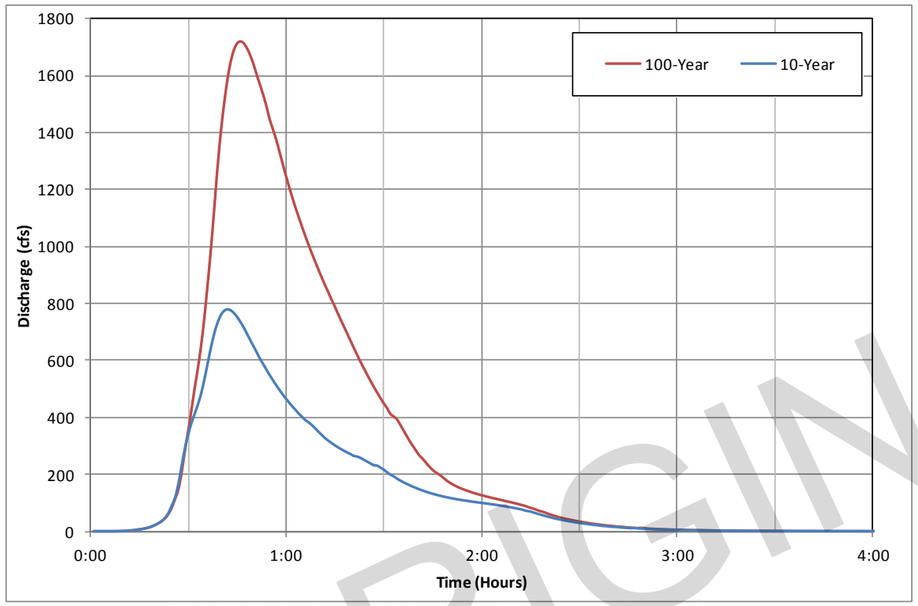


SWMM Node J11 - Big Dry Creek - South Broadway

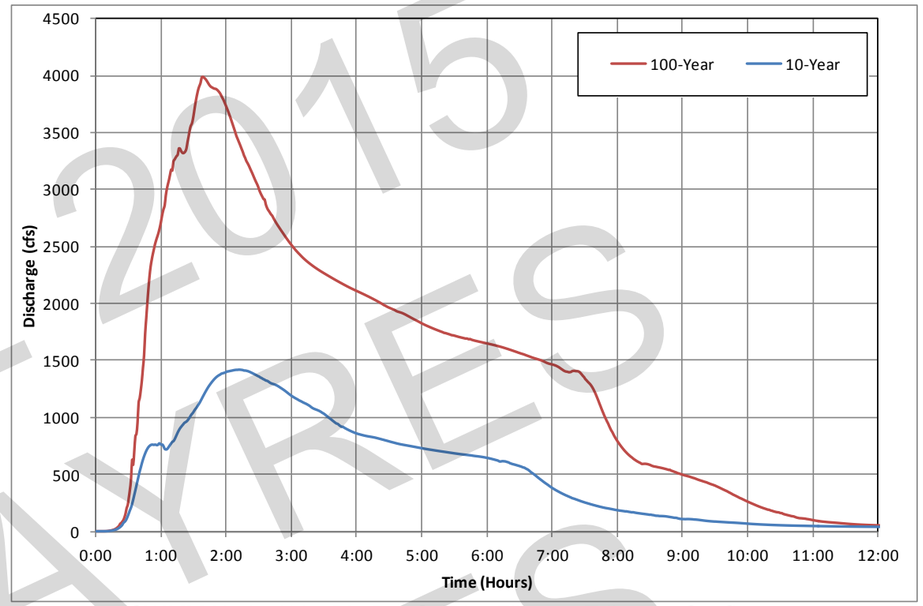


SWMM Node J30 - Big Dry Creek - High Line Canal with Nobles Road Tributary Confluence Flows

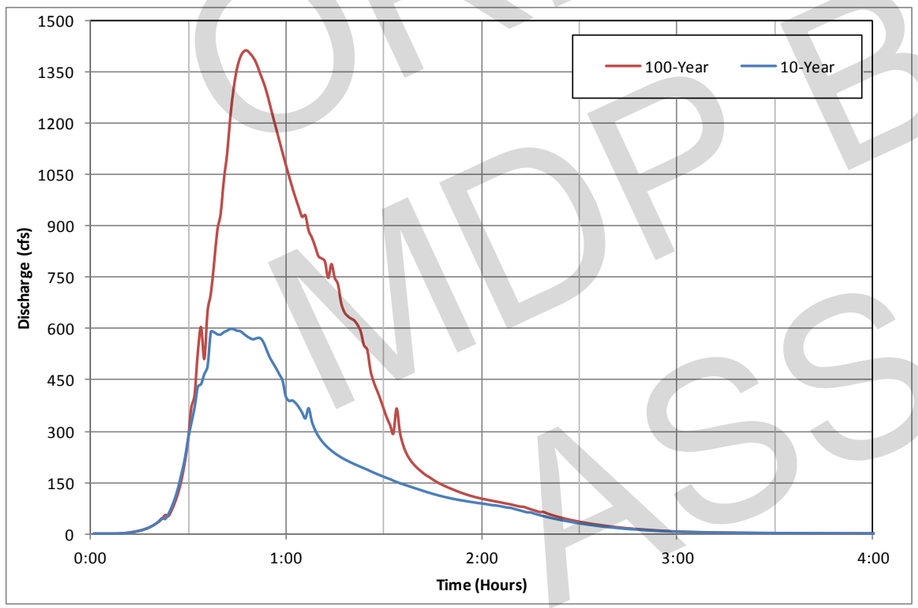
ORIGINAL 2015 MDP BY AYRES ASSOCIATES



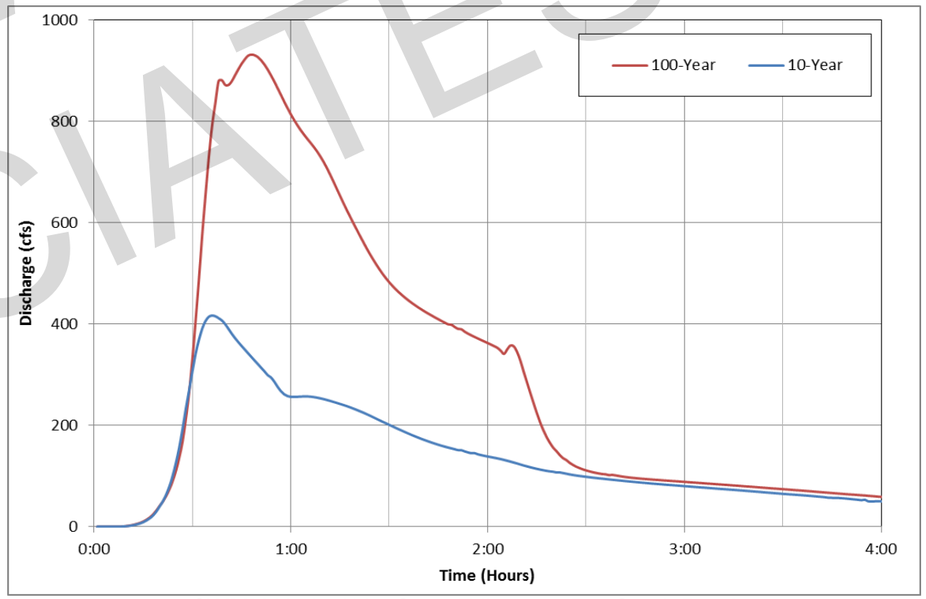
SWMM Node J31 - Nobles Road Tributary - Steele Street



SWMM Node J60 - Big Dry Creek - Fillmore Tributary Confluence

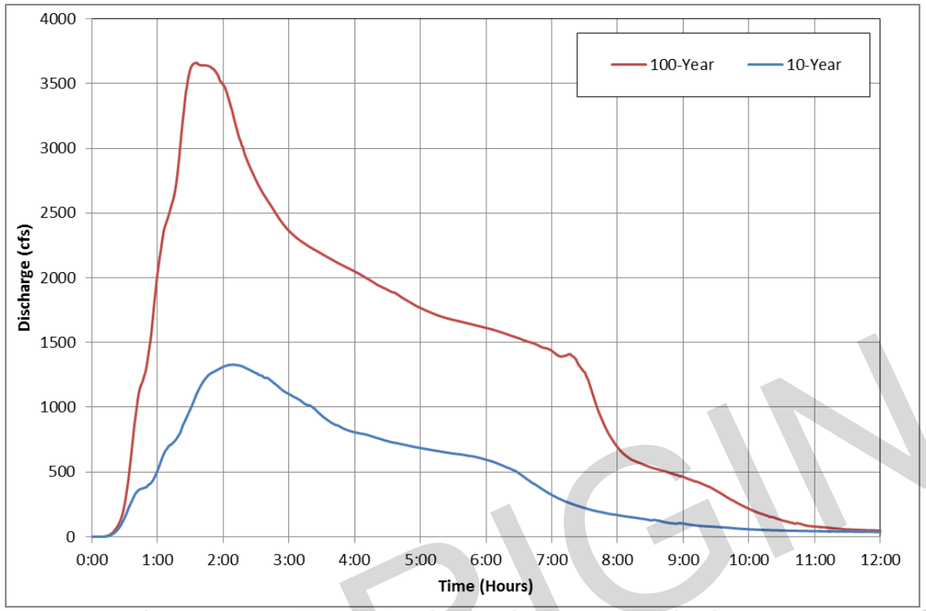


SWMM Node J51 - Fillmore Tributary - Dry Creek Road

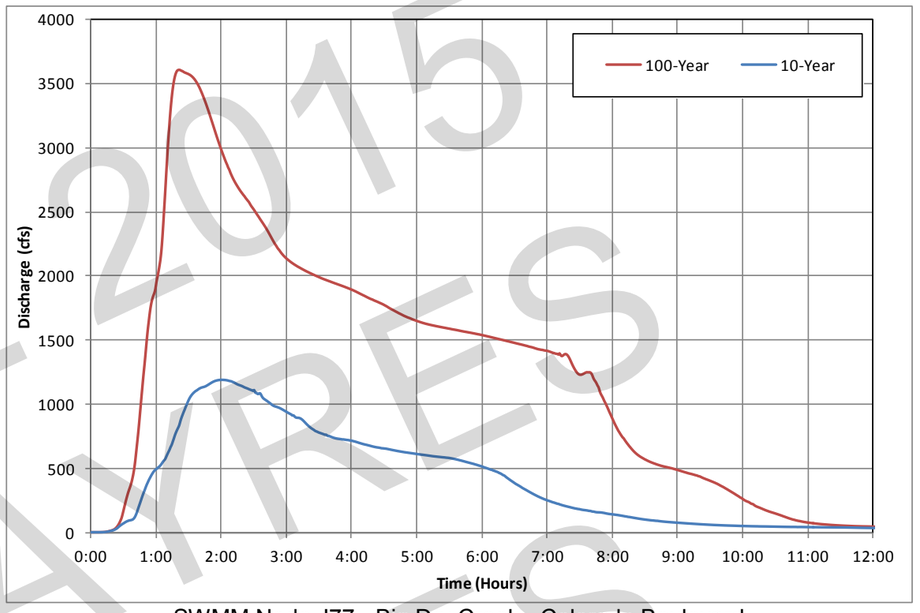


SWMM Node J66 - Otero Tributary - Dry Creek Road

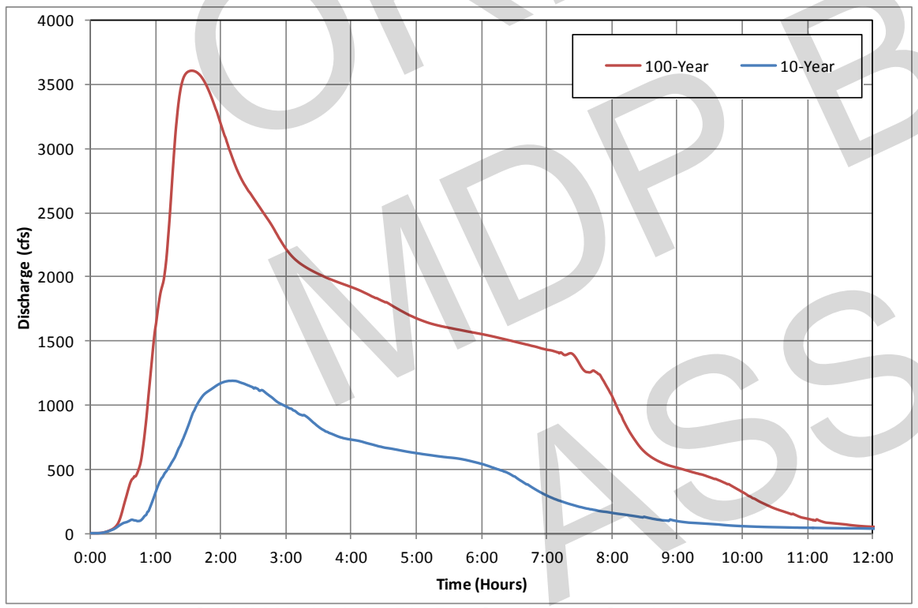
ORIGINAL 2015 MDP BY AYRES ASSOCIATES



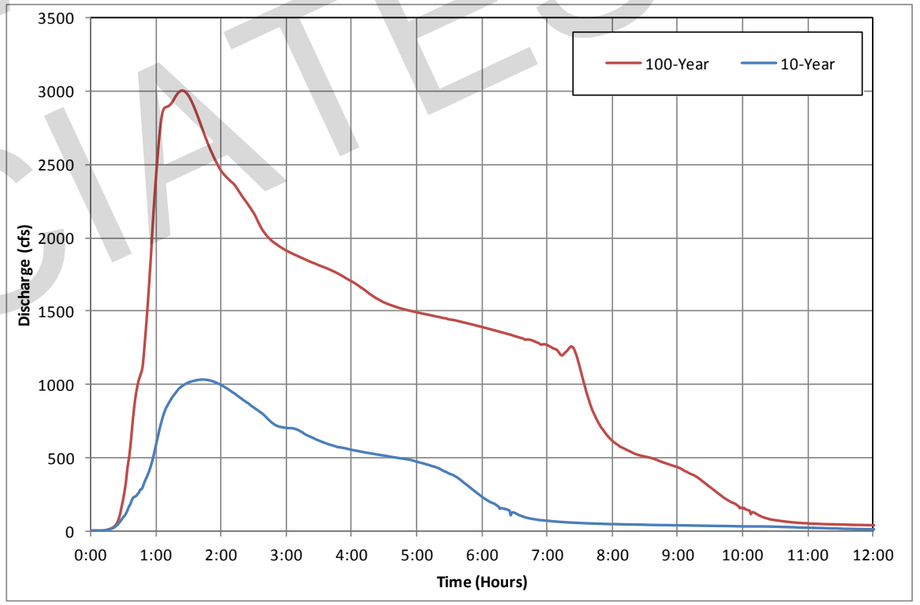
SWMM Node J75 - Big Dry Creek - Otero Tributary Confluence



SWMM Node J77 - Big Dry Creek - Colorado Boulevard

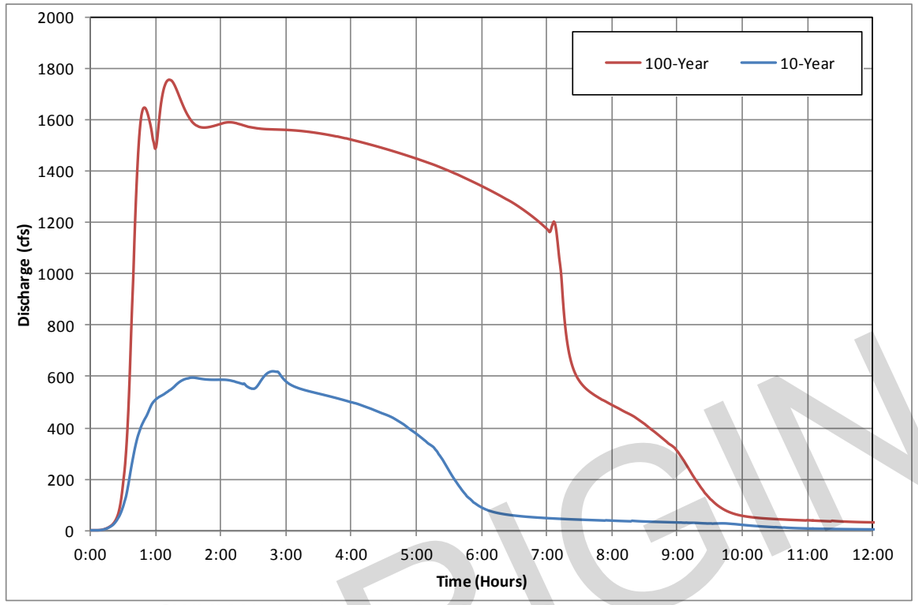


SWMM Node J76 - Big Dry Creek - Dry Creek Road

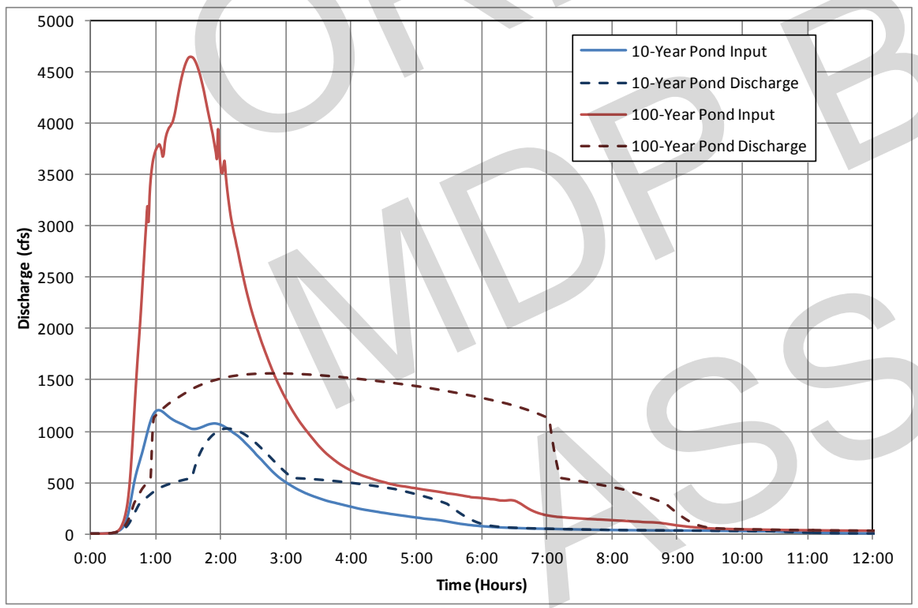


SWMM Node J95 - Big Dry Creek - County Line Road

ORIGINAL 2015 MDP BY AYRES ASSOCIATES



SWMM Node J116 - Big Dry Creek - Glen Eagles Parkway



SWMM Node P123 - Big Dry Creek - University Detention Pond

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Table B-20 - Full Output Results with Peak Discharges and Volumes for All Design Points

Location	Stream	SWMM Node	DRF Area (mi²)		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
			Minor Storm	Major Storm	Minor Storm			Major Storm			Minor Storm			Major Storm		
					2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
Big Dry Creek Outfall to S Platte	Big Dry Creek	BDCOutfall	19.35	19.35	805	1,226	1,523	2,824	3,607	4,630	373.3	521.6	704.2	1313.0	1598.2	1941.1
	Big Dry Creek	J1	19.35	19.35	805	1,226	1,523	2,824	3,607	4,630	373.3	521.6	704.2	1313.0	1598.2	1941.1
BNSF Railroad	Big Dry Creek	J2	19.35	19.35	804	1,224	1,519	2,814	3,604	4,628	370.1	517.4	699.0	1305.5	1589.7	1931.4
City Ditch	Big Dry Creek	J3	19.35	19.35	799	1,225	1,515	2,812	3,602	4,625	365.1	510.8	690.6	1292.0	1573.9	1912.8
Belleview Avenue	Big Dry Creek	J5	19.35	19.35	797	1,225	1,513	2,808	3,598	4,622	362.6	507.3	686.1	1283.7	1563.8	1900.4
	Big Dry Creek	J7	19.35	19.35	796	1,225	1,511	2,805	3,597	4,632	360.4	504.1	681.9	1275.4	1553.5	1887.6
Lehow Avenue	Big Dry Creek	J9	19.35	19.35	792	1,222	1,507	2,798	3,587	4,630	355.5	497.6	673.7	1262.5	1538.4	1870.0
Broadway	Big Dry Creek	J11	19.35	19.35	786	1,218	1,499	2,782	3,568	4,612	347.9	487.8	661.4	1244.8	1518.3	1847.2
	Big Dry Creek	J12	19.35	19.35	16	26	29	50	59	69	1.7	2.2	2.9	4.1	4.7	5.3
	Big Dry Creek	J13	19.35	19.35	778	1,212	1,488	2,757	3,533	4,574	339.2	476.1	646.2	1220.8	1490.2	1814.4
Littleton Boulevard	Big Dry Creek	J16	19.35	19.35	778	1,214	1,487	2,755	3,527	4,572	336.1	471.9	640.5	1211.2	1478.8	1800.7
	Big Dry Creek	J17	19.35	19.35	776	1,209	1,483	2,738	3,497	4,537	331.1	464.7	630.9	1192.9	1456.4	1773.4
	Big Dry Creek	J19	19.35	19.35	22	40	45	126	158	195	2.4	3.5	4.8	9.2	11.2	13.7
Orchard Road	Big Dry Creek	J20	19.35	19.35	772	1,205	1,476	2,722	3,460	4,486	326.8	458.4	622.3	1177.1	1437.2	1750.1
Cherrywood Circle	Big Dry Creek	J21	19.35	19.35	768	1,200	1,469	2,712	3,445	4,425	322.5	452.5	614.3	1163.4	1420.8	1730.7
Franklin Street	Big Dry Creek	J211	19.35	19.35	766	1,199	1,467	2,709	3,438	4,382	319.6	448.3	608.4	1152.3	1407.1	1713.9
	Big Dry Creek	J22	19.35	19.35	25	43	49	117	145	178	2.8	3.8	5.2	9.0	10.7	12.8
	Big Dry Creek	J23	19.35	19.35	10	17	19	41	50	61	1.1	1.5	2.0	3.3	3.8	4.5
	Big Dry Creek	J24	19.35	19.35	39	67	76	164	204	246	3.9	5.3	7.0	11.4	13.5	15.9
	Big Dry Creek	J25	19.35	19.35	764	1,196	1,462	2,703	3,428	4,357	316.7	444.4	603.2	1143.2	1396.3	1701.1
	Big Dry Creek	J26	19.35	19.35	759	1,192	1,462	2,695	3,411	4,310	312.2	437.9	594.6	1127.7	1377.4	1678.2
	Big Dry Creek	J27	19.35	19.35	41	68	76	150	183	219	4.5	6.0	7.9	12.2	14.1	16.4
	Big Dry Creek	J28	19.35	19.35	21	37	42	114	142	175	2.4	3.4	4.7	8.7	10.7	12.9
Highline Canal	Big Dry Creek	J30	15.62	19.35	798	1,255	1,526	2,684	3,387	4,247	314.0	452.4	617.2	1104.6	1349.7	1645.1
Steele Street	Nobles Road Tributary	J31	0	0	350	671	778	1,176	1,423	1,719	22.7	41.4	49.3	70.0	85.2	102.9
Arapahoe Road	Nobles Road Tributary	J32	0	0	318	606	701	1,051	1,269	1,532	20.1	36.5	43.4	61.5	74.7	90.1
	Nobles Road Tributary	J33	0	0	96	351	435	738	937	1,159	4.1	12.8	16.5	31.2	41.1	54.3
Colorado Boulevard	Nobles Road Tributary	J35	0	0	267	481	550	792	952	1,138	15.0	26.5	31.4	43.9	53.2	63.8
Nobles Road Street Flow - Overflow from J35	Nobles Road Tributary	C35	0	0	70	284	353	595	755	941	-	-	-	-	-	-
Hinsdale Place	Nobles Road Tributary	J37	0	0	165	263	298	405	480	558	7.2	11.5	13.3	17.5	20.8	24.3
Arapahoe Road	Big Dry Creek	J40	15.62	19.35	764	1,203	1,452	2,558	3,208	4,000	286.7	413.8	566.4	1023.7	1253.7	1531.4
	Big Dry Creek	J41	15.62	19.35	69	110	124	209	252	300	7.7	10.2	13.0	18.4	21.1	24.0
	Big Dry Creek	J43	15.62	19.35	13	23	28	59	74	92	1.2	1.8	2.4	4.2	5.0	6.1
Easter Avenue	Big Dry Creek	J44	15.62	19.35	755	1,193	1,429	2,530	3,157	3,940	274.6	396.9	544.3	989.5	1213.5	1484.3
	Big Dry Creek	J45	15.62	19.35	39	64	73	128	155	186	4.3	5.8	7.5	11.0	12.7	14.7

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Location	Stream	SWMM Node	DRF Area (mi²)		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
			Minor Storm	Major Storm	Minor Storm			Major Storm			Minor Storm			Major Storm		
					2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
	Big Dry Creek	J46	15.62	19.35	17	29	34	65	79	96	1.9	2.7	3.6	5.5	6.5	7.6
Dry Creek Road	Fillmore Tributary	J51	0	0	375	555	600	915	1,151	1,412	20.3	35.8	42.4	59.2	71.7	86.1
Jamison Avenue	Fillmore Tributary	J511	0	0	224	406	450	679	827	998	13.9	24.1	28.5	39.5	47.7	57.0
	Fillmore Tributary	J52	0	0	38	73	84	121	146	175	2.2	3.9	4.6	6.5	7.8	9.4
	Fillmore Tributary	J53	0	0	26	53	62	90	110	133	1.3	2.4	2.9	4.2	5.2	6.3
	Fillmore Tributary	J54	0	0	205	373	422	618	745	894	12.6	21.7	25.5	35.2	42.5	50.7
University Boulevard	Fillmore Tributary	J55	0	0	147	272	314	461	555	667	8.9	15.8	18.7	26.1	31.6	37.9
County Line Road	Fillmore Tributary	J56	0	0	103	181	207	290	343	417	5.7	9.9	11.6	16.1	19.4	23.1
C-470	Fillmore Tributary	J57	0	0	27	62	74	114	140	171	1.7	3.7	4.5	6.8	8.4	10.4
Fillmore Tributary Confluence	Big Dry Creek	J60	15.62	19.35	750	1,188	1,418	2,523	3,156	3,952	267.9	387.9	532.6	972.2	1193.4	1460.9
	Big Dry Creek	J61	15.62	19.35	710	1,118	1,331	2,373	2,942	3,648	242.1	351.8	485.4	898.4	1106.2	1358.4
Monroe Way	Otero Tributary	J66	0	0	185	362	417	624	760	932	23.6	42.6	50.7	71.8	87.3	105.2
Otero Avenue	Otero Tributary	J67	0	0	133	242	277	465	553	661	19.9	35.5	42.1	59.2	71.9	86.5
	Otero Tributary	J68	0	0	83	120	154	332	373	427	16.0	28.4	33.6	47.1	57.1	68.6
	Otero Tributary	J69	0	0	71	96	136	286	325	374	13.3	23.9	28.4	40.1	48.7	58.6
	Otero Tributary	O69	0	0	71	96	136	286	325	374	-	-	-	-	-	-
County Line Road	Otero Tributary	J70	0	0	38	72	89	198	295	421	7.4	14.1	17.0	24.7	30.3	36.9
	Otero Tributary	O70	0	0	34	64	80	179	269	388	-	-	-	-	-	-
	Otero Tributary	P70	0	0	122	237	273	398	483	581	7.0	13.2	15.9	22.9	28.1	34.1
	Otero Tributary	J72	0	0	5	12	15	24	29	35	0.4	0.9	1.2	1.8	2.2	2.7
	Otero Tributary	J73	0	0	95	170	195	273	328	387	4.6	7.9	9.2	12.7	15.2	18.1
Otero Tributary Confluence	Big Dry Creek	J75	15.62	19.35	709	1,118	1,330	2,382	2,981	3,662	240.2	349.4	482.3	893.6	1100.7	1352.0
Dry Creek Road	Big Dry Creek	J76	15.62	0	633	1,006	1,193	2,427	2,925	3,608	209.3	305.9	425.2	846.4	1057.3	1315.8
Colorado Boulevard	Big Dry Creek	J77	15.62	0	632	1,004	1,185	2,450	2,931	3,609	204.5	299.2	416.4	832.3	1040.3	1295.4
	Big Dry Creek	J78	15.62	0	16	26	29	68	81	96	1.5	2.0	2.6	3.4	4.0	4.7
	Big Dry Creek	J79	15.62	0	15	26	30	80	96	114	1.4	1.9	2.5	3.7	4.4	5.3
	Big Dry Creek	J80	15.62	0	618	989	1,153	2,369	2,821	3,448	197.2	289.1	403.3	812.3	1016.1	1266.4
	Big Dry Creek	J801	15.62	0	619	992	1,150	2,354	2,795	3,401	197.1	288.6	402.2	807.6	1010.0	1258.4
	Big Dry Creek	J81	15.62	0	18	29	33	73	87	102	1.9	2.6	3.3	4.1	4.8	5.7
	Big Dry Creek	J82	15.62	0	43	67	78	199	240	286	4.0	5.5	7.2	10.9	13.2	15.8
	Big Dry Creek	J83	15.62	0	40	64	72	166	197	231	3.6	4.8	6.2	7.9	9.4	11.1
	Big Dry Creek	J85	15.62	0	607	981	1,132	2,330	2,755	3,334	192.9	282.9	394.8	796.6	996.7	1242.4
	Big Dry Creek	J86	12.15	0	636	1,003	1,170	2,308	2,717	3,275	143.5	259.3	345.0	790.2	988.6	1232.1
	Big Dry Creek	J87	12.15	0	123	148	161	272	312	359	15.0	25.6	31.4	58.2	70.8	85.5
	Big Dry Creek	O88	12.15	0	105	110	111	119	121	125	-	-	-	-	-	-
	Big Dry Creek	J89	12.15	0	64	91	102	287	370	422	9.0	14.9	17.9	31.8	38.3	45.9
	Big Dry Creek	J90	12.15	0	49	62	67	200	255	268	7.2	11.7	13.8	23.6	28.3	33.5

ORIGINAL 2015 WDB BY KW ASSOCIATES

Location	Stream	SWMM Node	DRF Area (mi²)		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
			Minor Storm	Major Storm	Minor Storm			Major Storm			Minor Storm			Major Storm		
					2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
	Big Dry Creek	O90	12.15	0	49	62	67	200	255	268	-	-	-	-	-	-
	Big Dry Creek	J91	12.15	0	60	95	111	246	294	347	3.4	5.5	6.5	11.1	13.3	15.8
County Line Road	Big Dry Creek	J95	12.15	0	567	876	1,031	2,137	2,506	3,005	127.5	231.7	311.0	726.4	910.9	1138.1
	Big Dry Creek	J951	12.15	0	561	867	1,013	2,114	2,465	2,929	125.1	226.9	304.6	712.4	893.4	1116.4
	Big Dry Creek	J100	12.15	0	201	314	363	595	667	727	25.3	42.9	52.3	95.6	116.0	139.5
	Big Dry Creek	J101	12.15	0	189	293	334	552	601	669	22.7	38.5	46.9	85.6	103.9	124.9
Canongate Lane (Out)	Big Dry Creek	O101	12.15	0	189	293	334	552	601	669	-	-	-	-	-	-
	Big Dry Creek	J102	12.15	0	181	272	304	520	588	654	20.1	33.9	41.1	74.1	89.8	107.7
Cresthill Lane (Out)	Big Dry Creek	O102	12.15	0	181	272	304	520	588	654	-	-	-	-	-	-
	Big Dry Creek	J103	12.15	0	168	251	279	501	582	677	18.0	30.0	36.2	64.4	77.8	93.1
	Big Dry Creek	J105	12.15	0	151	217	232	350	389	432	15.8	26.2	31.4	54.9	66.1	78.8
Lark Sparrow Drive (Out)	Big Dry Creek	O105	12.15	0	138	193	205	289	305	322	-	-	-	-	-	-
	Big Dry Creek	J106	12.15	0	91	149	173	390	467	547	4.8	7.8	9.3	15.9	19.1	22.6
	Big Dry Creek	J107	12.15	0	108	174	204	473	568	678	7.0	11.4	13.6	23.6	28.3	33.7
	Big Dry Creek	J108	12.15	0	36	60	73	179	217	260	2.2	3.8	4.7	8.8	10.7	12.9
C-470	Big Dry Creek	J110	12.15	0	422	603	699	1,568	1,832	2,223	99.8	184.1	252.3	616.8	777.4	976.9
	Big Dry Creek	J112	12.15	0	413	589	680	1,548	1,776	2,119	95.1	176.5	243.3	598.6	755.0	949.2
	Big Dry Creek	J113	12.15	0	407	579	668	1,535	1,755	2,088	93.2	173.4	239.6	592.6	747.8	940.8
	Big Dry Creek	J114	12.15	0	43	74	90	228	281	344	4.1	6.9	8.5	15.9	19.3	23.3
Glen Eagles Village Parkway	Big Dry Creek	J116	12.15	0	380	528	621	1,403	1,526	1,759	87.0	162.9	226.9	568.9	719.2	906.4
	Big Dry Creek	J117	12.15	0	20	30	89	685	733	780	8.6	11.1	15.3	217.3	292.3	383.0
	Big Dry Creek	J118	12.15	0	20	30	89	685	733	780	8.6	11.1	15.3	217.3	292.3	383.0
	Big Dry Creek	J119	12.15	0	15	25	30	71	86	104	1.2	2.1	2.6	4.8	5.8	7.0
	Big Dry Creek	J120	12.15	0	353	492	553	904	1,088	1,300	75.1	146.1	204.3	337.4	409.5	502.1
	Big Dry Creek	J1201	12.15	0	342	476	543	708	829	966	71.2	139.6	196.5	323.7	393.0	482.4
	Big Dry Creek	J121	12.15	0	110	182	218	529	640	760	6.2	10.3	12.5	22.5	27.2	32.6
	Big Dry Creek	J122	12.15	0	60	99	119	296	358	426	3.3	5.5	6.8	12.4	15.0	18.1
	Big Dry Creek	J123	4.92	0	367	617	1,026	1,367	1,462	1,558	83.4	190.3	254.6	509.6	647.1	819.4
University Boulevard (Out)	Big Dry Creek	O123	4.92	0	367	617	1,026	1,367	1,462	1,558	-	-	-	-	-	-
	Big Dry Creek	J125	4.92	0	500	972	1,158	2,662	3,426	4,532	81.3	185.1	247.9	496.5	630.5	798.4
	Branch 1	J126	3.53	0	278	533	625	1,110	1,358	1,647	34.6	82.5	108.3	199.0	253.1	321.3
	Branch 1	J127	3.53	0	102	182	210	329	395	469	5.1	8.9	10.5	15.4	18.5	22.1
	Branch 1	J128	3.53	0	217	386	449	811	1,004	1,267	24.6	65.1	87.7	168.5	216.2	277.0
	Branch 1	J130	3.53	0	114	211	245	459	574	723	10.3	25.6	33.8	61.7	78.4	99.5
	Branch 1	J131	3.53	0	85	162	188	309	383	495	6.5	14.6	18.8	32.7	41.3	51.8
	Branch 1	J132	3.53	0	34	70	91	207	268	344	2.6	7.8	10.7	20.9	27.0	34.7
	Branch 1	J134	3.53	0	7	44	60	143	185	239	0.7	4.2	6.4	14.2	18.9	24.9

ORIGINAL 2015 MDP BY KIRKHAM ASSOCIATES

Location	Stream	SWMM Node	DRF Area (mi²)		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
			Minor Storm	Major Storm	Minor Storm			Major Storm			Minor Storm			Major Storm		
					2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
	Branch 1	J135	3.53	0	35	91	116	219	261	307	3.8	11.0	15.0	28.9	37.2	47.7
	Branch 1	O135	3.53	0	35	91	116	219	261	307	-	-	-	-	-	-
	Branch 1	J136	3.53	0	19	78	106	247	319	410	1.6	7.0	10.1	21.4	28.0	36.6
	Branch 1	J138	3.53	0	2	35	49	124	162	210	0.2	2.8	4.5	10.9	14.5	19.4
	Branch 1	J140	3.53	0	195	337	388	768	923	1,132	21.3	59.2	80.6	157.1	202.1	259.8
	Branch 1	J141	3.53	0	61	100	197	282	290	290	7.5	27.5	39.5	83.8	109.5	143.0
	Branch 1	O141	3.53	0	61	100	197	282	290	290	-	-	-	-	-	-
	Branch 1	J143	3.53	0	2	42	61	158	208	270	0.2	3.8	6.2	14.8	19.8	26.4
	Branch 1	J144	3.53	0	1	29	42	108	143	186	0.2	2.6	4.1	9.9	13.3	17.7
	Branch 1	J145	3.53	0	1	15	22	55	72	92	0.1	1.2	1.9	4.6	6.1	8.2
	Branch 1	J147	3.53	0	16	165	251	660	878	1,164	2.5	18.8	29.2	68.7	91.2	121.0
	Branch 1	J148	3.53	0	6	84	124	344	453	592	0.6	7.2	11.8	30.2	40.6	54.5
	Branch 1	J149	3.53	0	2	20	28	69	90	114	0.1	1.2	1.8	4.4	5.8	7.8
	Branch 1	J151	3.53	0	3	48	74	217	288	378	0.3	4.4	7.4	20.2	27.2	36.8
	Branch 1	J152	3.53	0	1	18	25	63	82	106	0.1	1.3	2.1	5.1	6.8	9.1
	Big Dry Creek	J160	4.92	0	228	466	674	1,783	2,366	3,198	45.8	107.4	144.2	286.8	364.2	460.7
	Wildcat Tributary	J161	4.92	0	75	127	146	251	299	354	14.7	27.8	34.2	57.3	70.5	86.0
	Wildcat Tributary	J162	4.92	0	30	38	42	82	121	236	10.8	21.0	26.0	44.5	54.9	67.2
	Wildcat Tributary	O162	4.92	0	30	38	42	82	121	236	-	-	-	-	-	-
	Wildcat Tributary	J164	4.92	0	86	144	164	273	322	378	8.4	16.7	21.0	36.4	45.1	55.5
	Wildcat Tributary	J165	4.92	0	48	66	70	99	141	235	4.9	10.5	13.4	24.3	30.3	37.7
Quebec Street (Out)	Wildcat Tributary	O165	4.92	0	48	66	70	99	141	235	-	-	-	-	-	-
	Wildcat Tributary	J1651	4.92	0	37	86	105	226	282	348	2.9	6.5	8.5	15.9	20.0	25.0
	Wildcat Tributary	J166	4.92	0	35	79	95	190	234	286	2.4	5.0	6.3	11.2	14.0	17.3
	Wildcat Tributary	J167	4.92	0	5	15	19	49	62	78	0.5	1.5	2.1	4.6	5.9	7.6
	Big Dry Creek	J170	4.92	0	144	388	594	1,653	2,201	2,950	27.3	73.2	102.4	217.6	279.4	357.5
Quebec Street	Big Dry Creek	J1701	4.92	0	123	377	574	1,603	2,131	2,860	24.5	67.4	95.0	204.7	263.3	337.7
	Big Dry Creek	J171	4.92	0	32	62	73	137	167	201	2.0	3.7	4.5	7.4	9.1	11.1
	Big Dry Creek	J175	4.92	0	109	369	564	1,577	2,095	2,801	22.3	63.4	90.2	196.9	253.9	326.2
	Big Dry Creek	J176	4.92	0	58	103	122	263	339	437	3.7	9.0	12.3	25.1	32.0	40.7
	Big Dry Creek	J177	4.92	0	7	41	60	174	226	292	0.8	3.9	6.2	15.6	20.6	27.0
	Big Dry Creek	J178	4.92	0	2	8	11	32	41	53	0.1	0.7	1.1	2.9	3.8	5.0
	Big Dry Creek	J179	4.92	0	4	20	29	85	109	140	0.3	1.8	2.9	7.5	9.9	13.1
	Big Dry Creek	J180	4.92	0	94	360	551	1,546	2,060	2,744	20.7	60.2	86.2	190.0	245.3	315.7
	Big Dry Creek	J181	4.92	0	80	319	487	1,377	1,826	2,453	16.3	49.9	72.3	162.1	209.9	270.8
	Big Dry Creek	J183	4.92	0	74	312	467	1,324	1,744	2,322	11.7	39.8	59.5	138.9	181.1	235.2
	Big Dry Creek	J187	4.92	0	15	54	73	199	248	316	1.4	4.6	6.7	15.3	20.0	25.8

ORIGINAL 2015 MDBY ASSOCIATES

Location	Stream	SWMM Node	DRF Area (mi^2)		Future Condition Peak Discharges (cfs)						Future Condition Runoff Volumes (acre-feet)					
			Minor Storm	Major Storm	Minor Storm			Major Storm			Minor Storm			Major Storm		
					2-year	5-year	10-year	25-year	50-year	100-year	2-year	5-year	10-year	25-year	50-year	100-year
	Big Dry Creek	J188	4.92	0	7	23	30	76	97	122	0.5	1.6	2.3	5.2	6.7	8.7
	Big Dry Creek	J190	0	0	90	436	595	1,224	1,606	2,128	12.9	50.7	69.6	125.6	163.5	212.2
	Big Dry Creek	J193	0	0	85	377	500	1,016	1,306	1,716	10.1	39.1	53.7	97.0	126.4	164.2
	Big Dry Creek	J195	0	0	88	345	440	861	1,114	1,436	8.3	31.0	42.3	75.7	98.5	127.7
	Big Dry Creek	J197	0	0	88	313	386	737	946	1,211	8.1	27.1	36.6	64.1	83.0	107.0
	Big Dry Creek	J198	0	0	88	274	340	635	810	1,033	7.8	23.8	31.6	54.0	69.5	89.0
Monarch Boulevard	Big Dry Creek	J200	0	0	92	264	326	589	749	949	7.7	22.0	28.8	48.6	62.2	79.3
	Big Dry Creek	J201	0	0	82	208	251	439	554	695	6.2	16.4	21.2	35.0	44.6	56.6
	Big Dry Creek	J202	0	0	51	111	129	192	235	284	2.6	5.1	6.1	9.0	11.1	13.5
	Big Dry Creek	J204	0	0	36	91	113	210	269	343	3.0	8.8	11.5	19.6	25.1	32.1
	Big Dry Creek	J205	0	0	3	28	37	74	96	123	0.3	2.3	3.3	6.4	8.5	11.2

ORIGINAL 2015 MDP BY AYRES ASSOCIATES

Table B-21 - Detention Pond Peak Inflows, Volumes, Depths and Discharges

`	Recurrence Interval	DRF Area (mi^2)	Peak Inflow (cfs)	Time of Max Occurrence (h:mm)	Peak Outflow (cfs)	Peak Storage Volume (acre-feet)	Max Depth (ft)	Time of Max Occurrence (h:mm)
P69	2-Year	0	151	0:32	71	2.83	4.95	0:53
	5-Year	0	257	0:31	96	5.83	13.18	1:24
	10-Year	0	291	0:31	136	6.31	14.05	0:59
	25-Year	0	400	0:35	286	7.16	18.96	0:58
	50-Year	0	475	0:35	325	10.29	21.70	1:09
	100-Year	0	629	0:52	374	16.11	24.91	0:00
P70	2-Year	0	122	0:34	34	3.17	4.95	1:09
	5-Year	0	237	0:34	64	6.75	13.18	1:11
	10-Year	0	273	0:33	80	7.77	14.05	1:15
	25-Year	0	398	0:38	179	10.64	18.96	0:58
	50-Year	0	483	0:38	269	11.81	21.70	0:59
	100-Year	0	581	0:38	388	12.60	24.91	0:00
P88	2-Year	12.15	114	0:38	105	0.14	3.94	0:47
	5-Year	12.15	180	0:37	110	2.58	5.56	1:20
	10-Year	12.15	209	0:36	111	4.52	9.38	1:35
	25-Year	0	469	0:37	119	21.19	18.96	1:46
	50-Year	0	566	0:39	121	29.47	21.70	1:53
	100-Year	0	718	0:47	125	0.00	24.91	0:00
P90	2-Year	12.15	121	0:34	49	2.42	3.94	0:56
	5-Year	12.15	196	0:33	62	4.77	5.56	1:05
	10-Year	12.15	230	0:33	67	5.91	9.38	1:20
	25-Year	0	521	0:36	200	11.76	18.96	0:57
	50-Year	0	626	0:36	255	13.49	21.70	0:56
	100-Year	0	745	0:36	125	16.43	24.91	0:00
P101	2-Year	12.15	190	1:15	189	0.22	5.41	1:17
	5-Year	12.15	296	1:13	293	0.72	7.46	1:18
	10-Year	12.15	337	1:13	334	1.01	8.27	1:19
	25-Year	0	603	1:07	552	4.42	13.06	1:23
	50-Year	0	693	1:06	601	6.86	15.06	1:28
	100-Year	0	794	1:06	669	10.63	17.31	1:32
P102	2-Year	12.15	189	0:53	181	2.02	4.68	1:04
	5-Year	12.15	292	0:52	272	3.22	5.90	1:04
	10-Year	12.15	332	0:48	304	3.70	6.32	1:03
	25-Year	0	654	0:44	520	8.46	9.13	1:02
	50-Year	0	772	0:43	588	10.49	9.98	1:02
	100-Year	0	909	0:43	654	13.47	11.06	1:06

`	Recurrence Interval	DRF Area (mi^2)	Peak Inflow (cfs)	Time of Max Occurrence (h:mm)	Peak Outflow (cfs)	Peak Storage Volume (acre-feet)	Max Depth (ft)	Time of Max Occurrence (h:mm)
P105	2-Year	12.15	220	0:38	138	2.83	4.68	0:53
	5-Year	12.15	367	0:37	193	6.02	5.90	0:57
	10-Year	12.15	431	0:37	205	7.67	6.32	1:00
	25-Year	0	1003	0:40	289	23.62	9.13	1:10
	50-Year	0	1205	0:39	305	30.38	9.98	1:13
	100-Year	0	1446	0:40	322	40.08	11.06	1:17
P123	2-Year	4.92	512	1:09	367	10.43	7.66	1:39
	5-Year	4.92	1007	1:04	617	46.75	15.13	2:27
	10-Year	4.92	1204	1:03	1026	52.99	15.83	2:06
	25-Year	0	2713	1:39	1367	164.60	23.25	2:35
	50-Year	0	3491	1:37	1462	242.53	26.44	2:43
	100-Year	0	4637	1:31	1558	349.98	29.84	2:50
P135	2-Year	3.53	37	0:33	35	0.15	8.13	0:44
	5-Year	3.53	101	0:57	91	1.03	15.48	1:08
	10-Year	3.53	135	0:56	116	1.70	16.25	1:11
	25-Year	0	304	0:54	219	6.08	23.25	1:21
	50-Year	0	394	0:56	261	8.92	26.44	1:24
	100-Year	0	513	0:56	307	13.55	29.84	1:27
P141	2-Year	3.53	104	0:31	61	1.22	8.13	0:47
	5-Year	3.53	196	1:10	100	10.04	15.48	1:57
	10-Year	3.53	293	1:08	197	14.78	16.25	1:45
	25-Year	0	727	1:07	282	38.94	23.25	2:04
	50-Year	0	968	1:05	290	58.18	26.44	1:29
	100-Year	0	1298	1:03	290	86.44	29.84	1:13
P162	2-Year	4.92	112	0:43	30	5.96	3.77	2:00
	5-Year	4.92	200	0:39	38	13.83	5.78	2:38
	10-Year	4.92	232	0:38	42	17.15	6.56	3:03
	25-Year	0	412	0:41	82	24.39	8.14	2:36
	50-Year	0	494	0:41	121	27.50	8.78	2:14
	100-Year	0	589	0:41	236	31.94	9.66	1:43
P165	2-Year	4.92	64	0:40	48	0.56	8.79	0:55
	5-Year	4.92	143	0:40	66	3.17	16.11	1:14
	10-Year	4.92	175	0:39	70	4.71	18.46	1:25
	25-Year	0	368	0:43	99	13.20	26.22	1:30
	50-Year	0	459	0:42	141	16.80	28.45	1:26
	100-Year	0	566	0:42	235	19.73	30.05	1:19

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Table B-22. Design Rainfall Distribution for 500-Year Storm Event

Time (HH:MM)	A ≤ 15 mi² (Unadjusted 2-Hour Design Storm)	A = 19.35 mi² (DRF-Adjusted 6-Hour Design Storm)
0:00	0.0000	0.0000
0:05	0.0318	0.0318
0:10	0.0954	0.0954
0:15	0.1463	0.1463
0:20	0.2544	0.2544
0:25	0.4452	0.4452
0:30	0.7950	0.7950
0:35	0.4452	0.4452
0:40	0.2544	0.2544
0:45	0.1972	0.1972
0:50	0.1590	0.1590
0:55	0.1272	0.1272
1:00	0.1272	0.1272
1:05	0.1272	0.1272
1:10	0.0636	0.0636
1:15	0.0636	0.0636
1:20	0.0382	0.0382
1:25	0.0382	0.0382
1:30	0.0382	0.0382
1:35	0.0382	0.0382
1:40	0.0382	0.0382
1:45	0.0382	0.0382
1:50	0.0382	0.0382
1:55	0.0382	0.0382
2:00	0.0382	0.0382
2:05	-	0.0234
2:10	-	0.0234
2:15	-	0.0234
2:20	-	0.0234
2:25	-	0.0234
2:30	-	0.0234
2:35	-	0.0234
2:40	-	0.0234
2:45	-	0.0234
2:50	-	0.0234
2:55	-	0.0234
3:00	-	0.0234
3:05	-	0.0090
3:10	-	0.0090
3:15	-	0.0090
3:20	-	0.0090
3:25	-	0.0090
3:30	-	0.0090
3:35	-	0.0090
3:40	-	0.0090
3:45	-	0.0090
3:50	-	0.0090
3:55	-	0.0090
4:00	-	0.0090
4:05	-	0.0090
4:10	-	0.0090
4:15	-	0.0090
4:20	-	0.0090
4:25	-	0.0090
4:30	-	0.0090
4:35	-	0.0090
4:40	-	0.0090
4:45	-	0.0090
4:50	-	0.0090
4:55	-	0.0090
5:00	-	0.0090
5:05	-	0.0090
5:10	-	0.0090
5:15	-	0.0090
5:20	-	0.0090
5:25	-	0.0090
5:30	-	0.0090
5:35	-	0.0090
5:40	-	0.0090
5:45	-	0.0090
5:50	-	0.0090
5:55	-	0.0090
6:00	-	0.0090

Table B-23. Modifications to Detention Pond P70 Curves

Stage (ft)	Discharge (cfs)
0	0
0.24	0.49
0.86	3.76
1.76	11.77
2.81	24.7
4.2	32.31
5.85	40.34
7.21	84.13
8.03	148.31
8.46	189.24
8.66	209.48
8.71	214.74
9.5	496
10	674.1

Table B-24. Modifications to Detention Pond P102 Curves

Stage (ft)	Area (ft^2)	Volume (ac-ft)
0	0	0
2	16,552.8	0.38
4	31,363.2	1.48
6	49,222.8	3.33
8	76,665.6	6.22
10	111,513.6	10.54
11	111,513.6	13.10
12	111,513.6	15.66
13	111,513.6	18.22
14	111,513.6	20.78

Stage (ft)	Discharge (cfs)
0	0
4	0
2	130
6	280
8	430
10	590
12	710
13	1,253
14	2,246

Table B-25. Modifications to Detention Pond P123 Curves

Stage (ft)	Discharge (cfs)
0	0
0.11	17.9
5	290.2
10	435.3
15	542.9
16	1,121.6
20	1,264.9
25	1,421.6
30	1,562.7
31	2,912.7
32	5,381.1
33	8,577.5
34	12,362.7
35	16,656.2

Table B-26. Modifications to Detention Pond P141 Curves

Stage (ft)	Discharge (cfs)
0	0
1	5
2	18
3	36
4	55
5	64
6	71
7	77
8	83
9	88
10	93
11	98
12	102
13	107
13.1	107

Stage (ft)	Discharge (cfs)
14	245
15	253
16	261
17	268
18	275
19	282
20	289
20.1	290
21	296.7
22	304
23	311.3
24	1,001.3
25	2,262.9
26	3,896.6

Table B-27. Modifications to Detention Pond P165 Curves

Stage (ft)	Discharge (cfs)
0	0
8	46.4
12	56.8
16	65.5
20	73.3
24	80.3
28	113.9
30	234.3
32	279.3
32.7	409.7

Figure B-16. Peak Flow Discharges Along Big Dry Creek (North of County Line Road) for 500-Year Storm Event

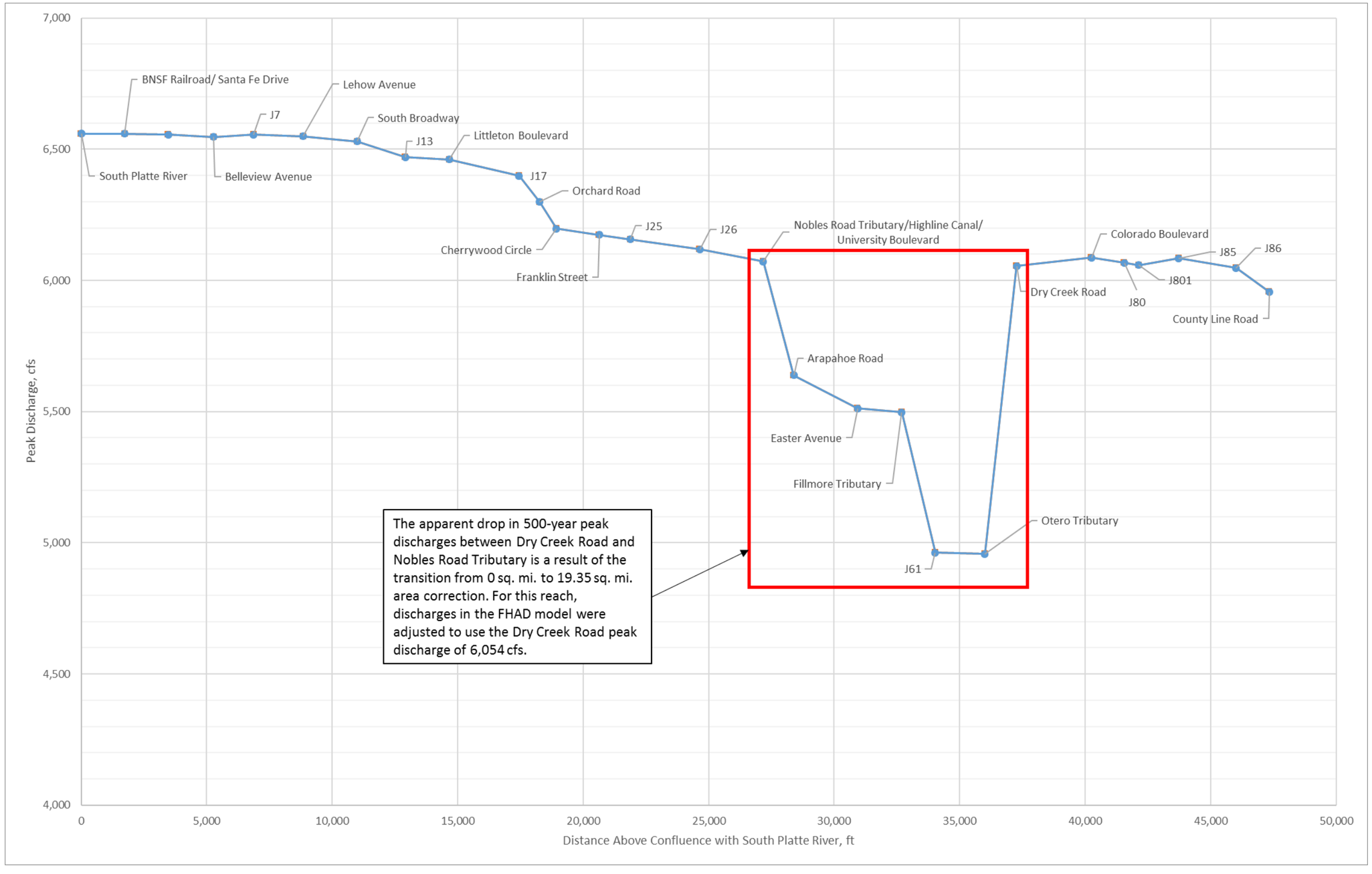


Figure B-17. Peak Flow Discharges Along Big Dry Creek (South of County Line Road) for 500-Year Storm Event

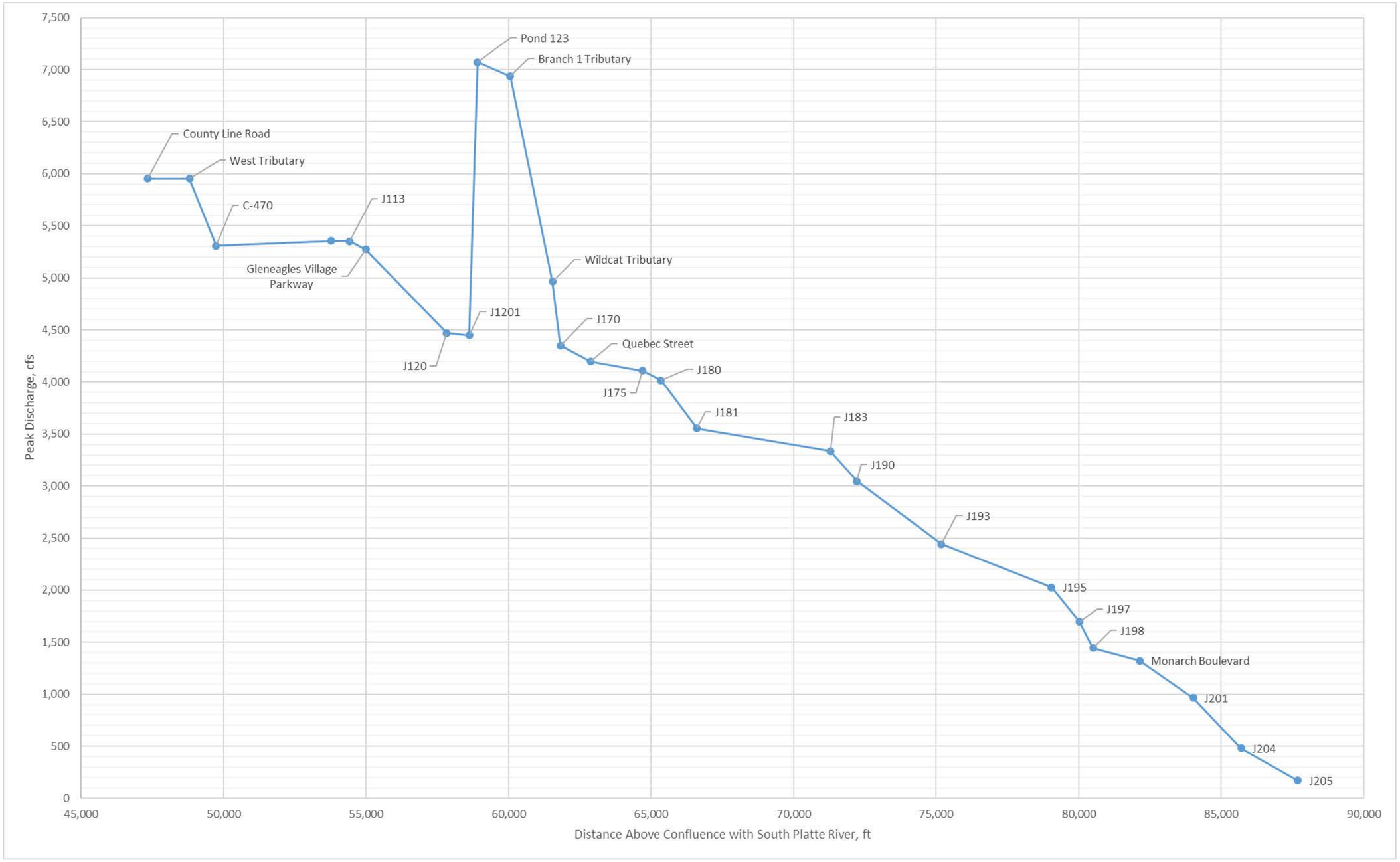


Figure B-18. Peak Flow Discharges Along Nobles Road Tributary for 500-Year Storm Event

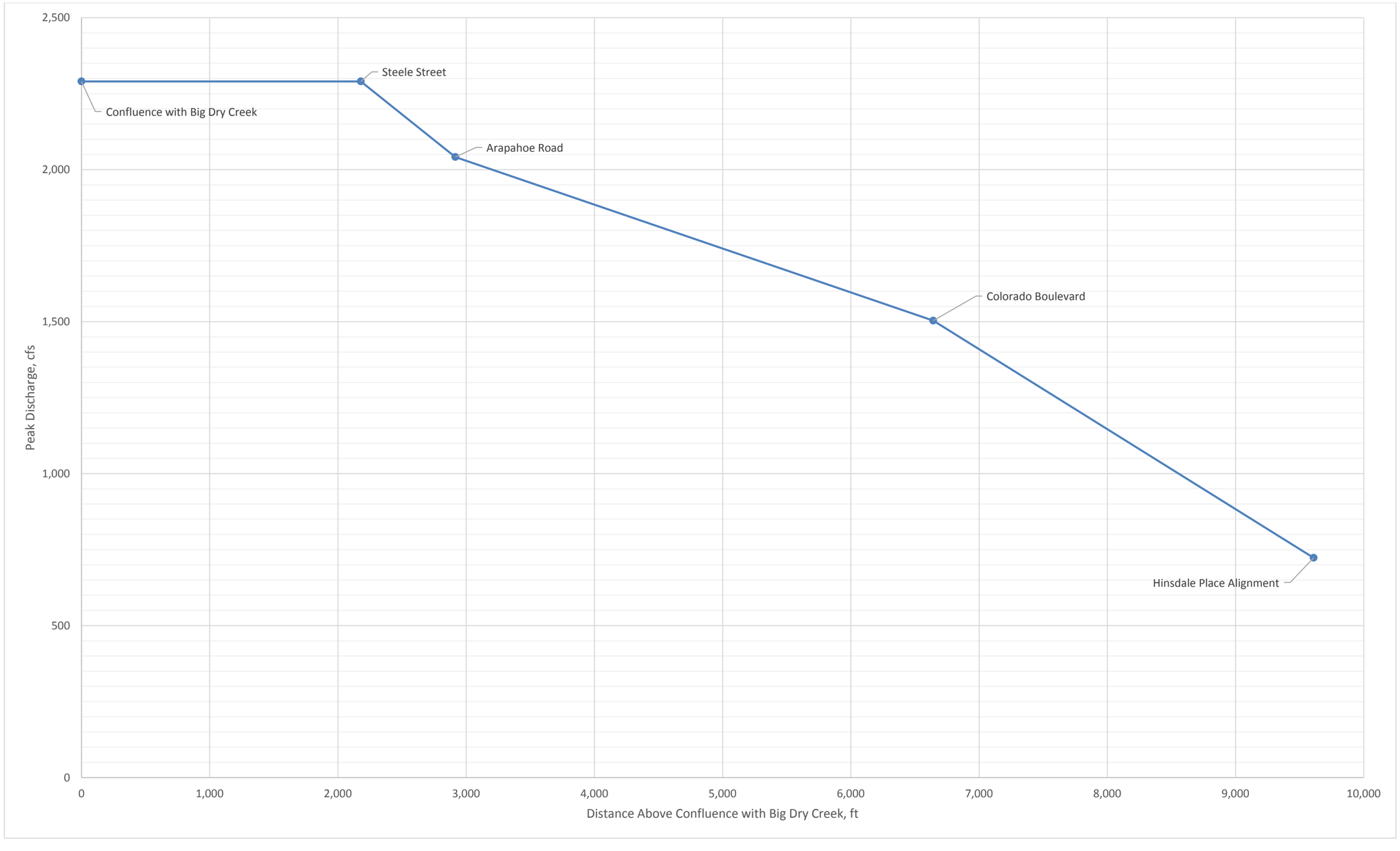


Figure B-19. Peak Flow Discharges Along Fillmore Tributary for 500-Year Storm Event

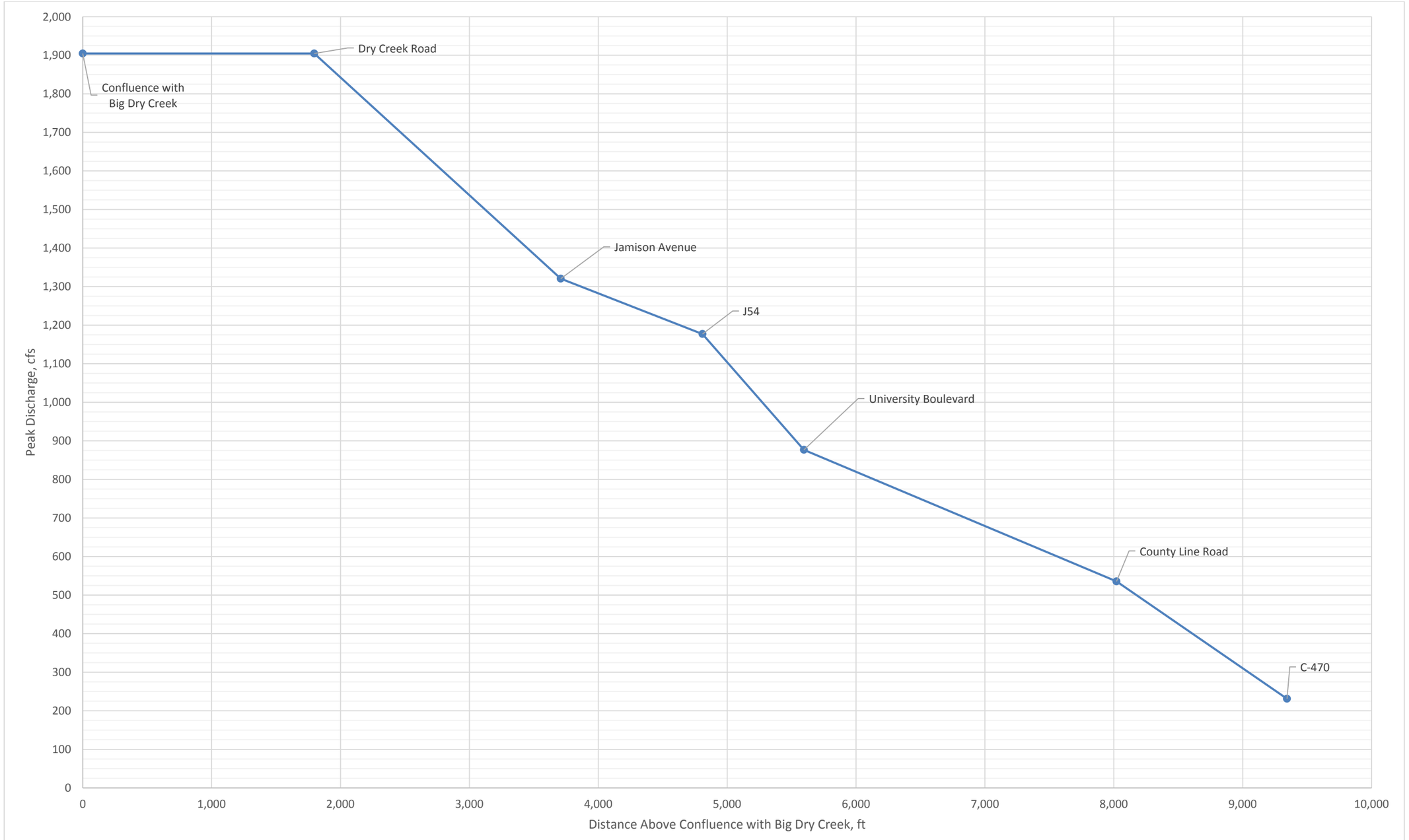


Figure B-20. Peak Flow Discharges Along Otero Tributary for 500-Year Storm Event

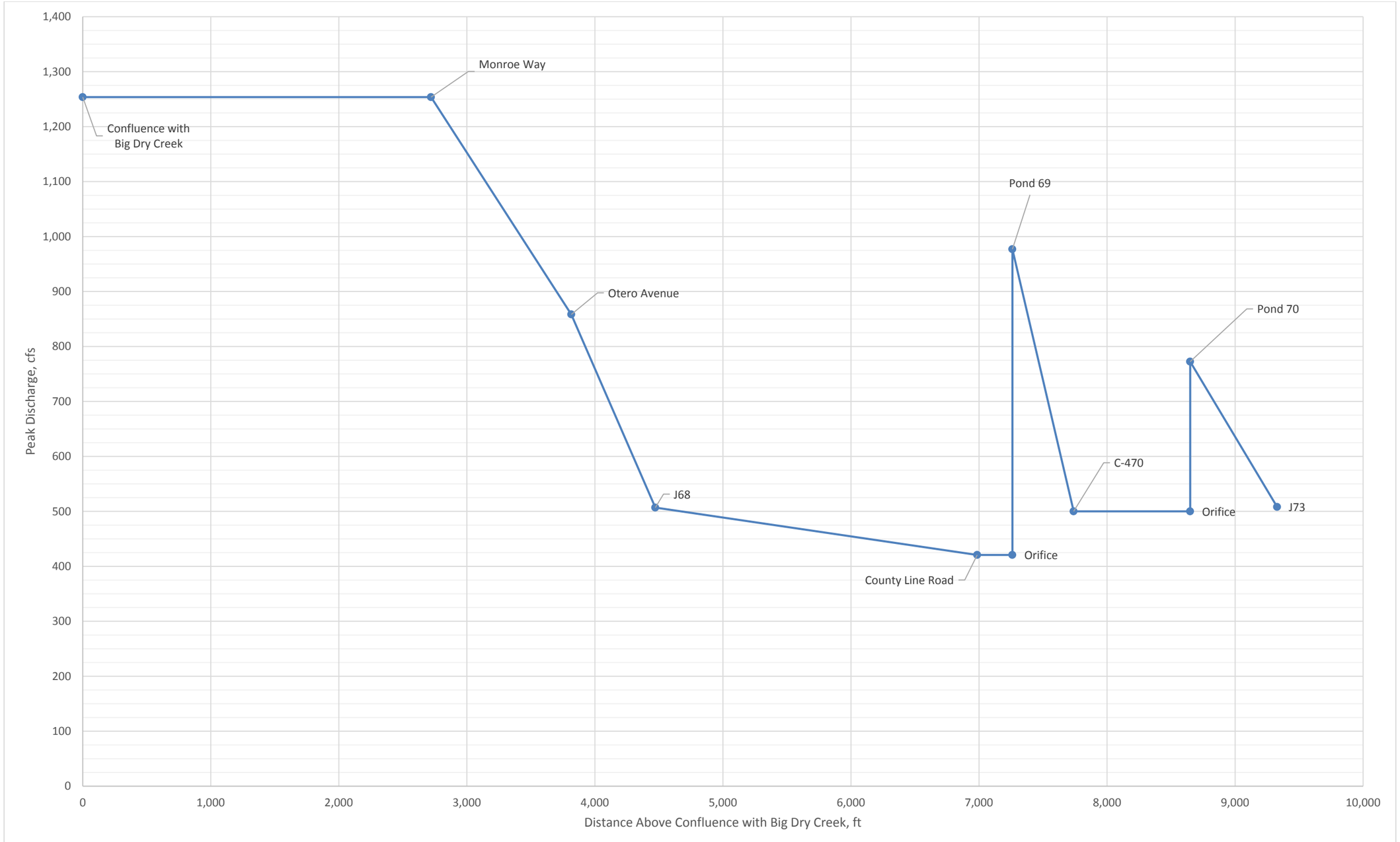


Table B-28. Full Output Results with Peak Discharges and Volumes for All Design Points for the 500-Year Storm Event

Location	Stream	SWMM Node	DRF Area (sq. mi.), Major Storm	Future Condition Peak Discharges, 500-Year Storm Event (cfs)	Future Condition Runoff Volumes, 500-Year Storm Event (ac-ft)
Big Dry Creek Outfall to S Platte	Big Dry Creek	BDCOutfall	19.35	6,559	2,681.7
	Big Dry Creek	J1	19.35	6,559	2,682.2
BNSF Railroad	Big Dry Creek	J2	19.35	6,560	2,669.9
City Ditch	Big Dry Creek	J3	19.35	6,555	2,642.3
Belleview Avenue	Big Dry Creek	J5	19.35	6,547	2,627.0
	Big Dry Creek	J7	19.35	6,556	2,608.6
Lehow Avenue	Big Dry Creek	J9	19.35	6,550	2,584.0
Broadway	Big Dry Creek	J11	19.35	6,530	2,553.3
	Big Dry Creek	J12	19.35	90	6.9
	Big Dry Creek	J13	19.35	6,469	2,510.3
Littleton Boulevard	Big Dry Creek	J16	19.35	6,461	2,491.9
	Big Dry Creek	J17	19.35	6,399	2,455.1
	Big Dry Creek	J19	19.35	266	19.0
Orchard Road	Big Dry Creek	J20	19.35	6,299	2,421.3
Cherrywood Circle	Big Dry Creek	J21	19.35	6,197	2,396.8
Franklin Street	Big Dry Creek	J211	19.35	6,174	2,372.2
	Big Dry Creek	J22	19.35	242	17.5
	Big Dry Creek	J23	19.35	82	6.1
	Big Dry Creek	J24	19.35	331	21.6
	Big Dry Creek	J25	19.35	6,157	2,353.8
	Big Dry Creek	J26	19.35	6,118	2,323.1
	Big Dry Creek	J27	19.35	291	21.9
	Big Dry Creek	J28	19.35	239	17.9
Highline Canal	Big Dry Creek	J30	19.35	6,071	2,277.1
Steele Street	Nobles Road Tributary	J31	0	2,290	137.8
Arapahoe Road	Nobles Road Tributary	J32	0	2,042	120.6
	Nobles Road Tributary	J33	0	1,607	78.9
Colorado Boulevard	Nobles Road Tributary	J35	0	1,503	85.0
Nobles Road Street Flow - Overflow from J35	Nobles Road Tributary	C35	0	0	37.6
Hinsdale Place	Nobles Road Tributary	J37	0	723	31.9
Arapahoe Road	Big Dry Creek	J40	19.35	5,639	2,123.7
	Big Dry Creek	J41	19.35	395	31.6
	Big Dry Creek	J43	19.35	125	8.3
Easter Avenue	Big Dry Creek	J44	19.35	5,513	2,059.2
	Big Dry Creek	J45	19.35	247	19.6
	Big Dry Creek	J46	19.35	128	10.3
Dry Creek Road	Fillmore Tributary	J51	0	1,905	114.8
Jamison Avenue	Fillmore Tributary	J511	0	1,321	75.8
	Fillmore Tributary	J52	0	231	12.6

Location	Stream	SWMM Node	DRF Area (sq. mi.), Major Storm	Future Condition Peak Discharges, 500-Year Storm Event (cfs)	Future Condition Runoff Volumes, 500-Year Storm Event (ac-ft)
	Fillmore Tributary	J53	0	176	8.5
	Fillmore Tributary	J54	0	1,177	67.2
University Boulevard	Fillmore Tributary	J55	0	877	50.6
County Line Road	Fillmore Tributary	J56	0	536	30.7
C-470	Fillmore Tributary	J57	0	231	14.2
Fillmore Tributary Confluence	Big Dry Creek	J60	19.35	5,497	2,028.5
	Big Dry Creek	J61	19.35	4,962	1,890.4
Monroe Way	Otero Tributary	J66	0	1,254	140.9
Otero Avenue	Otero Tributary	J67	0	858	115.7
	Otero Tributary	J68	0	507	91.8
	Otero Tributary	J69	0	421	78.3
	Otero Tributary	O69	0	421	78.3
County Line Road	Otero Tributary	J70	0	623	49.7
	Otero Tributary	O70	0	577	49.7
	Otero Tributary	P70	0	772	46.0
	Otero Tributary	J72	0	48	3.8
	Otero Tributary	J73	0	508	24.0
Otero Tributary Confluence	Big Dry Creek	J75	19.35	4,958	1,881.2
Dry Creek Road	Big Dry Creek	J76	0	6,054	1,807.6
Colorado Boulevard	Big Dry Creek	J77	0	6,086	1,780.0
	Big Dry Creek	J78	0	125	6.2
	Big Dry Creek	J79	0	151	7.1
	Big Dry Creek	J80	0	6,067	1,740.1
	Big Dry Creek	J801	0	6,058	1,730.9
	Big Dry Creek	J81	0	132	7.4
	Big Dry Creek	J82	0	378	21.2
	Big Dry Creek	J83	0	301	14.5
	Big Dry Creek	J85	0	6,084	1,709.4
	Big Dry Creek	J86	0	6,047	1,694.0
	Big Dry Creek	J87	0	452	114.8
	Big Dry Creek	O88	0	130	114.8
	Big Dry Creek	J89	0	504	61.1
	Big Dry Creek	J90	0	293	44.2
	Big Dry Creek	O90	0	293	44.2
	Big Dry Creek	J91	0	454	20.8
County Line Road	Big Dry Creek	J95	0	5,957	1,568.2
	Big Dry Creek	J951	0	5,954	1,537.5
	Big Dry Creek	J100	0	873	186.6
	Big Dry Creek	J101	0	768	166.9
Canongate Lane (Out)	Big Dry Creek	O101	0	768	166.9
	Big Dry Creek	J102	0	940	143.6

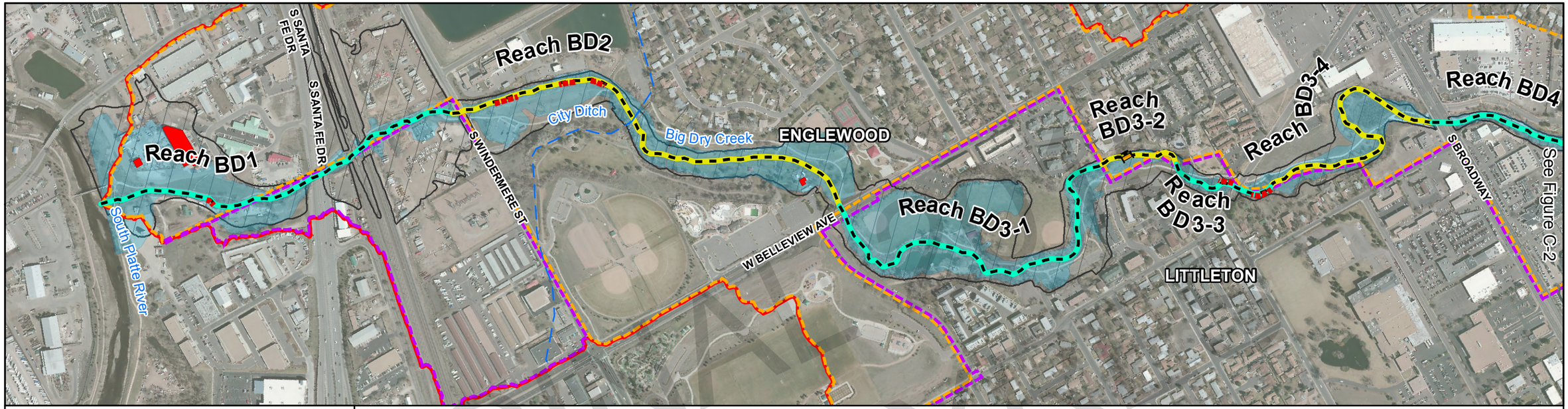
Location	Stream	SWMM Node	DRF Area (sq. mi.), Major Storm	Future Condition Peak Discharges, 500-Year Storm Event (cfs)	Future Condition Runoff Volumes, 500-Year Storm Event (ac-ft)
Cresthill Lane (Out)	Big Dry Creek	O102	0	940	143.6
	Big Dry Creek	J103	0	856	124.0
	Big Dry Creek	J105	0	513	104.6
Lark Sparrow Drive (Out)	Big Dry Creek	O105	0	345	104.6
	Big Dry Creek	J106	0	714	29.9
	Big Dry Creek	J107	0	900	44.5
	Big Dry Creek	J108	0	345	17.2
C-470	Big Dry Creek	J110	0	5,308	1,350.3
	Big Dry Creek	J112	0	5,354	1,313.5
	Big Dry Creek	J113	0	5,352	1,301.2
	Big Dry Creek	J114	0	464	31.3
Glen Eagles Village Parkway	Big Dry Creek	J116	0	5,273	1,258.2
	Big Dry Creek	J117	0	828	411.2
	Big Dry Creek	J118	0	138	9.4
	Big Dry Creek	J119	0	4,469	816.3
	Big Dry Creek	J120	0	4,448	788.7
	Big Dry Creek	J1201	0	1,002	43.6
	Big Dry Creek	J121	0	562	24.2
	Big Dry Creek	J122	0	5,189	1,141.6
	Big Dry Creek	J123	0	5,189	1,052.4
University Boulevard (Out)	Big Dry Creek	O123	0	6,935	1,110.9
	Big Dry Creek	J125	0	2,290	448.1
	Branch 1	J126	0	617	29.4
	Branch 1	J127	0	2,195	389.7
	Branch 1	J128	0	965	138.7
	Branch 1	J130	0	697	71.8
	Branch 1	J131	0	479	48.8
	Branch 1	J132	0	336	35.9
	Branch 1	J134	0	373	66.9
	Branch 1	J135	0	373	66.9
	Branch 1	O135	0	578	52.2
	Branch 1	J136	0	296	28.1
	Branch 1	J138	0	2,173	365.2
	Branch 1	J140	0	1,399	203.5
	Branch 1	J141	0	1,399	203.5
	Branch 1	O141	0	384	38.1
	Branch 1	J143	0	265	25.6
	Branch 1	J144	0	131	11.8
	Branch 1	J145	0	1,667	174.3
	Branch 1	J147	0	842	79.2
	Branch 1	J148	0	940	143.6

Location	Stream	SWMM Node	DRF Area (sq. mi.), Major Storm	Future Condition Peak Discharges, 500-Year Storm Event (cfs)	Future Condition Runoff Volumes, 500-Year Storm Event (ac-ft)
	Branch 1	J149	0	162	11.3
	Branch 1	J151	0	541	53.7
	Branch 1	J152	0	150	13.2
	Big Dry Creek	J160	0	4,965	641.4
	Wildcat Tributary	J161	0	595	116.3
	Wildcat Tributary	J162	0	514	91.5
	Wildcat Tributary	O162	0	514	91.5
	Wildcat Tributary	J164	0	532	75.5
	Wildcat Tributary	J165	0	388	51.9
Quebec Street (Out)	Wildcat Tributary	O165	0	388	51.9
	Wildcat Tributary	J1651	0	475	34.4
	Wildcat Tributary	J166	0	387	23.7
	Wildcat Tributary	J167	0	109	10.8
	Big Dry Creek	J170	0	4,349	500.2
Quebec Street	Big Dry Creek	J1701	0	4,196	475.7
	Big Dry Creek	J171	0	267	14.9
	Big Dry Creek	J175	0	4,107	460.3
	Big Dry Creek	J176	0	616	56.8
	Big Dry Creek	J177	0	412	38.7
	Big Dry Creek	J178	0	74	7.2
	Big Dry Creek	J179	0	198	18.8
	Big Dry Creek	J180	0	4,016	445.0
	Big Dry Creek	J181	0	3,555	383.6
	Big Dry Creek	J183	0	3,337	334.5
	Big Dry Creek	J187	0	443	36.5
	Big Dry Creek	J188	0	170	12.3
	Big Dry Creek	J190	0	3,047	300.8
	Big Dry Creek	J193	0	2,442	232.9
	Big Dry Creek	J195	0	2,027	181.1
	Big Dry Creek	J197	0	1,700	151.3
	Big Dry Creek	J198	0	1,445	125.2
Monarch Boulevard	Big Dry Creek	J200	0	1,322	111.1
	Big Dry Creek	J201	0	965	78.9
	Big Dry Creek	J202	0	380	18.3
	Big Dry Creek	J204	0	481	44.8
	Big Dry Creek	J205	0	173	16.2

Table B-29. Detention Pond Peak Inflows, Volumes, Depths, and Discharges for the 500-Year Storm Event

Name	DRF Area (sq. mi.)	Peak Inflow (cfs)	Time of Peak Inflow (HH:MM)	Peak Outflow (cfs)	Peak Storage Volume (ac-ft)	Max. Depth (ft)	Time of Max. Depth (HH:MM)
P69	0	977.0	0:48	420.7	28.16	19.4	1:18
P70	0	772.4	0:39	576.8	13.99	9.7	0:51
P88	0	973.4	0:43	130.1	58.46	43.1	2:17
P90	0	978.0	0:37	292.6	23.05	16.9	1:04
P101	0	1,123.4	1:03	768.3	18.7	21.2	1:31
P102	0	1,172.1	0:42	939.9	16.74	12.4	0:56
P105	0	1,917.1	0:40	345.2	57.98	19.5	1:21
P123	0	7,062.7	1:37	5,188.5	427.02	31.9	2:02
P135	0	730.3	0:54	372.6	23.06	12.4	1:32
P141	0	1,858.1	1:02	1,398.8	80.68	24.3	1:27
P162	0	771.7	0:40	514.1	35.32	10.3	1:24
P165	0	772.7	0:42	387.9	25.06	32.6	1:14

APPENDIX C
HYDRAULIC ANALYSIS



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Eroded Banks
- Aerial Sanitary Crossings
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
BD1	Englewood	Minor left bank instability in lower portion of reach
BD1	Englewood	Limited channel capacity, two buildings flooded in this reach
BD2	Englewood	Locations of left bank instability in lower half of reach
BD2	Englewood	Belleview Park Farms buildings in floodplain
BD3-2	Englewood	Existing aerial sanitary sewer crossing
BD3-3	Littleton	Grouted boulder edging failed downstream of Lehow Avenue
BD3-3	Littleton	Left bank vertical instability upstream of Lehow Avenue

0 500 1,000 Feet

ORIGINAL MAY BE BY MDP ASSOCIATES

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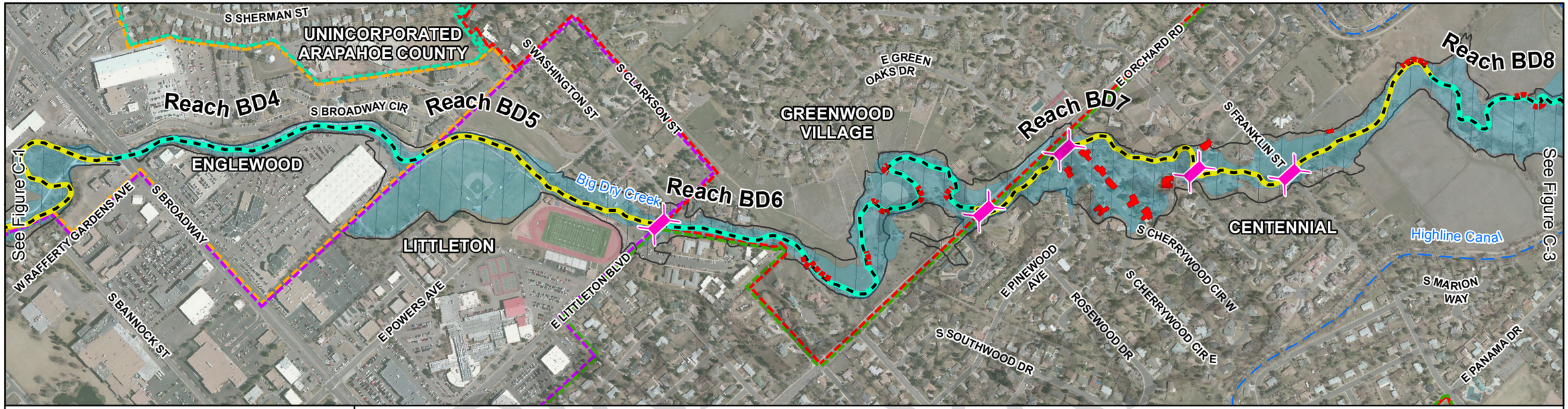
Designed by: MDH
Drawn by: MDH
Checked by: WCP
Project No.: 35-0214.00
Date: 10/15/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-1



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Eroded Banks
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
BD6	Greenwood Village/Littleton	Littleton Boulevard Bridge has <50-year capacity
BD6	Greenwood Village	Areas of unstable vertical banks
BD7	Greenwood Village/Centennial	Orchard Road Bridge has <25-year capacity
BD7	Centennial	Cherrywood Circle Bridge has 10-year capacity
BD7	Centennial	Lake Place Bridge has 10-year capacity
BD7	Centennial	Franklin Street Bridge has 50-year capacity
BD7	Centennial	10 houses are flooded in this reach

0 500 1,000 Feet

ORIGINAL MAY BE MDP BY AYRES ASSOCIATES

AYRES ASSOCIATES
12050 N Pecos St
Suite 150
Westminster, CO 80234
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www.AyresAssociates.com

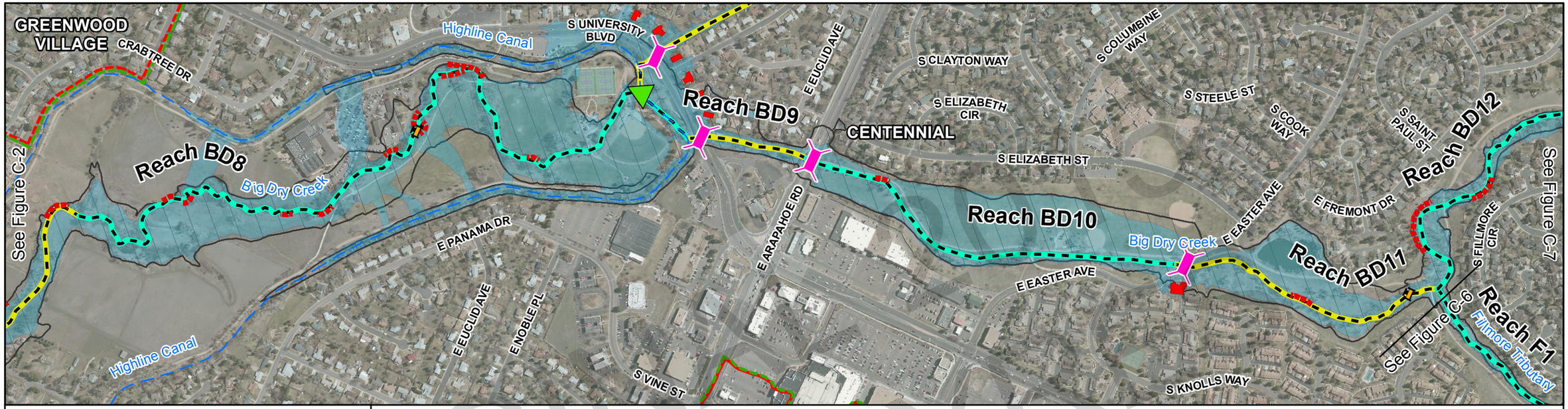
Designed by: MDH
Drawn by: MDH
Checked by: WCP
Project No.: 35-0214.00
Date: 10/15/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-2



Legend

- High Line Canal Gated Control Structure
- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Eroded Banks
- Aerial Sanitary Crossings
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
BD8	Centennial	Several location of lateral instability with vertical banks
BD8	Centennial	Existing aerial sanitary sewer crossing
BD8	Centennial	High Line Canal gated control structure is a major constriction to flow, causes spills over canal embankment in multiple locations, and also requires frequent maintenance for debris removal
BD9	Centennial	University Boulevard Bridge has 25-year capacity, and six houses are flooded along University Boulevard
BD10	Centennial	Arapahoe Road Bridge has 50-year capacity
BD10	Centennial	One location of right bank lateral instability threatening existing trail
BD11	Centennial	Easter Avenue culverts have <25-year capacity, and one house is flooded due to the backwater

0 500 1,000 Feet

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Suite 150
Westminster, CO 80234
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www.AyresAssociates.com

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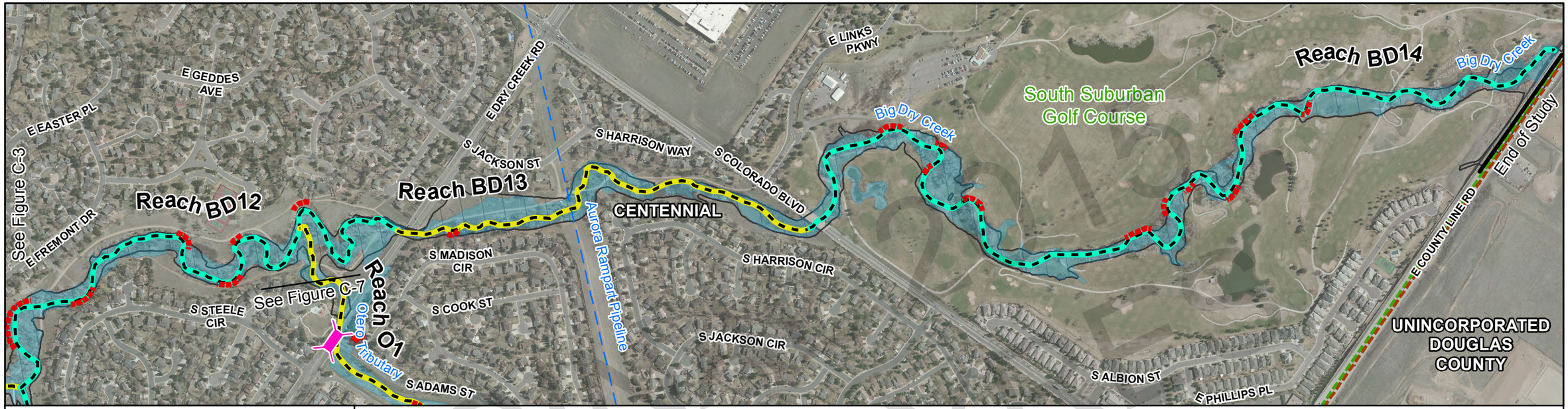
Drawn by: MDH
Checked by: WCP
Project No.: 35-0214.00
Date: 10/15/2014

URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-3



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Eroded Banks
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
BD12	Centennial	There are several locations of lateral instability and vertical banks
BD13	Centennial	There is one area of left bank lateral instability upstream of Dry Creek Road
BD14	Centennial	There are several locations of lateral instability and vertical banks within the South Suburban Golf Course

N

0 500 1,000 Feet

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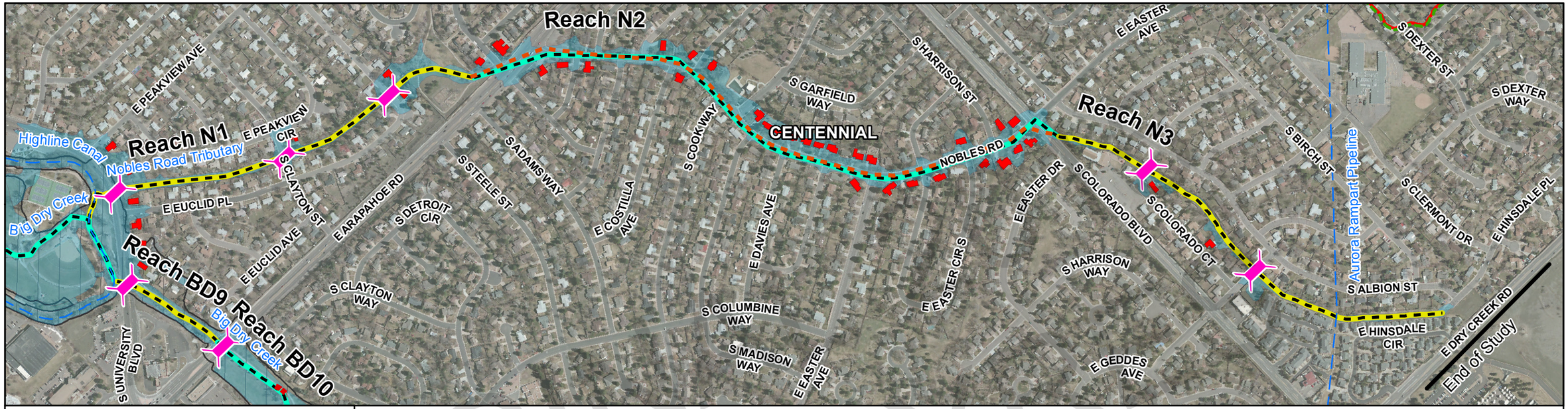
Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-4



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Undersized Storm Sewer
- Eroded Banks
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
N1	Centennial	University Boulevard culvert has 10-year capacity
N1	Centennial	Clayton Street culvert has 2-year capacity, and one house is flooded due to the backwater
N1	Centennial	Steele Street culvert has 2-year capacity, and two houses are flooded due to the backwater
N2	Centennial	Nobles Road storm sewer has <2-year capacity, and 29 houses are flooded in this reach
N3	Centennial	Colorado Court culvert has <2-year capacity, and the backwater floods one house
N3	Centennial	Geddes Avenue culvert has 2-year capacity
N3	Centennial	One house is flooded between Geedes Avenue and Colorado Court due to lack of conveyance

0 500 1,000 Feet

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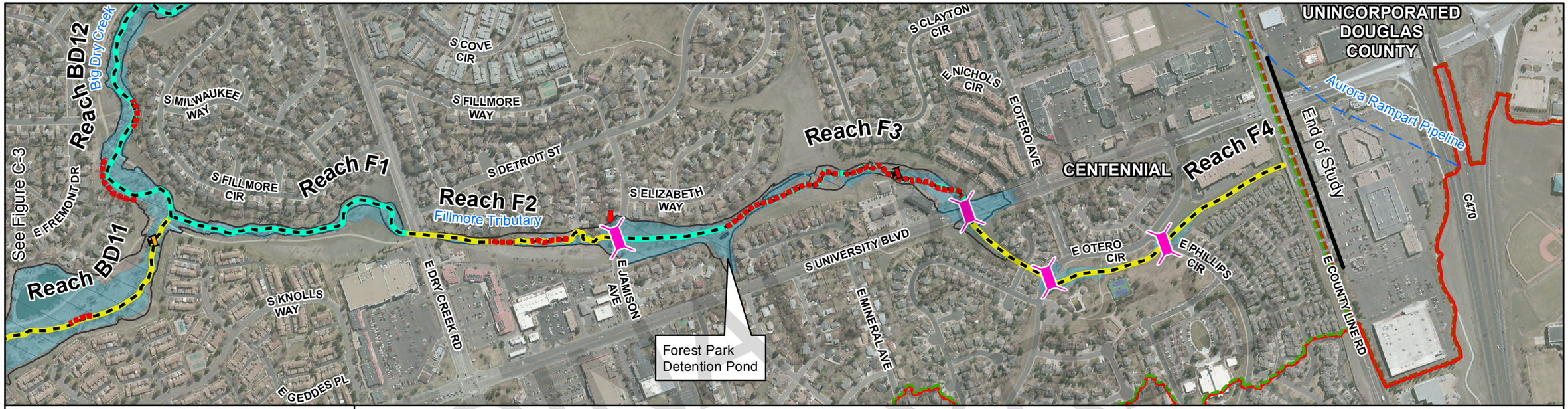
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-5



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Eroded Banks
- Exposed Sanitary Crossing
- Aerial Sanitary Crossings
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
F2	Centennial	Low flow channel instability between existing drop structures
F3	Centennial	Jamison Avenue culvert has <2-year capacity, and one house is flooded due to the backwater
F3	Centennial	Significant vertical and lateral instability between the new Forest Park Detention Pond and University Boulevard, with a deeply incised low flow channel
F3	Centennial	8" sanitary sewer exposed and suspended across low flow in portion of reach
F4	Centennial	University Boulevard culvert has <25-year capacity
F4	Centennial	E. Otero Circle/Nichols Place culvert has 100-year capacity, but floods E. Otero Circle
F4	Centennial	E. Phillips Circle culvert has 50-year capacity

0 500 1,000 Feet

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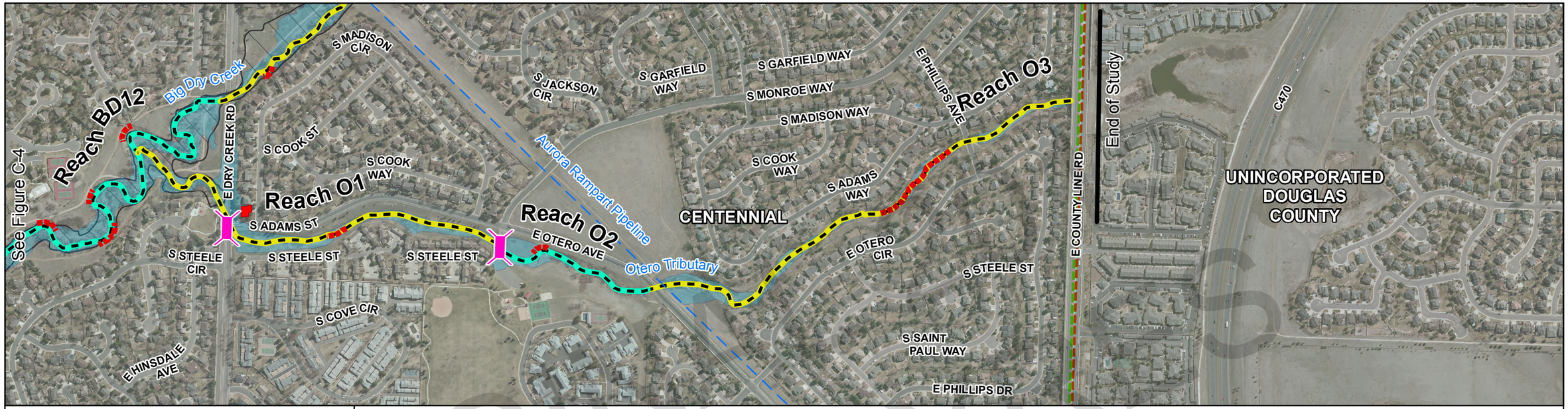
URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-6



Legend

- Regulatory 100-Year Floodplain
- 2014 100-Year Floodplain
- Buildings In 2014 100-Year Floodplain
- Undersized Crossing Structures
- Eroded Banks
- Big Dry Creek Basin Boundary

Reach	Jurisdiction	Problem Description
O1	Centennial	Dry Creek Road culvert has 10-year capacity, and one house is flooded due to the backwater
O1	Centennial	There are a few locations of low flow channel instability
O2	Centennial	Steele Street culvert has 10-year capacity
O2	Centennial	There is one location of right bank lateral instability
O3	Centennial	The upper portion of this reach to Phillips Avenue is experiencing severe vertical degradation, and has a deeply incised low flow channel

0 500 1,000 Feet

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URBAN DRAINAGE AND FLOOD CONTROL DISTRICT,SOUTHEAST METRO STORMWATER AUTHORITY, CITY OF GREENWOOD VILLAGE, CITY OF ENGLEWOOD

Major Drainageway Plan for Big Dry Creek (Downstream of County Line Road)

Problem Areas

Figure C-7

Figure C-8. Typical Manning's "n" Values



Pavement = 0.016



Grass (Regularly Maintained) = 0.03



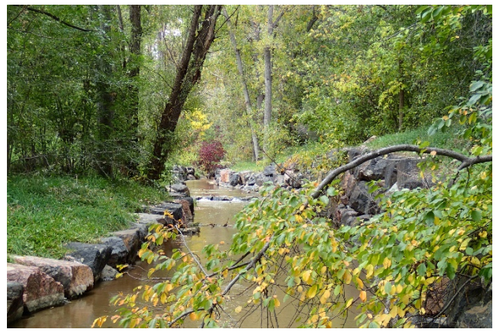
Grassland = 0.035



Channel = 0.035



Brush and Weeds = 0.05



Dense Trees = 0.07



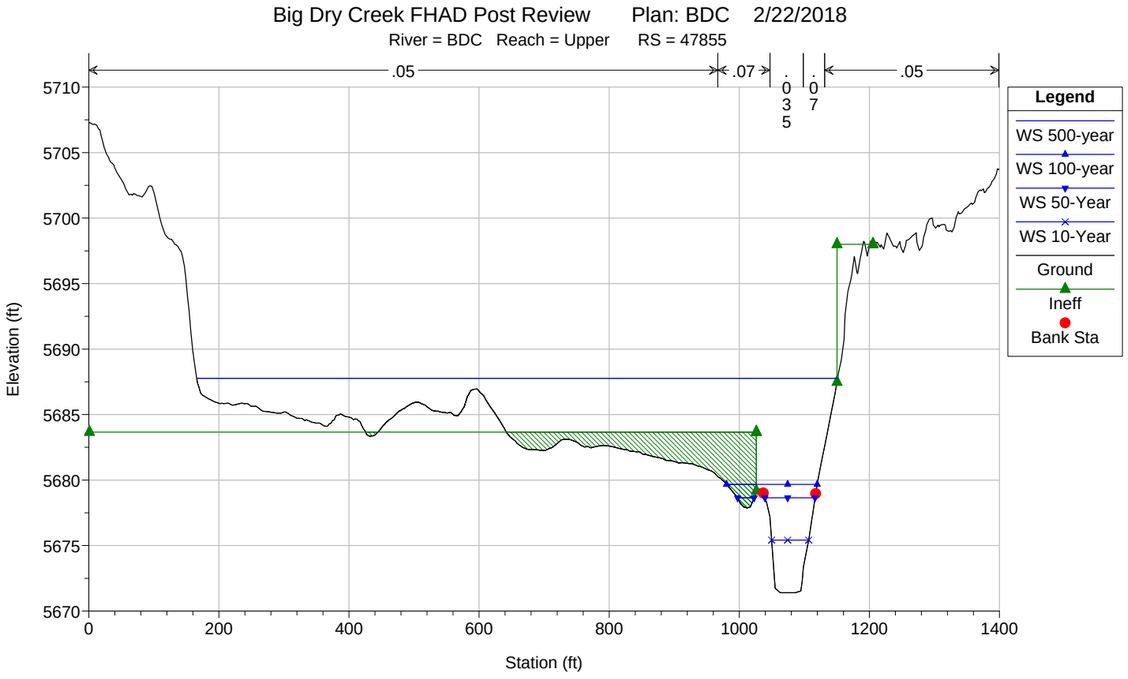
Buildings and Development = 0.1

Table C-1. Existing Facilities

Creek	Survey No.	Station	Location	Reach	Crossing Type	Size	General Capacity
Big Dry Creek	58	1+62	Pedestrian Bridge	BD1	Pedestrian Bridge	Pedestrian Bridge	--
	57	9+35	Pedestrian Bridge	BD1	Pedestrian Bridge	Pedestrian Bridge	--
	56	15+03	US-85/Santa Fe	BD1	Bridge	1 - 46.5’ x 12.5’ Opening	100yr
	55	17+38	BNSF Railroad	BD1	Bridge/Culvert	1 - 49’ x 12’ Opening,1 - 12’ x 9.25’ RCBC	100yr
	54	18+35	RTD Lightrail, BNSF Railroad	BD1	Parallel Bridges	3 - 50’ x 16’ Openings	100yr
	53	23+94	Pedestrian Bridge	BD1	Pedestrian Bridge	Pedestrian Bridge	--
	52	25+29	Windermere Street	BD2	Bridge	1 - 118’ x 15’ Opening	100yr
	51	35+57	Pedestrian Bridge	BD2	Pedestrian Bridge	Pedestrian Bridge	--
	50	37+62	City Ditch	BD2	Bridge	Aerial Flume	100yr
	49	41+20	Miniature Railroad	BD2	Bridge	Bridge	--
	48	47+03	Pedestrian Bridge	BD2	Pedestrian Bridge	Pedestrian Bridge	--
	47	51+04	Pedestrian Bridge	BD2	Bridge	Bridge	--
	46	53+87	Belleview Avenue	BD3	Culvert	1 - 9’ x 10’ RCBC, 1 - 12’ x 10’ RCBC, 1 - 9’ x 9.5’ RCBC	100yr
	45	65+38	Pedestrian Bridge	BD3	Pedestrian Bridge	Pedestrian Bridge	--
	44	68+73	Pedestrian Bridge	BD3	Pedestrian Bridge	Pedestrian Bridge	--
	43	85+01	Pedestrian Bridge	BD3	Pedestrian Bridge	Pedestrian Bridge	--
	42	89+00	Lehow Avenue	BD3	Culvert	2 - 20’ x 14.3’ RCBC	100yr
	41	100+36	Pedestrian Bridge	BD3	Pedestrian Bridge	Pedestrian Bridge	--
	40	107+78	Pedestrian Bridge	BD3	Pedestrian Bridge	Pedestrian Bridge	--
	39	110+68	Broadway	BD4	Bridge	3 - 23.7’ x 18’ Openings	100yr
	38	147+74	Littleton Boulevard	BD6	Bridge	1 - 29.6’ x 11’ Opening	<50yr
	37	183+46	Orchard Road	BD7	Bridge	1 - 36.8’ x 9’ Opening	<25yr
	36	189+99	Cherrywood Circle	BD7	Bridge	1 - 28’ x 10’ Opening	10yr
	35	200+47	Lake Place	BD8	Bridge	1 - 38.5’ x 10.8’ Opening	10yr
	34	207+11	Franklin Street	BD8	Bridge	1 - 28’ x 13.4’ Opening	50yr
	33	242+76	Pedestrian Bridge	BD8	Pedestrian Bridge	Pedestrian Bridge	--
	--	247+98	Pedestrian Bridge	BD8	Pedestrian Bridge	Pedestrian Bridge	--
	32	256+56	Pedestrian Bridge	BD8	Pedestrian Bridge	Pedestrian Bridge	--

Creek	Survey No.	Station	Location	Reach	Crossing Type	Size	General Capacity
Big Dry Creek	31	267+66	Pedestrian Bridge	BD8	Pedestrian Bridge	Pedestrian Bridge	--
	30	271+87	Pedestrian Bridge	BD8	Pedestrian Bridge	Pedestrian Bridge	--
	29	273+29	Highline Canal	BD9	Gate Structure	Gate Structure	--
	28	274+25	Pedestrian Bridge	BD9	Pedestrian Bridge	Pedestrian Bridge	--
	27	277+33	University Boulevard	BD9	Bridge	1 - 26.3’ x 12’ Opening	25yr
	26	284+71	Arapahoe Road	BD10	Bridge	2 - 18.7’ x 11.5’ Openings	50yr
	25	290+79	Pedestrian Bridge	BD10	Pedestrian Bridge	Pedestrian Bridge	--
	24	300+87	Pedestrian Bridge	BD10	Pedestrian Bridge	Pedestrian Bridge	--
	23	310+36	Easter Avenue	BD11	Culvert	1 - 14’ x 10’ RCBC, 1 - 14’ x 9.5’ RCBC	<25yr
	22	327+53	Pedestrian Bridge	BD11	Pedestrian Bridge	Pedestrian Bridge	--
	21	330+46	Pedestrian Bridge	BD12	Pedestrian Bridge	Pedestrian Bridge	--
	20	335+42	Pedestrian Bridge	BD12	Pedestrian Bridge	Pedestrian Bridge	--
	19	359+78	Pedestrian Bridge	BD12	Pedestrian Bridge	Pedestrian Bridge	--
	18	373+17	Pedestrian Bridge	BD12	Pedestrian Bridge	Pedestrian Bridge	--
	17	374+40	Dry Creek Road	BD13	Bridge	1 - 56.8’ x 12.9’ Opening	100yr
	16	387+22	Pedestrian Bridge	BD13	Pedestrian Bridge	Pedestrian Bridge	--
	--	390+67	Pedestrian Bridge	BD13	Pedestrian Bridge	Pedestrian Bridge	--
	15	405+10	Colorado Boulevard	BD14	Bridge	2 - 74’ x 12.3’ Openings	100yr
	14	407+86	Golf Course Path	BD14	Culvert	1 - 5' RCP	--
	13	409+81	Golf Course Path	BD14	Culvert	1 - 4' CMP	--
	12	415+52	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	11	423+12	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	10	430+47	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	9	432+97	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	8	447+76	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	7	455+03	Pedestrian Bridge	BD14	Pedestrian Bridge	Pedestrian Bridge	--

Creek	Survey No.	Station	Location	Reach	Crossing Type	Size	General Capacity
Big Dry Creek	6	460+49	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	5	464+53	Golf Course Path	BD14	Culvert	1 - 2' CMP	--
	4	472+35	Golf Course Path	BD14	Pedestrian Bridge	Pedestrian Bridge	--
	3	477+67	County Line Road	BD14	Culvert	4 - 10’ x 9’ RCBC	100yr
Fillmore Tributary	T7	618+06	Dry Creek Road	F2	Culvert	2 - 10’ x 6’ RCBC	100yr
	T6	632+26	Jamison Avenue	F3	Culvert	1 - 2’ RCP	<2yr
	T5	656+55	University Boulevard	F4	Culvert	1 - 10’ x 4’ RCBC	<25yr
	T4	663+14	Otero Circle/ Nichols Place	F4	Culvert	1 - 6’ RCP	50yr
	T3	666+68	Pedestrian Bridge	F4	Pedestrian Bridge	Pedestrian Bridge	--
	T2	671+14	Phillips Circle	F4	Culvert	1 - 6’ RCP	50yr
Otero Tributary	T8	702+91	Pedestrian Bridge	O1	Culvert	1 - 3.5’ CMP	--
	T9	709+29	Dry Creek Road	O1	Culvert	1 - 8’ CMP	10yr
	T10	727+70	South Steele Street	O2	Culvert	1 - 87” x 63” Pipe Arch CMP	10yr
	T11	738+98	Adams Street	O3	Culvert	1 - 10’ x 4.8’ RCBC	100yr
	T12	763+22	Phillips Avenue	O3	Culvert	1 – 90” CMP	100yr
Nobles Road Tributary	T21	2+61	University Boulevard	N1	Culvert	1 - 112” x 75” Pipe Arch CMP	10yr
	T20	13+54	Clayton Street	N1	Culvert	1 - 87” x 63” Pipe Arch CMP	2yr
	T19	21+20	Steele Street	N1	Culvert	1 - 87” x 63” Pipe Arch CMP	2yr
	T18	23+55	Pedestrian Bridge	N2	Culvert	2 - 4' CMP	--
	--	30+71	Arapahoe Road	N2	--	Storm Sewer Outfall	--
	--	66+35	Colorado Boulevard	N2	--	Storm Sewer Inlet, 1 - 4’ RCP	<2yr
	T16	72+25	Easter Place	N3	Culvert	1 - 5’ RCP	<2yr
	T15	82+47	Geddes Ave	N3	Culvert	1 - 4.5’ RCP	2yr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.035
.07
.05
Legend
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WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5705
5700
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5685
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5675
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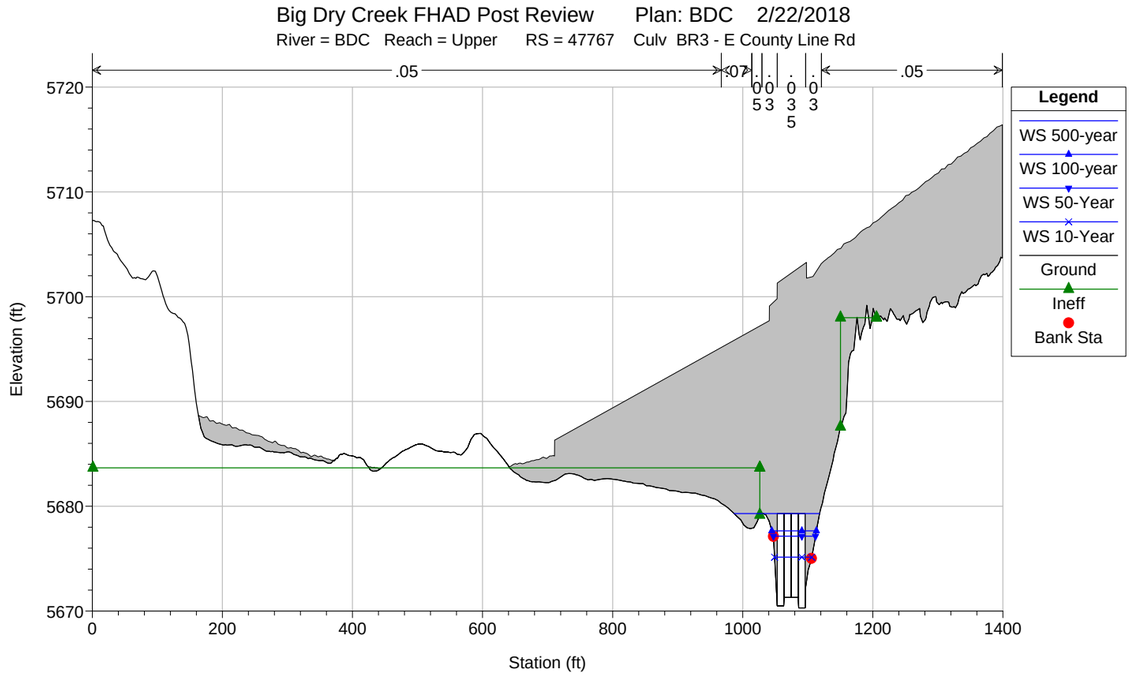
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.07
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.035
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Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
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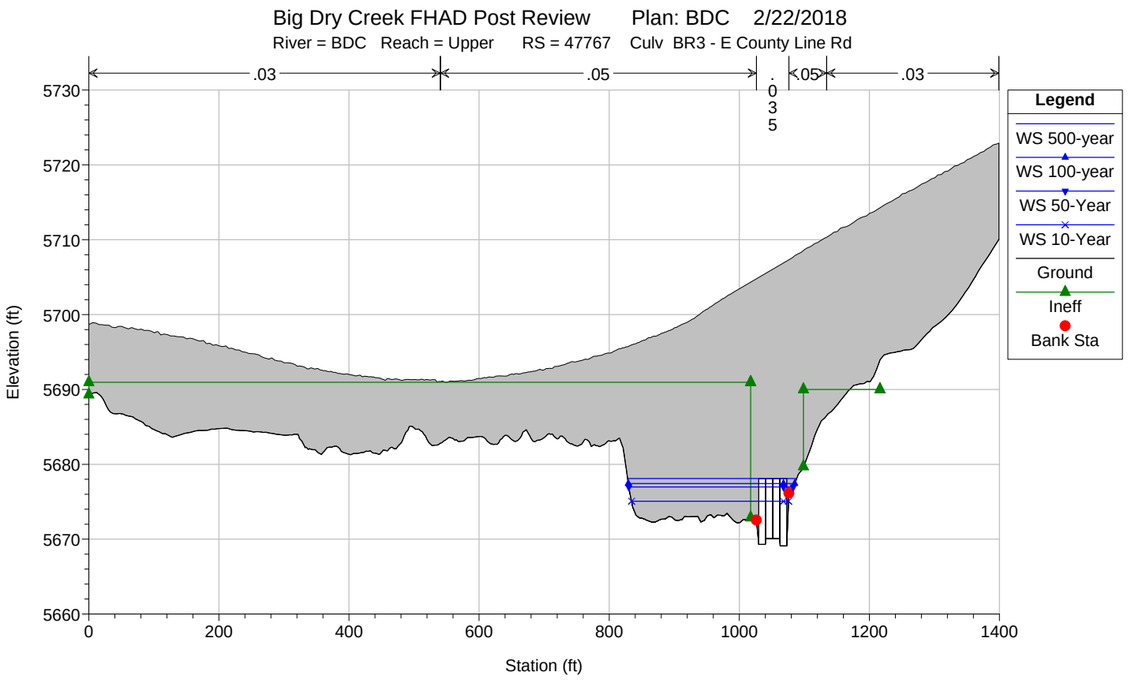
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Legend
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WS 100-year
WS 50-Year
WS 10-Year
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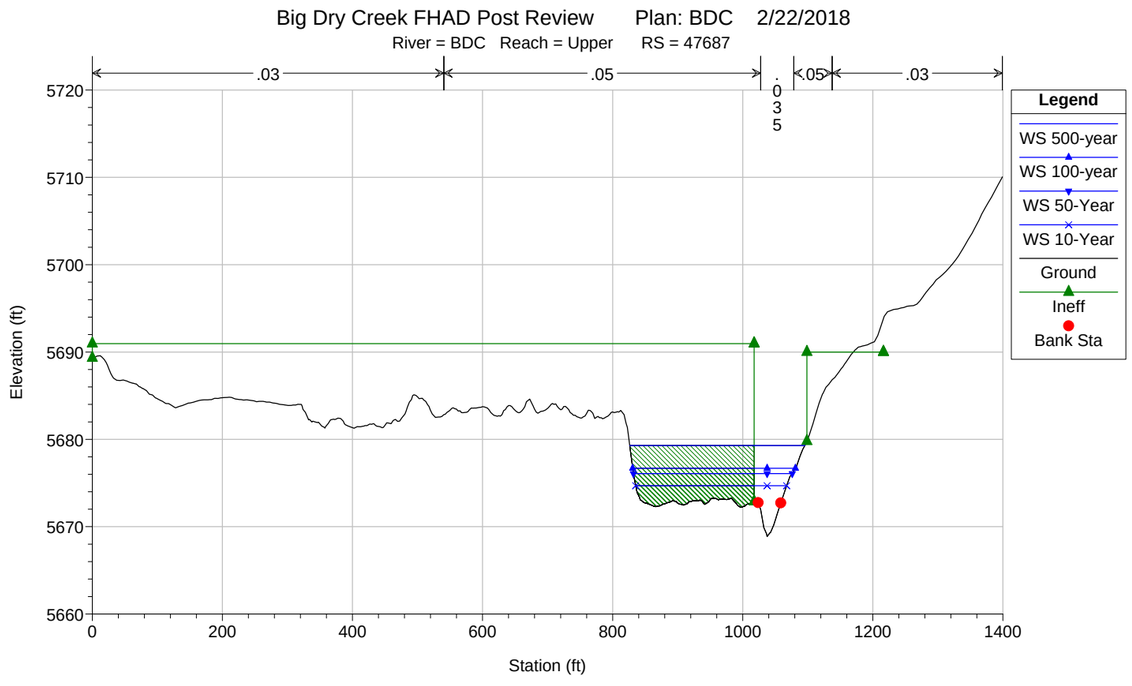
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WS 10-Year
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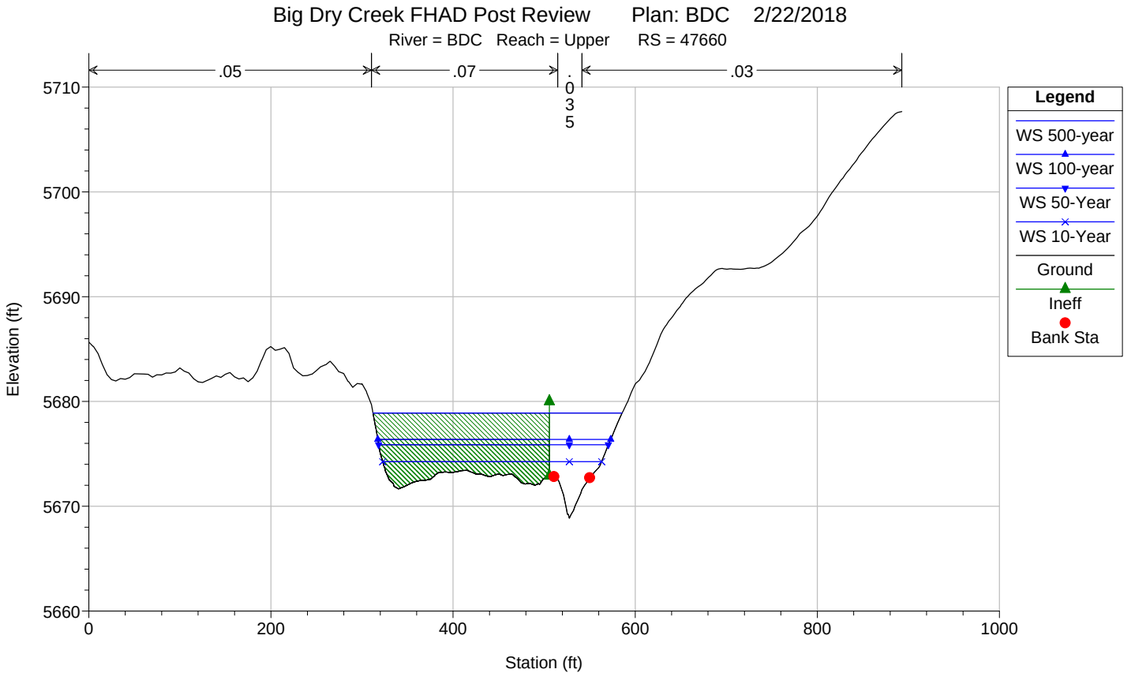
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WS 100-year
WS 50-Year
WS 10-Year
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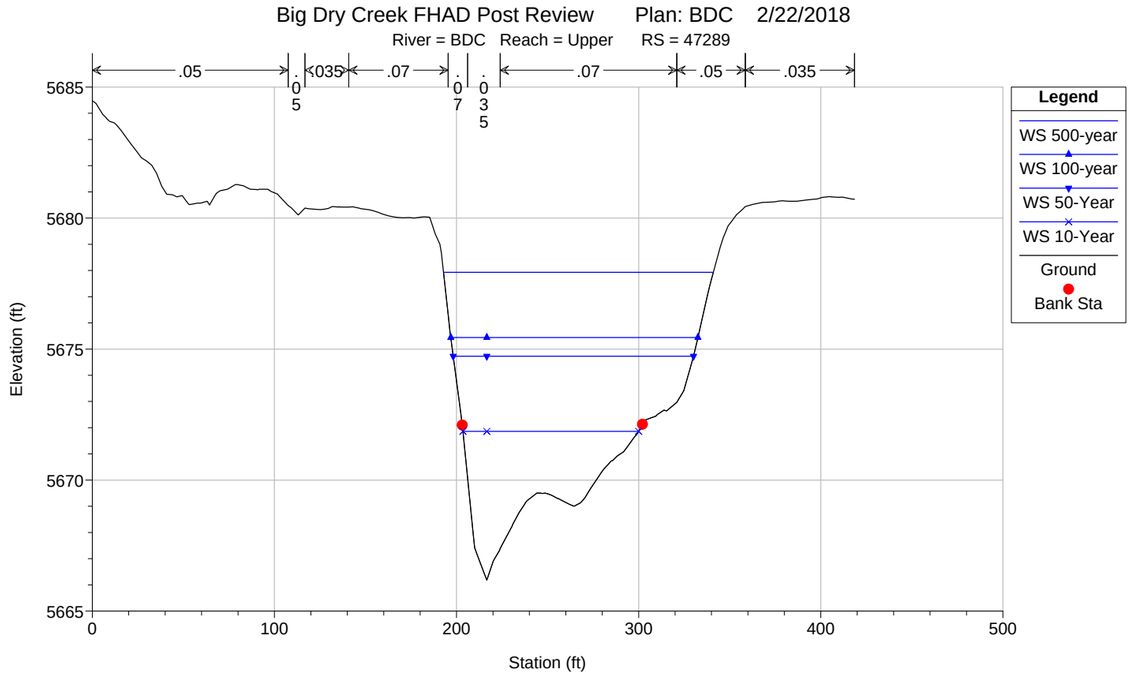
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WS 50-Year
WS 10-Year
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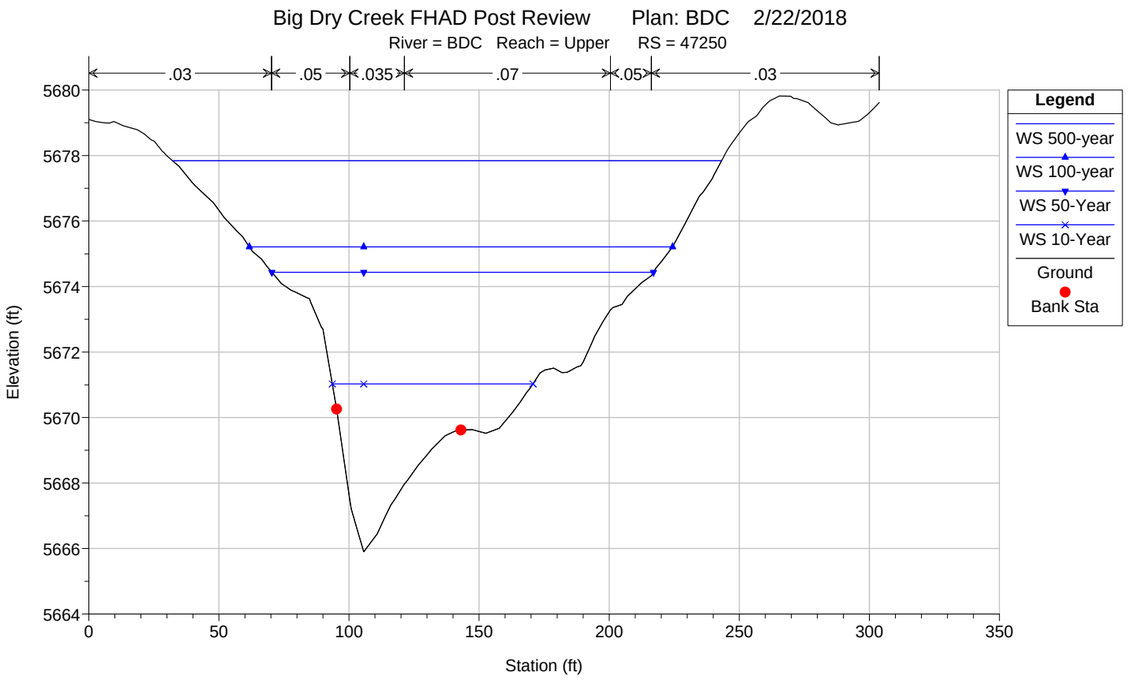
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Legend
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WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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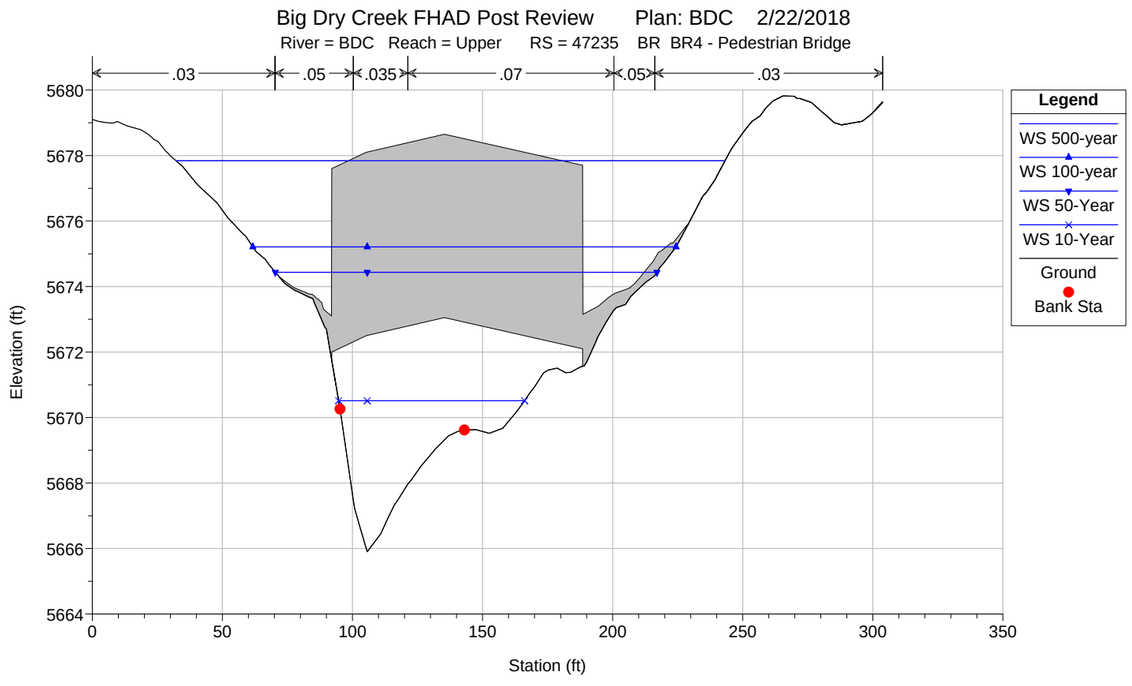
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Legend
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WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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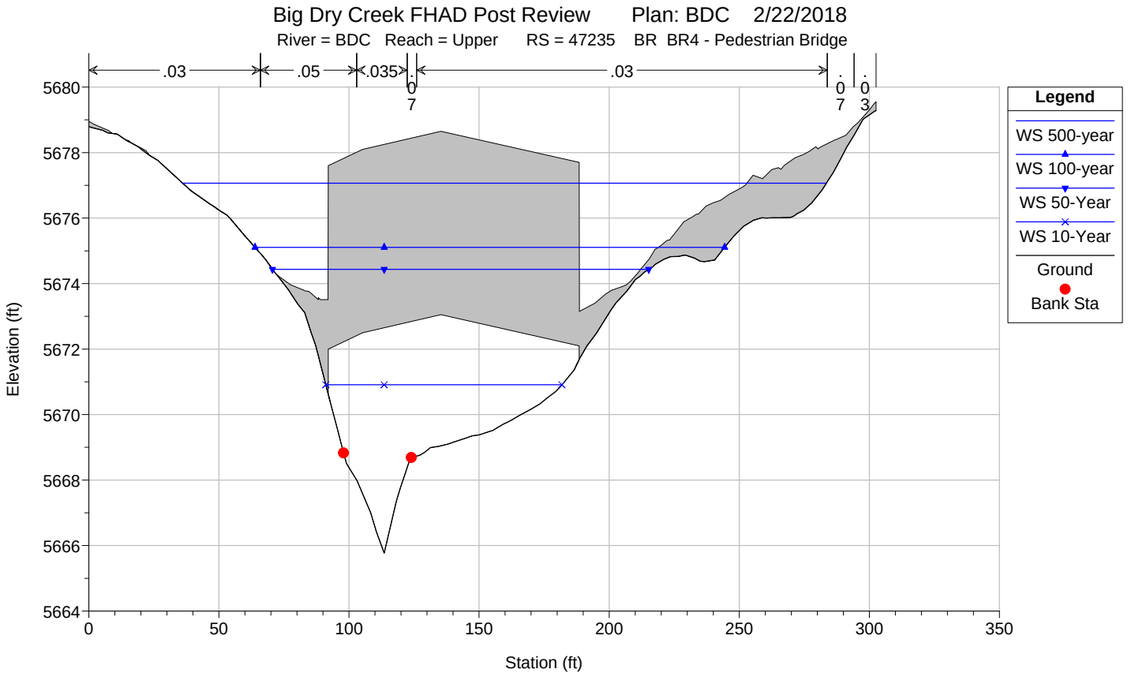
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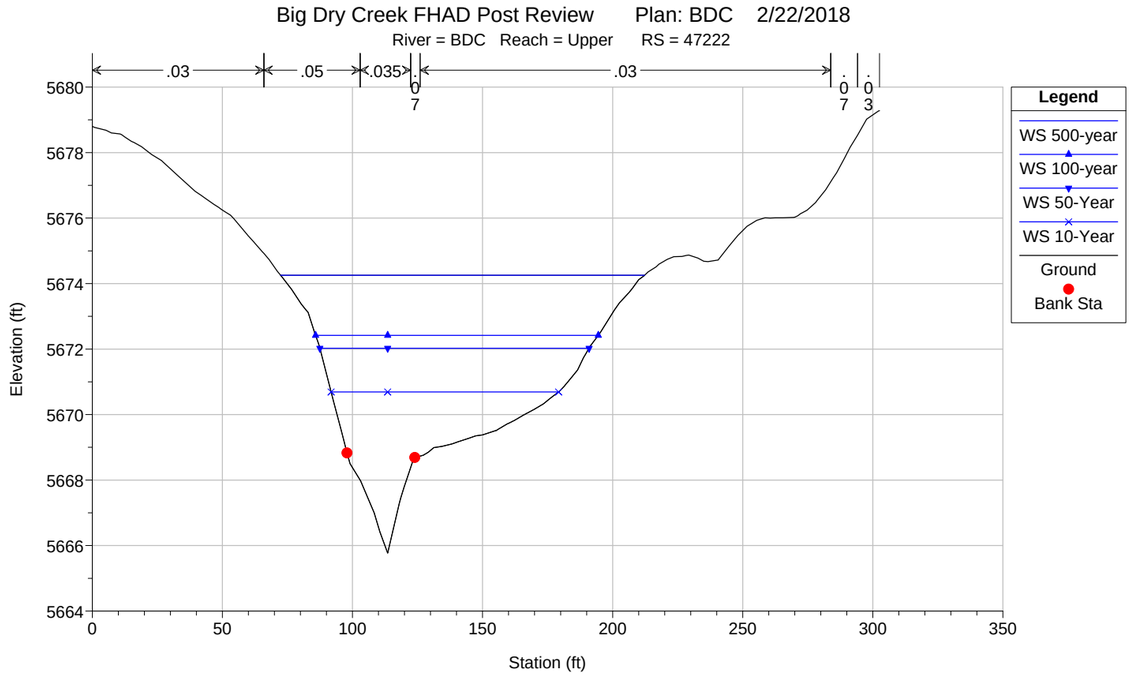
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)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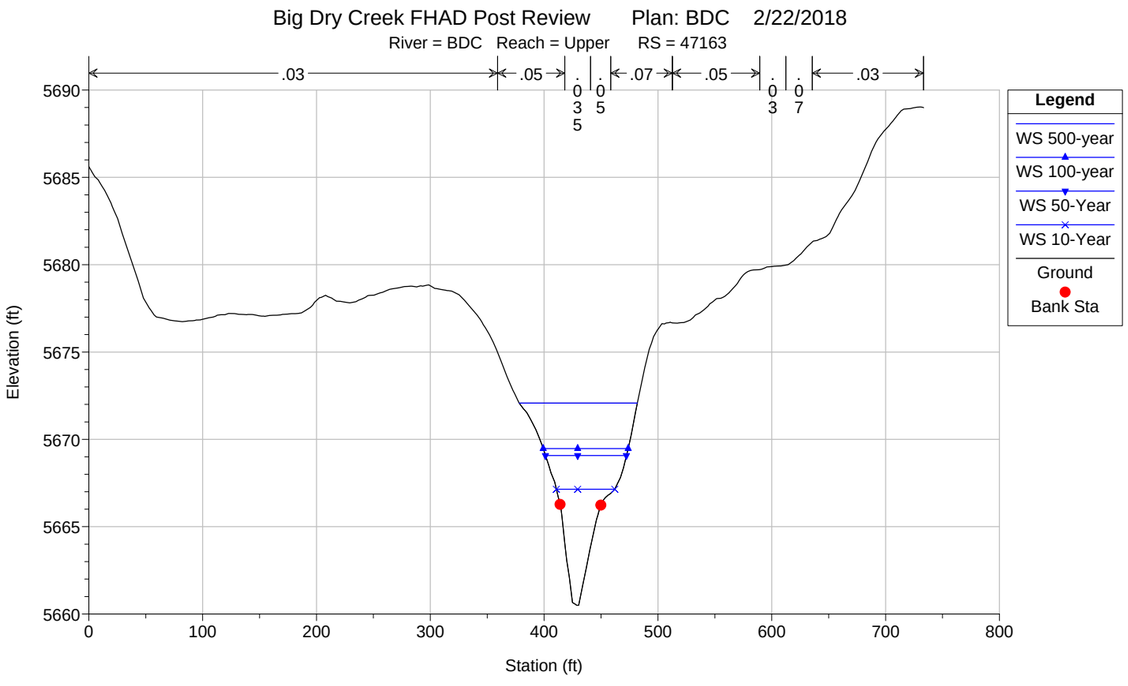
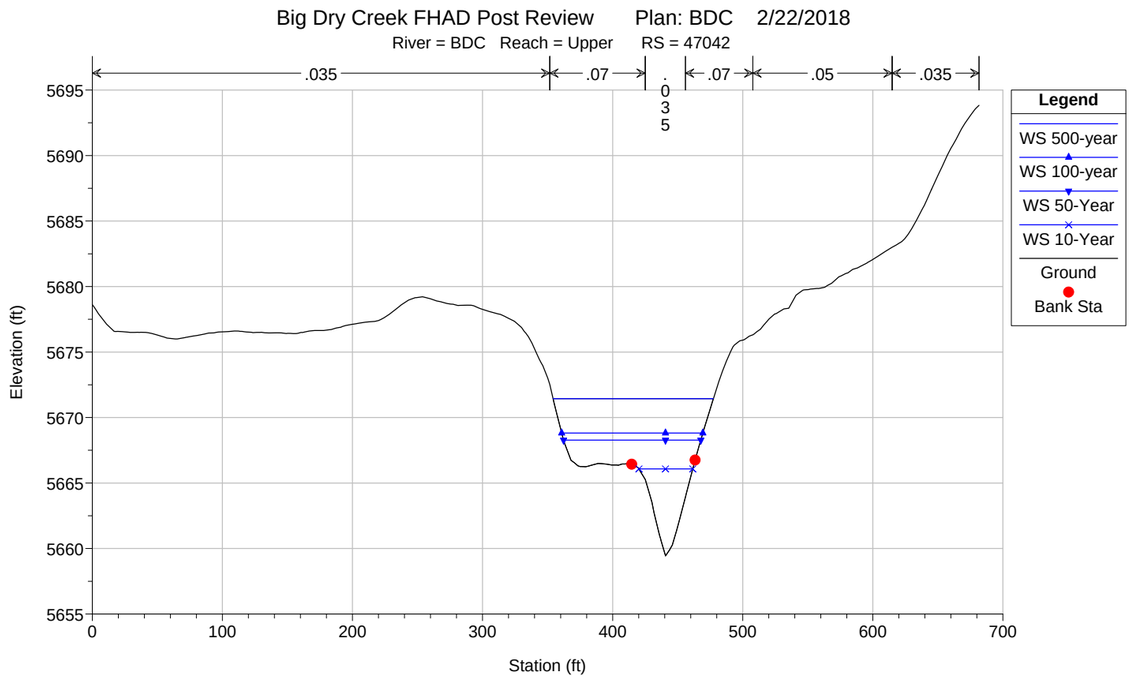
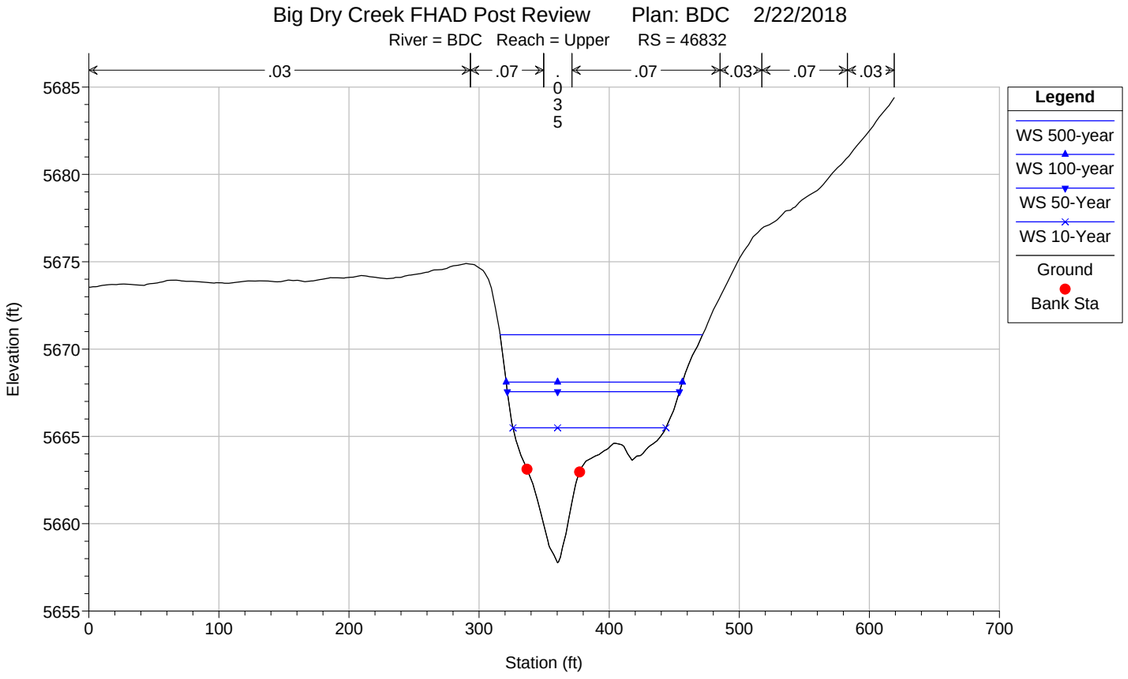
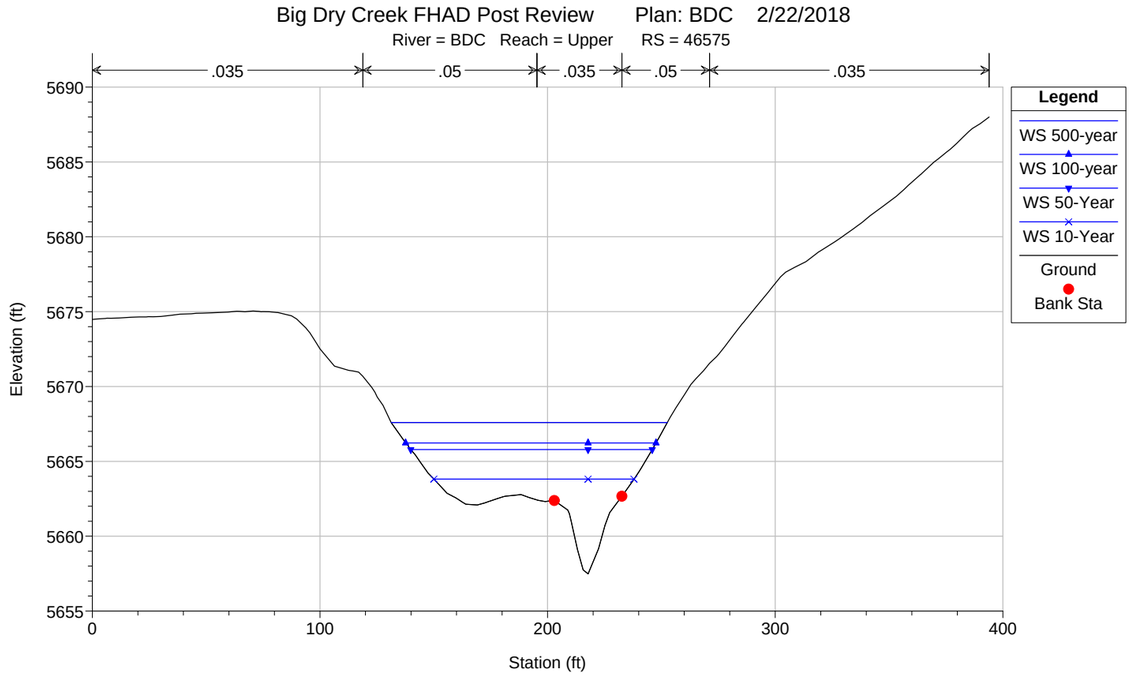
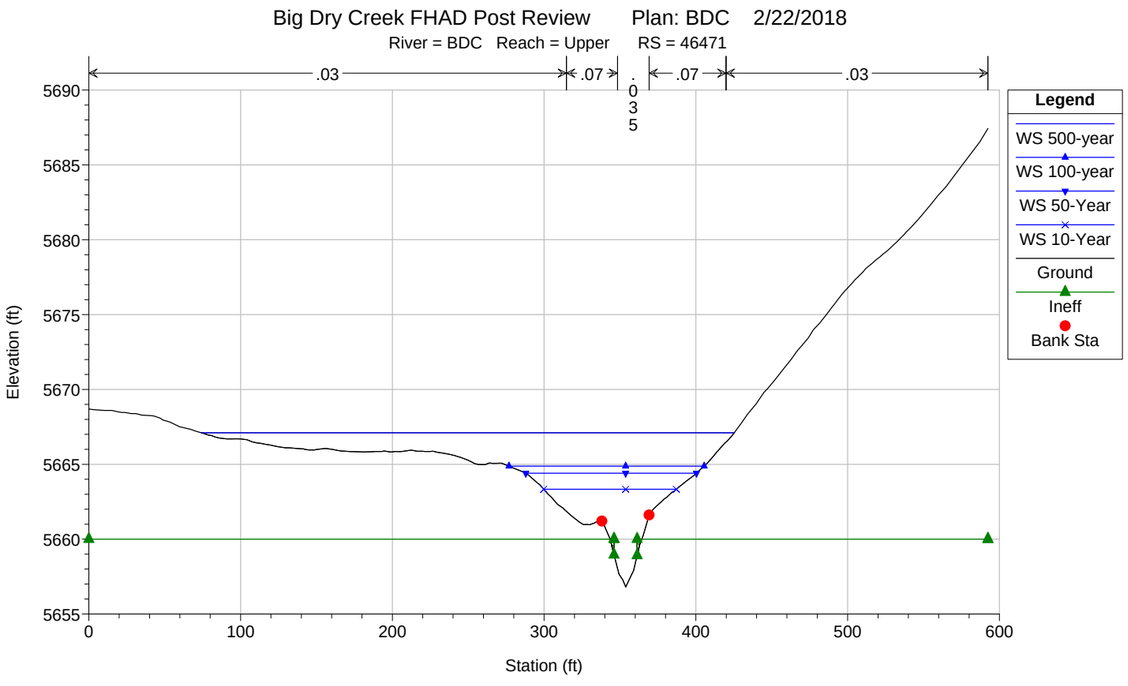
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

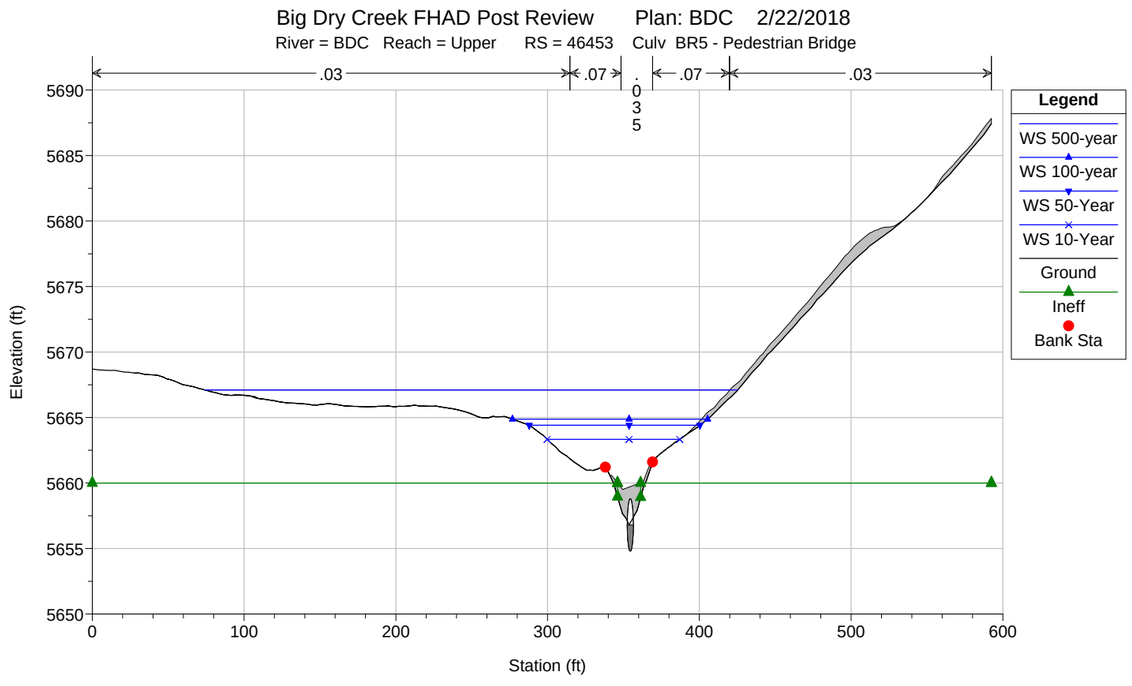

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 47163
.03
.05
.035
.05
.07
.05
.03
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

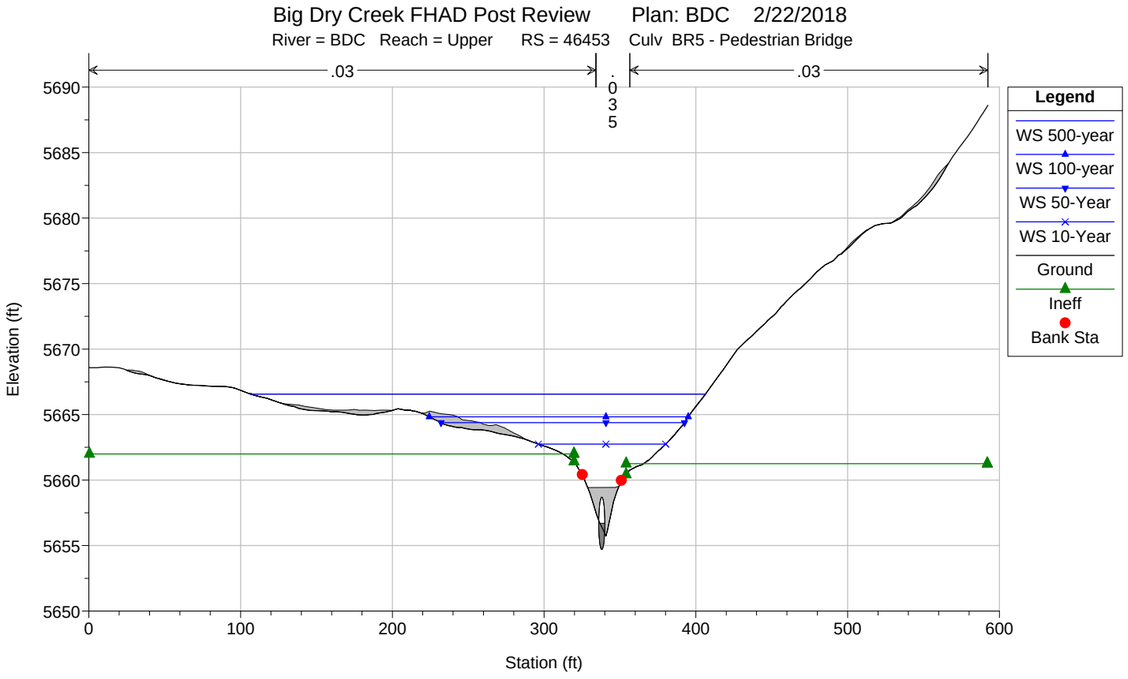

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 47042
.035
.07
.035
.07
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46832
.03
.07
.035
.07
.03
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46575
.035
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46471
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46453 Culv BR5 - Pedestrian Bridge
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46453 Culv BR5 - Pedestrian Bridge
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5690
5685
5680
5675
5670
5665
5660
5655
5650
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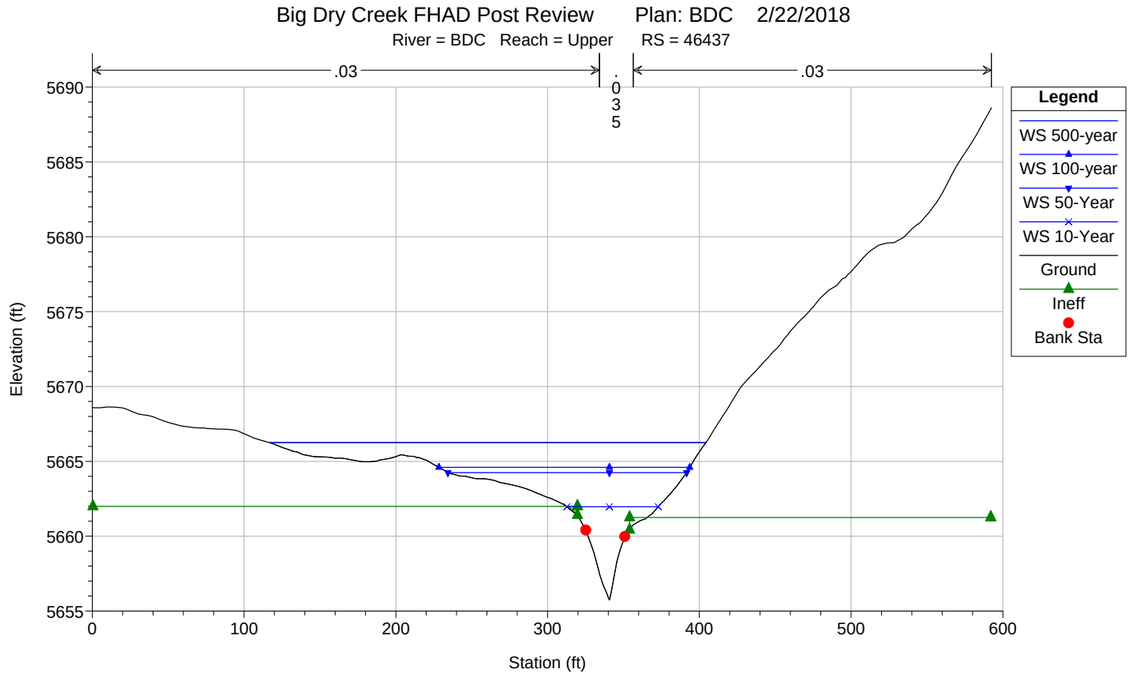
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46437
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5690
5685
5680
5675
5670
5665
5660
5655
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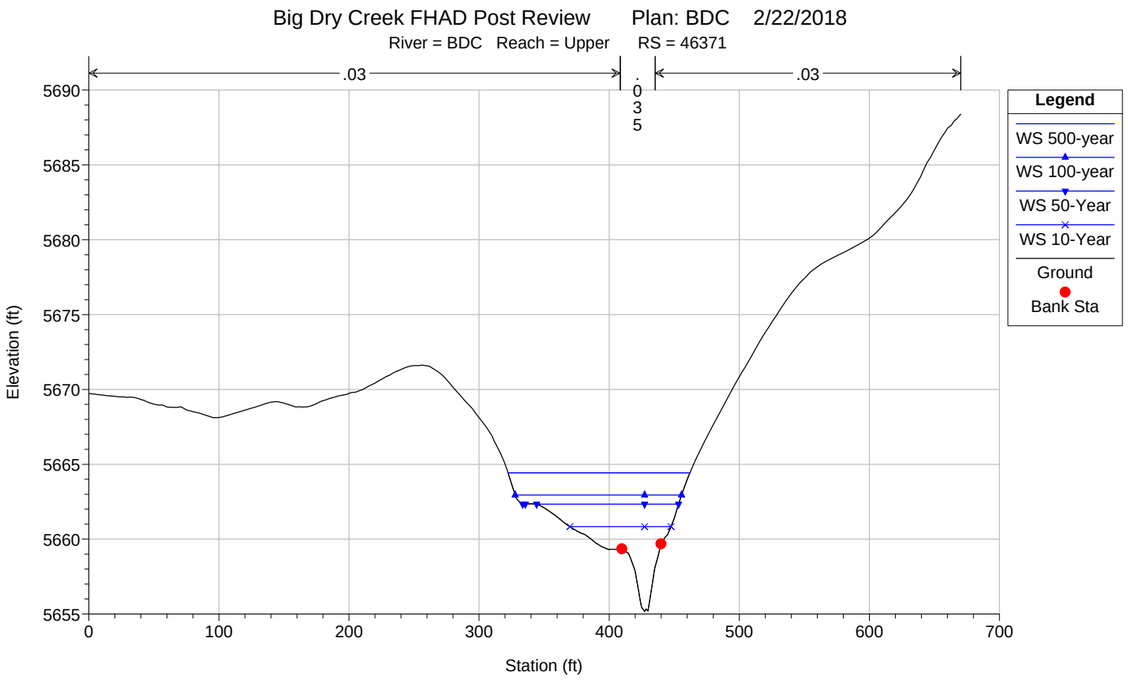
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46371
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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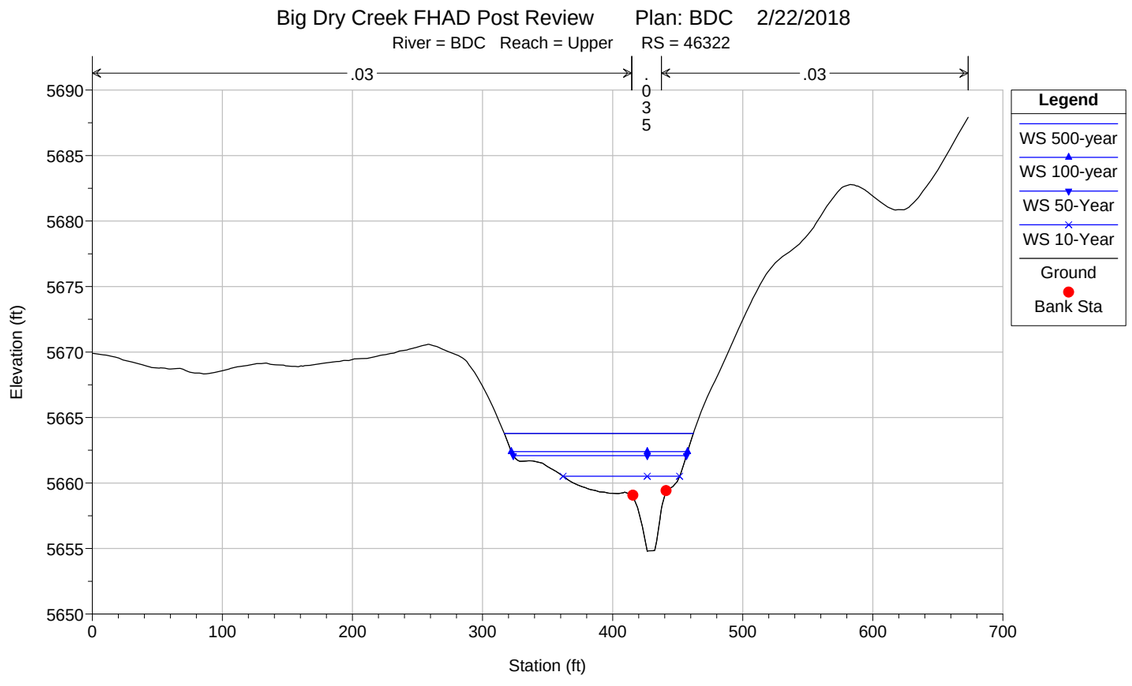
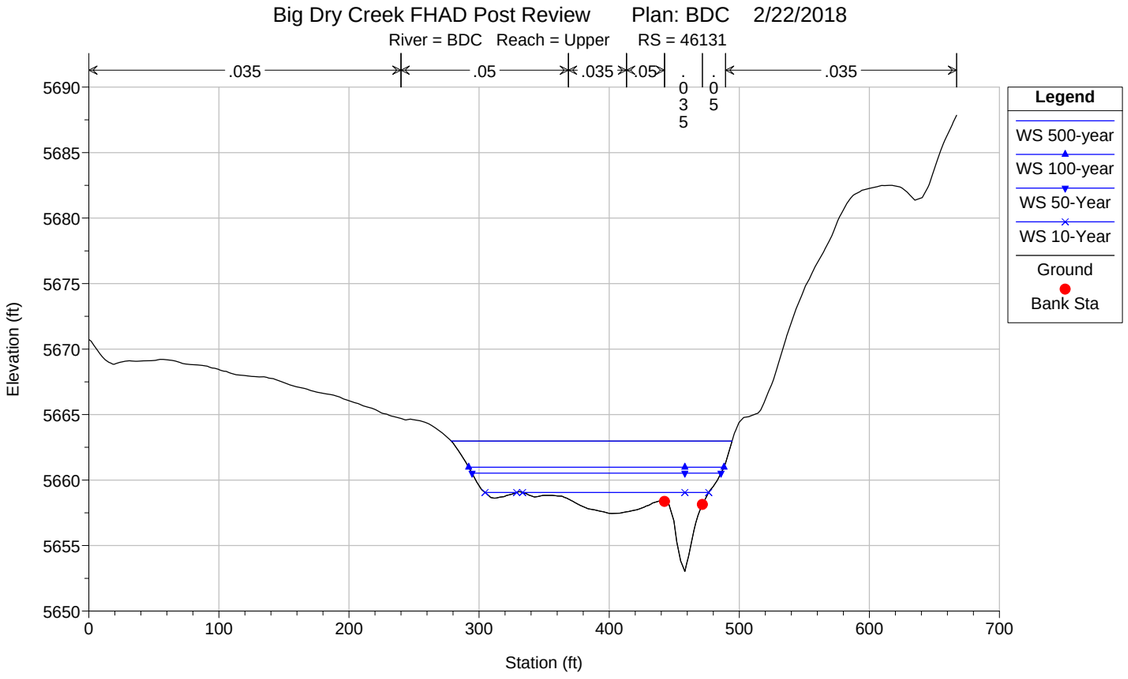
5680
5675
5670
5665
5660
5655
0
100
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46322
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5690
5685
5680
5675
5670
5665
5660
5655
5650
0
100
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46131
.035
.05
.035
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5650
5655
5660
5665
5670
5675
5680
5685
5690
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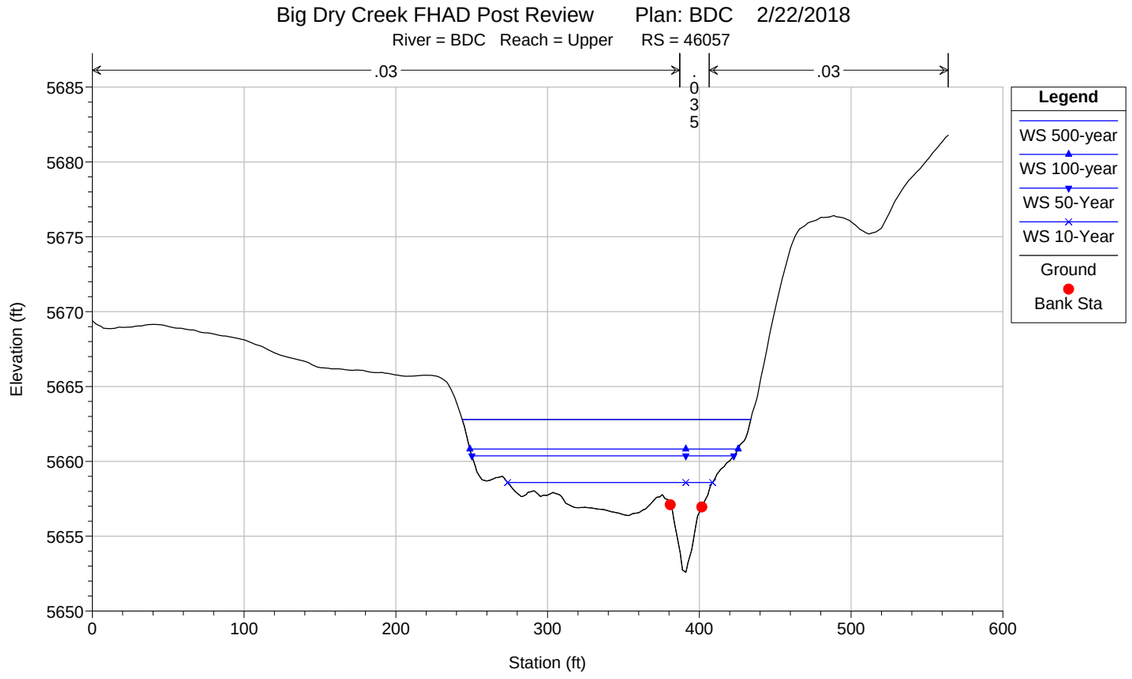
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46057
.03
.03
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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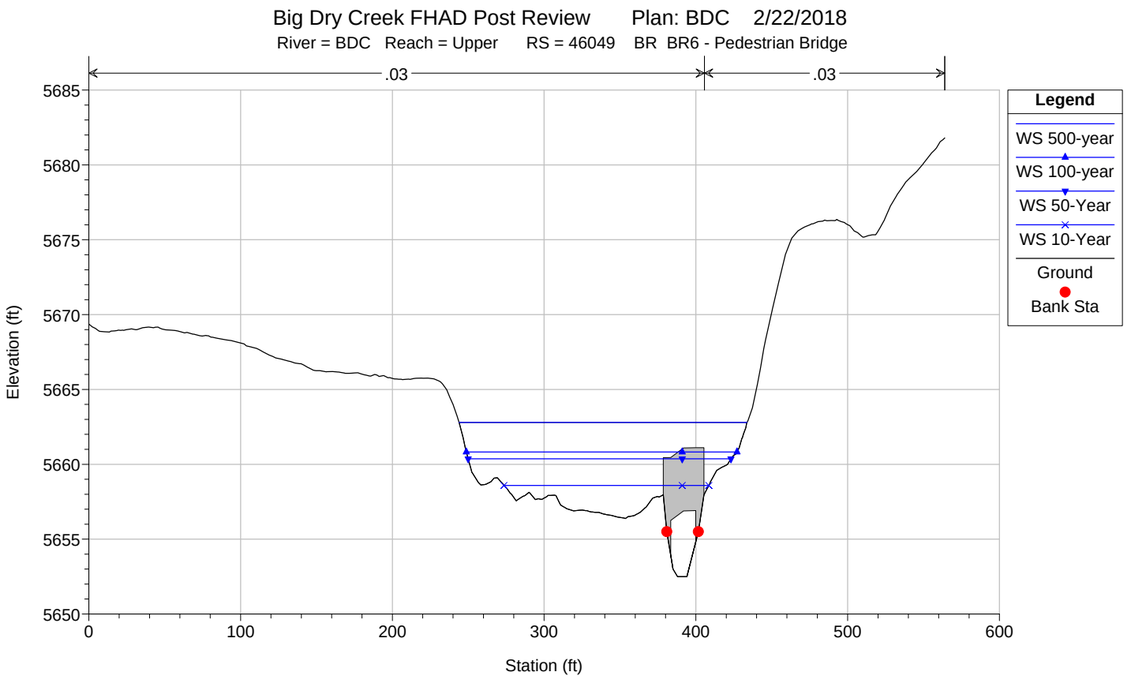
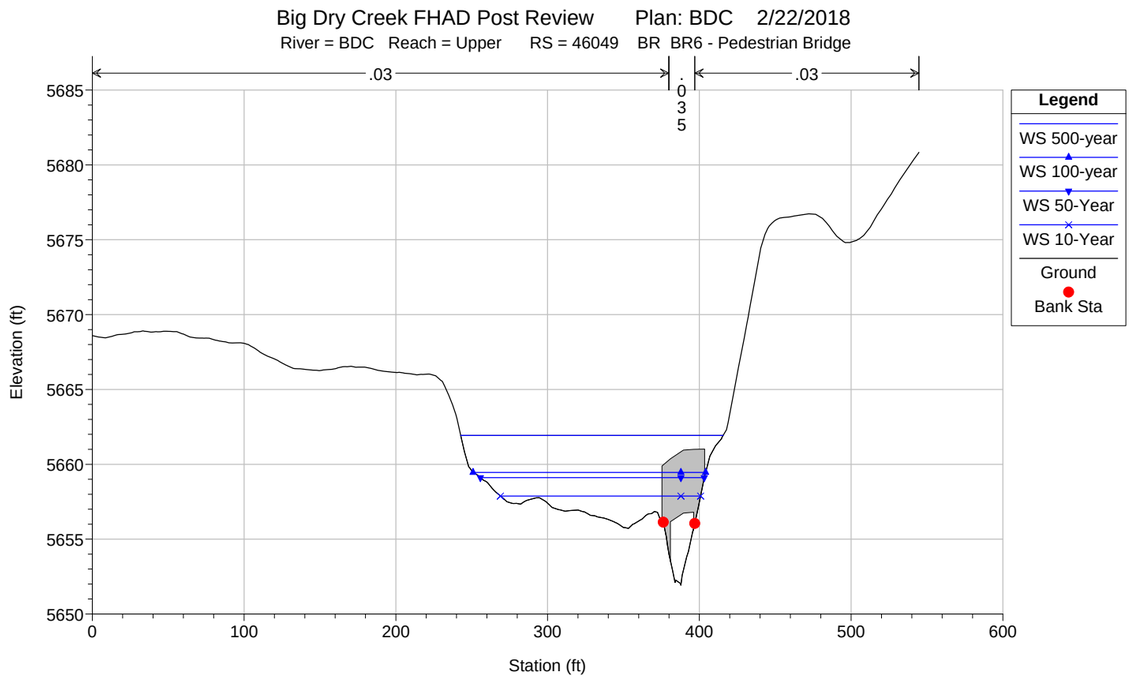
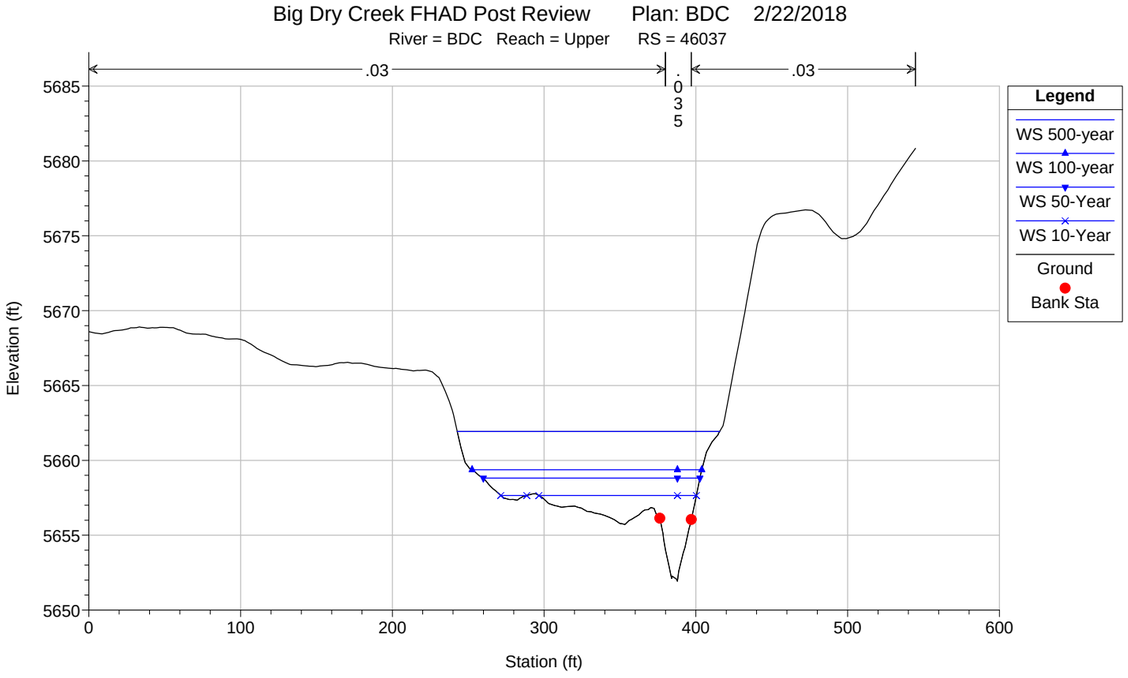
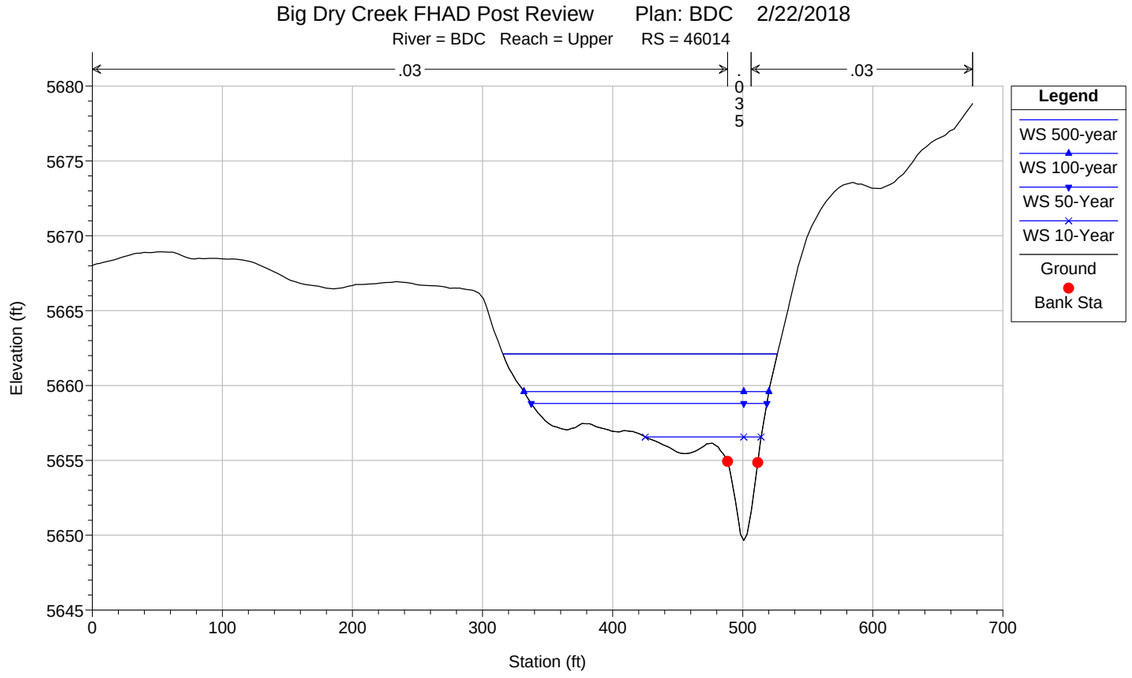
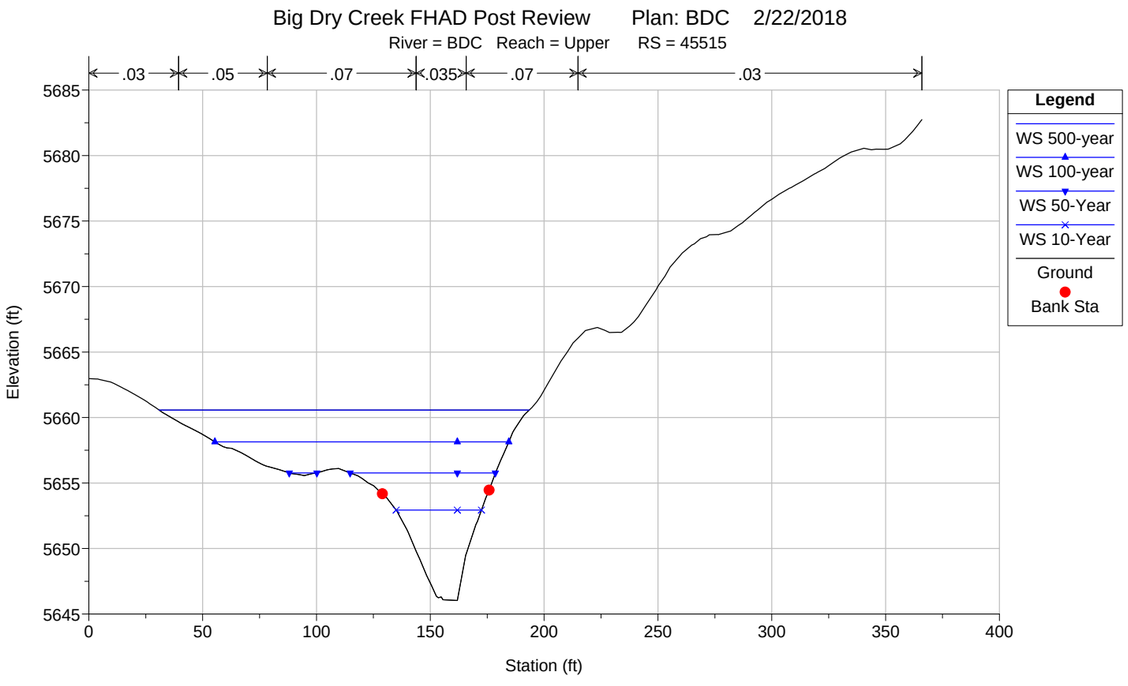
5655
5660
5665
5670
5675
5680
5685
0
100
200
300
400
500
600

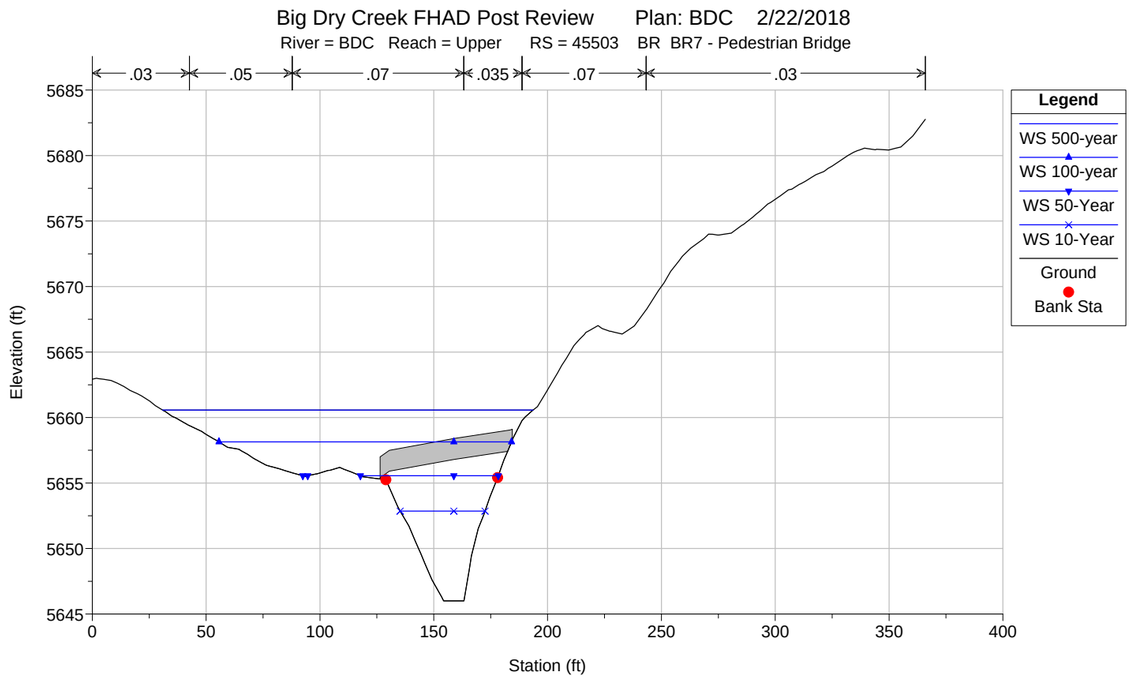

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46049 BR BR6 - Pedestrian Bridge
.03
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5650
5655
5660
5665
5670
5675
5680
5685
0
100
200
300
400
500
600

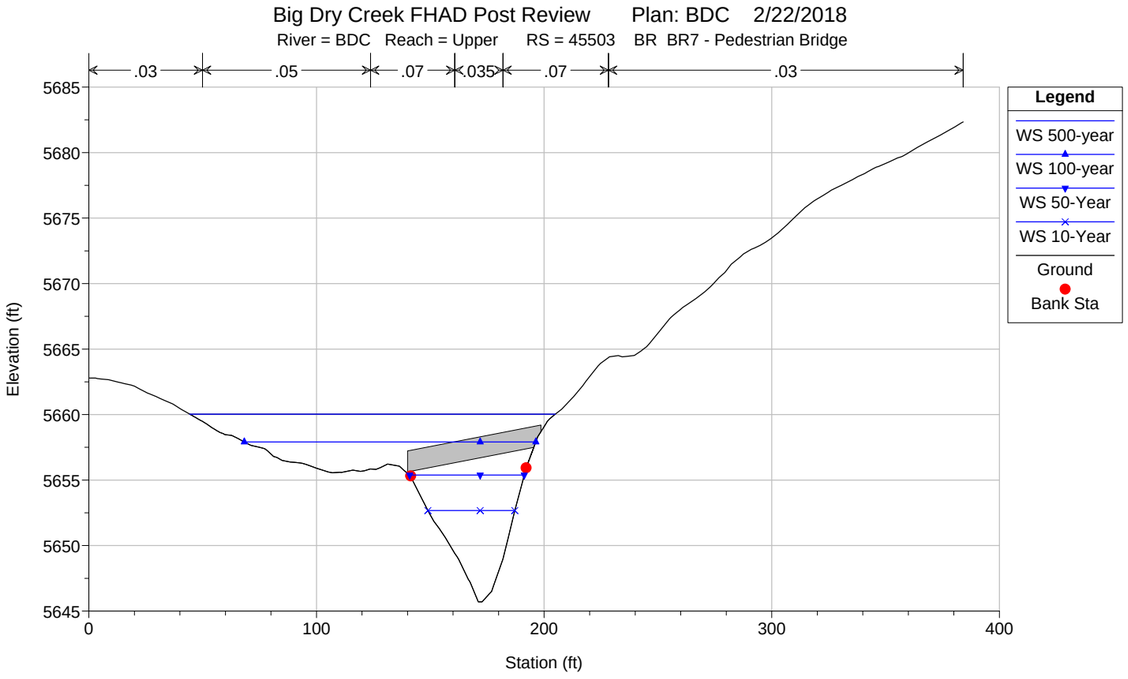

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46049 BR BR6 - Pedestrian Bridge
.03
.03
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5650
5655
5660
5665
5670
5675
5680
5685
0
100
200
300
400
500
600

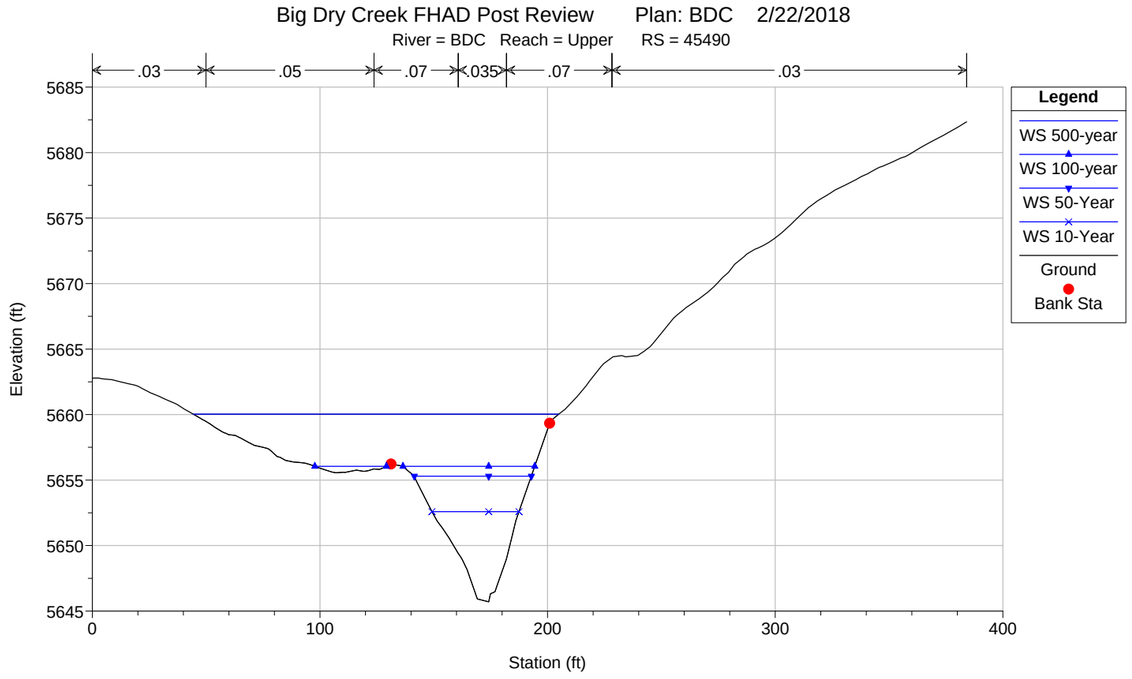

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46037
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

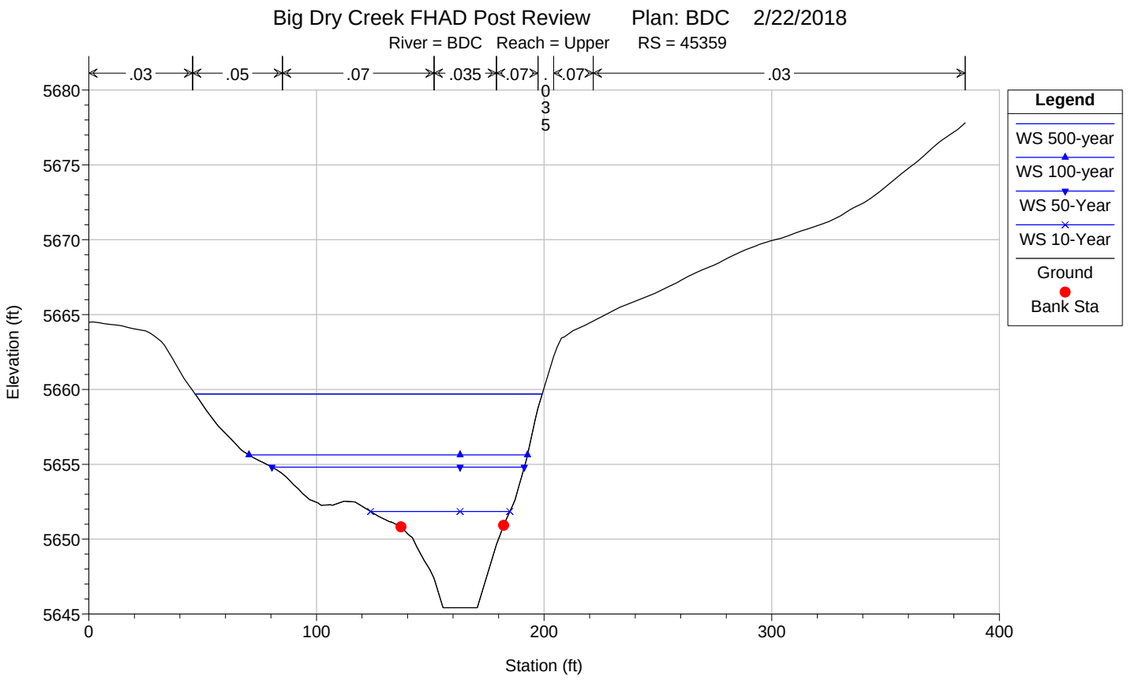

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 46014
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

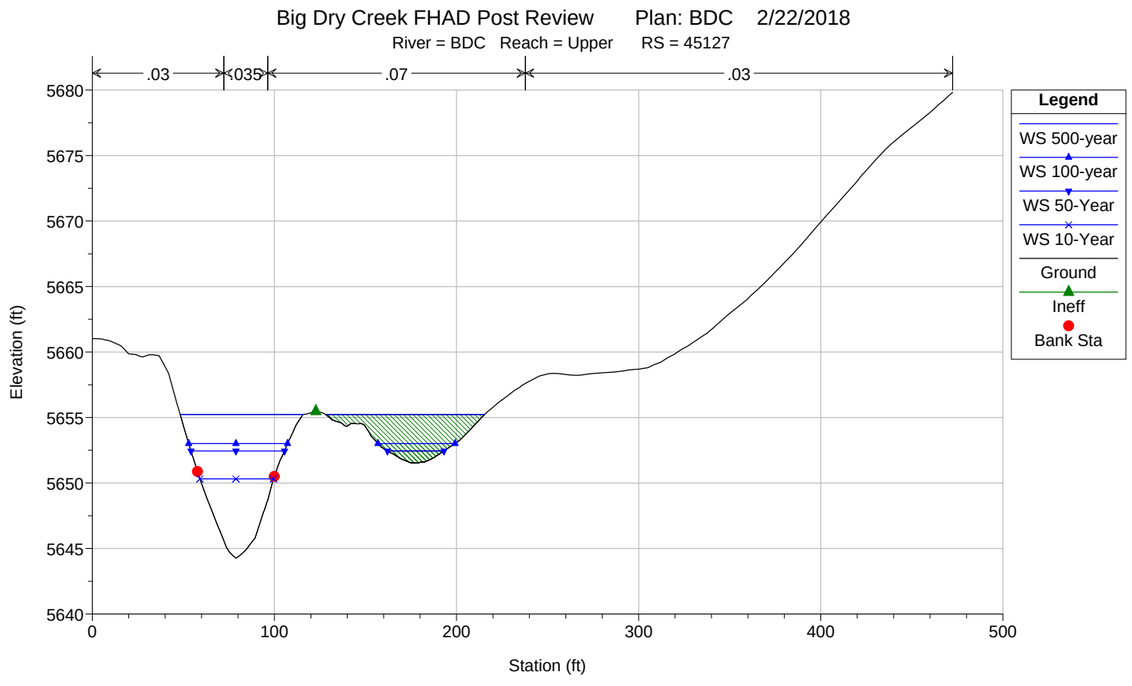

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45515
.03
.05
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

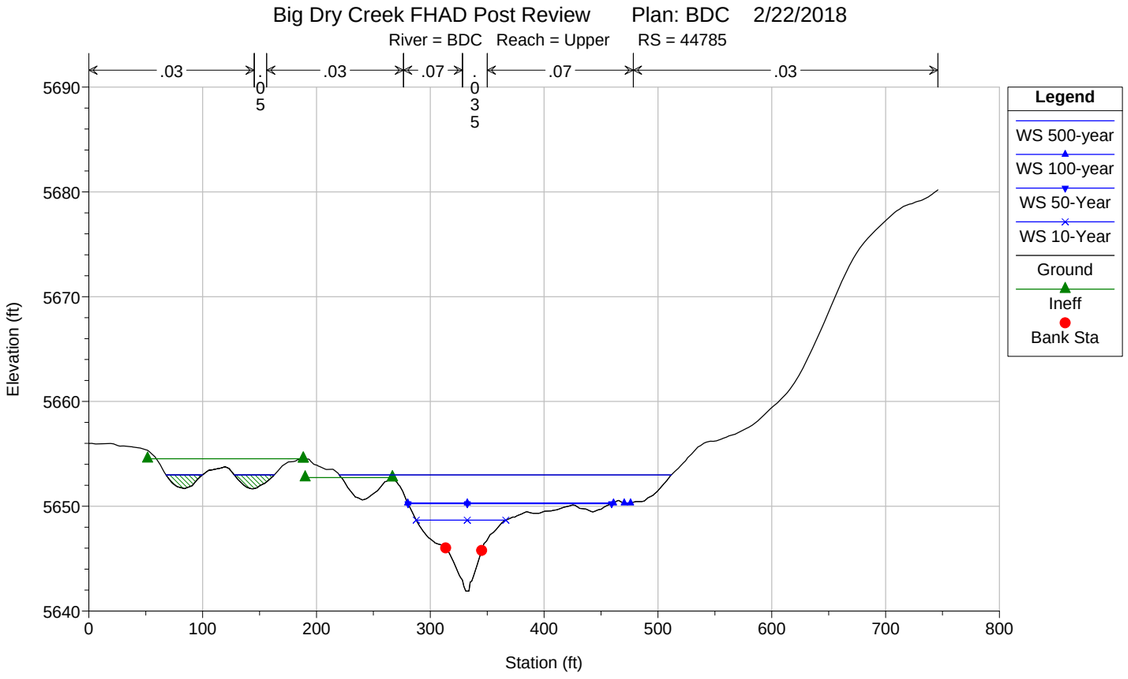

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45503 BR BR7 - Pedestrian Bridge
.03
.05
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

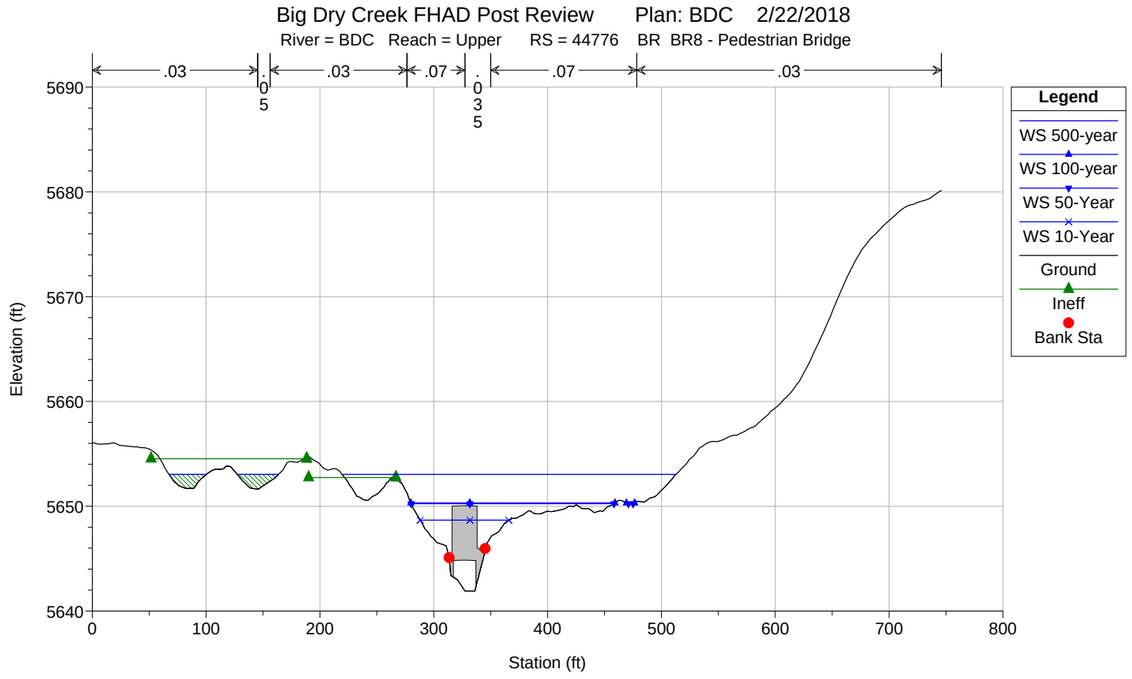

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45503 BR BR7 - Pedestrian Bridge
.03
.05
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45490
.03
.05
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45359
.03
.05
.07
.035
.07
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 45127
.03
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44785
.03
.05
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5690
5680
5670
5660
5650
5640
0
100
200
300
400
500
600
700
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44776 BR BR8 - Pedestrian Bridge
.03
.05
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5690
5680
5670
5660
5650
5640
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100
200
300
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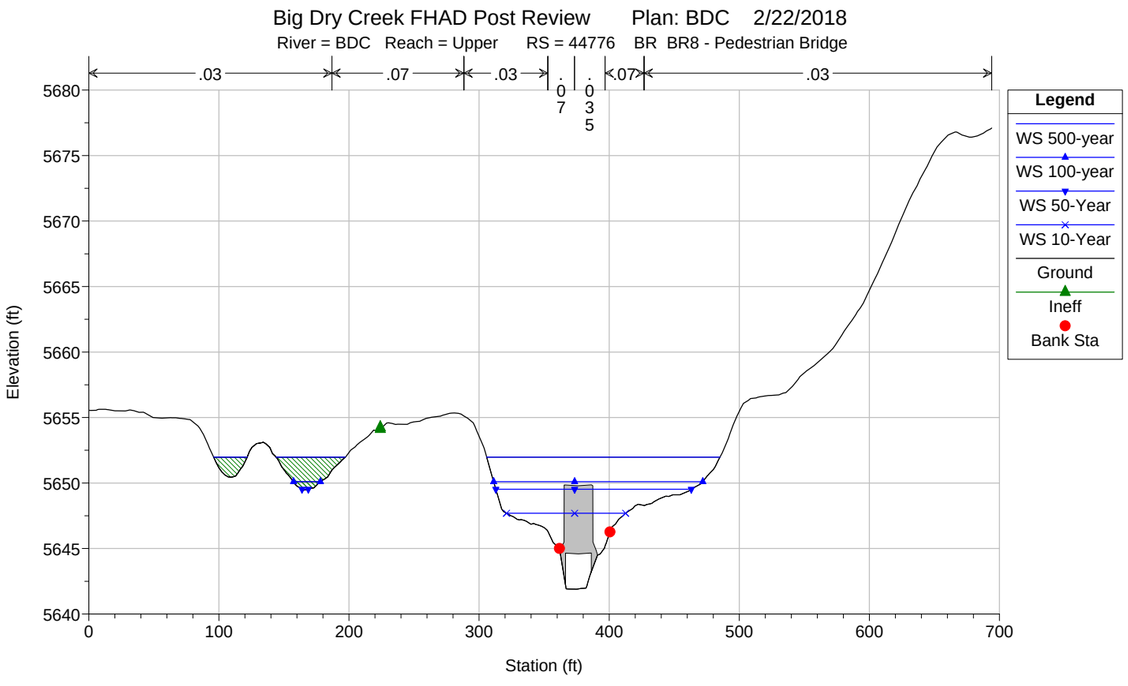
500
600
700
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44776 BR BR8 - Pedestrian Bridge
.03
.07
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5680
5675
5670
5665
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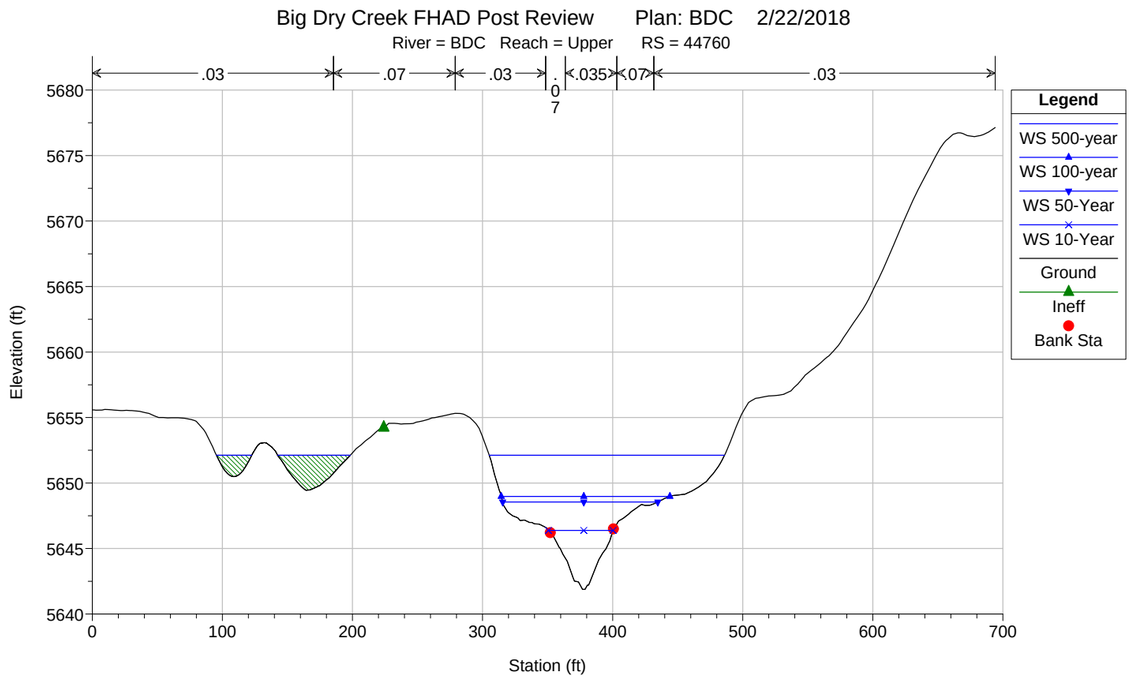
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44760
.03
.07
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5680
5675
5670
5665
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5640
0
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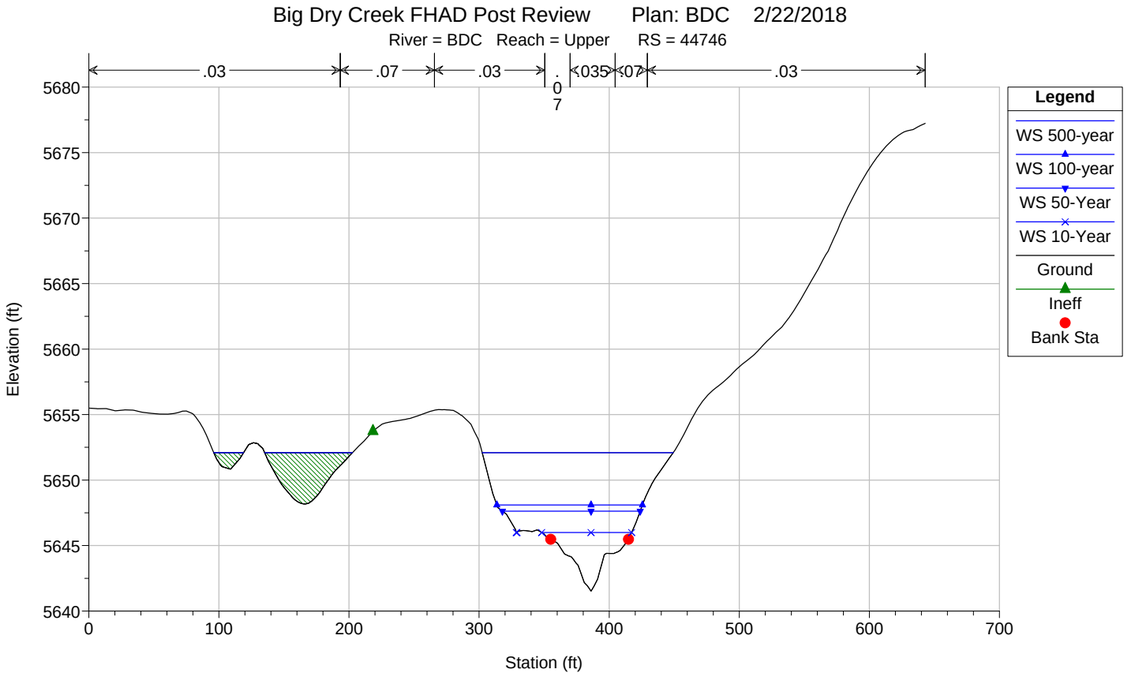
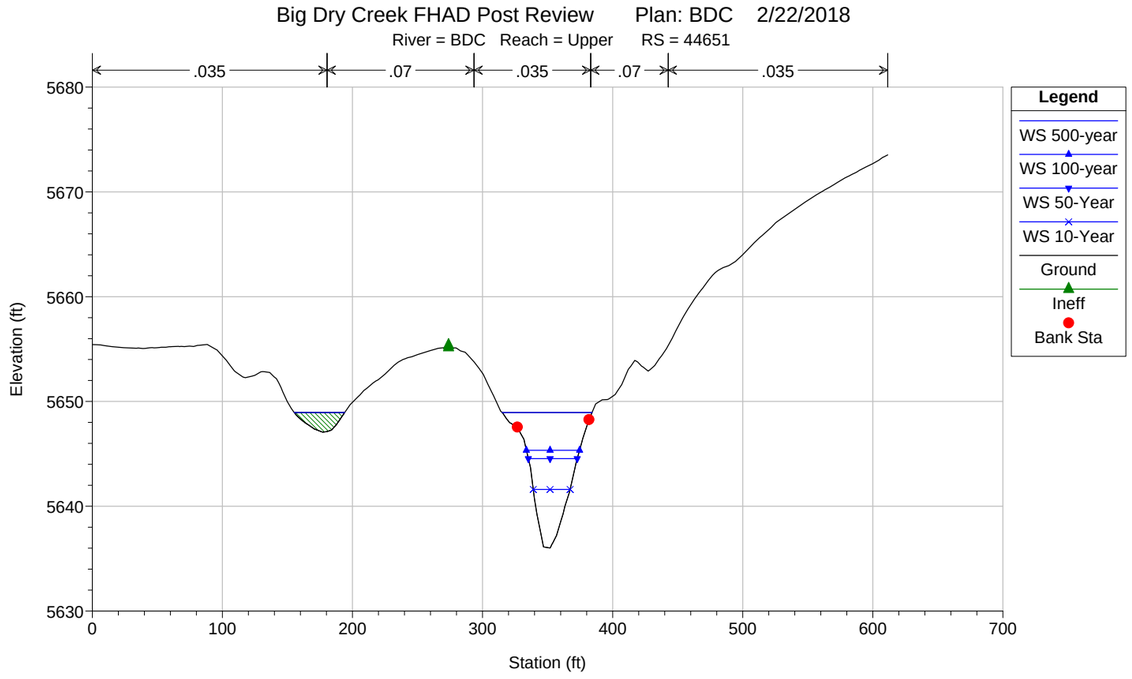
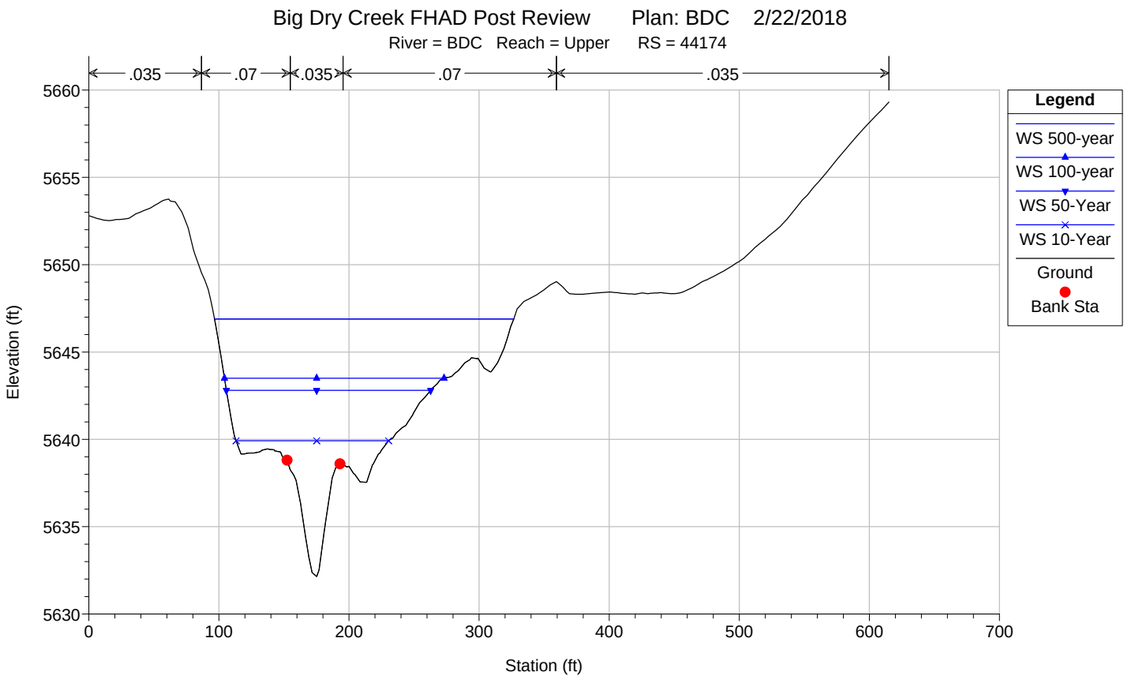
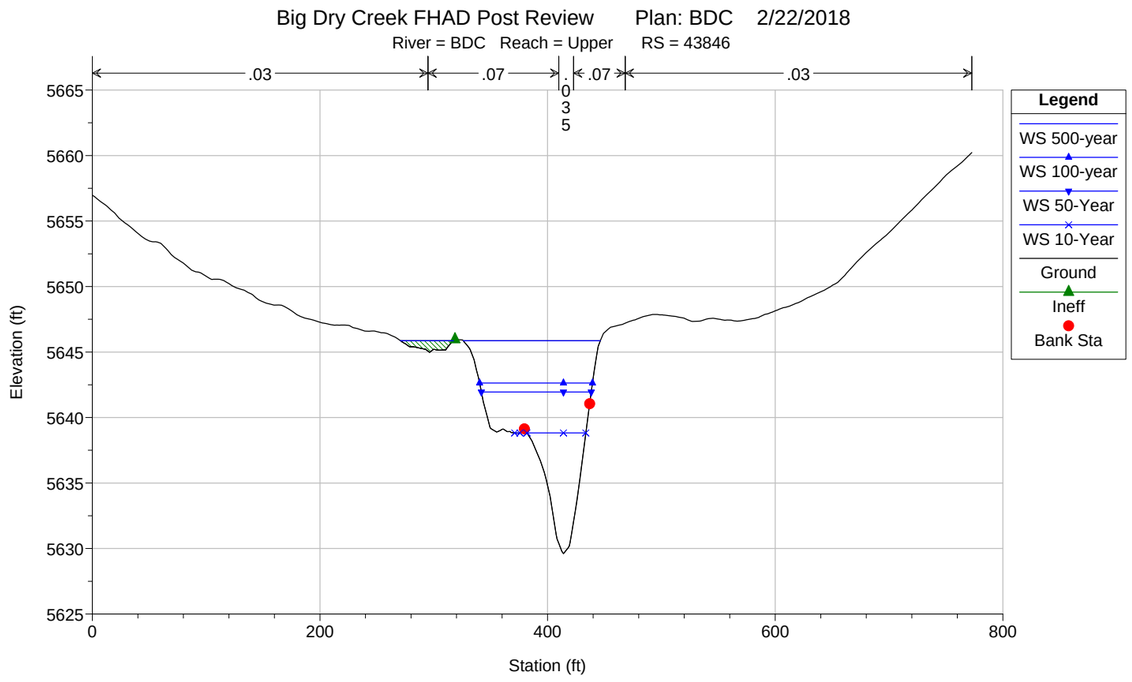
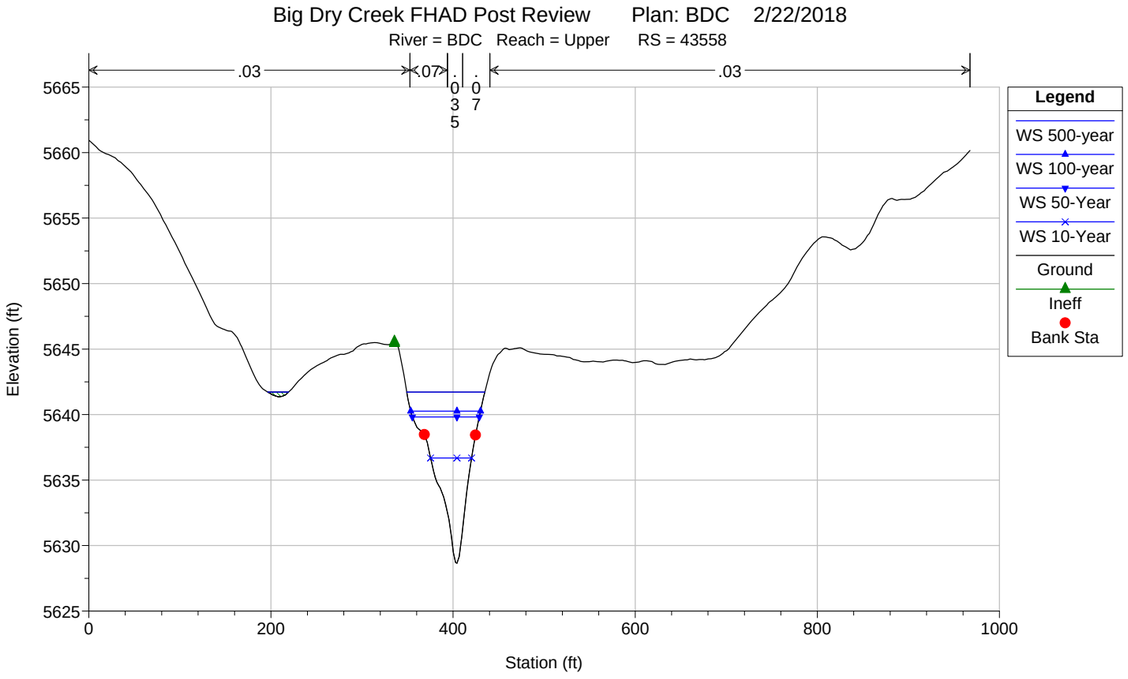
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44746
.03
.07
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44651
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 44174
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43846
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43558
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
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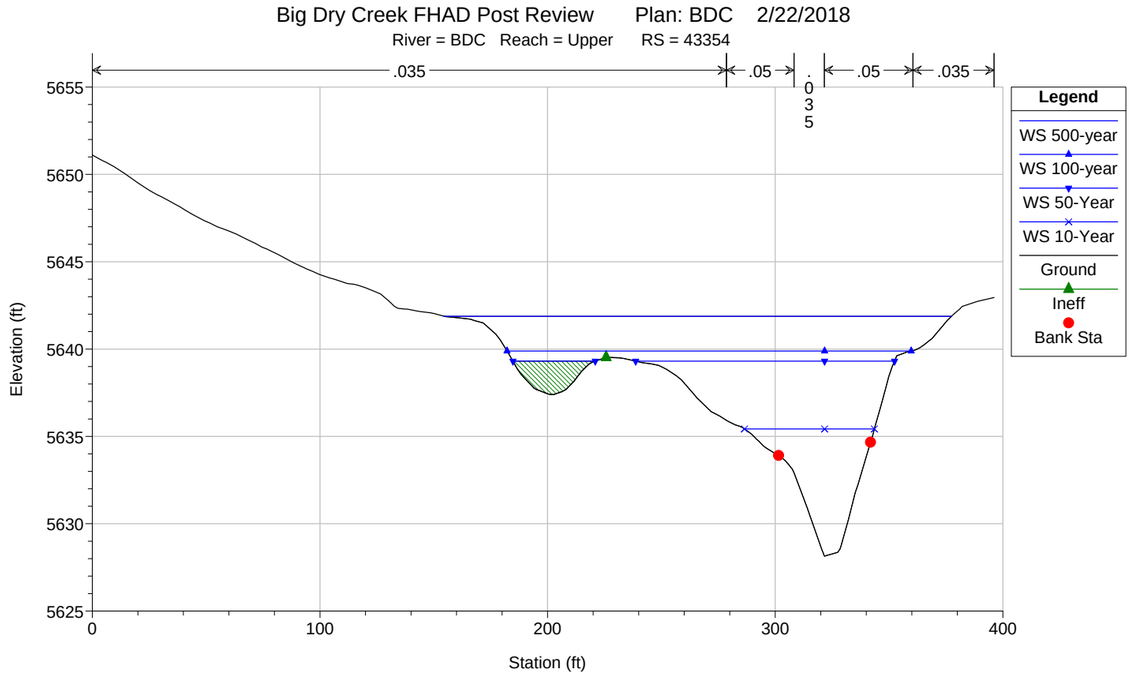
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43354
.035
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
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Station (ft)
5655
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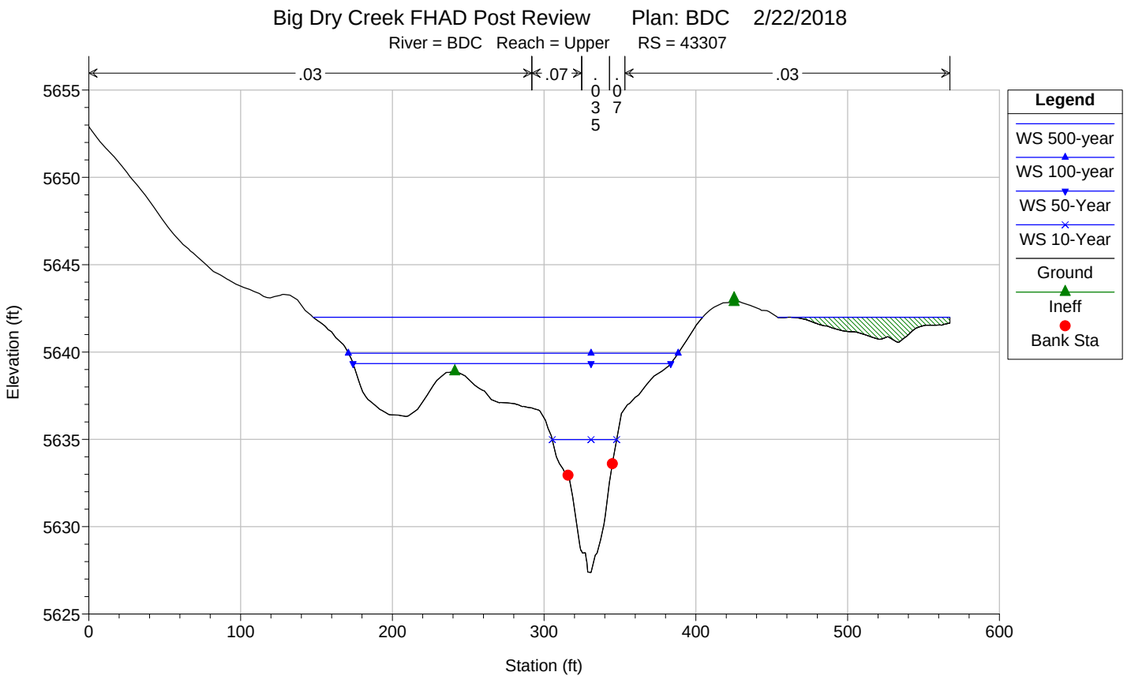
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43307
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5650
5645
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500
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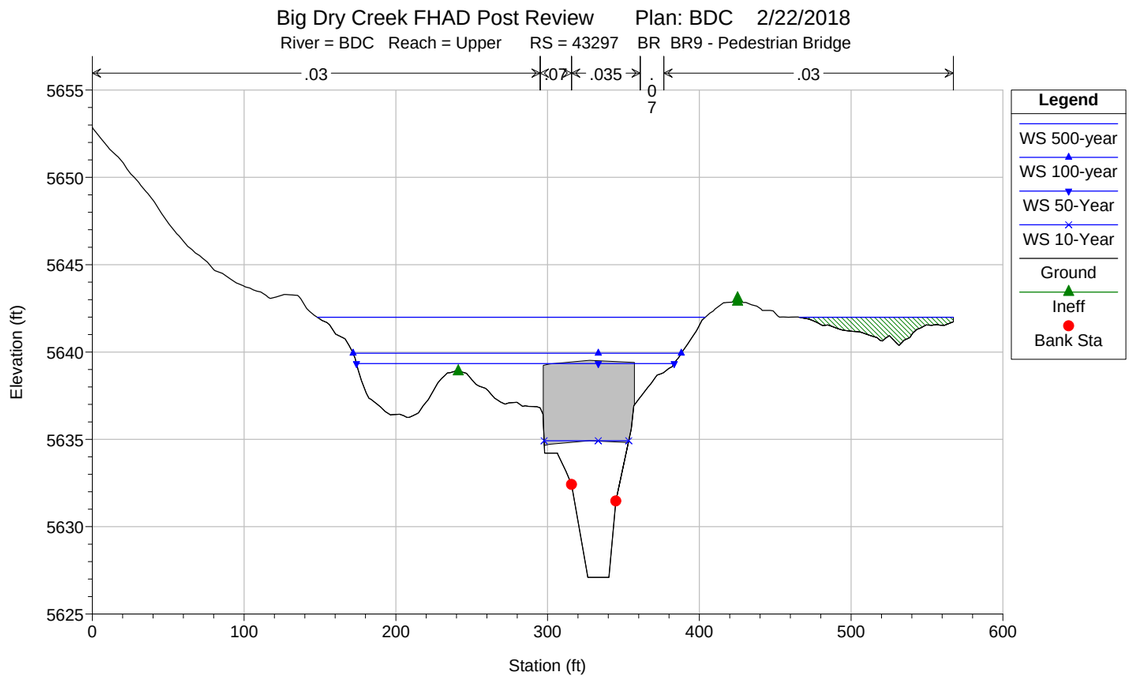
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43297 BR BR9 - Pedestrian Bridge
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
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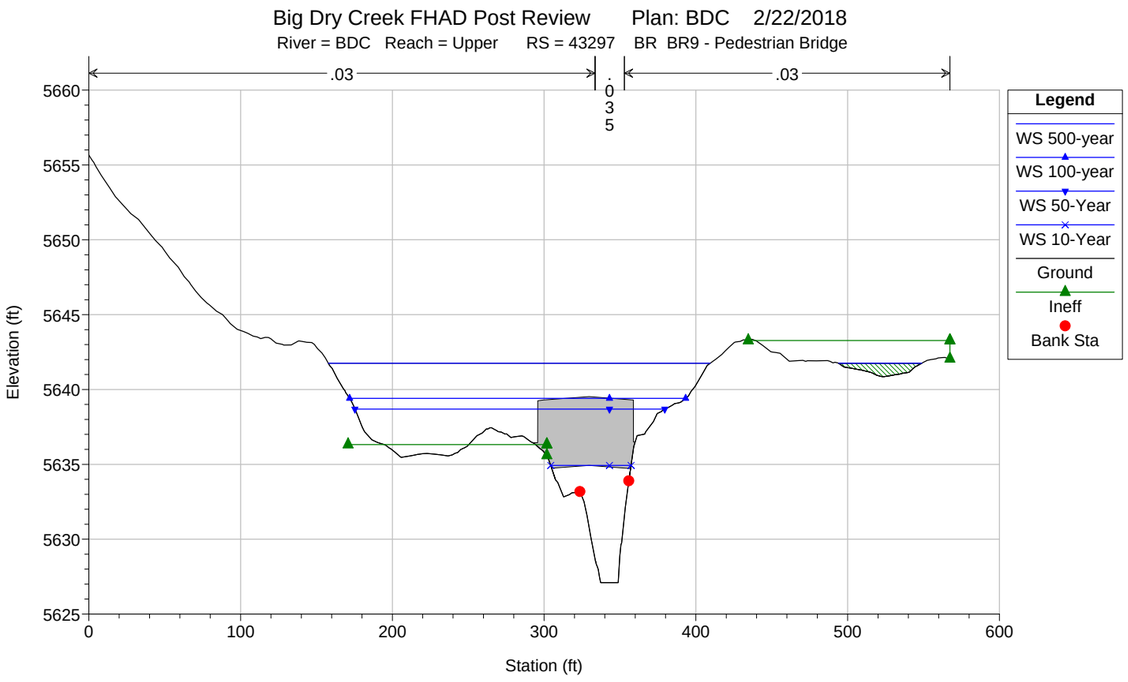
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43297 BR BR9 - Pedestrian Bridge
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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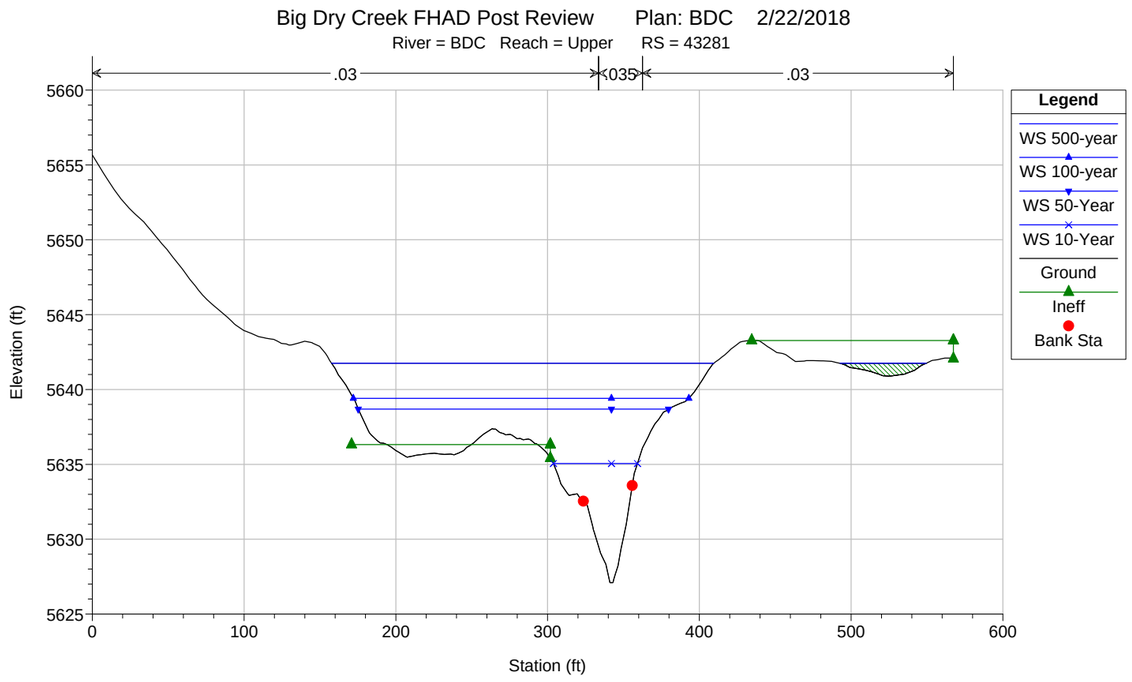
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43281
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5650
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5625
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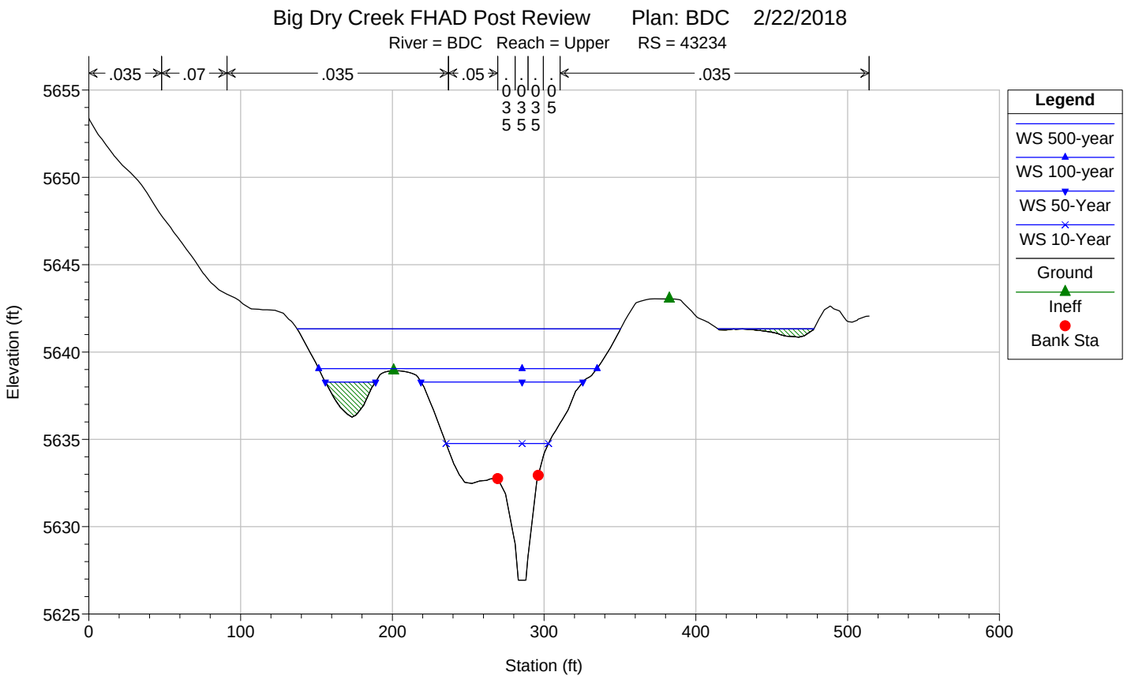
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43234
.035
.07
.035
.05
.035
.035
.035
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5645
5640
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300
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500
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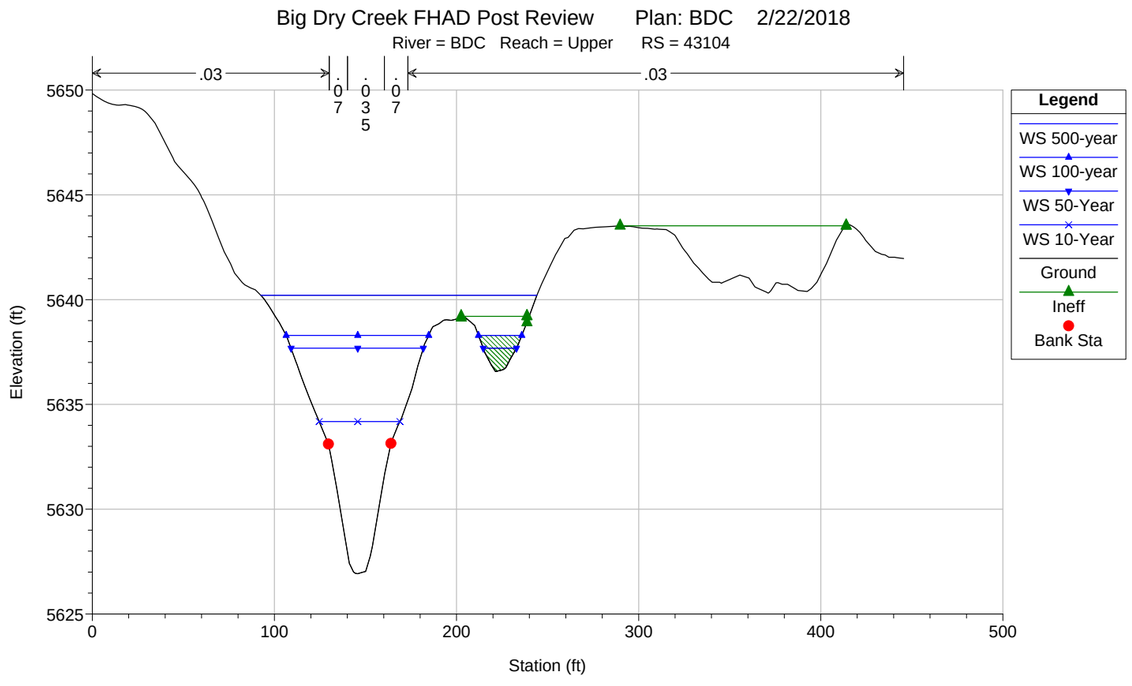
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43104
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5650
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300
400
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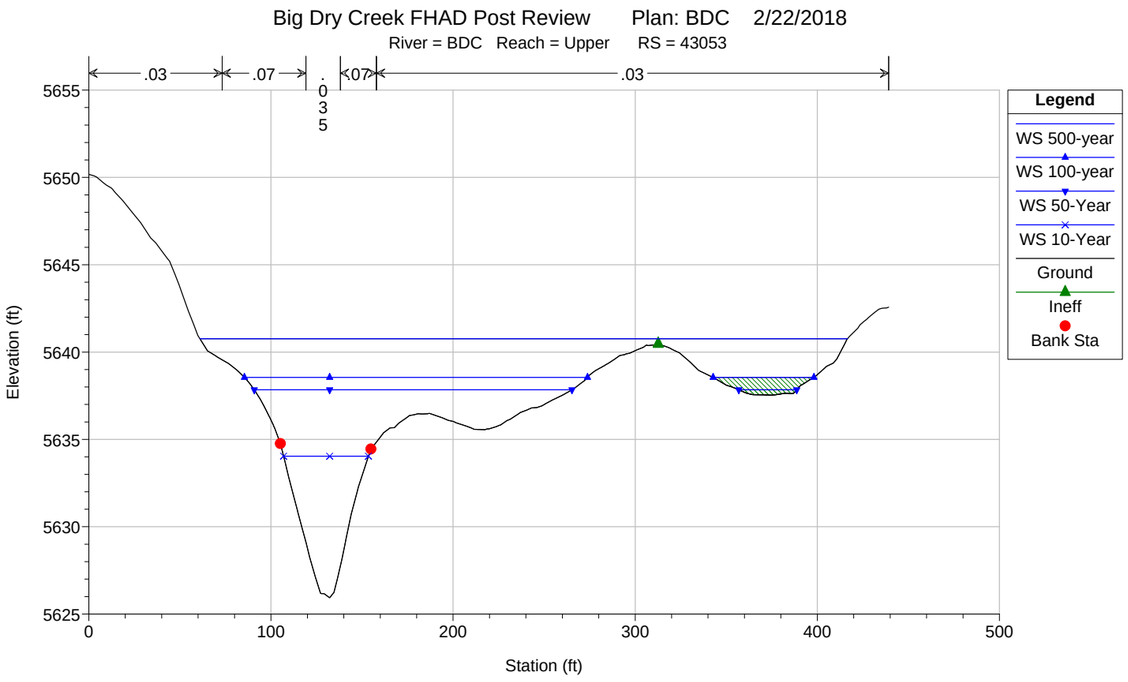
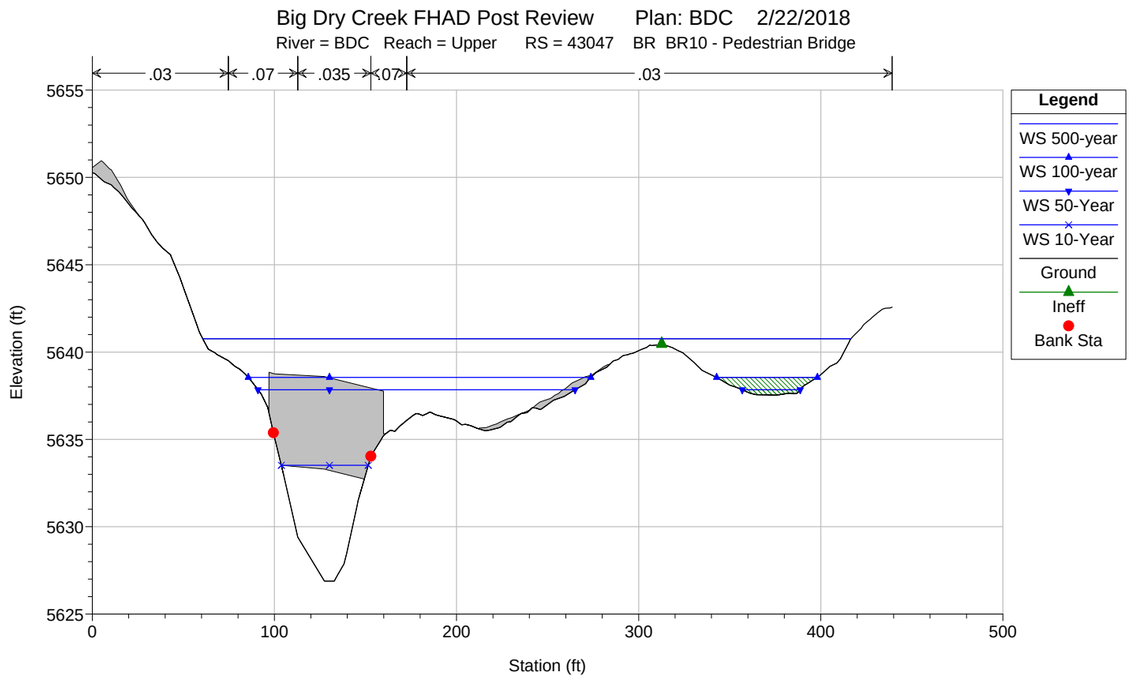

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43053
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
5625
0
100
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43047 BR BR10 - Pedestrian Bridge
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
5625
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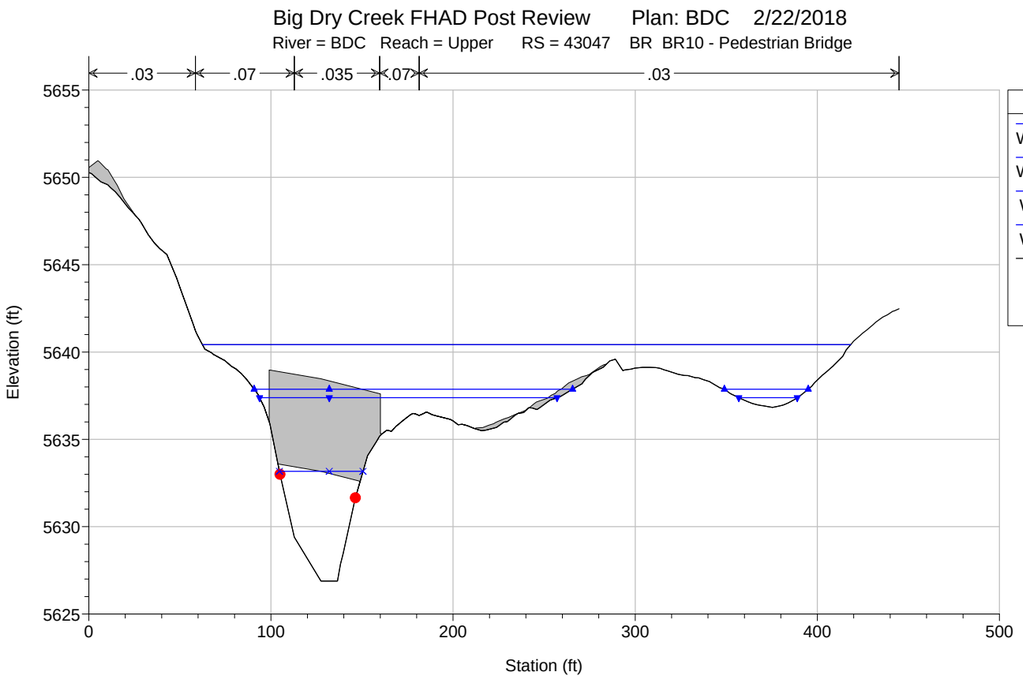
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43047 BR BR10 - Pedestrian Bridge
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5650
5645
5640
5635
5630
5625
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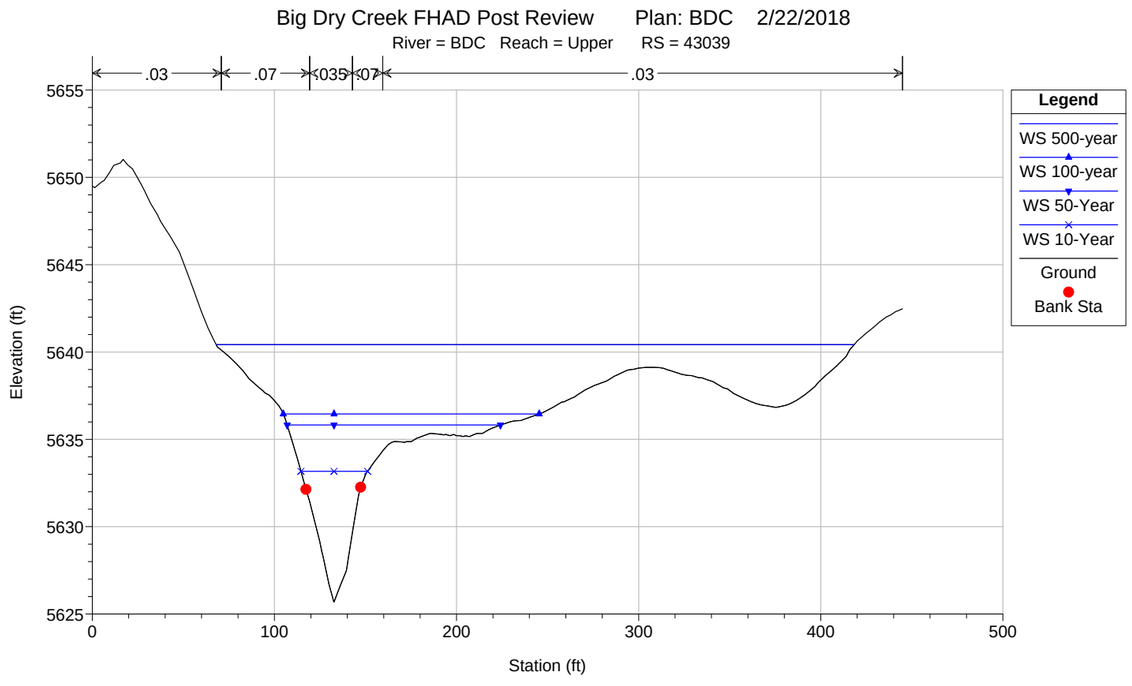
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 43039
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
5625
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200
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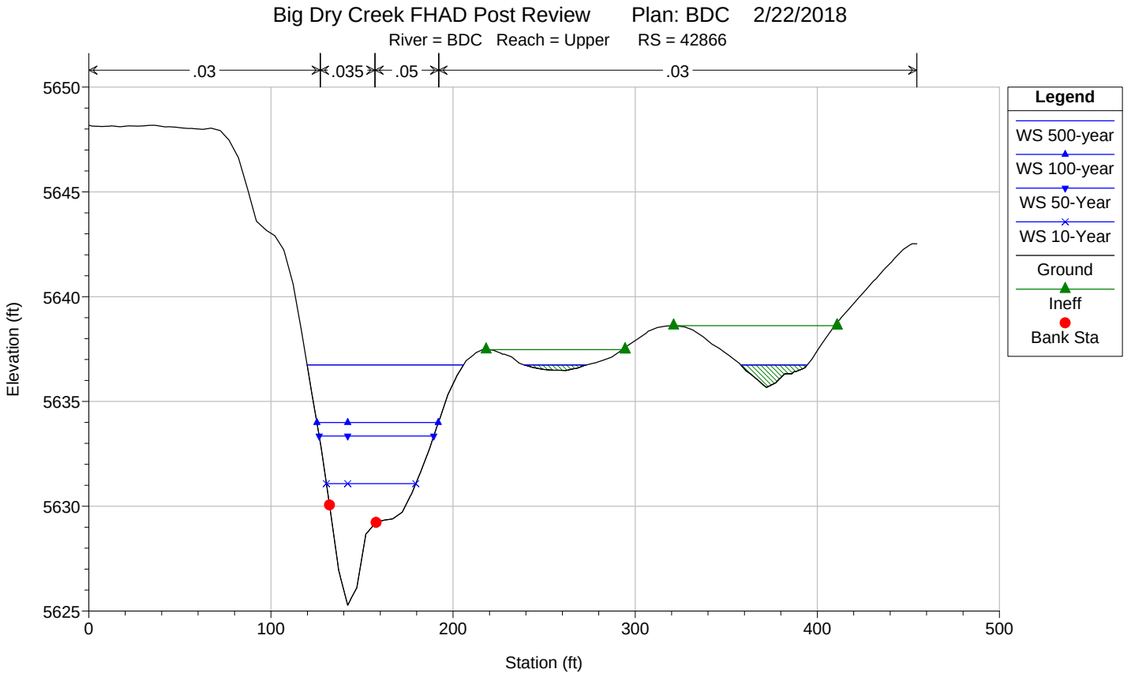
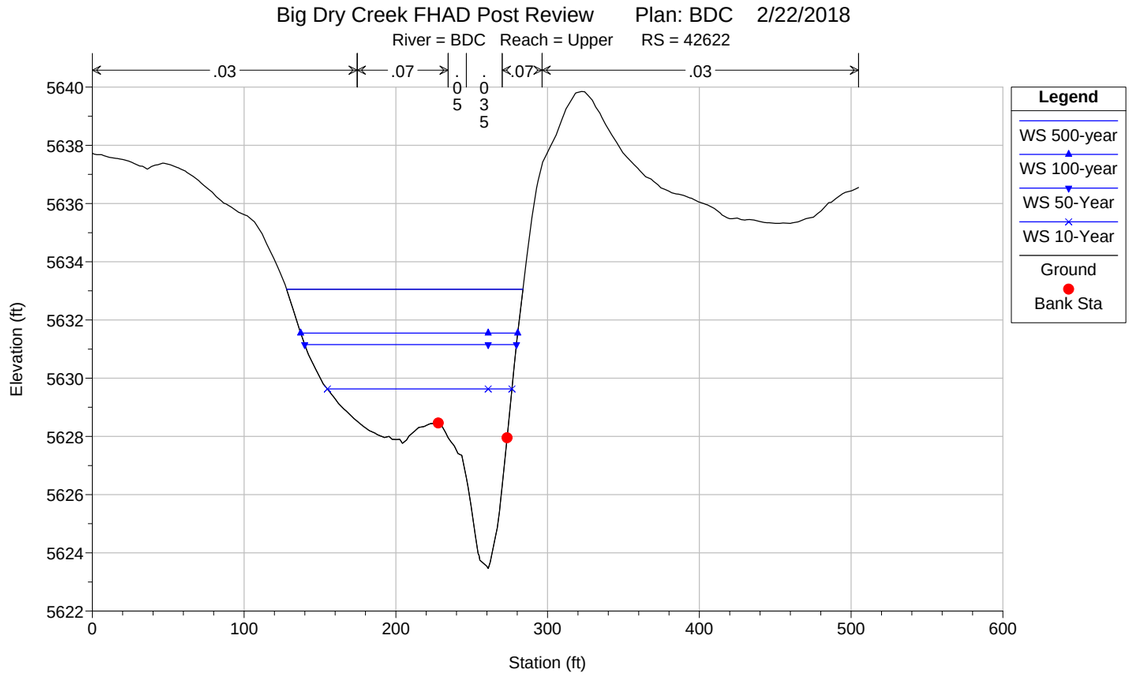
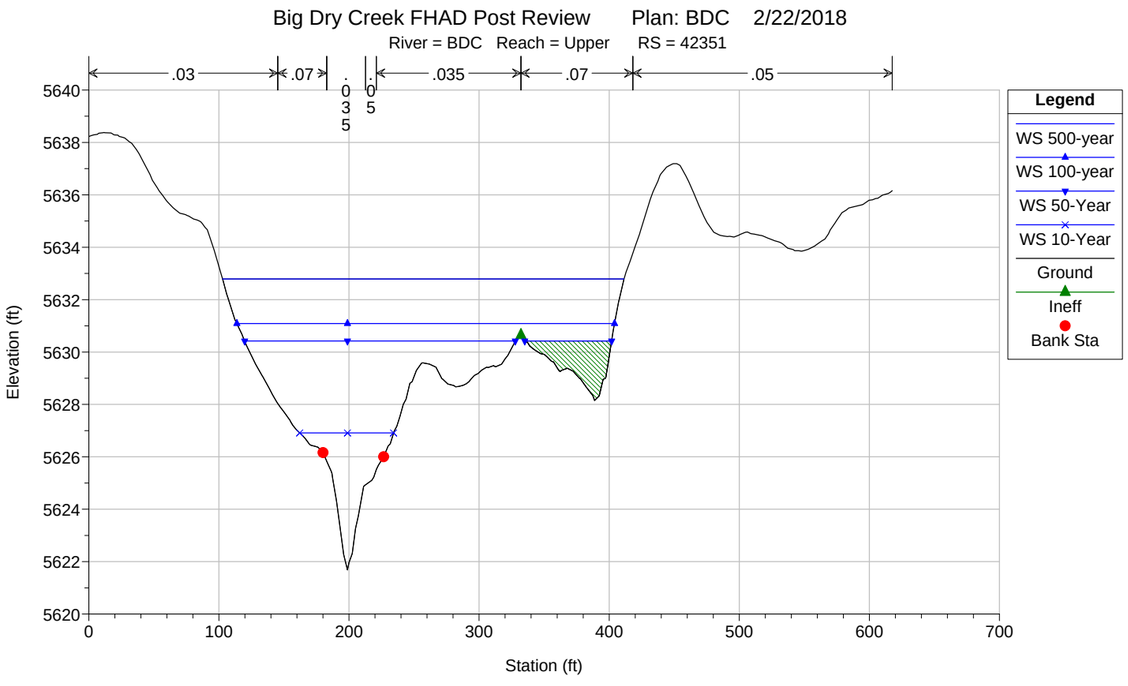
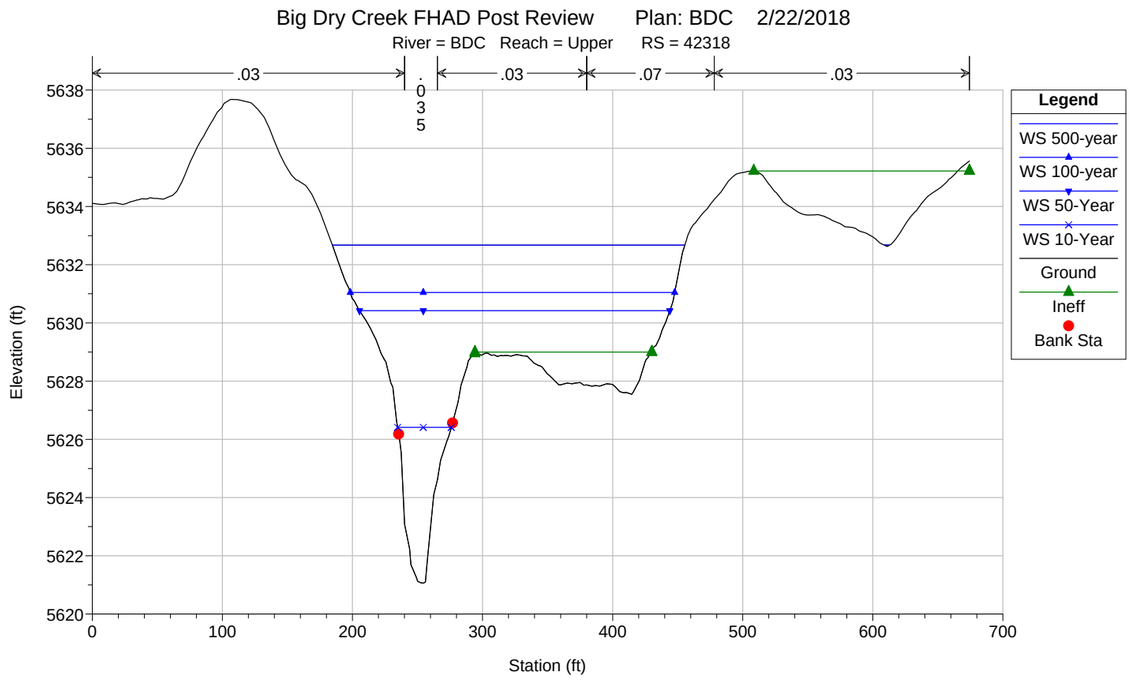
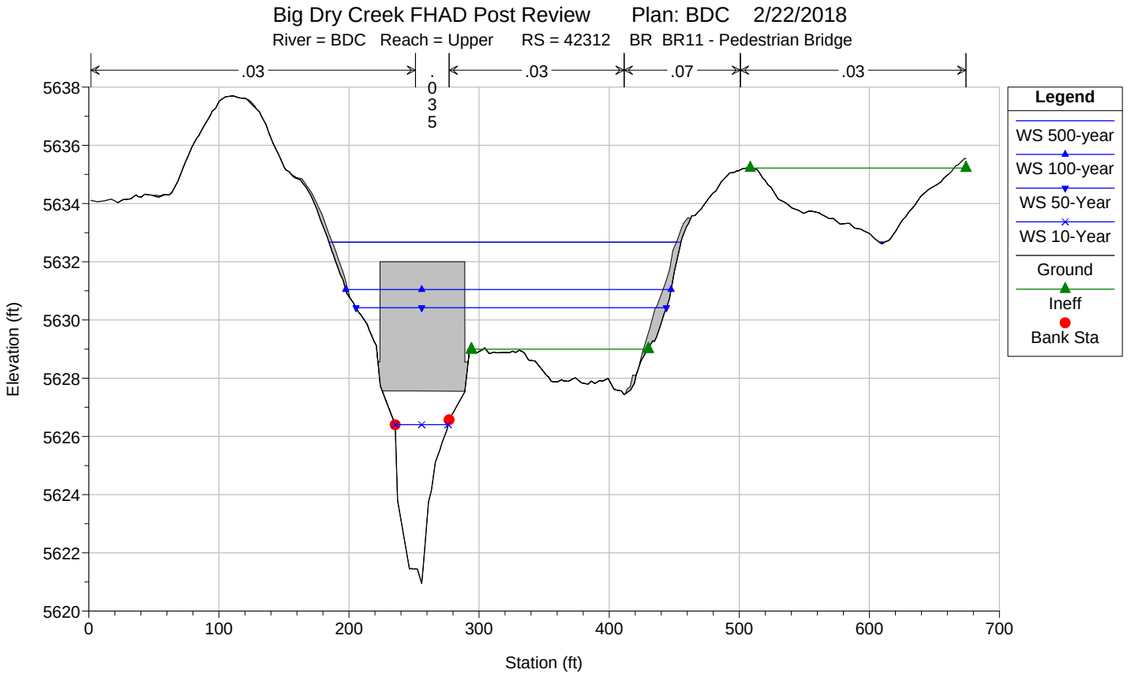
400
500

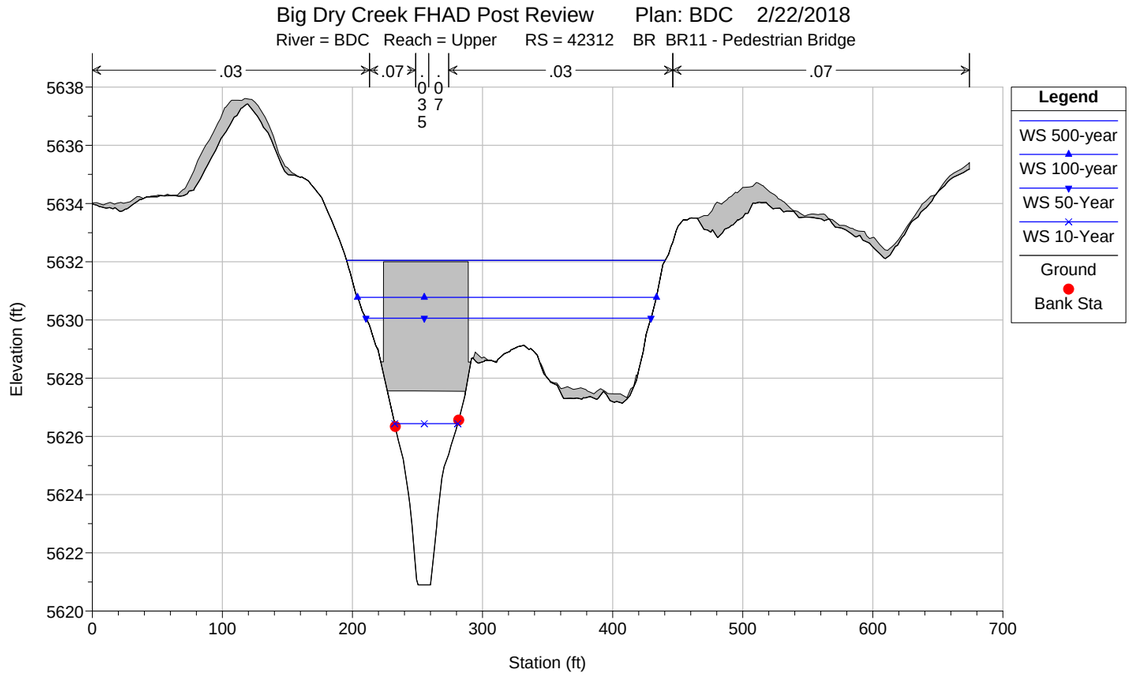

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42866
.03
.035
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

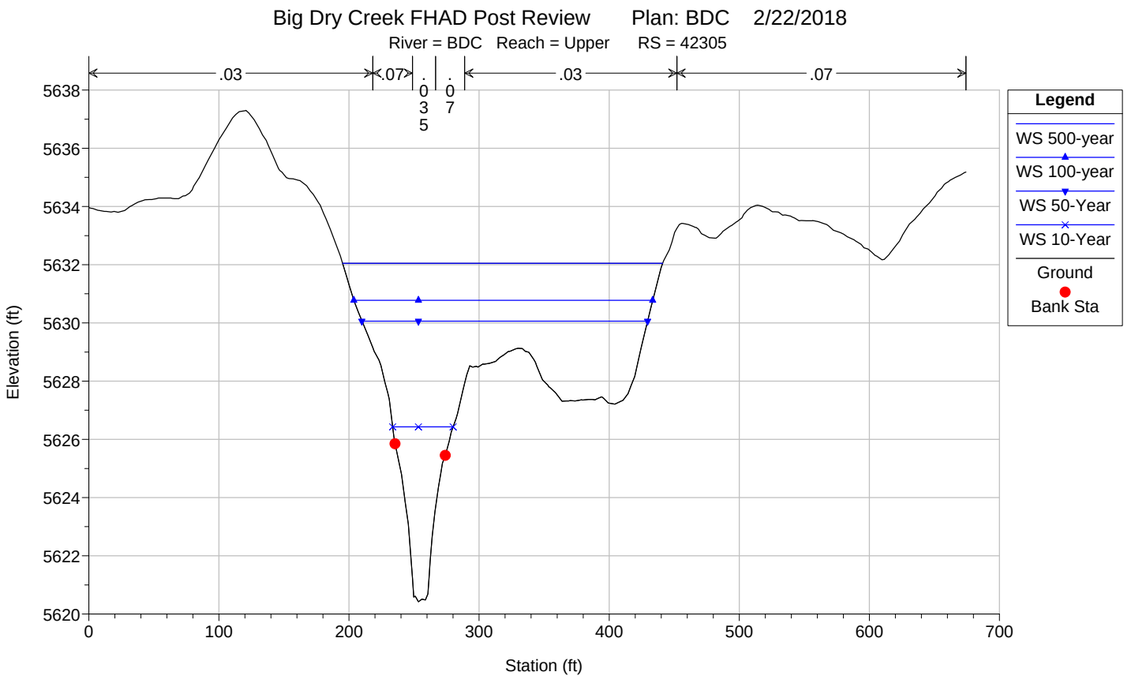

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42622
.03
.07
.05
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

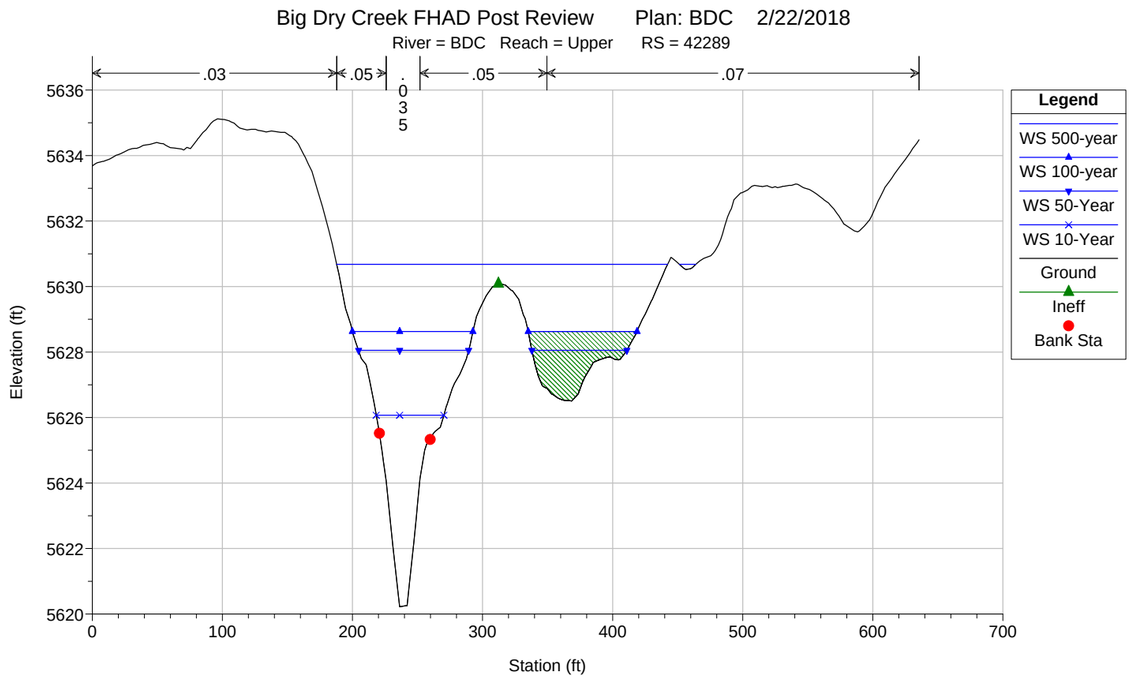

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42351
.03
.07
.035
.05
.035
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

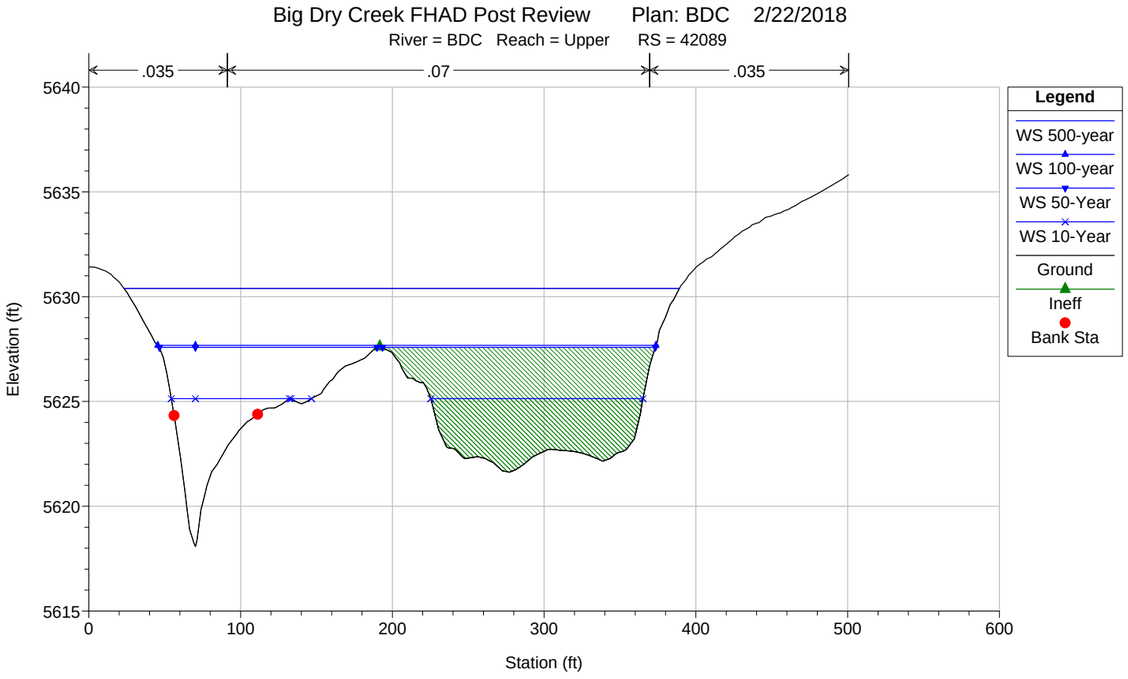

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42318
.03
.035
.03
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42312 BR BR11 - Pedestrian Bridge
.03
.07
.03
.07
.03
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42312 BR BR11 - Pedestrian Bridge
.03
.07
.03
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42305
.03
.07
.03
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42289
.03
.05
.05
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 42089
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
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5615
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100
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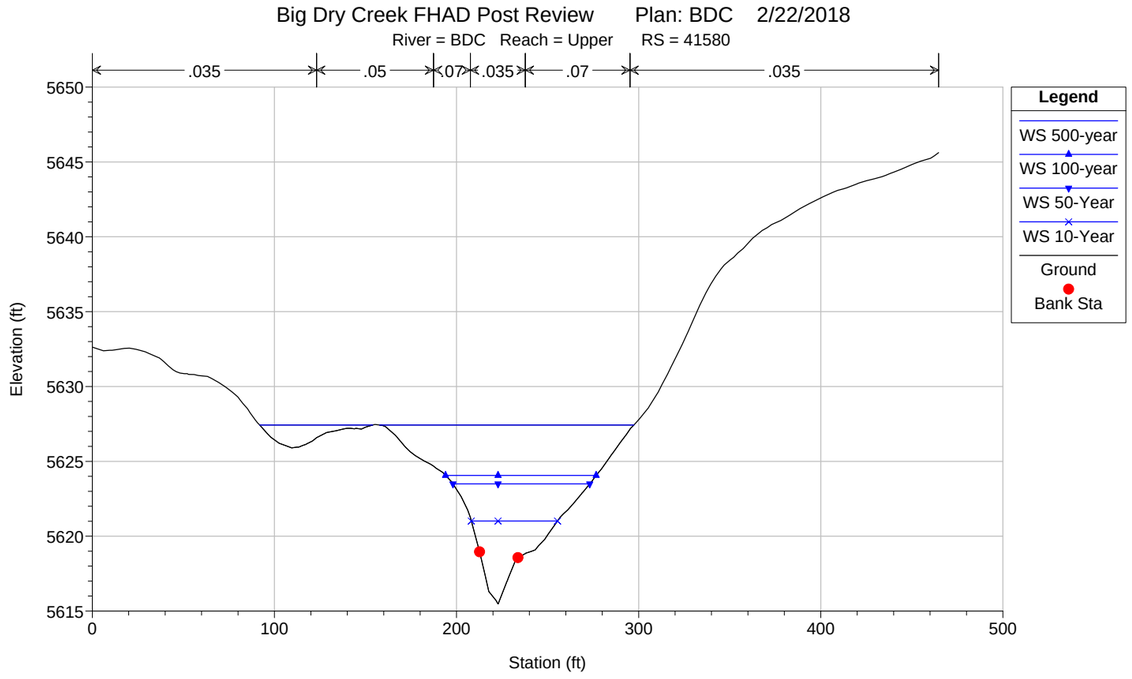
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41580
.035
.05
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5645
5640
5635
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5625
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5615
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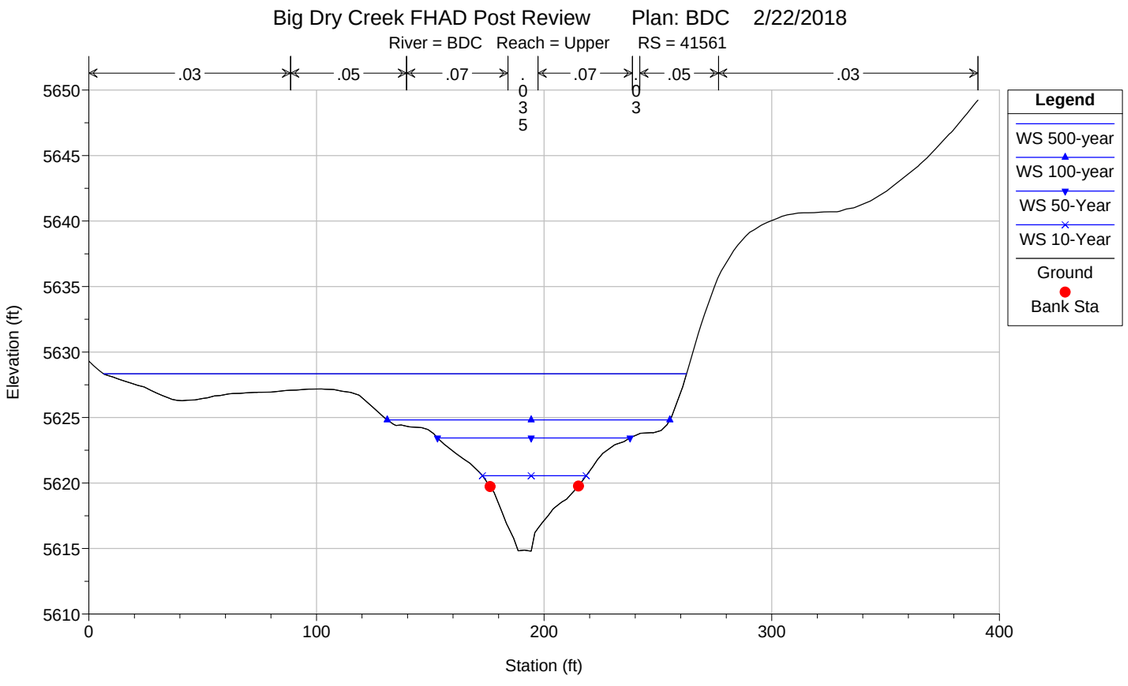
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41561
.03
.05
.07
.035
.07
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5650
5645
5640
5635
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5625
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5615
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300
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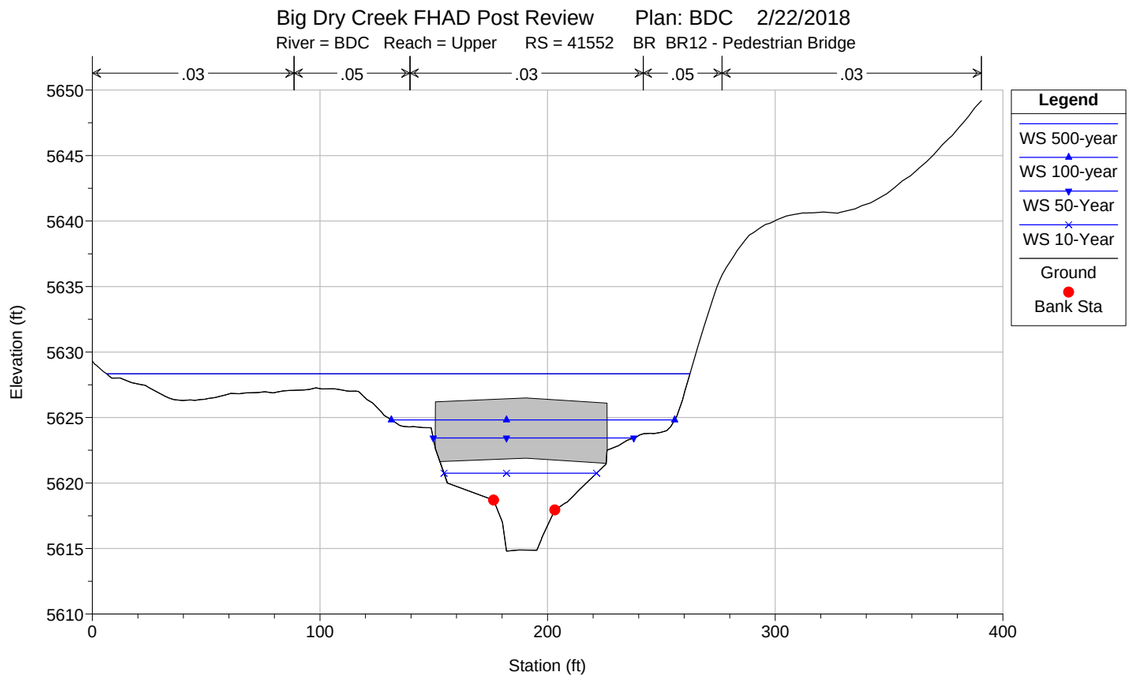
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41552 BR BR12 - Pedestrian Bridge
.03
.05
.03
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5650
5645
5640
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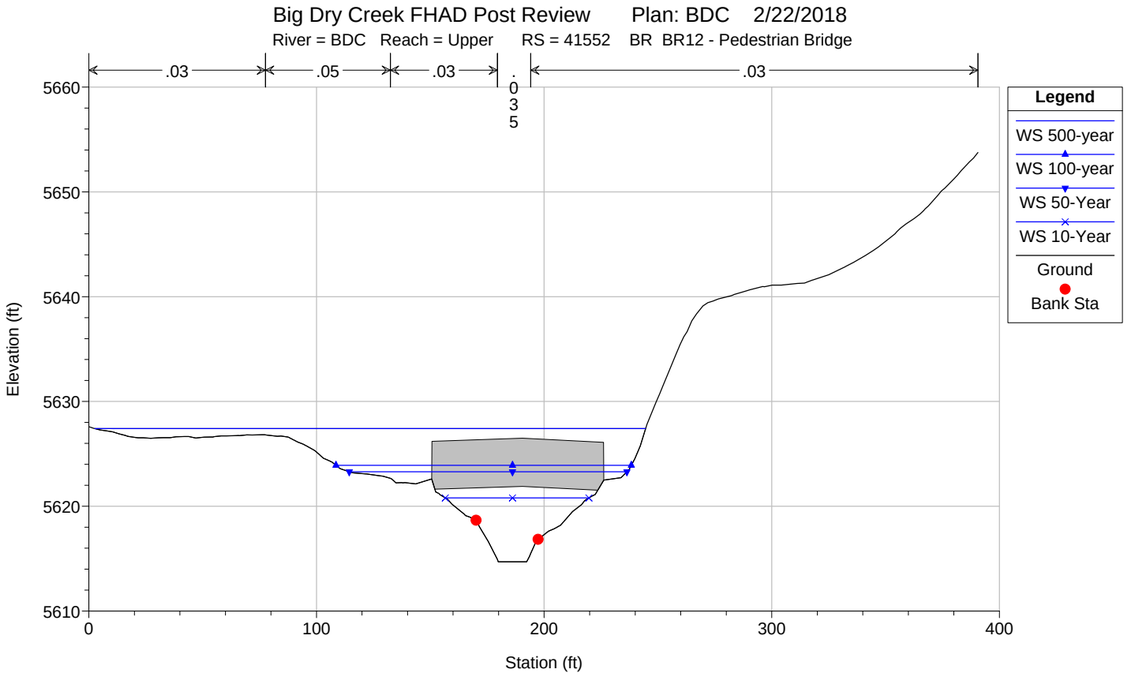
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41552 BR BR12 - Pedestrian Bridge
.03
.05
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5640
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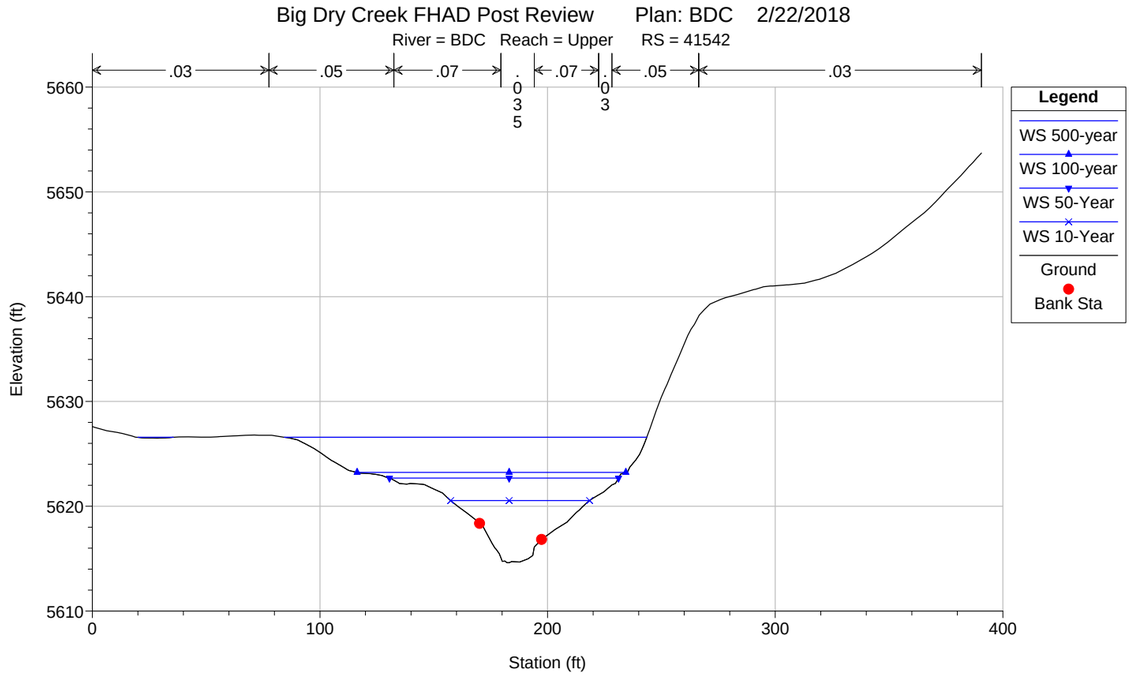
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41542
.03
.05
.07
.035
.07
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5660
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300
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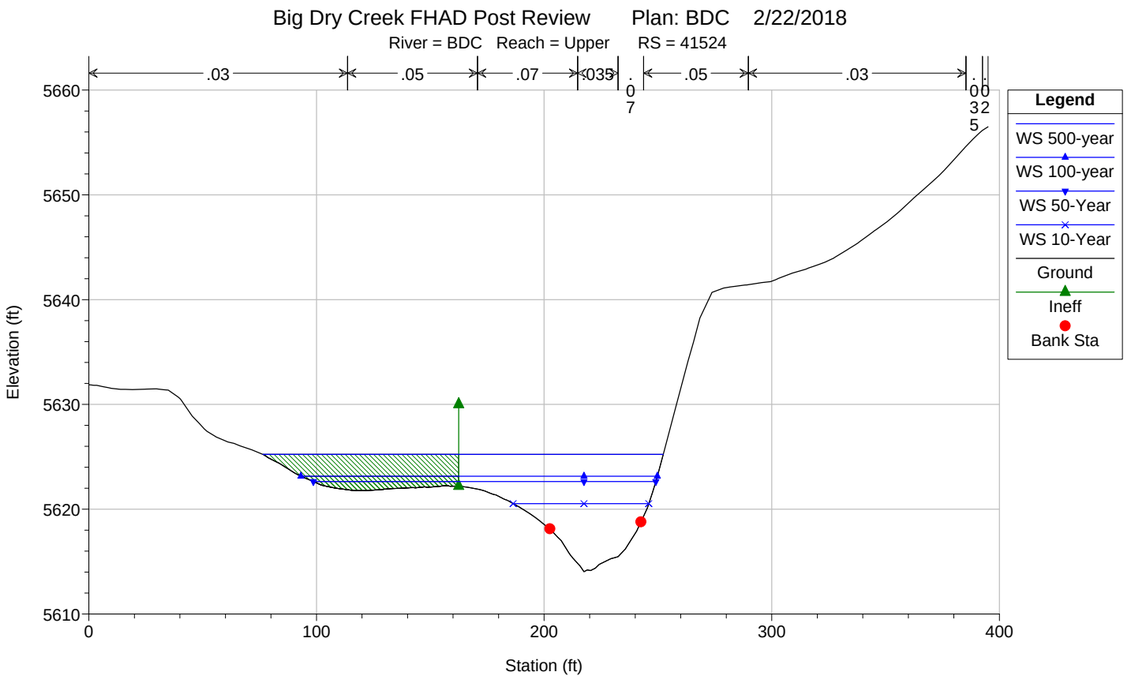
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41524
.03
.05
.07
.035
.07
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5660
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5620
5610
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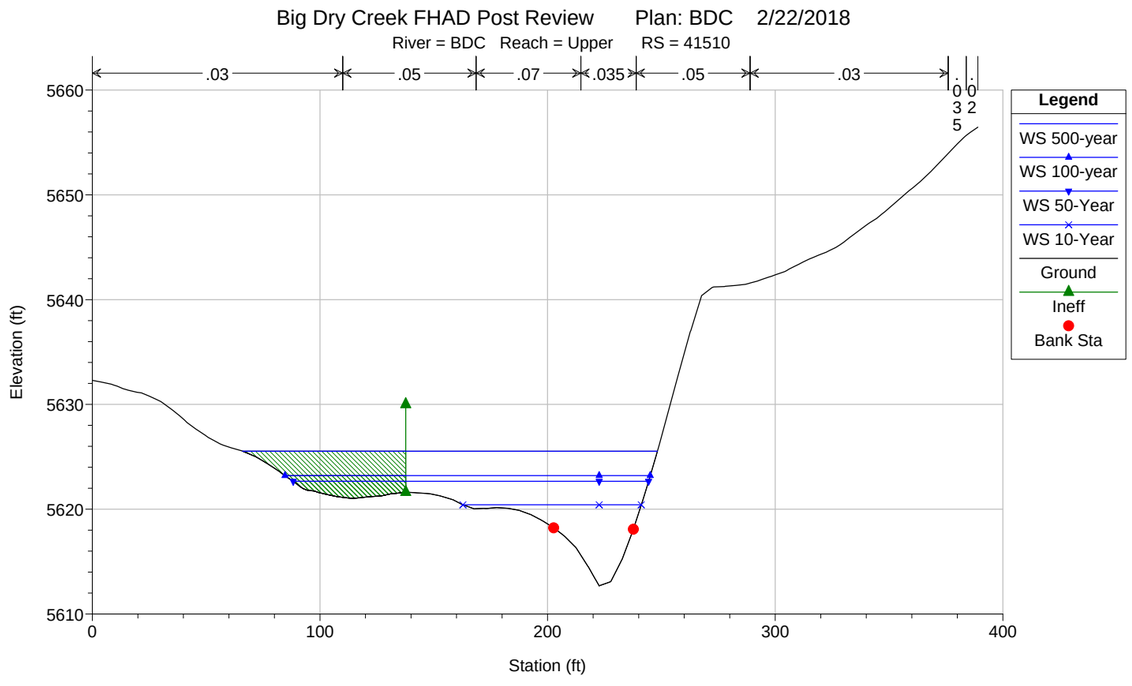
100
200
300
400


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41510
.03
.05
.07
.035
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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300
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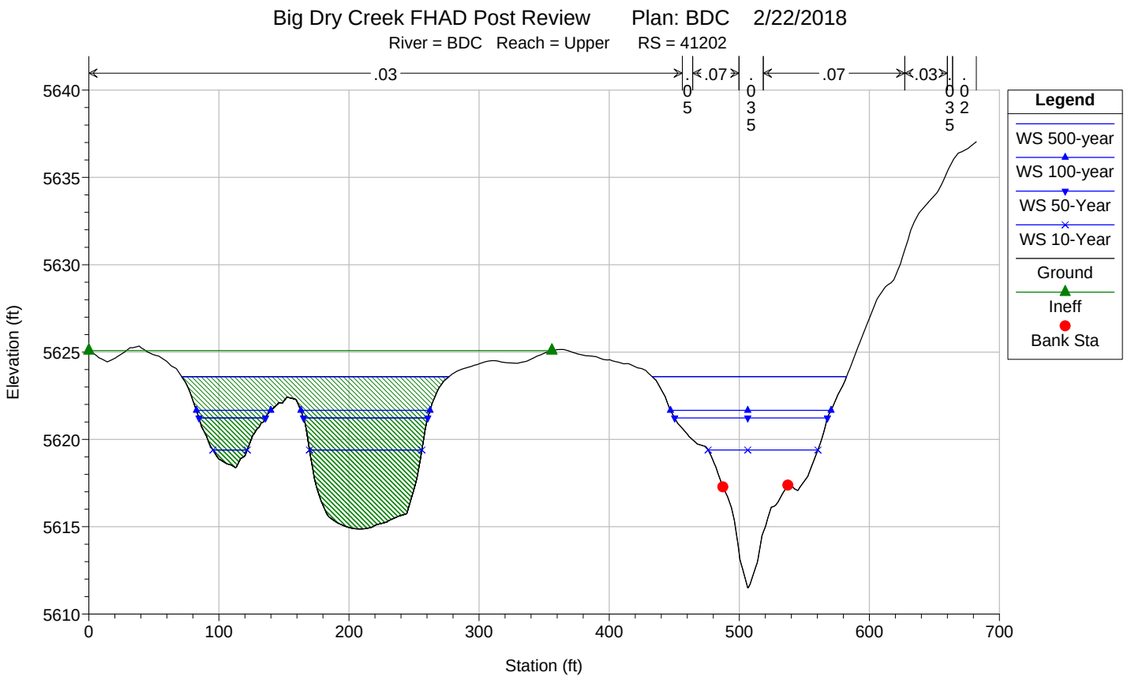
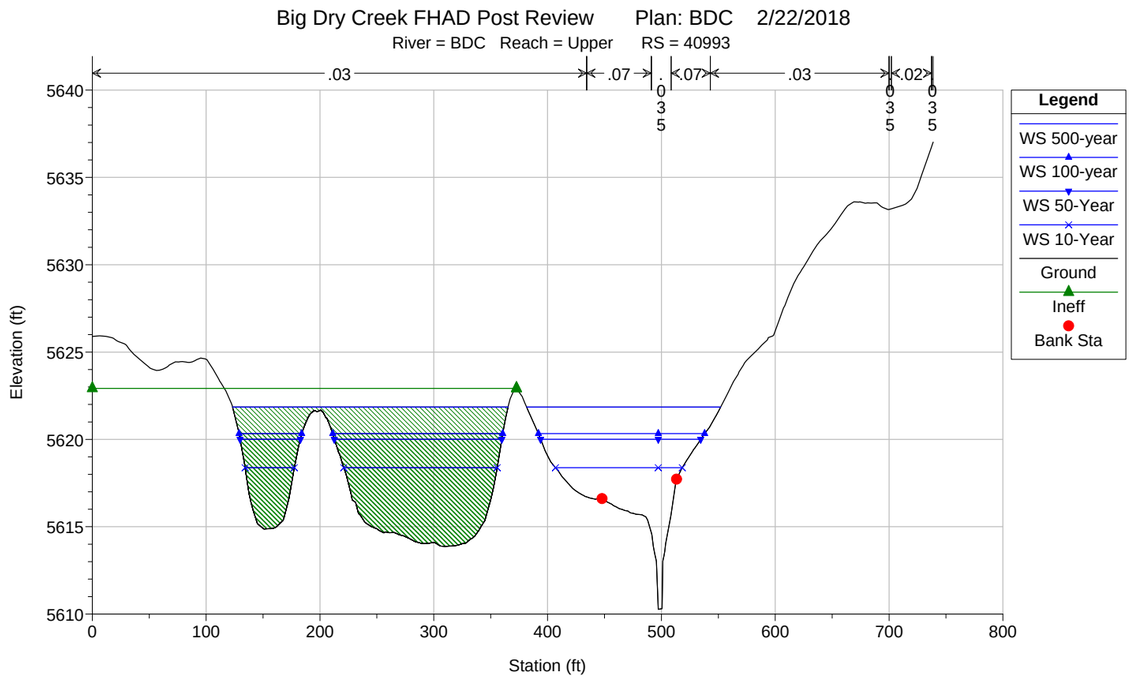
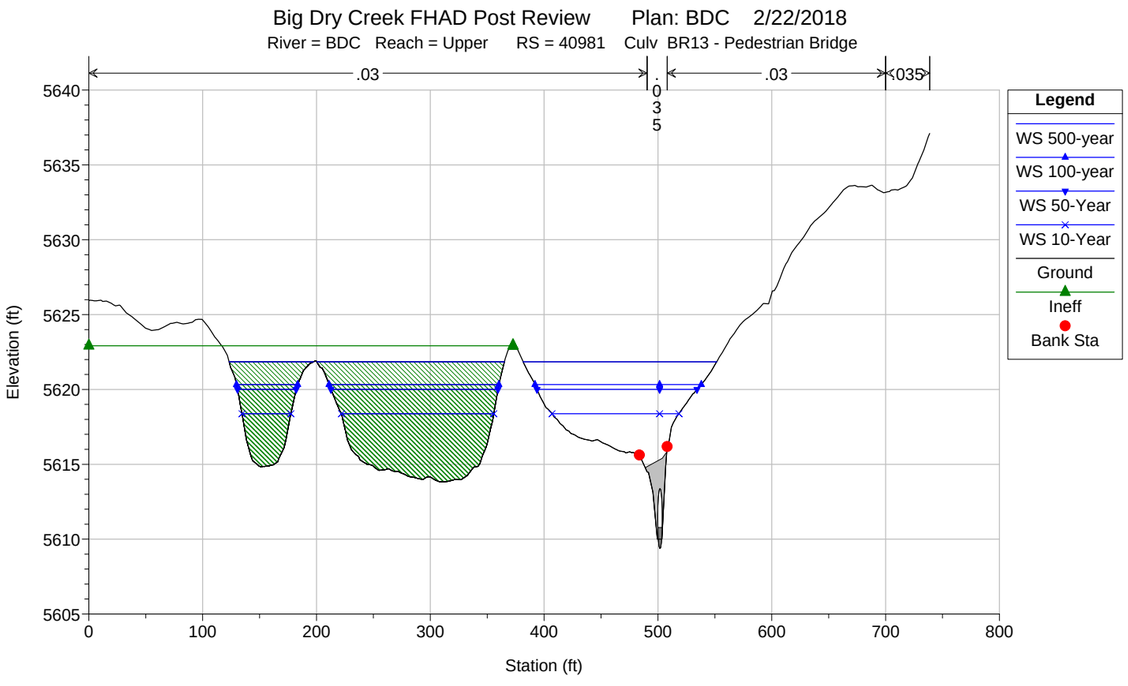
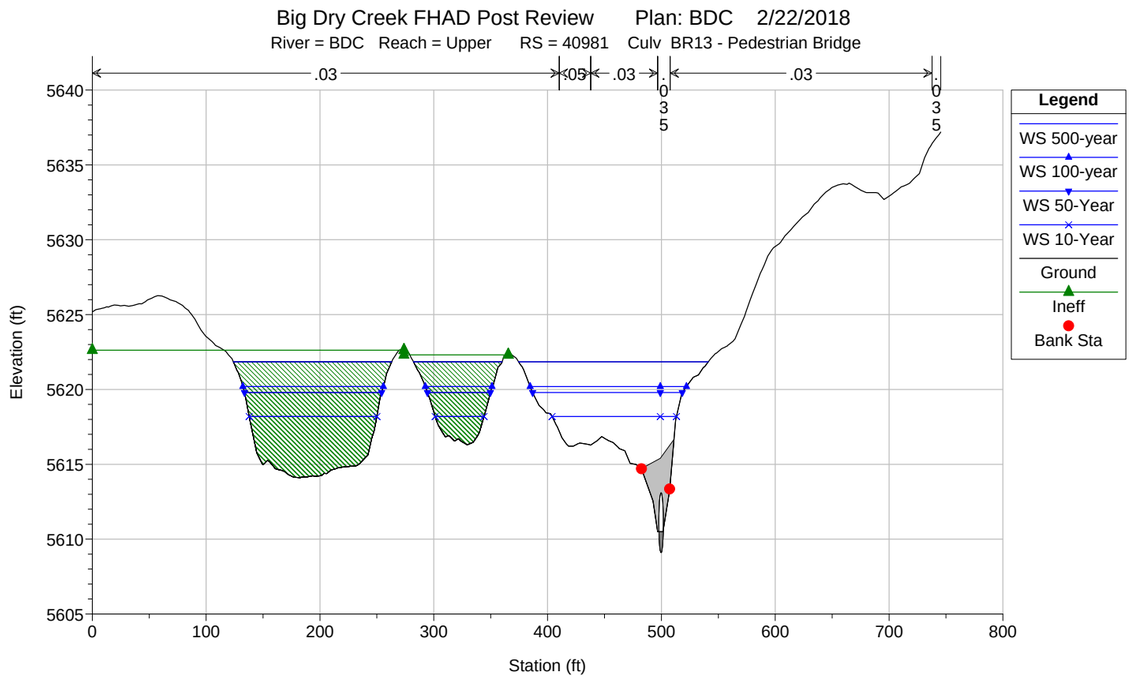
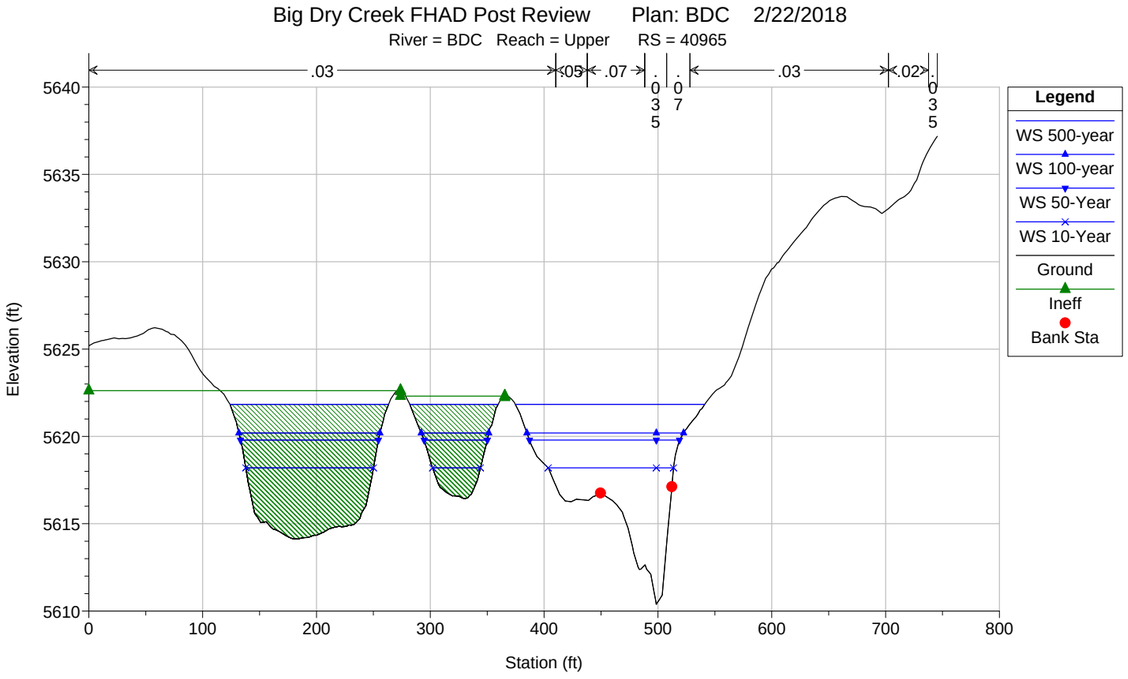
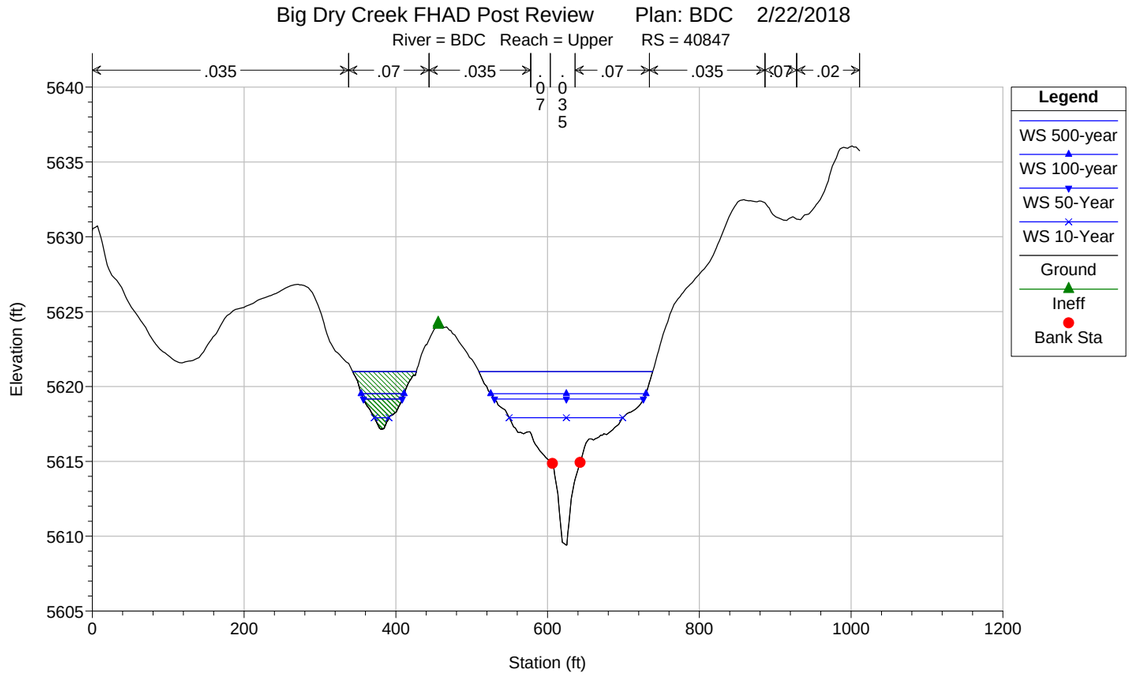

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 41202
.03
.07
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

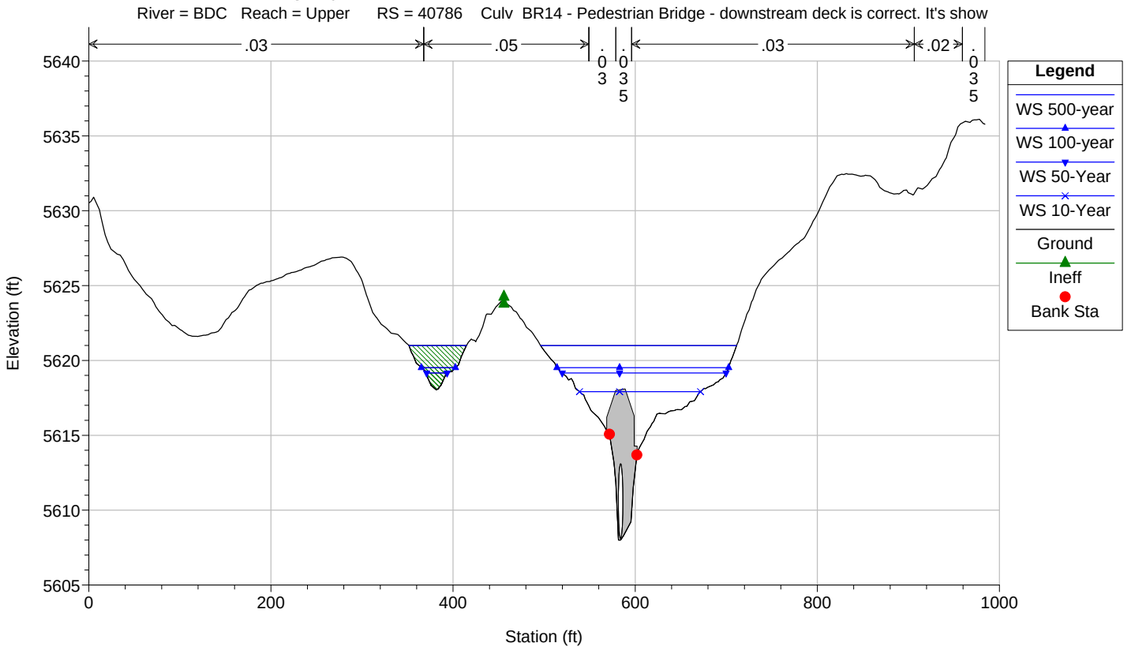

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40993
.03
.07
.07
.03
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

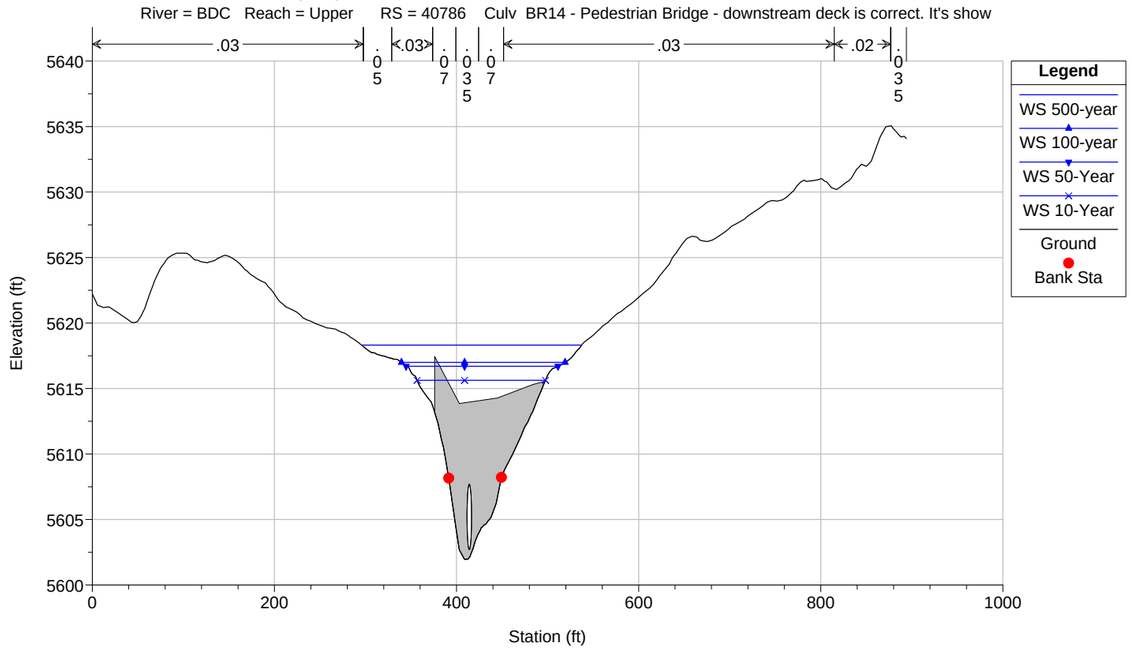

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40981 Culv BR13 - Pedestrian Bridge
.03
.03
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

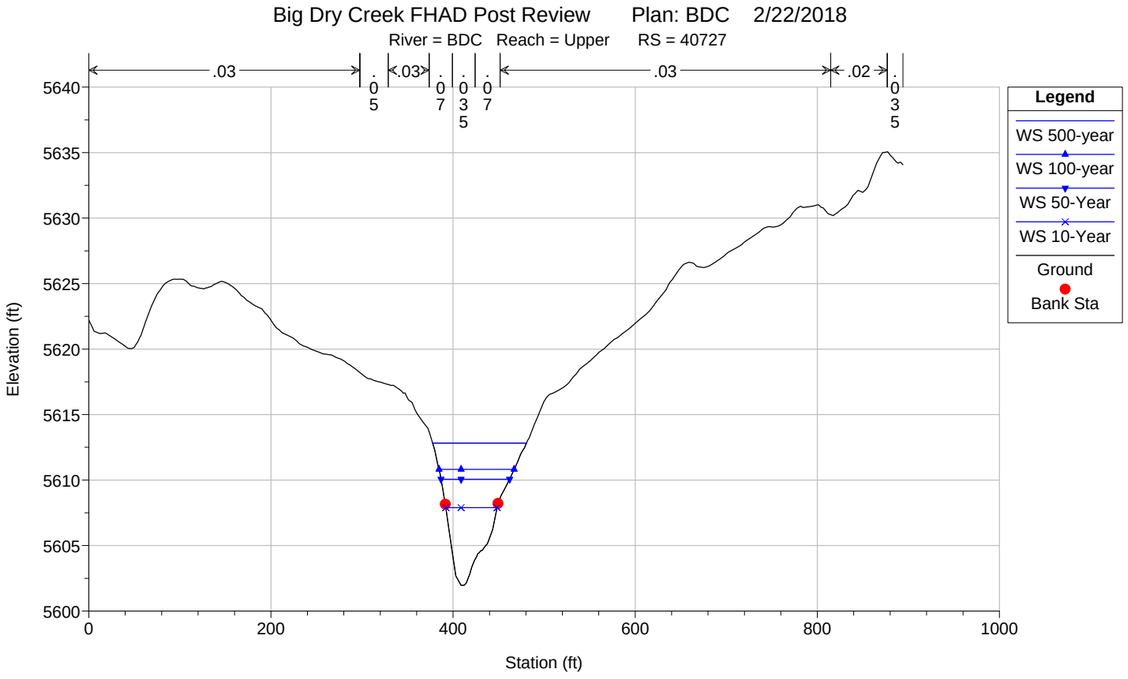

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40981 Culv BR13 - Pedestrian Bridge
.03
.05
.03
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

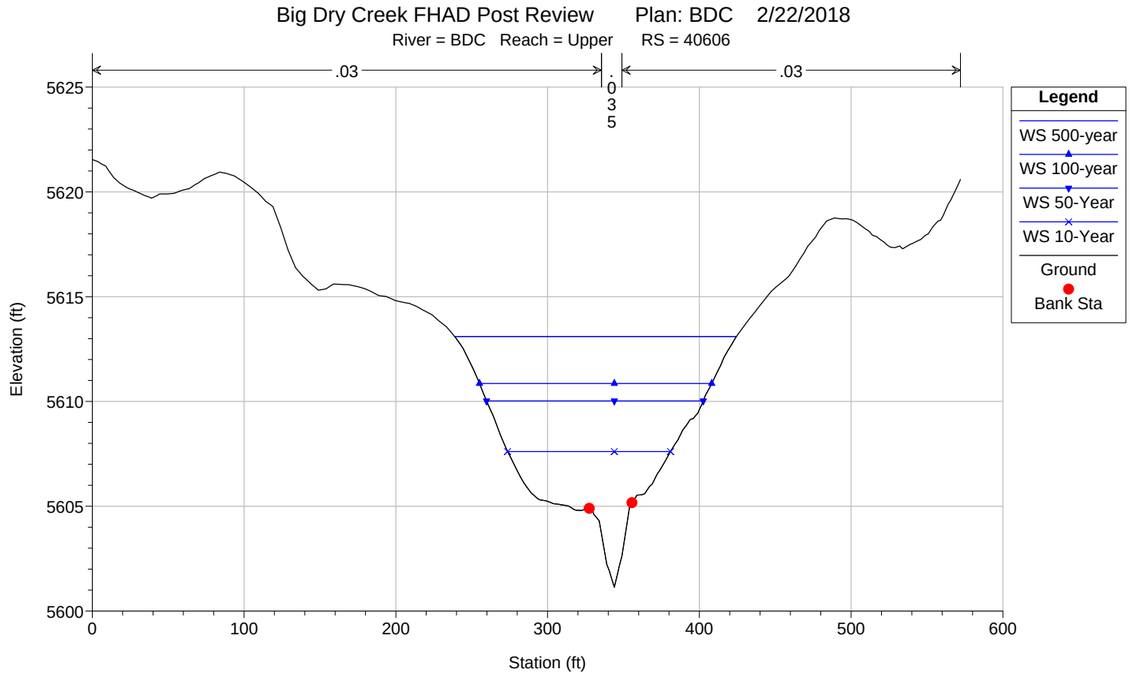

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40965
.03
.05
.07
.035
.07
.03
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
5620
5615
5610
0
100
200
300
400
500
600
700
800

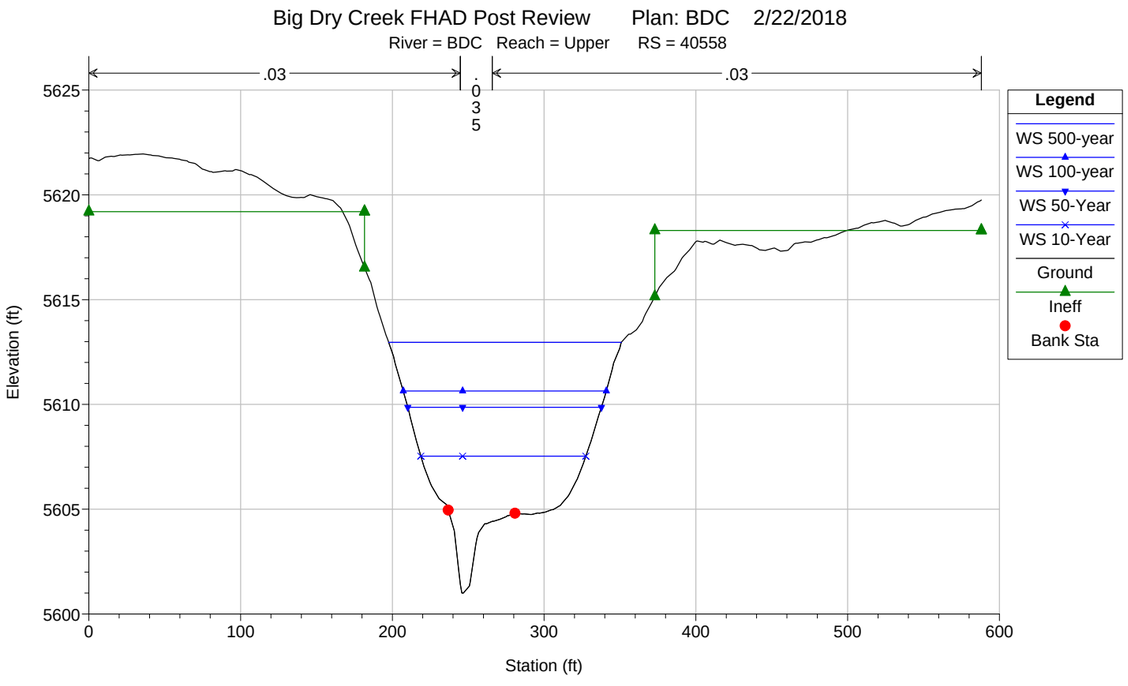

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40847
.035
.07
.035
.07
.035
.07
.02
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
5620
5615
5610
5605
0
200
400
600
800
1000
1200

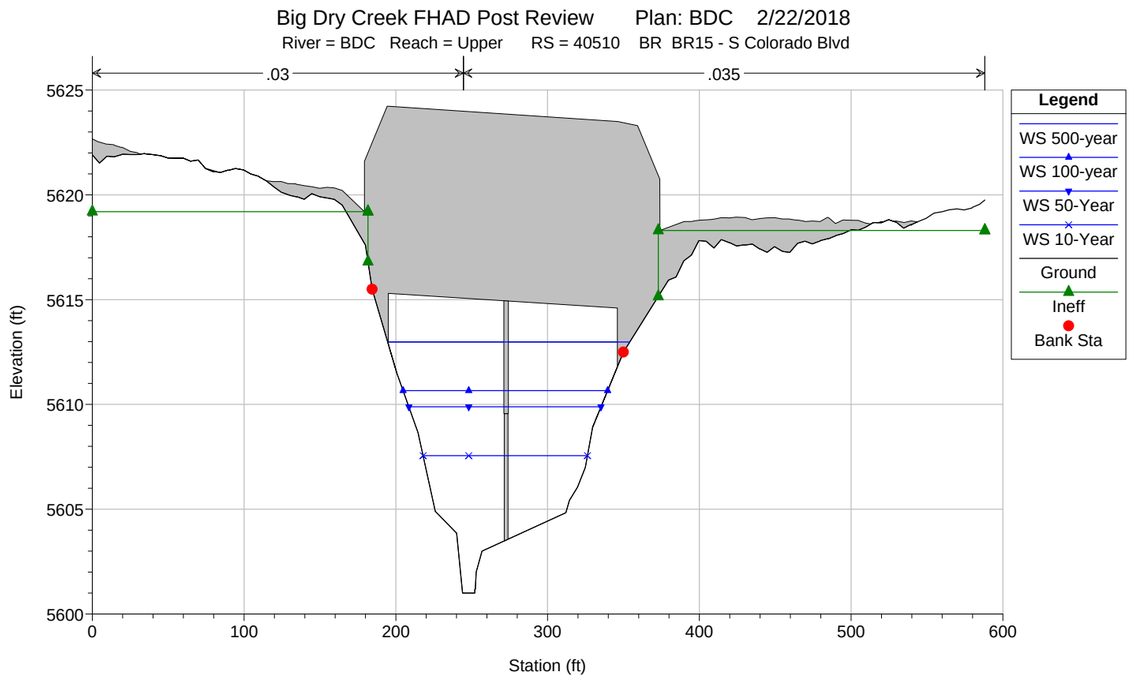

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40786 Culv BR14 - Pedestrian Bridge - downstream deck is correct. It's show
.03
.05
.03
.02
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
5620
5615
5610
5605
0
200
400
600
800
1000

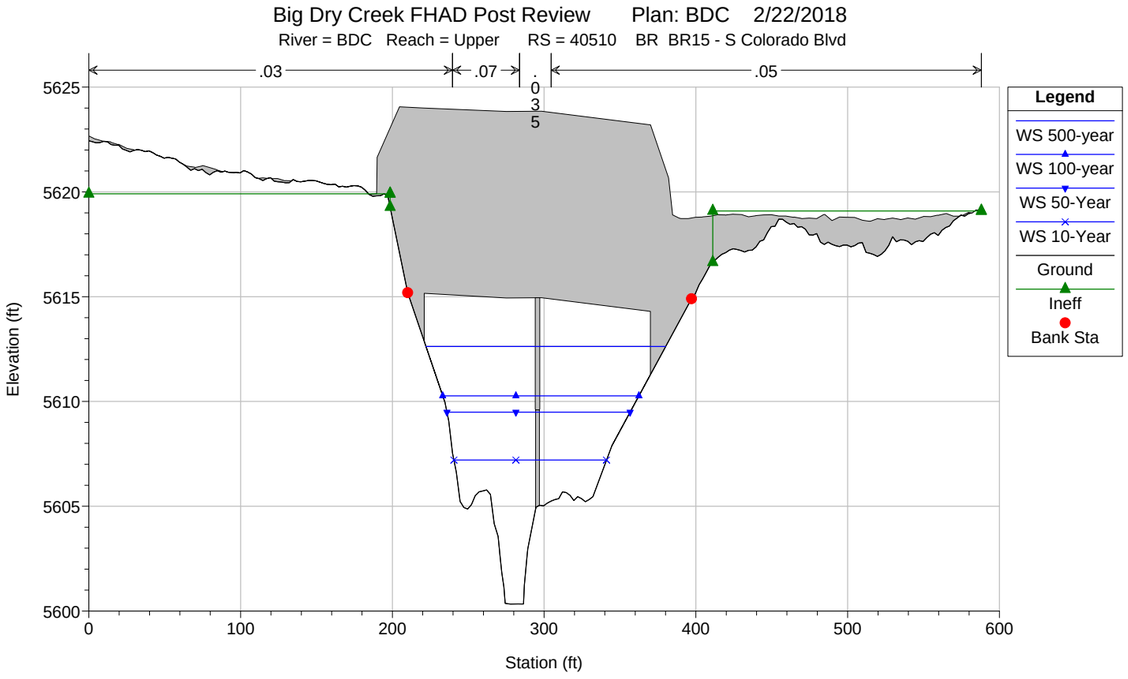

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40786 Culv BR14 - Pedestrian Bridge - downstream deck is correct. It's show
.03
.05
.03
.07
.03
.07
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
5620
5615
5610
5605
5600
0
200
400
600
800
1000

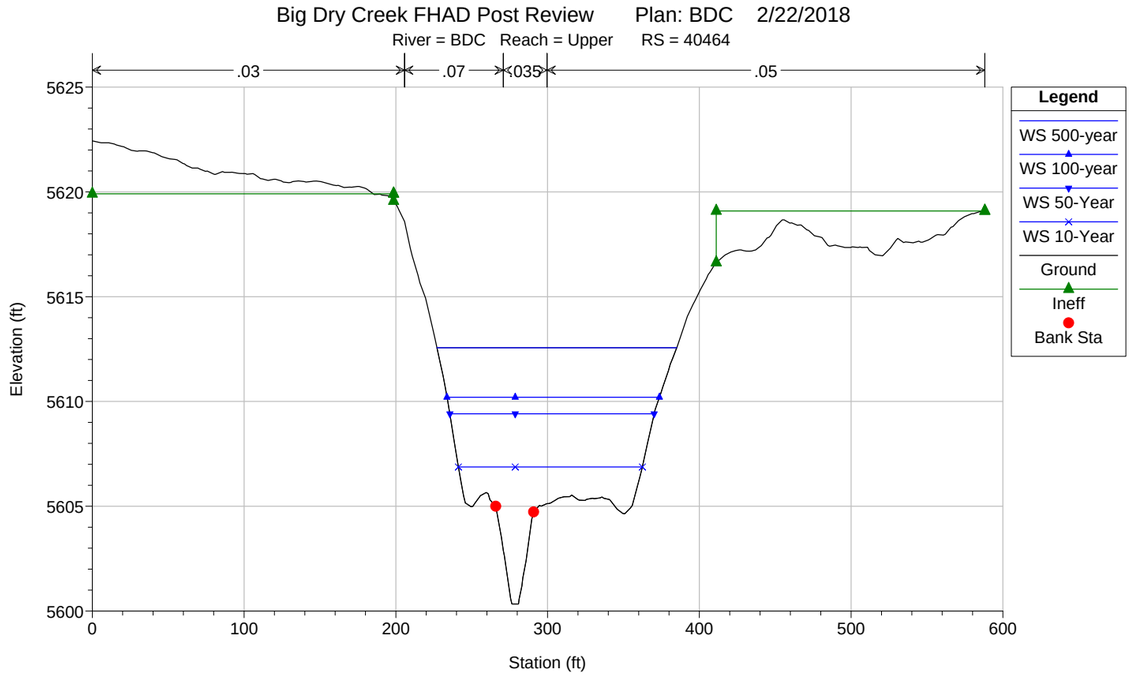

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40727
.03
.05
.03
.07
.035
.07
.03
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5600
5605
5610
5615
5620
5625
5630
5635
5640
0
200
400
600
800
1000

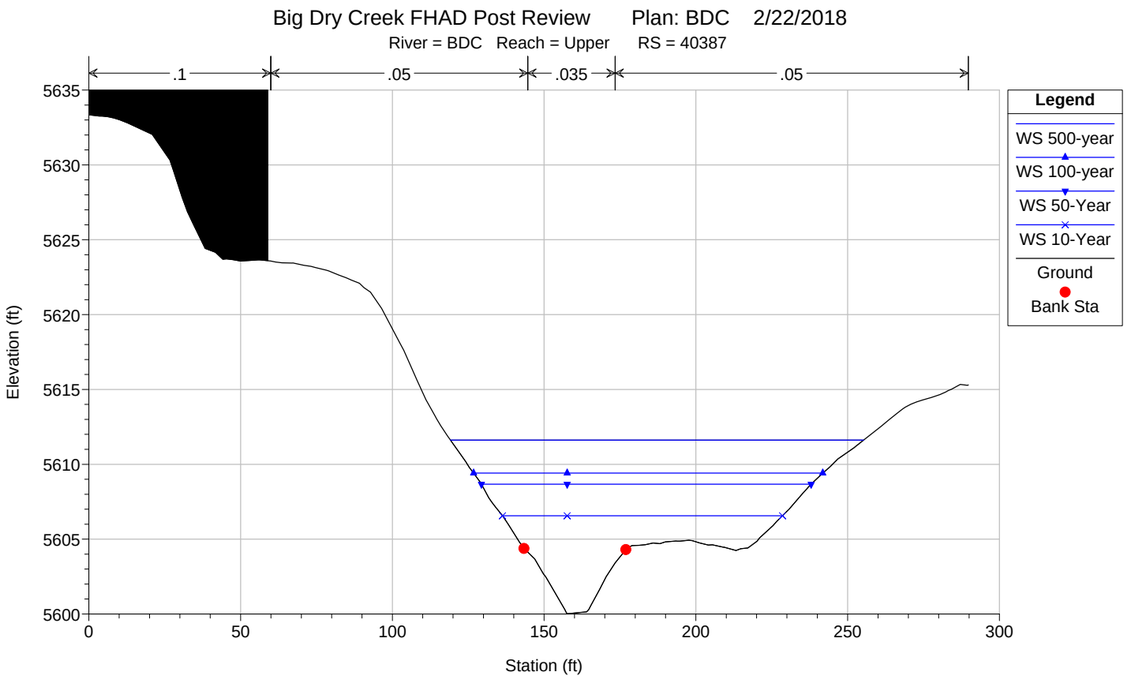

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40606
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5600
5605
5610
5615
5620
5625
0
100
200
300
400
500
600

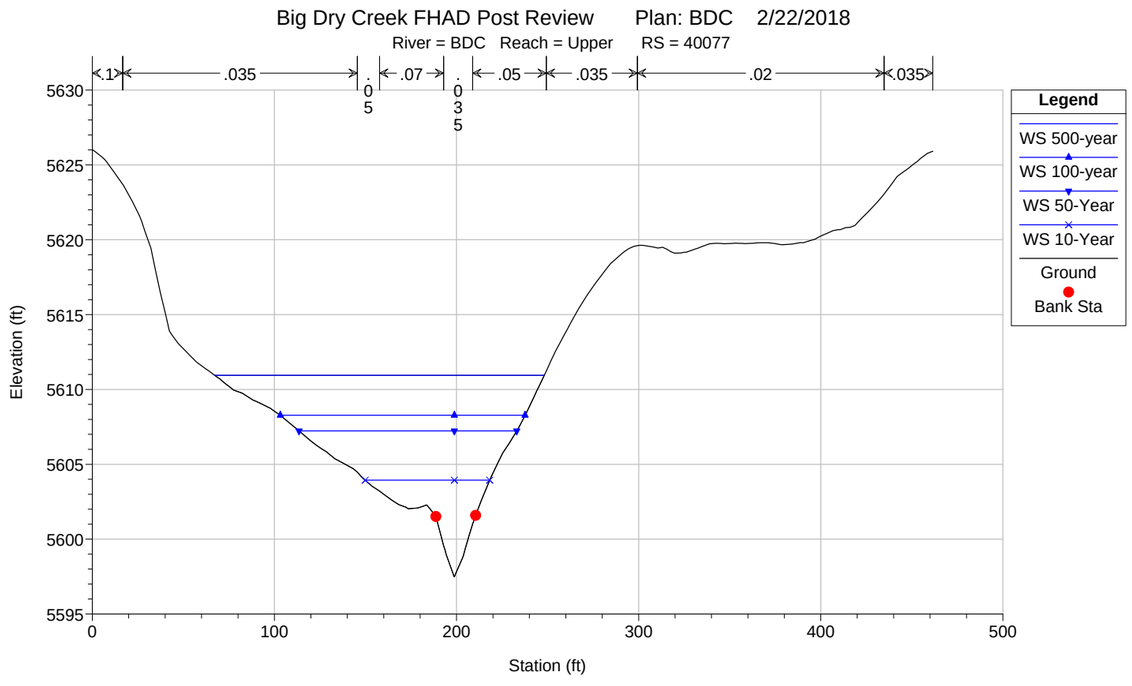

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40558
.03
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5600
5605
5610
5615
5620
5625
0
100
200
300
400
500
600

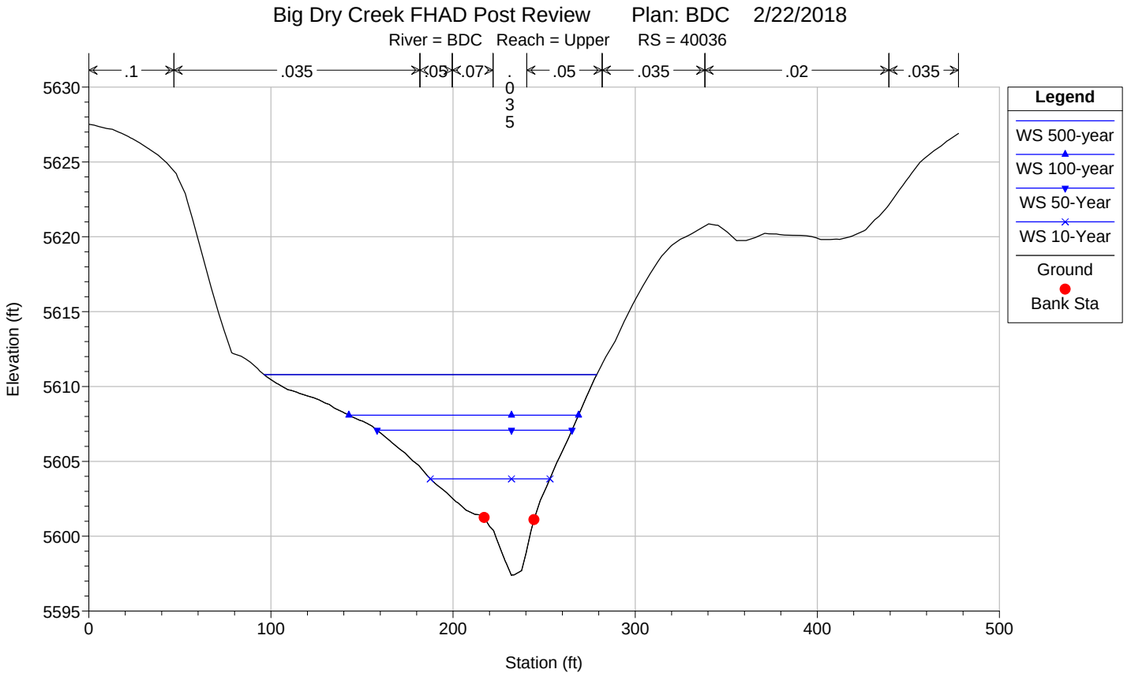

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40510 BR BR15 - S Colorado Blvd
.03
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5600
5605
5610
5615
5620
5625
0
100
200
300
400
500
600

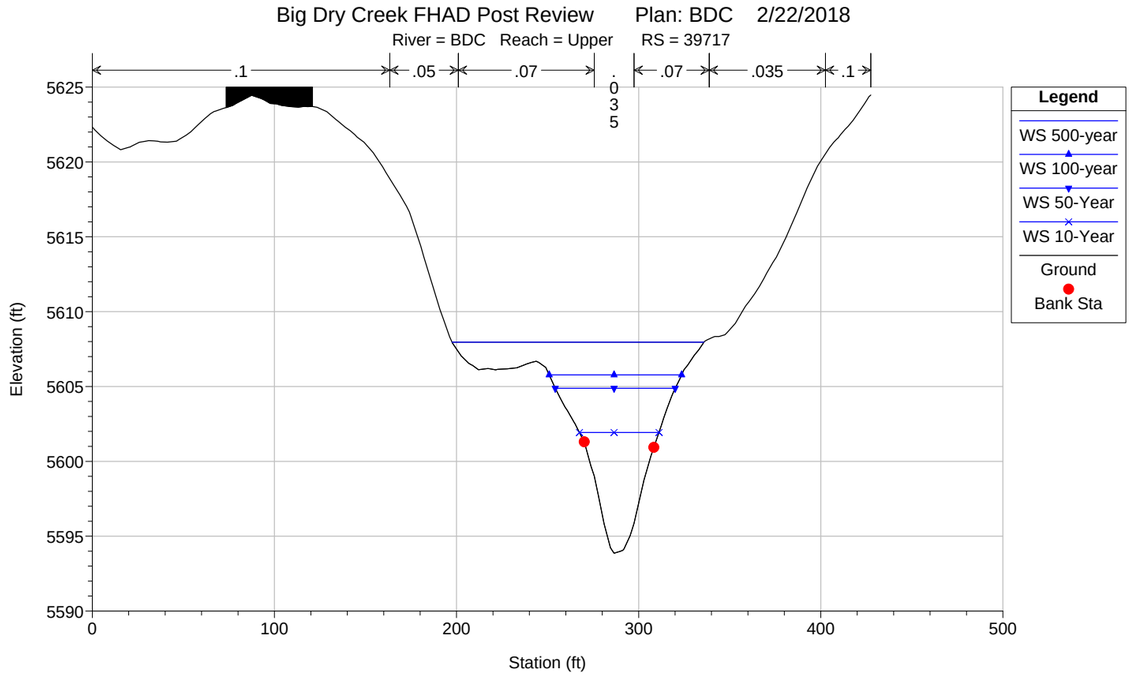

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40510 BR BR15 - S Colorado Blvd
.03
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5625
5620
5615
5610
5605
5600
0
100
200
300
400
500
600

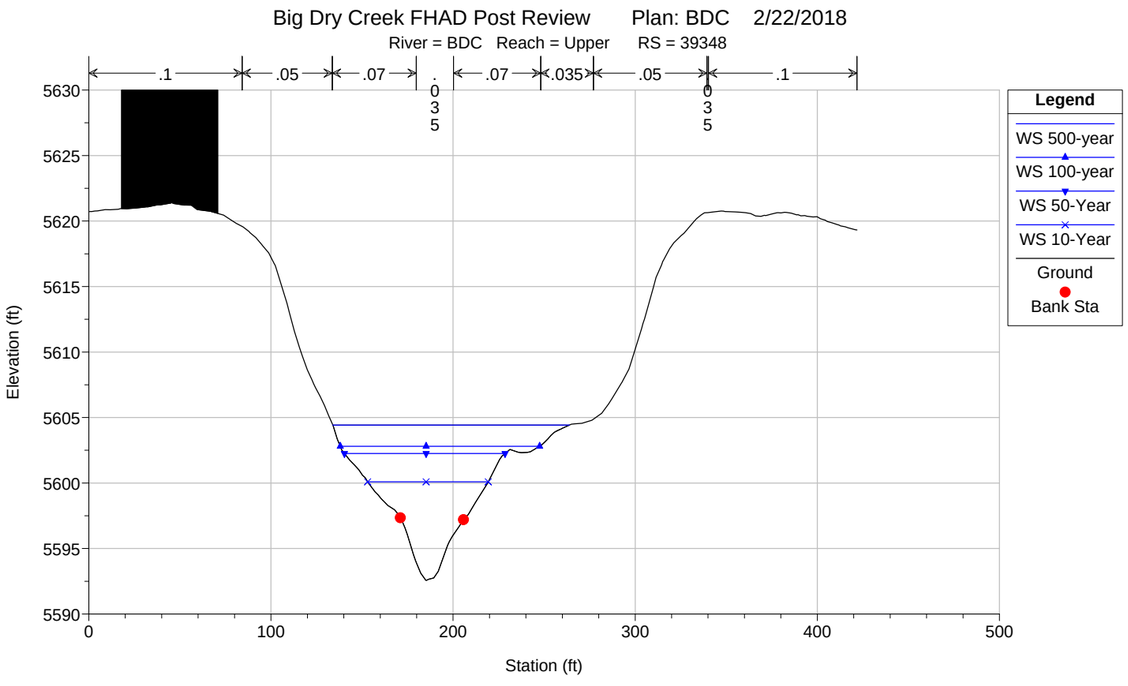

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40464
.03
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5625
5620
5615
5610
5605
5600
0
100
200
300
400
500
600

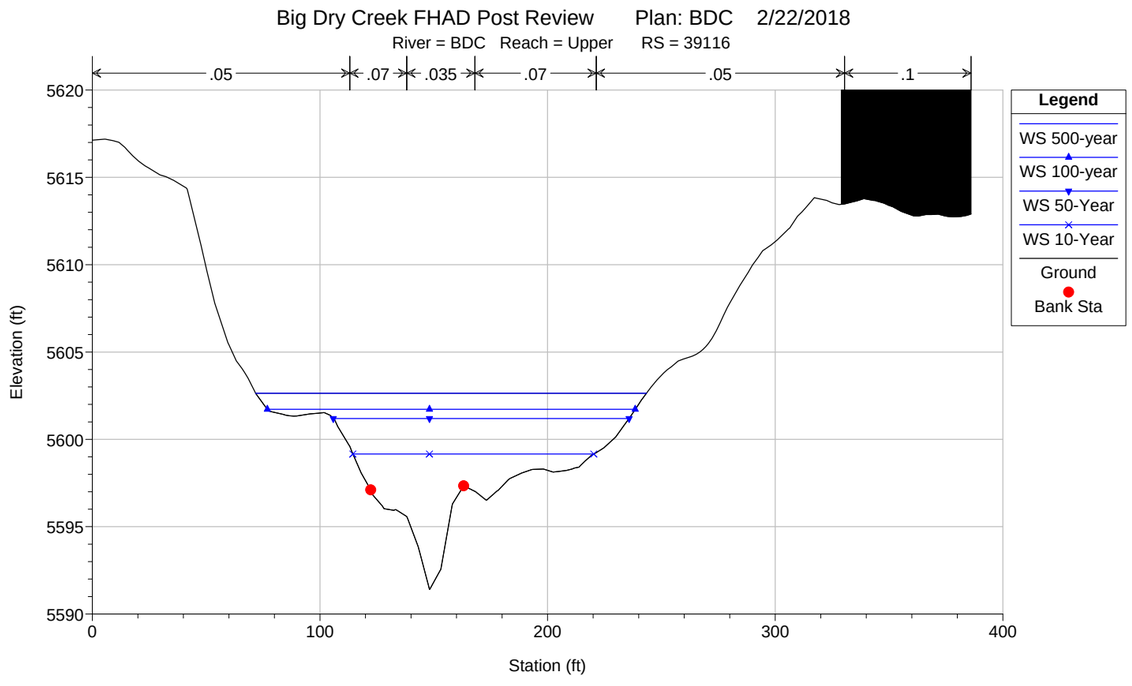

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40387
.1
.05
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5635
5630
5625
5620
5615
5610
5605
5600
0
50
100
150
200
250
300

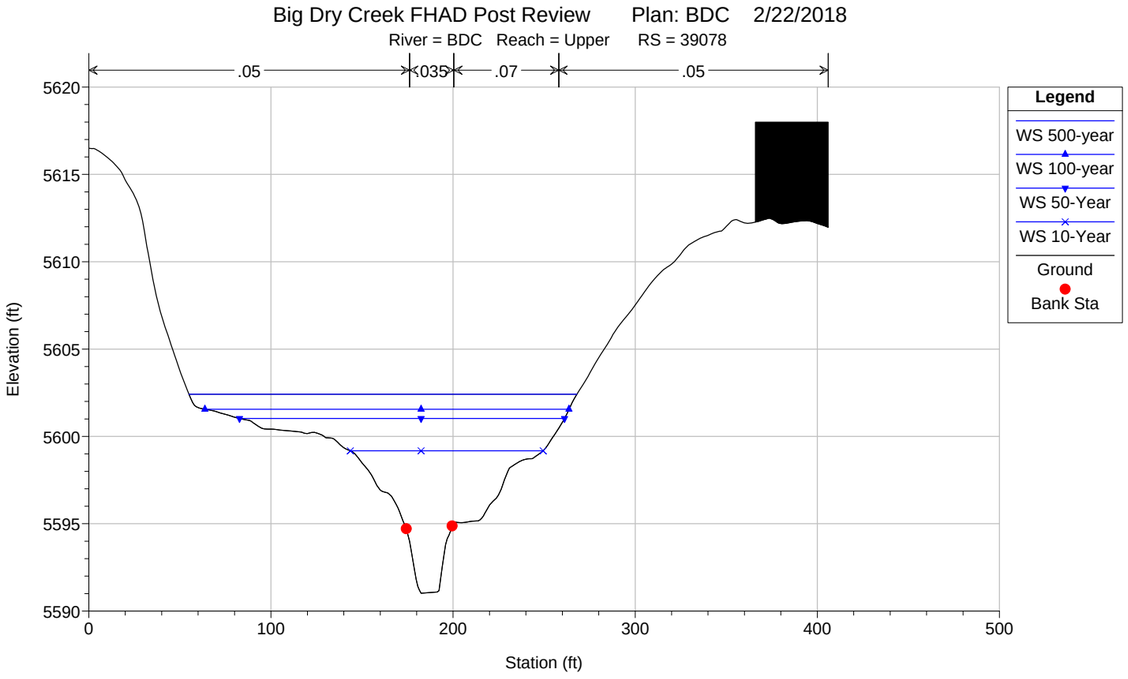

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40077
.1
.035
.05
.07
.05
.035
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5630
5625
5620
5615
5610
5605
5600
5595
0
100
200
300
400
500

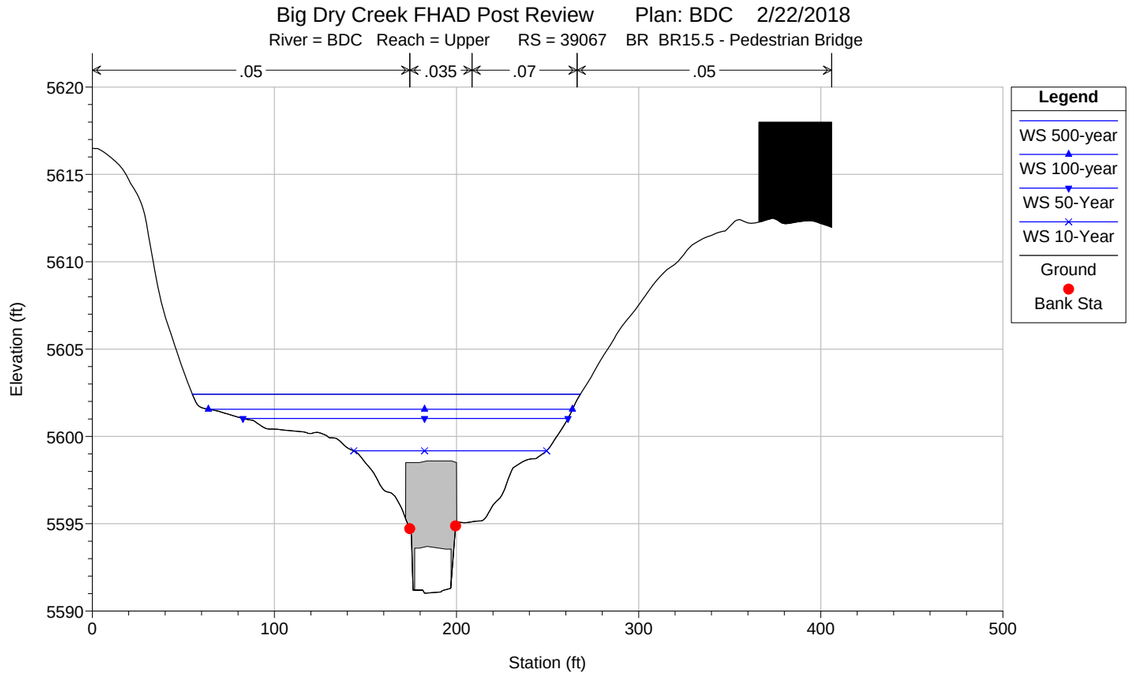

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 40036
.1
.035
.05
.07
.035
.05
.035
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

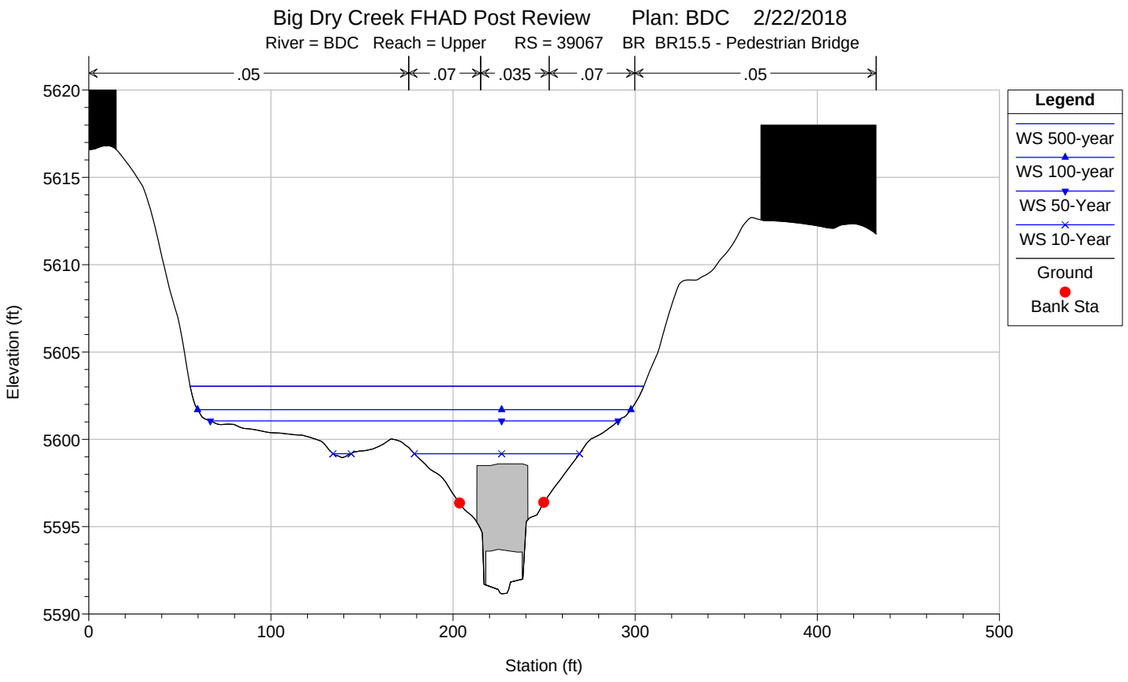

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39717
.1
.05
.07
.035
.07
.035
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

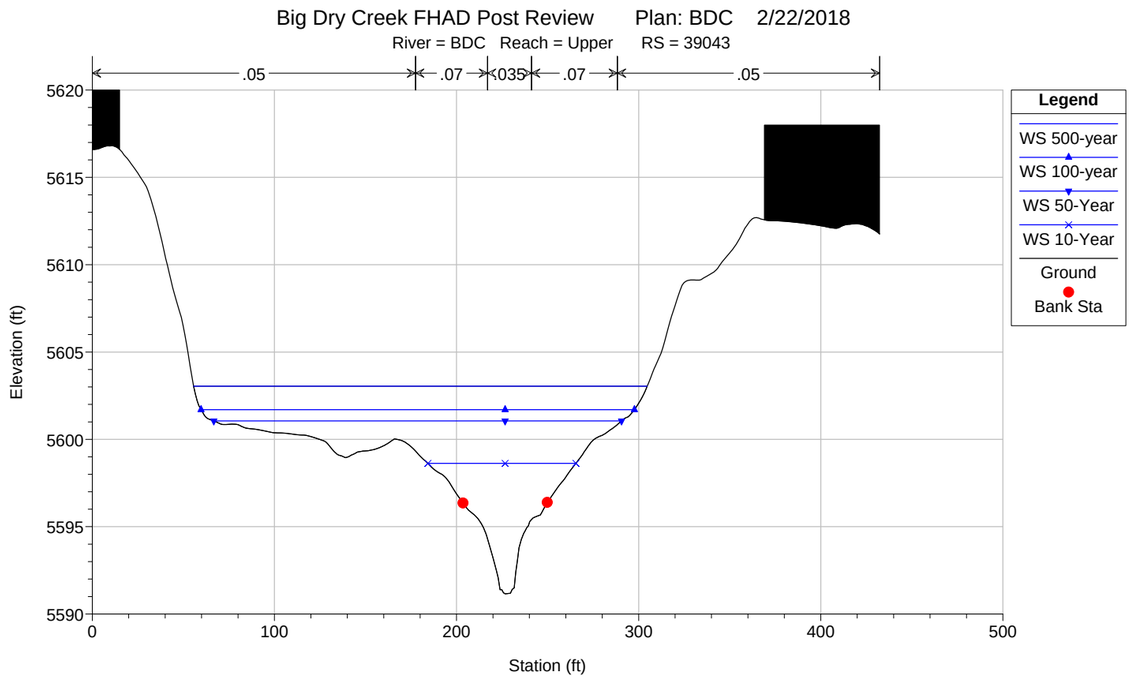

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39348
.1
.05
.07
.035
.07
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

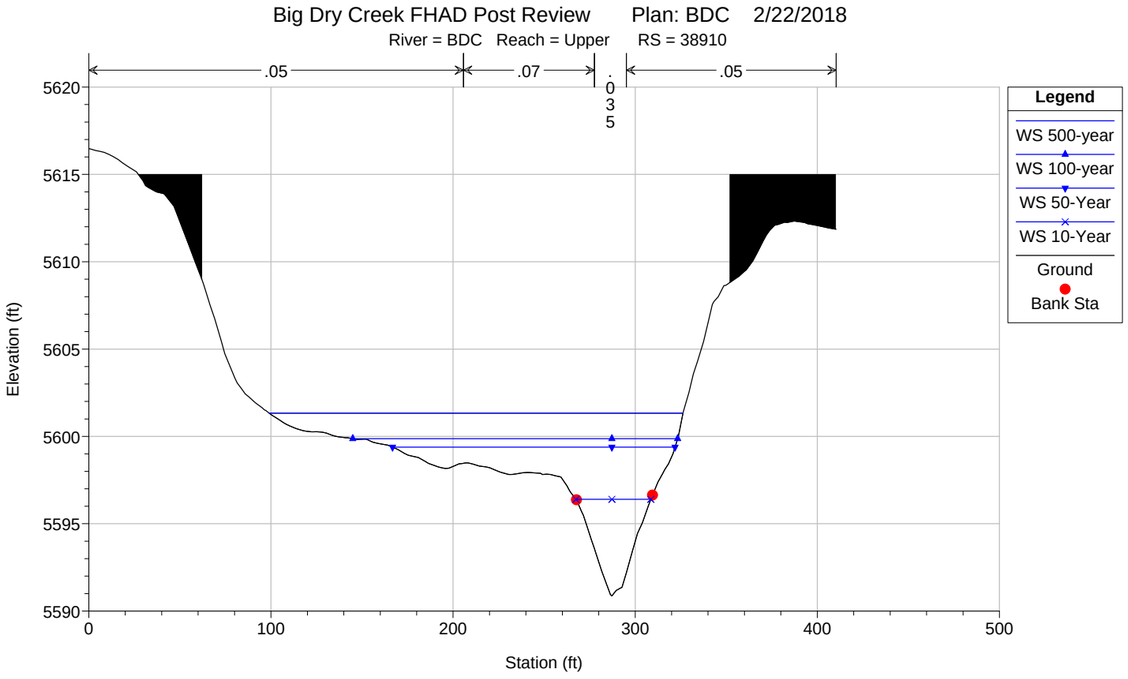

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39116
.05
.07
.035
.07
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

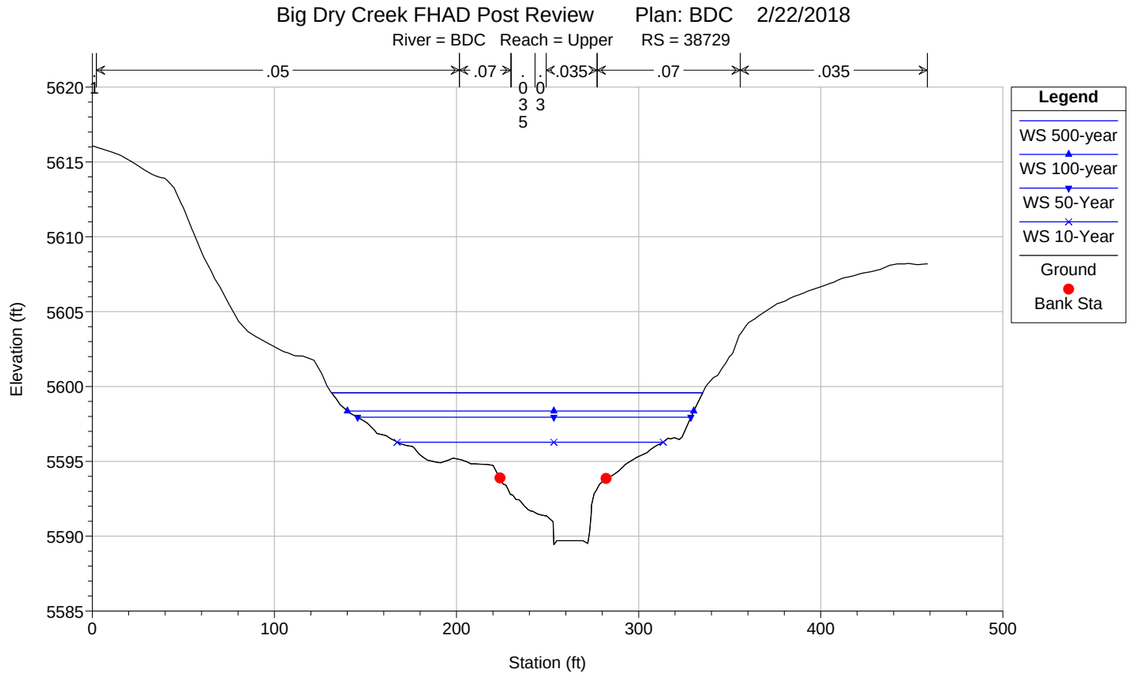

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39078
.05
.035
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

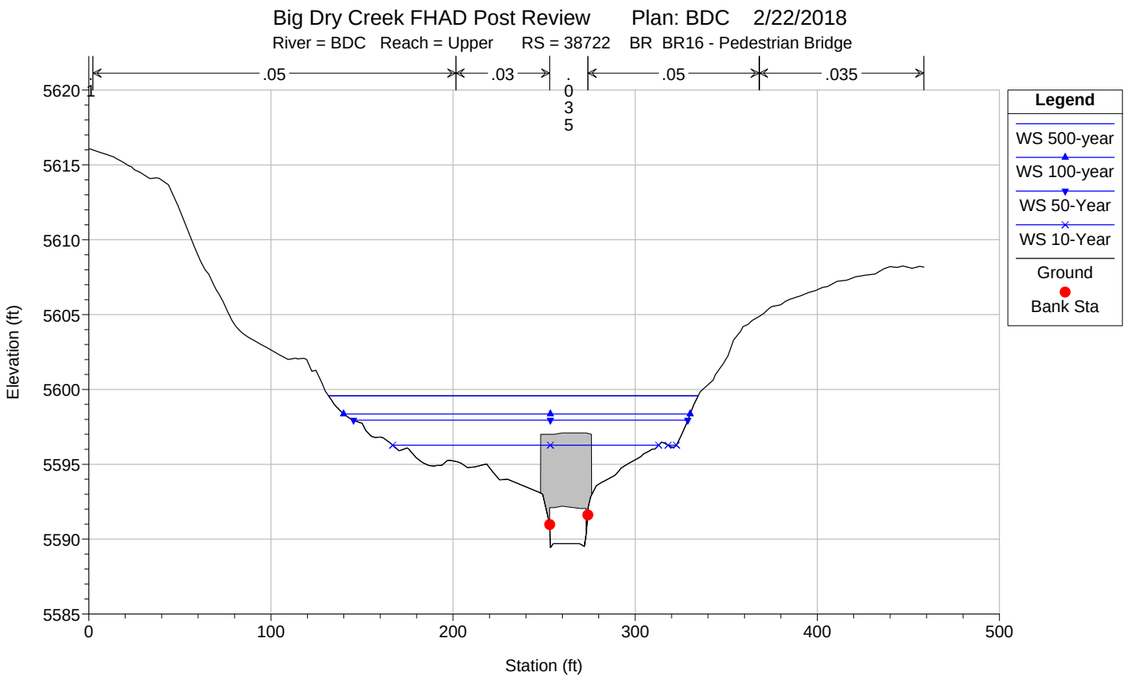

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39067 BR BR15.5 - Pedestrian Bridge
.05
.035
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

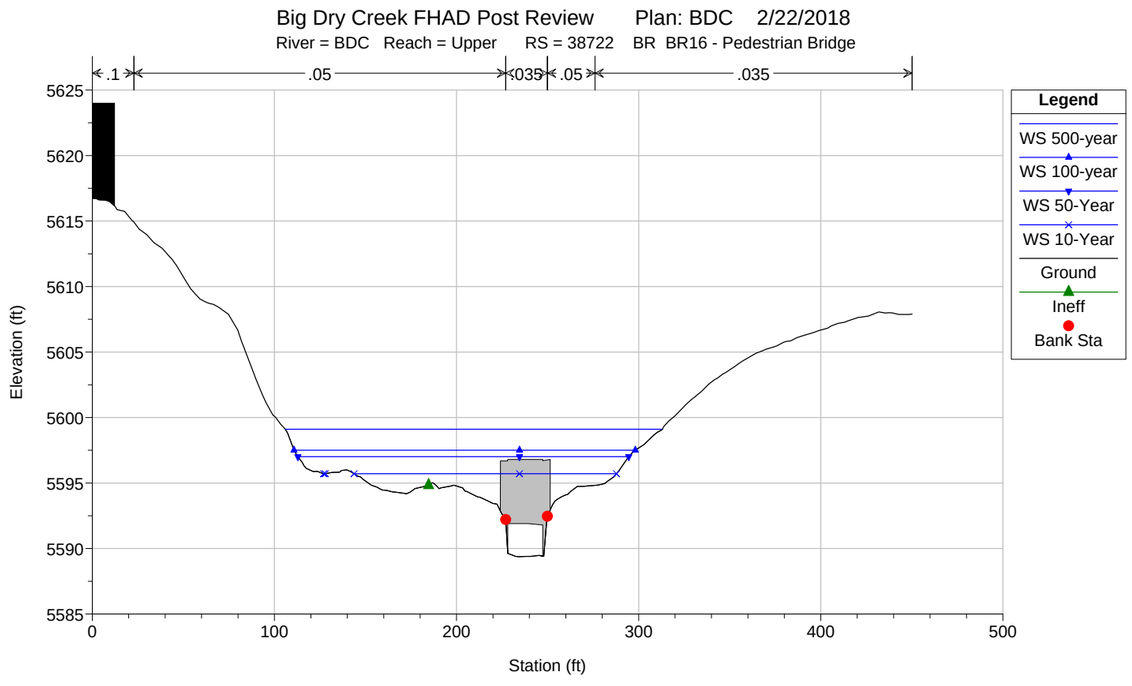

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39067 BR BR15.5 - Pedestrian Bridge
.05
.07
.035
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

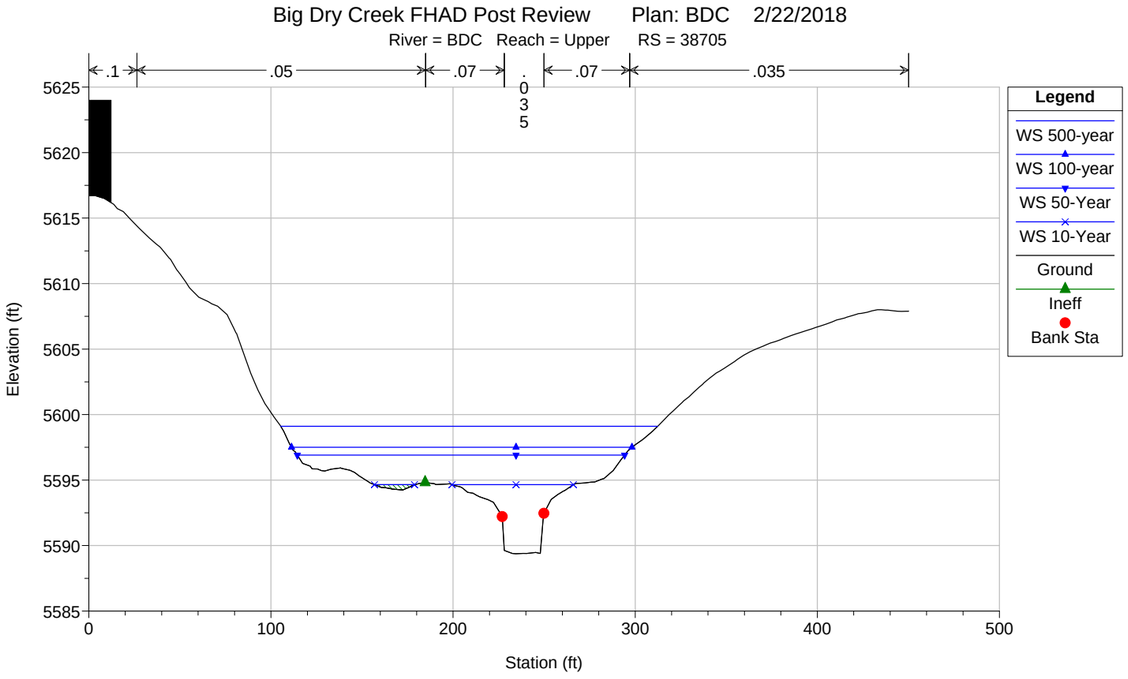

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 39043
.05
.07
.035
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

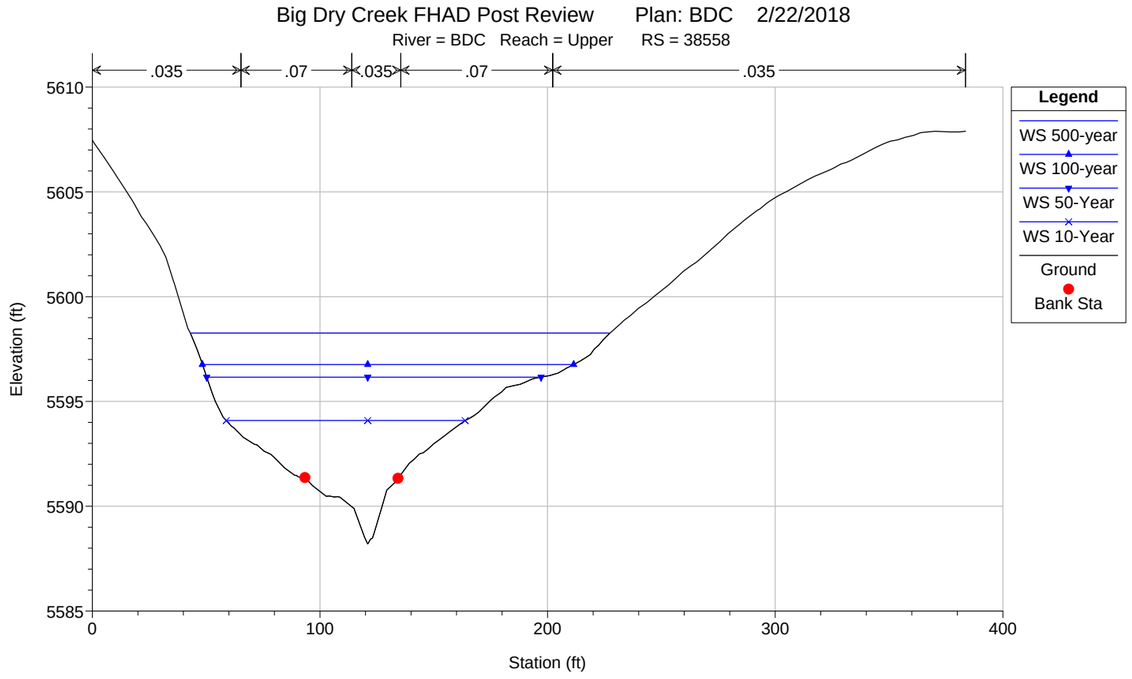

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38910
.05
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

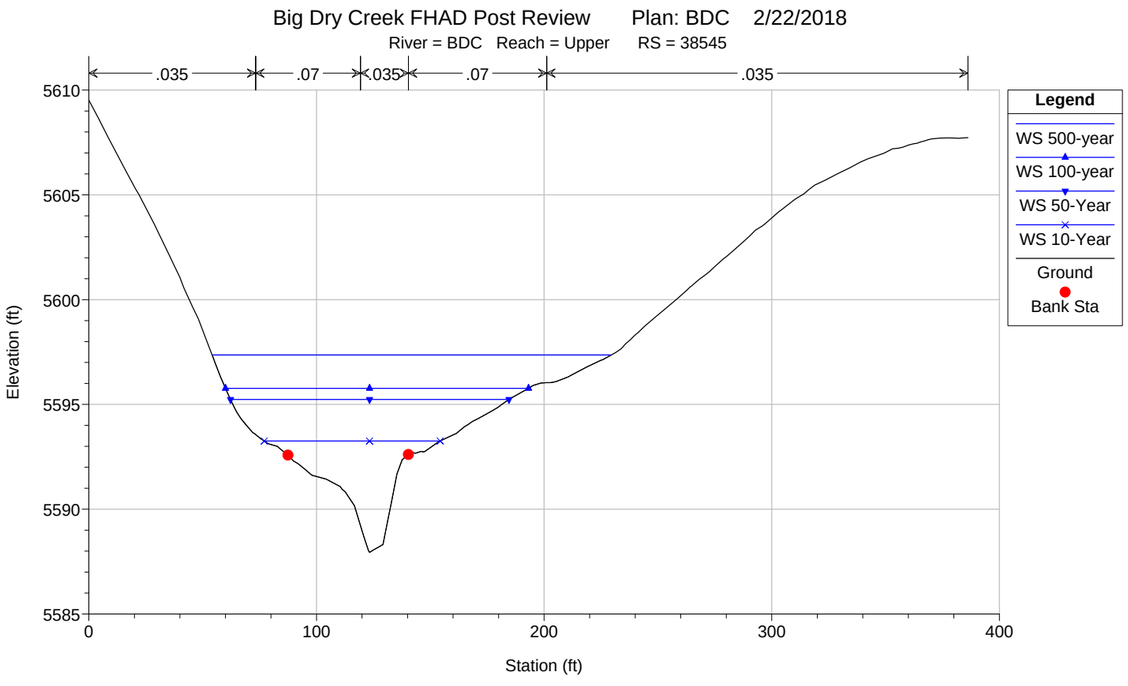

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38729
.05
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

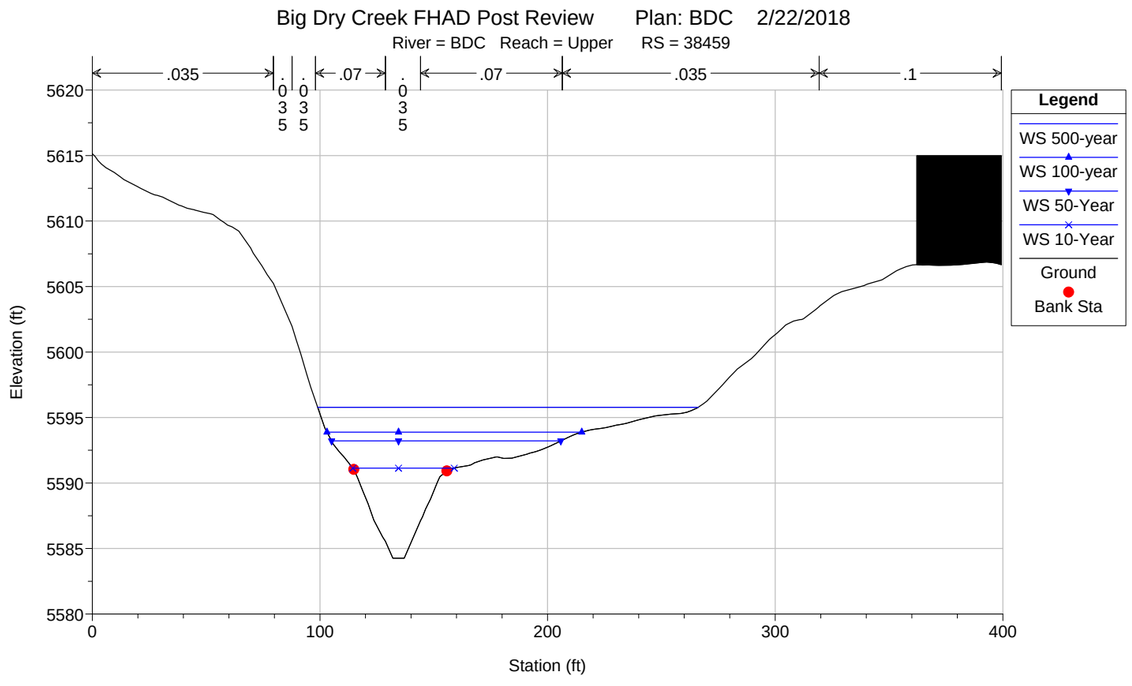

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38722 BR BR16 - Pedestrian Bridge
.1
.05
.03
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

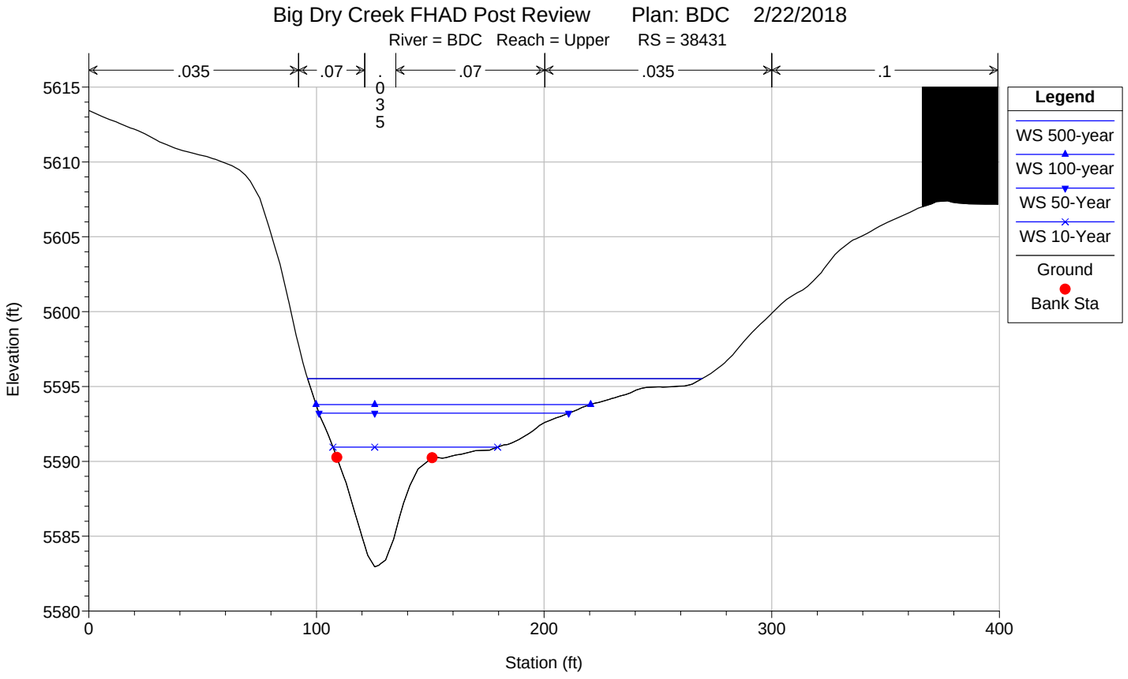

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38722 BR BR16 - Pedestrian Bridge
.1
.05
.05
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

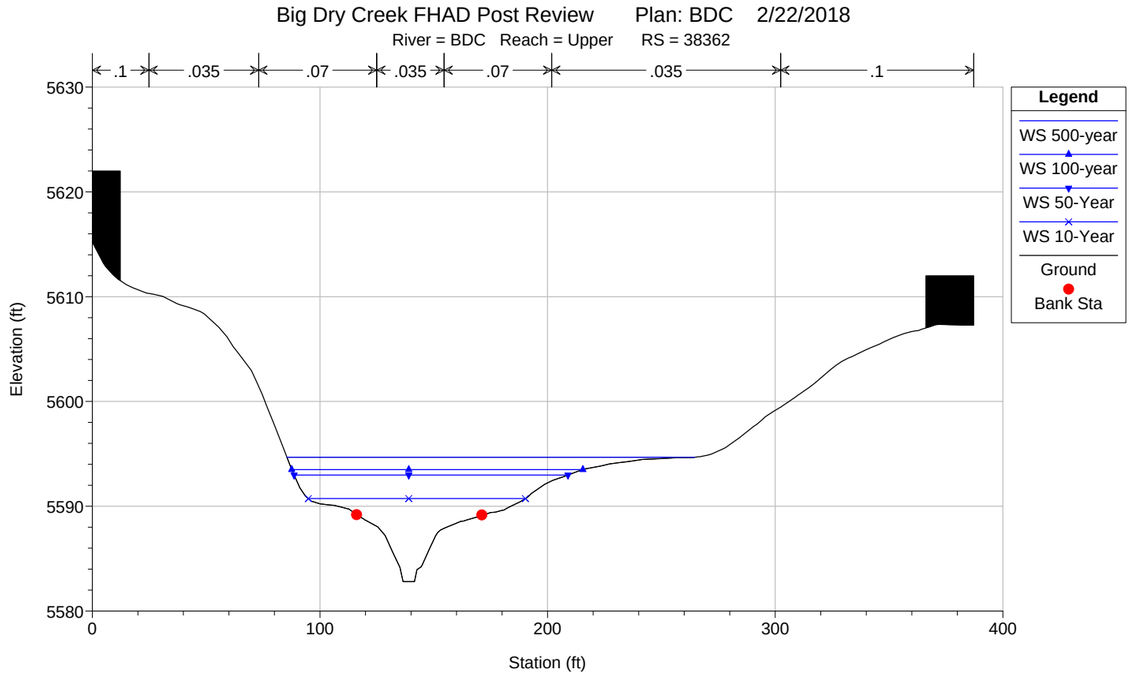

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38705
.1
.05
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

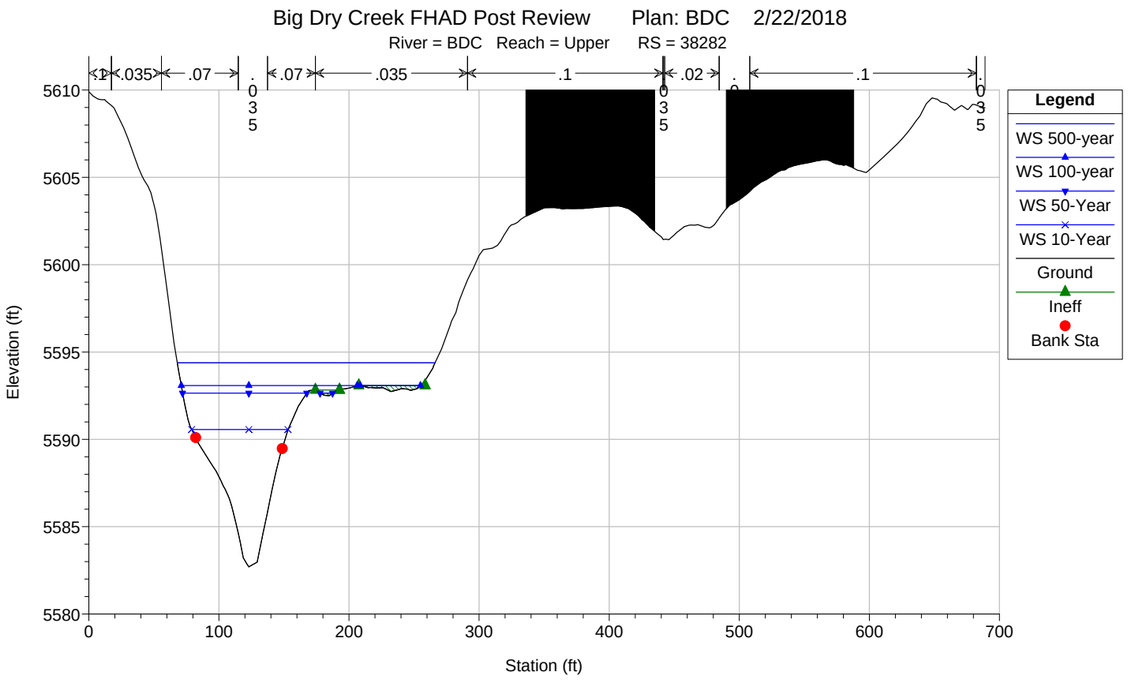

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38558
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

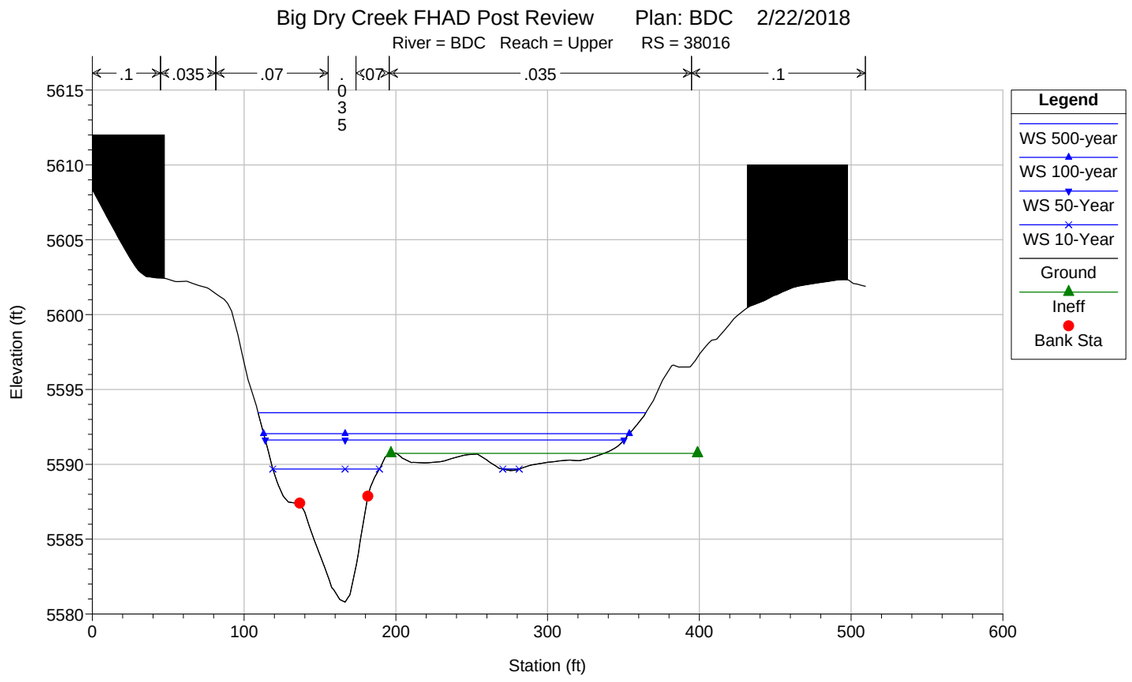

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38545
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

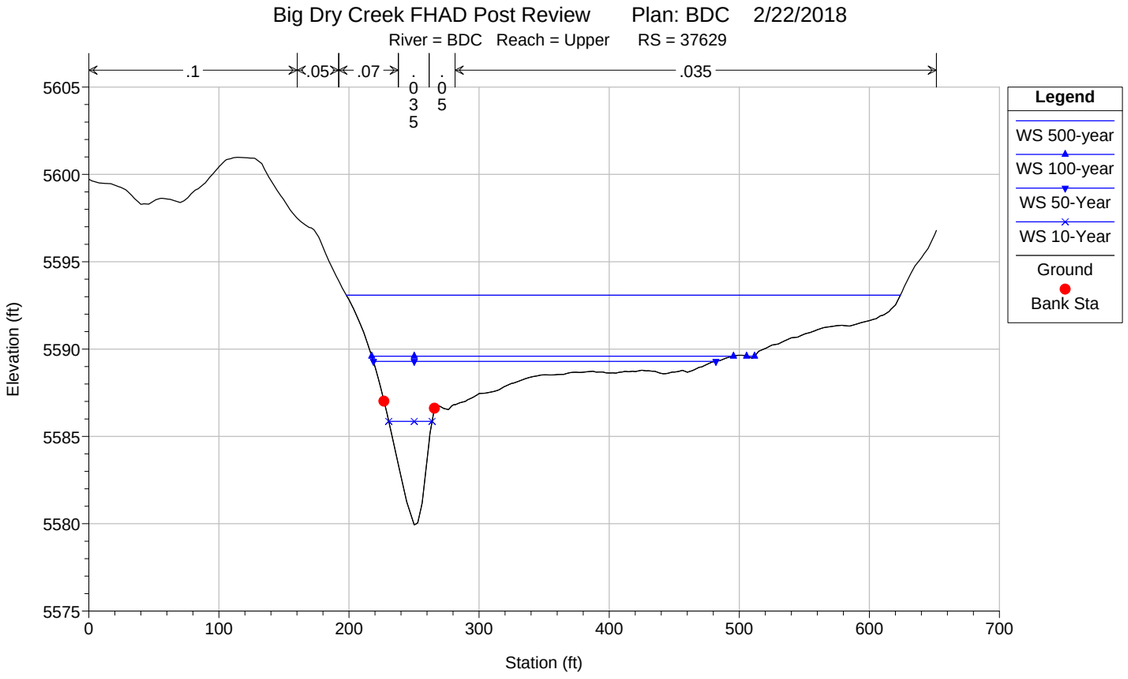

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38459
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

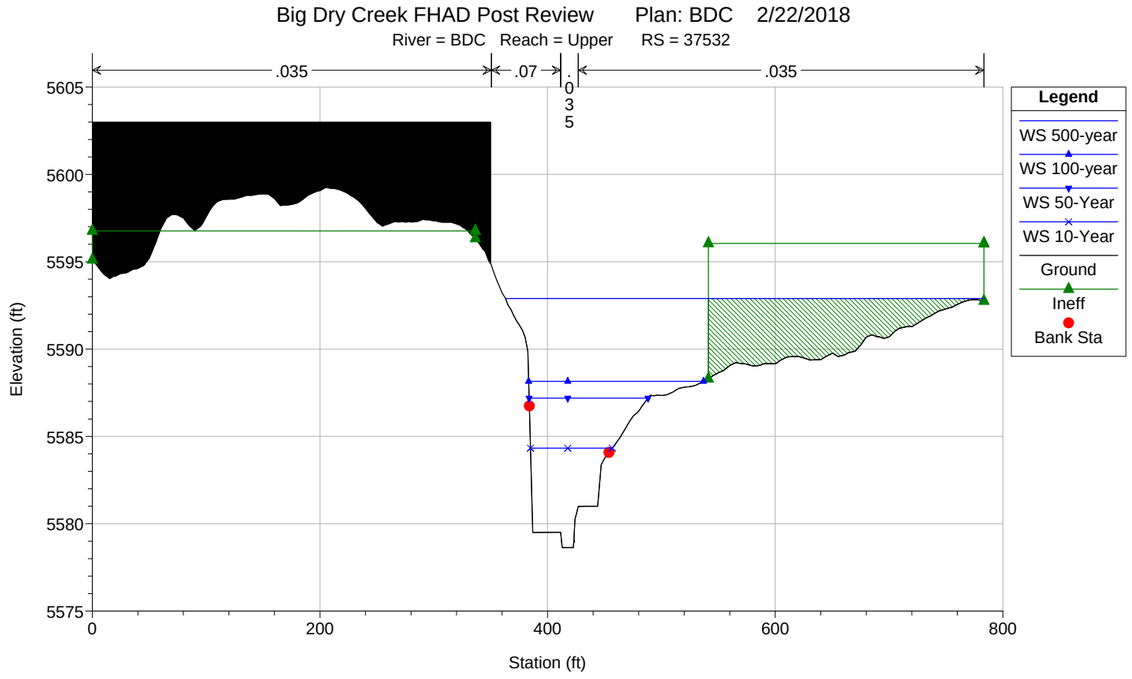

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38431
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

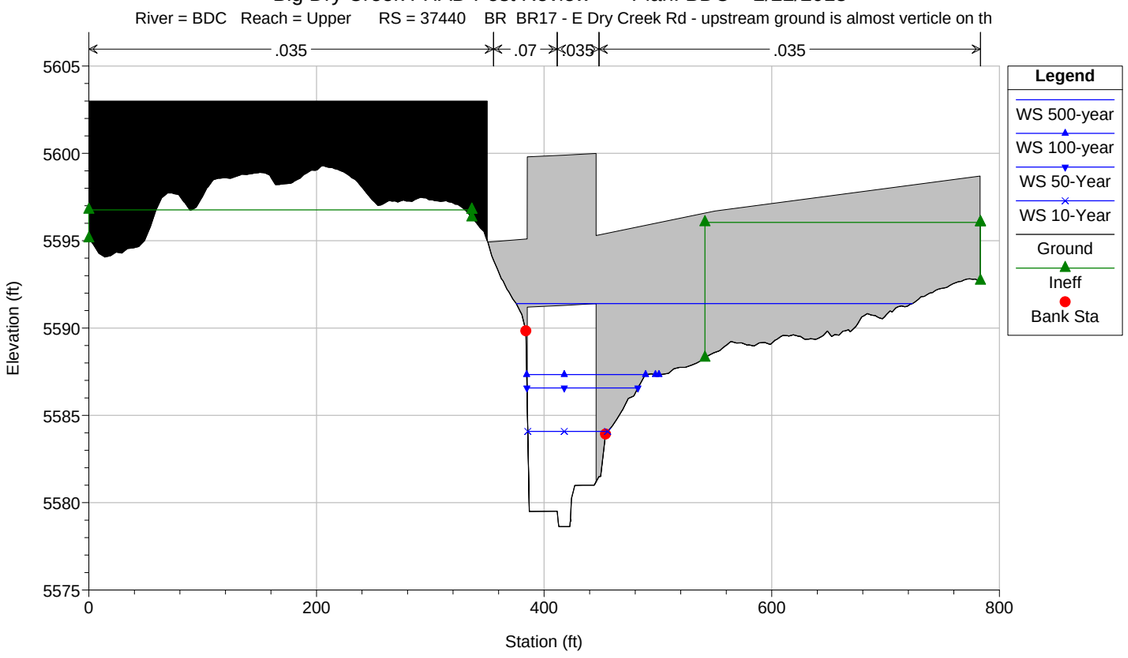

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38362
.1
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

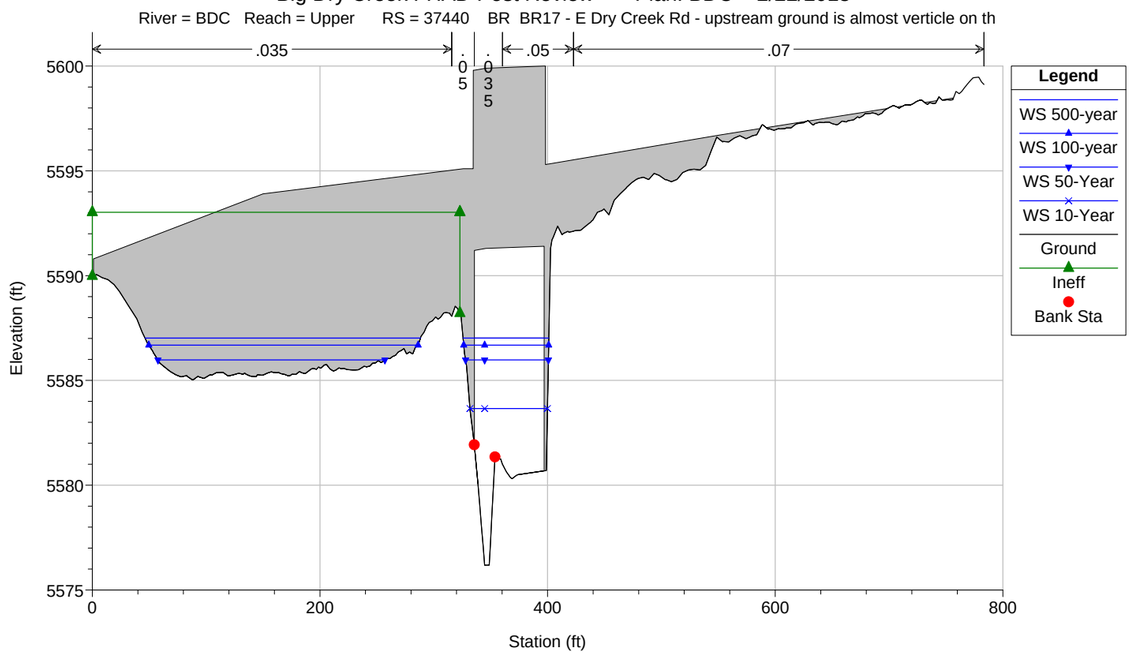

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38282
.1
.035
.07
.07
.035
.1
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

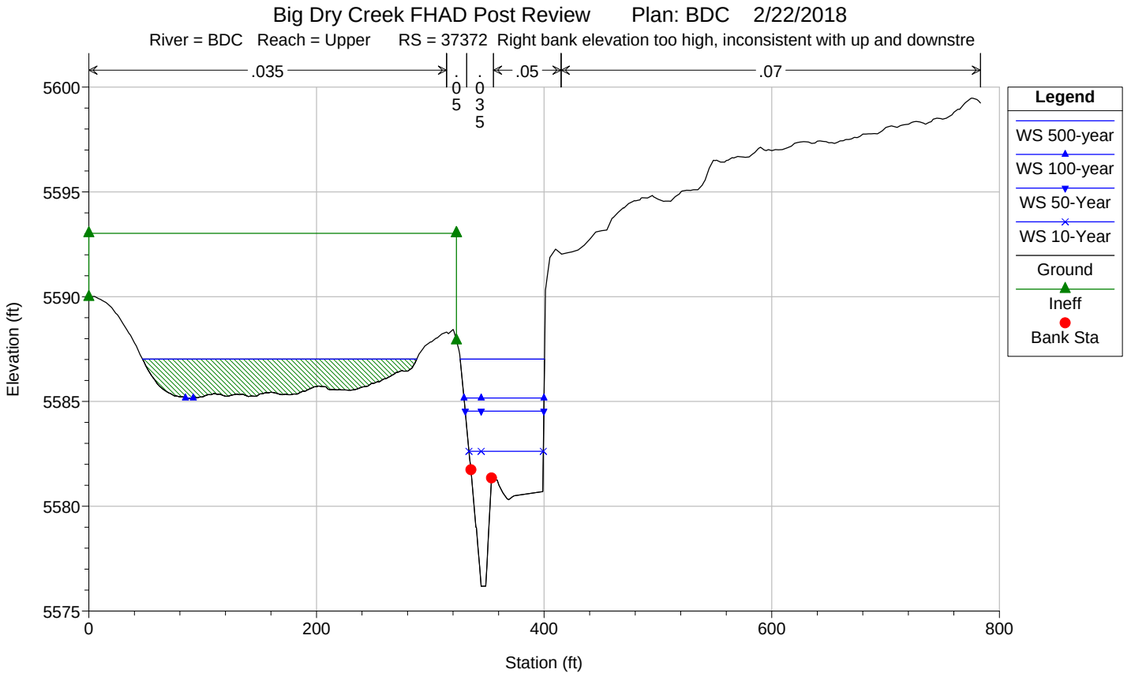

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 38016
.1
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

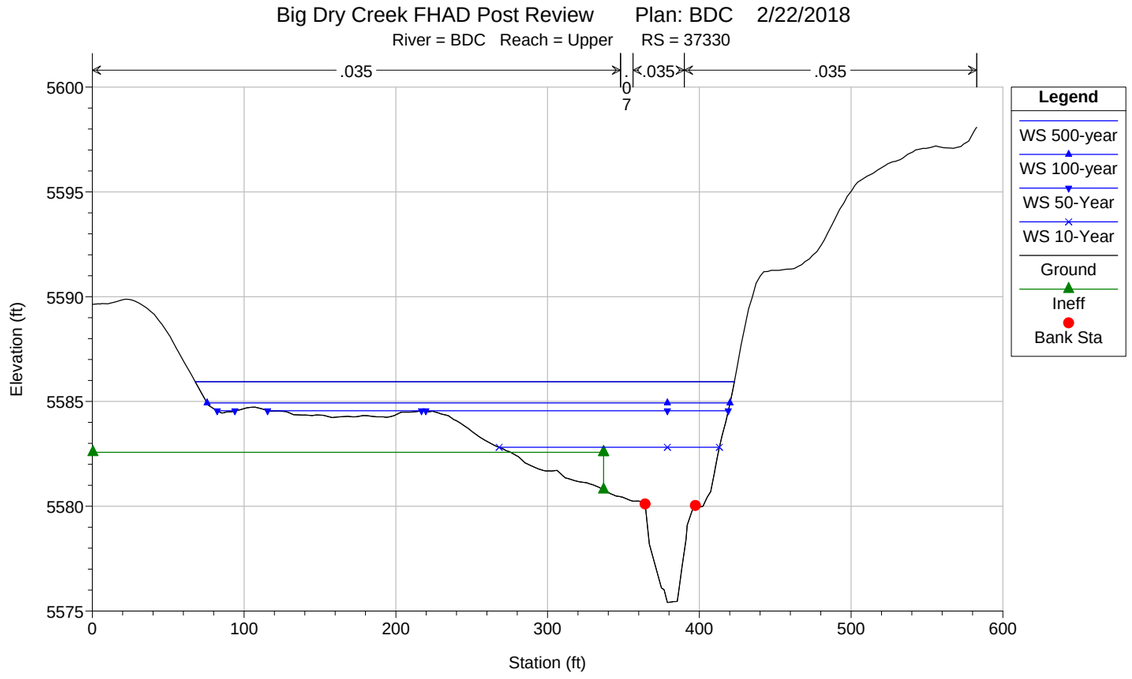

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37629
.1
.05
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5605
5600
5595
5590
5585
5580
5575
0
100
200
300
400
500
600
700

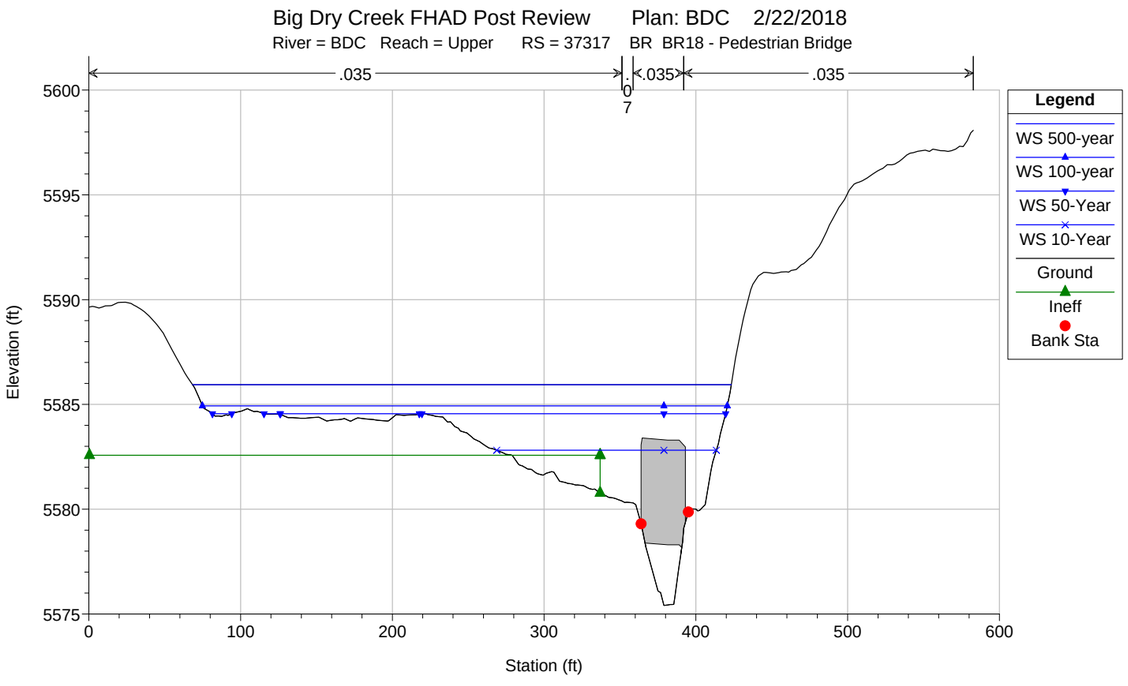

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37532
.035
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5605
5600
5595
5590
5585
5580
5575
0
200
400
600
800

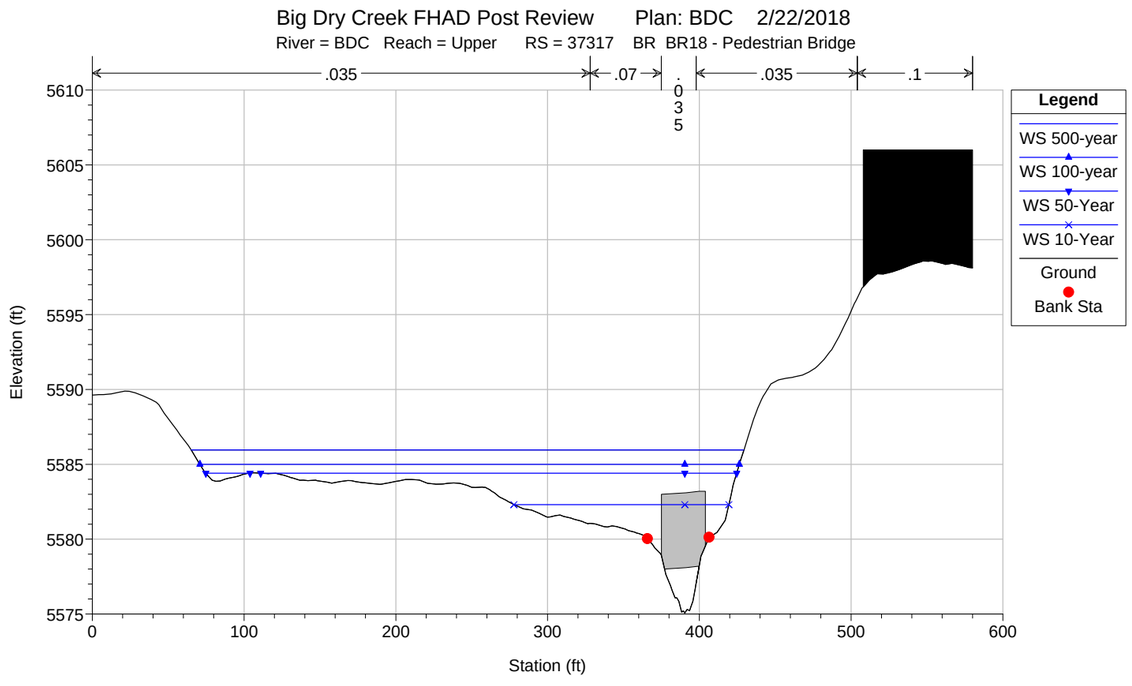

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37440 BR BR17 - E Dry Creek Rd - upstream ground is almost verticle on th
.035
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5605
5600
5595
5590
5585
5580
5575
0
200
400
600
800

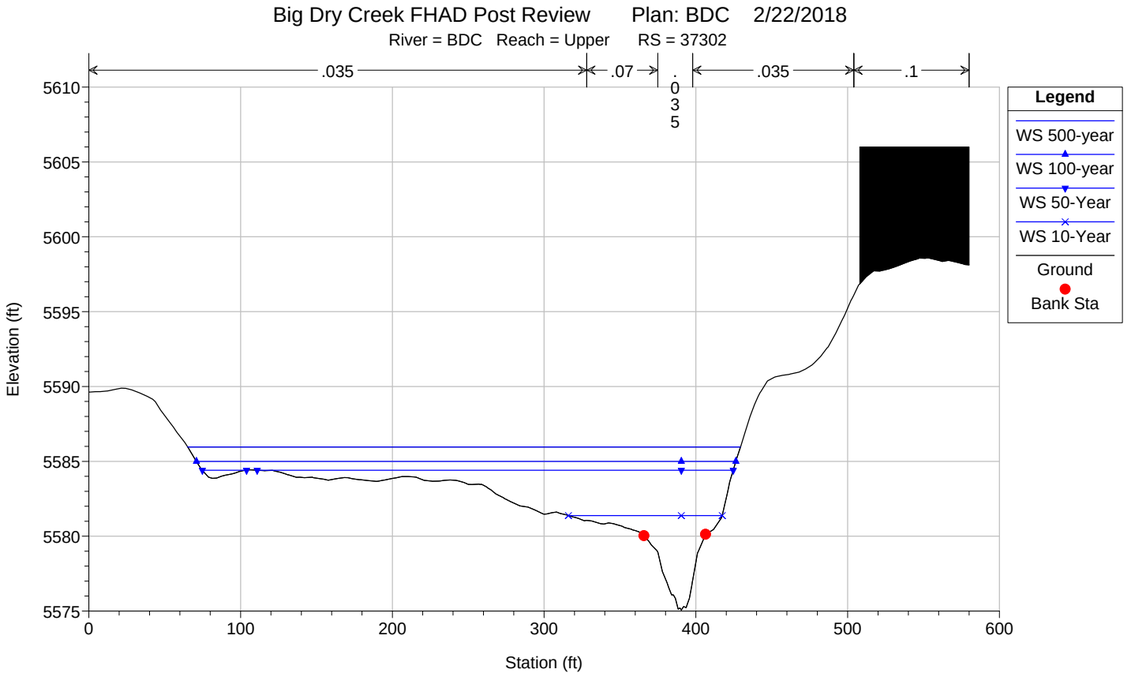

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37440 BR BR17 - E Dry Creek Rd - upstream ground is almost verticle on th
.035
.05
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5600
5595
5590
5585
5580
5575
0
200
400
600
800

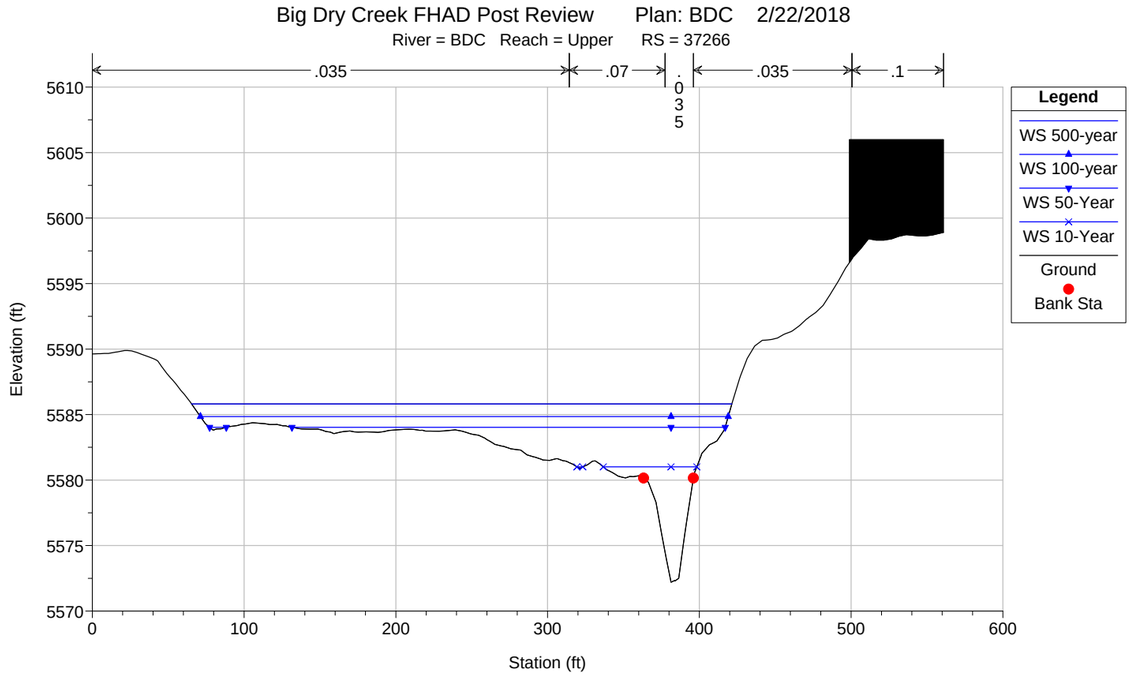

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37372 Right bank elevation too high, inconsistent with up and downstre
.035
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

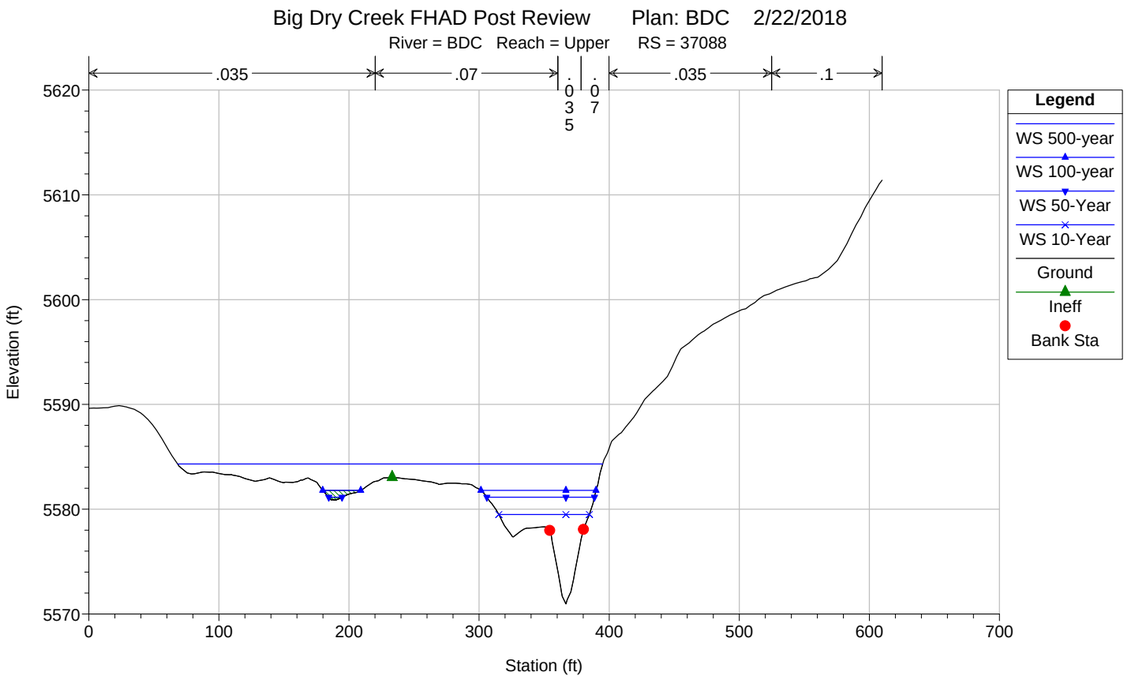

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37330
.035
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

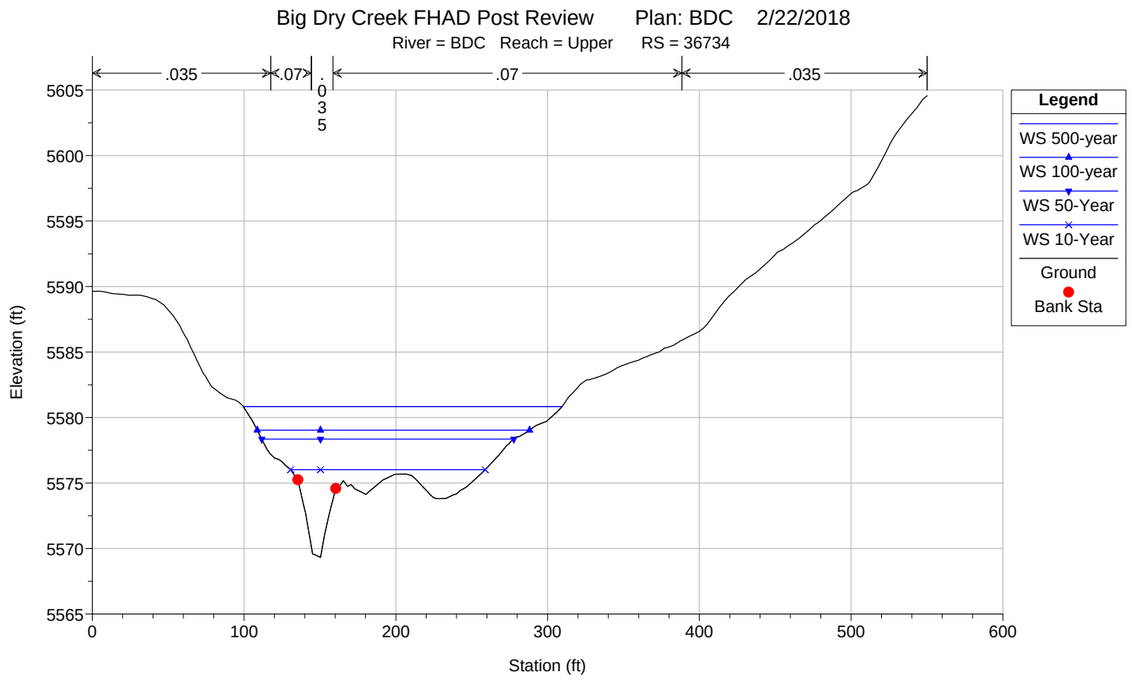

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37317 BR BR18 - Pedestrian Bridge
.035
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

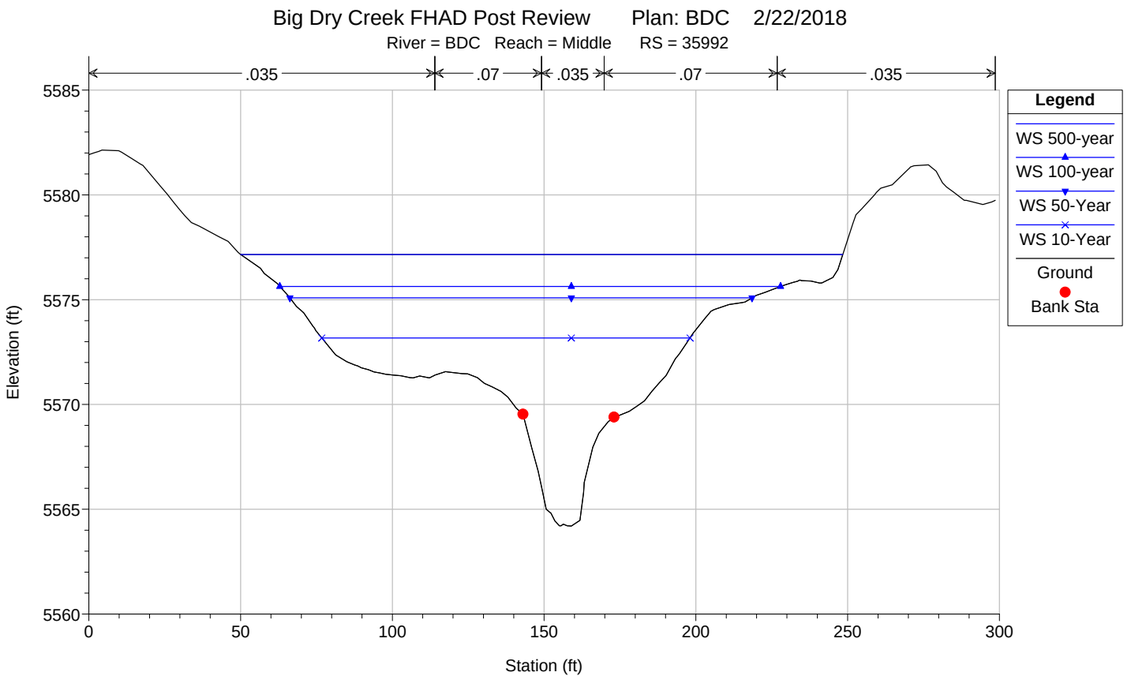

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37317 BR BR18 - Pedestrian Bridge
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

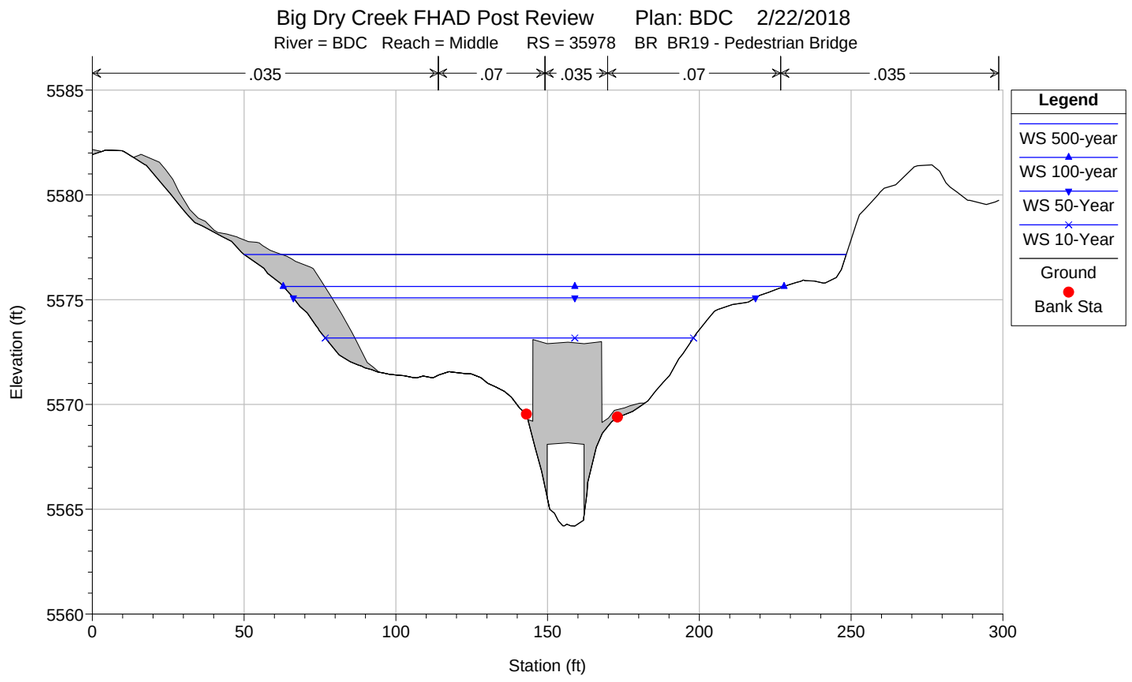

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37302
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

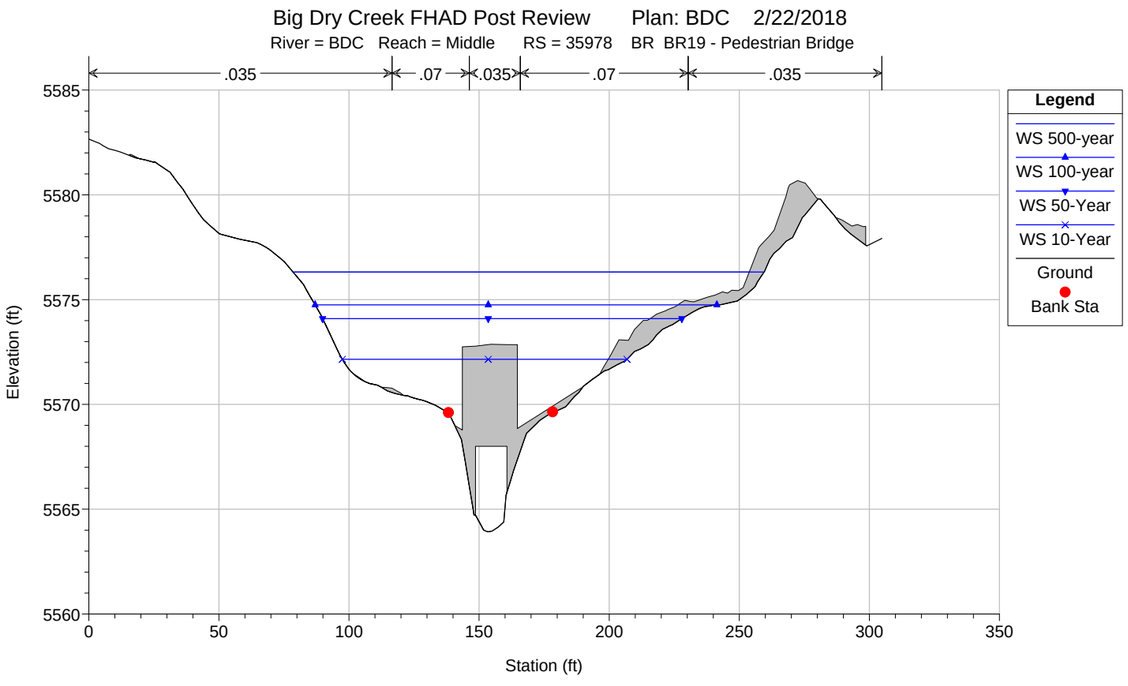

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37266
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

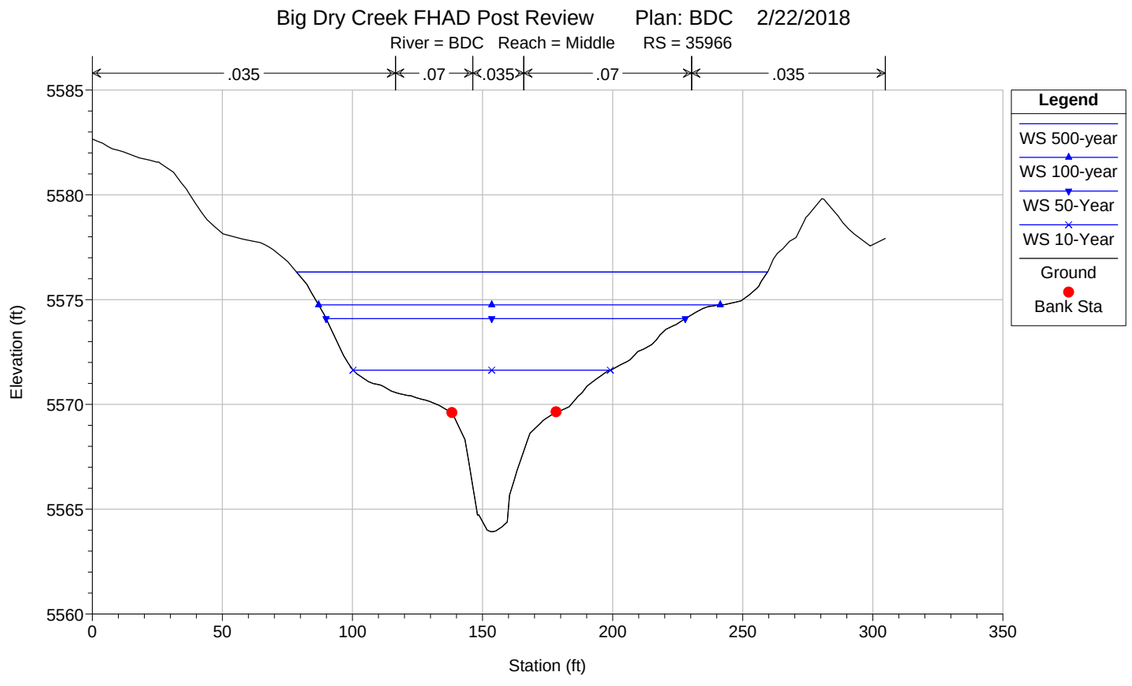

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 37088
.035
.07
.035
.07
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

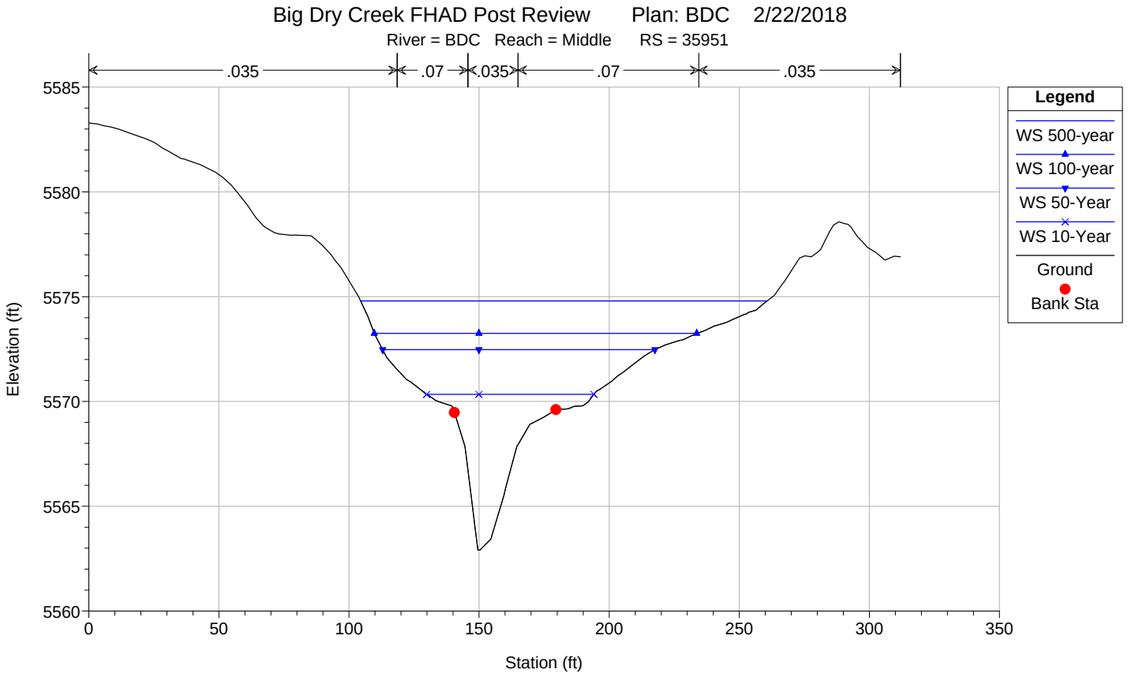

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Upper RS = 36734
.035
.07
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

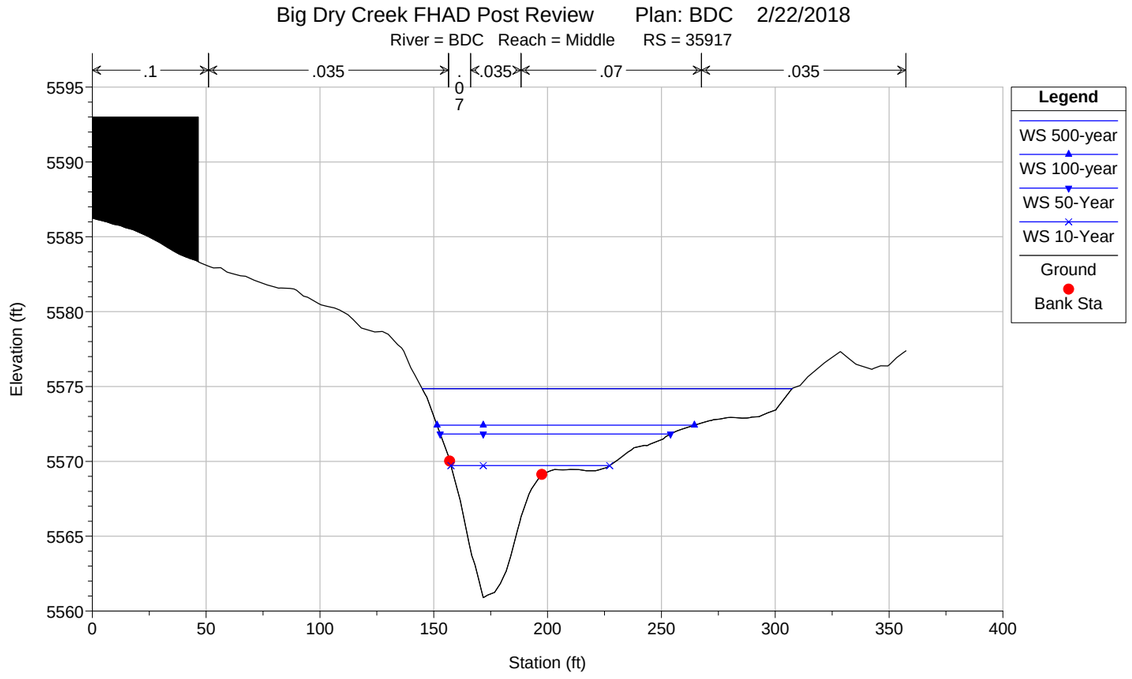

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35992
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5585
5580
5575
5570
5565
5560
0
50
100
150
200
250
300

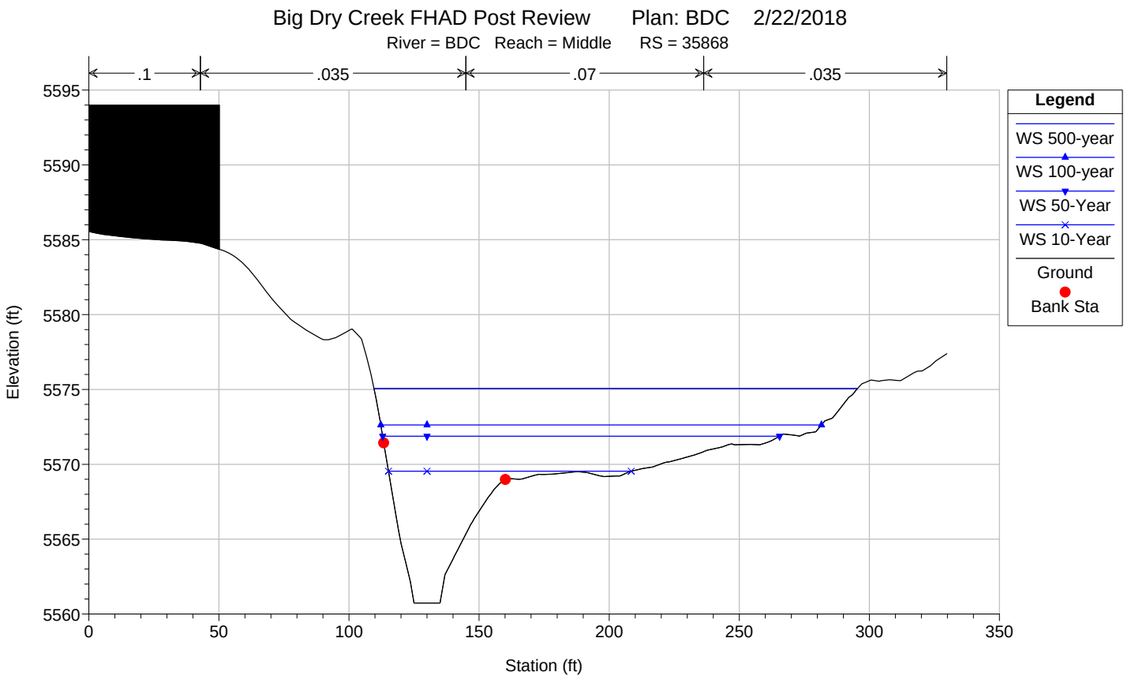

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35978 BR BR19 - Pedestrian Bridge
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5585
5580
5575
5570
5565
5560
0
50
100
150
200
250
300

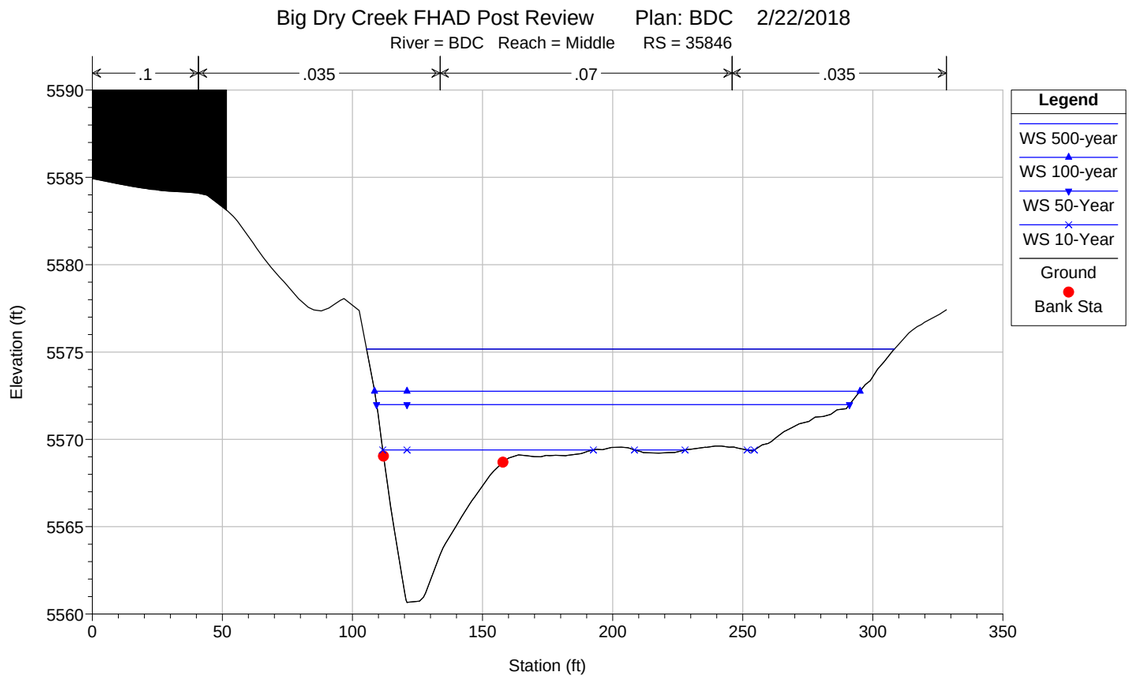

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35978 BR BR19 - Pedestrian Bridge
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5585
5580
5575
5570
5565
5560
0
50
100
150
200
250
300
350

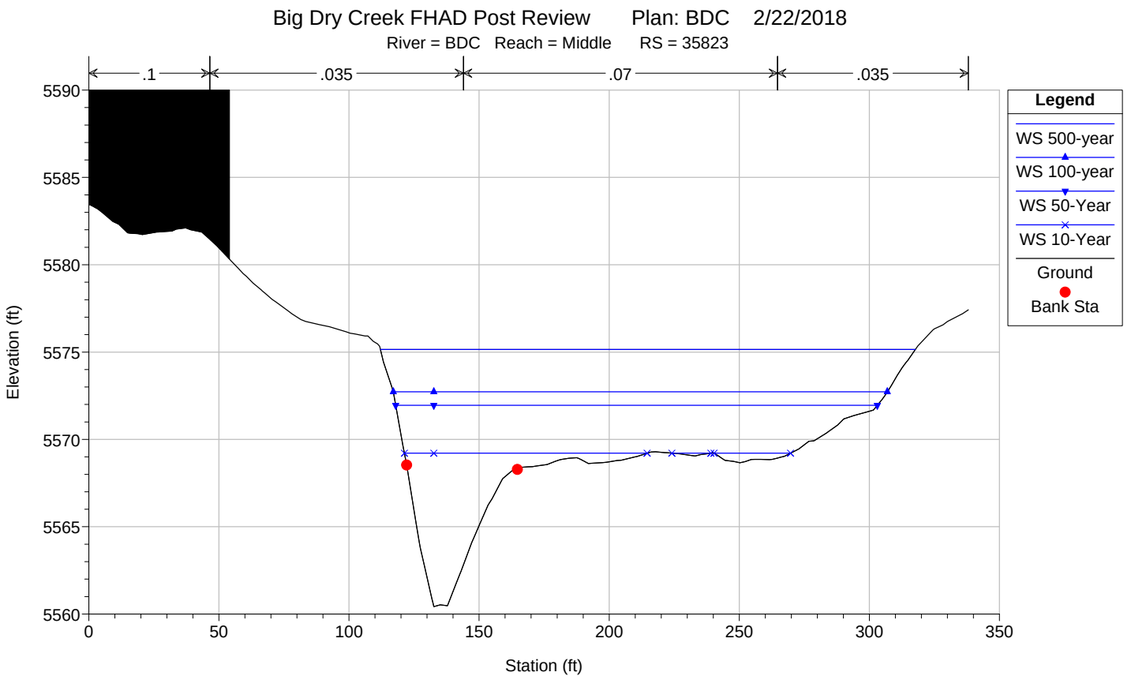

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35966
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5585
5580
5575
5570
5565
5560
0
50
100
150
200
250
300
350

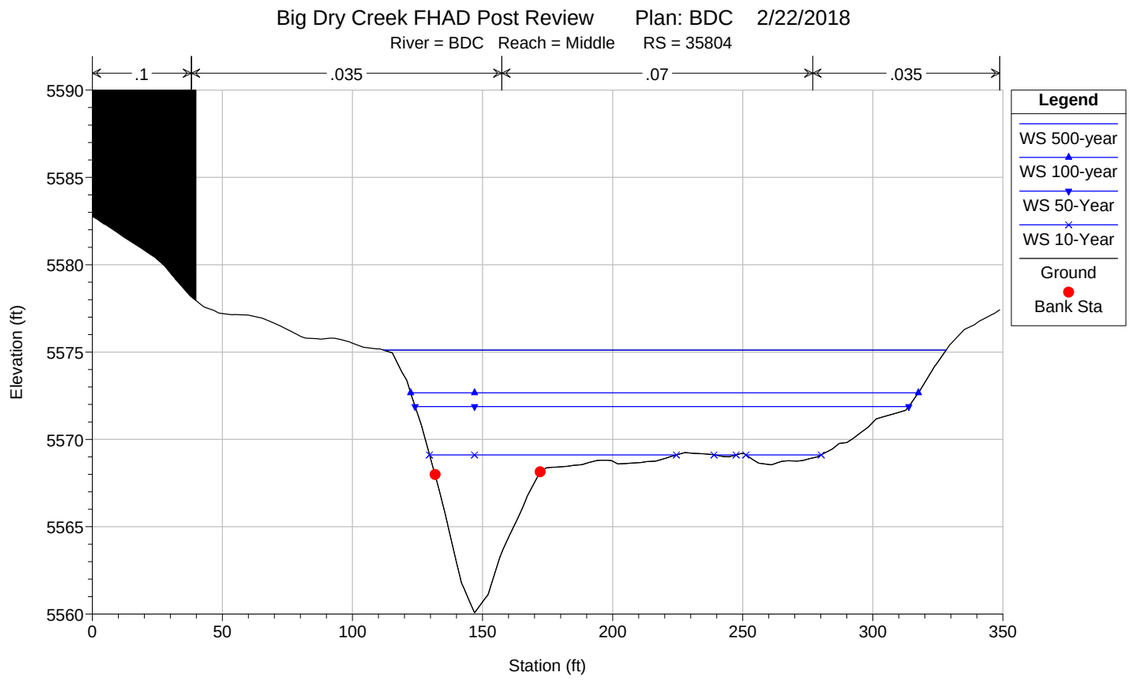

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35951
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

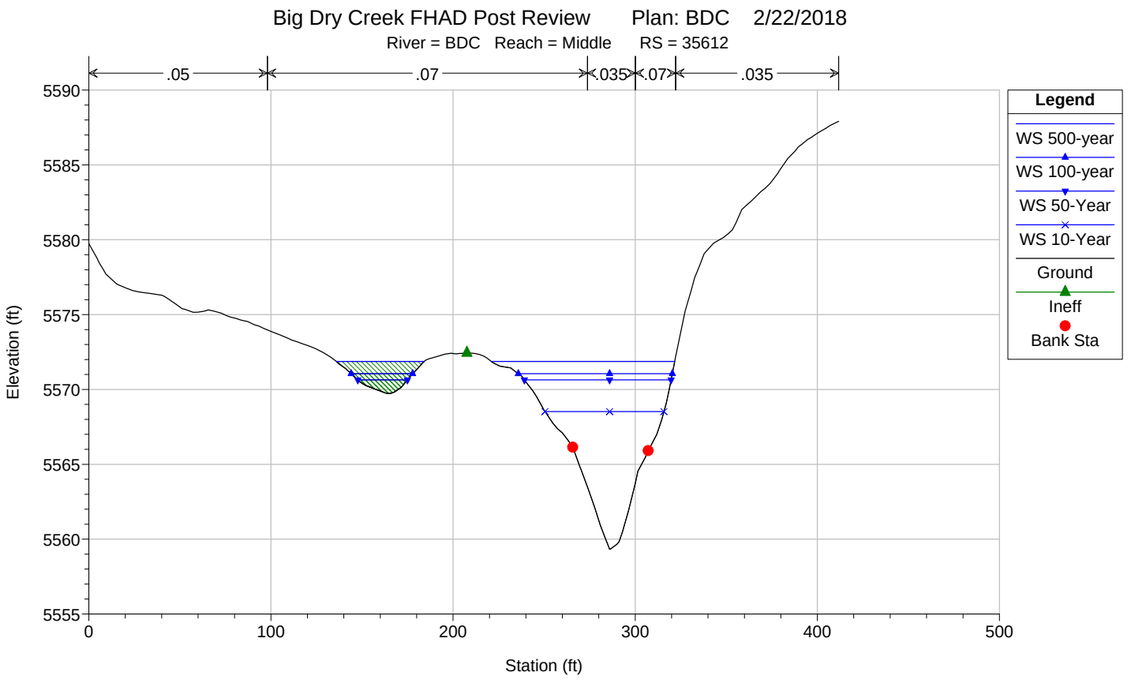

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35917
.1
.035
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

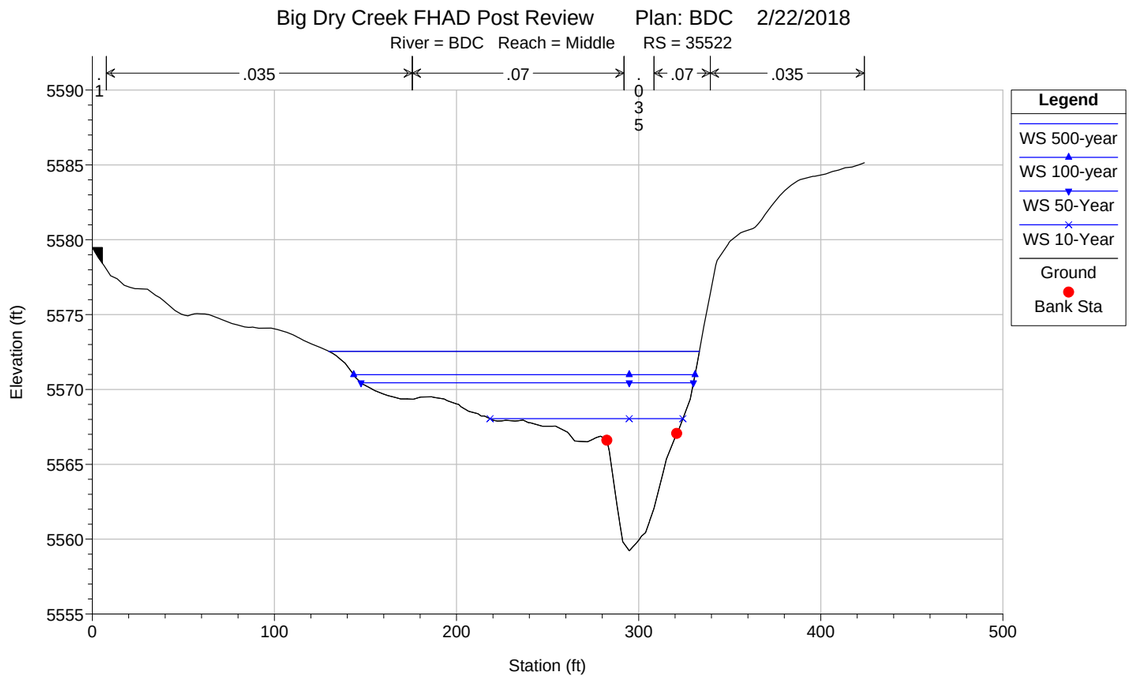

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35868
.1
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

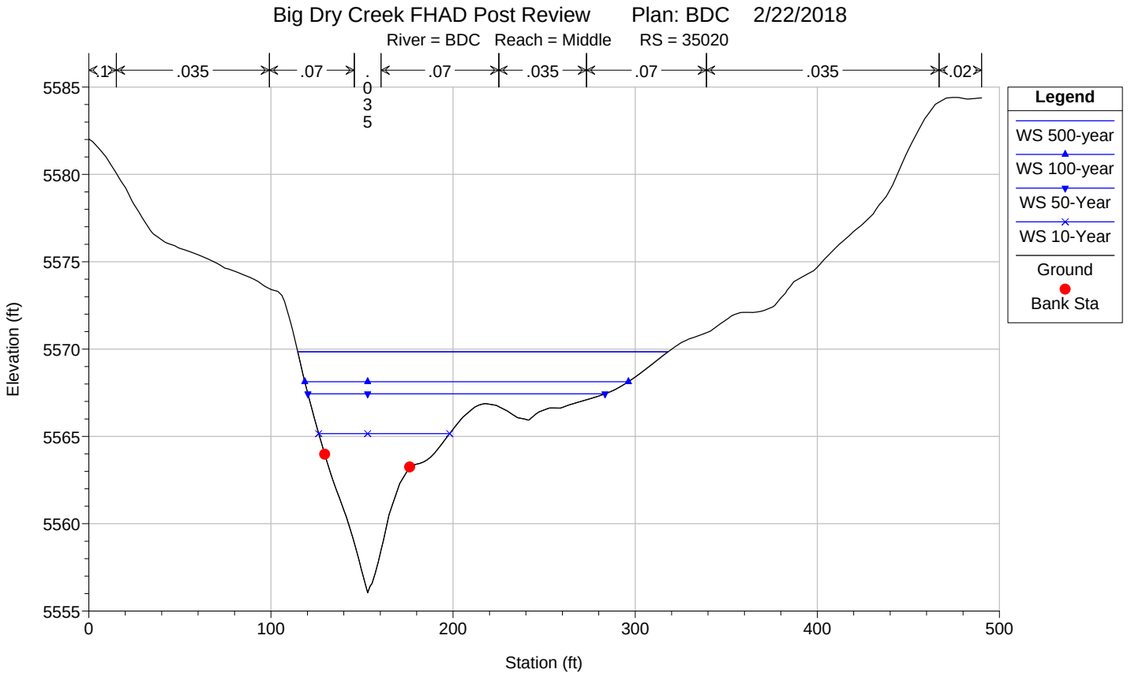

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35846
.1
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

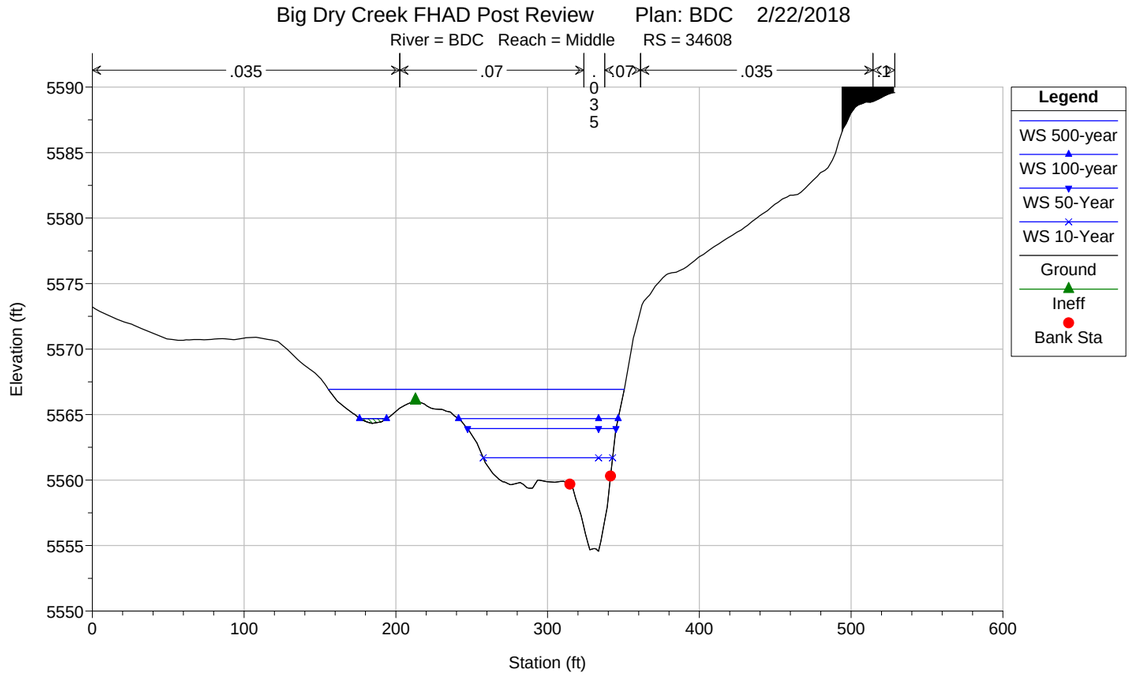

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35823
.1
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

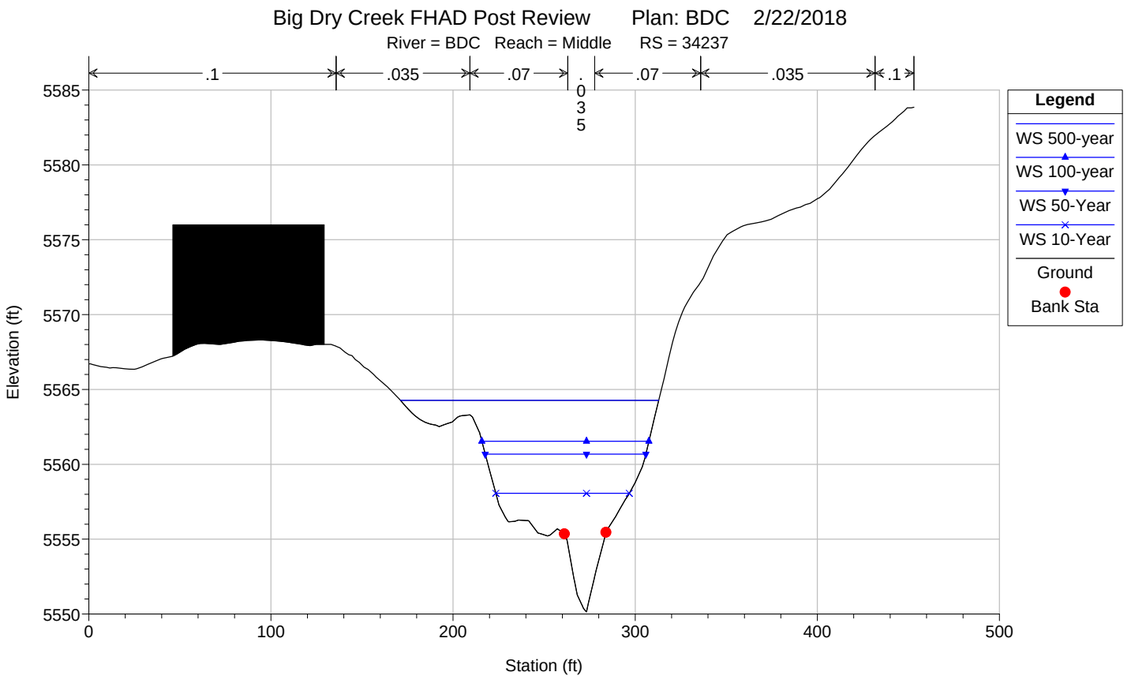

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35804
.1
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

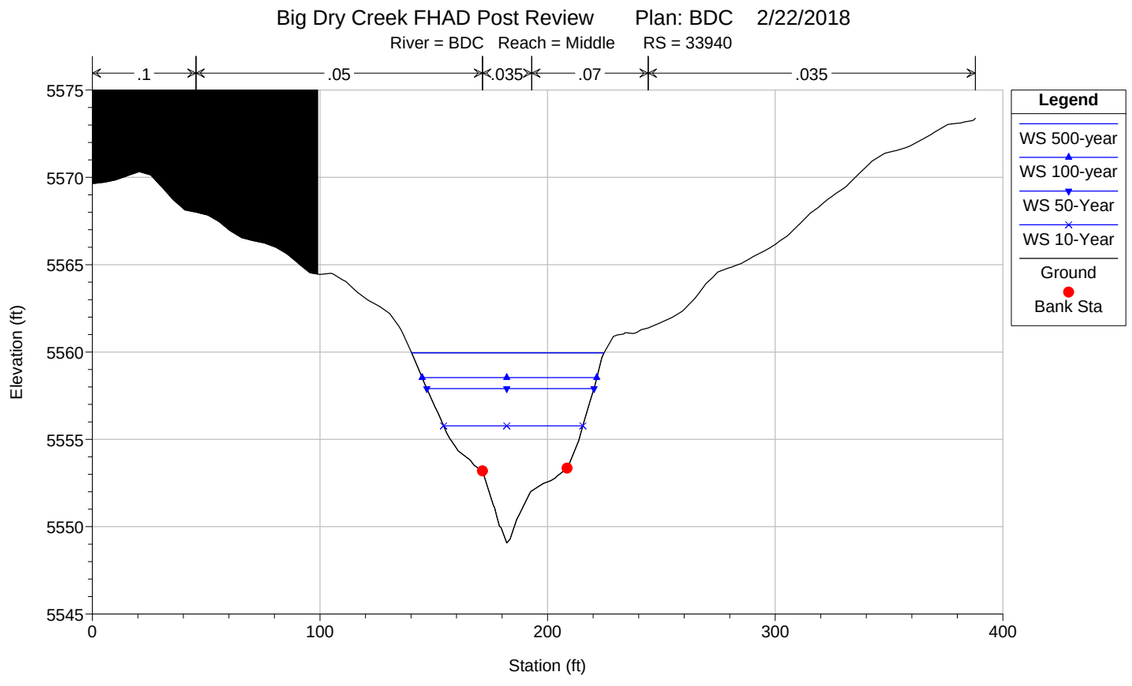

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35612
.05
.07
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

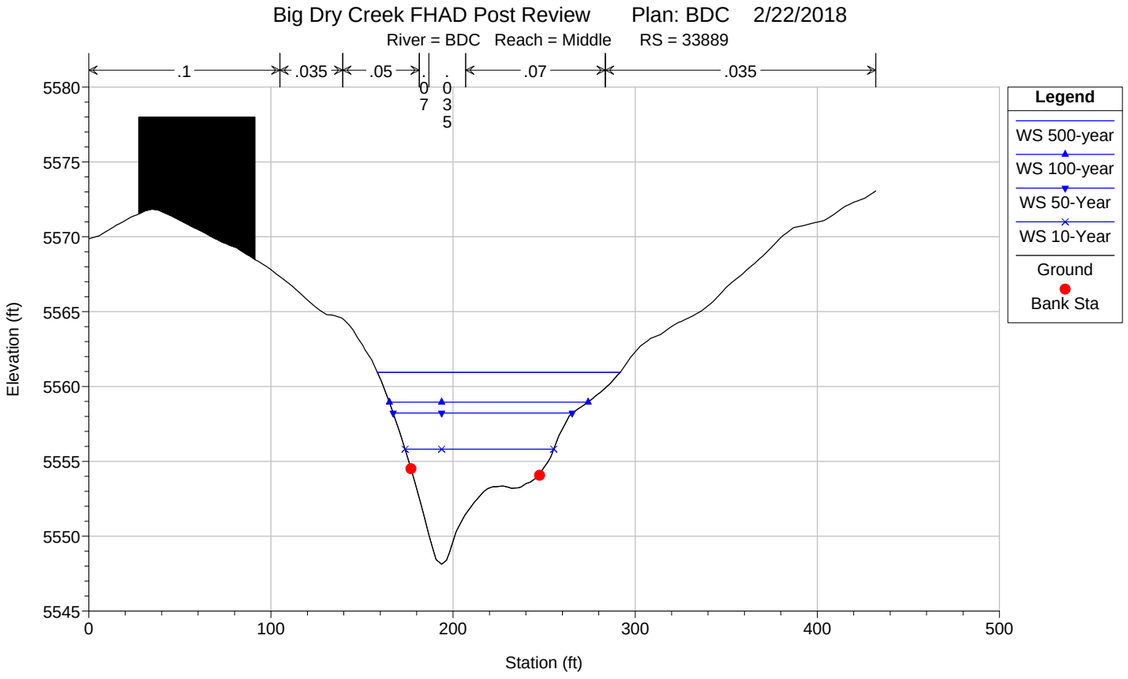

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35522
.1
.035
.07
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

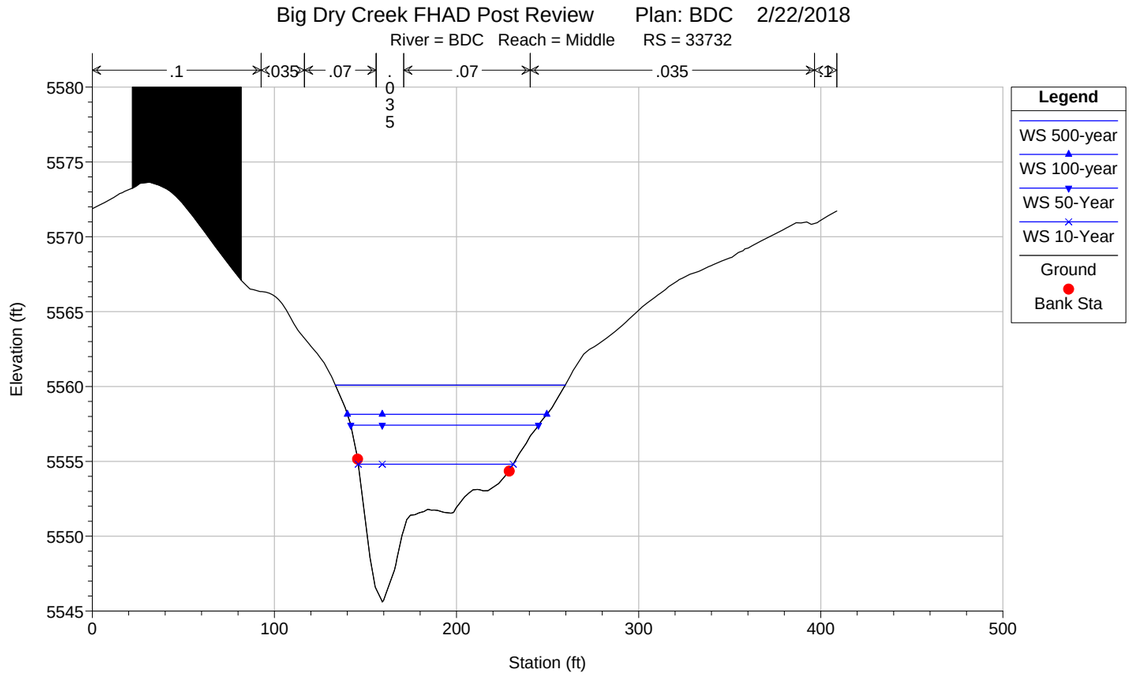

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 35020
.1
.035
.07
.035
.07
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

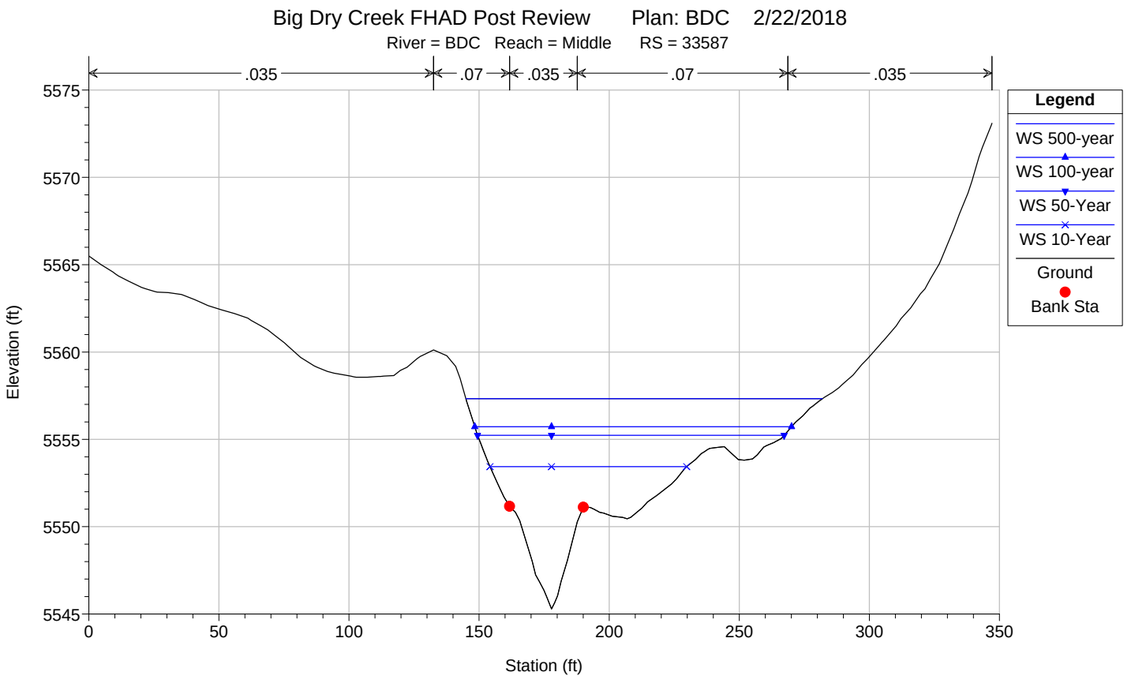

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 34608
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

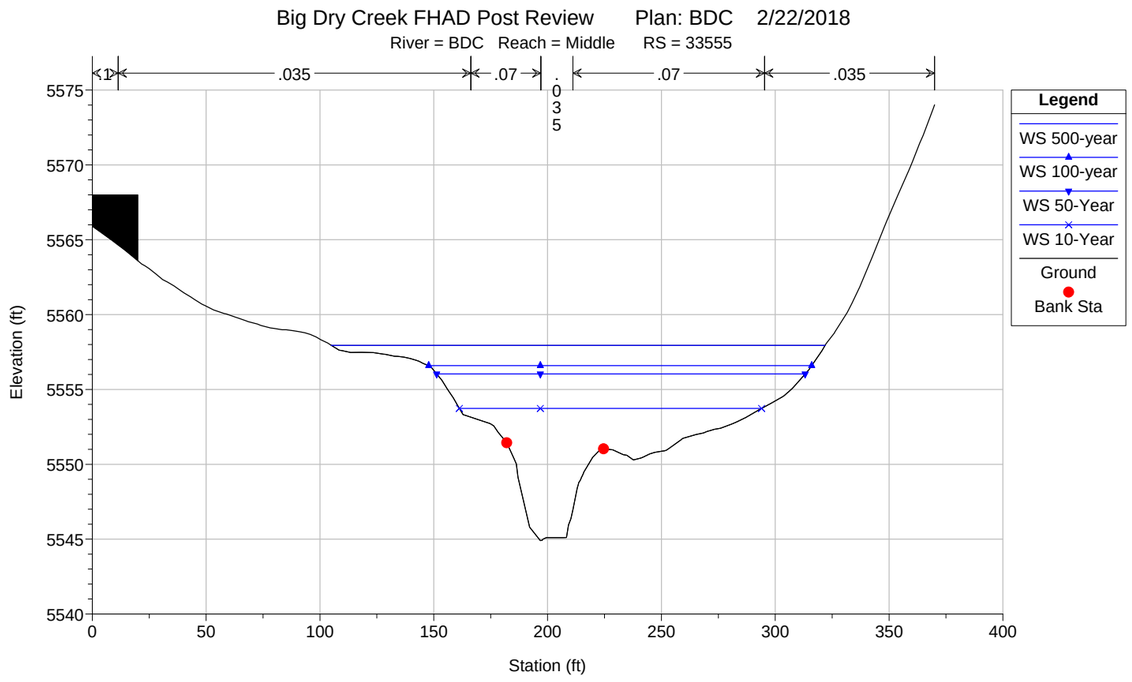

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 34237
.1
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

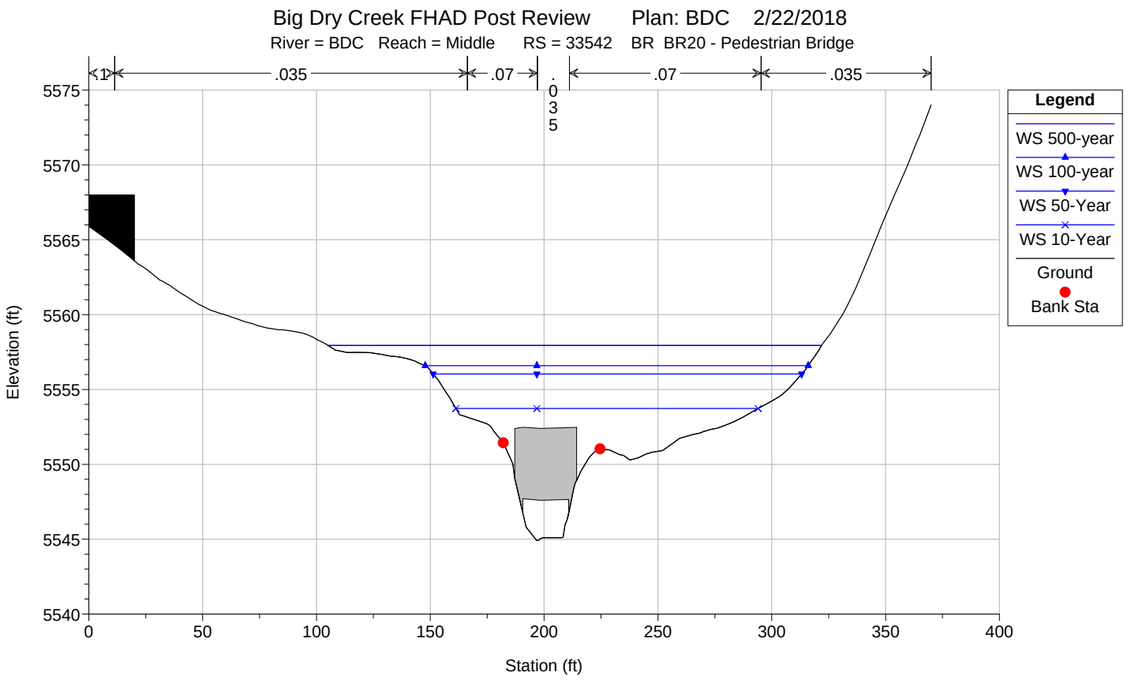

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33940
.1
.05
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

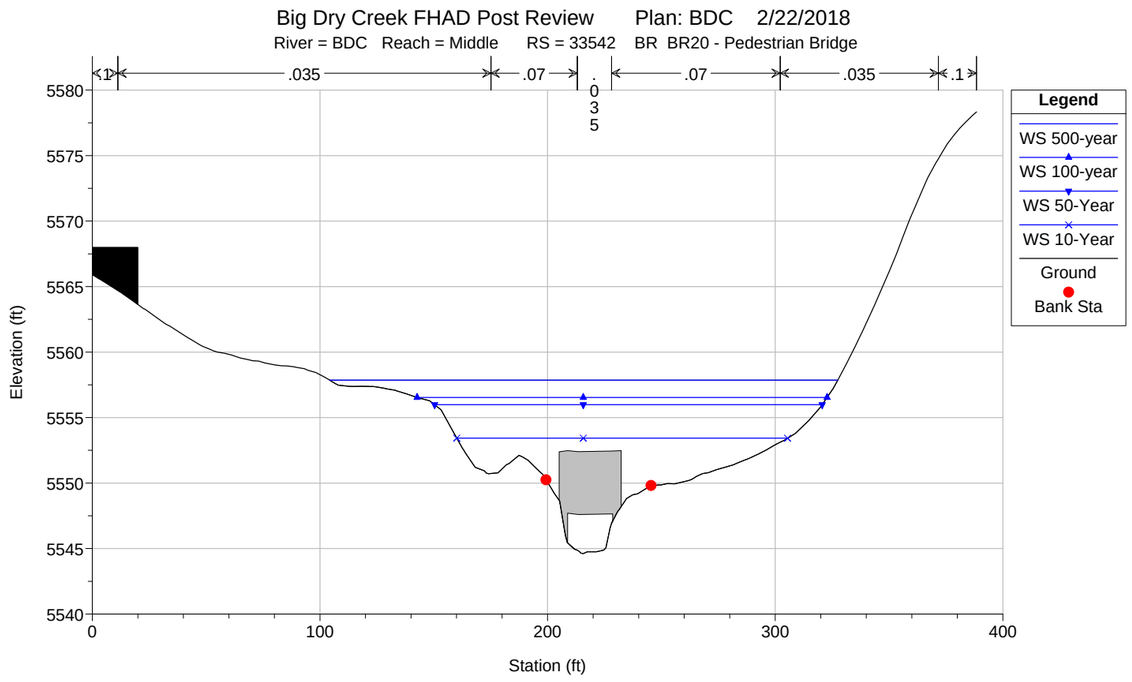

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33889
.1
.035
.05
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

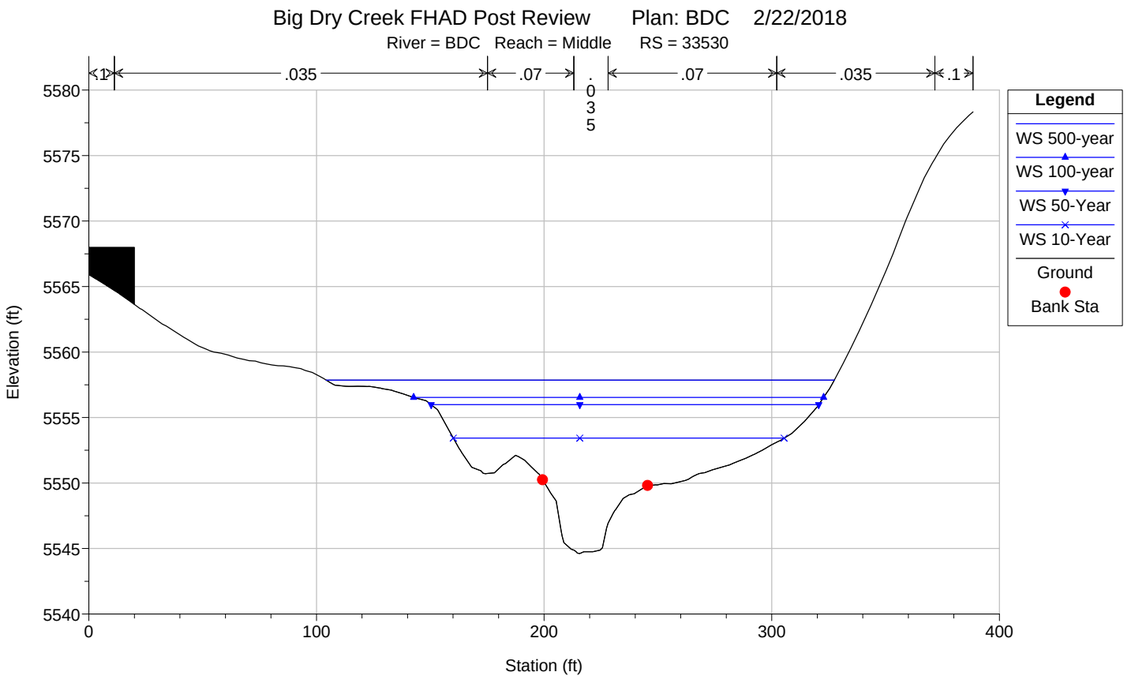

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33732
.1
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

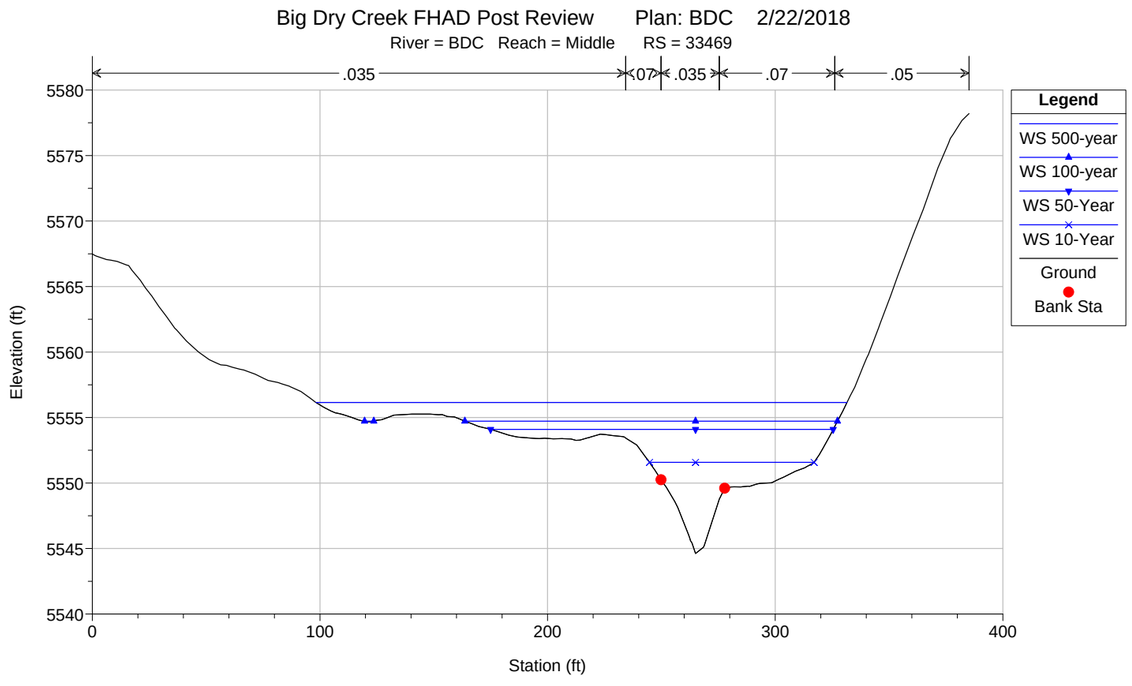

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33587
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

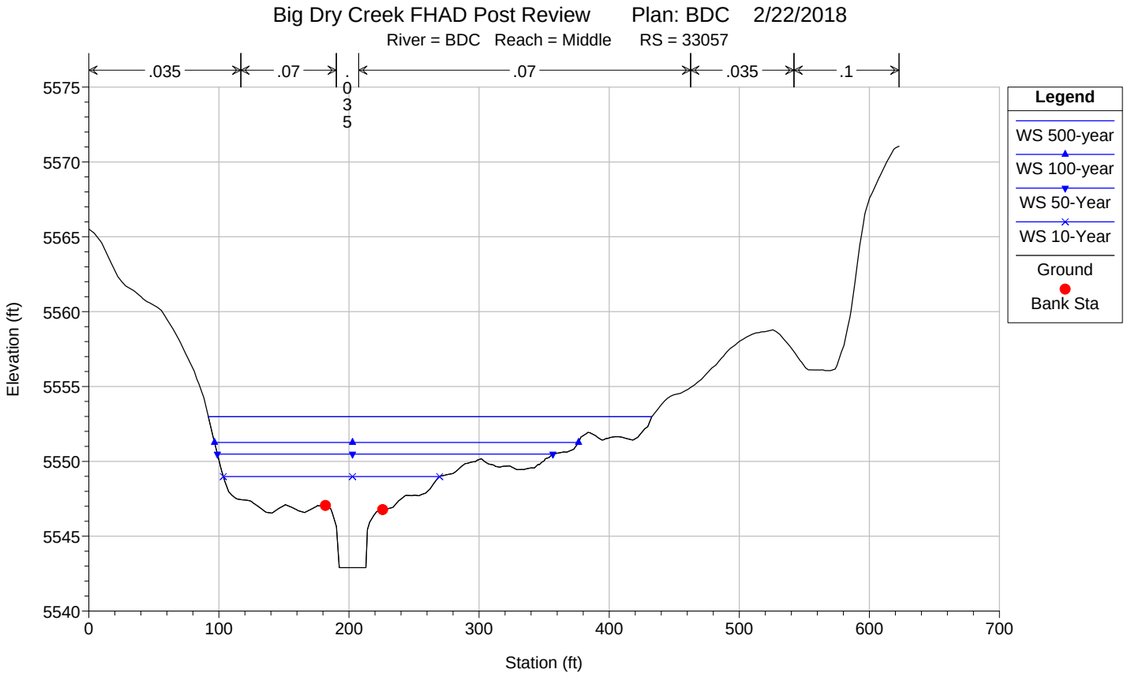

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33555
.1
.035
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

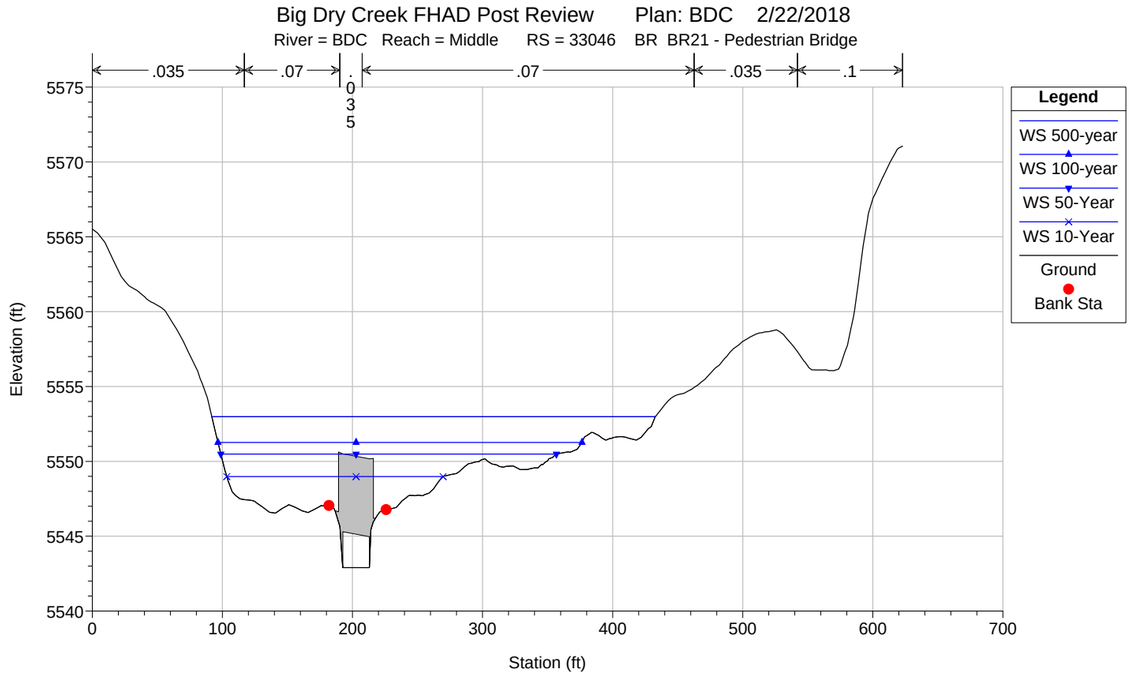

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33542 BR BR20 - Pedestrian Bridge
.1
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

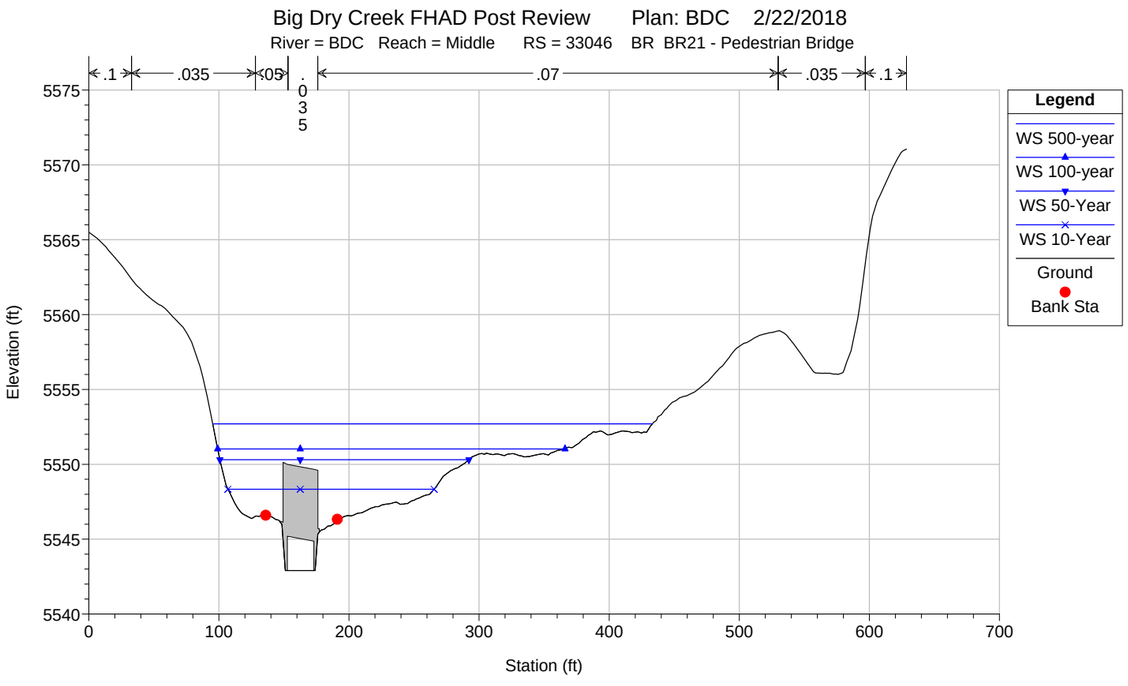

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33542 BR BR20 - Pedestrian Bridge
.1
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

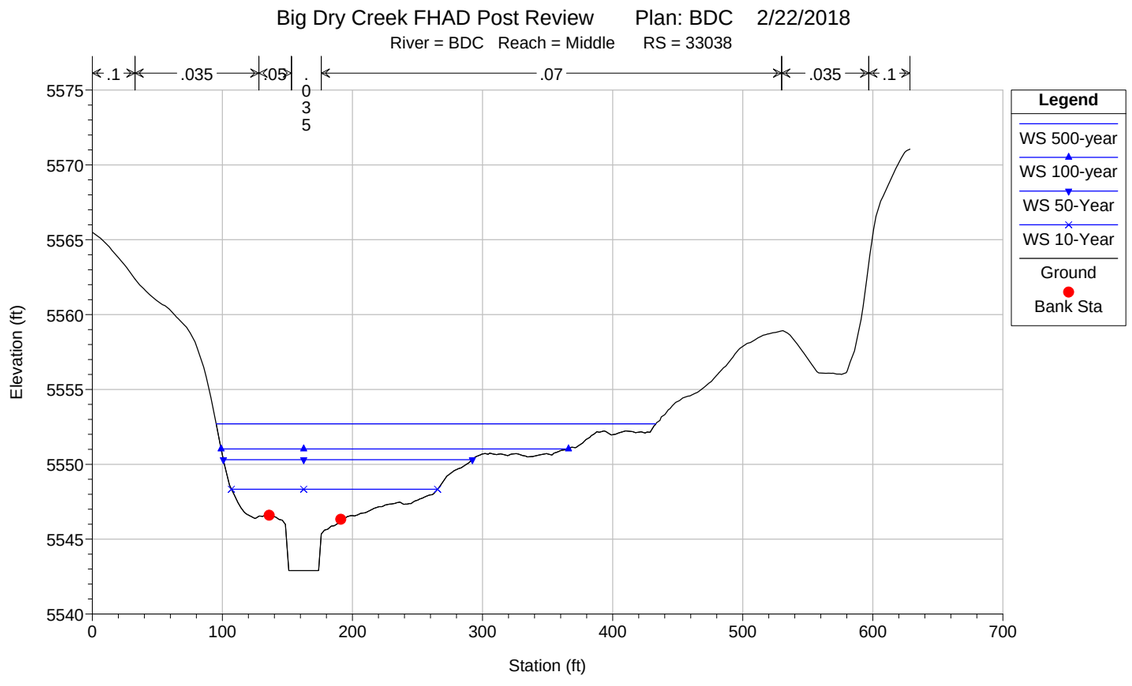

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33530
.1
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

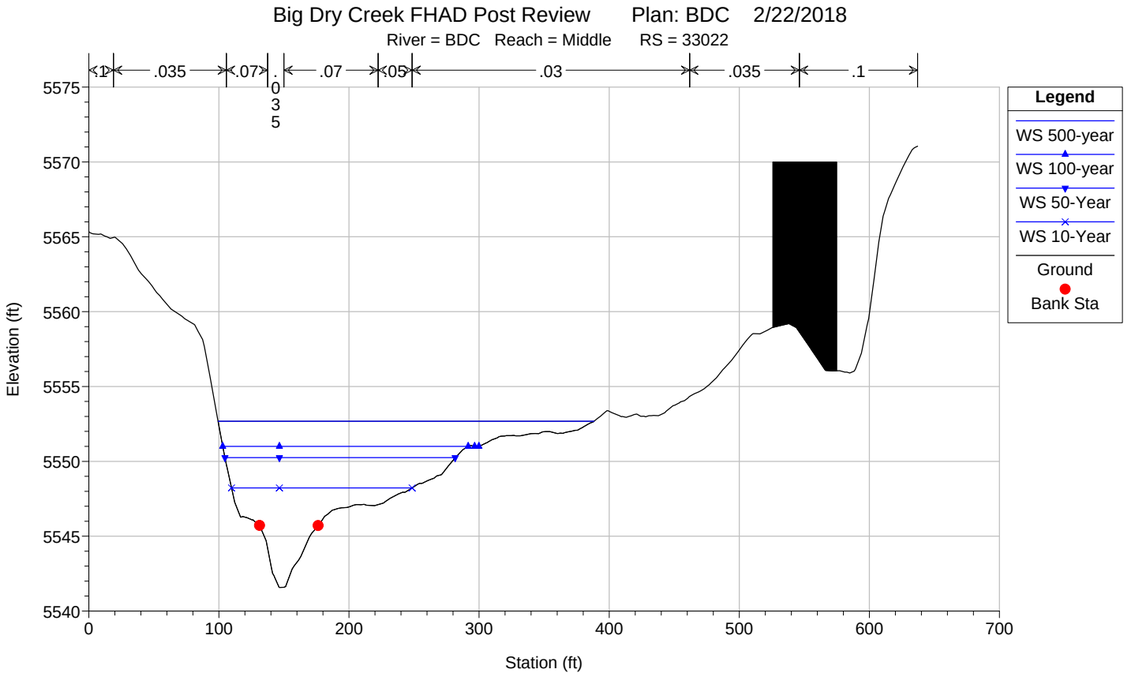

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33469
.035
.07
.035
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

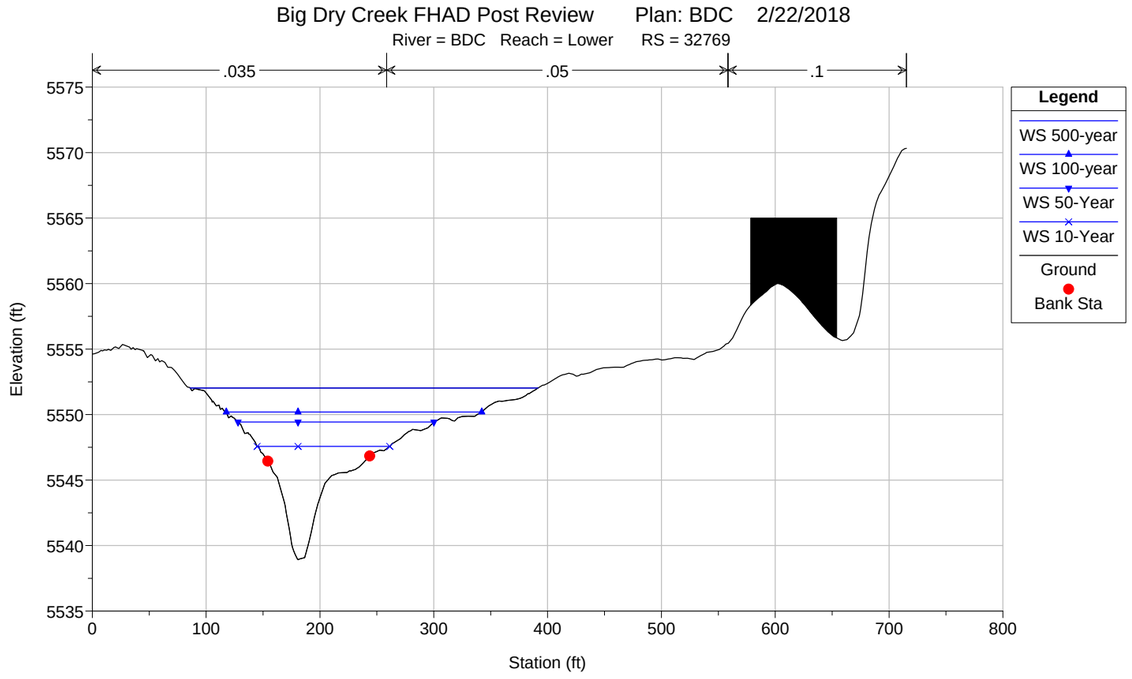

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33057
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

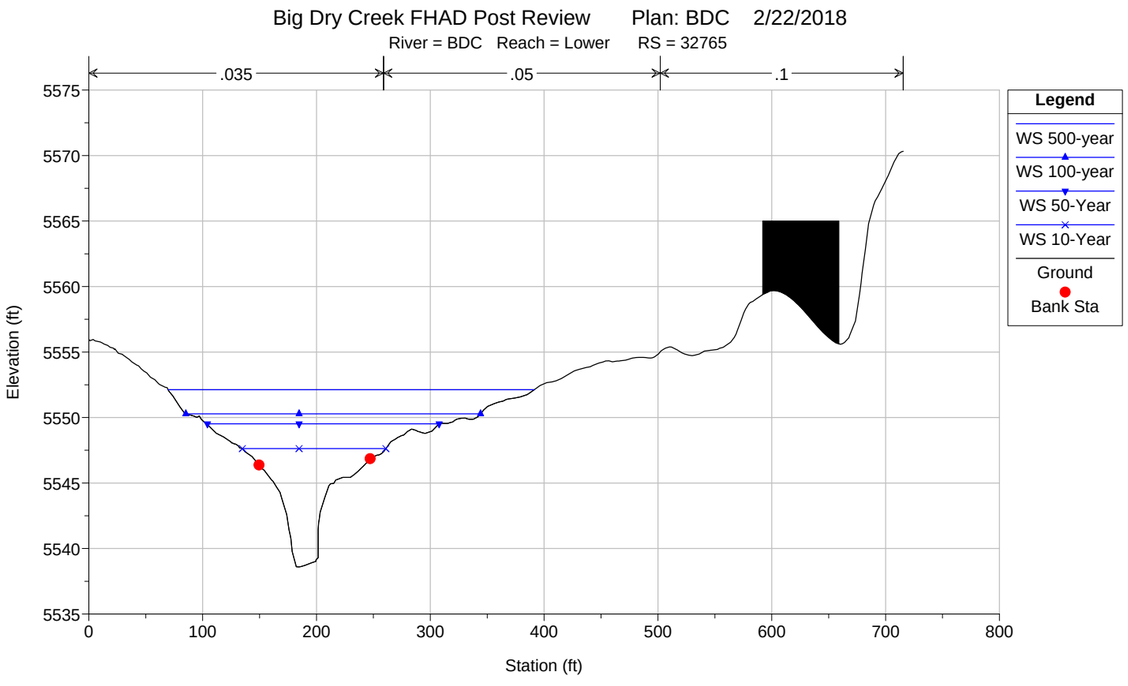

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33046 BR BR21 - Pedestrian Bridge
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

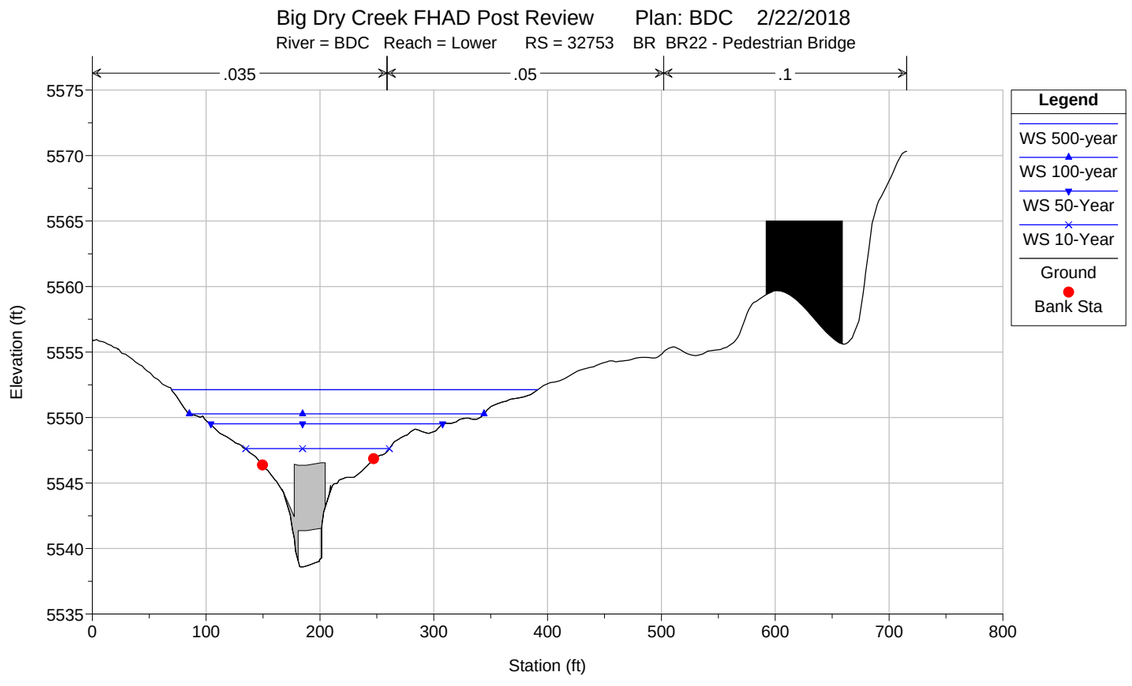

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33046 BR BR21 - Pedestrian Bridge
.1
.035
.05
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

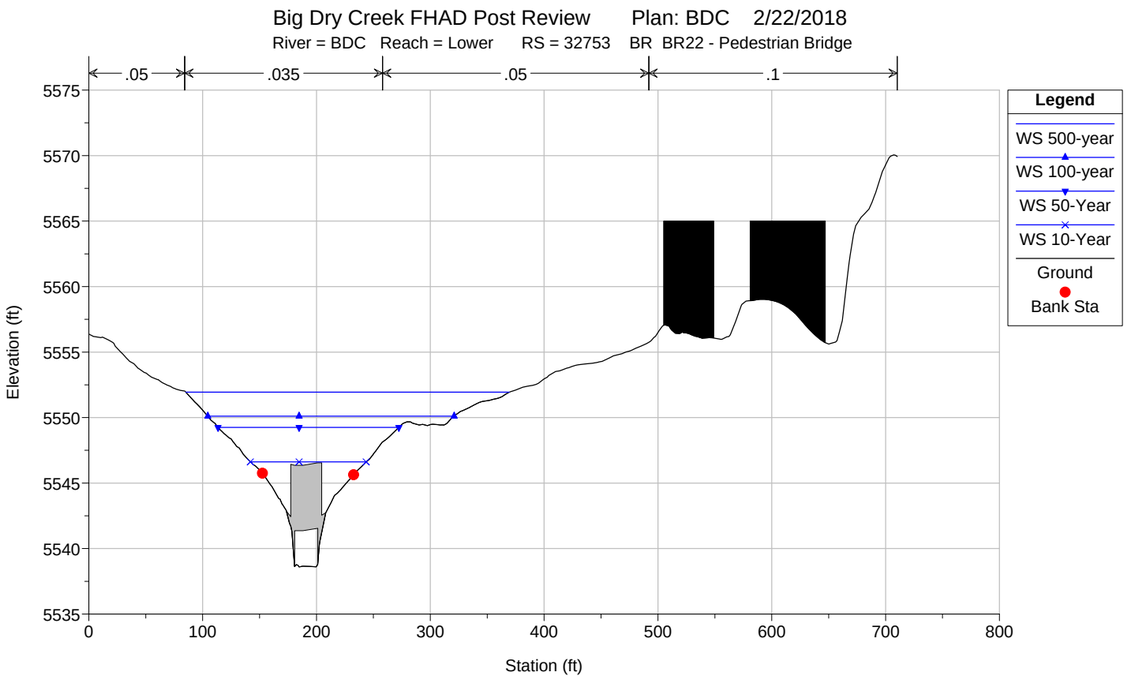

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33038
.1
.035
.05
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

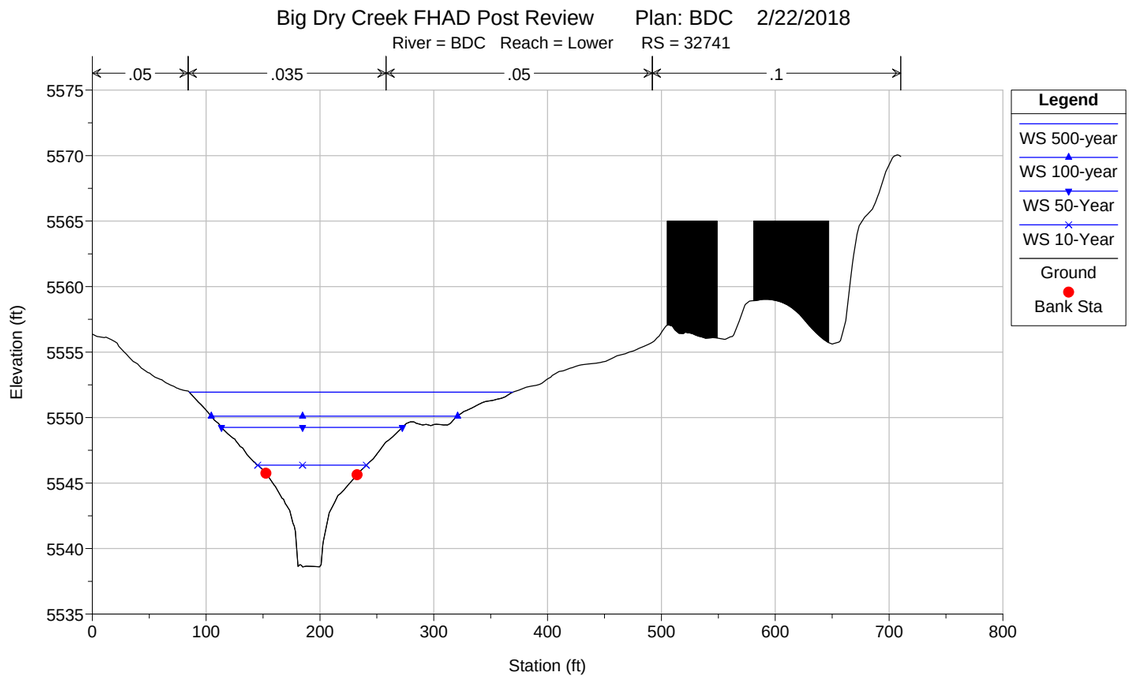

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Middle RS = 33022
.1
.035
.07
.035
.07
.05
.03
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

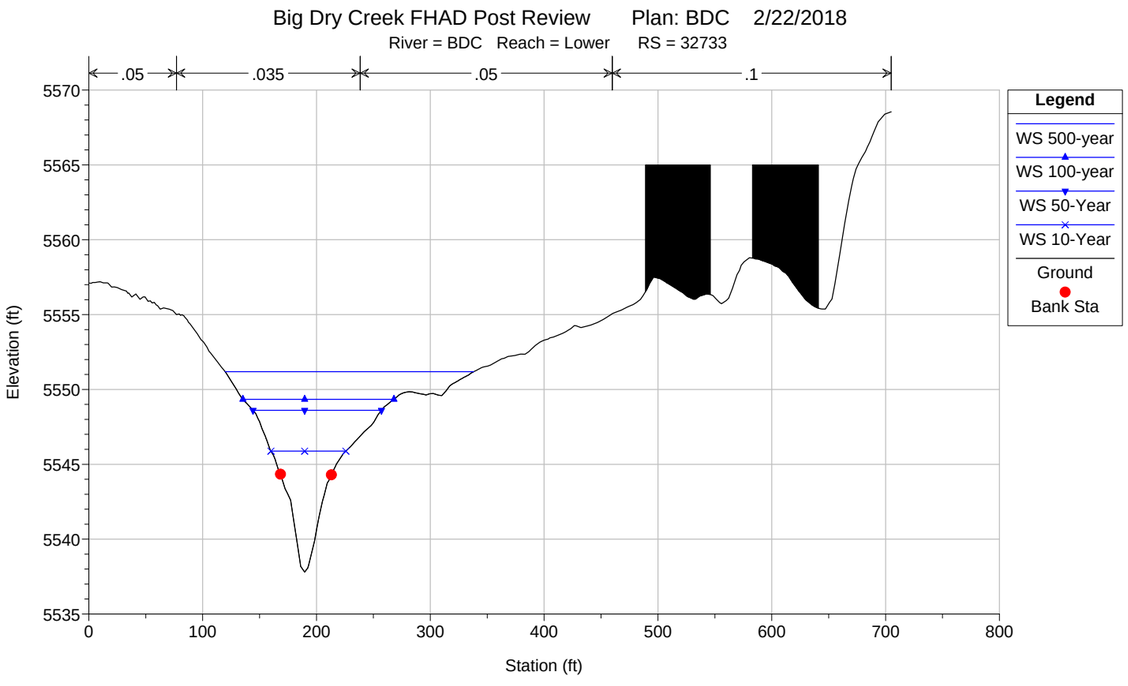

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32769
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

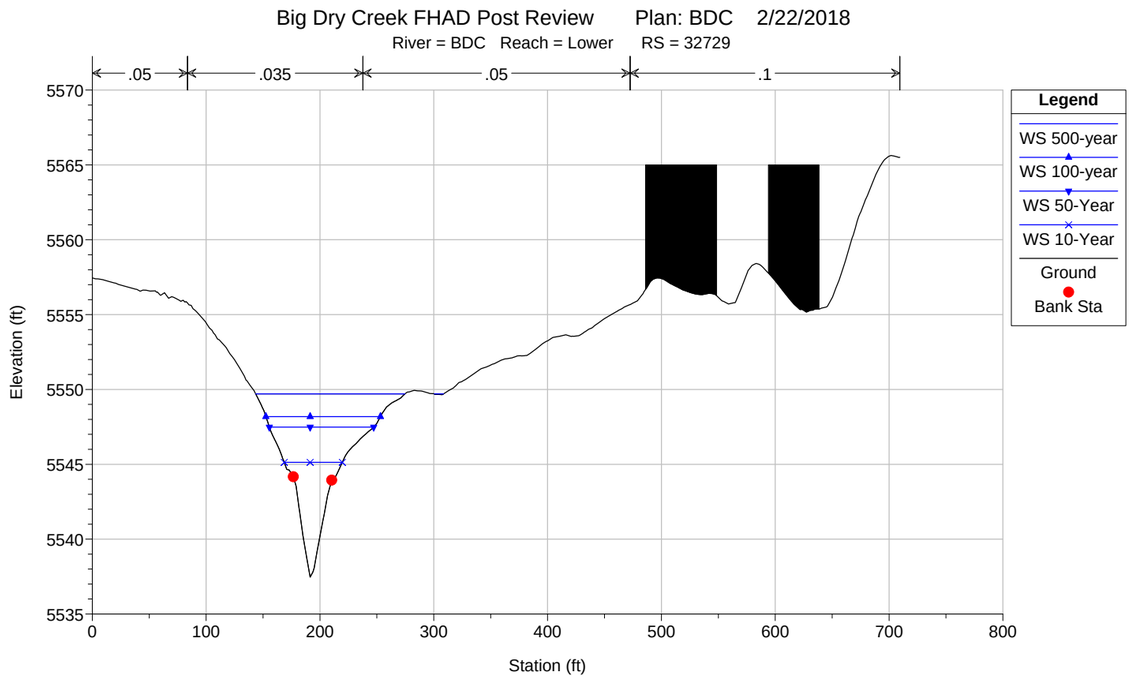

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32765
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

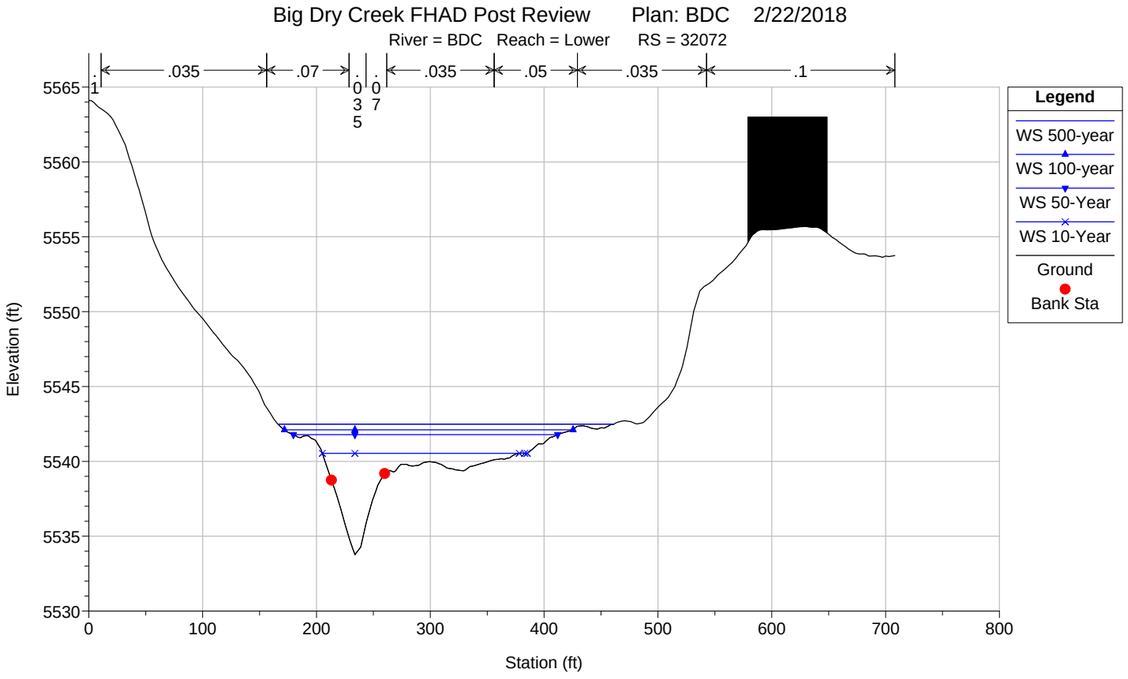

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32753 BR BR22 - Pedestrian Bridge
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

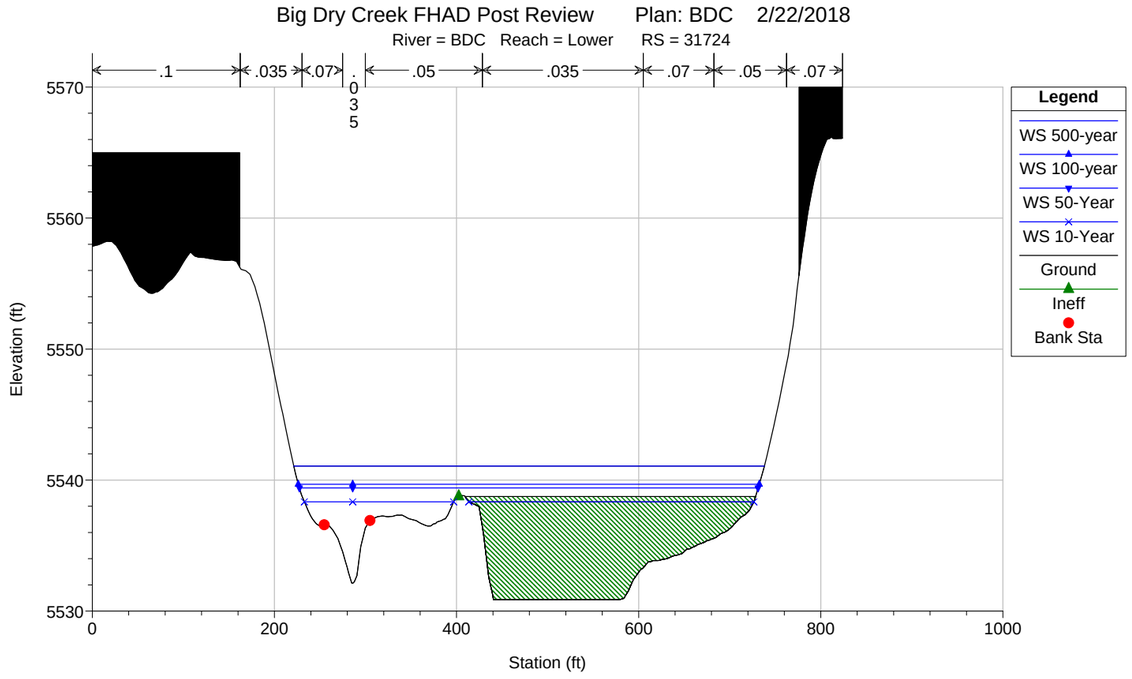

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32753 BR BR22 - Pedestrian Bridge
.05
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5575
5570
5565
5560
5555
5550
5545
5540
5535
0
100
200
300
400
500
600
700
800

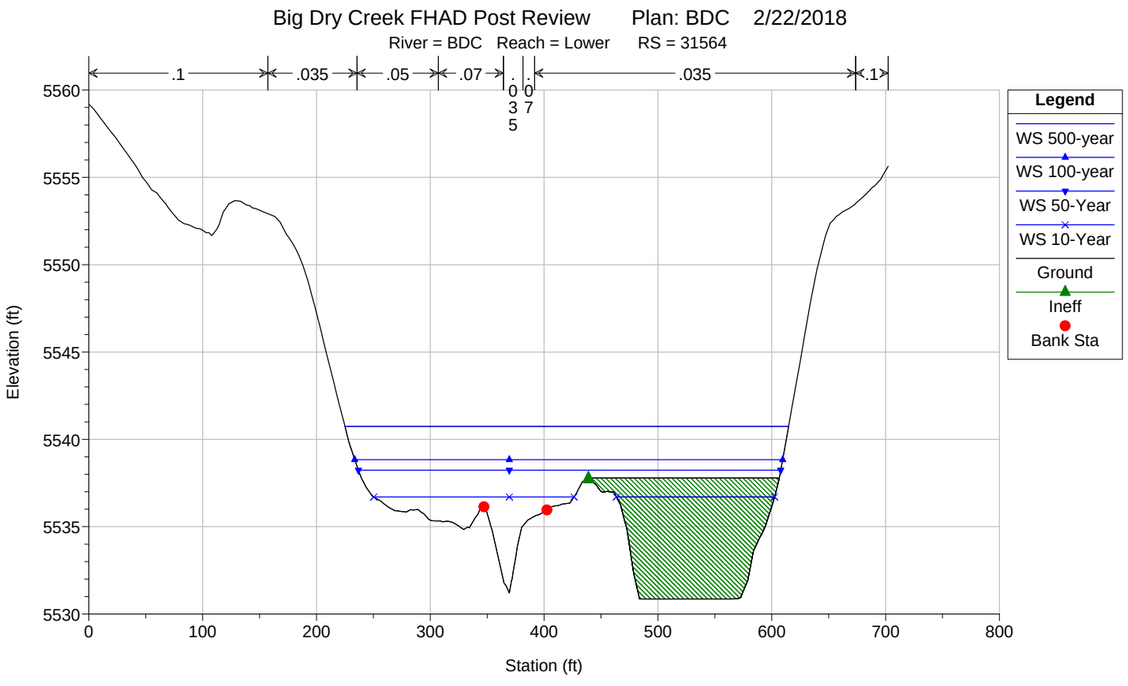

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32741
.05
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5575
5570
5565
5560
5555
5550
5545
5540
5535
0
100
200
300
400
500
600
700
800

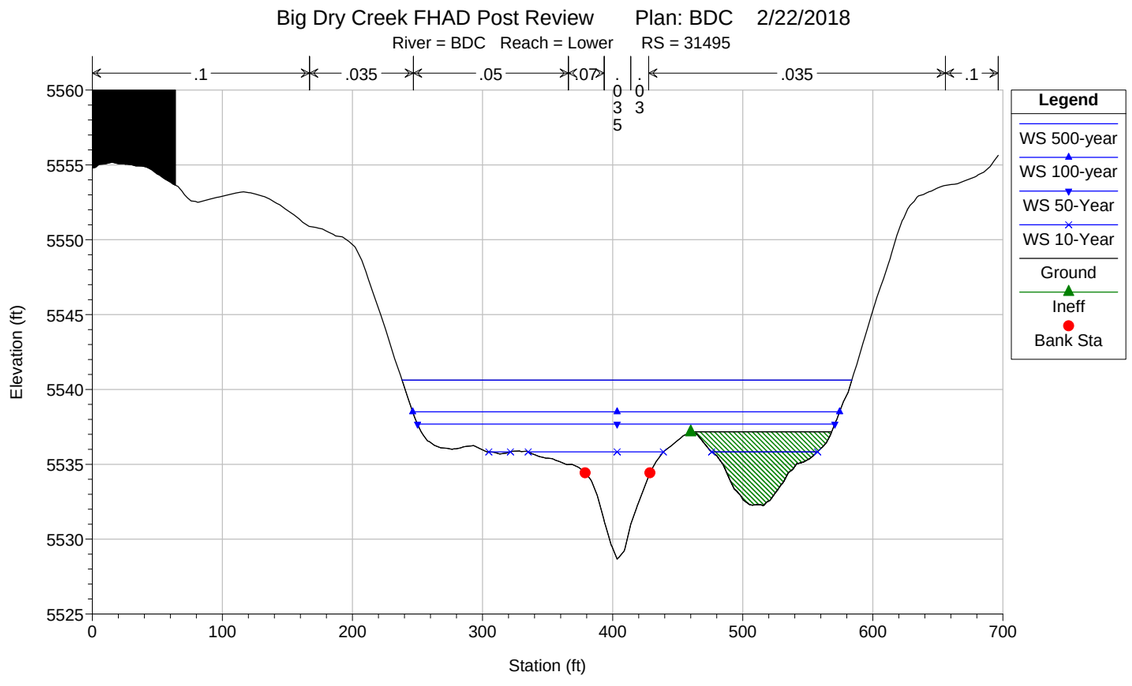

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32733
.05
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5570
5565
5560
5555
5550
5545
5540
5535
0
100
200
300
400
500
600
700
800

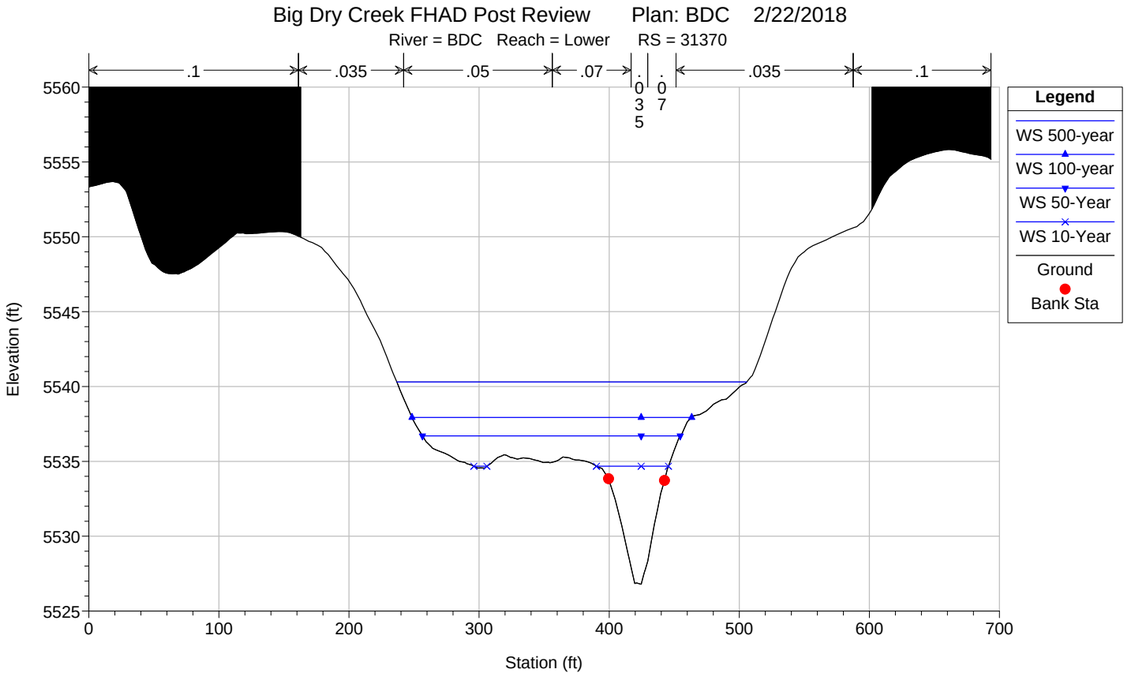

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32729
.05
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5570
5565
5560
5555
5550
5545
5540
5535
0
100
200
300
400
500
600
700
800

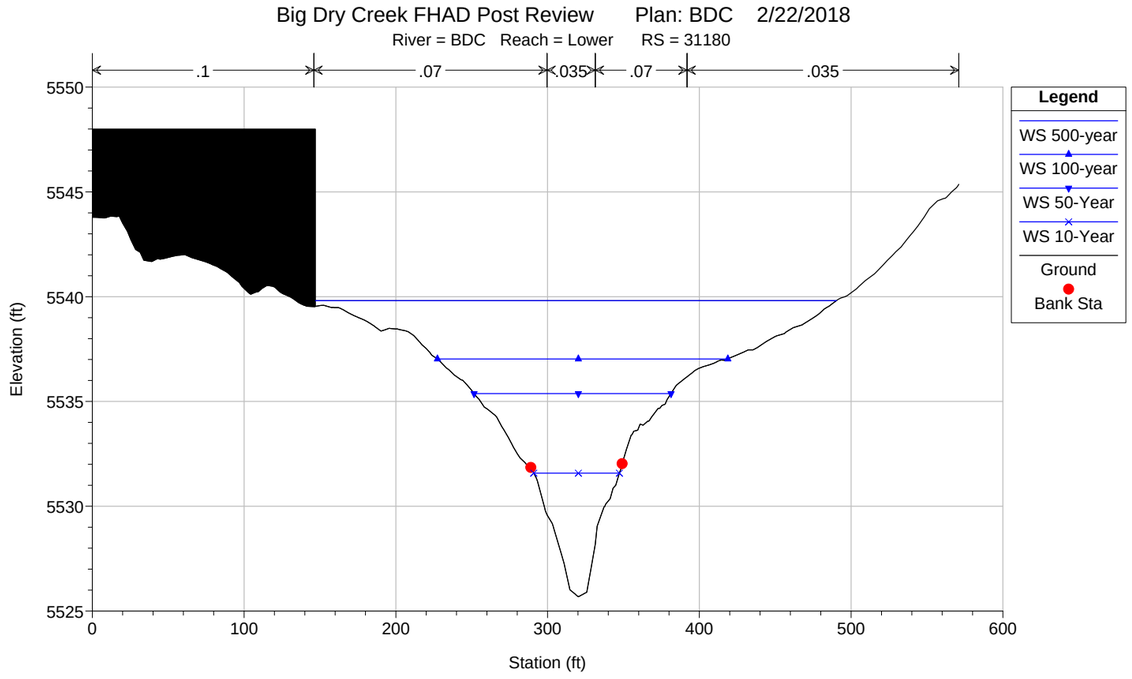

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 32072
.1
.035
.07
.035
.05
.035
.1
0.035
0.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

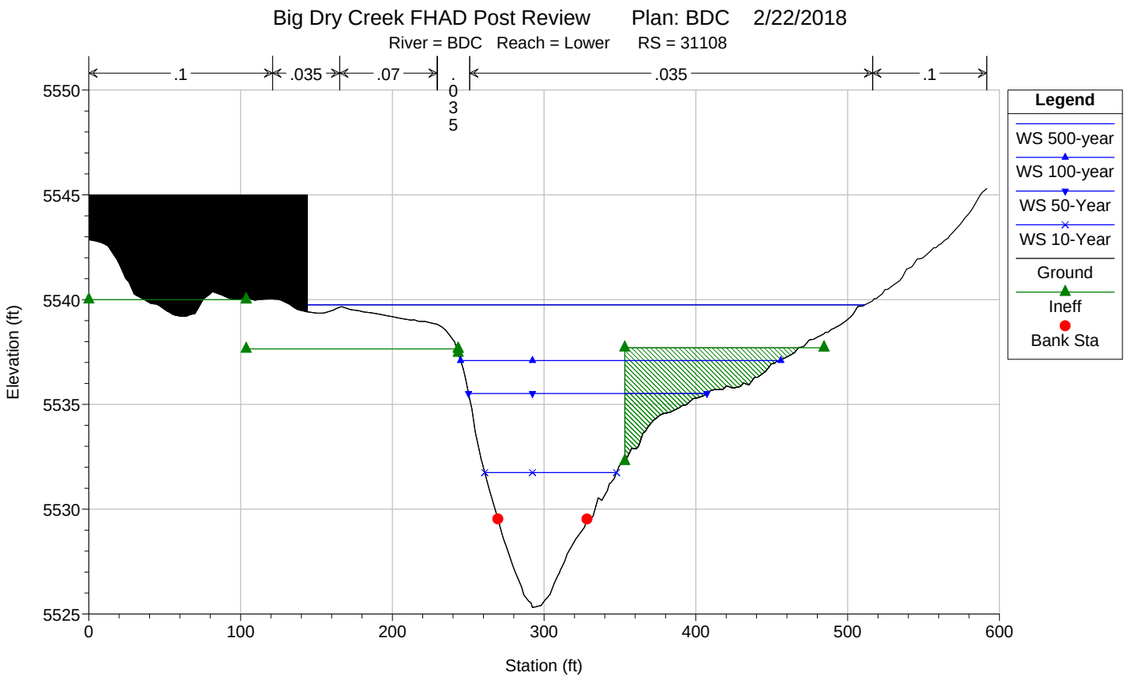

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31724
.1
.035
.07
.05
.035
.07
.05
.07
0.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

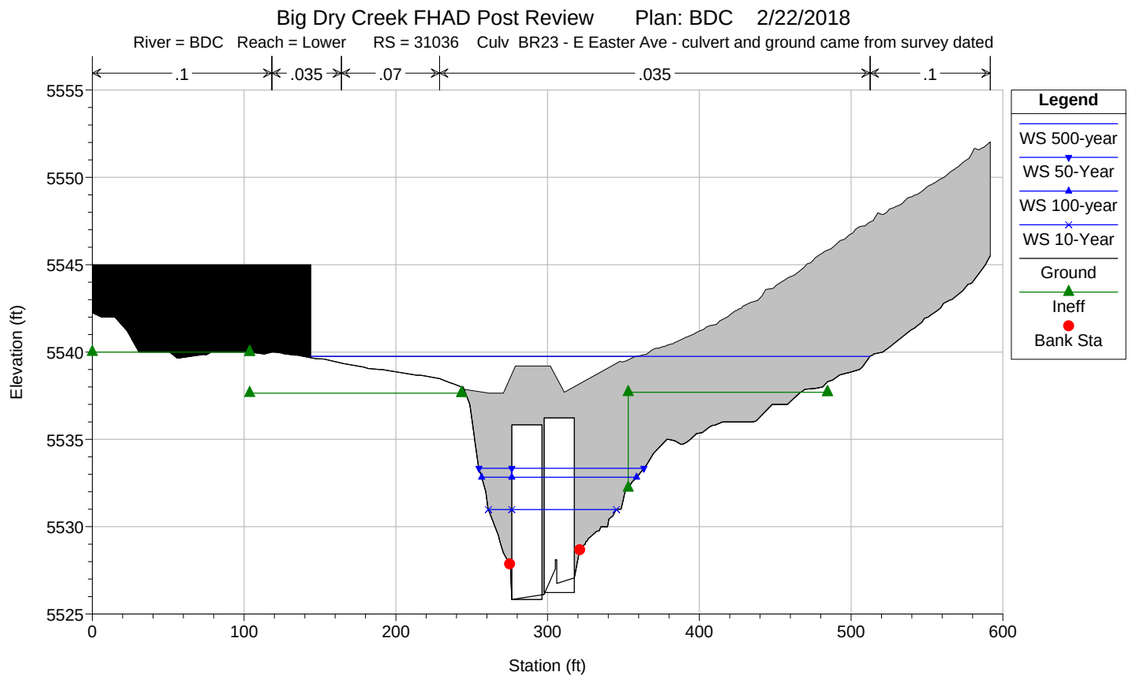

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31564
.1
.035
.05
.07
.035
.1
0.035
0.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

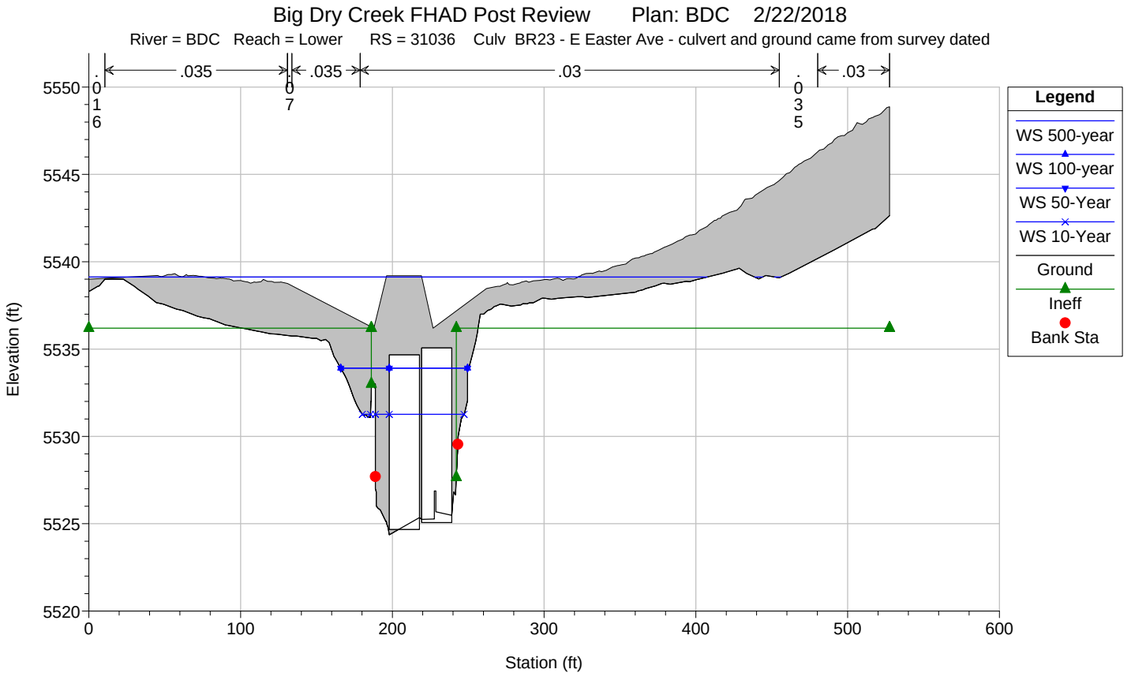

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31495
.1
.035
.05
.07
0.035
0.03
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

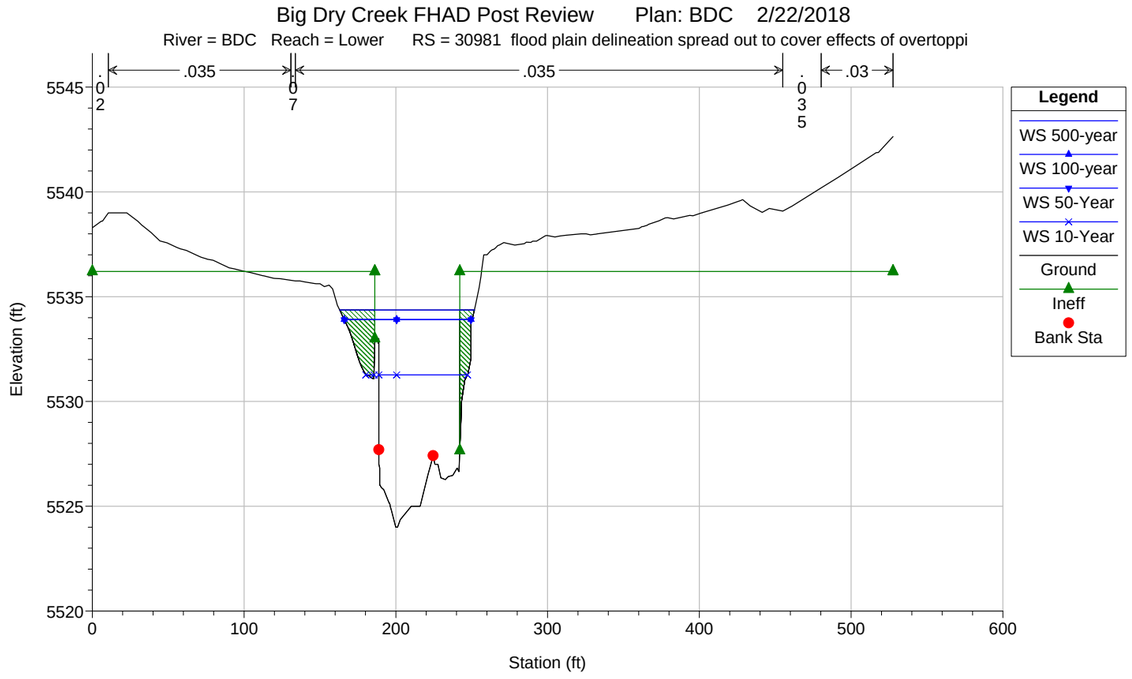

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31370
.1
.035
.05
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

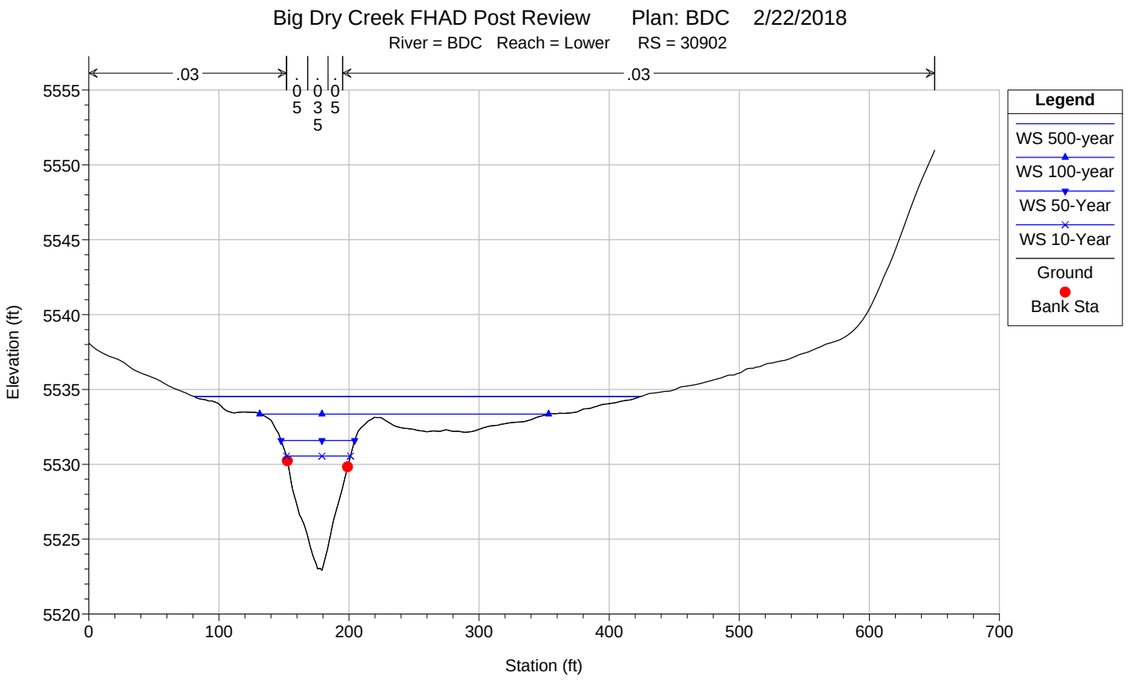

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31180
.1
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

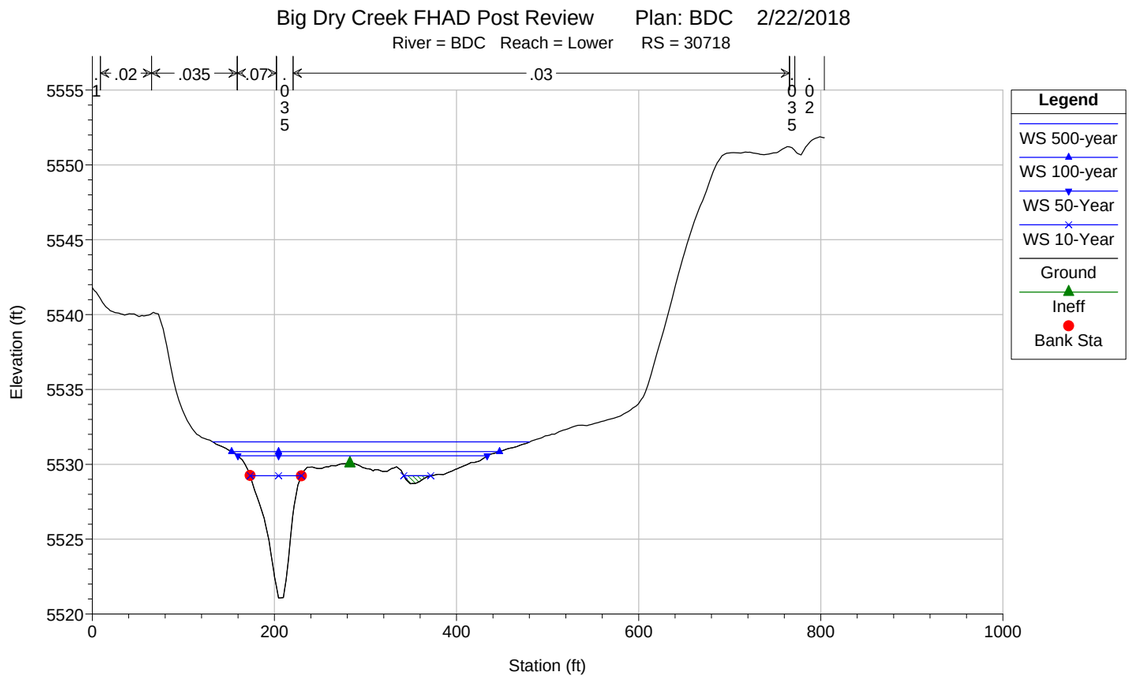

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31108
.1
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

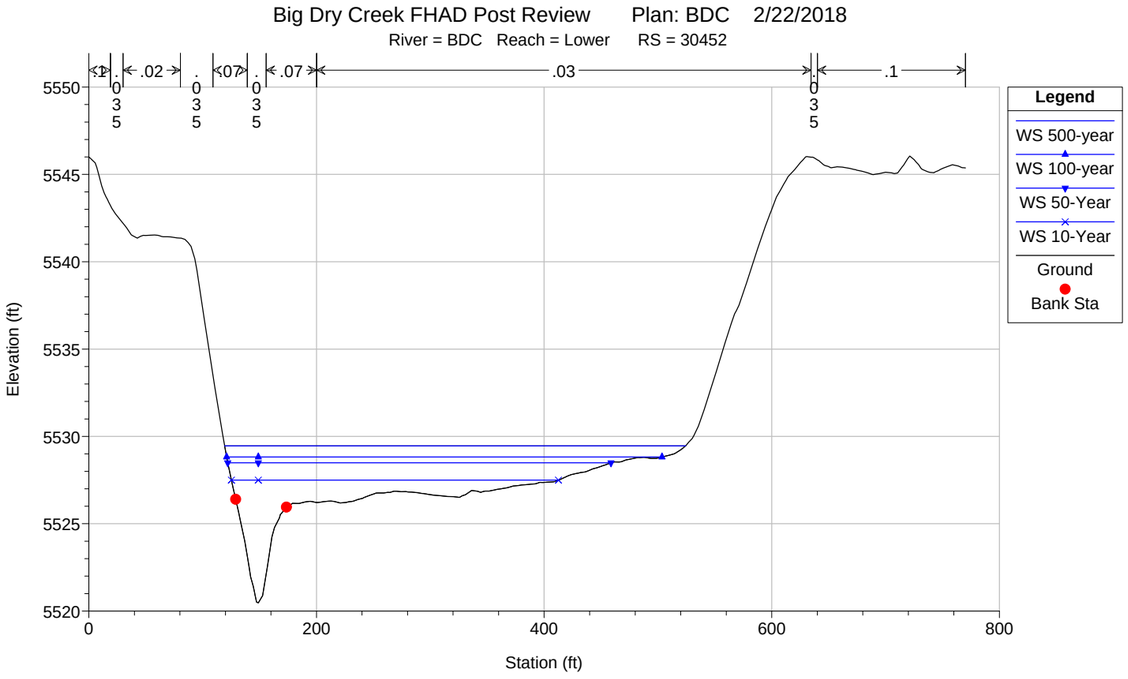

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31036 Culv BR23 - E Easter Ave - culvert and ground came from survey dated
.1
.035
.07
.035
.1
Legend
WS 500-year
WS 50-Year
WS 100-year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 31036 Culv BR23 - E Easter Ave - culvert and ground came from survey dated
.035
.035
.03
.03
.016
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5550
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30981 flood plain delineation spread out to cover effects of overtoppi
.035
.035
.03
.02
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30902
.03
.03
.05
.035
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5555
5550
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30718
.02
.035
.07
.03
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5555
5550
5545
5540
5535
5530
5525
5520
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30452
.02
.035
.05
.07
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5550
5545
5540
5535
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5525
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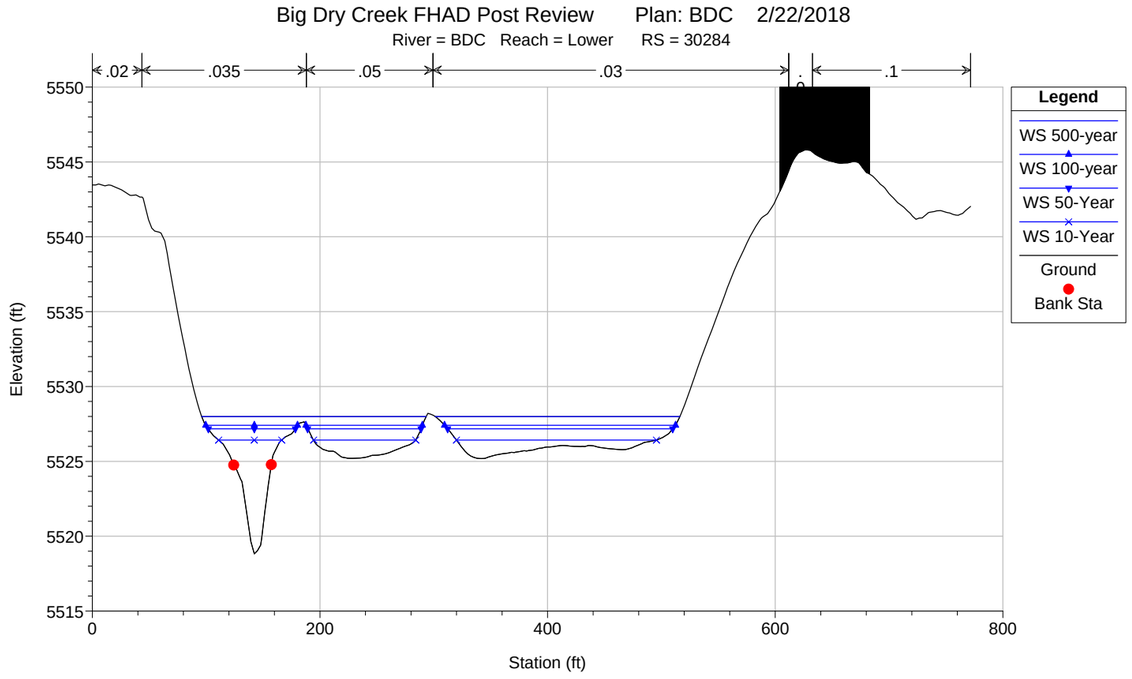
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30284
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.035
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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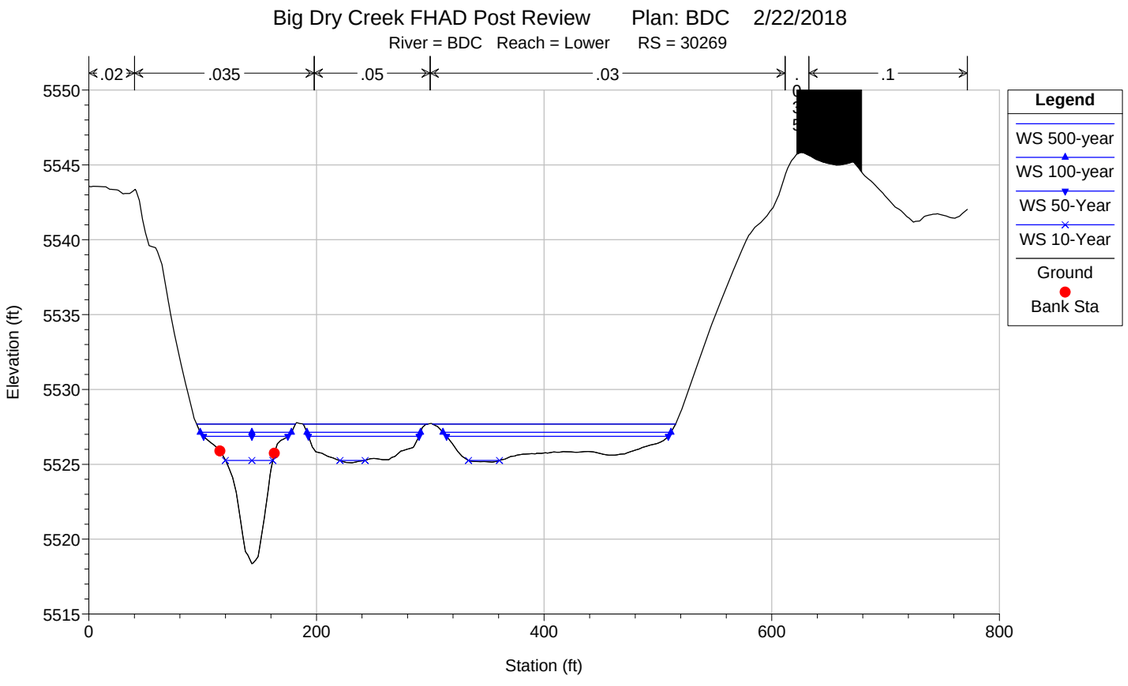
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30269
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.035
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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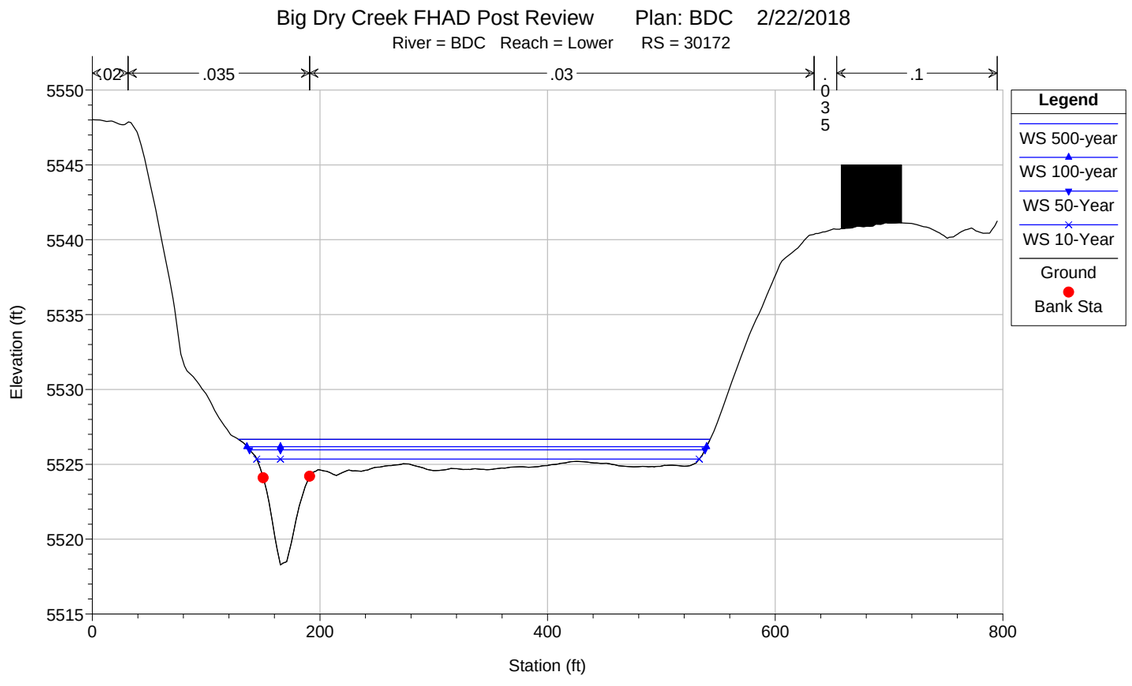
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30172
.02
.035
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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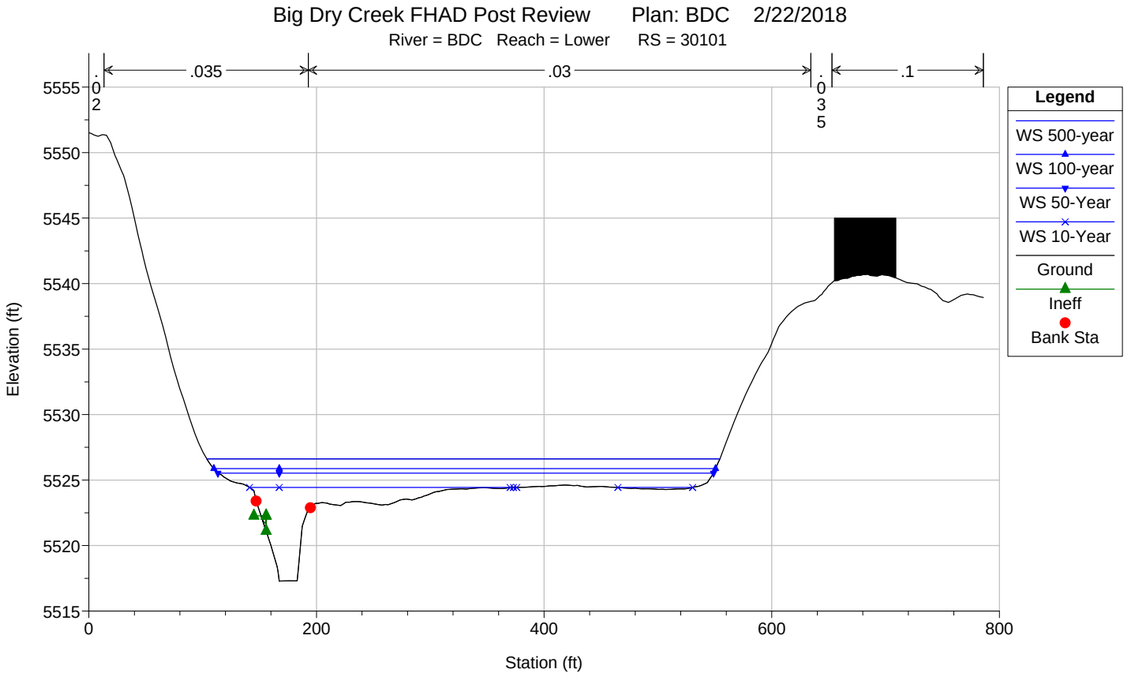
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30101
.035
.03
.1
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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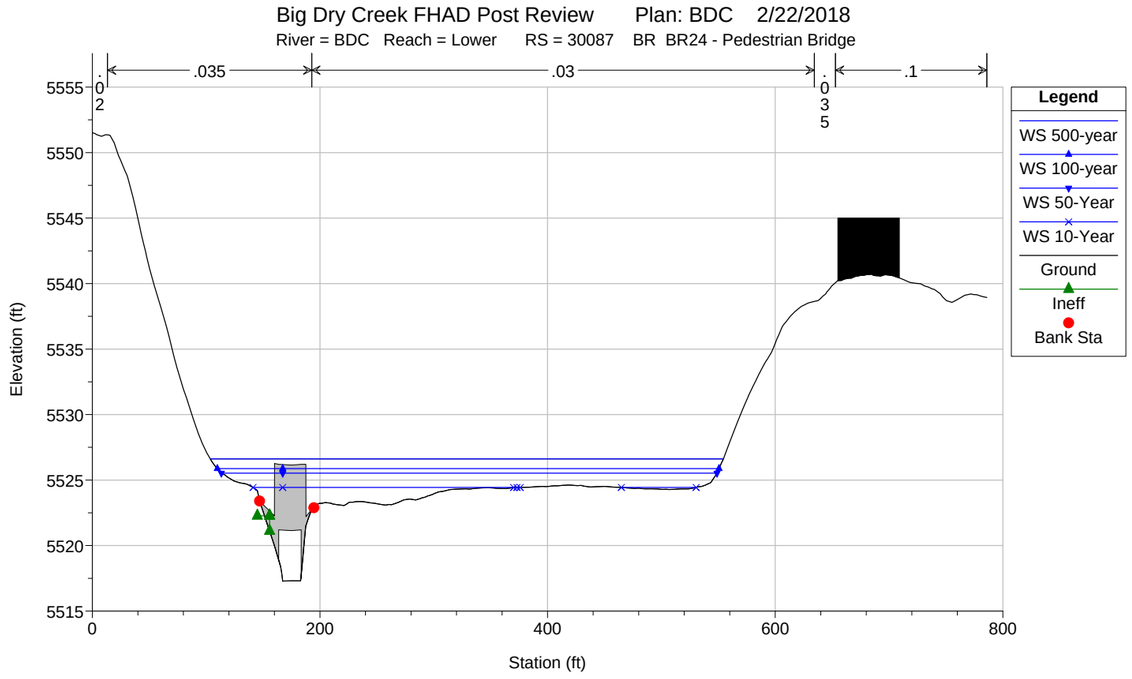
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30087 BR BR24 - Pedestrian Bridge
.035
.03
.1
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5555
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5545
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400
600
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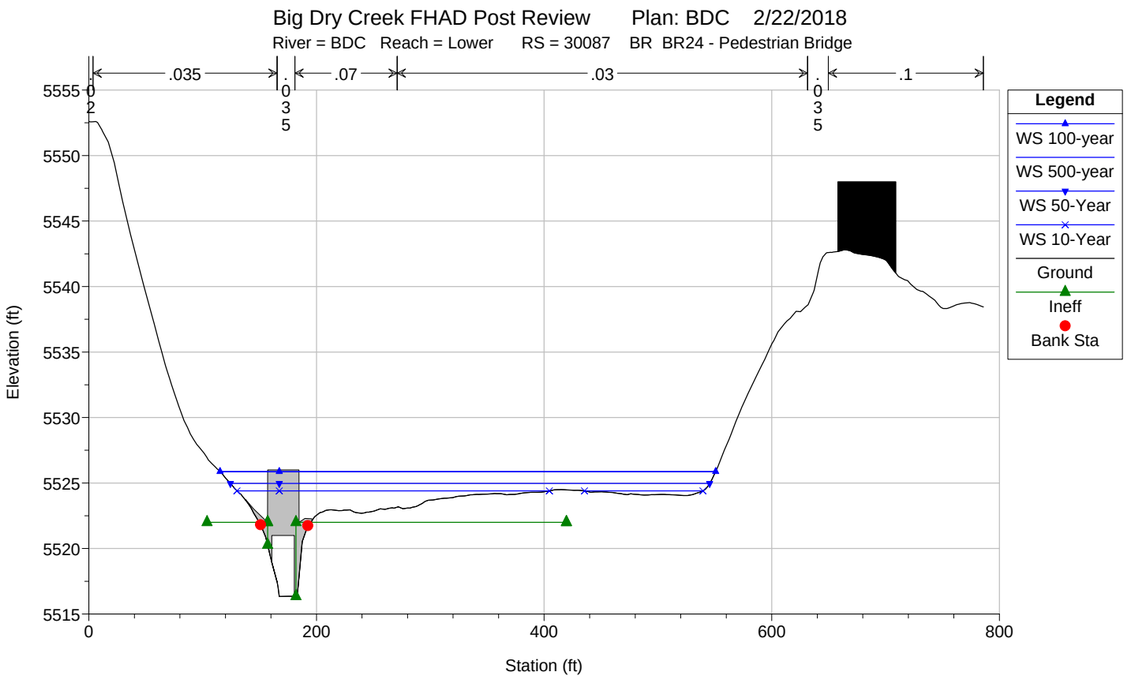
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30087 BR BR24 - Pedestrian Bridge
.035
.07
.03
.1
.02
.035
.035
Legend
WS 100-year
WS 500-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5555
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5545
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5535
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5520
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600
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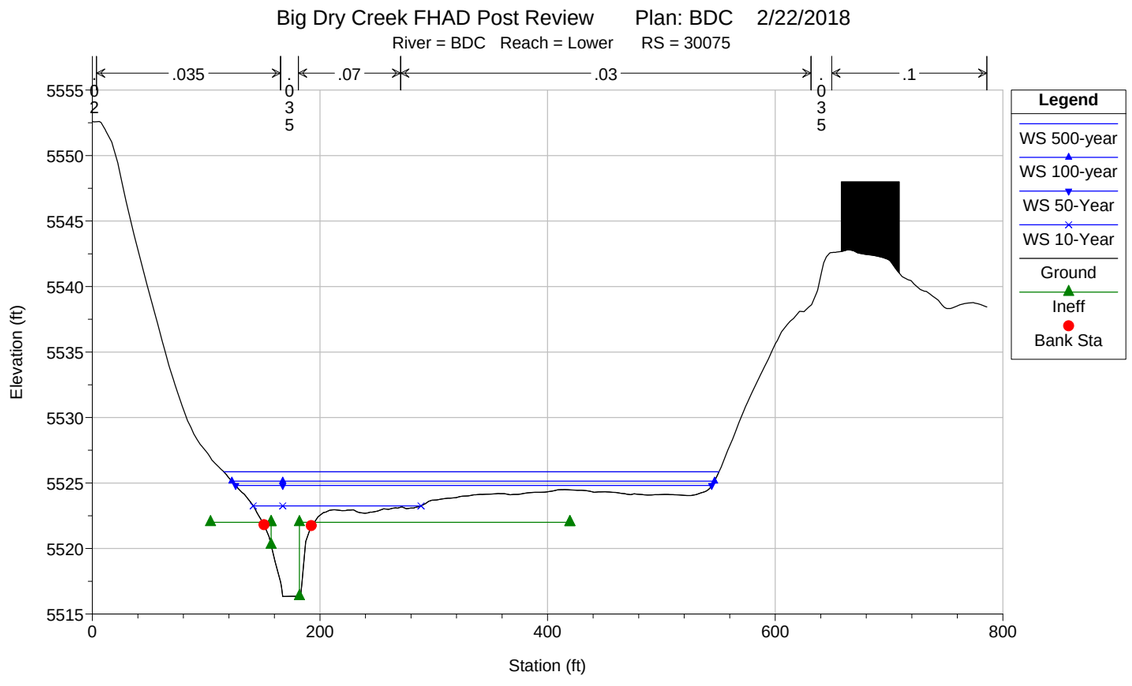
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30075
.035
.07
.03
.1
.02
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5555
5550
5545
5540
5535
5530
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5520
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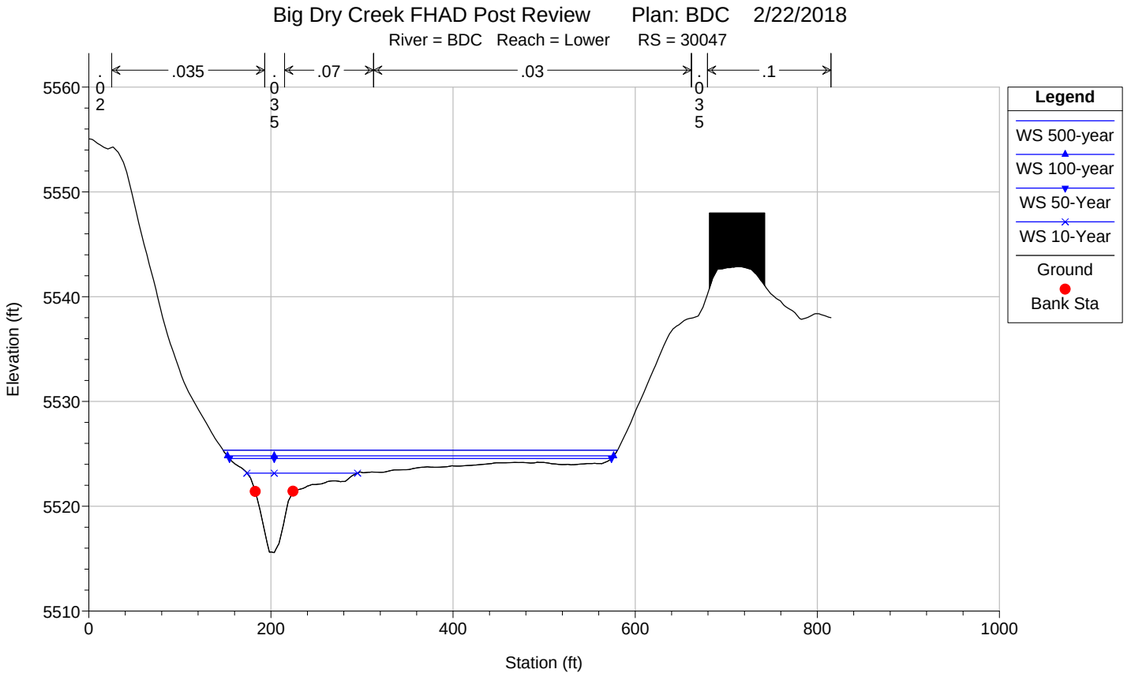
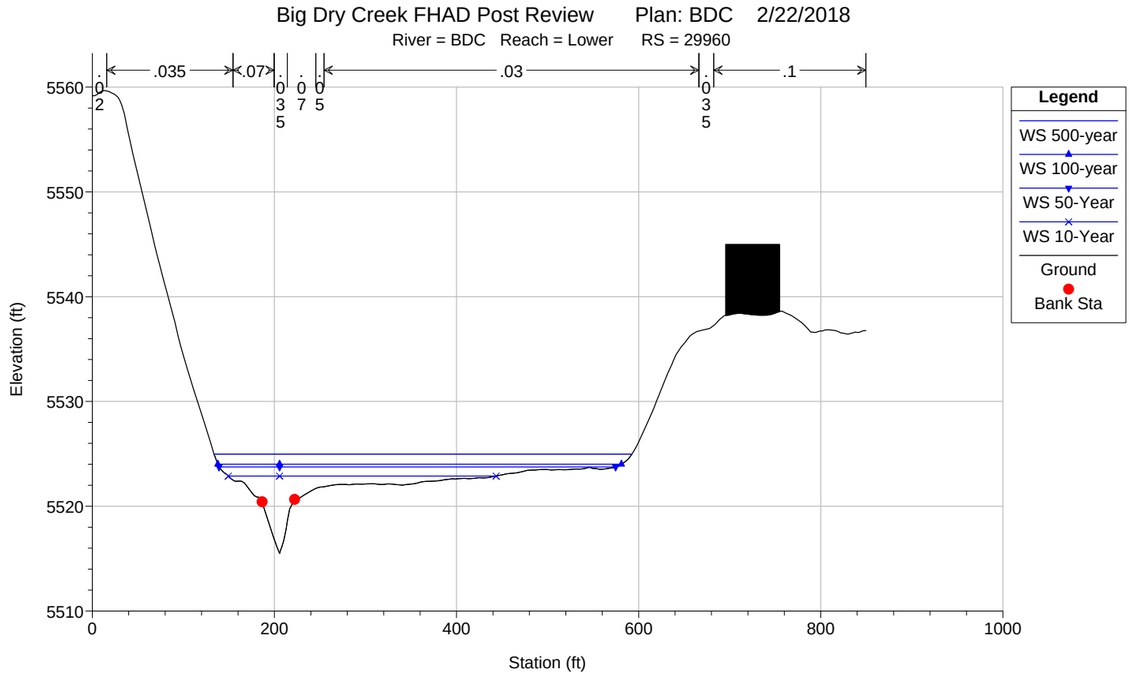
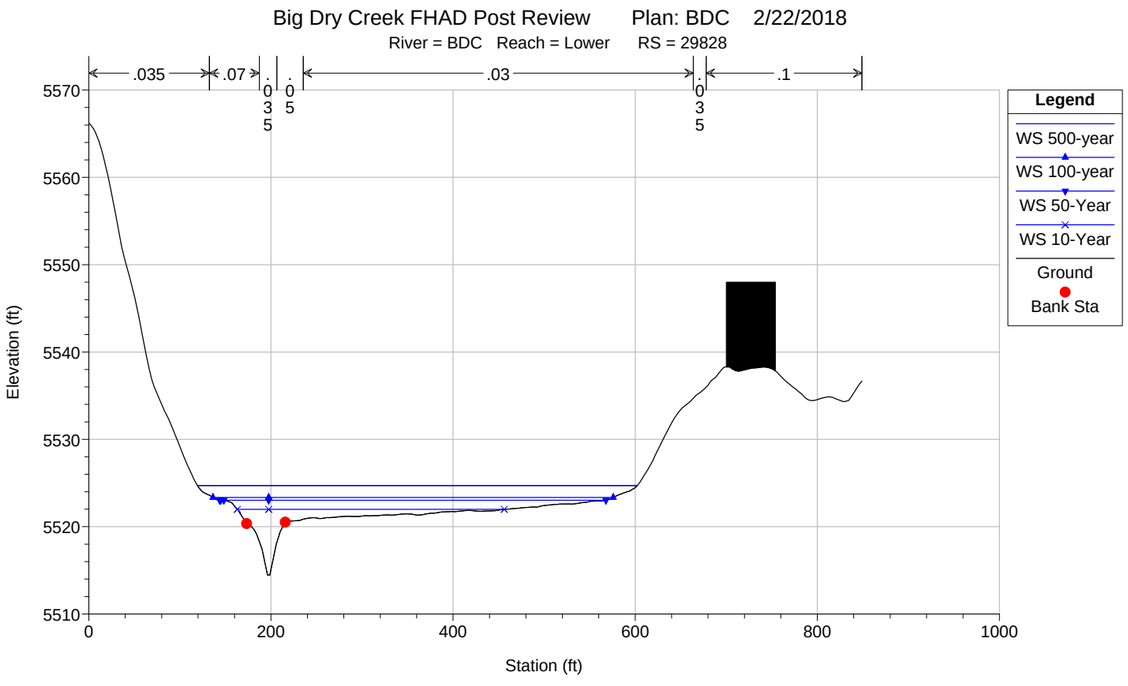
200
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 30047
.035
.07
.03
.1
.02
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5560
5550
5540
5530
5520
5510
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29960
.035
.07
.03
.1
.02
.035
.07
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5560
5550
5540
5530
5520
5510
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29828
.035
.07
.03
.1
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5570
5560
5550
5540
5530
5520
5510
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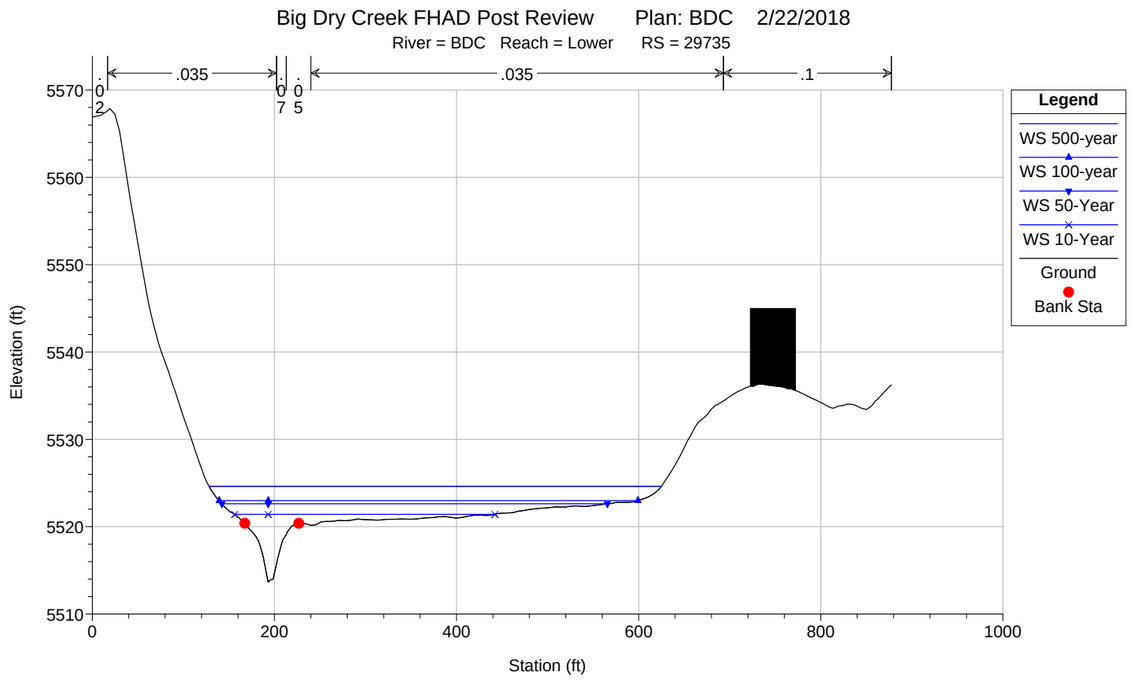
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29735
.035
.035
.1
.02
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5570
5560
5550
5540
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5520
5510
0
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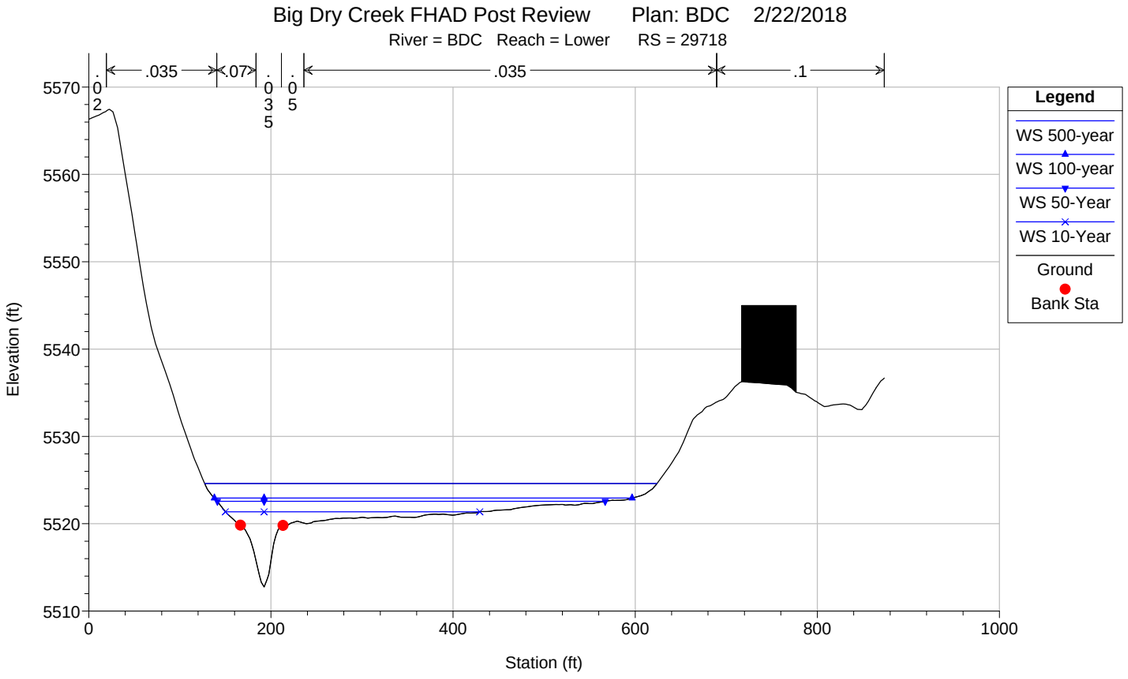
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29718
.02
.035
.07
.035
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5570
5560
5550
5540
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5510
0
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400
600
800
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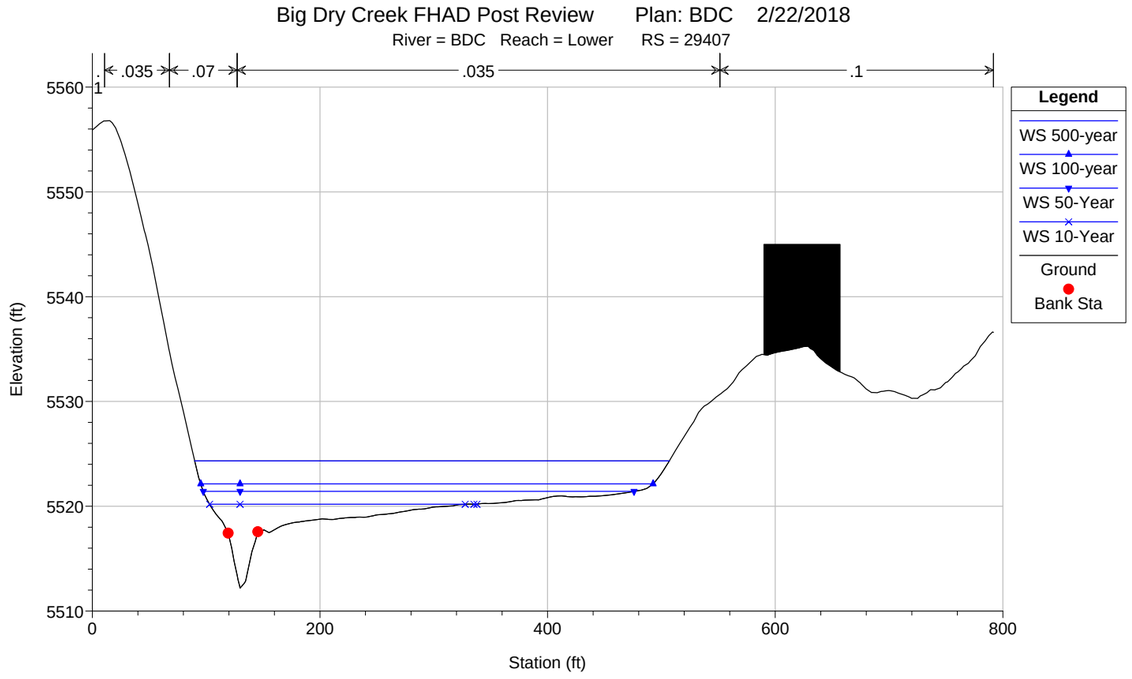
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29407
.1
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5540
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5510
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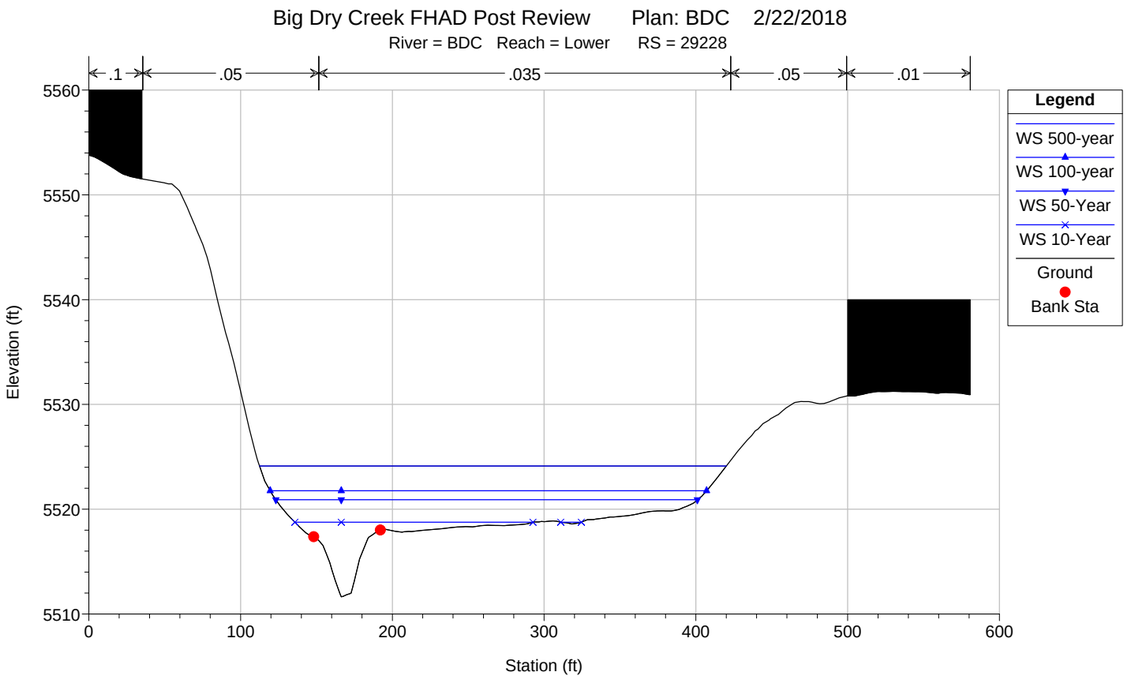
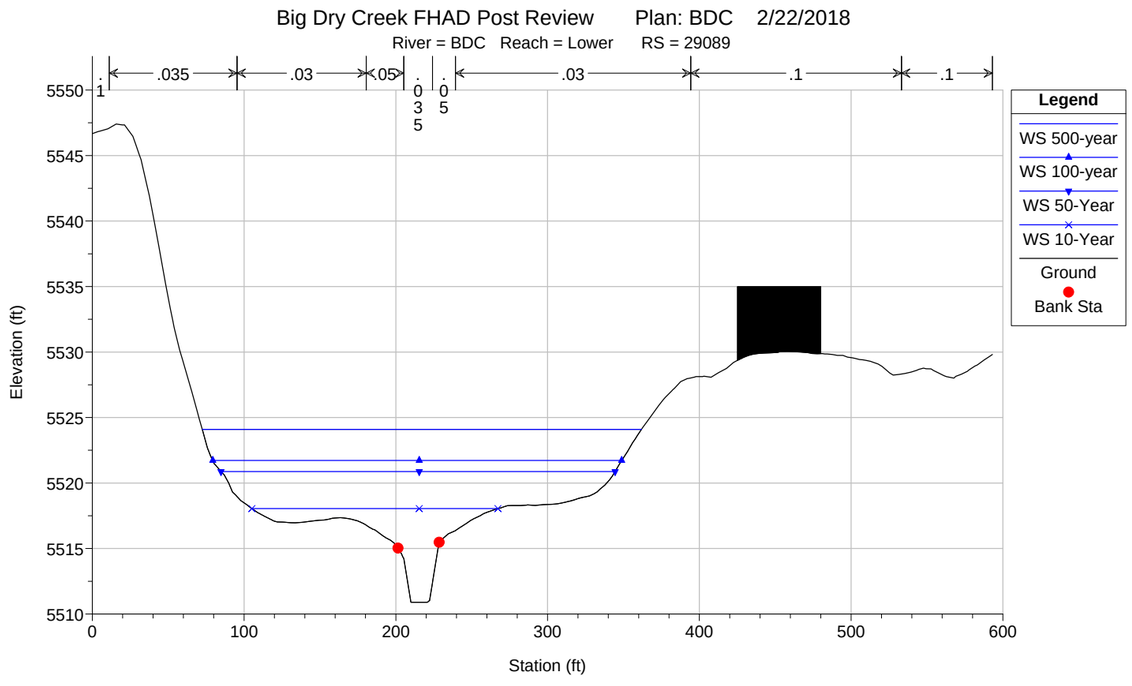
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29228
.1
.05
.035
.05
.01
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5560
5550
5540
5530
5520
5510
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29089
.1
.035
.03
.05
.035
.03
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5550
5545
5540
5535
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5525
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5515
5510
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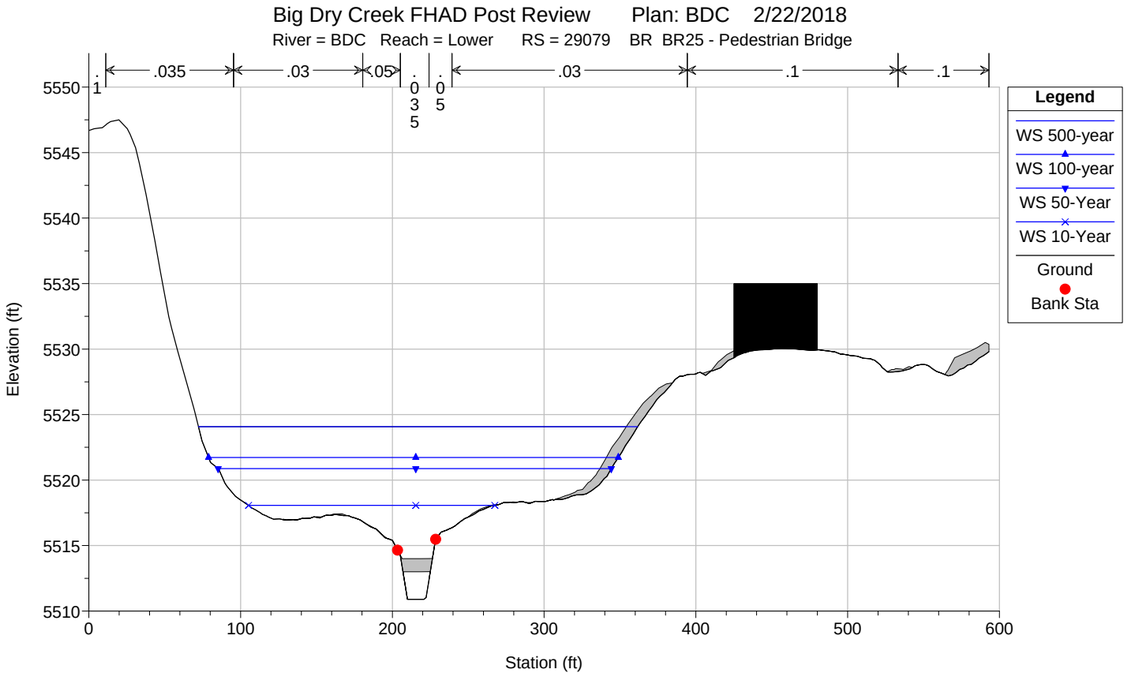
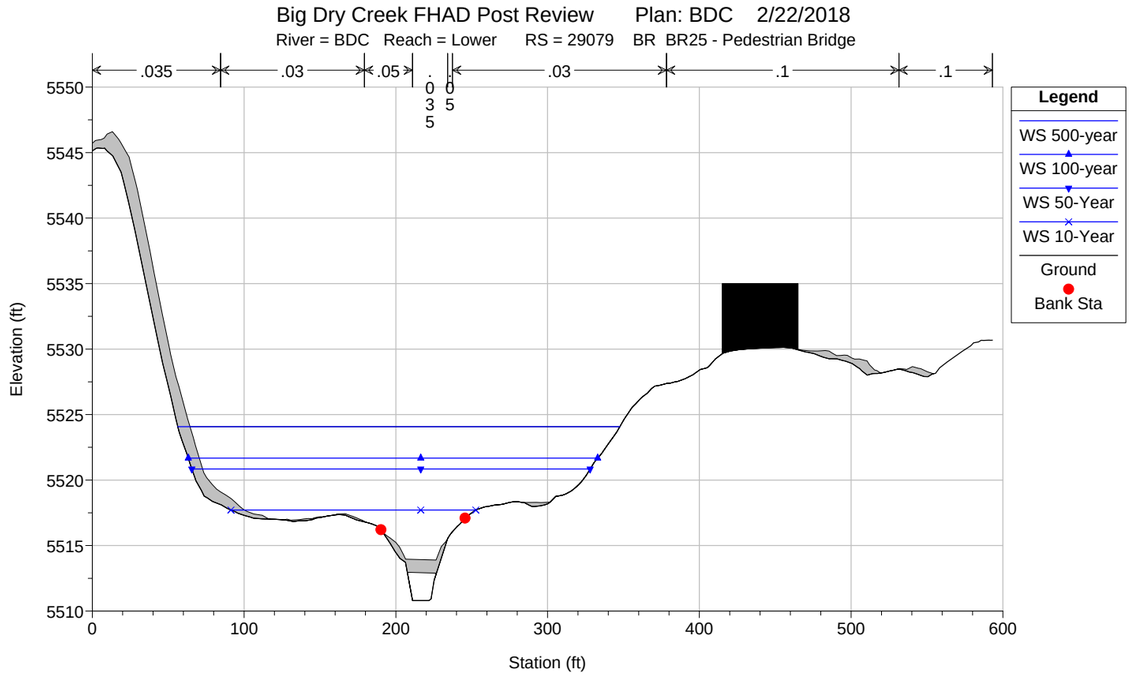
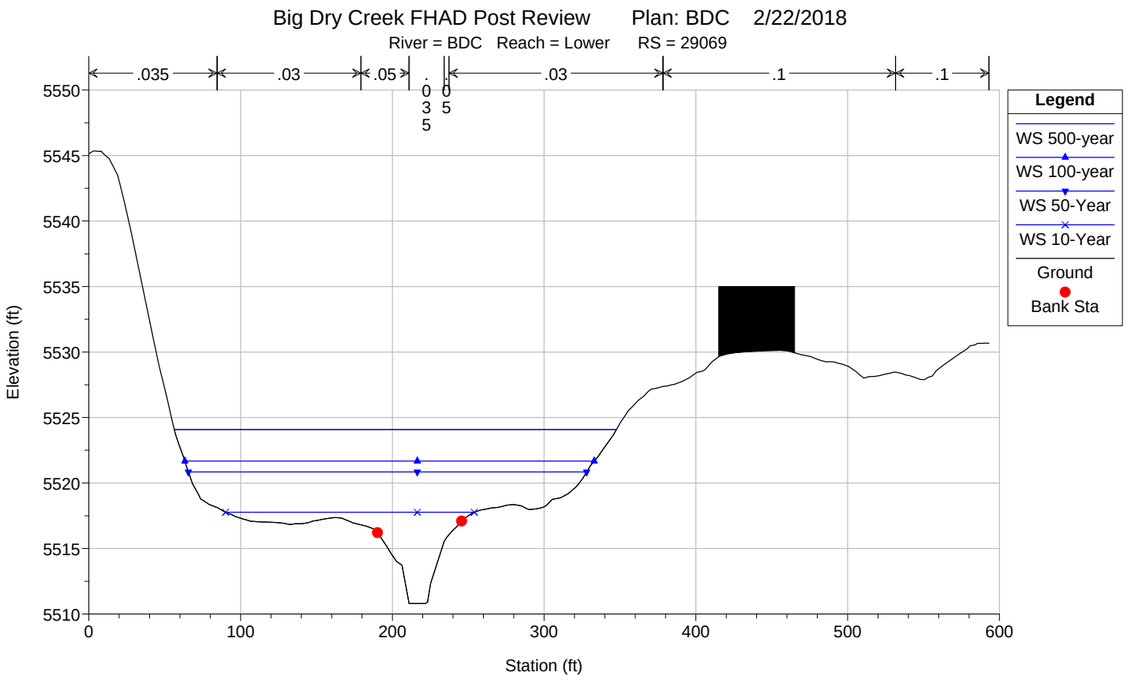
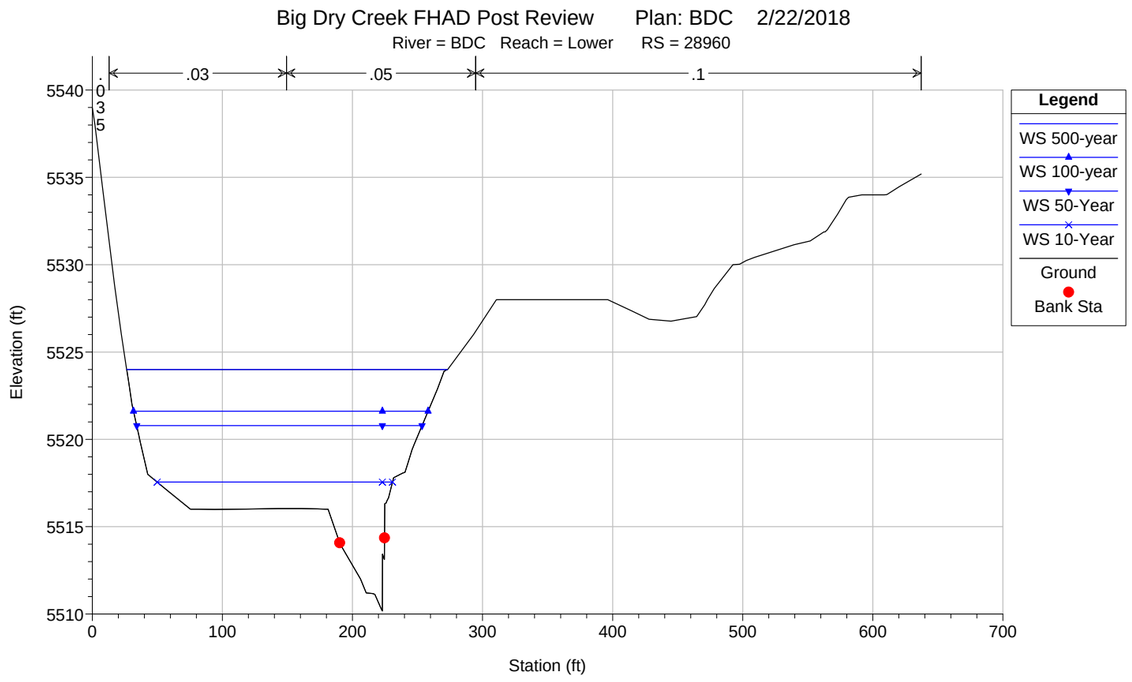
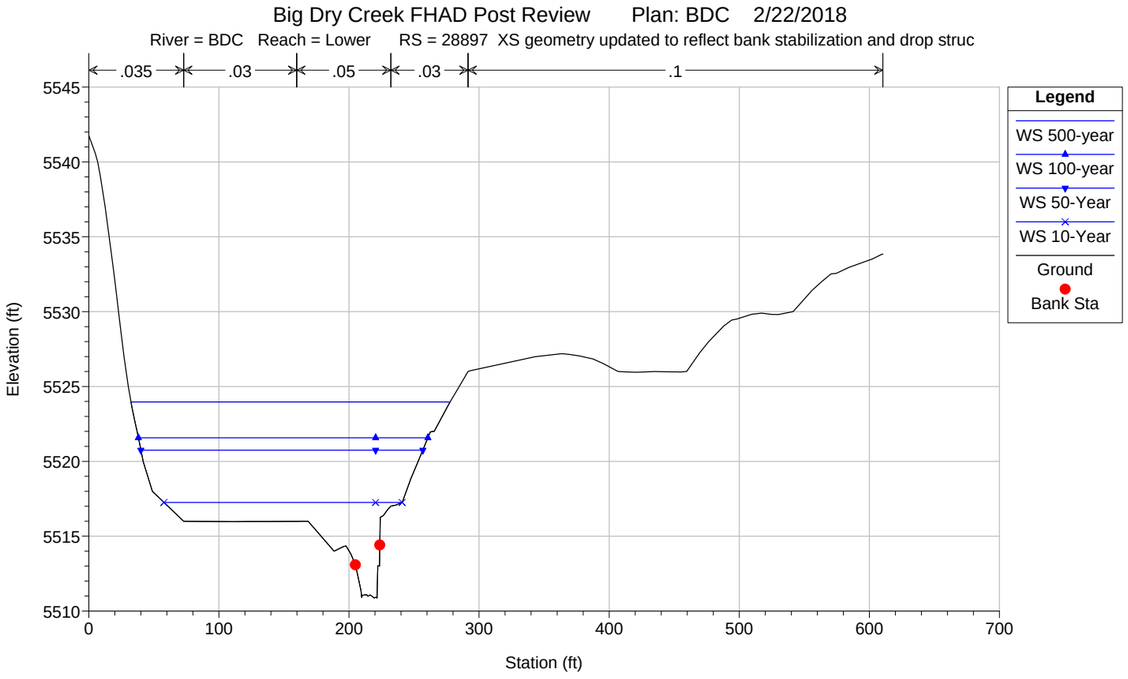
100
200
300
400
500
600

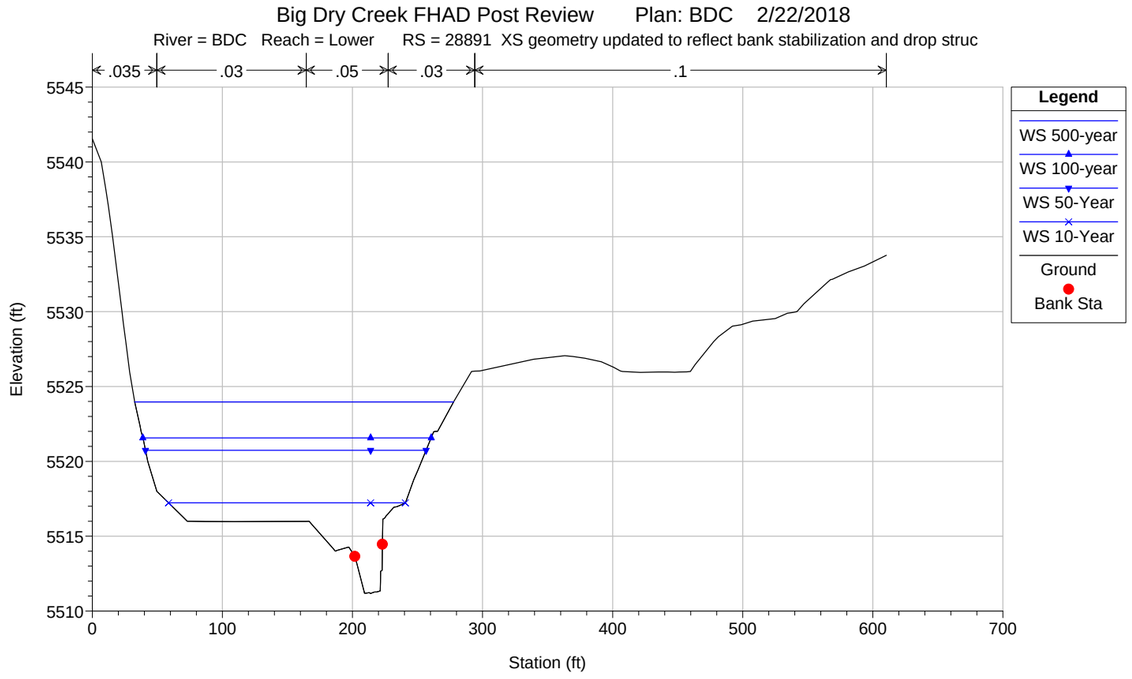

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29079 BR BR25 - Pedestrian Bridge
.035
.03
.05
.03
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

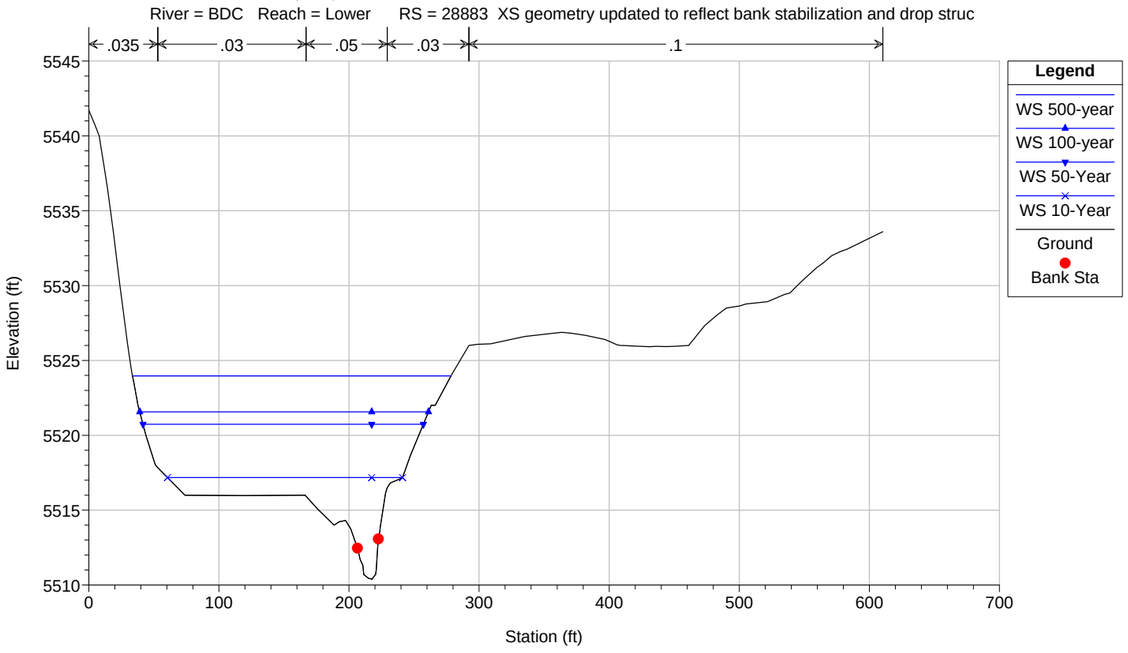

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29079 BR BR25 - Pedestrian Bridge
.035
.03
.05
.03
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

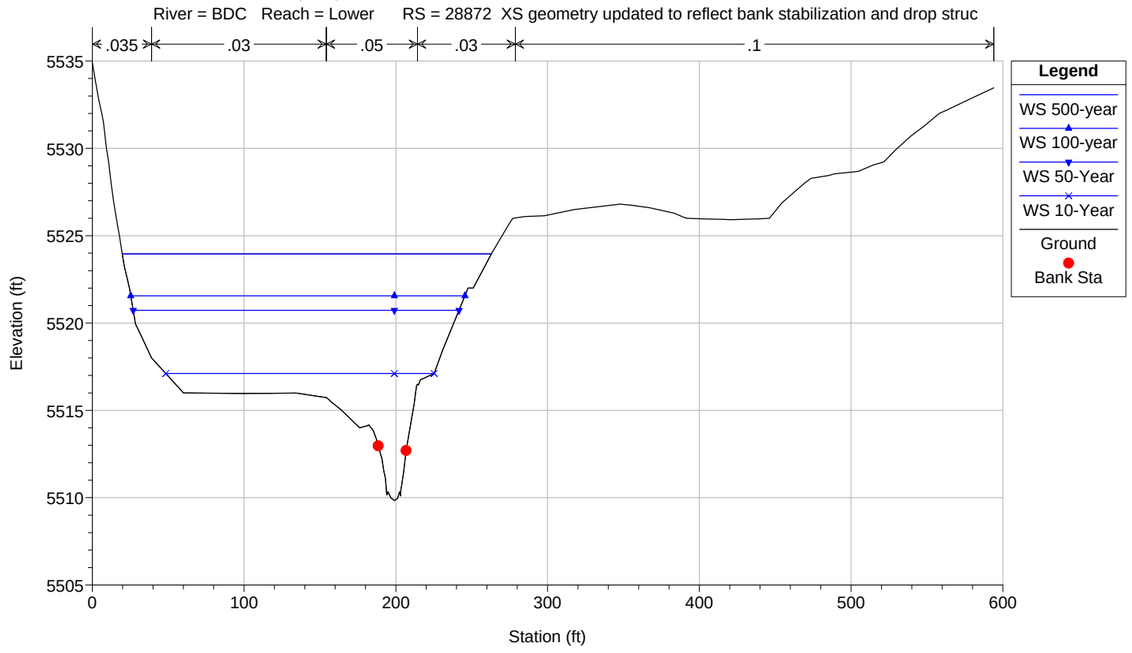

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 29069
.035
.03
.05
.03
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

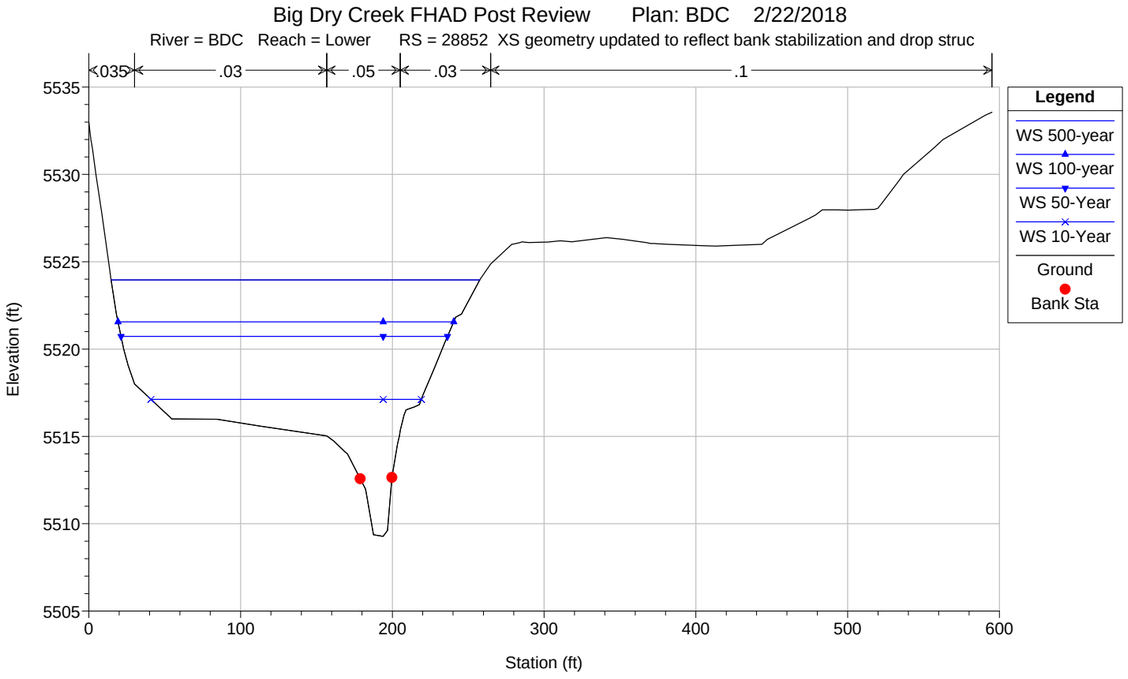

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28960
.03
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28897 XS geometry updated to reflect bank stabilization and drop struc
.035
.03
.05
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28891 XS geometry updated to reflect bank stabilization and drop struc
.035
.03
.05
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28883 XS geometry updated to reflect bank stabilization and drop struc
.035
.03
.05
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28872 XS geometry updated to reflect bank stabilization and drop struc
.035
.03
.05
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28852 XS geometry updated to reflect bank stabilization and drop struc
.035
.03
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5535
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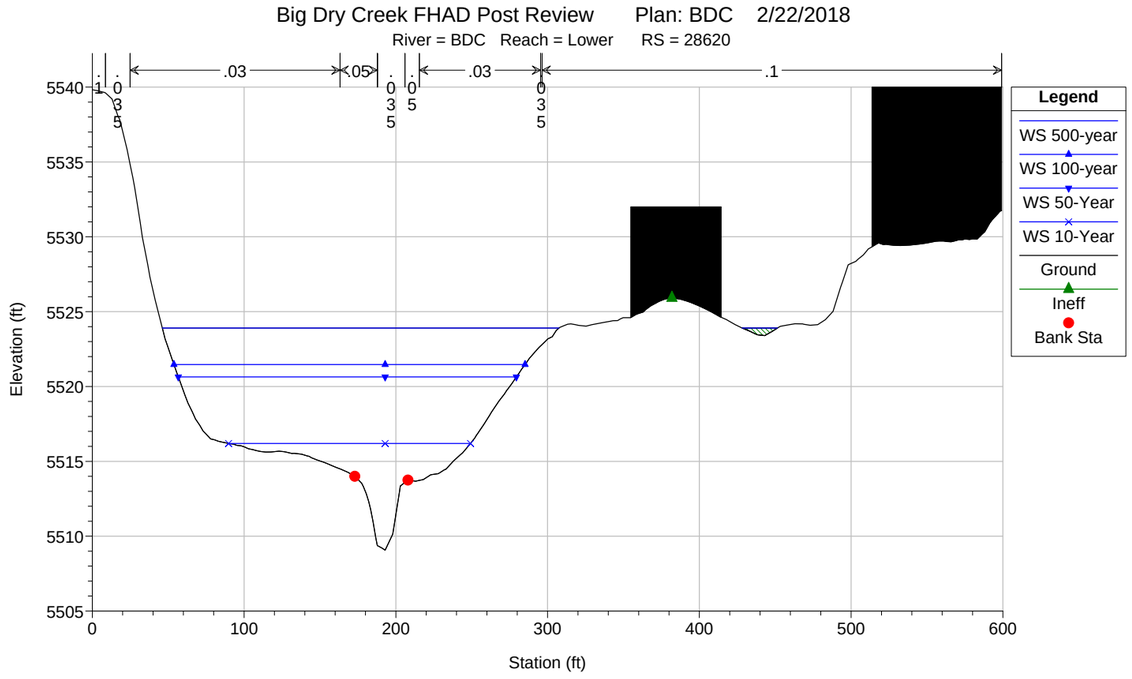
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28620
.1
.03
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5530
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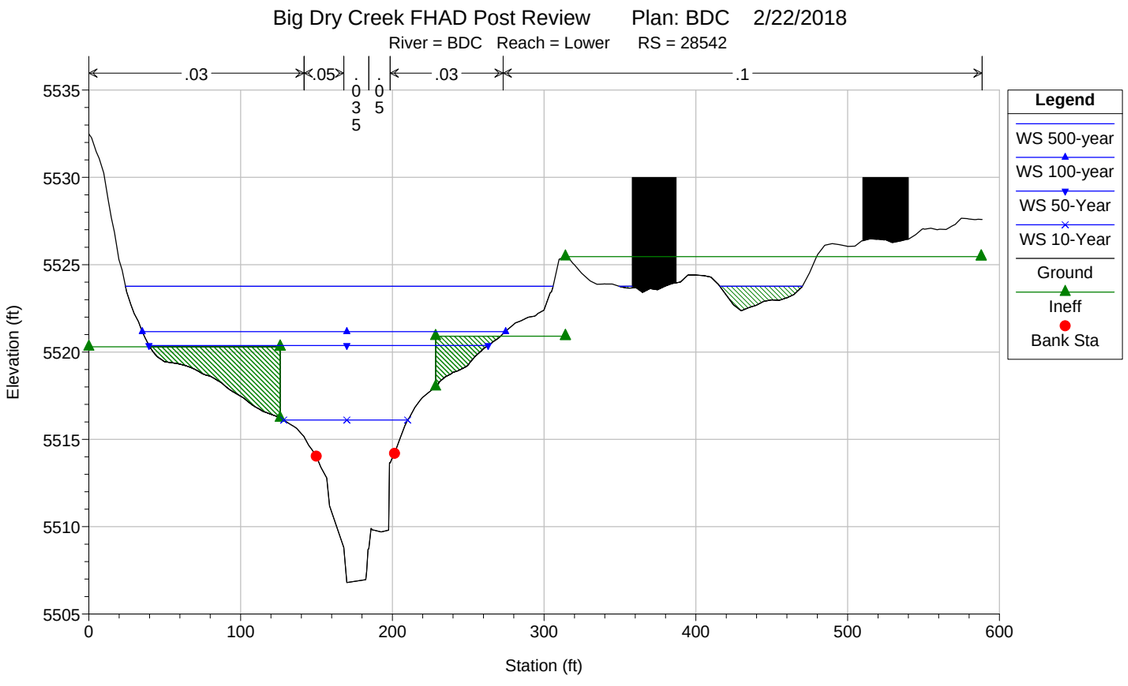
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28542
.03
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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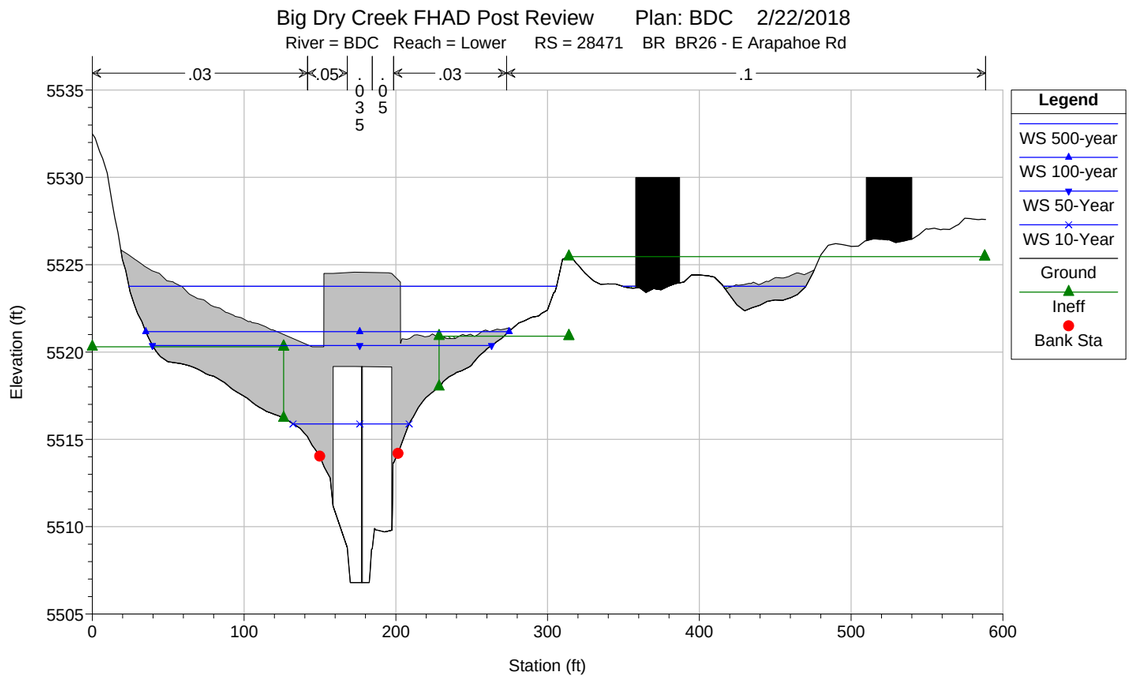
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28471 BR BR26 - E Arapahoe Rd
.03
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5535
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5520
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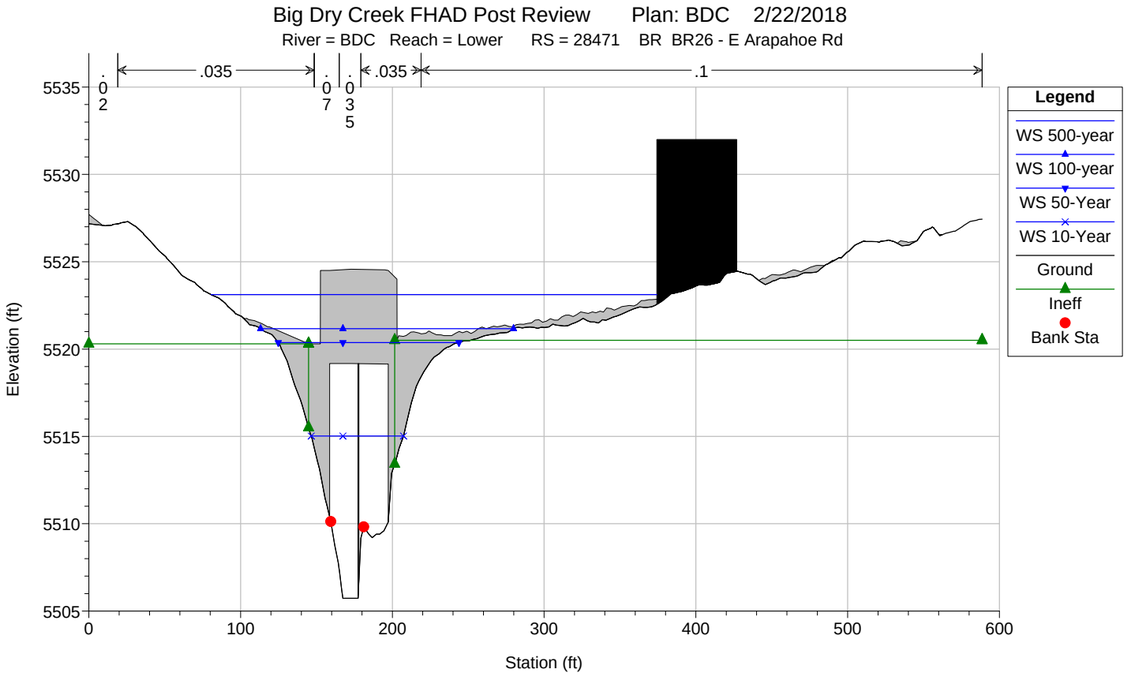
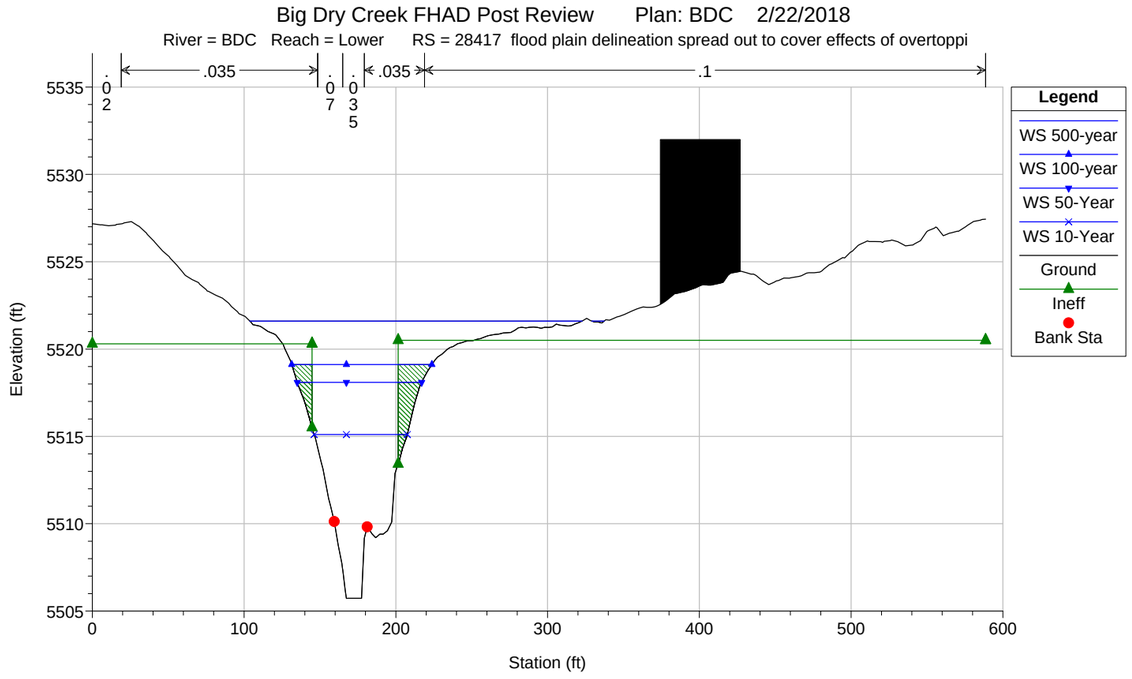
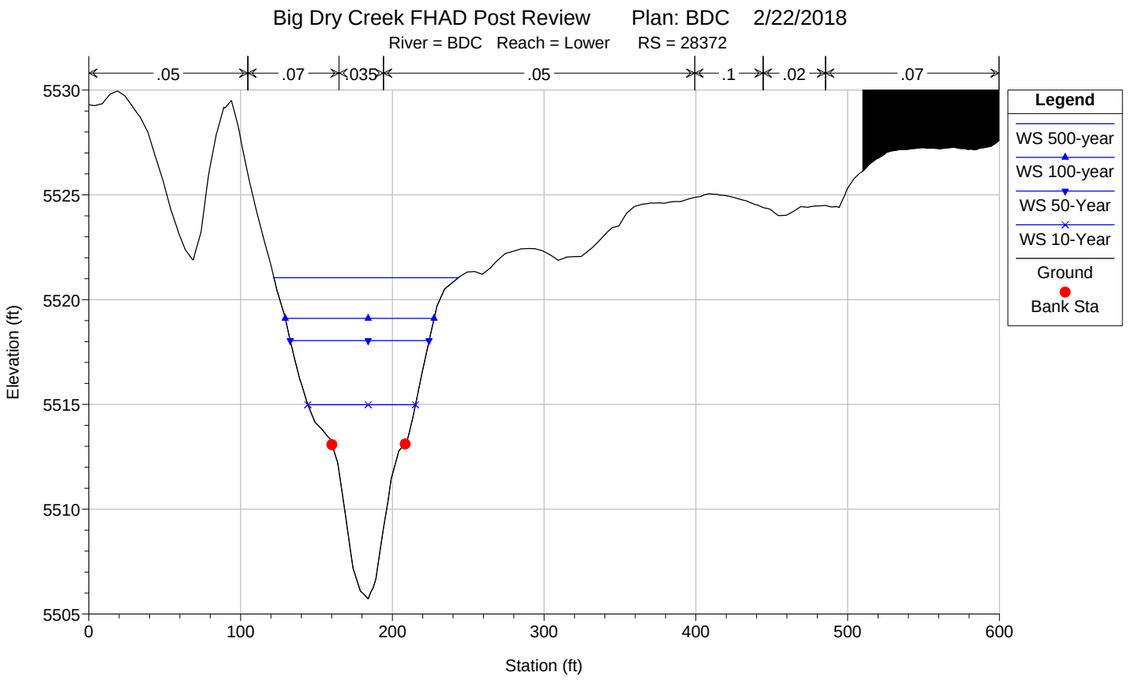
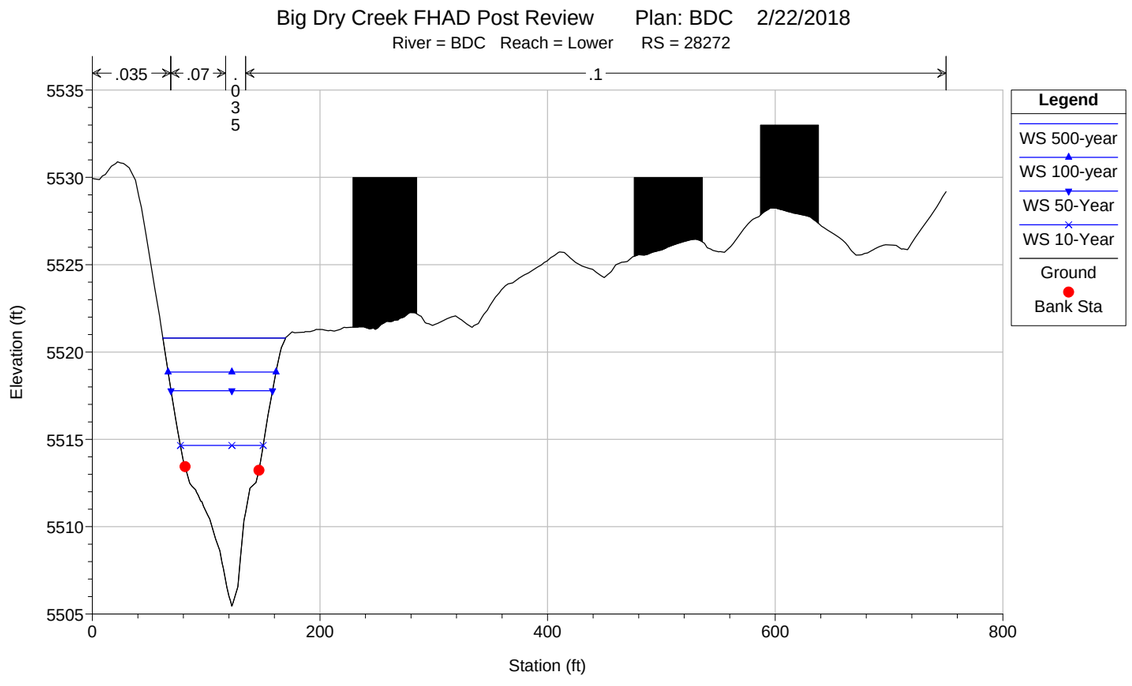
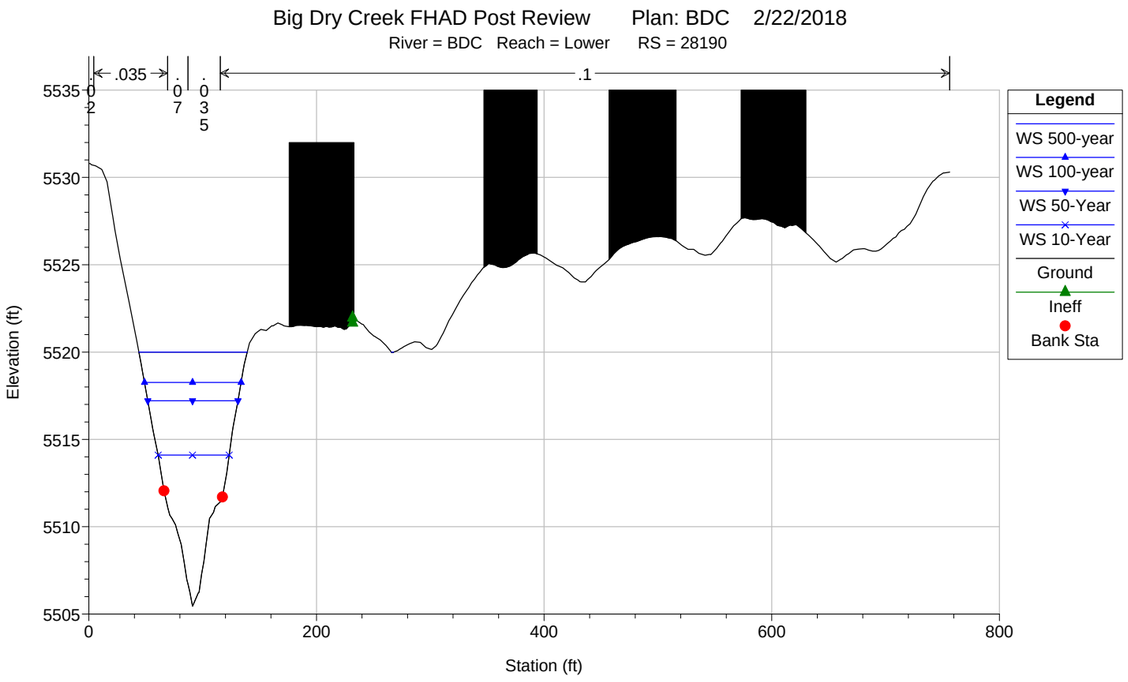
5510
5505
0
100
200
300
400
500
600

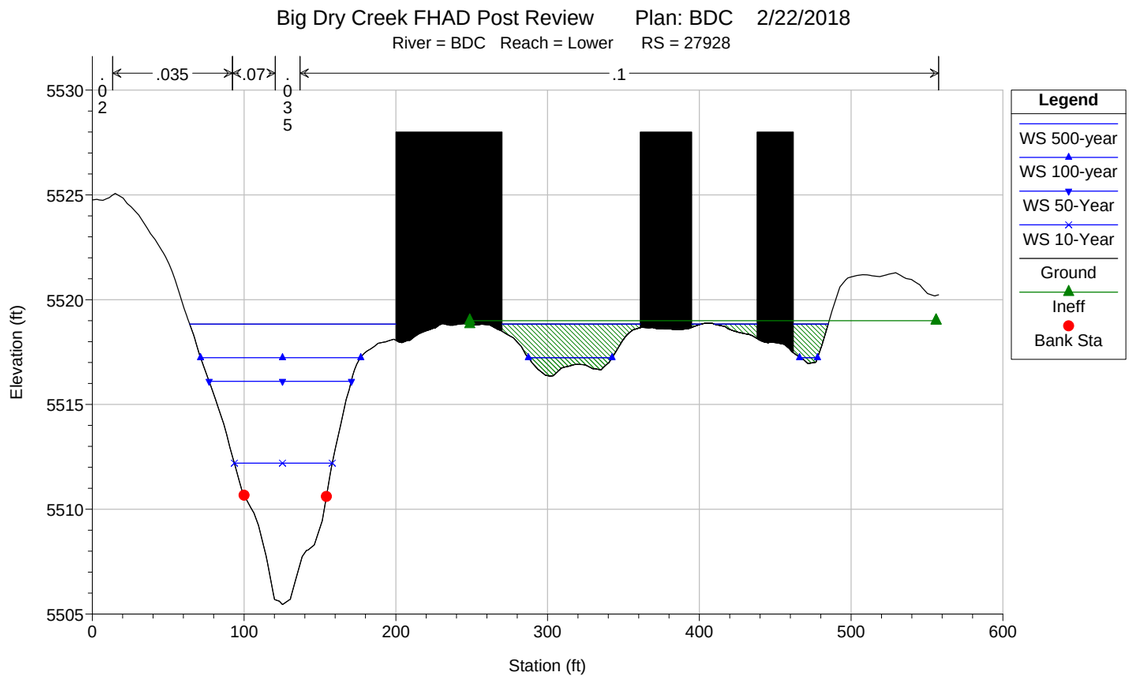

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28471 BR BR26 - E Arapahoe Rd
.02
.035
.07
.035
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5535
5530
5525
5520
5515
5510
5505
0
100
200
300
400
500
600

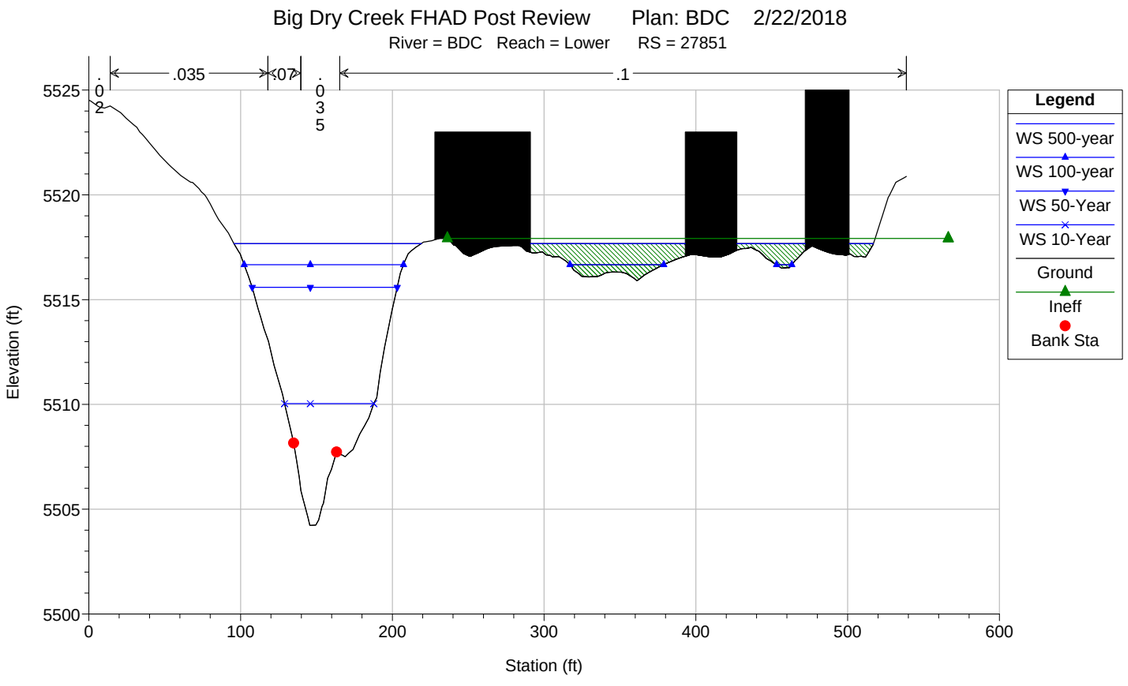

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28417 flood plain delineation spread out to cover effects of overtoppi
.02
.035
.07
.035
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5535
5530
5525
5520
5515
5510
5505
0
100
200
300
400
500
600

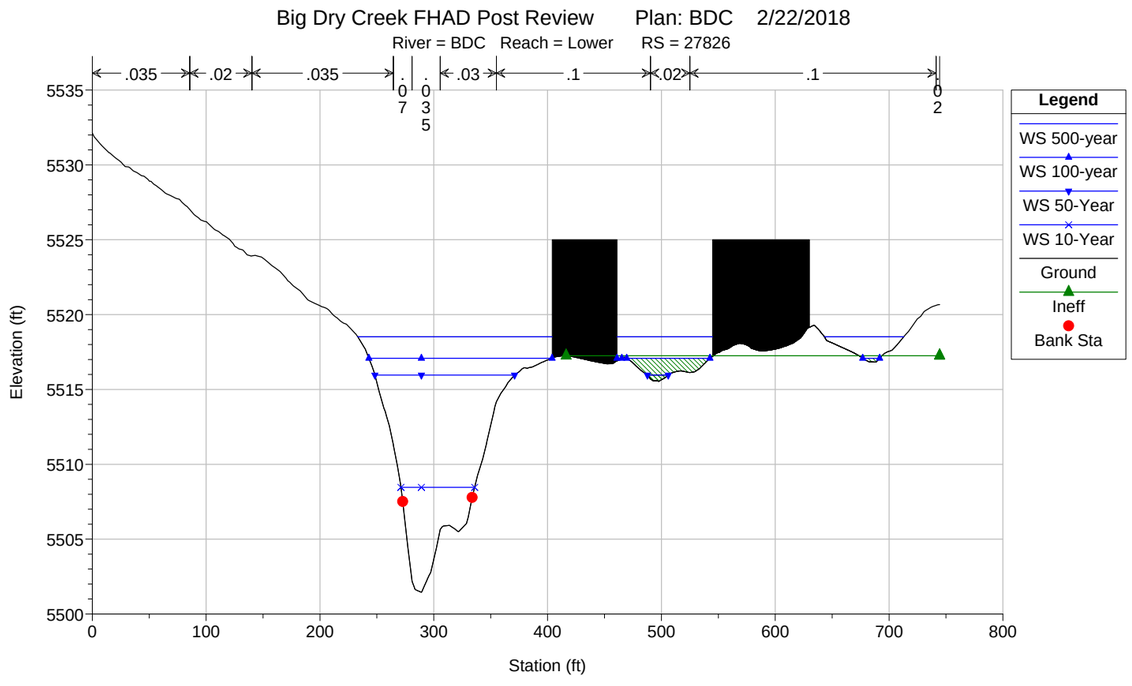

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28372
.05
.07
035
.05
.1
.02
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5530
5525
5520
5515
5510
5505
0
100
200
300
400
500
600

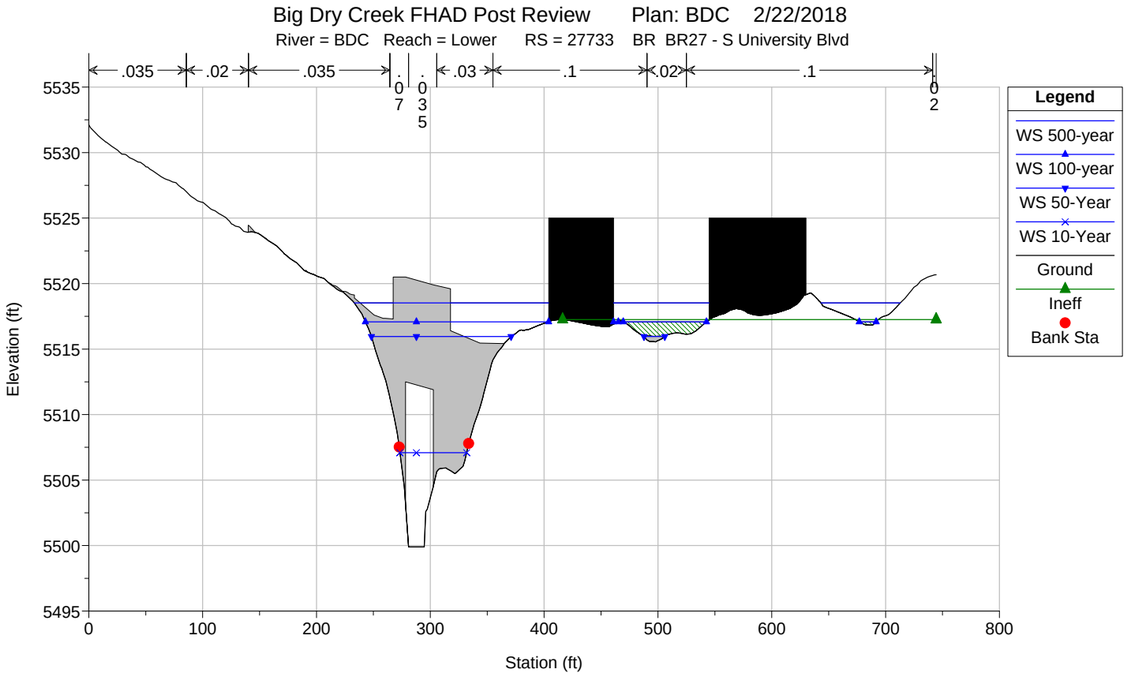

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28272
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5535
5530
5525
5520
5515
5510
5505
0
200
400
600
800

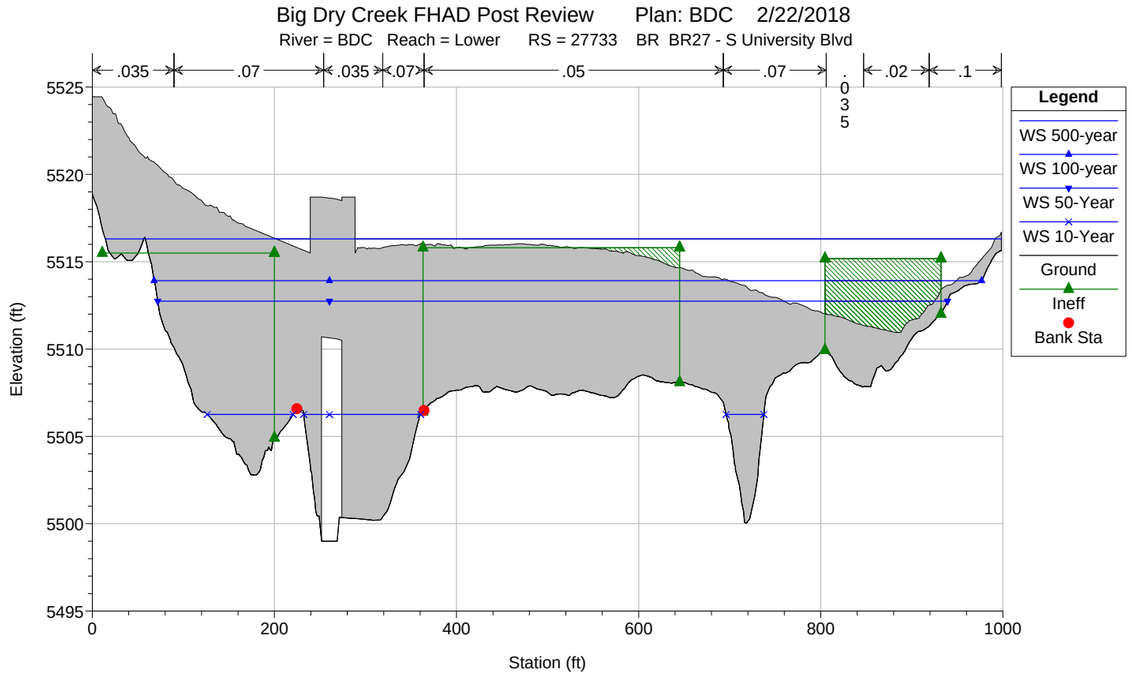

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 28190
.02
.035
.07
.035
.1
Elevation (ft)
Station (ft)
5535
5530
5525
5520
5515
5510
5505
0
200
400
600
800
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

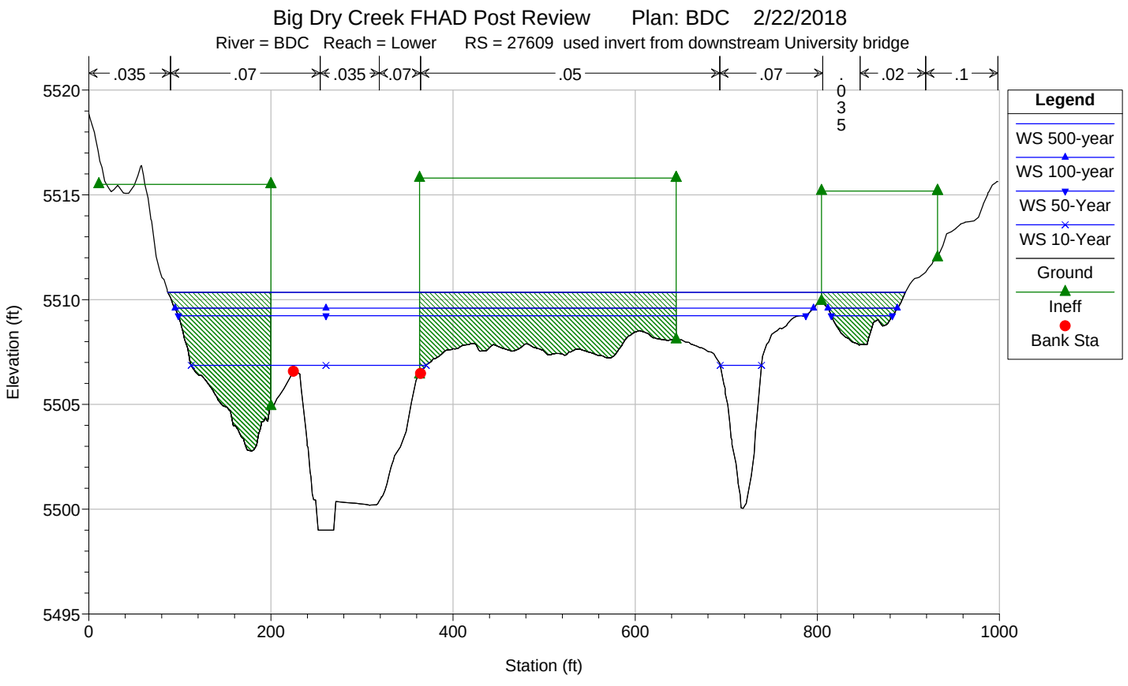

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27928
.02
.035
.07
.035
.1
Elevation (ft)
Station (ft)
5530
5525
5520
5515
5510
5505
0
100
200
300
400
500
600
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

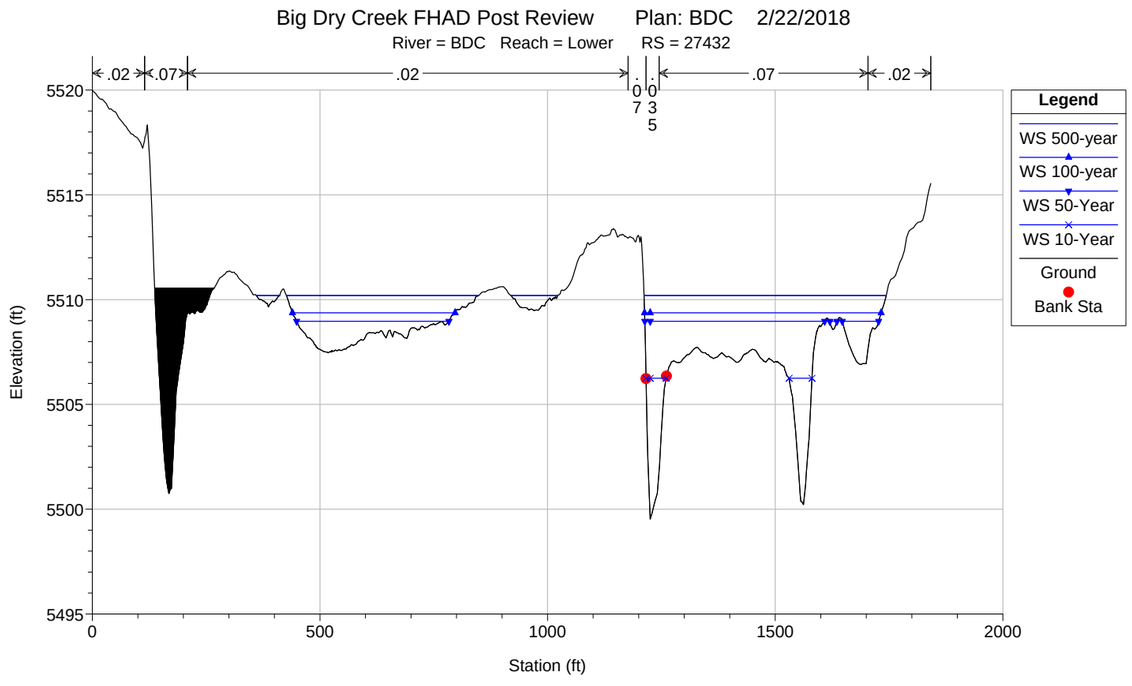

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27851
.02
.035
.07
.035
.1
Elevation (ft)
Station (ft)
5525
5520
5515
5510
5505
5500
0
100
200
300
400
500
600
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

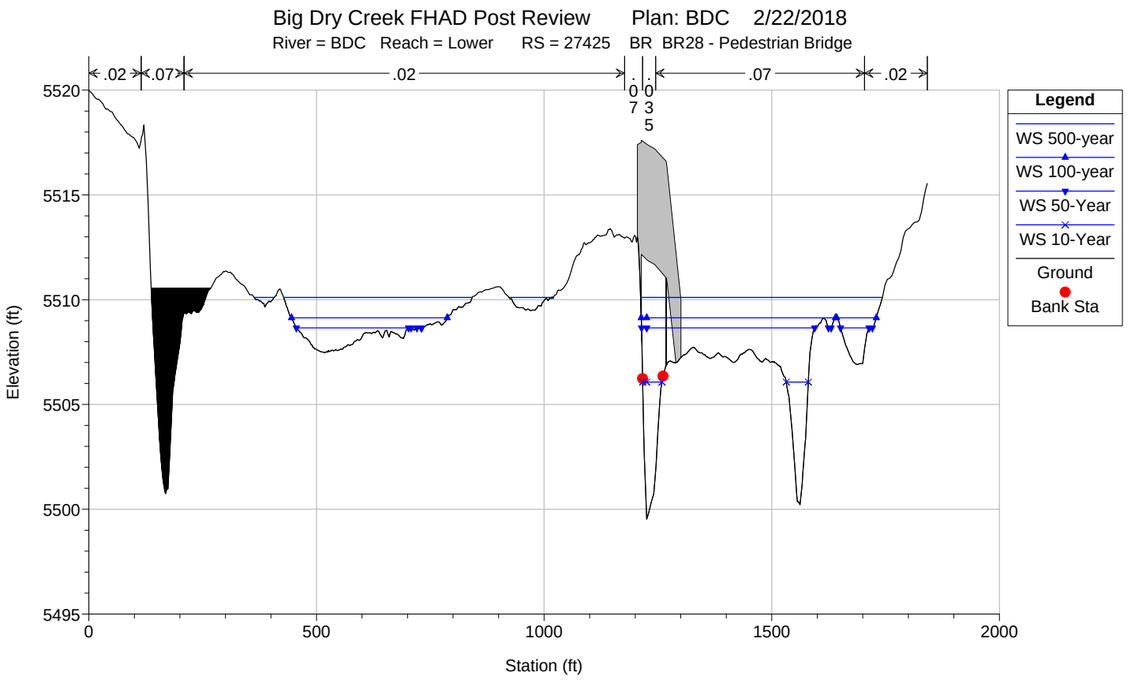

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27826
.035
.02
.035
.07
.035
.03
.1
.02
.1
.02
Elevation (ft)
Station (ft)
5535
5530
5525
5520
5515
5510
5505
5500
0
100
200
300
400
500
600
700
800
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

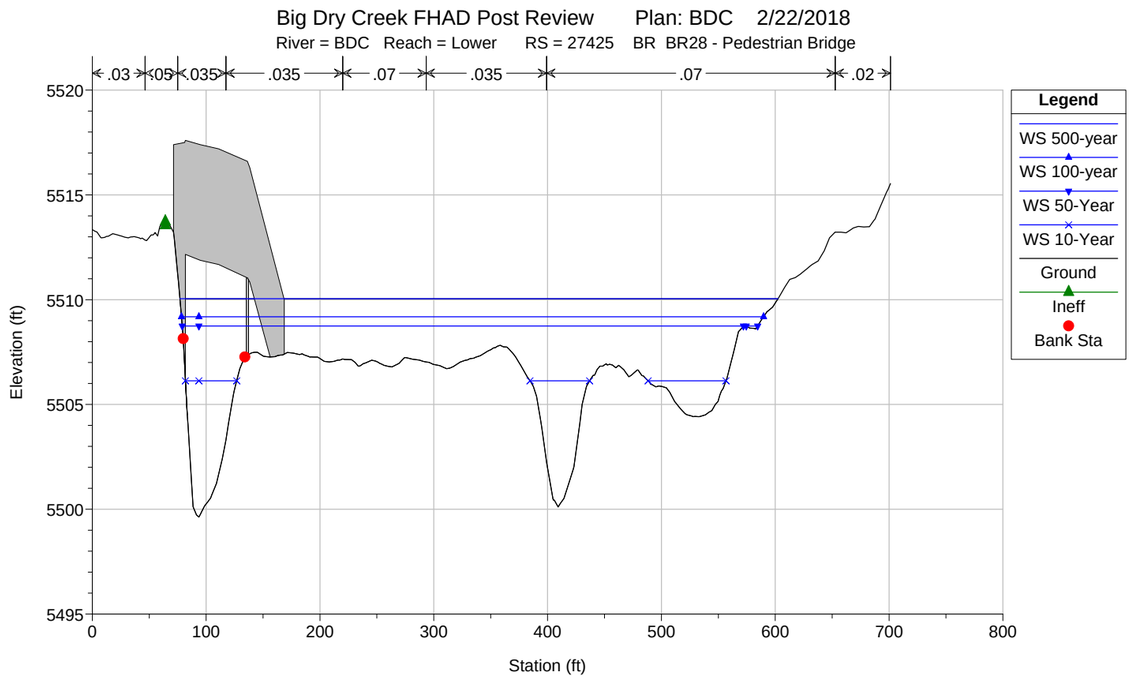

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27733 BR BR27 - S University Blvd
.035 .02 .035 .07 .035 .03 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

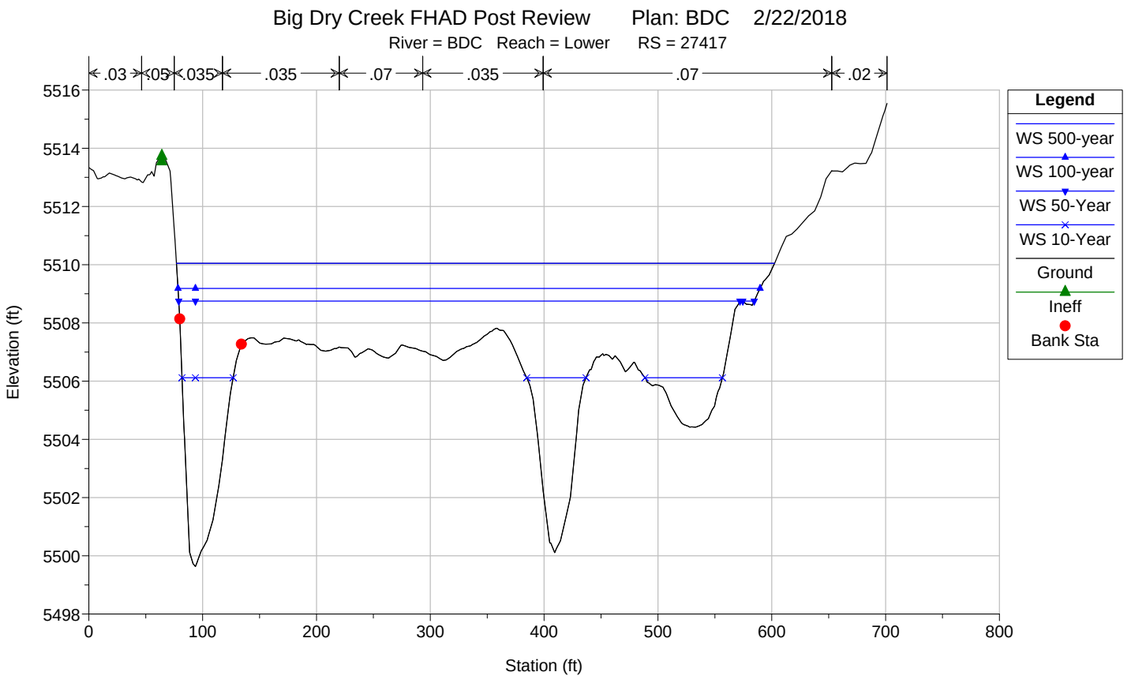

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27733 BR BR27 - S University Blvd
.035 .07 .035 .07 .05 .07 .035 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

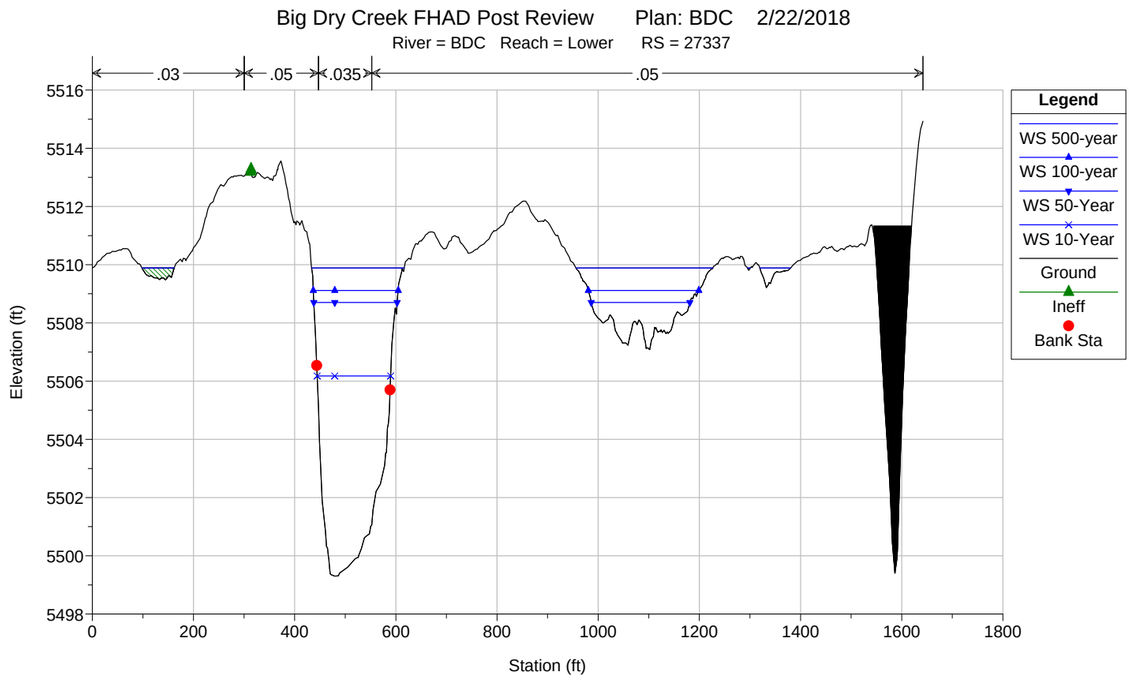

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27609 used invert from downstream University bridge
.035 .07 .035 .07 .05 .07 .035 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

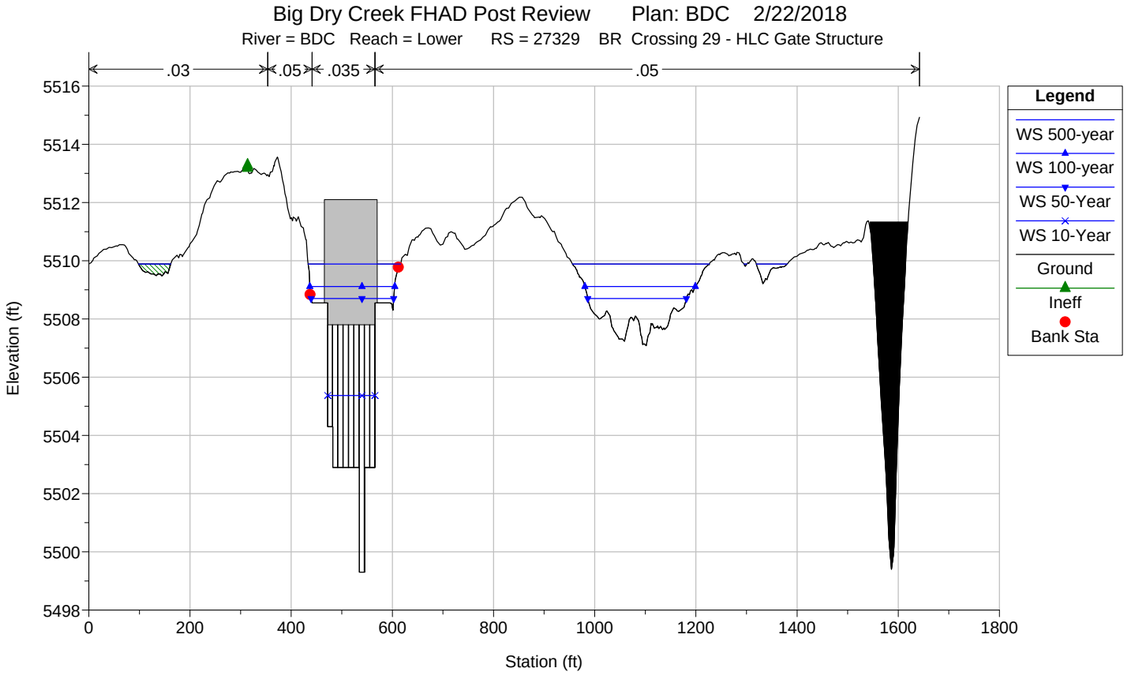

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27432
.02 .07 .02 .07 .02 .07 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

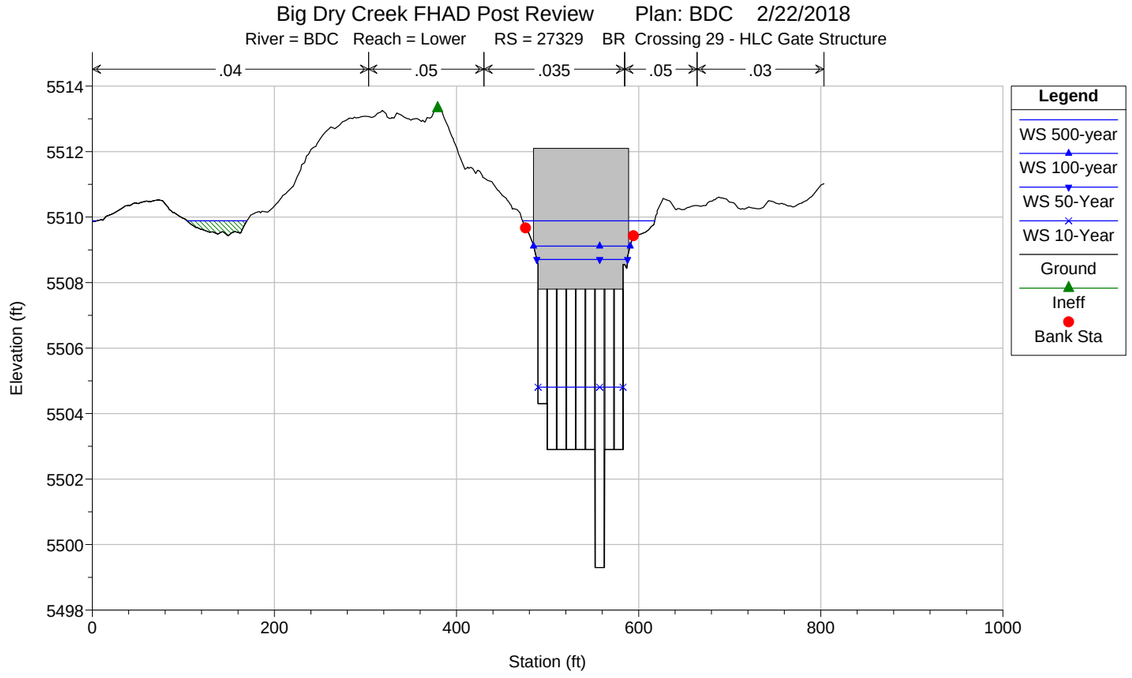

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27425 BR BR28 - Pedestrian Bridge
.02
.07
.02
.07
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

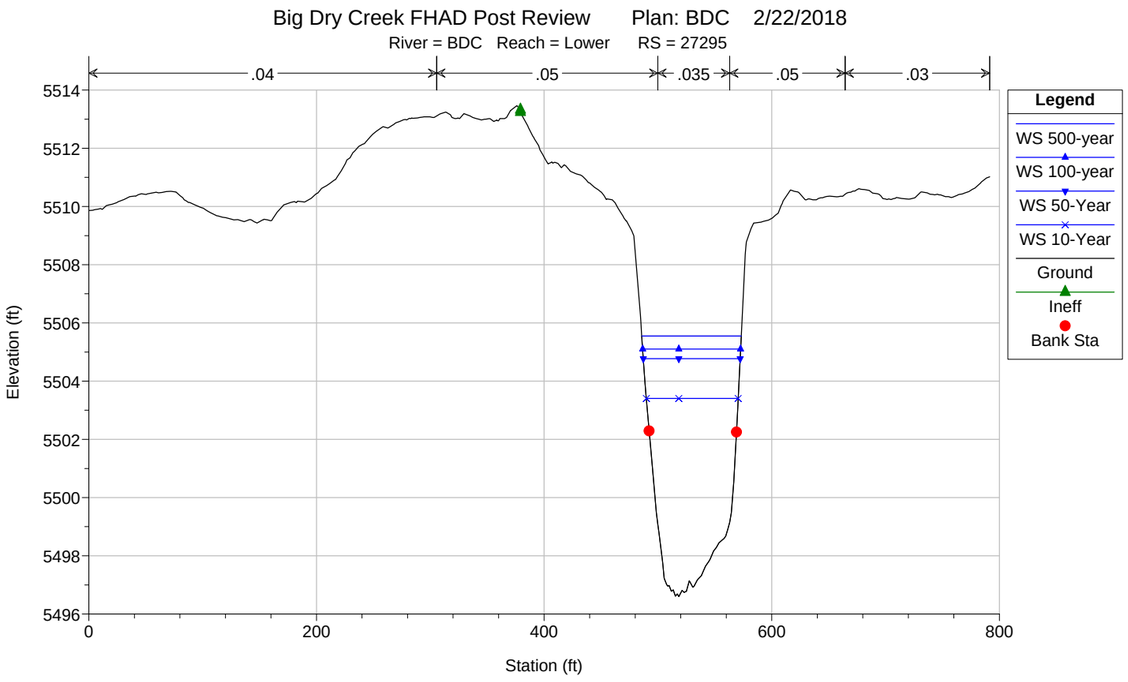

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27425 BR BR28 - Pedestrian Bridge
.03
.05
.035
.035
.07
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

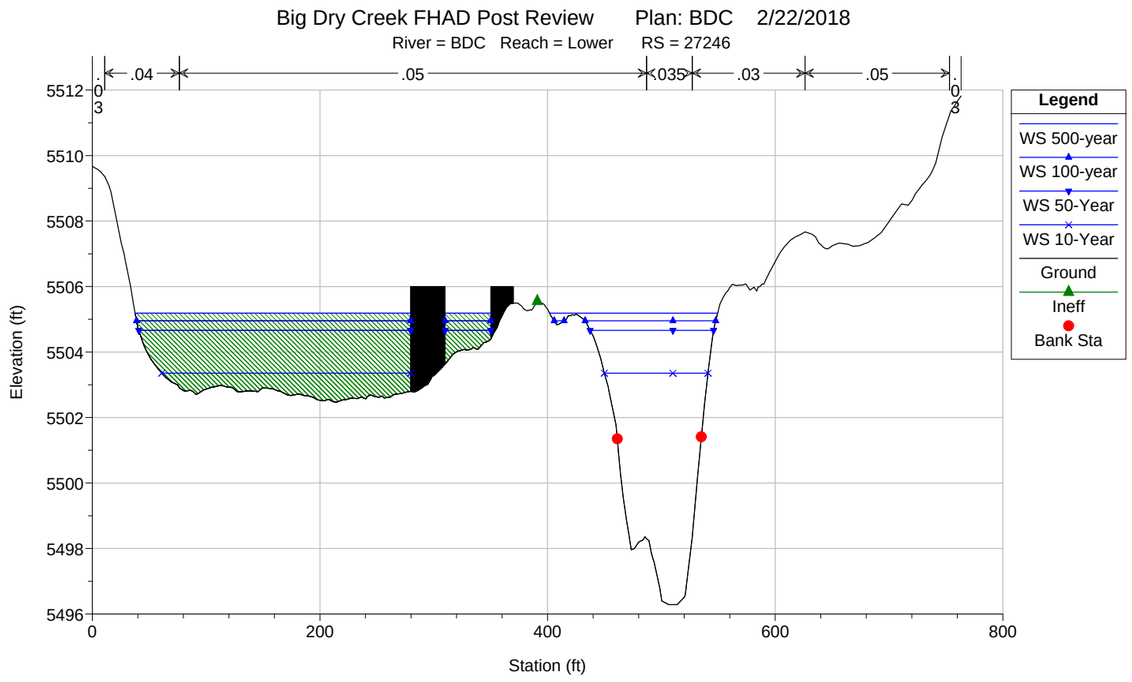

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27417
.03
.05
.035
.035
.07
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

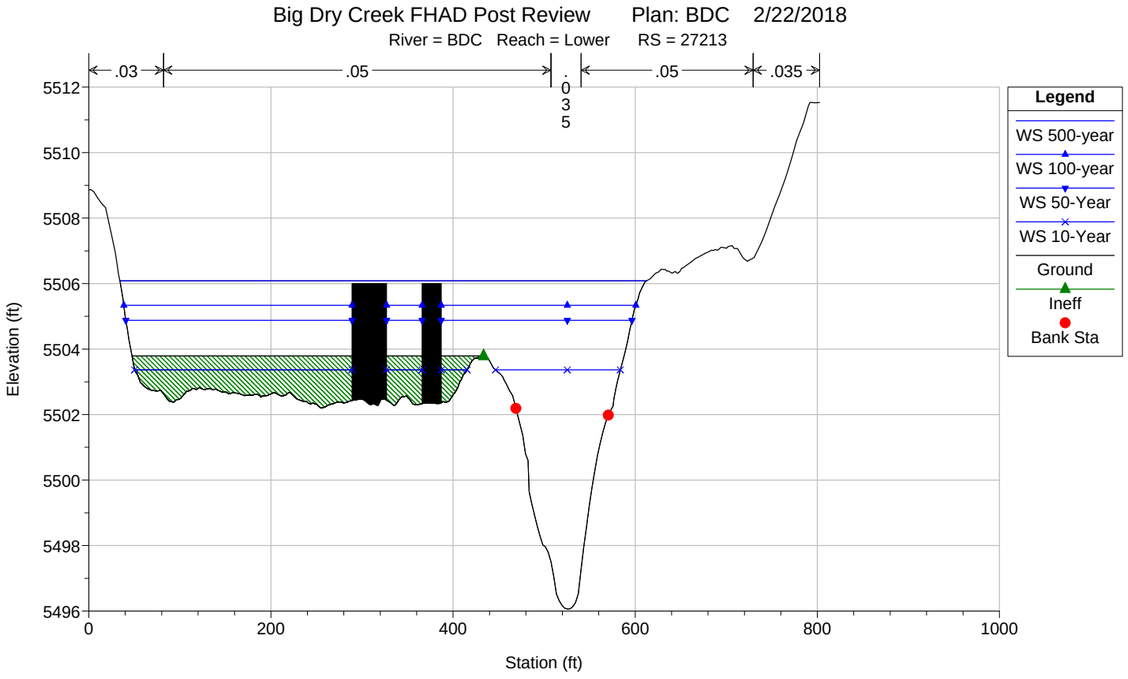

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27337
.03
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

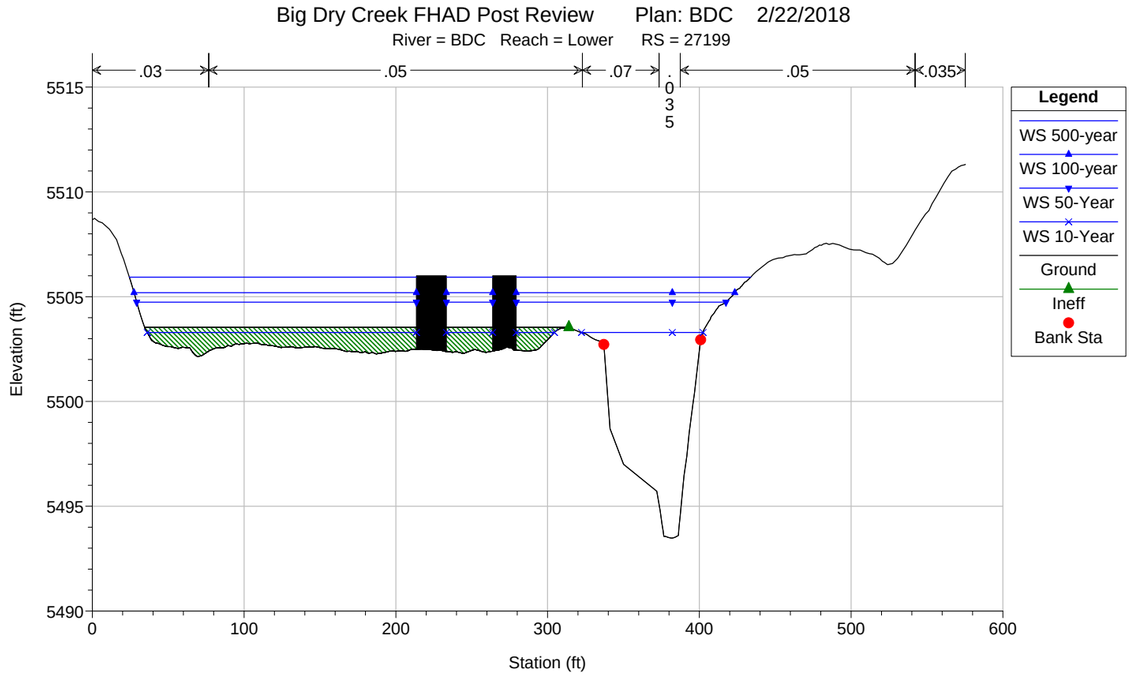

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27329 BR Crossing 29 - HLC Gate Structure
.03
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

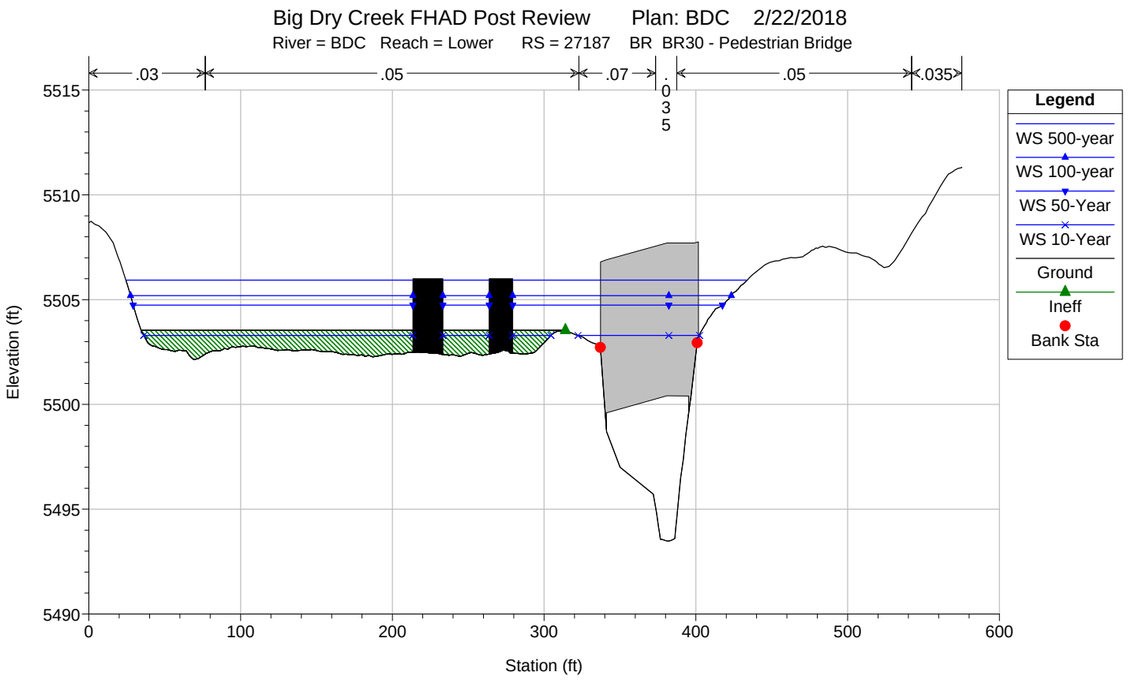

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27329 BR Crossing 29 - HLC Gate Structure
.04
.05
.035
.05
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

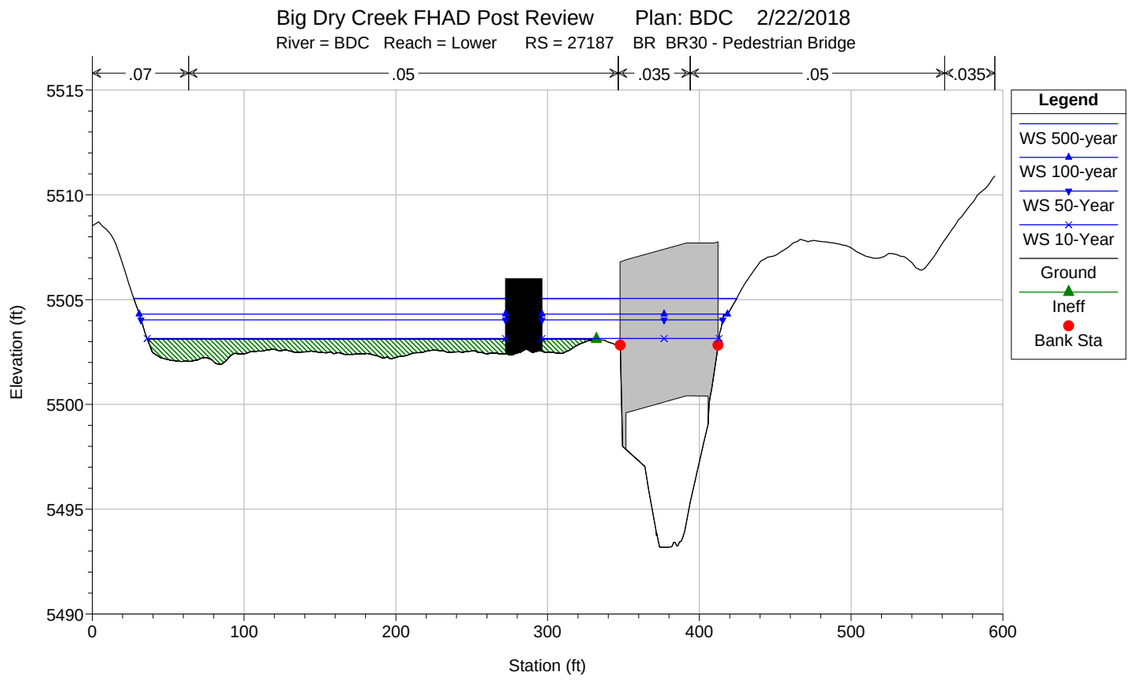

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27295
.04
.05
.035
.05
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

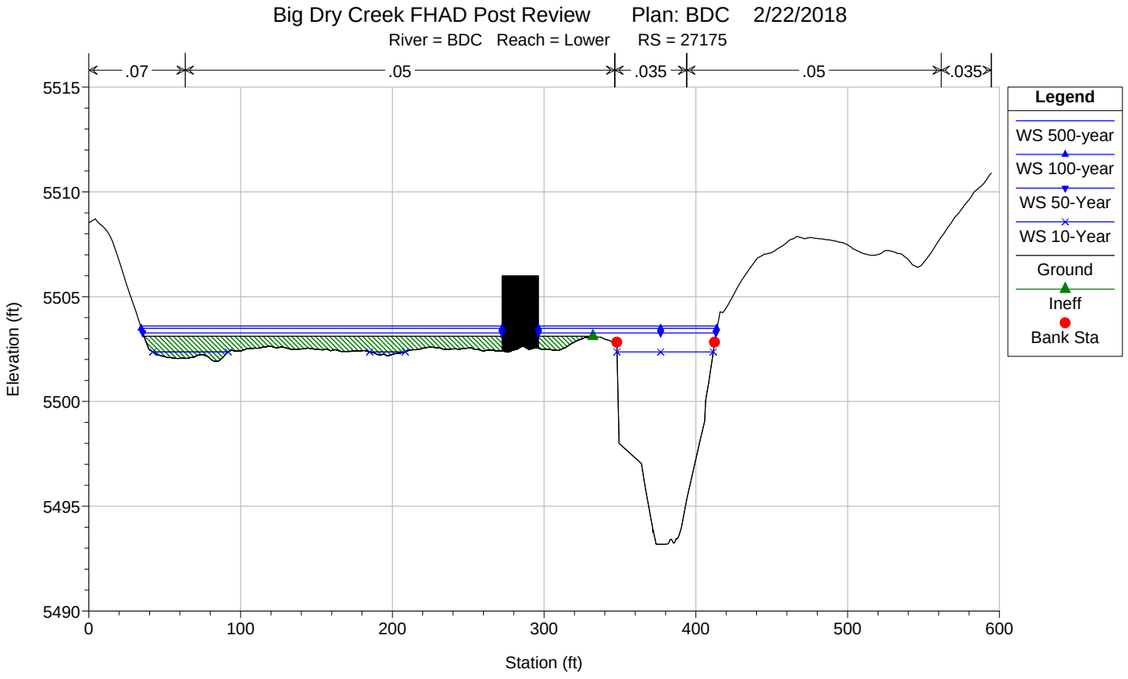

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27246
.03
.04
.05
.035
.03
.05
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

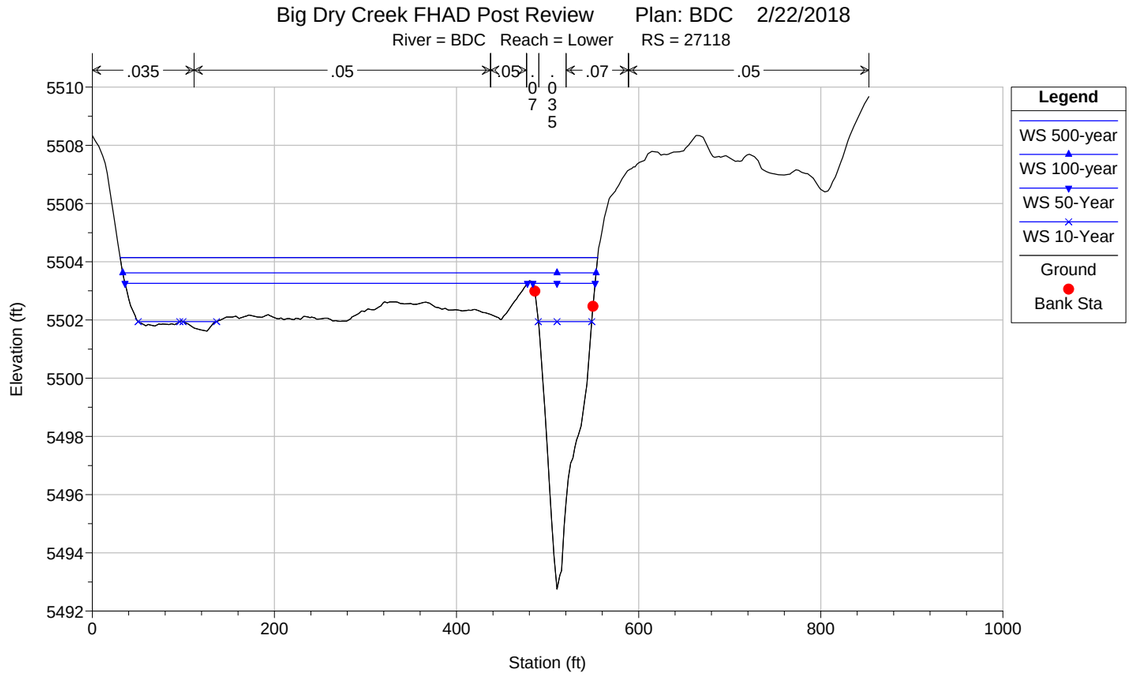

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27213
.03
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

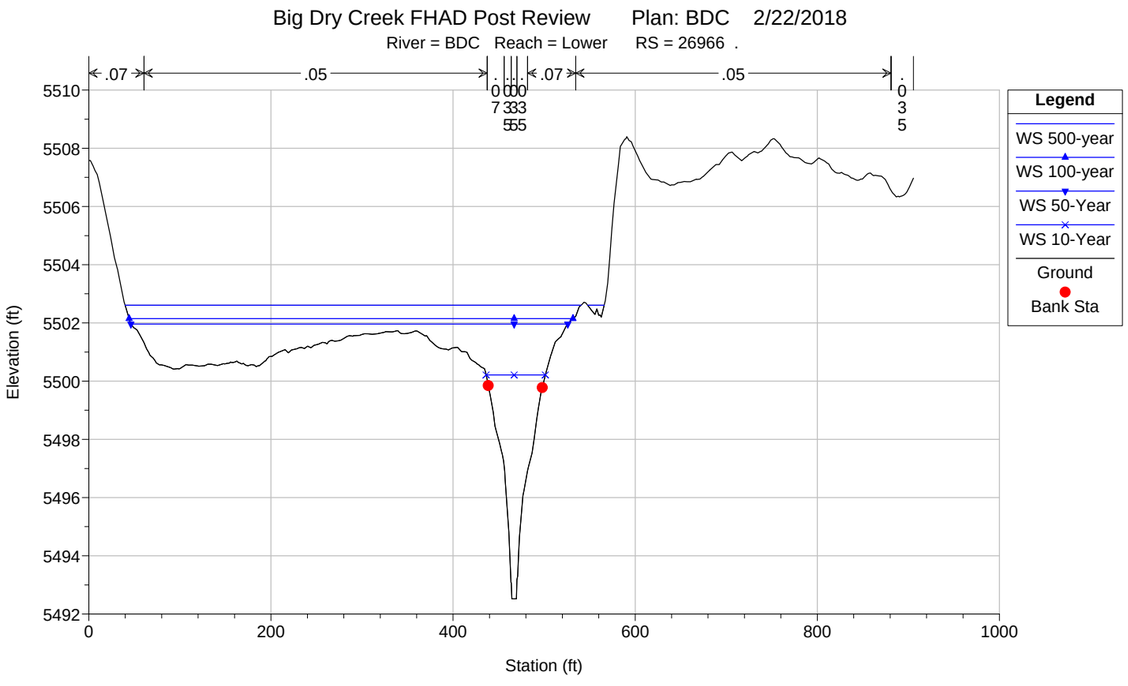

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27199
.03
.05
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

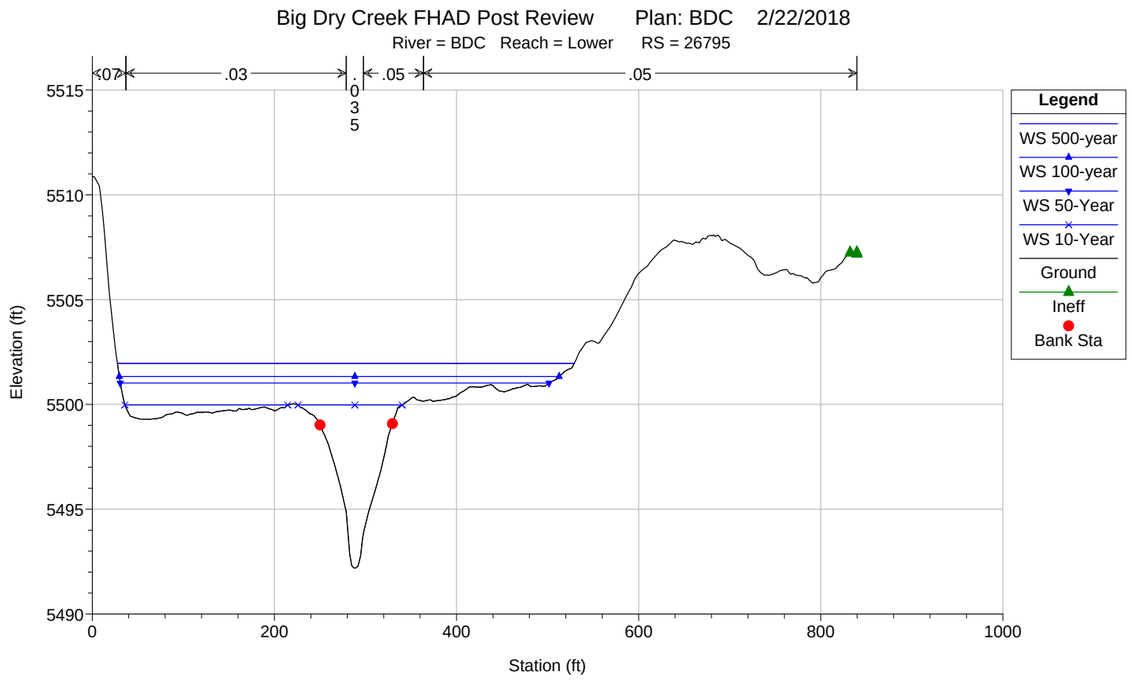

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27187 BR BR30 - Pedestrian Bridge
.03
.05
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

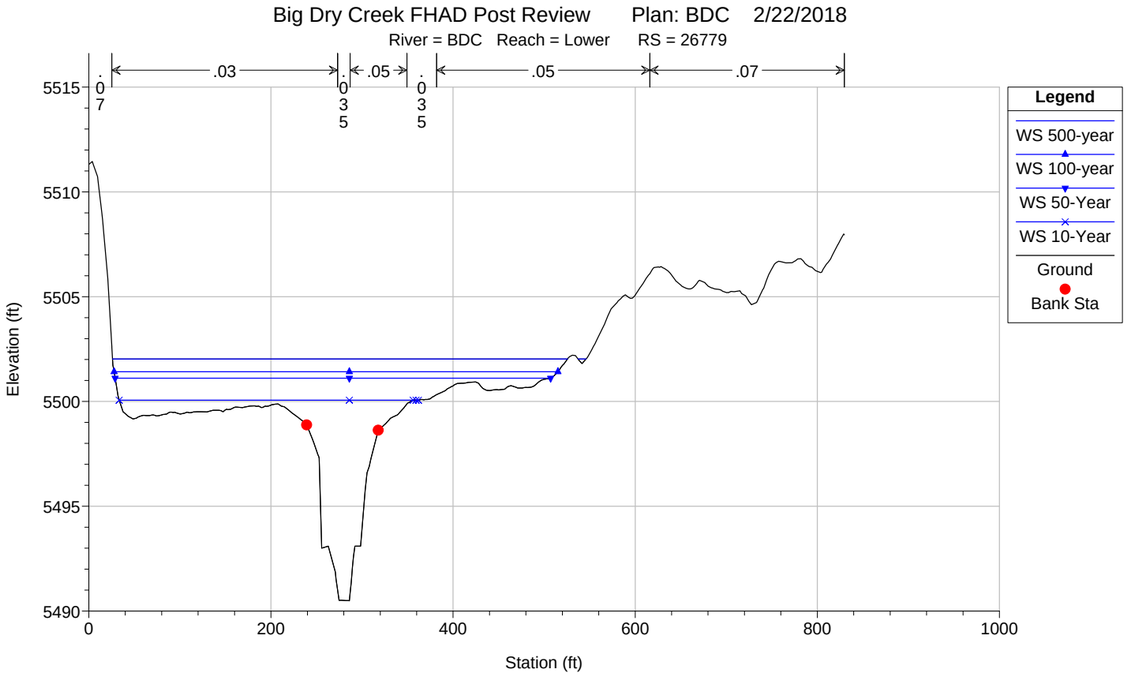

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27187 BR BR30 - Pedestrian Bridge
.07
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

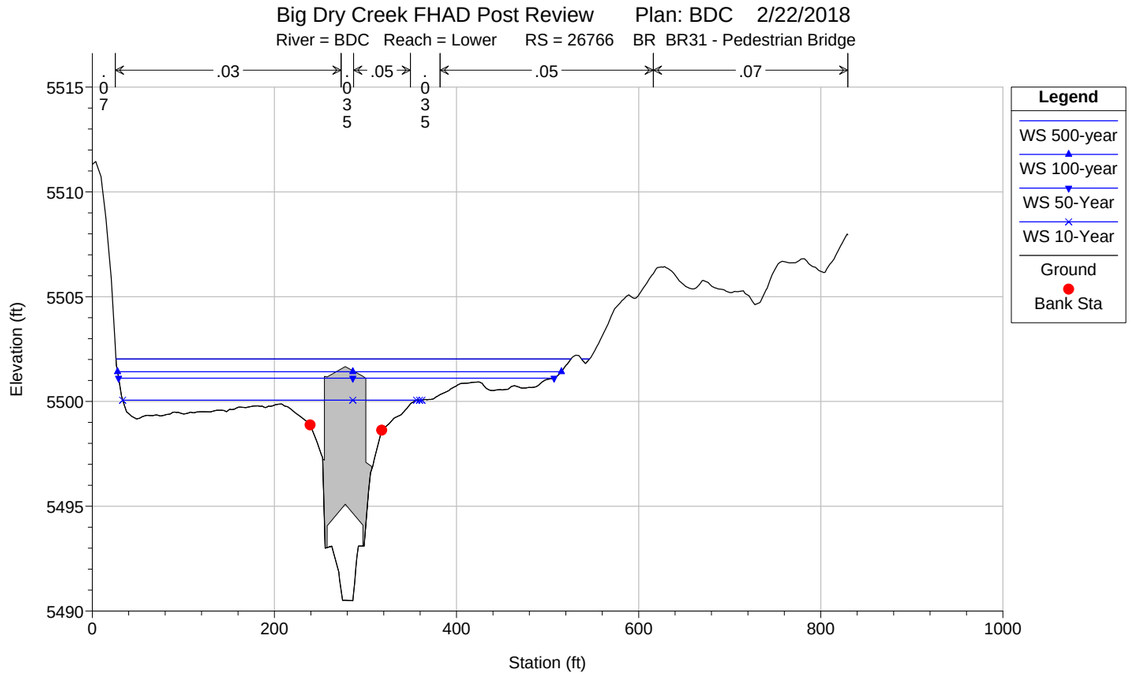

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27175
.07
.05
.035
.05
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 27118
.035
.05
.05
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26966
.07
.05
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26795
.07
.03
.05
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26779
.07
.03
.05
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
5500
5495
5490
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26766 BR BR31 - Pedestrian Bridge
.07
.03
.05
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
5500
5495
5490
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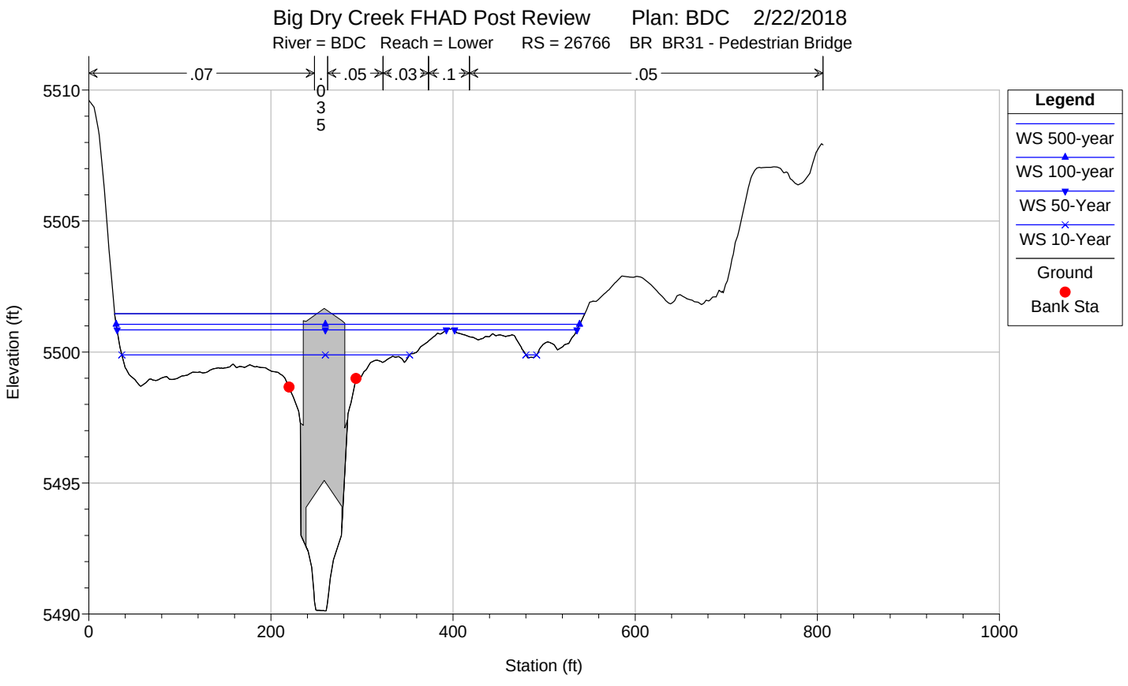
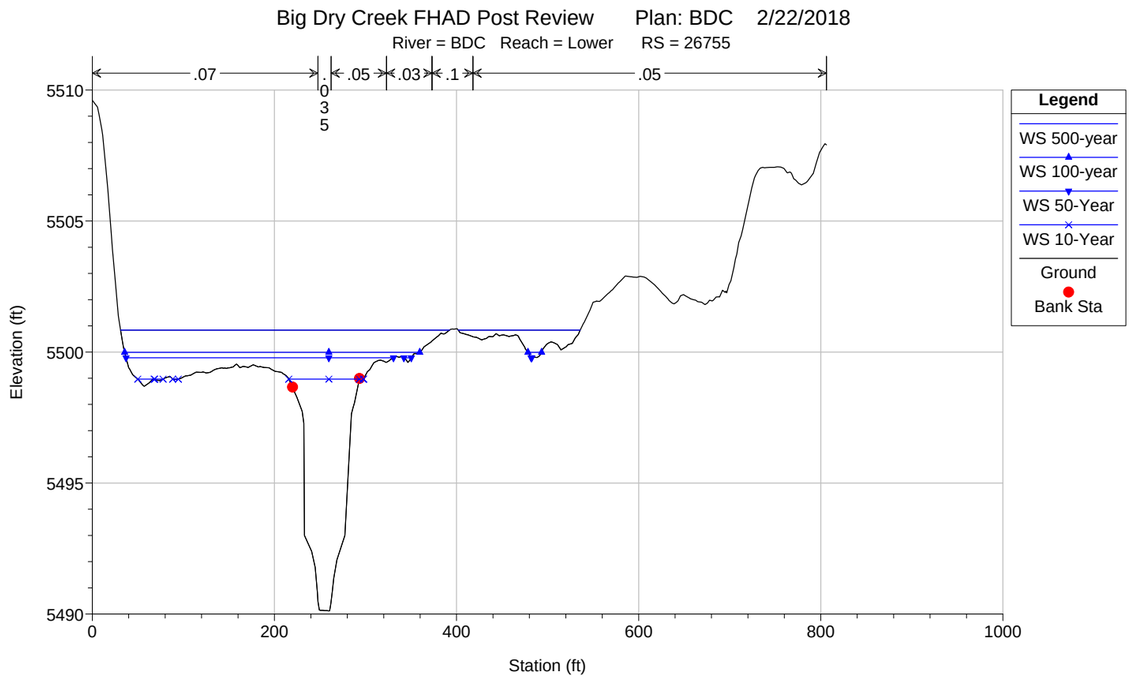
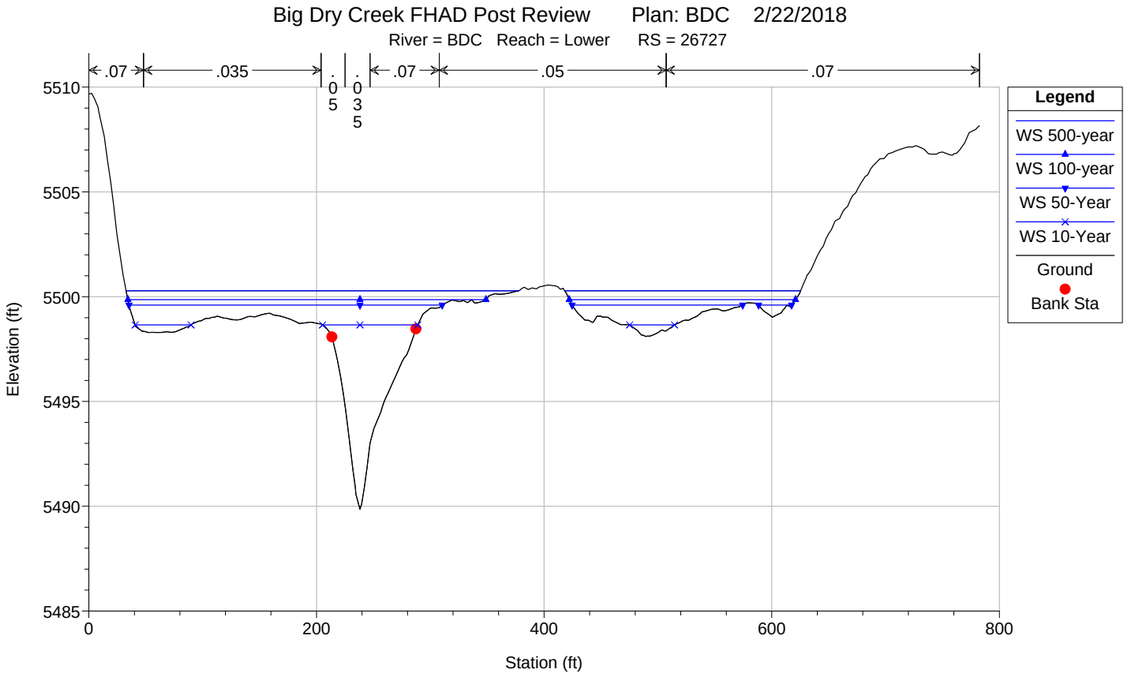
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26766 BR BR31 - Pedestrian Bridge
.07
.05
.03
.1
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26755
.07
.05
.03
.1
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26727
.07
.035
.05
.035
.07
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
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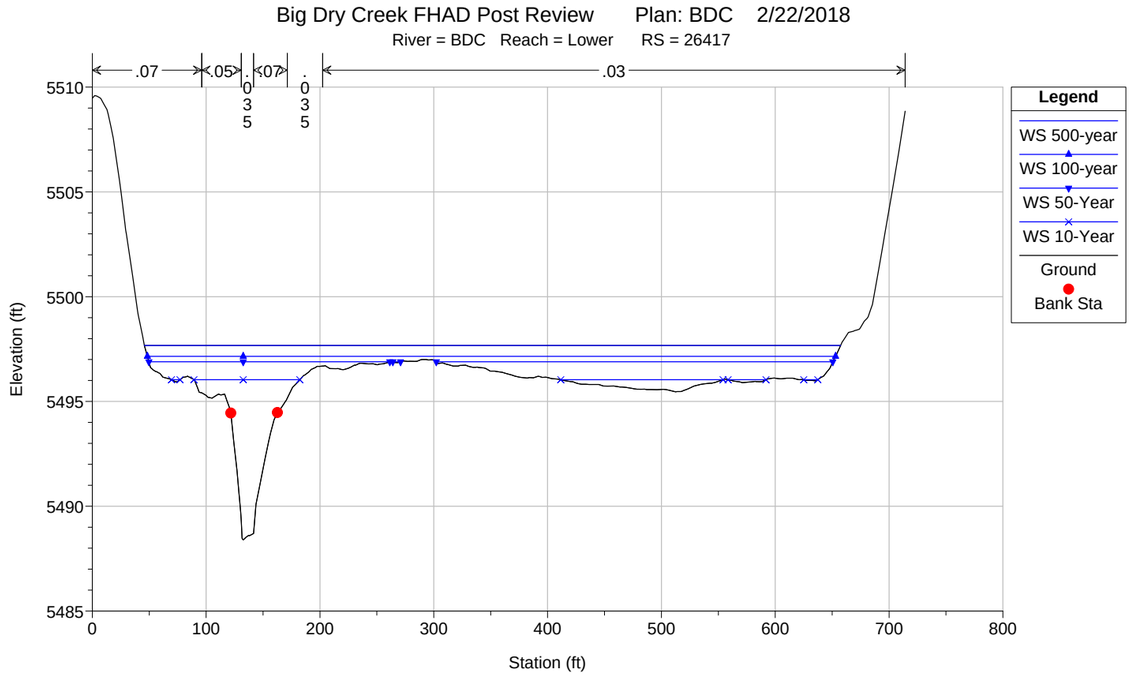
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26417
.07
.05
.07
.03
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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100
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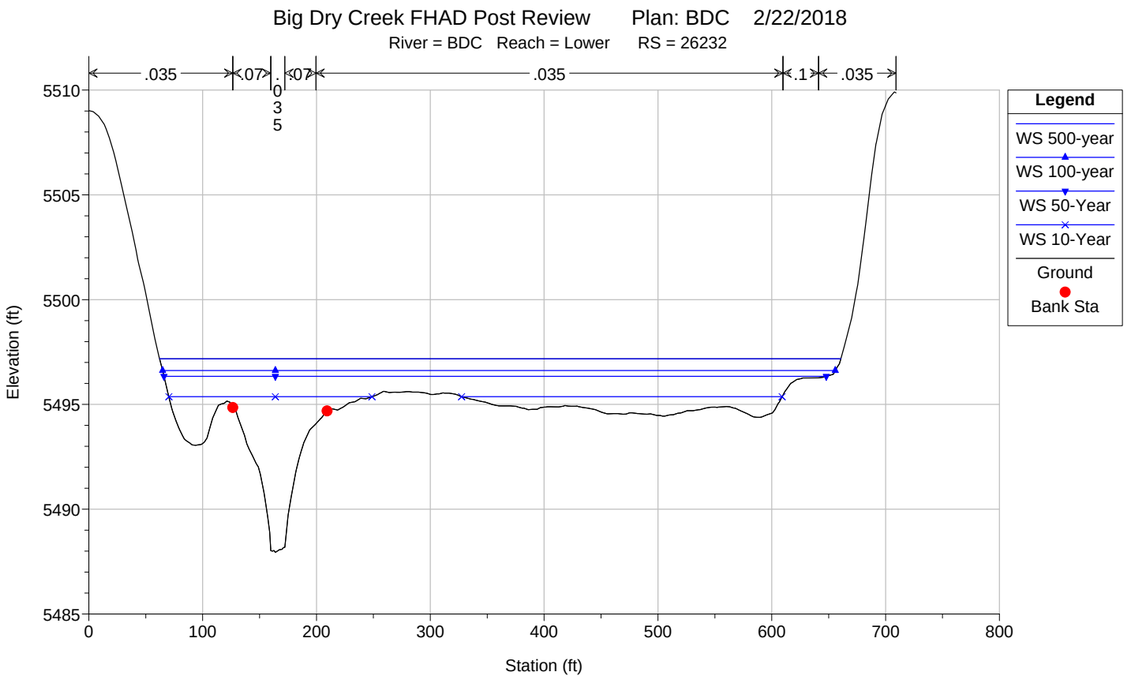
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 26232
.035
.07
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5505
5500
5495
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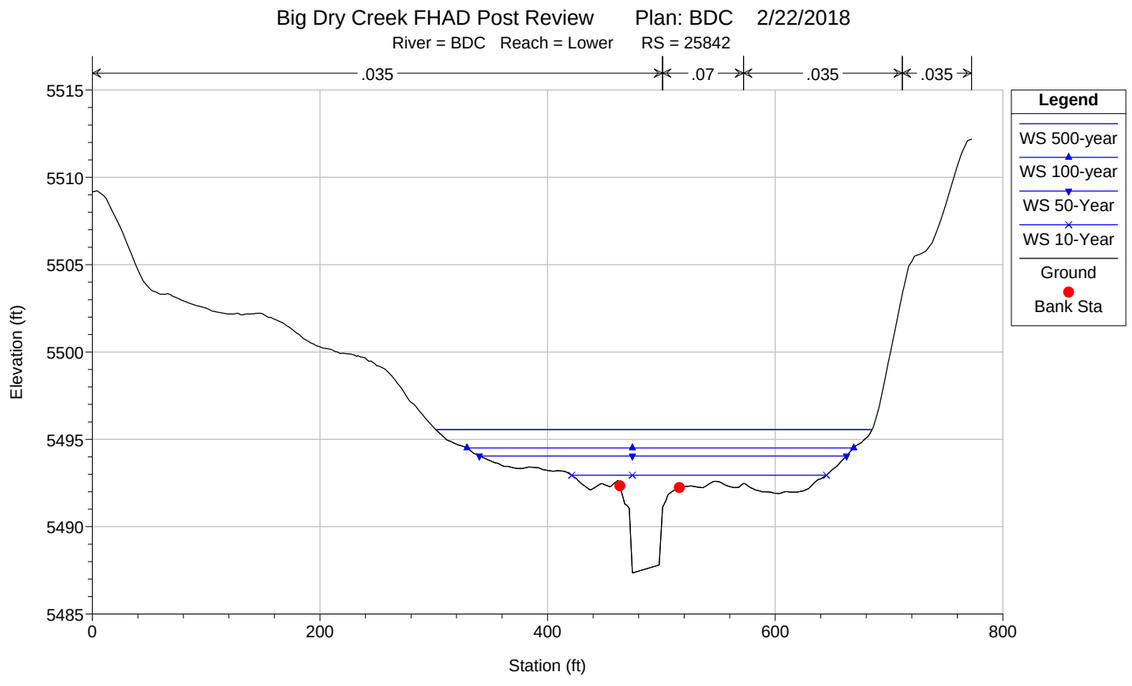
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25842
.035
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
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5490
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600
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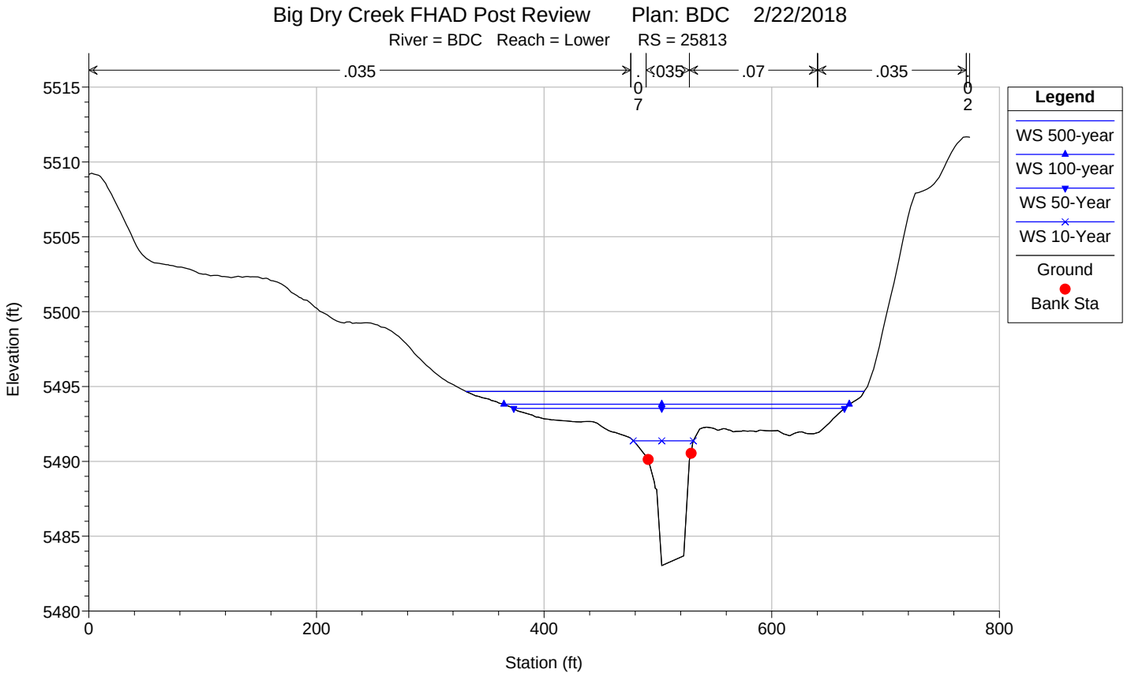
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25813
.035
.07
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
5500
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5485
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600
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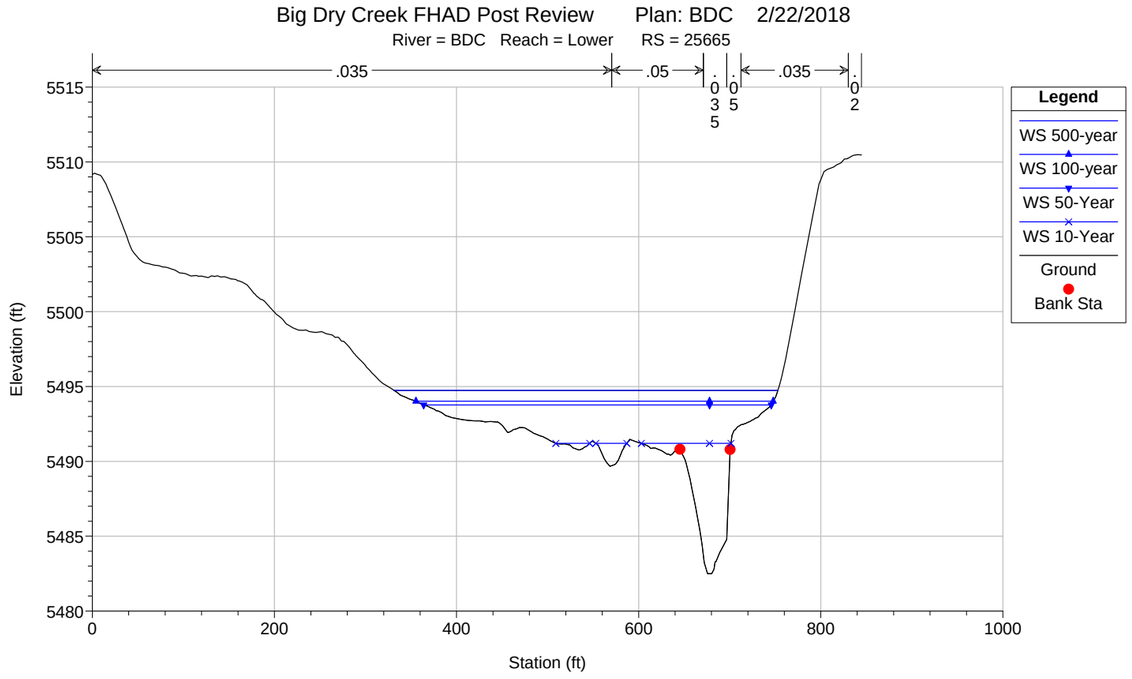
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25665
.035
.05
.035
.05
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5510
5505
5500
5495
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5485
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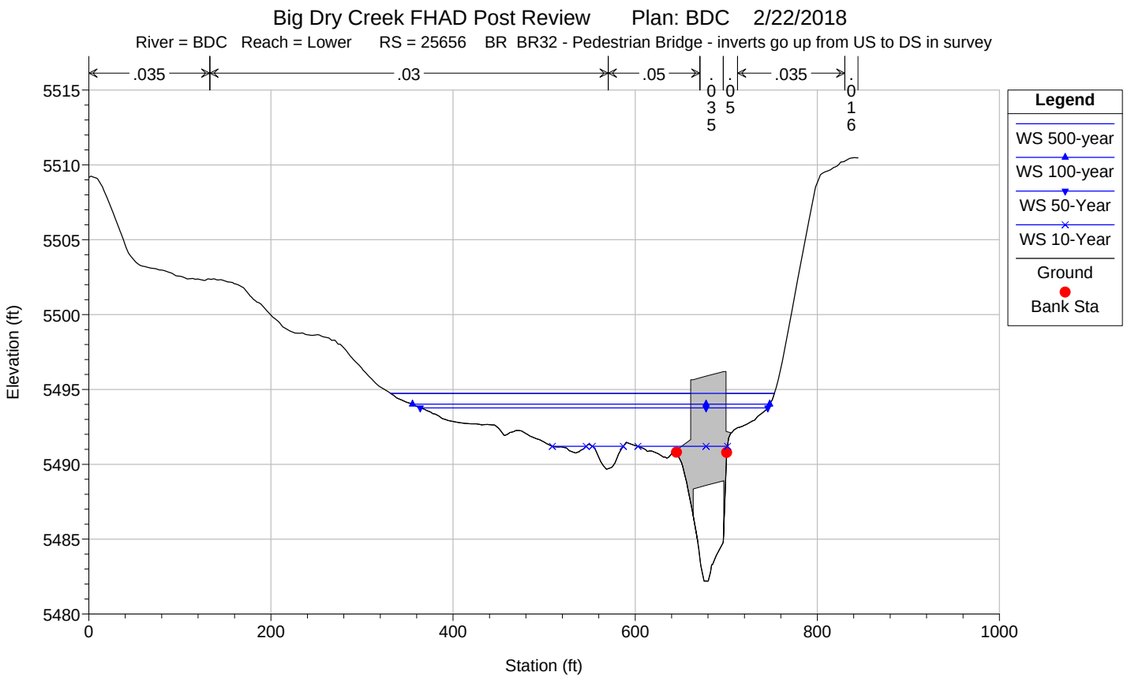
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25656 BR BR32 - Pedestrian Bridge - inverts go up from US to DS in survey
.035
.03
.05
.035
.05
.035
.16
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
5500
5495
5490
5485
5480
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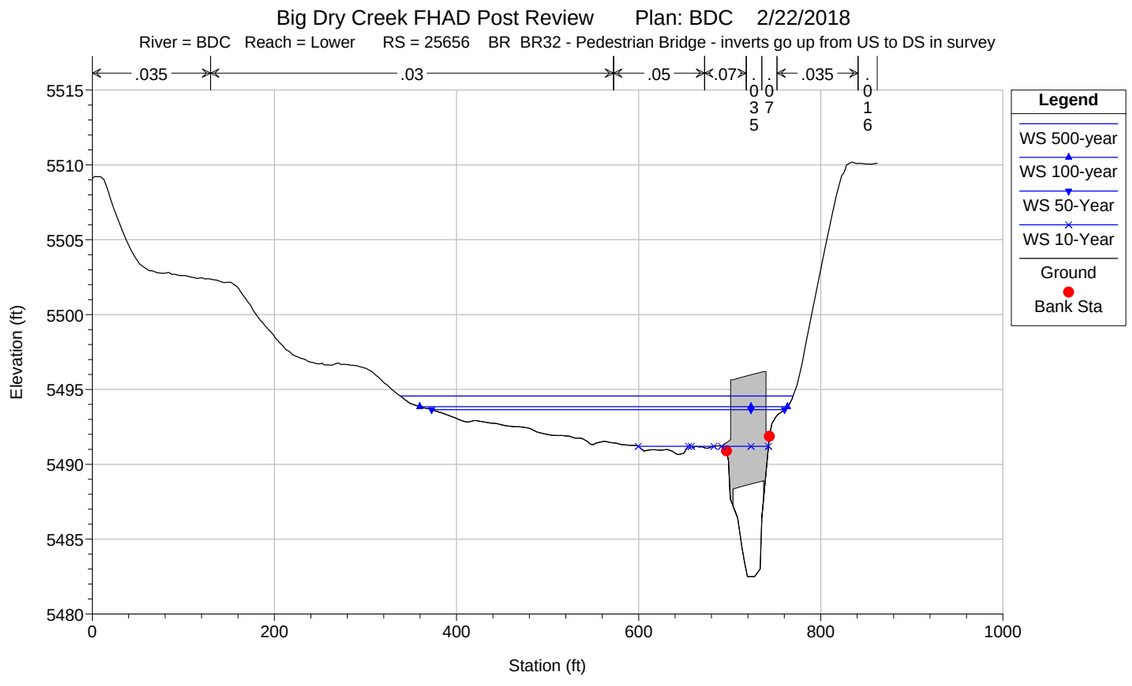
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25656 BR BR32 - Pedestrian Bridge - inverts go up from US to DS in survey
.035
.03
.05
.07
.035
.07
.035
.16
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5515
5510
5505
5500
5495
5490
5485
5480
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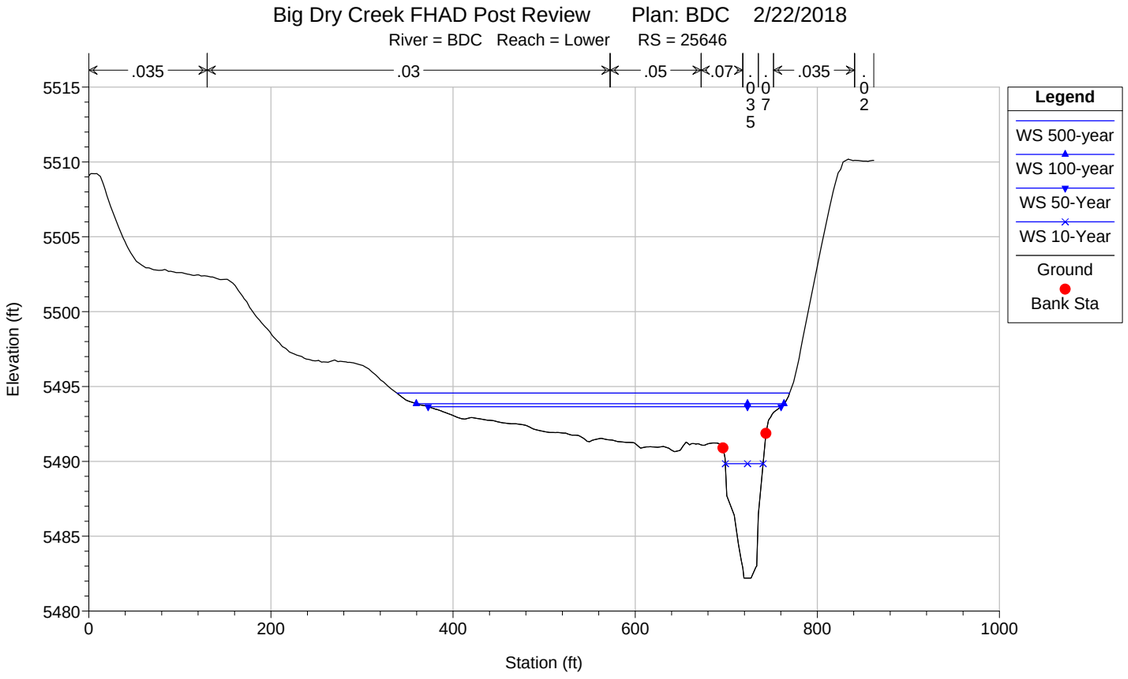
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25646
.035
.03
.05
.07
.035
.1
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5510
5505
5500
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5485
5480
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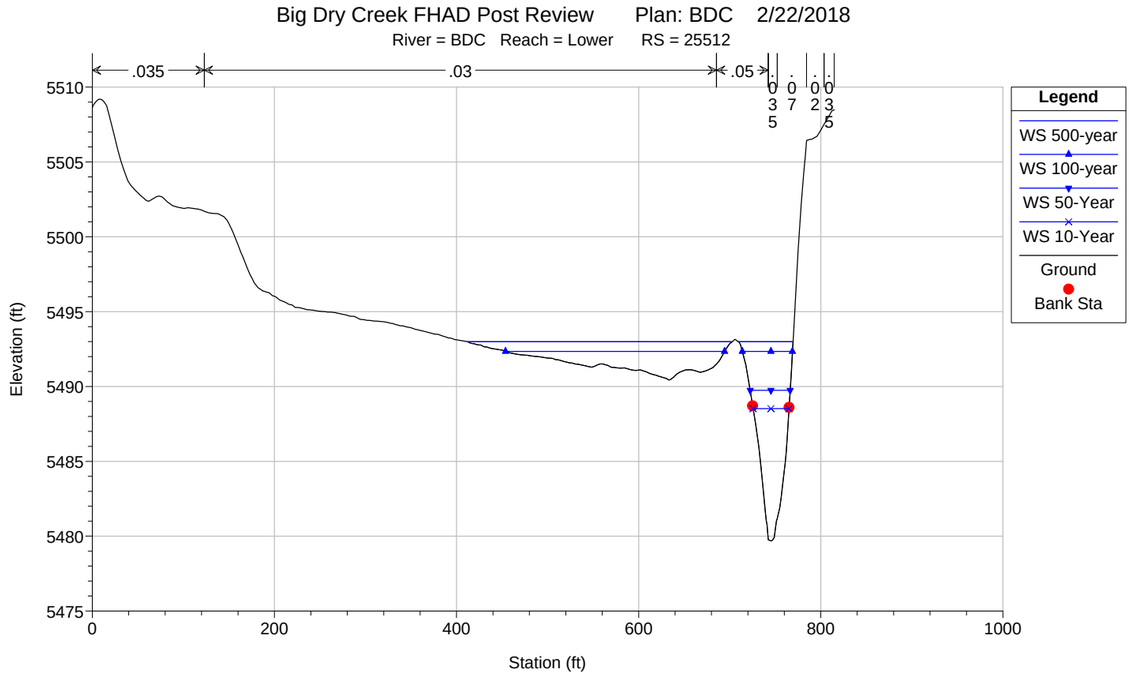
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25512
.035
.03
.05
.035
.07
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5505
5500
5495
5490
5485
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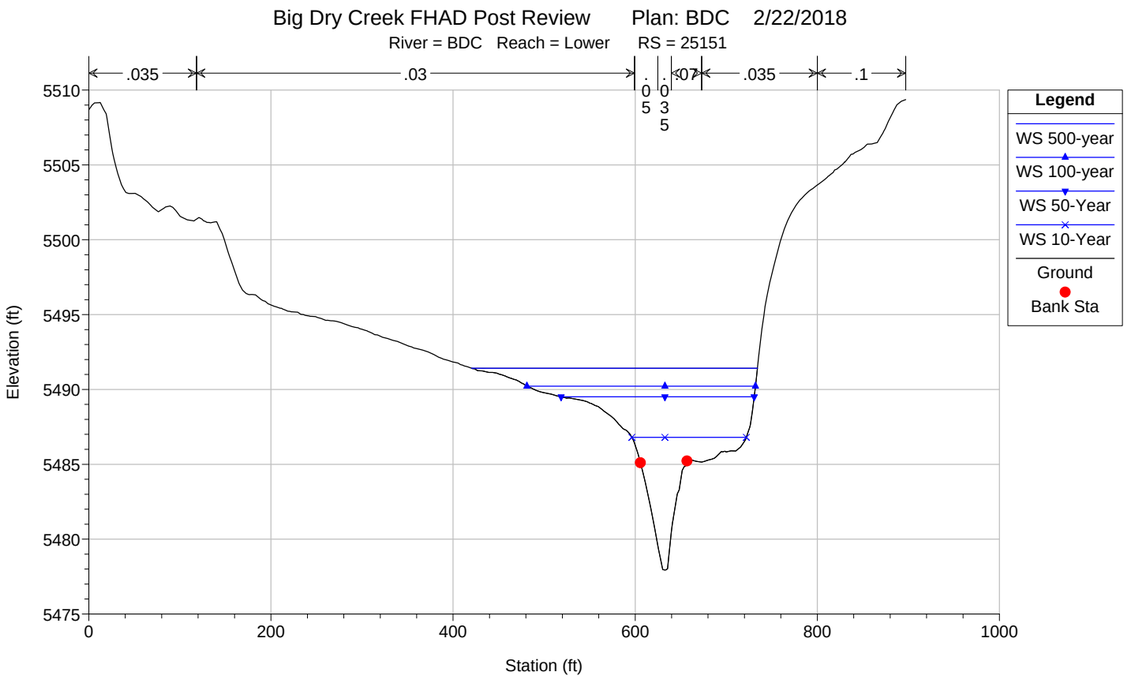
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25151
.035
.03
.05
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5505
5500
5495
5490
5485
5480
5475
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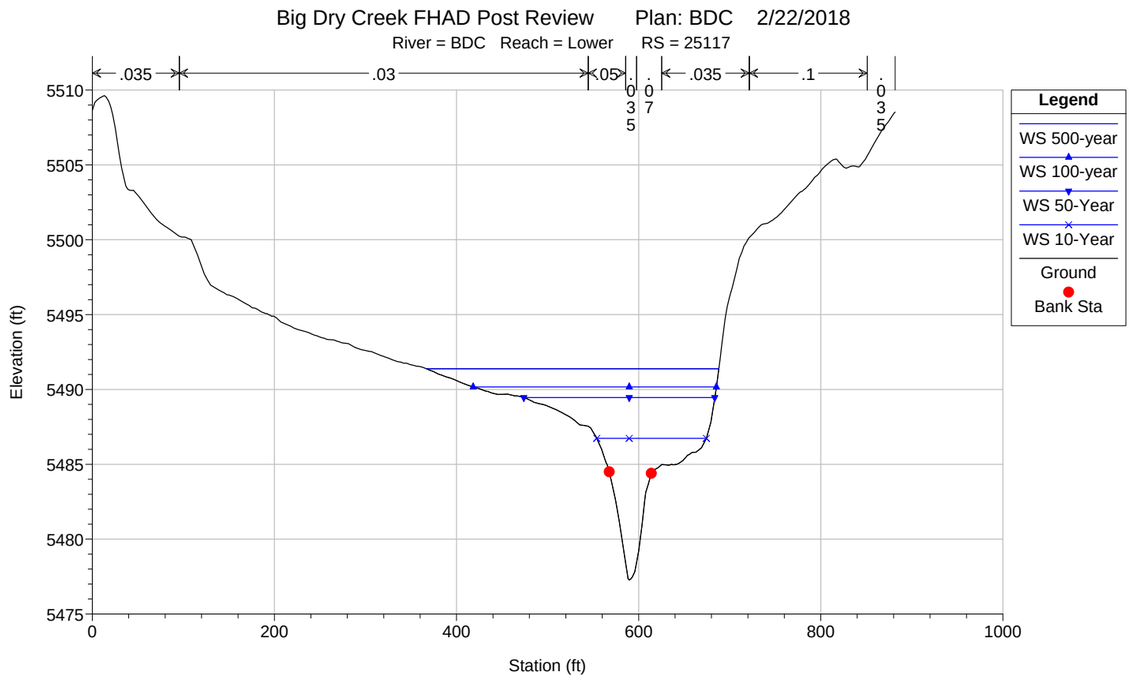
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 25117
.035
.03
.05
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
5485
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5475
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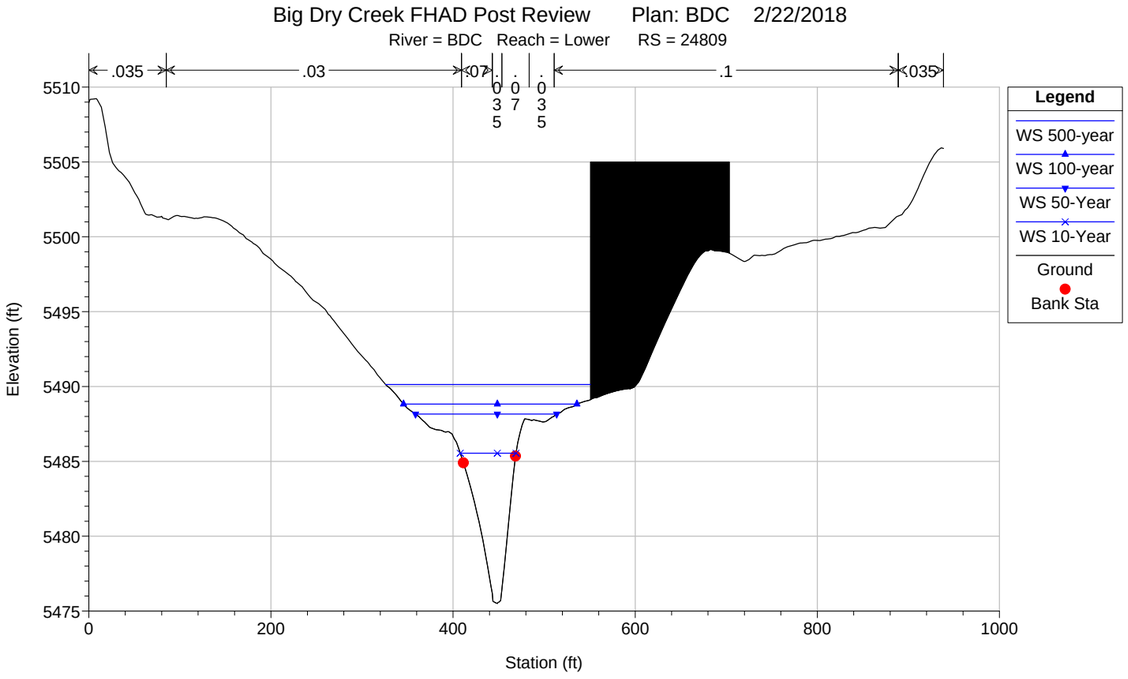
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24809
.035
.03
.07
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
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5485
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5475
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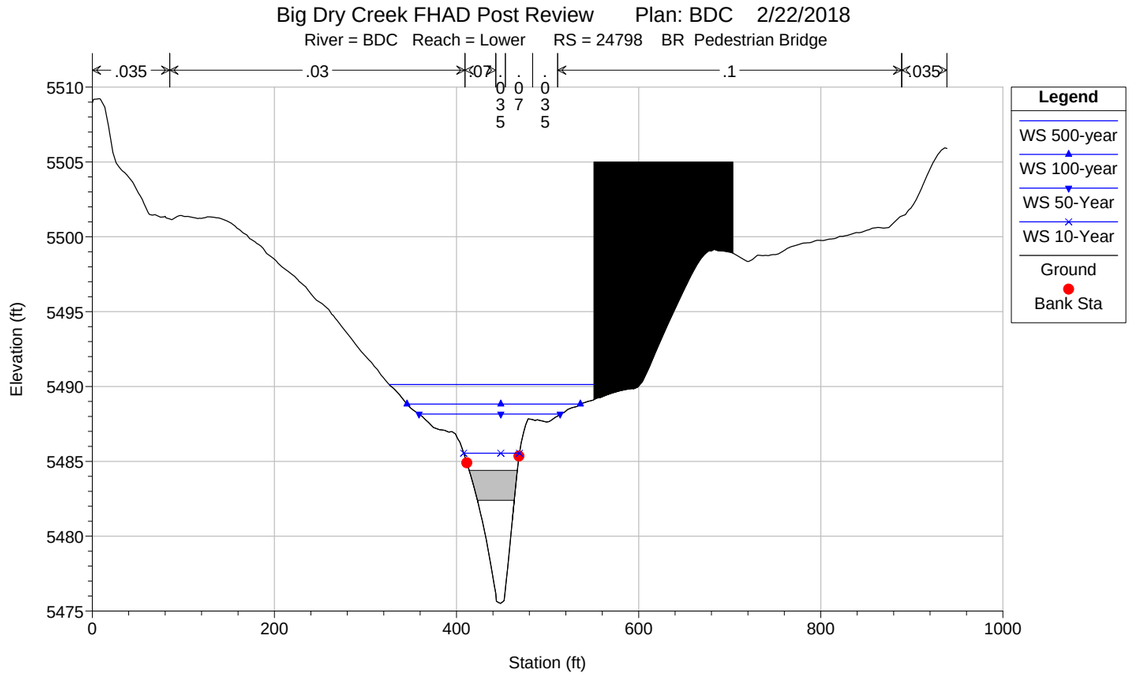
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24798 BR Pedestrian Bridge
.035
.03
.07
.035
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
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5475
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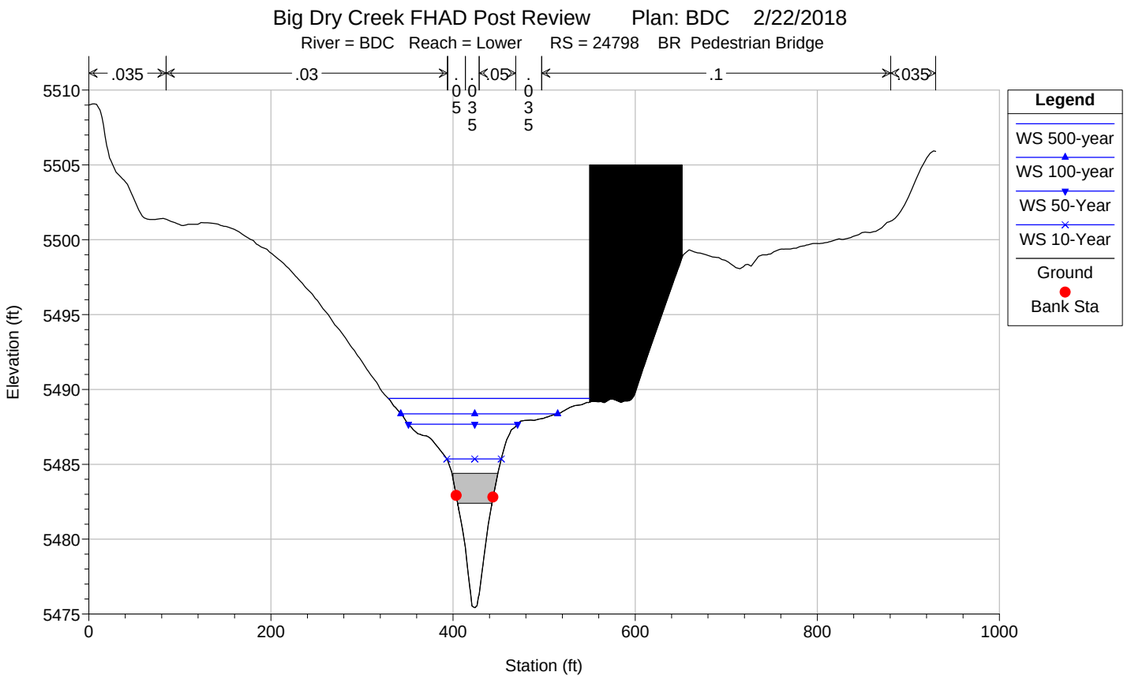
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24798 BR Pedestrian Bridge
.035
.03
.05
.05
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
5485
5480
5475
0
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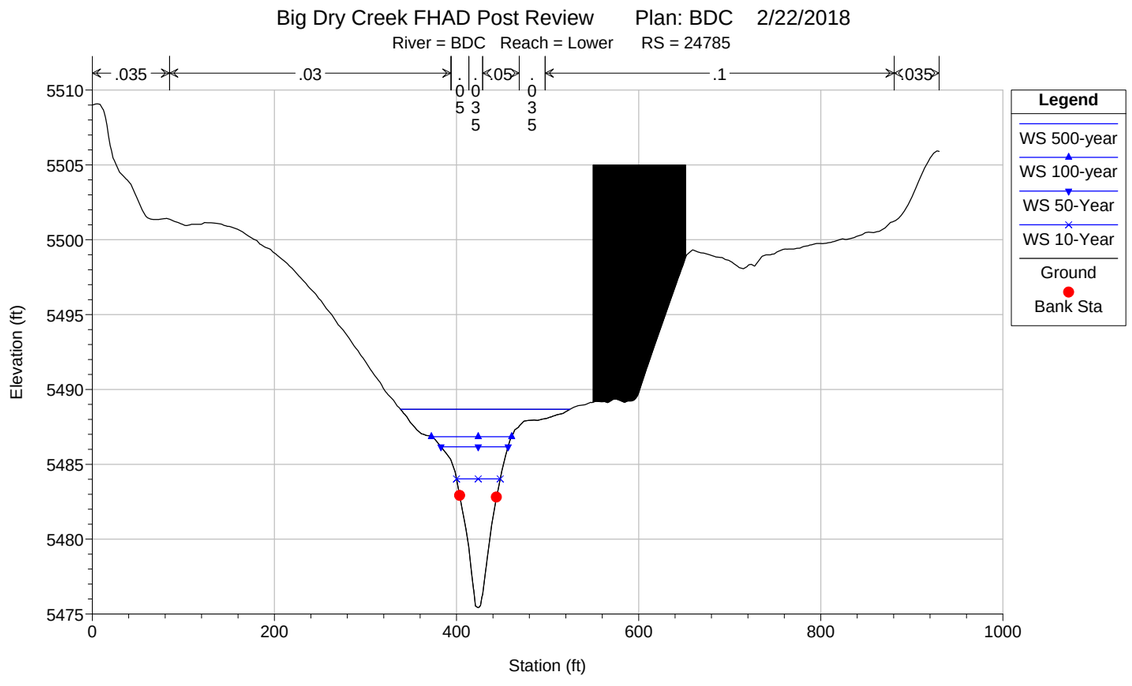
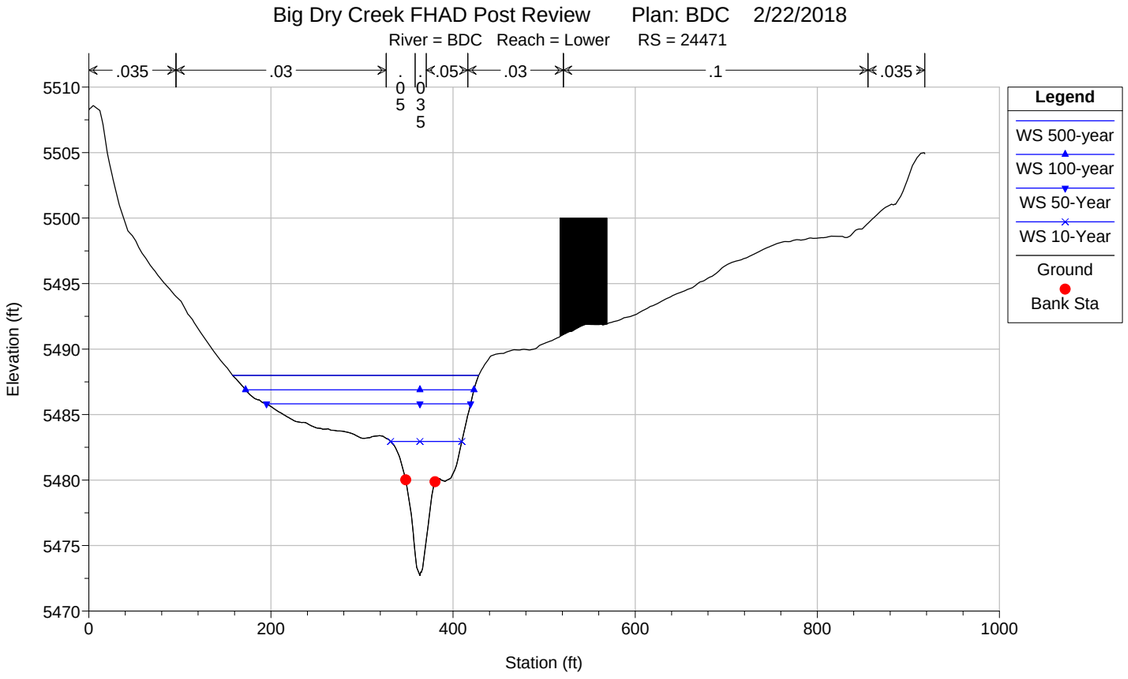
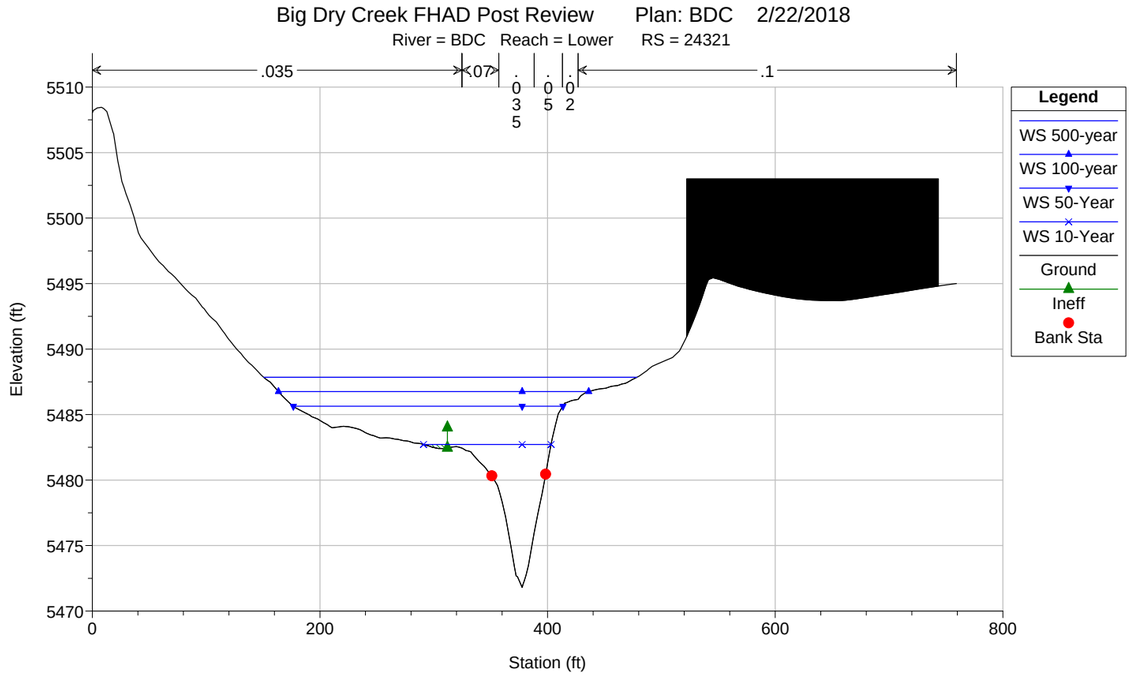
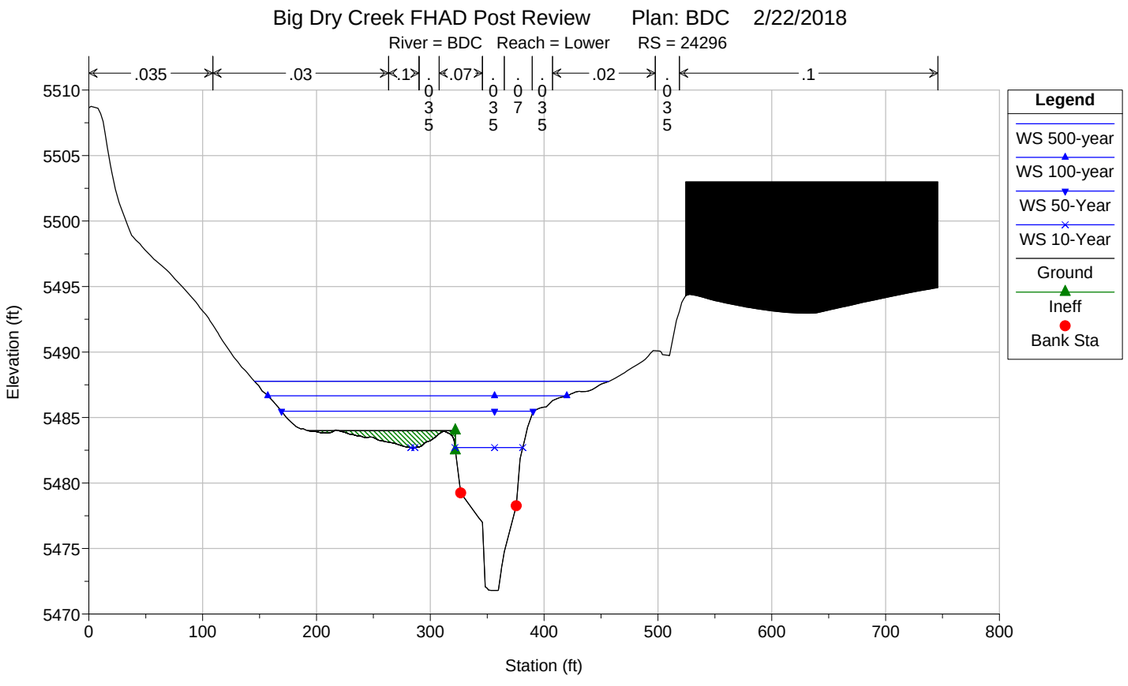
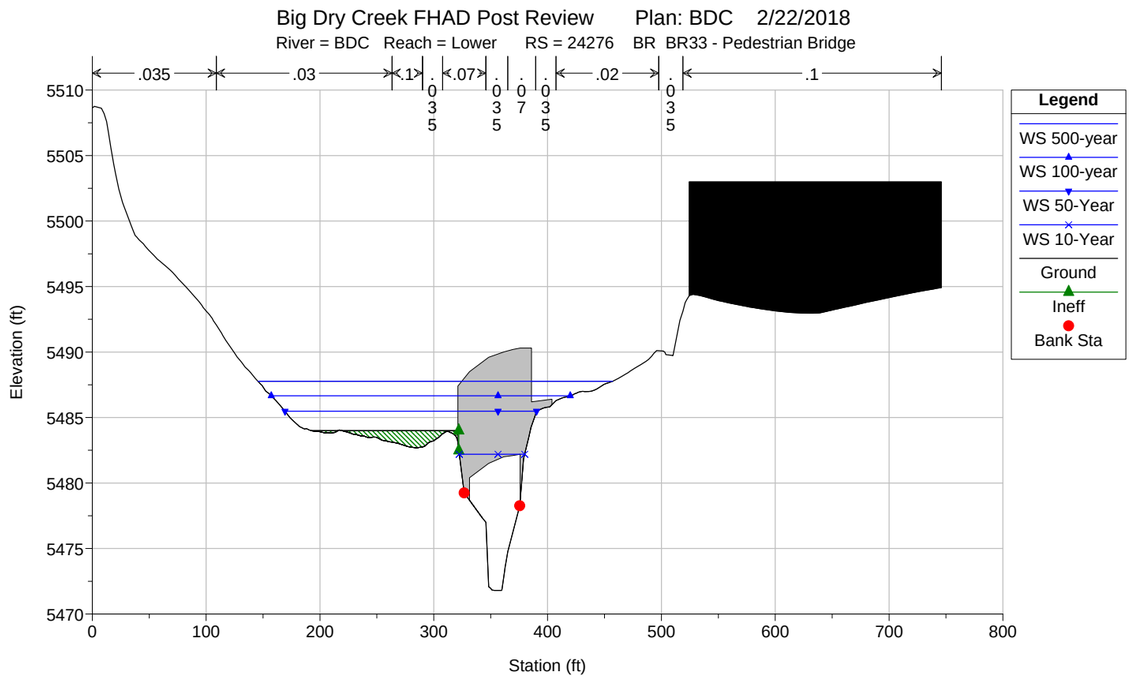
400
600
800
1000

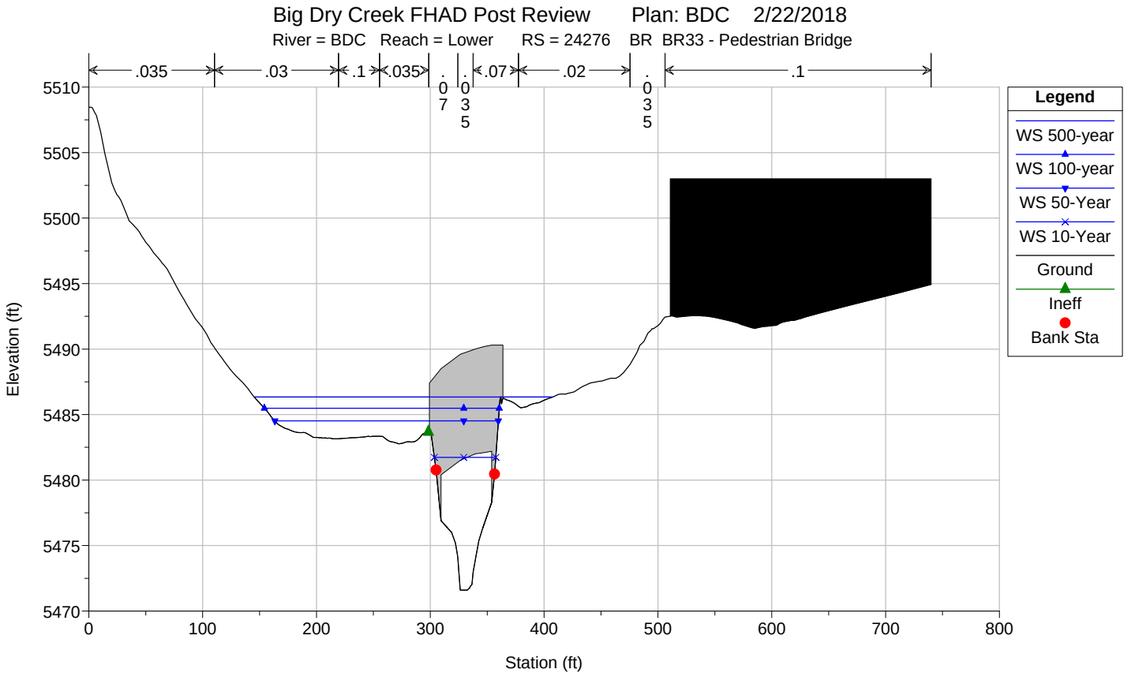

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24785
.035
.03
.05
.05
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5510
5505
5500
5495
5490
5485
5480
5475
0
200
400
600
800
1000

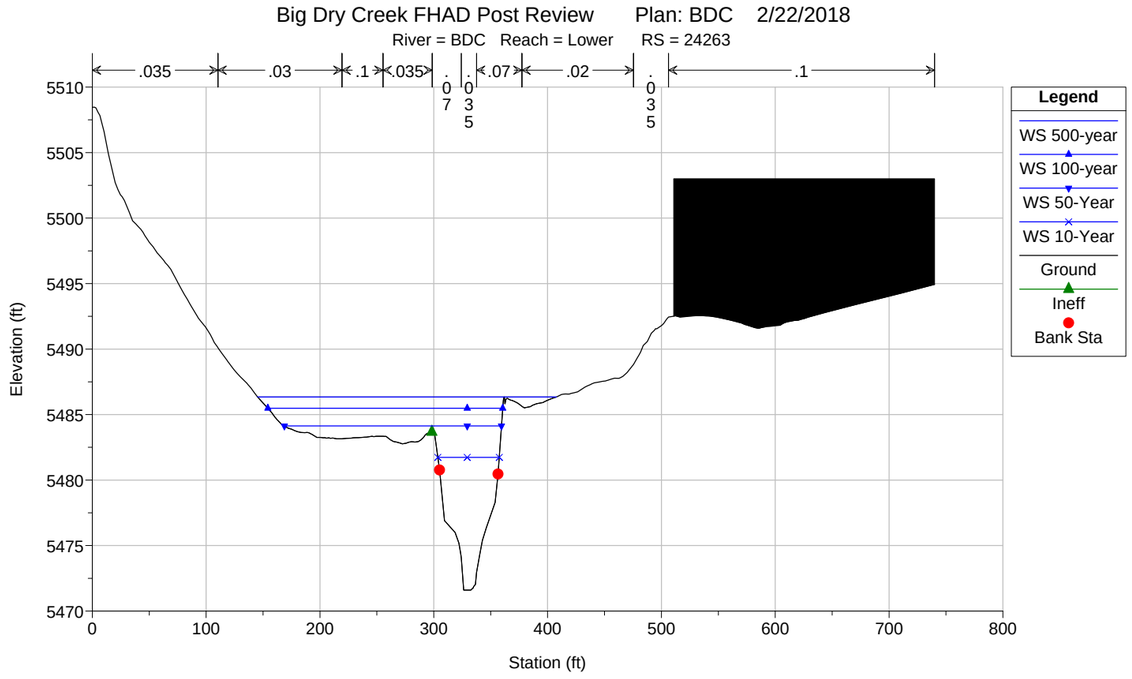

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24471
.035
.03
.05
.03
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

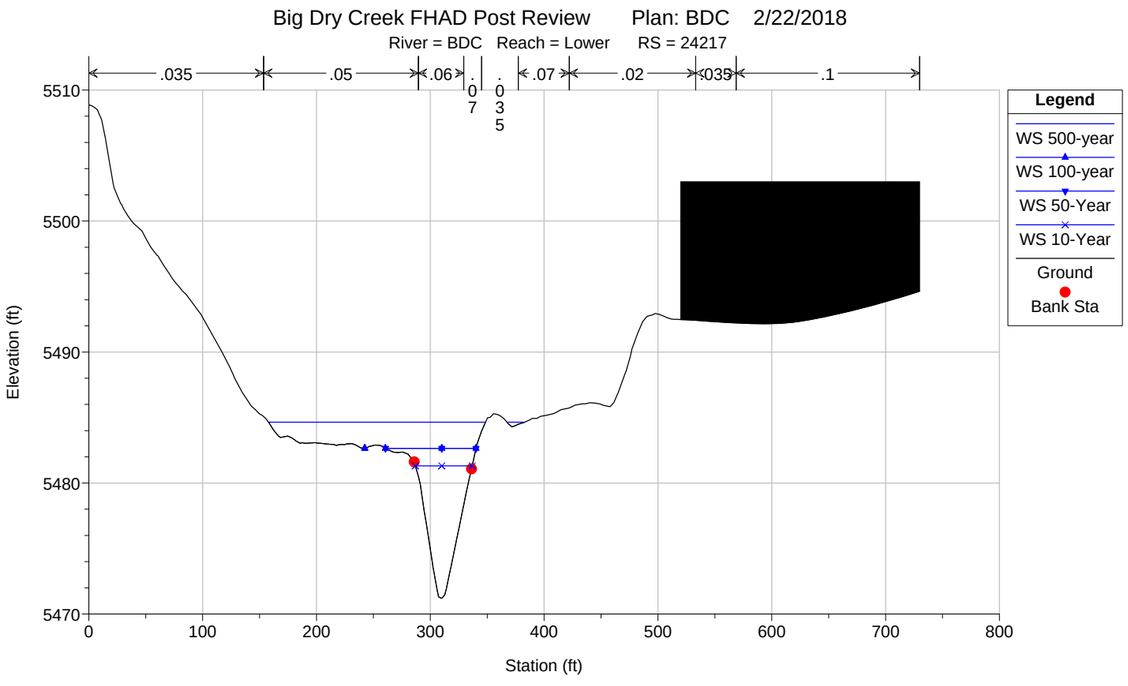

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24321
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

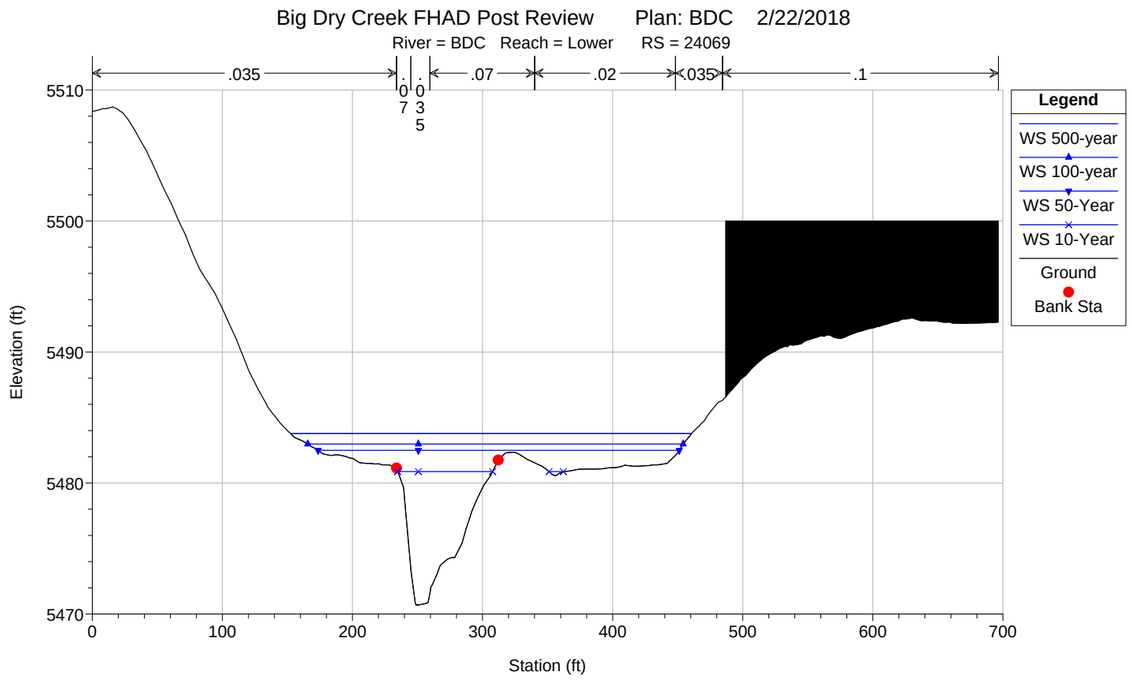

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24296
.035
.03
.1
.07
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

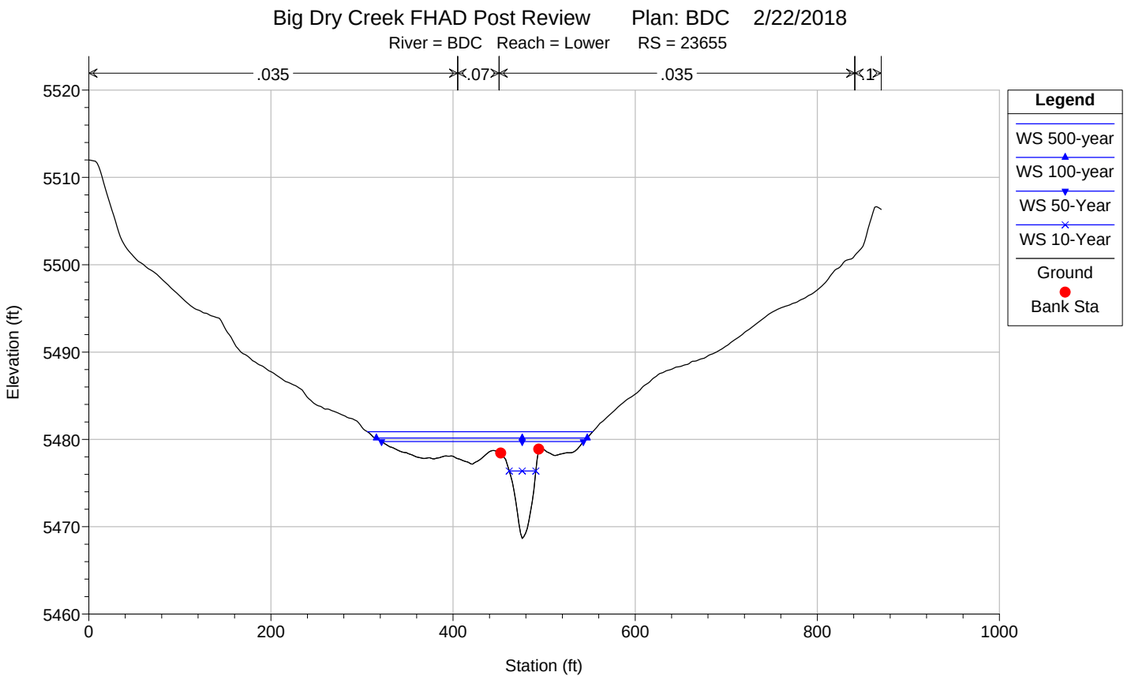

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24276 BR BR33 - Pedestrian Bridge
.035
.03
.1
.07
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24276 BR BR33 - Pedestrian Bridge
.035 .03 .1 .035 .07 .02 .1
.07 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24263
.035 .03 .1 .035 .07 .02 .1
.07 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24217
.035 .05 .06 .07 .02 .035 .1
.07 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 24069
.035 .07 .02 .035 .1
.07 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 23655
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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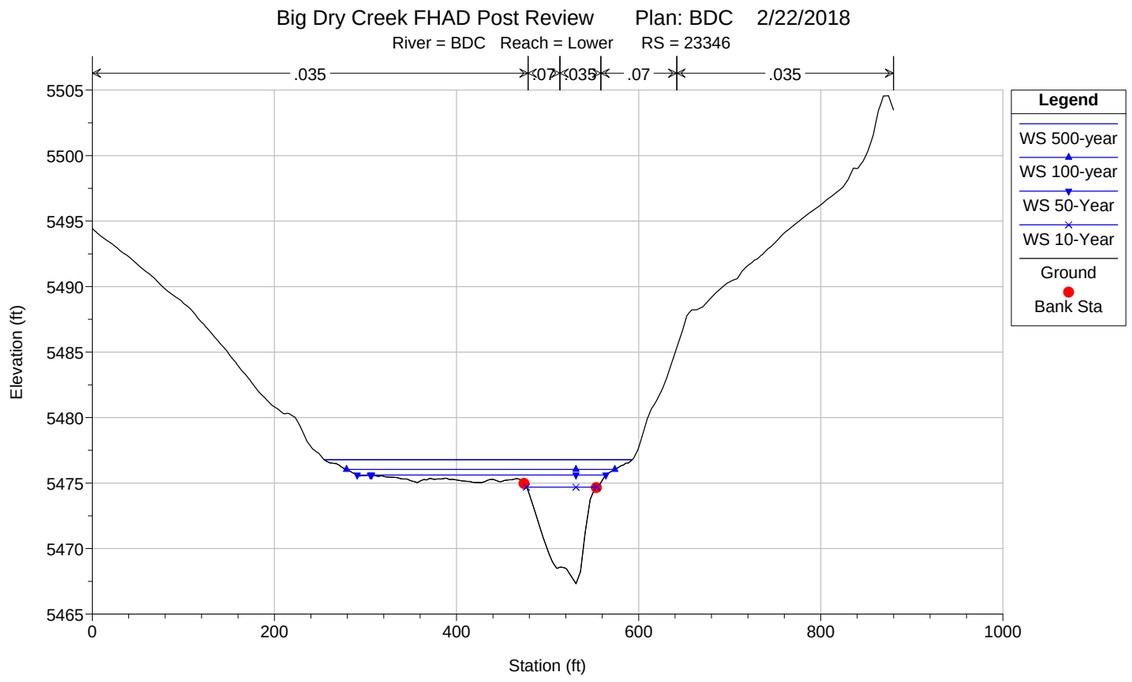
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 23346
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5495
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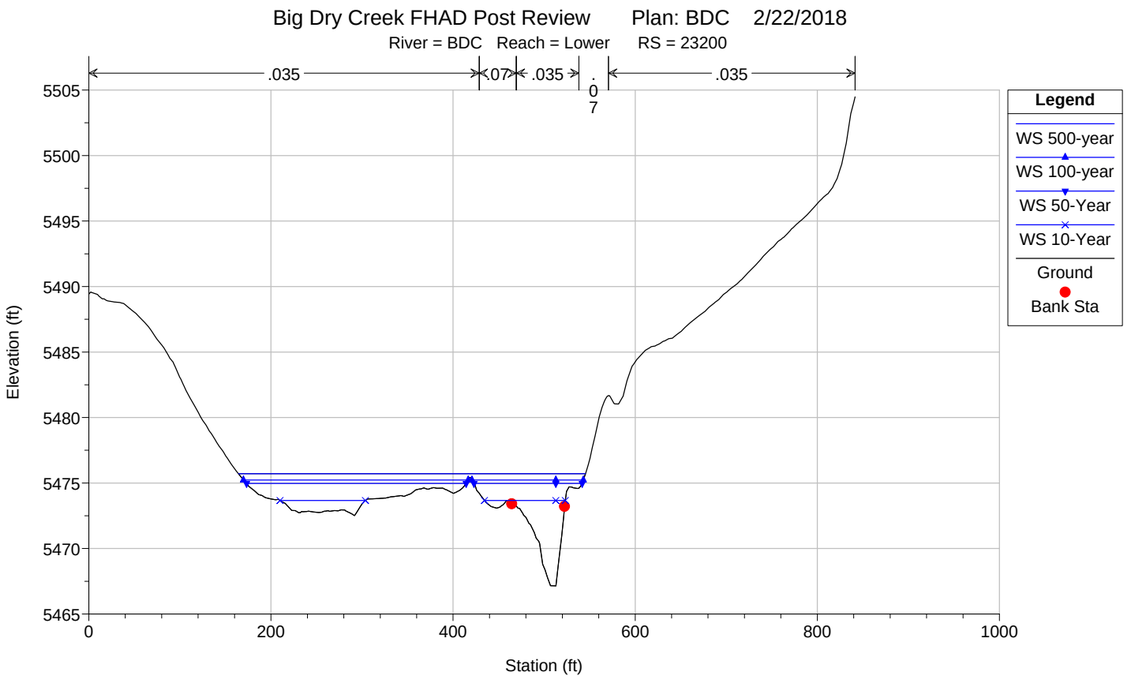
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 23200
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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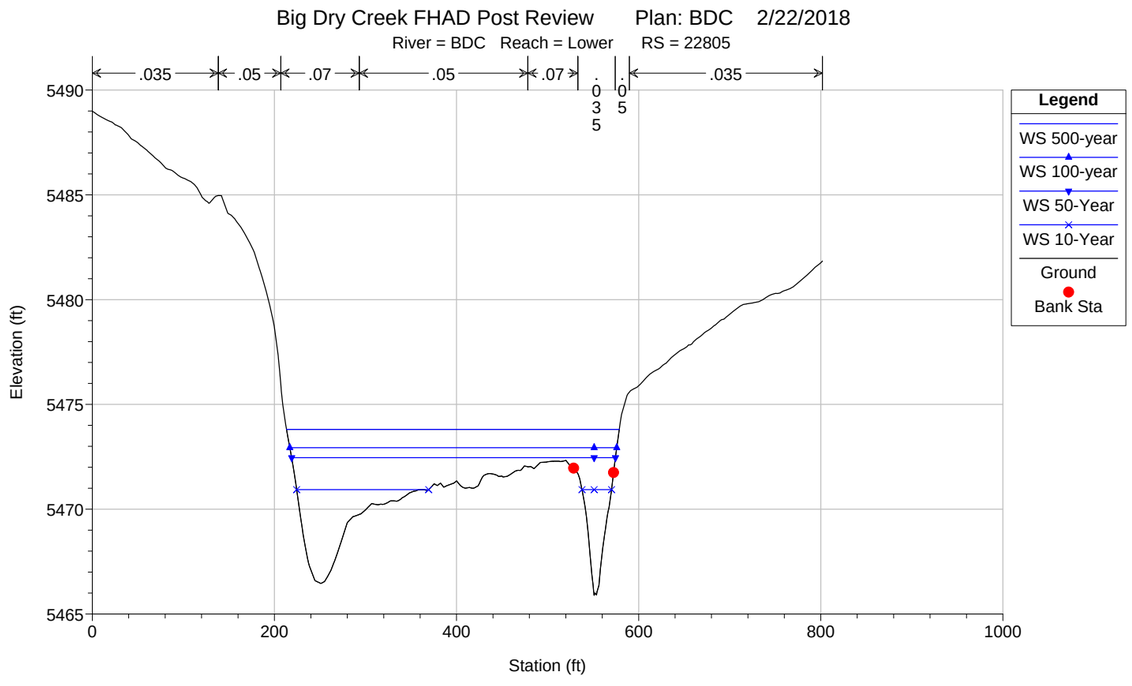
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 22805
.035
.05
.07
.05
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5490
5485
5480
5475
5470
5465
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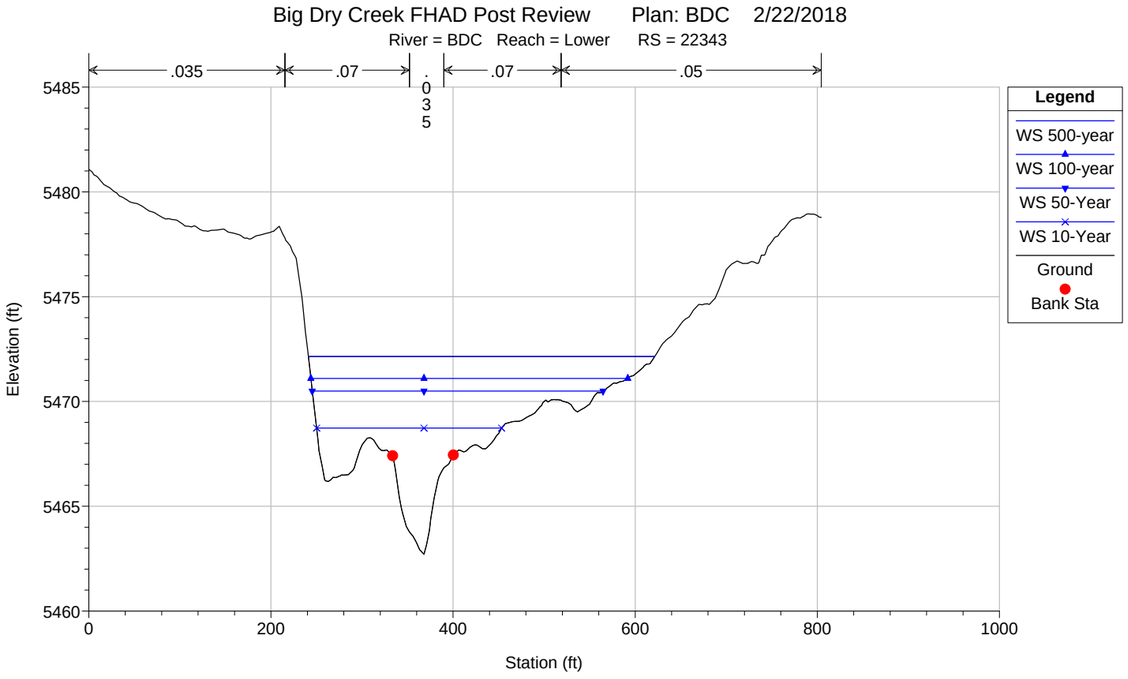
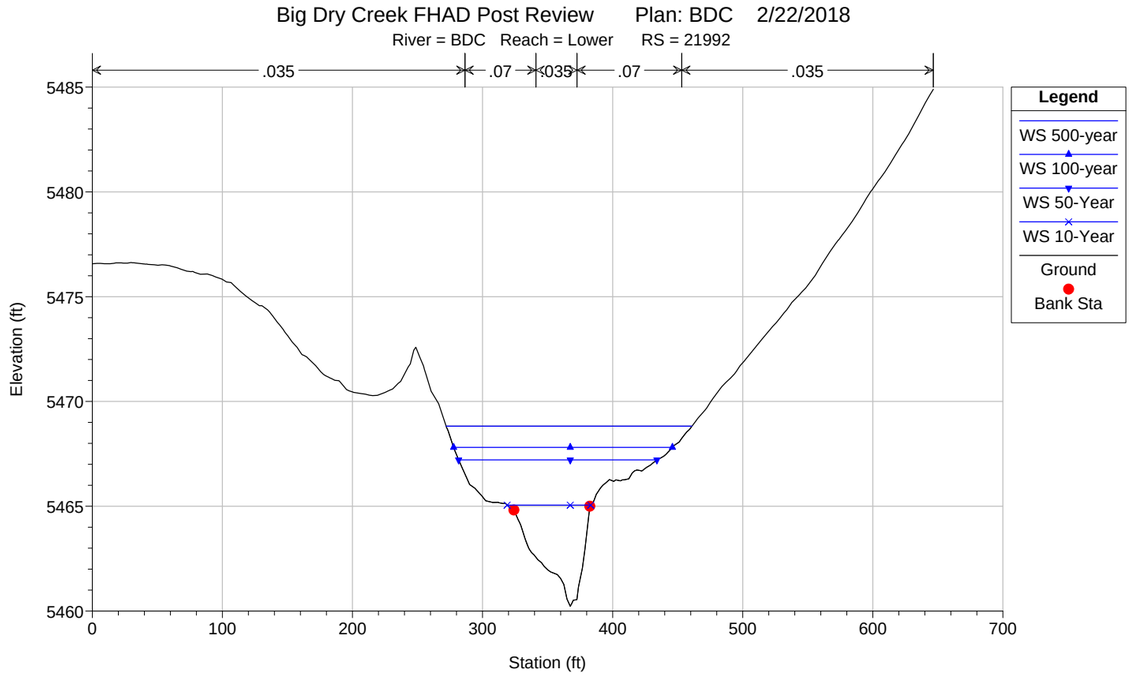
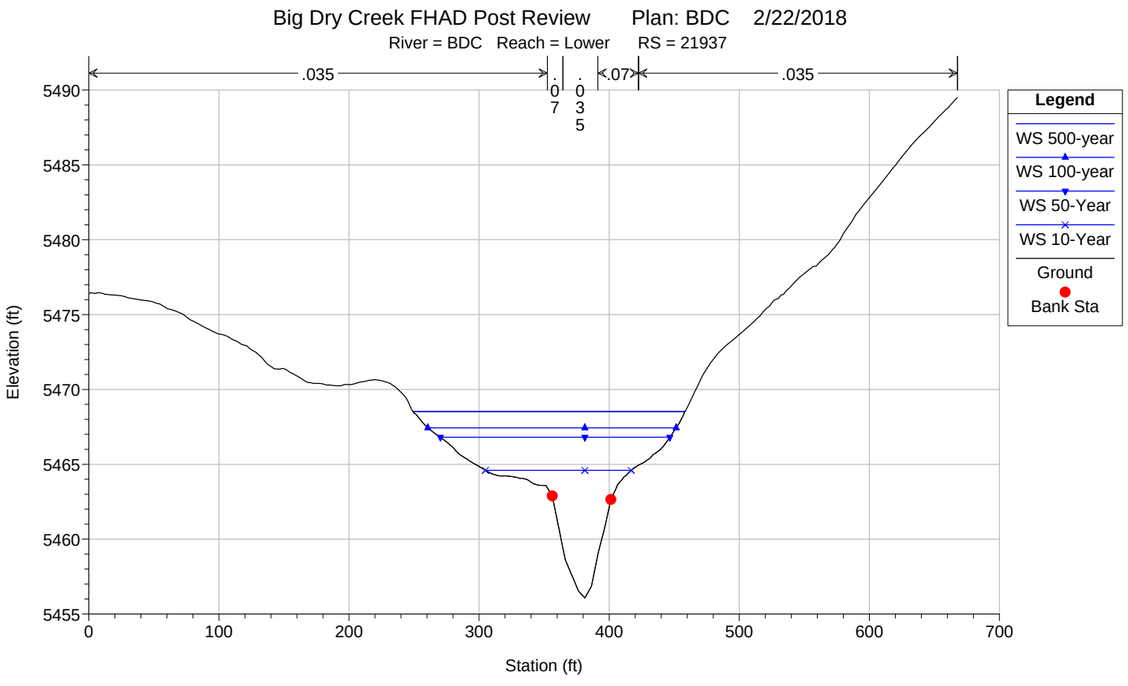
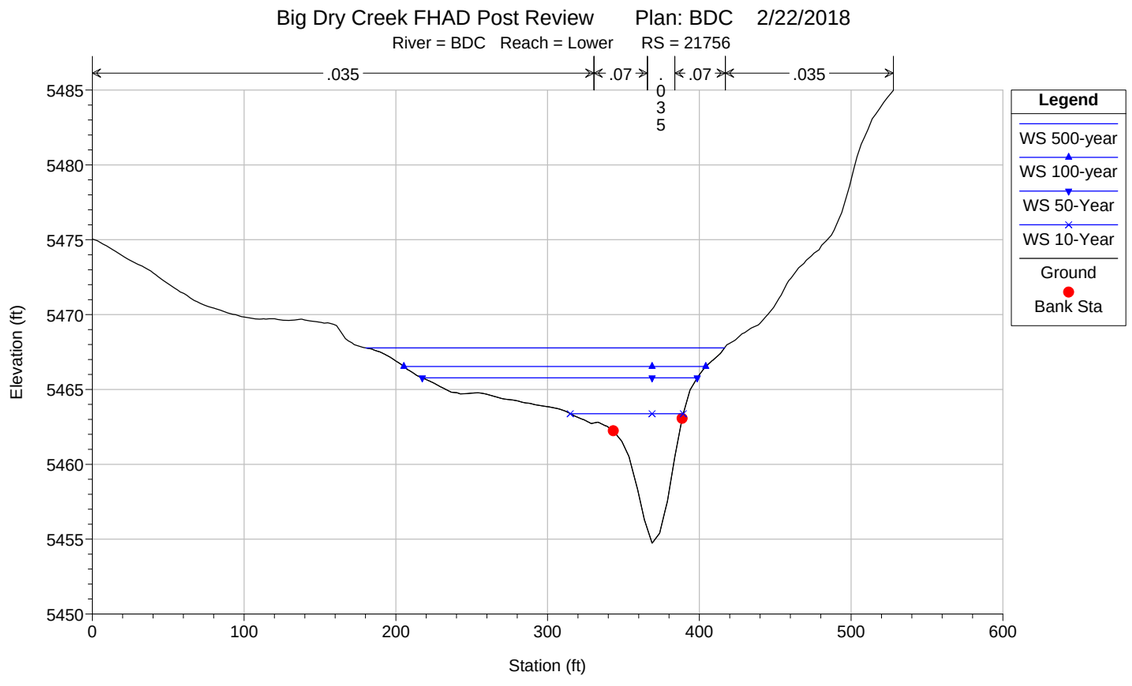
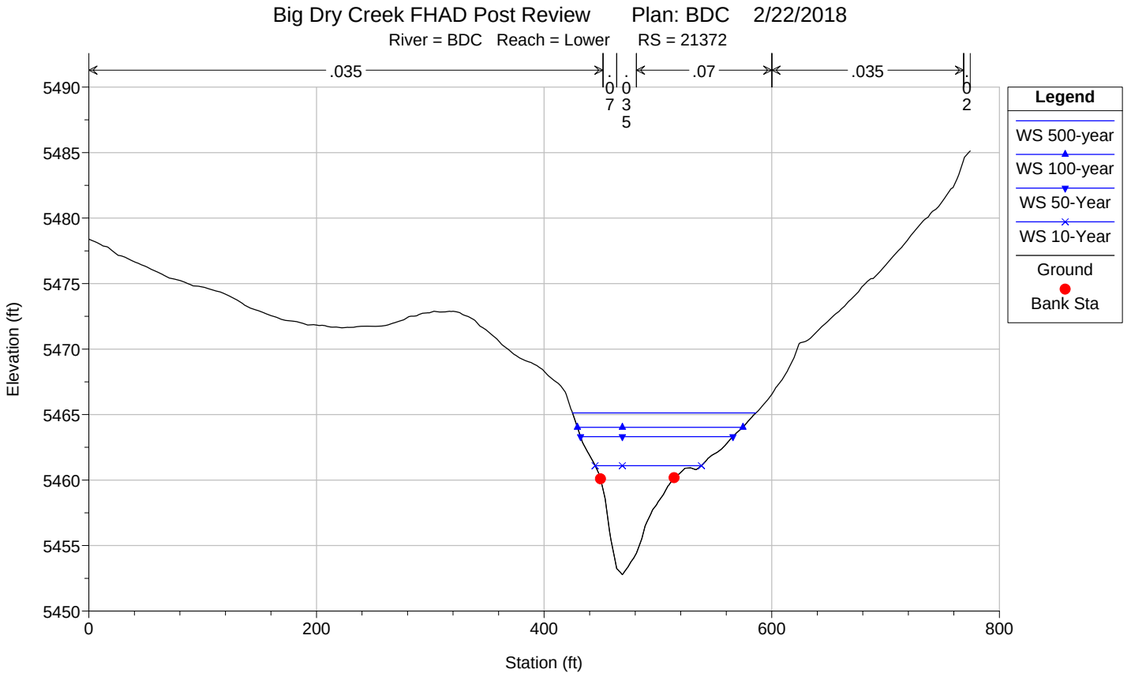
200
400
600
800
1000

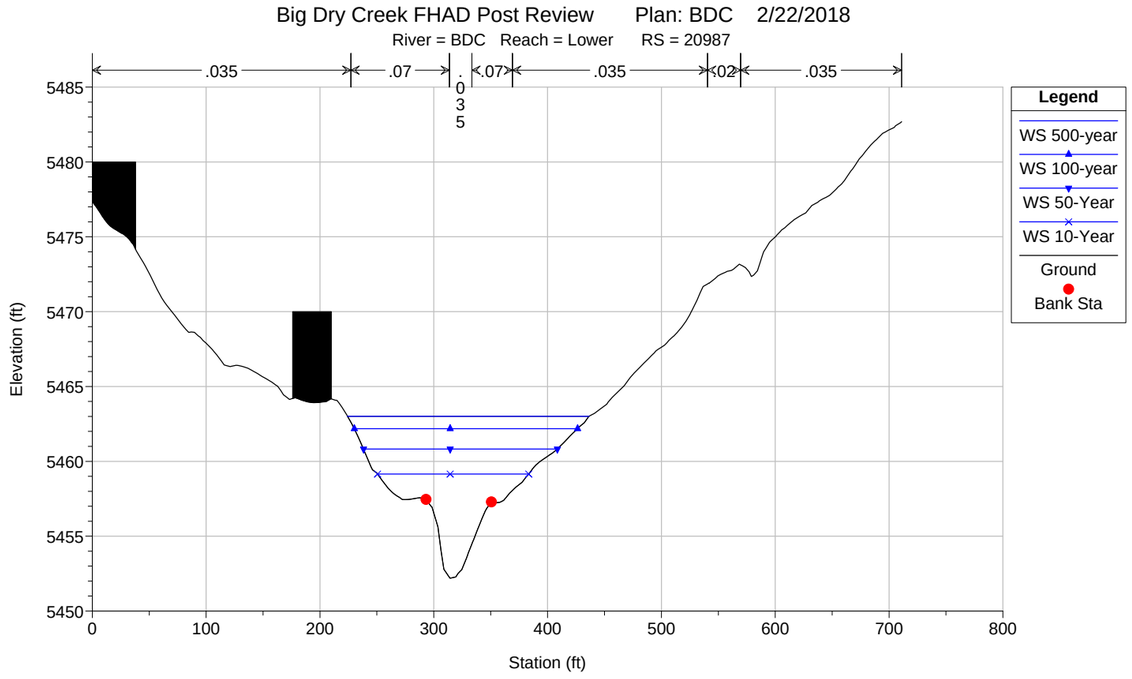

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 22343
.035
.07
.035
.07
.05
5485
5480
5475
5470
5465
5460
Elevation (ft)
0
200
400
600
800
1000
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

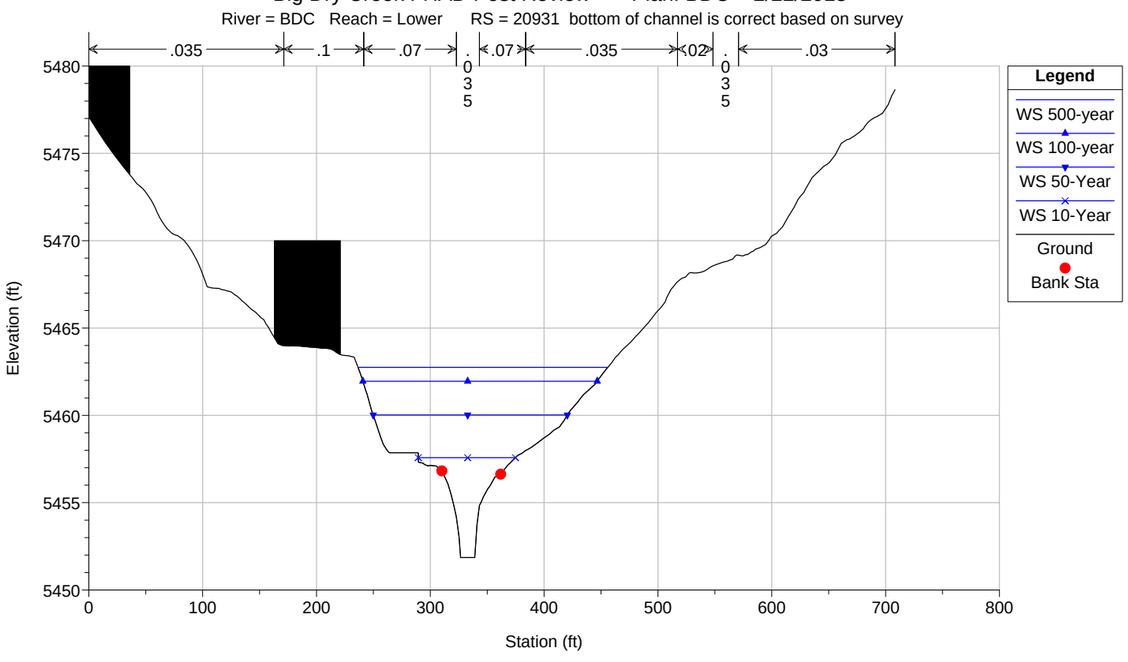

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 21992
.035
.07
.035
.07
.035
5485
5480
5475
5470
5465
5460
Elevation (ft)
0
100
200
300
400
500
600
700
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

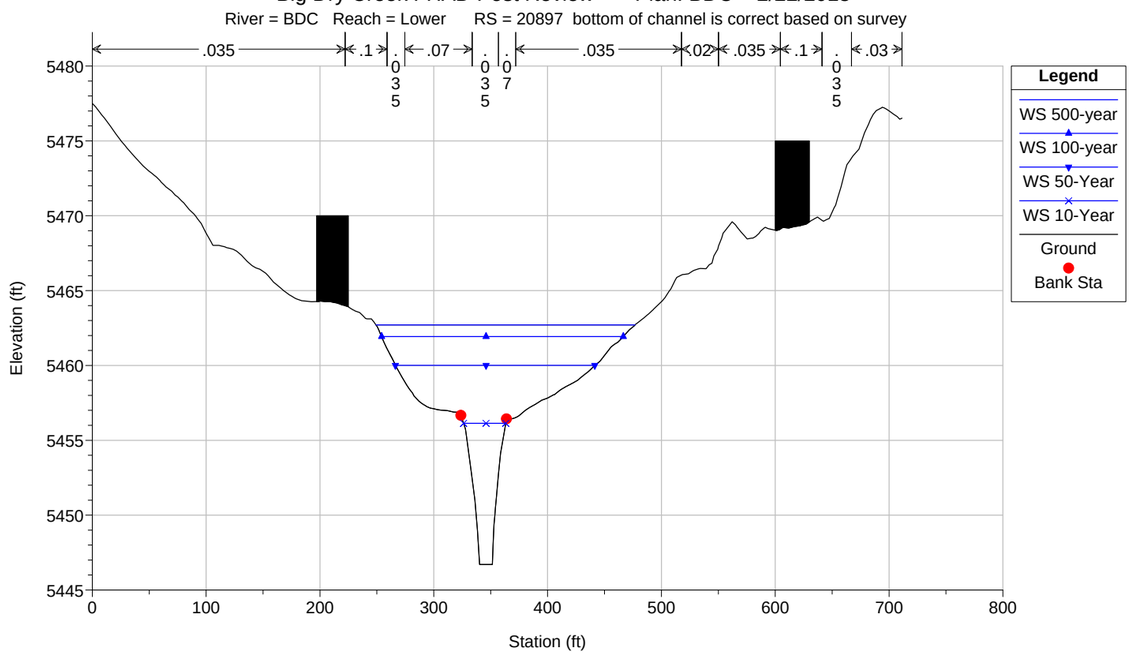

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 21937
.035
.07
.035
.07
.035
5490
5485
5480
5475
5470
5465
5460
5455
Elevation (ft)
0
100
200
300
400
500
600
700
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

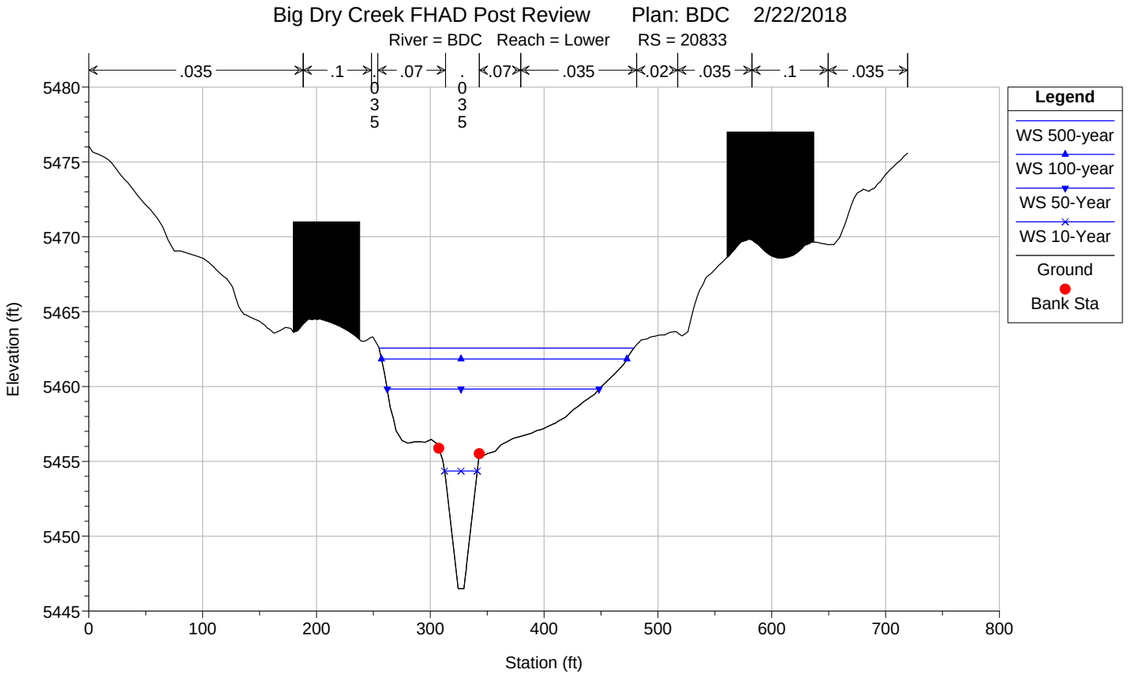

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 21756
.035
.07
.07
.035
5485
5480
5475
5470
5465
5460
5455
5450
Elevation (ft)
0
100
200
300
400
500
600
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

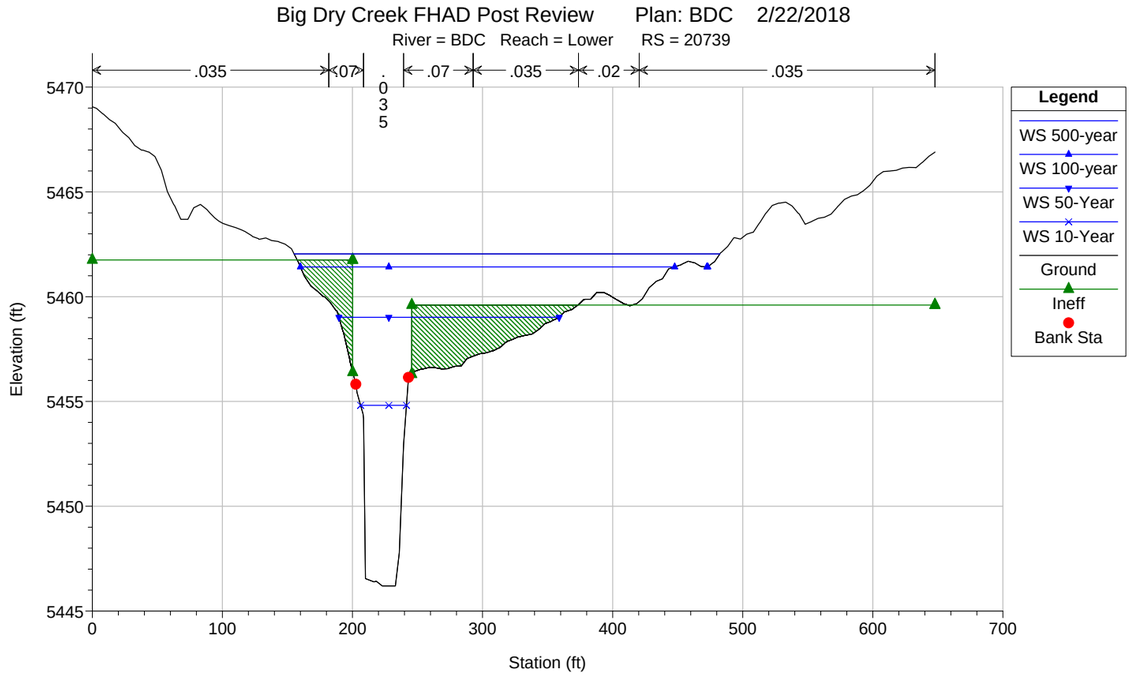

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 21372
.035
.07
.035
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

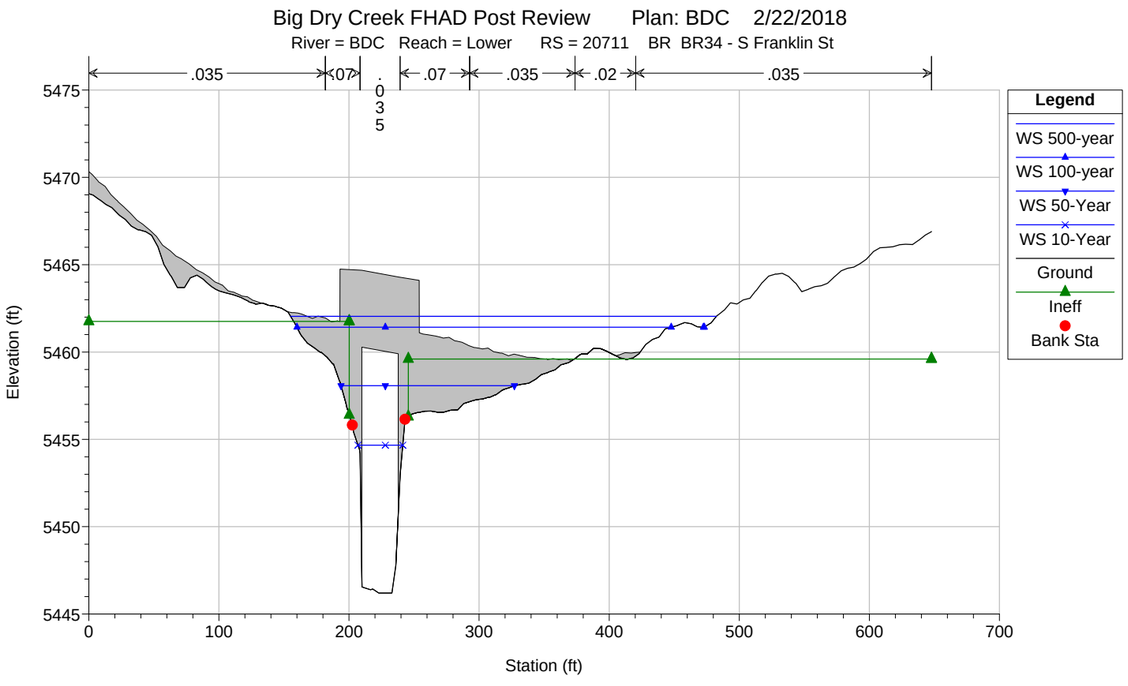

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20987
.035
.07
.07
.035
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

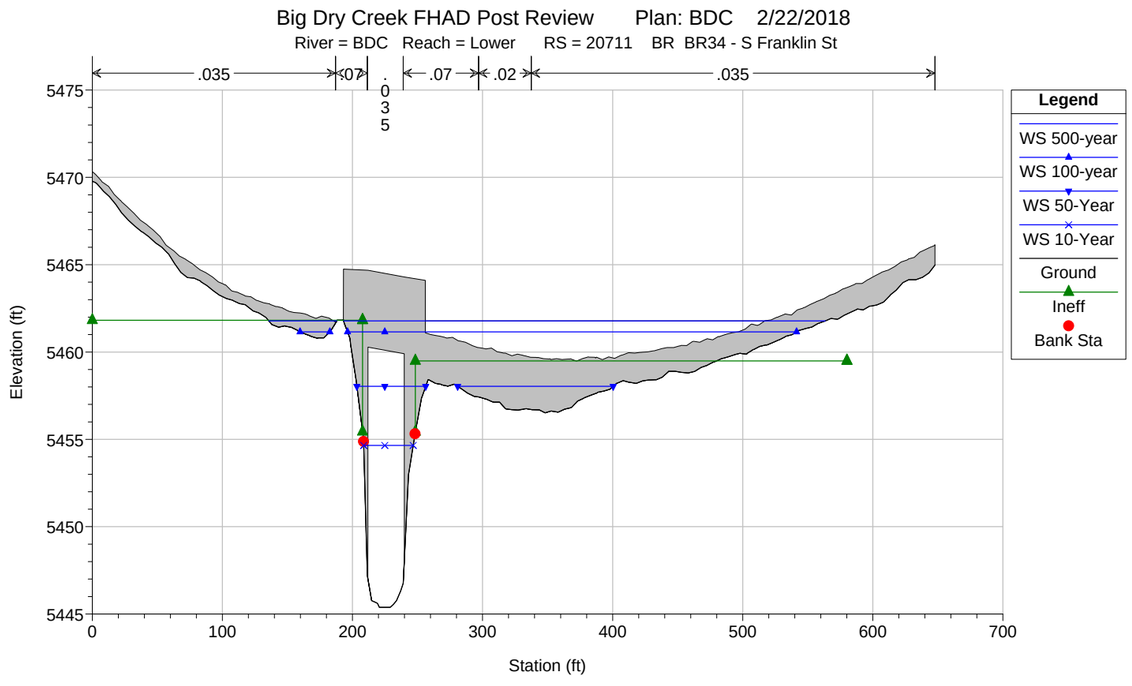

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20931 bottom of channel is correct based on survey
.035
.1
.07
.07
.035
.02
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

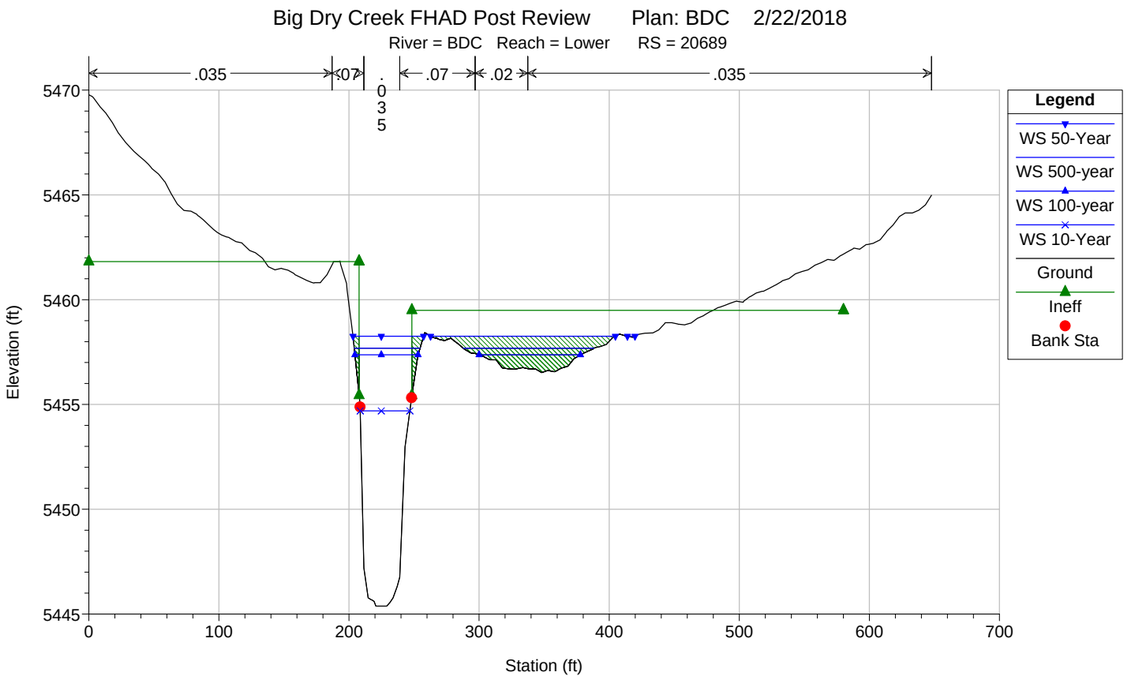

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20897 bottom of channel is correct based on survey
.035
.1
.07
.07
.035
.02
.035
.1
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

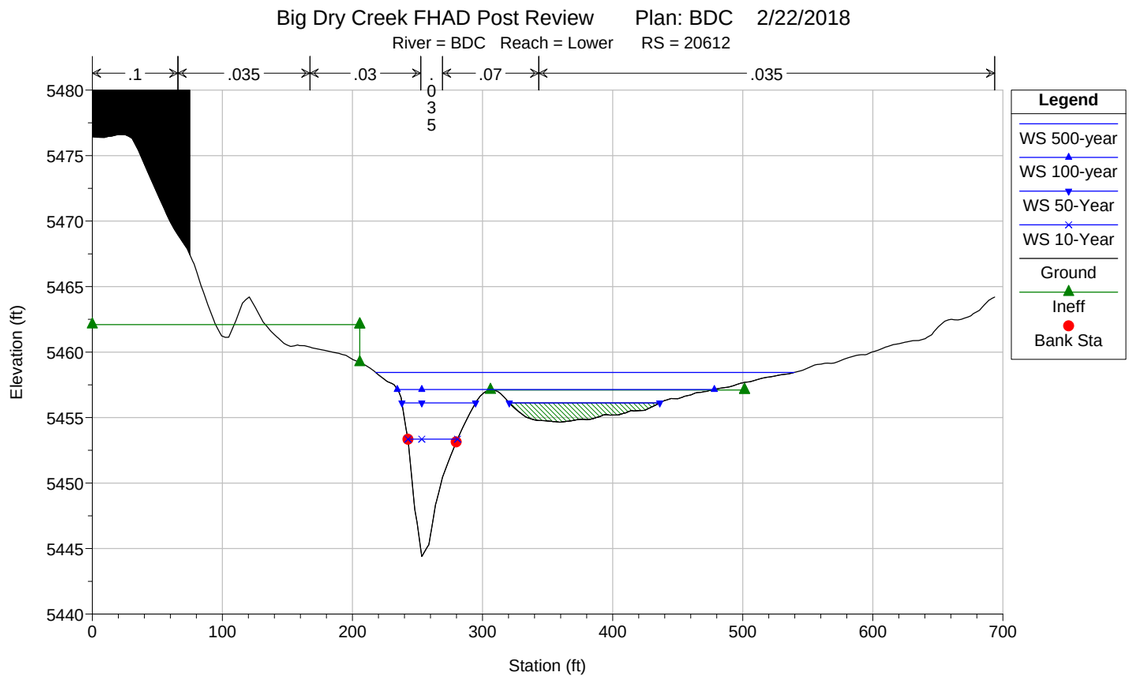

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20833
.035
.1
.07
.035
.07
.035
.02
.035
.1
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

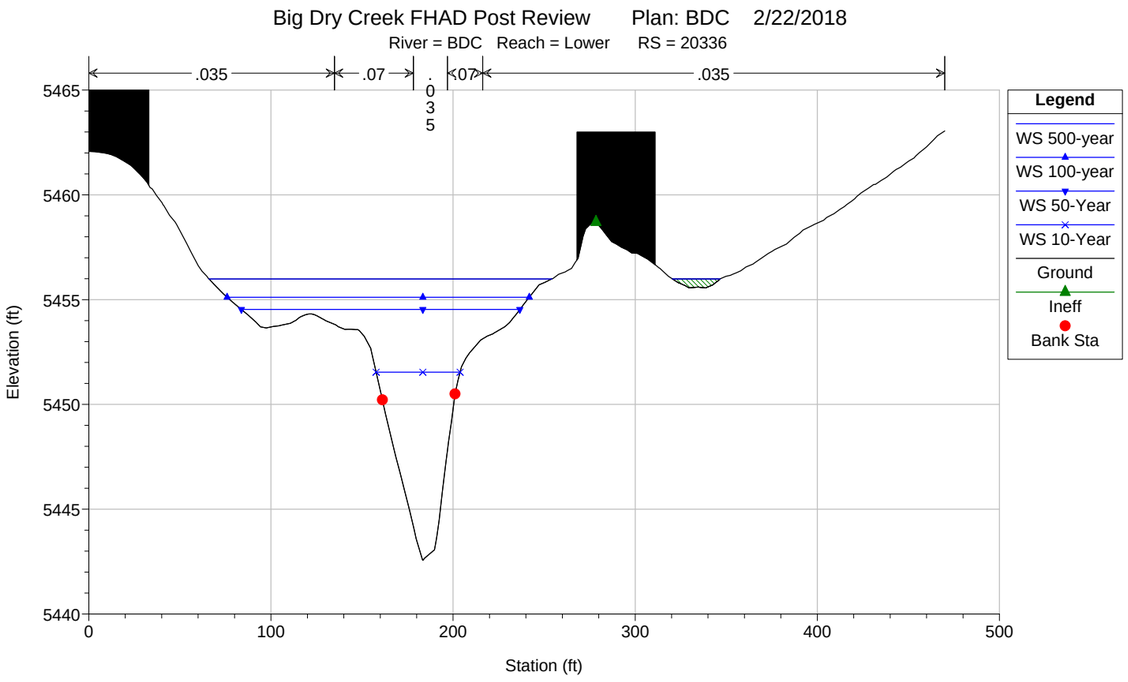

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20739
.035
.07
.07
.035
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

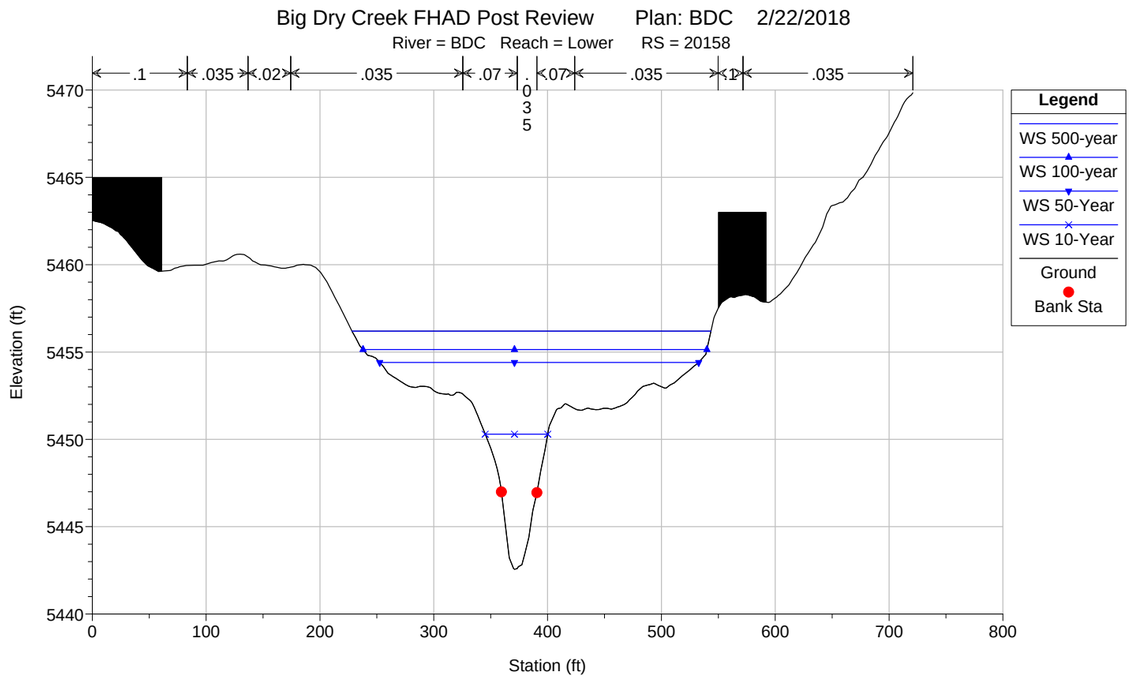

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20711 BR BR34 - S Franklin St
.035
.07
.07
.035
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

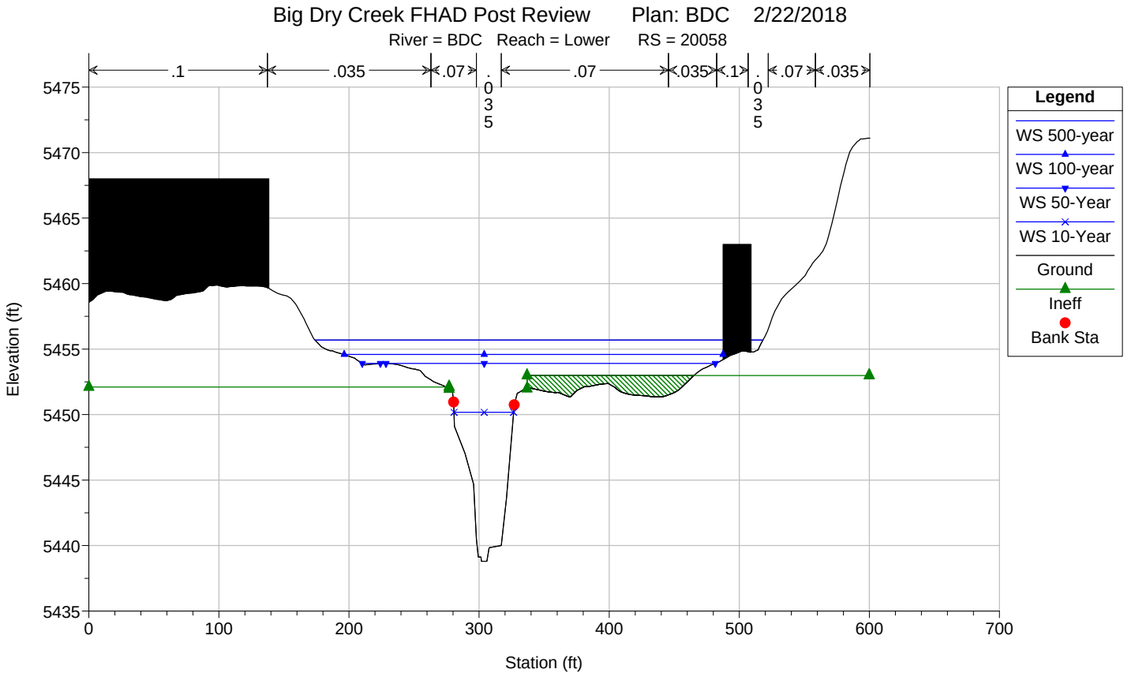

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20711 BR BR34 - S Franklin St
.035
.07
.07
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

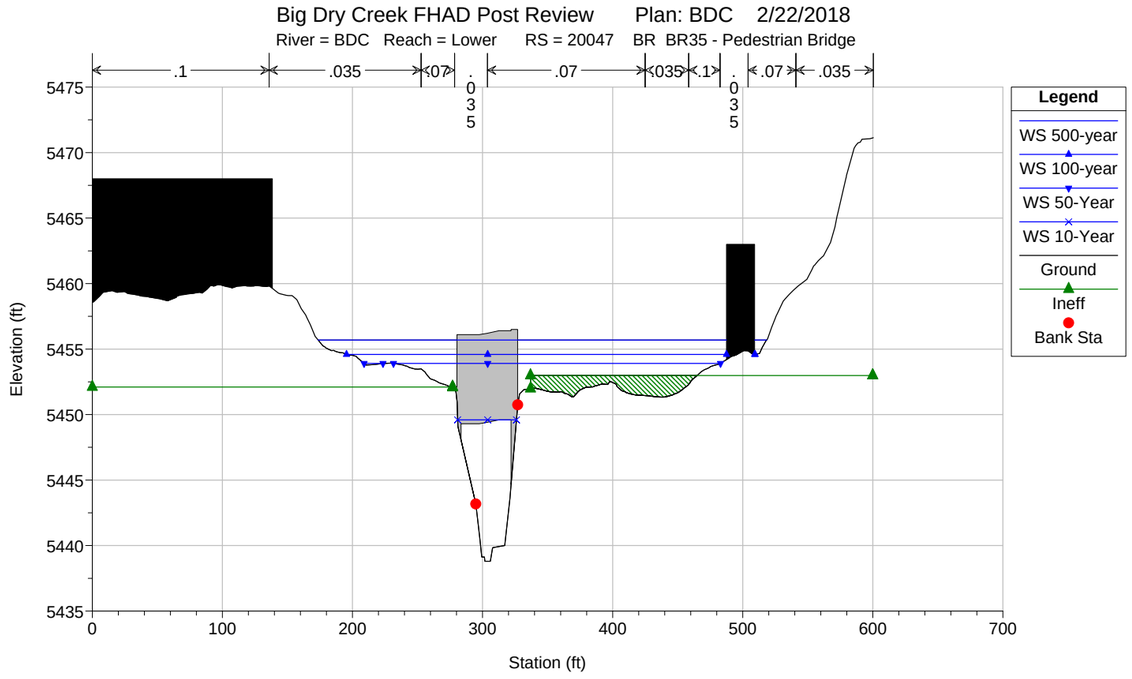

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20689
.035
.07
.035
.07
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 50-Year
WS 500-year
WS 100-year
WS 10-Year
Ground
Ineff
Bank Sta

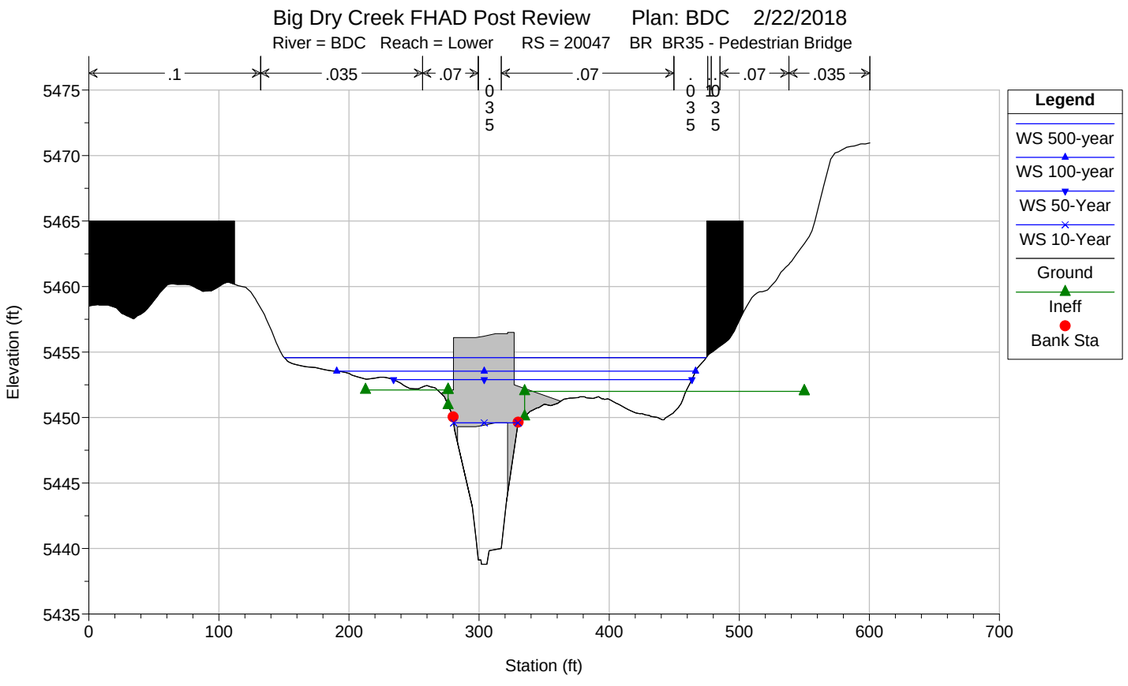

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20612
.1
.035
.03
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

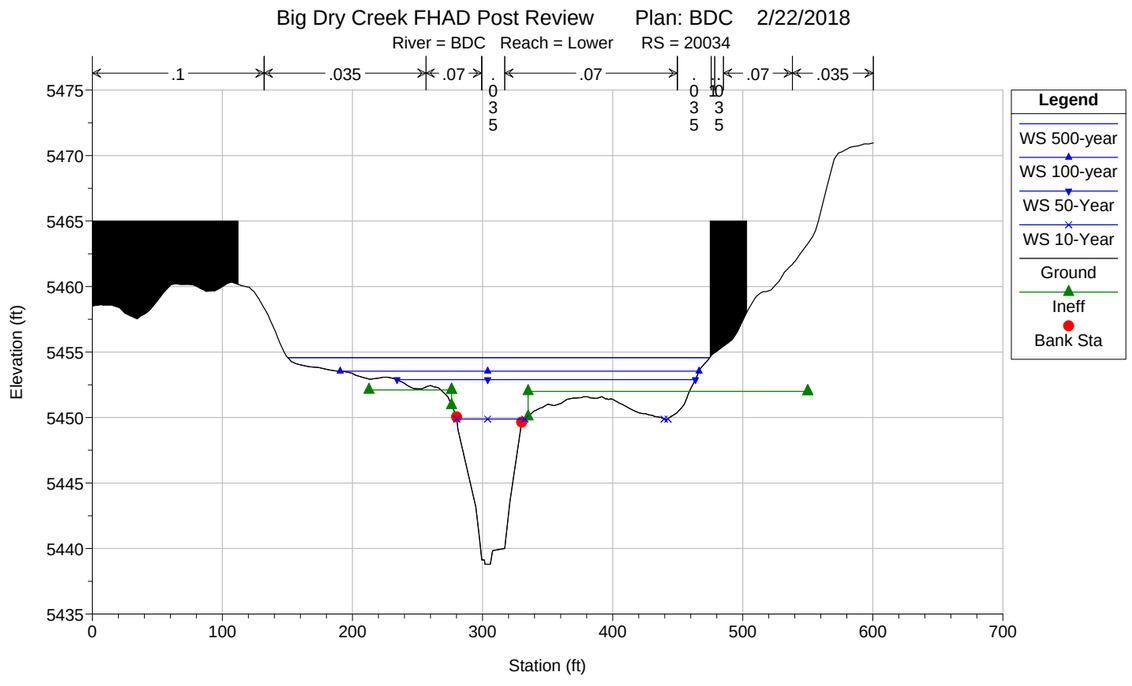

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20336
.035
.07
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

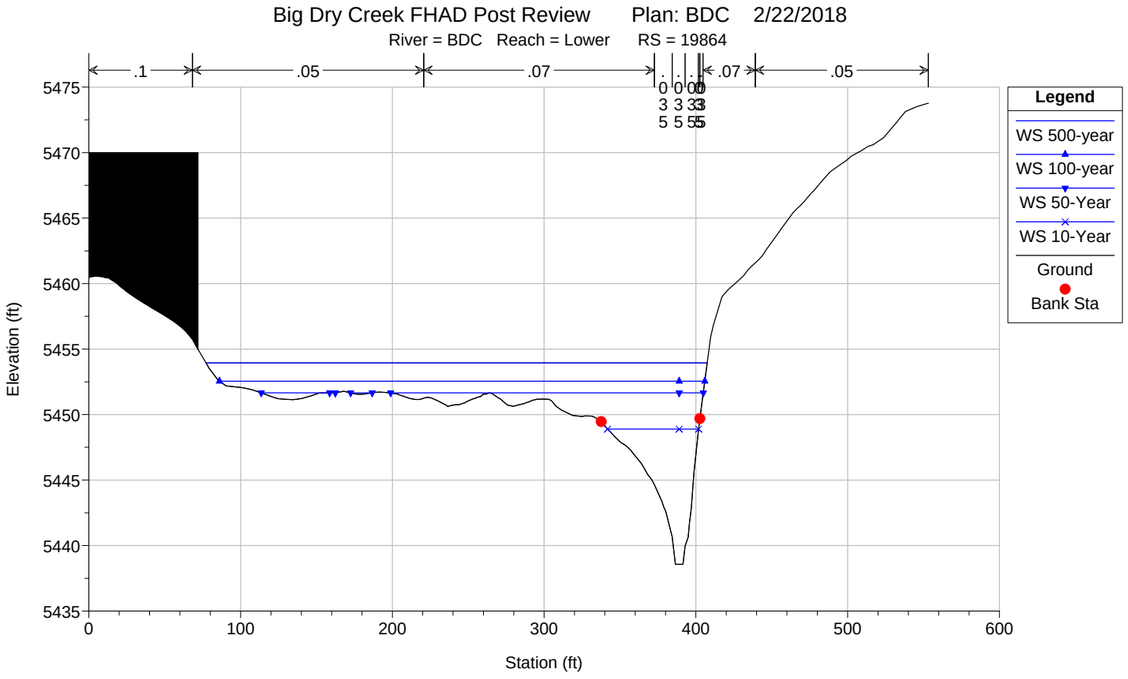

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20158
.1
.035
.02
.035
.07
.07
.035
.1
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

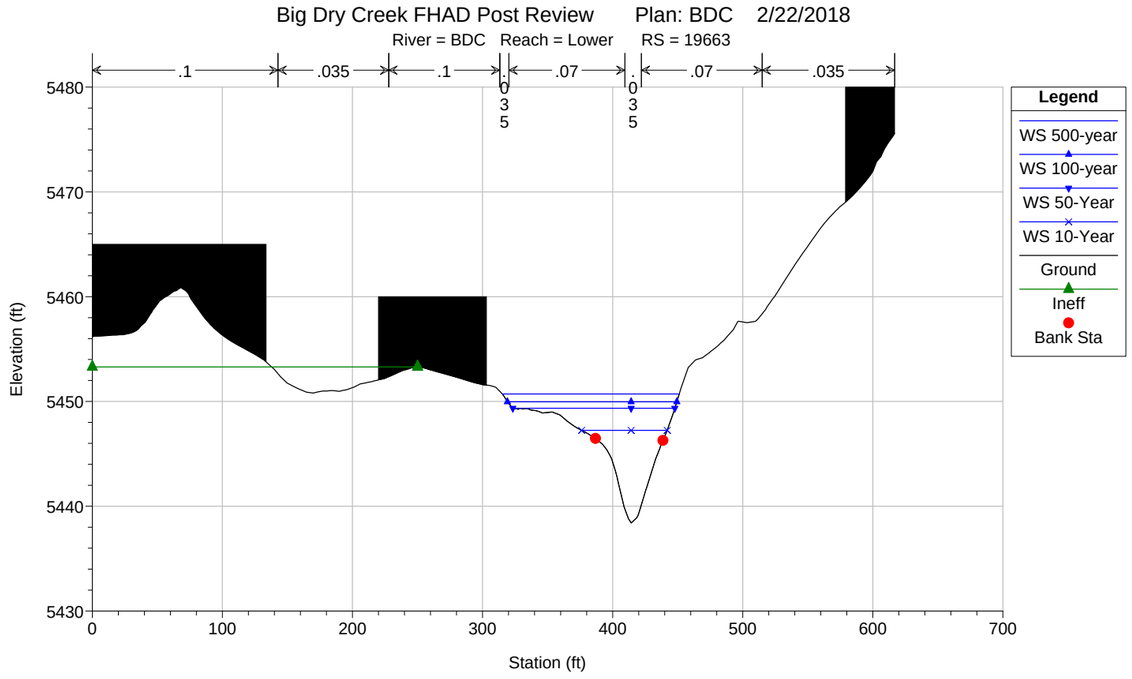

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20058
.1
.035
.07
.035
.07
.035
.1
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

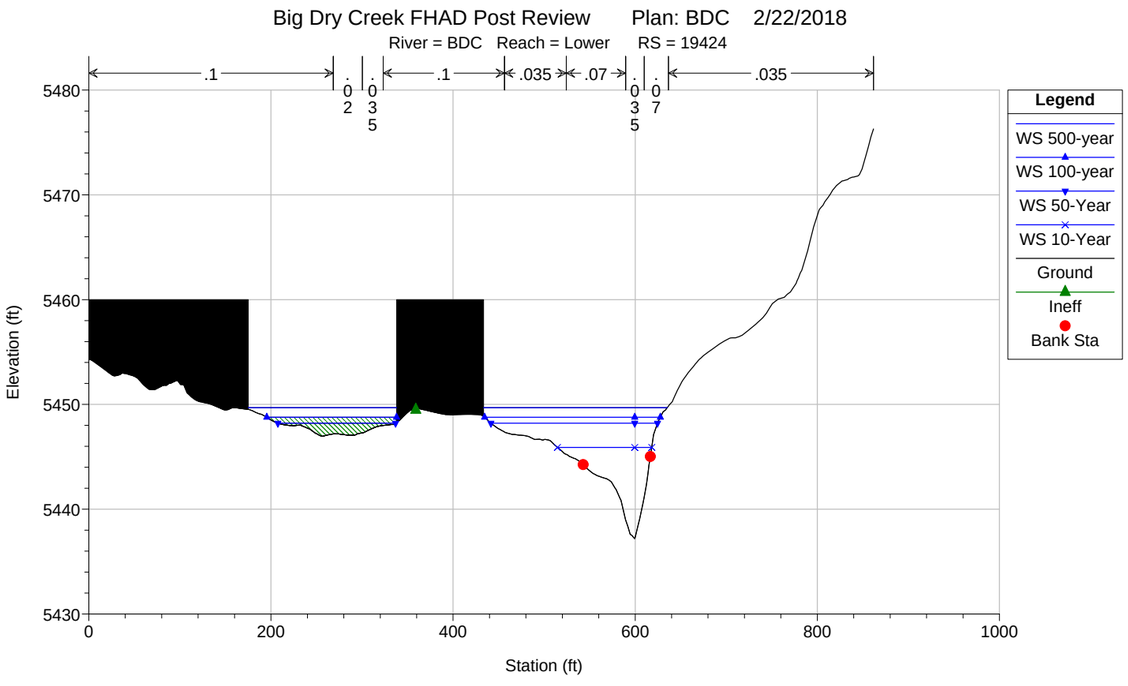

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20047 BR BR35 - Pedestrian Bridge
.1
.035
.07
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

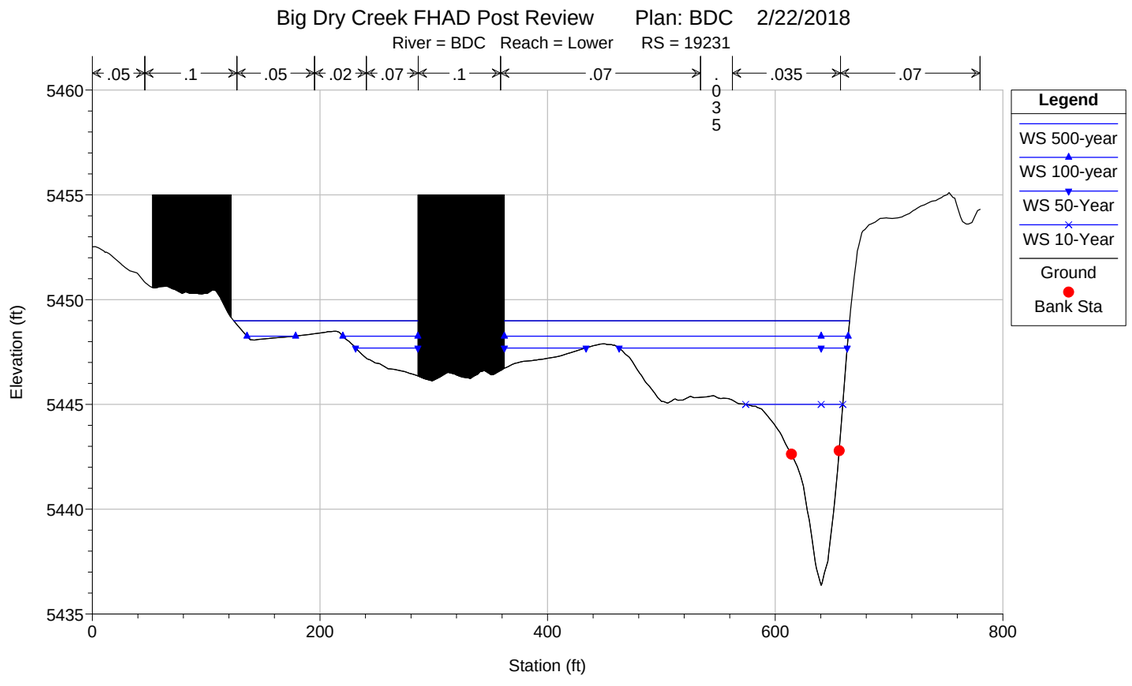

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20047 BR BR35 - Pedestrian Bridge
.1
.035
.07
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

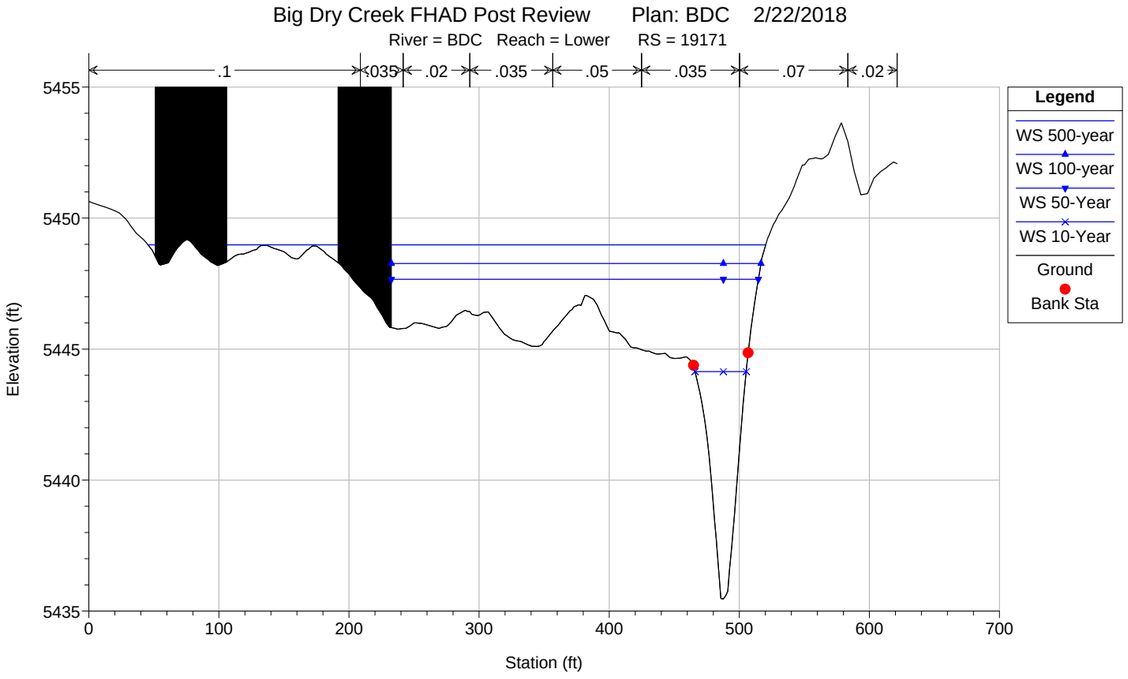

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 20034
.1
.035
.07
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

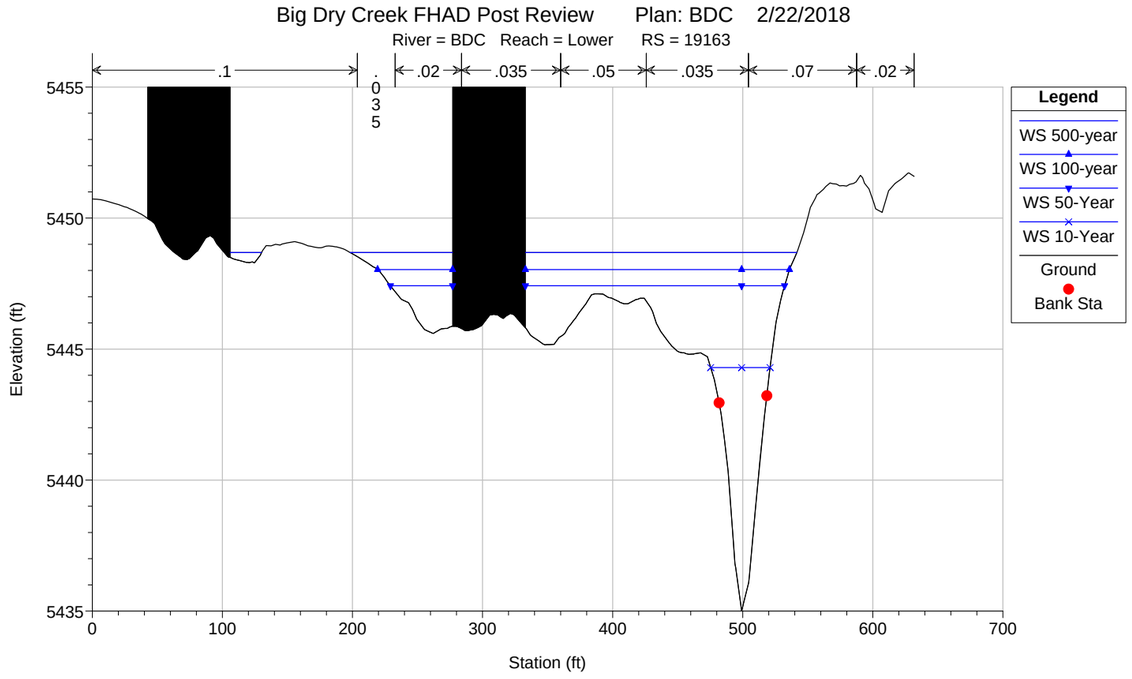

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19864
.1
.05
.07
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

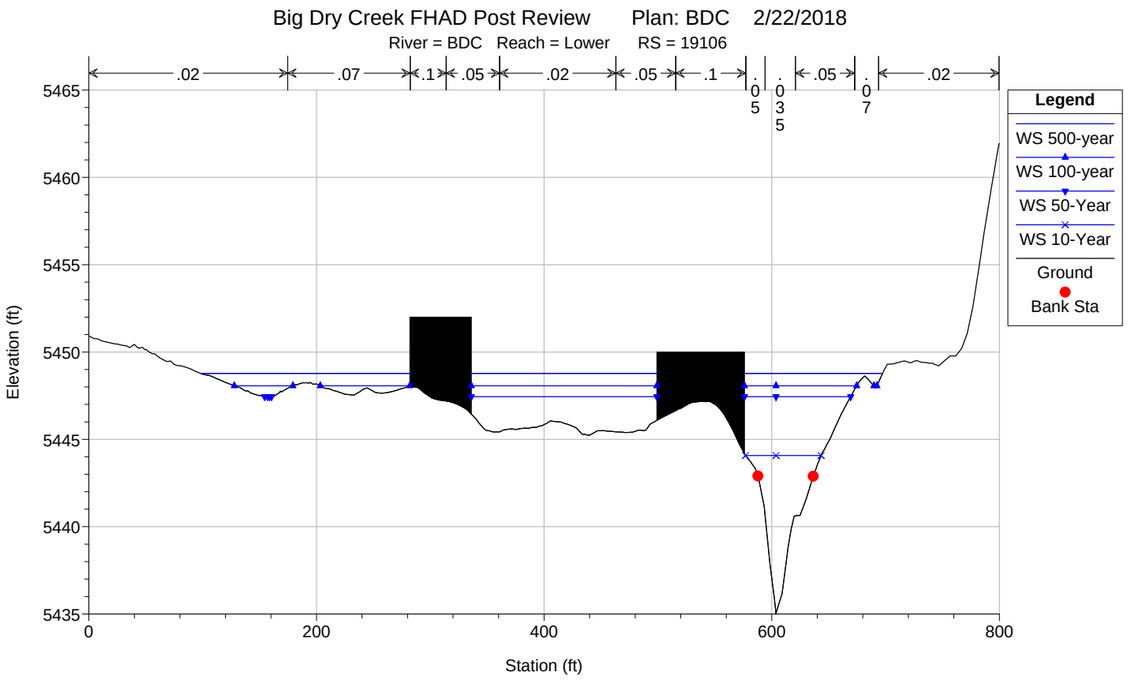

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19663
.1
.035
.1
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

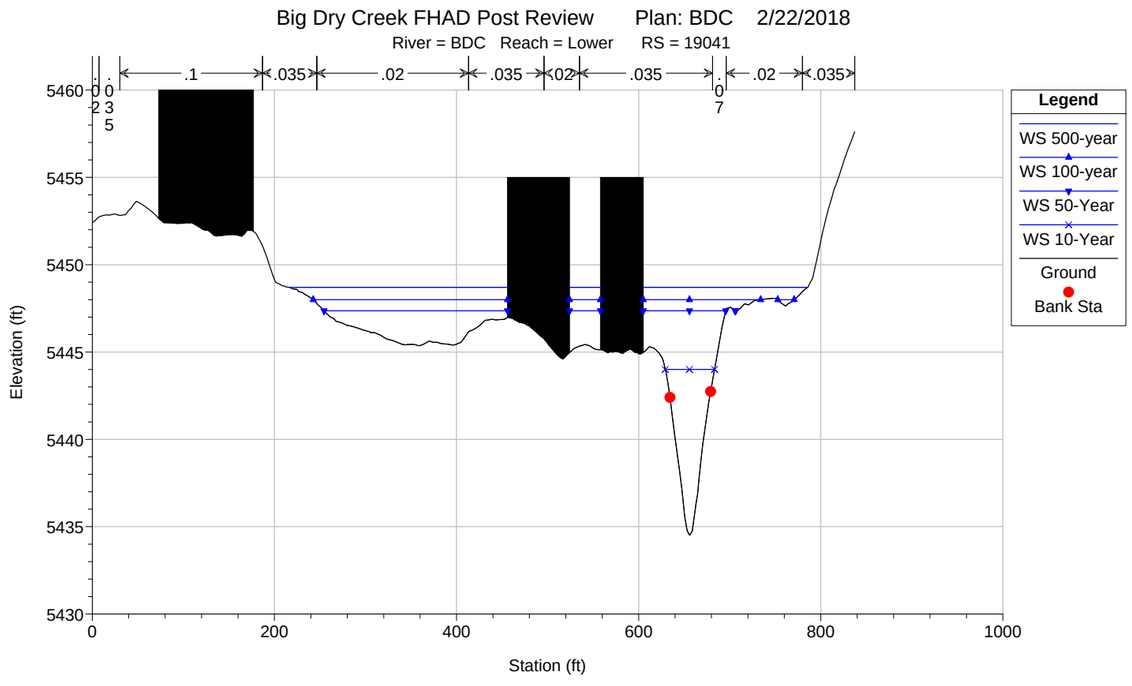

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19424
.1
.1
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

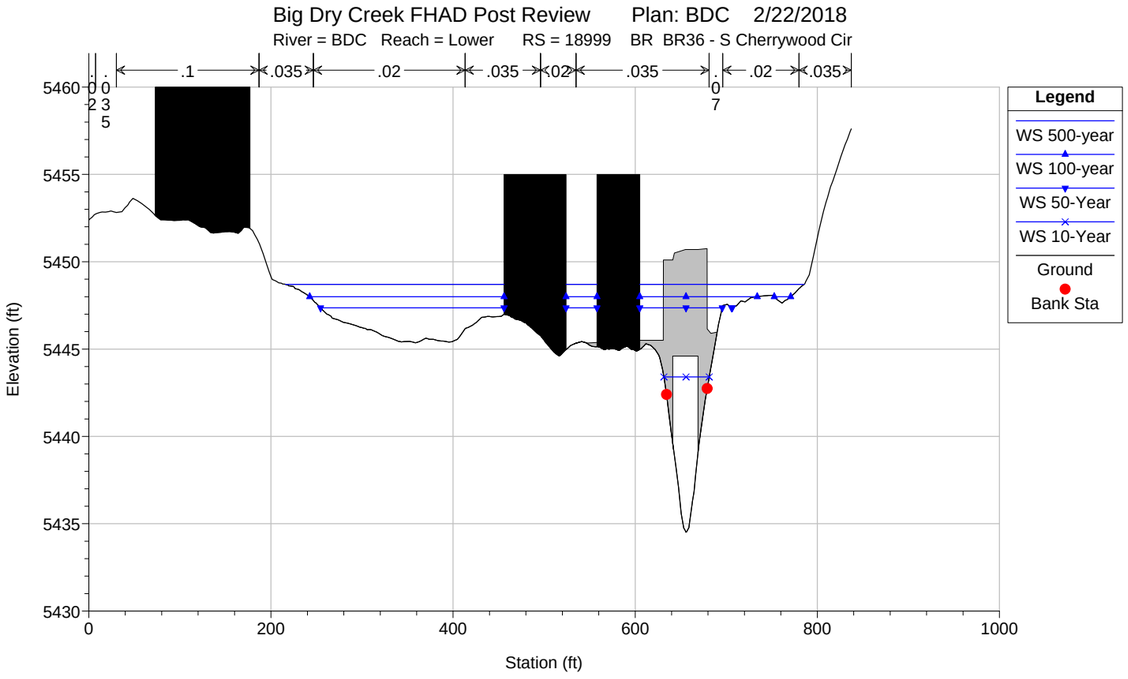

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19231
.05
.1
.05
.02
.07
.1
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

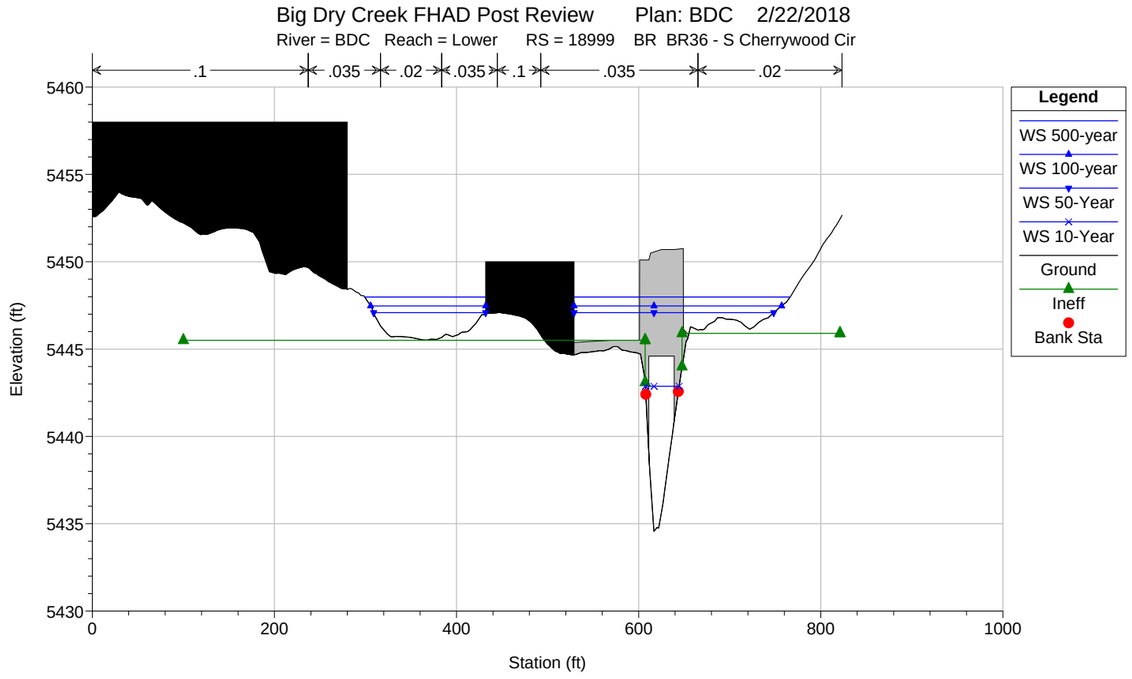

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19171
.1
.035
.02
.035
.05
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

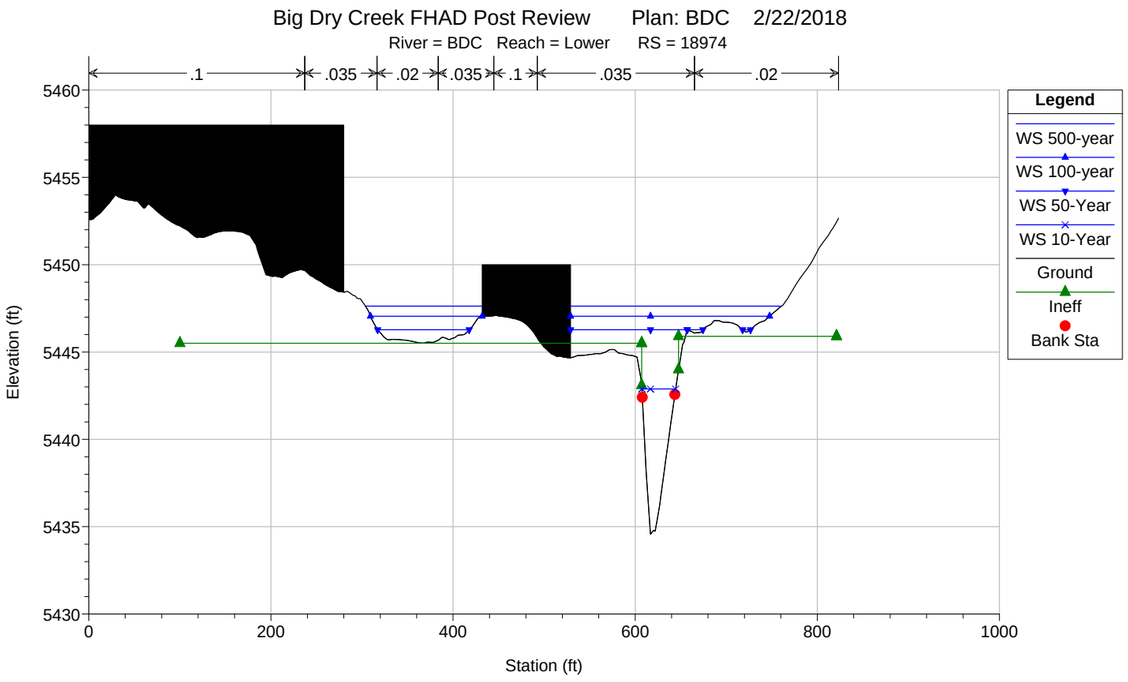

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19163
.1
.035
.02
.035
.05
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

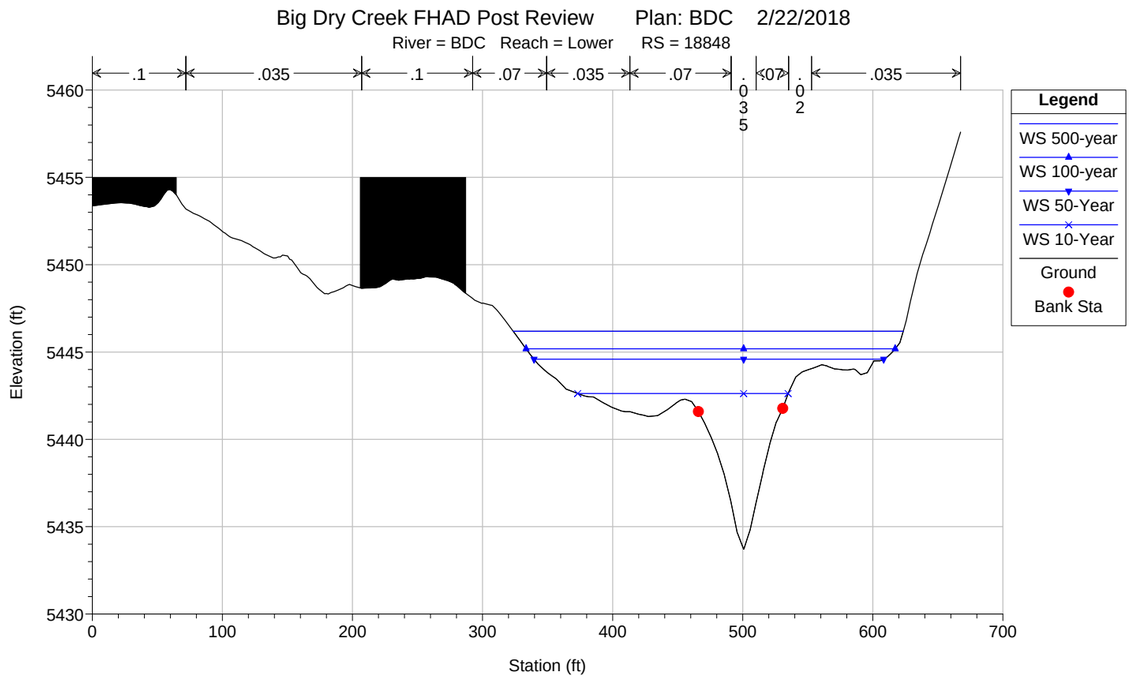

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19106
.02
.07
.1
.05
.02
.05
.1
.05
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

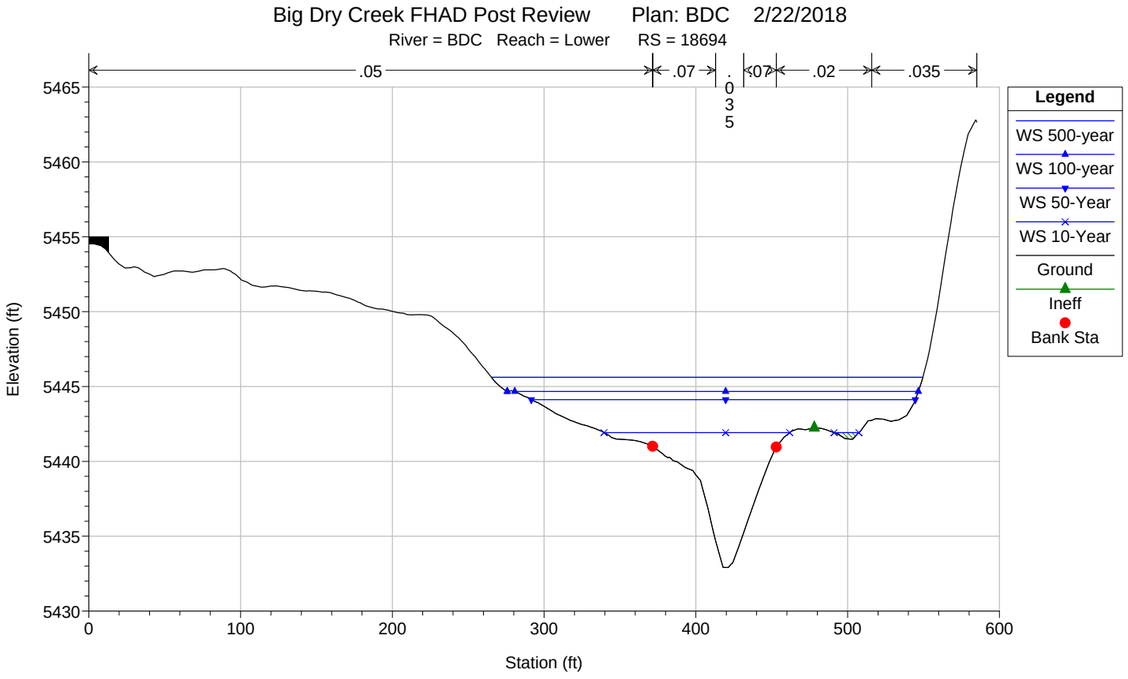

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 19041
.1
.035
.02
.035
.02
.035
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

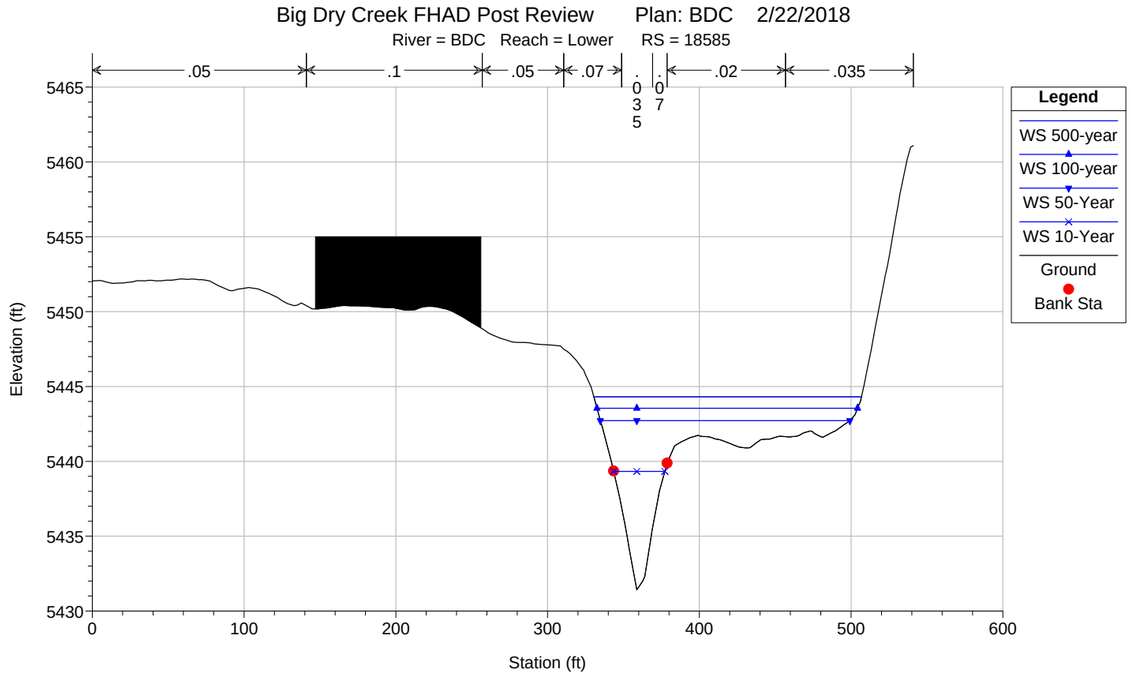

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18999 BR BR36 - S Cherrywood Cir
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18999 BR BR36 - S Cherrywood Cir
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18974
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18848
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18694
.05
.07
.035
.07
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18585
.05
.1
.05
.07
.02
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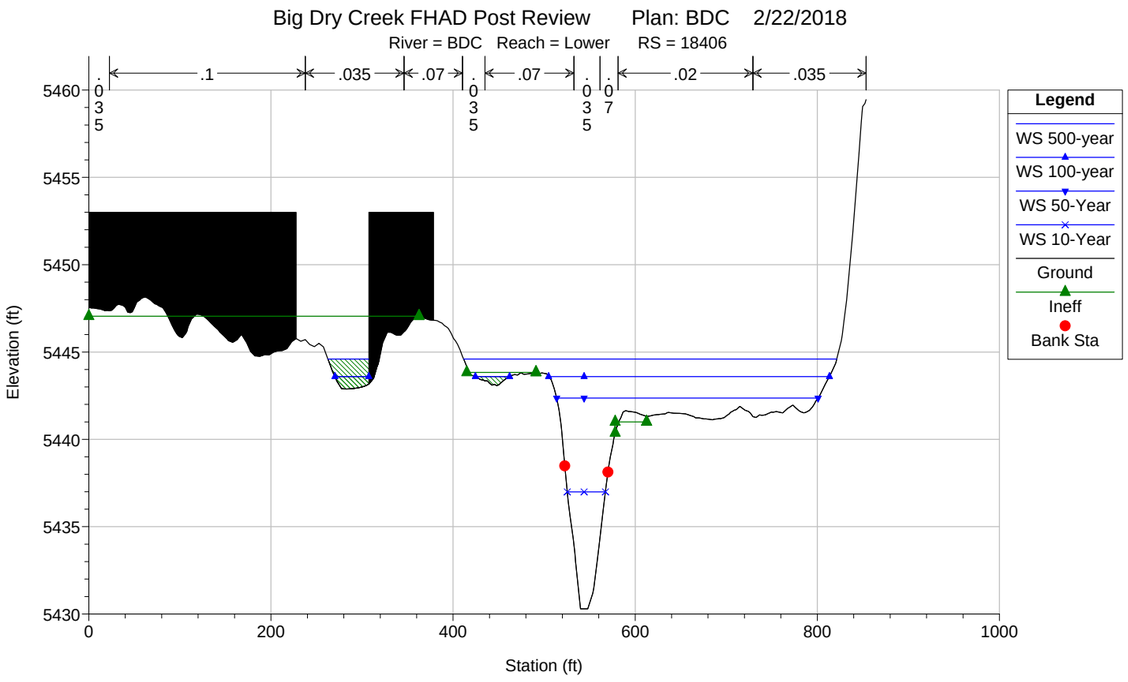
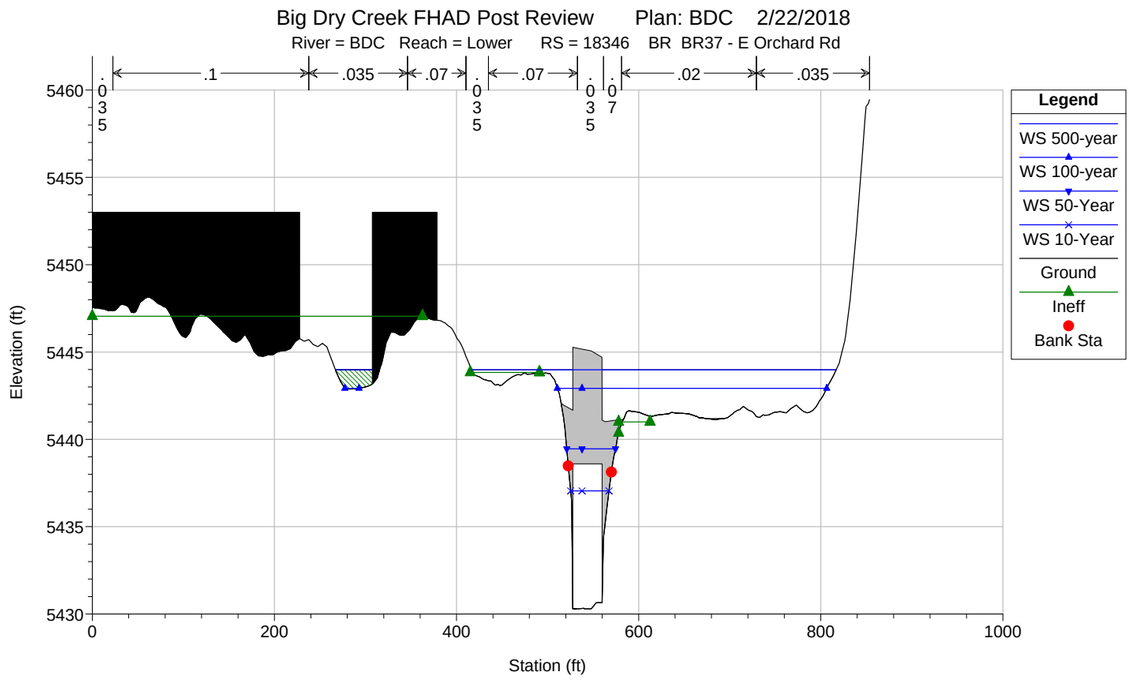
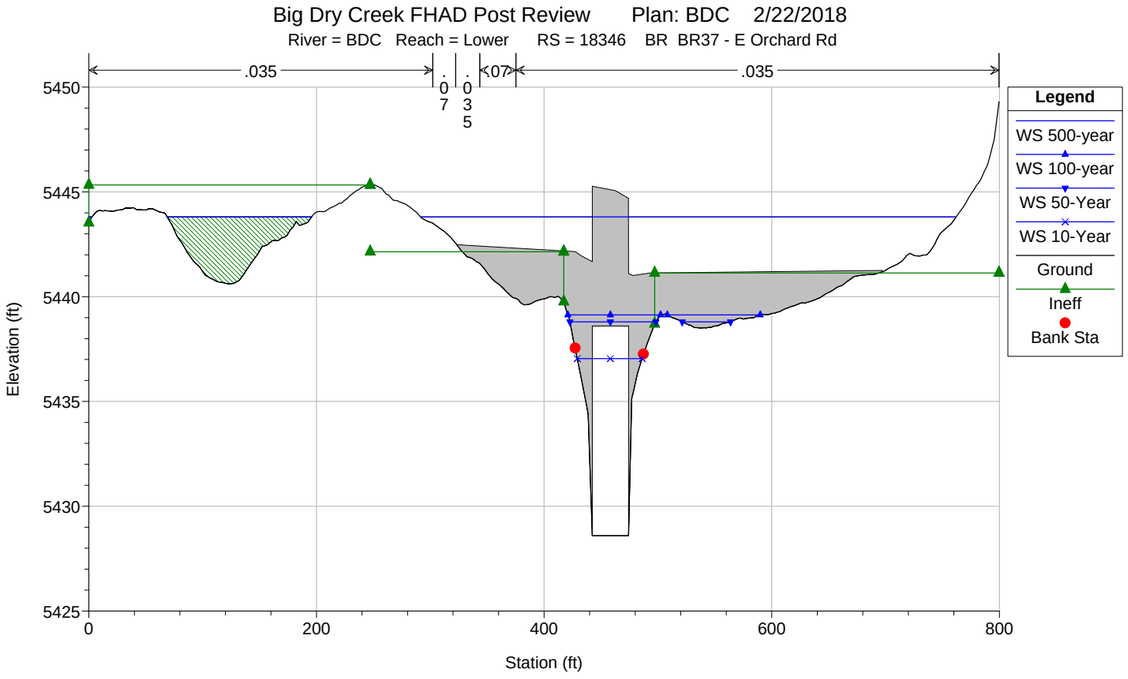
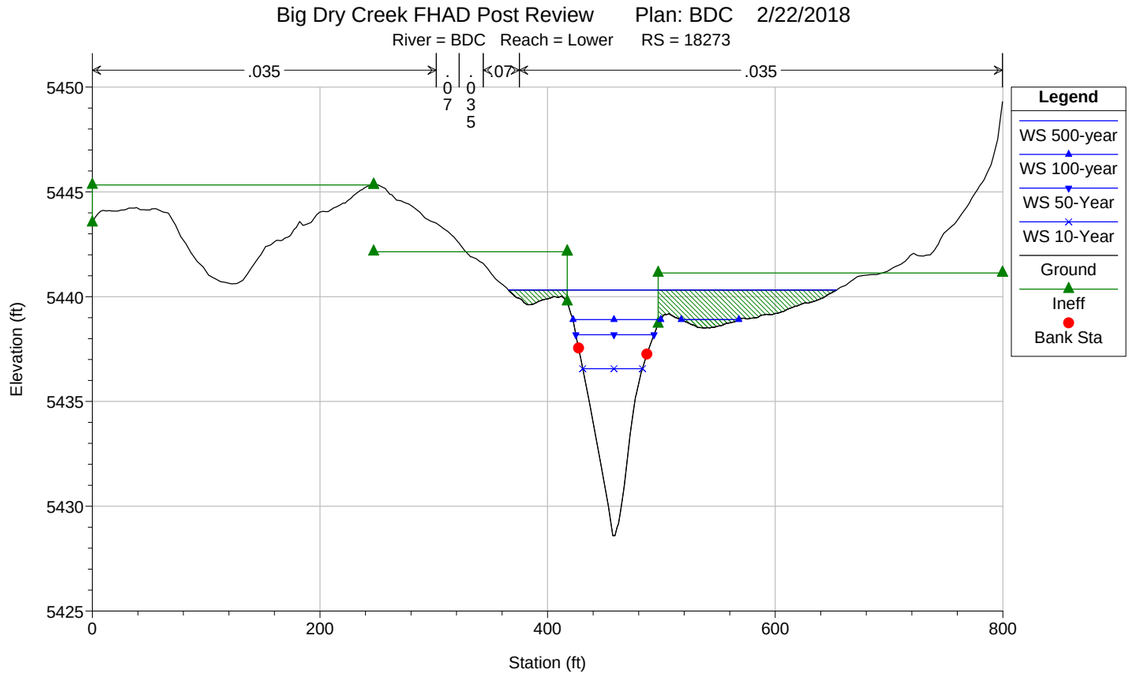
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18406
.1
.035
.07
.07
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18346 BR BR37 - E Orchard Rd
.1
.035
.07
.07
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18346 BR BR37 - E Orchard Rd
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5450
5445
5440
5435
5430
5425
0
200
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18273
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
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Station (ft)
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5445
5440
5435
5430
5425
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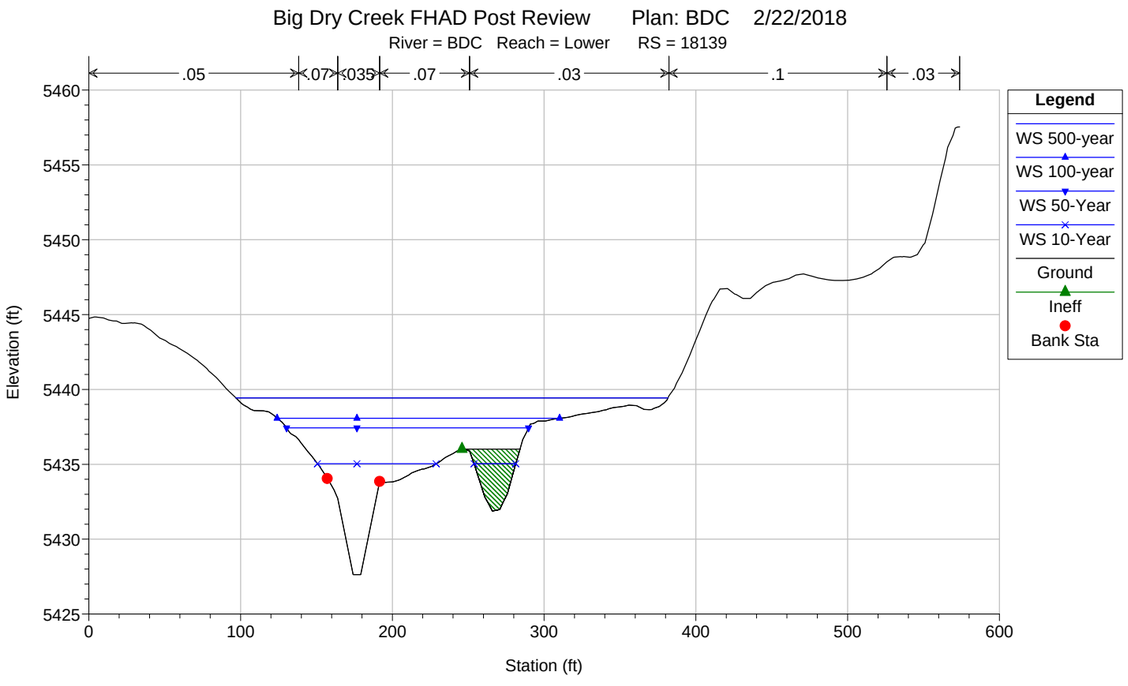
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 18139
.05
.07
.035
.07
.03
.1
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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5455
5450
5445
5440
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5425
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100
200
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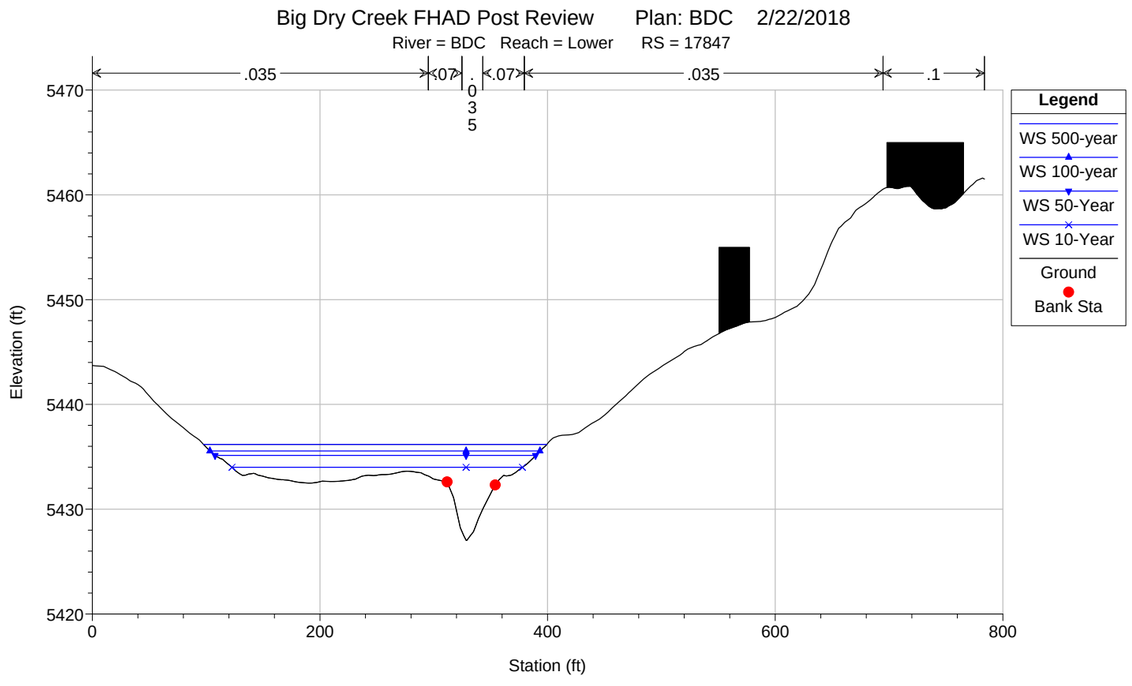
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17847
.035
.07
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5470
5460
5450
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5430
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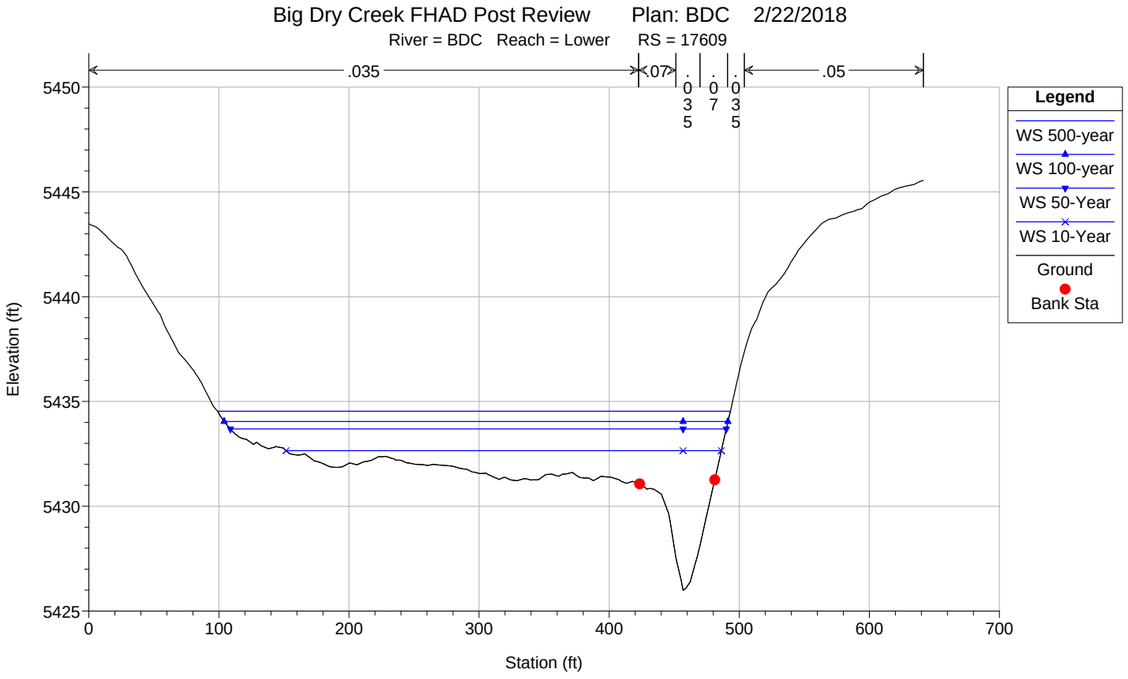
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17609
.035
.07
.035
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5450
5445
5440
5435
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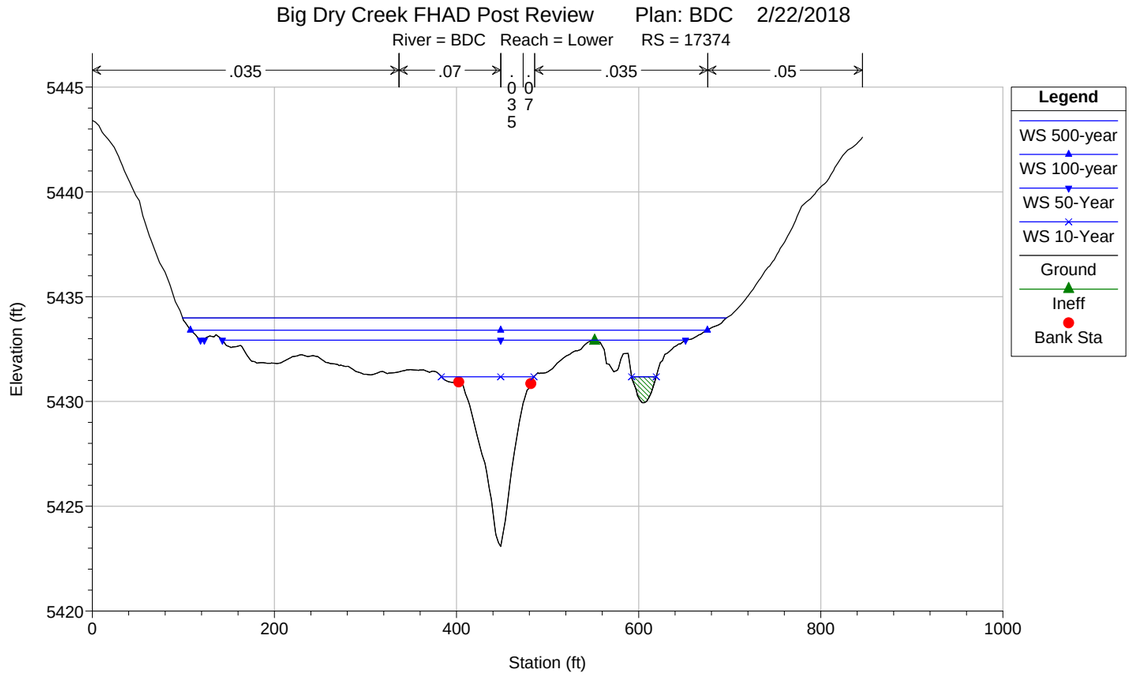
5425
0
100
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17374
.035
.07
.035
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5445
5440
5435
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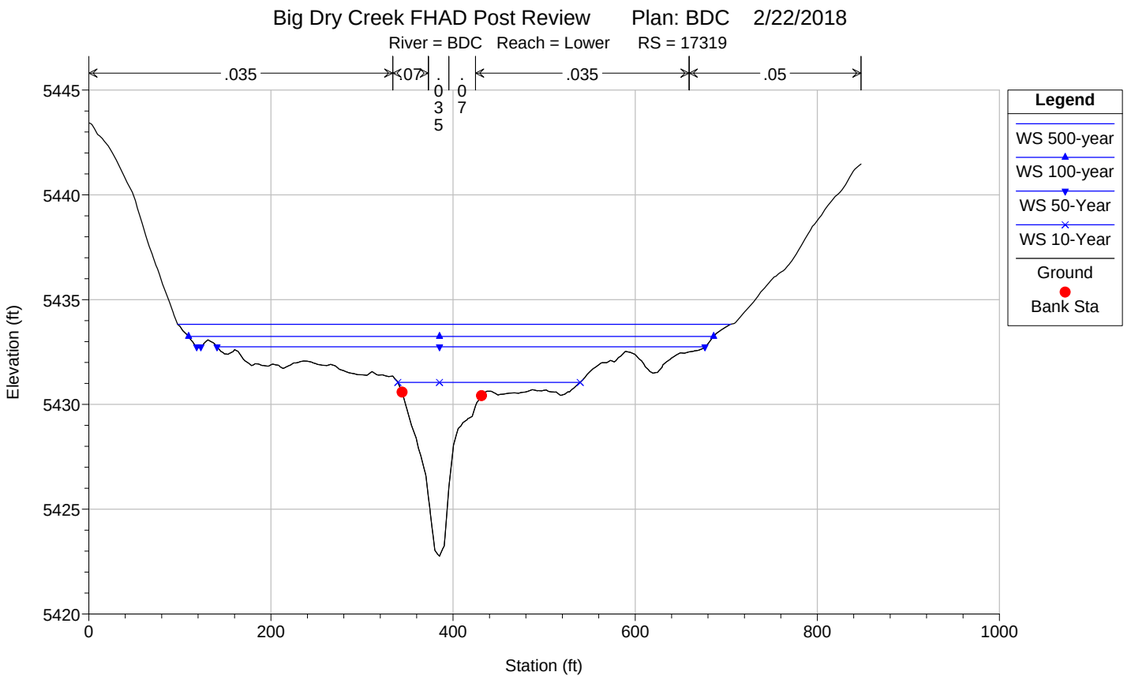
5425
5420
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17319
.035
.07
.035
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5445
5440
5435
5430
5425
5420
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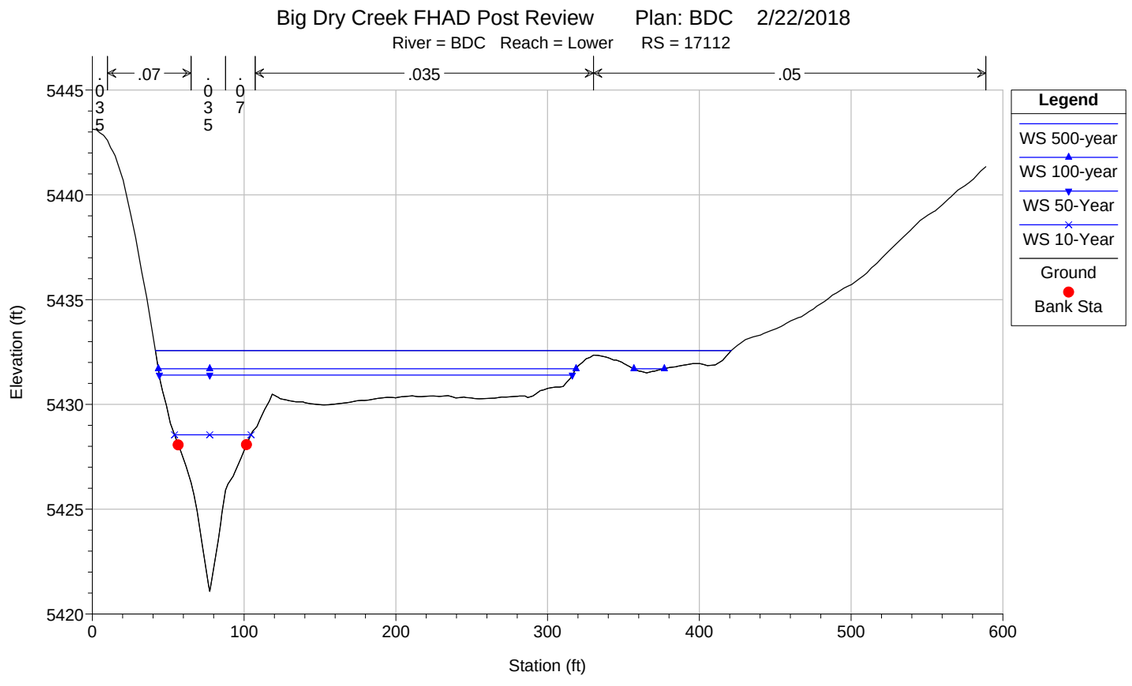
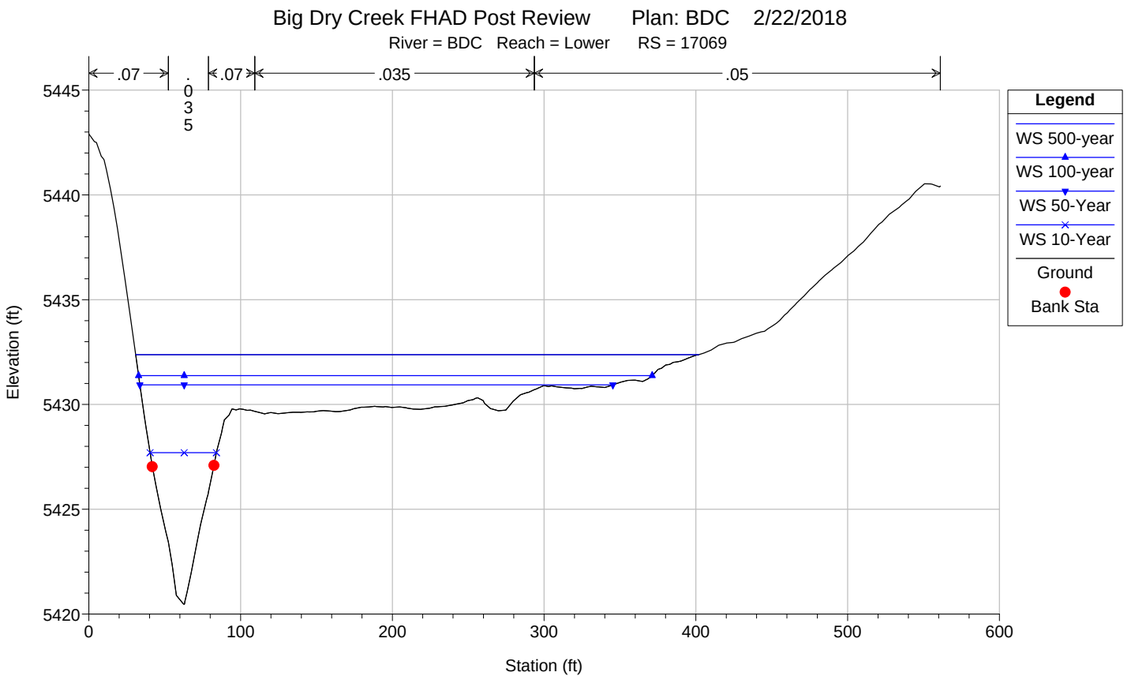
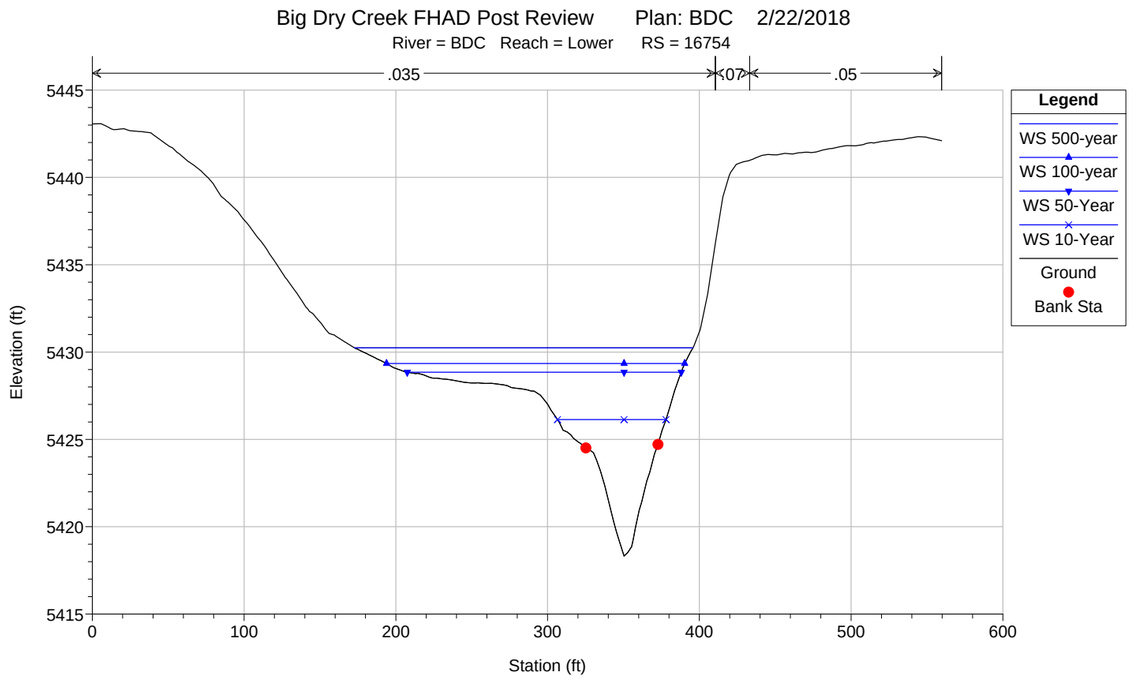
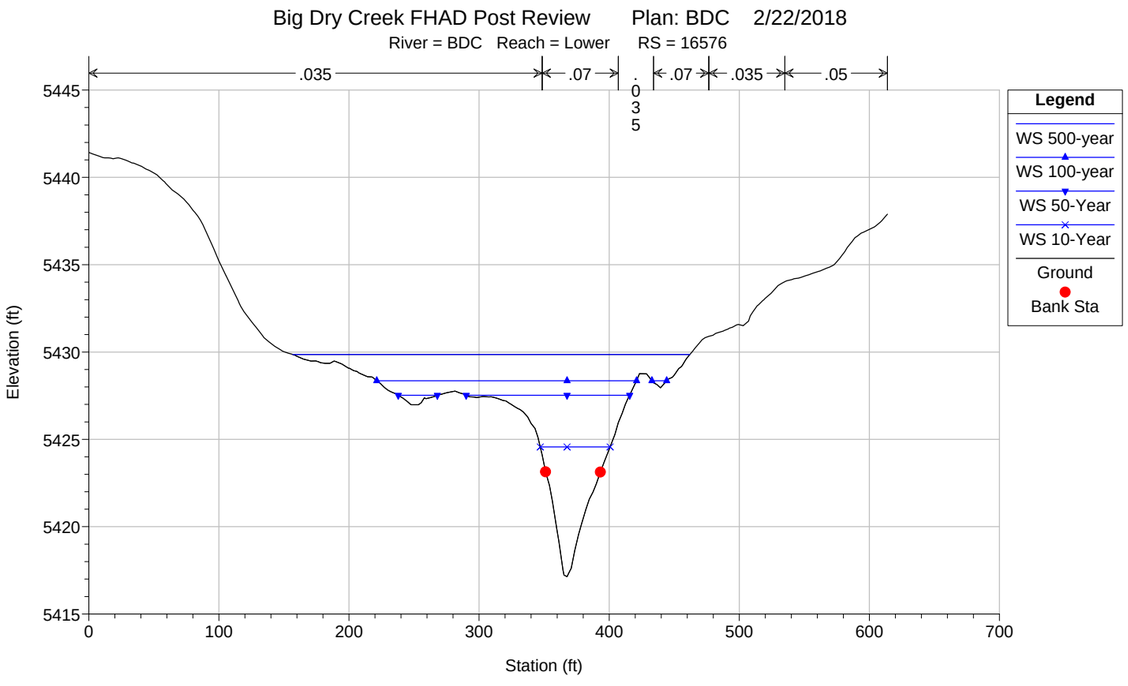
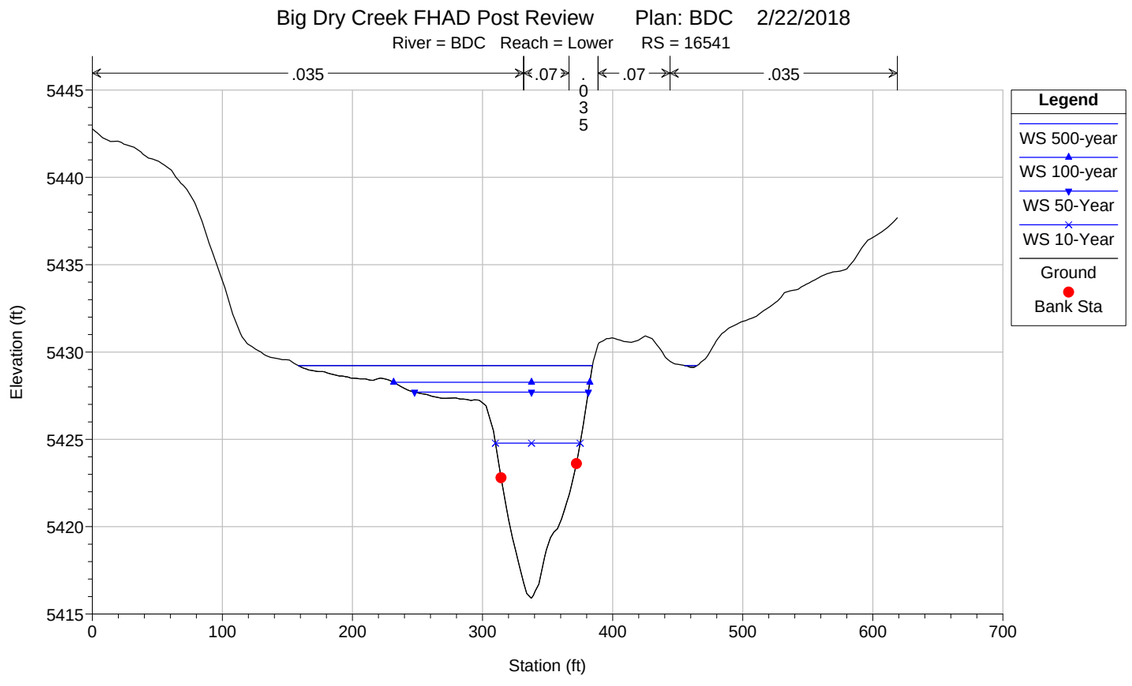
200
400
600
800
1000

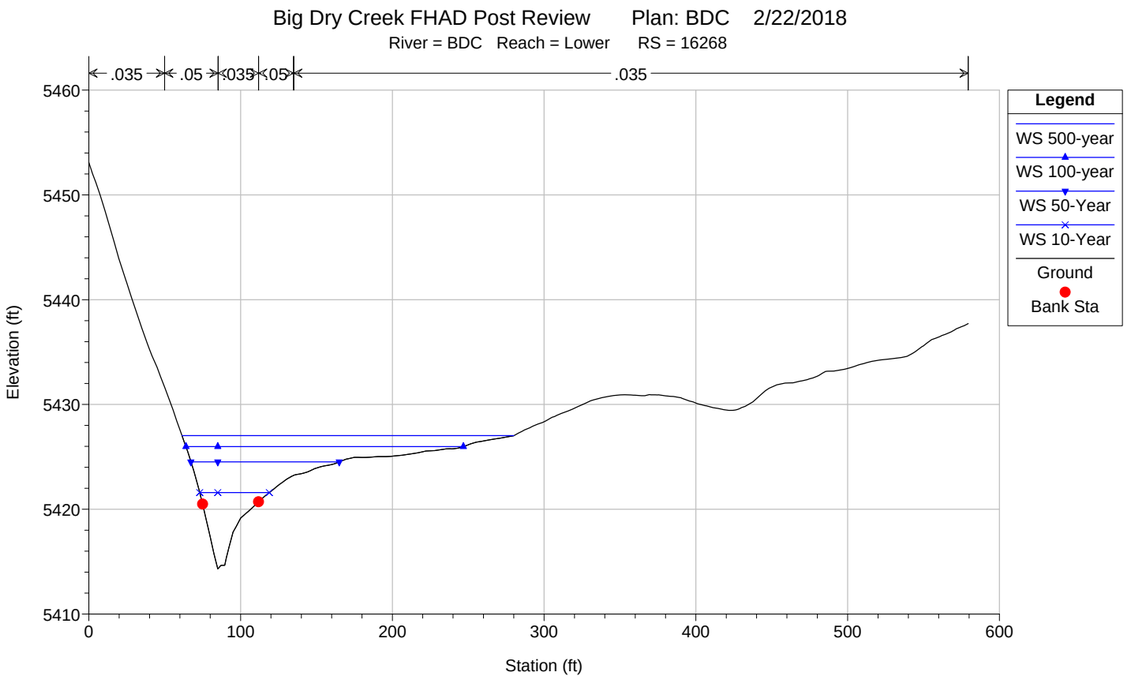

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17112
.035
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5445
5440
5435
5430
5425
5420
0
100
200
300
400
500
600

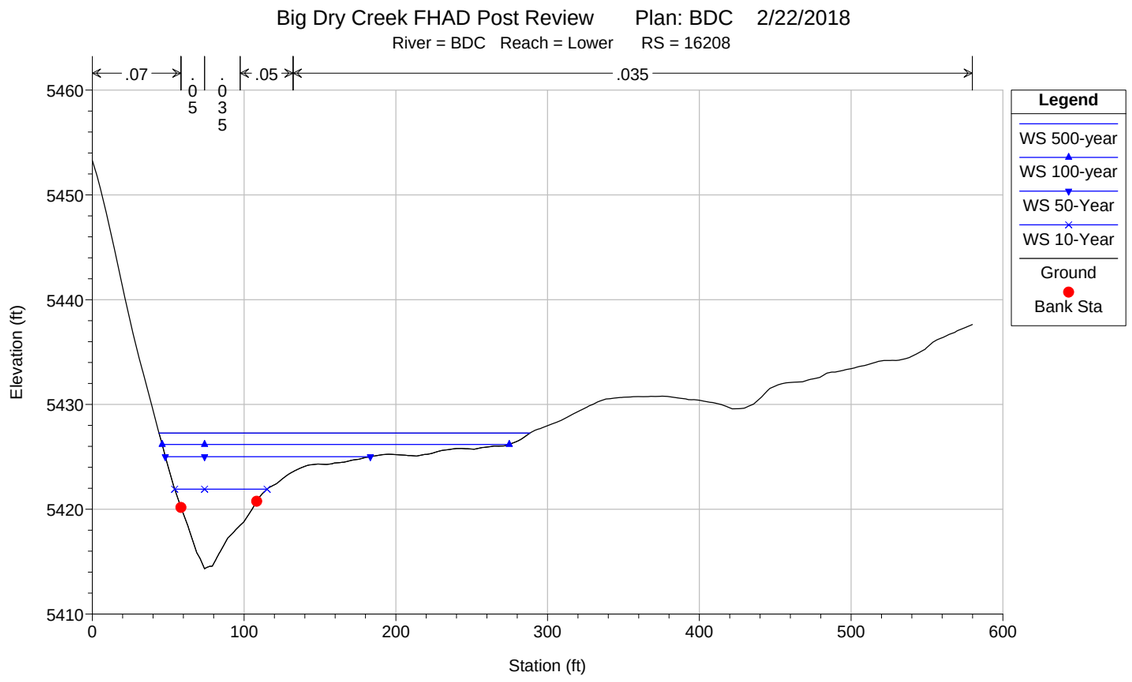

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 17069
.07
.035
.07
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

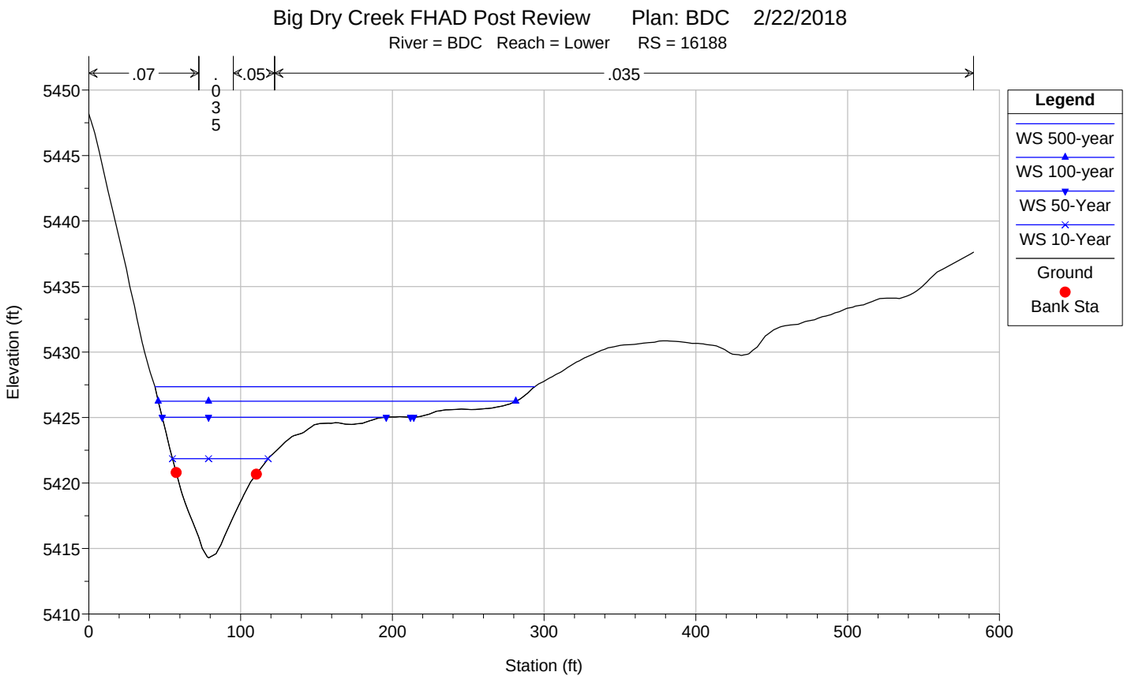

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16754
.035
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16576
.035
.07
.07
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16541
.035
.07
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16268
.035
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5460
5450
5440
5430
5420
5410
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16208
.07
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5460
5450
5440
5430
5420
5410
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16188
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5450
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5440
5435
5430
5425
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5410
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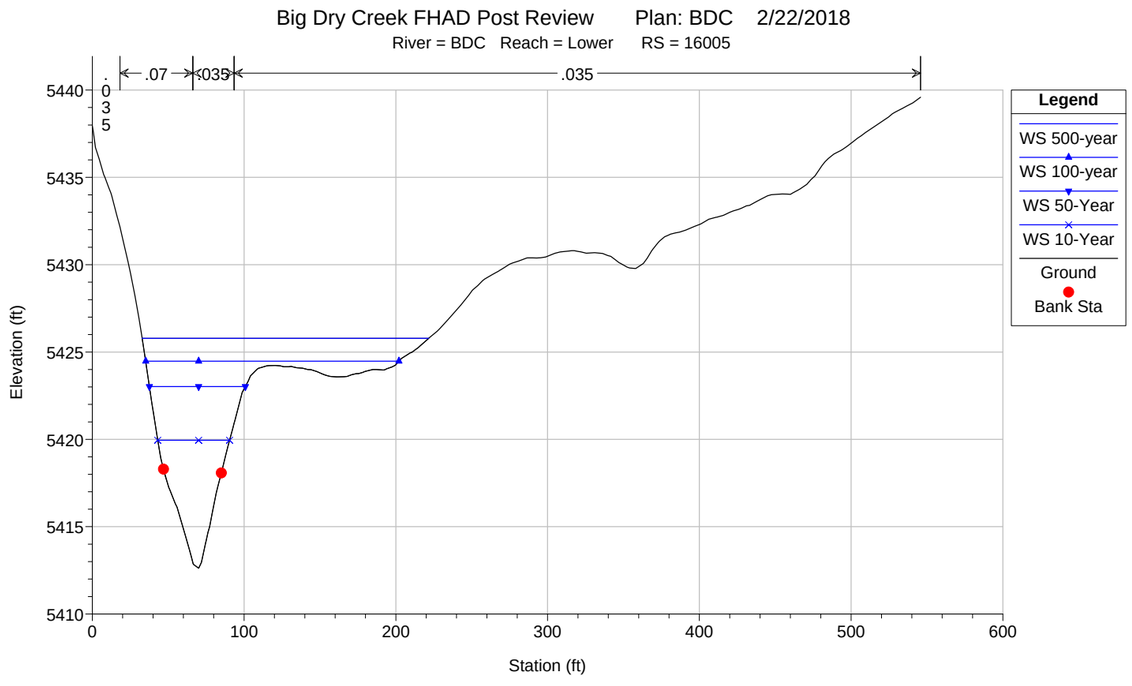
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 16005
.035
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5430
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5410
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300
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500
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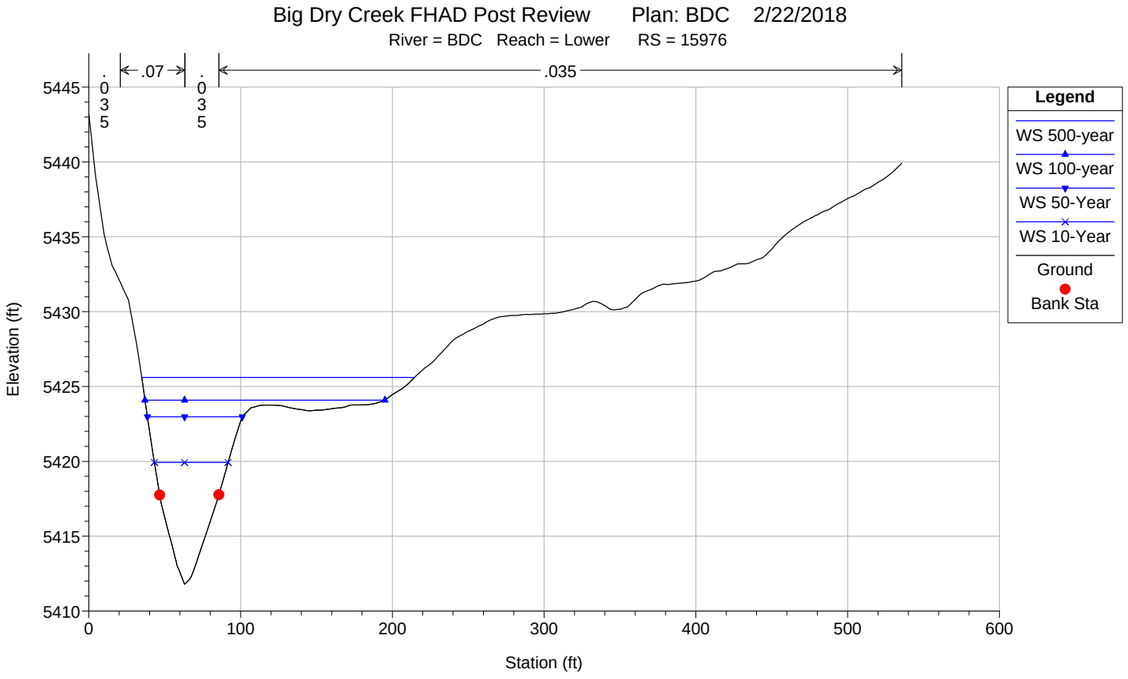
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15976
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
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5435
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300
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500
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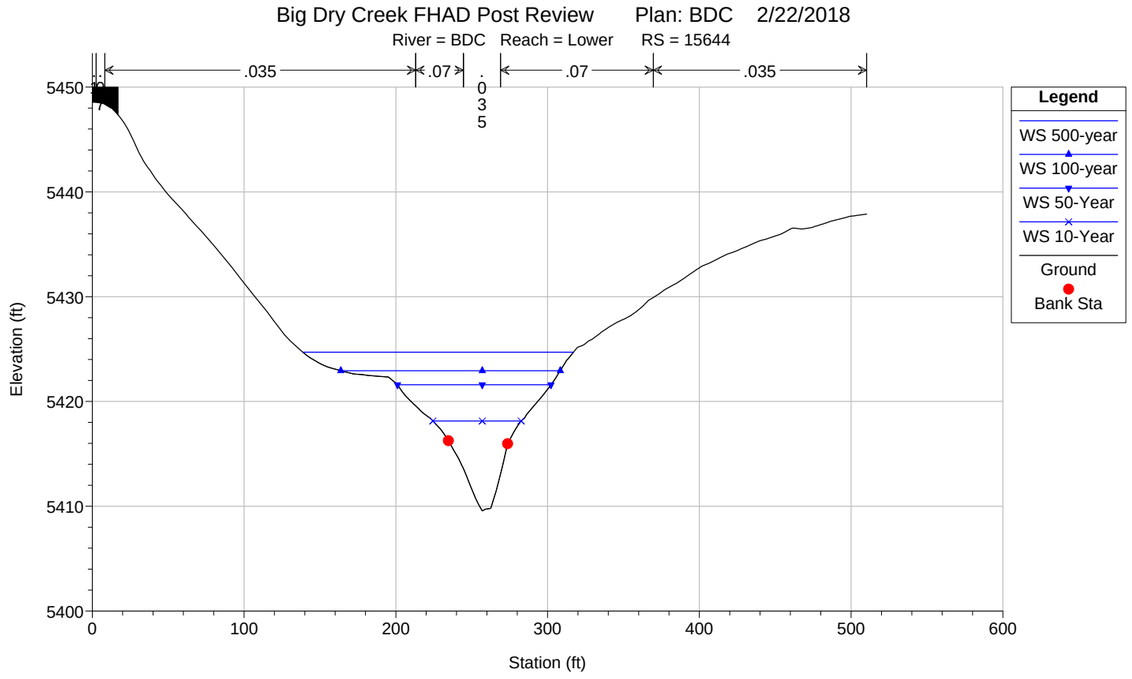
Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15644
.035
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5450
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5430
5420
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5400
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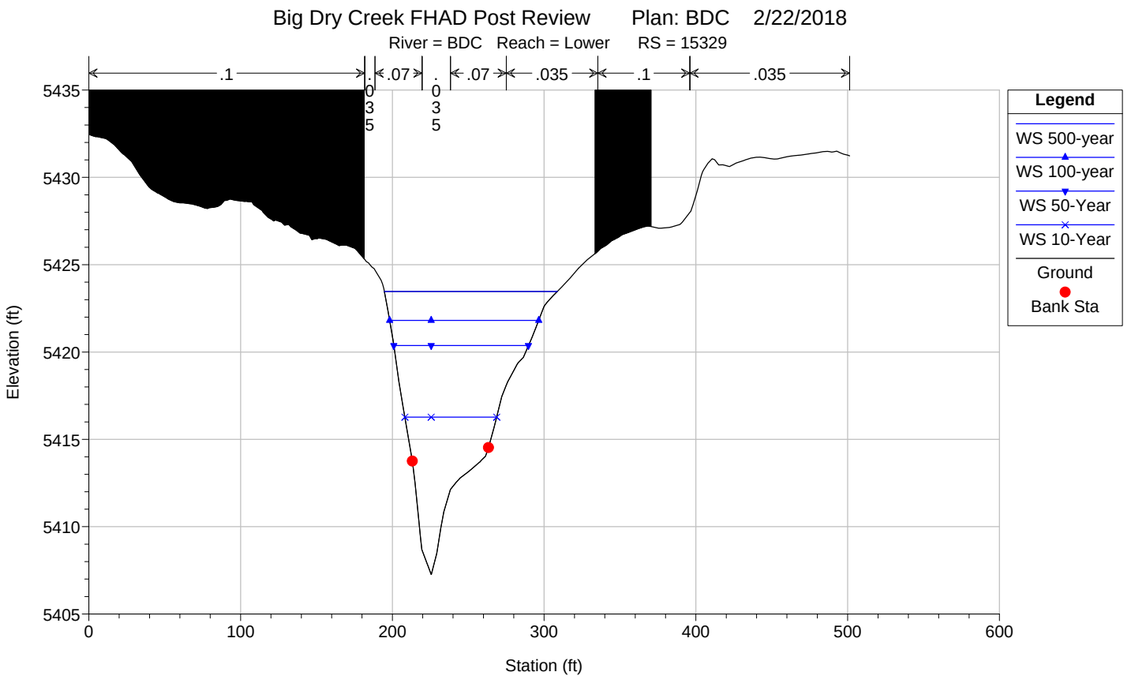
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15329
.1
.07
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5435
5430
5425
5420
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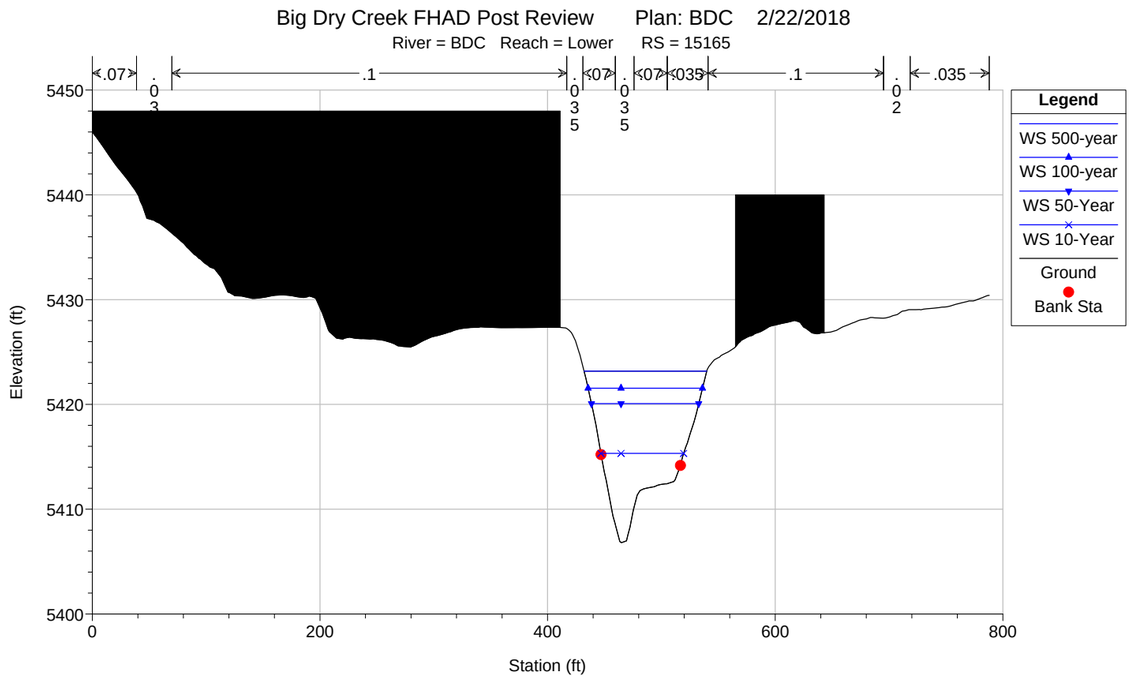
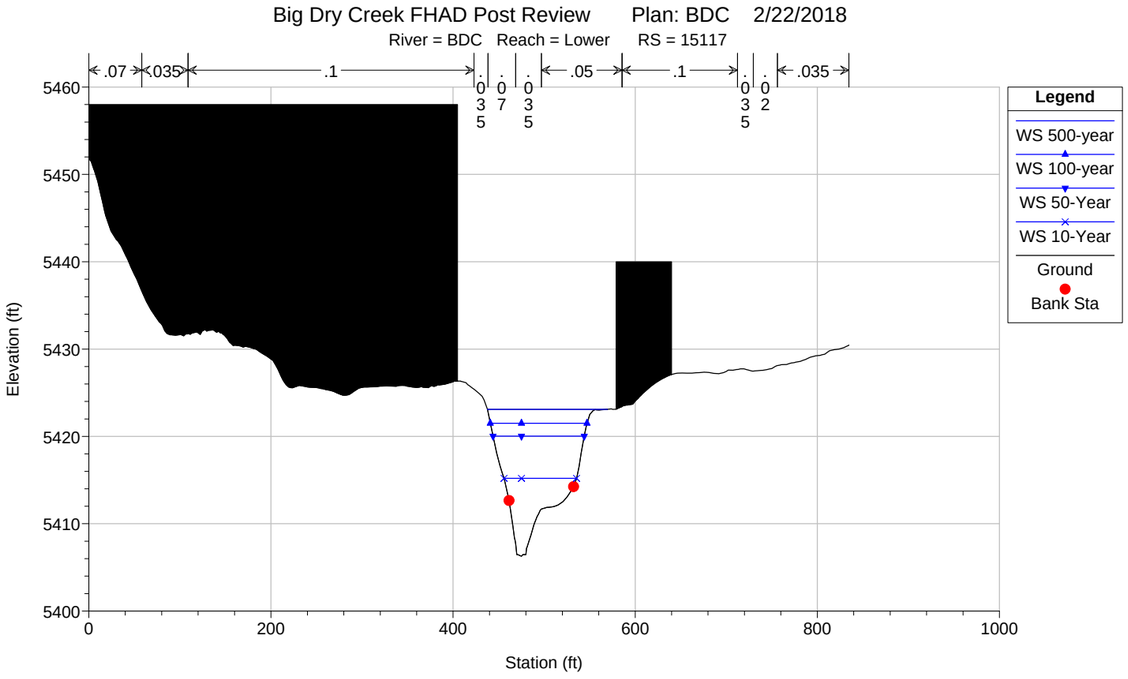
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15165
.07
.1
.07
.07
.035
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5450
5440
5430
5420
5410
5400
0
200
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15117
.07
.035
.1
.035
.07
.035
.05
.1
.035
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5460
5450
5440
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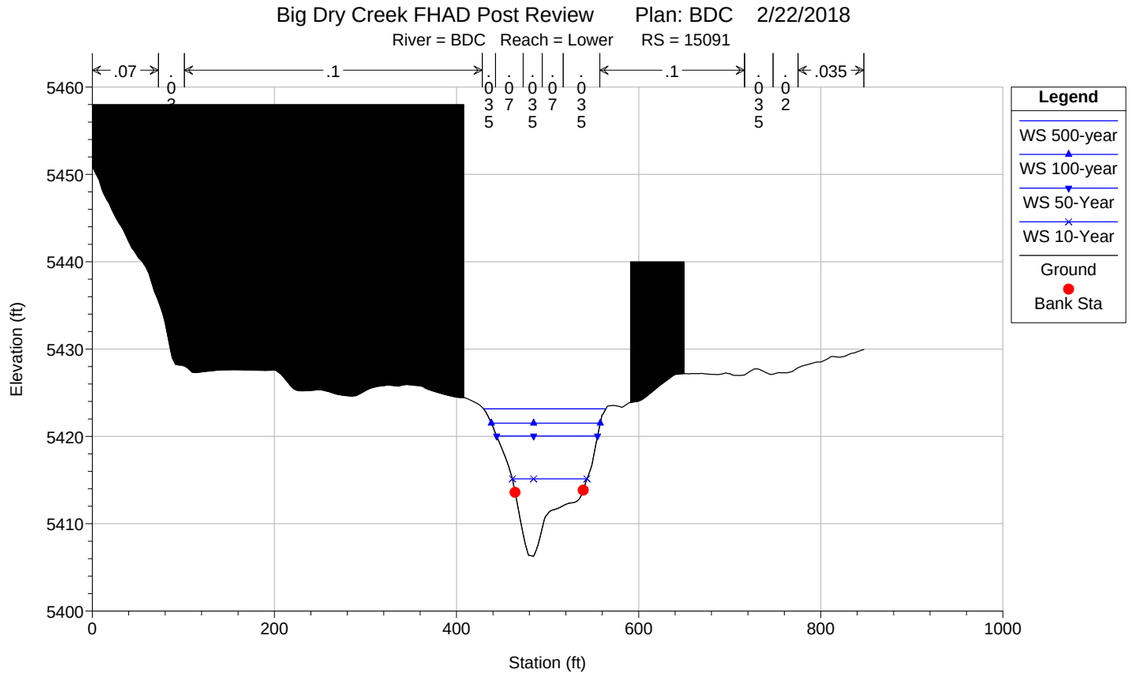
5400
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 15091
.07
.03
.1
.035
.07
.035
.07
.035
.1
.035
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5460
5450
5440
5430
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5410
5400
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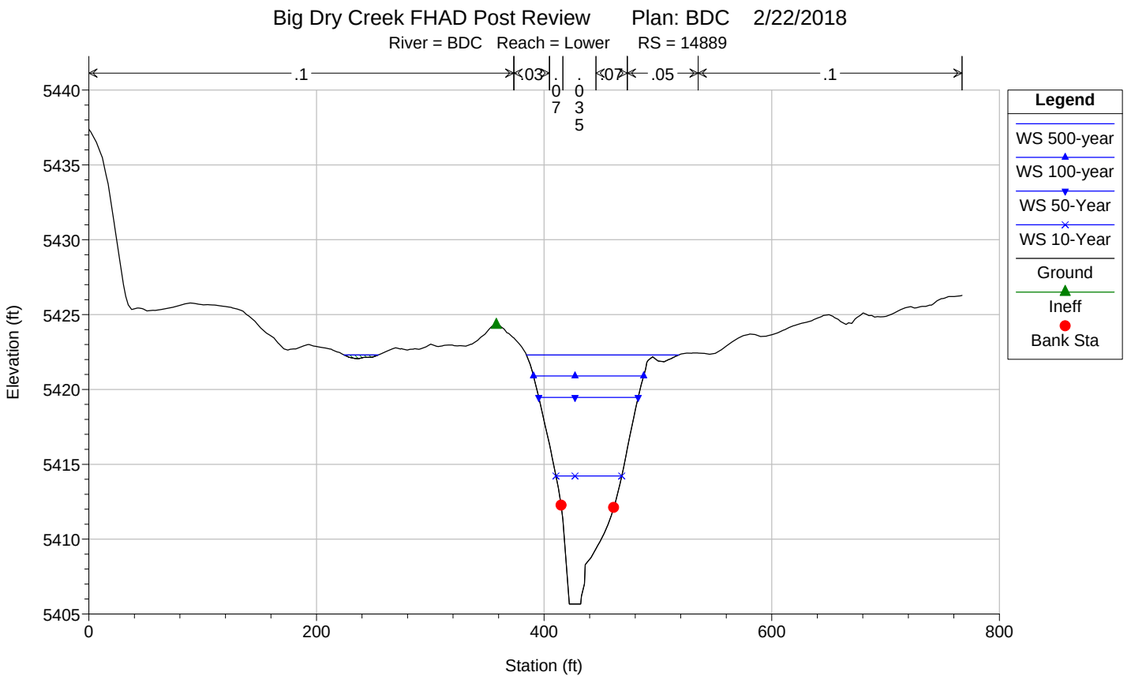
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14889
.1
.03
.07
.035
.07
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5440
5435
5430
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5410
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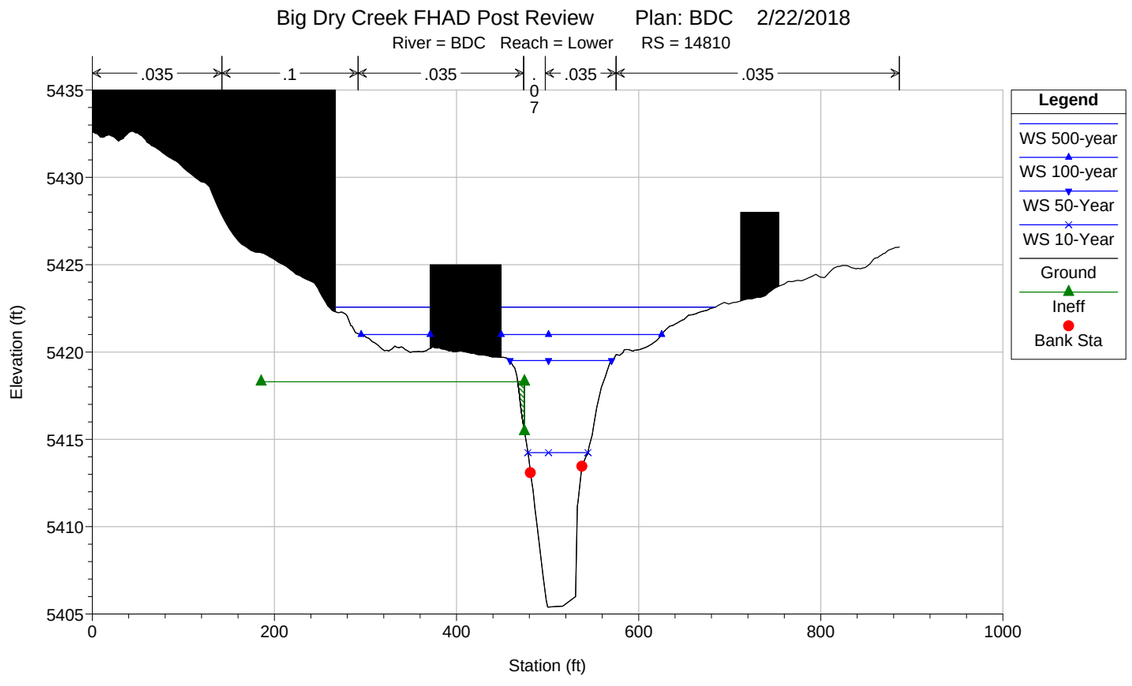
400
600
800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14810
.035
.1
.035
.07
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5435
5430
5425
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0
200
400
600
800
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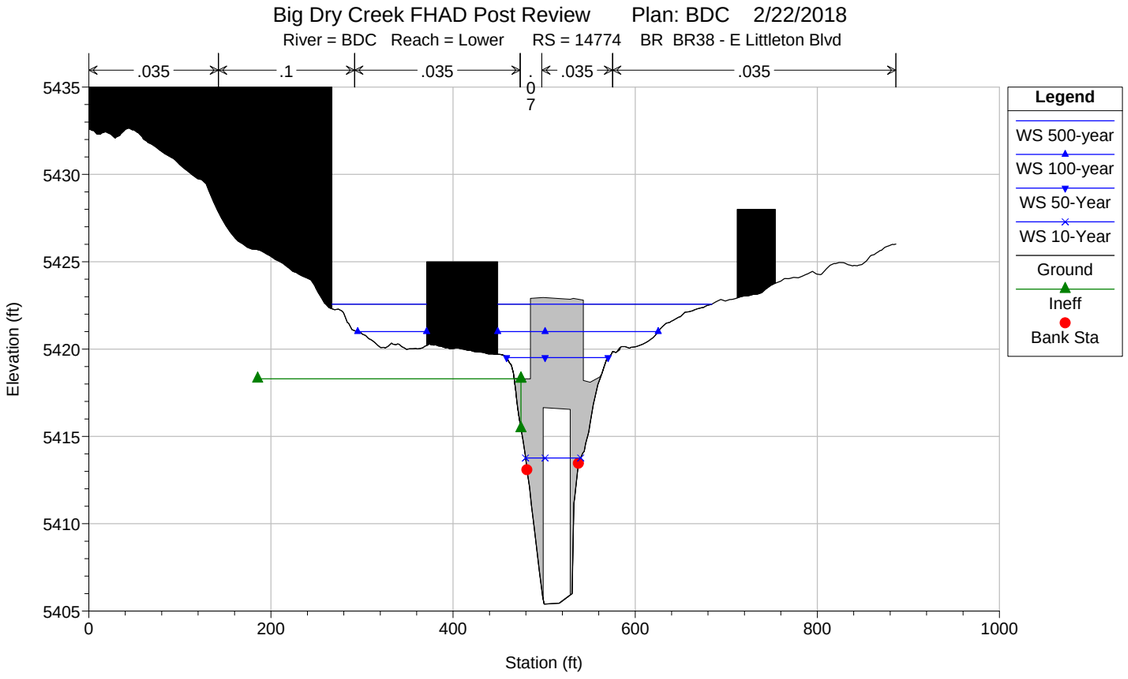
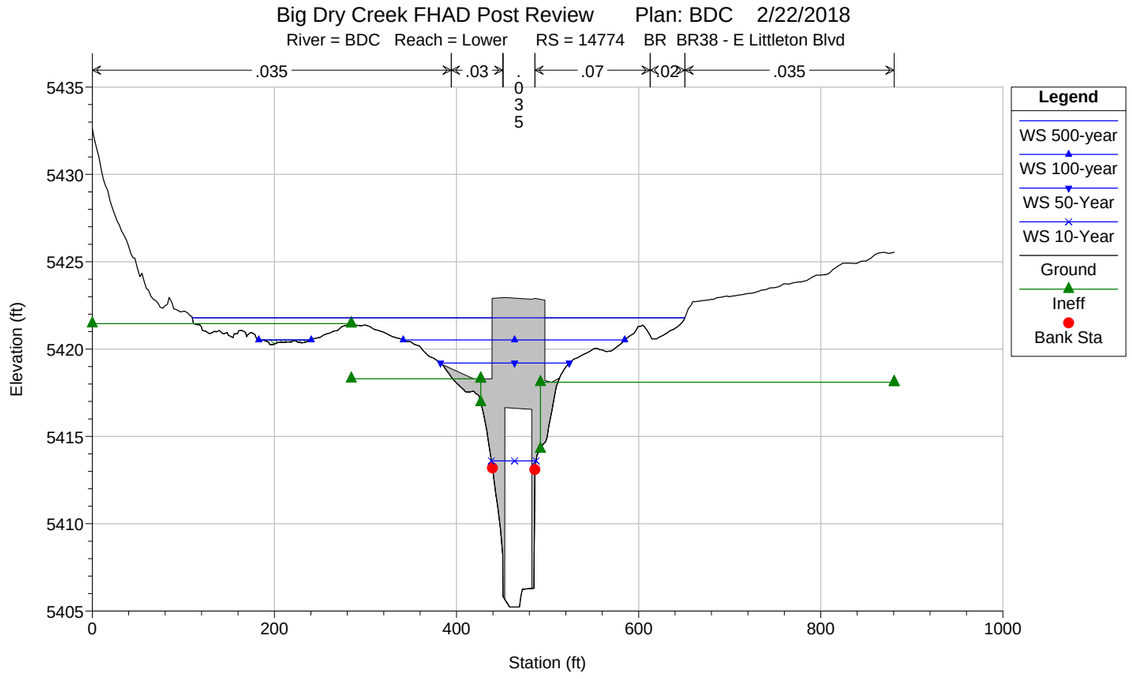
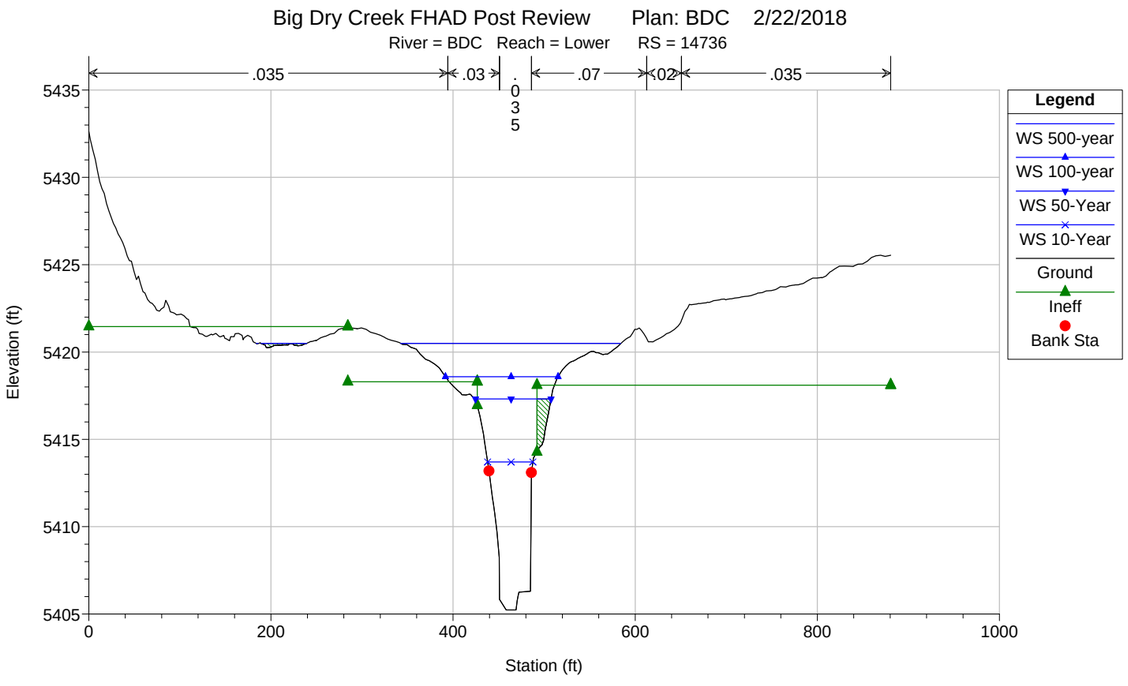
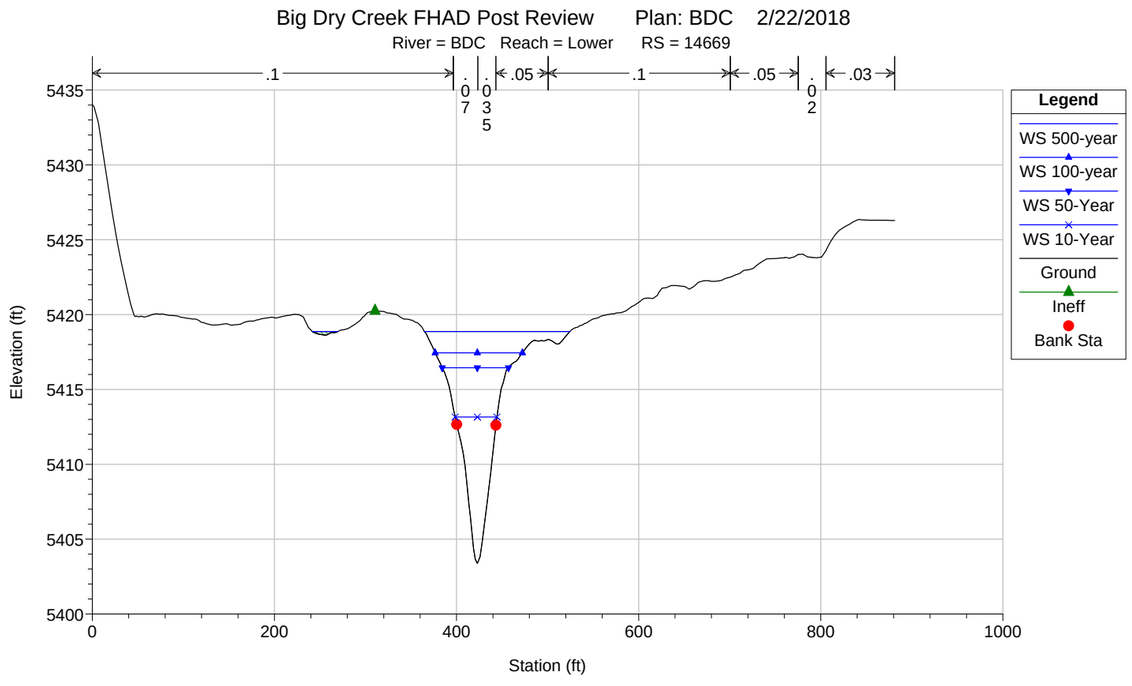
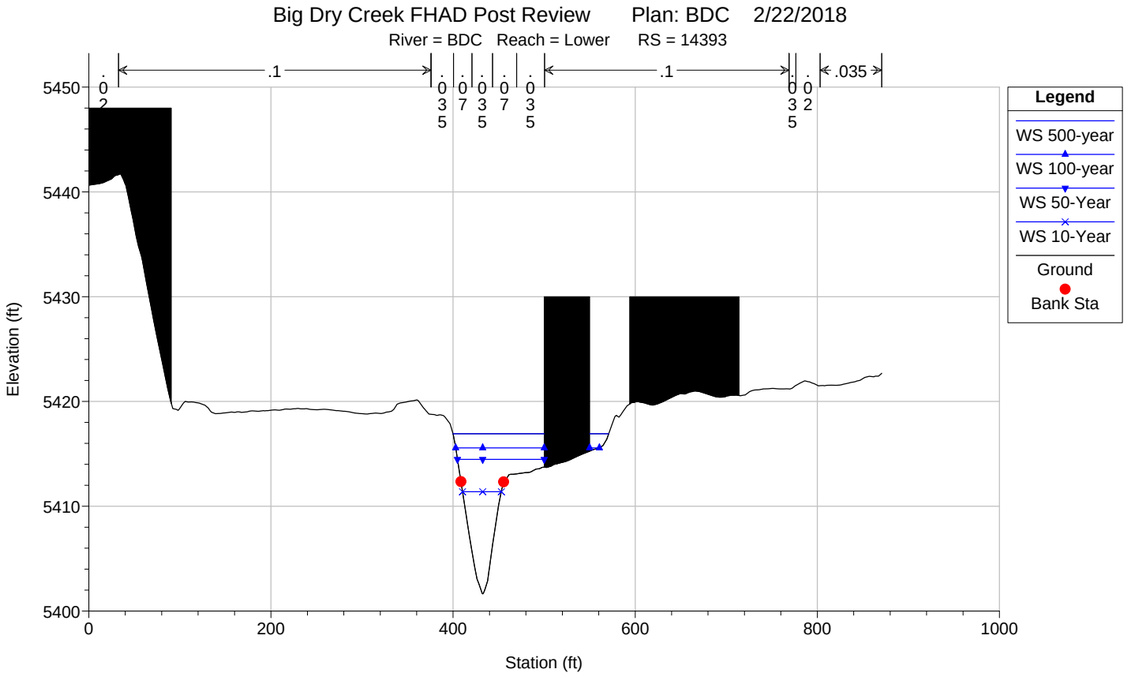
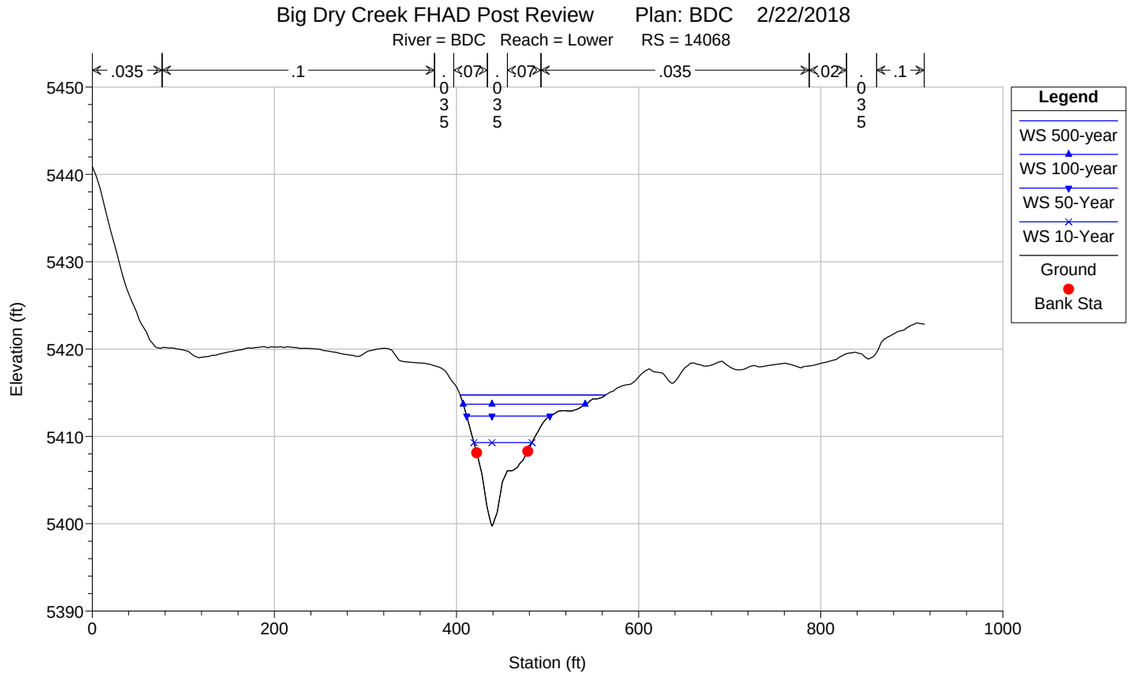

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14774 BR BR38 - E Littleton Blvd
.035
.1
.035
.07
.035
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

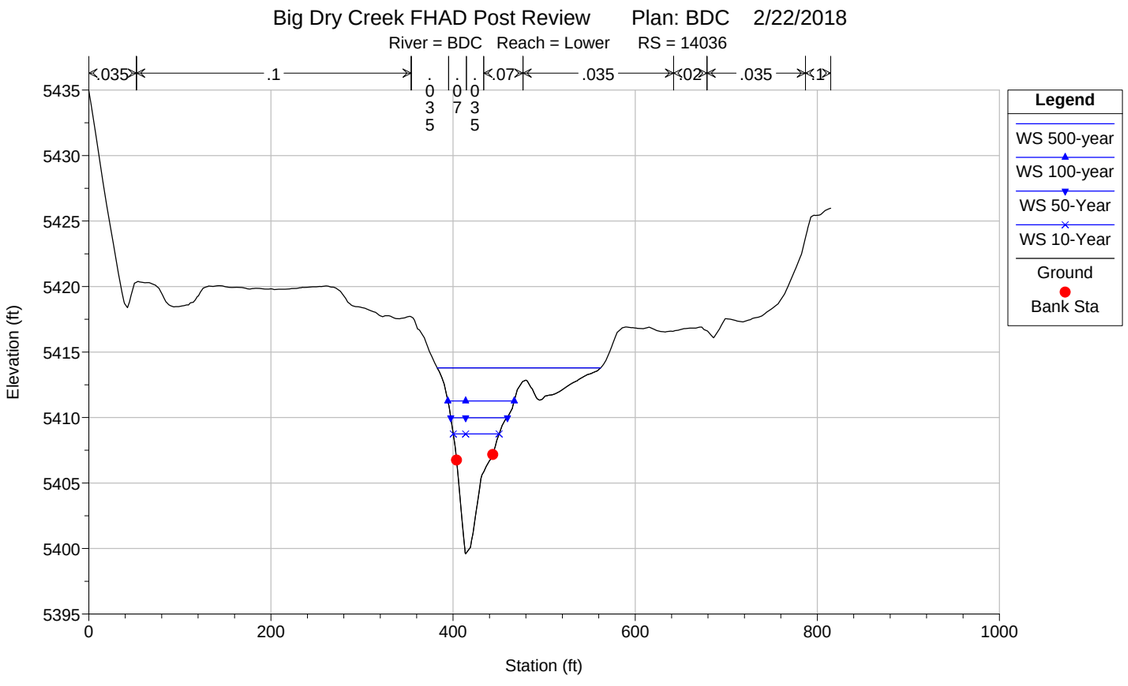

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14774 BR BR38 - E Littleton Blvd
.035
.03
.07
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

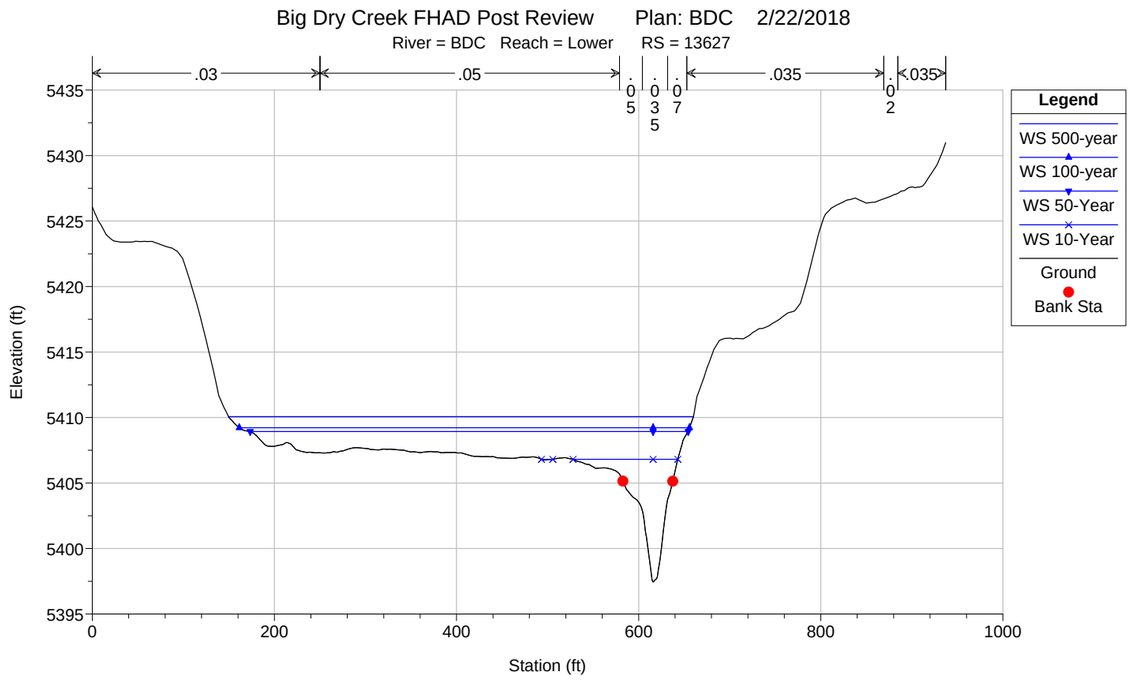

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14736
.035
.03
.07
.02
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

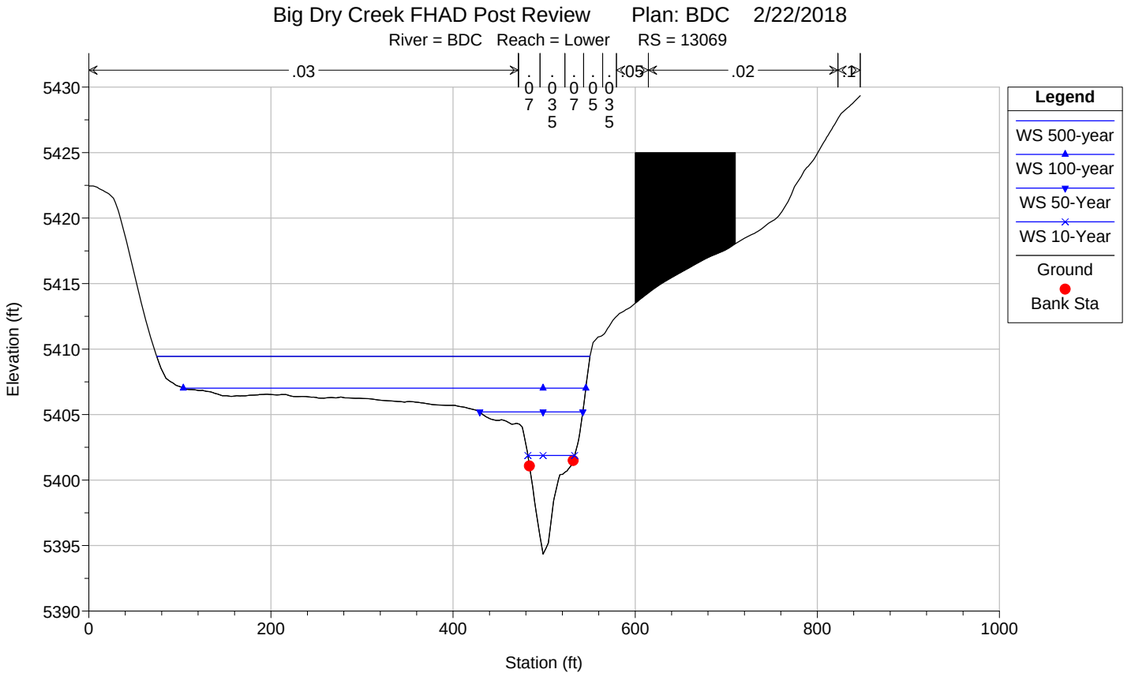

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14669
.1
.05
.1
.05
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

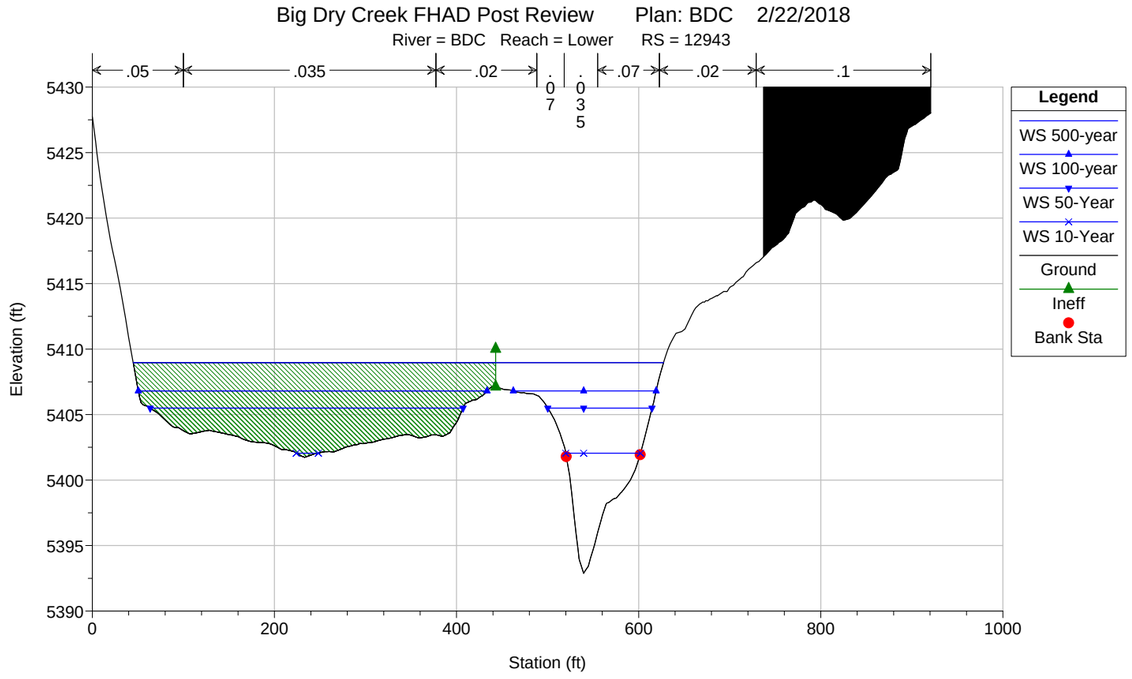

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14393
.02 .1 .035 .07 .035 .07 .035 .1 .035 .02 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

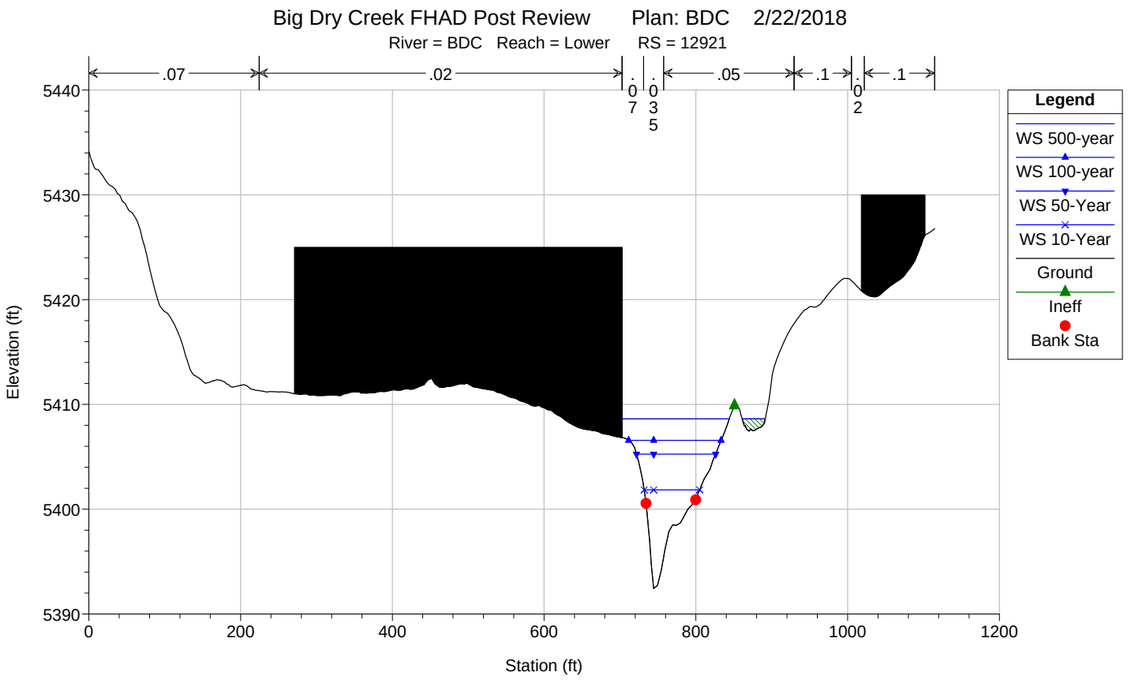

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14068
.035 .1 .035 .07 .07 .035 .02 .035 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

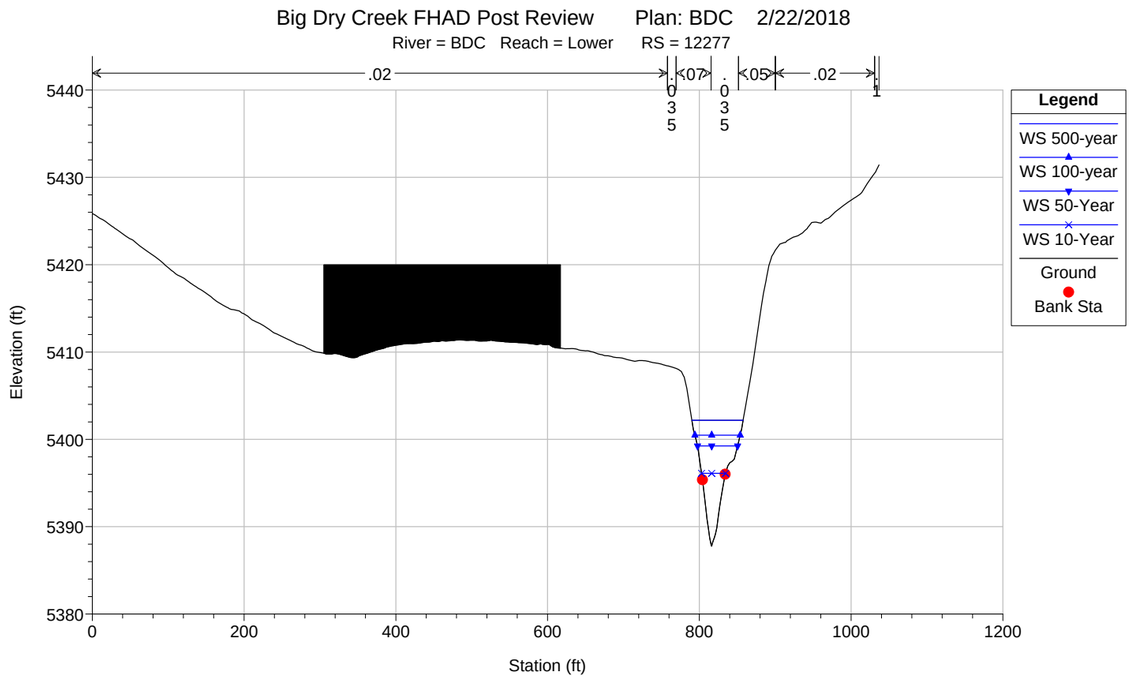

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 14036
.035 .1 .035 .07 .035 .07 .035 .02 .035 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

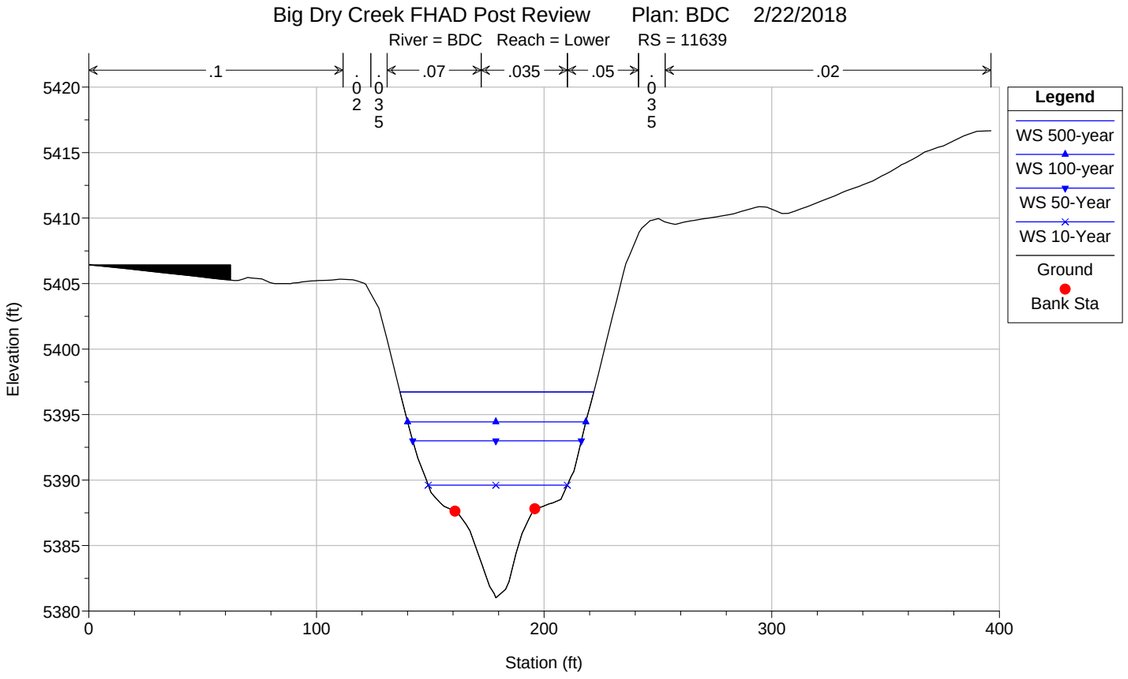

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 13627
.03 .05 .035 .035 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

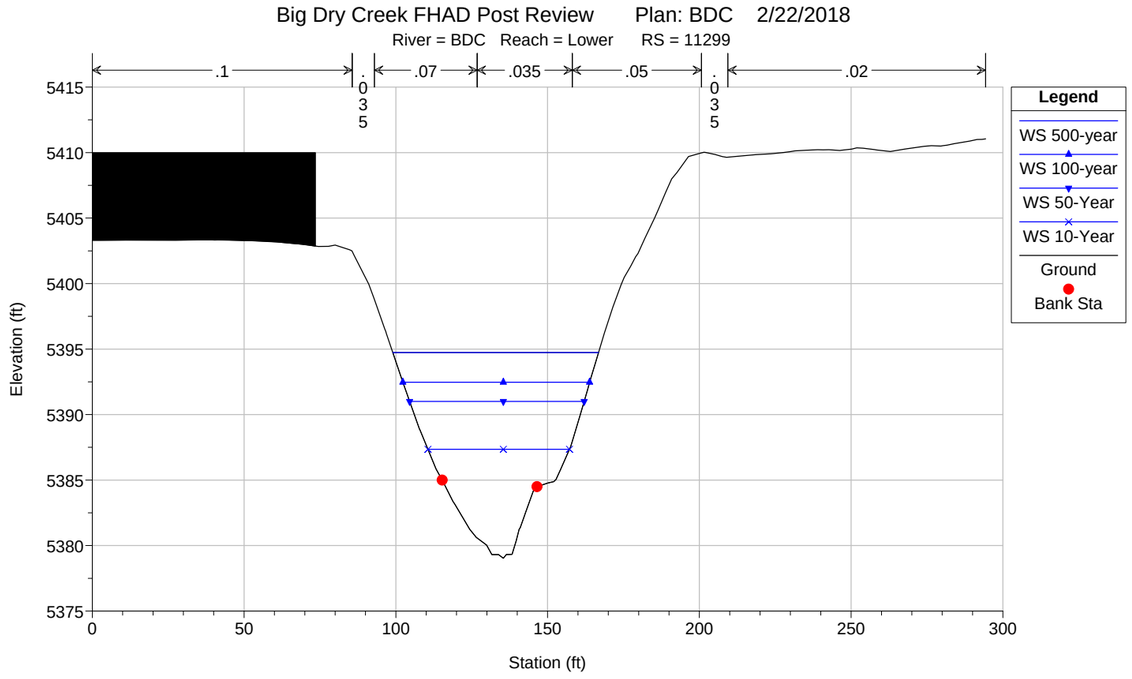

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 13069
.03
.07
.035
.07
.05
.035
.05
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5430
5425
5420
5415
5410
5405
5400
5395
5390
0
200
400
600
800
1000

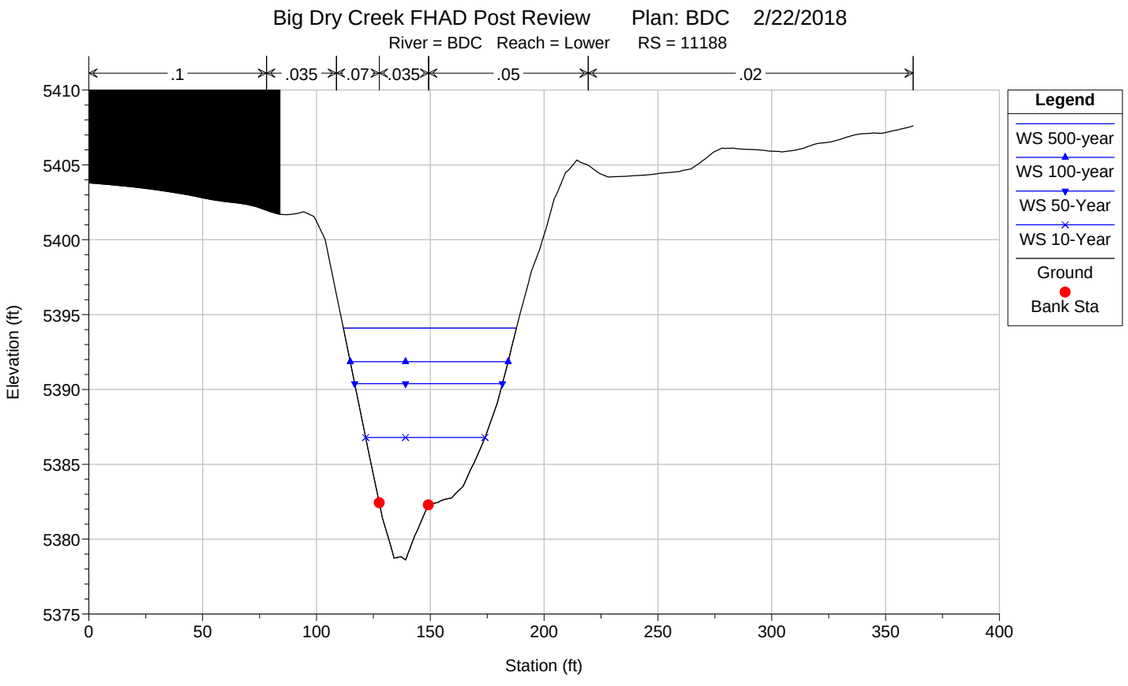

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 12943
.05
.035
.02
.07
.035
.07
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5430
5425
5420
5415
5410
5405
5400
5395
5390
0
200
400
600
800
1000

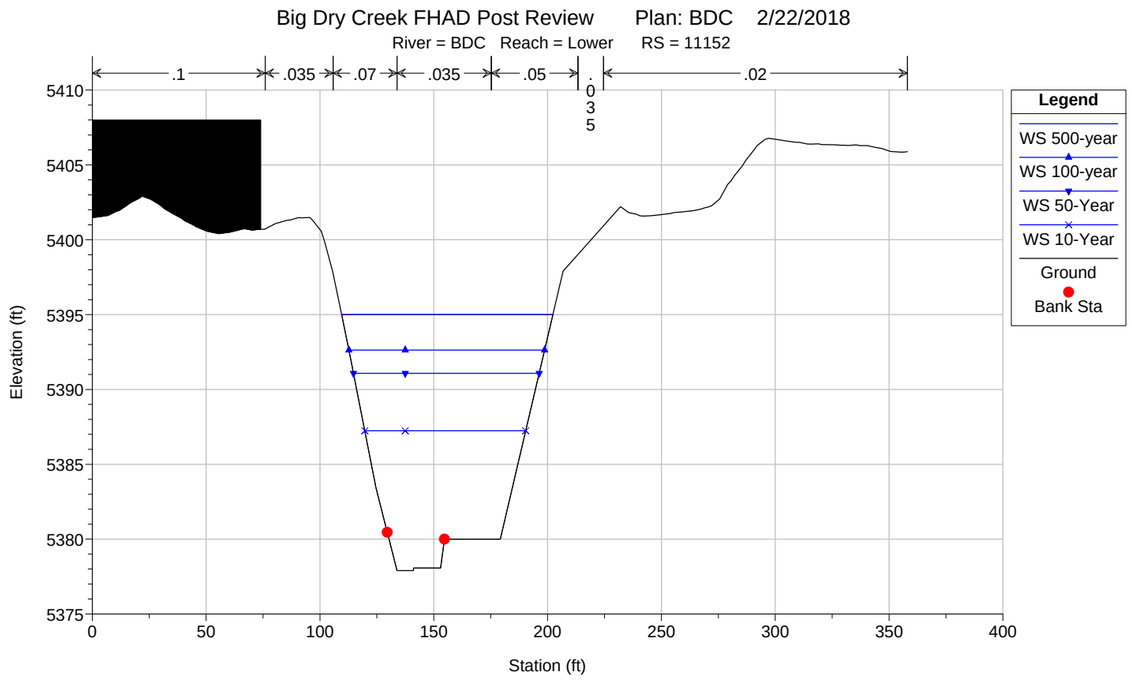

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 12921
.07
.02
.07
.035
.05
.1
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5440
5430
5420
5410
5400
5390
0
200
400
600
800
1000
1200

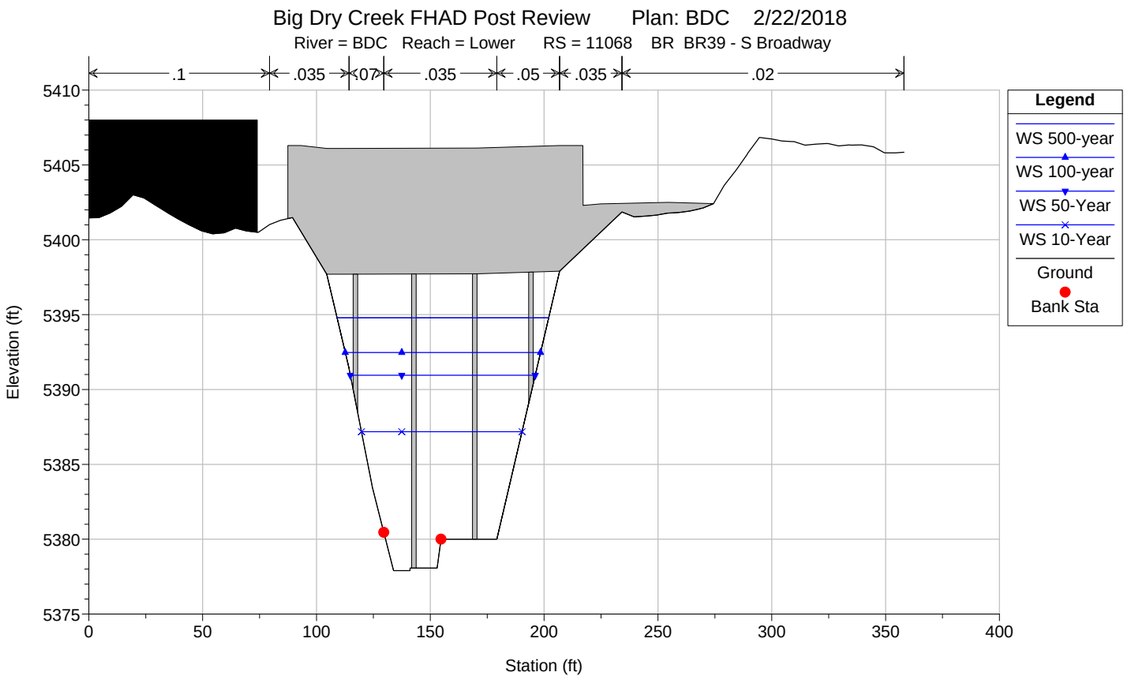

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 12277
.02
.07
.035
.07
.035
.05
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5440
5430
5420
5410
5400
5390
5380
0
200
400
600
800
1000
1200

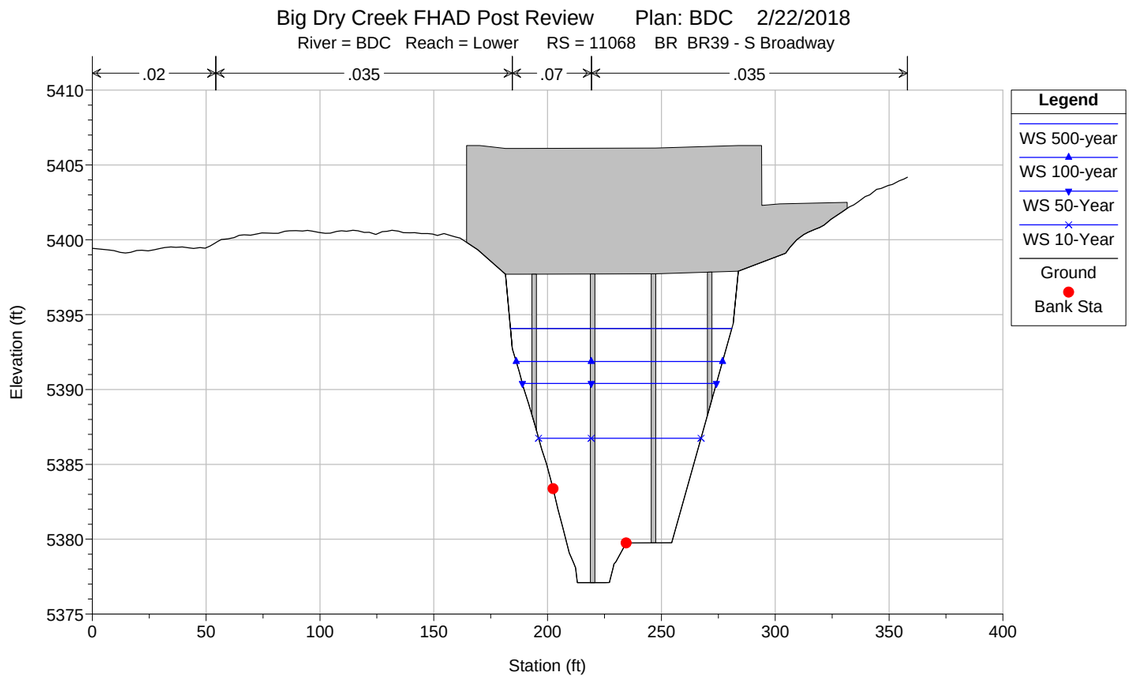

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11639
.1
.02
.07
.035
.05
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5420
5415
5410
5405
5400
5395
5390
5385
5380
0
100
200
300
400

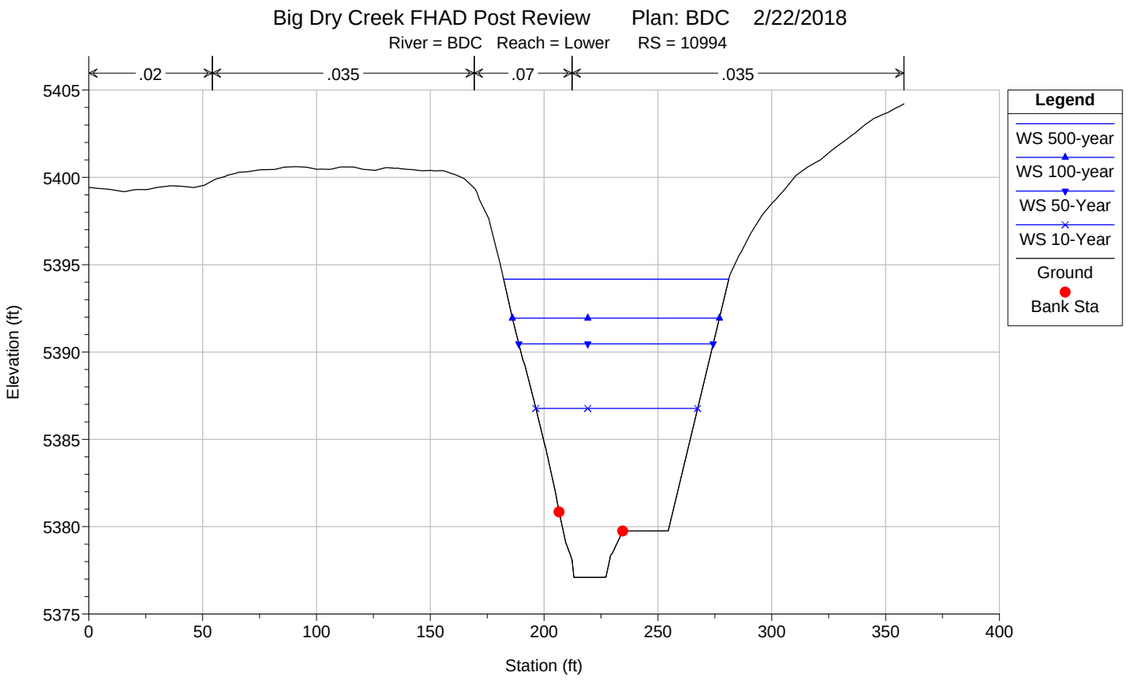

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11299
.1
.07
.035
.05
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5415
5410
5405
5400
5395
5390
5385
5380
5375
0
50
100
150
200
250
300

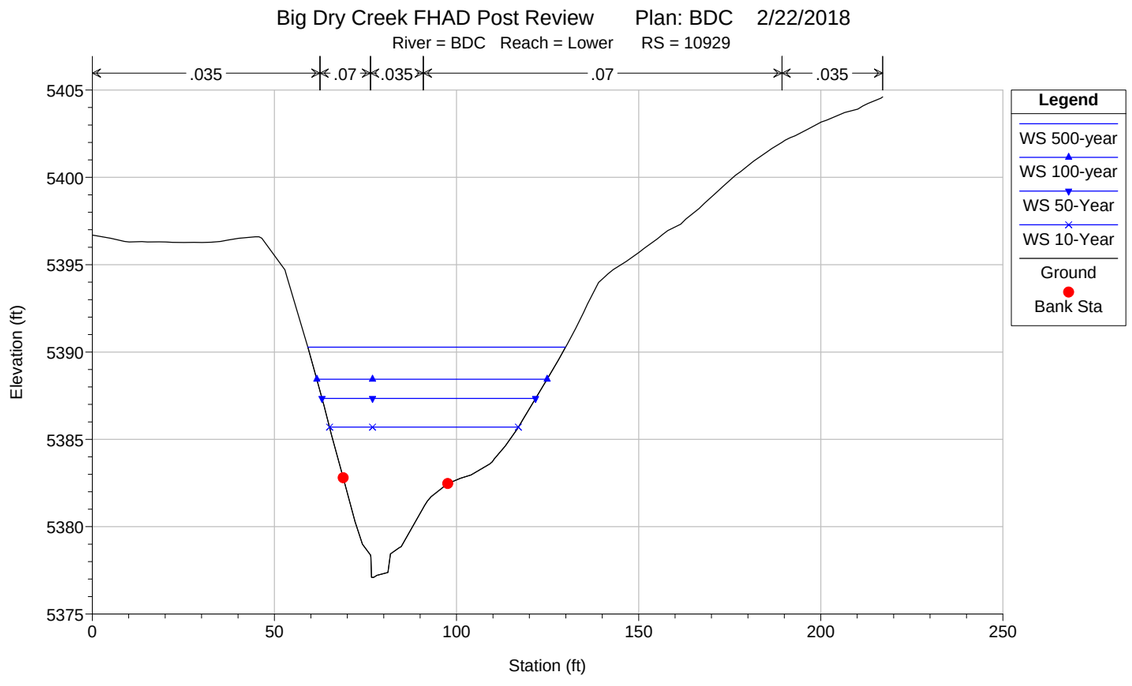

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11188
.1
.035
.07
.035
.05
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5410
5405
5400
5395
5390
5385
5380
5375
0
50
100
150
200
250
300
350
400

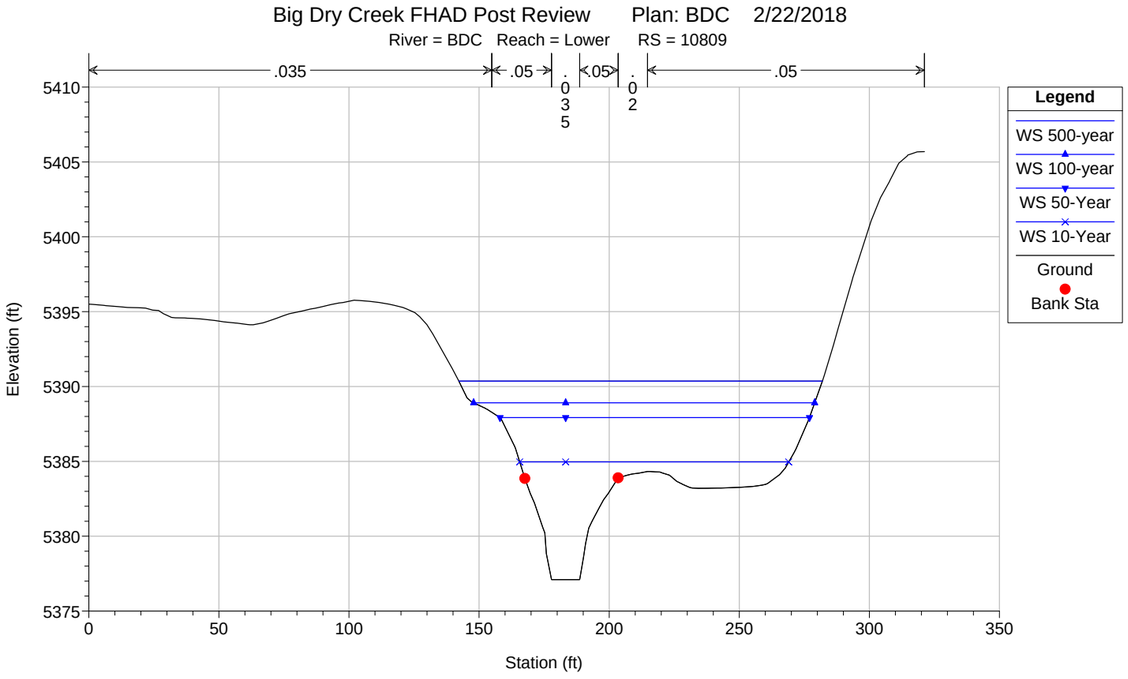

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11152
.1
.035
.07
.035
.05
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5410
5405
5400
5395
5390
5385
5380
5375
0
50
100
150
200
250
300
350
400

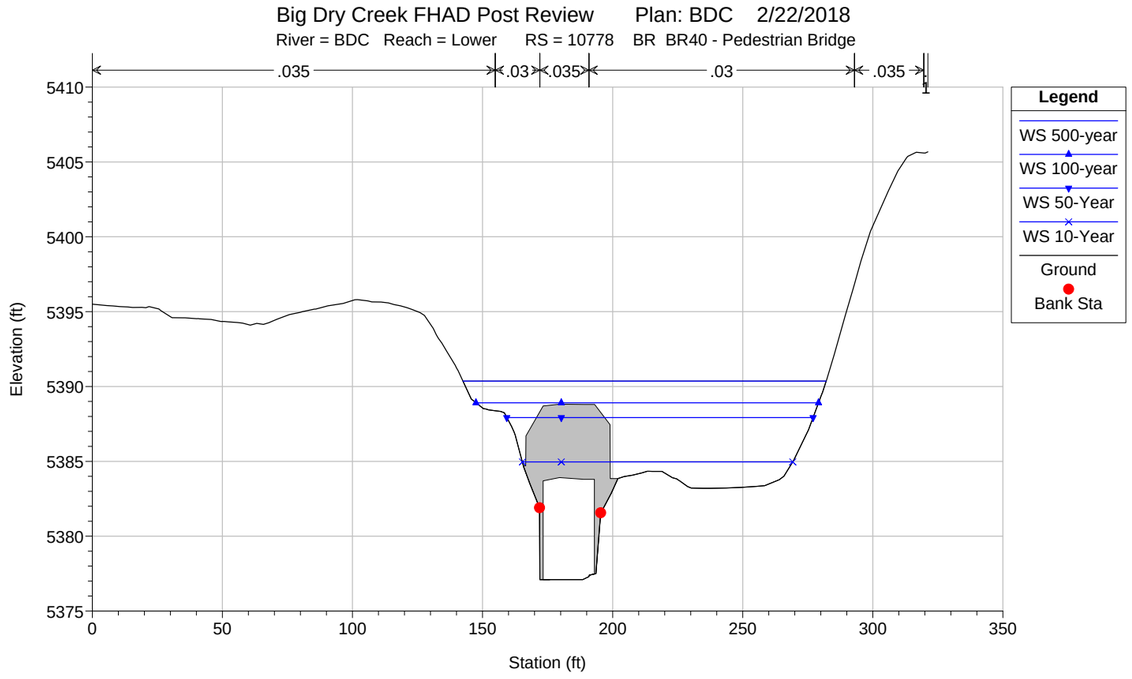

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11068 BR BR39 - S Broadway
.1
.035
.07
.035
.05
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

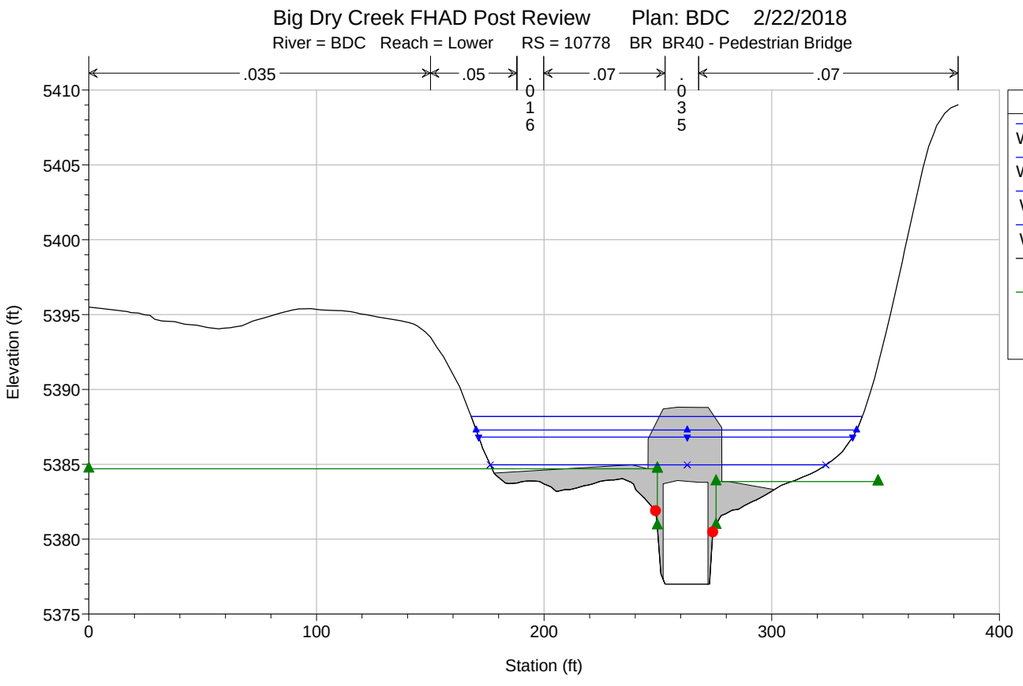

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 11068 BR BR39 - S Broadway
.02
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

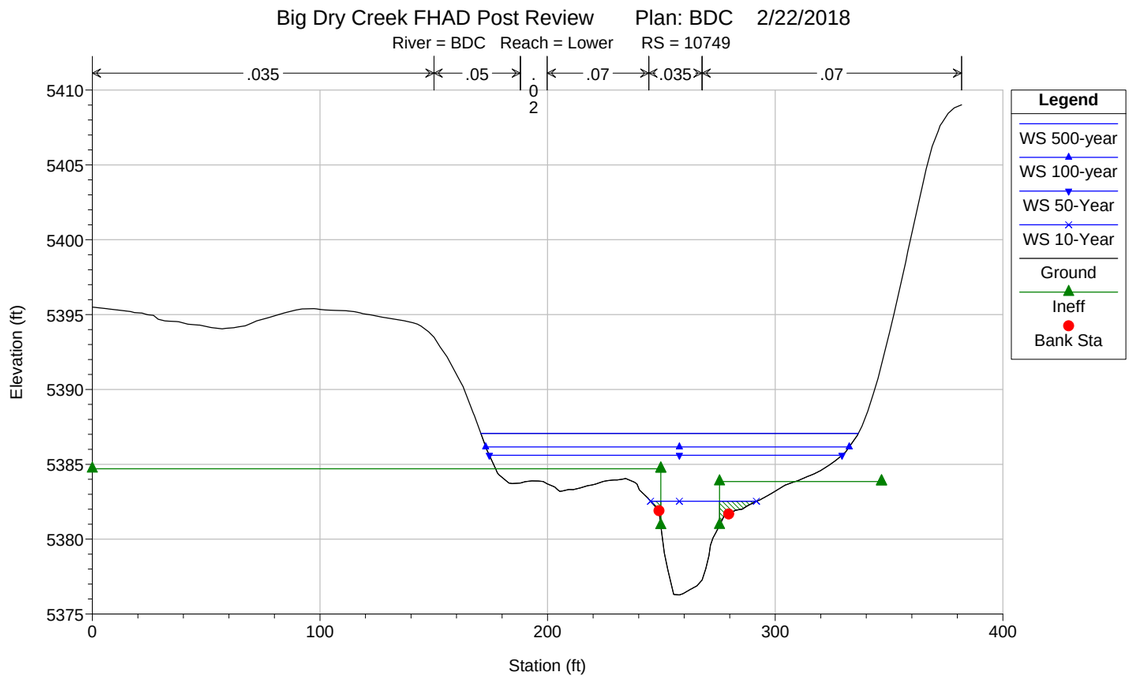

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10994
.02
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

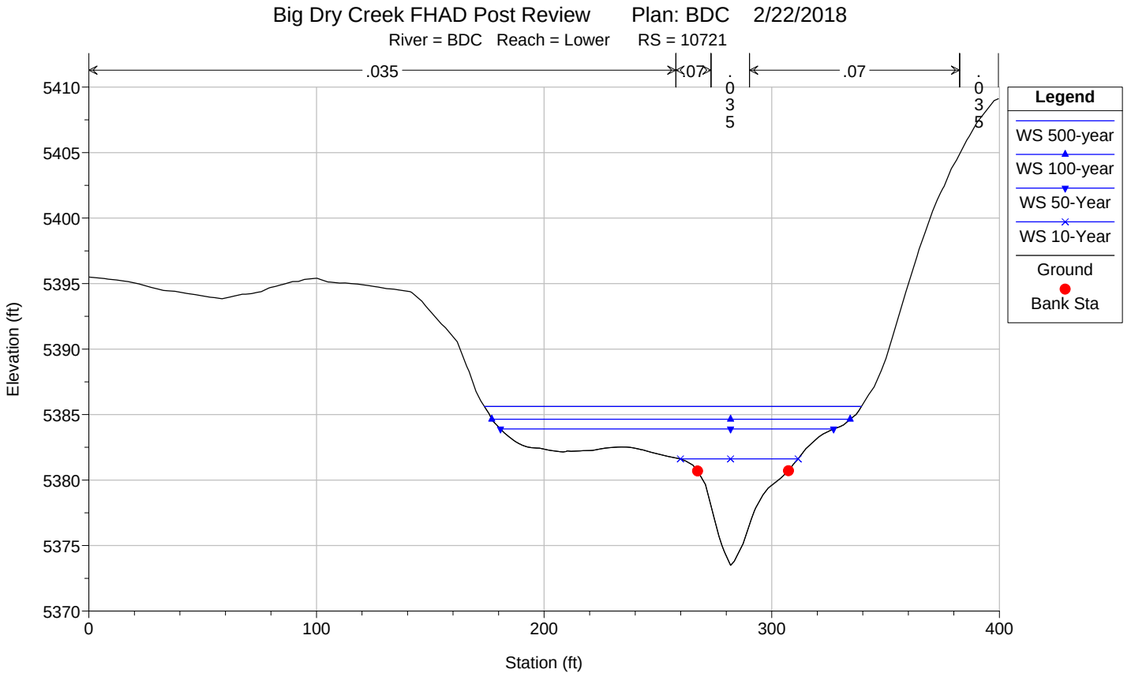

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10929
.035
.07
.035
.07
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

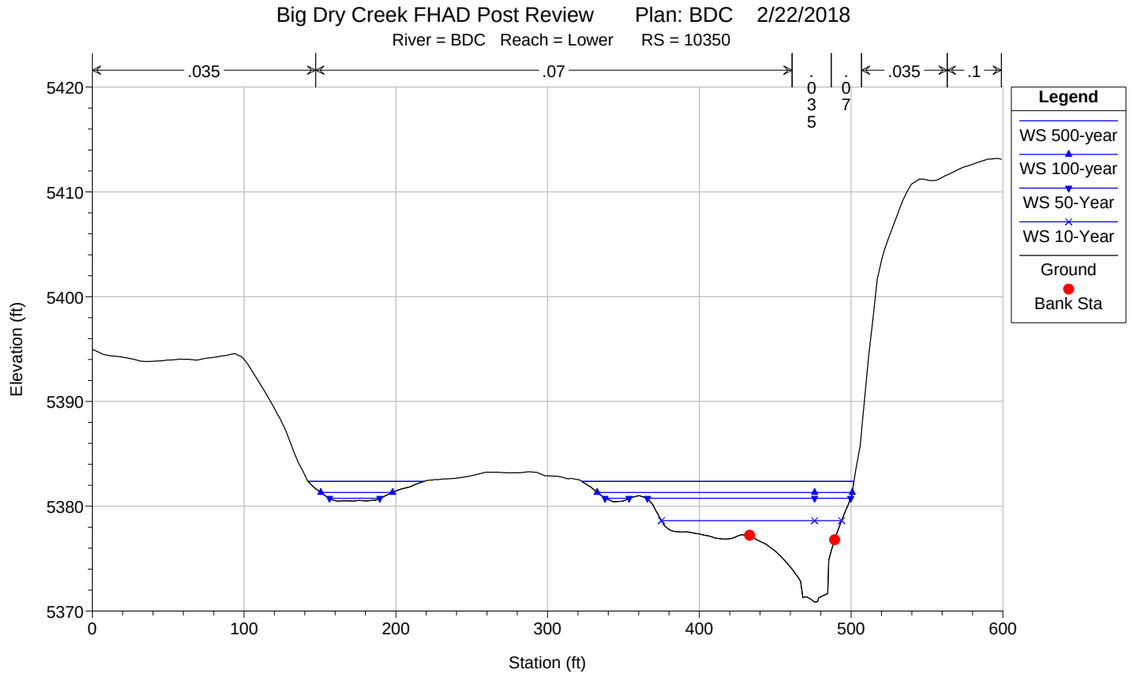

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10809
.035
.05
.035
.05
.02
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

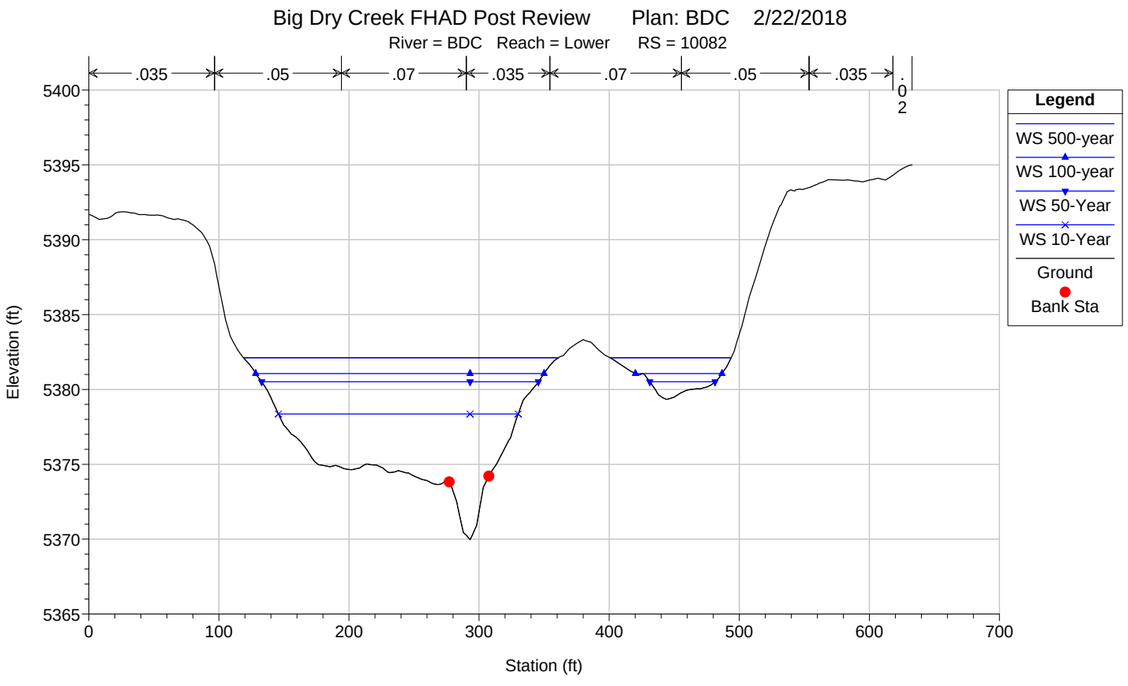

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10778 BR BR40 - Pedestrian Bridge
.035
.03
.035
.03
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

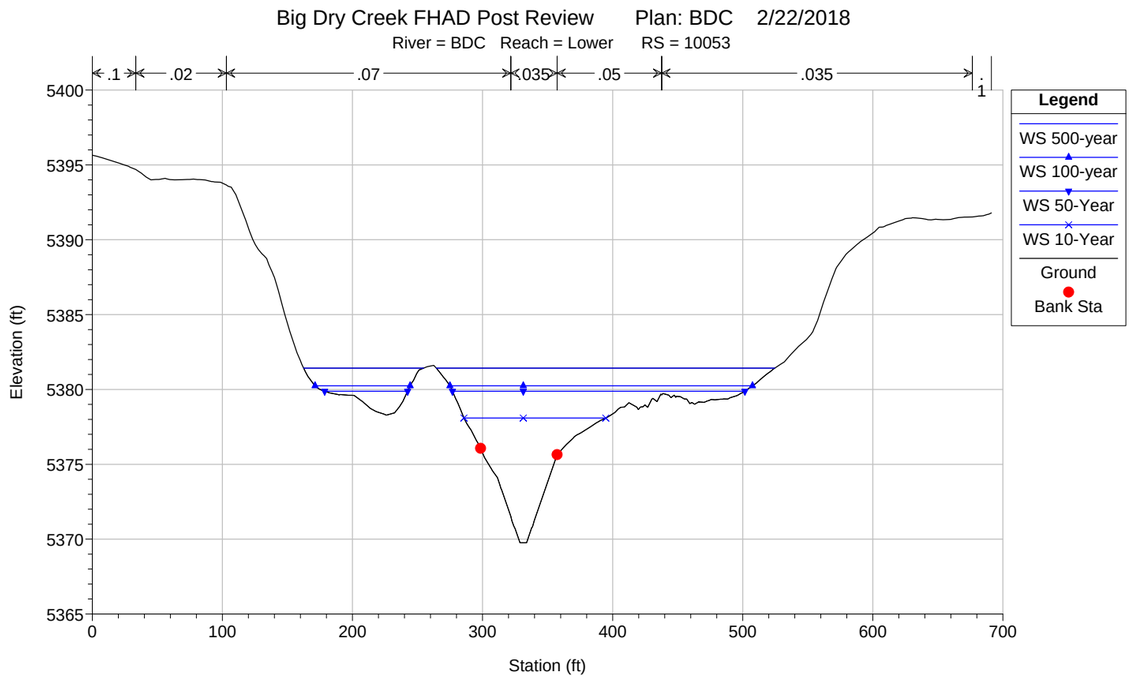

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10778 BR BR40 - Pedestrian Bridge
.035
.05
.07
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

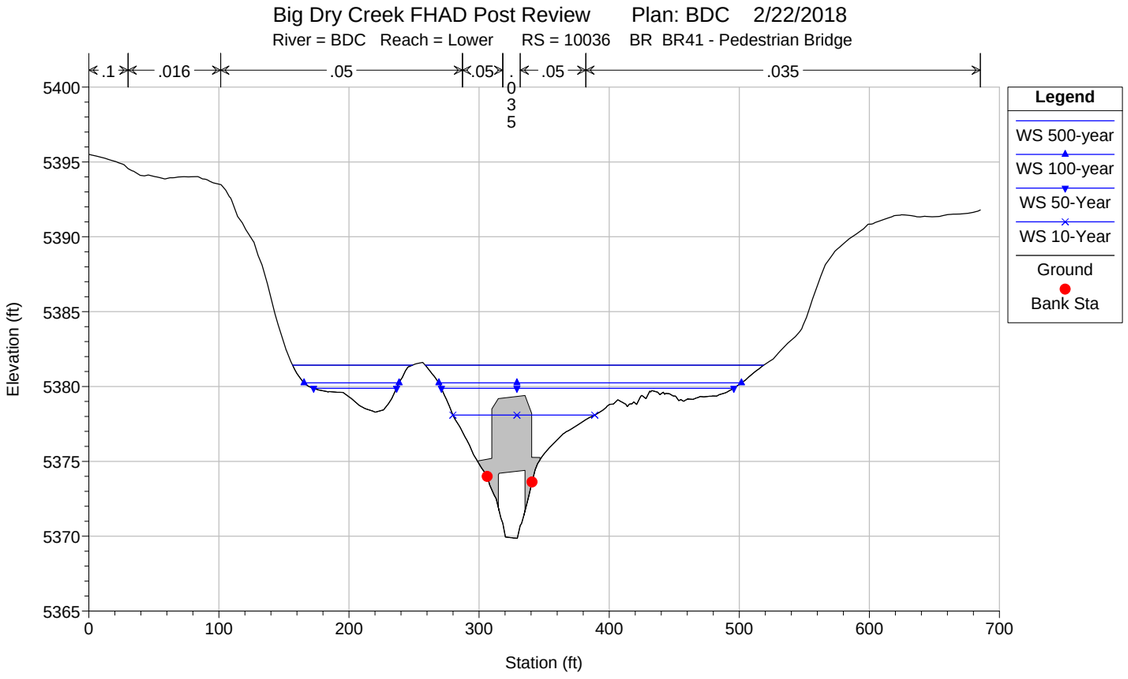

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10749
.035
.05
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

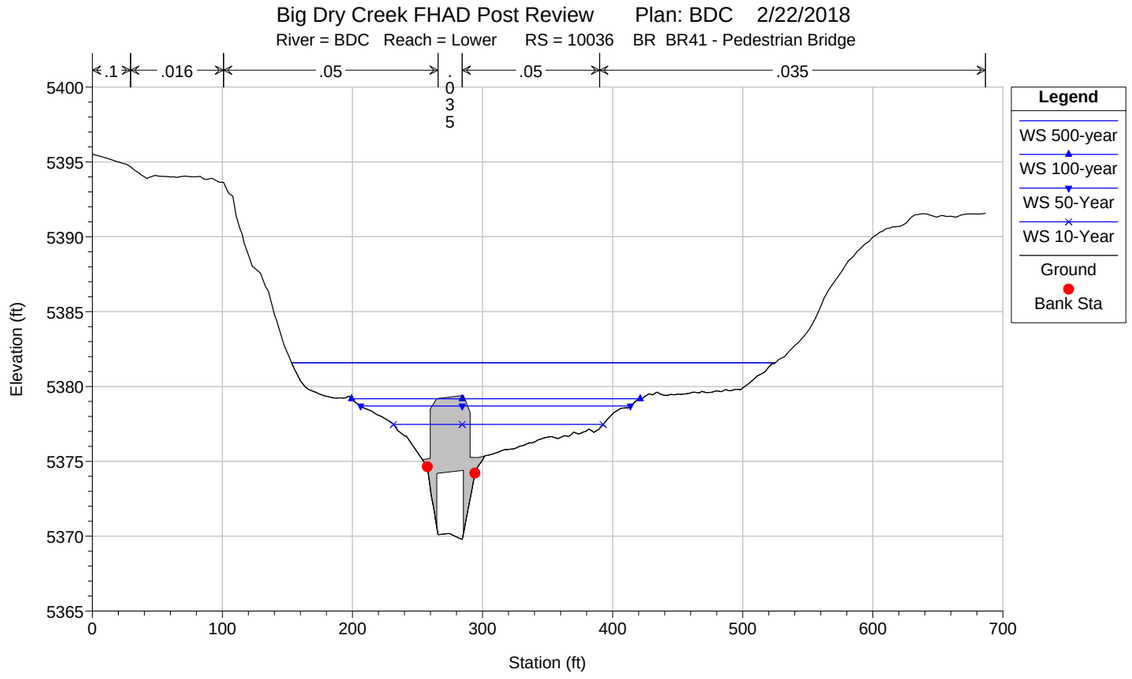

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10721
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

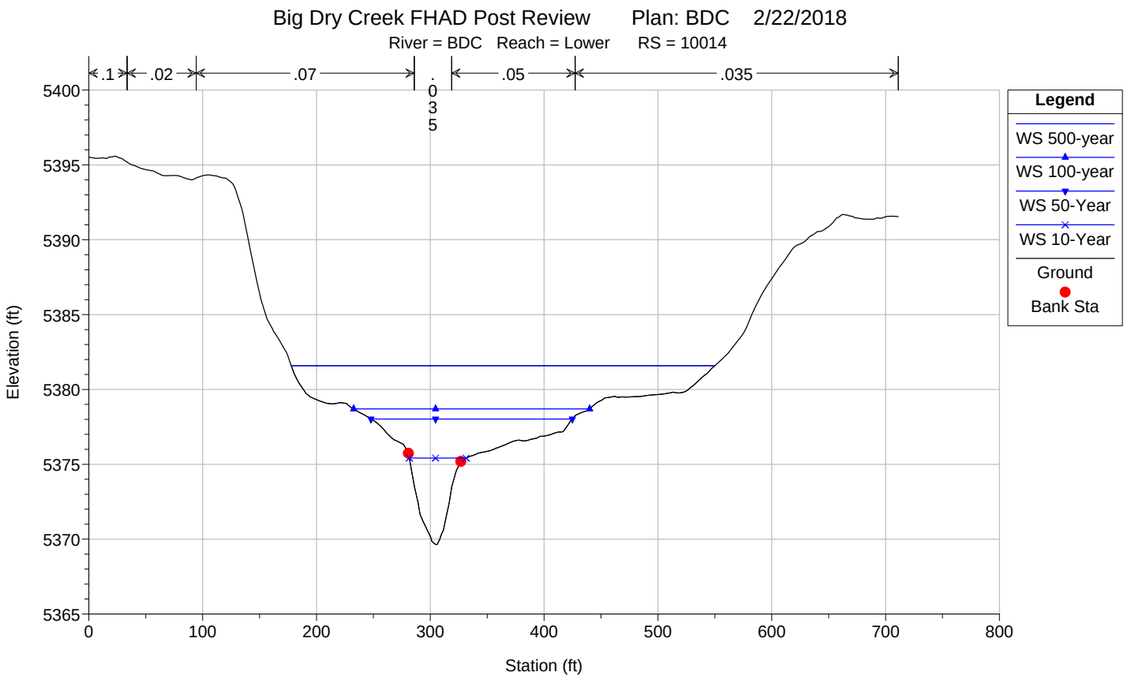

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10350
.035
.07
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

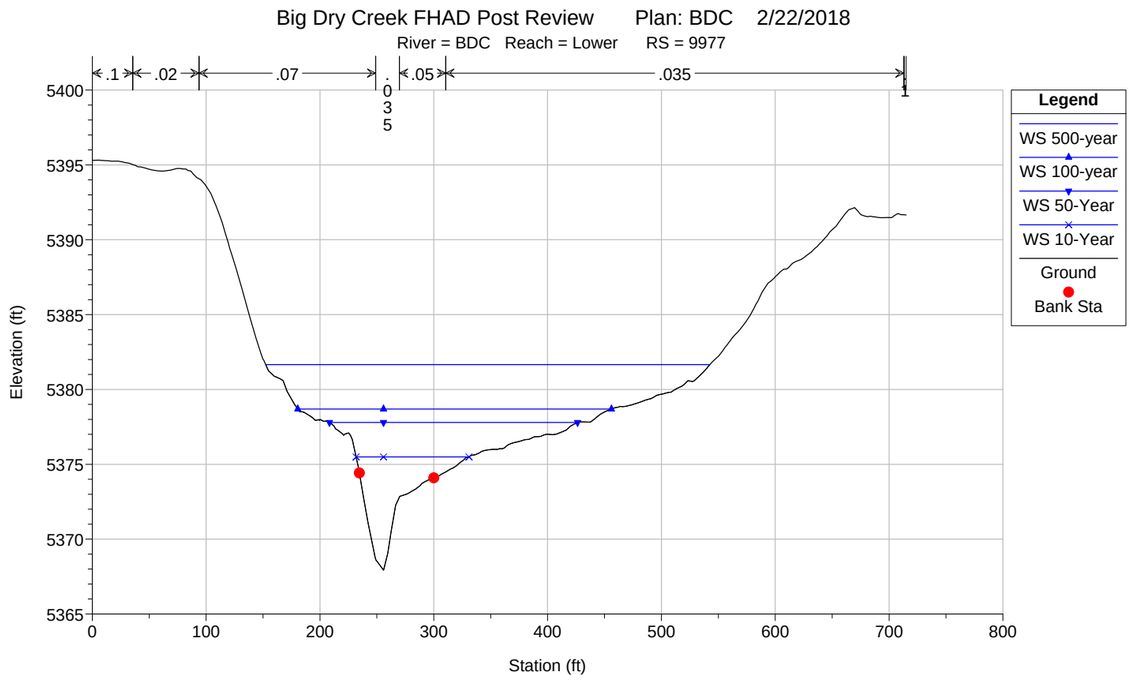

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10082
.035
.05
.07
.035
.07
.05
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

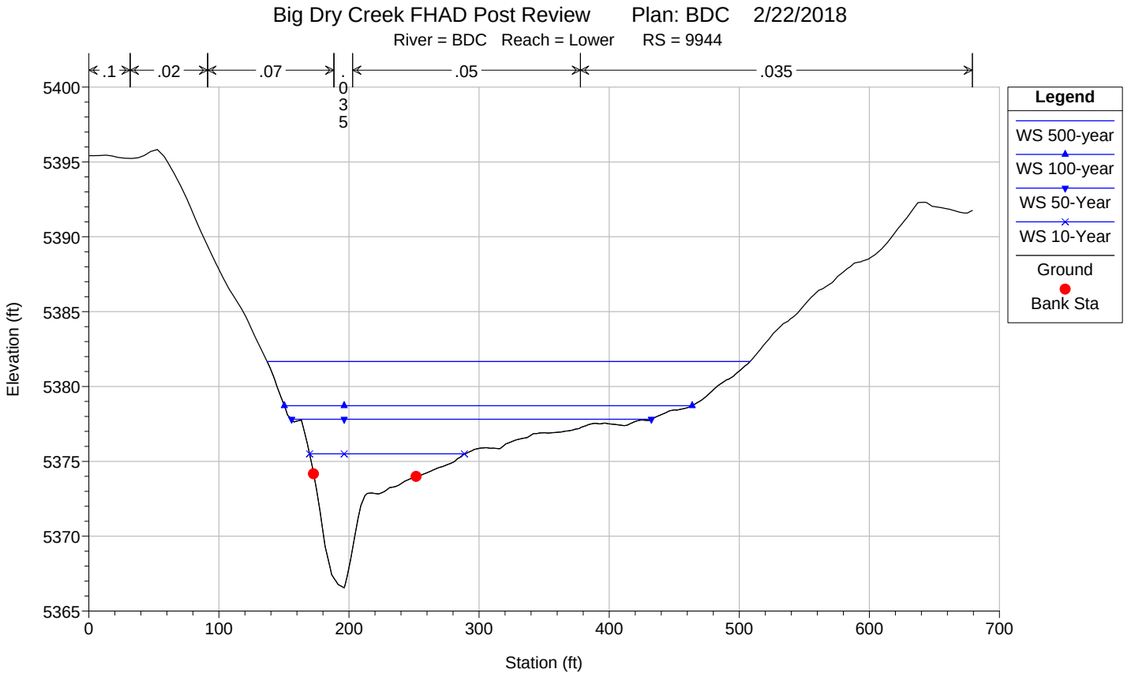

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10053
.1
.02
.07
.035
.05
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

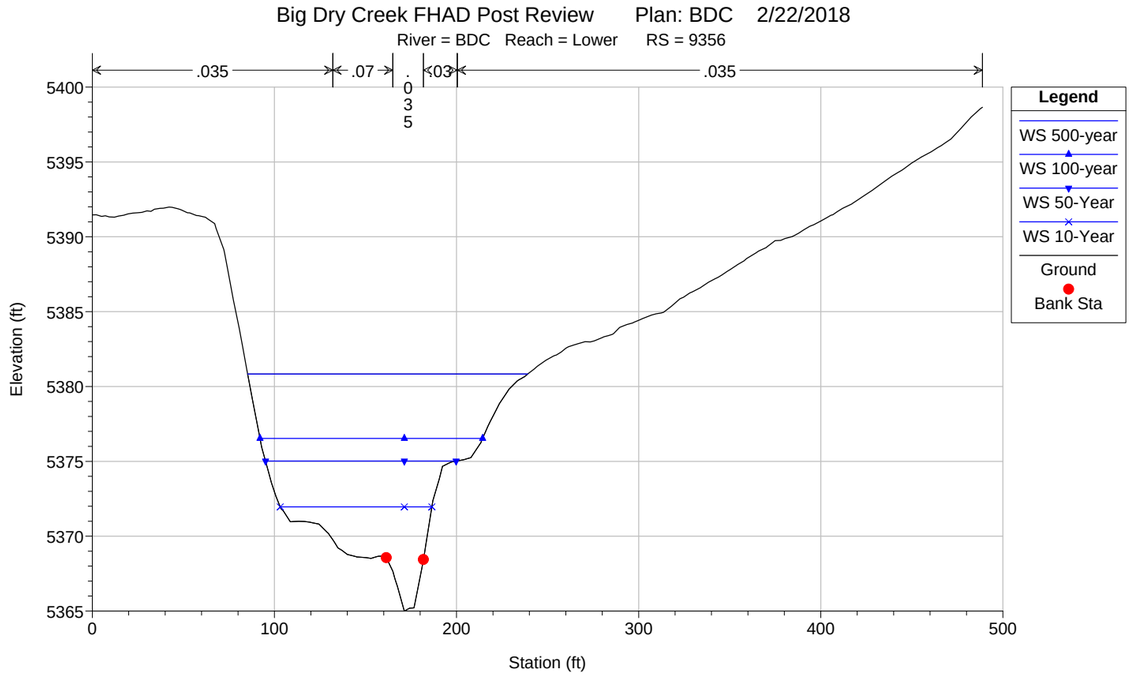

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10036 BR BR41 - Pedestrian Bridge
.1
.016
.05
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10036 BR BR41 - Pedestrian Bridge
.1
.016
.05
.05
.035
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 10014
.1
.02
.07
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 9977
.1
.02
.07
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 9944
.1
.02
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 9356
.035
.07
.035
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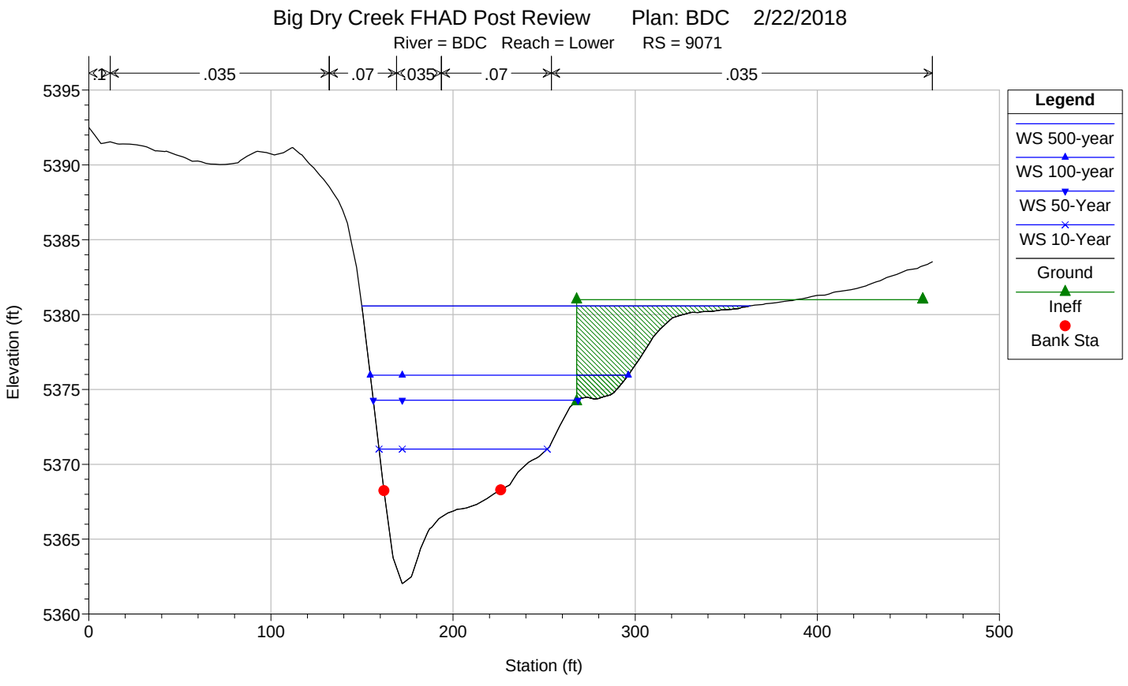
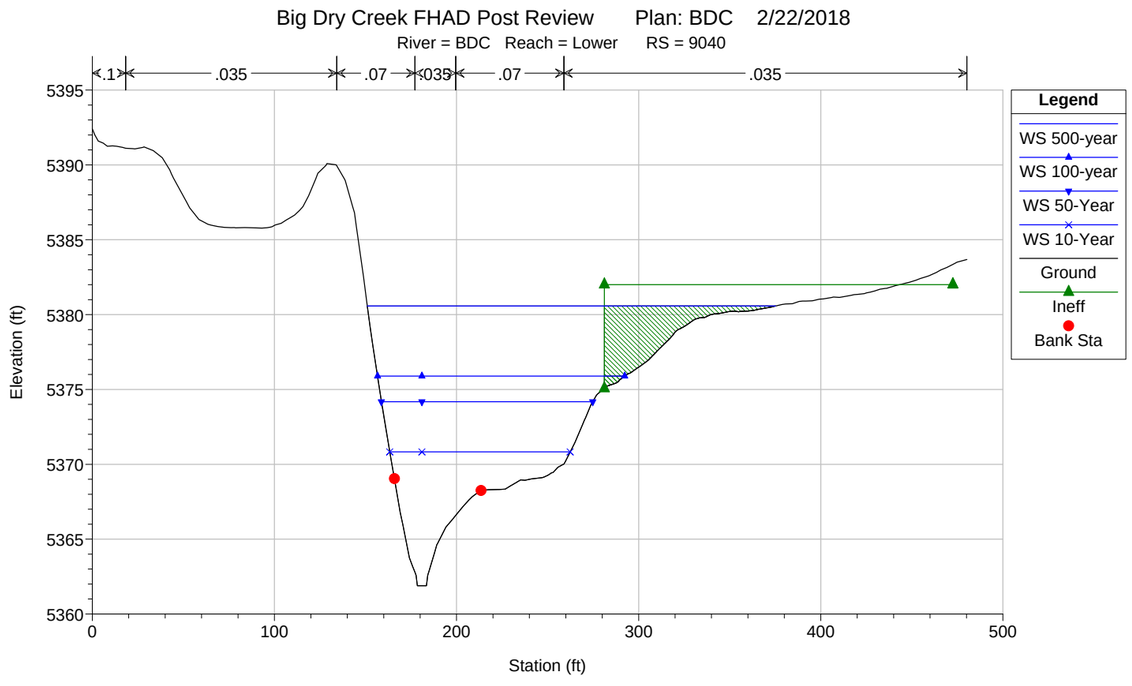
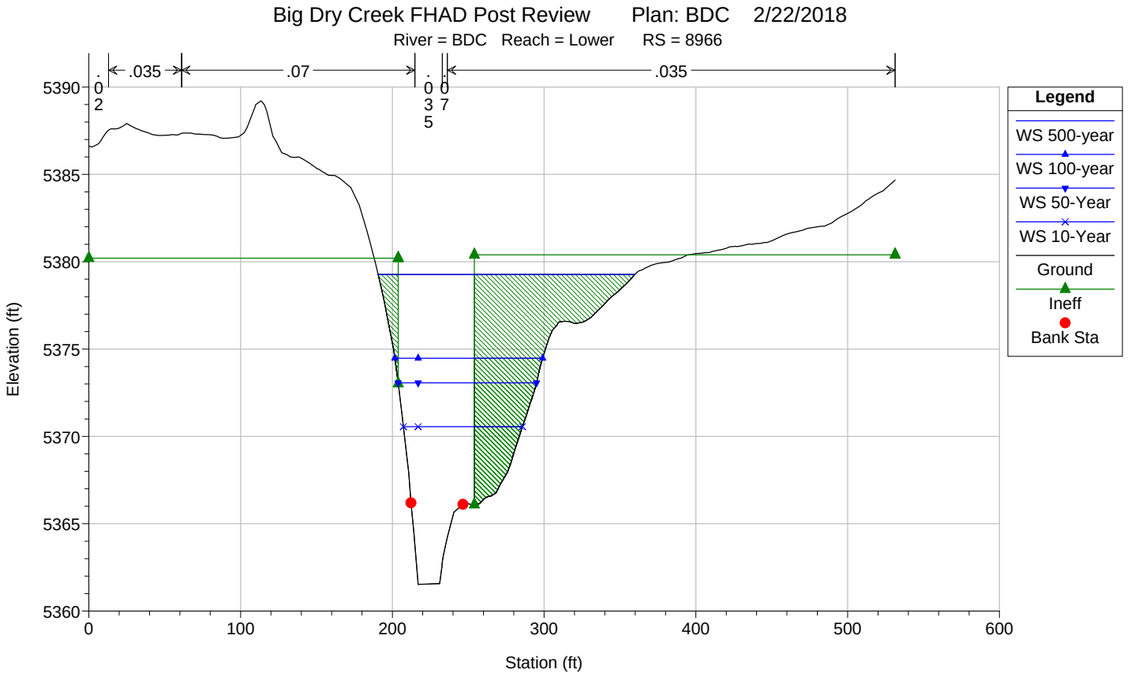
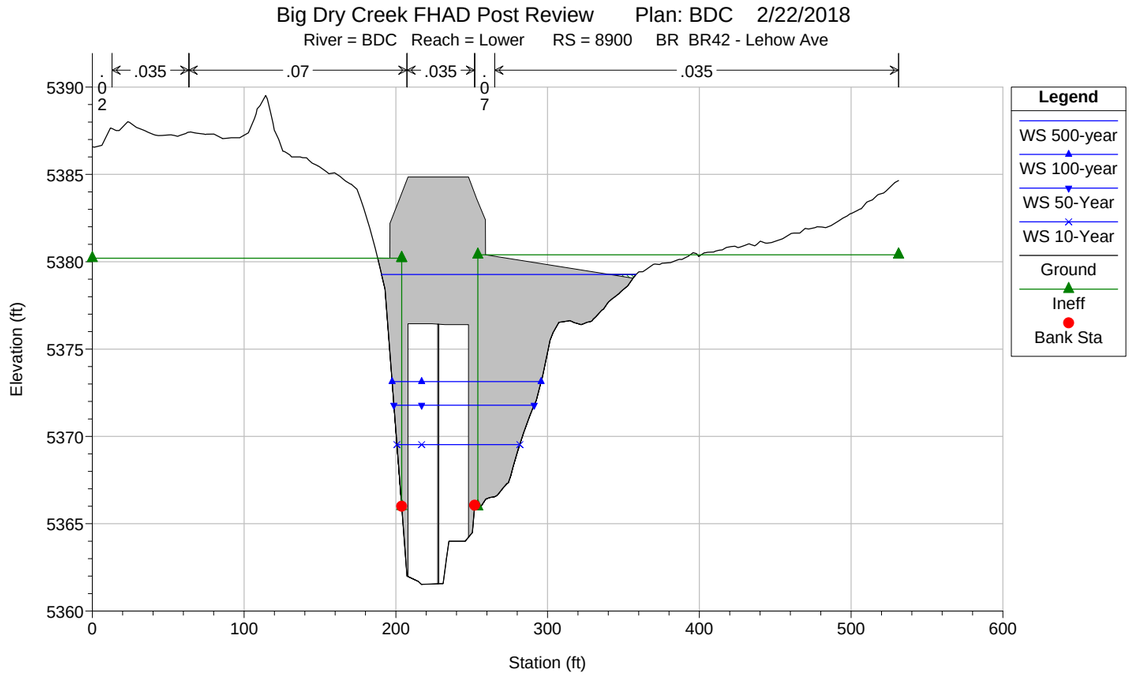
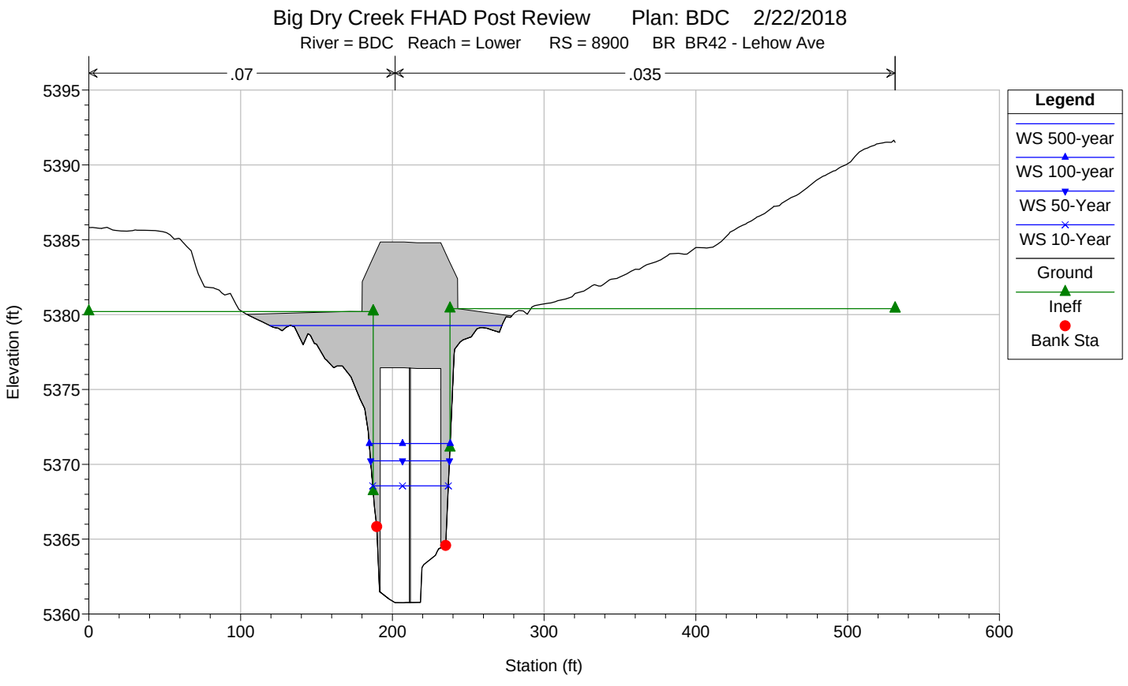
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

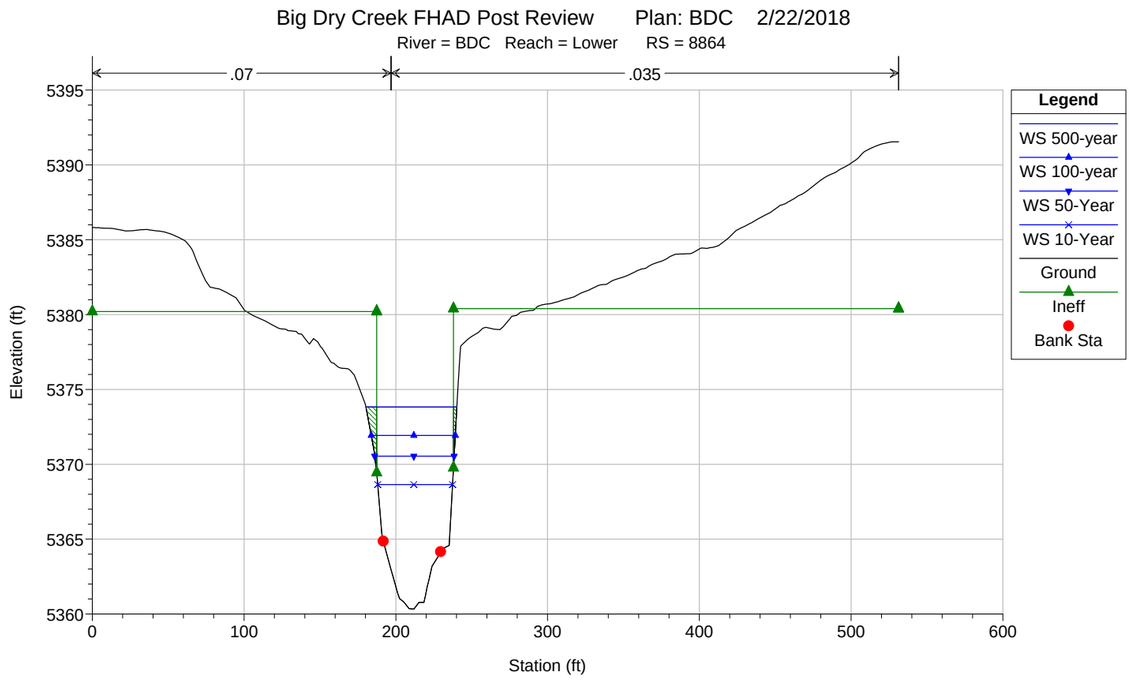

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 9071
.1
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

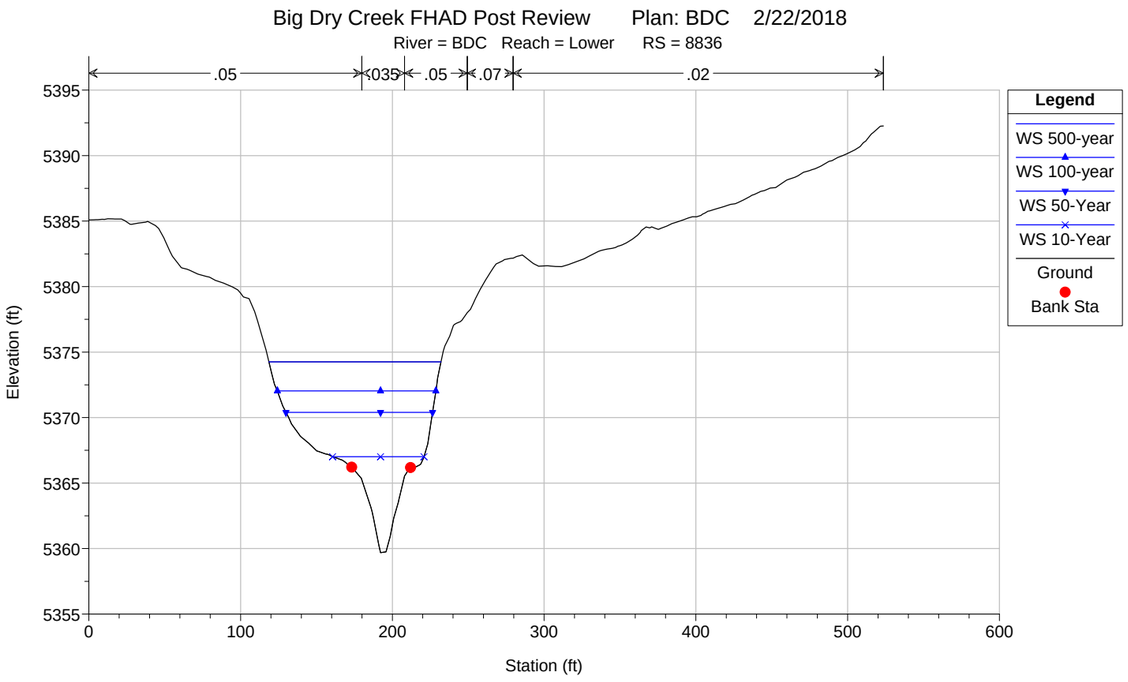

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 9040
.1
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

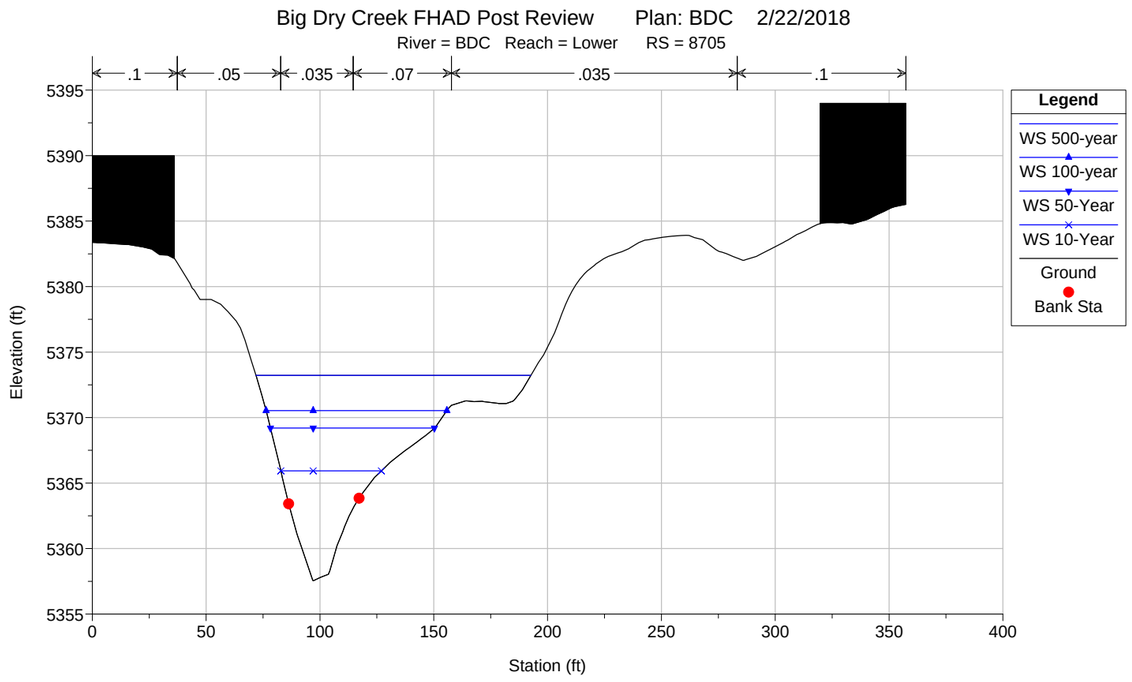

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8966
.035
.07
.035
.02
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5385
5380
5375
5370
5365
5360
0
100
200
300
400
500
600

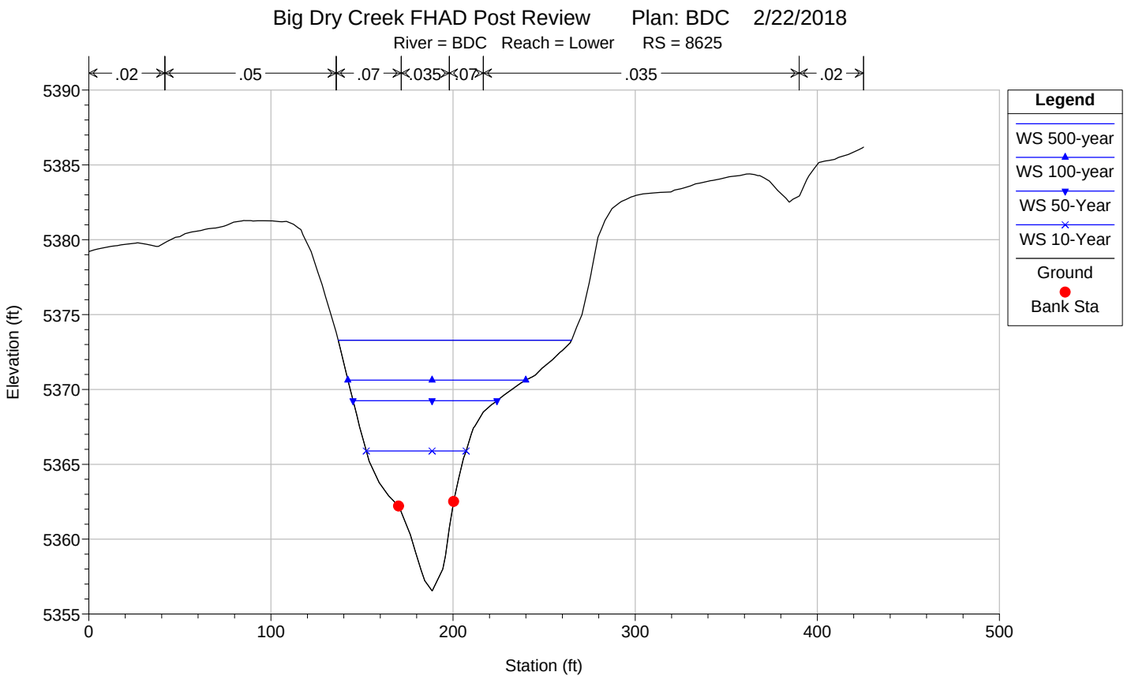

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8900 BR BR42 - Lehow Ave
.035
.07
.035
.035
.02
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5385
5380
5375
5370
5365
5360
0
100
200
300
400
500
600

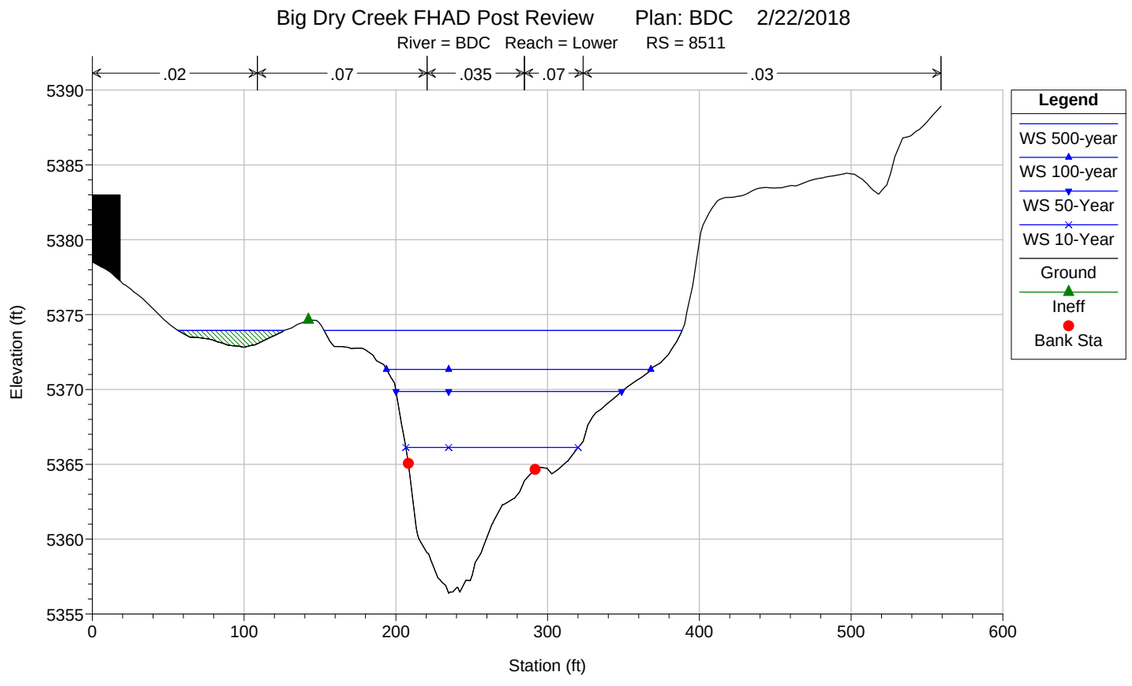

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8900 BR BR42 - Lehow Ave
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5395
5390
5385
5380
5375
5370
5365
5360
0
100
200
300
400
500
600

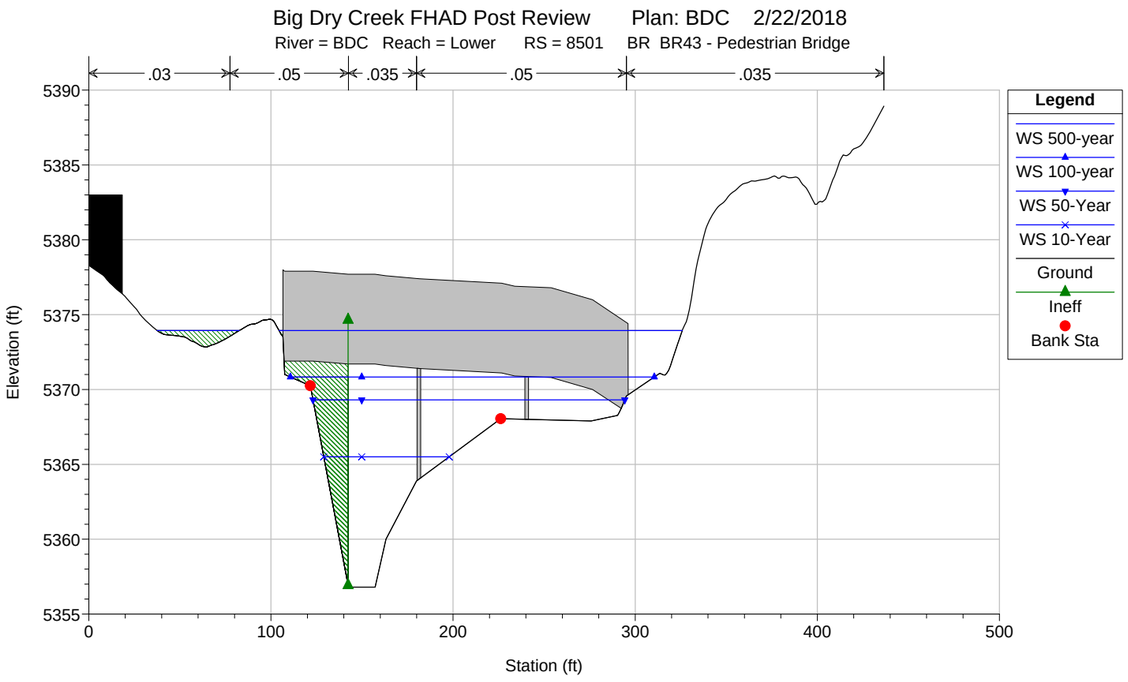

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8864
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5395
5390
5385
5380
5375
5370
5365
5360
0
100
200
300
400
500
600

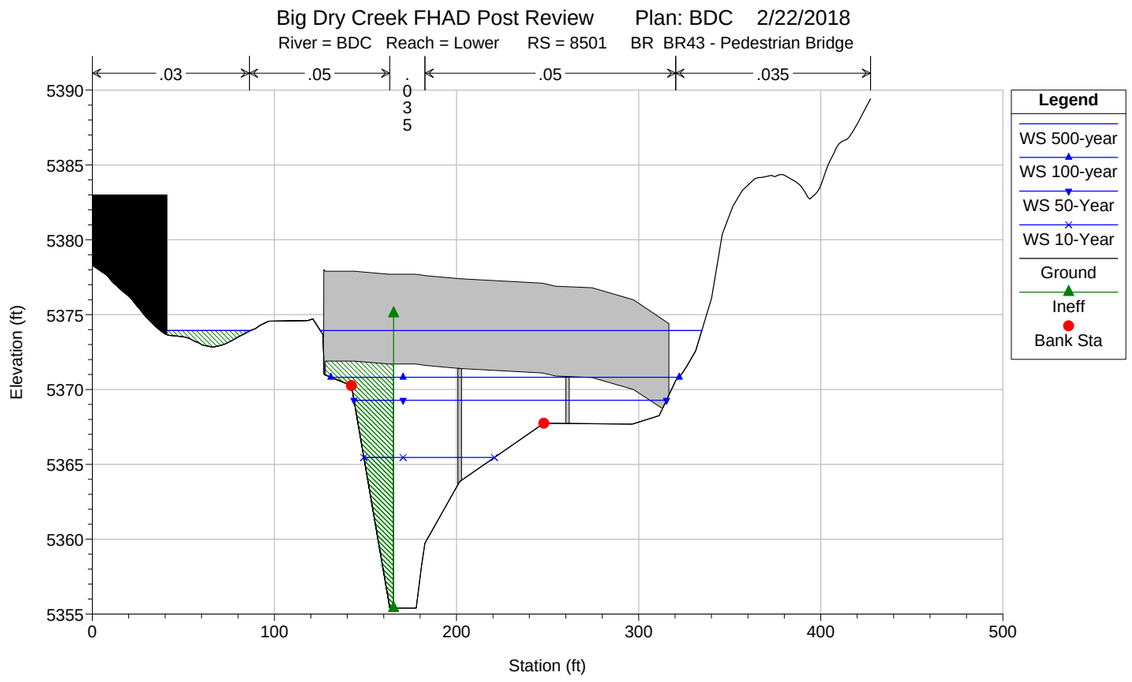

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8836
.05
.035
.05
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

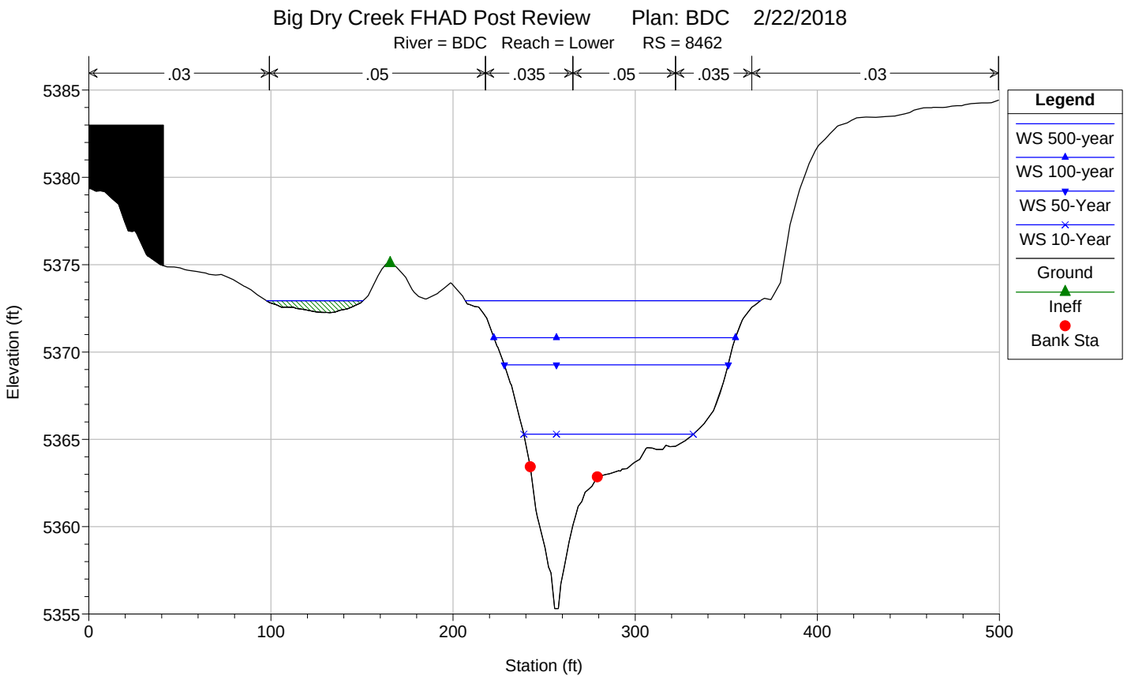

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8705
.1
.05
.035
.07
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

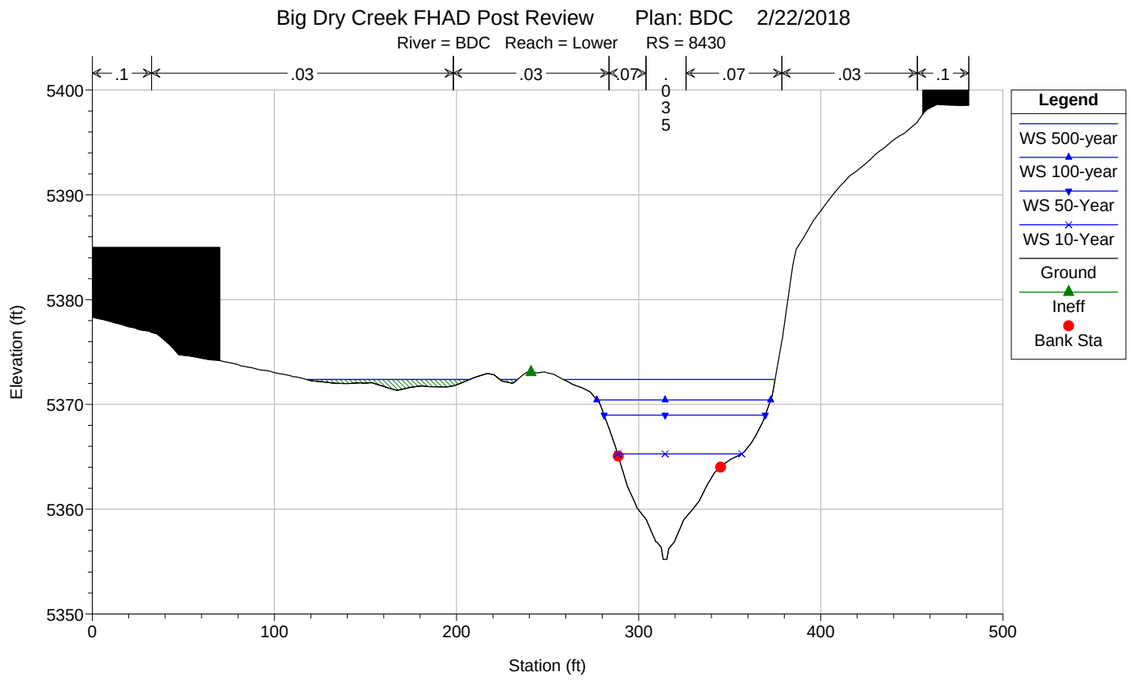

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8625
.02
.05
.07
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

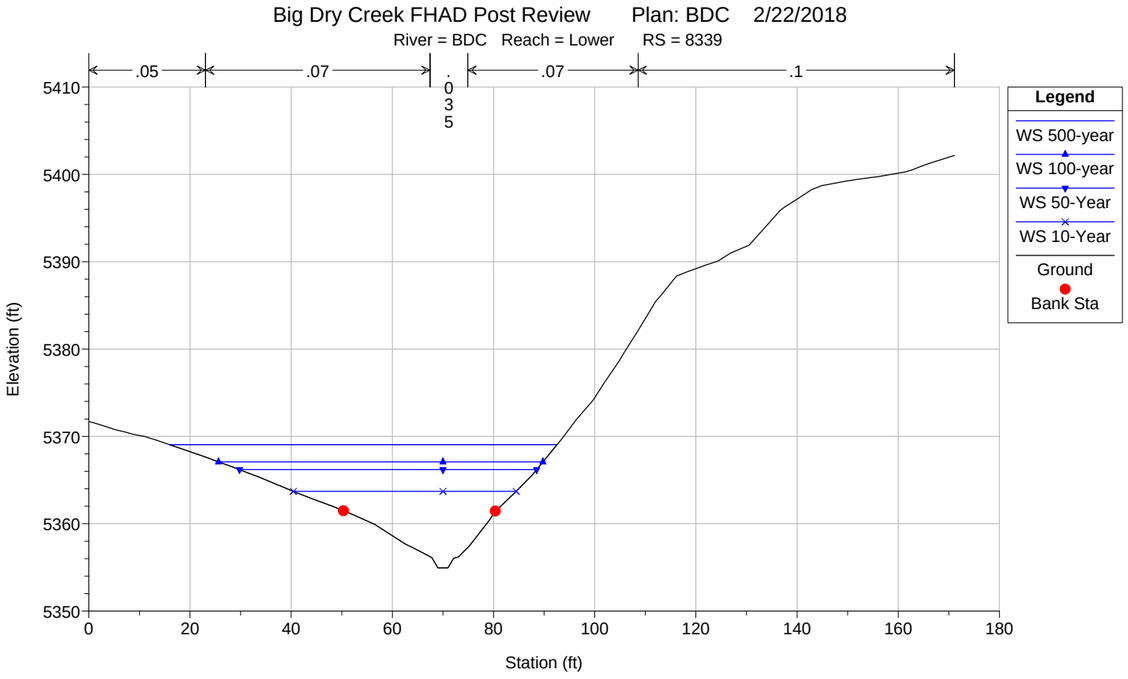

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8511
.02
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

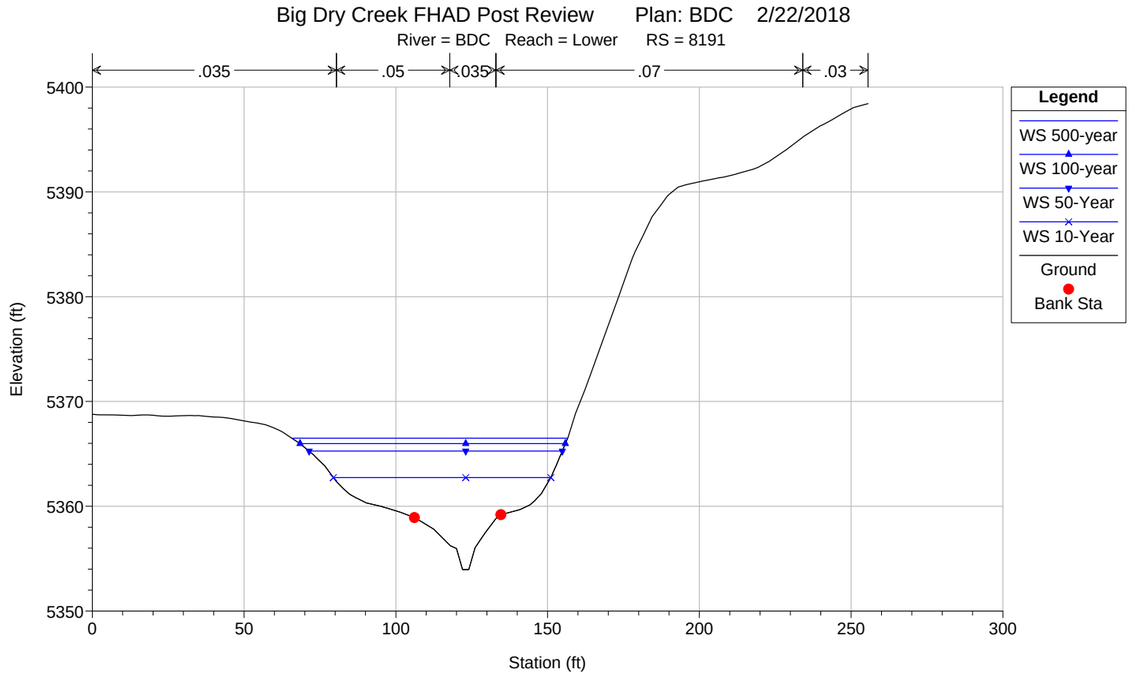

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8501 BR BR43 - Pedestrian Bridge
.03
.05
.035
.05
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

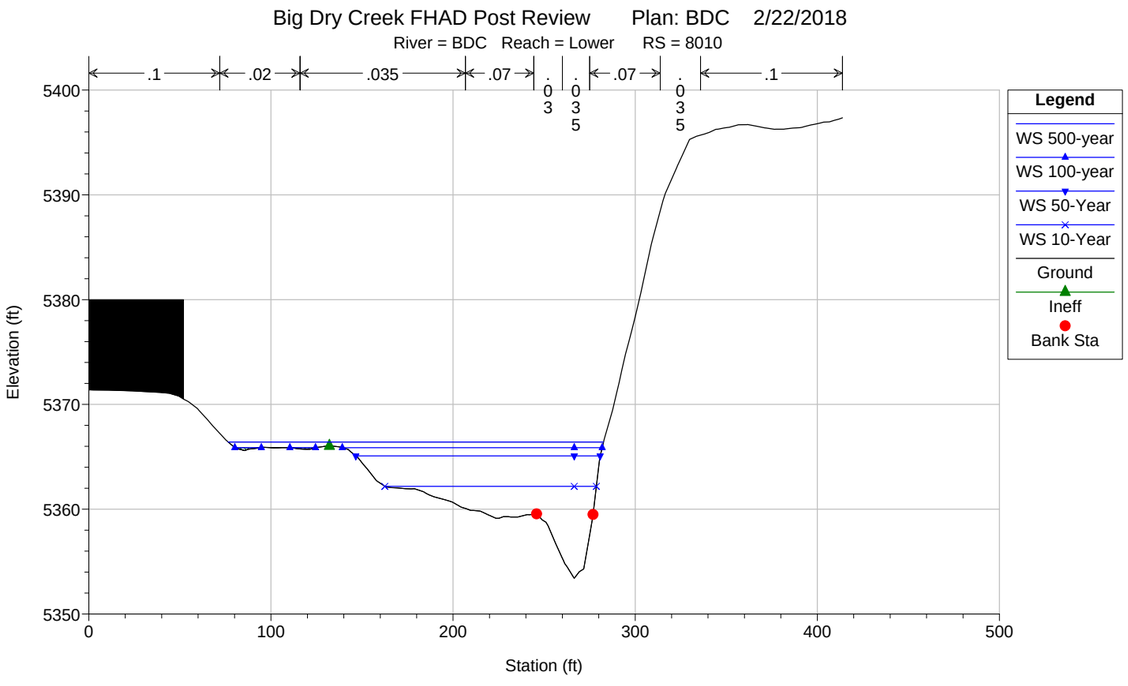

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8501 BR BR43 - Pedestrian Bridge
.03
.05
.035
.05
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

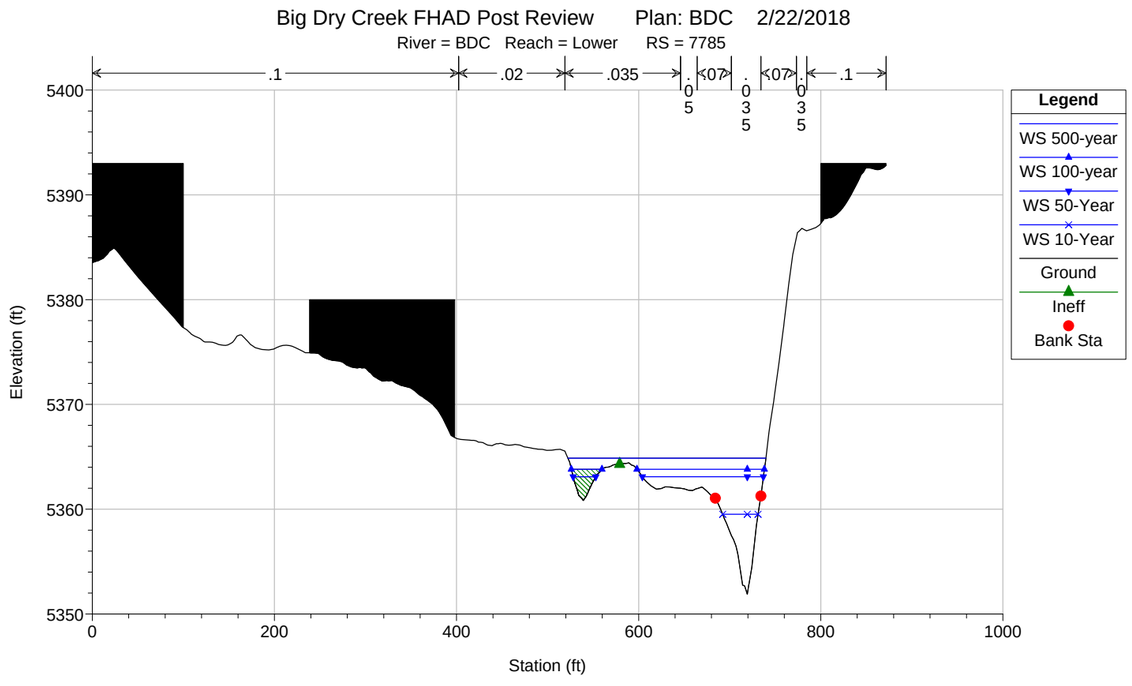

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8462
.03
.05
.035
.05
.035
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

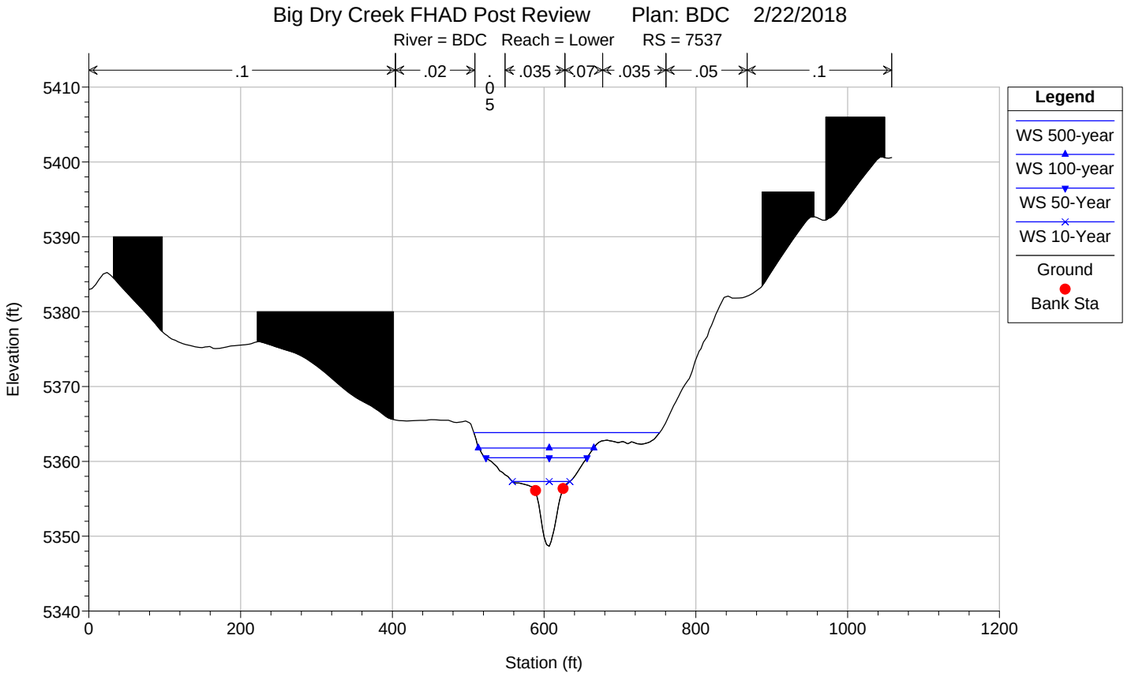

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8430
.1
.03
.03
.07
.035
.07
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

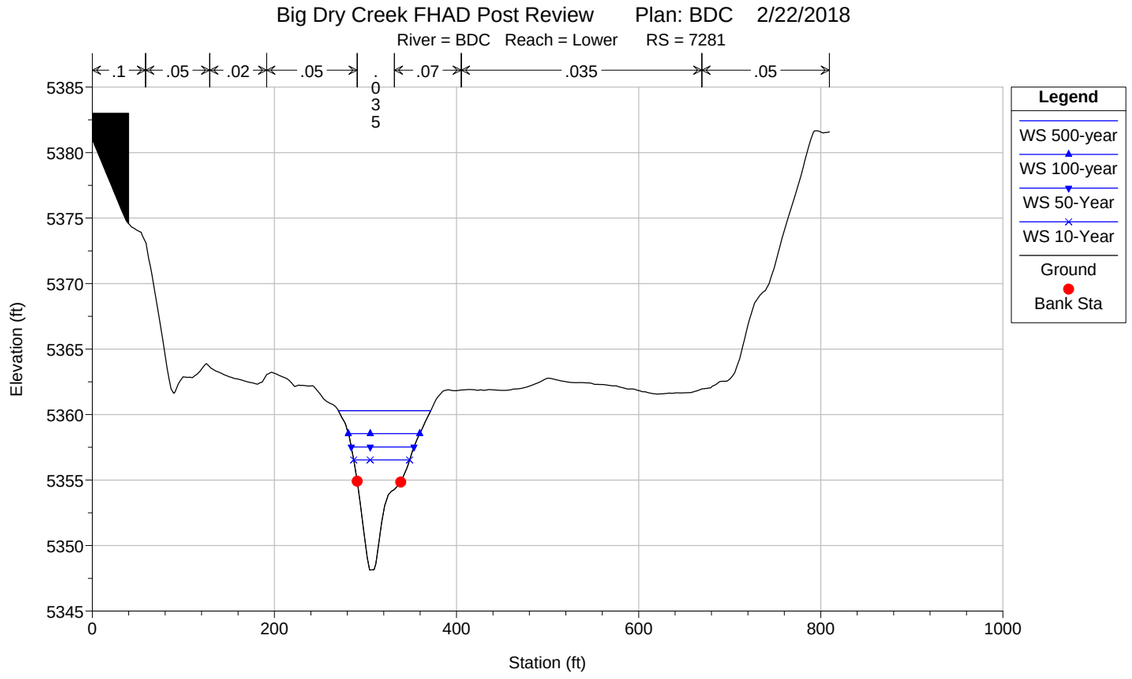

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8339
.05
.07
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

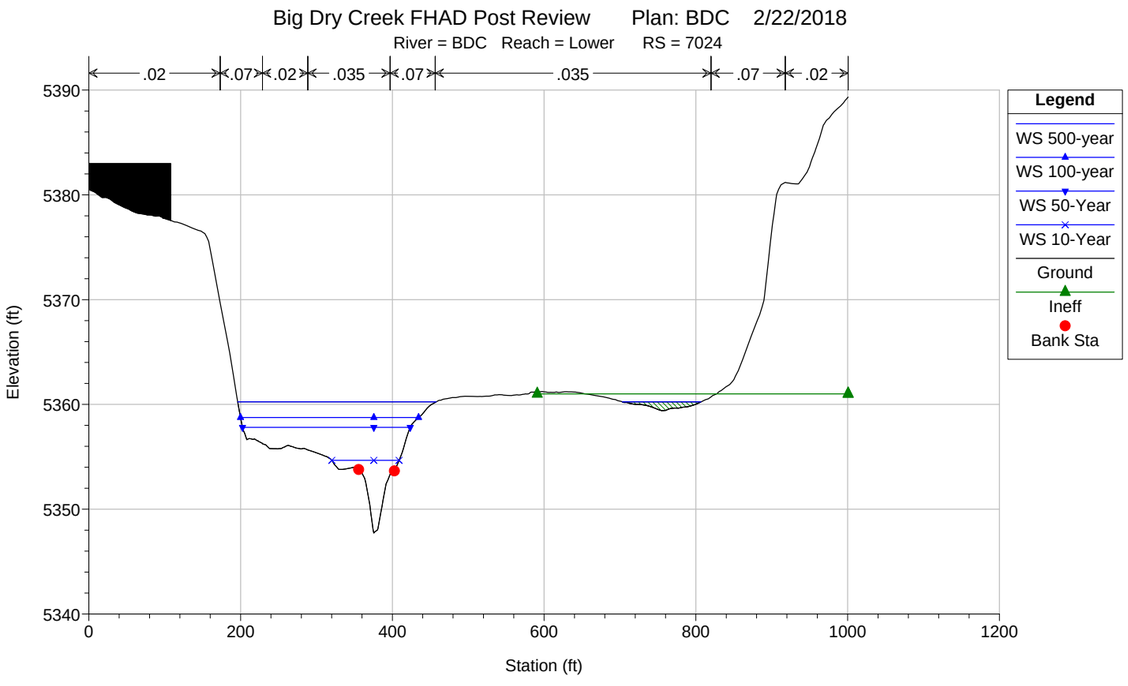

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8191
.035
.05
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

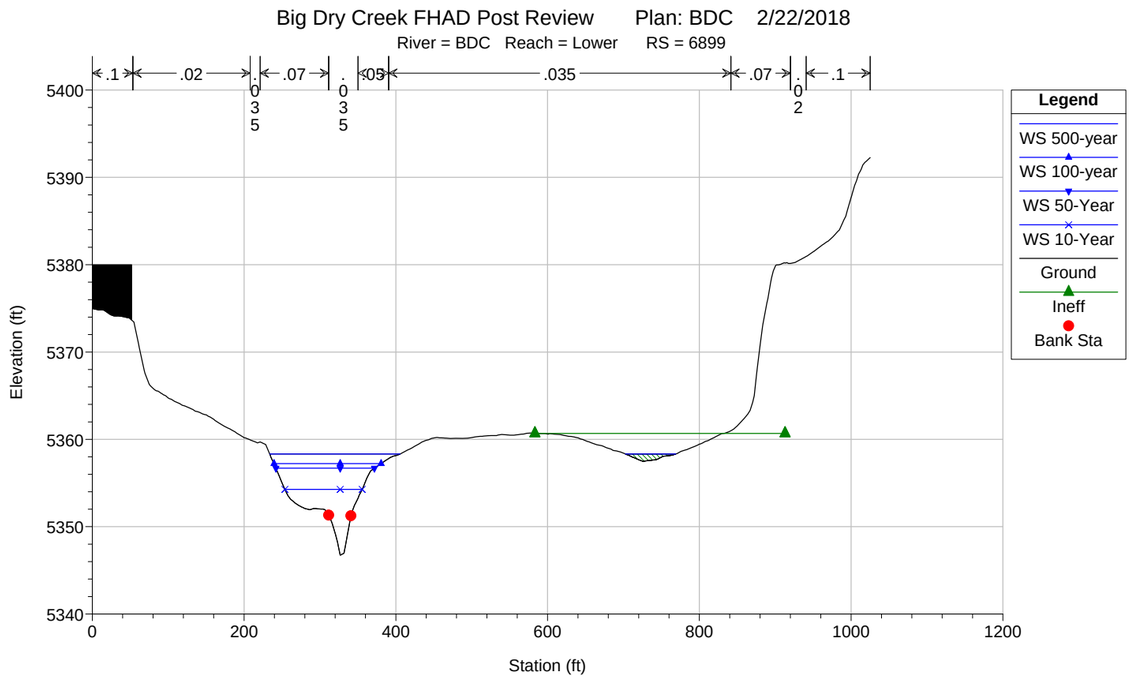

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 8010
.1
.02
.035
.07
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

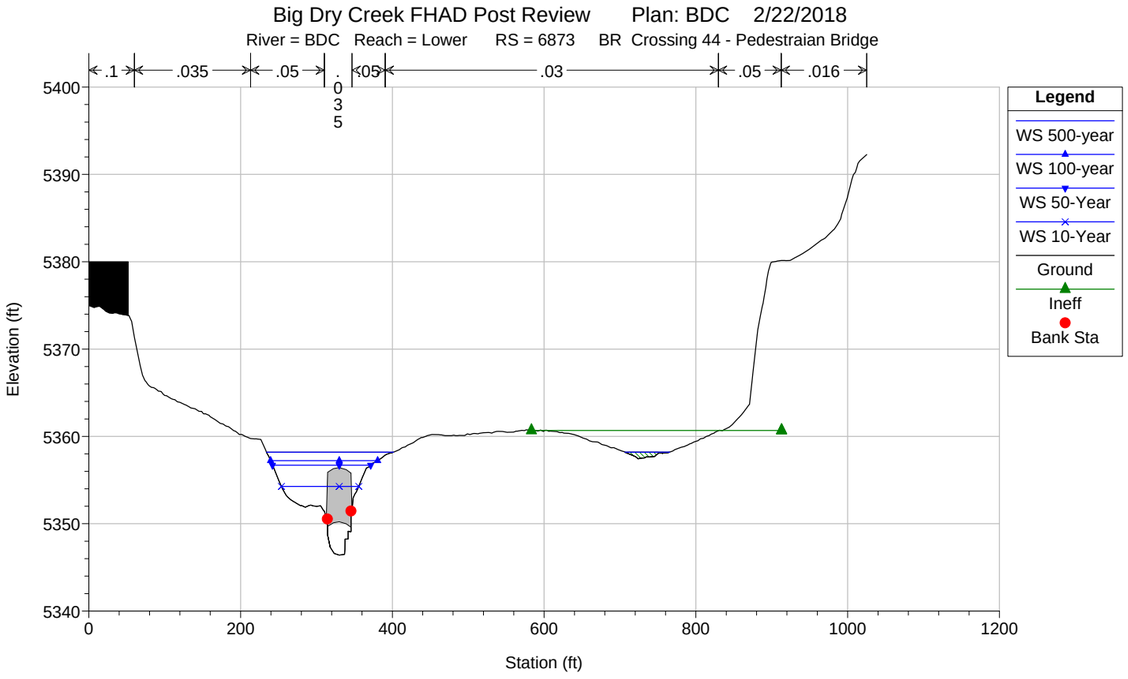

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 7785
.1
.02
.035
.07
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

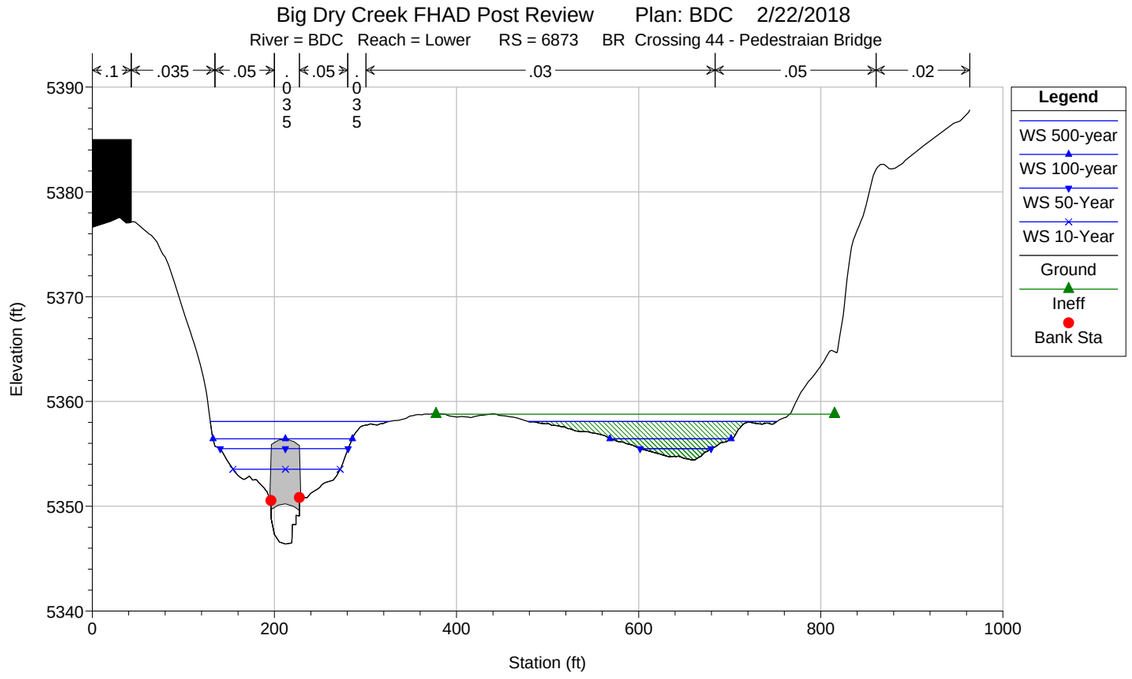

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 7537
.1
.02
.05
.035
.07
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

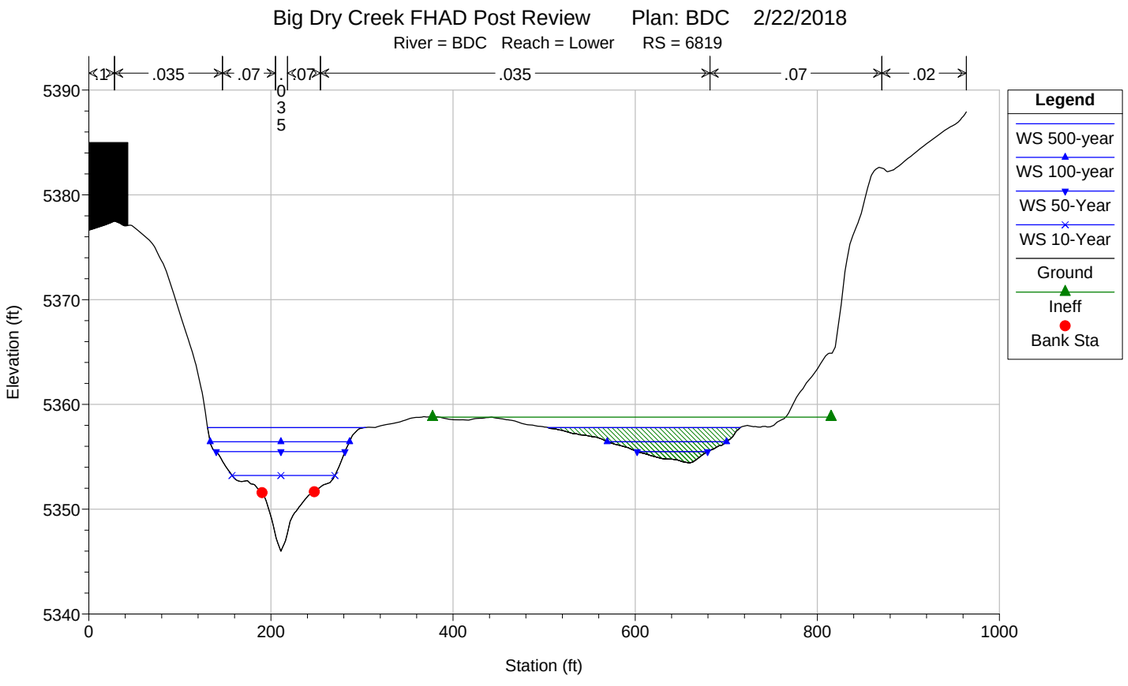

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 7281
.1
.05
.02
.05
.035
.07
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

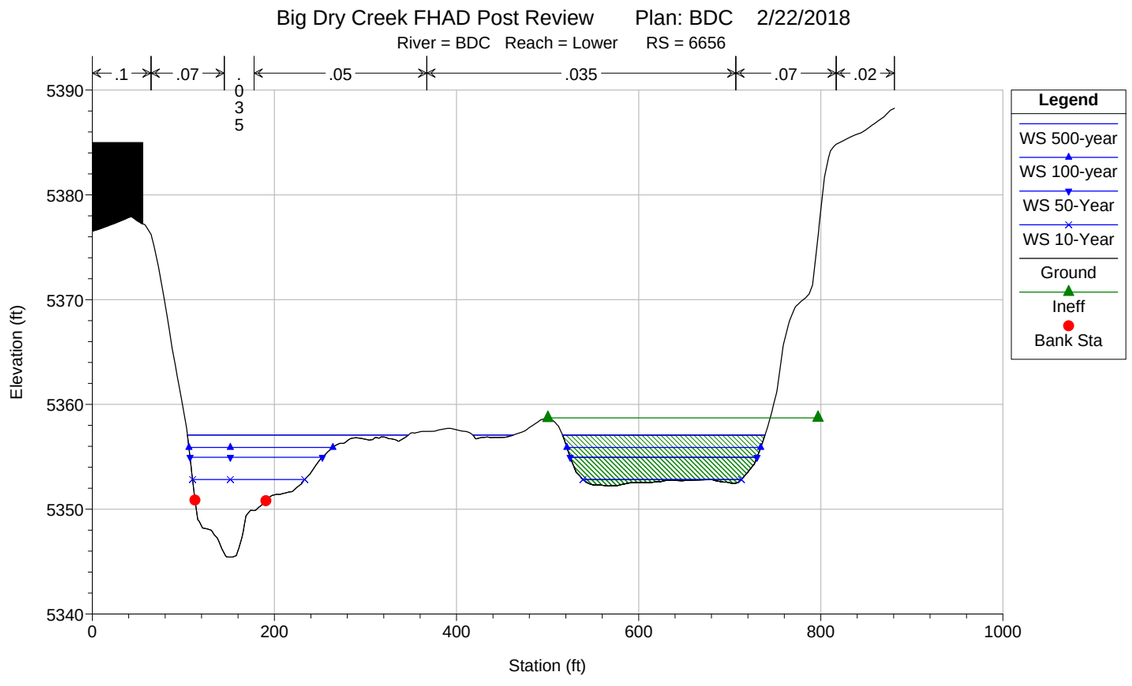

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 7024
.02
.07
.02
.035
.07
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

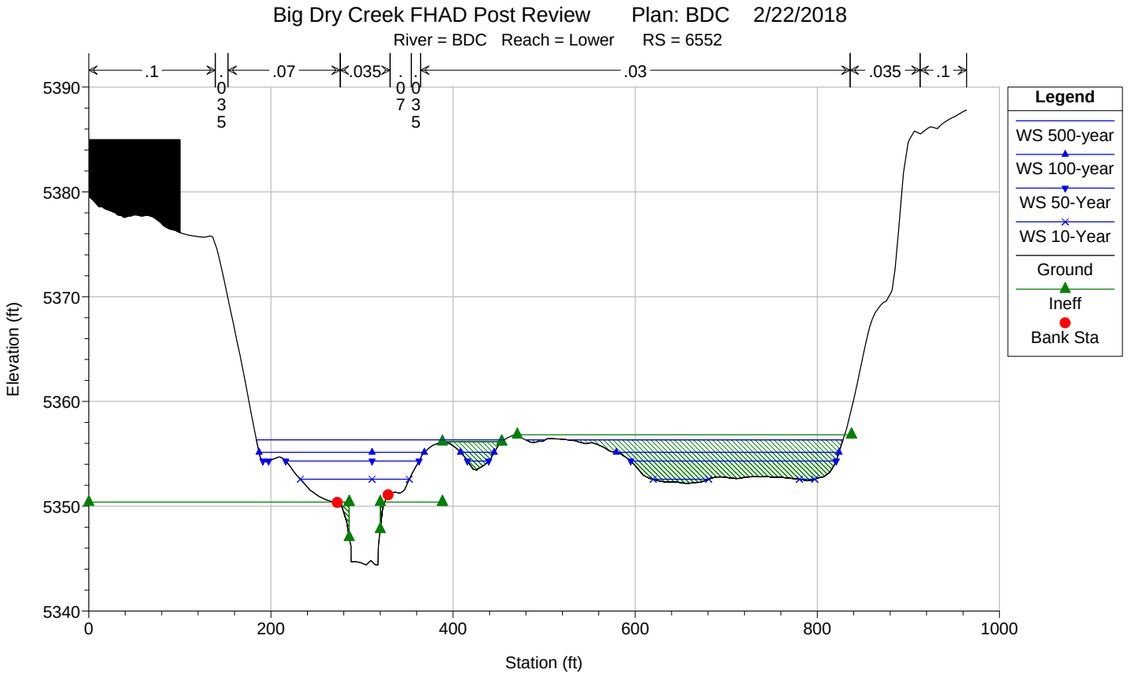

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6899
.1
.02
.035
.07
.035
.05
.035
.07
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

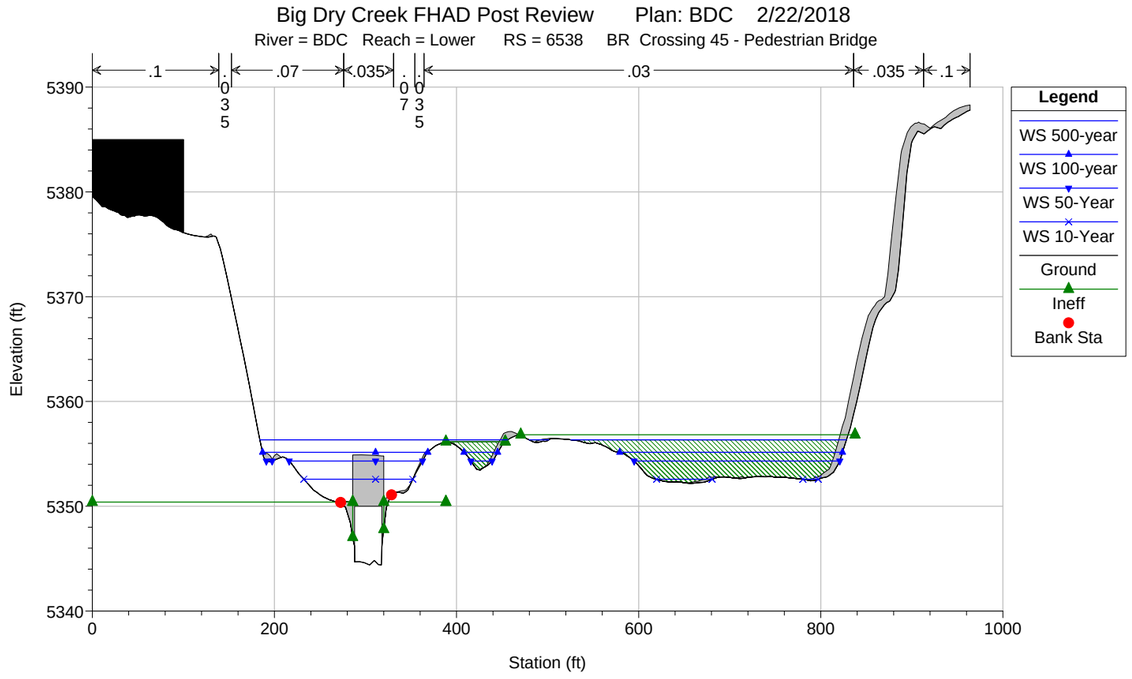

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6873 BR Crossing 44 - Pedestraian Bridge
.1
.035
.05
.035
.05
.03
.05
.016
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

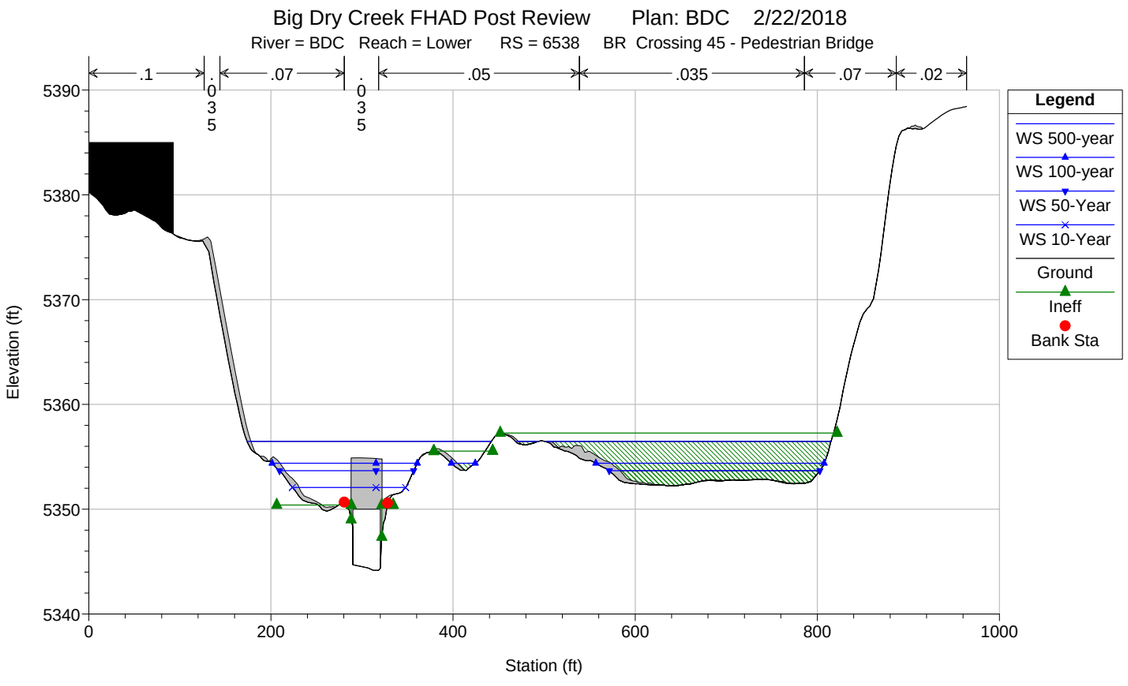

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6873 BR Crossing 44 - Pedestraian Bridge
.1
.035
.05
.05
.03
.05
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

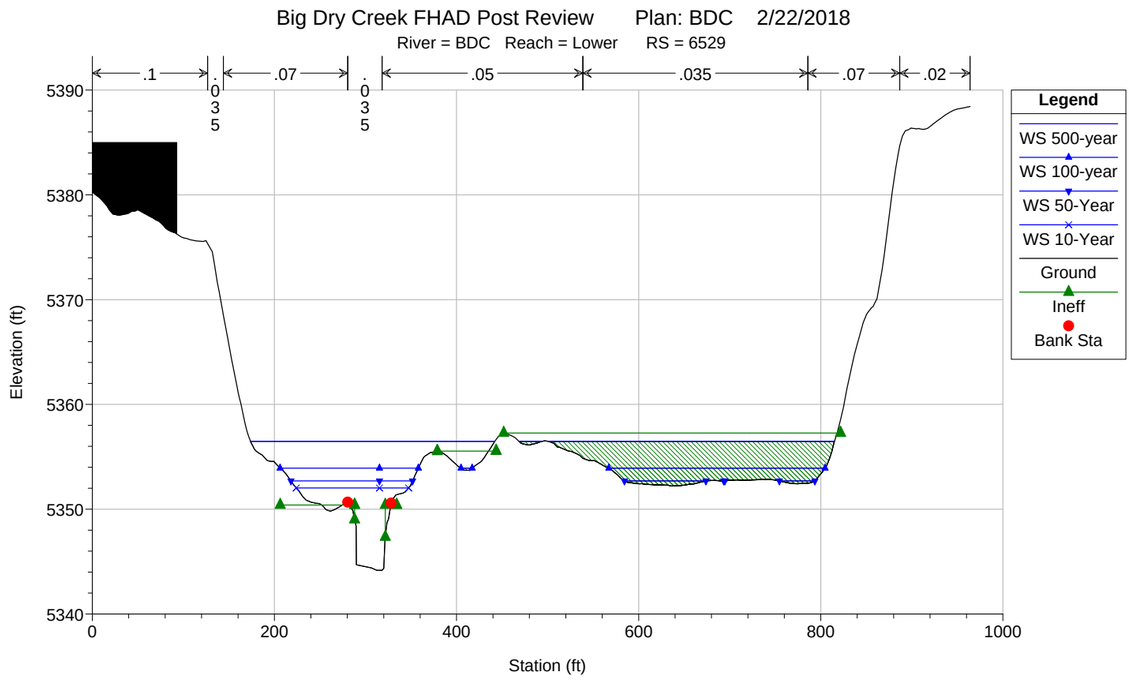

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6819
.1
.035
.07
.07
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

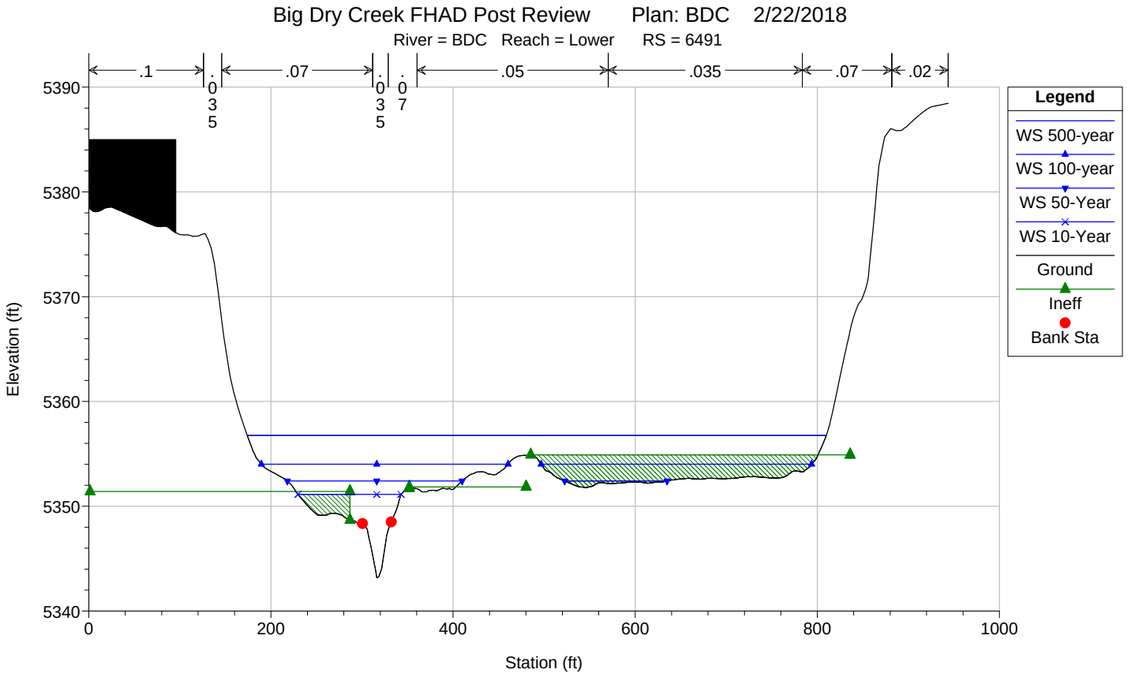

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6656
.1
.07
.05
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

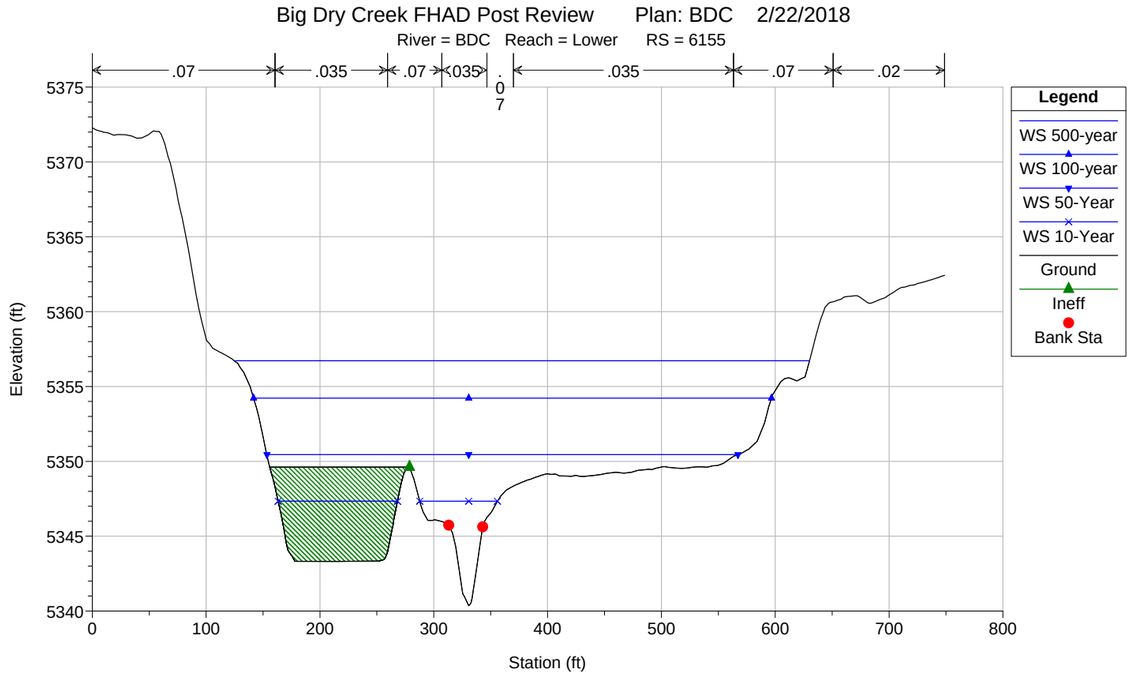

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6552
.1
.035
.07
.035
.03
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6538 BR Crossing 45 - Pedestrian Bridge
.1
.035
.07
.035
.03
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6538 BR Crossing 45 - Pedestrian Bridge
.1
.035
.07
.035
.05
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6529
.1
.035
.07
.035
.05
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6491
.1
.035
.07
.035
.07
.05
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
0
200
400
600
800
1000


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 6155
.07
.035
.07
.035
.07
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5375
5370
5365
5360
5355
5350
5345
5340
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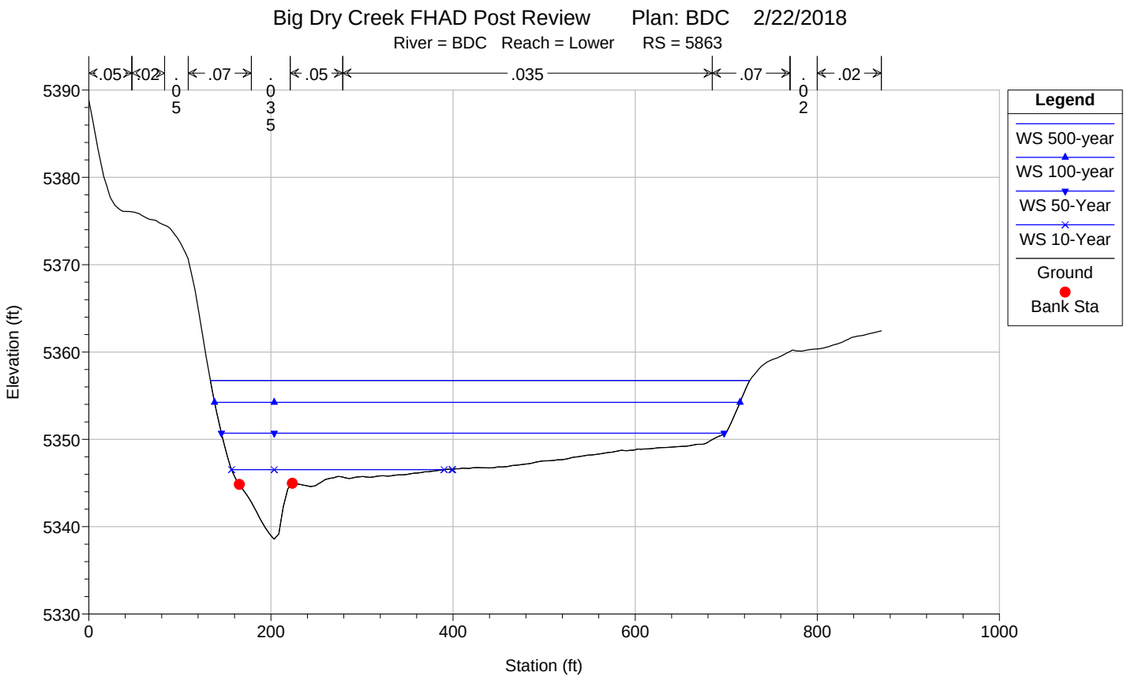
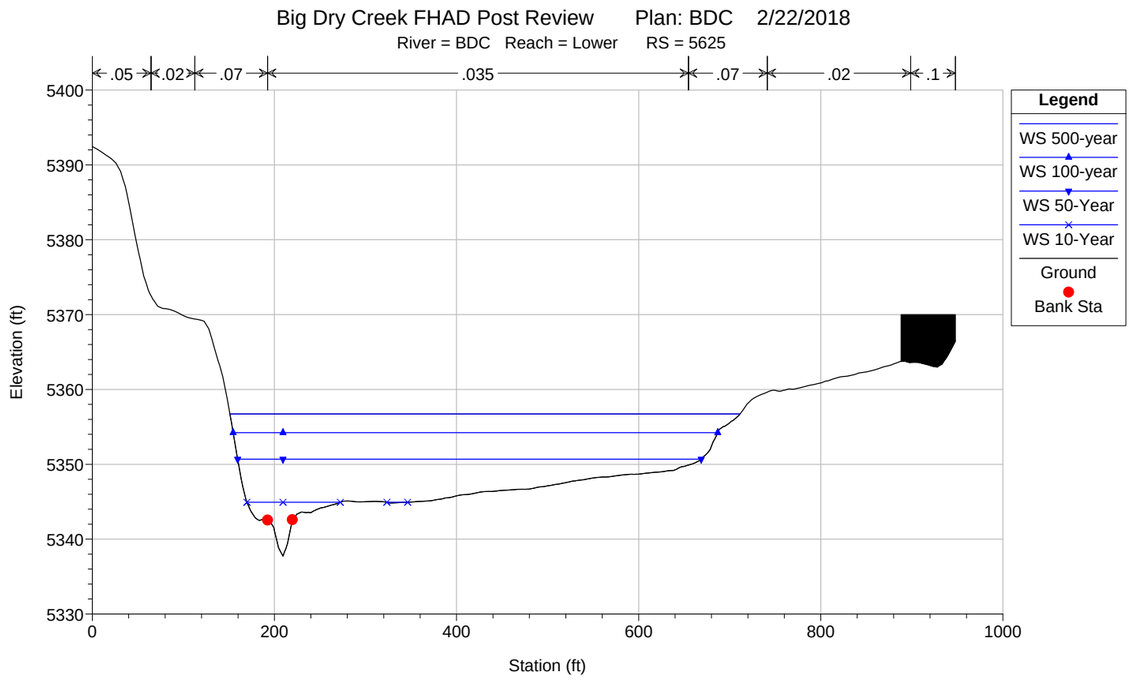
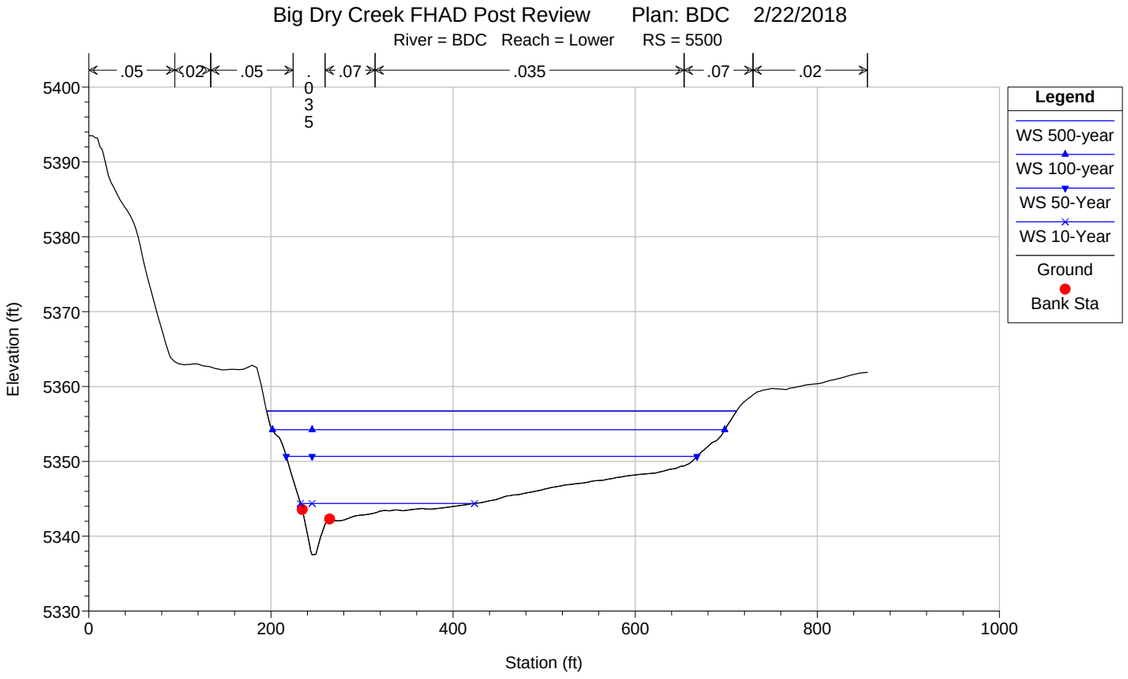
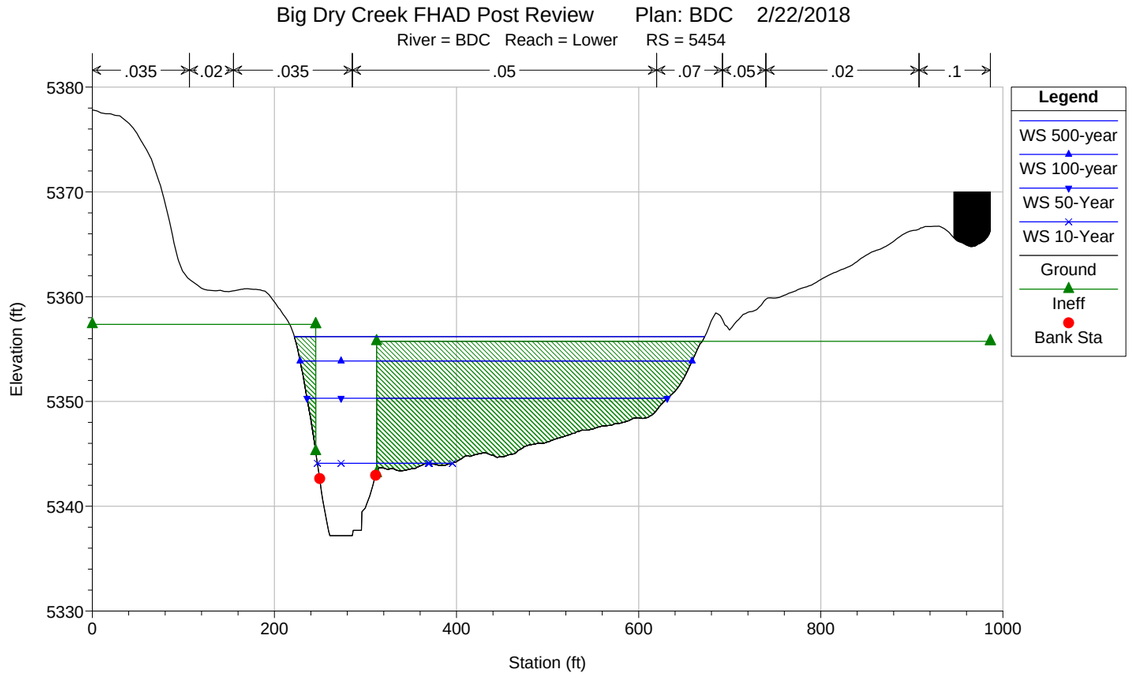
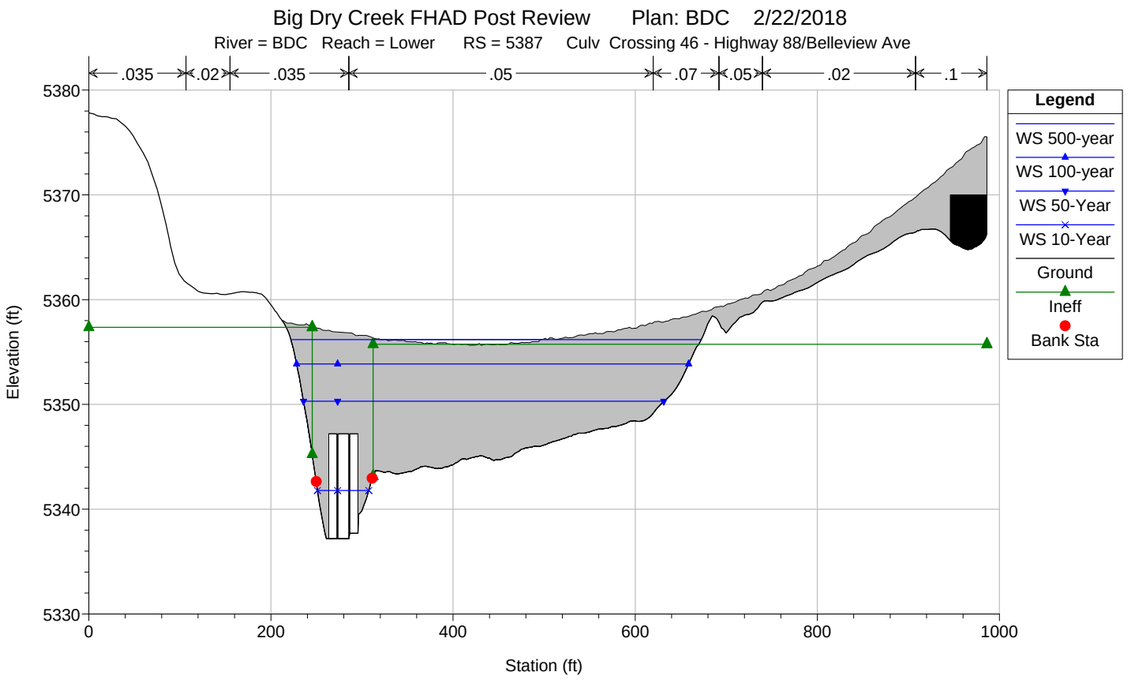
100
200
300
400
500
600
700
800

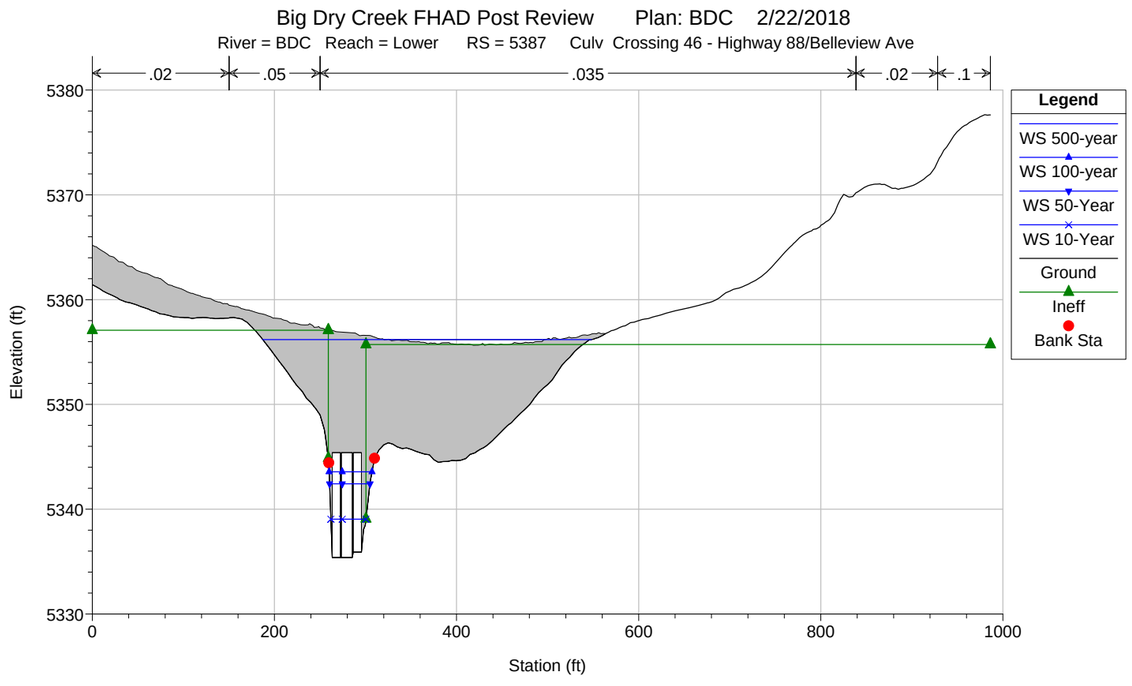

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5863
.05
.02
.05
.07
.035
.05
.035
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

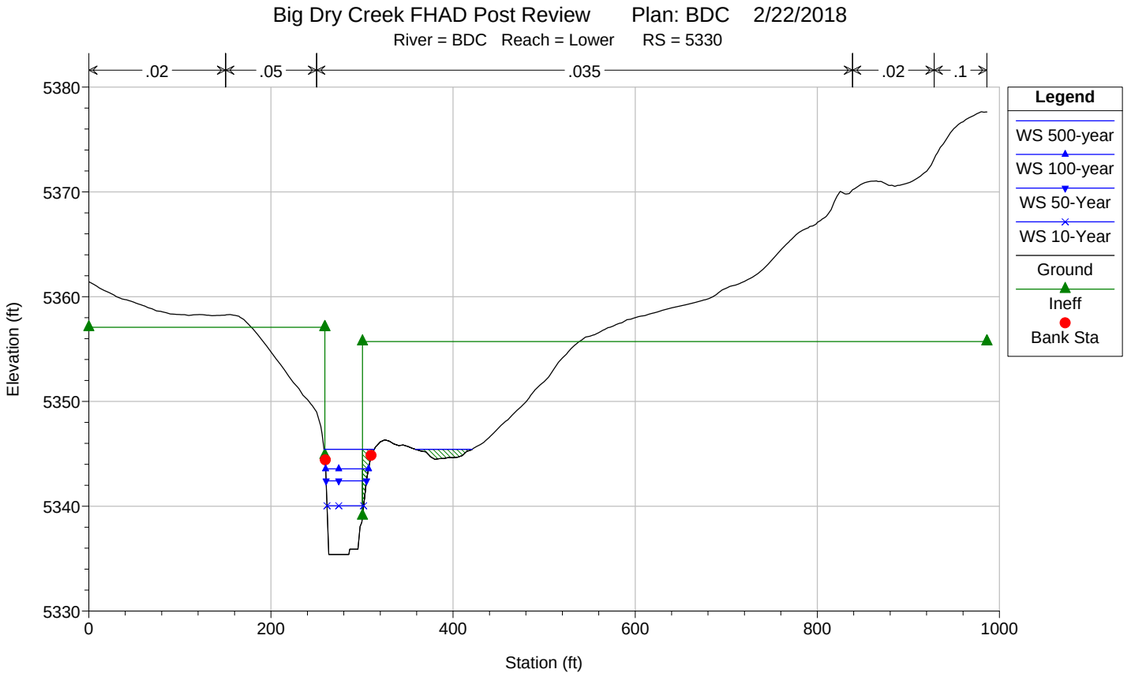

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5625
.05
.02
.07
.035
.07
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5400
5390
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

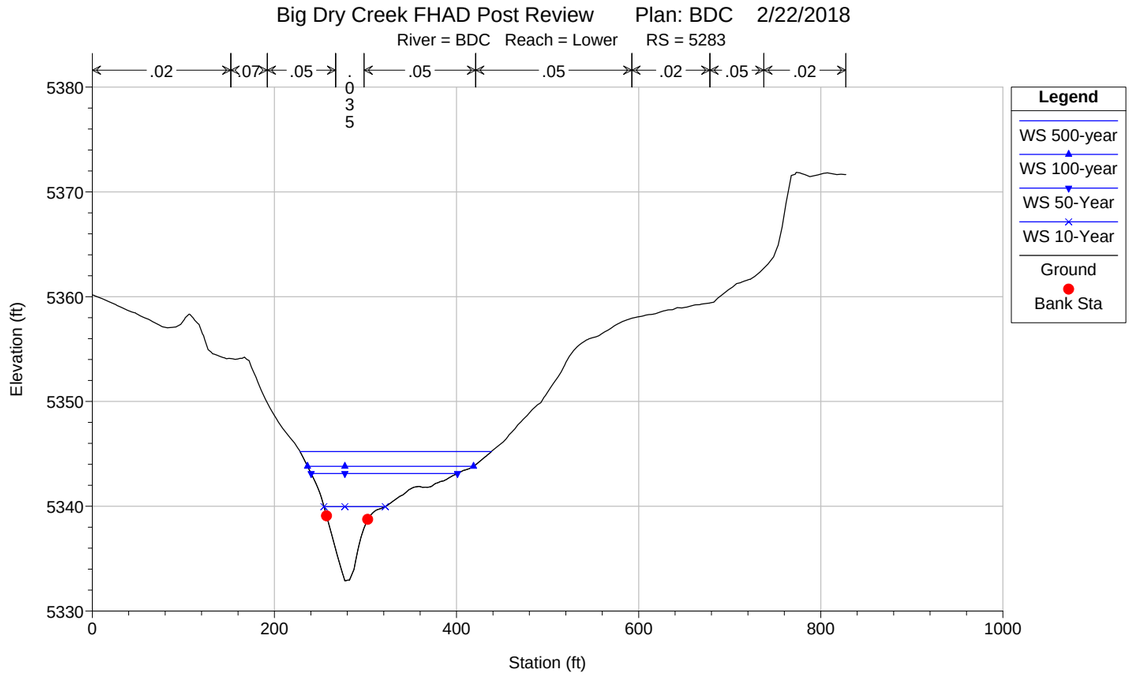

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5500
.05 .02 .05 .035 .07 .035 .07 .02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5400
5390
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

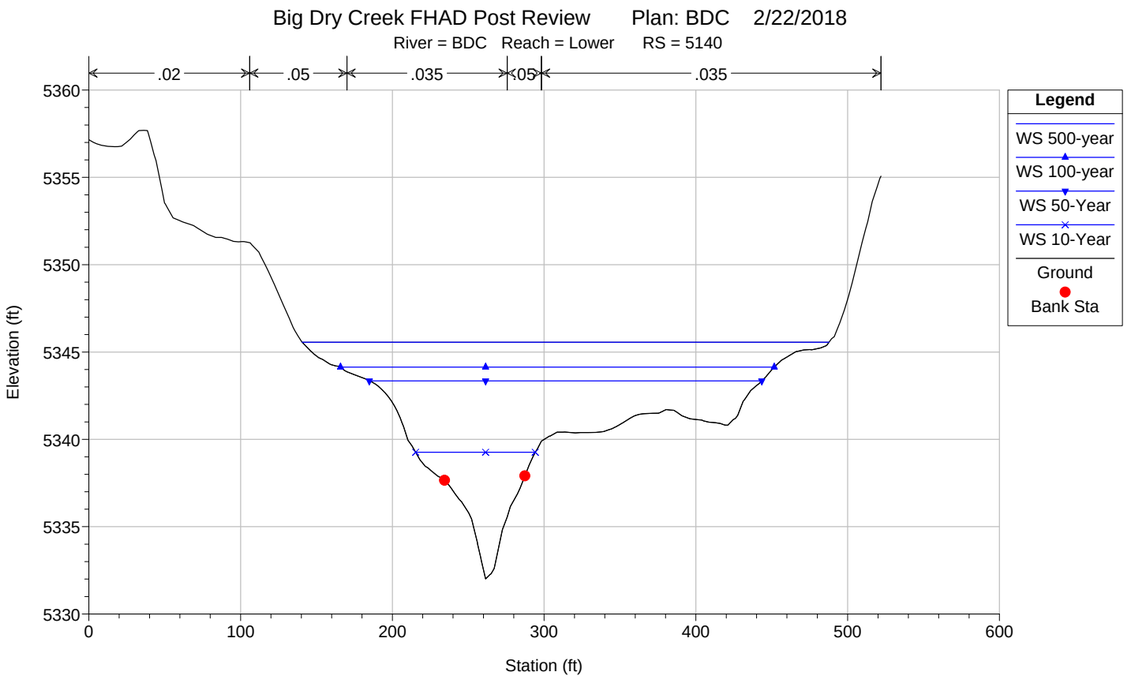

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5454
.035 .02 .035 .05 .07 .05 .02 .1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

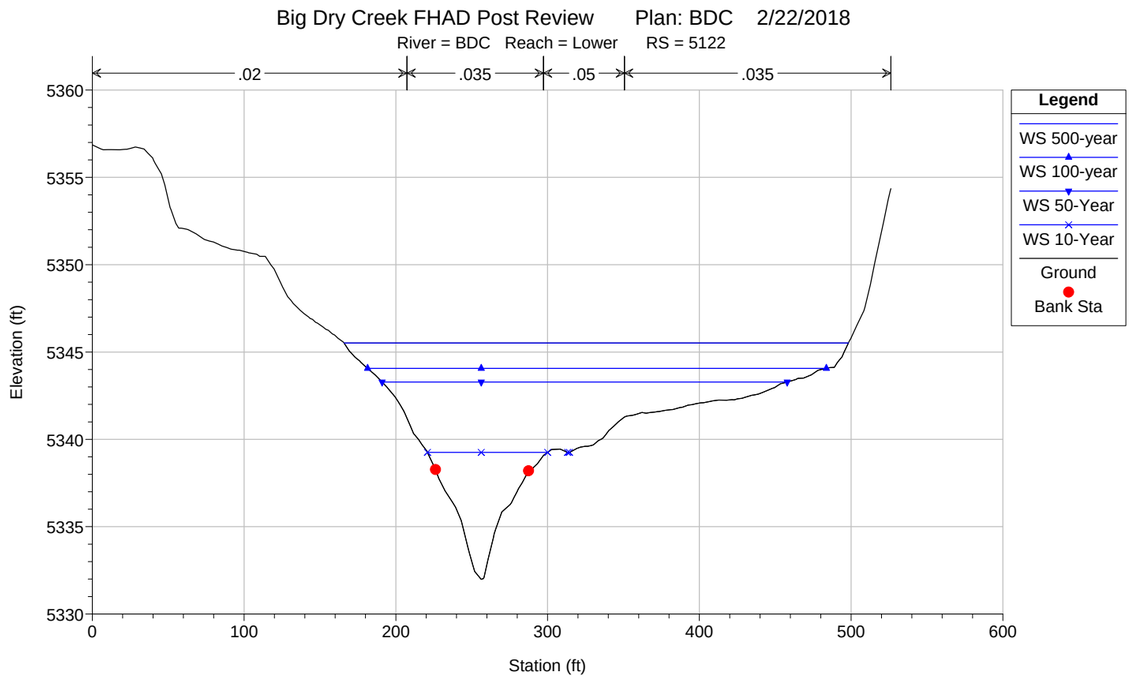

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5387 Culv Crossing 46 - Highway 88/Belleview Ave
.035 .02 .035 .05 .07 .05 .02 .1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

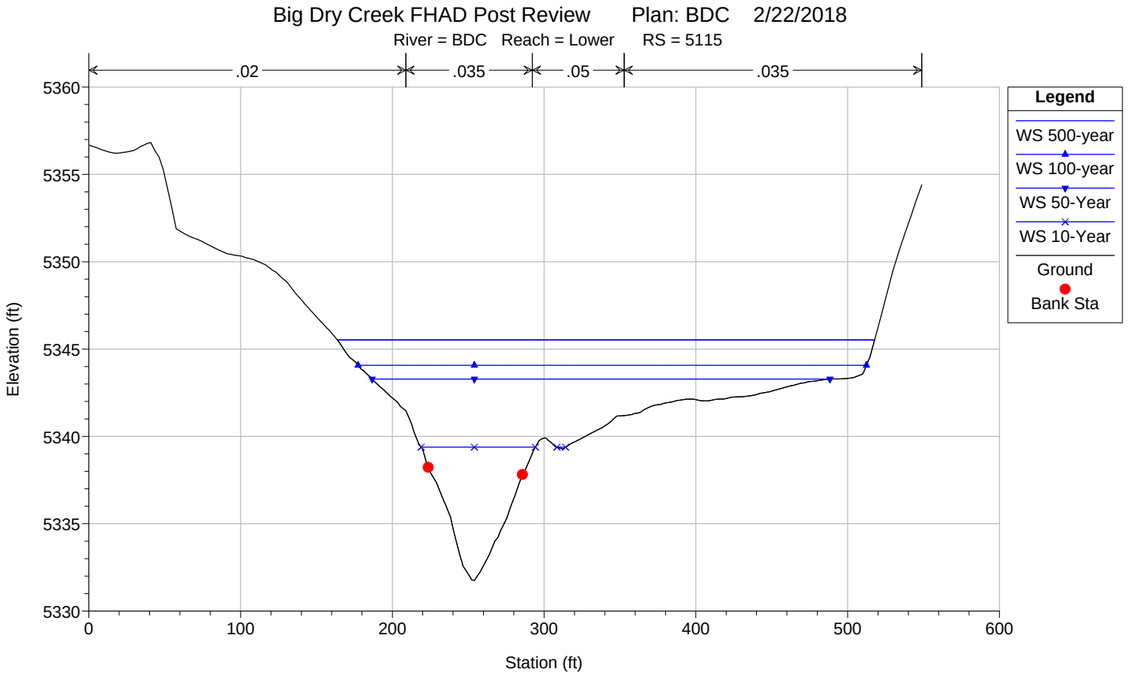

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5387 Culv Crossing 46 - Highway 88/Belleview Ave
.02 .05 .035 .02 .1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
0
200
400
600
800
1000

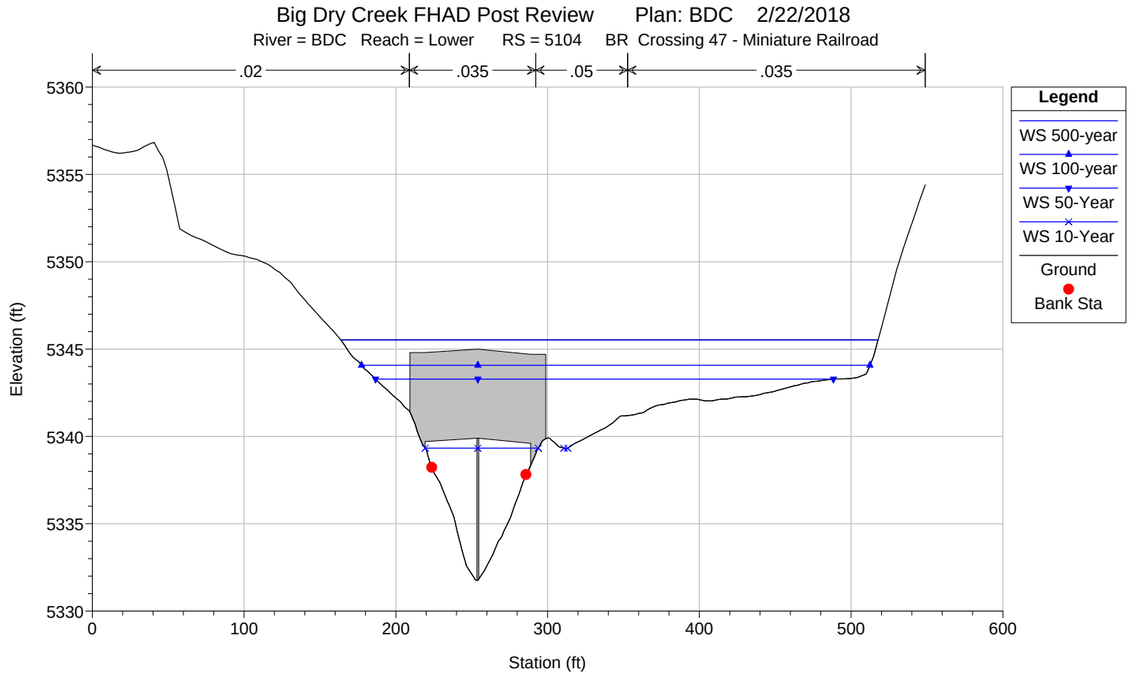

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5330
.02
.05
.035
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

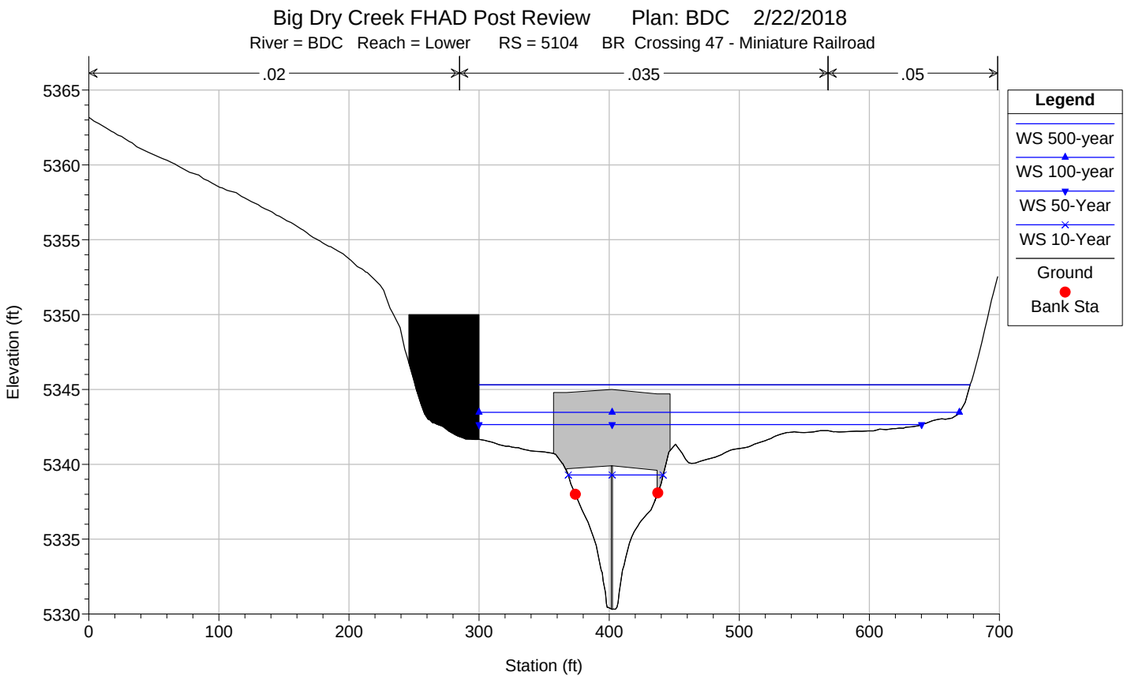

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5283
.02
.07
.05
.035
.05
.05
.02
.05
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

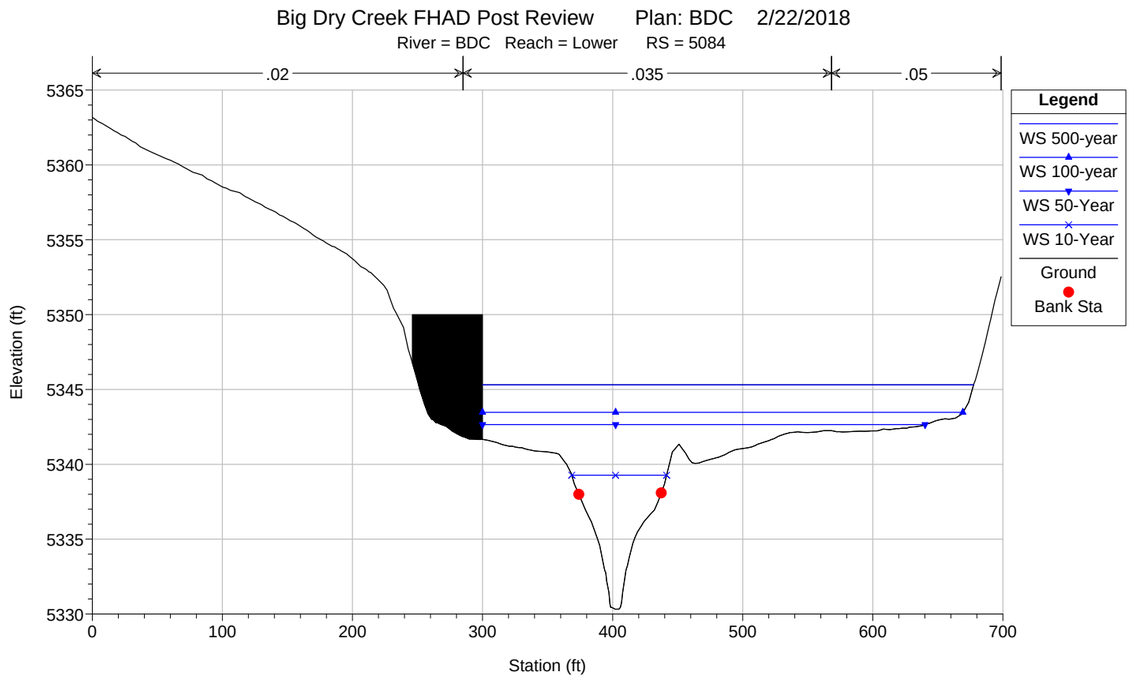

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5140
.02
.05
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

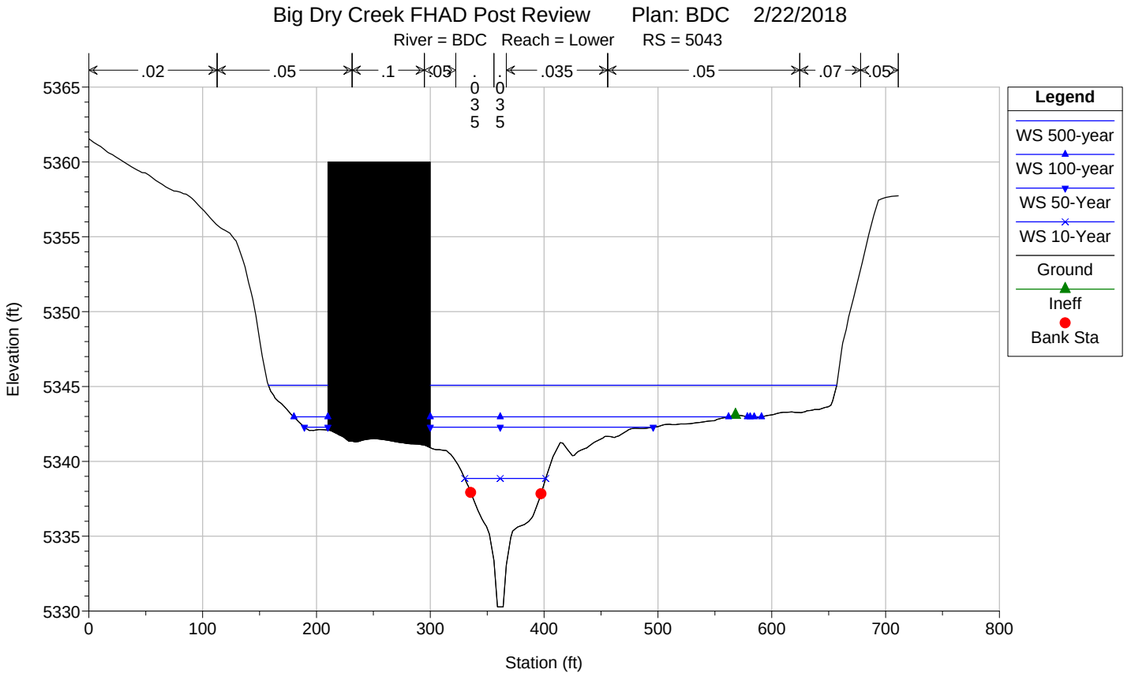

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5122
.02
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

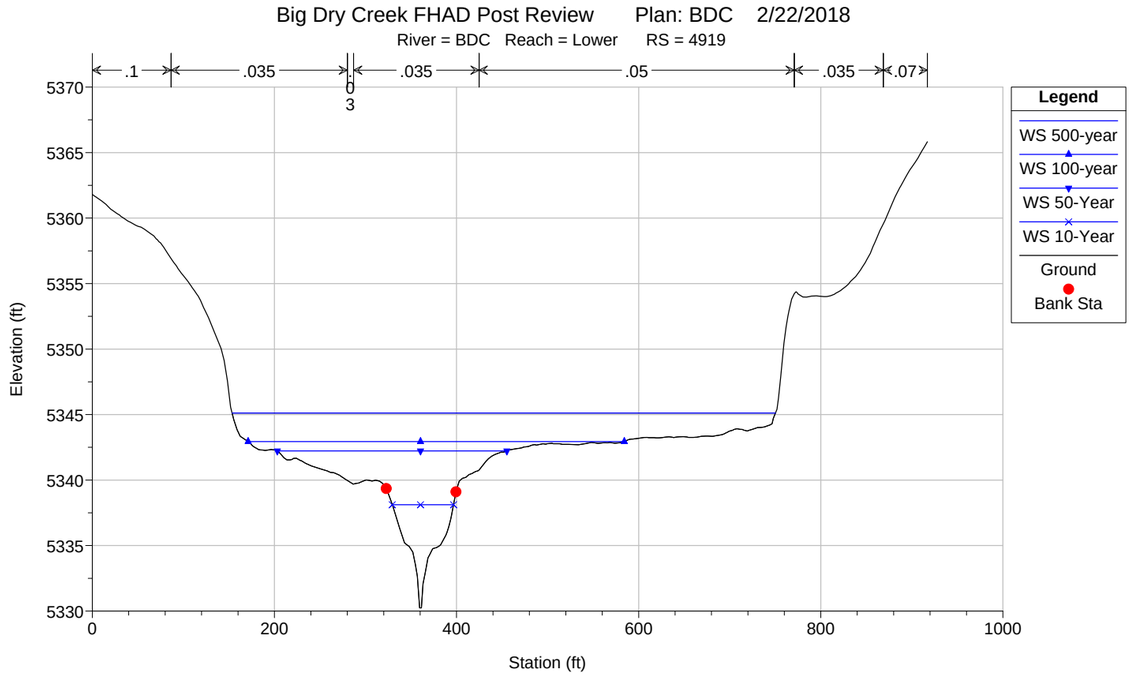

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5115
.02
.035
.05
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

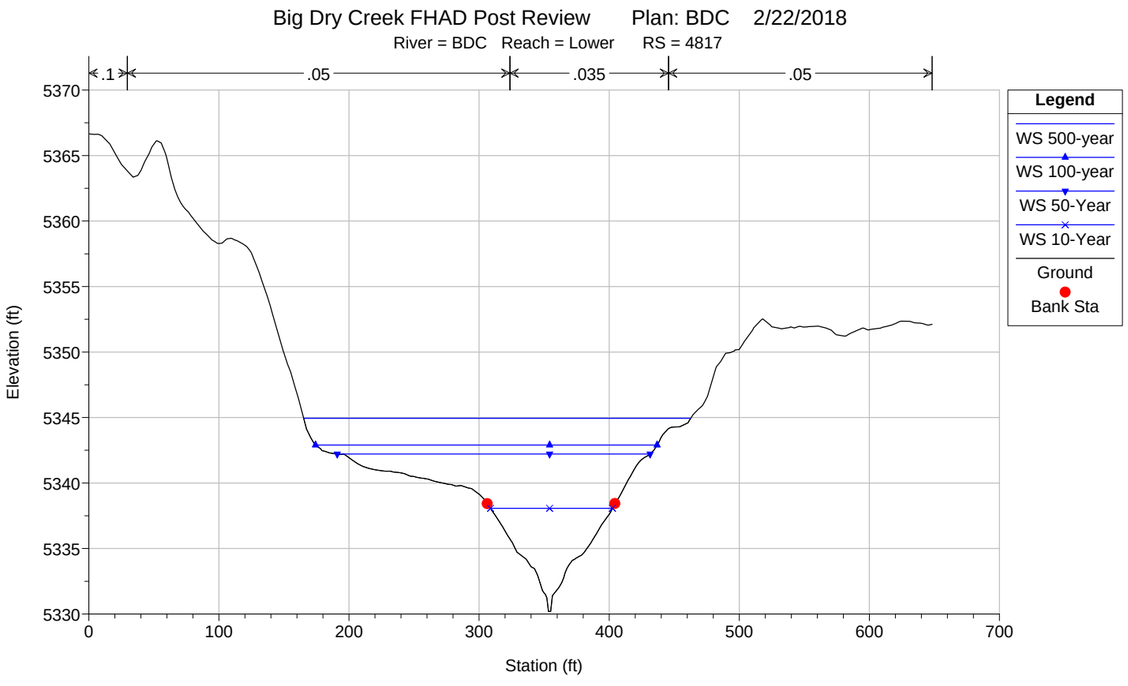

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5104 BR Crossing 47 - Miniature Railroad
.02
.035
.05
.035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

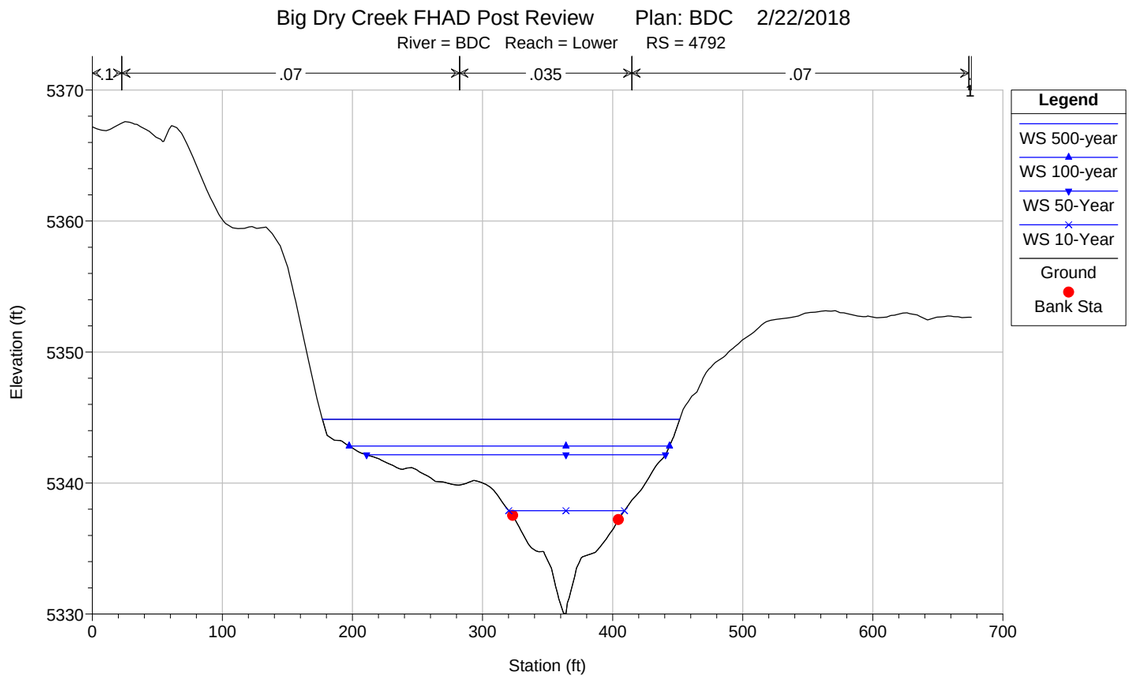

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5104 BR Crossing 47 - Miniature Railroad
.02
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

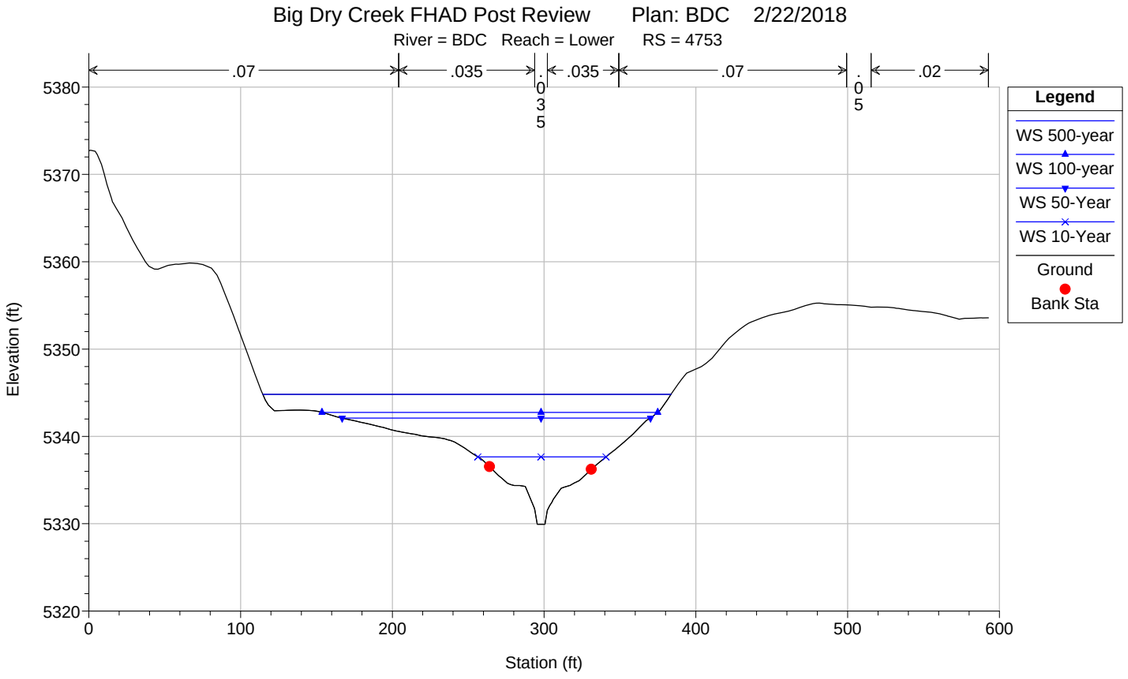

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5084
.02
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

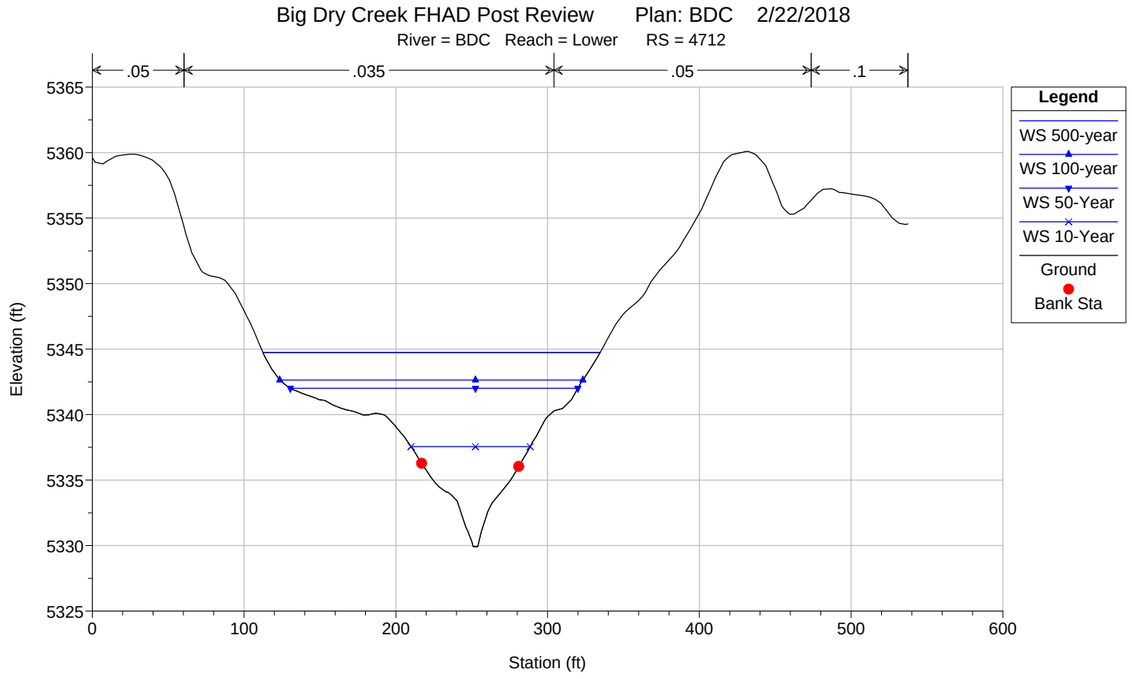

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 5043
.02
.05
.1
.09
.035
.035
.035
.05
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

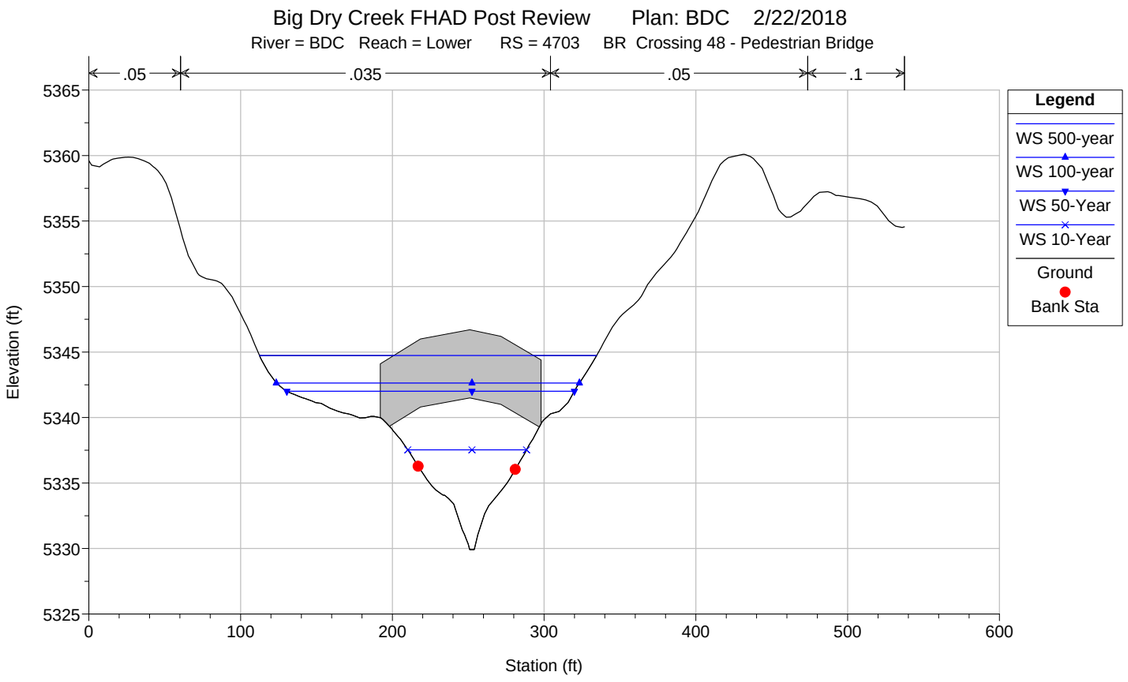

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4919
.1
.035
.035
.05
.035
.07
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

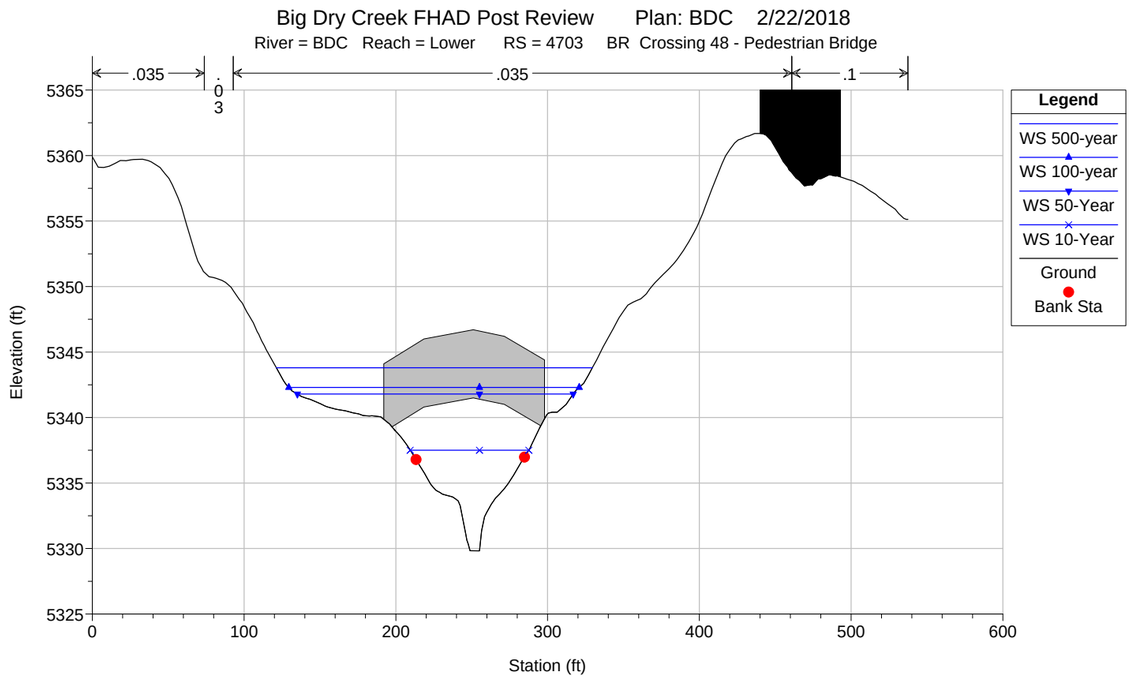

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4817
.1
.05
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

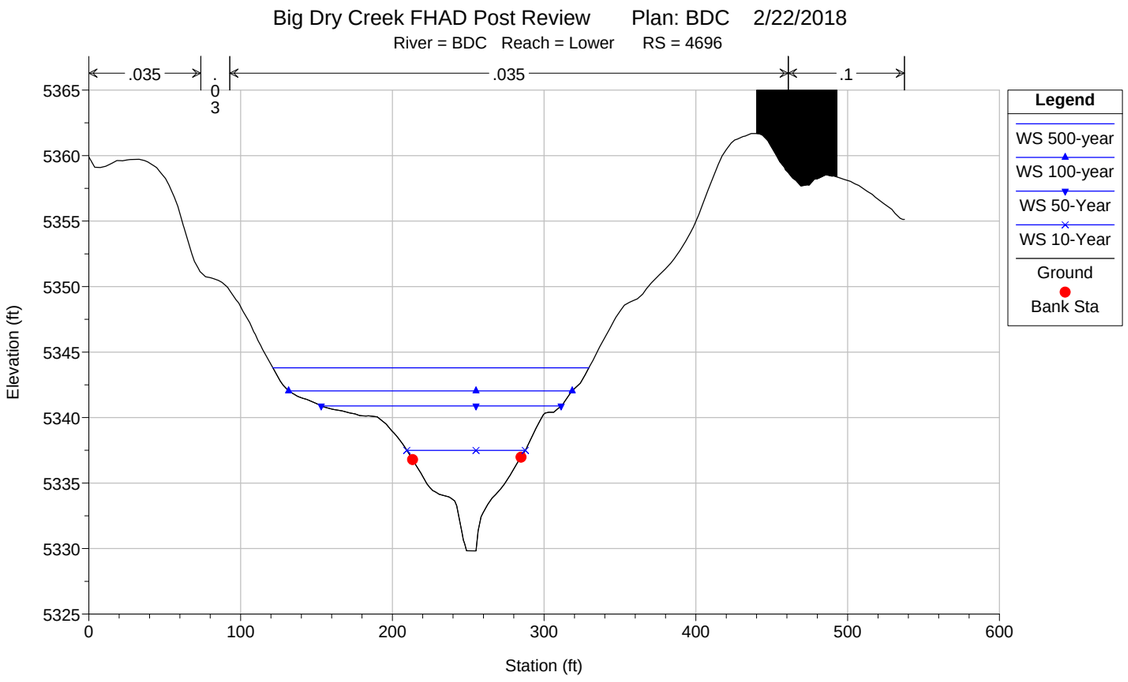

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4792
.1
.07
.035
.07
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

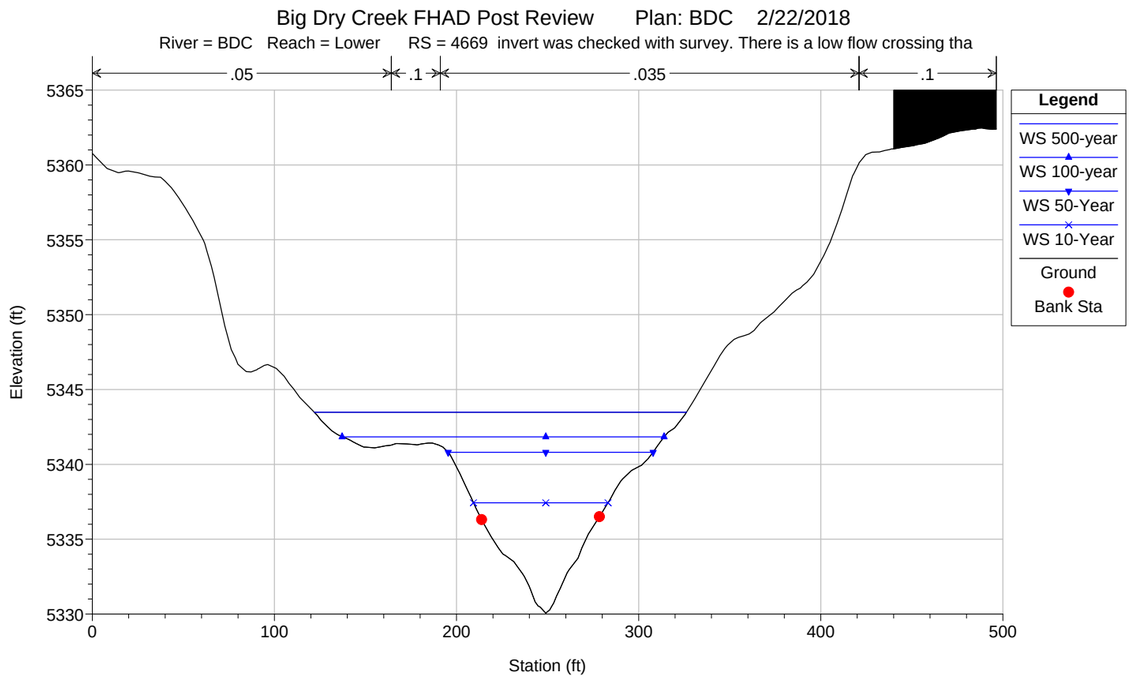

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4753
.07
.035
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4712
.05
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4703 BR Crossing 48 - Pedestrian Bridge
.05
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4703 BR Crossing 48 - Pedestrian Bridge
.035
.035
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4696
.035
.03
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
5325
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4669 invert was checked with survey. There is a low flow crossing tha
.05
.1
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
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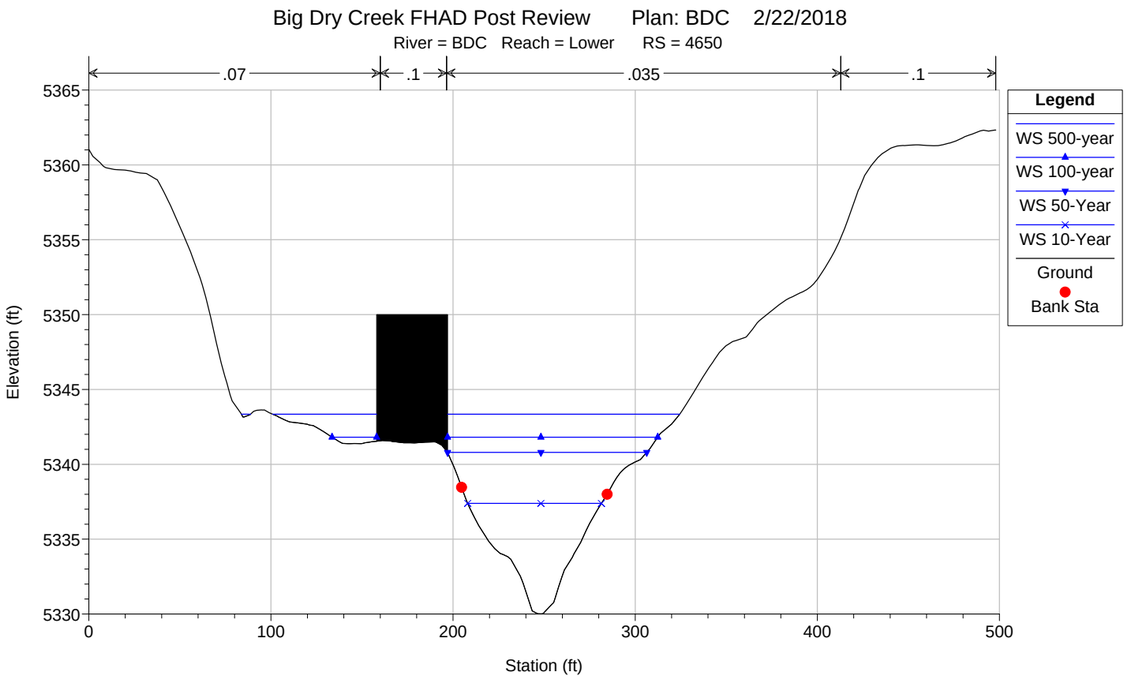
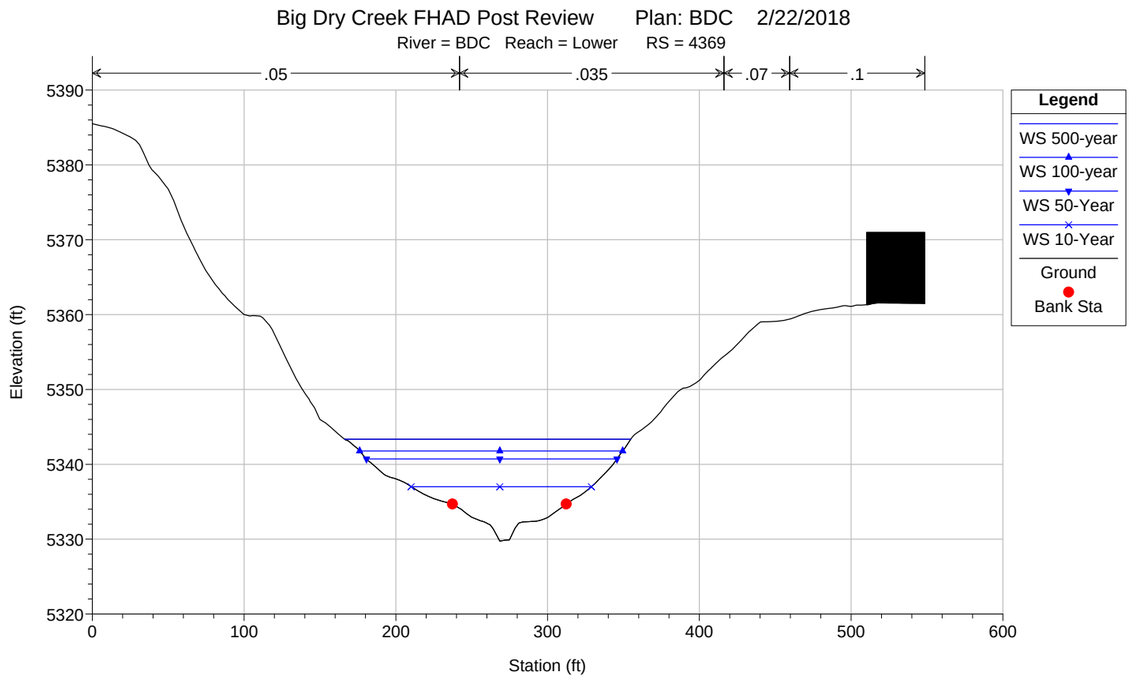
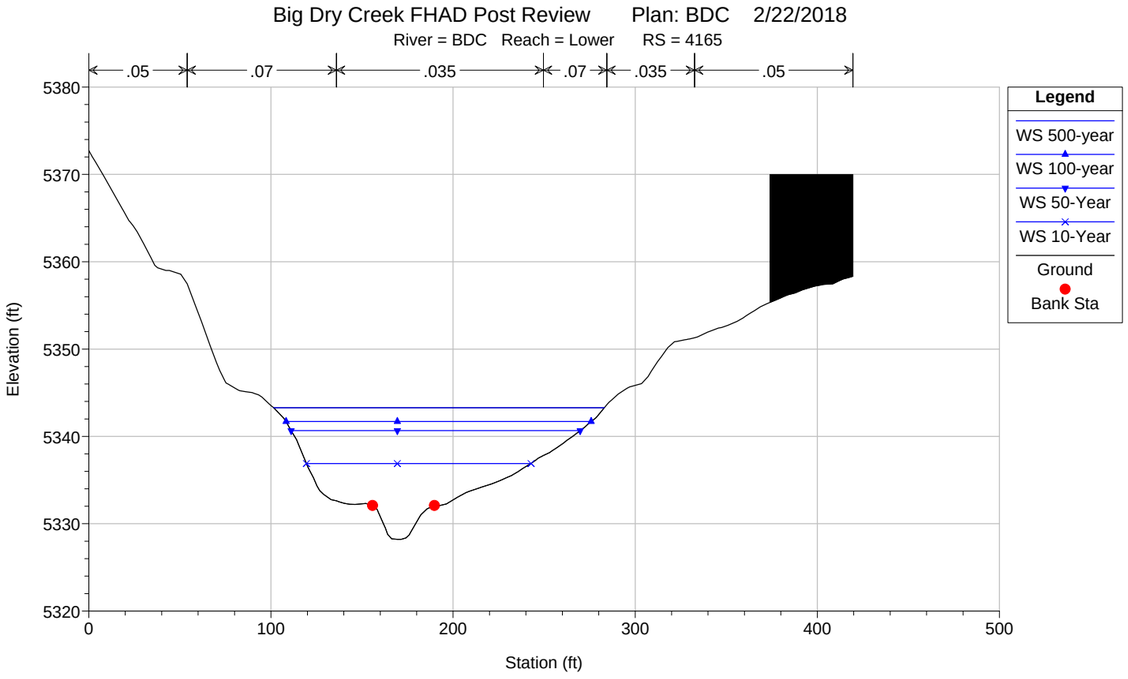
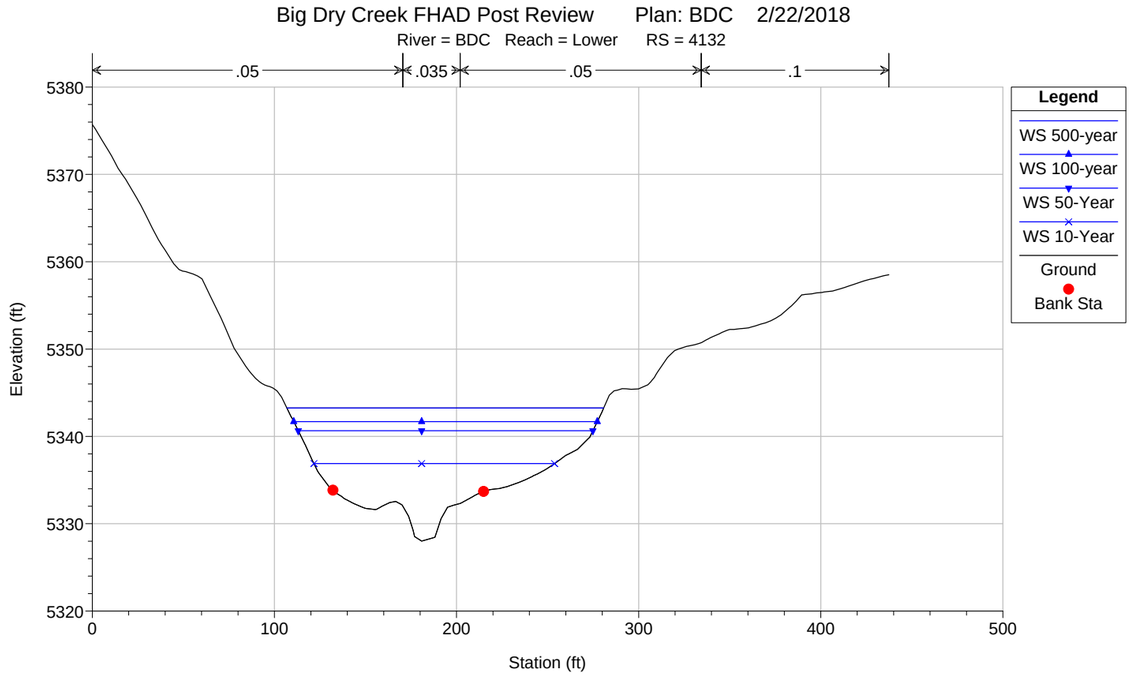
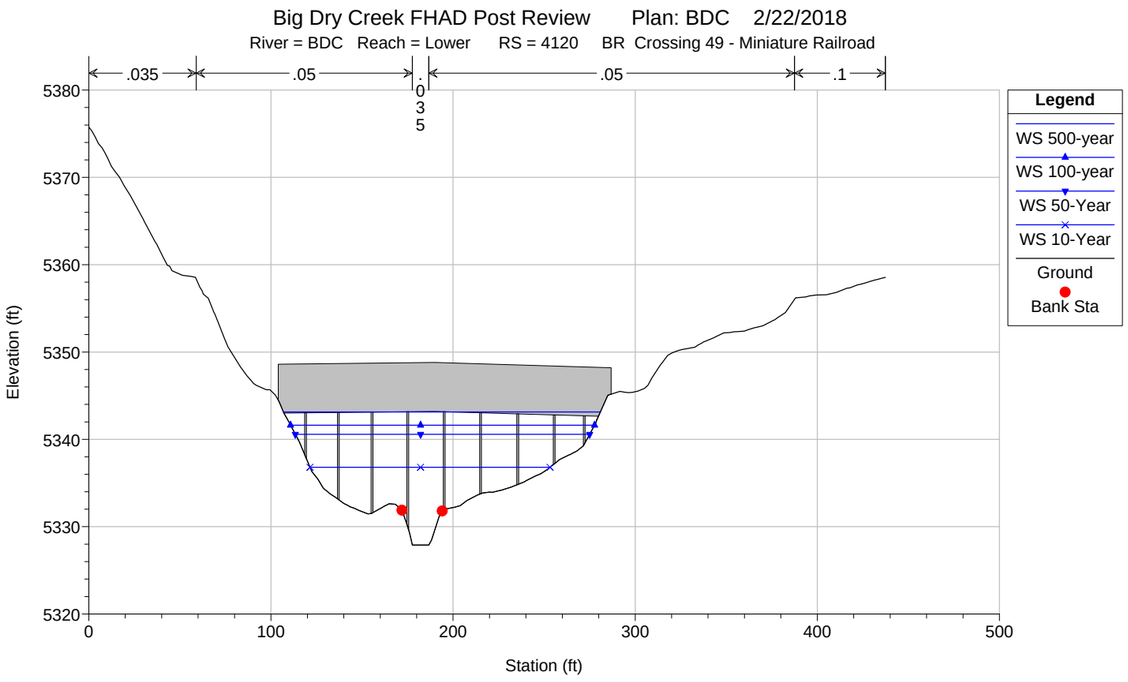
5330
0
100
200
300
400
500

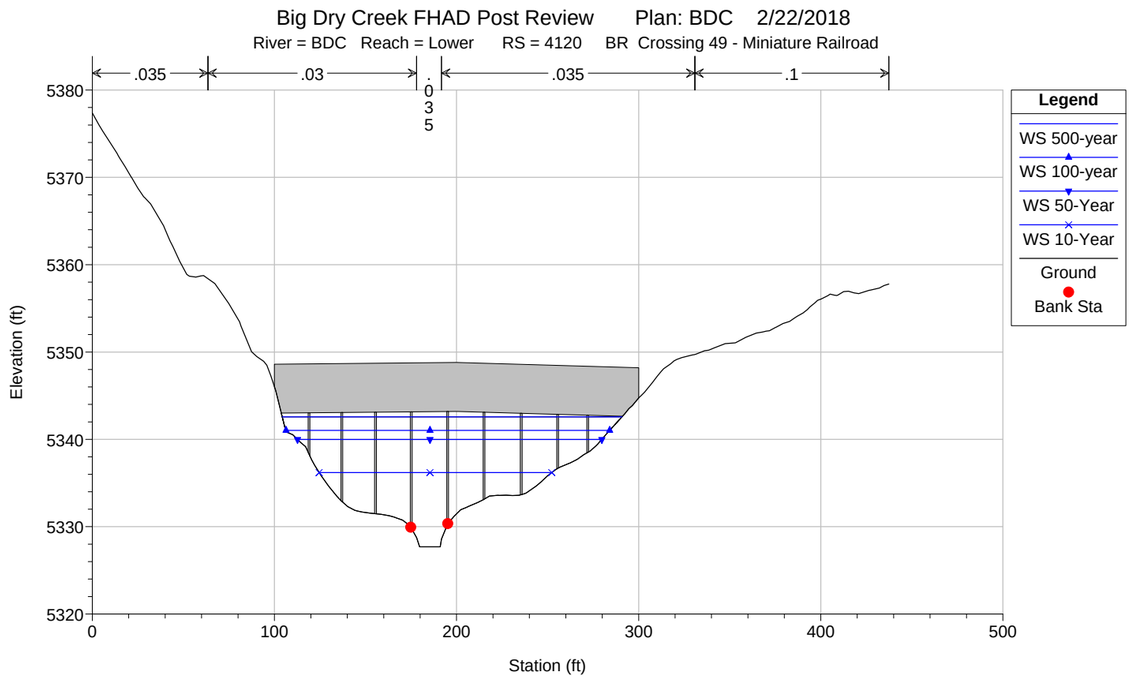

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4650
.07
.1
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
0
100
200
300
400
500

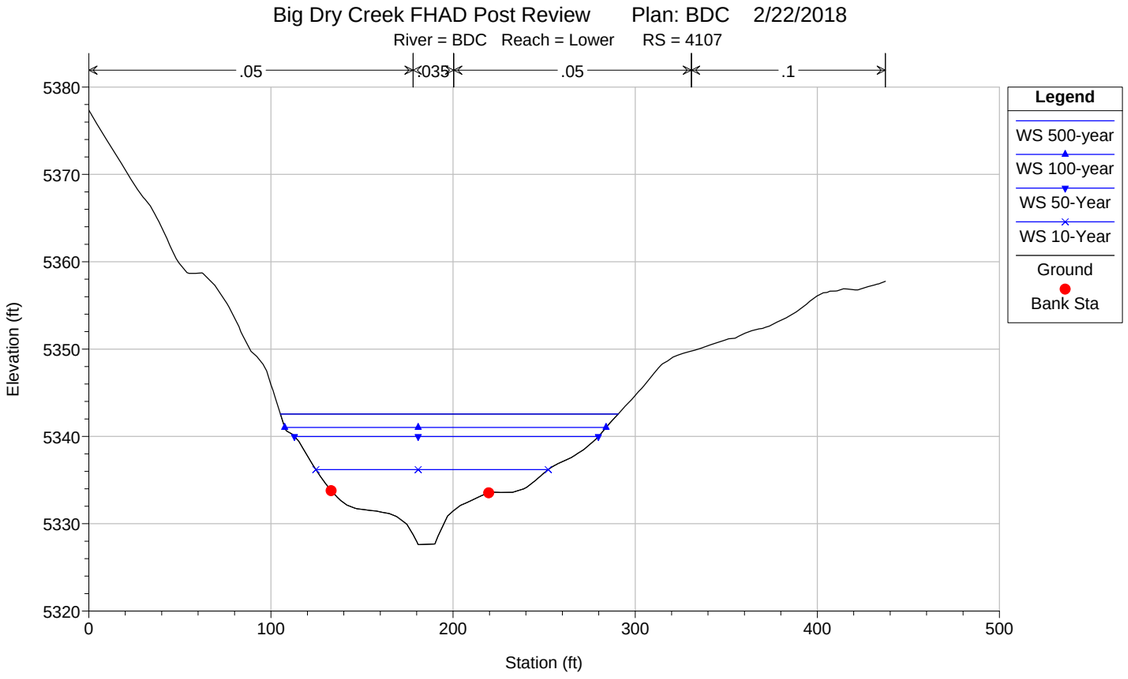

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4369
.05
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5390
5380
5370
5360
5350
5340
5330
5320
0
100
200
300
400
500
600

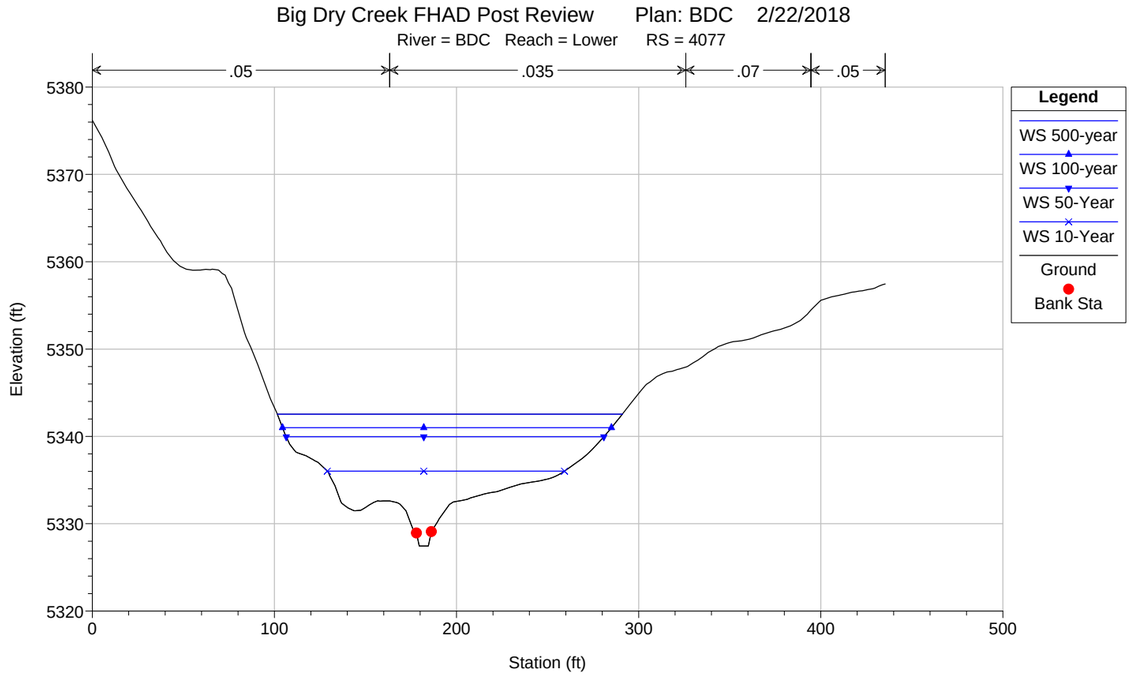

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4165
.05
.07
.035
.07
.035
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

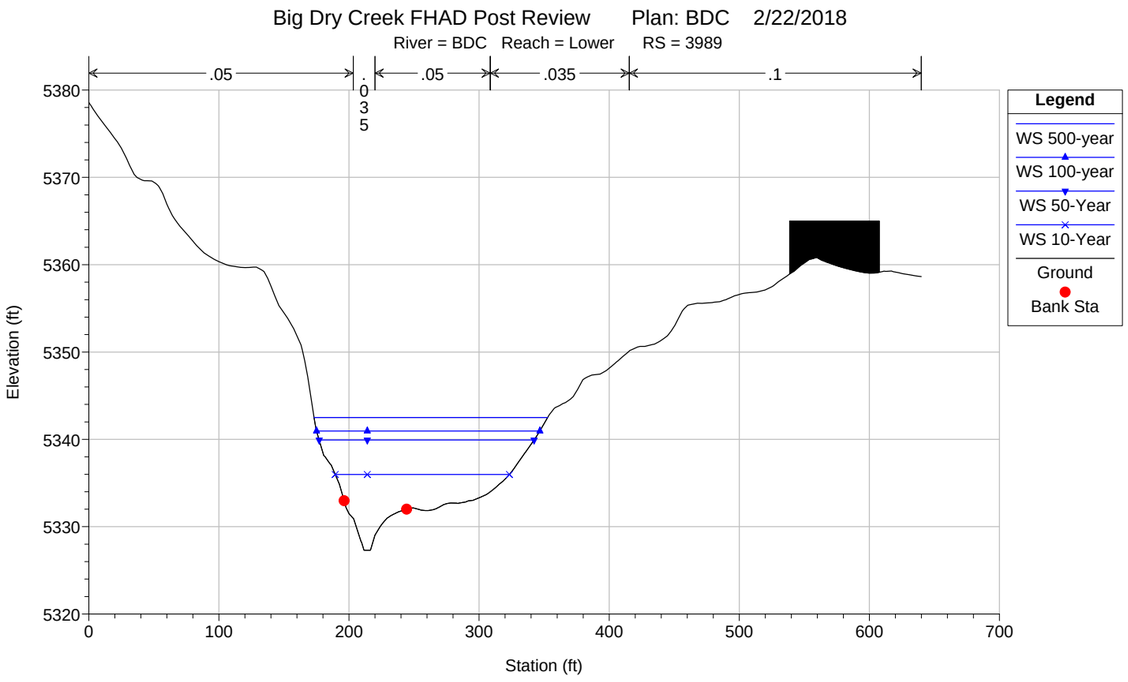

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4132
.05
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

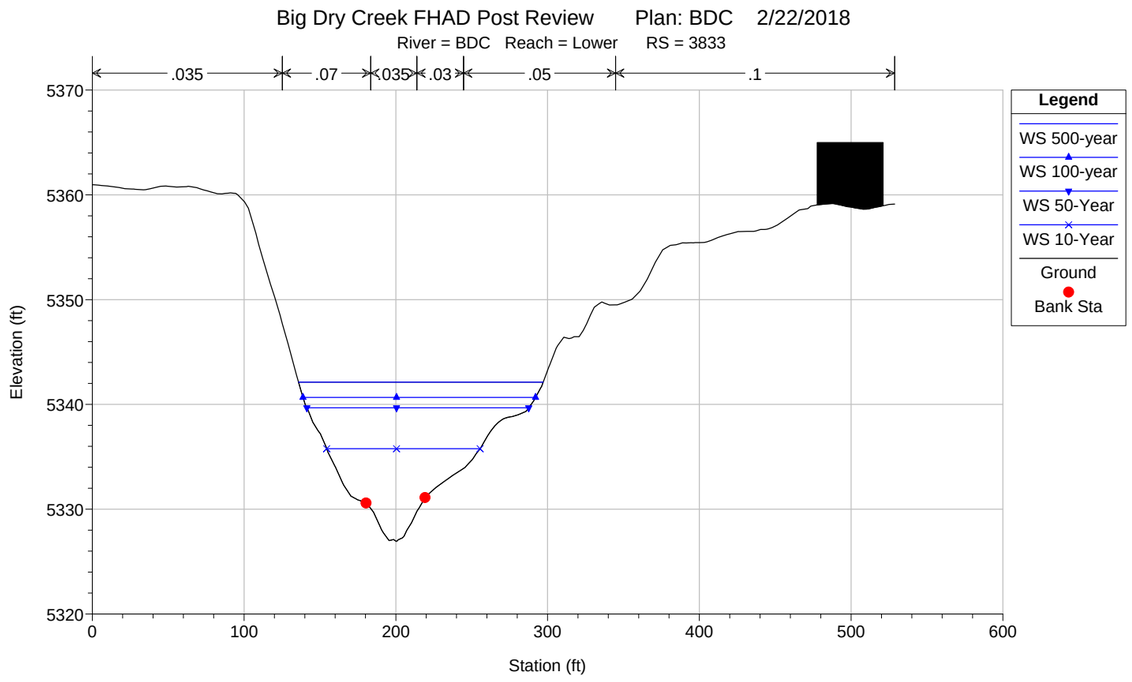

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4120 BR Crossing 49 - Miniature Railroad
.035
.05
.035
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

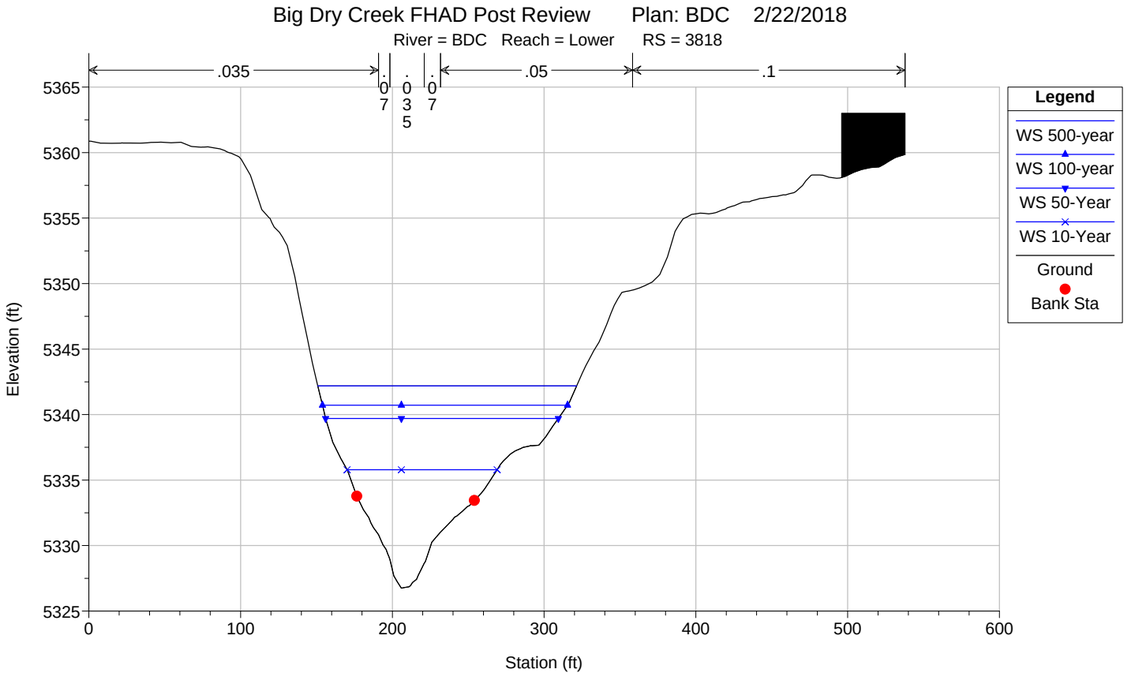

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4120 BR Crossing 49 - Miniature Railroad
.035
.03
.035
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

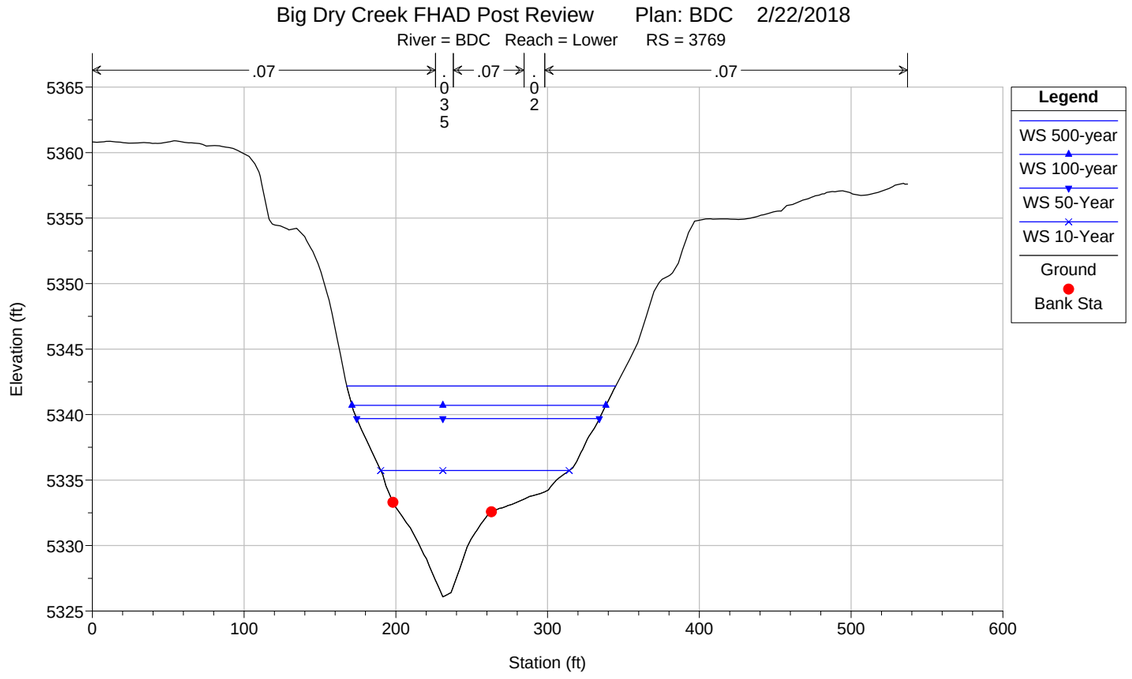

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4107
.05
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
5320
0
100
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 4077
.05
.035
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
5320
0
100
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3989
.05
.035
.05
.035
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5380
5370
5360
5350
5340
5330
5320
0
100
200
300
400
500
600
700


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3833
.035
.07
.035
.03
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5370
5360
5350
5340
5330
5320
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3818
.035
.07
.035
.07
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
5325
0
100
200
300
400
500
600


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3769
.07
.07
.07
.07
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
5325
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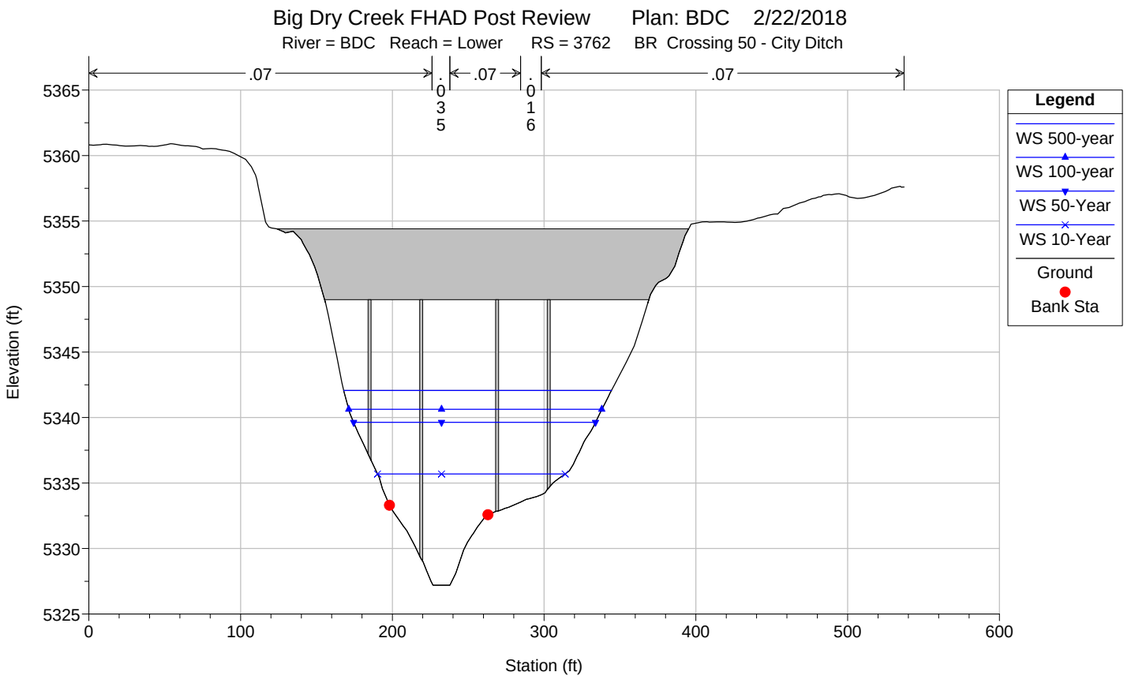
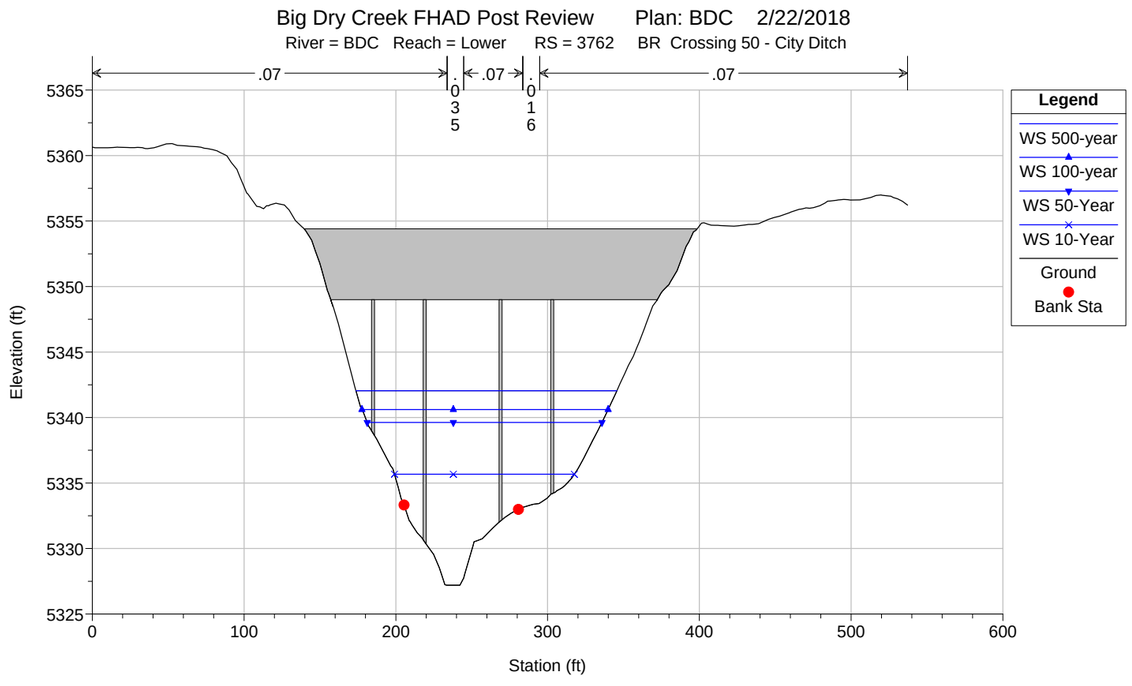
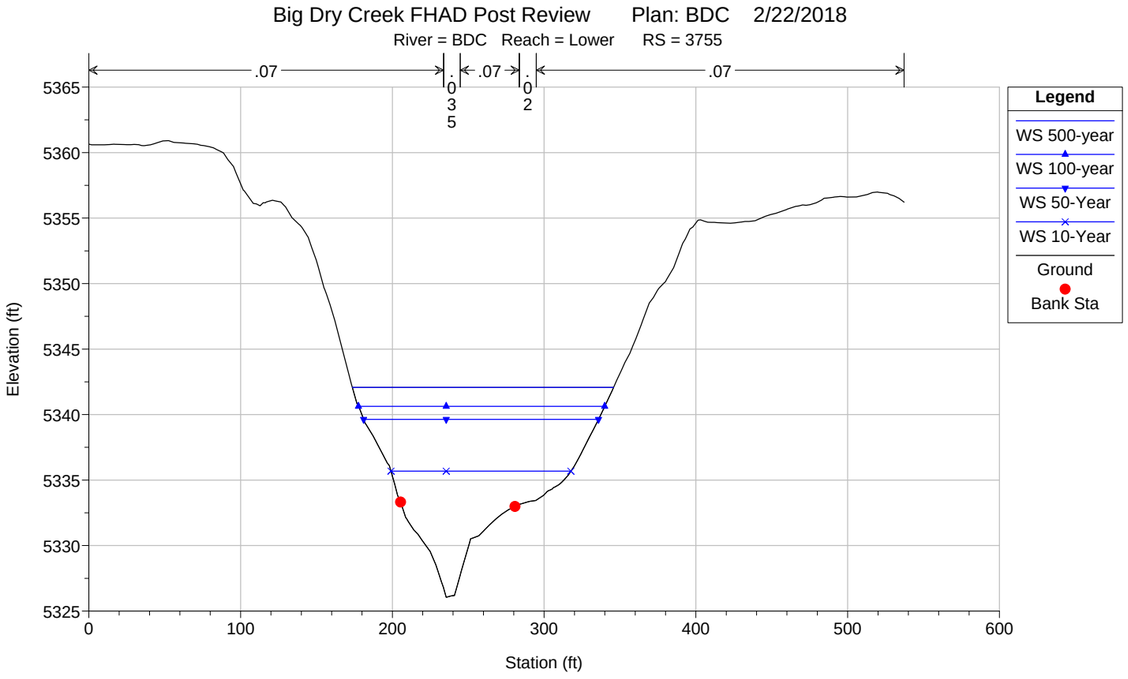
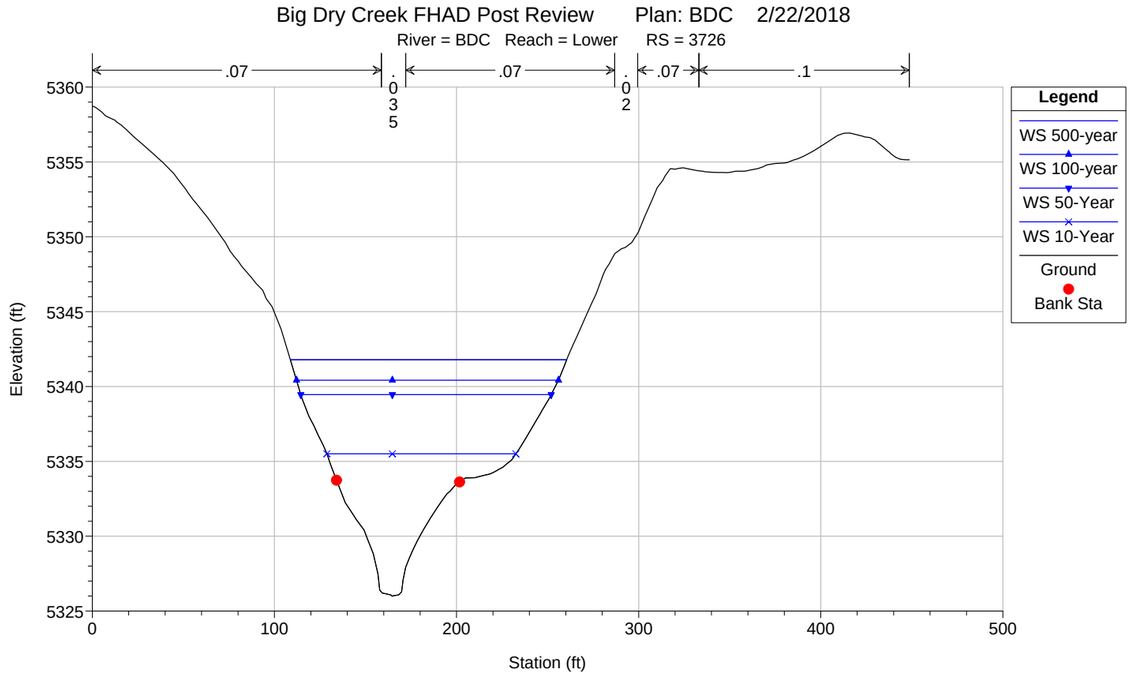
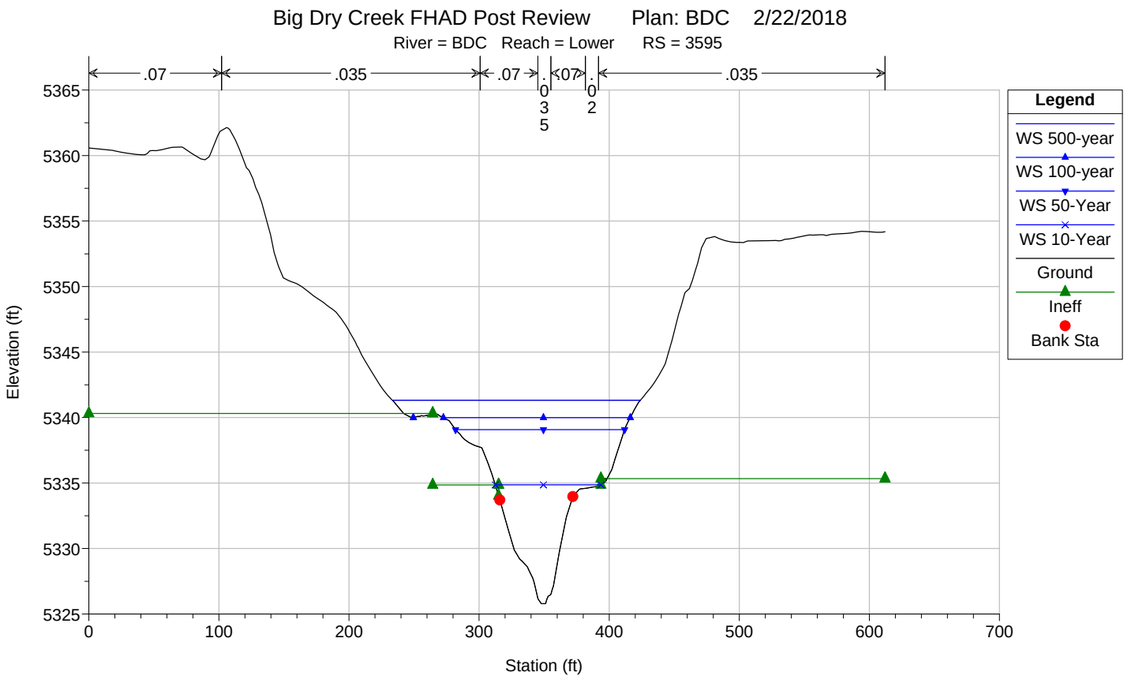
100
200
300
400
500
600

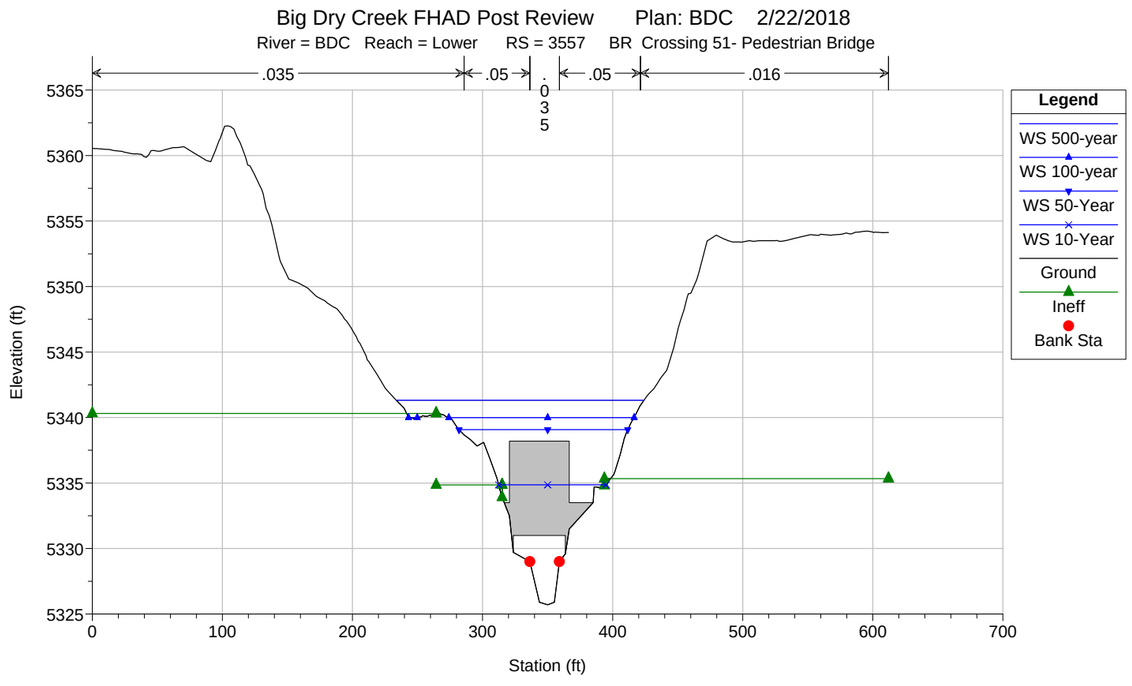

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3762 BR Crossing 50 - City Ditch
.07
.07
.07
.035
.016
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
5325
0
100
200
300
400
500
600

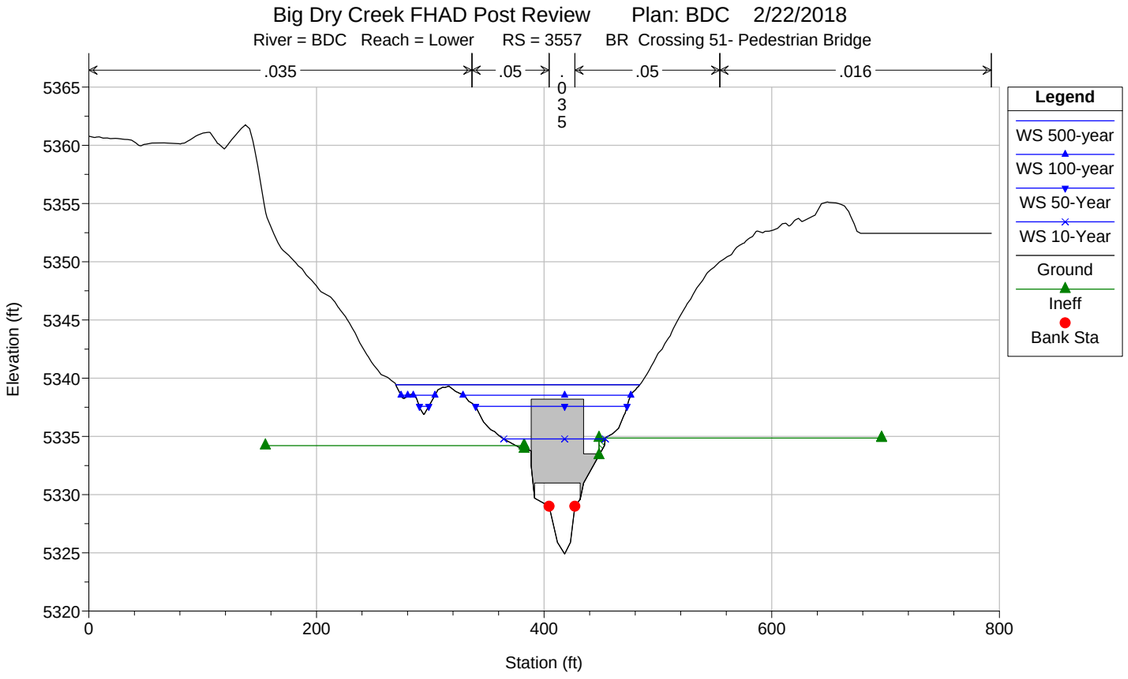

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3762 BR Crossing 50 - City Ditch
.07
.07
.07
.035
.016
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5365
5360
5355
5350
5345
5340
5335
5330
5325
0
100
200
300
400
500
600

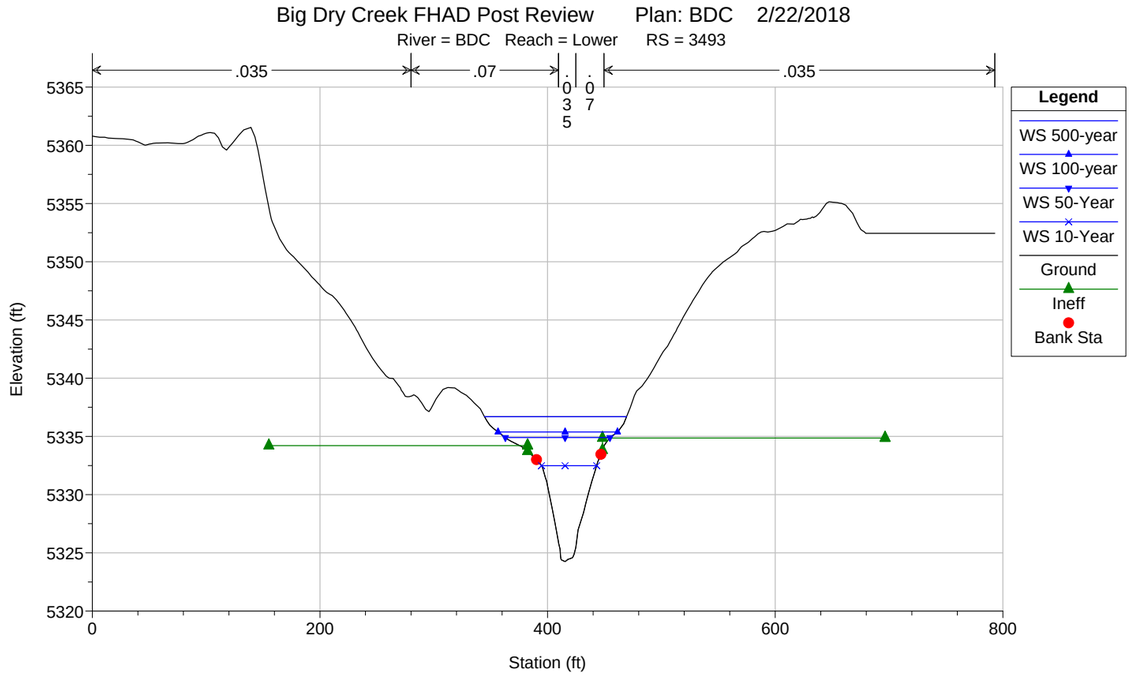

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3755
.07
.035
.07
.07
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

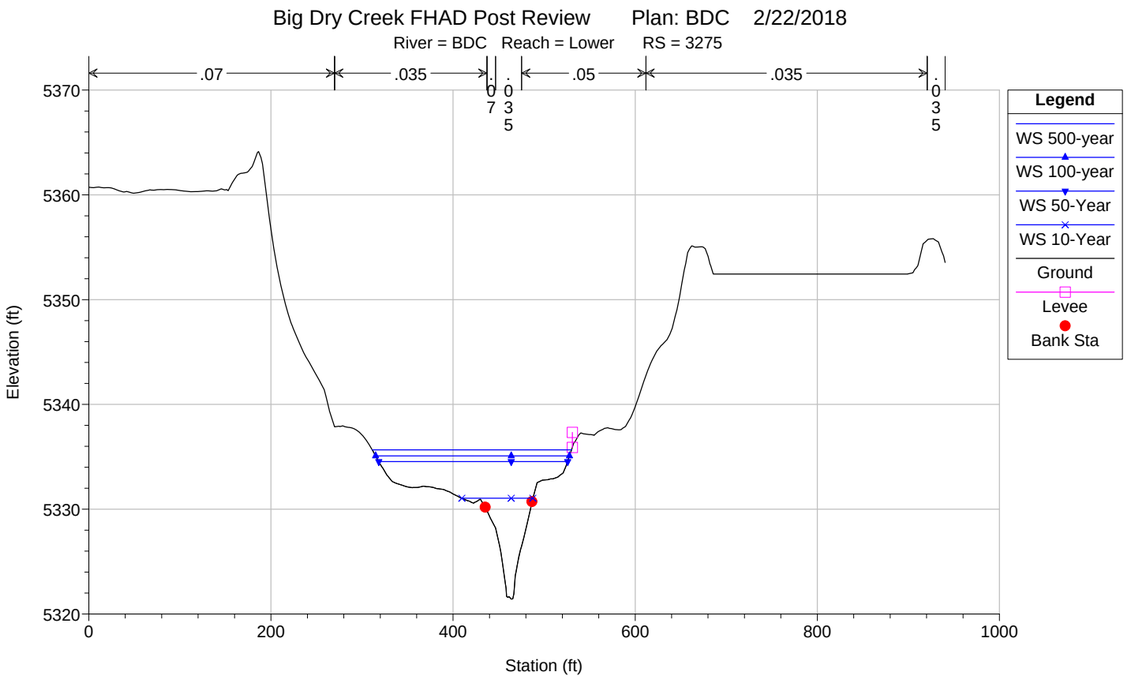

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3726
.07
.035
.07
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

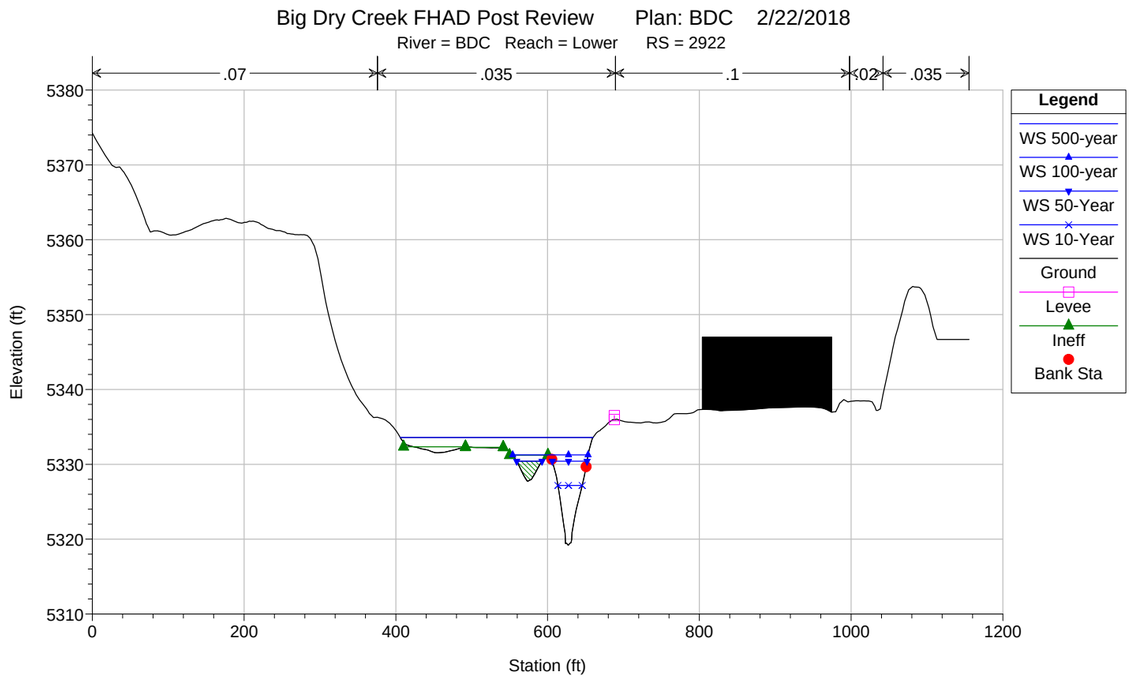

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3595
.07
.035
.07
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

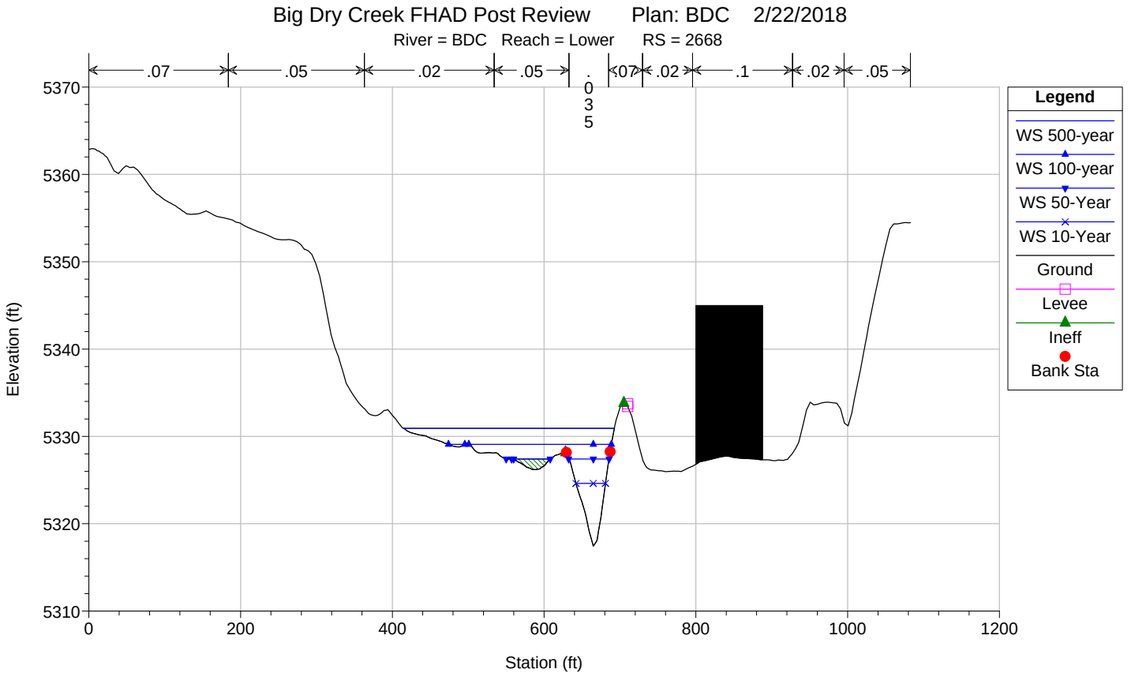

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3557 BR Crossing 51- Pedestrian Bridge
.035
.05
.05
.016
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

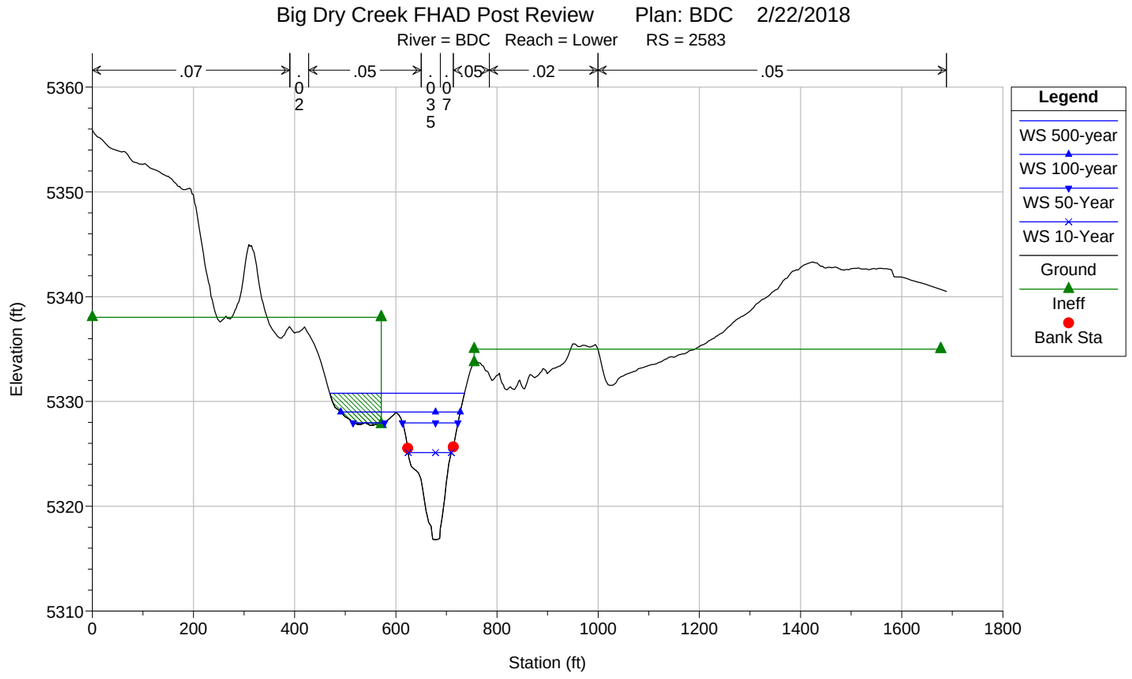

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3557 BR Crossing 51- Pedestrian Bridge
.035
.05
.035
.05
.016
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

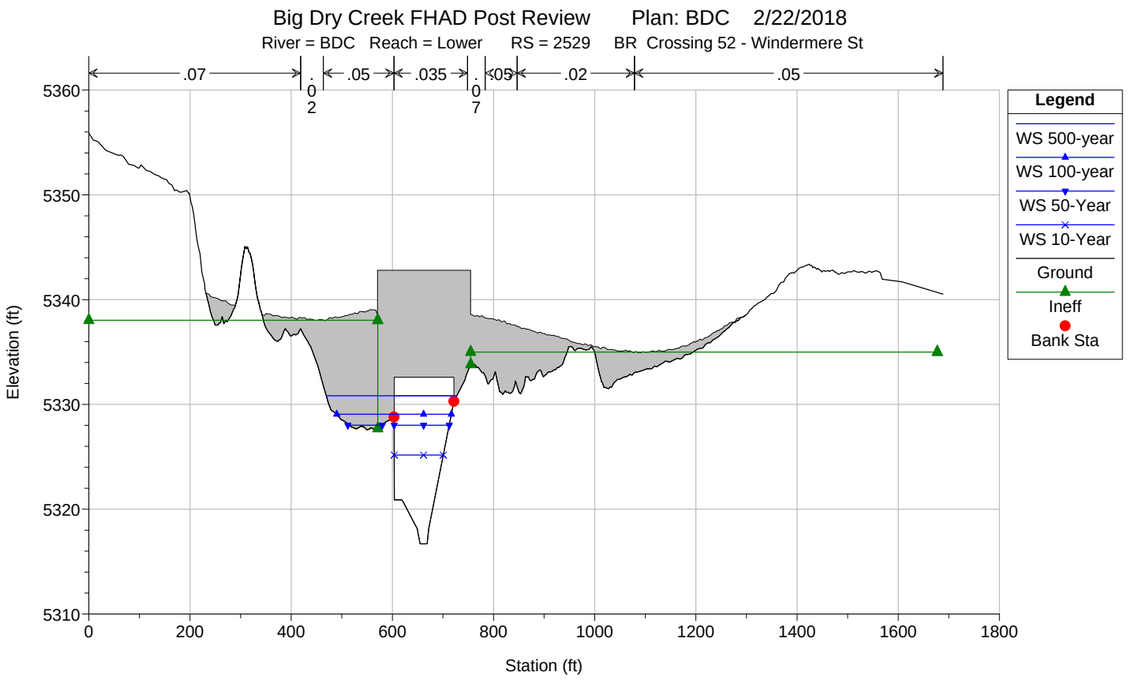

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3493
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

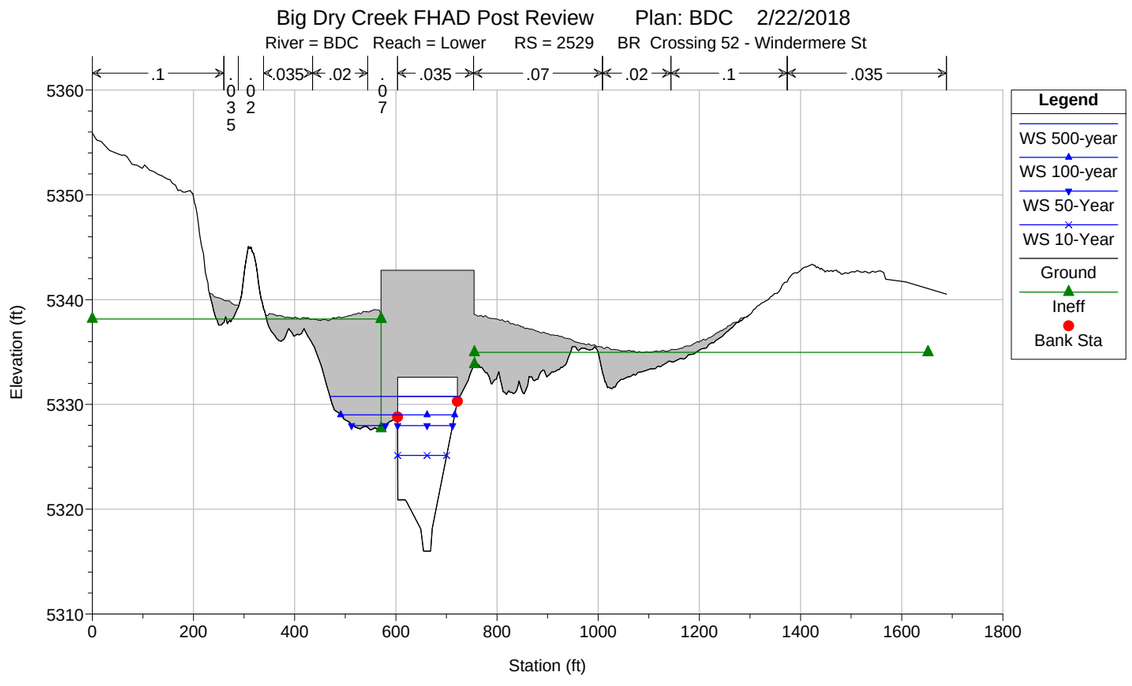

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 3275
.07
.035
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

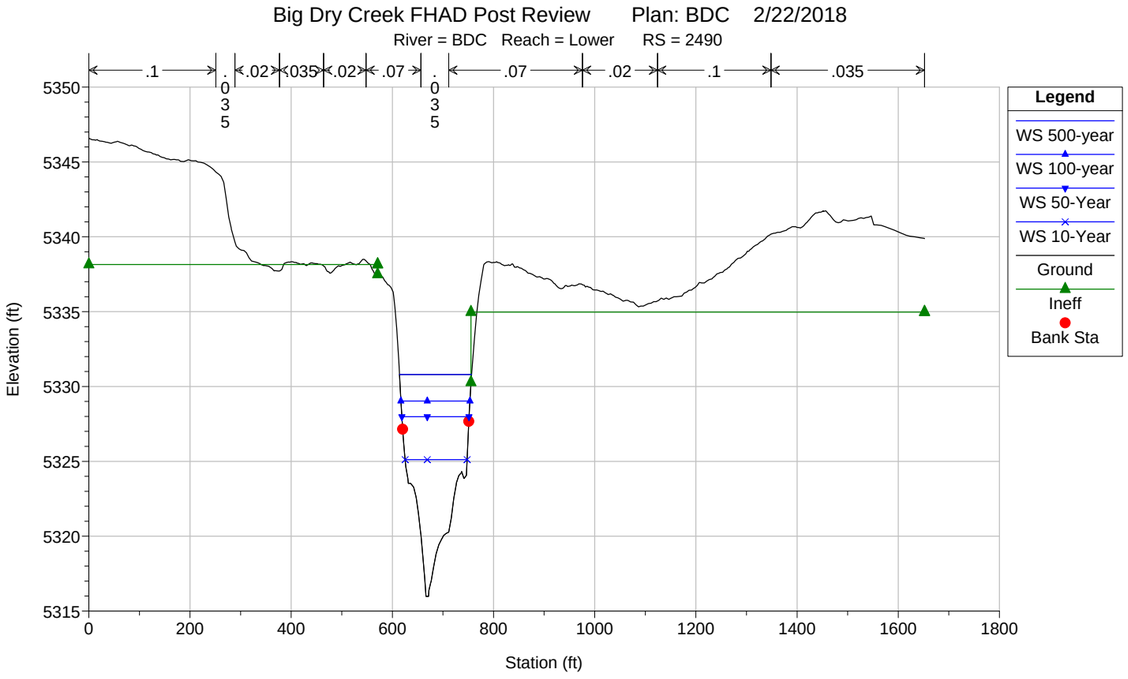

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2922
.07
.035
.1
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

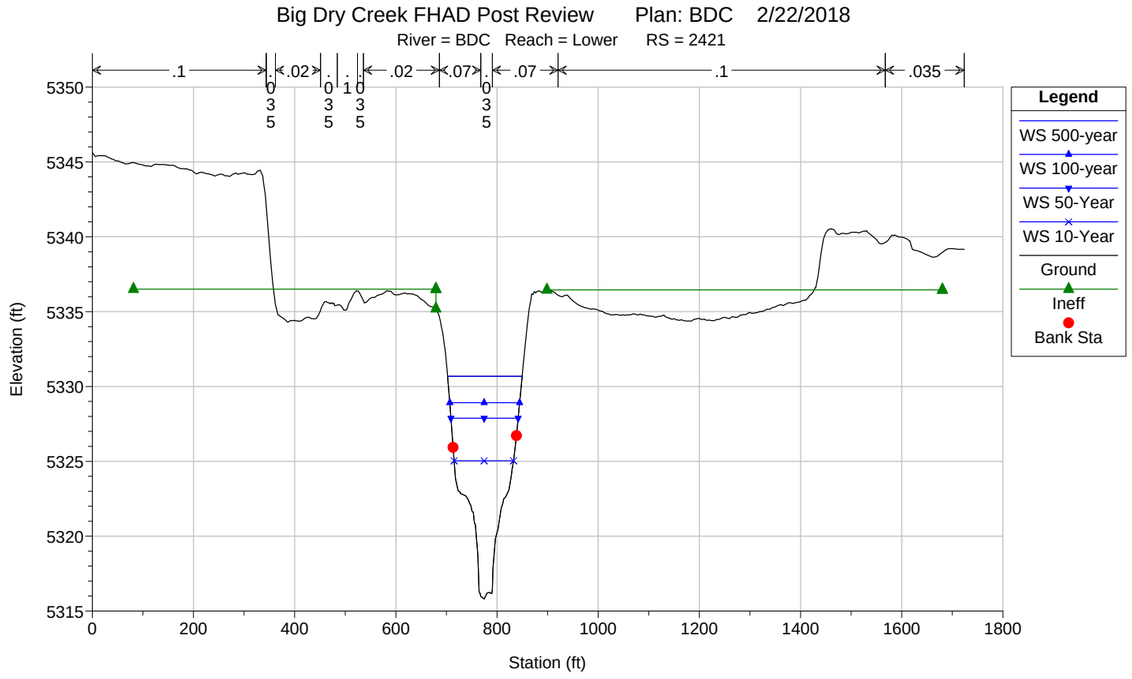

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2668
.07 .05 .02 .05 .035 .07 .02 .1 .02 .05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Levee
Ineff
Bank Sta

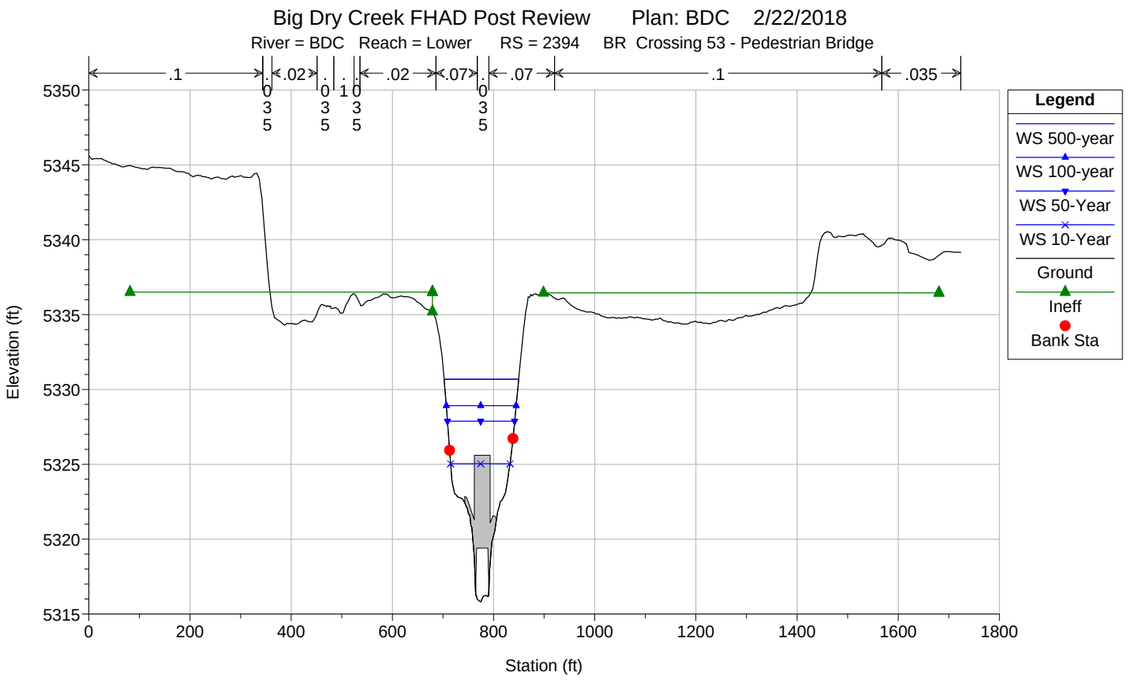

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2583
.07 .02 .05 .035 .07 .05 .02 .05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2529 BR Crossing 52 - Windermere St
.07 .02 .05 .035 .07 .05 .02 .05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2529 BR Crossing 52 - Windermere St
.1 .02 .035 .02 .07 .035 .07 .02 .1 .035
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2490
.1
.035
.02
.035
.02
.07
.07
.02
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5350
5345
5340
5335
5330
5325
5320
5315
0
200
400
600
800
1000
1200
1400
1600
1800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2421
.1
.035
.02
.02
.07
.07
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5350
5345
5340
5335
5330
5325
5320
5315
0
200
400
600
800
1000
1200
1400
1600
1800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2394 BR Crossing 53 - Pedestrian Bridge
.1
.035
.02
.02
.07
.07
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5350
5345
5340
5335
5330
5325
5320
5315
0
200
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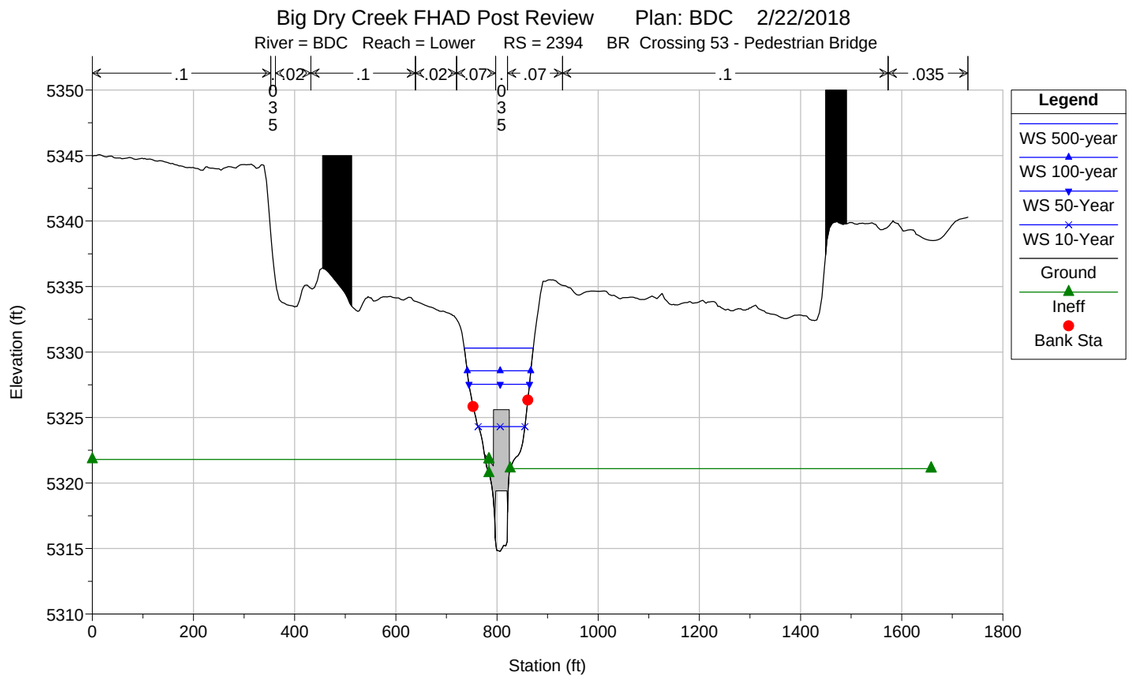
800
1000
1200
1400
1600
1800


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2394 BR Crossing 53 - Pedestrian Bridge
.1
.035
.02
.1
.02
.07
.07
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5350
5345
5340
5335
5330
5325
5320
5315
5310
0
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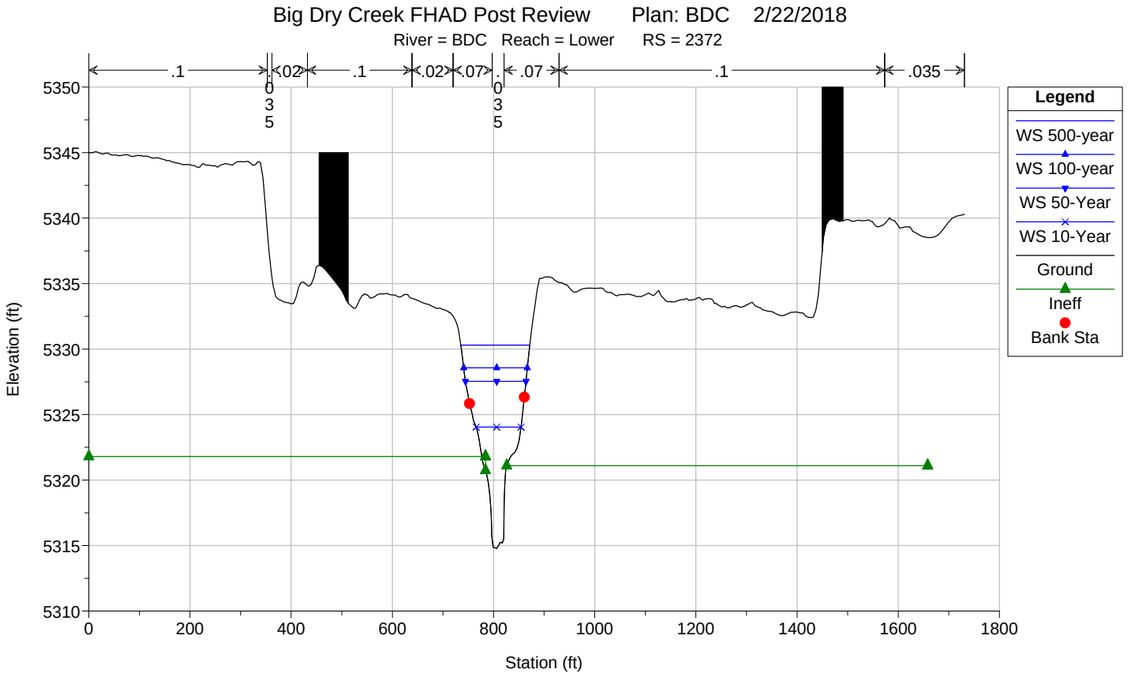
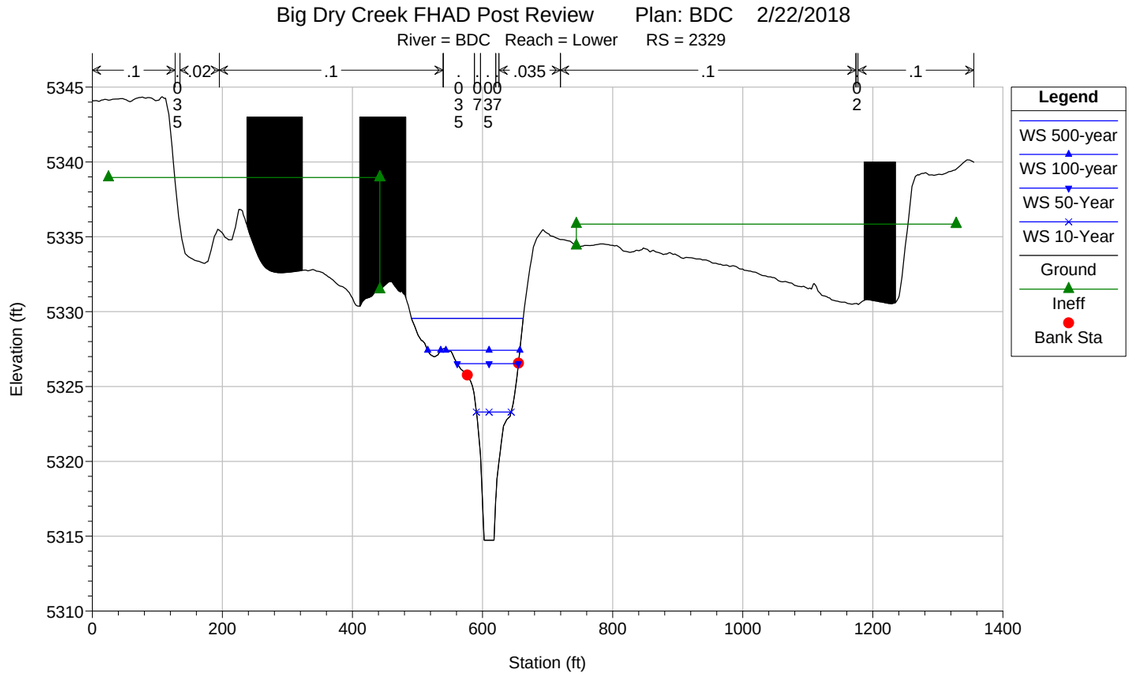
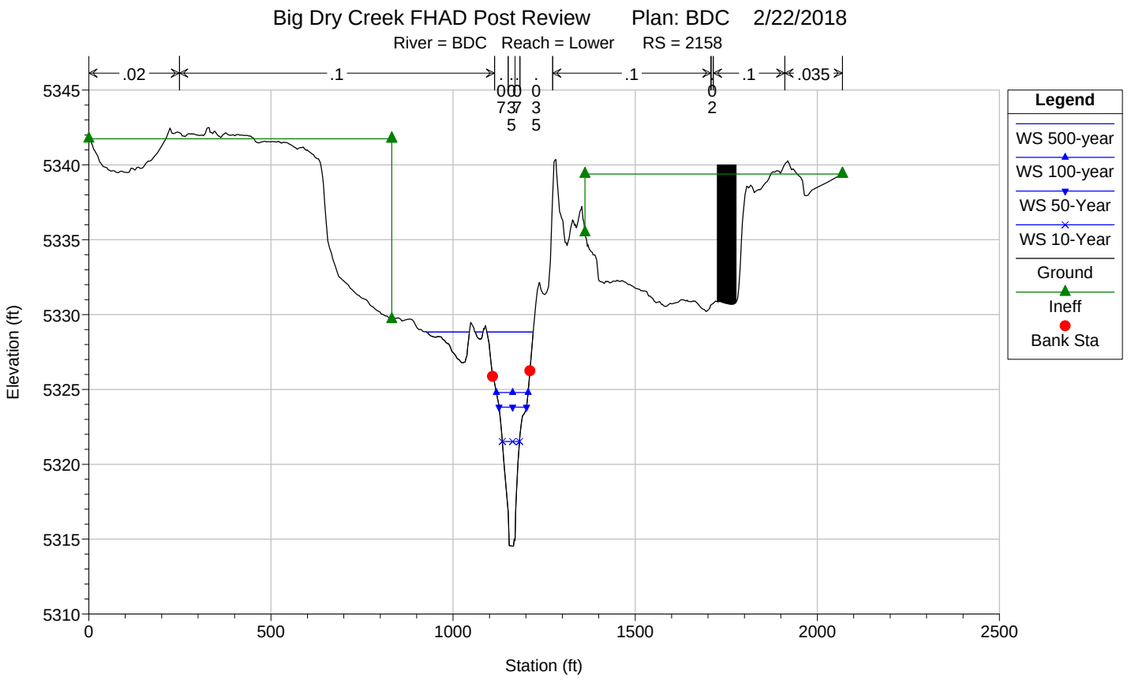
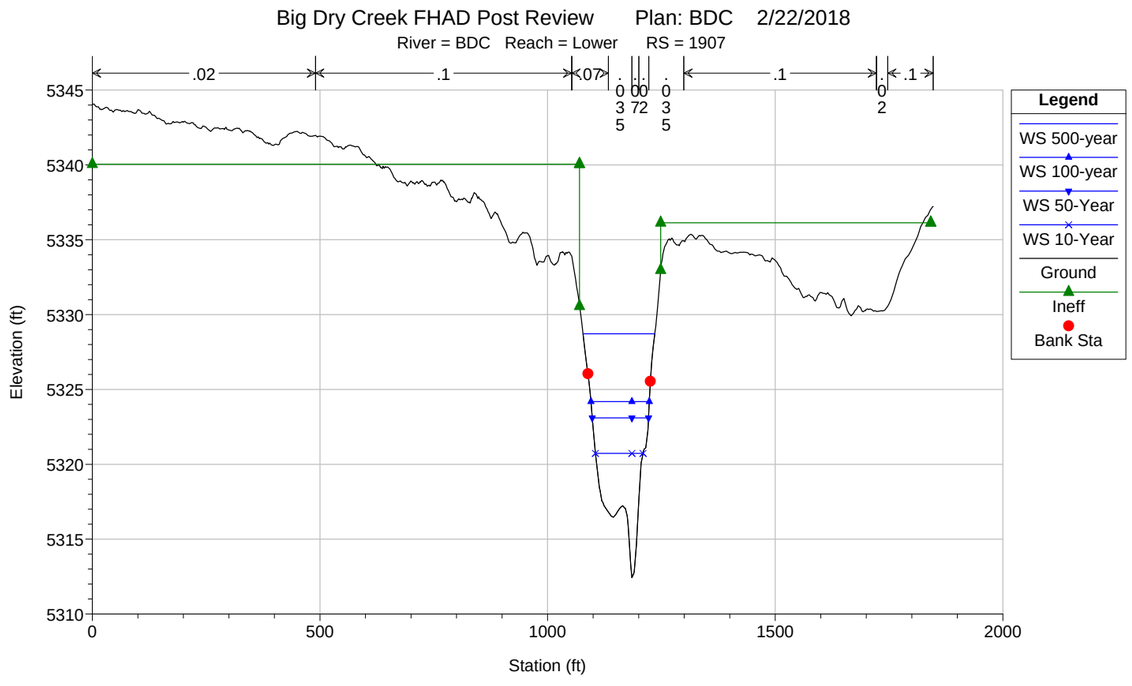
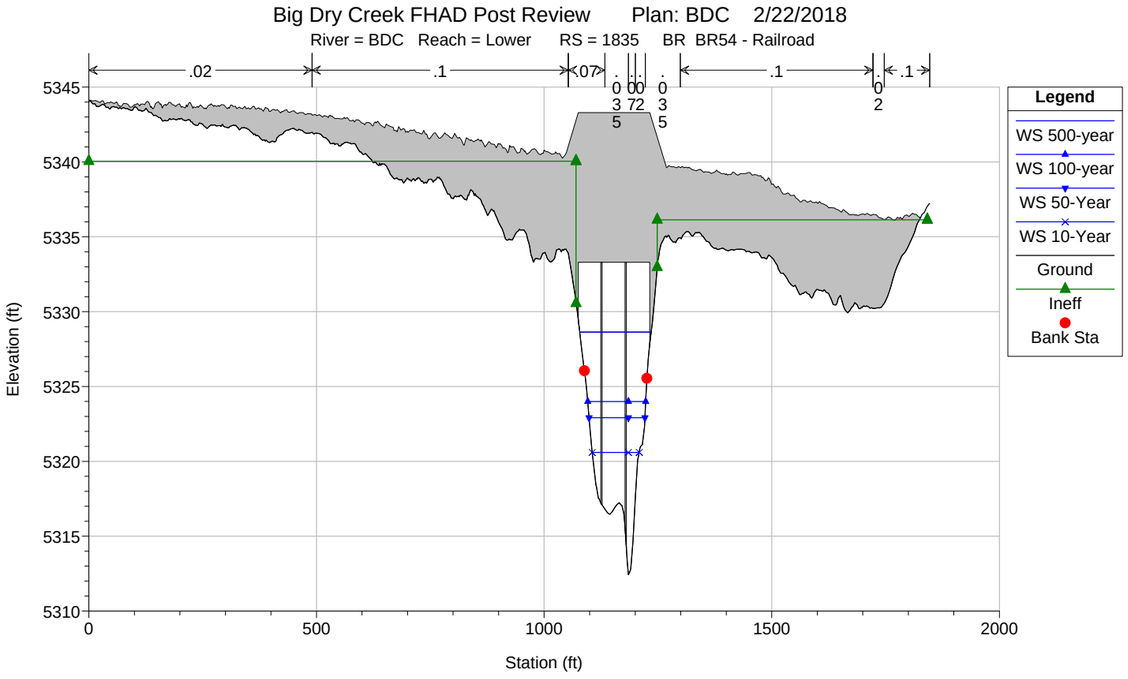
800
1000
1200
1400
1600
1800

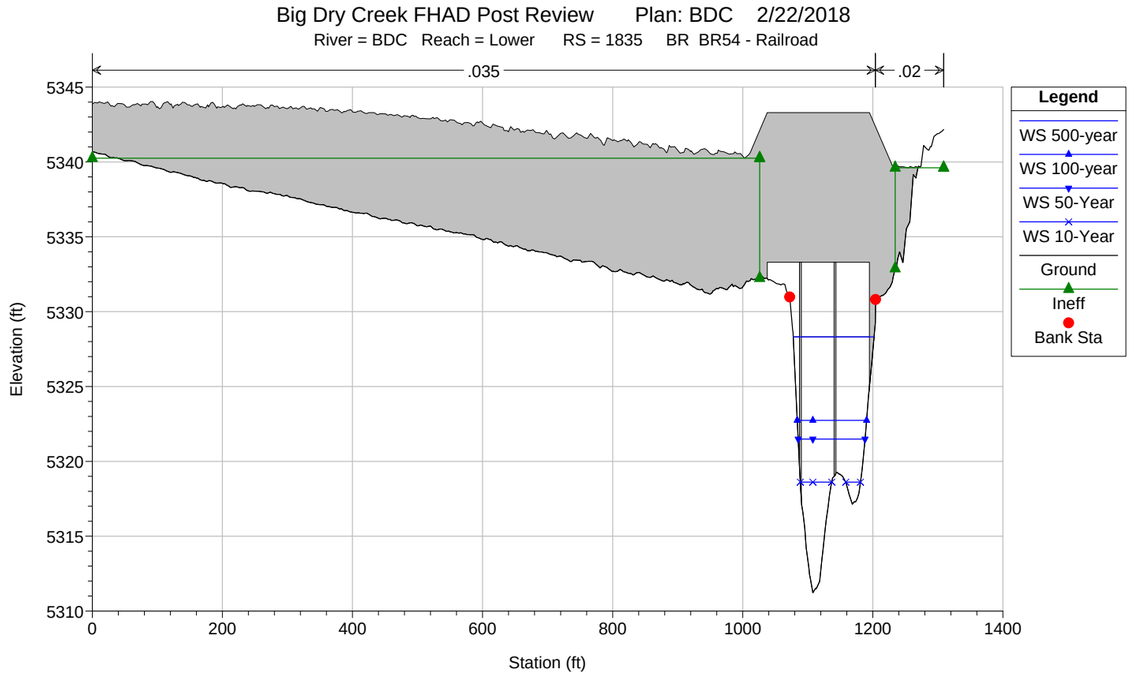

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2372
.1
.02
.1
.02
.07
.07
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

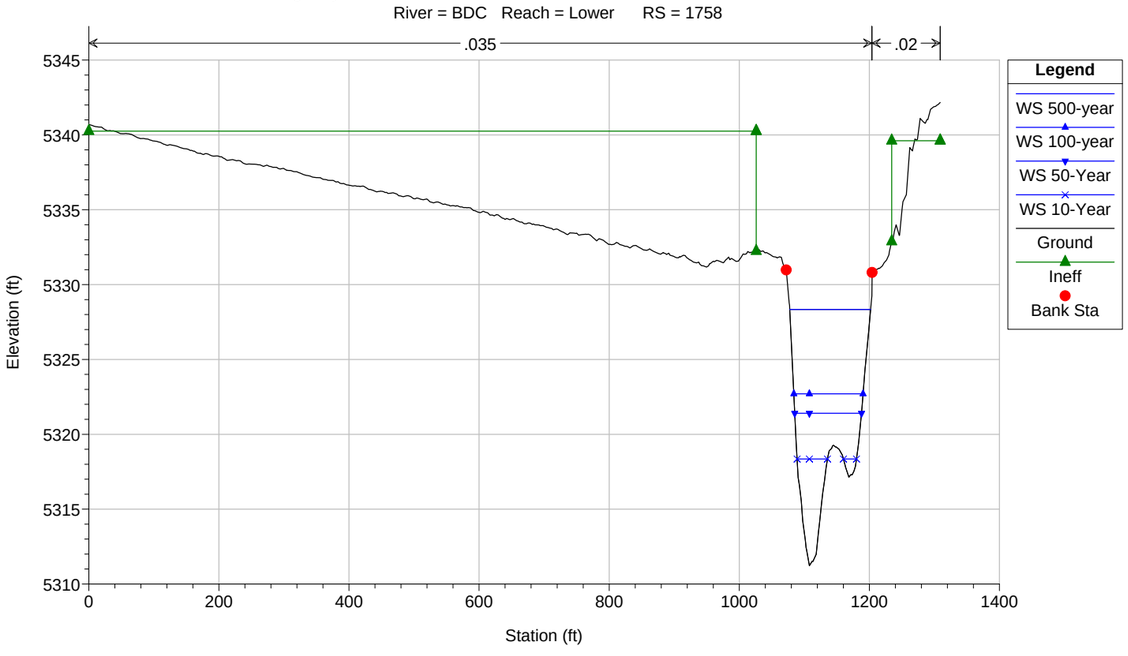

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2329
.1
.02
.1
.035
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

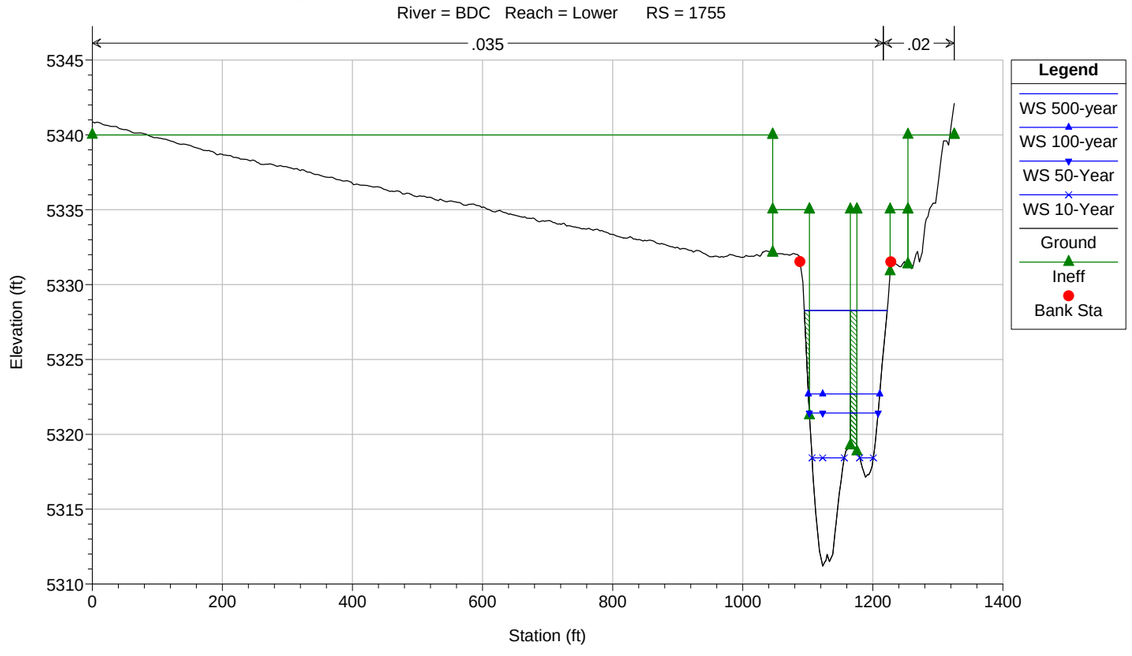

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 2158
.02
.1
.1
.1
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

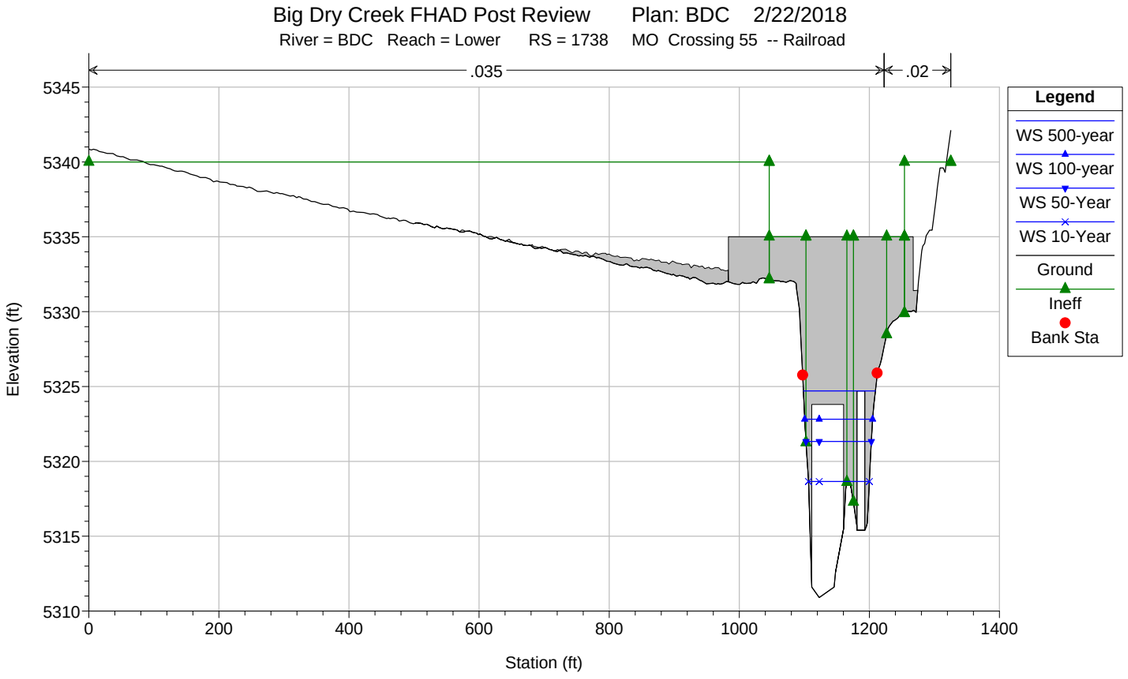

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1907
.02
.1
.07
.1
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

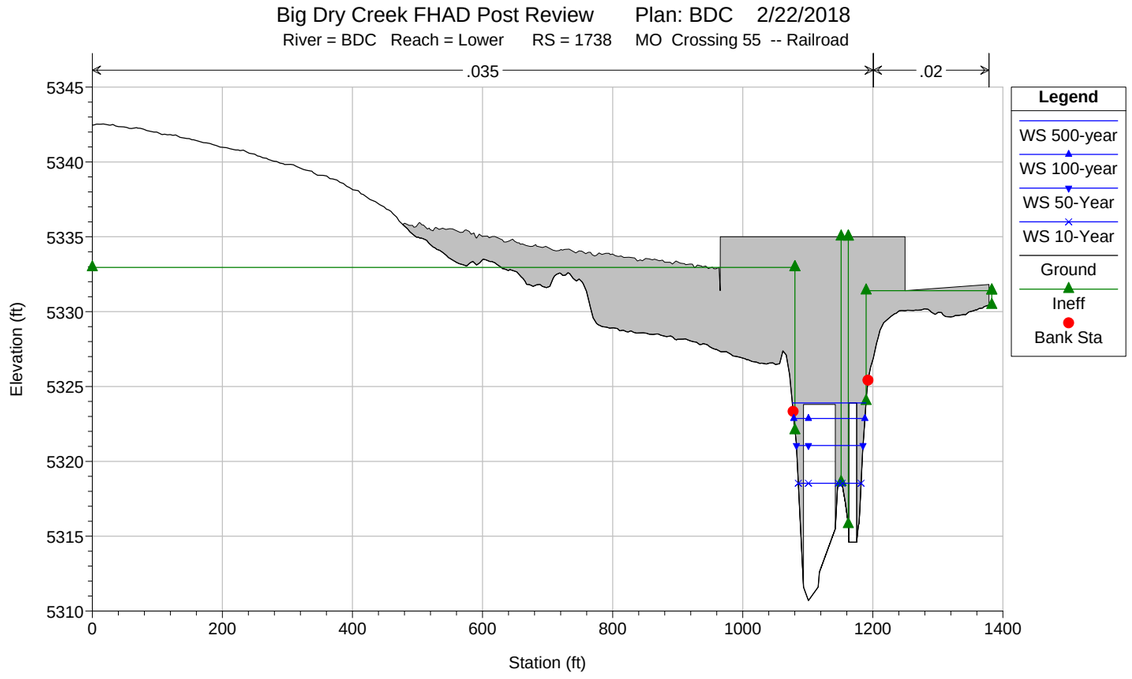

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1835 BR BR54 - Railroad
.02
.1
.07
.035
.072
.035
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

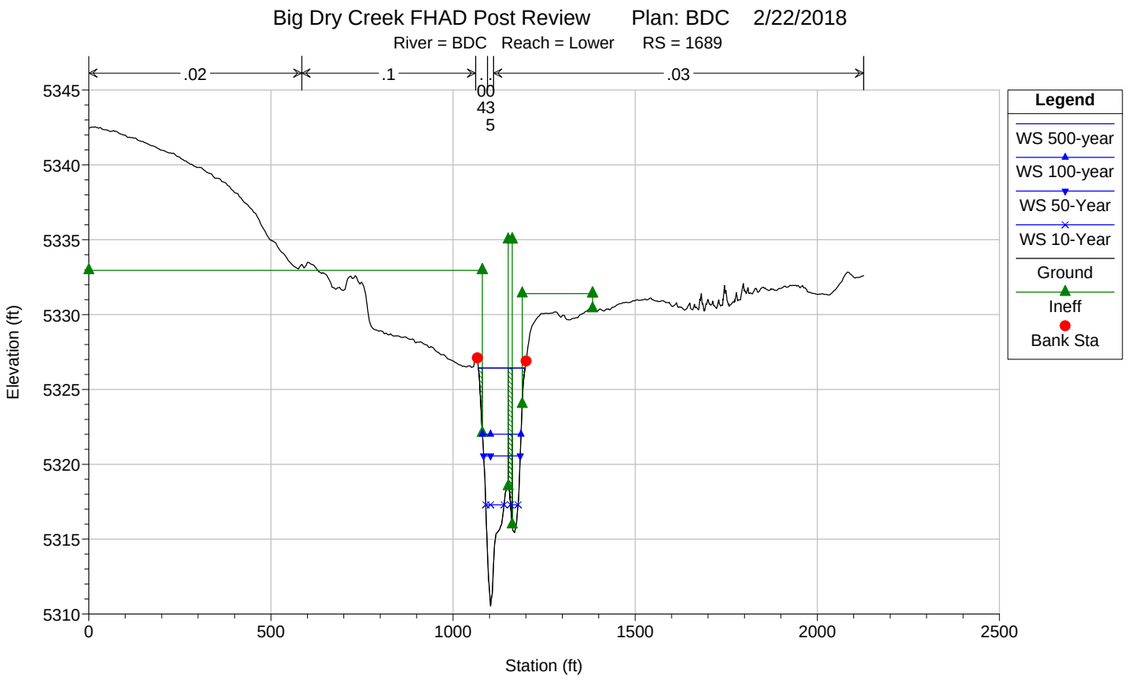

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1835 BR BR54 - Railroad
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

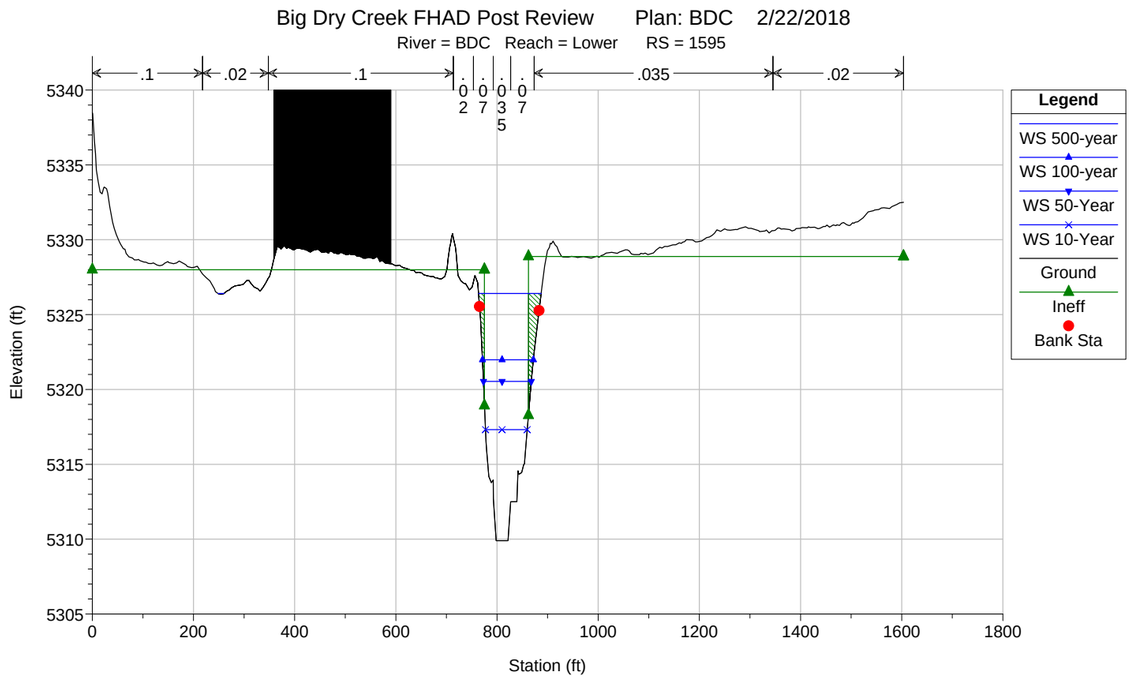

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1758
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

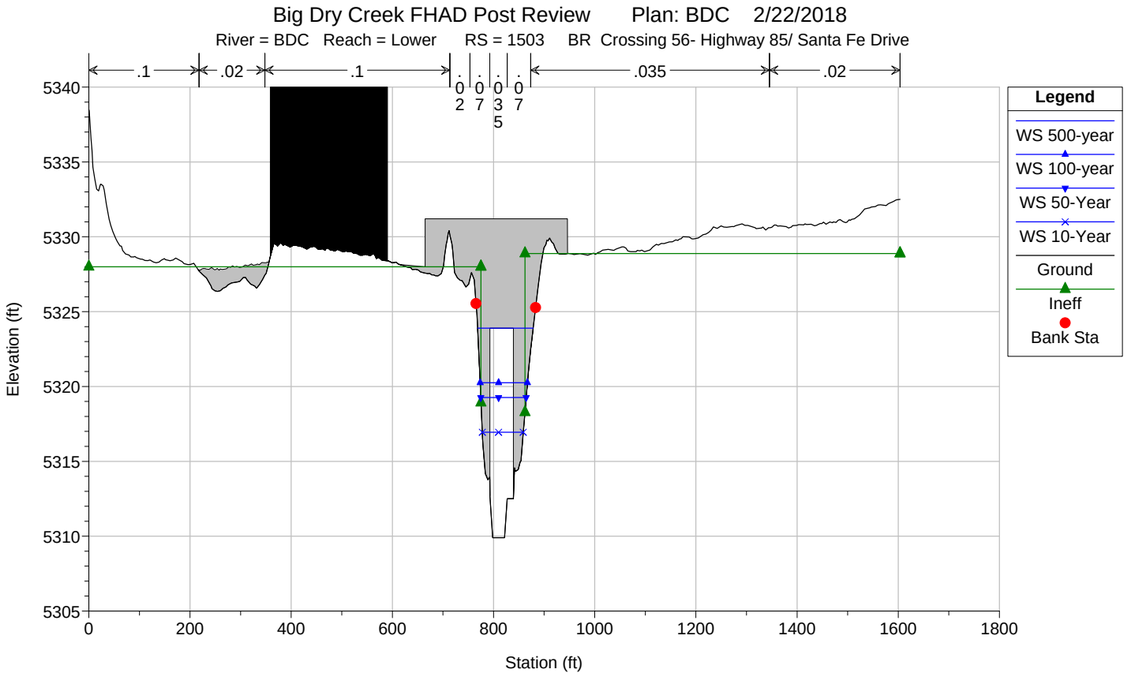

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1755
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1738 MO Crossing 55 -- Railroad
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1738 MO Crossing 55 -- Railroad
.035
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1689
.02
.1
.00435
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1595
.1
.02
.1
.02
.07
.035
.07
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1503 BR Crossing 56- Highway 85/ Santa Fe Drive
.1
.02
.1
.02
.07
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5340
5335
5330
5325
5320
5315
5310
5305
0
200
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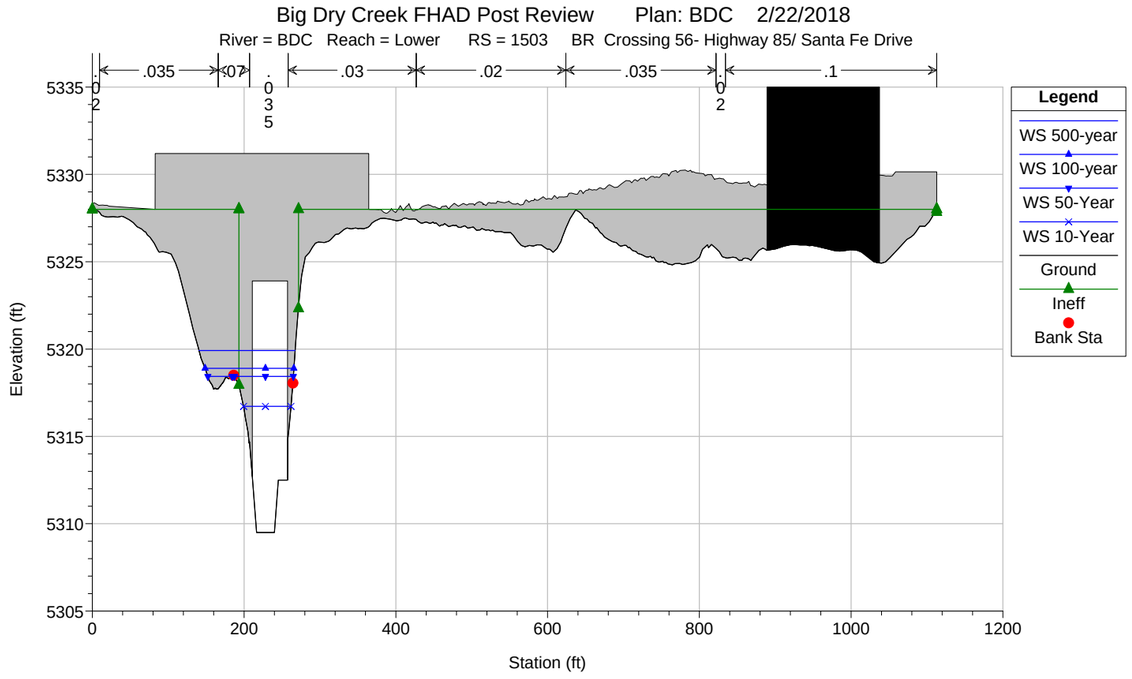
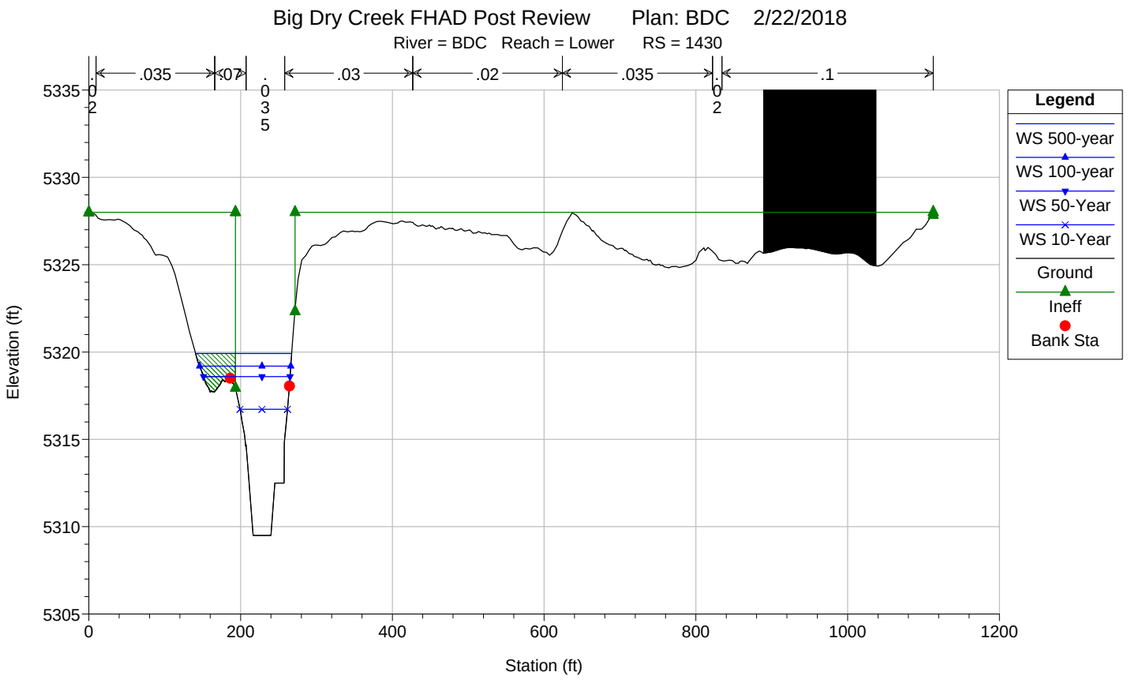
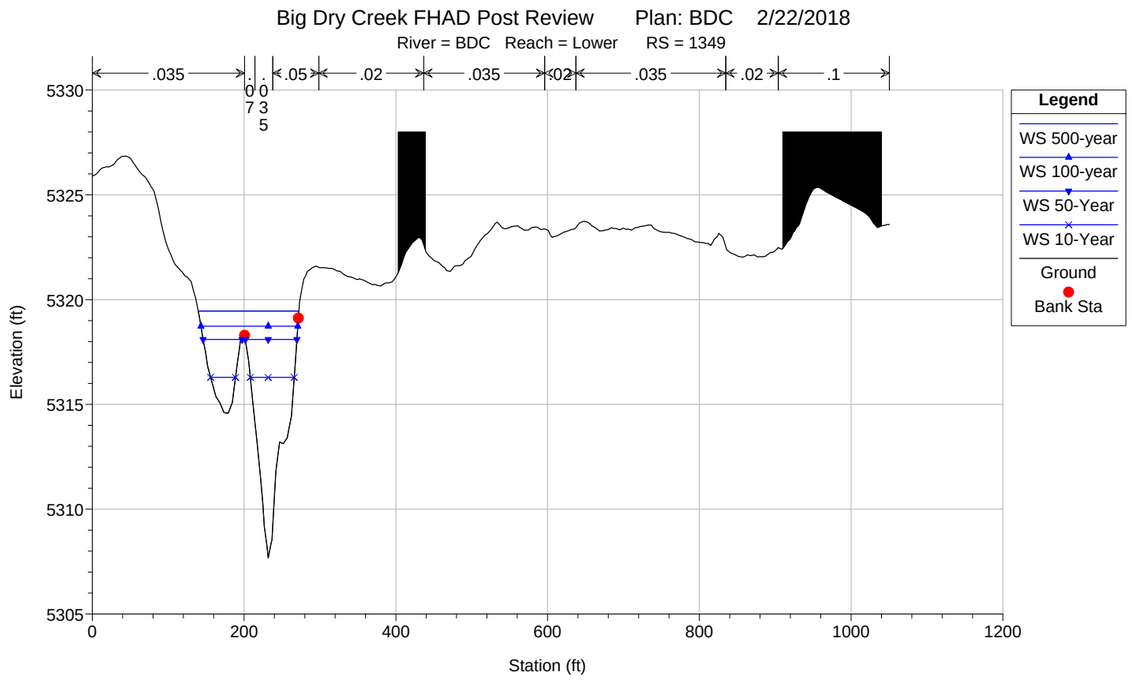
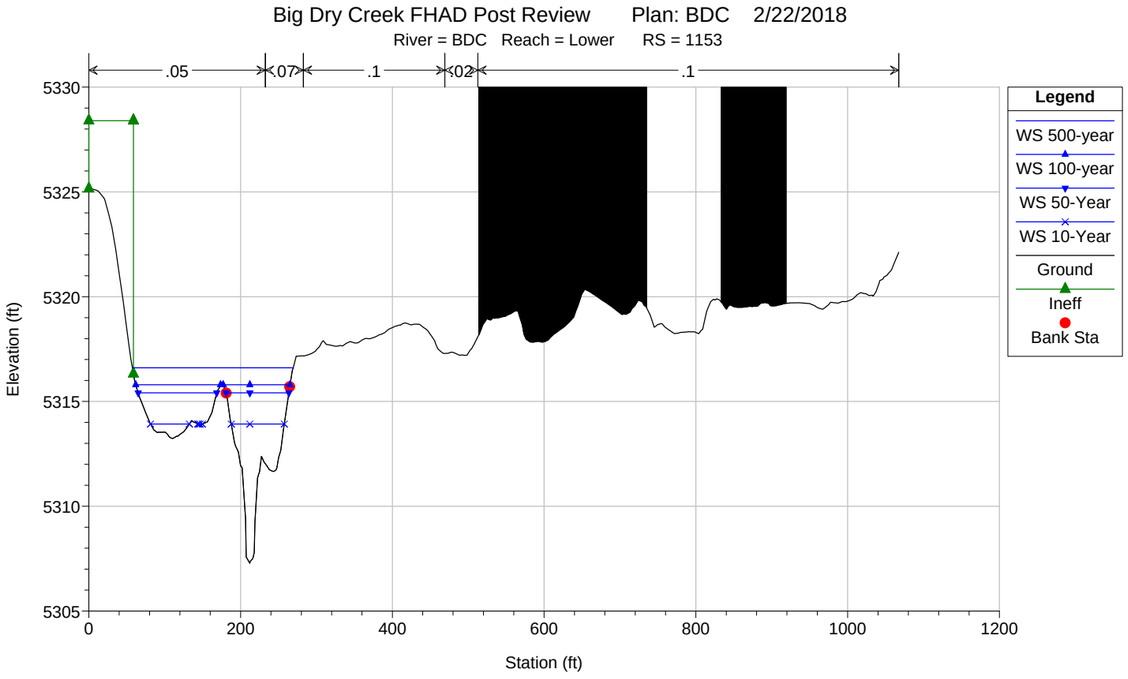
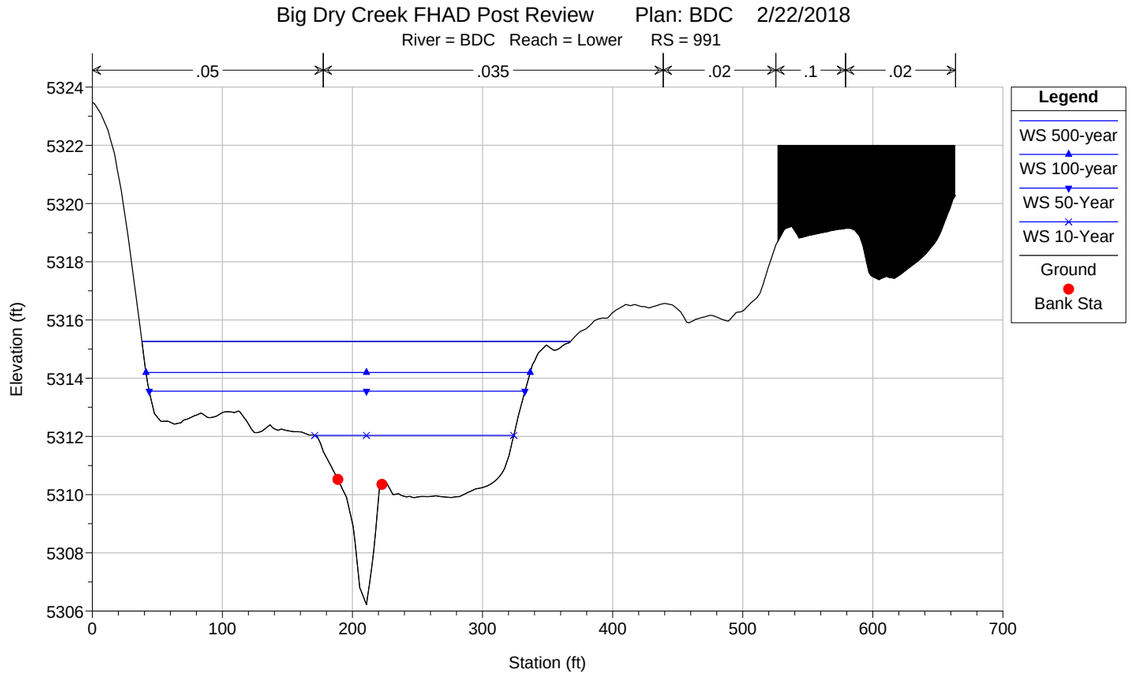
800
1000
1200
1400
1600
1800

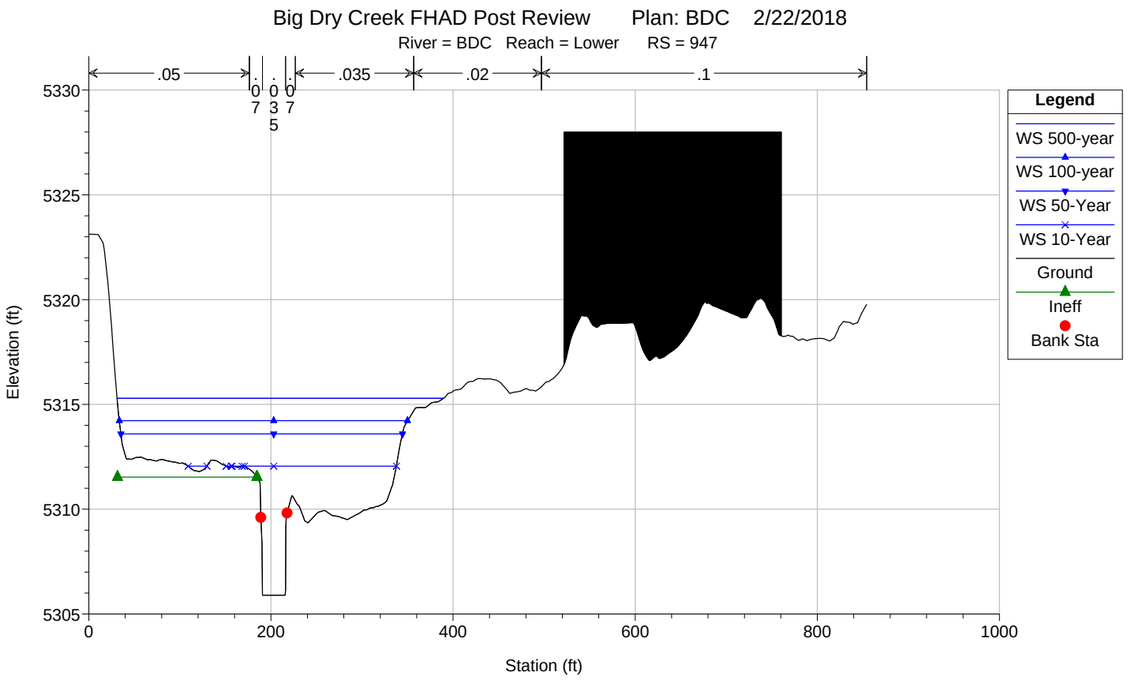

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1503 BR Crossing 56- Highway 85/ Santa Fe Drive
.035
.07
.03
.02
.035
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5335
5330
5325
5320
5315
5310
5305
0
200
400
600
800
1000
1200

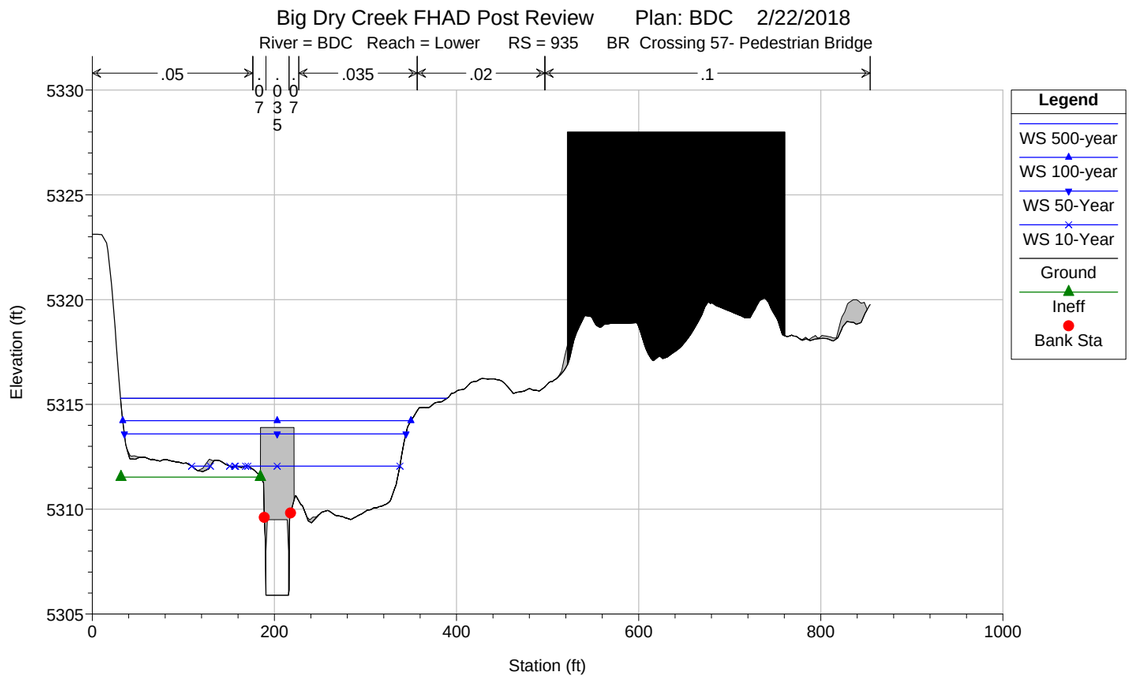

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1430
.035
.07
.03
.02
.035
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5335
5330
5325
5320
5315
5310
5305
0
200
400
600
800
1000
1200

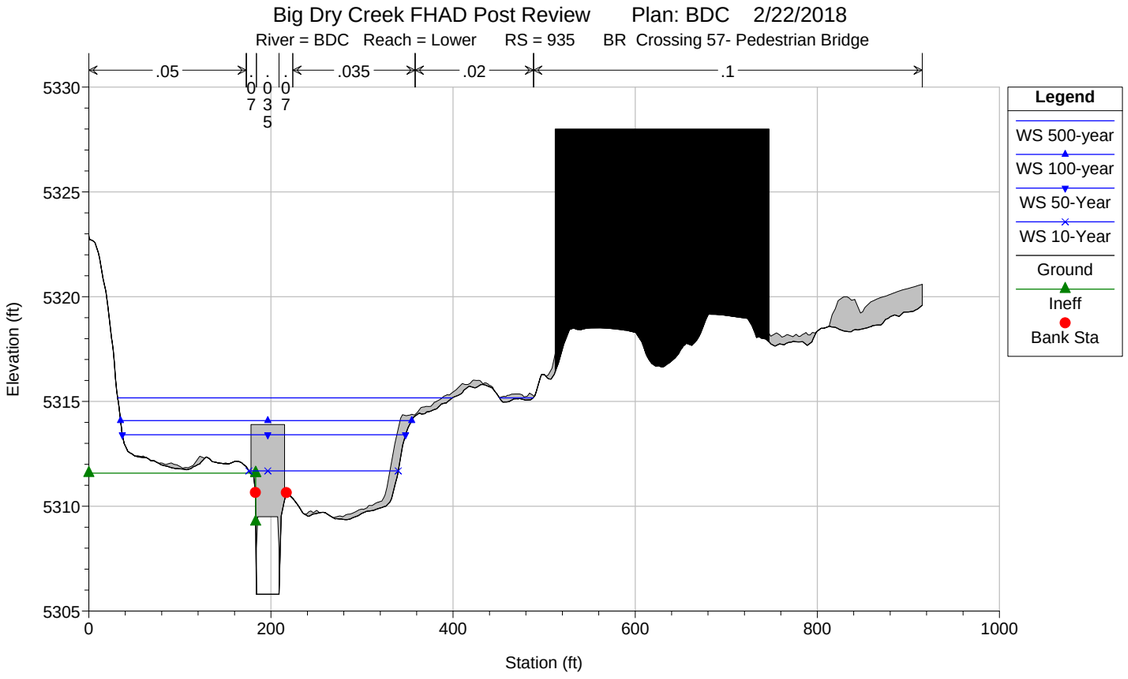

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1349
.035
.05
.02
.035
.02
.035
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5330
5325
5320
5315
5310
5305
0
200
400
600
800
1000
1200

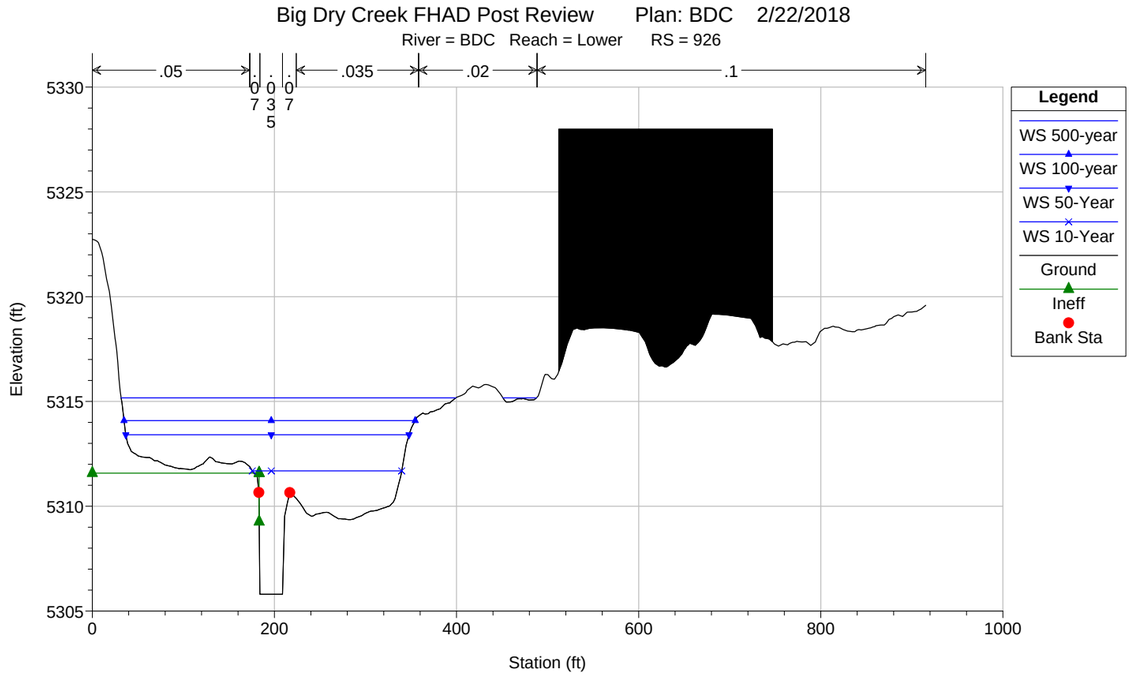

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 1153
.05
.07
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

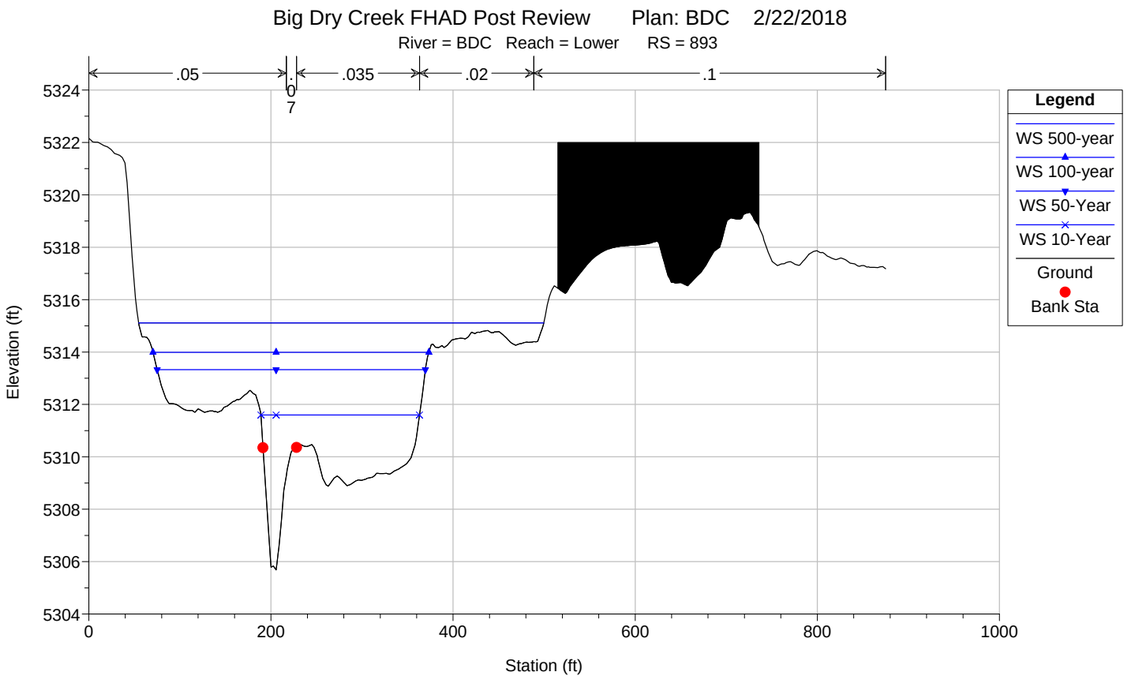

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 991
.05
.035
.02
.1
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

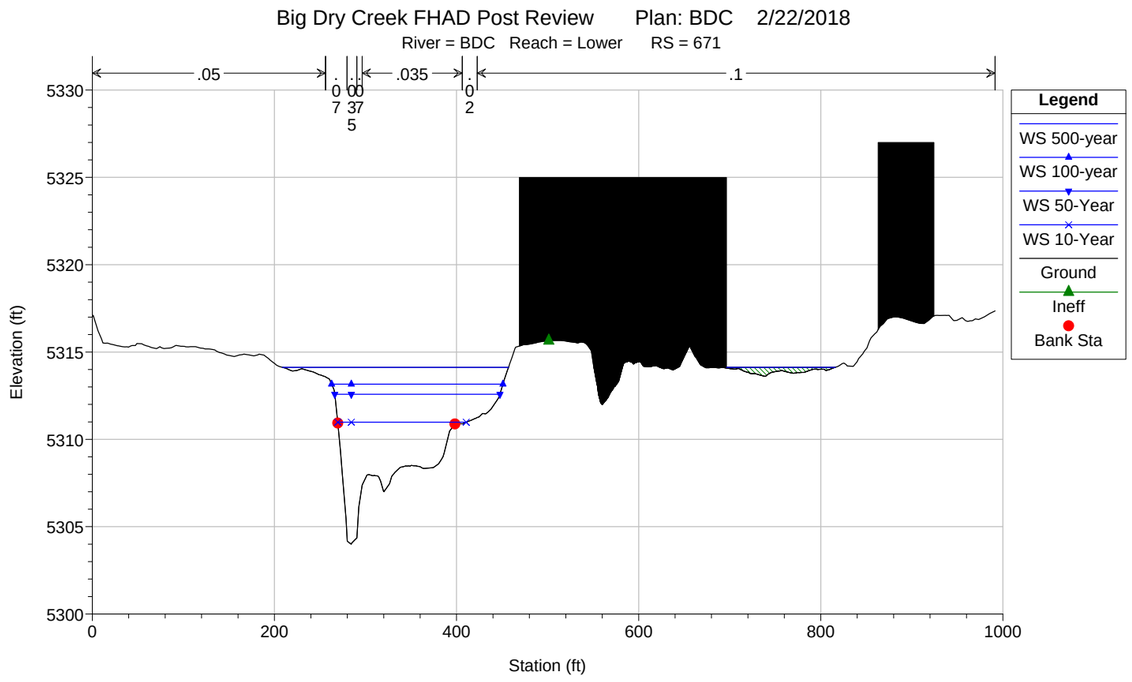

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 947
.05
.07
.035
.07
.035
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

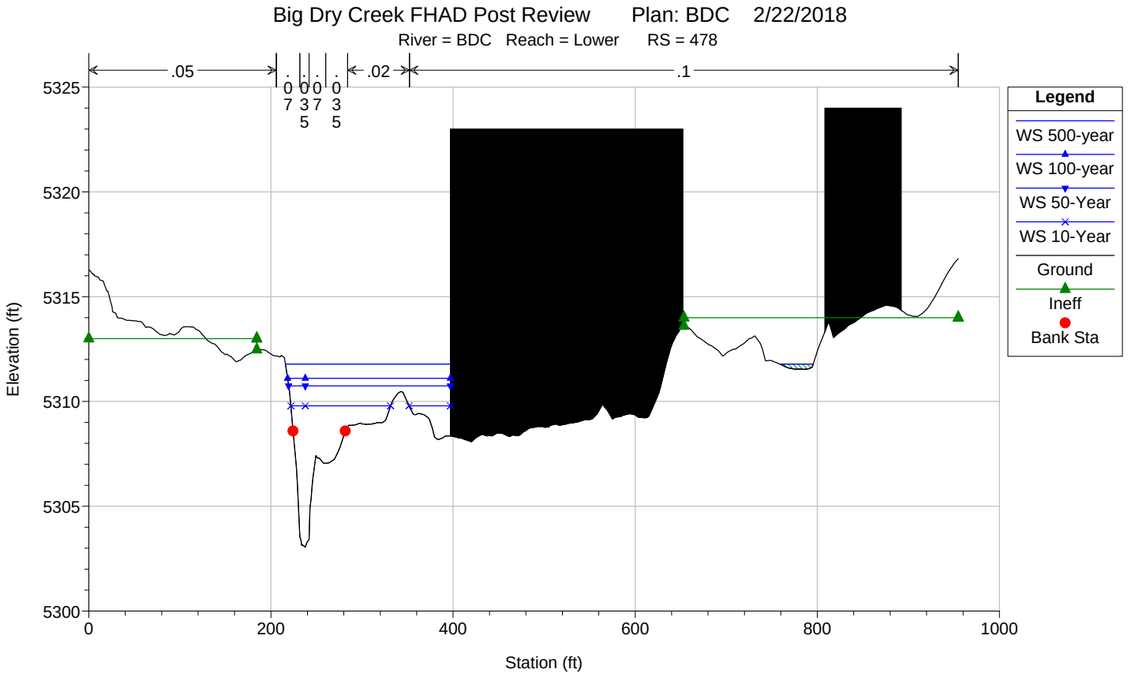

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 935 BR Crossing 57- Pedestrian Bridge
.05
.07
.035
.07
.035
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

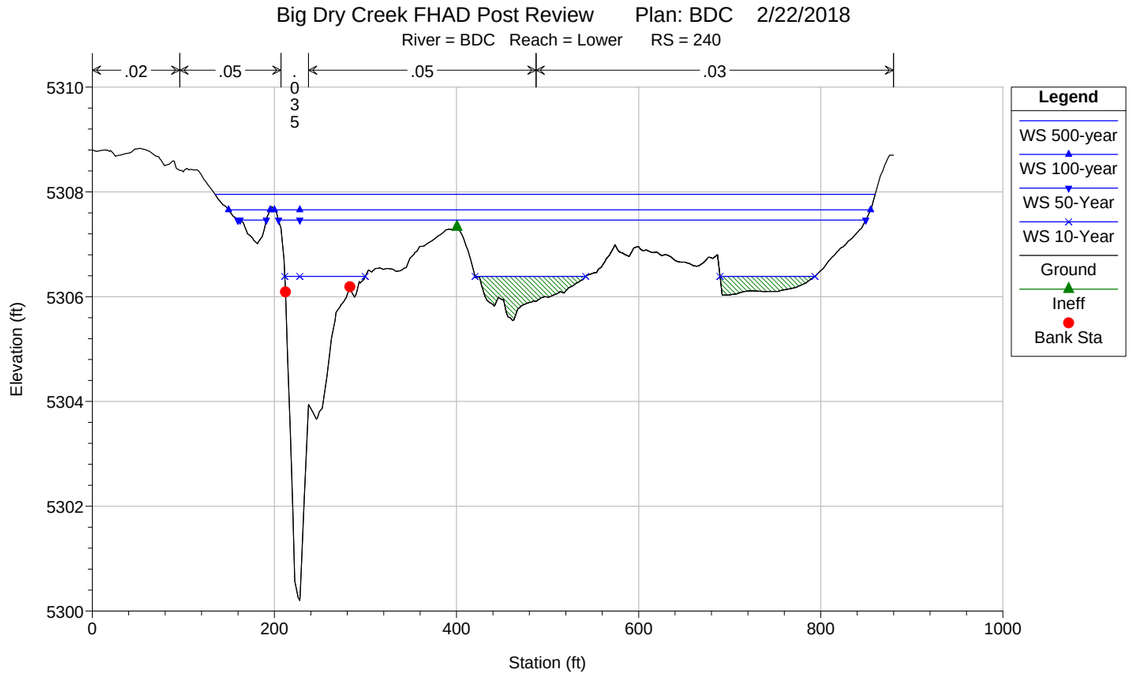

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 935 BR Crossing 57- Pedestrian Bridge
.05
.035
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

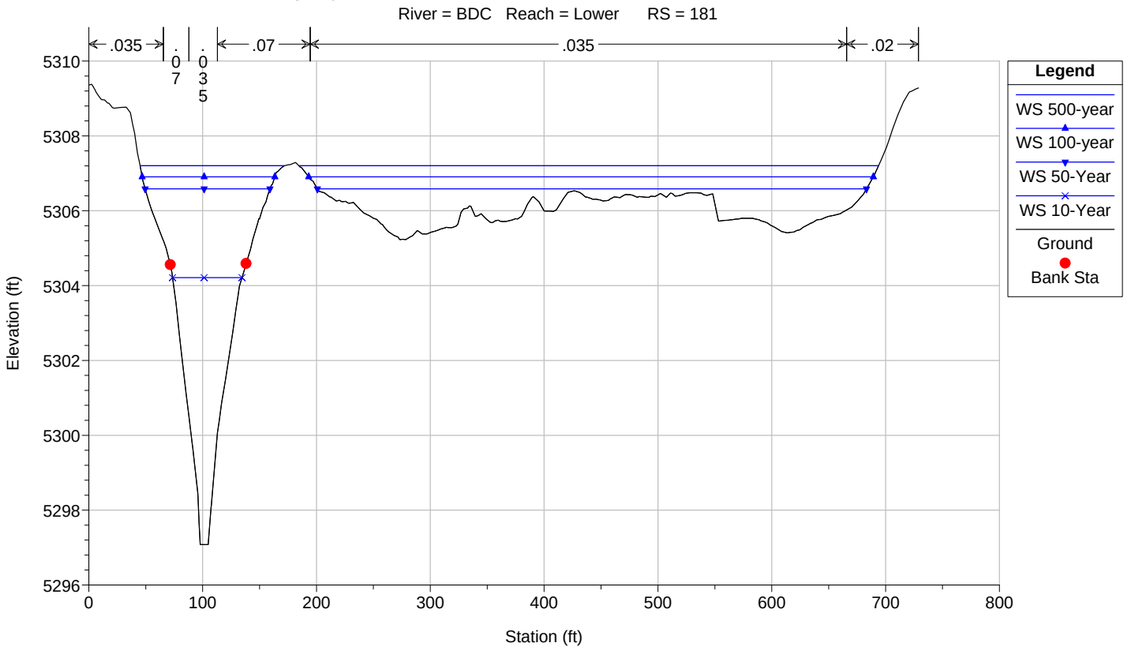

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 926
.05
.035
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

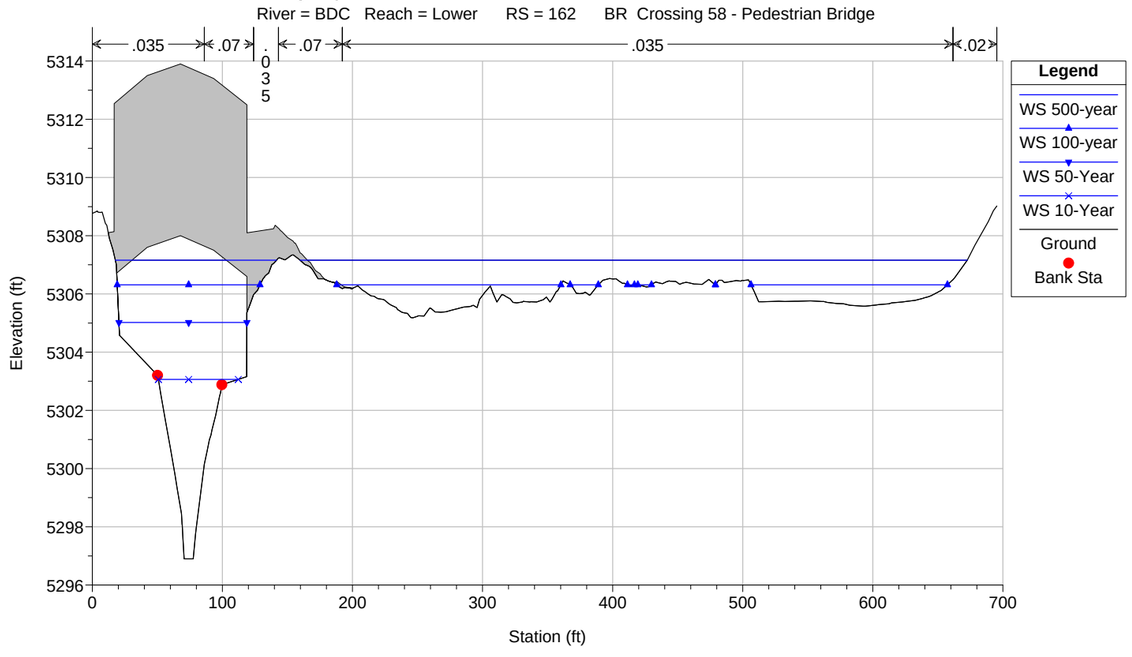

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 893
.05
.035
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

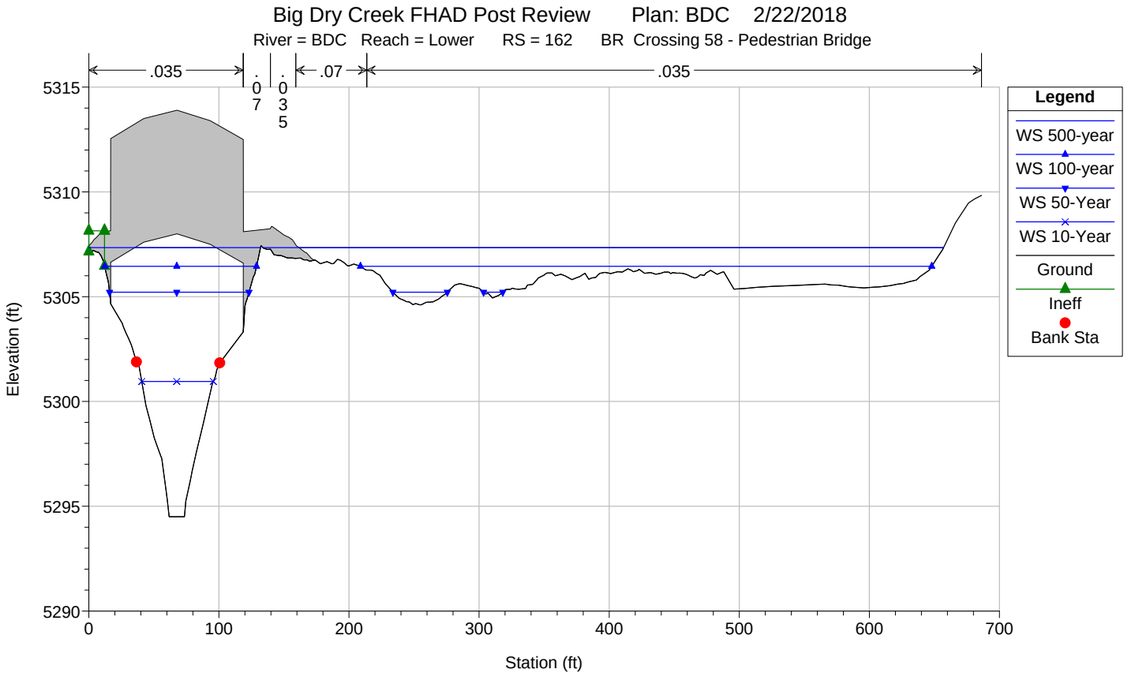

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 671
.05
.035
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

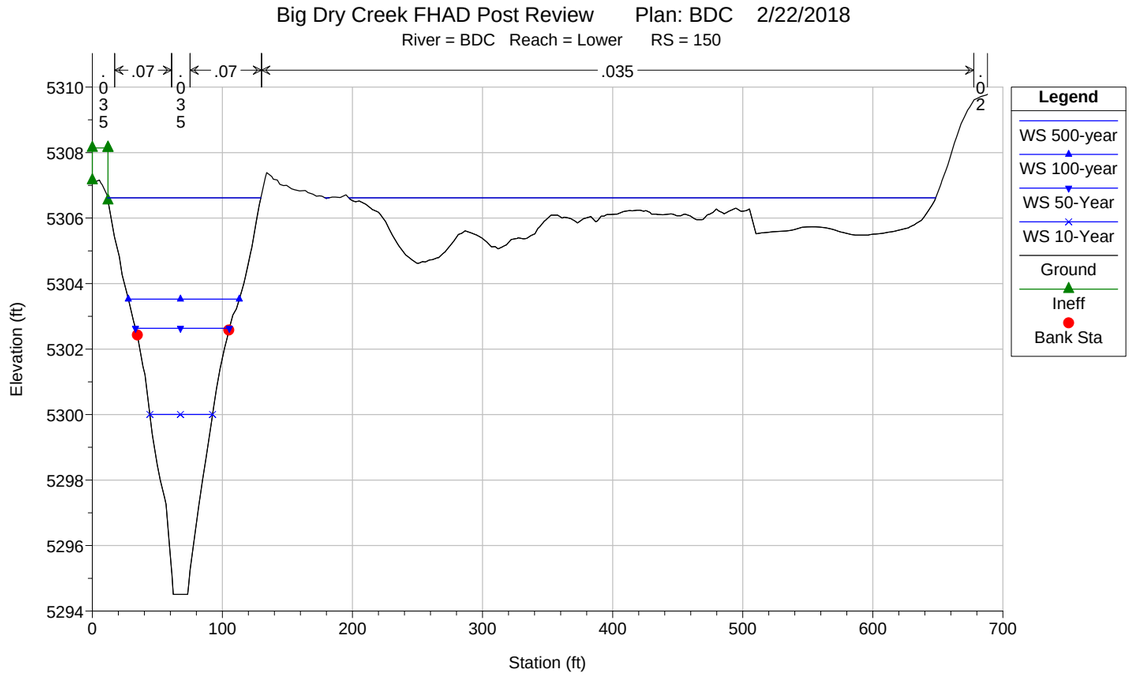

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 478
.05
.07
.035
.07
.035
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5325
5320
5315
5310
5305
5300
0
200
400
600
800
1000

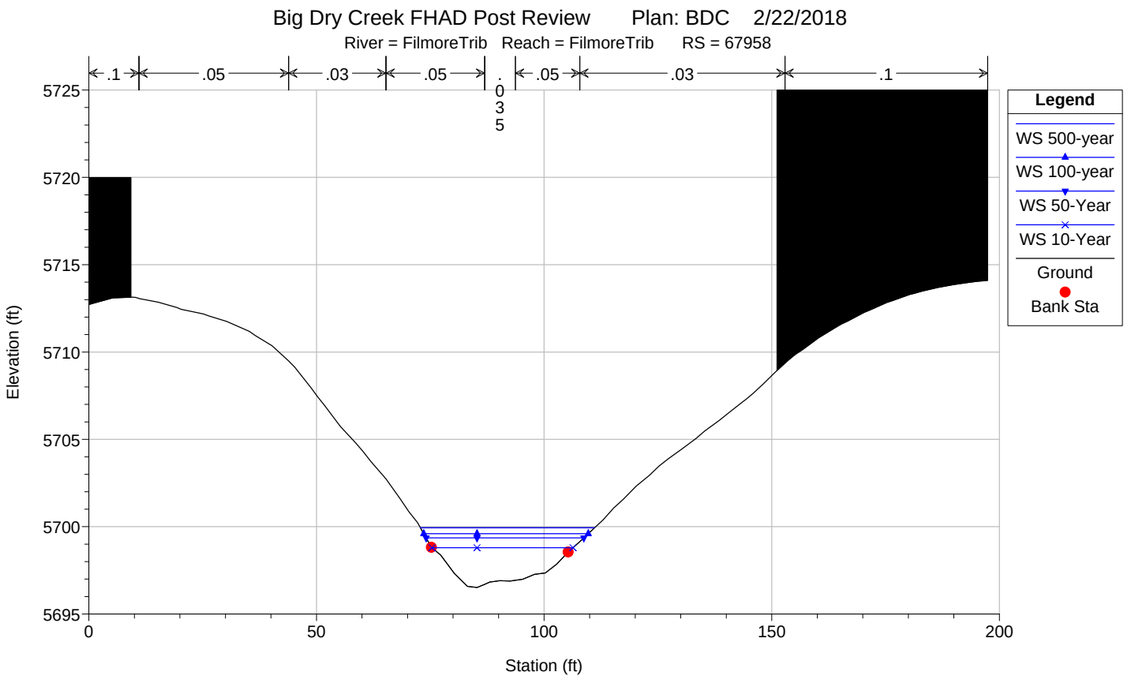

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 240
.02
.05
.035
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5310
5308
5306
5304
5302
5300
0
200
400
600
800
1000

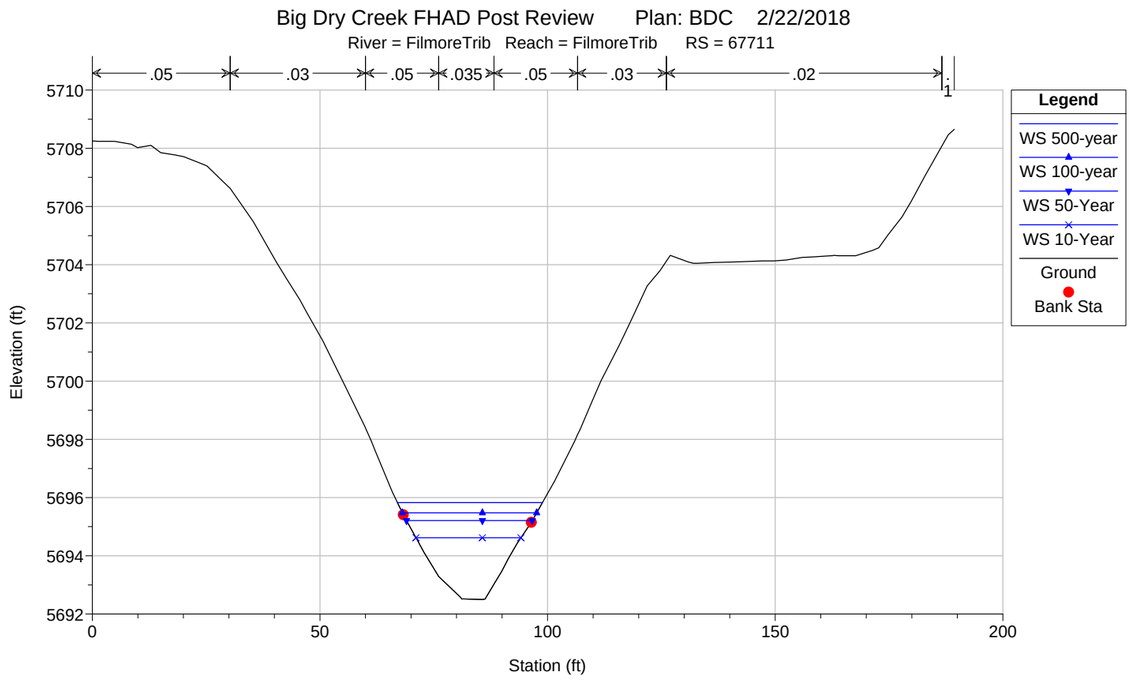

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 181
.035
.07
.035
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5310
5308
5306
5304
5302
5300
5298
5296
0
100
200
300
400
500
600
700
800

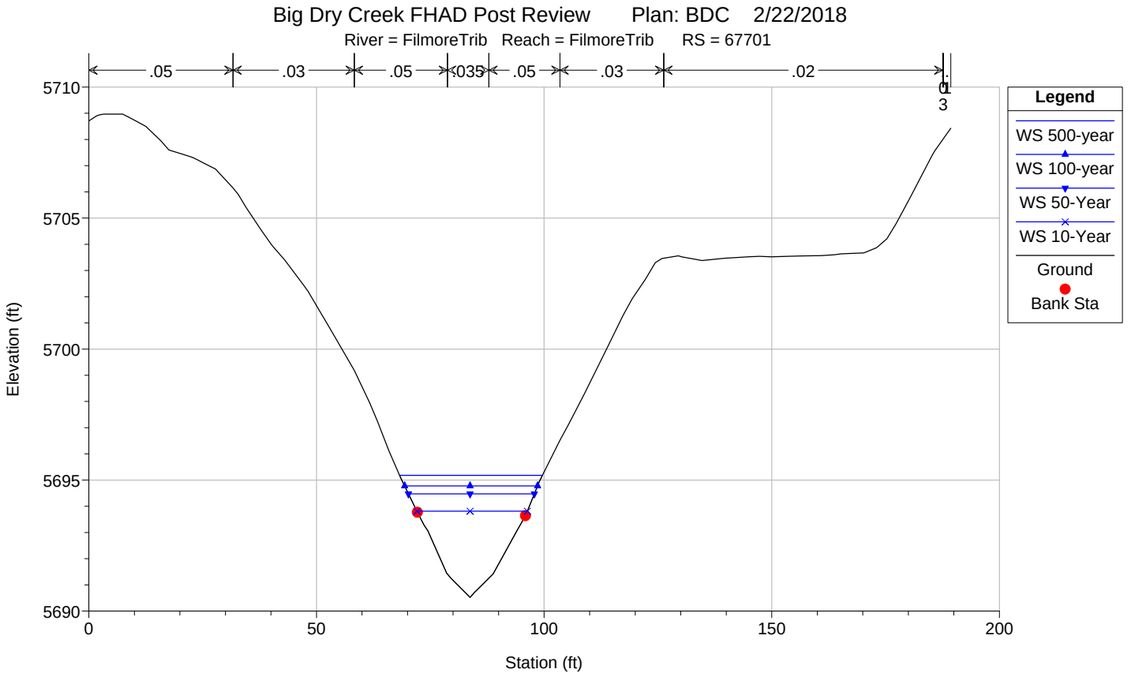

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 162 BR Crossing 58 - Pedestrian Bridge
.035
.07
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5314
5312
5310
5308
5306
5304
5302
5300
5298
5296
0
100
200
300
400
500
600
700

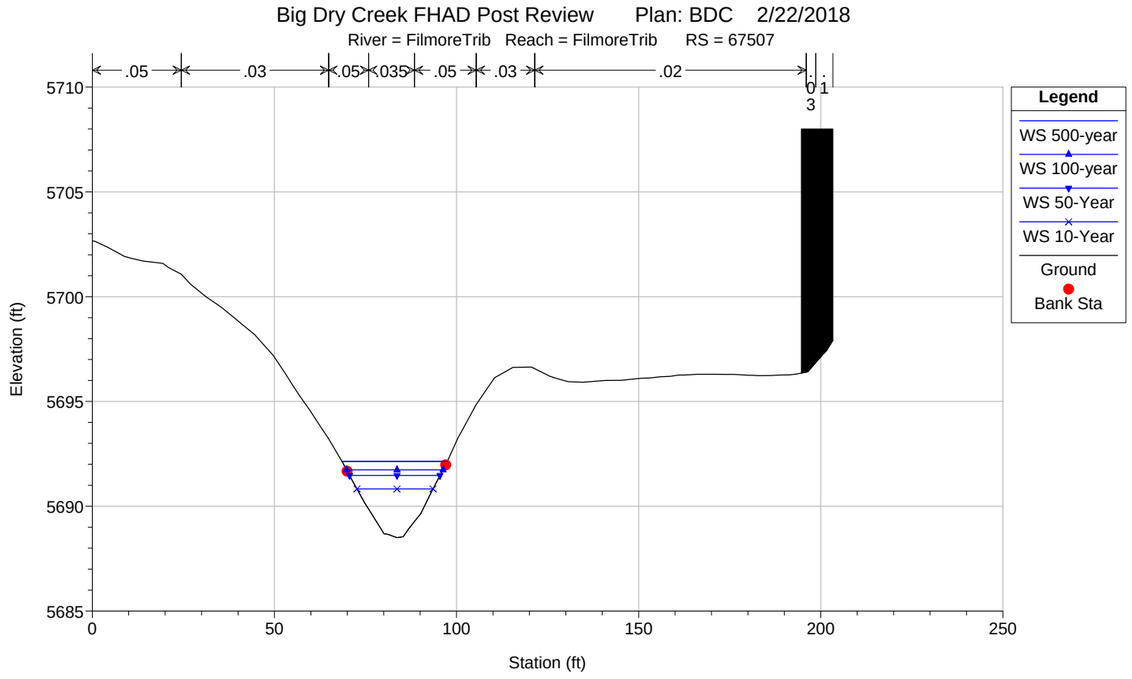

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 162 BR Crossing 58 - Pedestrian Bridge
.035
.07
.035
.07
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

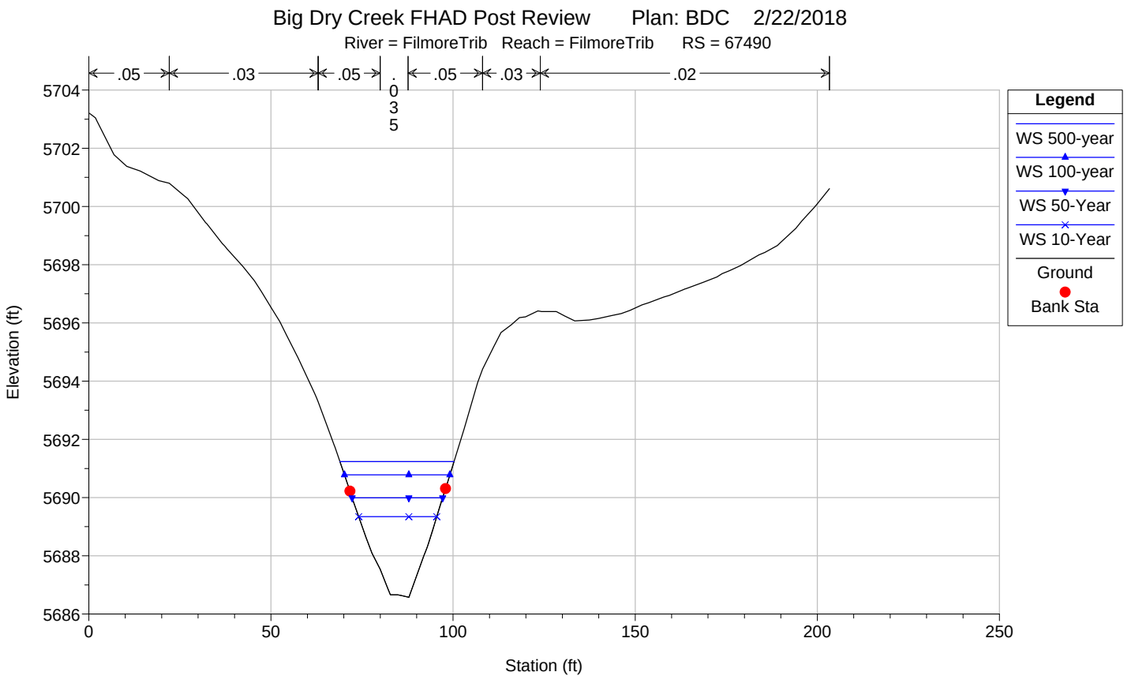

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = BDC Reach = Lower RS = 150
.035
.07
.07
.035
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

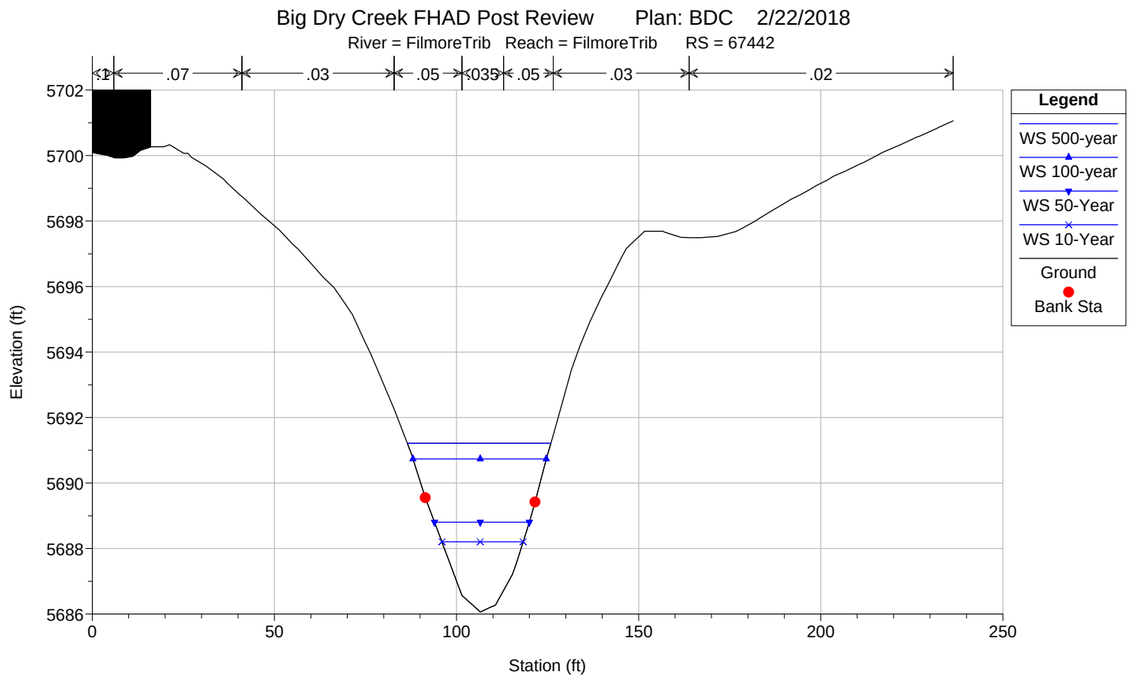

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67958
.1
.05
.03
.05
.035
.05
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

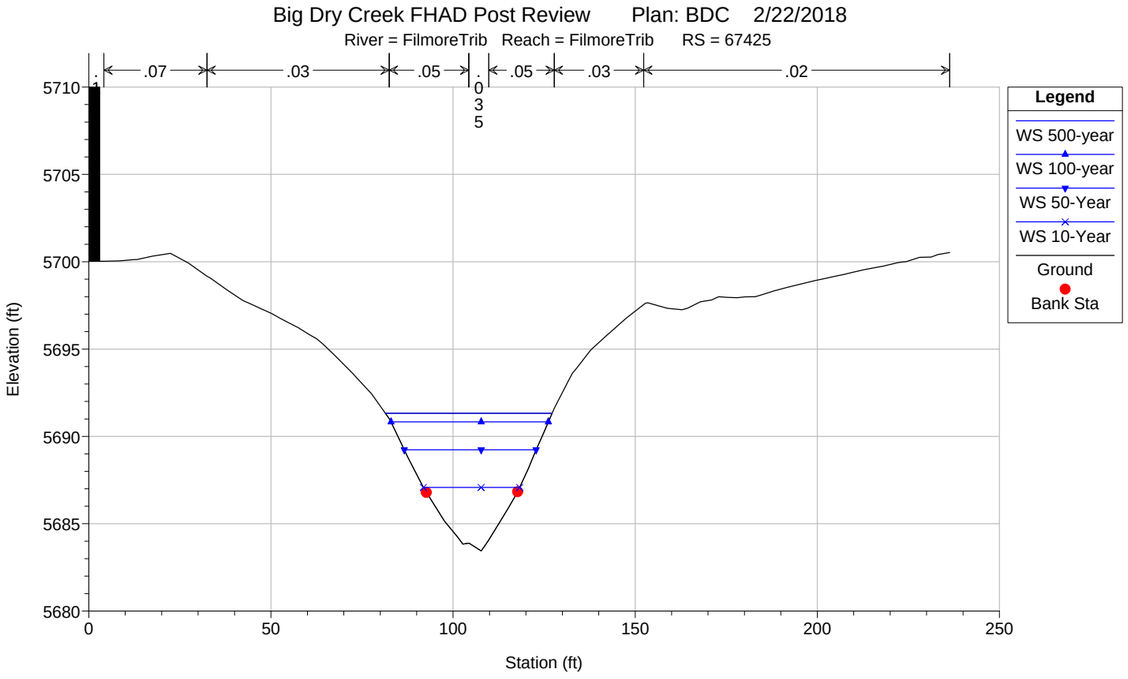

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67711
.05
.03
.05
.035
.05
.03
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

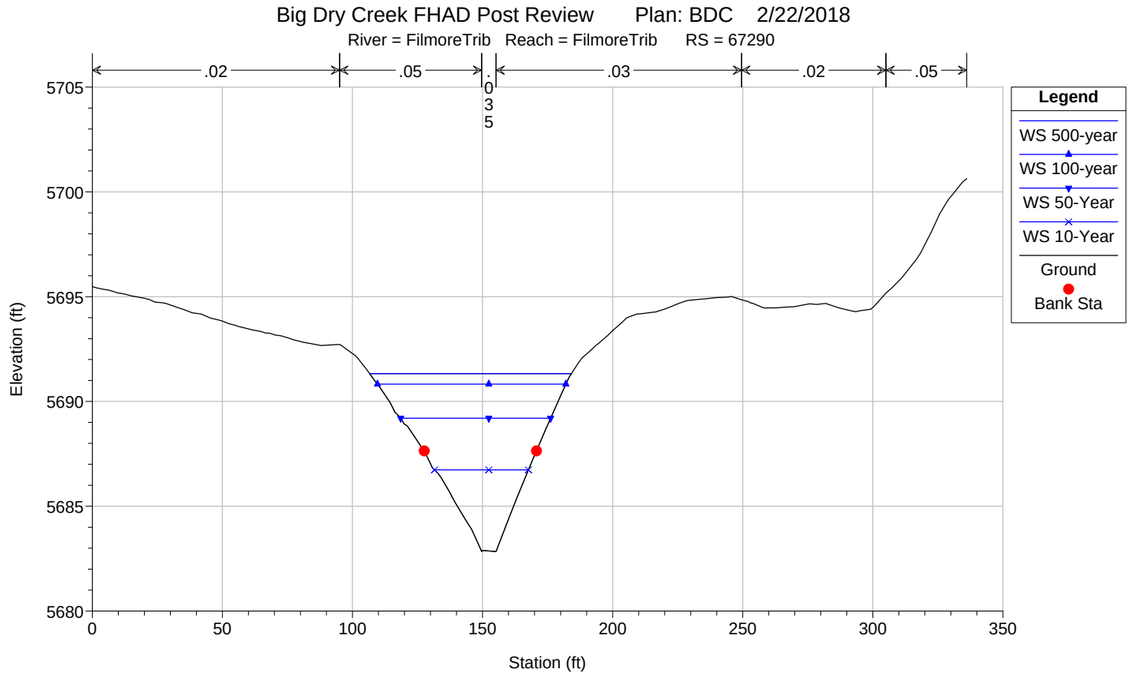

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67701
.05
.03
.05
.035
.05
.03
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

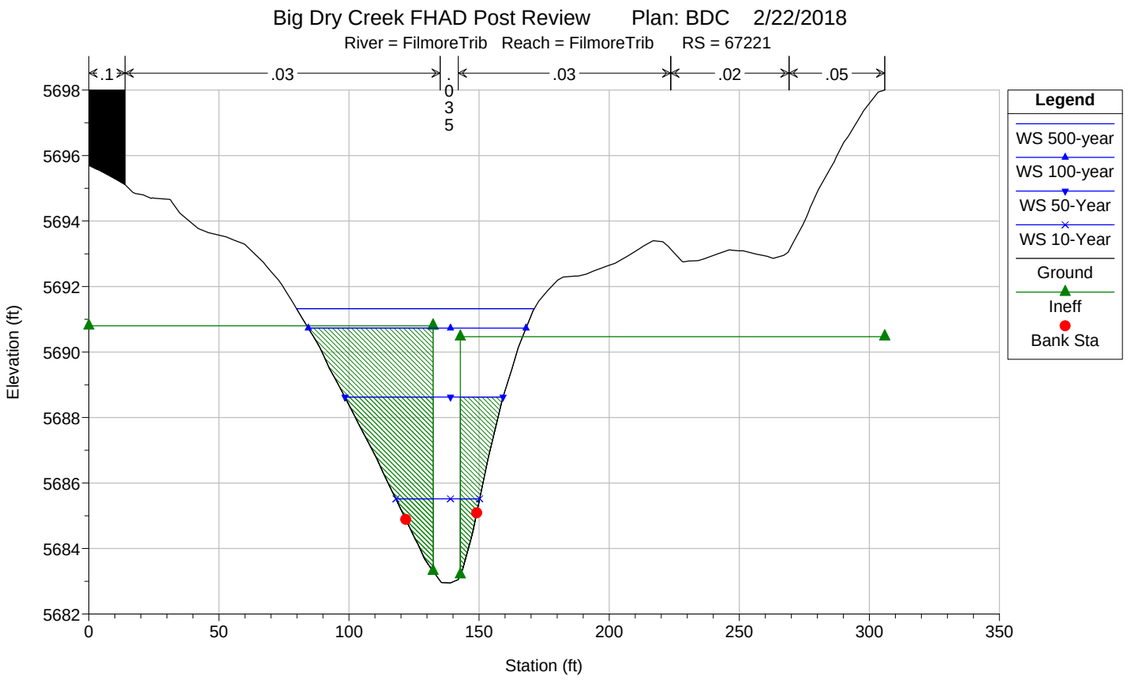

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67507
.05
.03
.05
.035
.05
.03
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

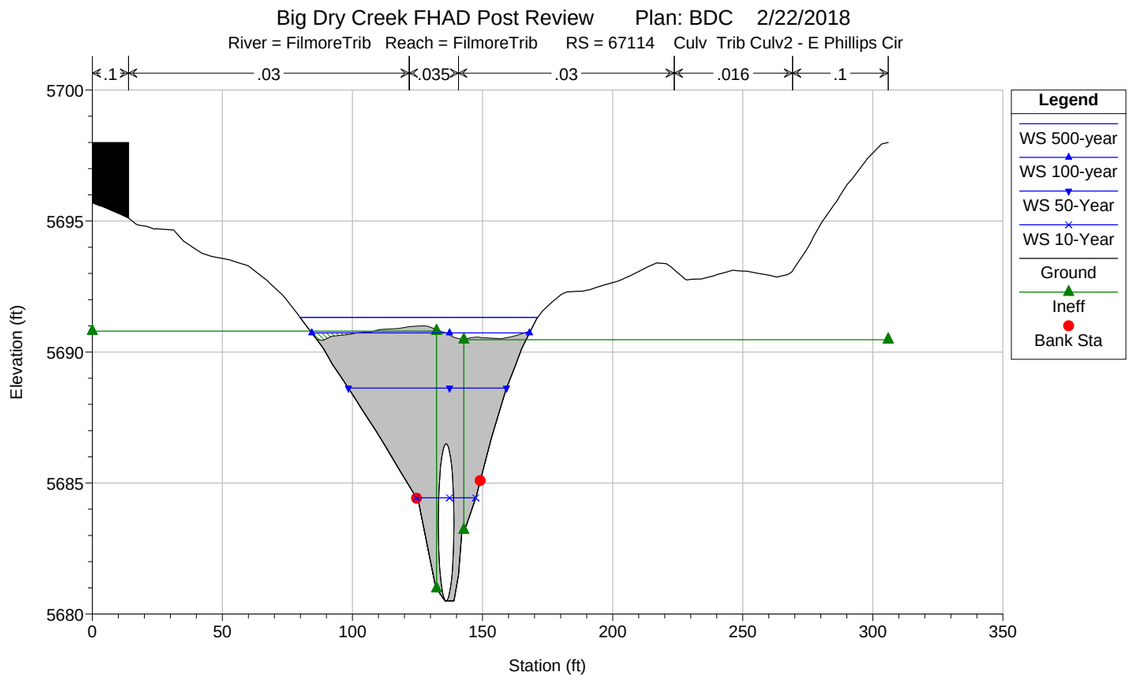

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67490
.05
.03
.05
.035
.05
.03
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

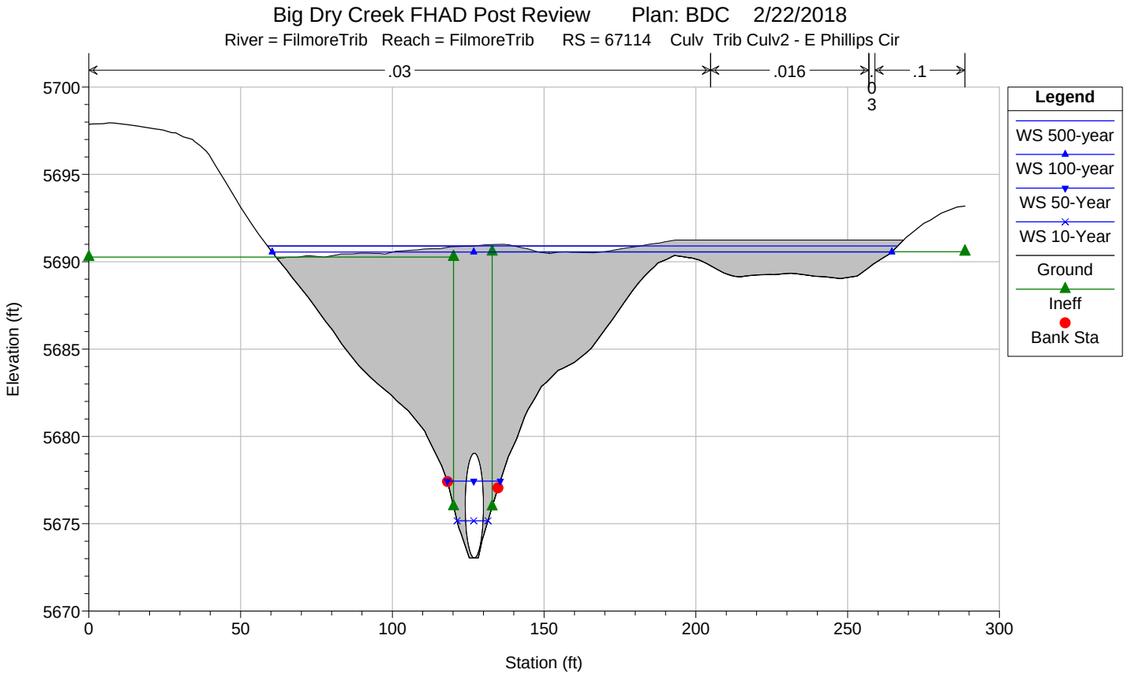

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67442
.07
.03
.05
.035
.05
.03
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

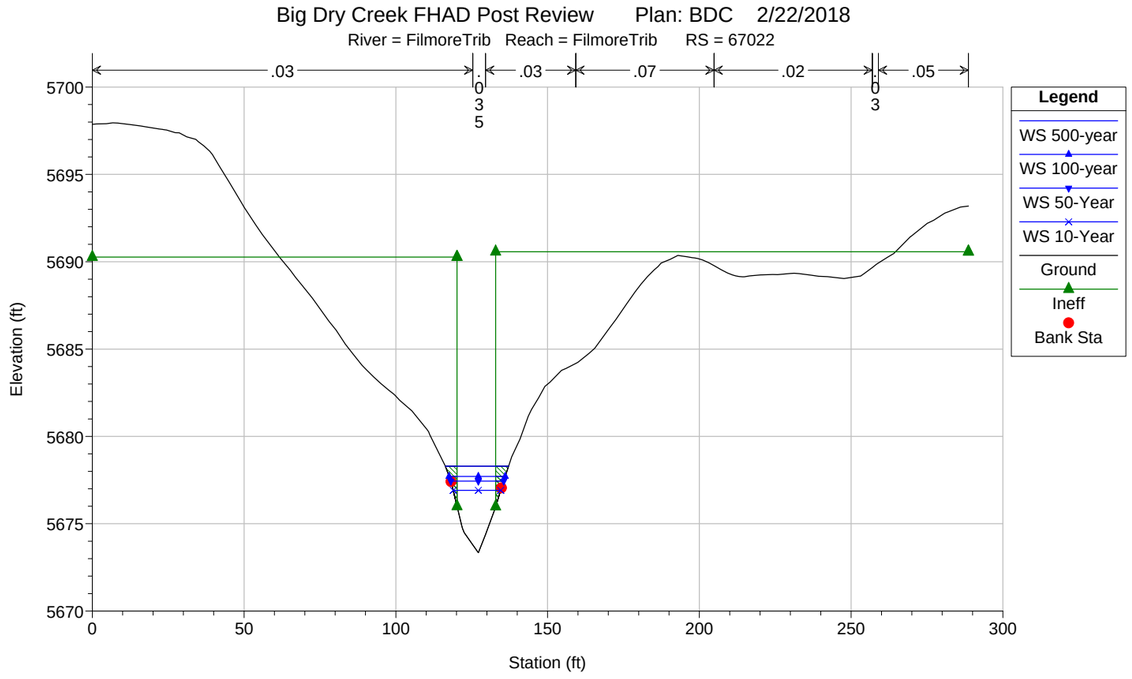

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67425
.07
.03
.05
.05
.03
.02
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

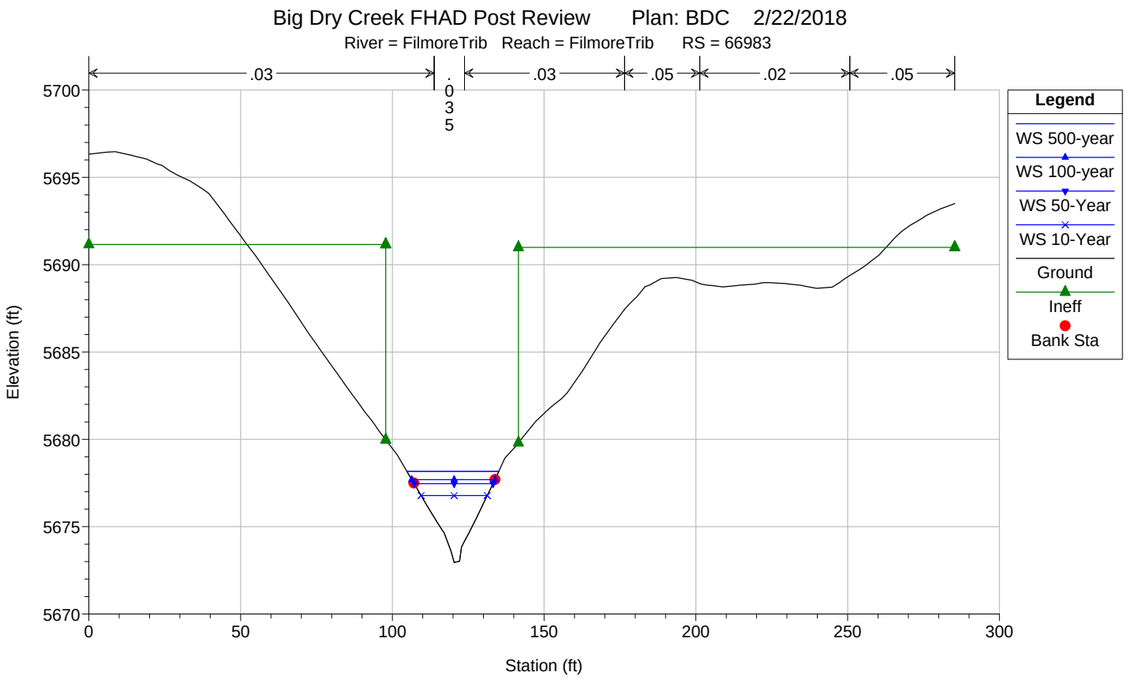

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67290
.02
.05
.03
.02
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

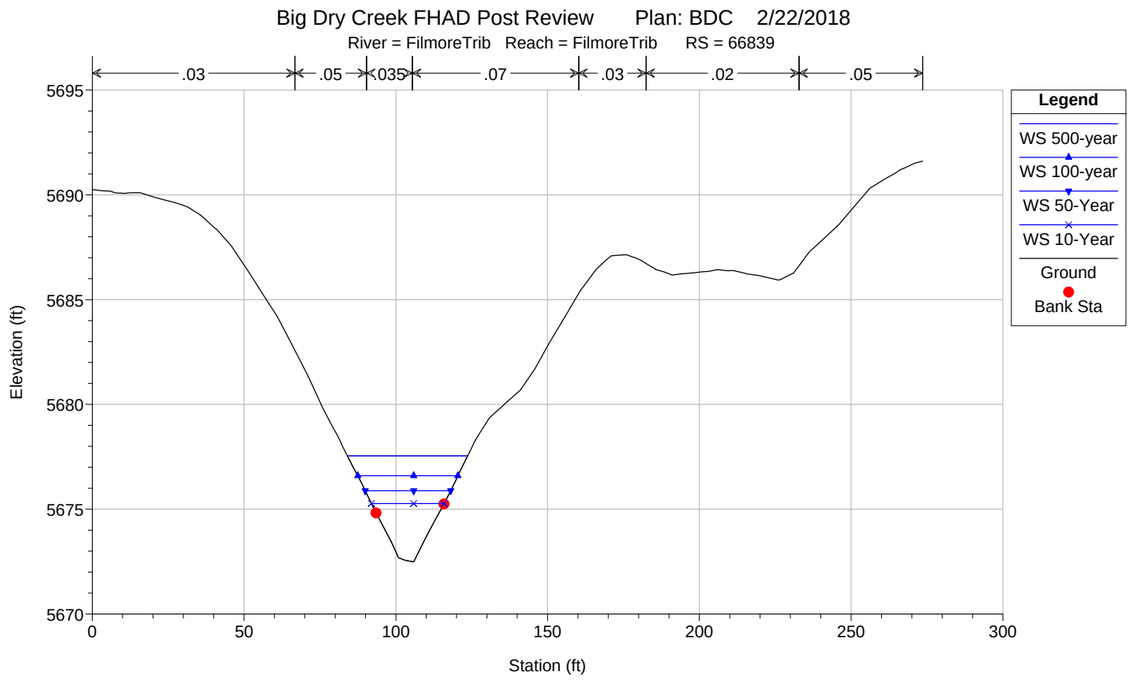

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67221
.1
.03
.03
.02
.05
.035
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

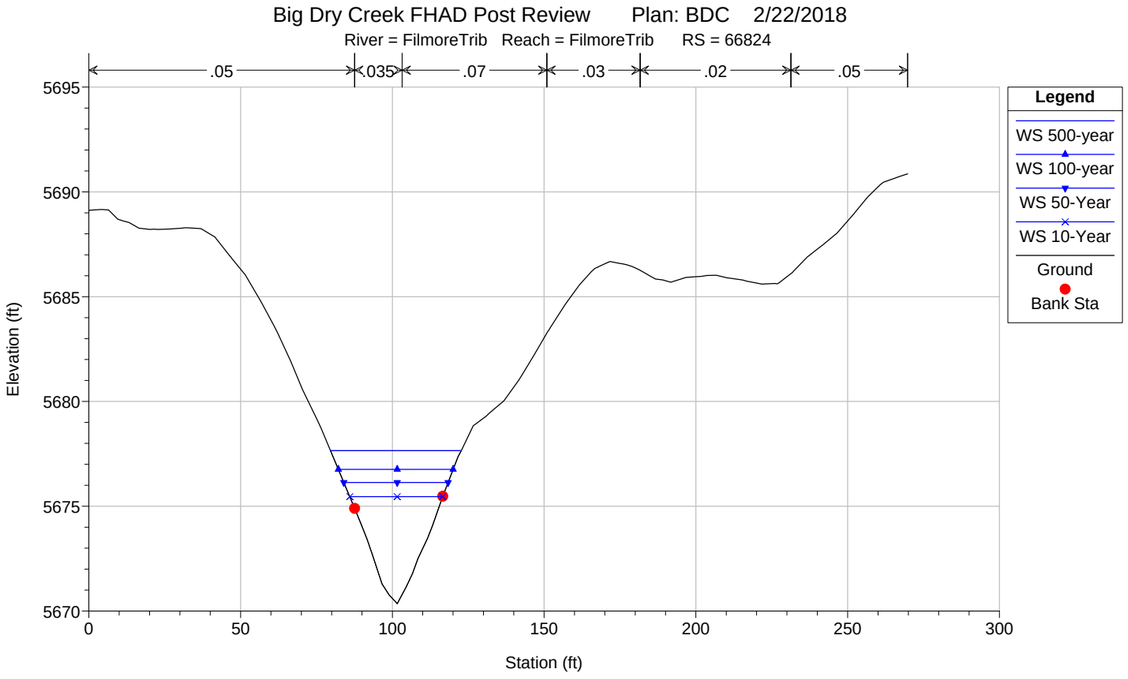

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67114 Culv Trib Culv2 - E Phillips Cir
.1
.03
.035
.03
.016
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

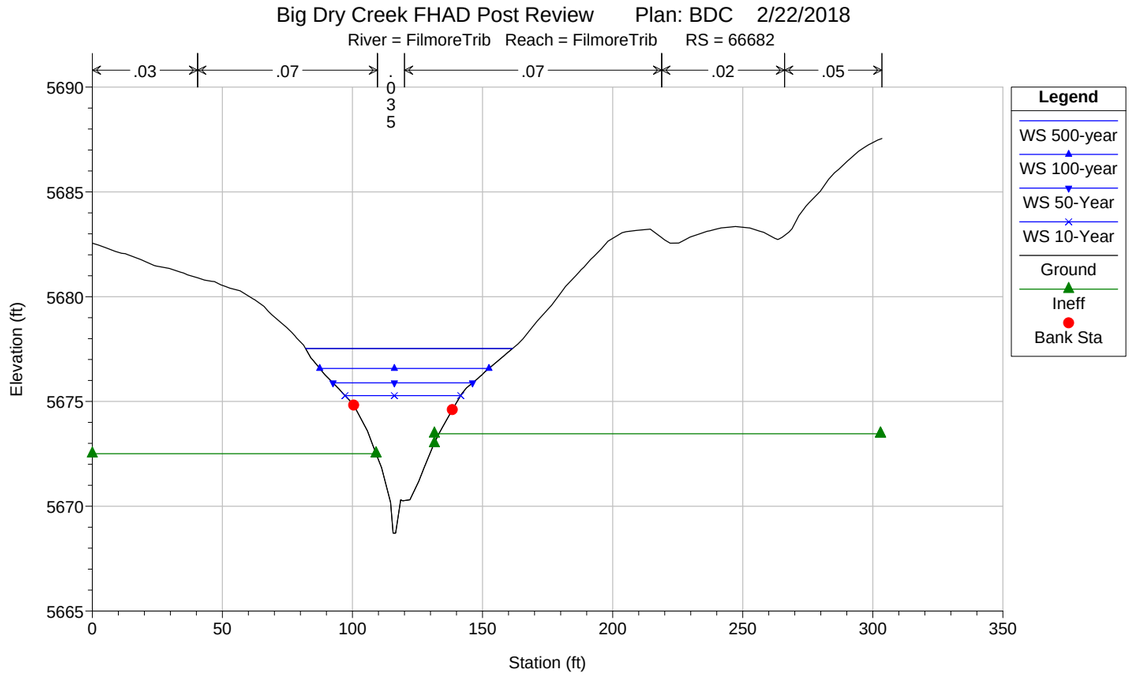

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67114 Culv Trib Culv2 - E Phillips Cir
.03
.016
.1
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5700
5695
5690
5685
5680
5675
5670
0
50
100
150
200
250
300

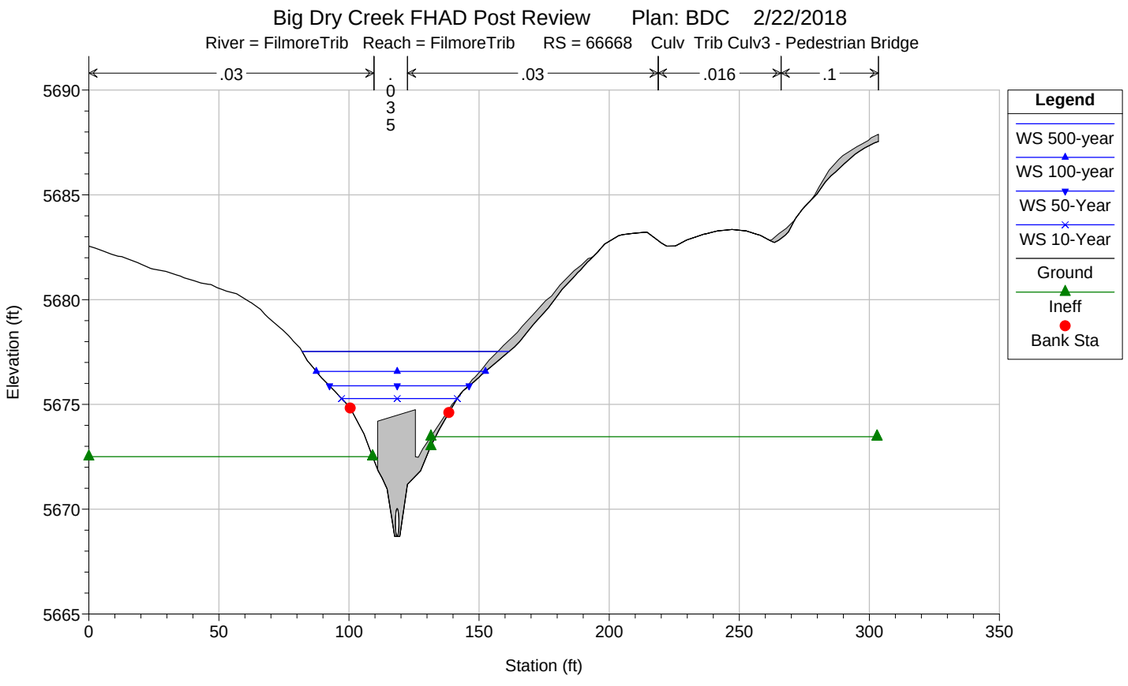

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 67022
.03
.03
.07
.02
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5700
5695
5690
5685
5680
5675
5670
0
50
100
150
200
250
300

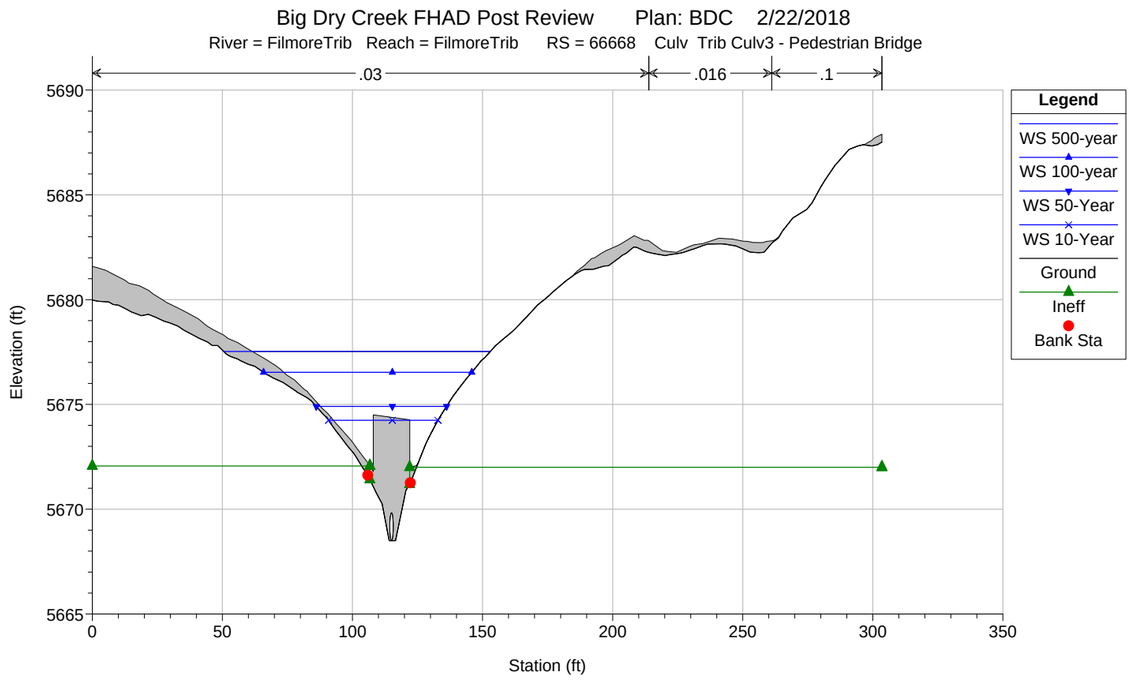

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66983
.03
.03
.05
.02
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5700
5695
5690
5685
5680
5675
5670
0
50
100
150
200
250
300

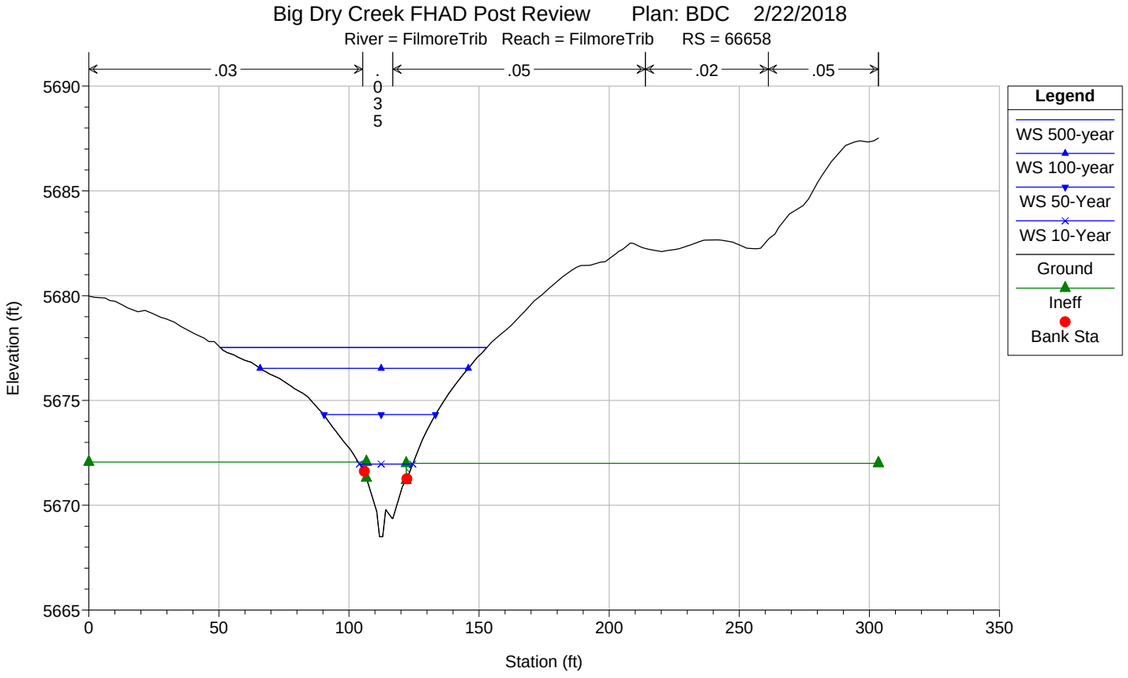

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66839
.03
.05
.07
.03
.02
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5695
5690
5685
5680
5675
5670
0
50
100
150
200
250
300

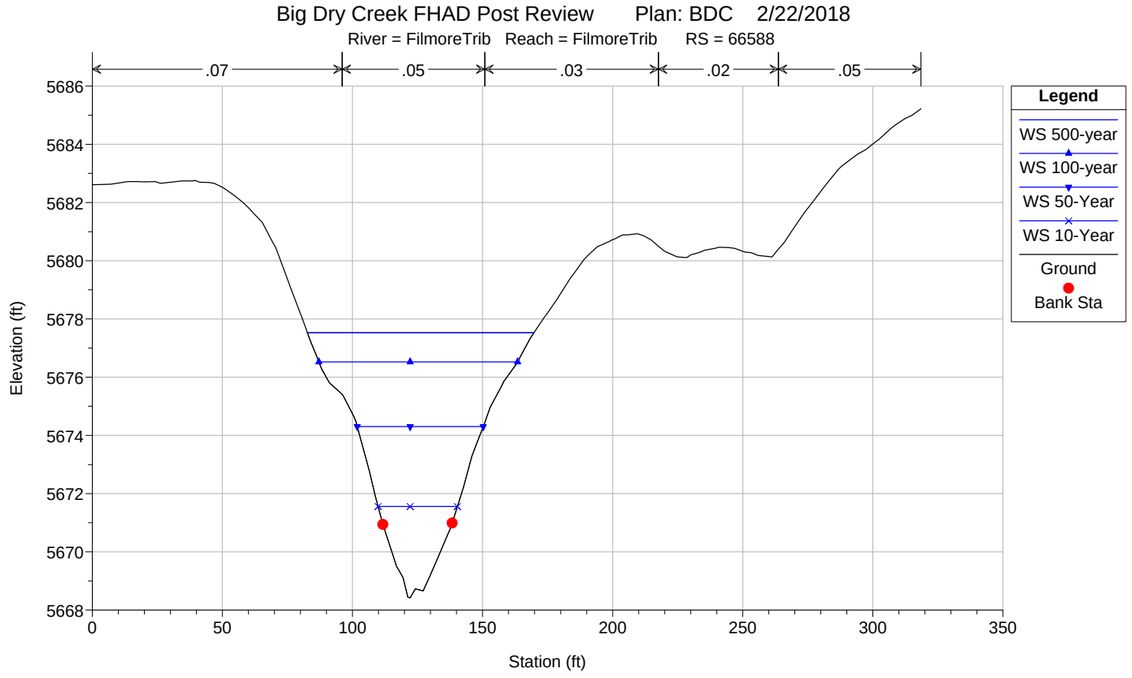

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66824
.05
.035
.07
.03
.02
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

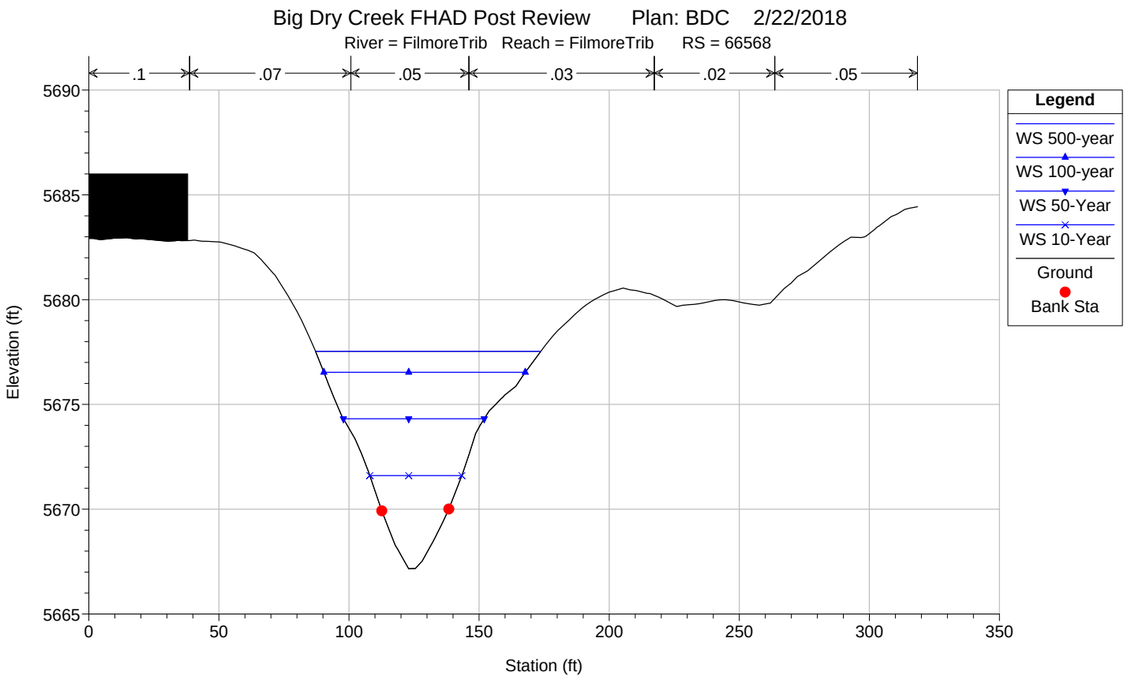

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66682
.03
.07
.035
.07
.02
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

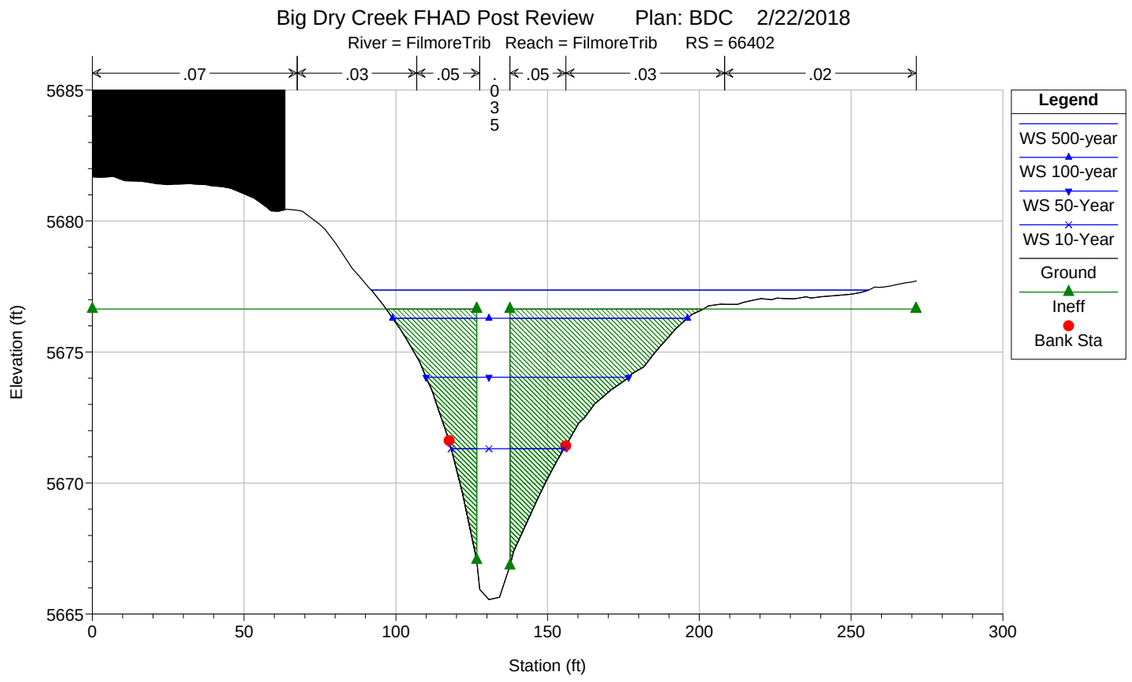

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66668 Culv Trib Culv3 - Pedestrian Bridge
.03
.035
.03
.016
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

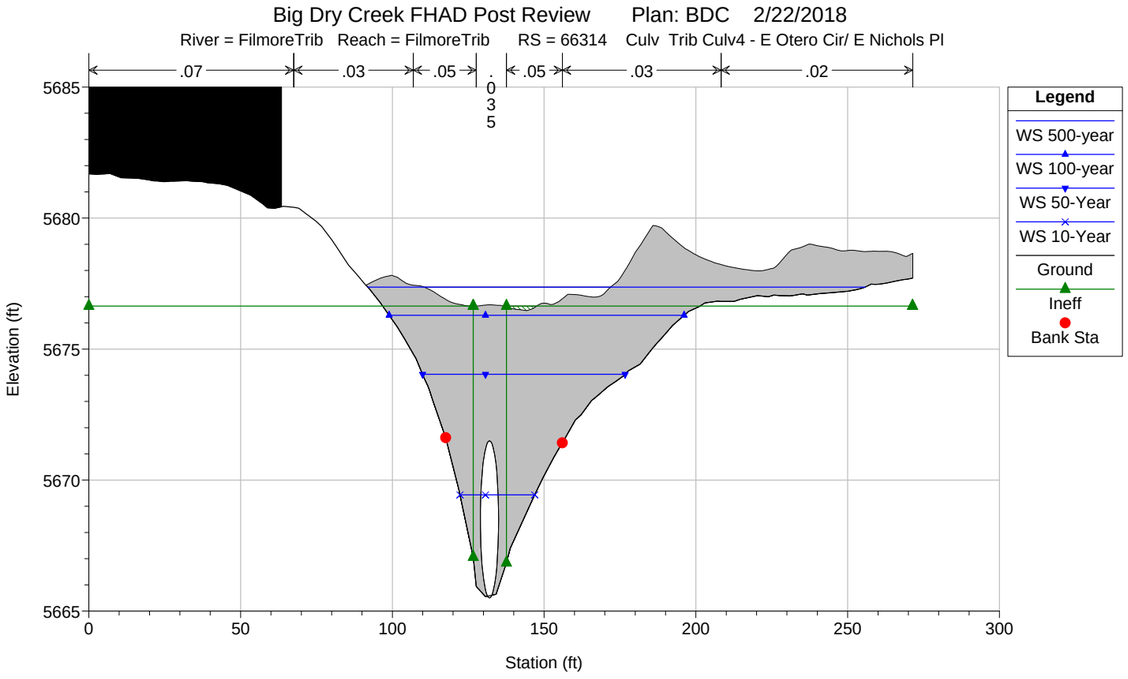

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66668 Culv Trib Culv3 - Pedestrian Bridge
.03
.016
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

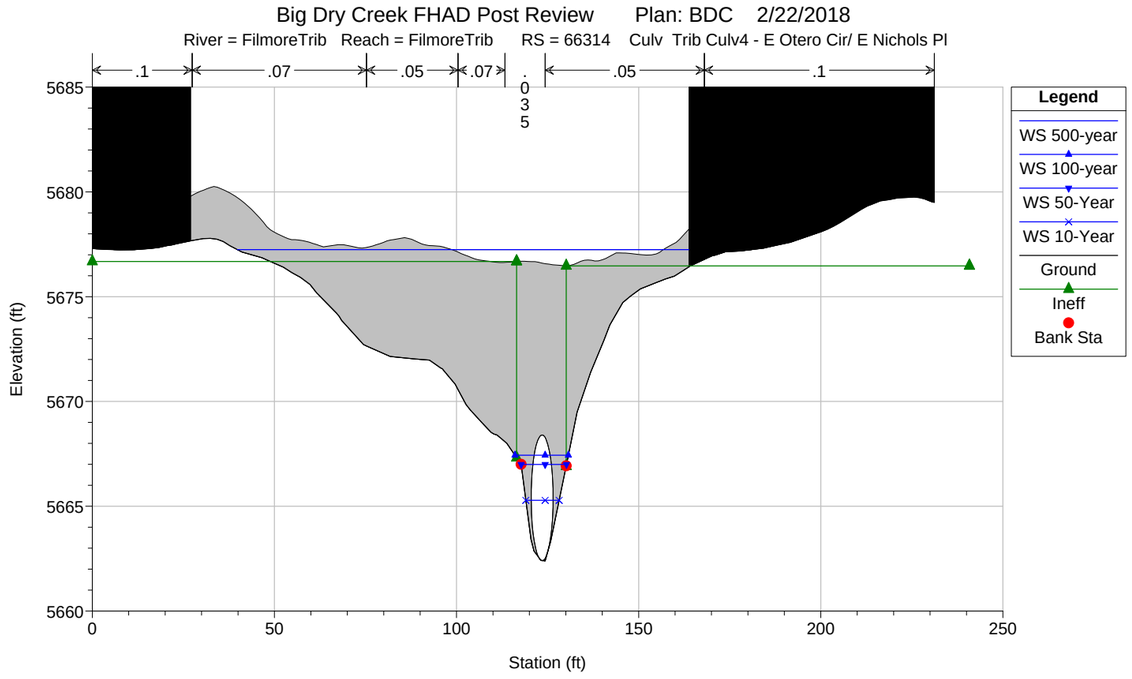

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66658
.03
.035
.05
.02
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

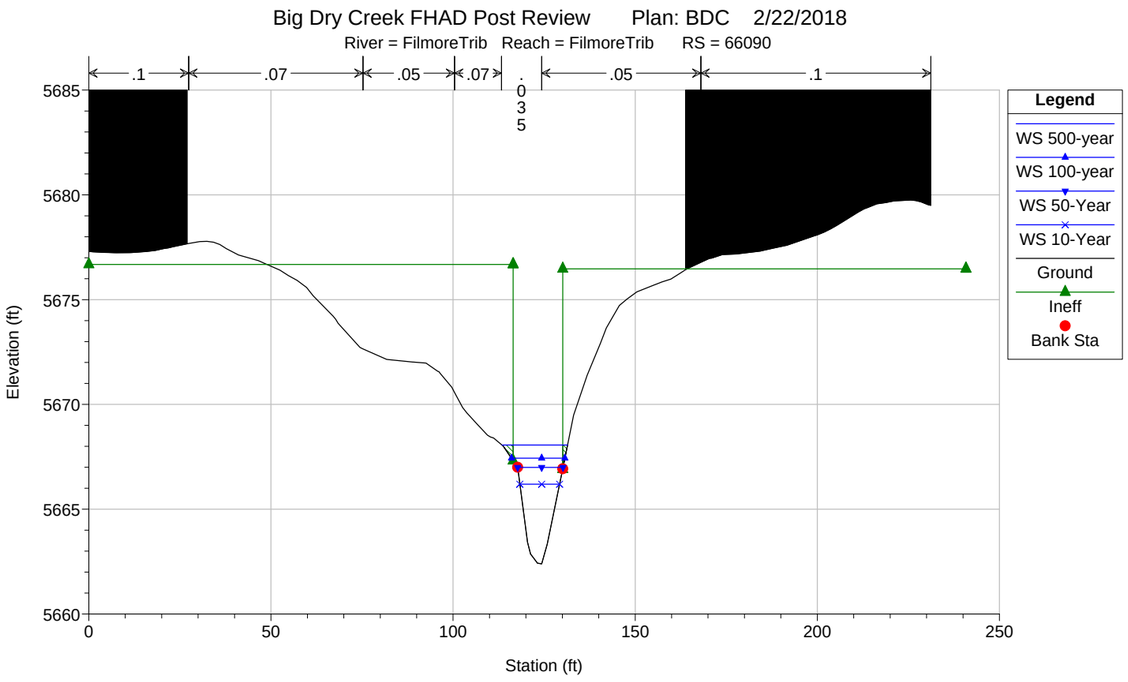

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66588
.07
.05
.03
.02
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

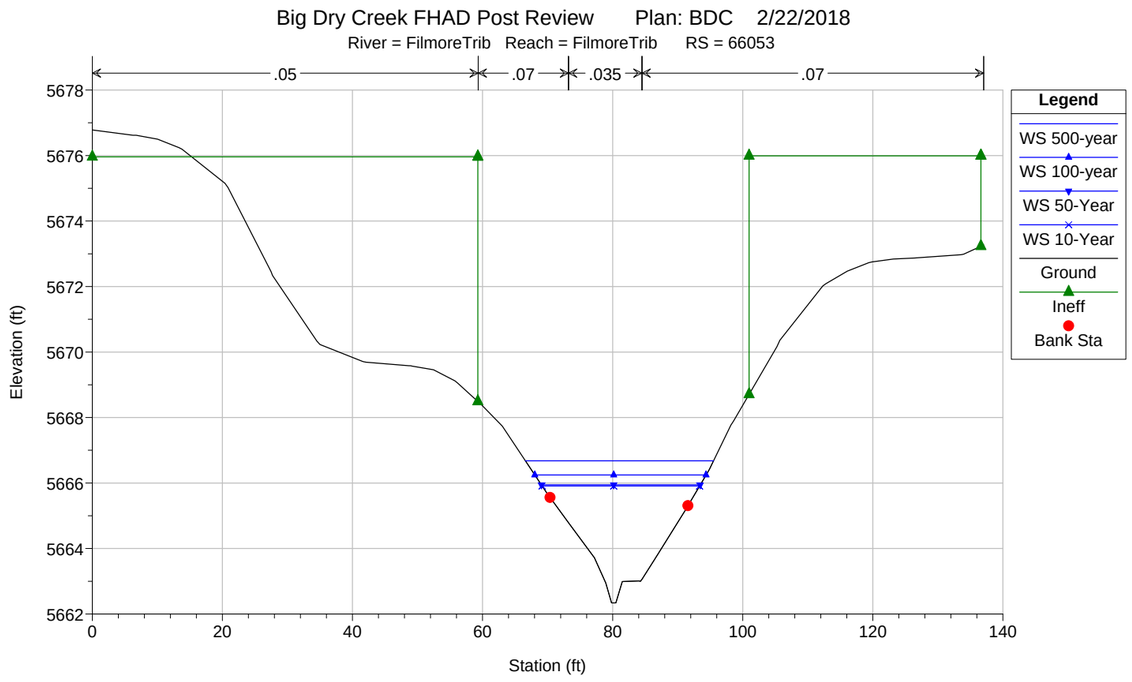

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66568
.1
.07
.05
.03
.02
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

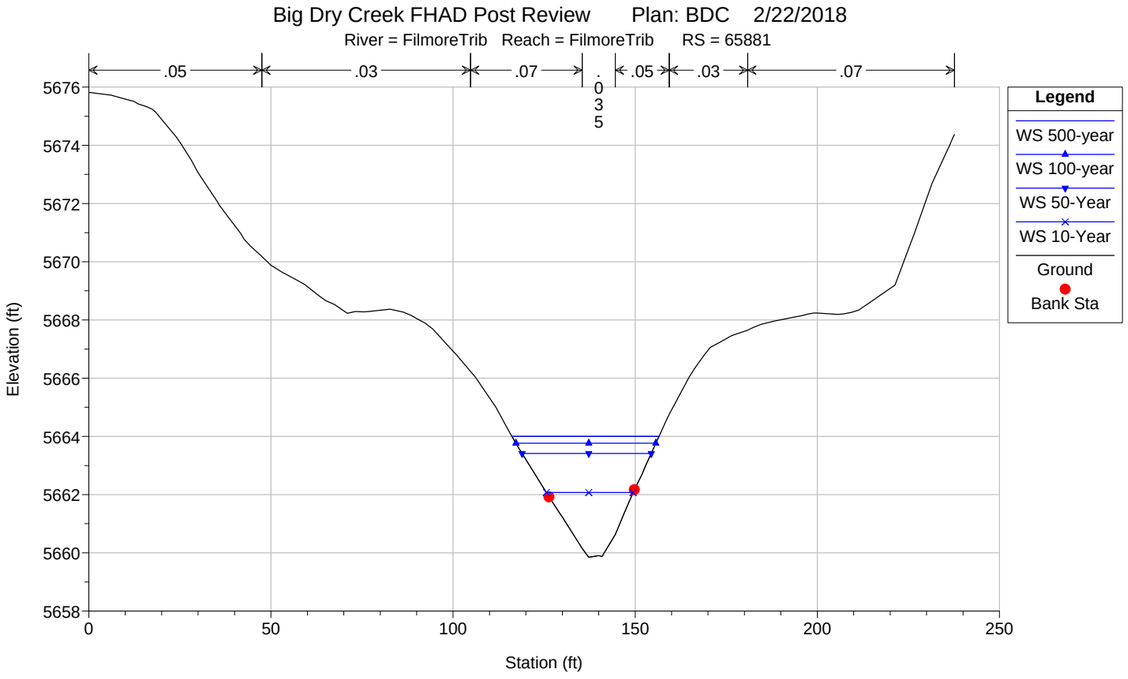

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66402
.07
.03
.05
.035
.05
.03
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

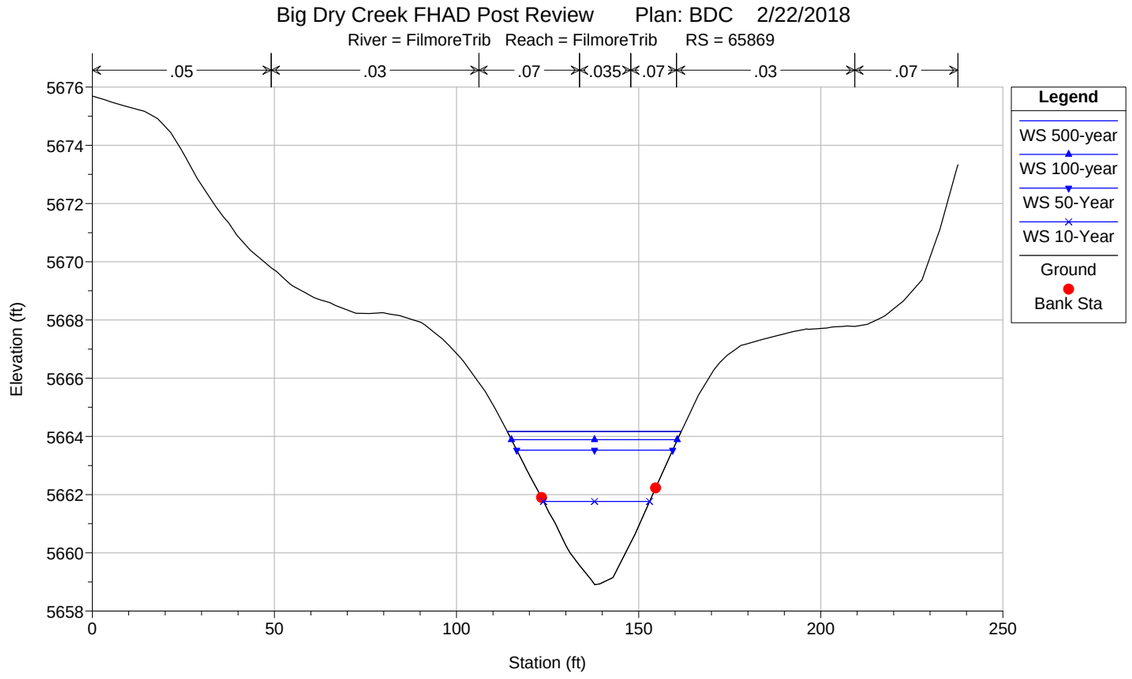

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66314 Culv Trib Culv4 - E Otero Cir/ E Nichols Pl
.07
.03
.05
.035
.05
.03
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

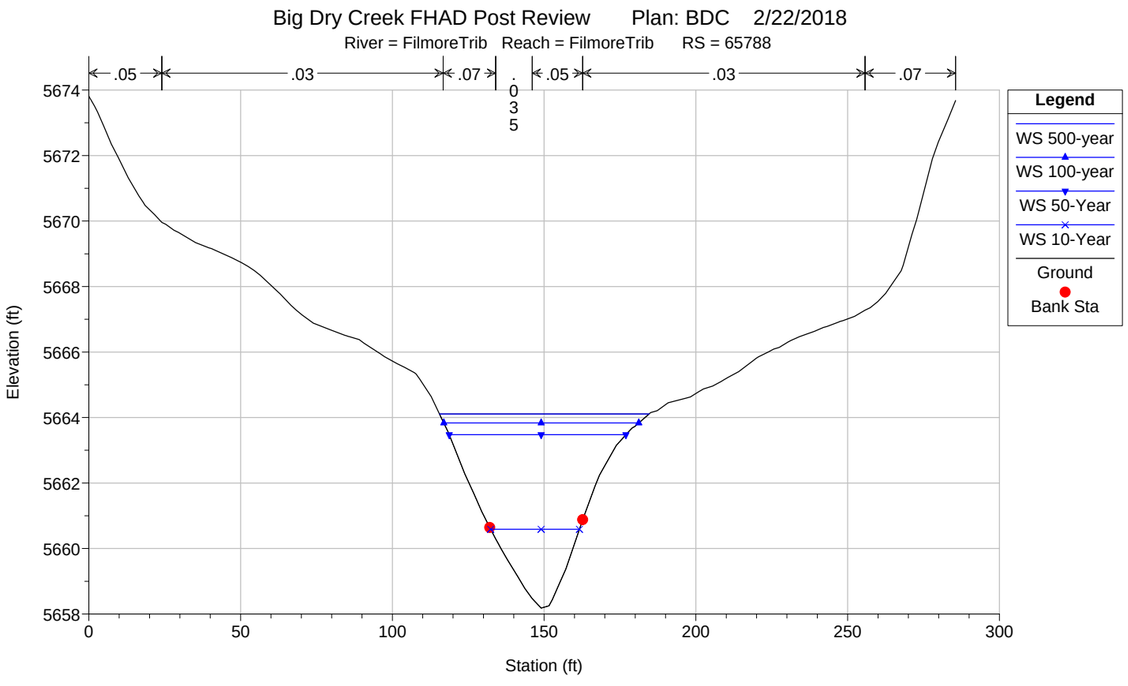

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66314 Culv Trib Culv4 - E Otero Cir/ E Nichols Pl
.1
.07
.05
.07
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

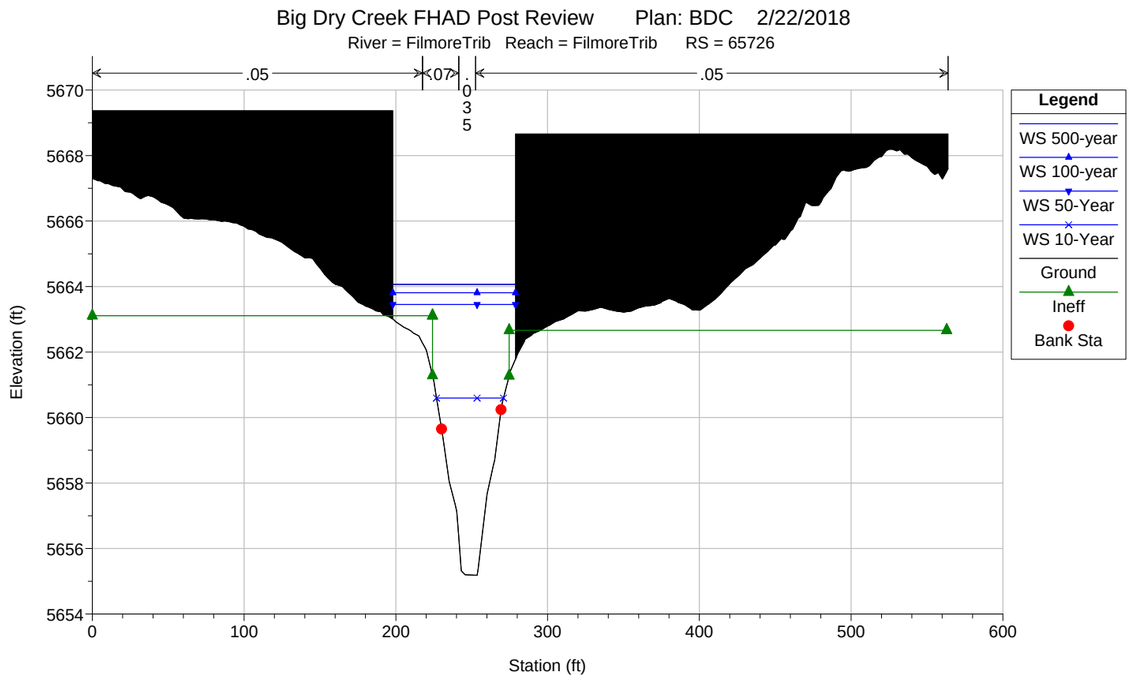

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66090
.1
.07
.05
.07
.035
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

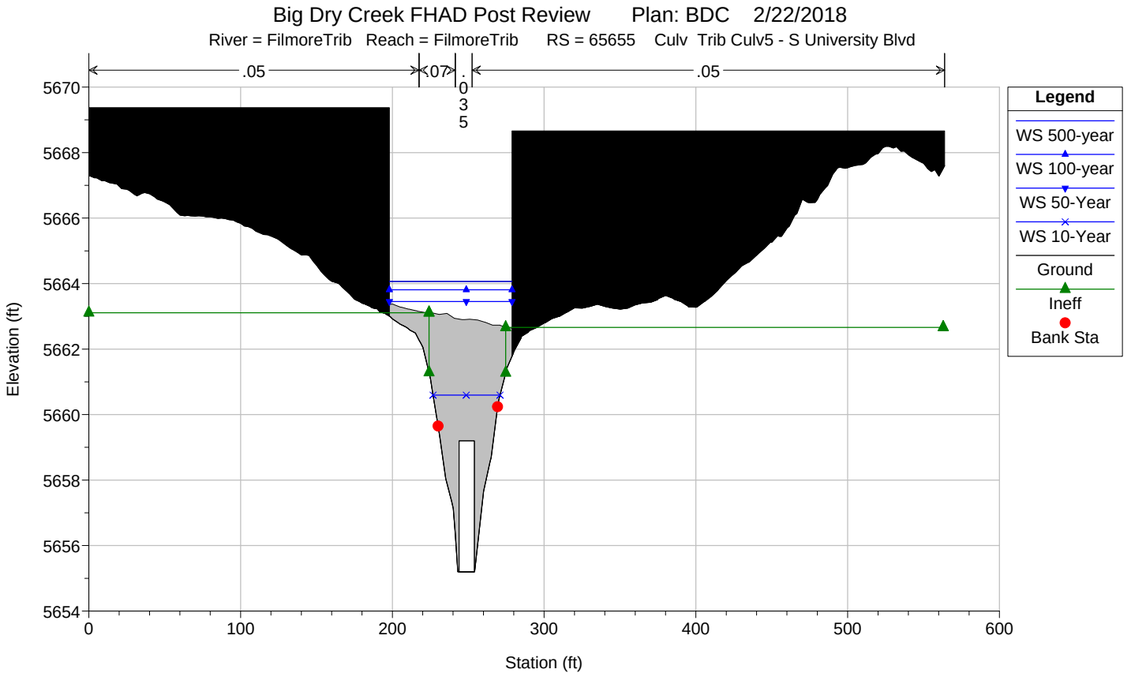

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 66053
.05
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

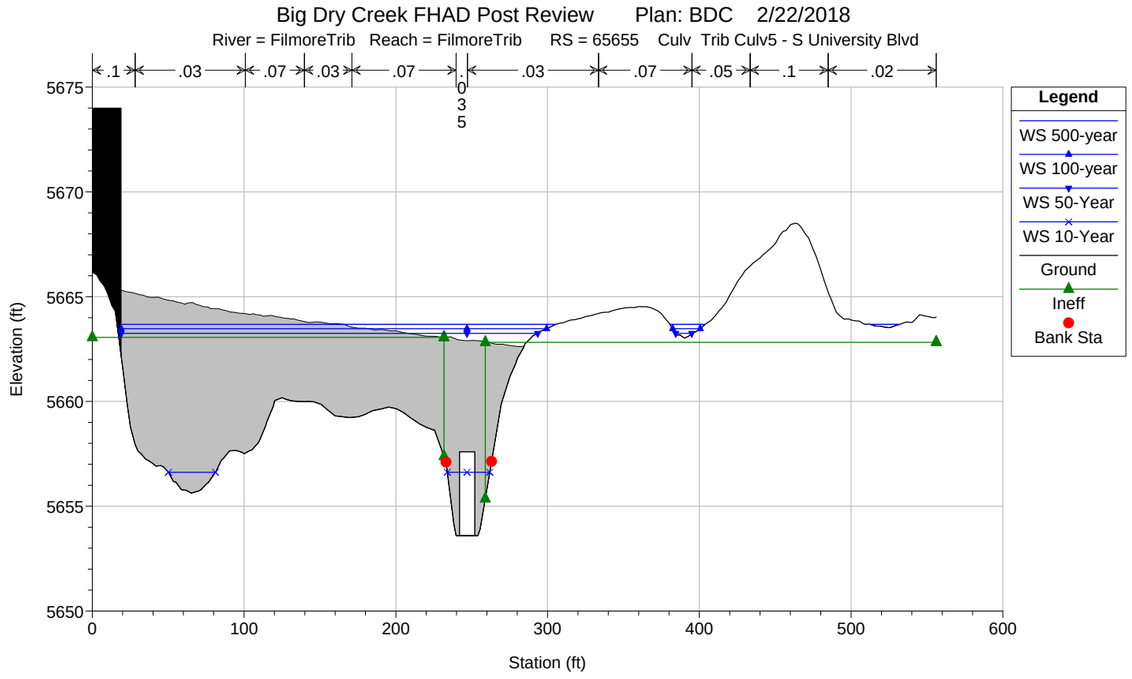

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65881
.05
.03
.07
.035
.05
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

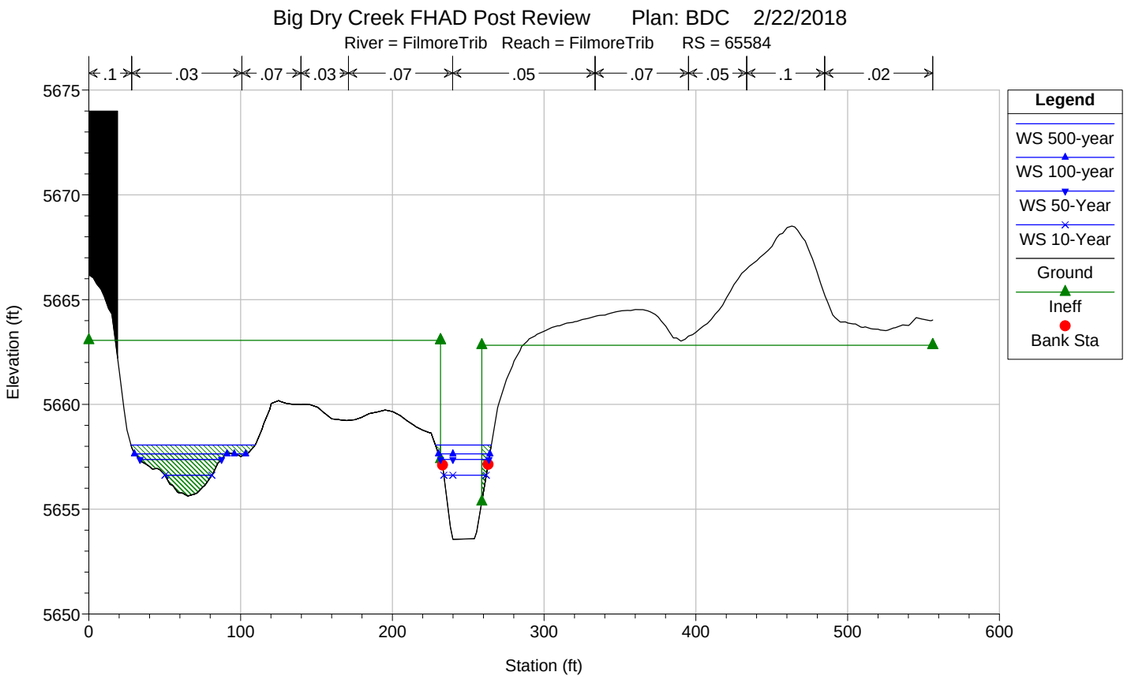

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65869
.05
.03
.07
.035
.07
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

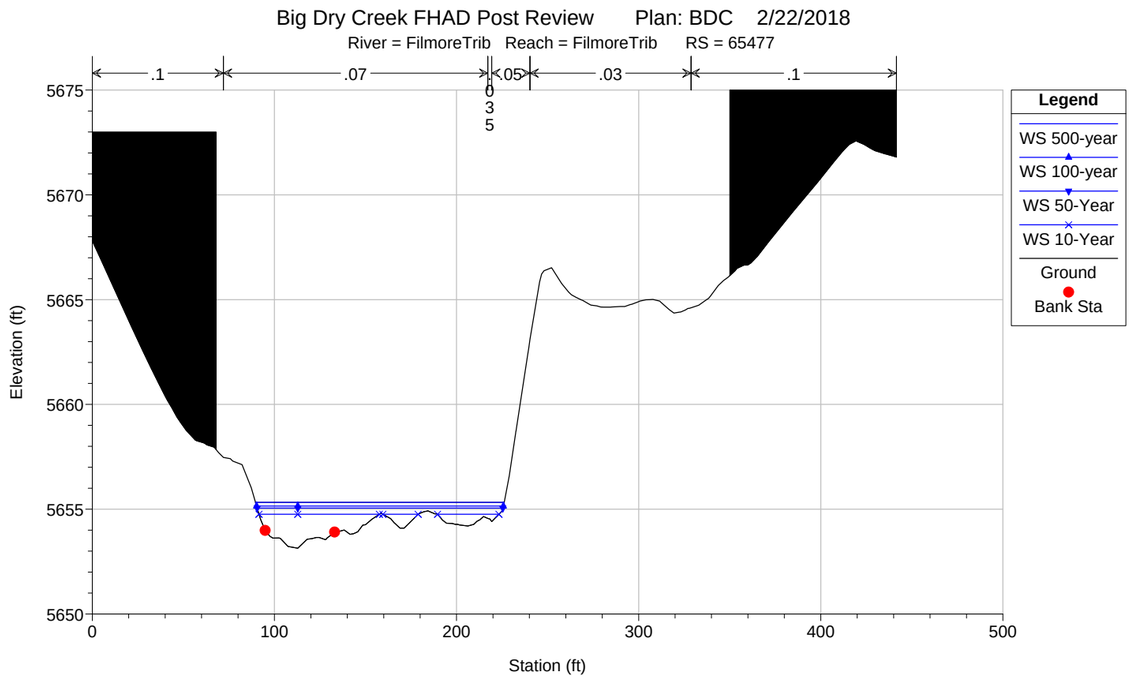

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65788
.05
.03
.07
.035
.05
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

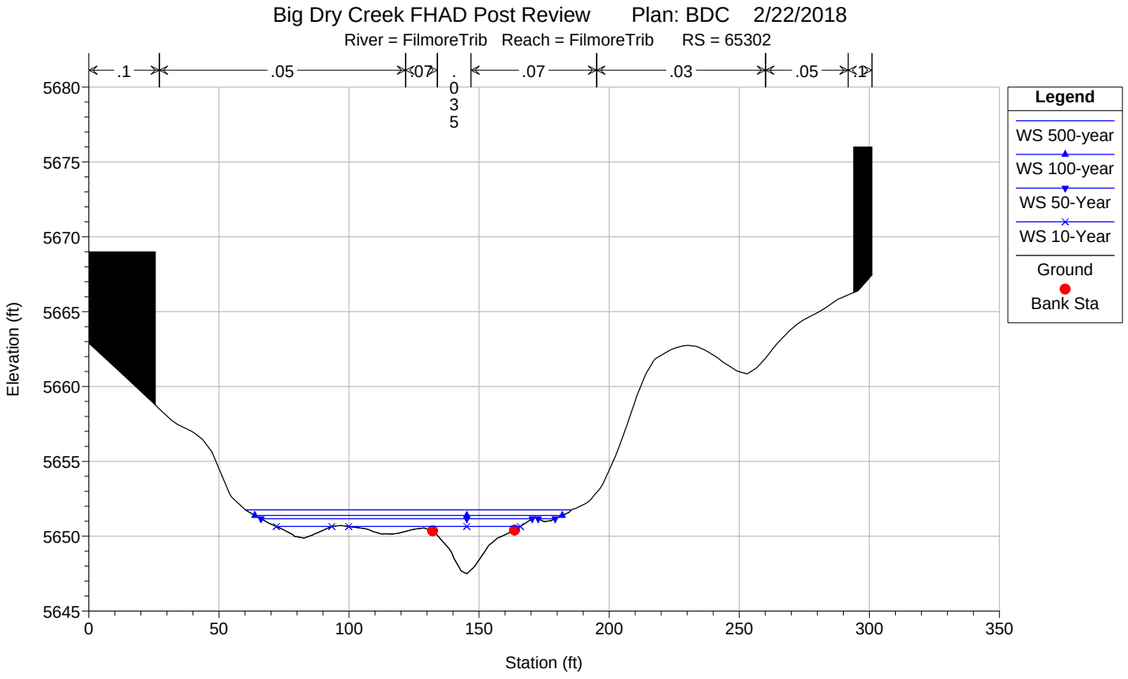

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65726
.05
.07
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

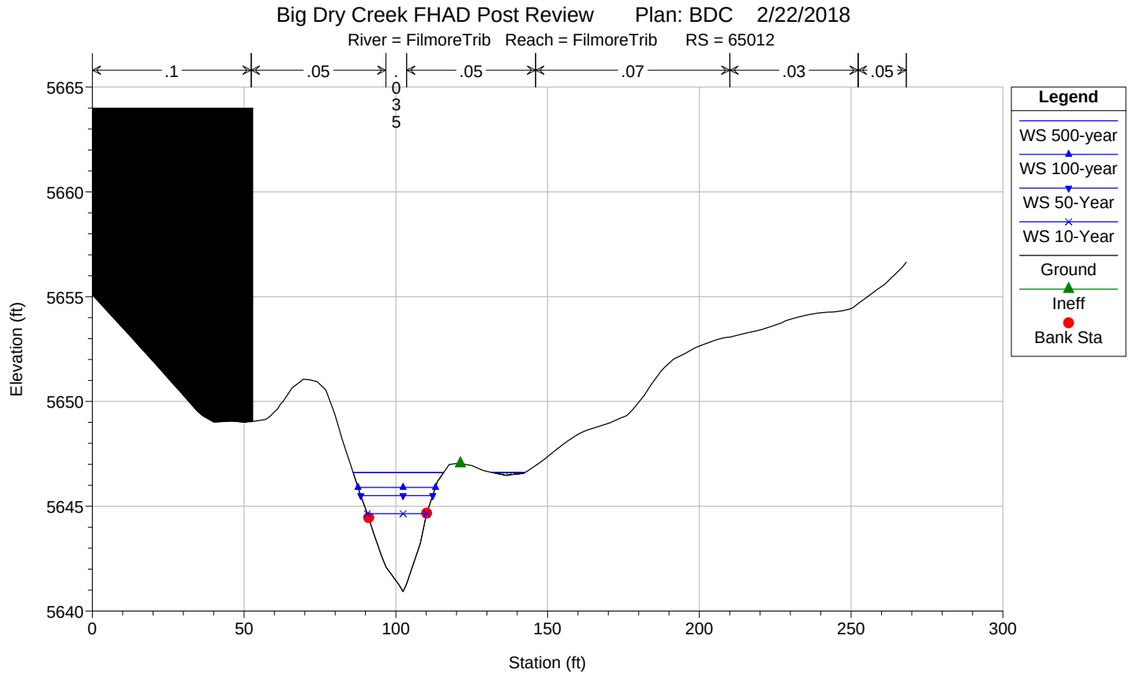

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65655 Culv Trib Culv5 - S University Blvd
.05
.07
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

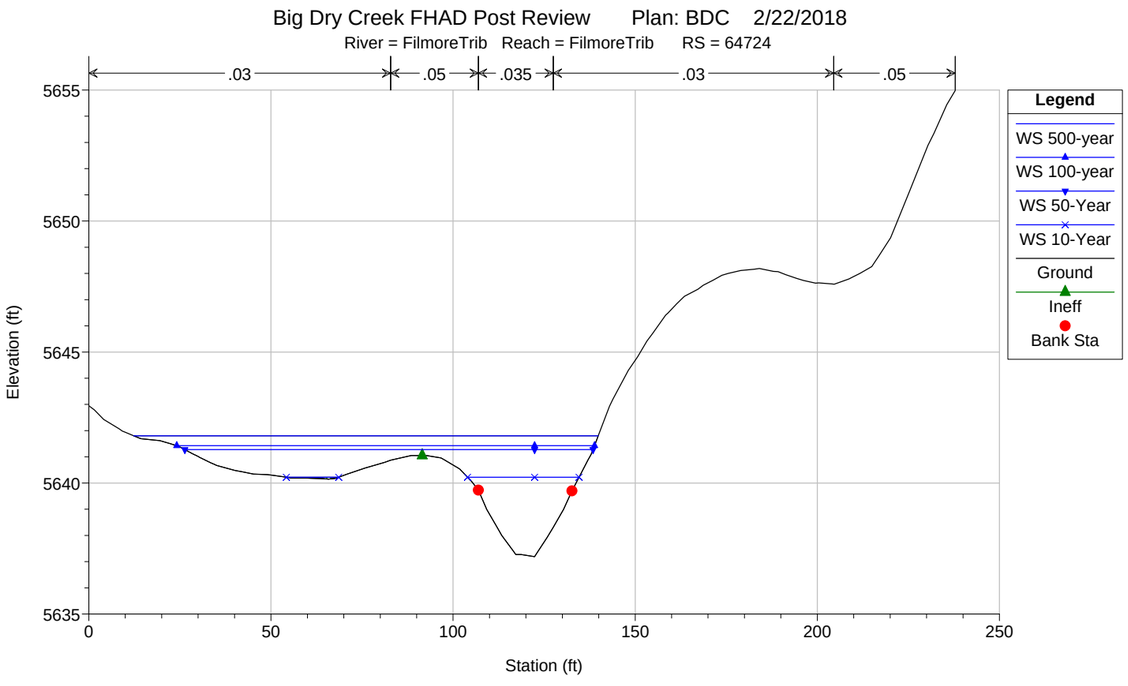

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65655 Culv Trib Culv5 - S University Blvd
.1
.03
.07
.03
.07
.03
.07
.05
.1
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

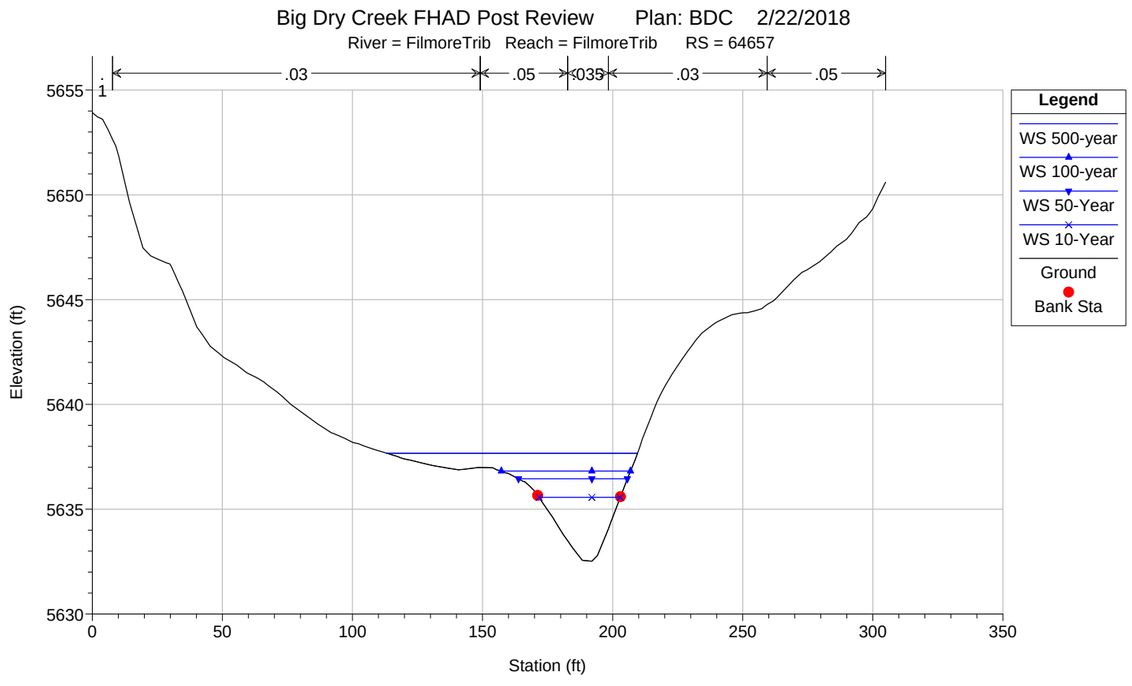

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65584
.1
.03
.07
.03
.07
.05
.07
.05
.1
.02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65477
.1
.07
.05
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65302
.1
.05
.07
.035
.07
.03
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 65012
.1
.05
.035
.05
.07
.03
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 64724
.03
.05
.035
.03
.05
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 64657
.1
.03
.05
.035
.03
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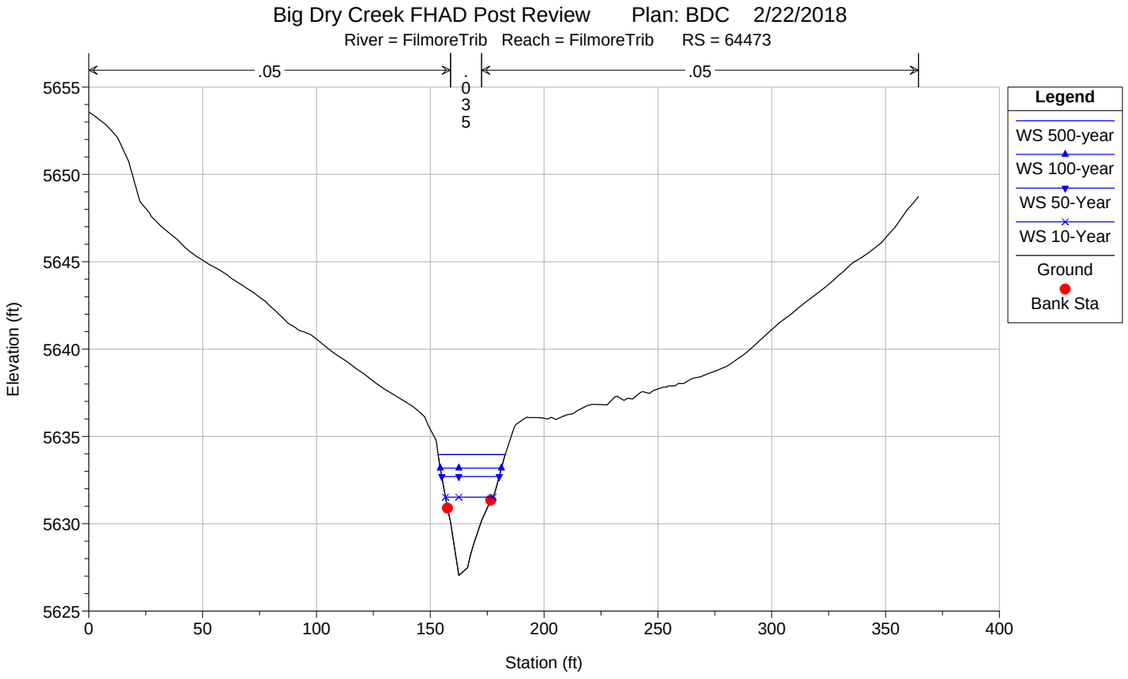
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 64473
.05
.035
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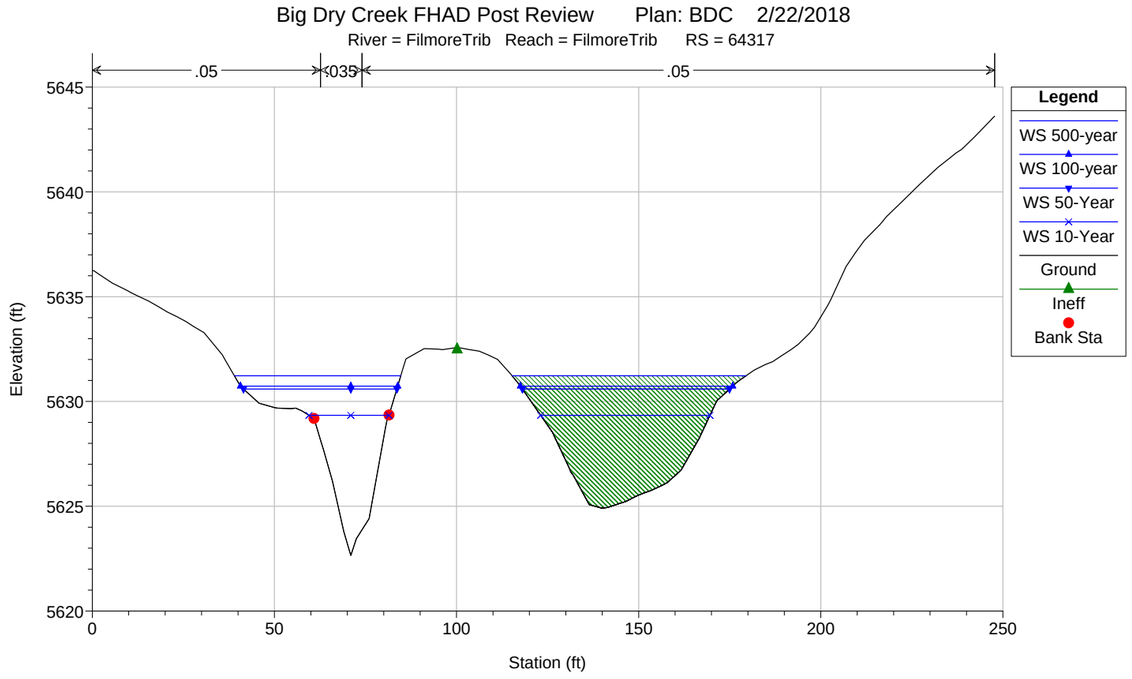
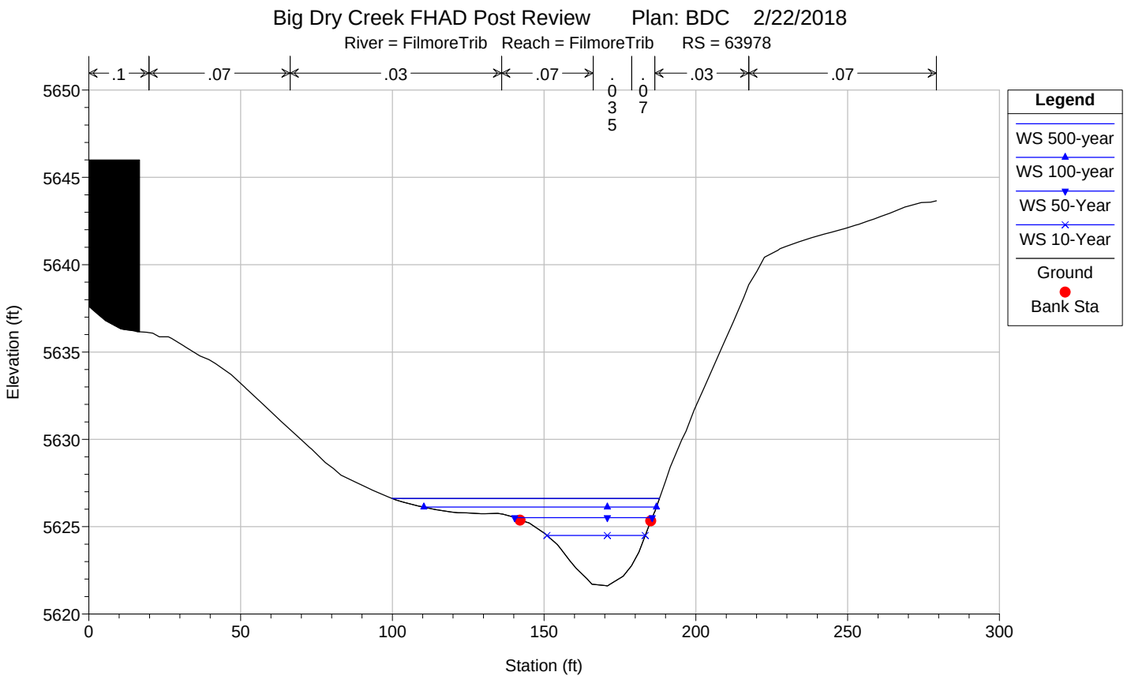
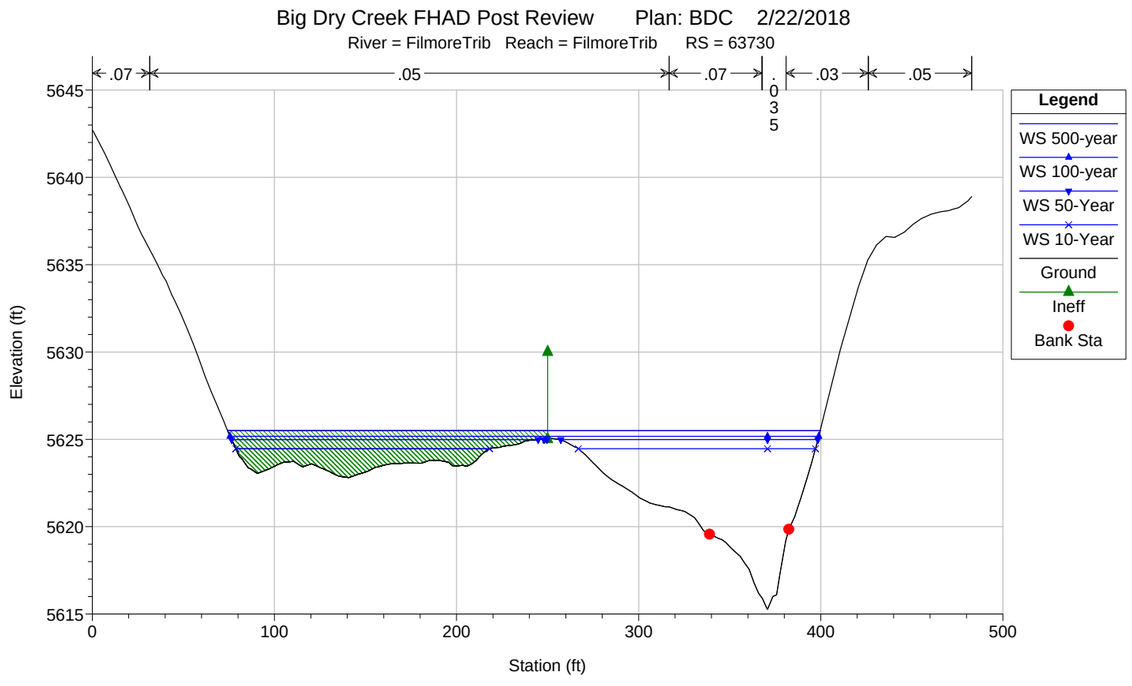
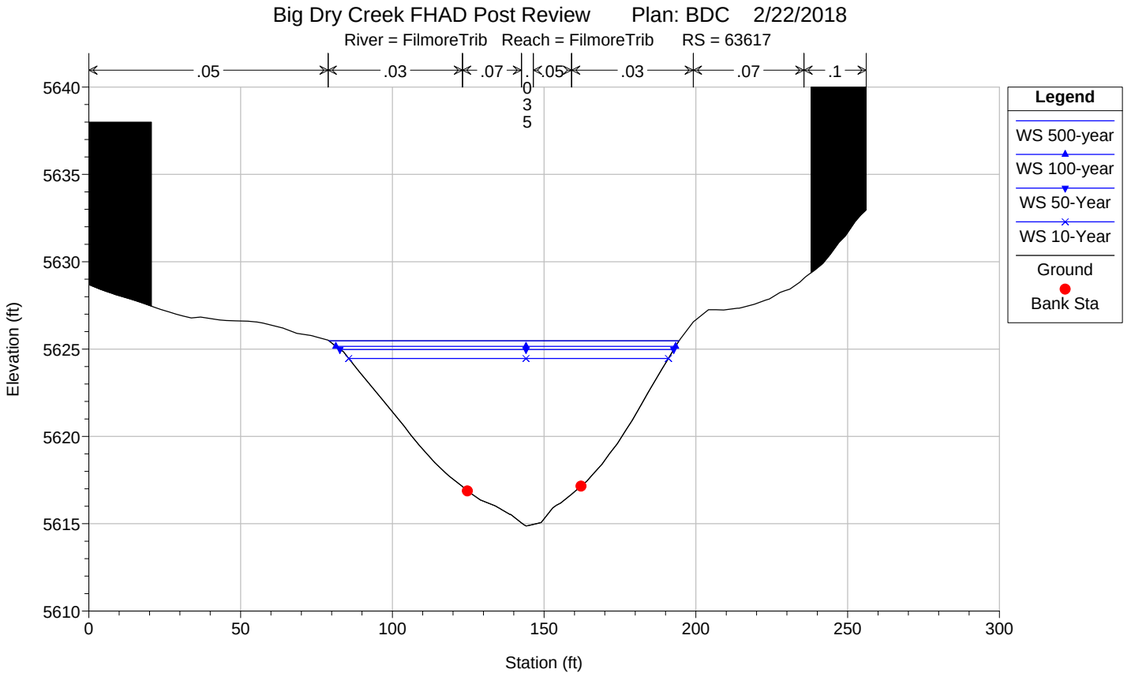
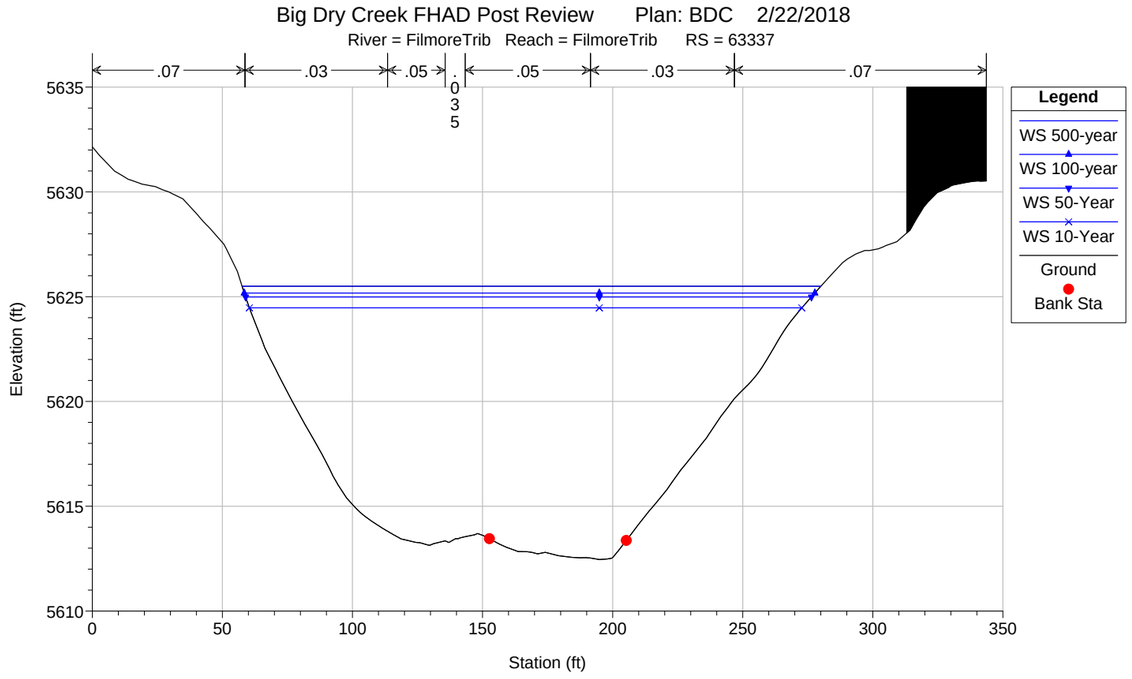
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

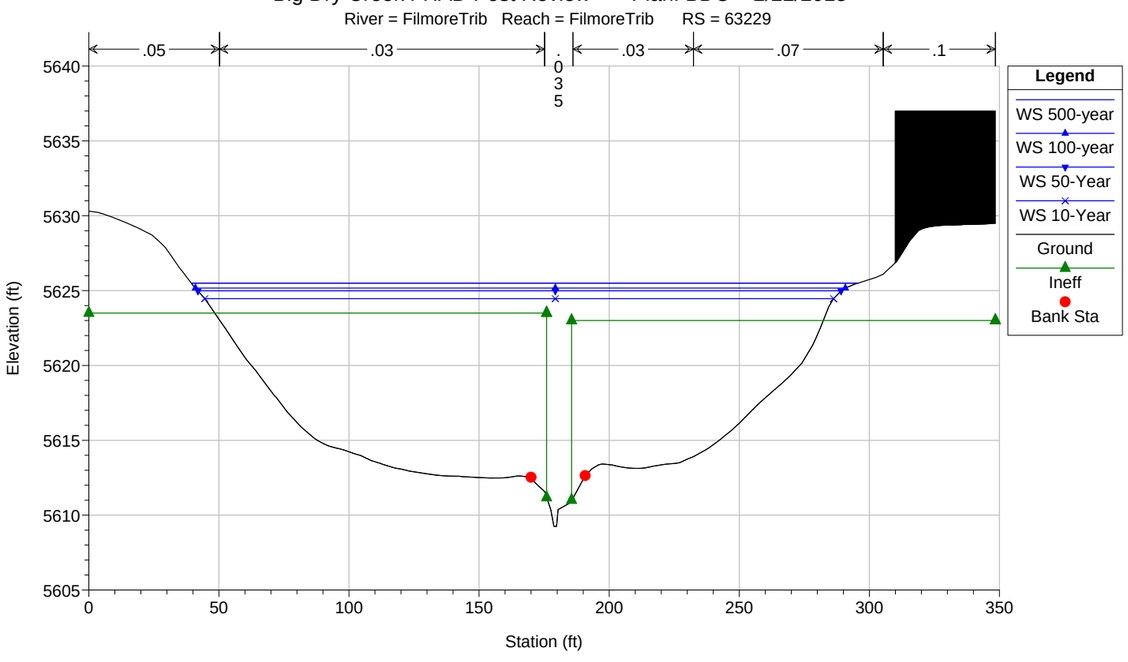

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 64317
.05
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

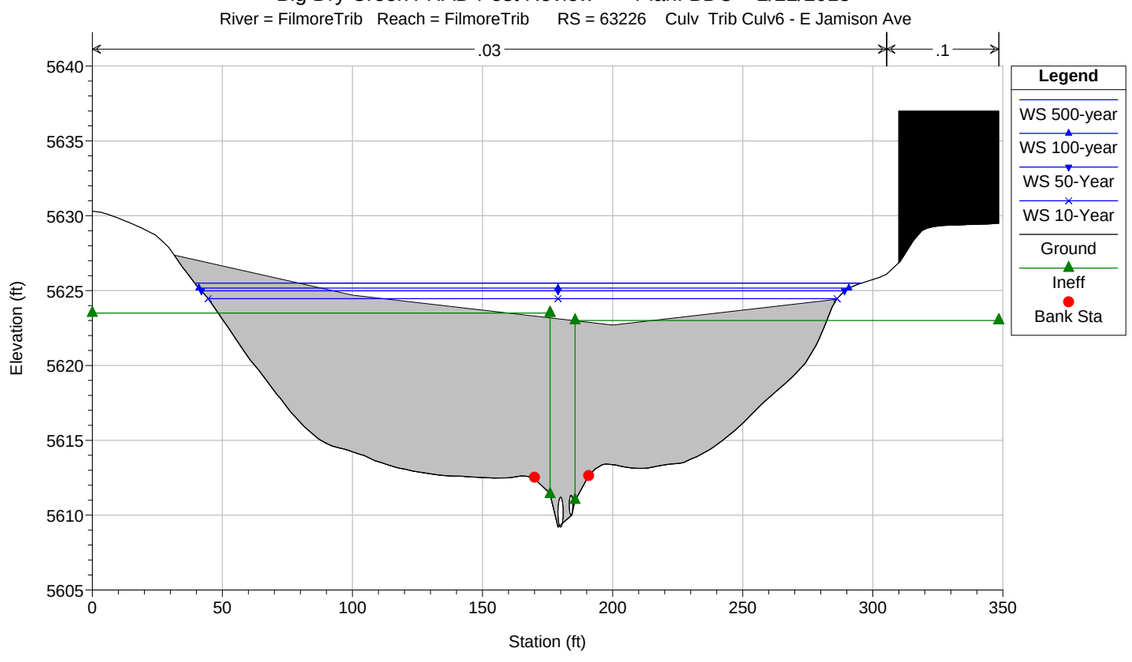

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63978
.1
.07
.03
.07
.035
.07
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

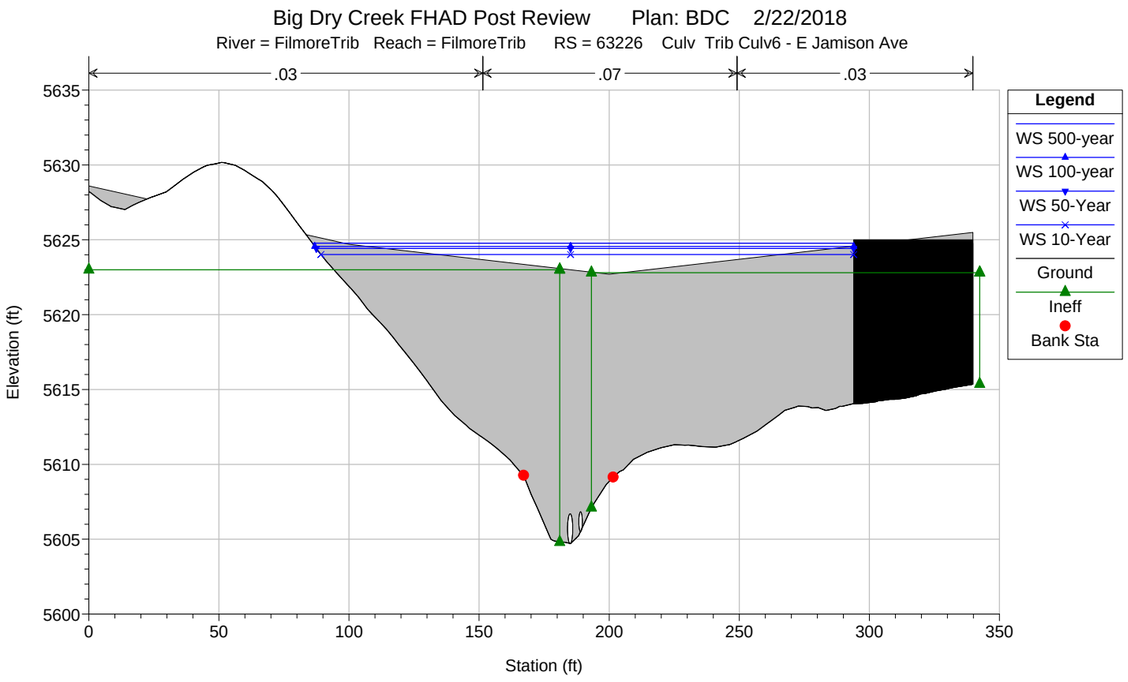

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63730
.07
.05
.07
.035
.03
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

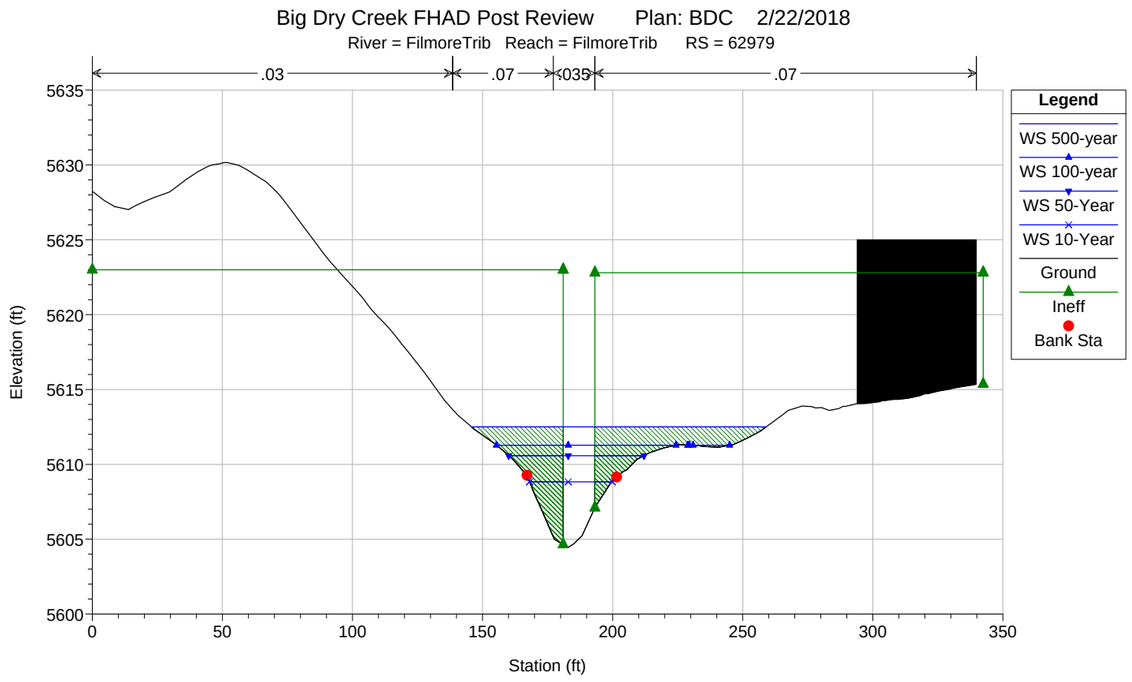

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63617
.05
.03
.07
.05
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

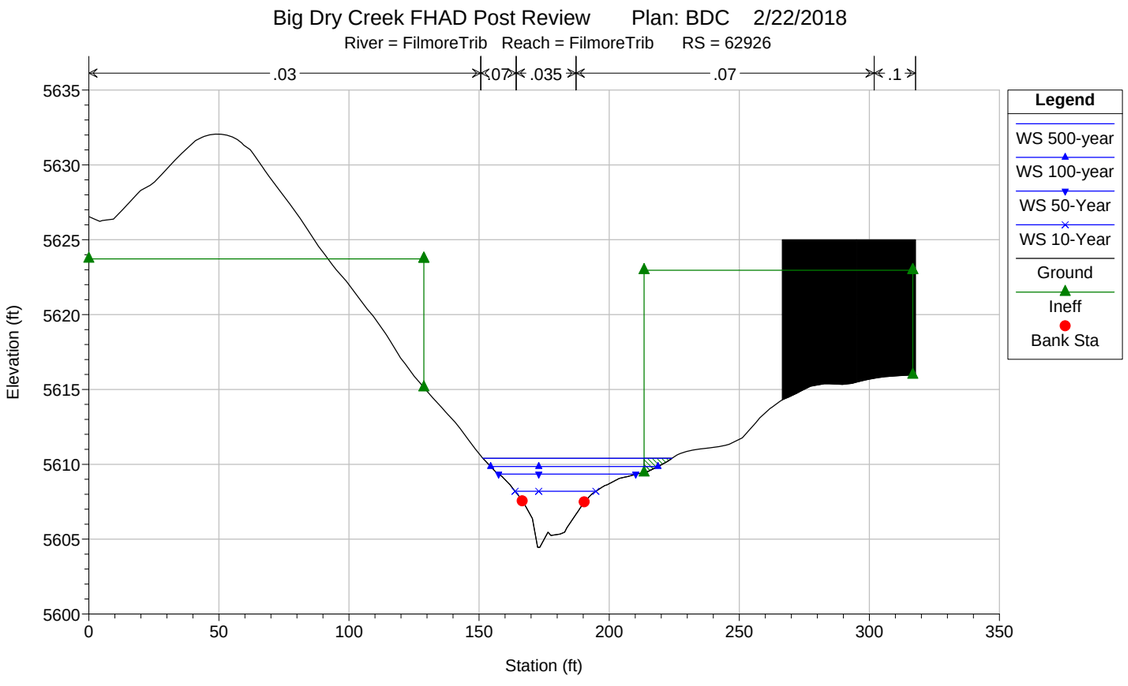

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63337
.07
.03
.05
.05
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

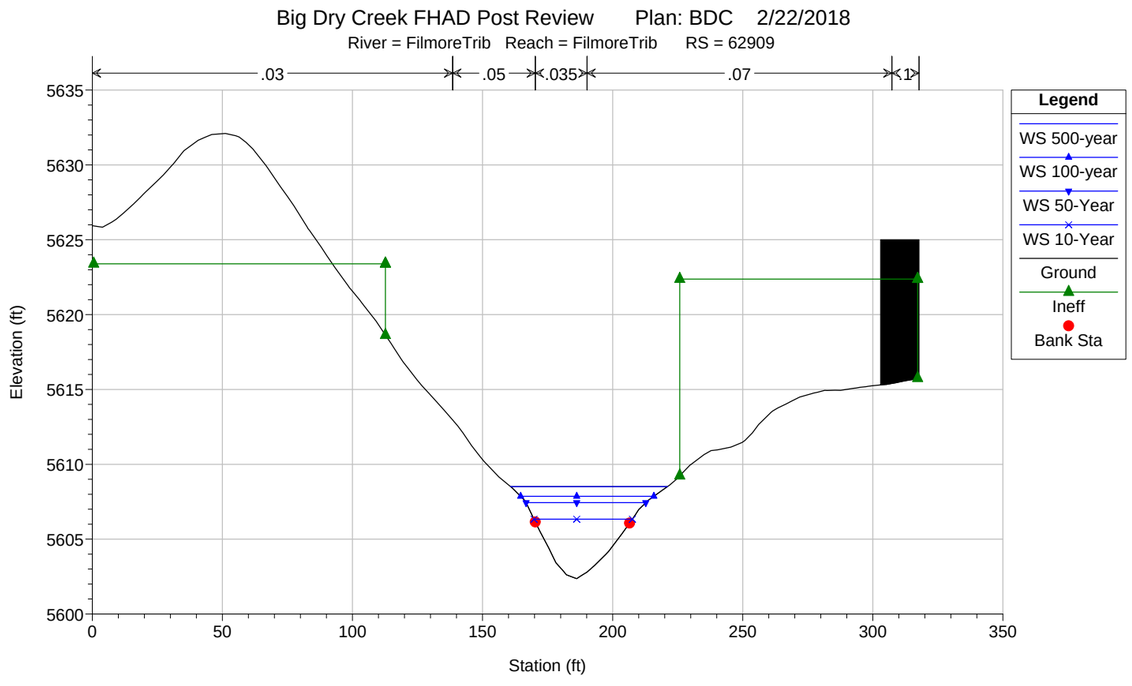

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63229
.05
.03
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

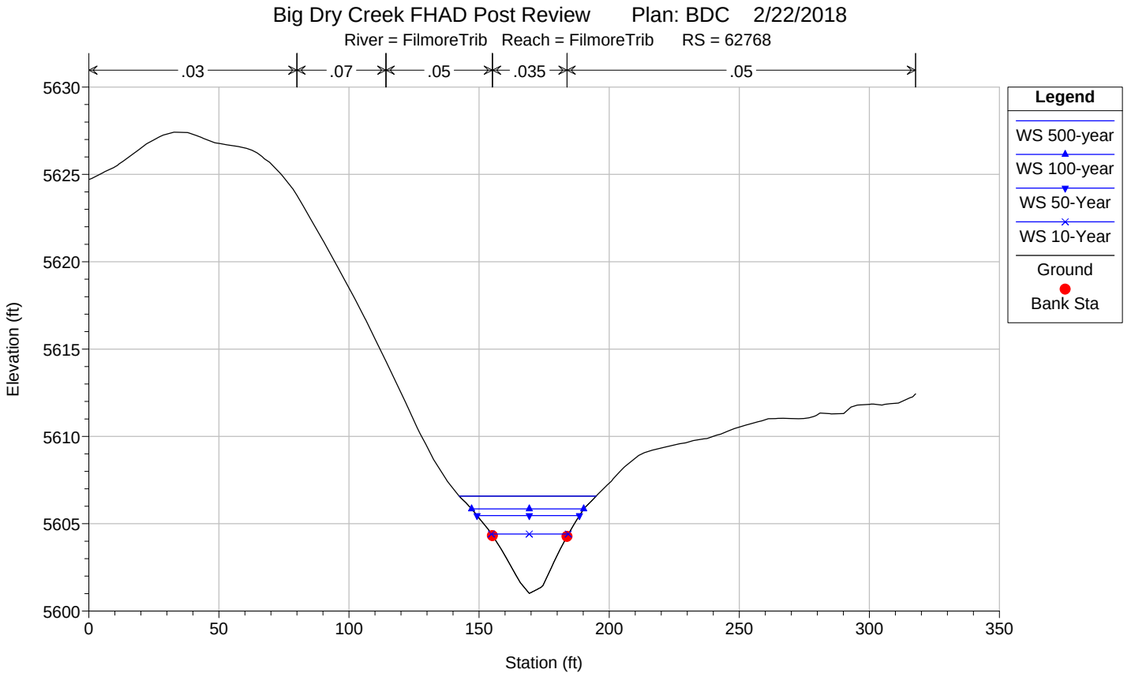

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63226 Culv Trib Culv6 - E Jamison Ave
.03
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

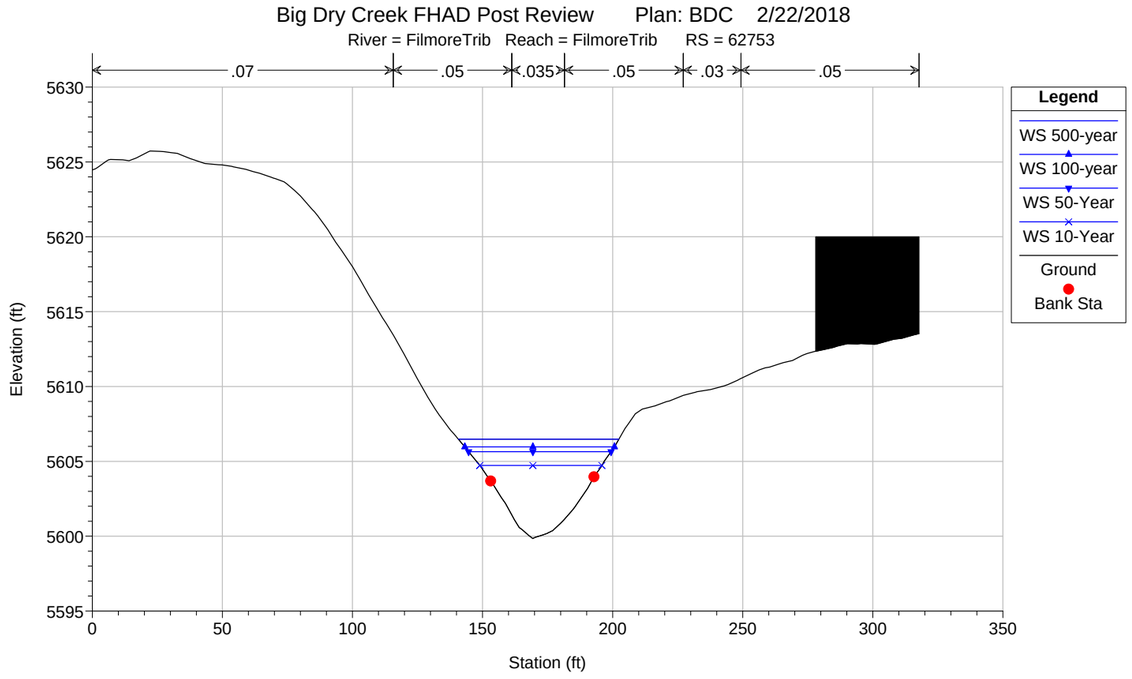

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 63226 Culv Trib Culv6 - E Jamison Ave
.03
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

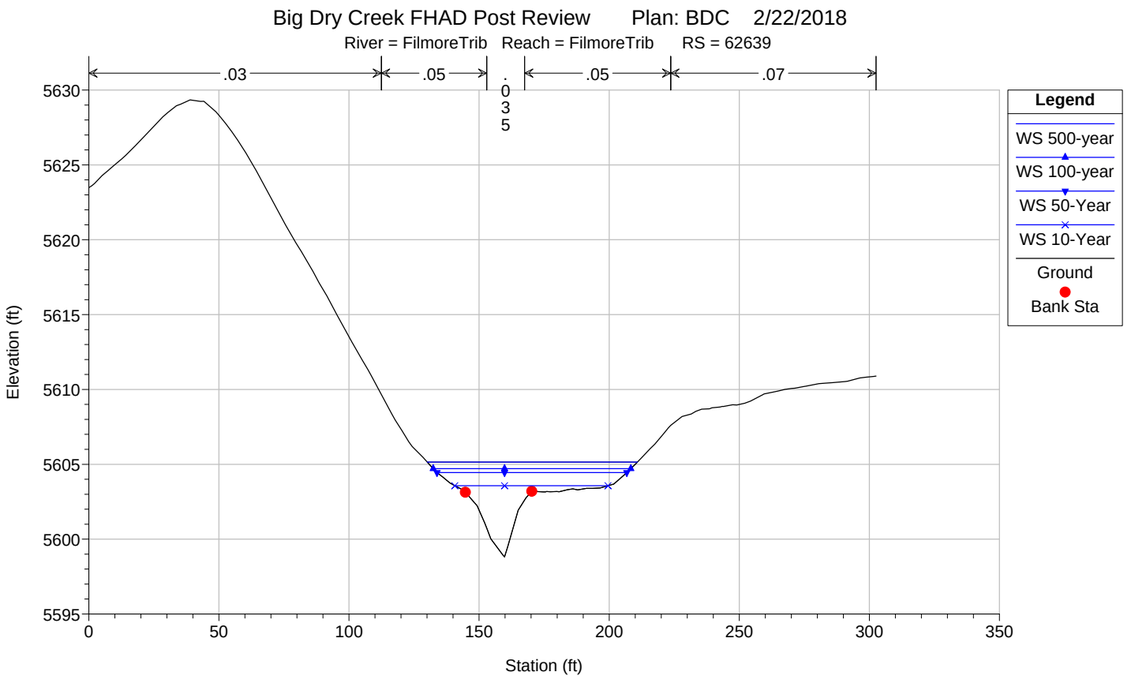

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62979
.03
.07
.035
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

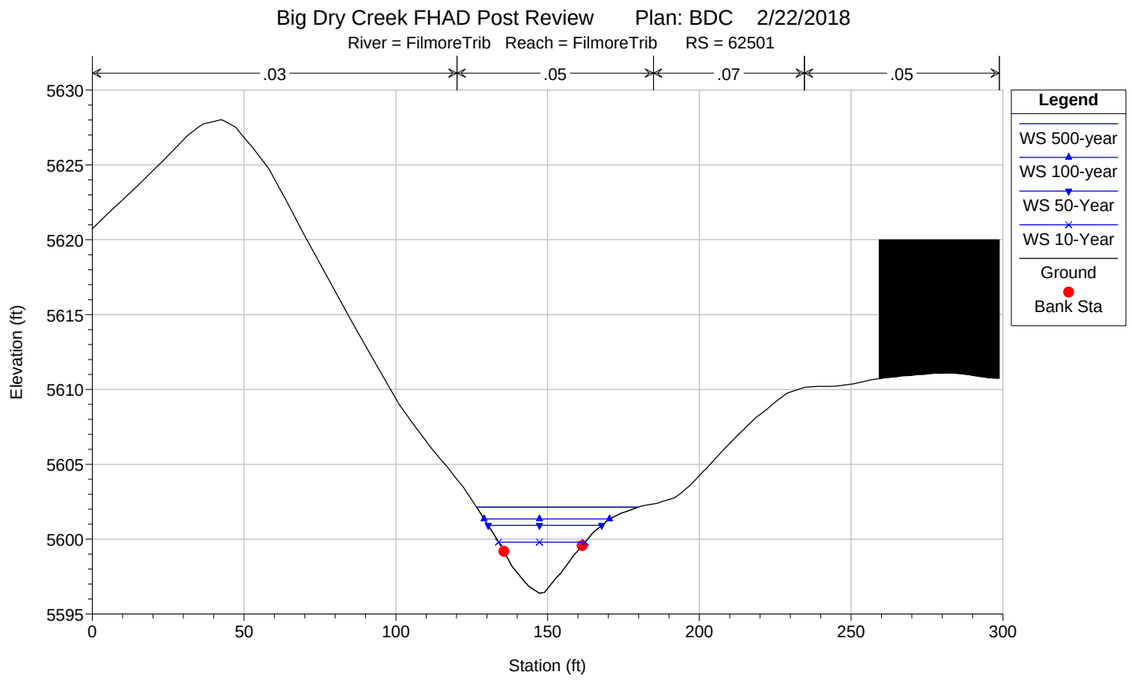

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62926
.03
.07
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

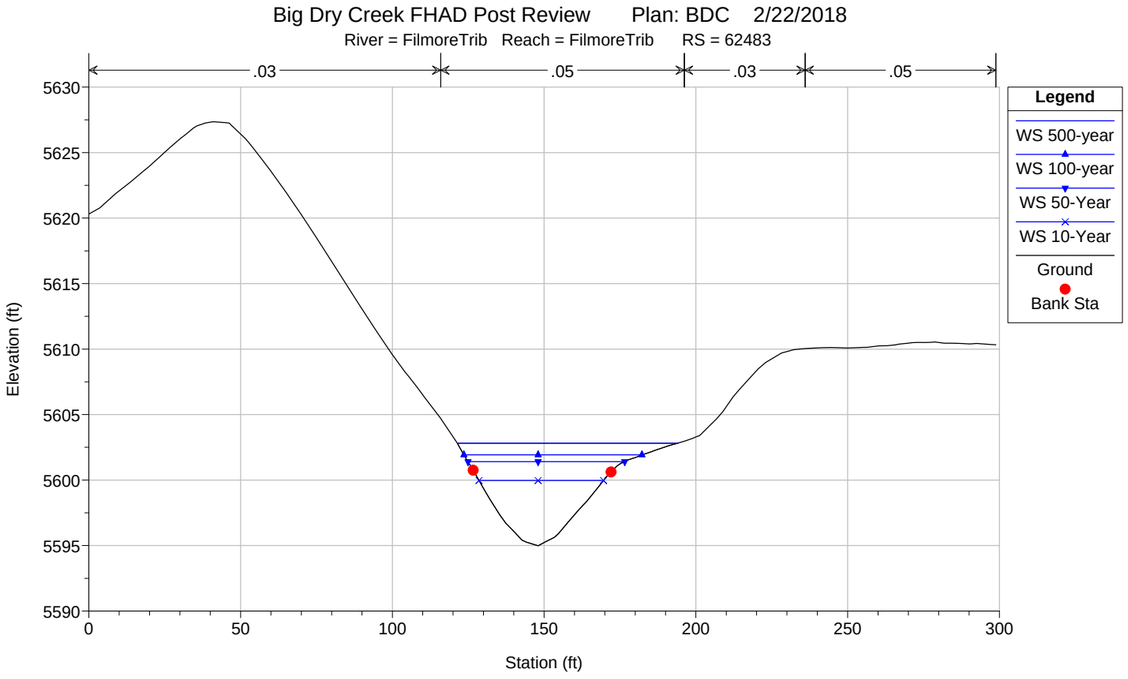

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62909
.03
.05
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

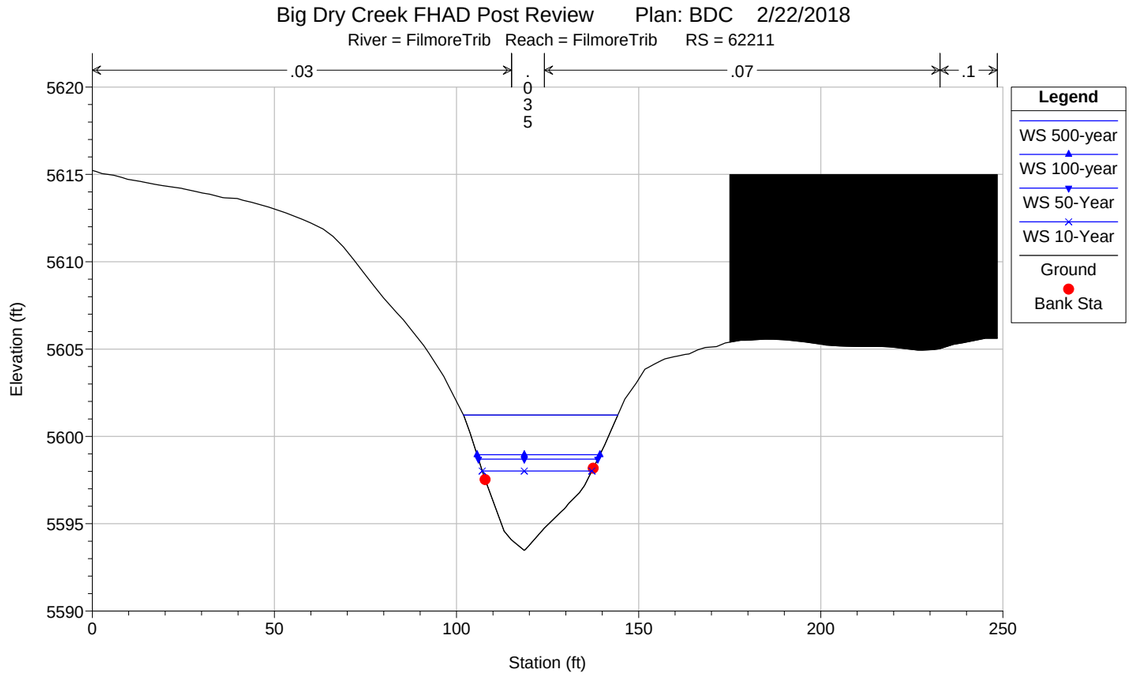

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62768
.03
.07
.05
.035
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

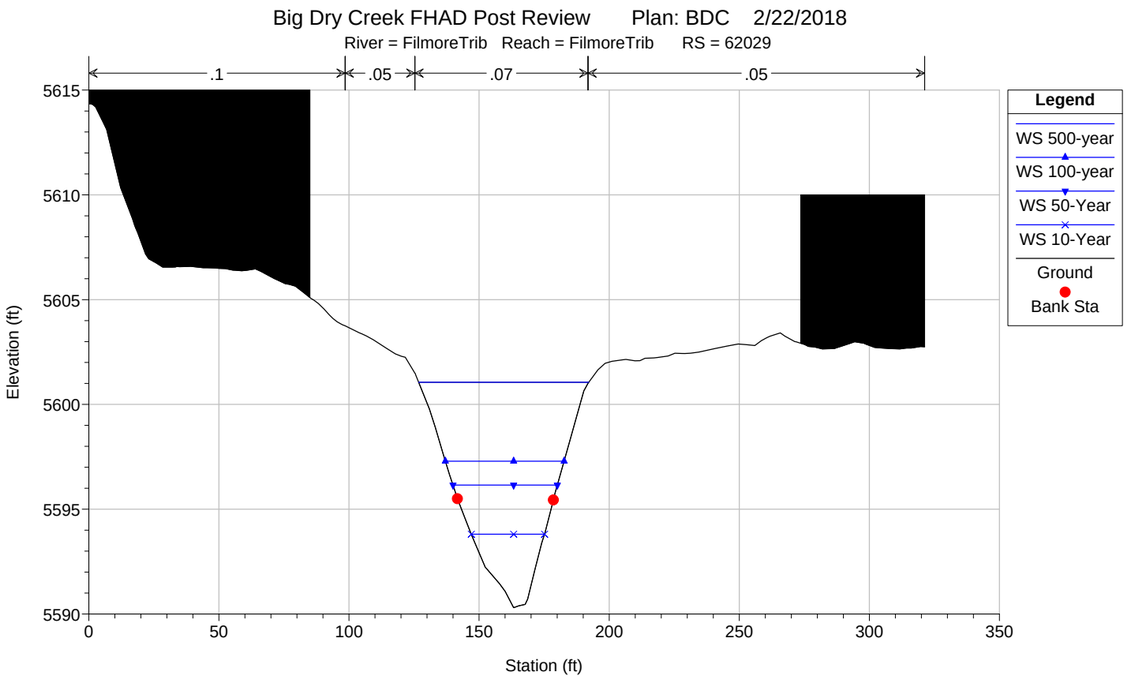

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62753
.07
.05
.035
.05
.03
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

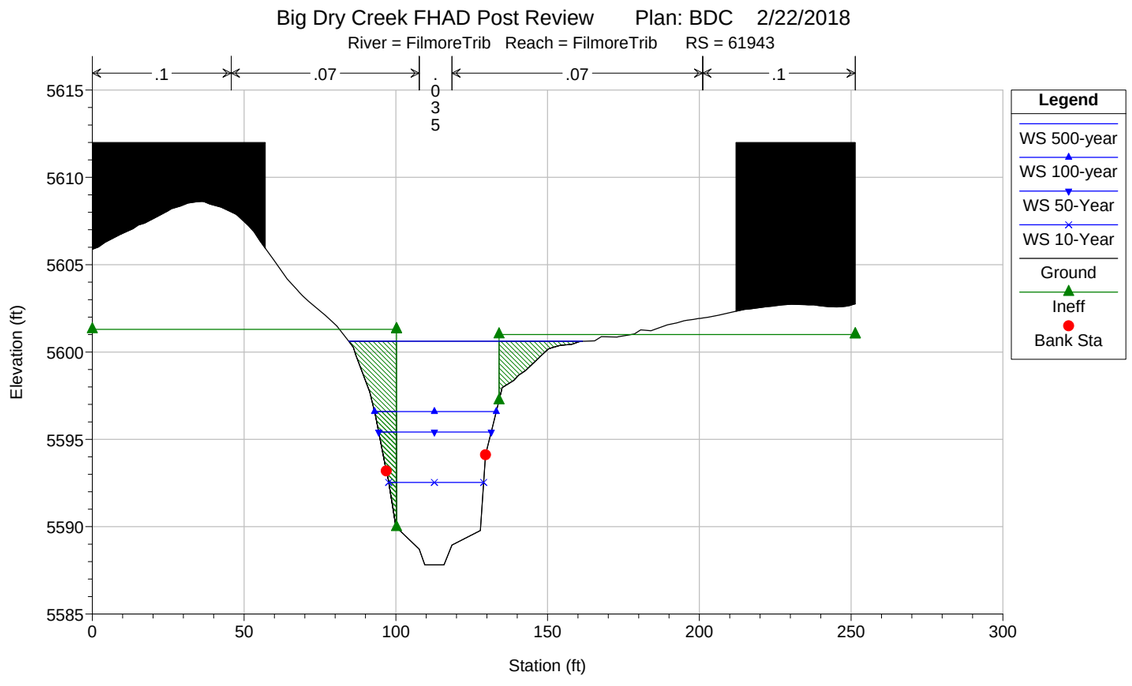

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62639
.03
.05
.035
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

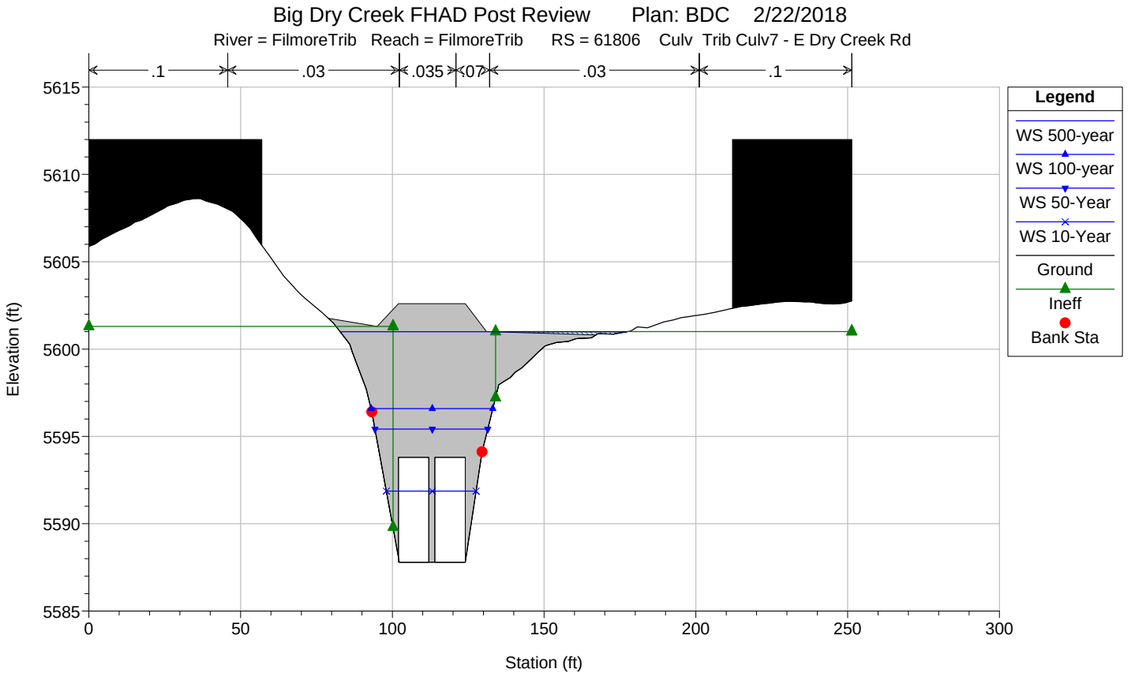

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62501
.03
.05
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

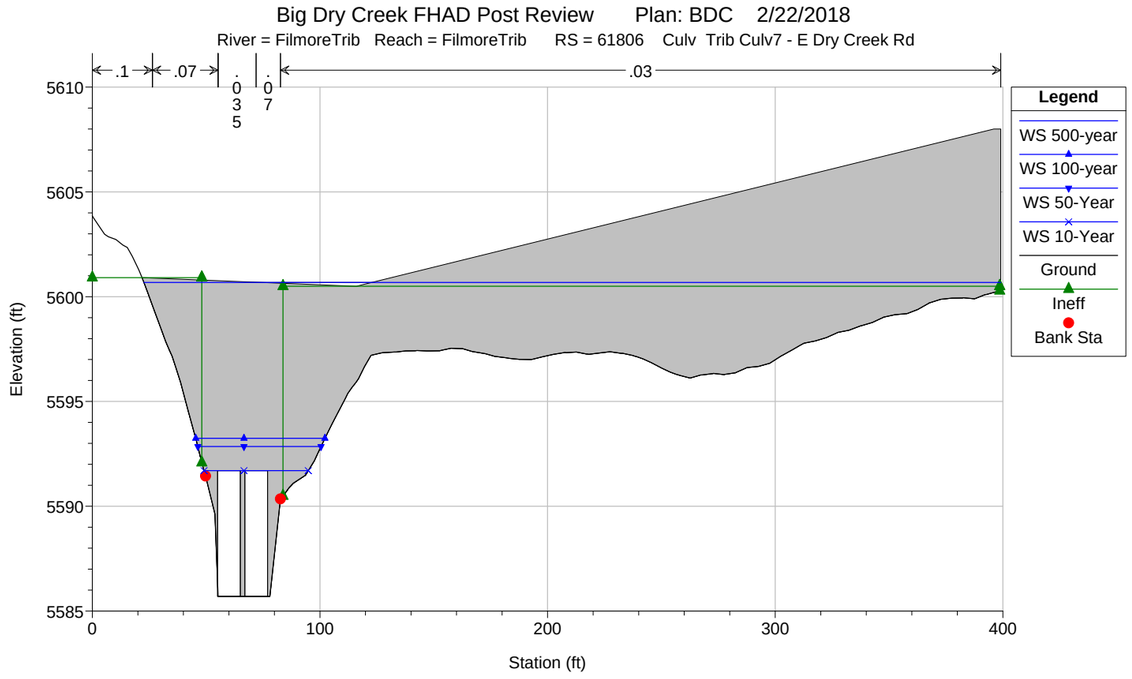

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62483
.03
.05
.03
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

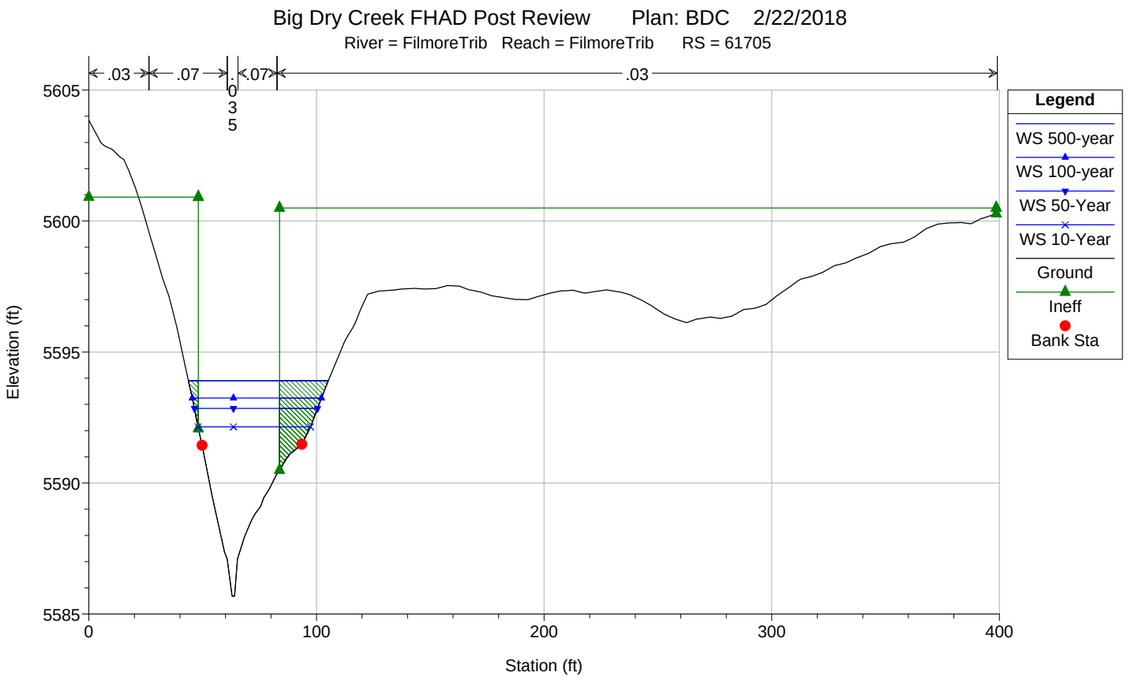

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62211
.03
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

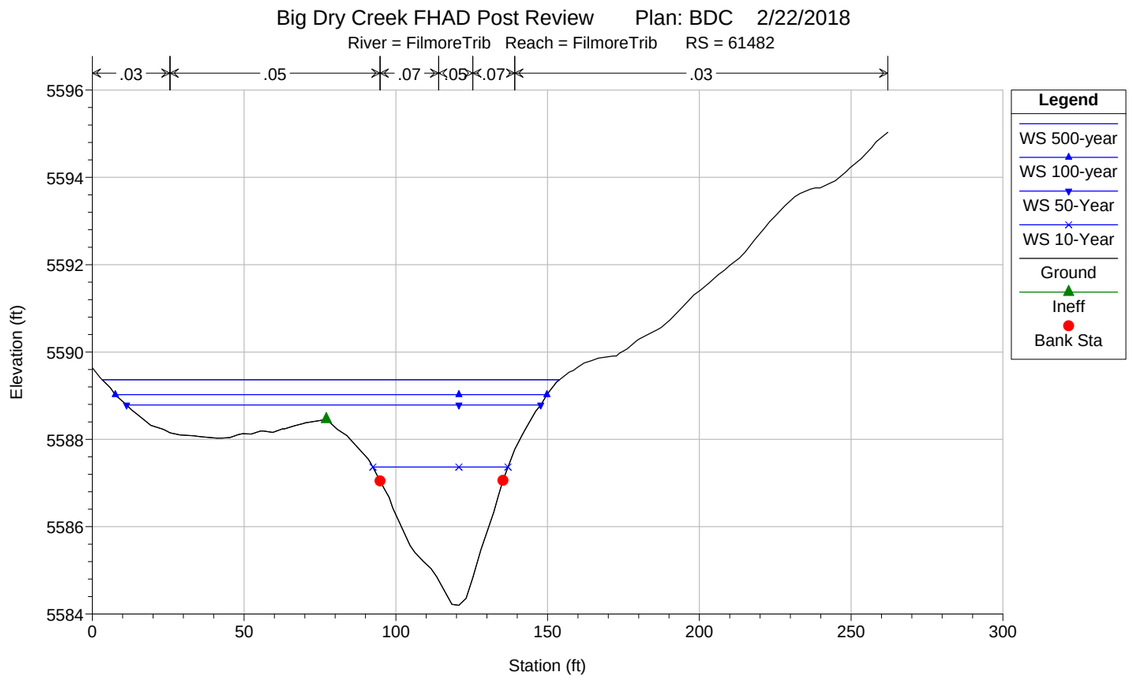

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 62029
.1
.05
.07
.05
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

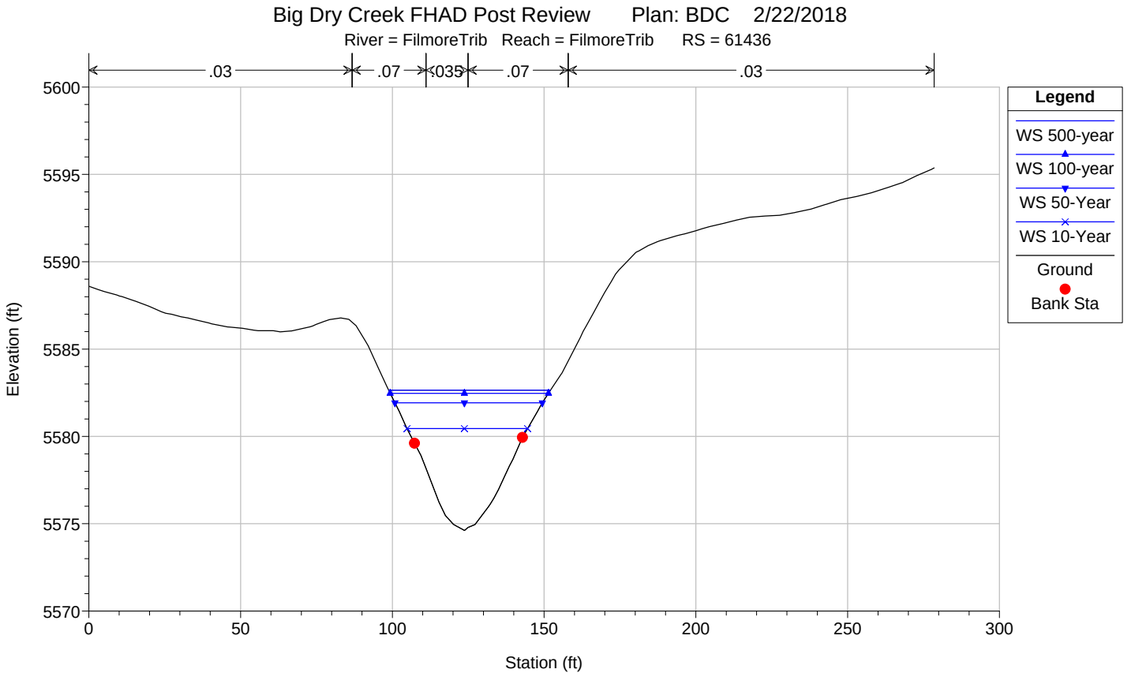

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61943
.1
.07
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

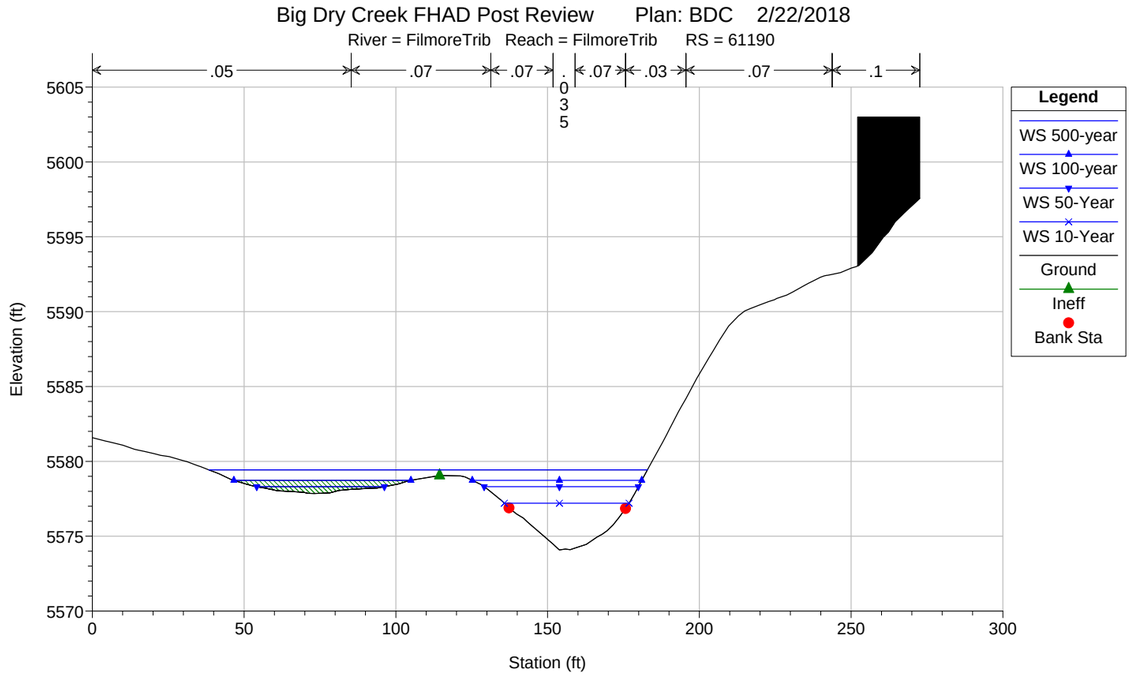

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61806 Culv Trib Culv7 - E Dry Creek Rd
.1
.03
.035
.07
.03
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

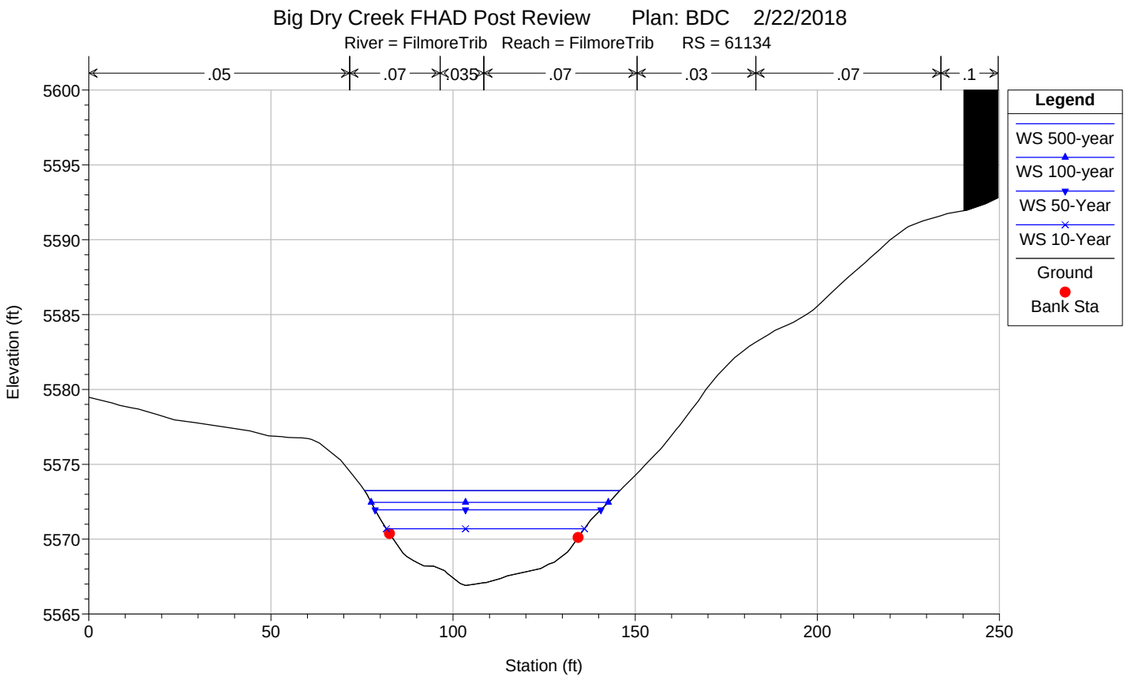

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61806 Culv Trib Culv7 - E Dry Creek Rd
.1
.07
.035
.07
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

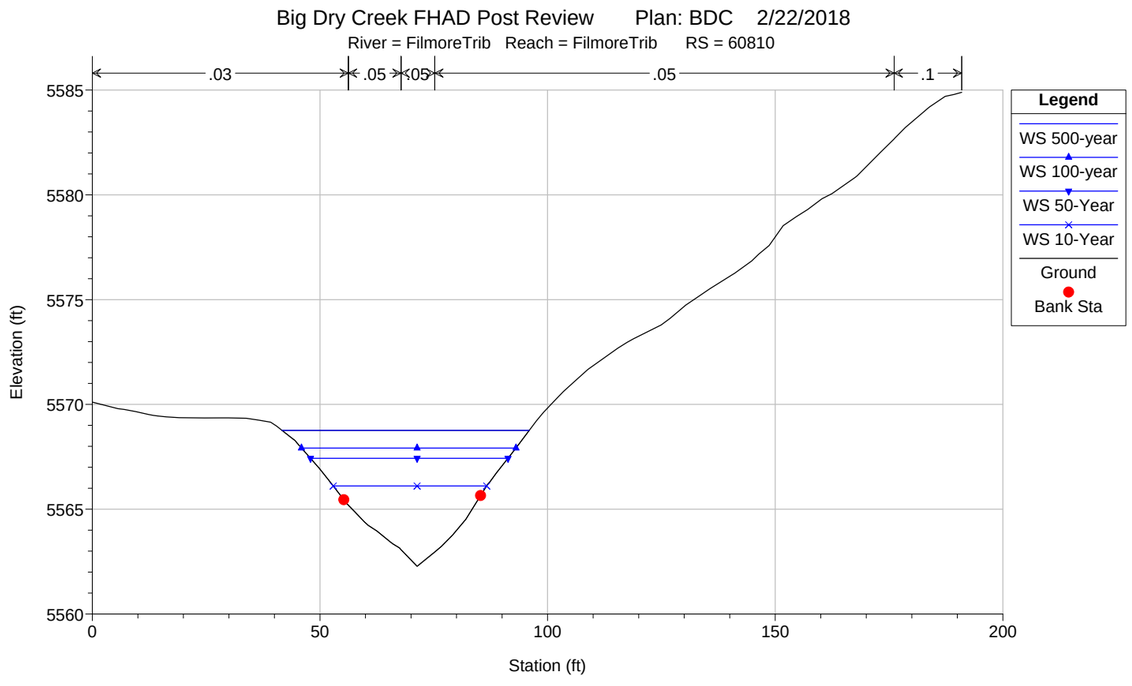

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61705
.03
.07
.035
.07
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

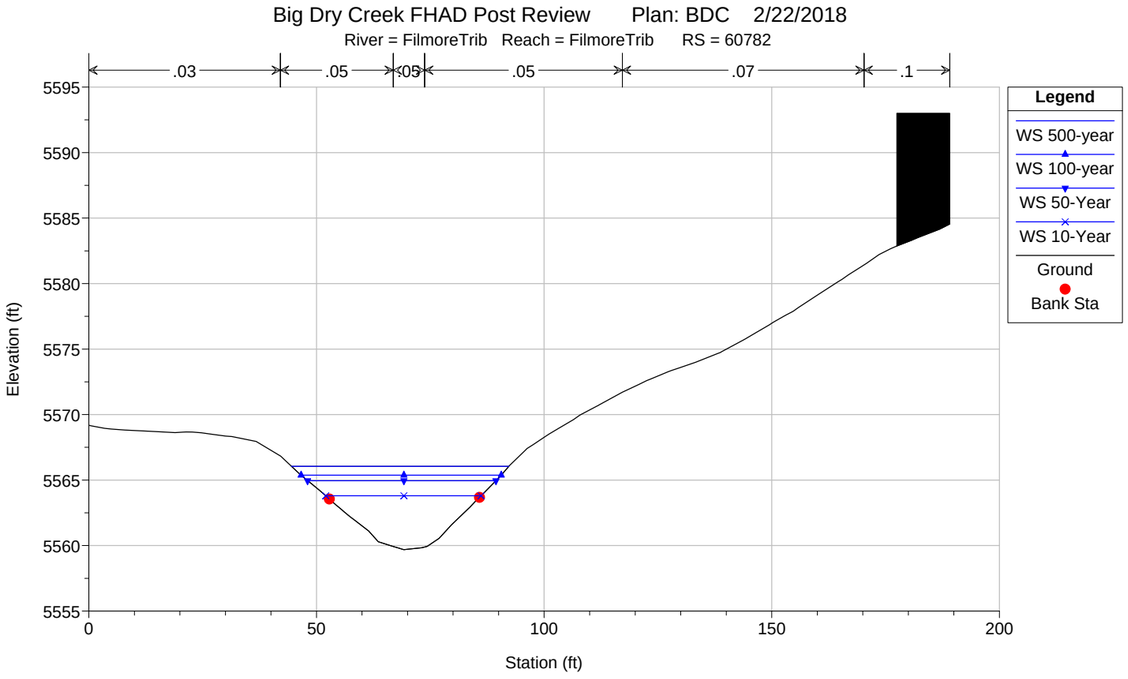

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61482
.03
.05
.07
.05
.07
.03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

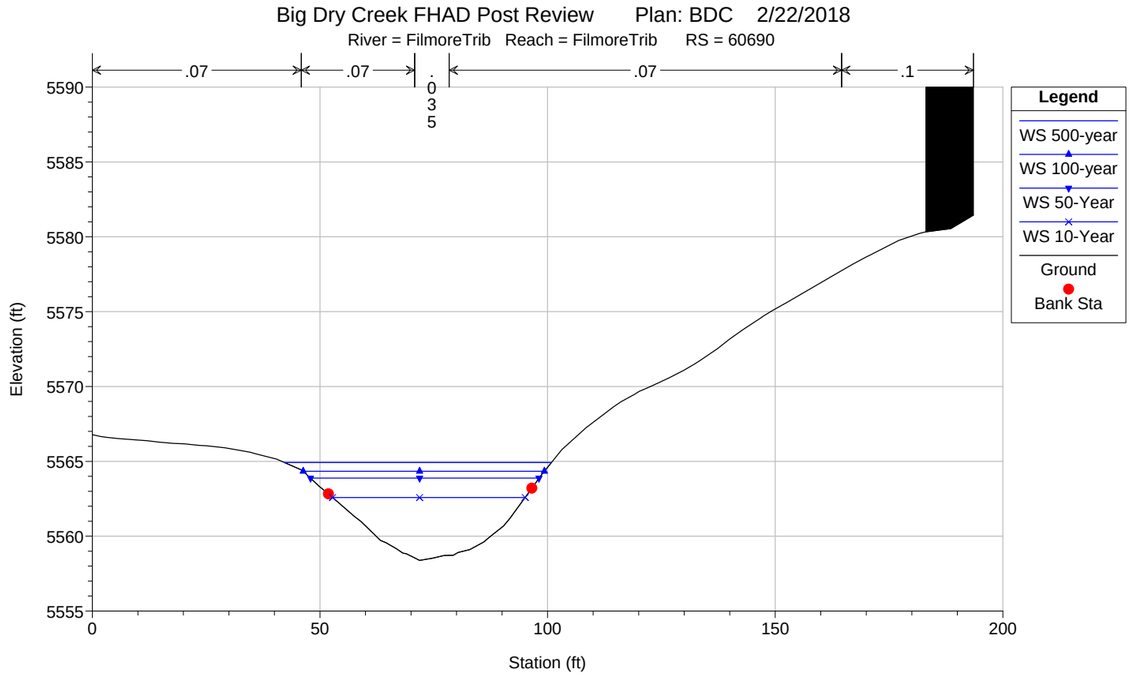

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61436
.03
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

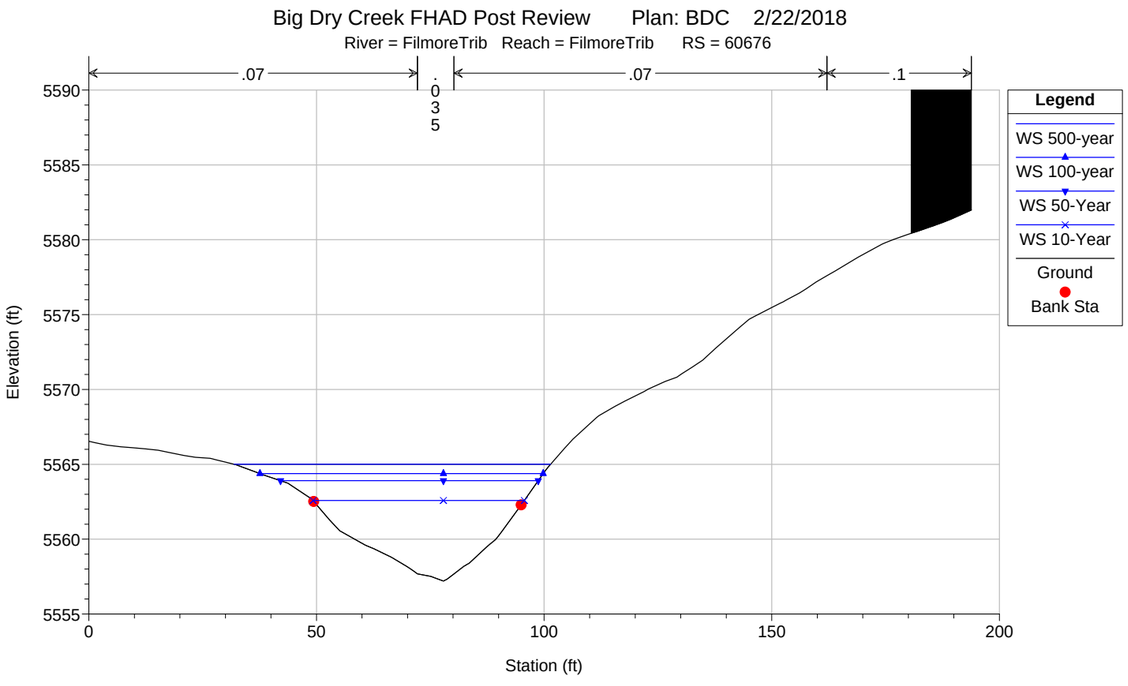

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61190
.05
.07
.07
.035
.07
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

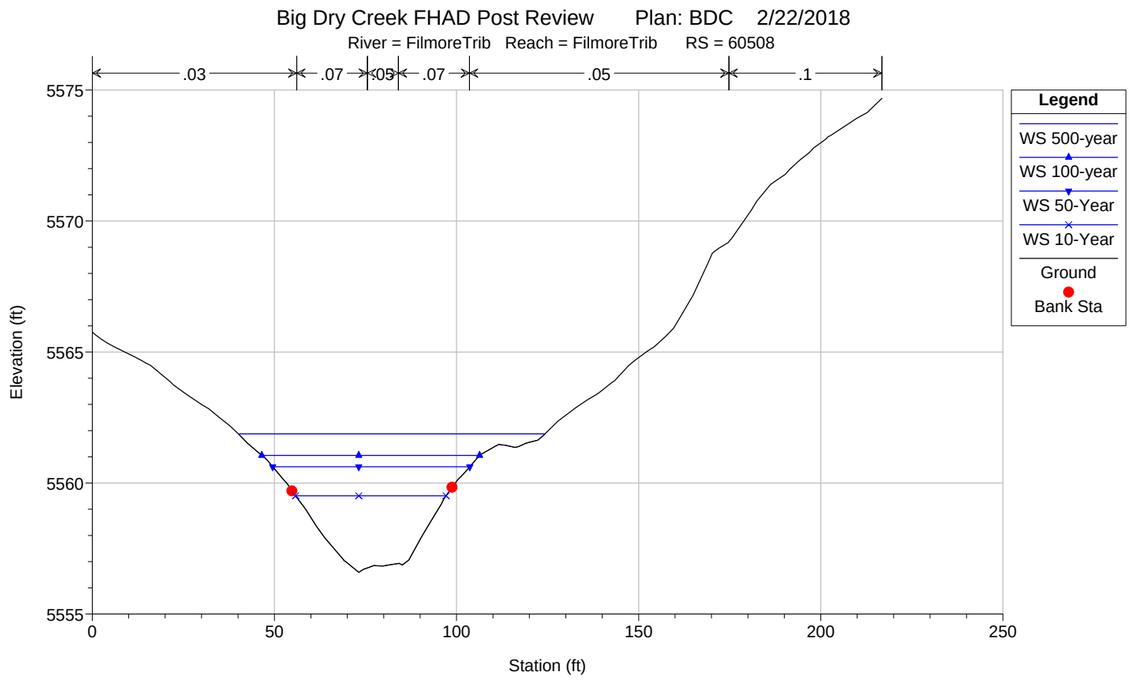

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 61134
.05
.07
.035
.07
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

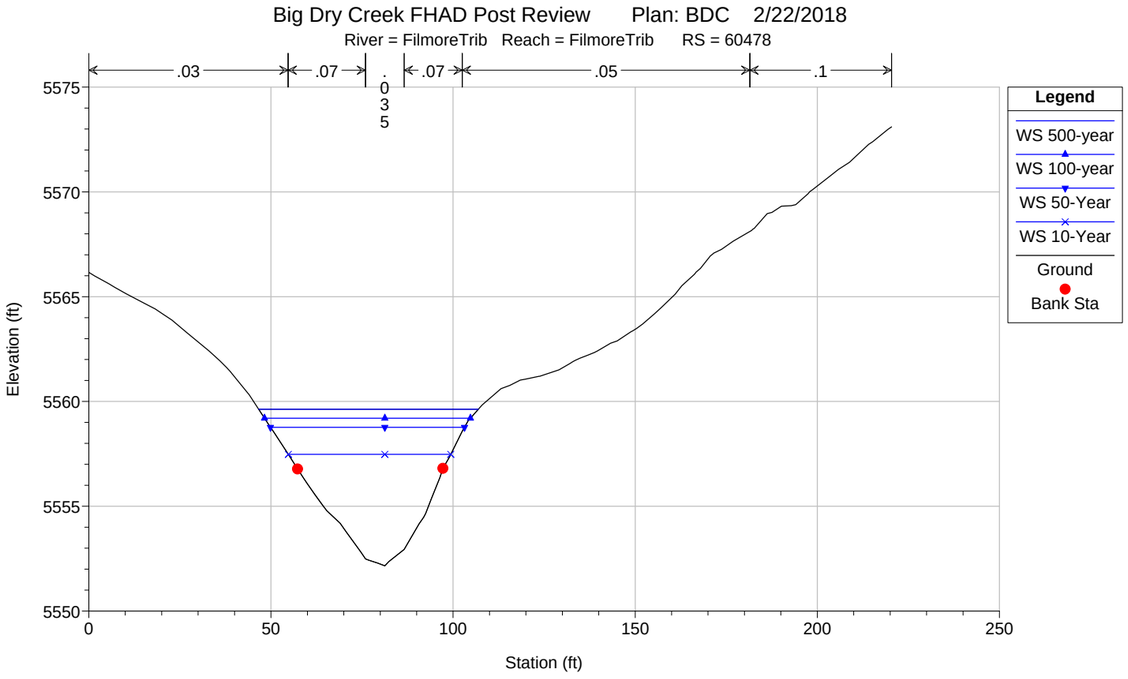

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60810
.03
.05
.05
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

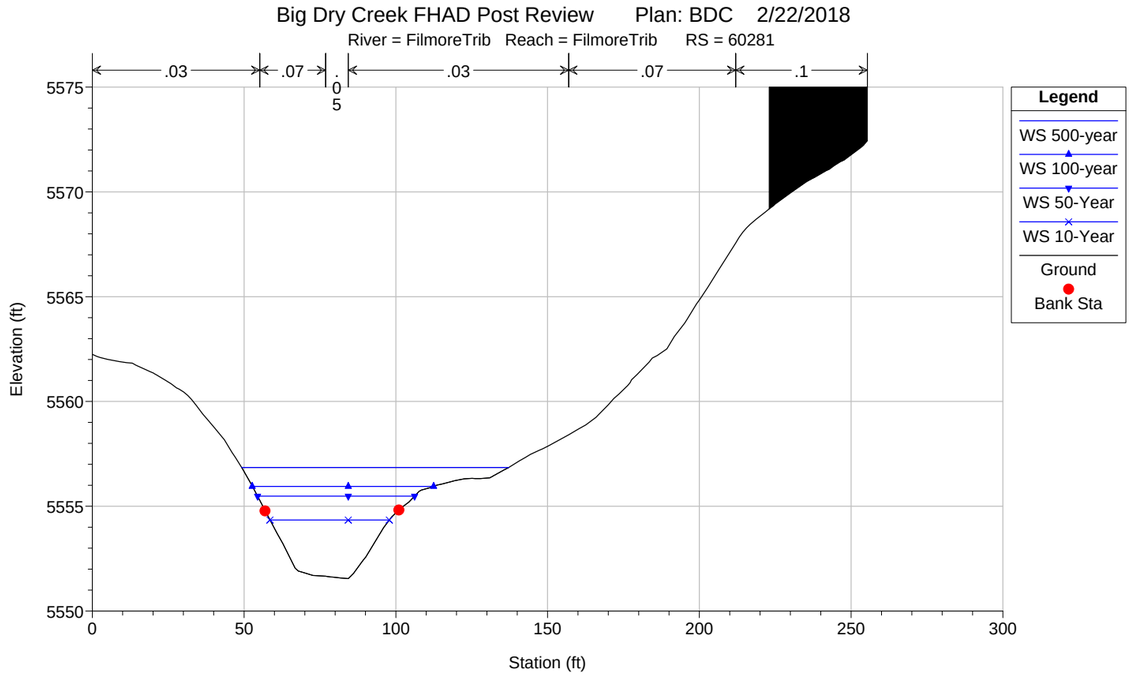

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60782
.03
.05
.05
.05
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

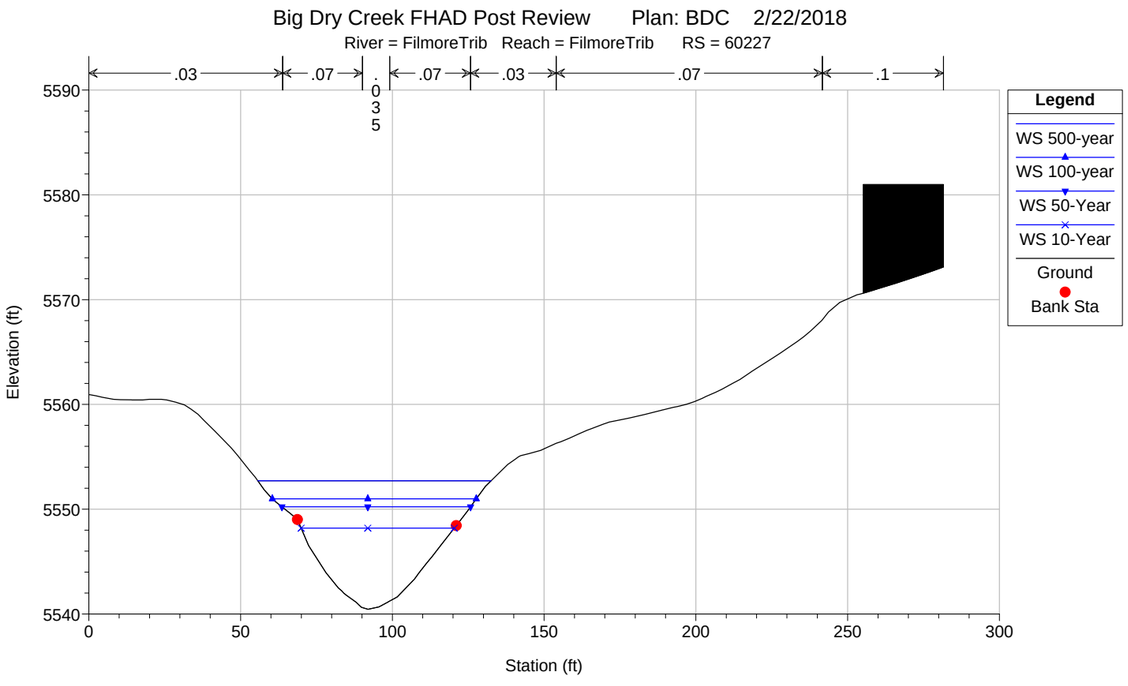

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60690
.07
.07
.035
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

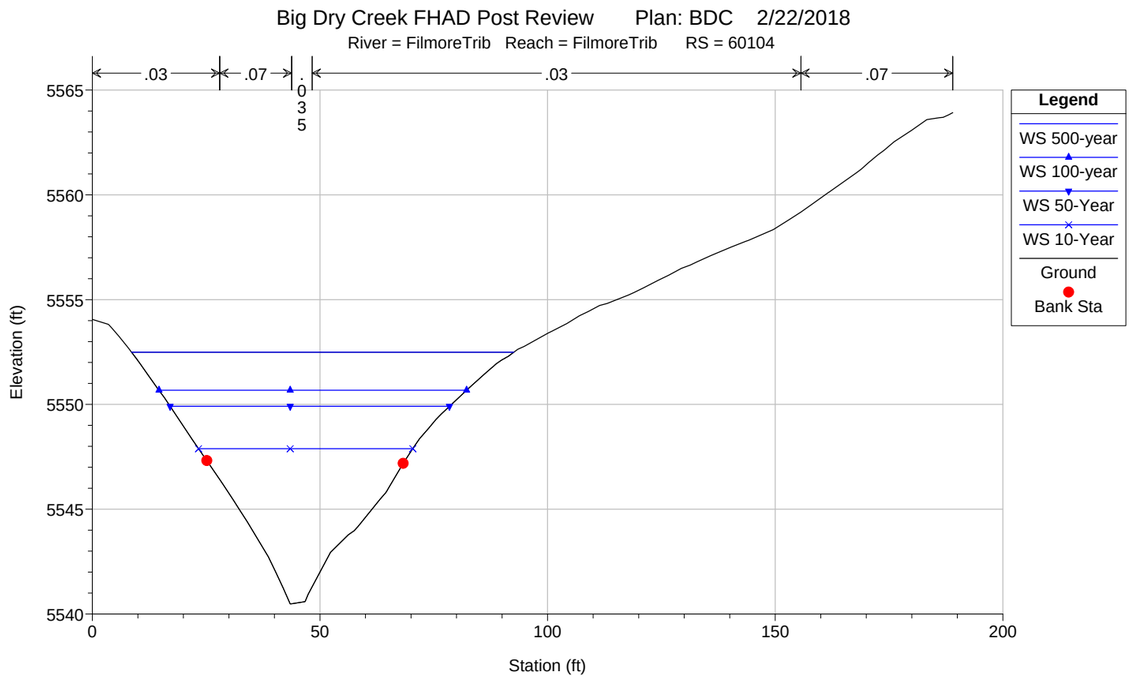

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60676
.07
.035
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

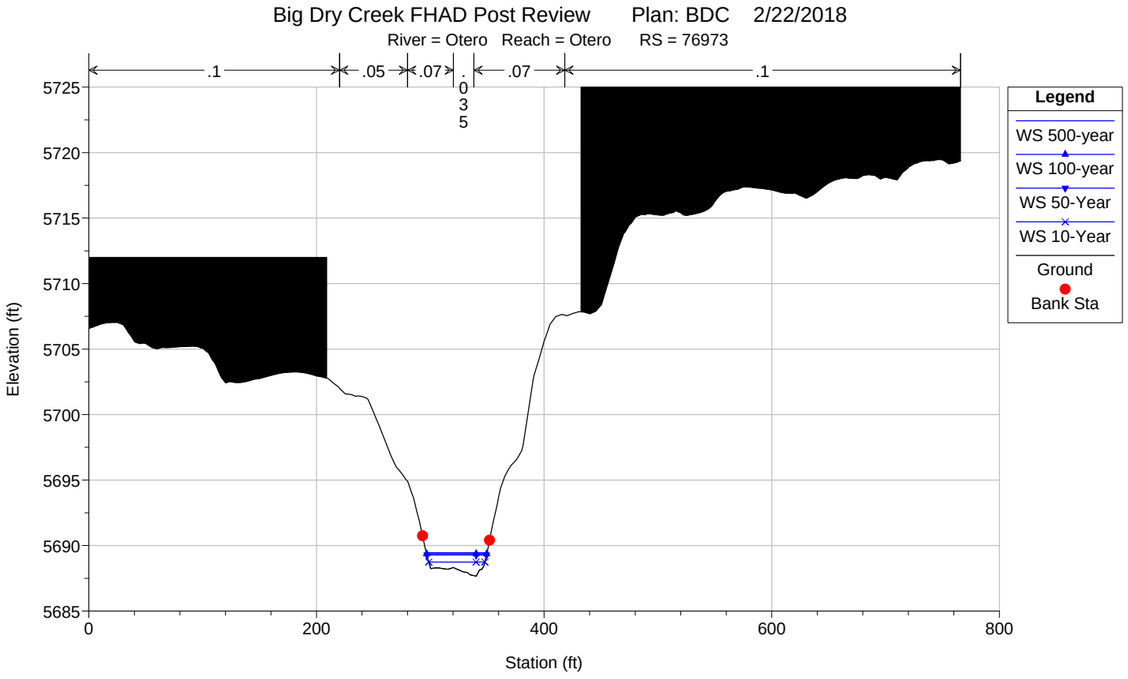

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60508
.03
.07
.05
.07
.05
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

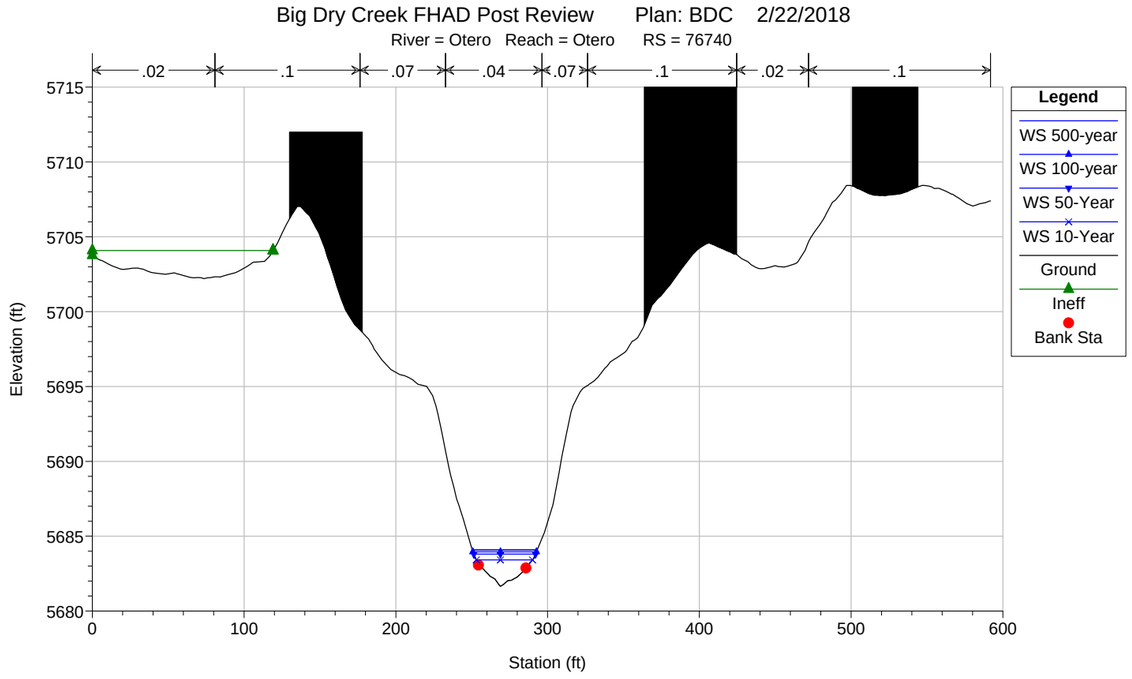

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60478
.03
.07
.035
.07
.05
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5550
5555
5560
5565
5570
5575
0
50
100
150
200
250

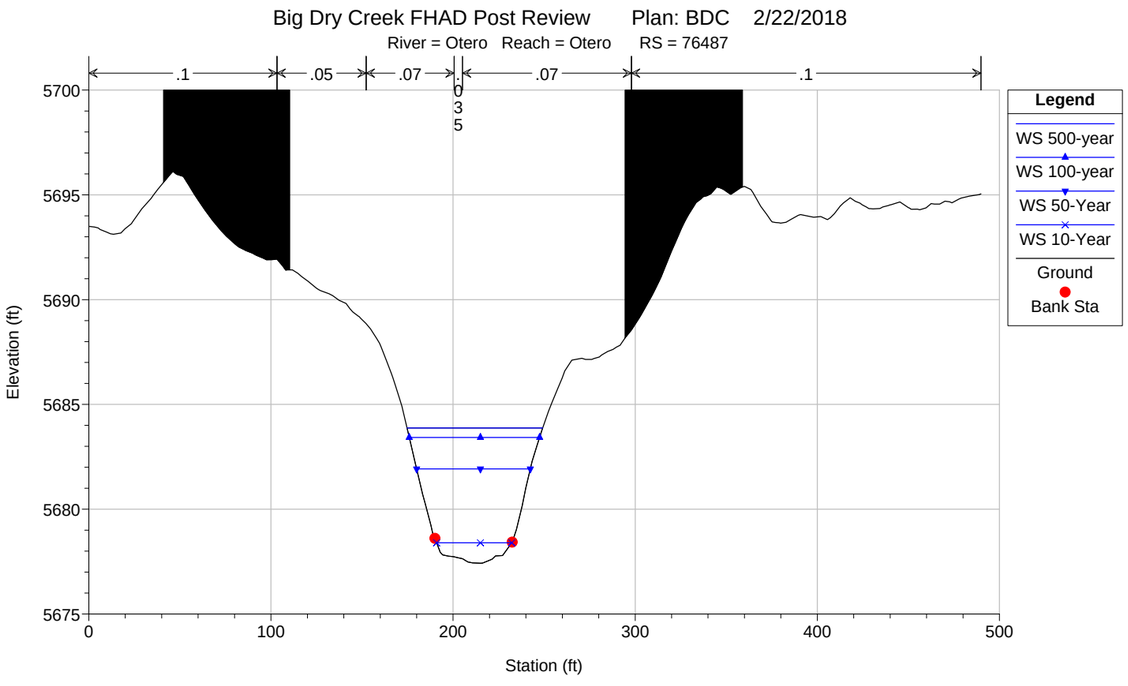

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60281
.03
.07
.05
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5550
5555
5560
5565
5570
5575
0
50
100
150
200
250
300

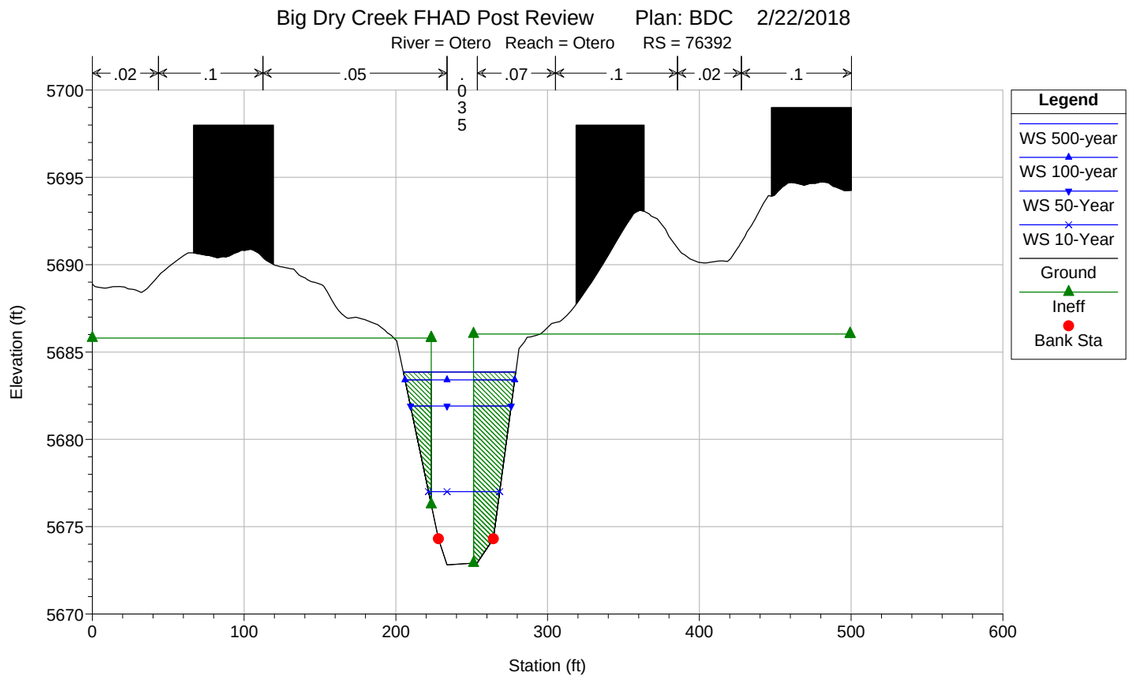

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60227
.03
.07
.035
.07
.03
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5540
5550
5560
5570
5580
5590
0
50
100
150
200
250
300

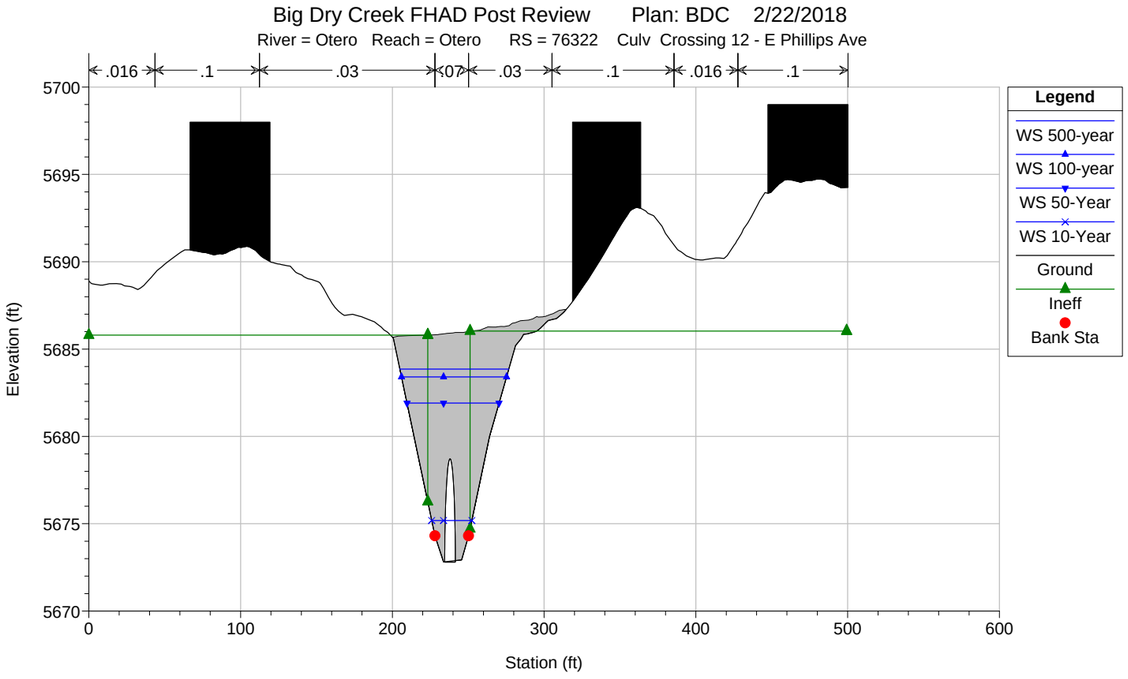

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = FilmoreTrib Reach = FilmoreTrib RS = 60104
.03
.07
.035
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5540
5545
5550
5555
5560
5565
0
50
100
150
200

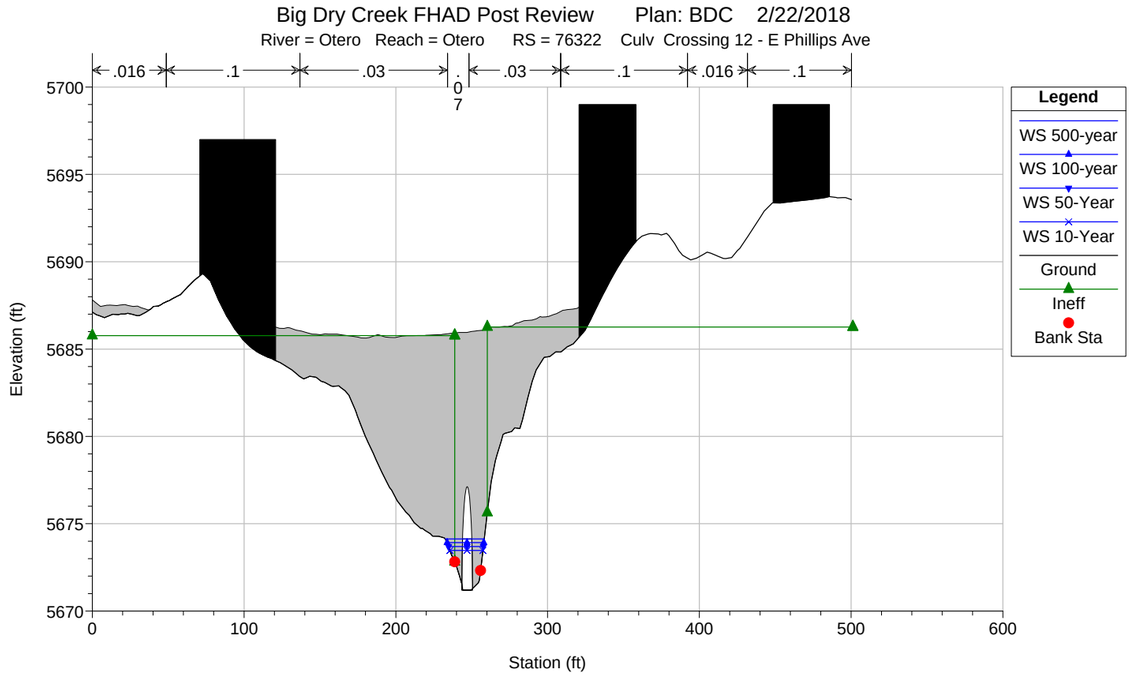

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76973
.1
.05
.07
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5725
5720
5715
5710
5705
5700
5695
5690
5685
0
200
400
600
800

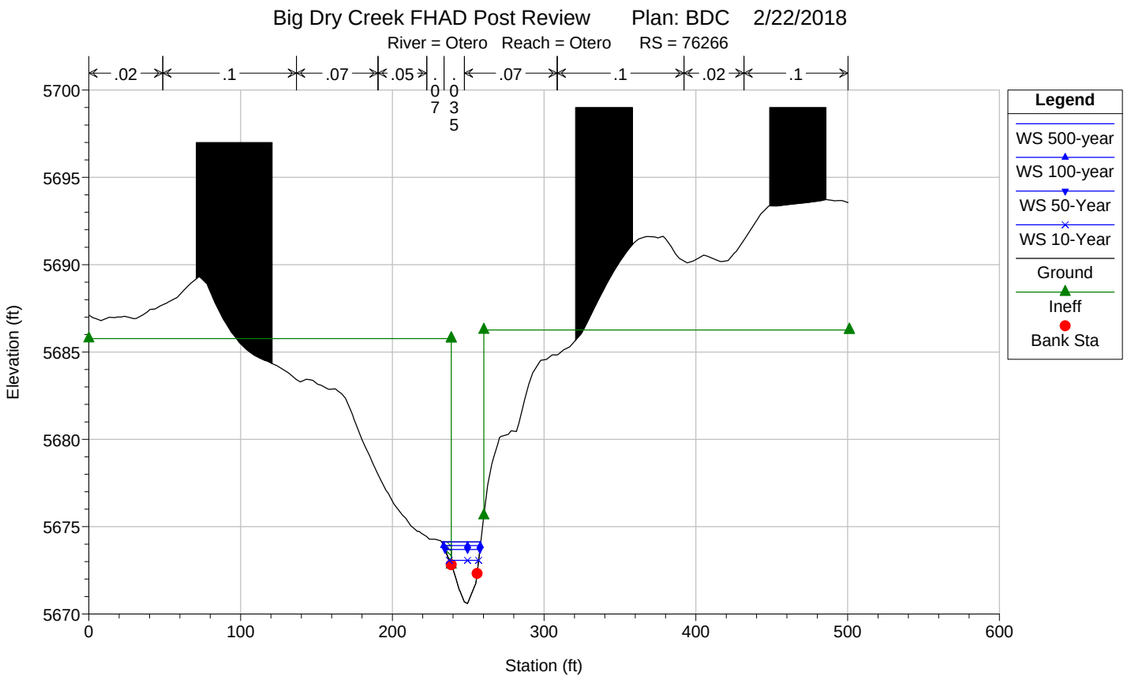

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76740
.02
.1
.07
.04
.07
.1
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5715
5710
5705
5700
5695
5690
5685
5680
0
100
200
300
400
500
600

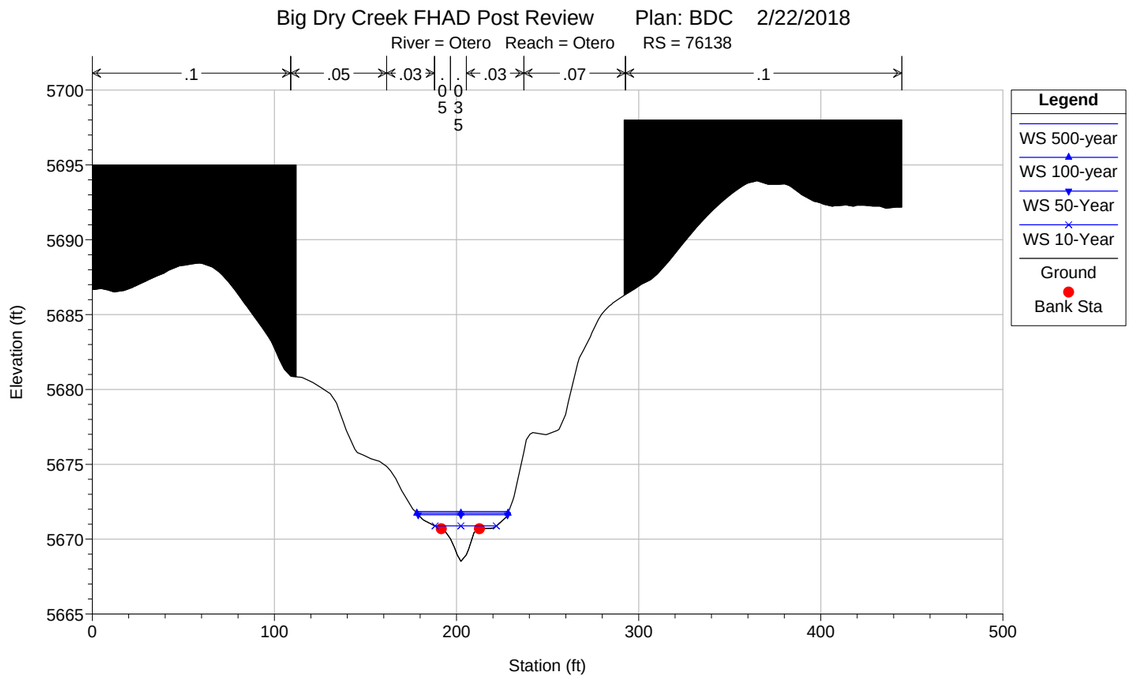

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76487
.1
.05
.07
.035
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5700
5695
5690
5685
5680
5675
0
100
200
300
400
500

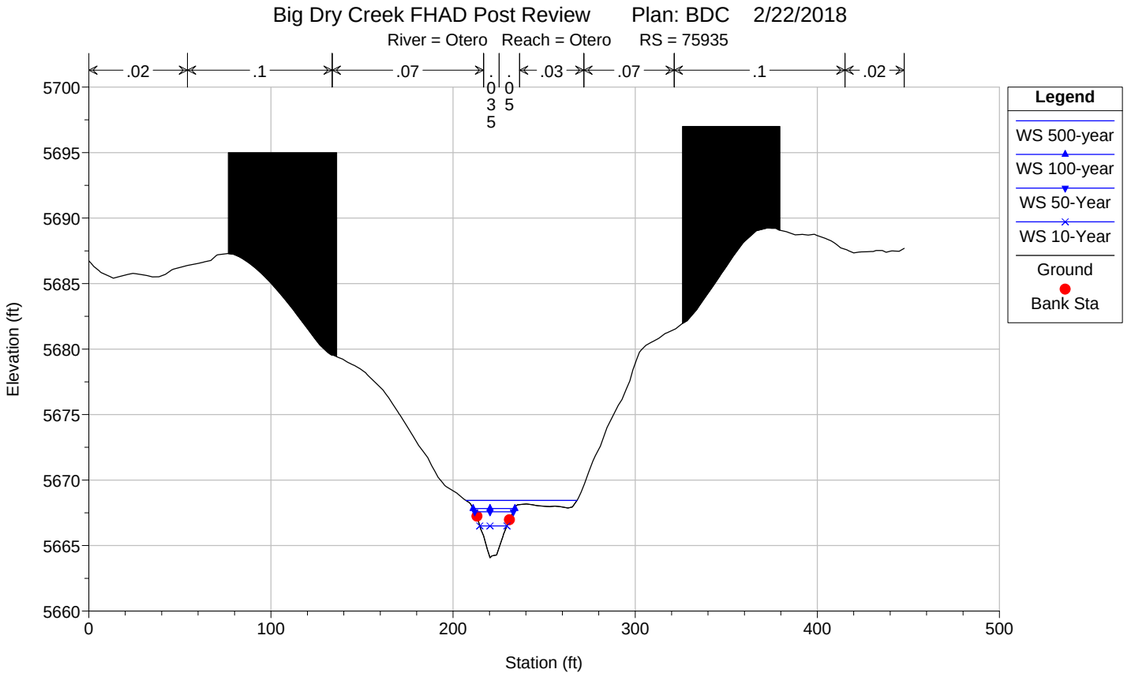

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76392
.02
.1
.05
.035
.07
.1
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5700
5695
5690
5685
5680
5675
5670
0
100
200
300
400
500
600

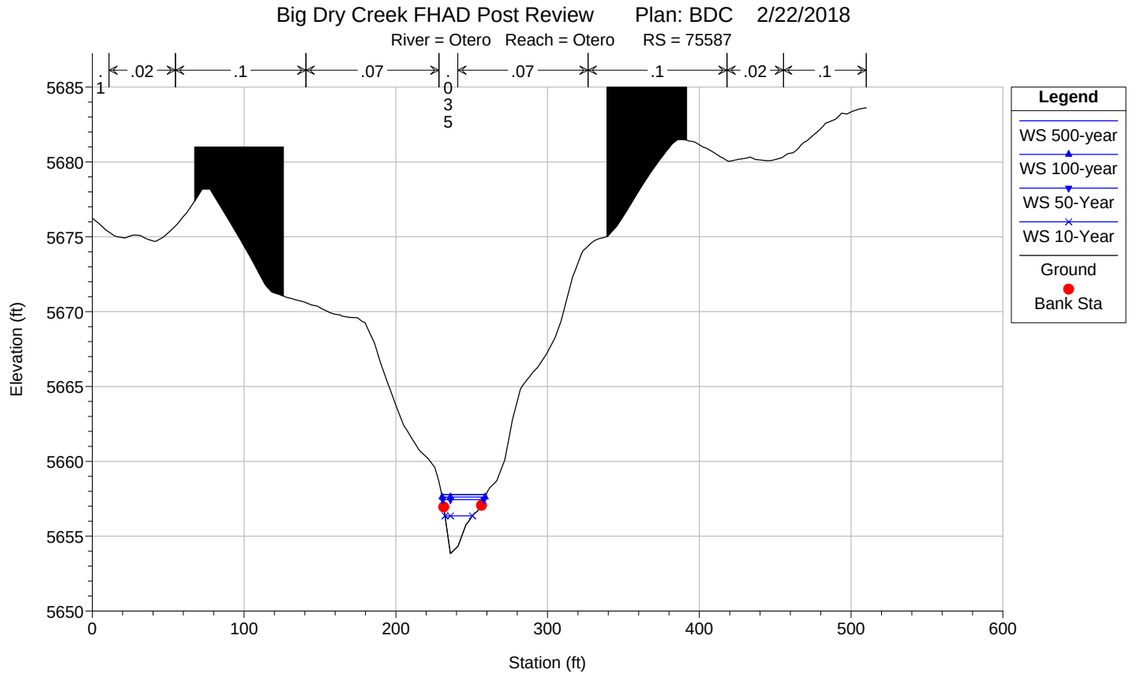

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76322 Culv Crossing 12 - E Phillips Ave
.016 .1 .03 .07 .03 .1 .016 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

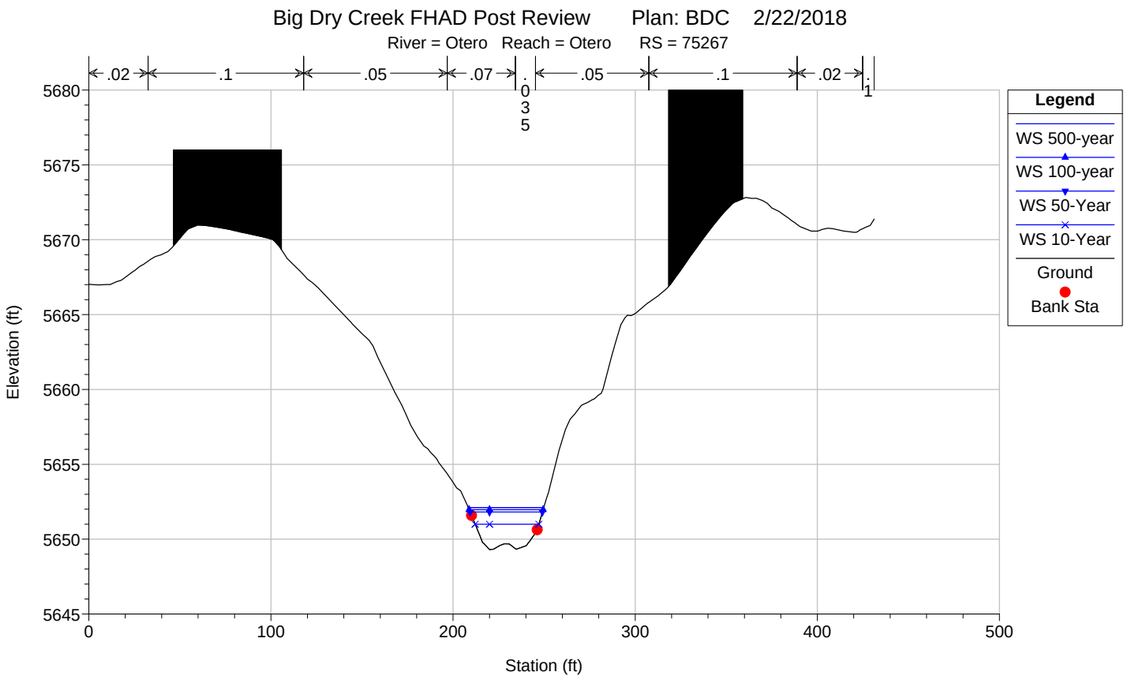

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76322 Culv Crossing 12 - E Phillips Ave
.016 .1 .03 .07 .03 .1 .016 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

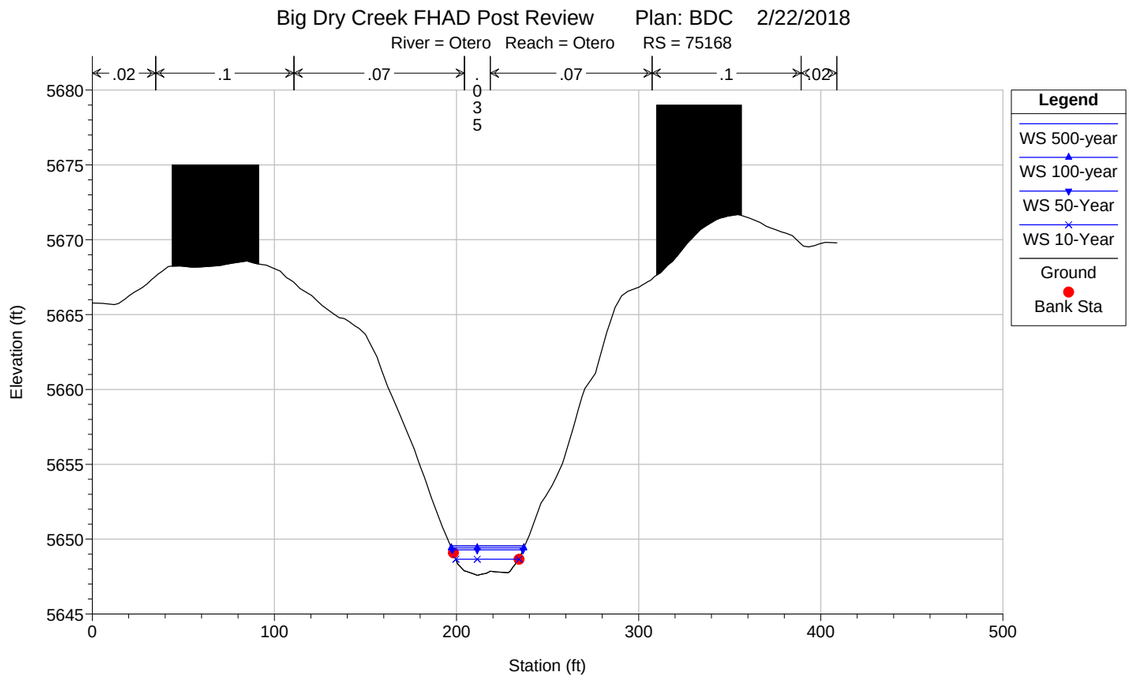

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76266
.02 .1 .07 .05 .07 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

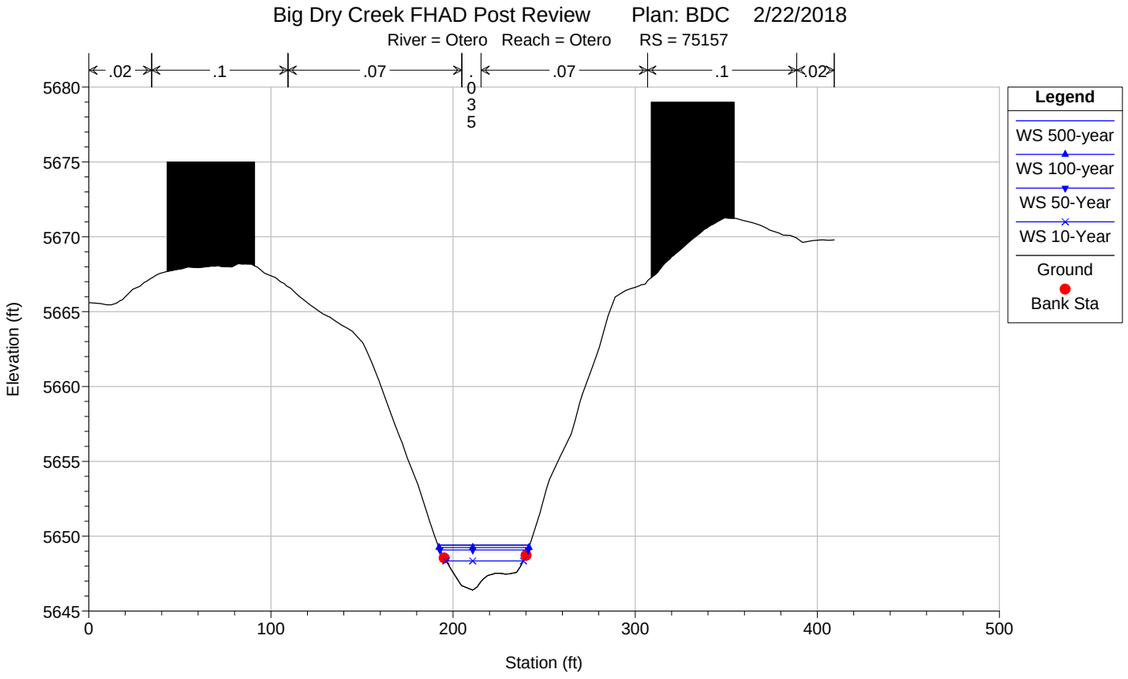

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 76138
.1 .05 .03 .03 .07 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

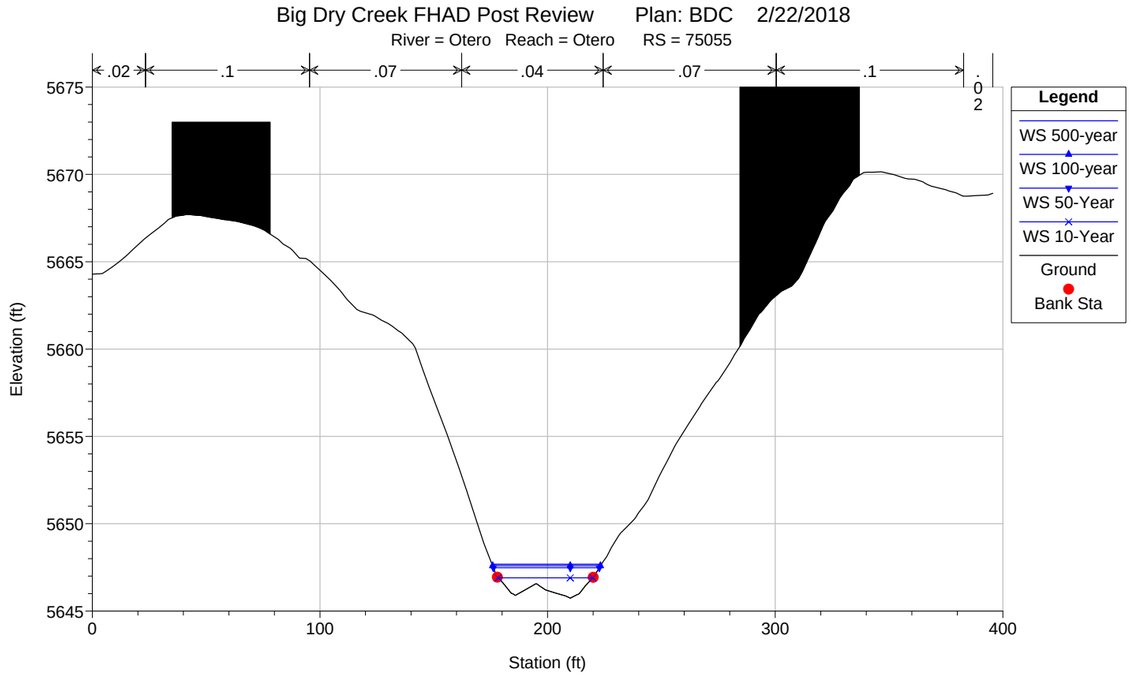

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75935
.02 .1 .07 .035 .05 .03 .07 .1 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

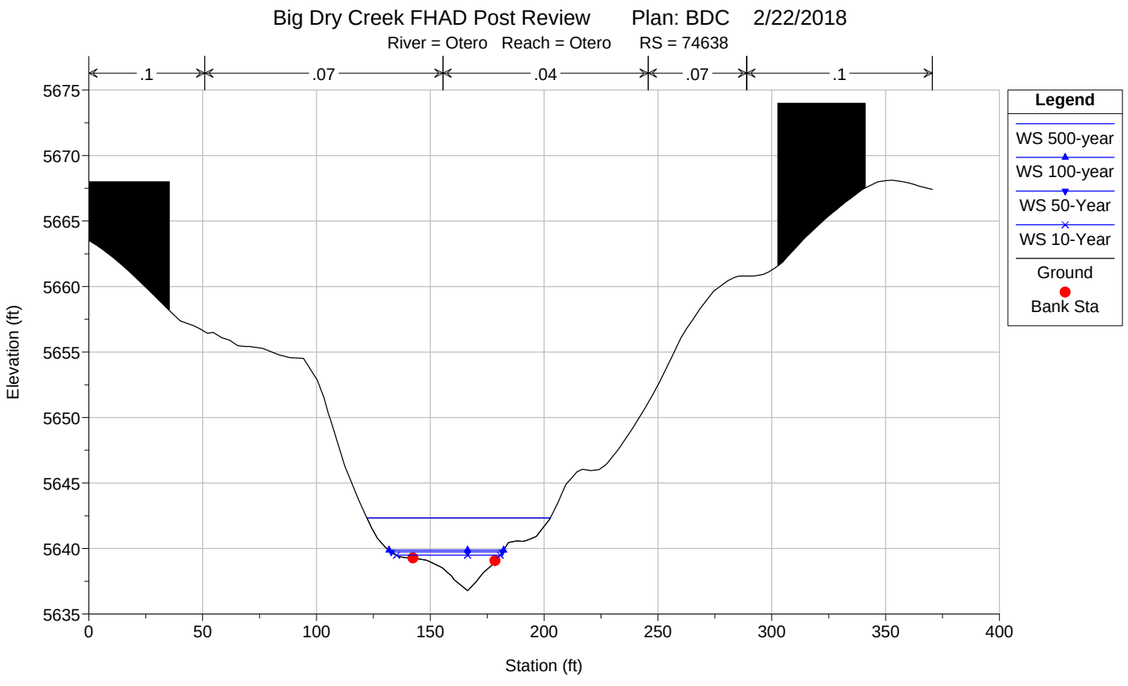

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75587
.1 .02 .1 .07 .035 .07 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75267
.02 .1 .05 .07 .035 .05 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75168
.02 .1 .07 .035 .07 .1 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75157
.02
.1
.07
.035
.07
.1
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5680
5675
5670
5665
5660
5655
5650
5645
0
100
200
300
400
500


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 75055
.02
.1
.07
.04
.07
.1
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5675
5670
5665
5660
5655
5650
5645
0
100
200
300
400


Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 74638
.1
.07
.04
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5675
5670
5665
5660
5655
5650
5645
5640
5635
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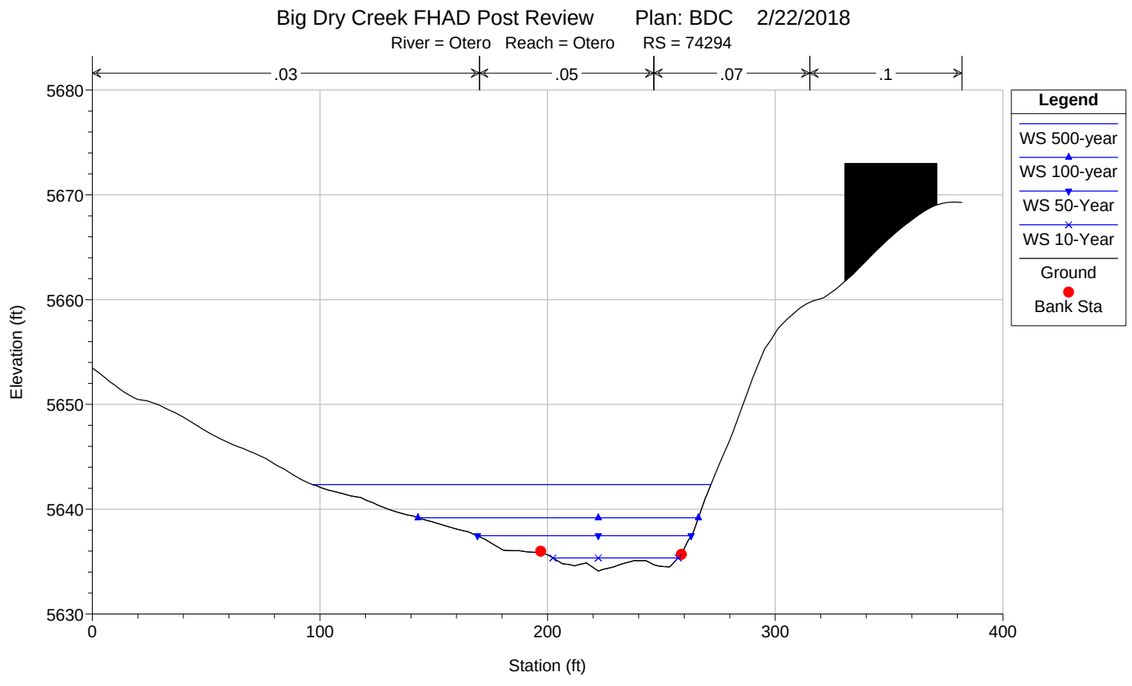
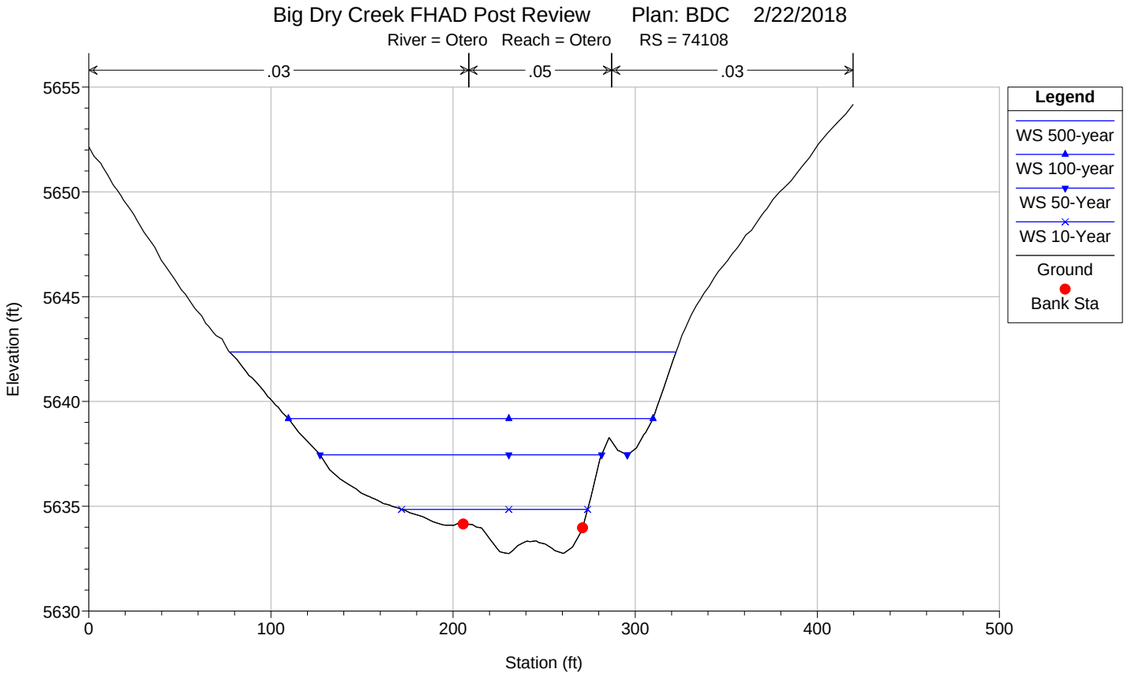
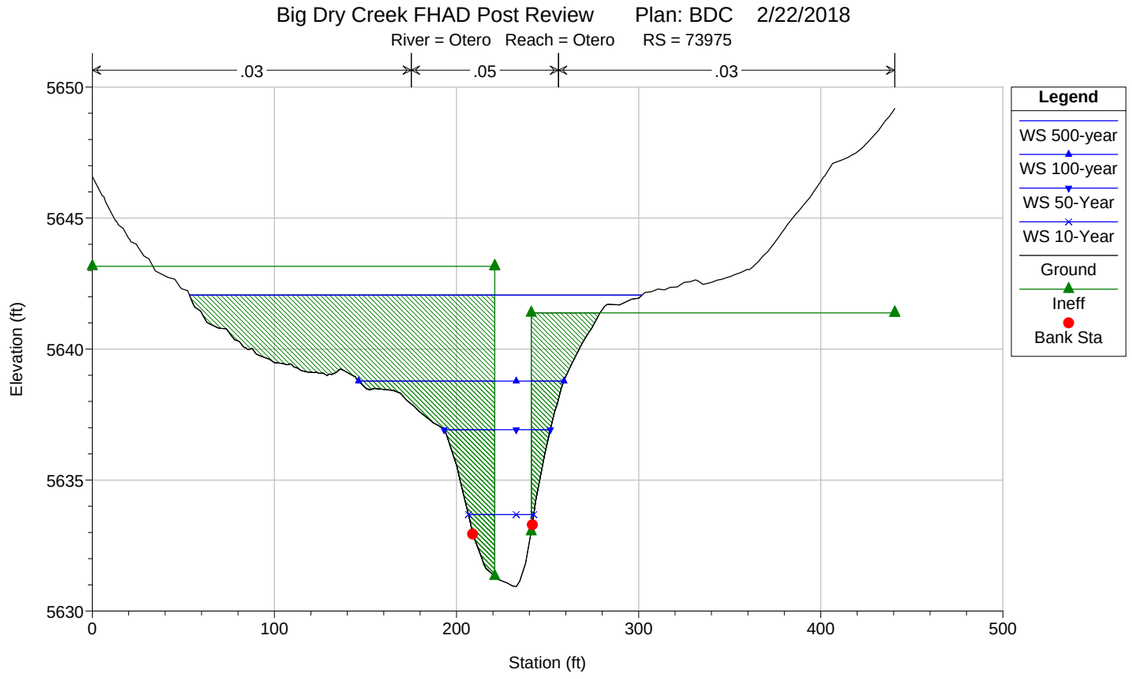
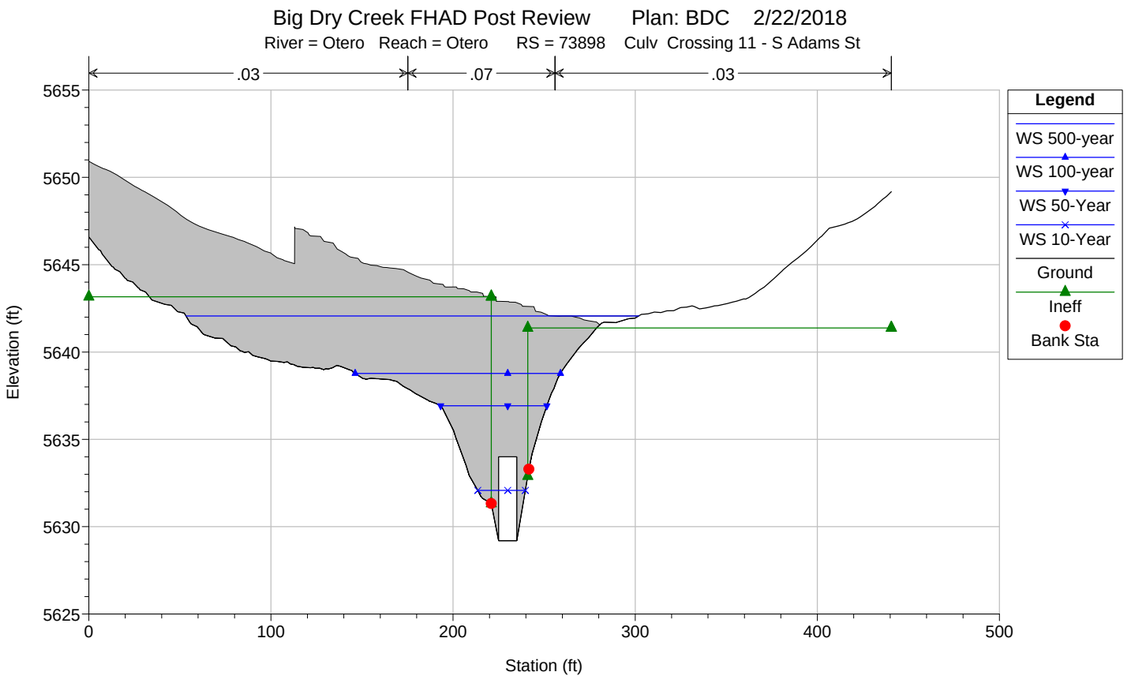
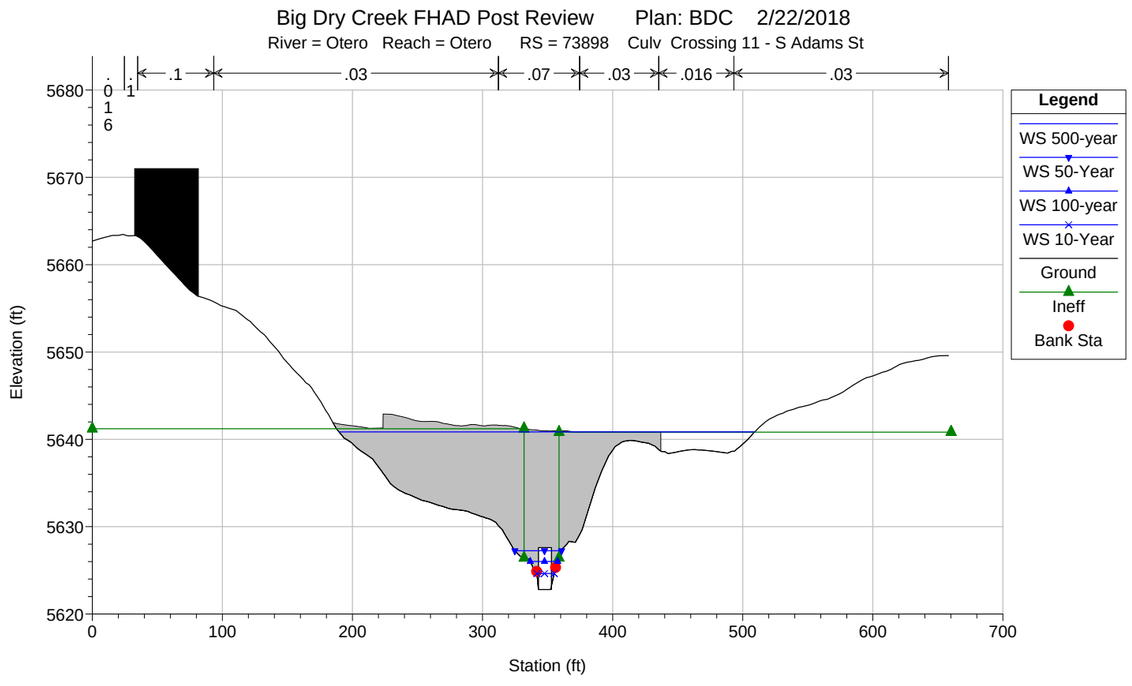
50
100
150
200
250
300
350
400

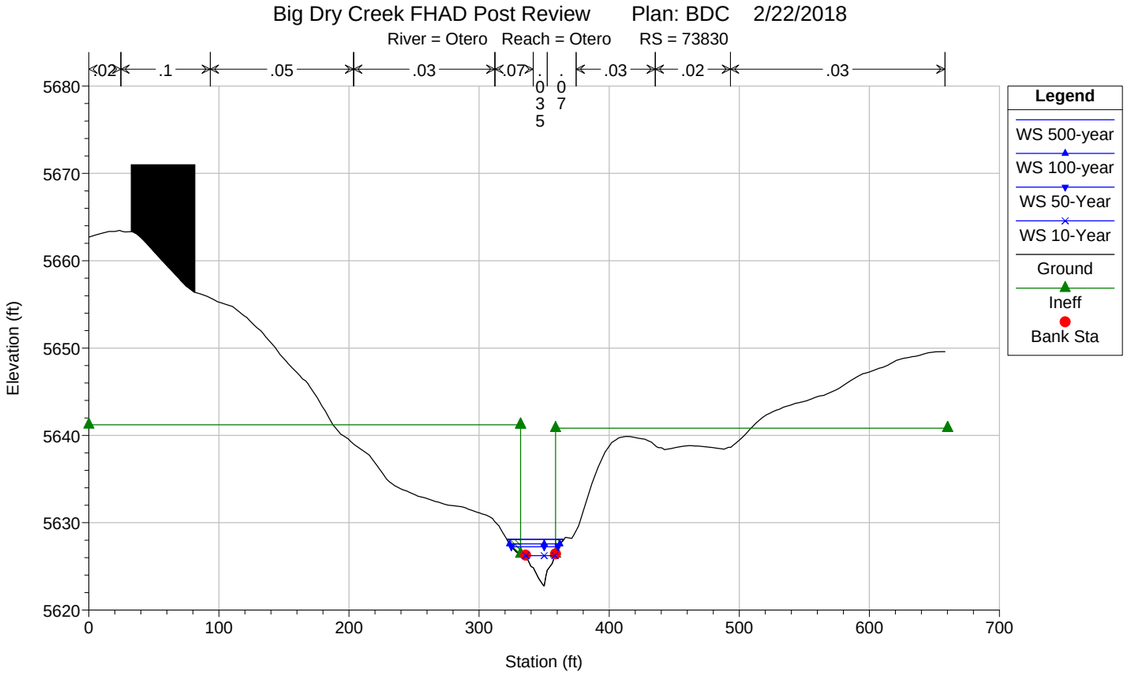

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 74294
.03
.05
.07
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5680
5670
5660
5650
5640
5630
0
100
200
300
400

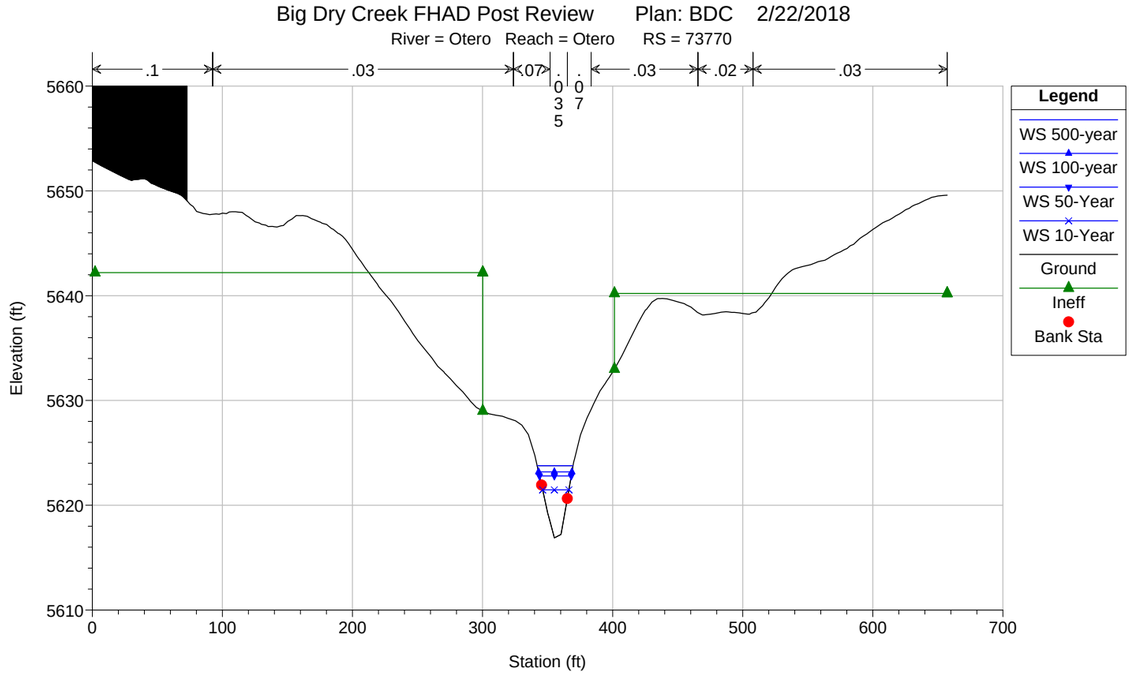

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 74108
.03
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
0
100
200
300
400
500

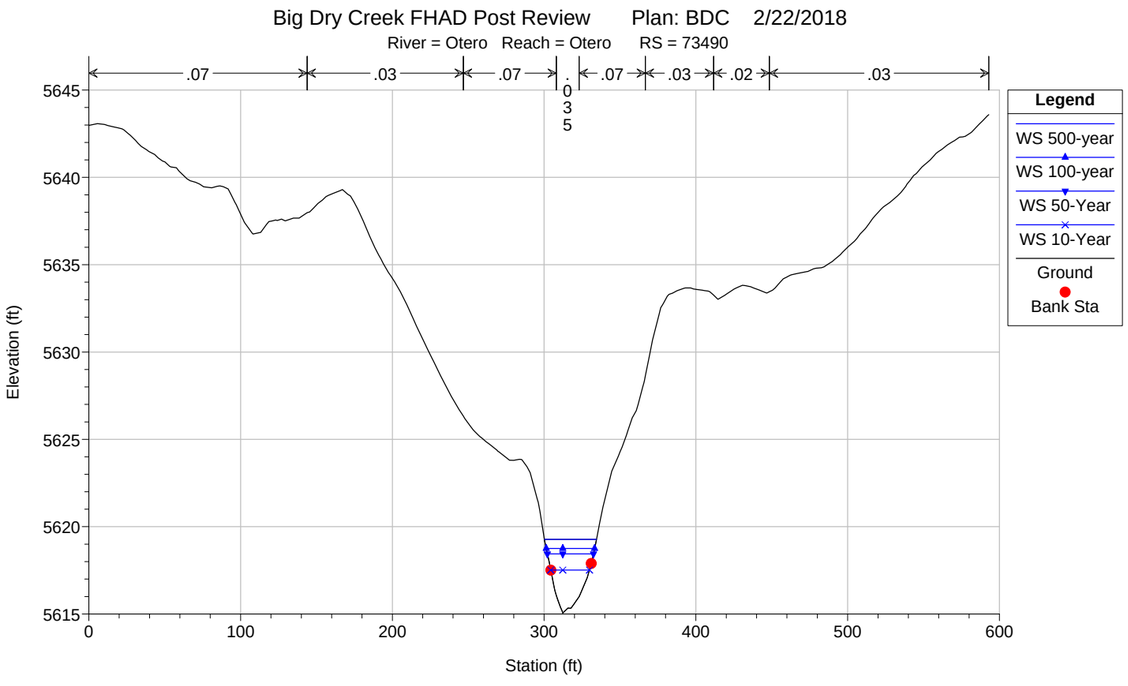

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73975
.03
.05
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5650
5645
5640
5635
5630
0
100
200
300
400
500

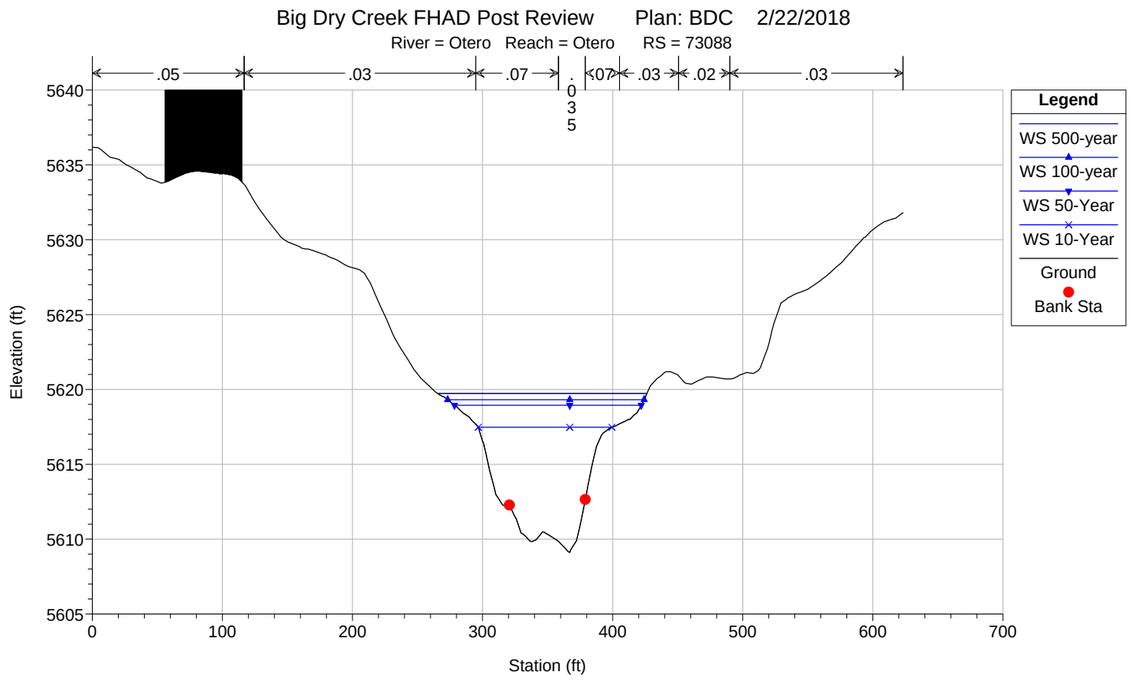

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73898 Culv Crossing 11 - S Adams St
.03
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
5625
0
100
200
300
400
500

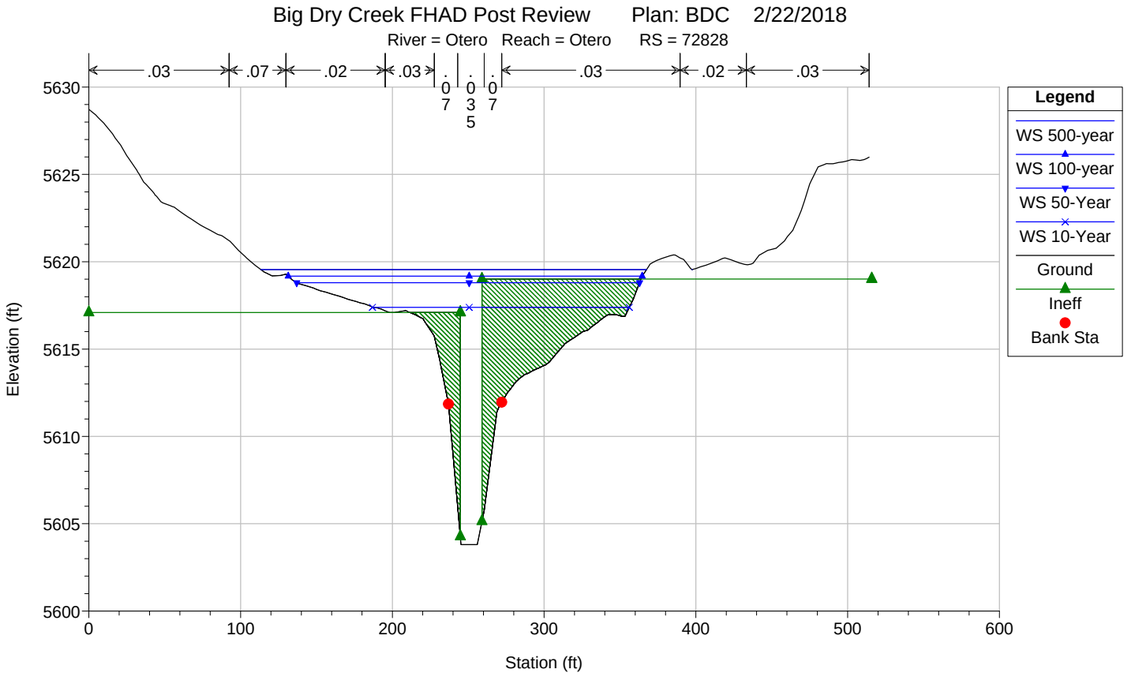

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73898 Culv Crossing 11 - S Adams St
.01
.1
.1
.03
.07
.03
.016
.03
Legend
WS 500-year
WS 50-Year
WS 100-year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5680
5670
5660
5650
5640
5630
5620
0
100
200
300
400
500
600
700

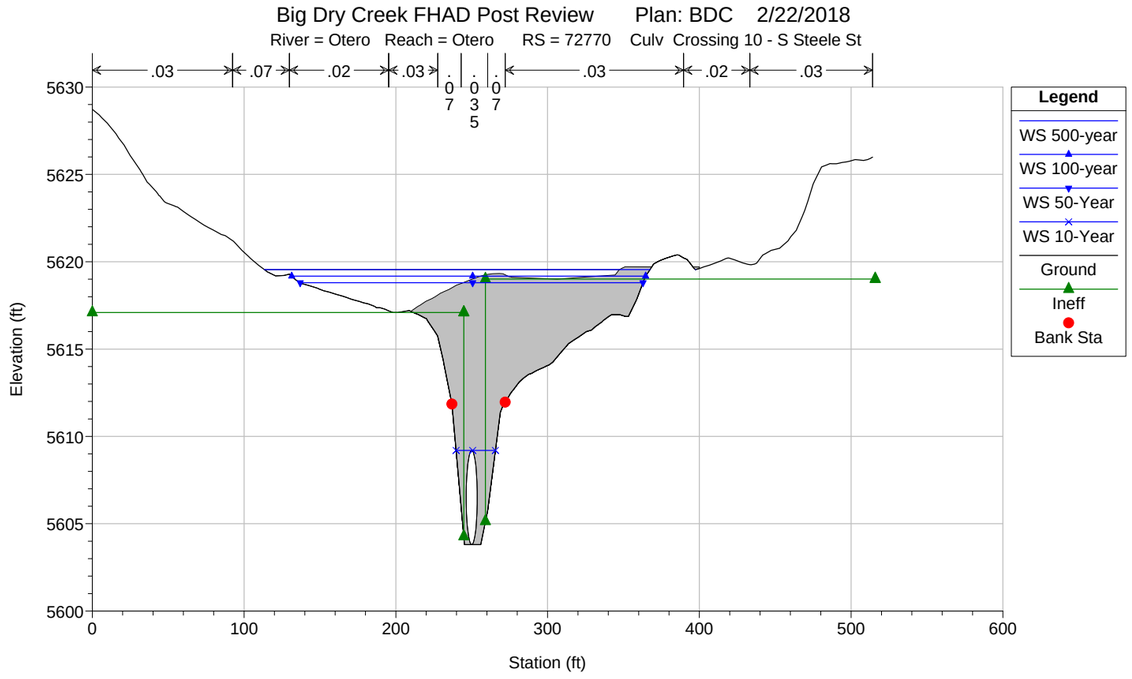

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73830
.02
.1
.05
.03
.07
.035
.07
.03
.02
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5680
5670
5660
5650
5640
5630
5620
0
100
200
300
400
500
600
700

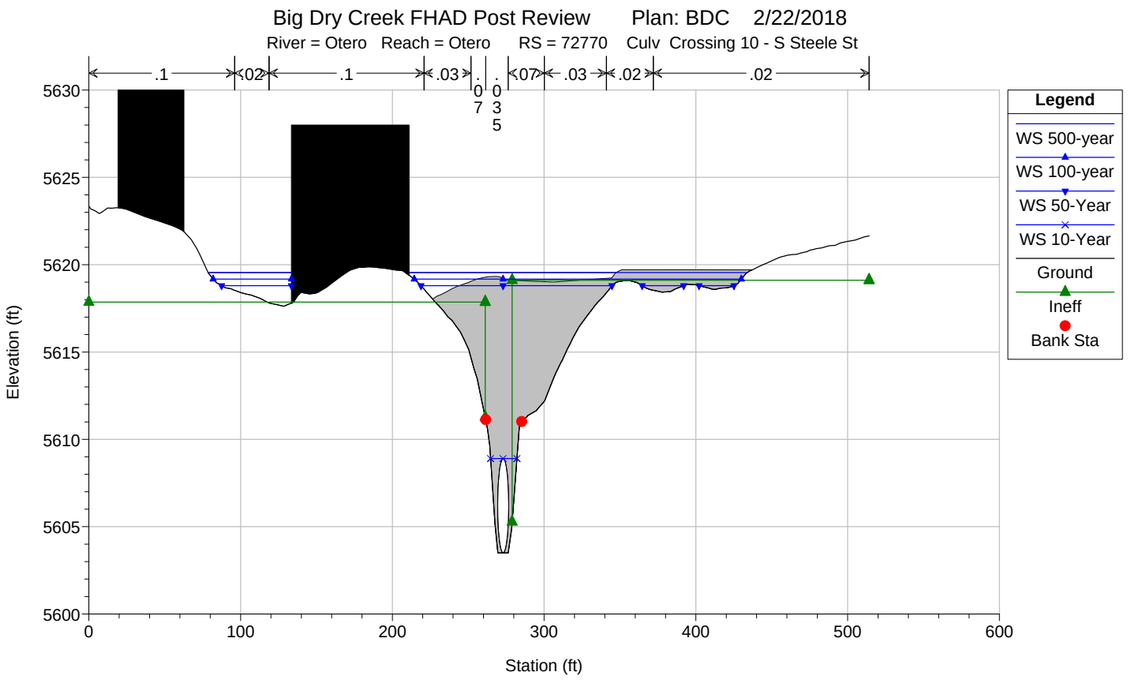

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73770
.1
.03
.07
.035
.07
.03
.02
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5660
5650
5640
5630
5620
5610
0
100
200
300
400
500
600
700

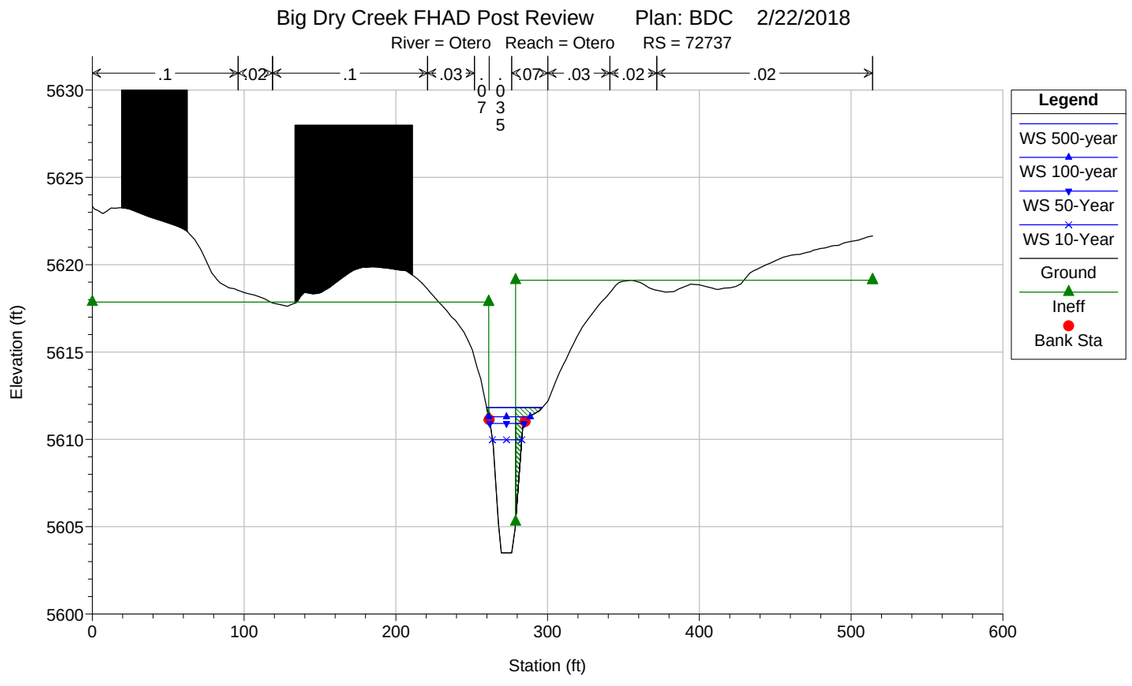

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73490
.07
.03
.07
.035
.07
.03
.02
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5645
5640
5635
5630
5625
5620
5615
0
100
200
300
400
500
600

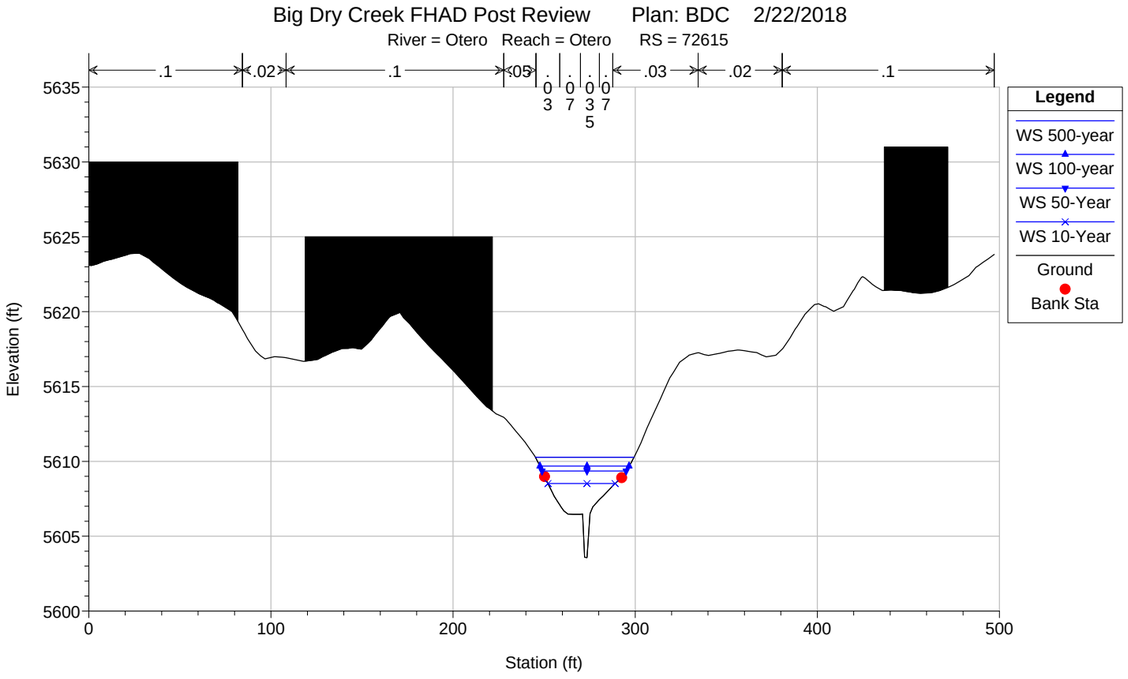

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 73088
.05
.03
.07
.035
.07
.03
.02
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5640
5635
5630
5625
5620
5615
5610
5605
0
100
200
300
400
500
600
700

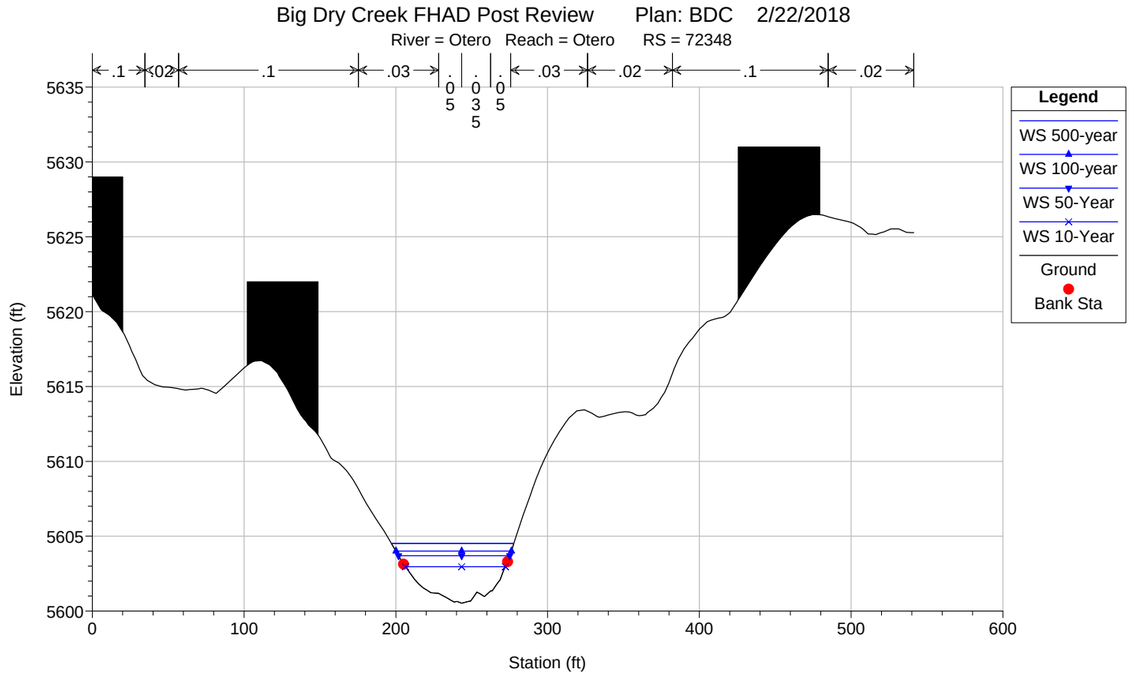

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72828
.03 .07 .02 .03 .07 .035 .07 .03 .02 .03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

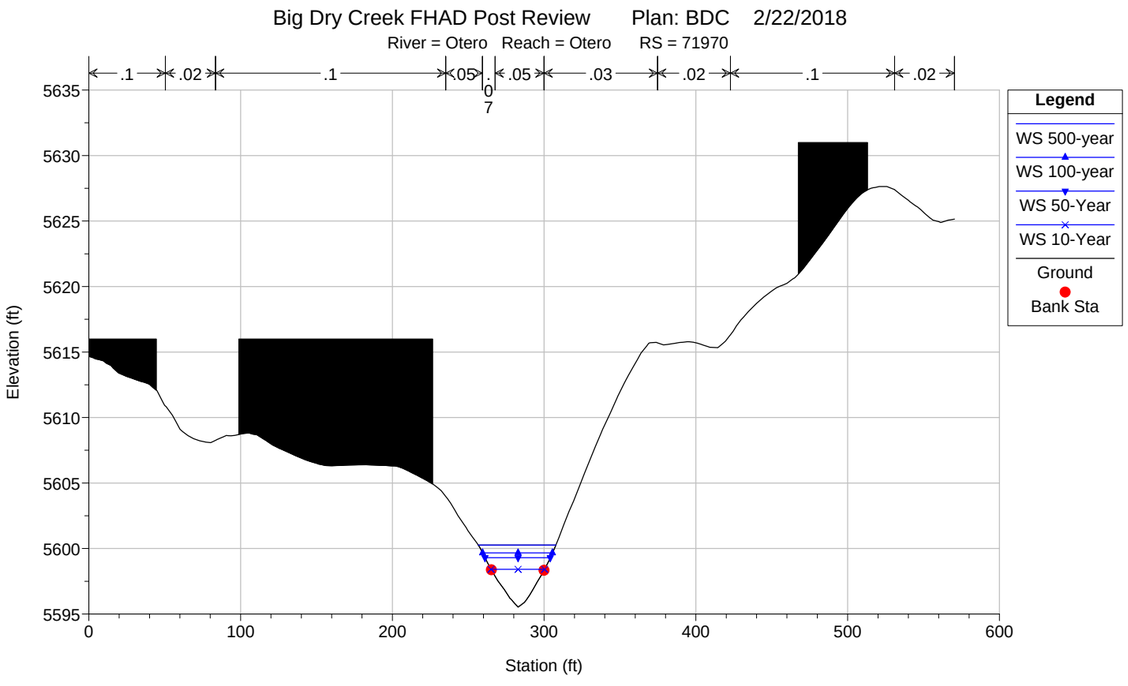

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72770 Culv Crossing 10 - S Steele St
.03 .07 .02 .03 .07 .035 .07 .03 .02 .03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

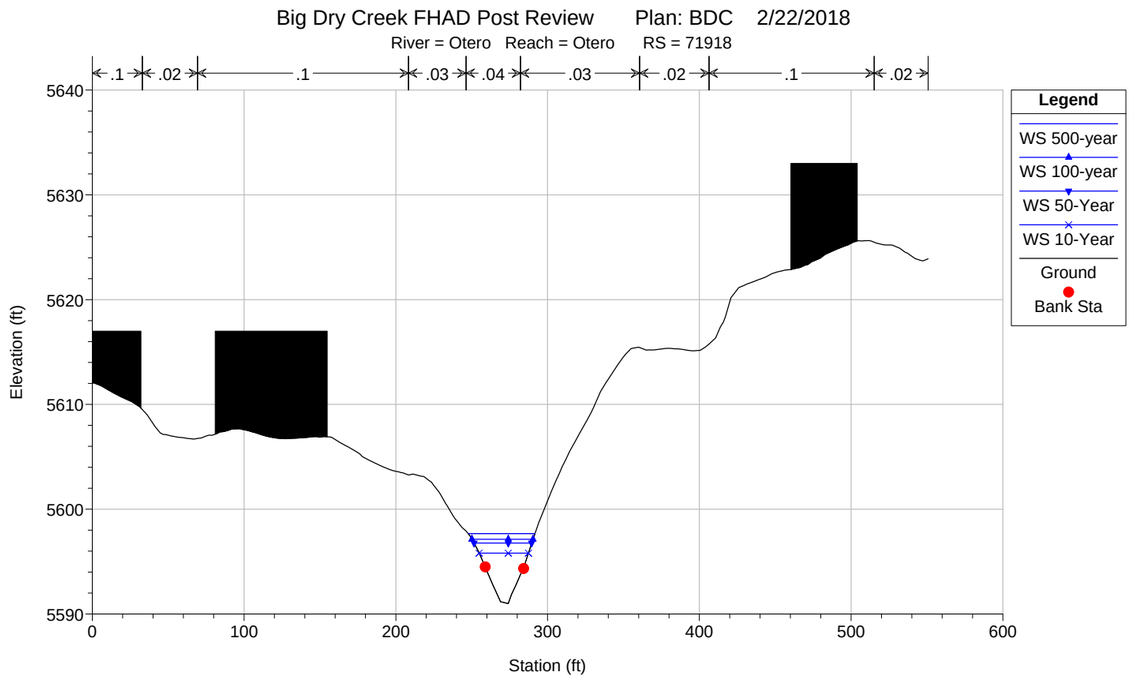

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72770 Culv Crossing 10 - S Steele St
.1 .02 .1 .03 .07 .035 .07 .03 .02 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

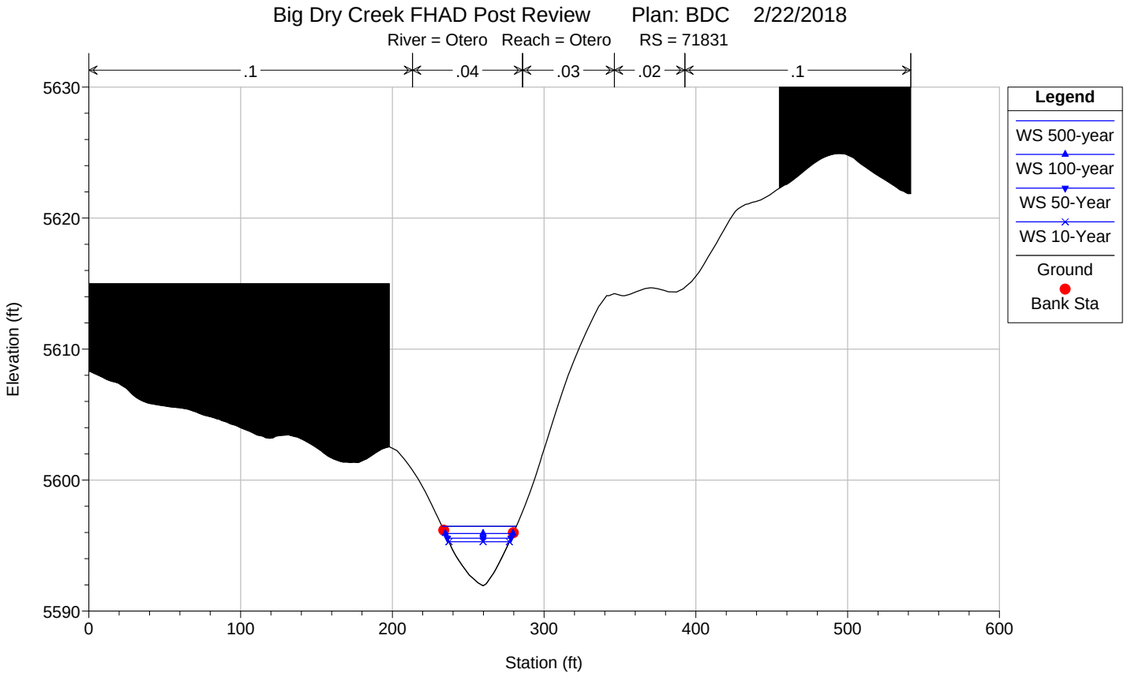

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72737
.1 .02 .1 .03 .07 .035 .07 .03 .02 .02
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

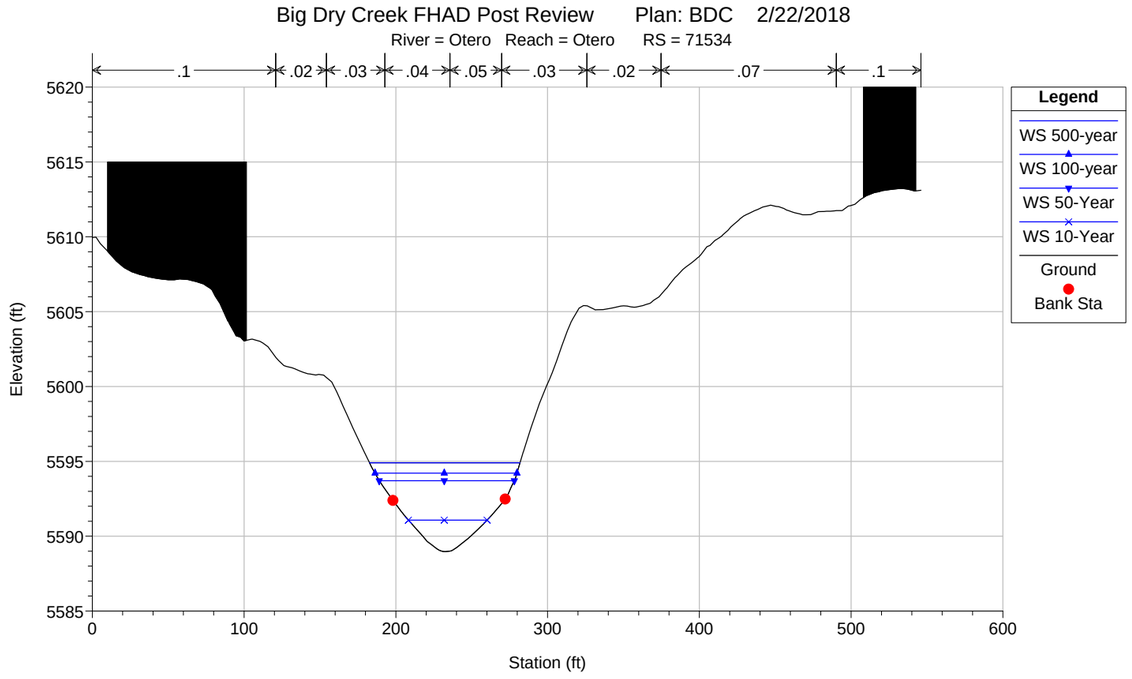

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72615
.1
.02
.1
.05
.03
.07
.035
.07
.03
.02
.1
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5635
5630
5625
5620
5615
5610
5605
5600
0
100
200
300
400
500

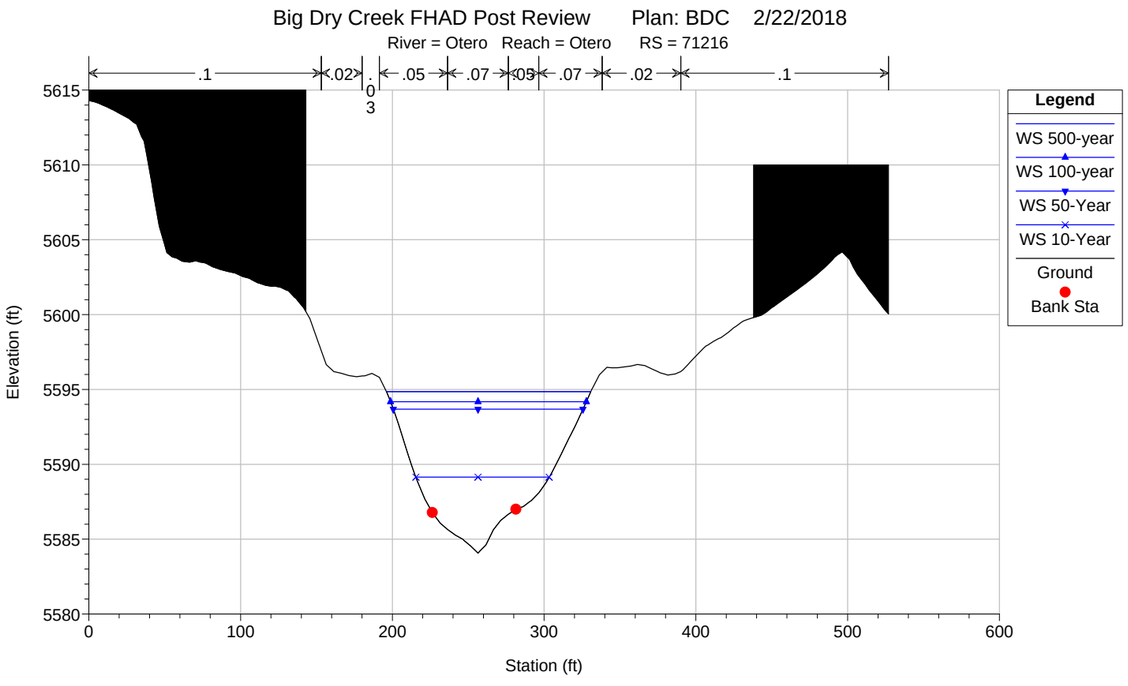

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 72348
.1
.02
.1
.03
.05
.035
.05
.03
.02
.1
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5635
5630
5625
5620
5615
5610
5605
5600
0
100
200
300
400
500
600

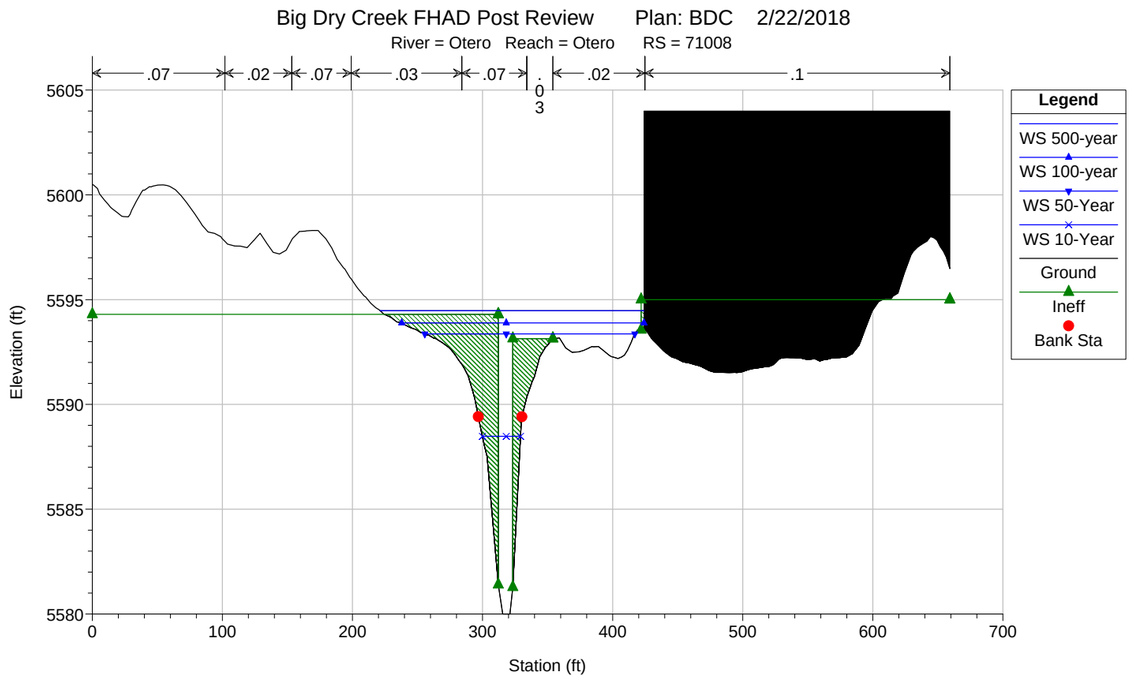

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71970
.1
.02
.1
.05
.07
.05
.03
.02
.1
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5635
5630
5625
5620
5615
5610
5605
5600
5595
0
100
200
300
400
500
600

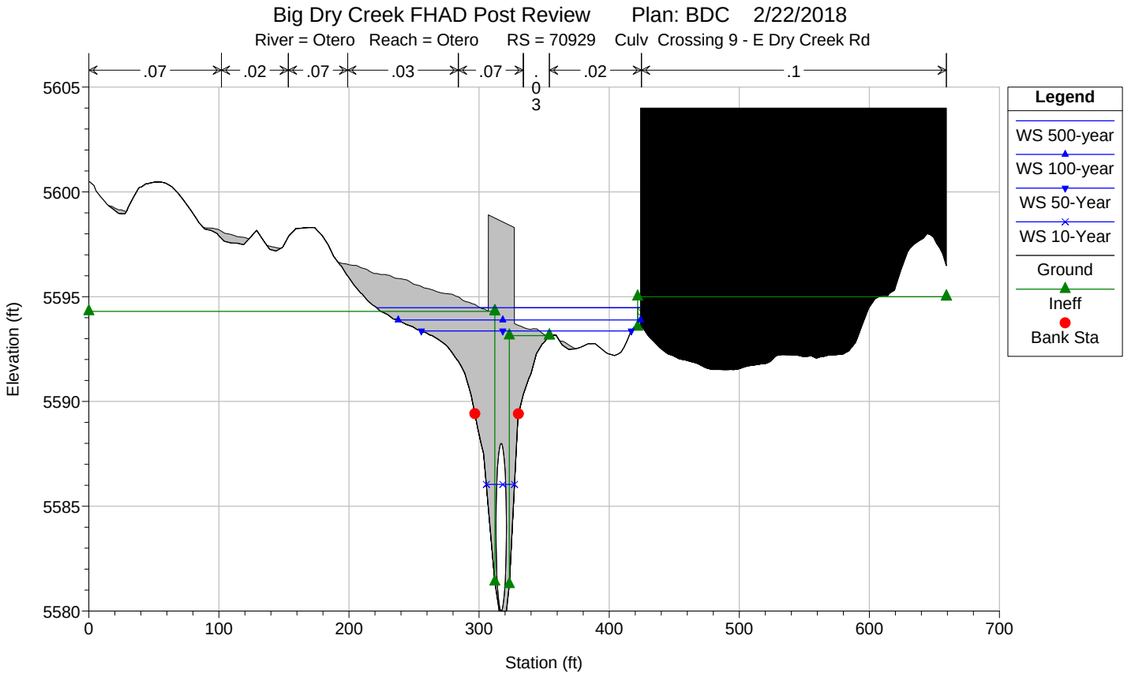

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71918
.1
.02
.1
.03
.04
.03
.02
.1
.02
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5640
5630
5620
5610
5600
5590
0
100
200
300
400
500
600

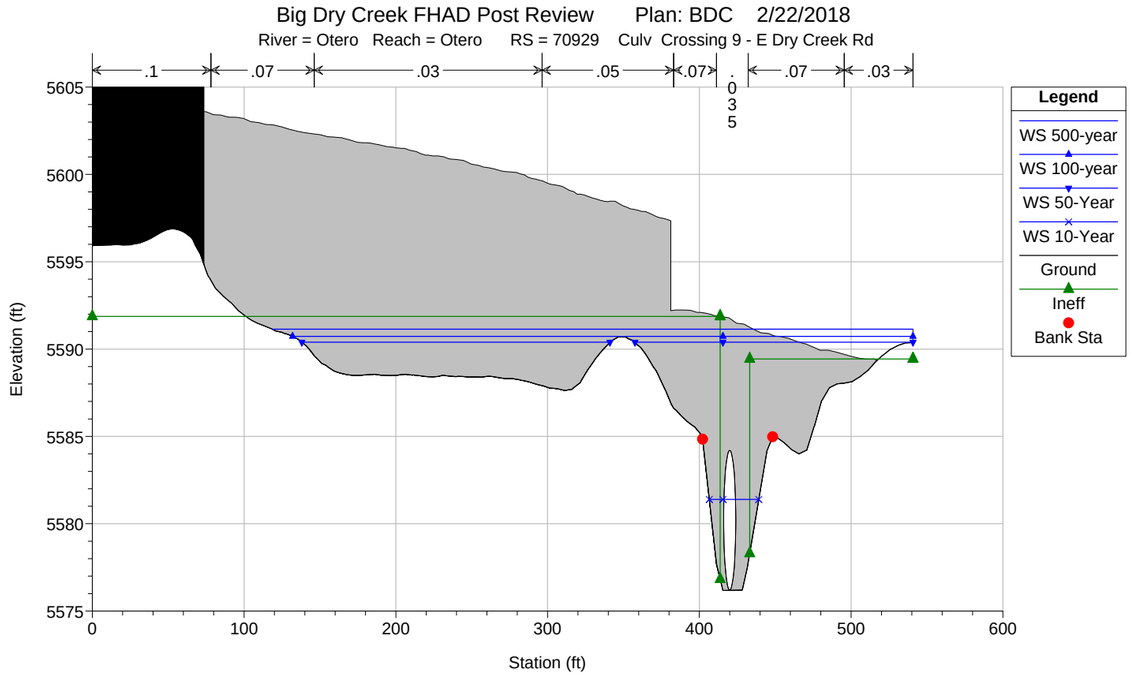

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71831
.1
.04
.03
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

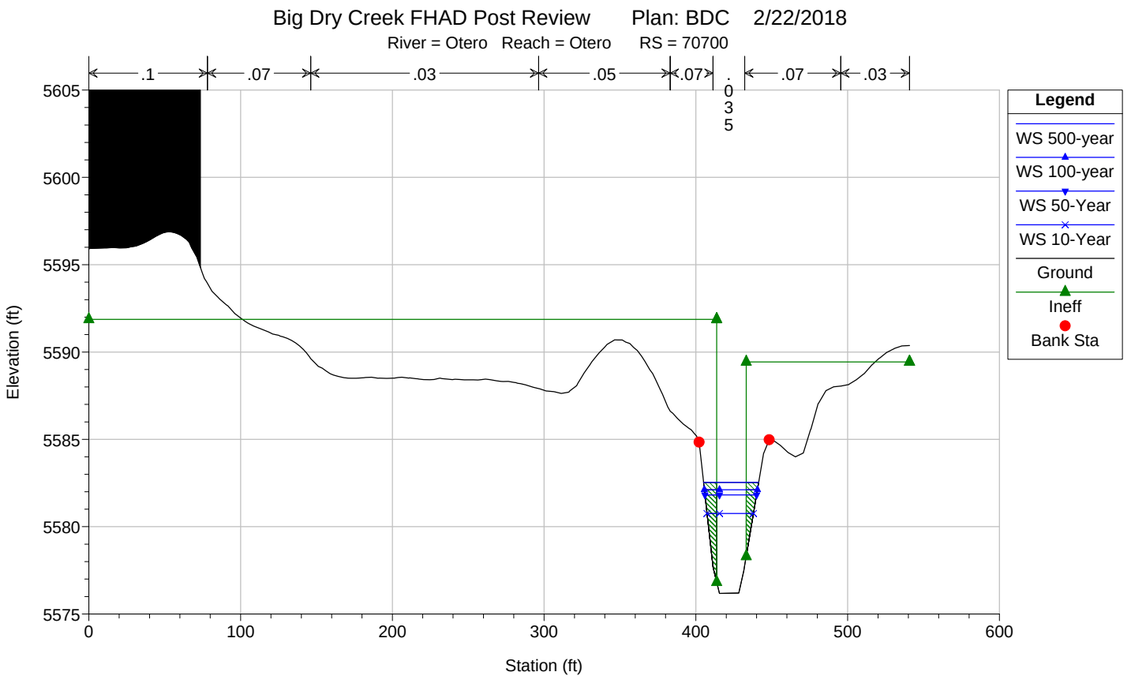

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71534
.1
.02
.03
.04
.05
.03
.02
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

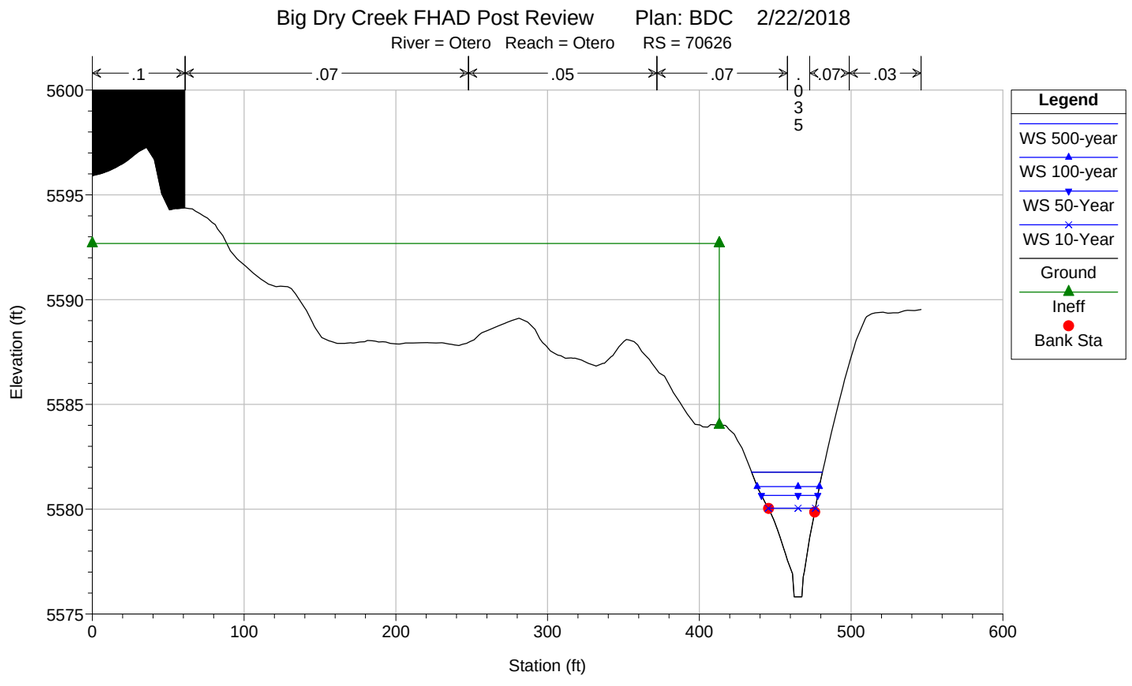

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71216
.1
.02
.03
.05
.07
.05
.07
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

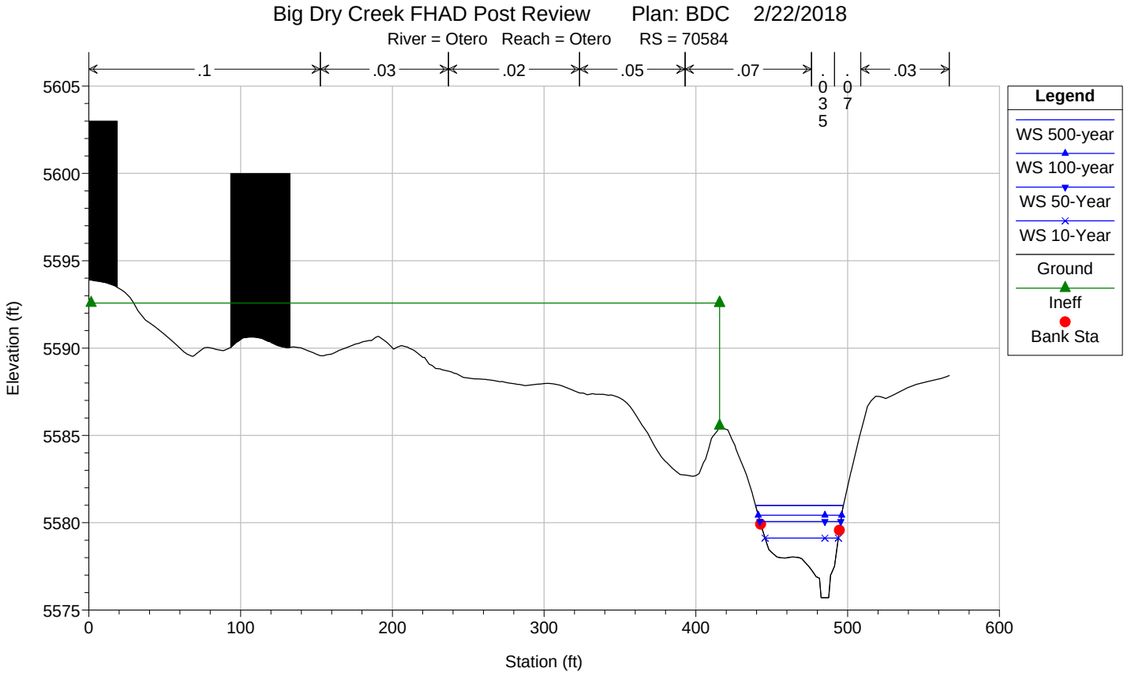

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 71008
.07
.02
.07
.03
.07
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

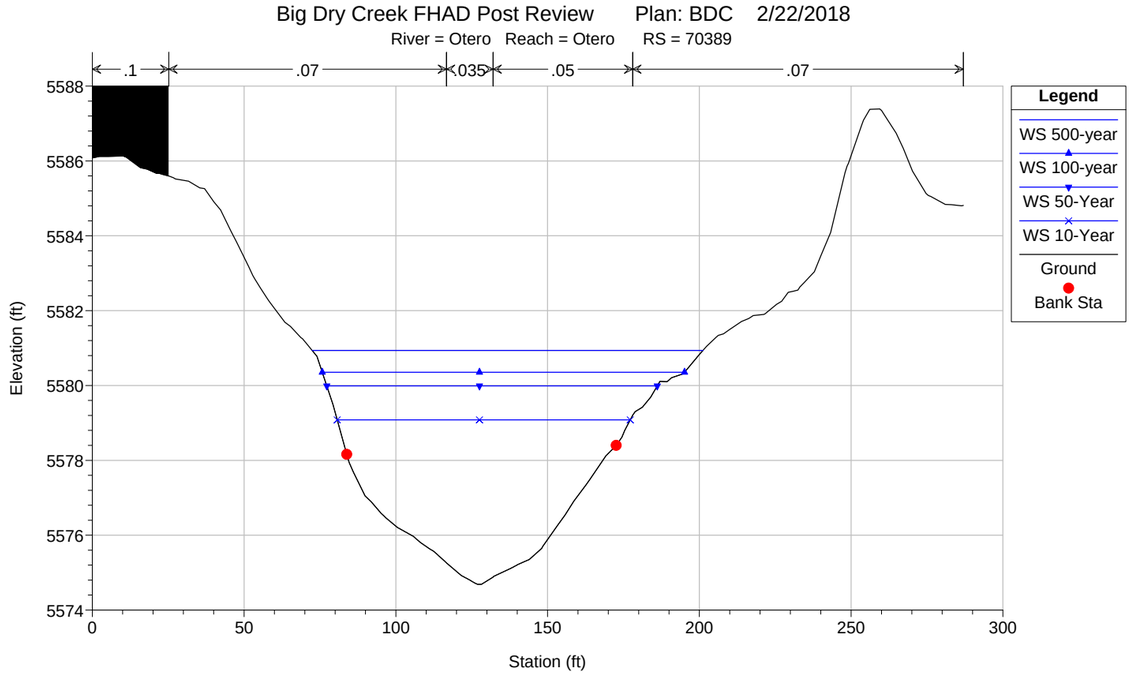

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70929 Culv Crossing 9 - E Dry Creek Rd
.07 .02 .07 .03 .07 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

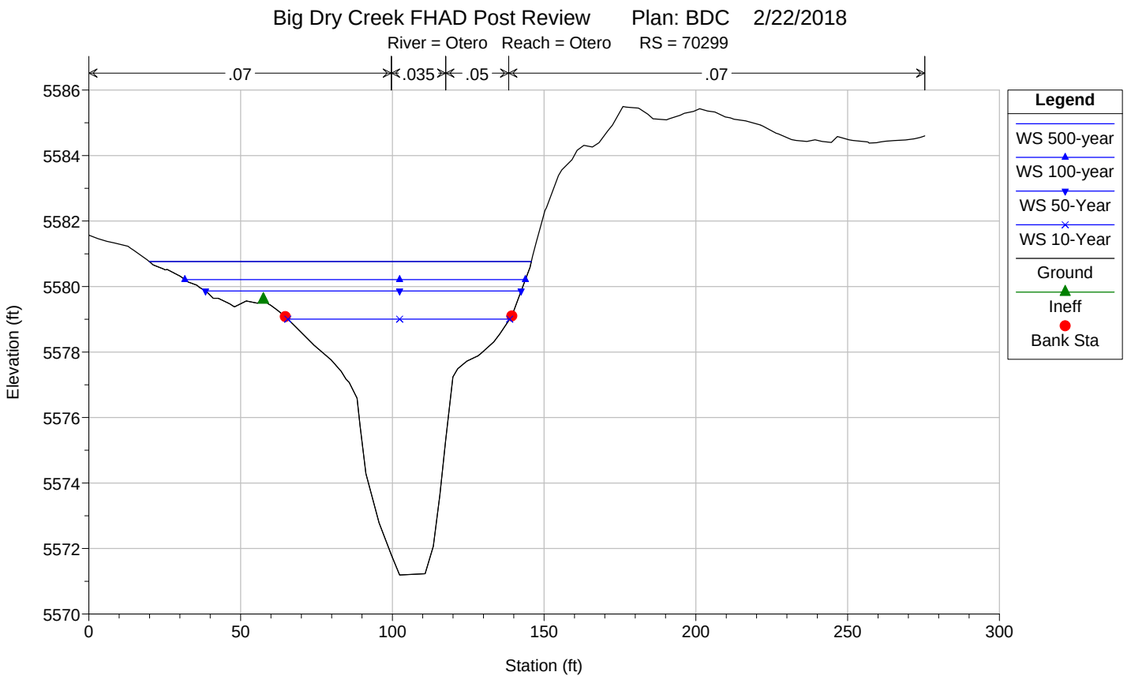

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70929 Culv Crossing 9 - E Dry Creek Rd
.1 .07 .03 .05 .07 .07 .03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

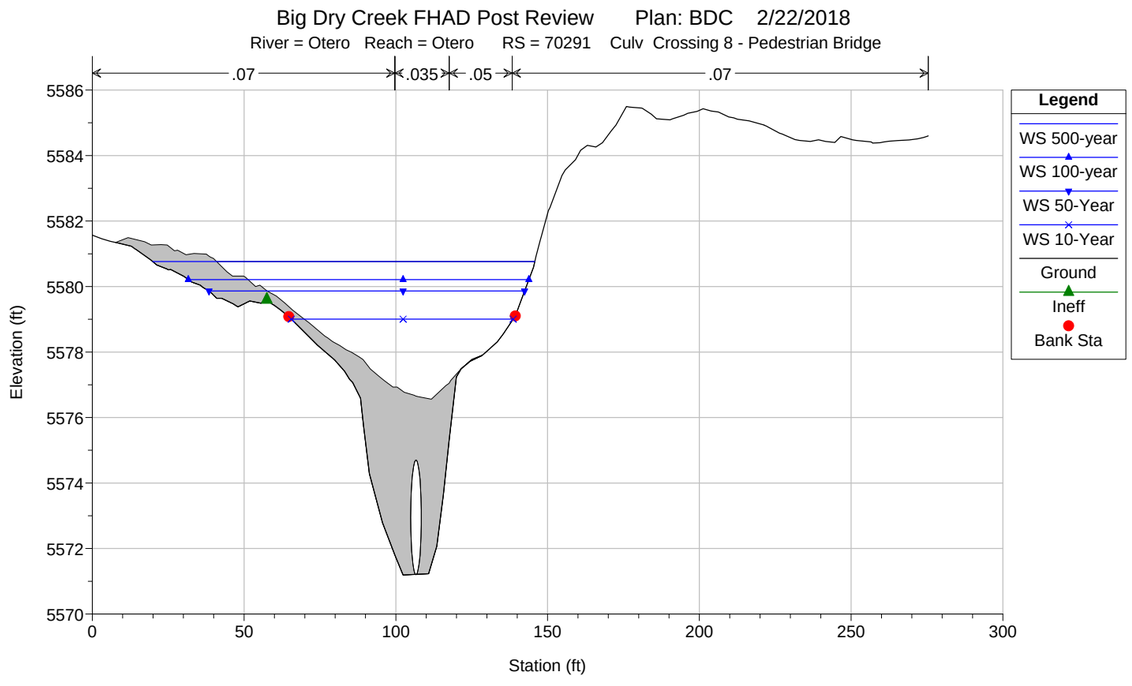

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70700
.1 .07 .03 .05 .07 .07 .03 .03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

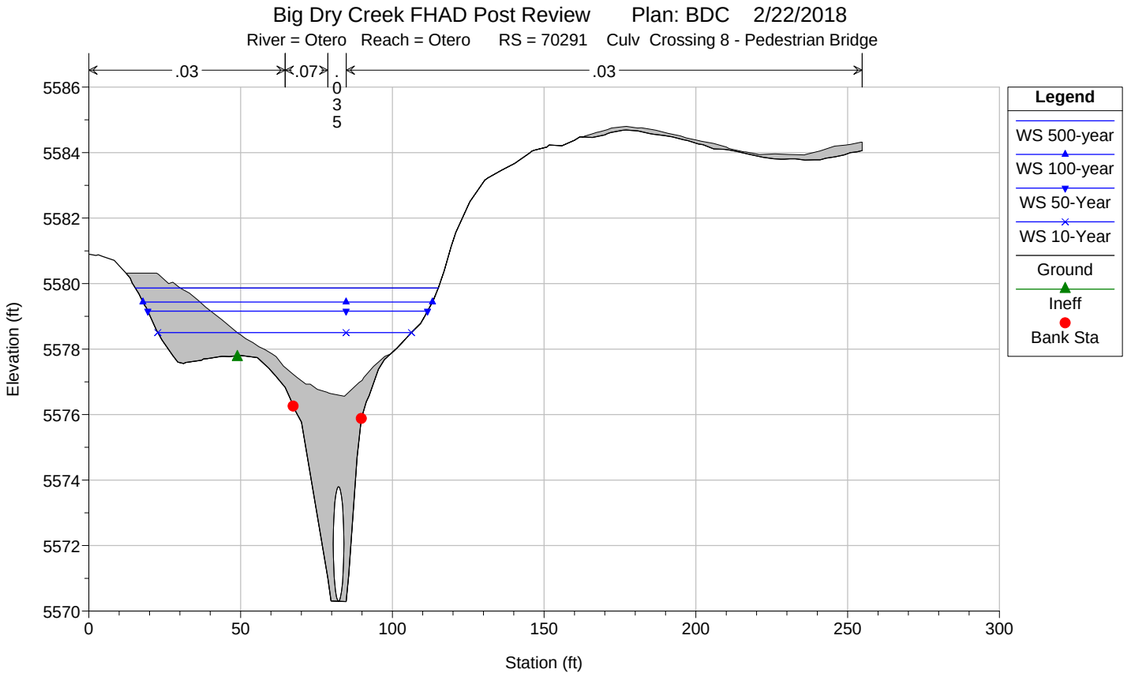

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70626
.1 .07 .05 .07 .07 .07 .03
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

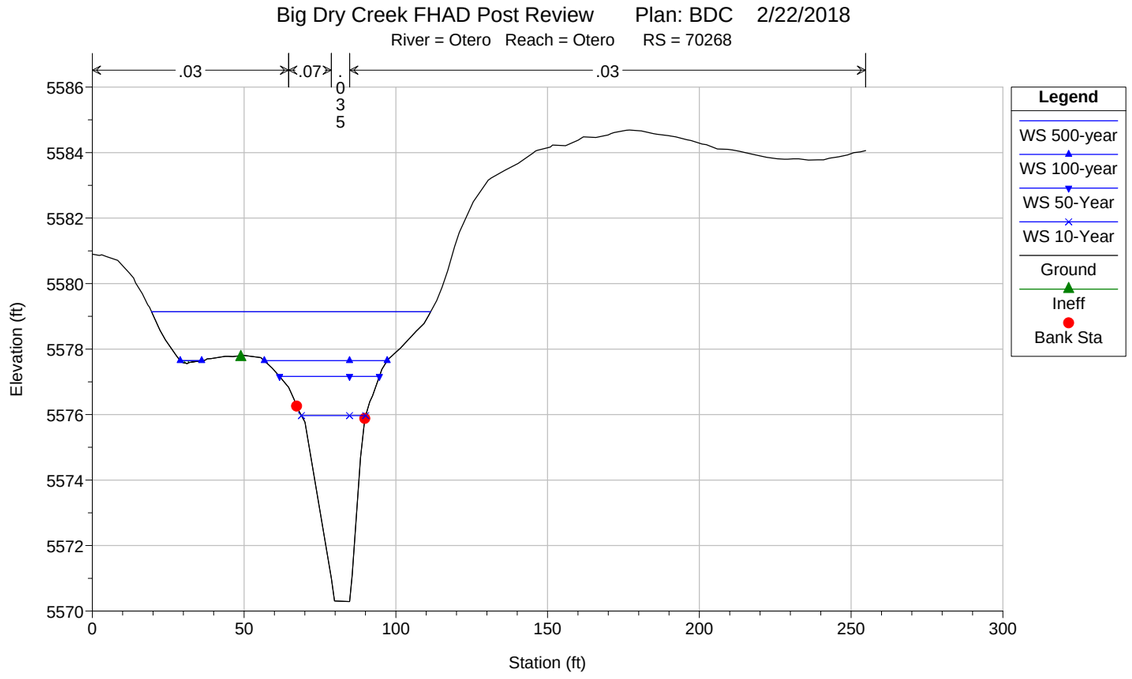

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70584
.1
.03
.02
.05
.07
.035
.07
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5605
5600
5595
5590
5585
5580
5575
0
100
200
300
400
500
600

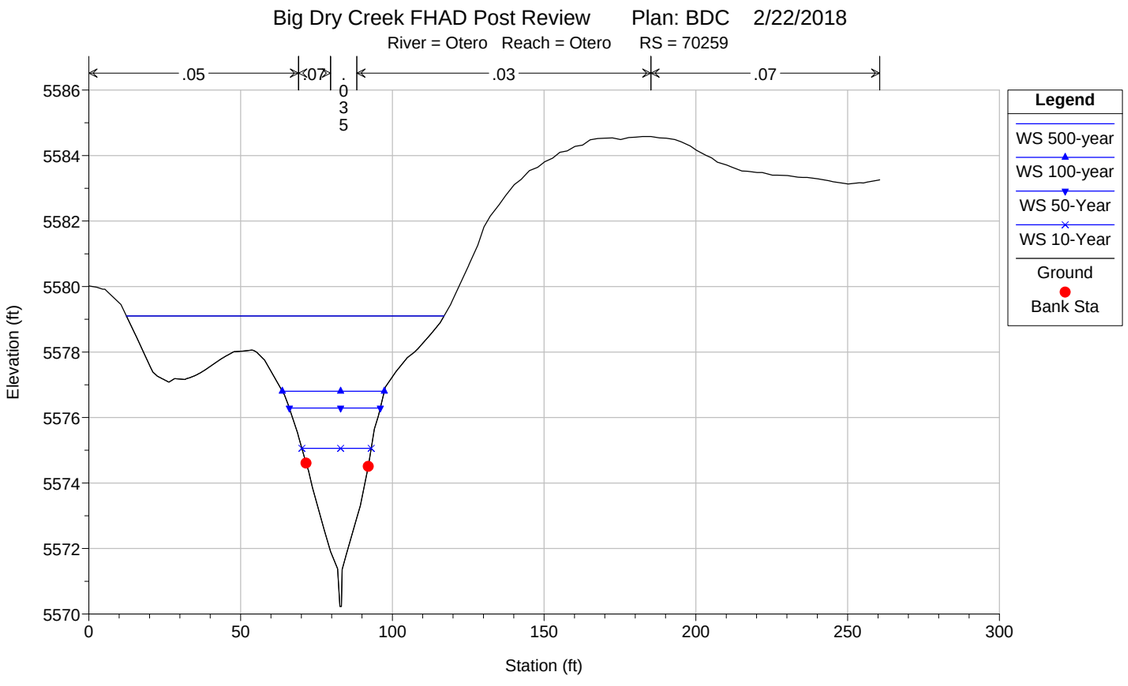

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70389
.1
.07
.035
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5588
5586
5584
5582
5580
5578
5576
5574
0
50
100
150
200
250
300

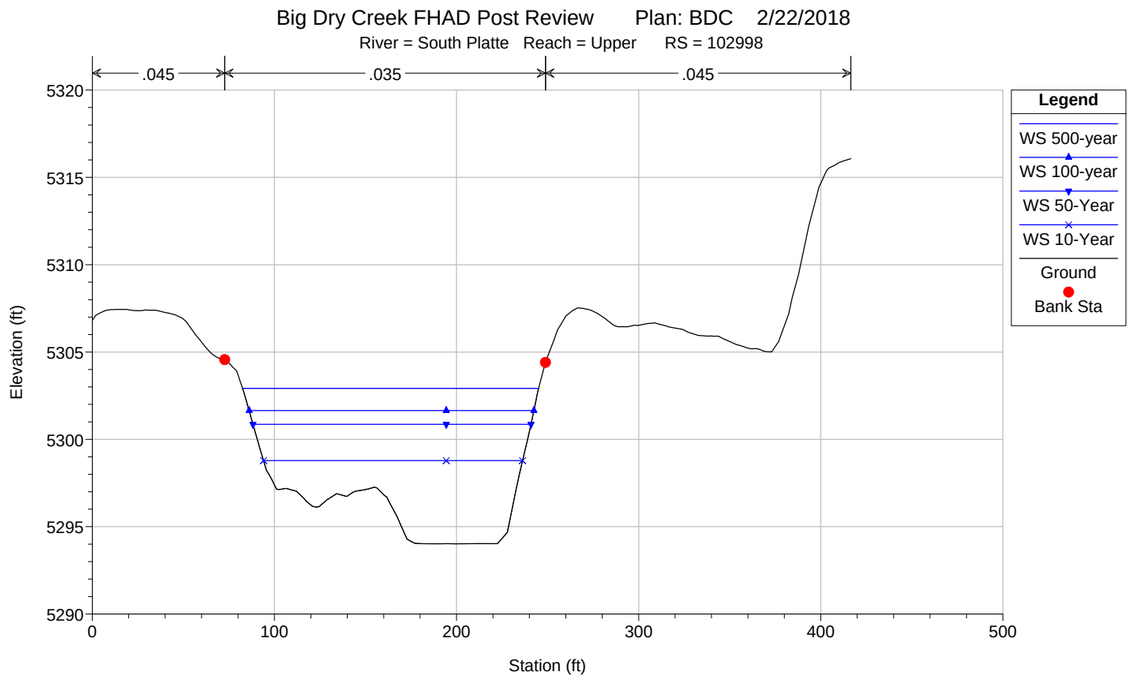

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70299
.07
.035
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5586
5584
5582
5580
5578
5576
5574
5572
5570
0
50
100
150
200
250
300

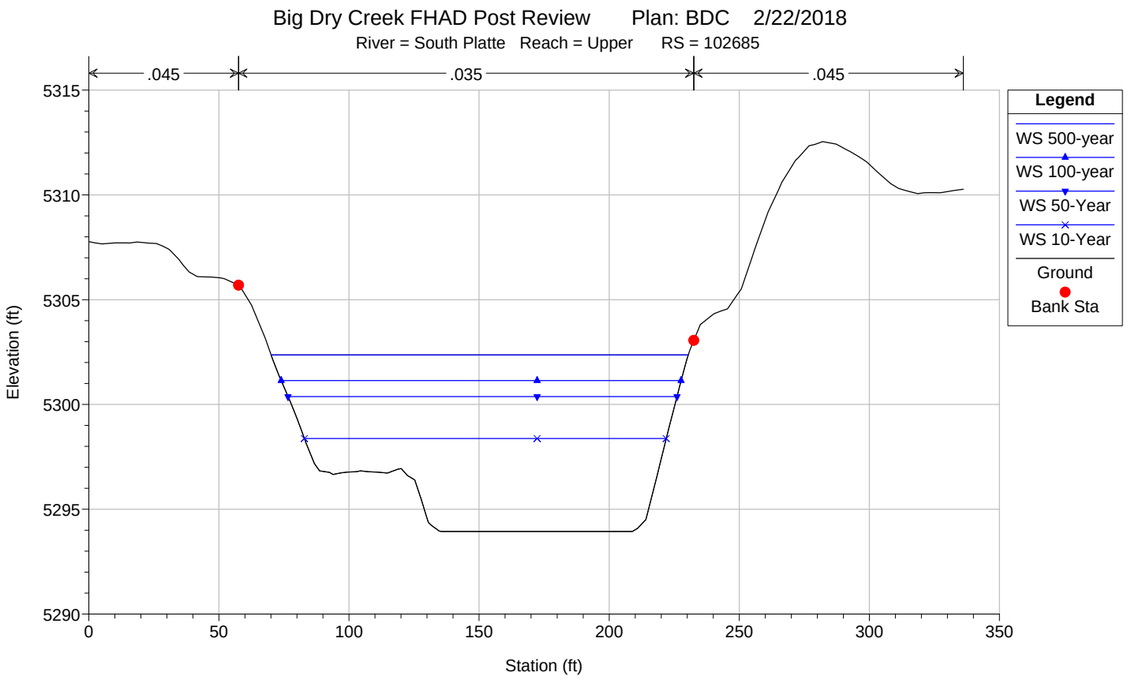

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70291 Culv Crossing 8 - Pedestrian Bridge
.07
.035
.05
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5586
5584
5582
5580
5578
5576
5574
5572
5570
0
50
100
150
200
250
300

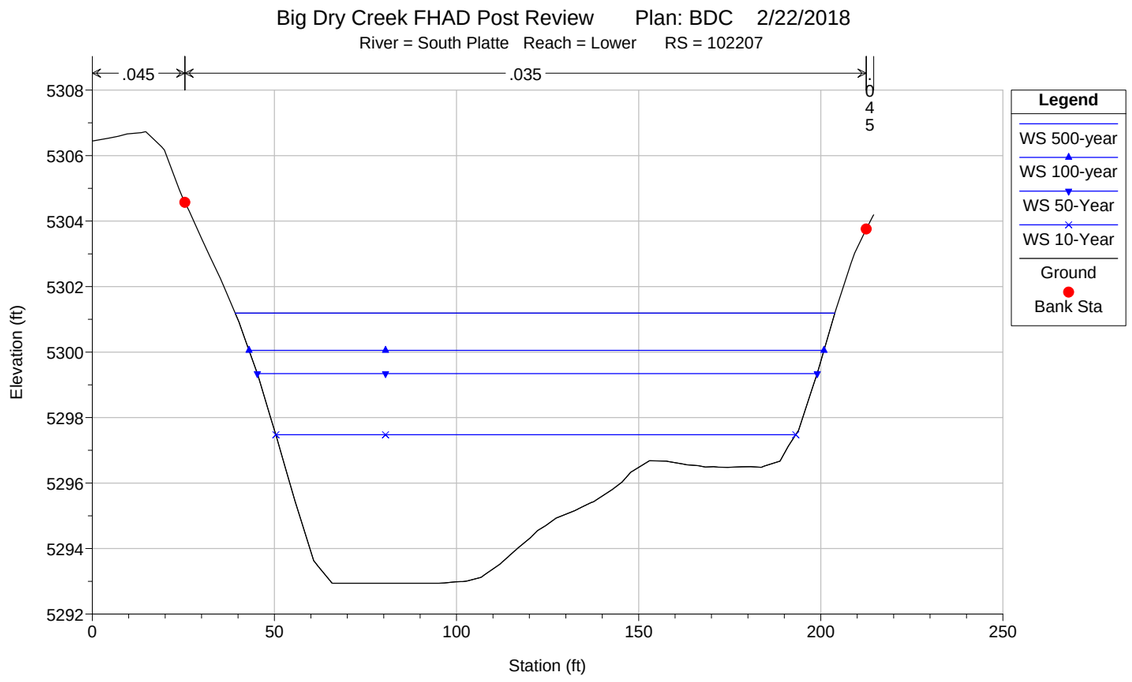

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70291 Culv Crossing 8 - Pedestrian Bridge
.03
.07
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5586
5584
5582
5580
5578
5576
5574
5572
5570
0
50
100
150
200
250
300

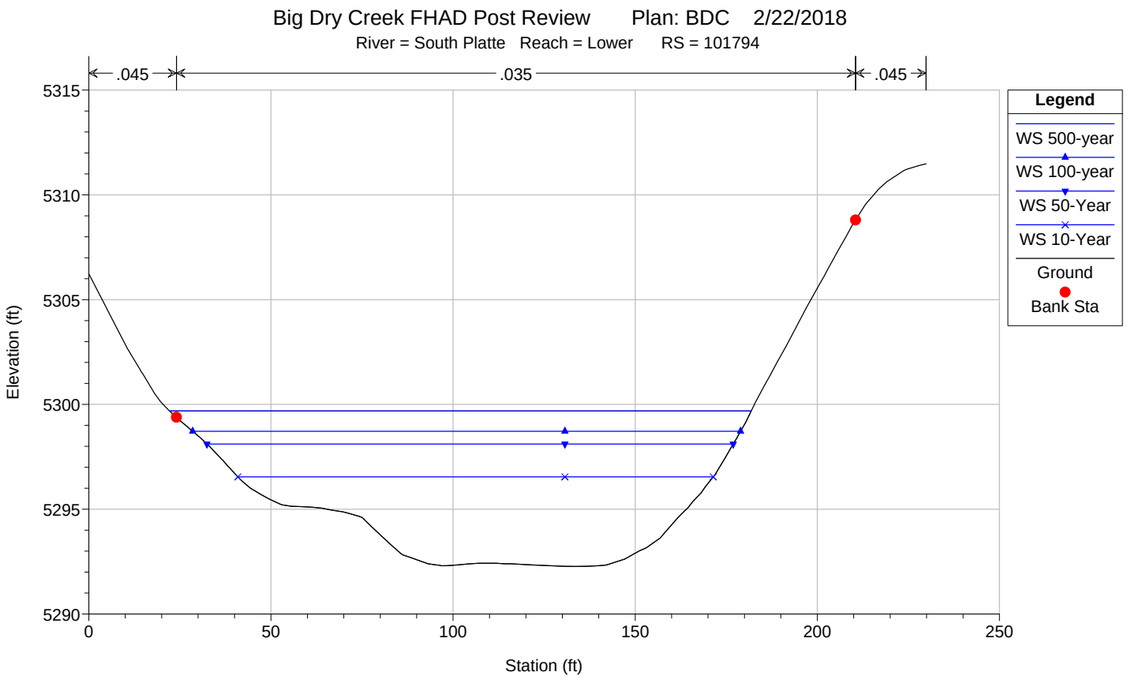

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70268
.03
.07
.035
.03
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5586
5584
5582
5580
5578
5576
5574
5572
5570
0
50
100
150
200
250
300

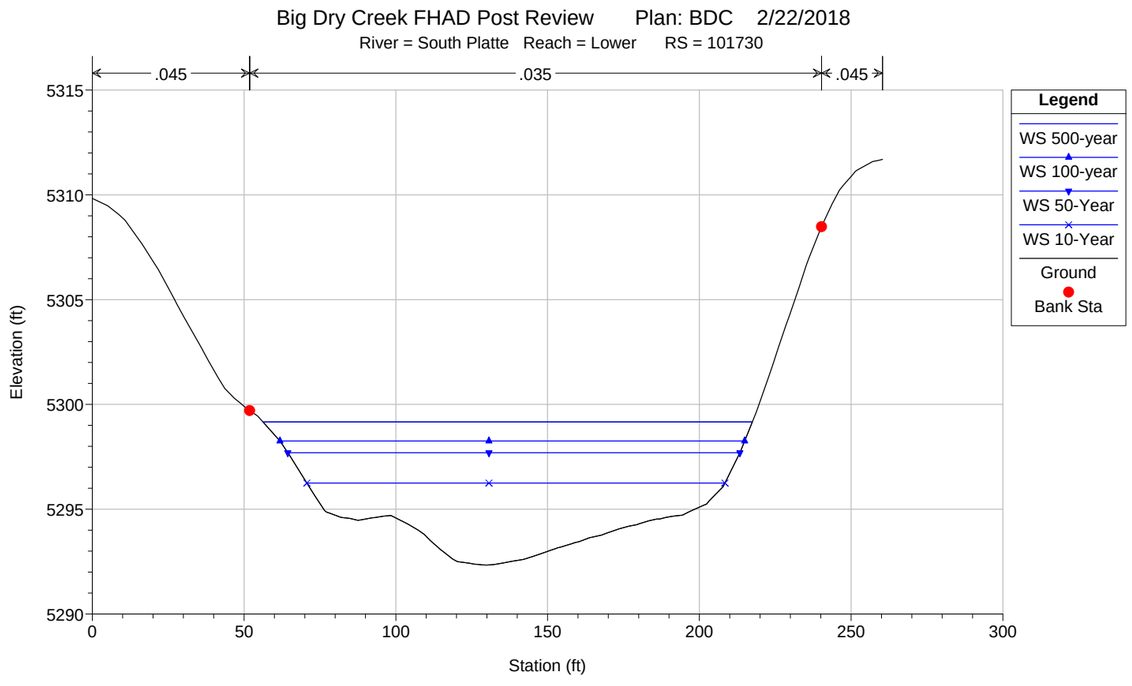

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = Otero Reach = Otero RS = 70259
.05
.07
.035
.03
.07
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5586
5584
5582
5580
5578
5576
5574
5572
5570
0
50
100
150
200
250
300

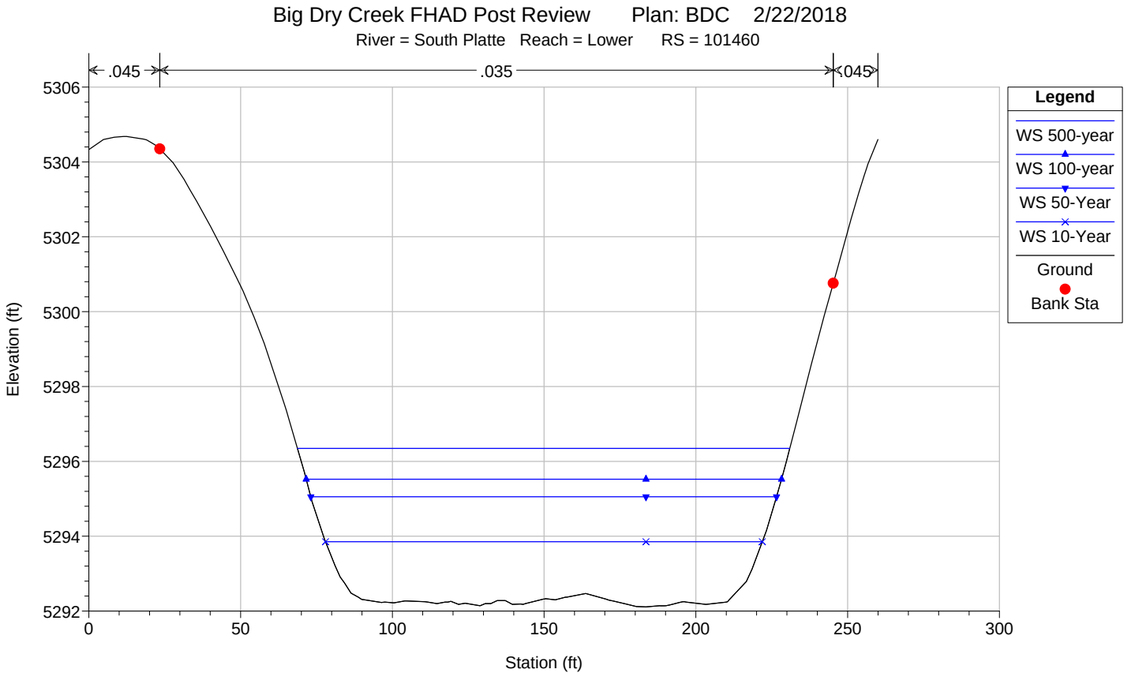

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Upper RS = 102998
.045
.035
.045
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5320
5315
5310
5305
5300
5295
5290
0
100
200
300
400
500

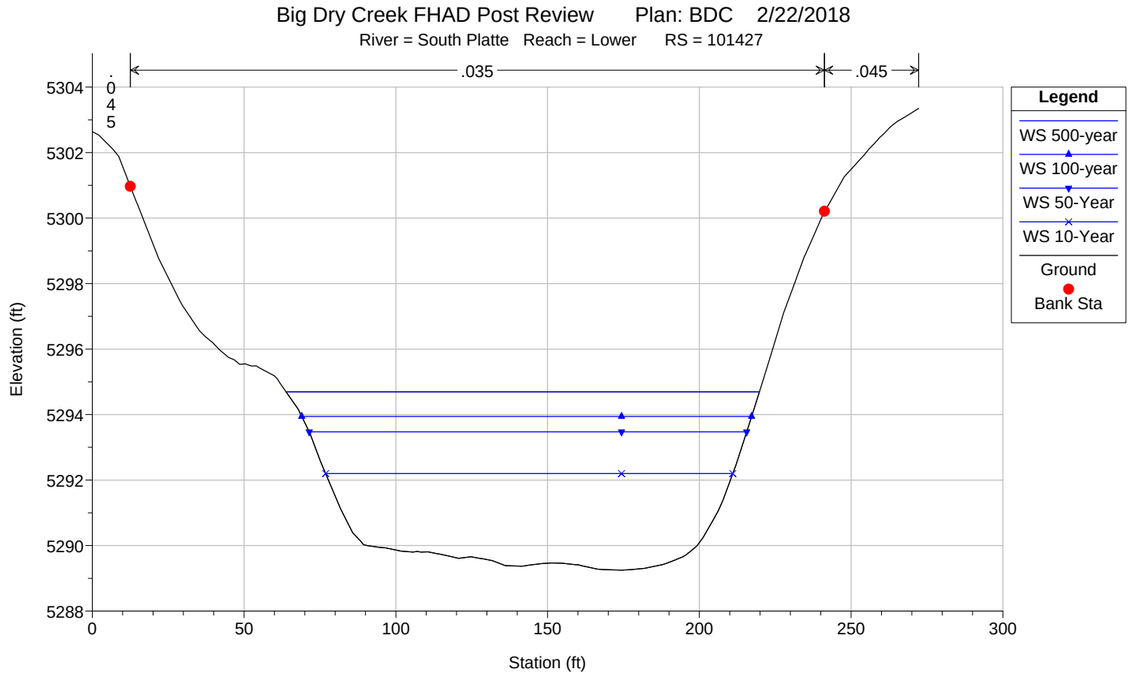

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Upper RS = 102685
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

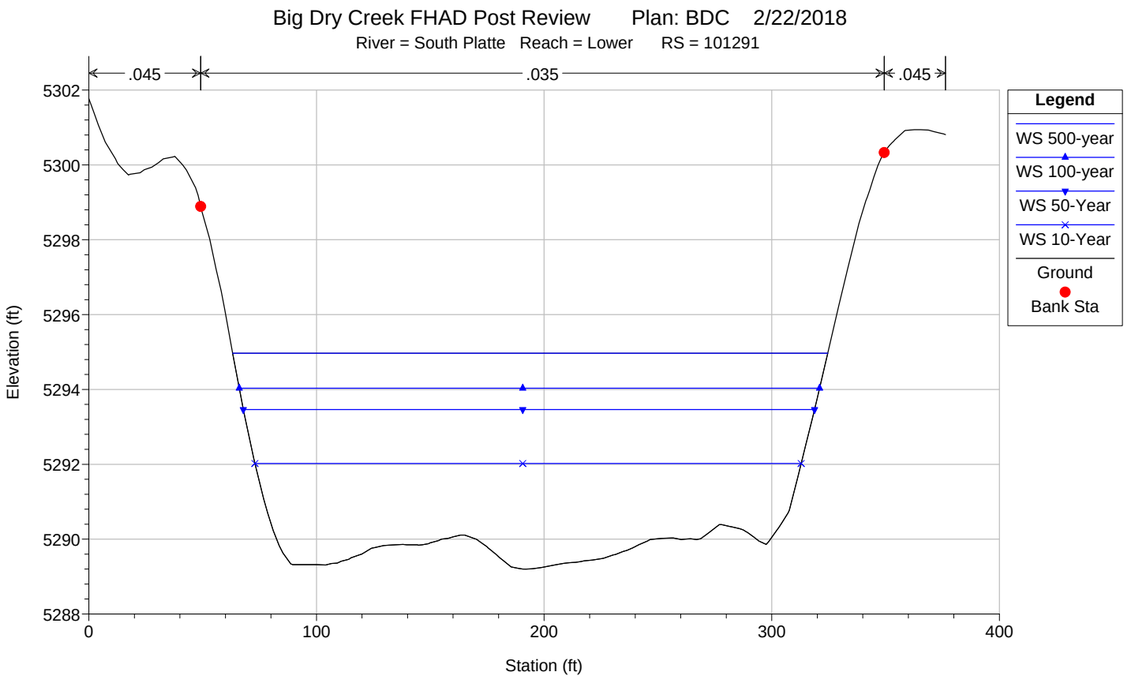

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 102207
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

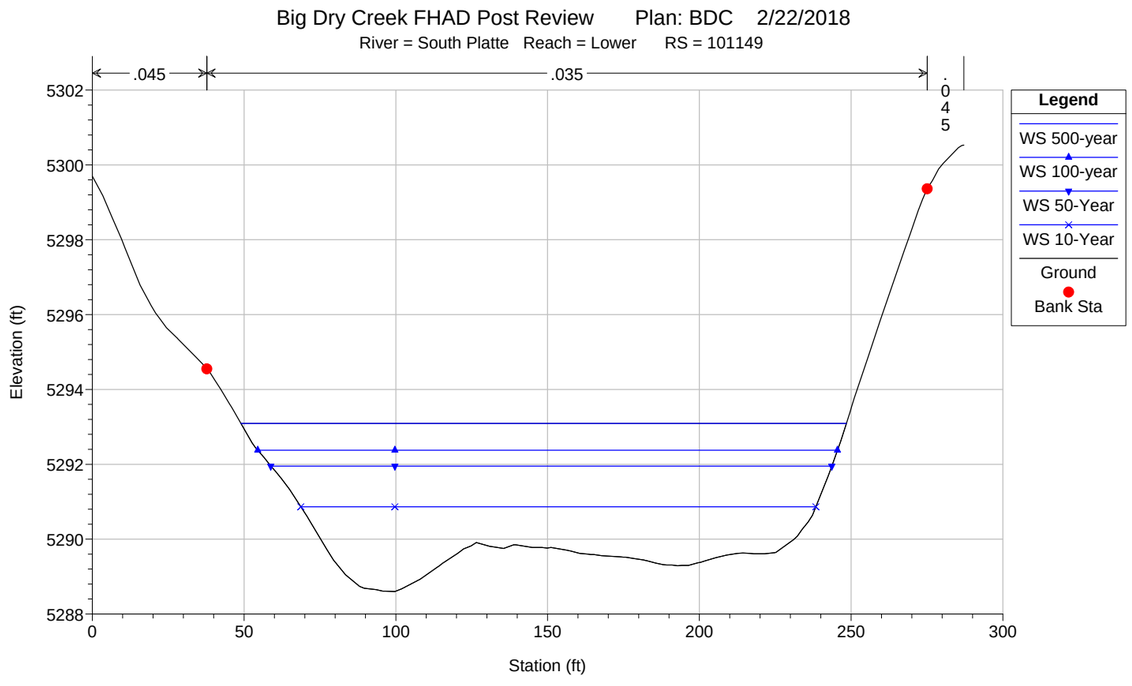

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101794
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

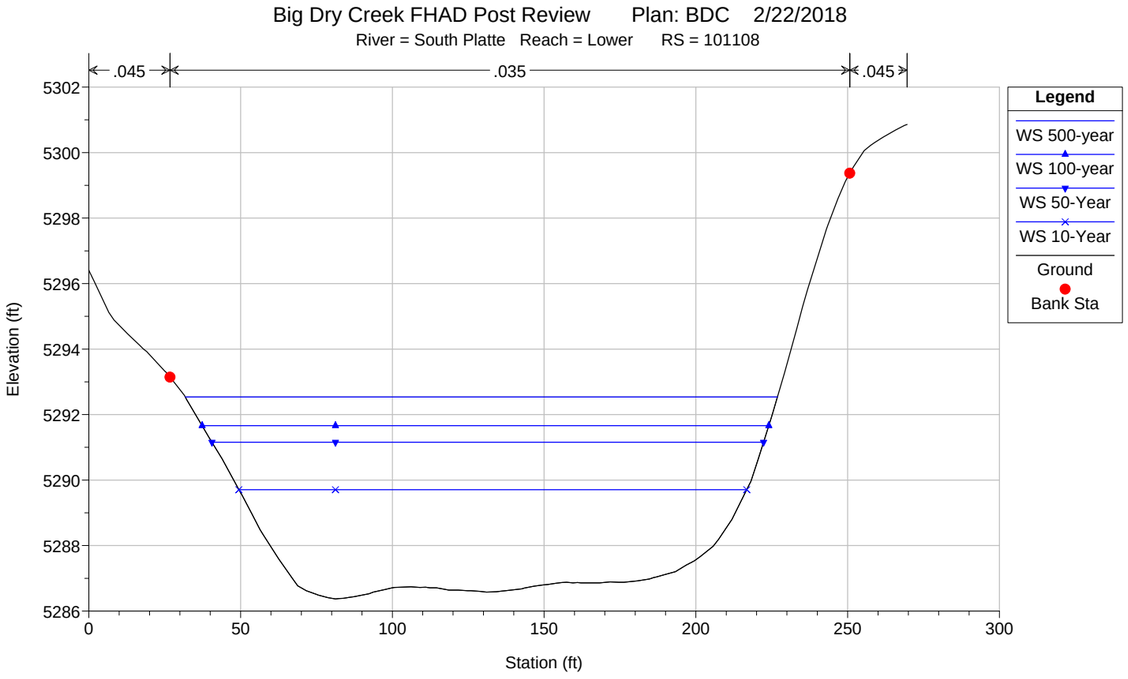

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101730
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

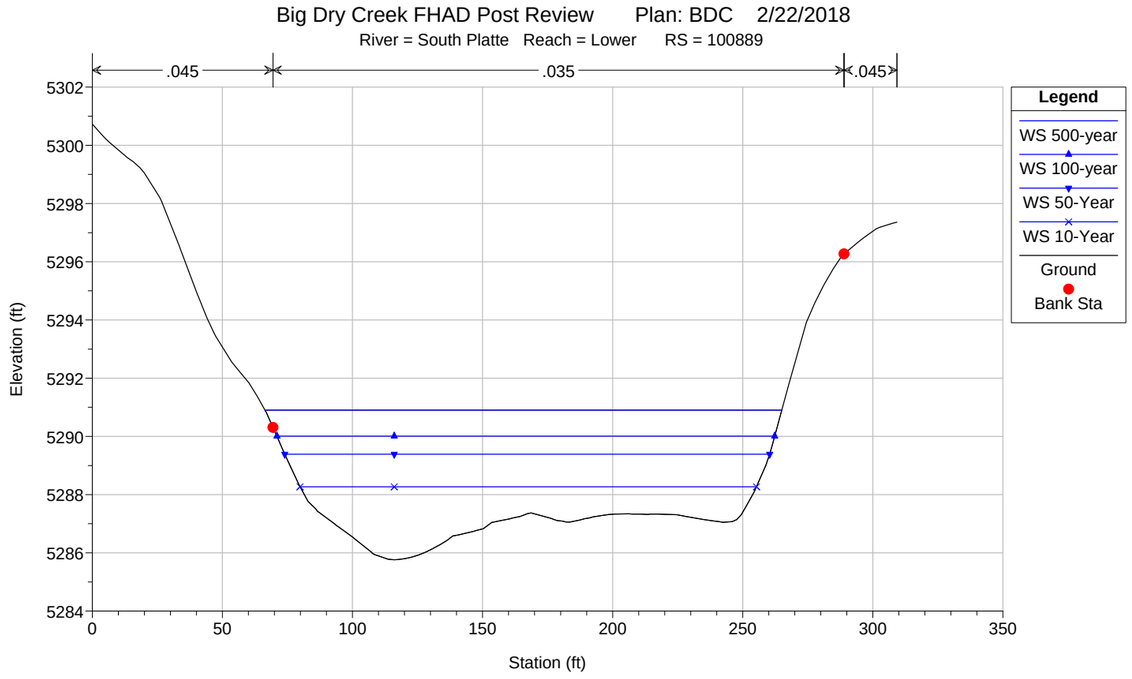

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101460
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

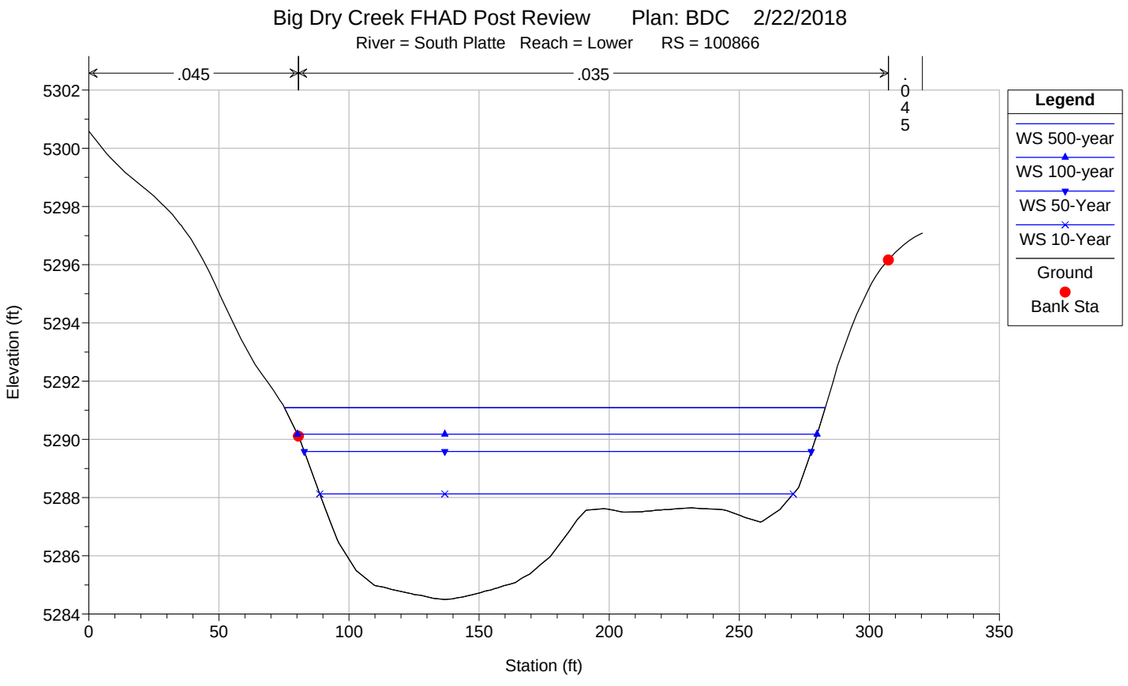

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101427
.035
.045
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

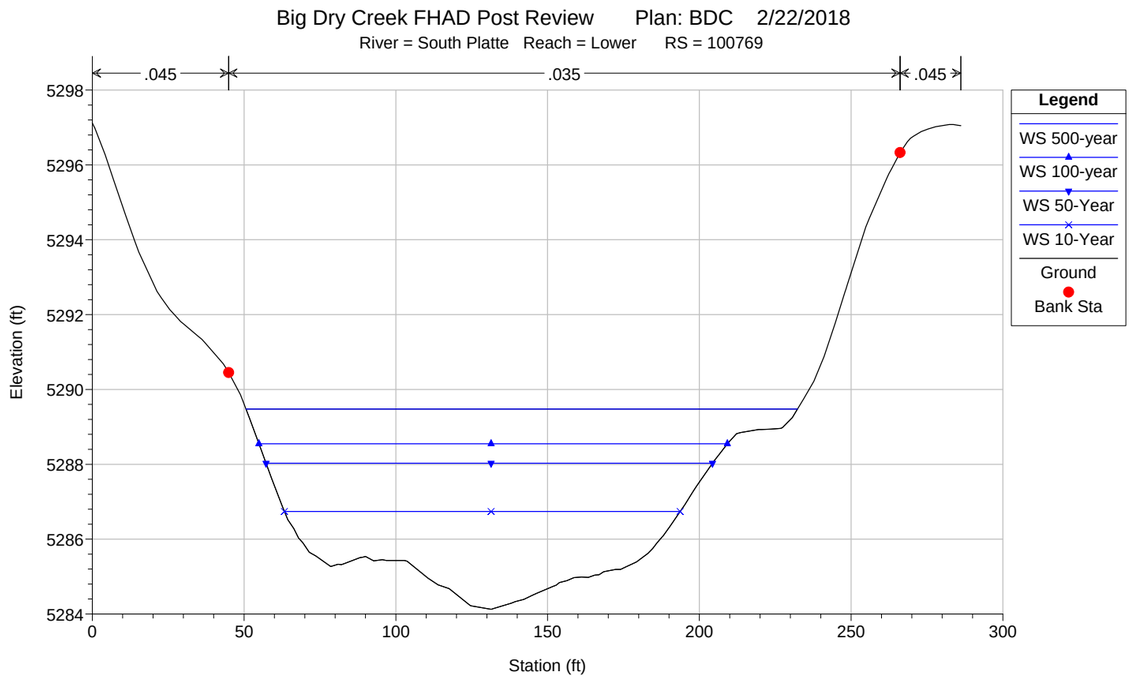

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101291
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

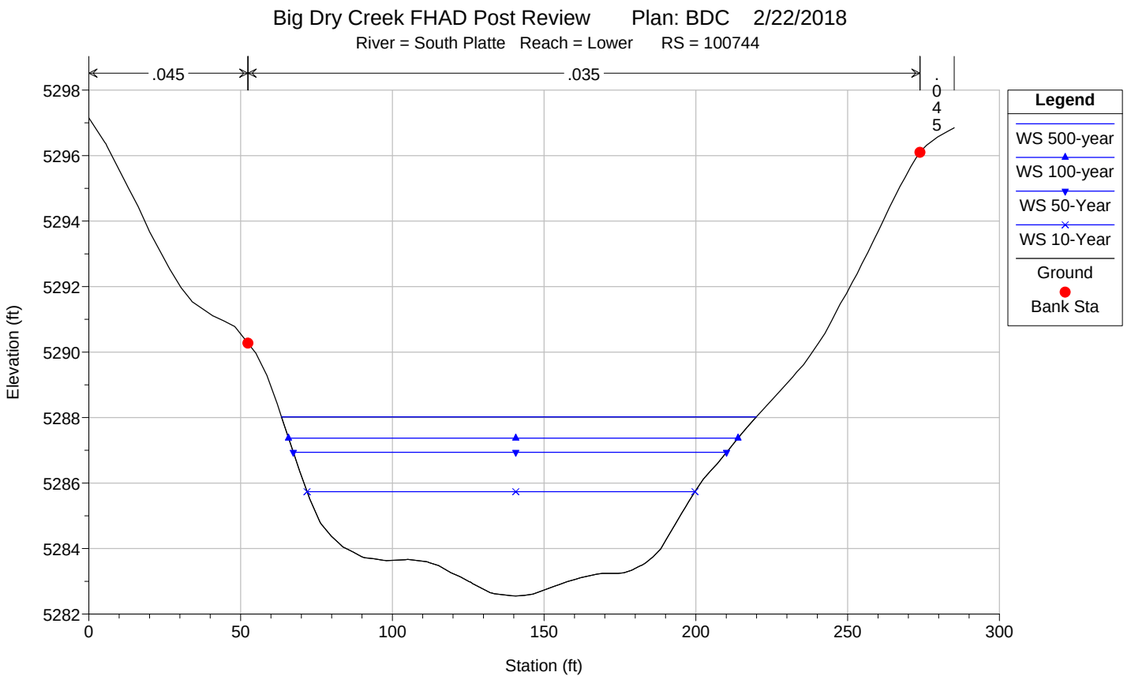

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101149
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

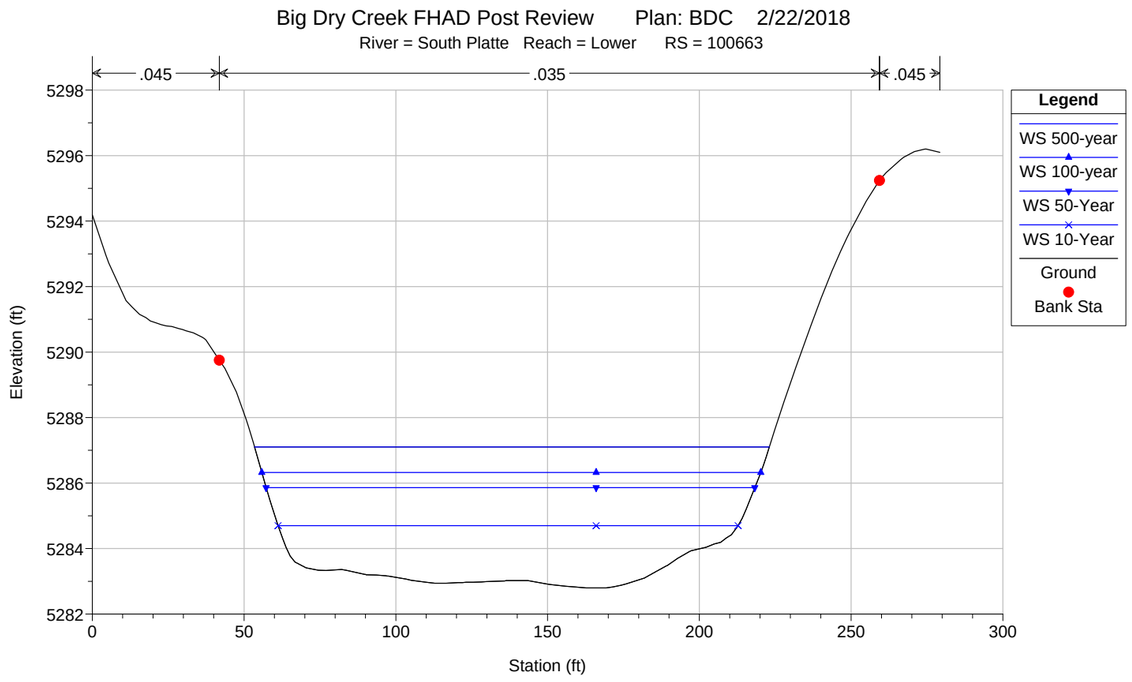

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 101108
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

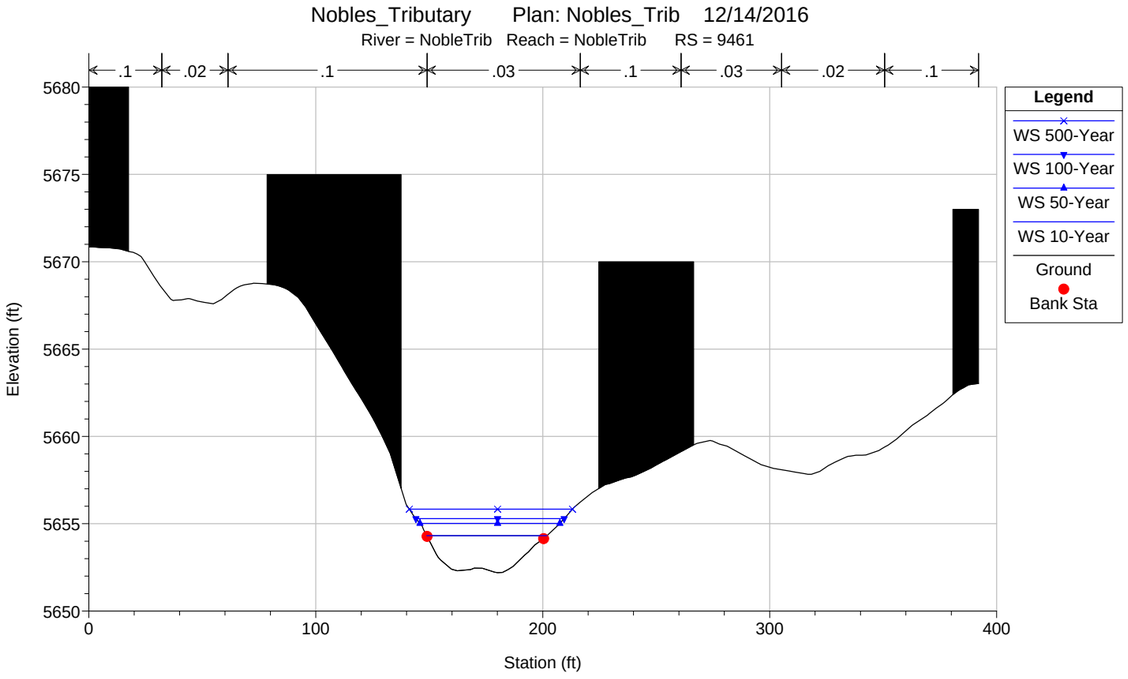

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 100889
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

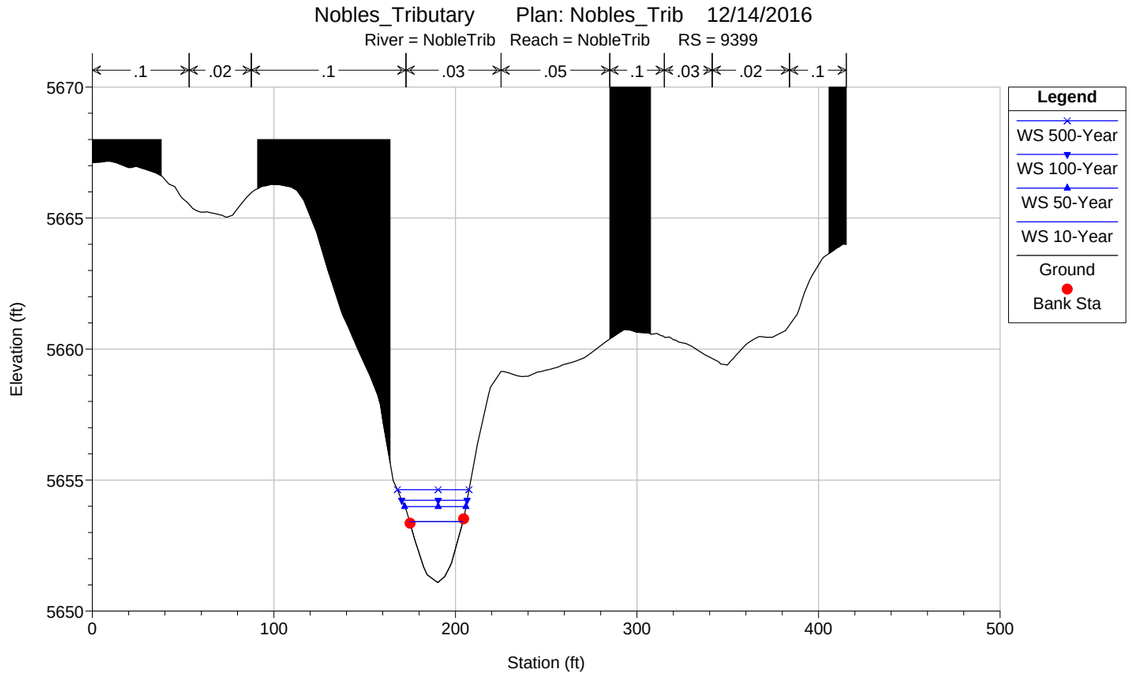

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 100866
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

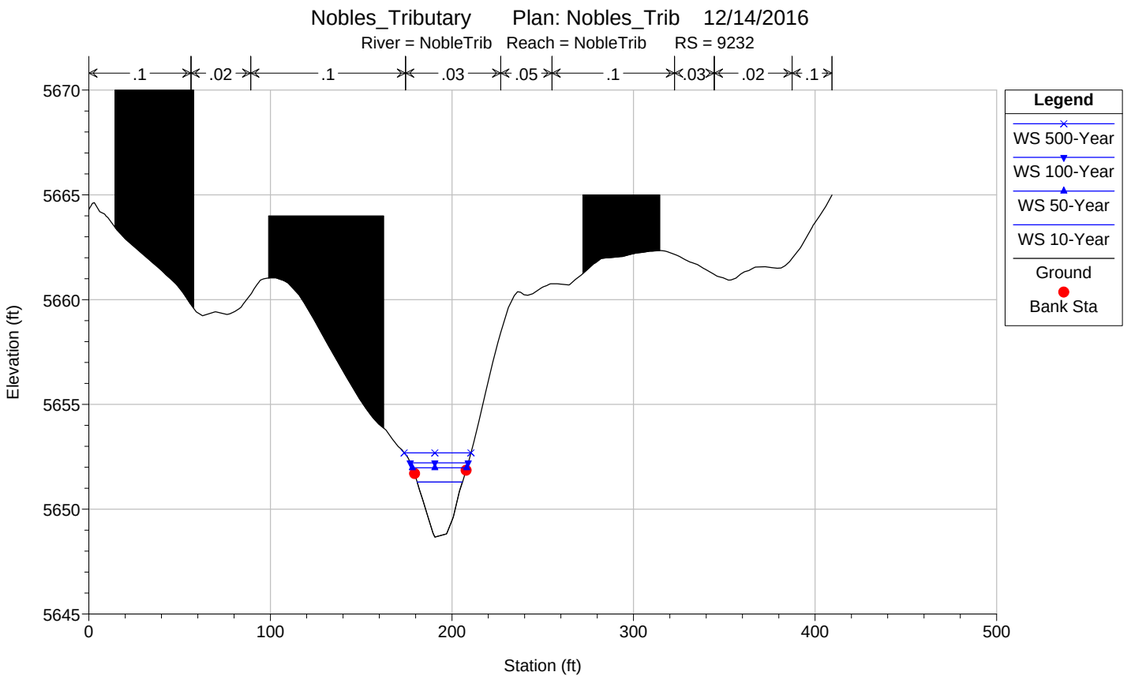

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 100769
.045
.035
.045
Elevation (ft)
Station (ft)
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta

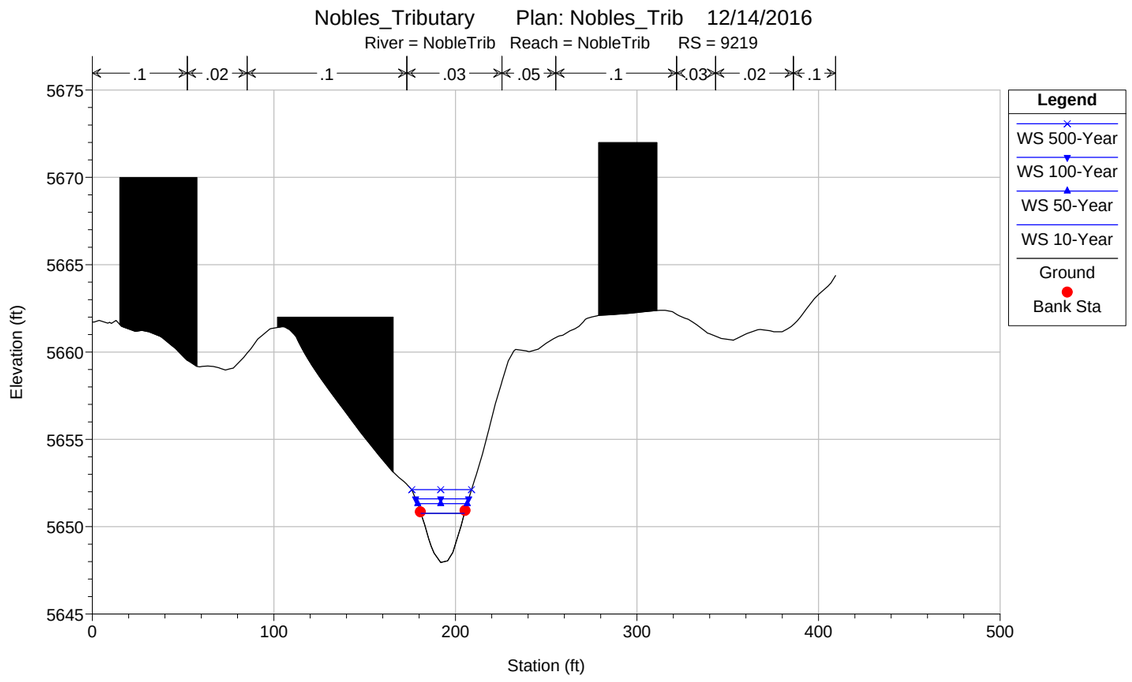

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 100744
.045
.035
.045
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5298
5296
5294
5292
5290
5288
5286
5284
5282
0
50
100
150
200
250
300

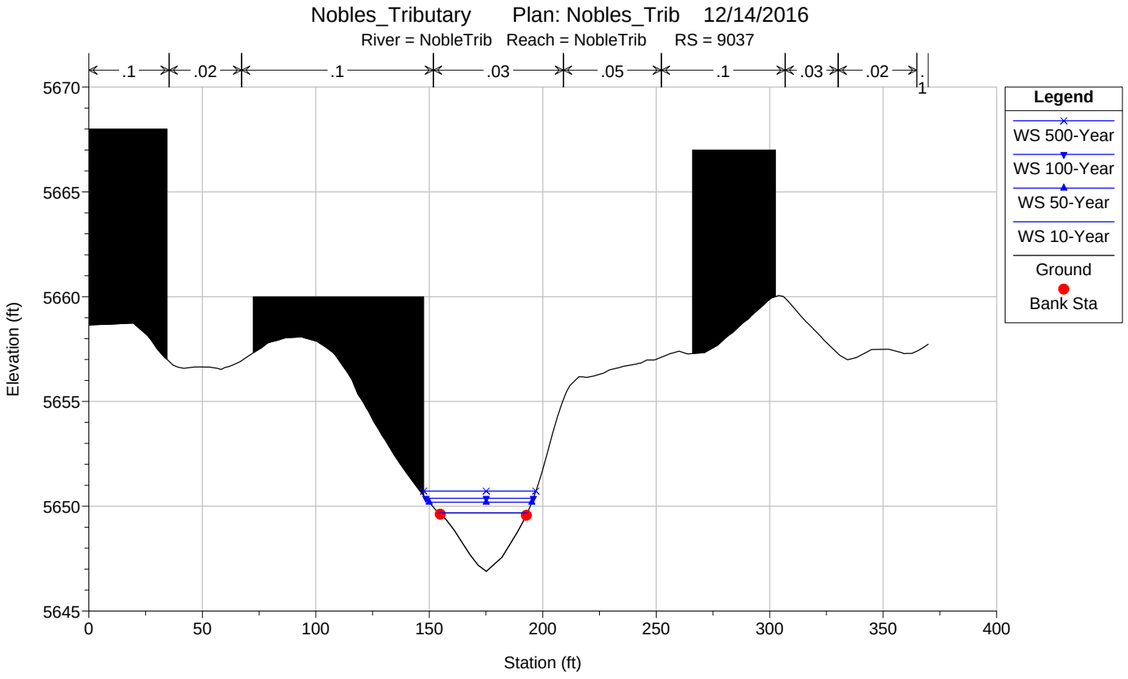

Big Dry Creek FHAD Post Review Plan: BDC 2/22/2018
River = South Platte Reach = Lower RS = 100663
.045
.035
.045
Legend
WS 500-year
WS 100-year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5298
5296
5294
5292
5290
5288
5286
5284
5282
0
50
100
150
200
250
300

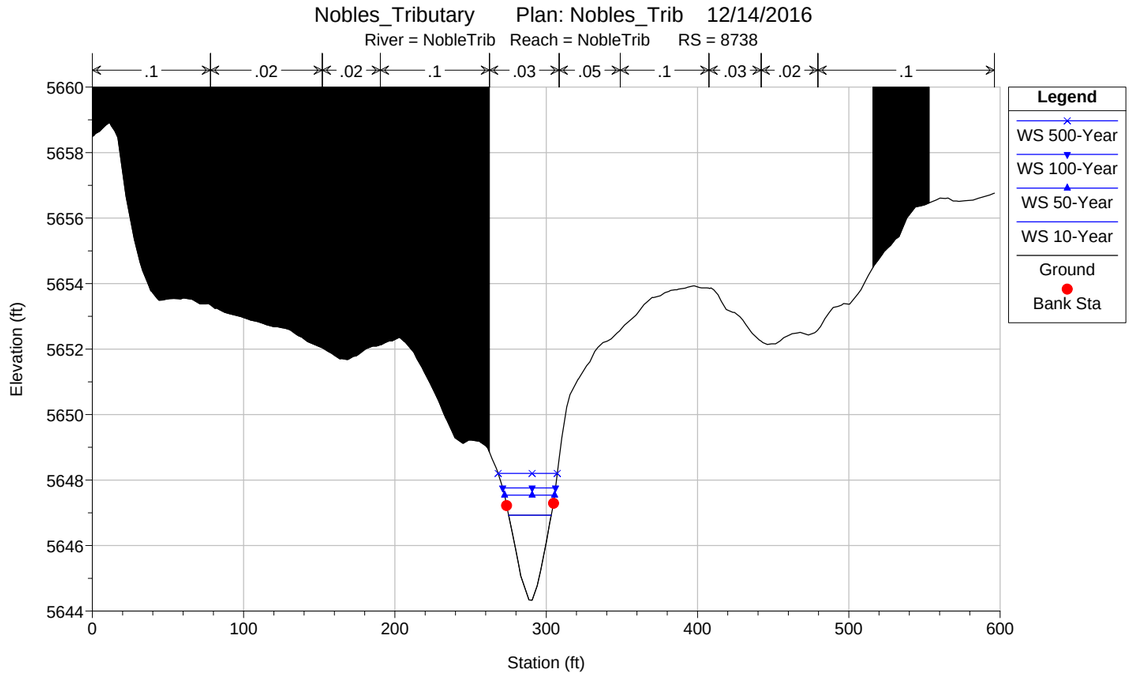

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 9461
.1 .02 .1 .03 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

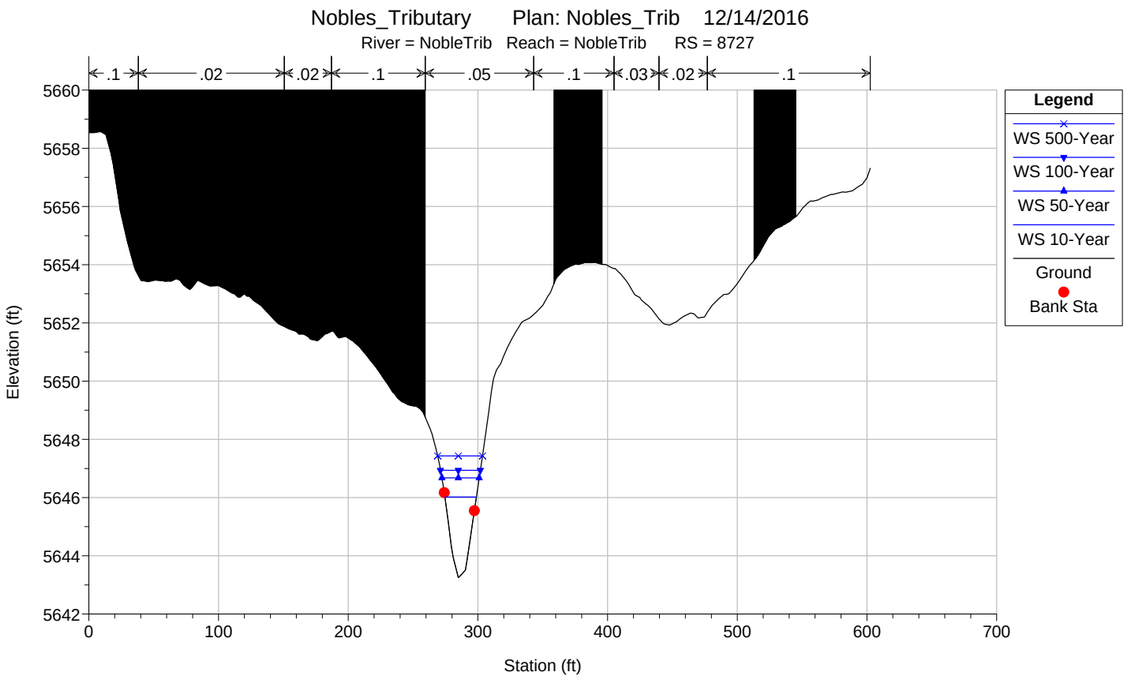

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 9399
.1 .02 .1 .03 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

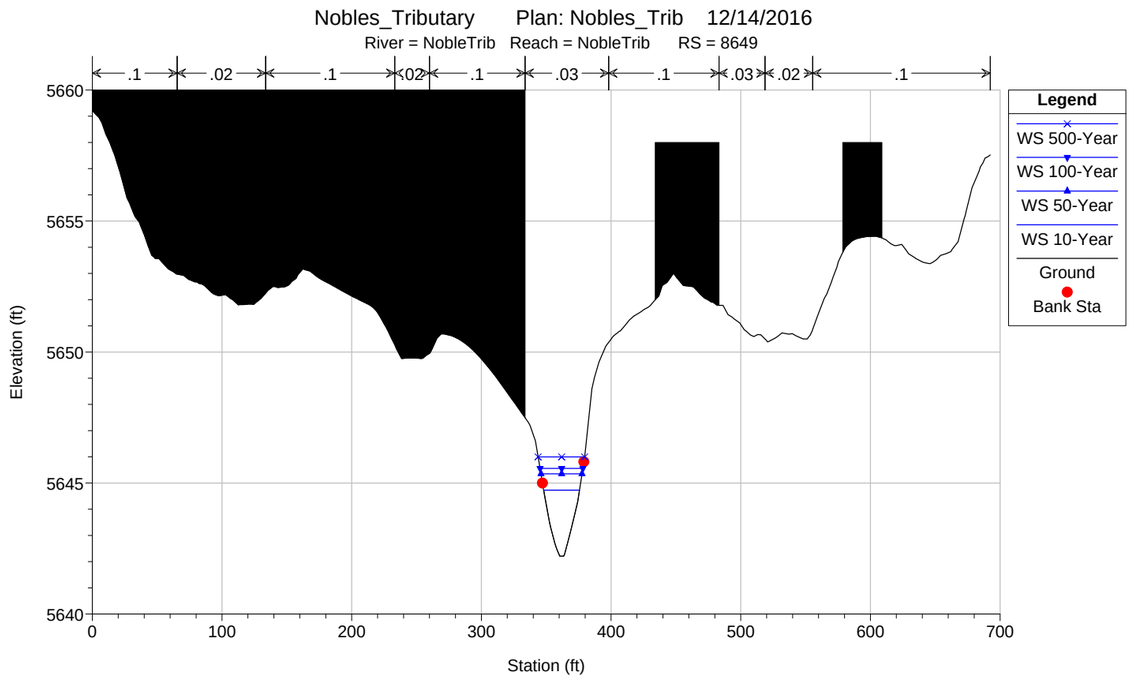

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 9232
.1 .02 .1 .03 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

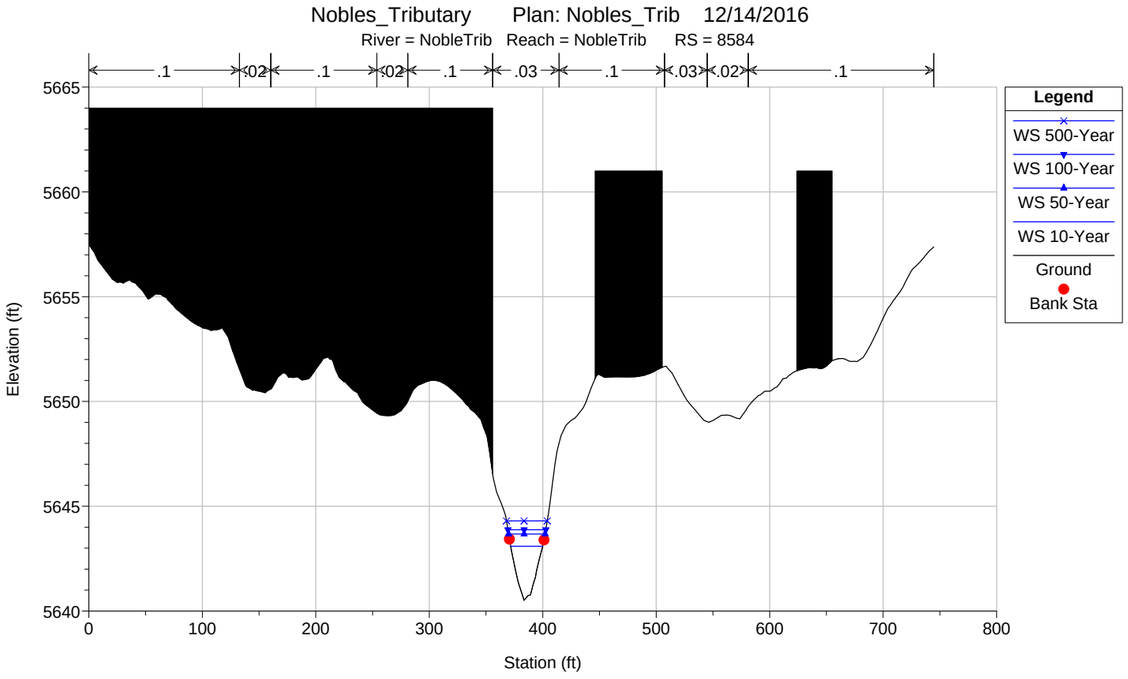

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 9219
.1 .02 .1 .03 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

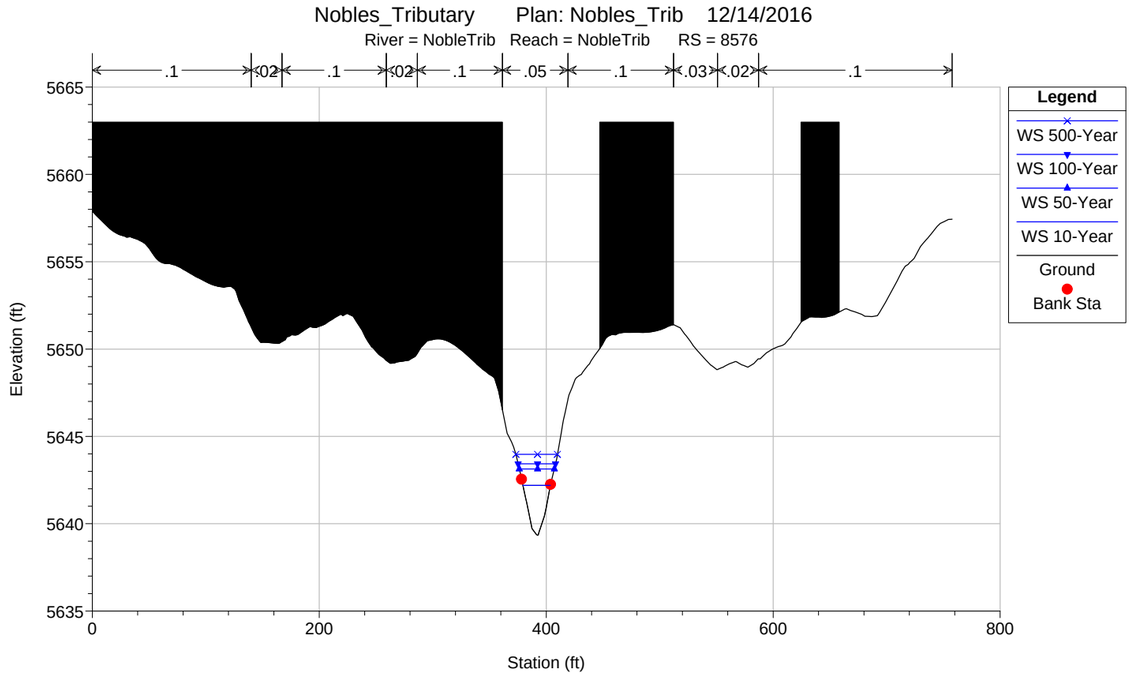

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 9037
.1 .02 .1 .03 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

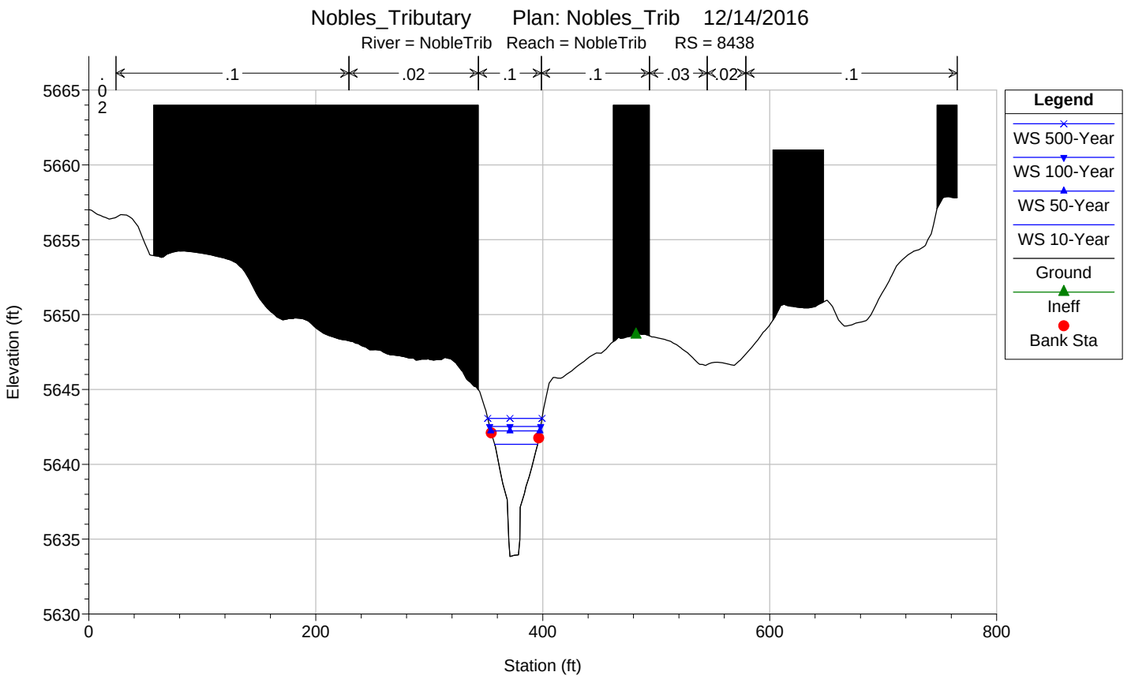

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8738
.1 .02 .02 .1 .03 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

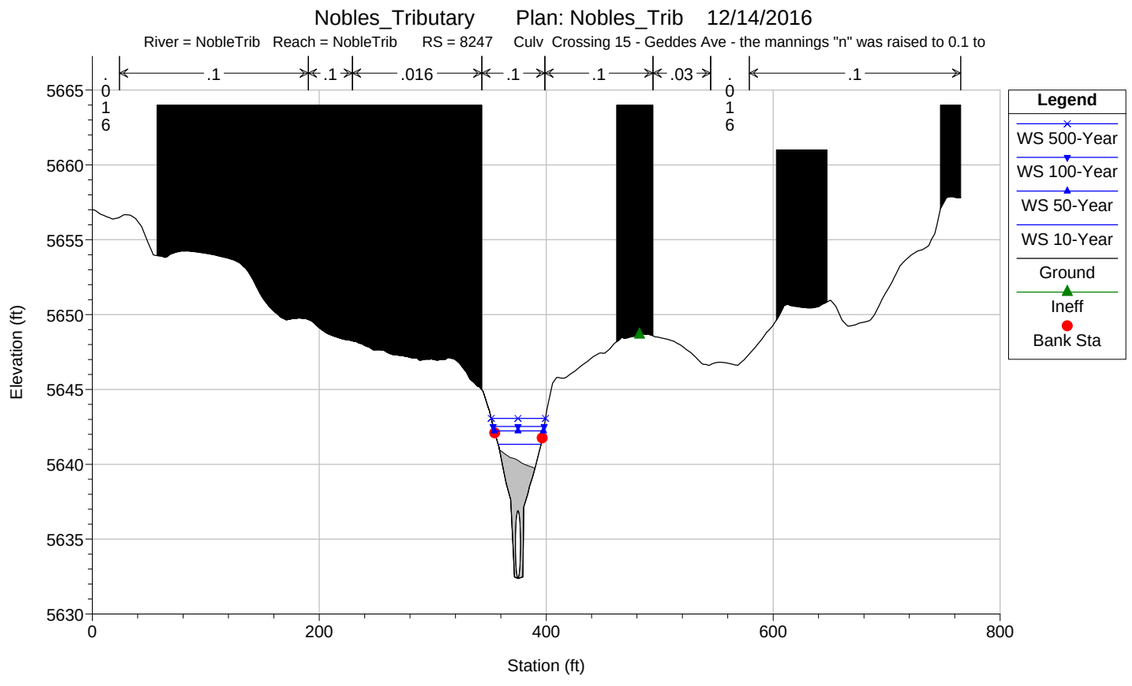

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8727
.1 .02 .02 .1 .05 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

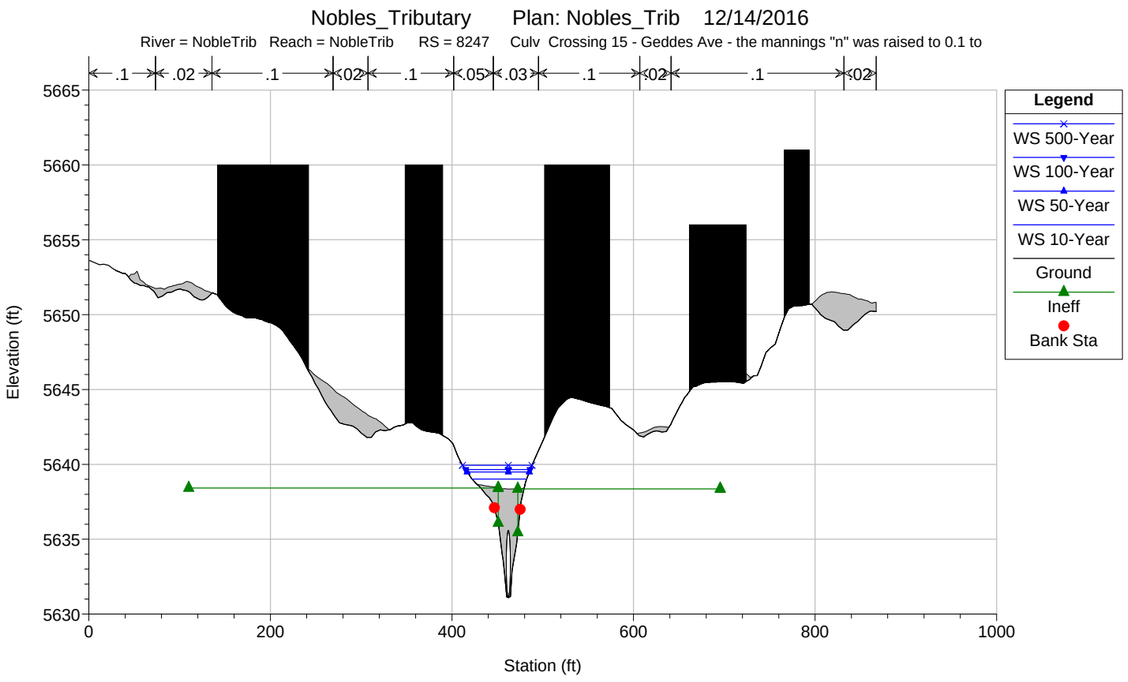

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8649
.1 .02 .1 .02 .1 .03 .1 .03 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

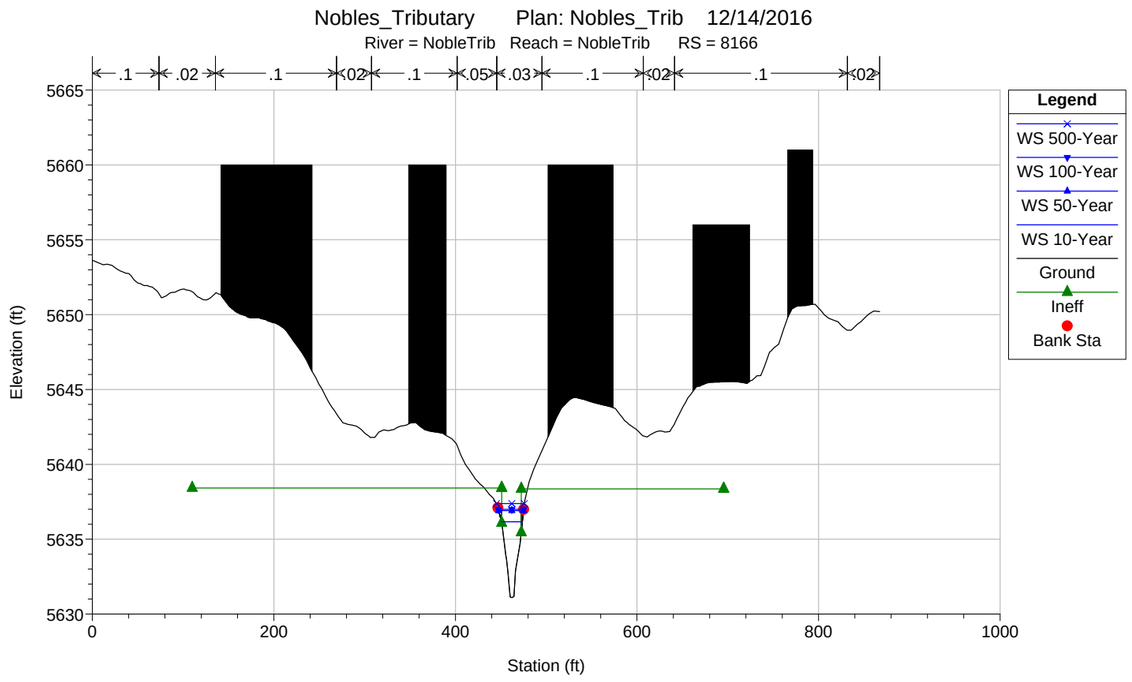

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8584
.1
.02
.1
.02
.1
.03
.1
.03
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
0
100
200
300
400
500
600
700
800

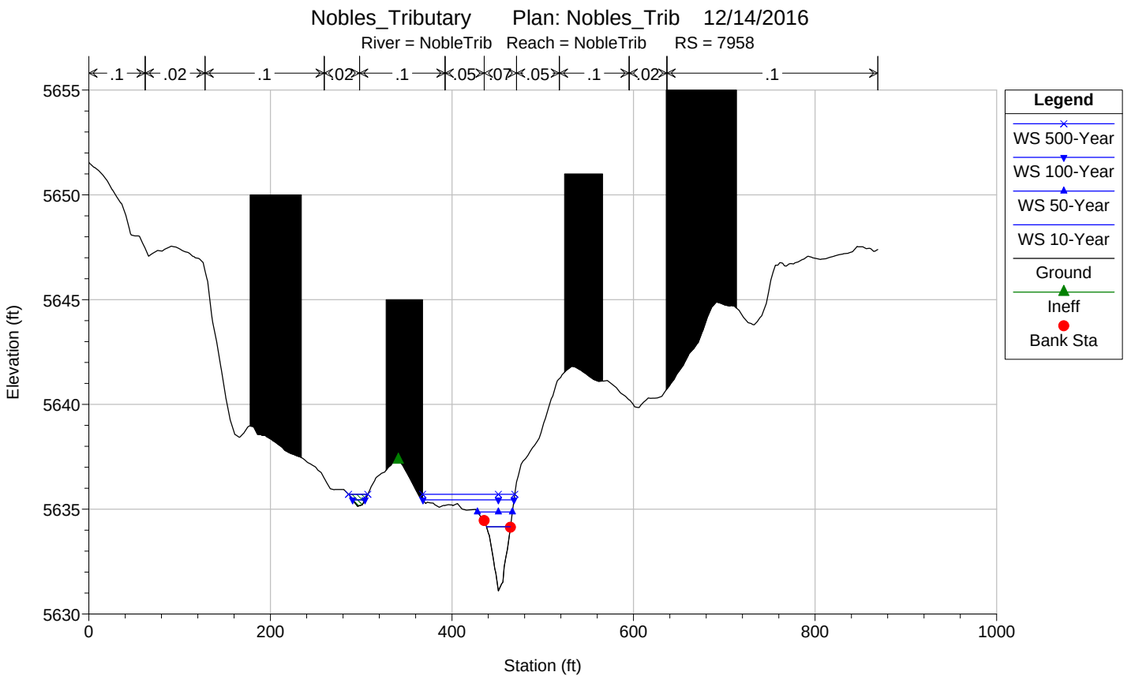

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8576
.1
.02
.1
.02
.1
.05
.1
.03
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
5635
0
200
400
600
800

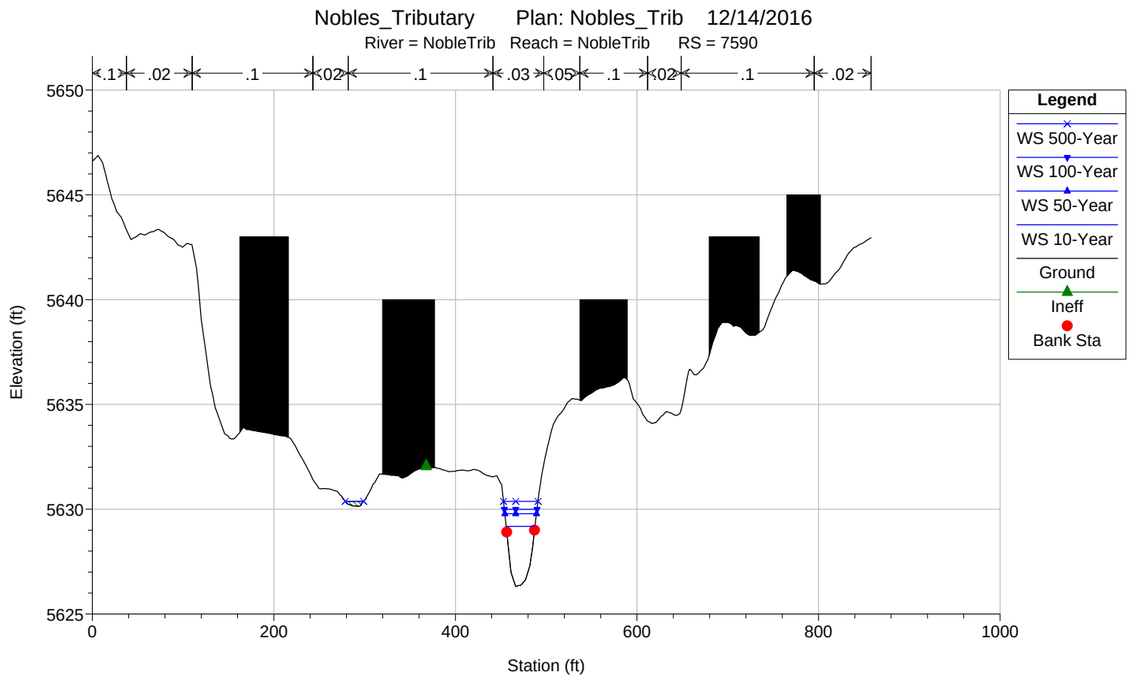

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8438
.02
.1
.02
.1
.1
.03
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
5635
5630
0
200
400
600
800

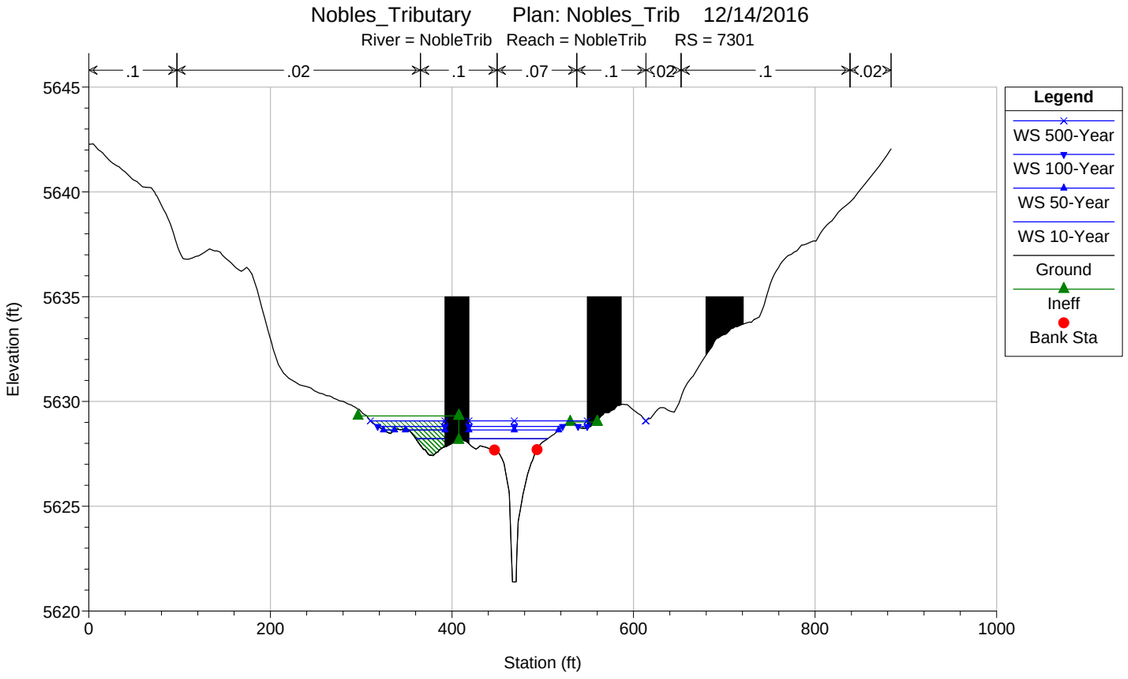

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8247 Culv Crossing 15 - Geddes Ave - the mannings "n" was raised to 0.1 to
.1
.1
.016
.1
.1
.03
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
5635
5630
0
200
400
600
800

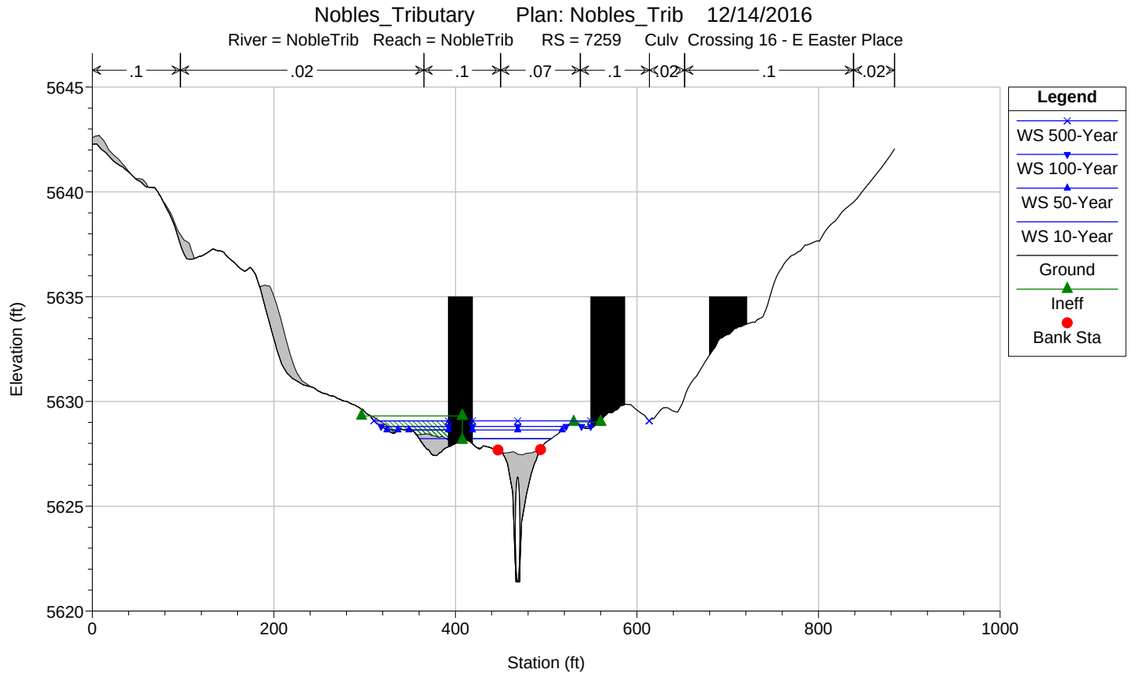

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8247 Culv Crossing 15 - Geddes Ave - the mannings "n" was raised to 0.1 to
.1 .02 .1 .02 .1 .05 .03 .1 .02 .1 .02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
5635
5630
0
200
400
600
800
1000

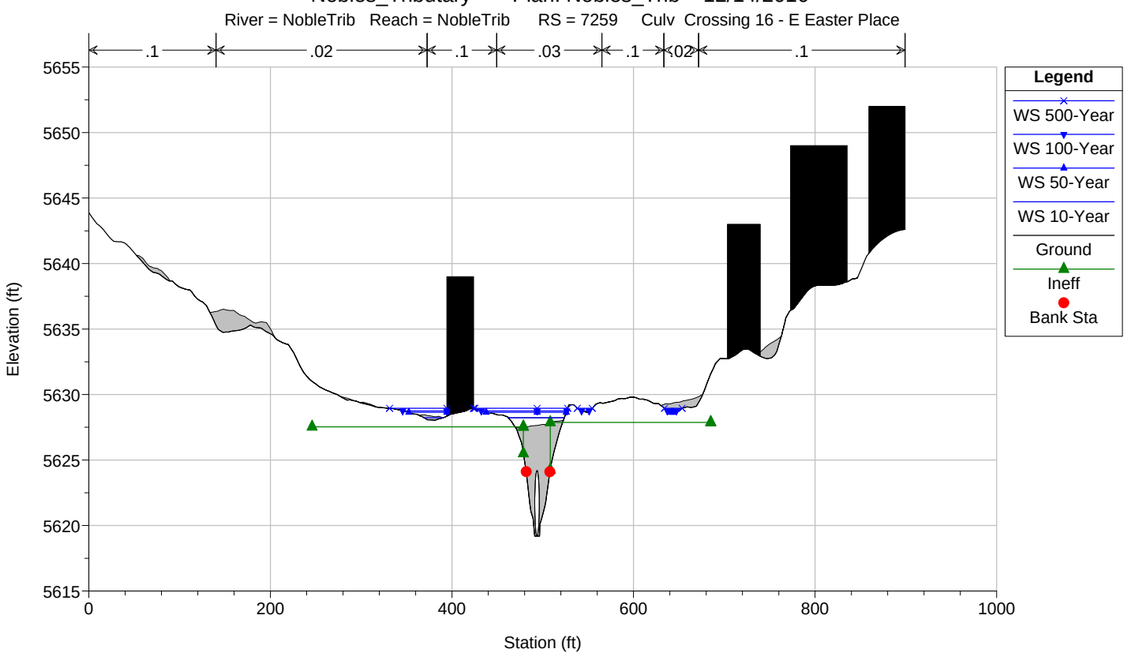

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 8166
.1 .02 .1 .02 .1 .05 .03 .1 .02 .1 .02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5665
5660
5655
5650
5645
5640
5635
5630
0
200
400
600
800
1000

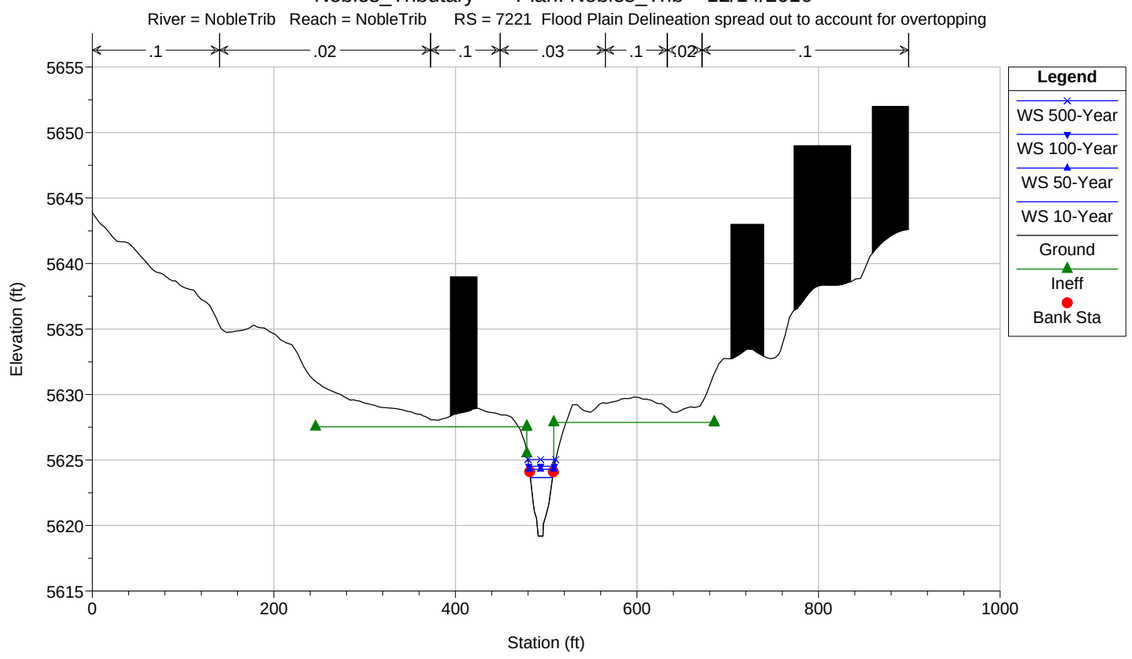

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7958
.1 .02 .1 .02 .1 .05 .07 .05 .1 .02 .1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5655
5650
5645
5640
5635
5630
0
200
400
600
800
1000

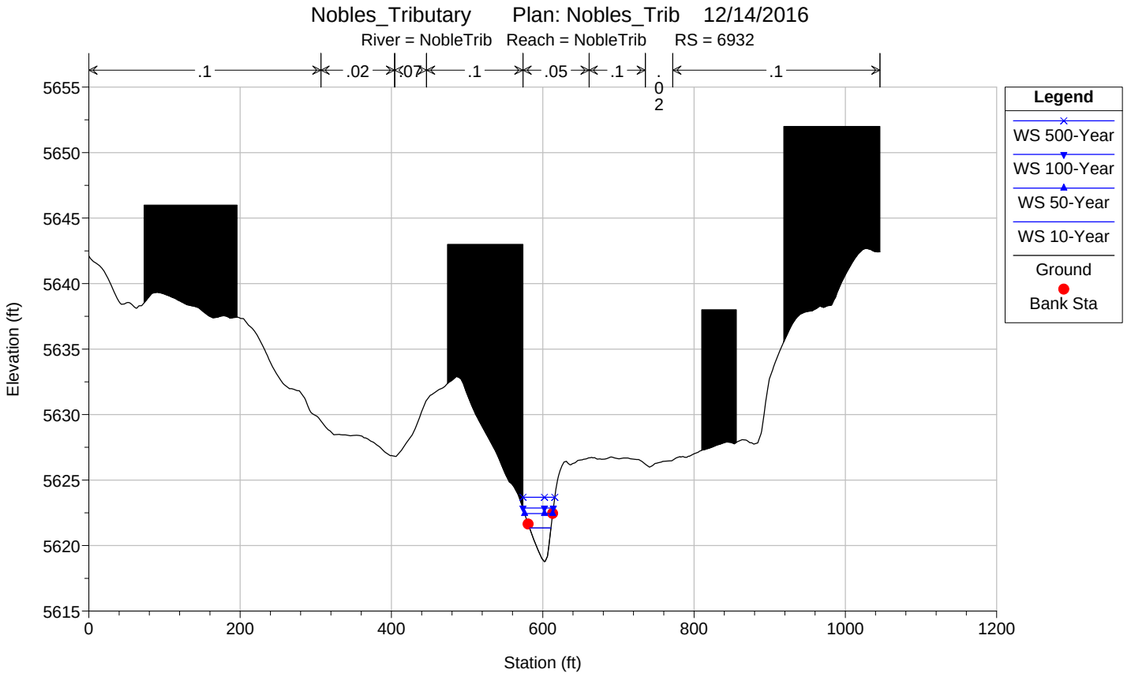

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7590
.1 .02 .1 .02 .1 .03 .05 .1 .02 .1 .02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5650
5645
5640
5635
5630
5625
0
200
400
600
800
1000

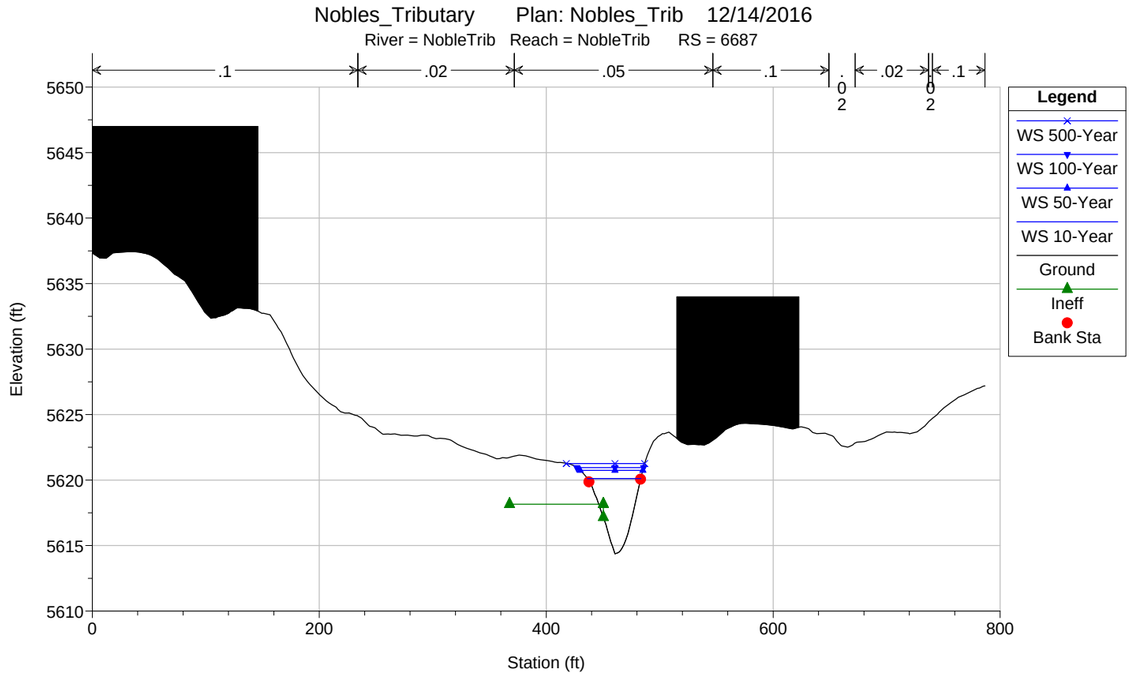

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7301
.1 .02 .1 .07 .1 .02 .1 .02
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

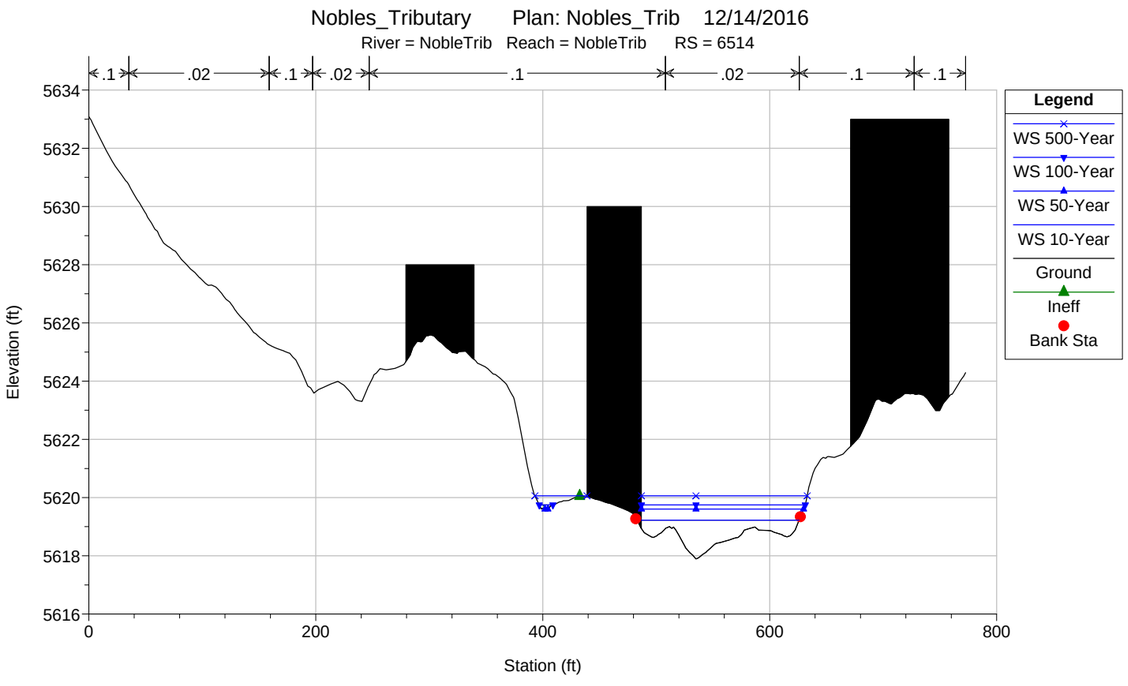

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7259 Culv Crossing 16 - E Easter Place
.1 .02 .1 .07 .1 .02 .1 .02
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

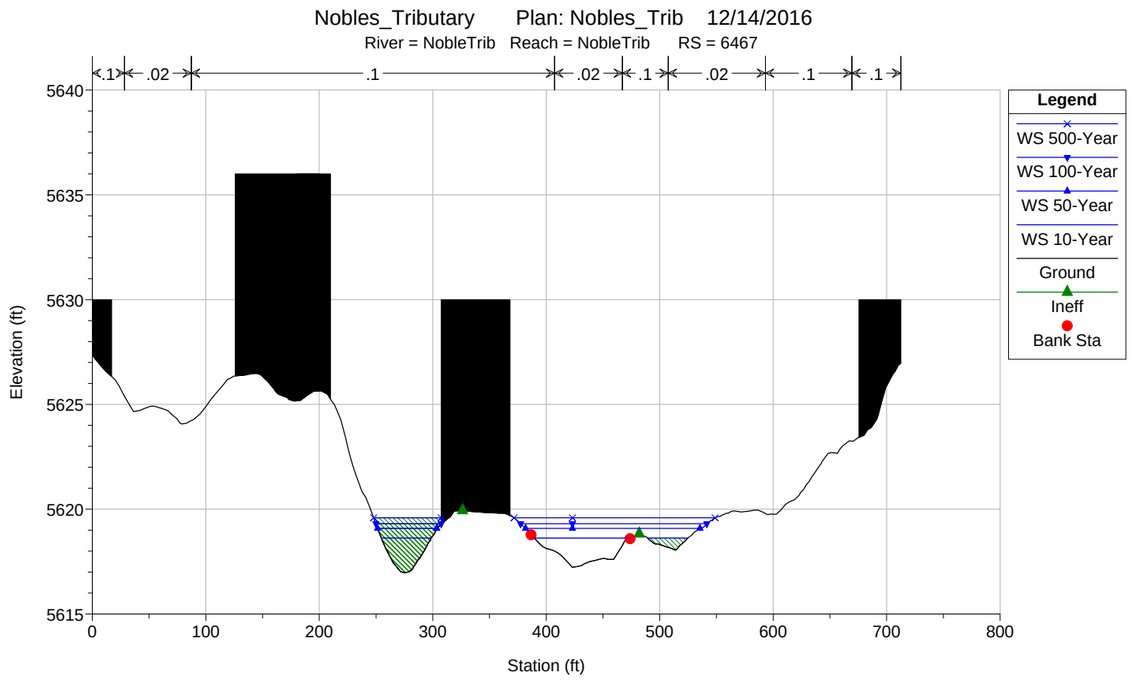

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7259 Culv Crossing 16 - E Easter Place
.1 .02 .1 .03 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

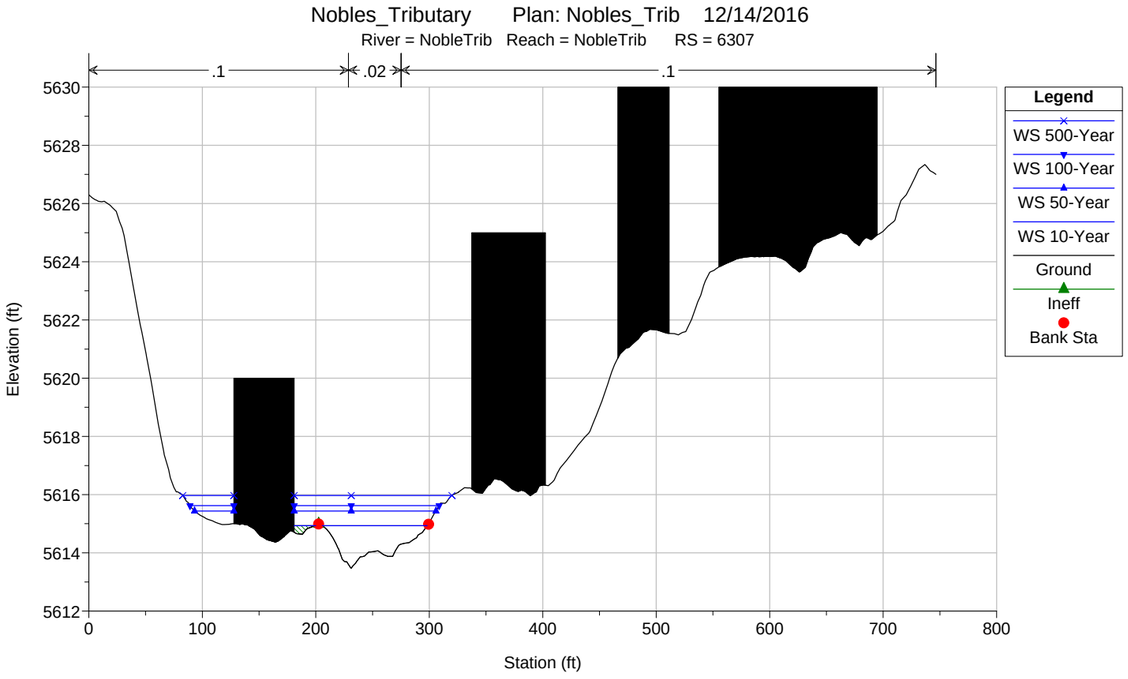

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 7221 Flood Plain Delineation spread out to account for overtopping
.1 .02 .1 .03 .1 .02 .1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

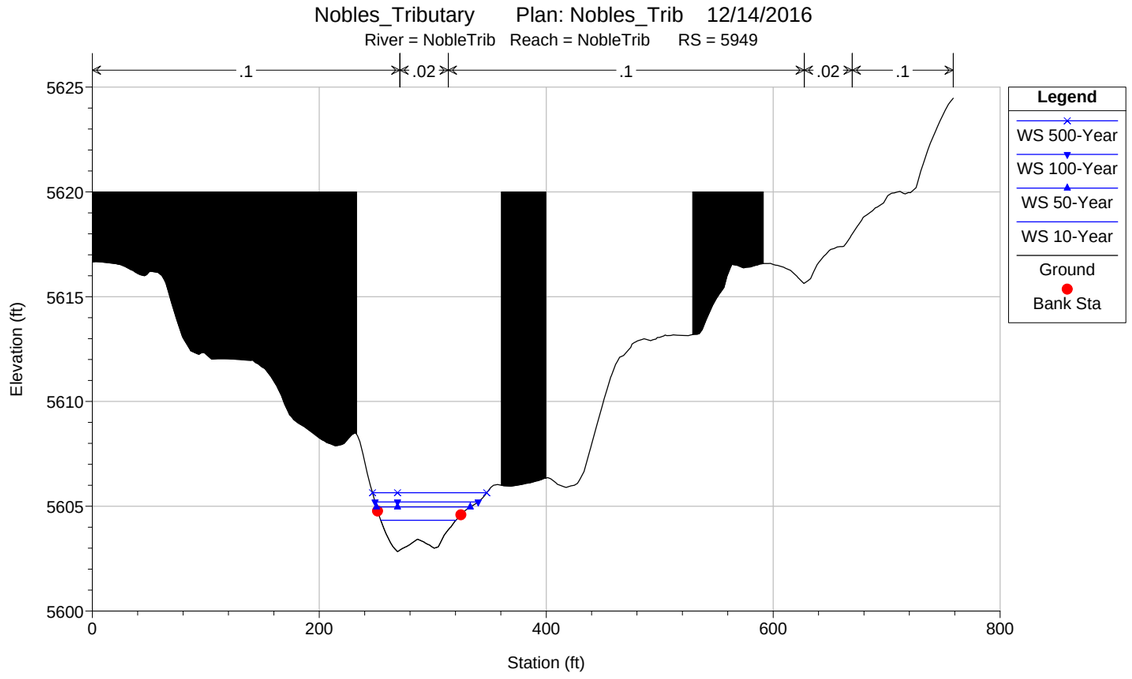

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 6932
.1
.02
.07
.1
.05
.1
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

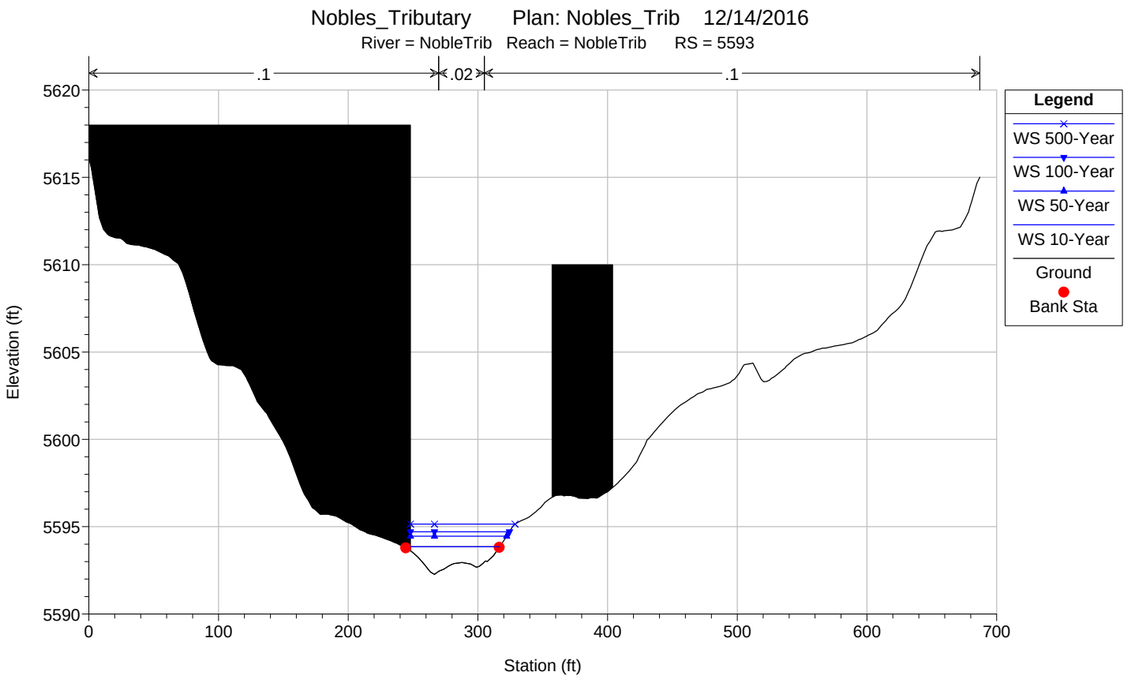

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 6687
.1
.02
.05
.1
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

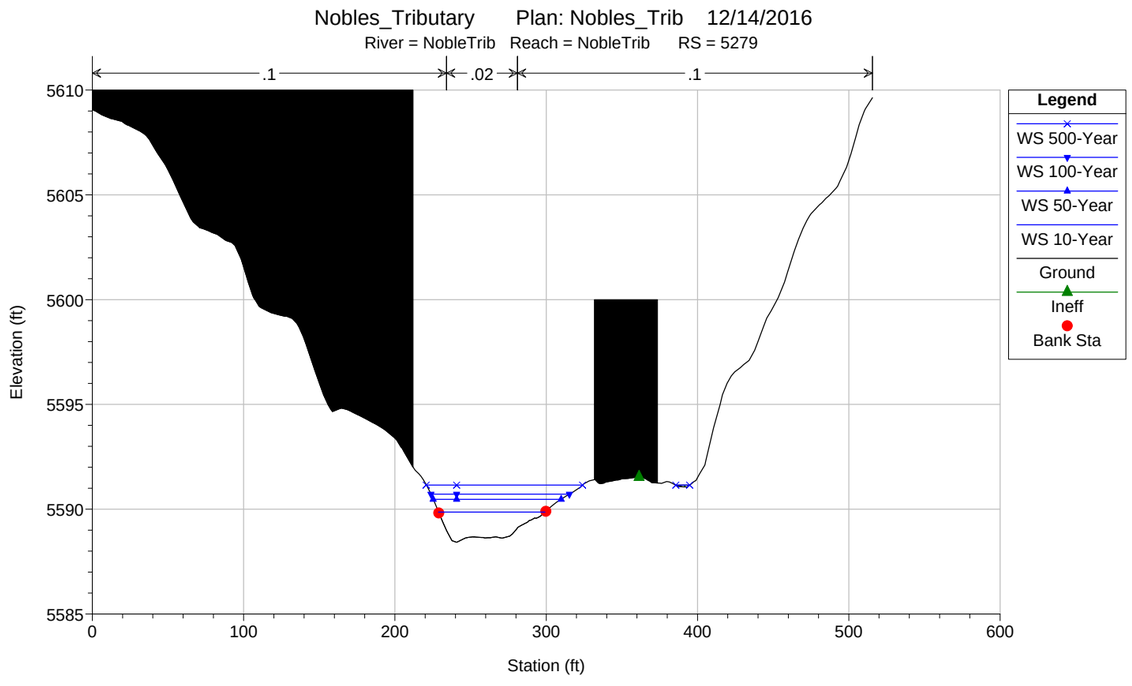

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 6514
.1
.02
.1
.02
.1
.02
.1
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

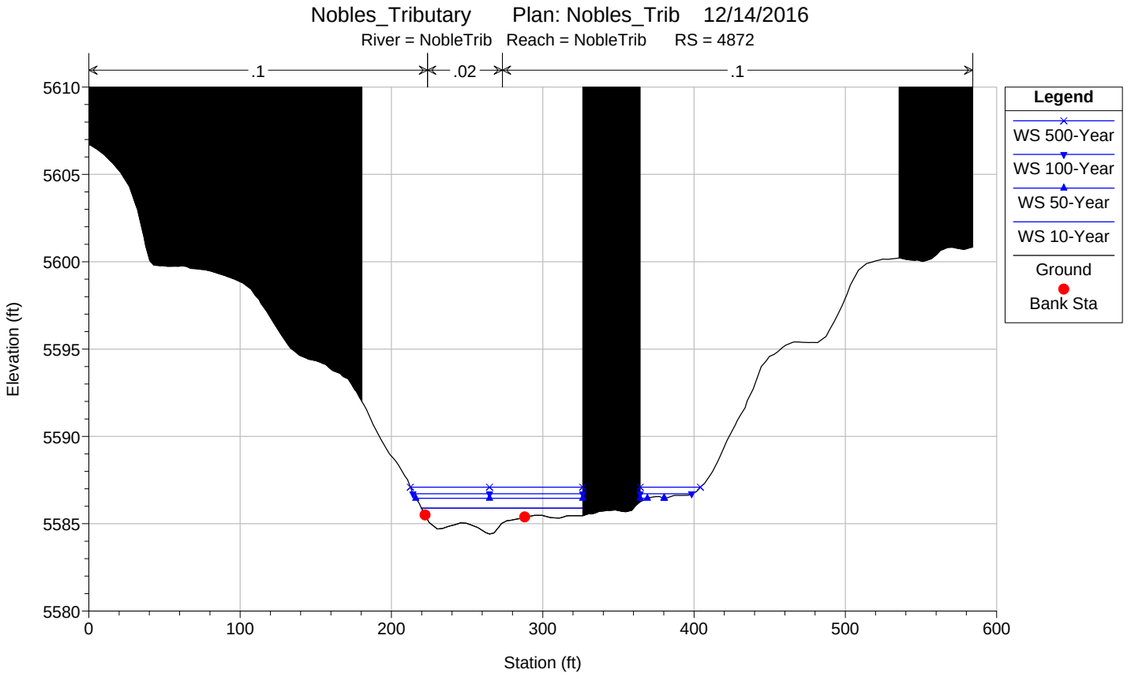

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 6467
.1
.02
.1
.02
.1
.02
.1
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

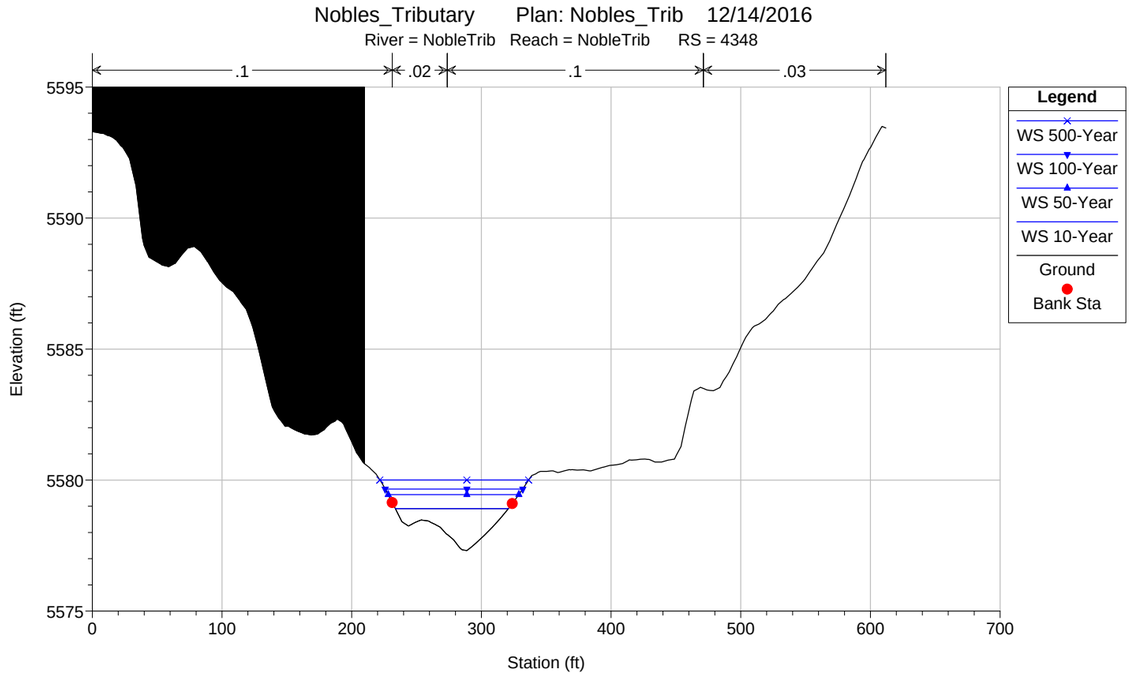

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 6307
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

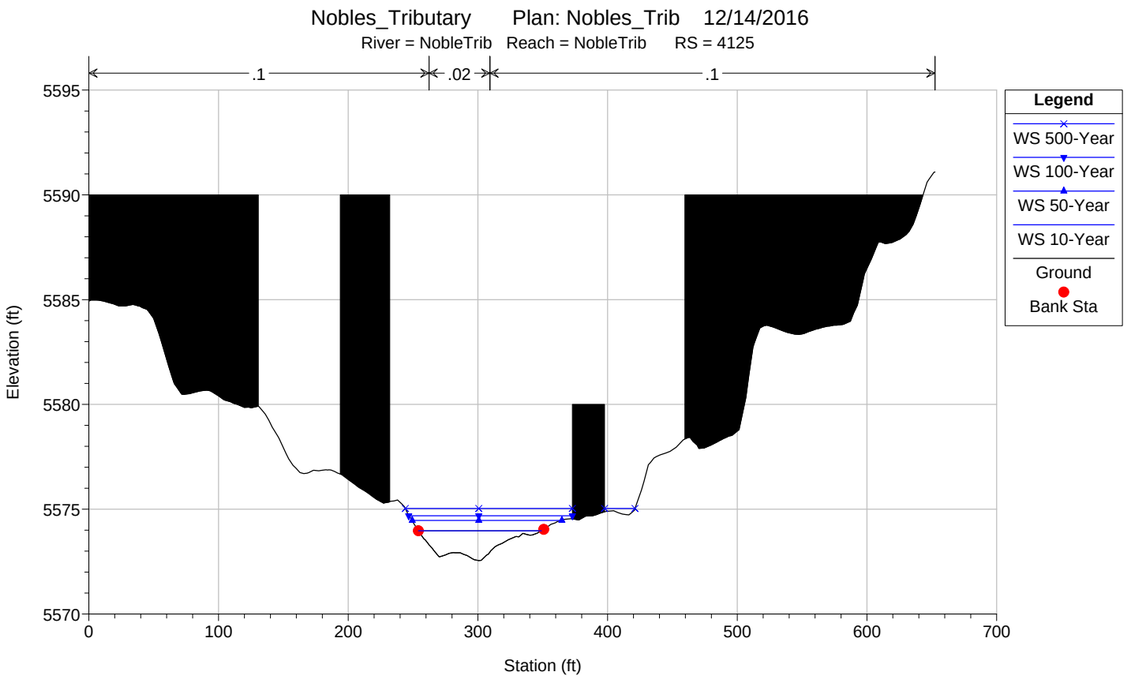

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 5949
.1
.02
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

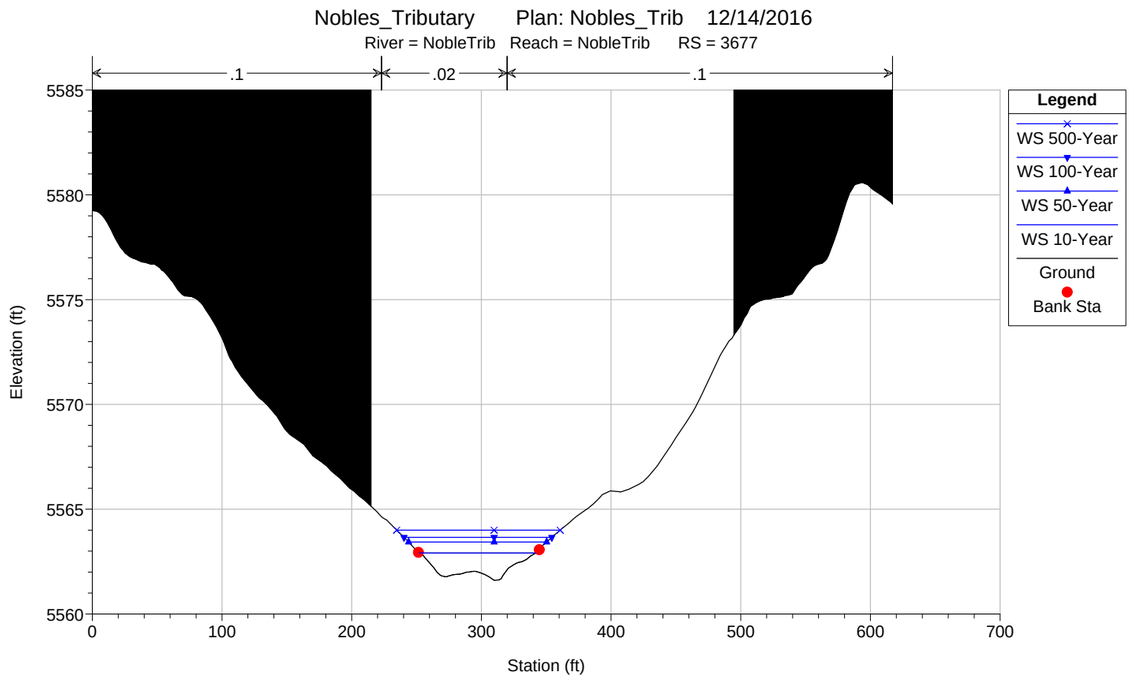

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 5593
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

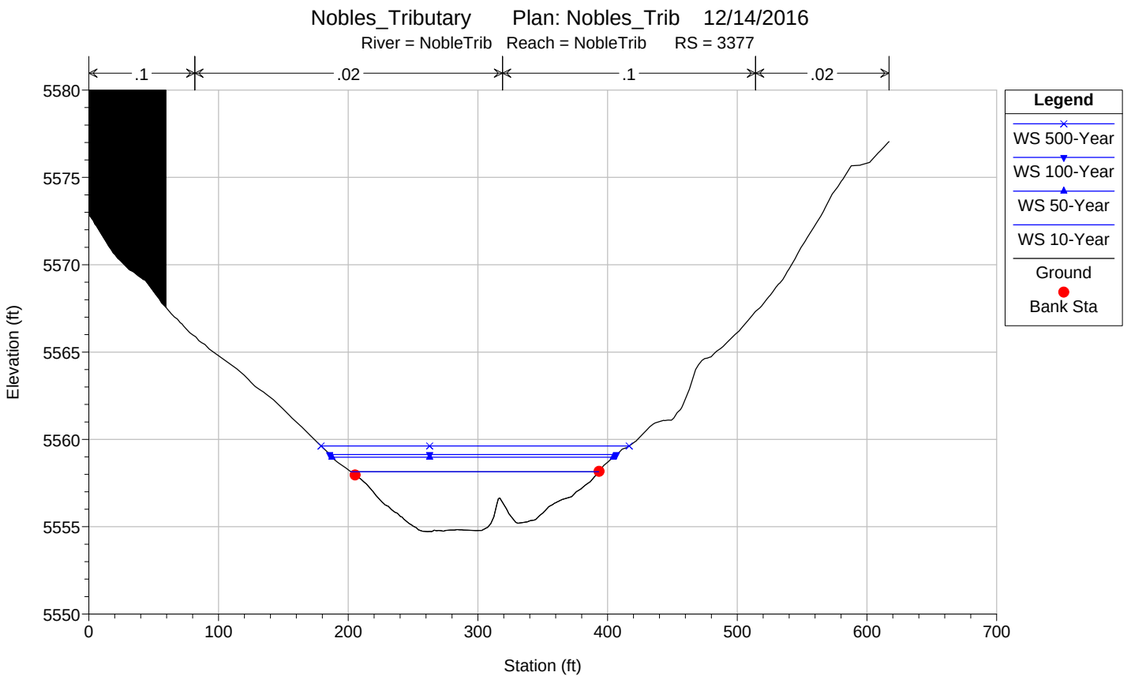

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 5279
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

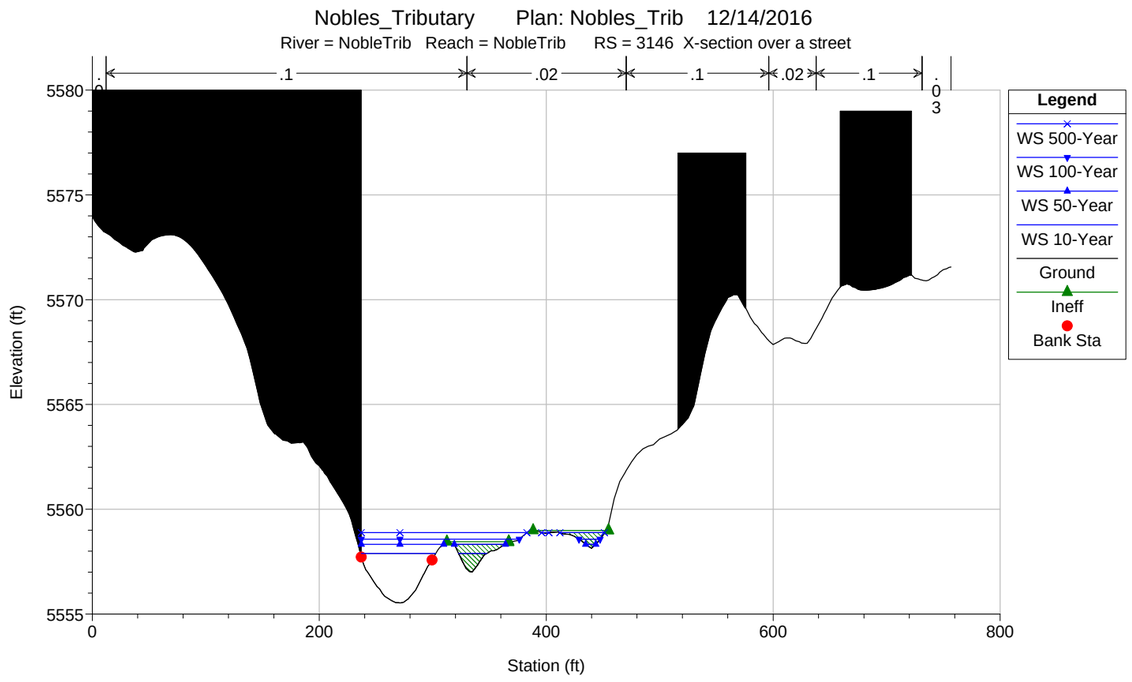

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 4872
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

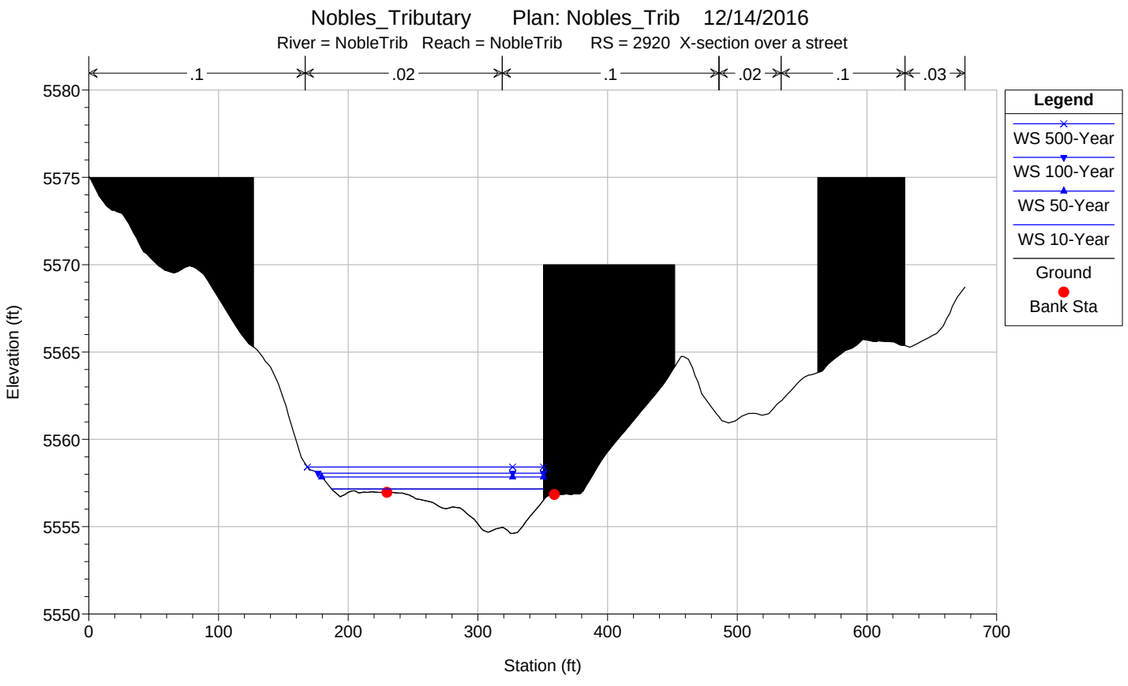

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 4348
.1
.02
.1
.03
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

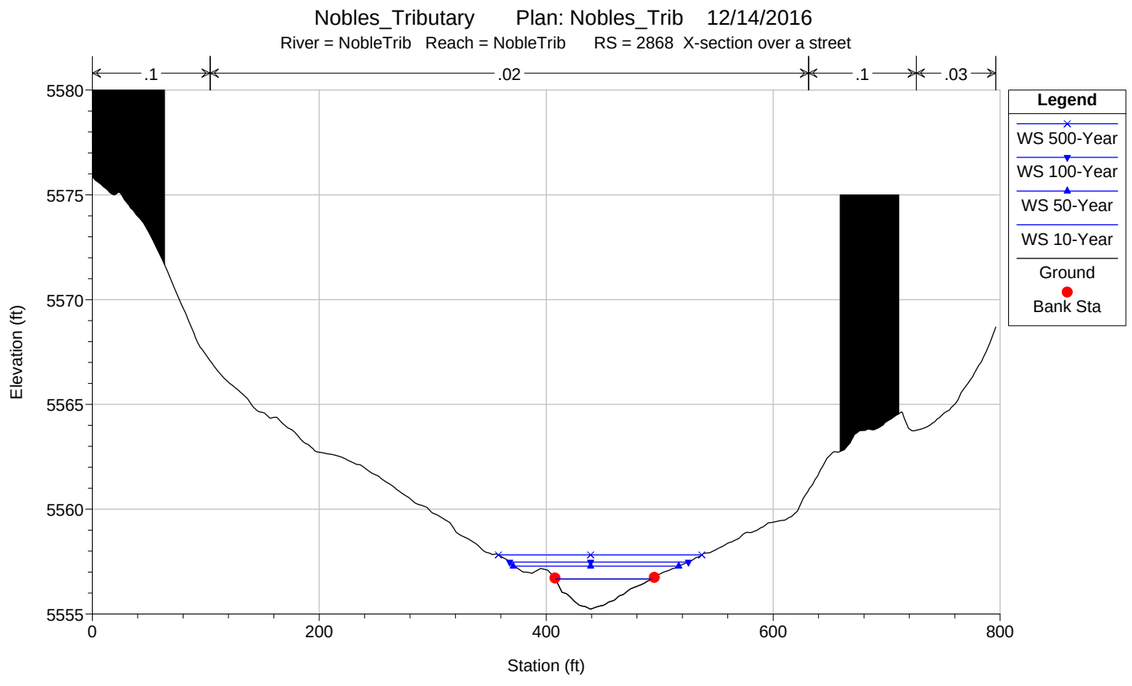

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 4125
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

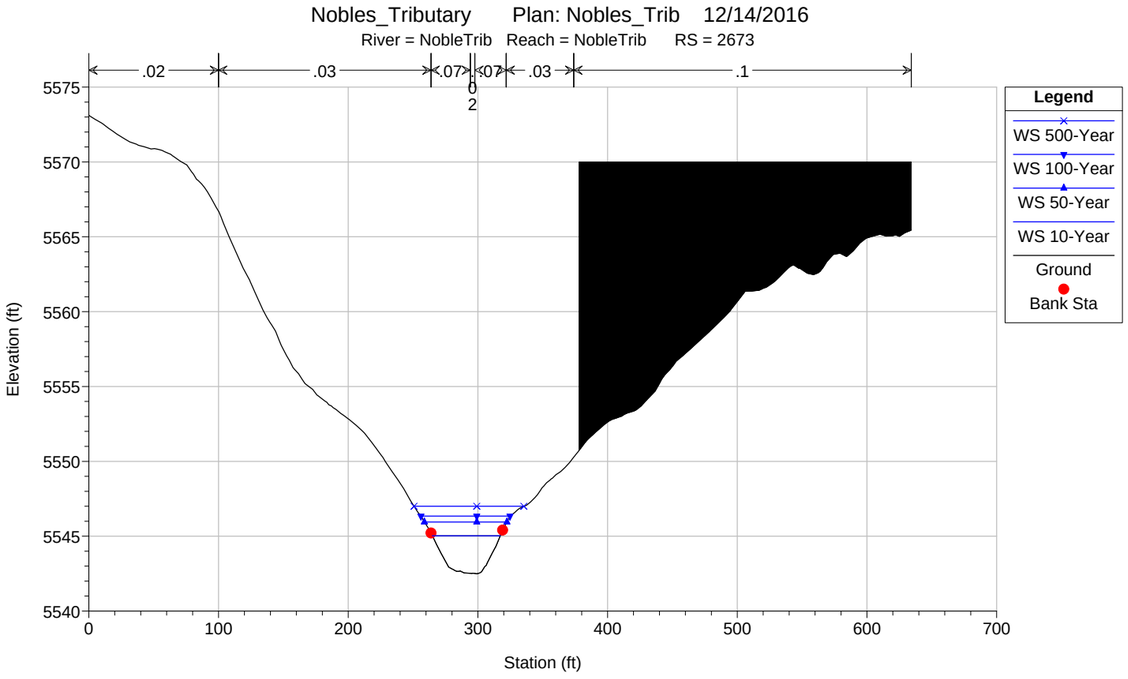

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 3677
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

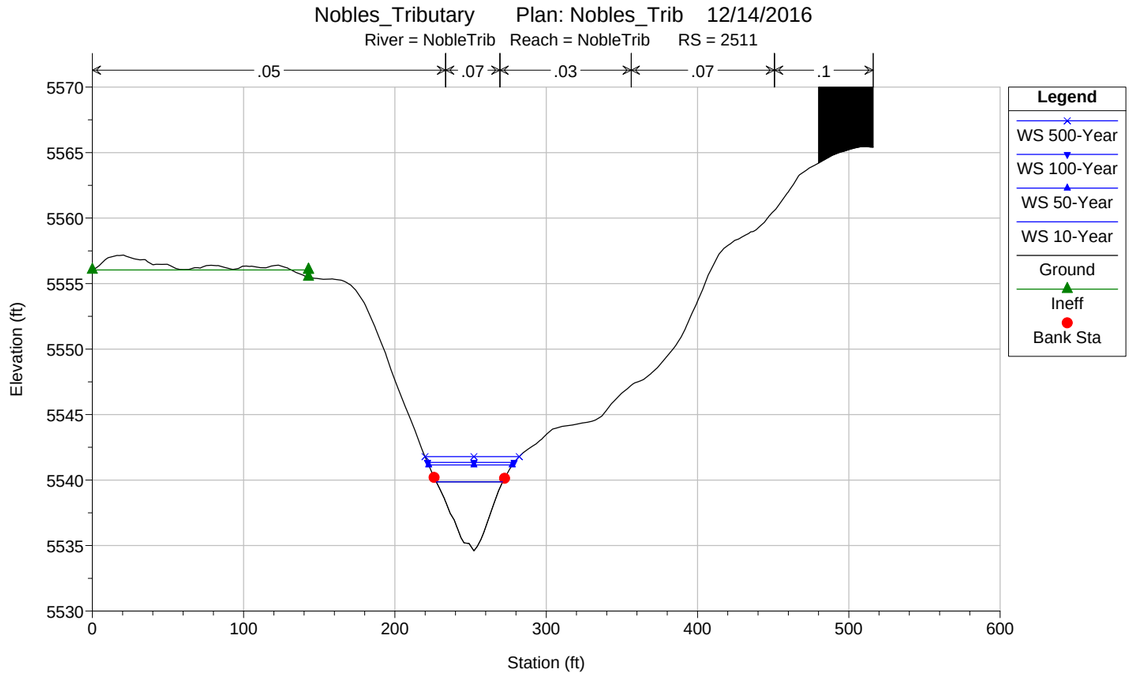

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 3377
.1
.02
.1
.02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

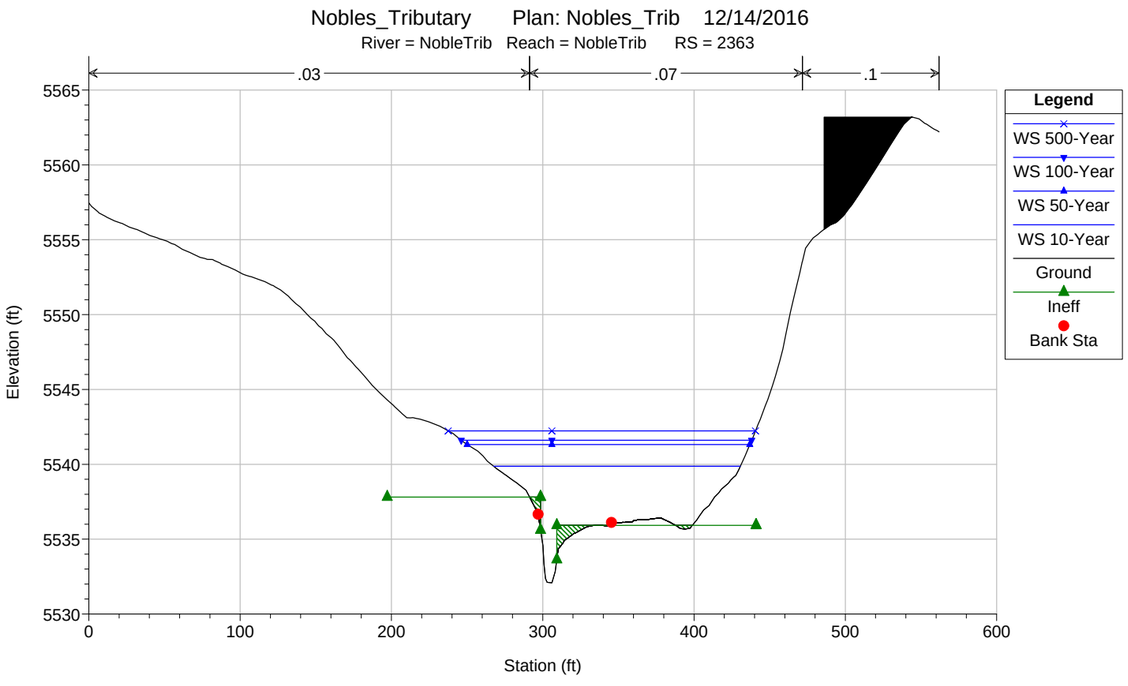

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 3146 X-section over a street
.1
.02
.1
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

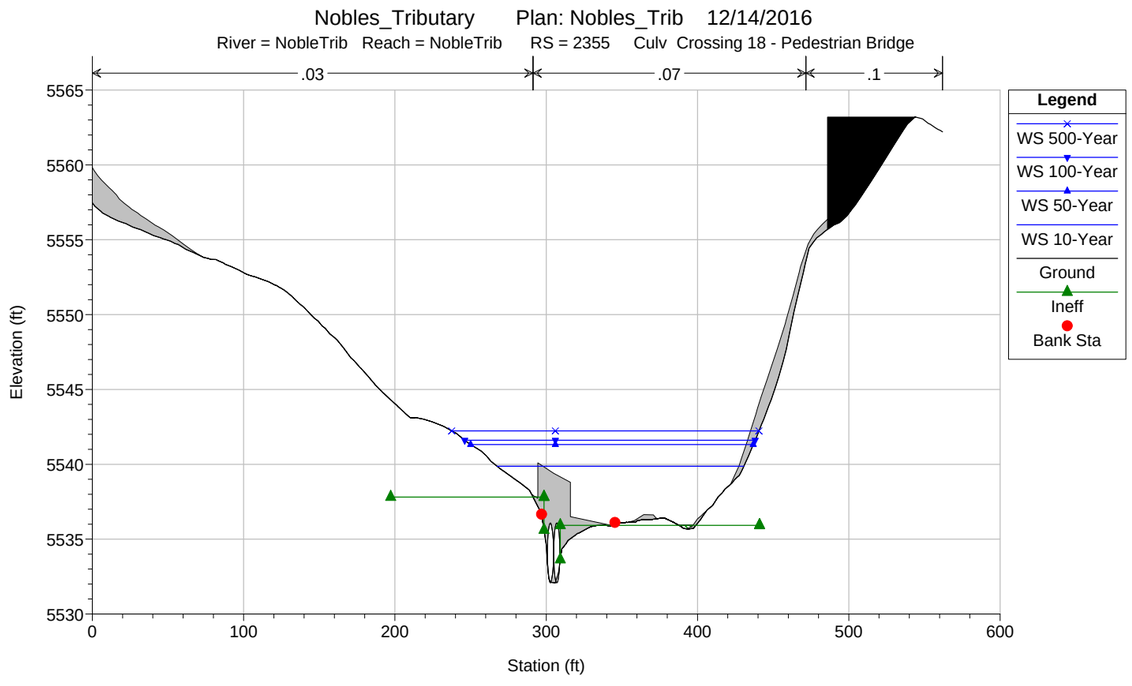

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2920 X-section over a street
.1
.02
.1
.02
.1
.03
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

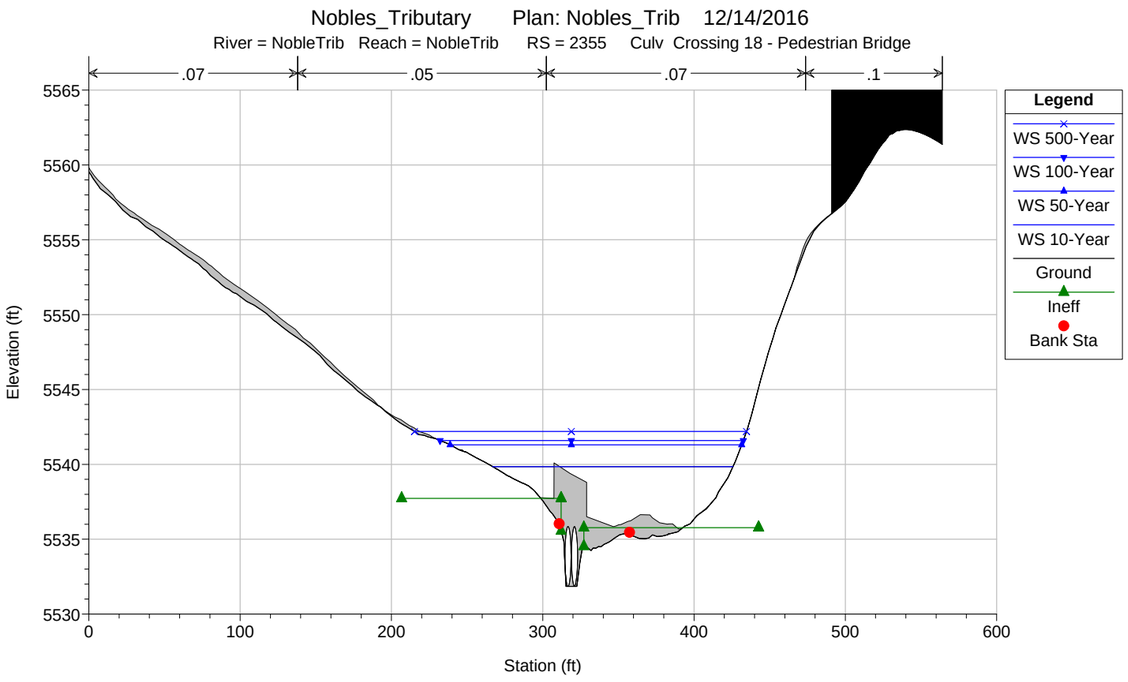

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2868 X-section over a street
.1
.02
.1
.03
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

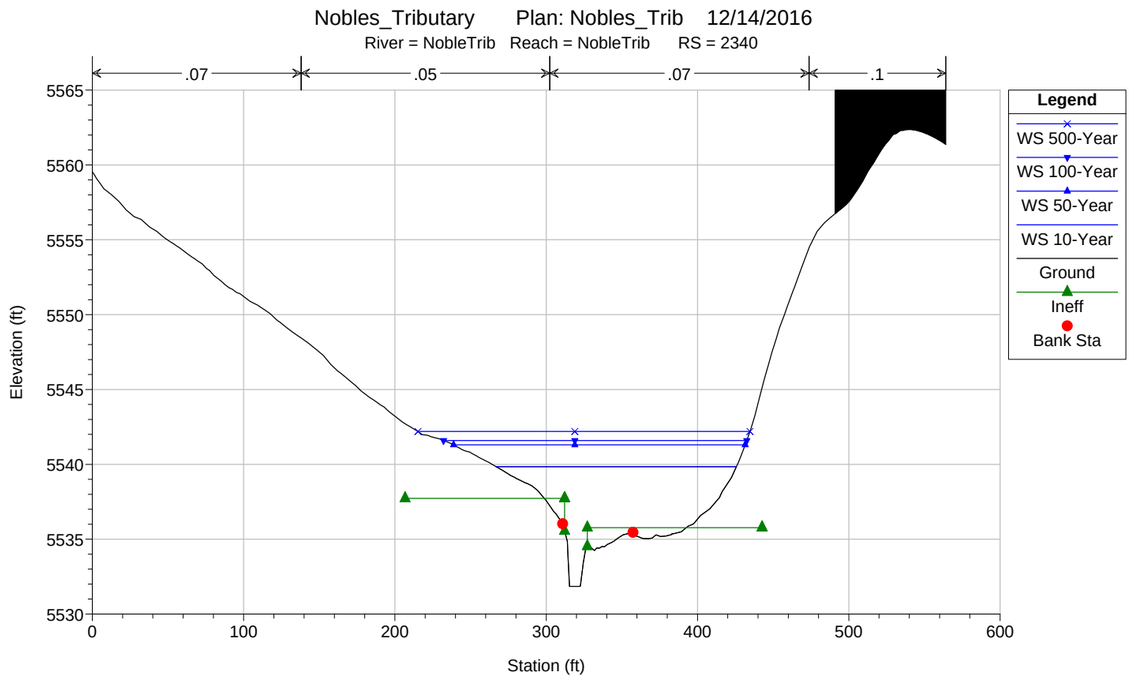

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2673
.02
.03
.07
.07
.03
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)

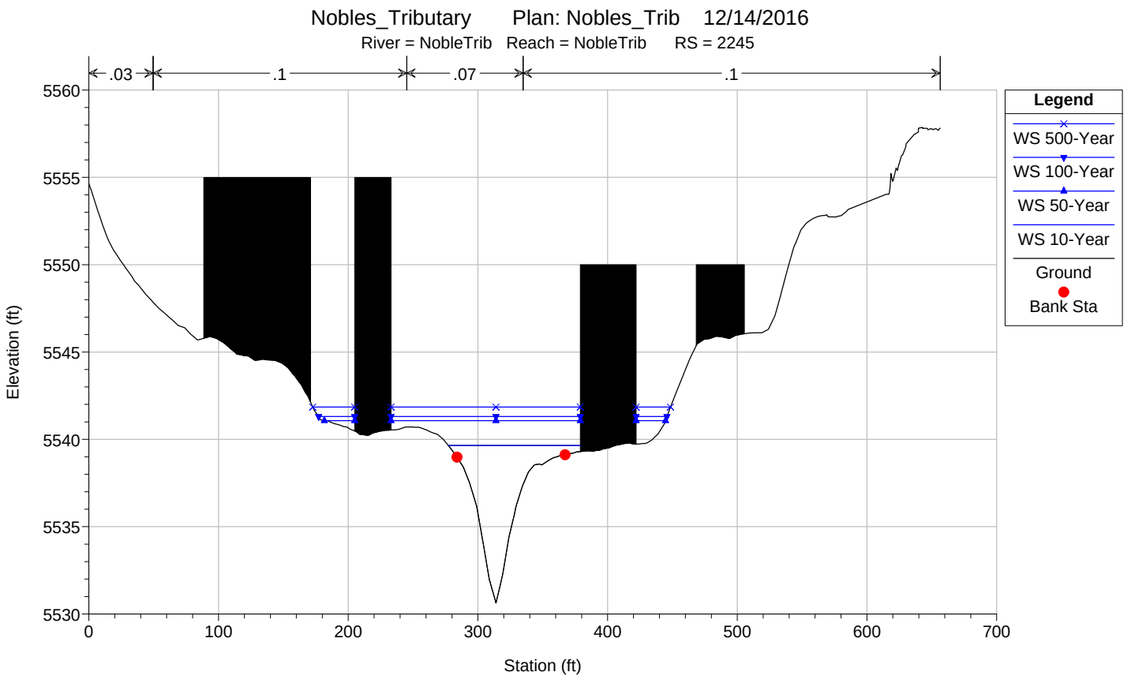

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2511
.05
.07
.03
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

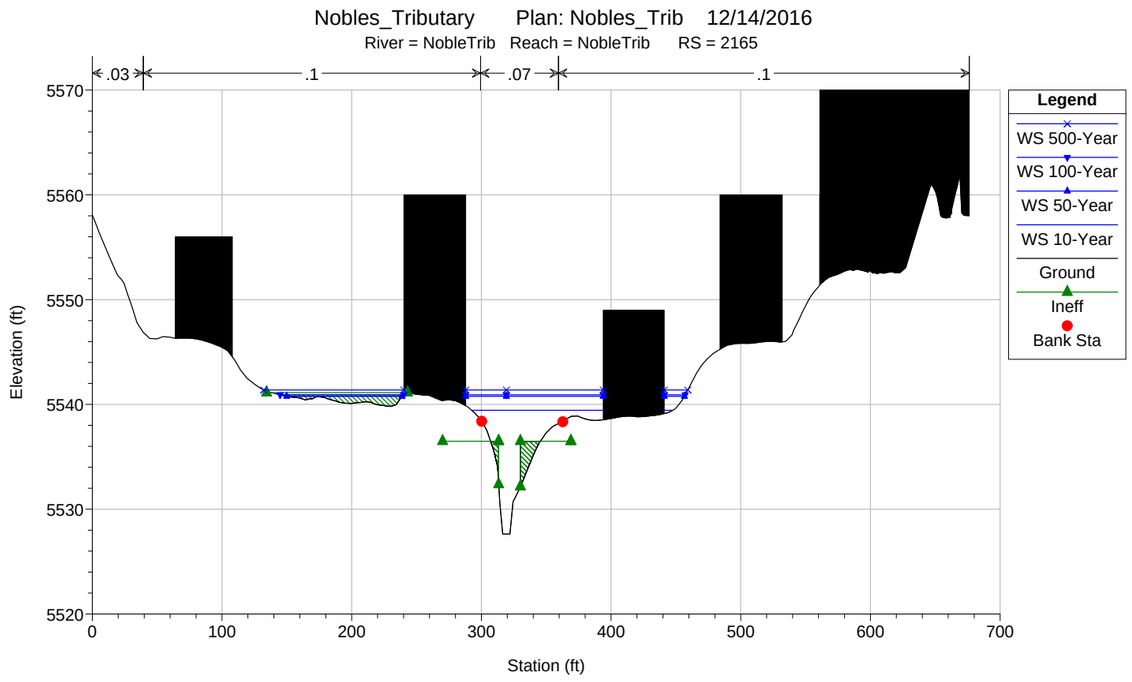

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2363
.03
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

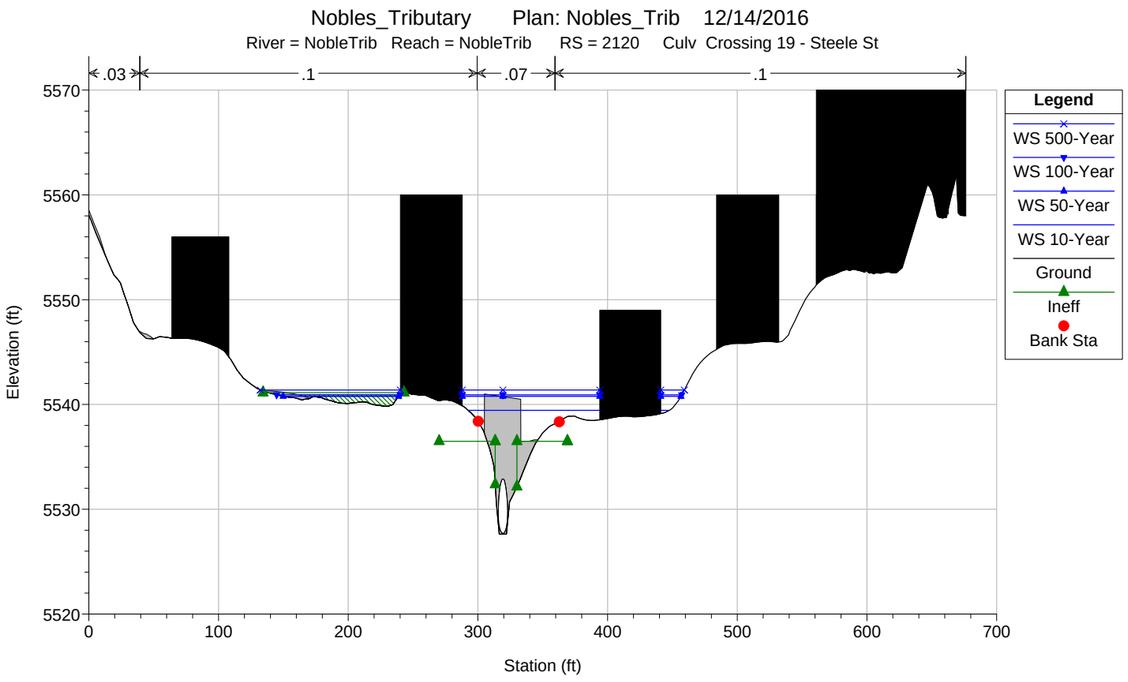

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2355 Culv Crossing 18 - Pedestrian Bridge
.03
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

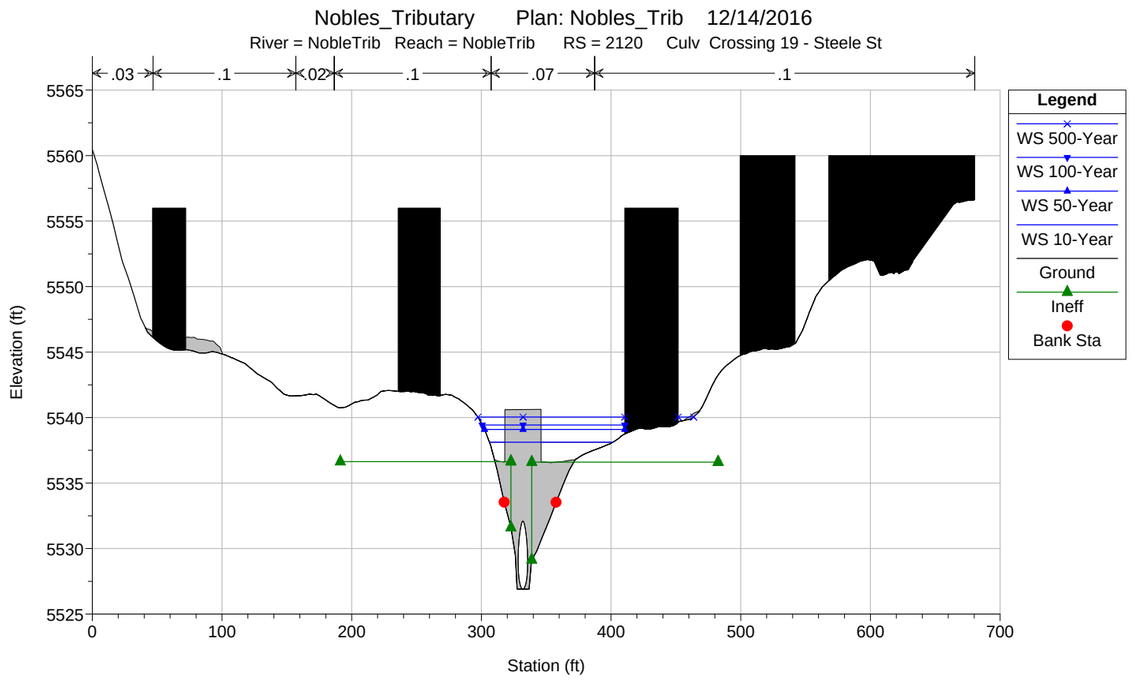

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2355 Culv Crossing 18 - Pedestrian Bridge
.07
.05
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

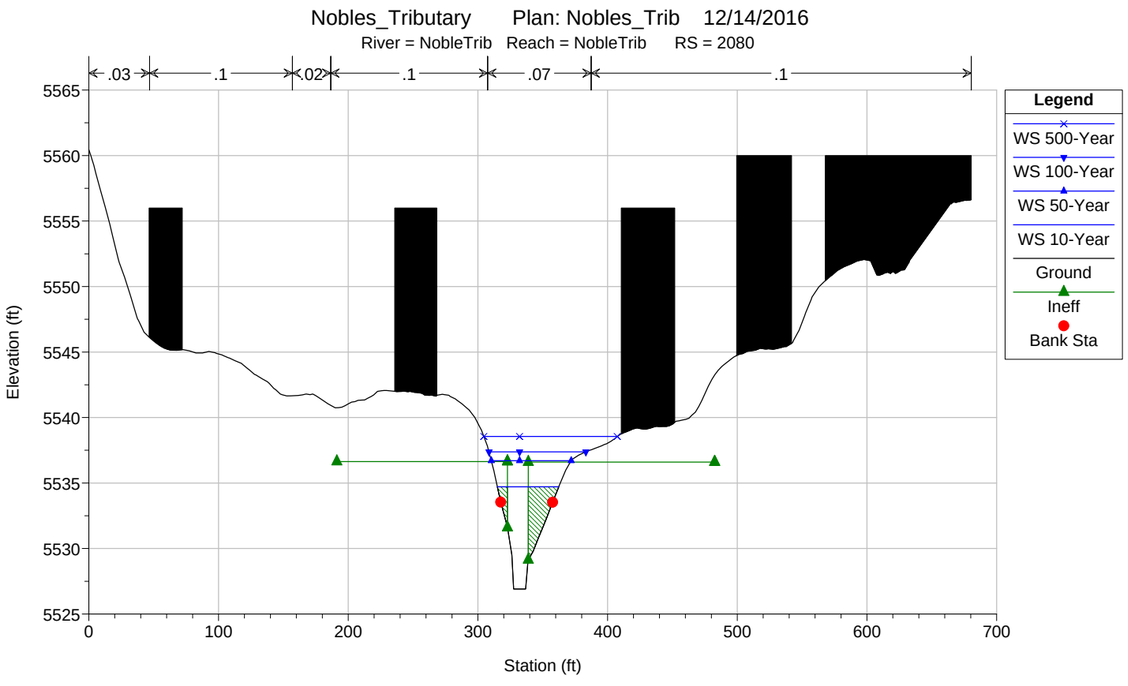

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2340
.07
.05
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

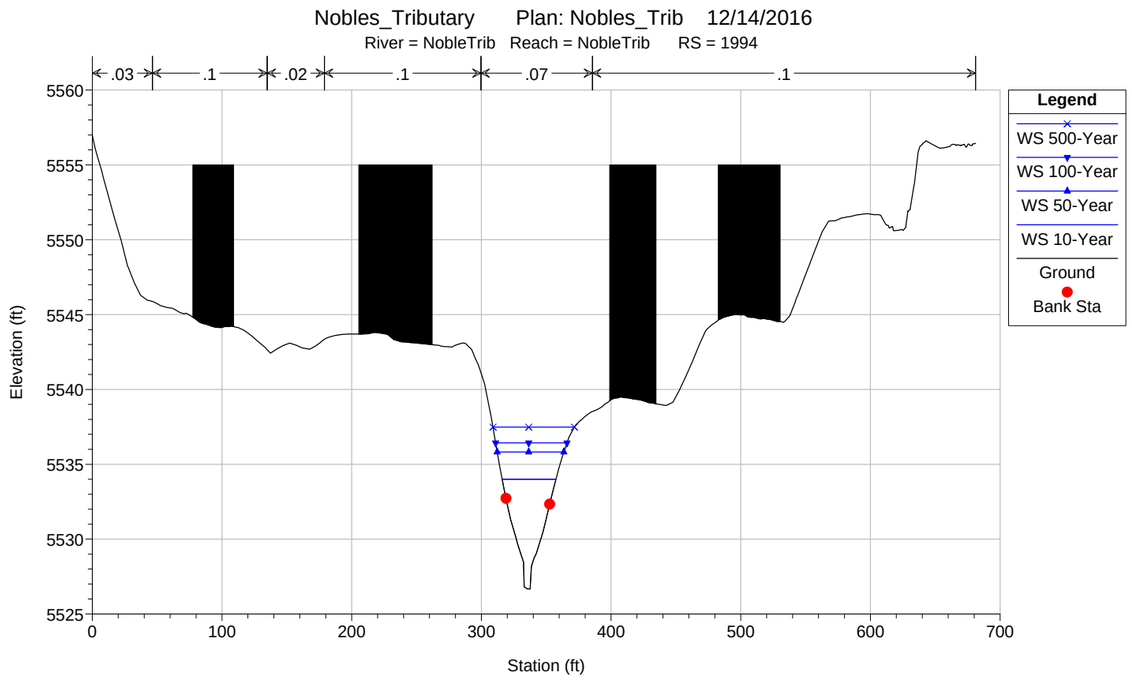

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2245
.03
.1
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta

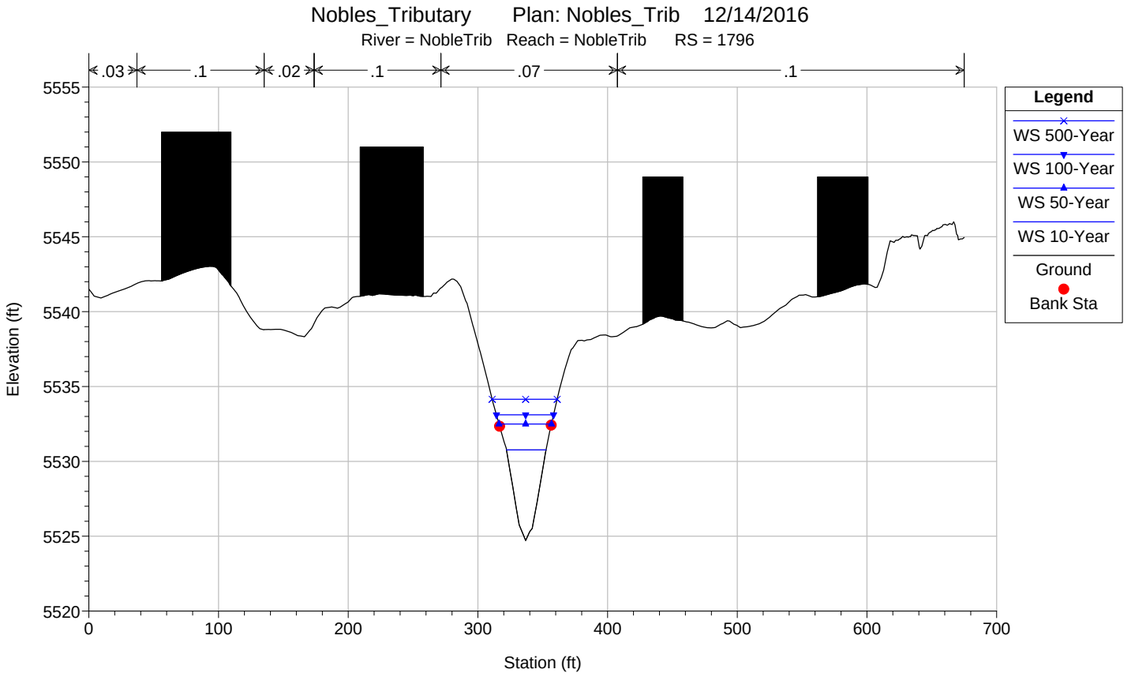

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2165
.03
.1
.07
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta

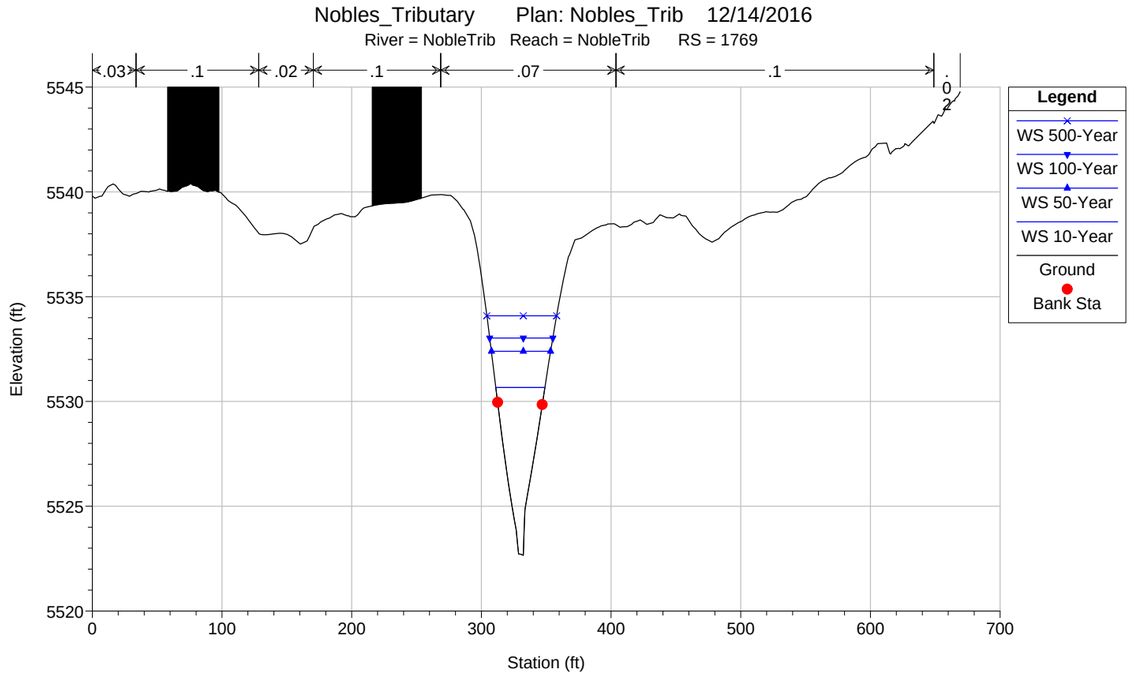

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2120 Culv Crossing 19 - Steele St
.03
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5570
5560
5550
5540
5530
5520
0
100
200
300
400
500
600
700

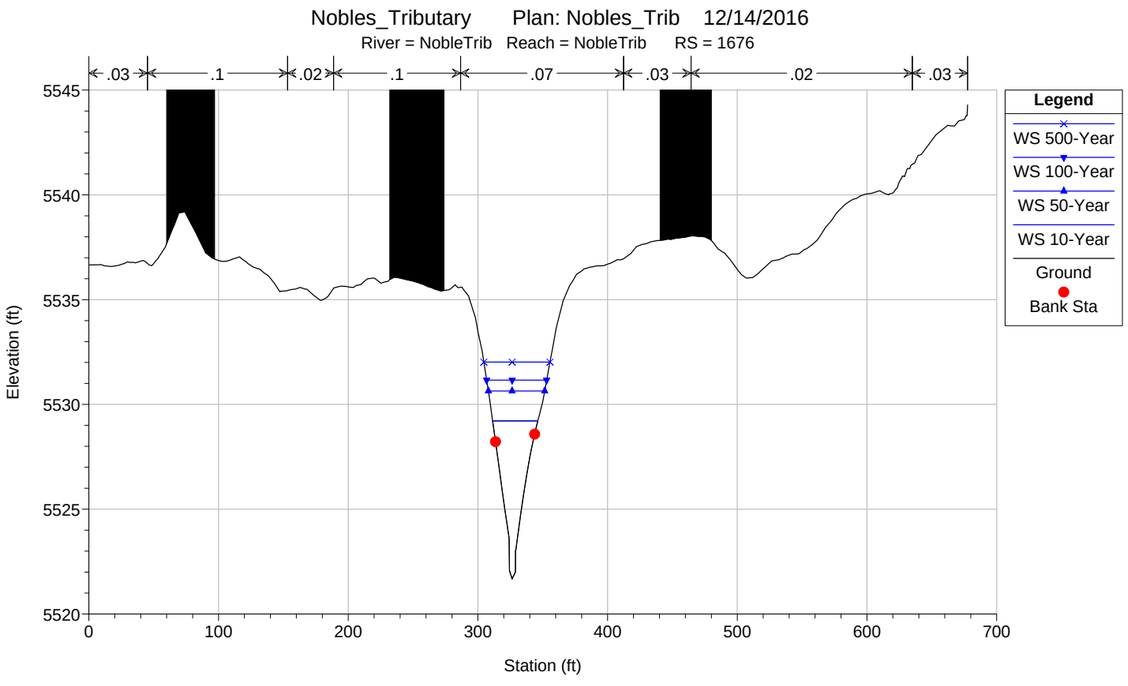

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2120 Culv Crossing 19 - Steele St
.03
.1
.02
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5565
5560
5555
5550
5545
5540
5535
5530
5525
0
100
200
300
400
500
600
700

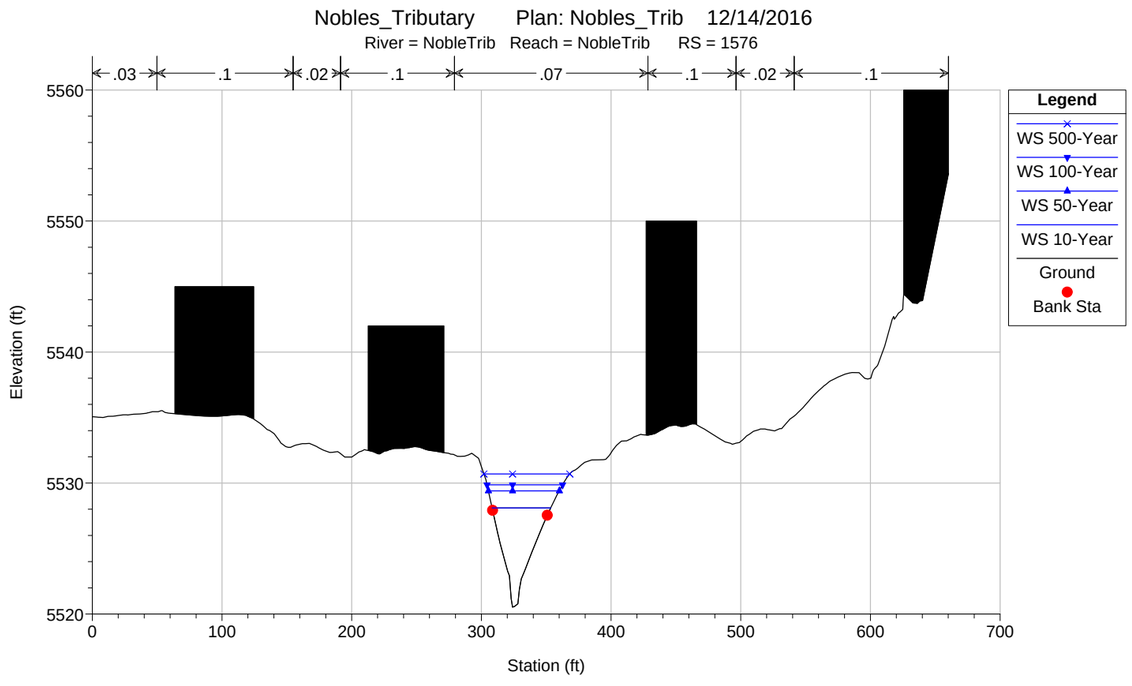

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 2080
.03
.1
.02
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5565
5560
5555
5550
5545
5540
5535
5530
5525
0
100
200
300
400
500
600
700

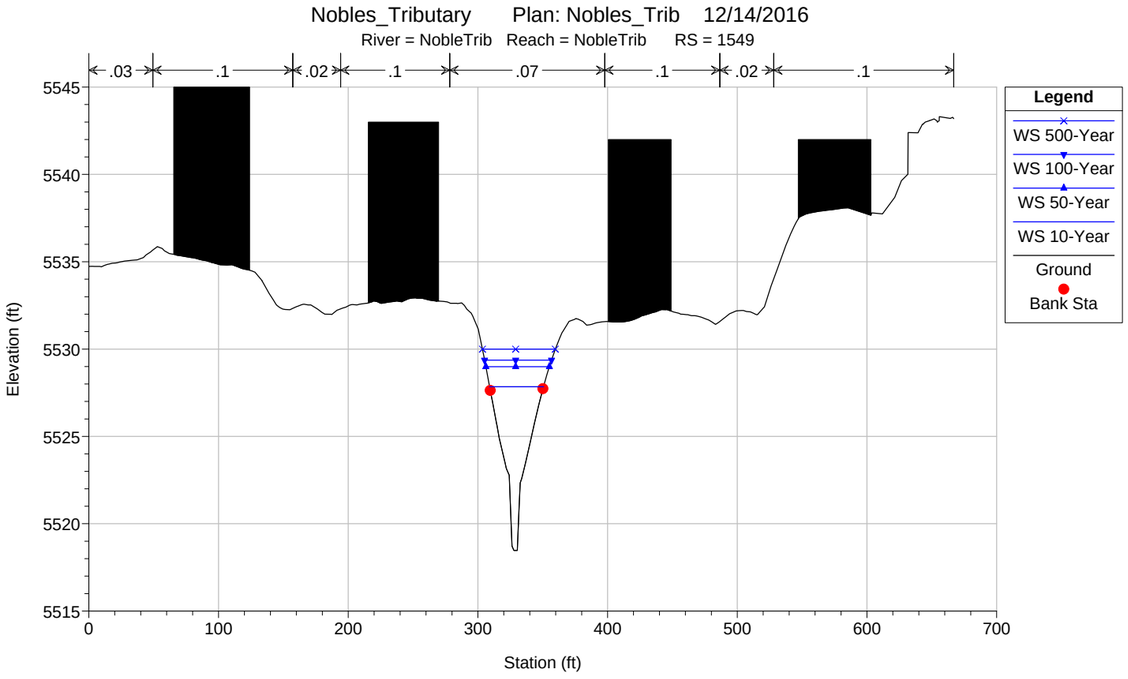

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1994
.03
.1
.02
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5560
5555
5550
5545
5540
5535
5530
5525
0
100
200
300
400
500
600
700

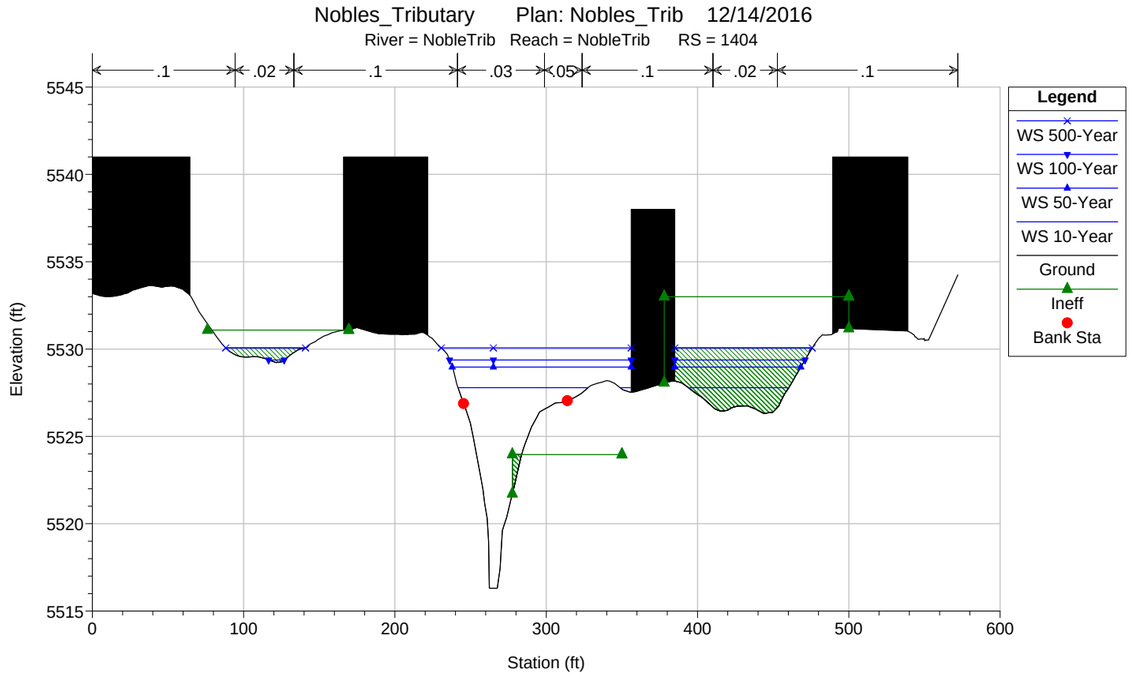

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1796
.03
.1
.02
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5555
5550
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600
700

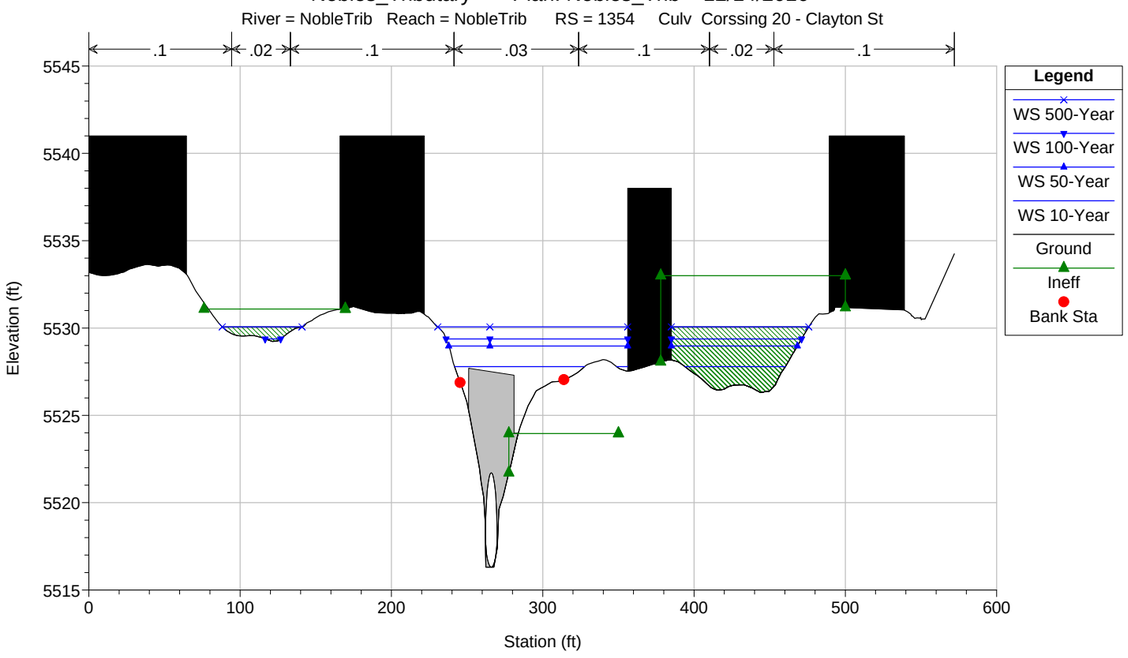

Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1769
.03
.1
.02
.1
.07
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600
700


Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1676
.03
.1
.02
.1
.07
.03
.02
.03
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5545
5540
5535
5530
5525
5520
0
100
200
300
400
500
600
700


Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1576
.03
.1
.02
.1
.07
.1
.02
.1
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta
Elevation (ft)
Station (ft)
5560
5550
5540
5530
5520
0
100
200
300
400
500
600
700


Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1549
.03
.1
.02
.1
.07
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Bank Sta


Nobles_Tributary Plan: Nobles_Trib 12/14/2016
River = NobleTrib Reach = NobleTrib RS = 1404
.1
.02
.1
.03
.05
.1
.02
.1
Elevation (ft)
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta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.03
.1
.02
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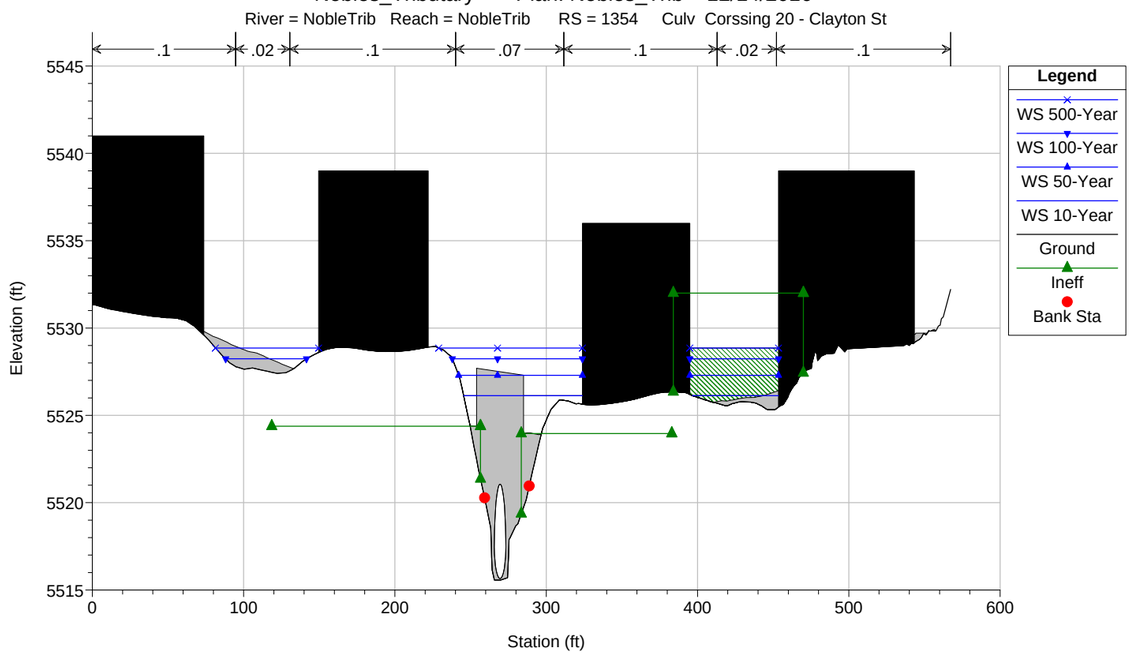
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta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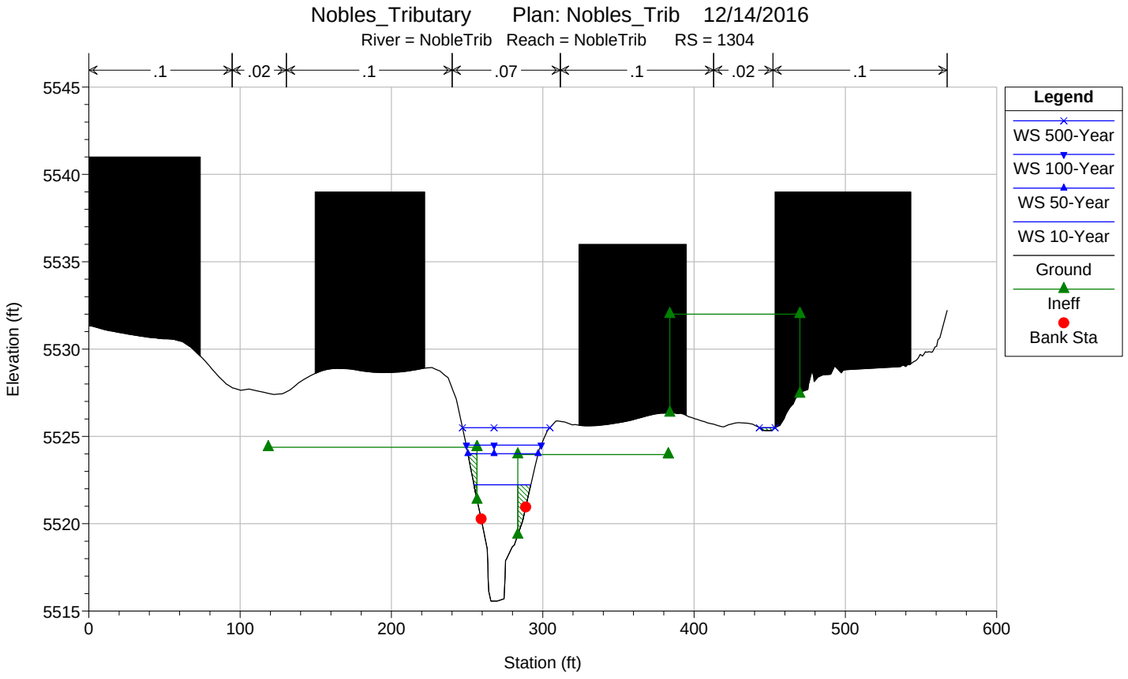
Station (ft)
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta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.02
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Legend
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WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
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Station (ft)
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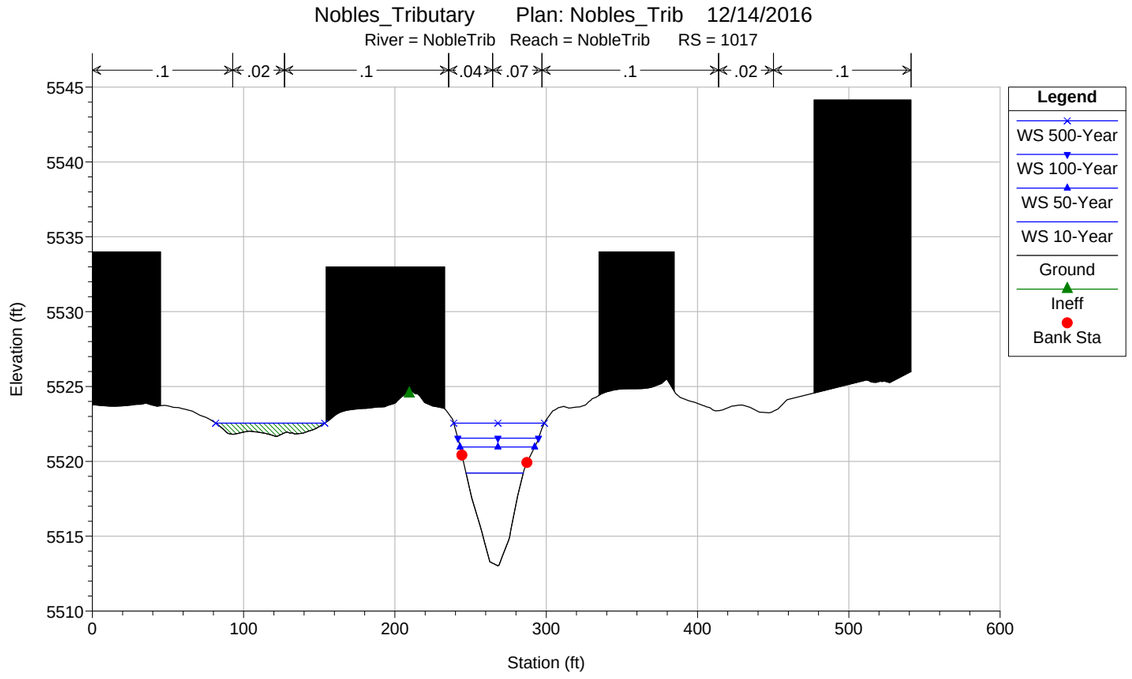
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.02
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Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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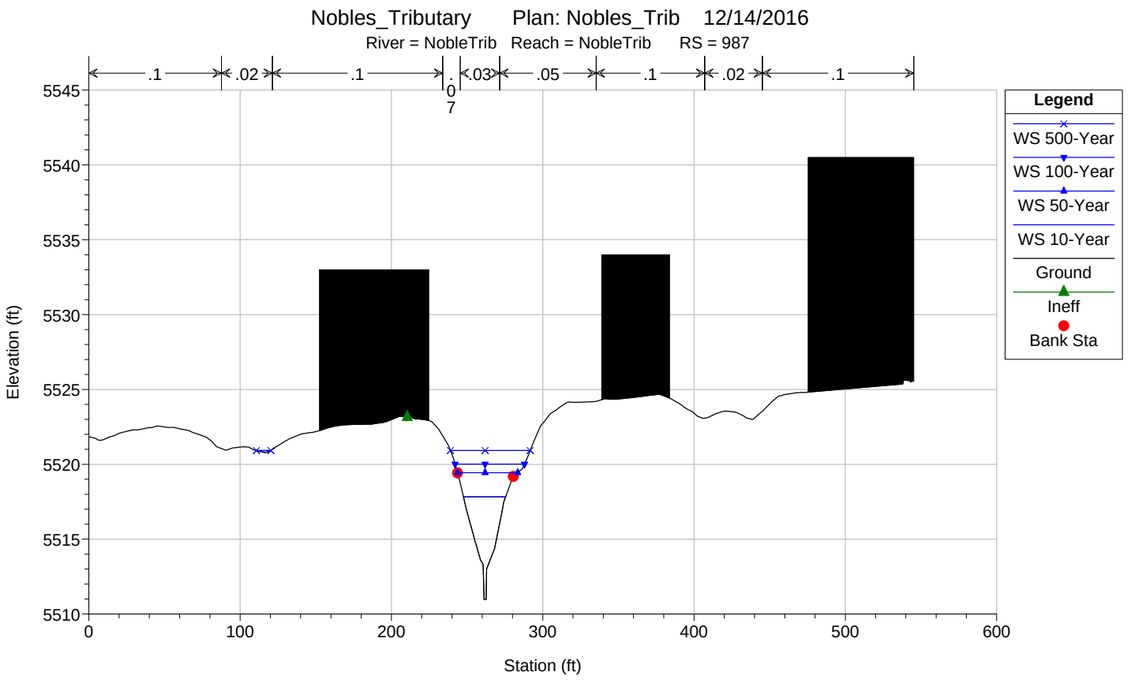
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WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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400
500
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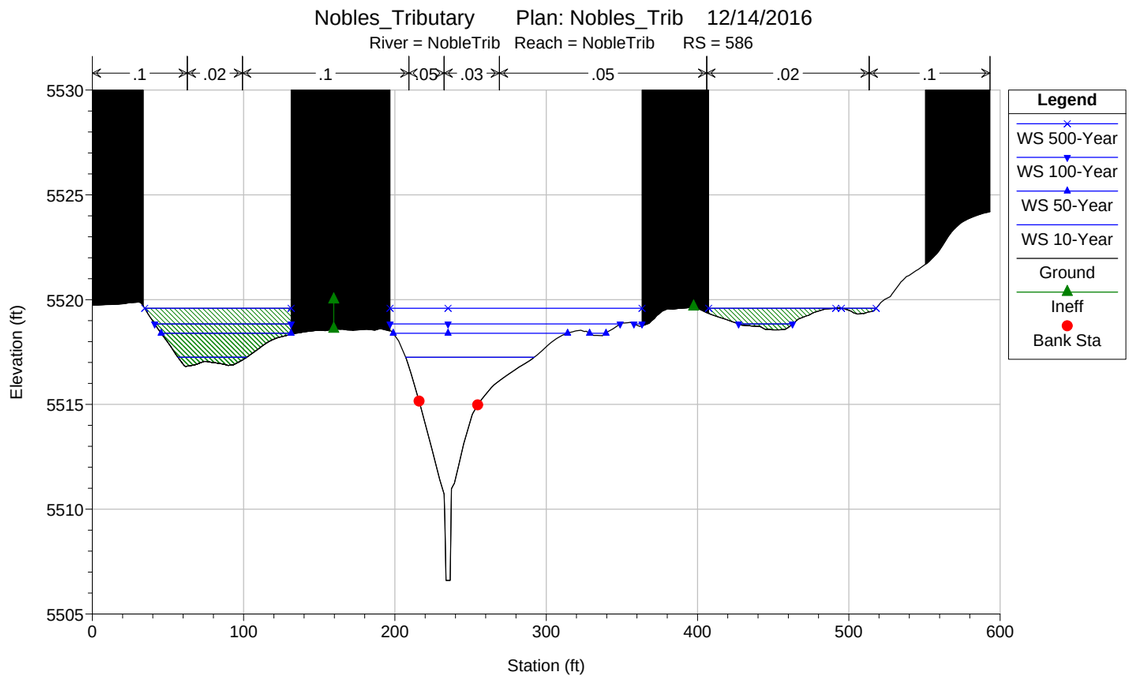
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WS 10-Year
Ground
Ineff
Bank Sta
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Station (ft)
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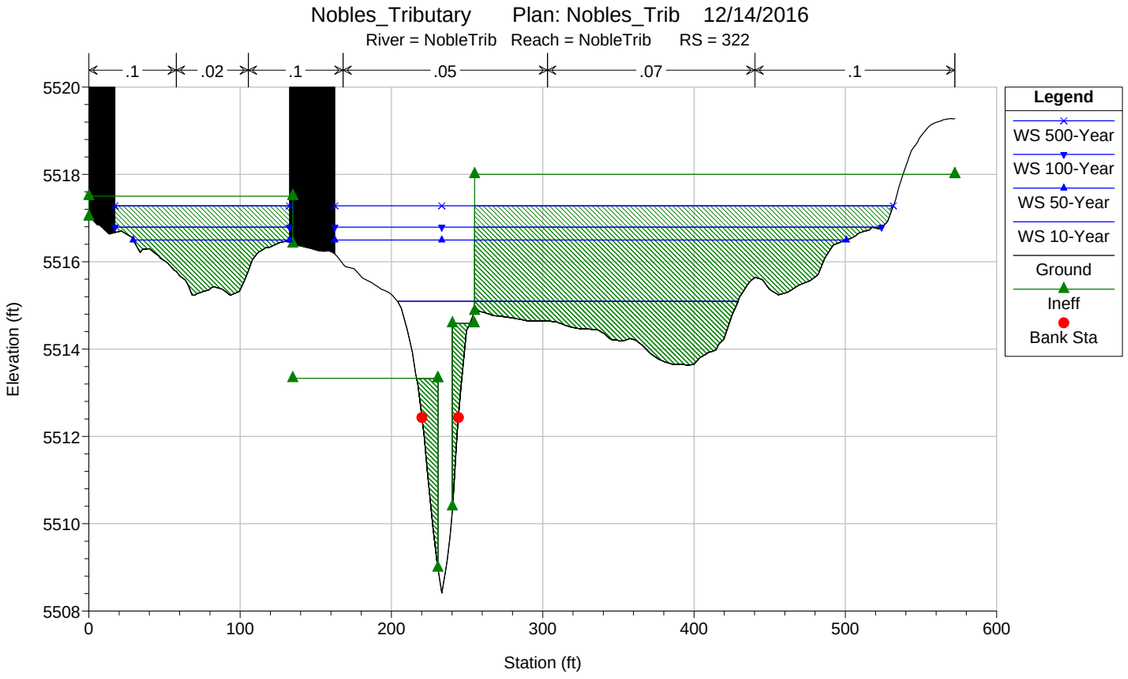
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Legend
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WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
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Station (ft)
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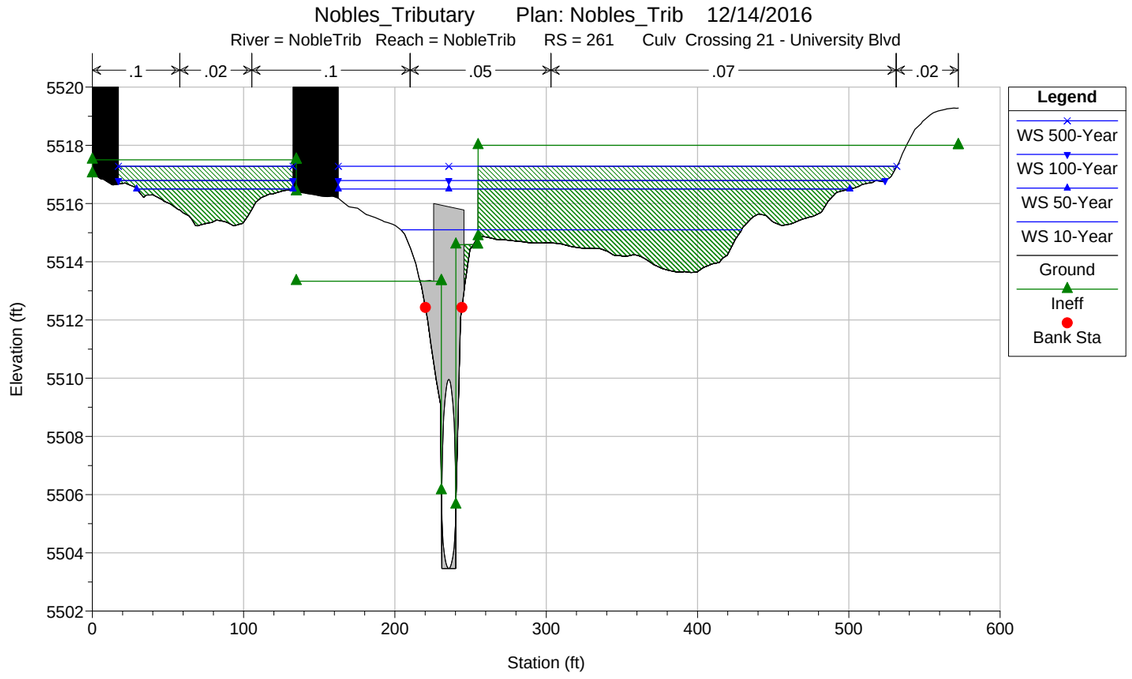
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.07
.02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
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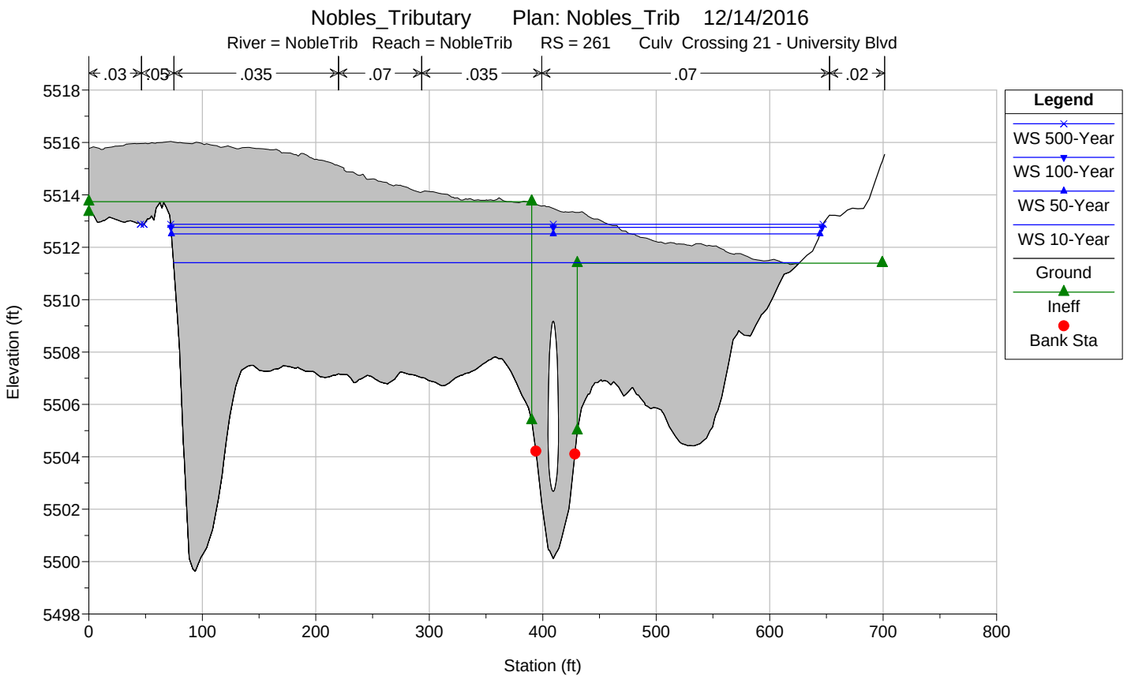
600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.035
.07
.035
.07
.02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5518
5516
5514
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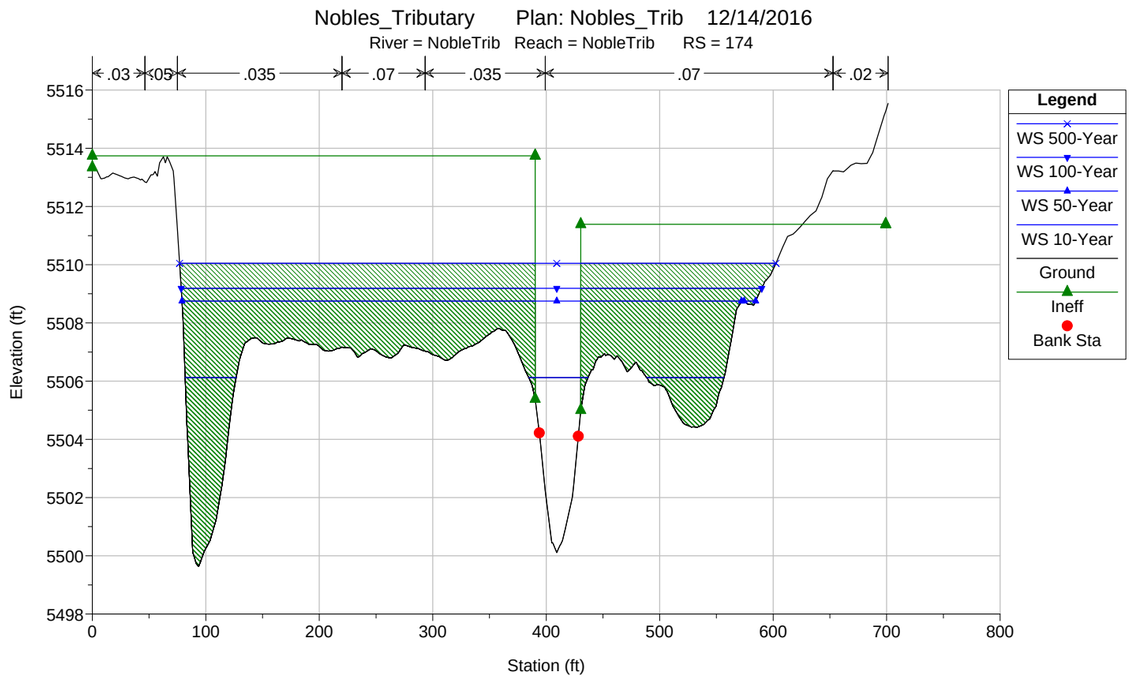
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.035
.07
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.07
.02
Legend
WS 500-Year
WS 100-Year
WS 50-Year
WS 10-Year
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
5516
5514
5512
5510
5508
5506
5504
5502
5500
5498
0
100
200
300
400
500
600
700
800

APPENDIX D
FLOODPLAIN & FLOODWAY DATA TABLE

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
Big Dry Creek Mainstem																				
Study Limit/DS of Pedestrian Bridge	1+50	150	5294.5	1523	3607	4630	6559	5300.0	5302.6	5303.5	5306.6	688.2	5305.9	5303.52	688.2	377.2	12.3	0.0	0.0	Floodplain delineation includes ineffective flow area
US of Pedestrian Bridge	1+81	181	5297.1	1523	3607	4630	6559	5304.2	5306.6	5306.9	5307.2	642.4	5307.5	5306.96	427.7	731.7	6.3	0.1	0.3	
	2+40	240	5300.2	1523	3607	4630	6559	5306.4	5307.5	5307.7	5308.0	701.3	5308.2	5307.97	458.0	814.4	5.7	0.3	0.5	
	4+78	478	5303.1	1523	3607	4630	6559	5309.8	5310.8	5311.1	5311.8	412.3	5312.5	5311.11	178.8	503.0	9.2	0.0	0.0	Floodplain top width includes obstruction
	6+71	671	5304.0	1519	3604	4628	6560	5311.0	5312.6	5313.2	5314.1	188.1	5313.8	5313.16	188.1	771.4	6.0	0.0	0.0	
	8+93	893	5305.7	1519	3604	4628	6560	5311.6	5313.3	5314.0	5315.1	301.7	5314.4	5313.99	301.7	1054.4	4.4	0.0	0.0	
DS of Pedestrian Bridge	9+26	926	5305.8	1519	3604	4628	6560	5311.7	5313.4	5314.1	5315.2	320.5	5314.4	5314.09	320.5	1082.4	4.3	0.0	0.0	
US of Pedestrian Bridge	9+47	947	5305.9	1519	3604	4628	6560	5312.1	5313.6	5314.2	5315.3	317.7	5314.6	5314.22	317.7	1066.2	4.3	0.0	0.0	
	9+91	991	5306.2	1519	3604	4628	6560	5312.0	5313.6	5314.2	5315.3	296.8	5314.8	5314.19	296.8	879.1	5.3	0.0	0.0	
	11+53	1153	5307.3	1519	3604	4628	6560	5313.9	5315.4	5315.8	5316.6	203.4	5317.1	5315.8	203.4	528.6	8.8	0.0	0.0	
	13+49	1349	5307.7	1519	3604	4628	6560	5316.3	5318.1	5318.7	5319.5	127.7	5319.9	5318.73	127.7	542.7	8.5	0.0	0.0	
DS Highway 85	14+30	1430	5309.5	1519	3604	4628	6560	5316.7	5318.6	5319.2	5319.9	120.2	5320.7	5319.2	120.2	524.2	9.7	0.0	0.0	
US Highway 85	15+95	1595	5309.9	1519	3604	4628	6560	5317.3	5320.5	5322.0	5326.4	99.8	5322.5	5321.99	99.8	816.2	5.8	0.0	0.0	
DS Railroad	16+89	1689	5310.5	1519	3604	4628	6560	5317.3	5320.6	5322.0	5326.4	106.3	5323.1	5322.01	106.3	615.5	8.2	0.0	0.0	
US Railroad	17+55	1755	5311.2	1519	3604	4628	6560	5318.4	5321.4	5322.7	5328.3	105.0	5323.5	5322.7	105.0	672.5	7.3	0.0	0.0	Modified cross section due to lack of survey
DS Railroad	17+58	1758	5311.2	1519	3604	4628	6560	5318.4	5321.4	5322.7	5328.3	109.4	5323.5	5322.71	109.4	632.8	7.3	0.0	0.0	Modified cross section due to lack of survey
US Railroad	19+07	1907	5312.4	1519	3604	4628	6560	5320.7	5323.1	5324.2	5328.7	127.8	5324.7	5324.19	127.8	825.1	5.6	0.0	0.0	
	21+58	2158	5314.5	1513	3598	4622	6547	5321.5	5323.8	5324.8	5328.8	84.7	5326.8	5324.8	84.7	409.9	11.3	0.0	0.0	
	23+29	2329	5314.7	1513	3598	4622	6547	5323.3	5326.5	5327.4	5329.6	142.3	5328.6	5327.42	142.3	550.5	8.4	0.0	0.0	
DS of Pedestrian Bridge	23+72	2372	5314.8	1513	3598	4622	6547	5324.1	5327.5	5328.6	5330.3	125.9	5329.0	5328.57	125.9	876.8	5.3	0.0	0.0	
US of Pedestrian Bridge	24+21	2421	5315.8	1513	3598	4622	6547	5325.0	5327.9	5328.9	5330.7	138.3	5329.3	5328.92	138.3	1014.4	4.6	0.0	0.0	
DS of Windermere St	24+90	2490	5316.0	1513	3598	4622	6547	5325.1	5328.0	5329.0	5330.8	136.7	5329.4	5329.03	136.7	1010.0	4.6	0.0	0.0	
US of Windermere St	25+83	2583	5316.8	1513	3598	4622	6547	5325.1	5328.0	5329.0	5330.8	237.3	5329.6	5328.99	237.3	860.1	5.9	0.0	0.0	
Wastewater treatment plant in ROB	26+68	2668	5317.4	1513	3598	4622	6547	5324.6	5327.4	5329.1	5330.9	223.1	5330.5	5329.09	223.1	583.7	7.9	0.0	0.0	Model top width includes ineffective flow area. WWTP floodwall/levee in ROB
Wastewater treatment plant in ROB	29+22	2922	5319.2	1513	3598	4622	6547	5327.2	5330.4	5331.3	5333.6	99.7	5333.9	5331.26	99.7	388.5	11.9	0.0	0.0	WWTP floodwall/levee in ROB
Wastewater treatment plant in ROB	32+75	3275	5321.4	1513	3598	4622	6547	5331.1	5334.6	5335.1	5335.7	213.3	5335.6	5335.08	213.3	914.5	5.1	0.0	0.0	WWTP floodwall/levee in ROB
DS of Pedestrian Bridge	34+93	3493	5324.3	1513	3598	4622	6547	5332.5	5334.9	5335.4	5336.7	102.7	5337.4	5335.38	102.7	428.5	10.8	0.0	0.0	
US of Pedestrian Bridge	35+95	3595	5325.8	1513	3598	4622	6547	5334.9	5339.1	5340.0	5341.3	141.9	5340.5	5339.99	141.9	878.8	5.3	0.0	0.0	
	37+26	3726	5326.0	1513	3598	4622	6547	5335.5	5339.5	5340.4	5341.8	143.8	5340.8	5340.42	143.8	1026.1	4.5	0.0	0.0	
DS of City Ditch	37+55	3755	5326.1	1513	3598	4622	6547	5335.7	5339.6	5340.6	5342.1	162.2	5340.9	5340.63	162.2	1182.5	3.9	0.0	0.0	
US of City Ditch	37+69	3769	5326.1	1513	3598	4622	6547	5335.7	5339.7	5340.7	5342.2	167.3	5340.9	5340.71	167.3	1226.0	3.8	0.0	0.0	
	38+18	3818	5326.7	1513	3598	4622	6547	5335.8	5339.7	5340.7	5342.2	161.9	5341.0	5340.71	161.9	1111.6	4.2	0.0	0.0	
	38+33	3833	5326.9	1513	3598	4622	6547	5335.8	5339.7	5340.7	5342.1	153.5	5341.1	5340.67	153.5	1073.5	4.3	0.0	0.0	
	39+89	3989	5327.3	1513	3598	4622	6547	5336.0	5339.9	5341.0	5342.5	171.7	5341.2	5340.96	171.7	1288.5	3.6	0.0	0.0	
	40+77	4077	5327.5	1513	3598	4622	6547	5336.0	5340.0	5341.0	5342.6	180.8	5341.3	5341	180.8	1227.2	3.8	0.0	0.0	
DS of Miniature Railroad	41+07	4107	5327.6	1513	3598	4622	6547	5336.2	5340.0	5341.0	5342.6	177.8	5341.3	5341.02	177.8	1263.1	3.7	0.0	0.0	
US of Miniature Railroad	41+32	4132	5328.0	1513	3598	4622	6547	5336.9	5340.7	5341.7	5343.3	164.1	5341.9	5341.69	164.1	1264.4	3.7	0.0	0.0	
	41+65	4165	5328.2	1513	3598	4622	6547	5336.9	5340.7	5341.7	5343.3	162.7	5342.0	5341.71	162.7	1218.0	3.8	0.0	0.0	
	43+69	4369	5329.7	1513	3598	4622	6547	5337.0	5340.7	5341.8	5343.4	168.8	5342.1	5341.78	168.8	1114.3	4.2	0.0	0.0	
	46+50	4650	5330.0	1513	3598	4622	6547	5337.4	5340.8	5341.8	5343.4	175.2	5342.6	5341.81	122.6	694.7	6.7	0.0	0.0	
	46+69	4669	5330.1	1513	3598	4622	6547	5337.4	5340.8	5341.8	5343.5	175.2	5342.6	5341.84	175.2	730.2	6.3	0.0	0.0	
DS of Pedestrian Bridge	46+96	4696	5329.8	1513	3598	4622	6547	5337.5	5340.9	5342.0	5343.8	188.6	5342.7	5342.05	188.6	811.4	5.7	0.0	0.0	
US of Pedestrian Bridge	47+12	4712	5329.9	1513	3598	4622	6547	5337.6	5342.0	5342.6	5344.7	194.8	5343.1	5342.65	194.8	941.8	4.9	0.0	0.0	
	47+53	4753	5329.9	1513	3598	4622	6547	5337.7	5342.1	5342.8	5344.8	213.6	5343.2	5342.76	213.6	1002.1	4.6	0.0	0.0	
	47+92	4792	5330.0	1513	3598	4622	6547	5337.9	5342.2	5342.8	5344.9	240.6	5343.2	5342.83	240.6	1080.9	4.3	0.0	0.0	
	48+17	4817	5330.2	1513	3598	4622	6547	5338.1	5342.2	5342.9	5345.0	257.2	5343.3	5342.9	257.2	1144.4	4.0	0.0	0.0	
	49+19	4919	5330.2	1513	3598	4622	6547	5338.1	5342.2	5342.9	5345.1	307.4	5343.4	5342.93	252.3	949.6	4.9	0.0	0.0	
	50+43	5043	5330.3	1513	3598	4622	6547	5338.9	5342.3	5343.0	5345.1	366.5	5343.7	5342.96	289.0	765.3	6.0	0.0	0.0	Model top width includes ineffective flow area
DS of Miniature Railroad	50+84	5084	5330.3	1513	3598	4622	6547	5339.3	5342.7	5343.5	5345.3	409.8	5343.9	5343.48	341.9	1102.7	4.2	0.0	0.0	Floodplain top width includes obstruction
US of Miniature Railroad	51+15	5115	5331.8	1513	3598	4622	6547	5339.4	5343.3	5344.1	5345.5	335.7	5344.4	5344.14	294.4	1213.4	3.8	0.1	0.1	
	51+22	5122	5332.0	1513	3598	4622	6547	5339.3	5343.3	5344.1	5345.5	306.2	5344.4	5344.14	281.7	1156.2	4.0	0.1	0.1	
	51+40	5140	5332.0	1513	3598	4622	6547	5339.3	5343.4	5344.1	5345.6	284.6	5344.5	5344.21	284.6	1180.2	3.9	0.1	0.1	
	52+83	5283	5332.9	1513	3598	4622	6547	5340.0	5343.1	5343.8	5345.2	187.3	5345.0	5343.9	187.3	686.1	6.7	0.1	0.0	
DS of Highway 88	53+30	5330	5335.4	1513	3598	4622	6547	5340.1	5342.4	5343.6	5345.4	48.1	5347.3	5343.57	48.1	313.6	15.4	0.0	0.0	
US of Highway 88	54+54	5454	5337.2	1513	3598	4622	6547	5344.1	5350.3	5353.9	5356.2	430.6	5354.2	5353.87	375.5	3487.7	4.7	0.0	0.0	
	55+00	5500	5337.5	1511	3597	4632	6556	5344.4	5350.7	5354.2	5356.7	496.8	5354.2	5354.22	393.4	3649.1	1.3	0.0	0.0	
	56+25	5625	5337.7	1511	3597	4632	6556	5344.9	5350.7	5354.2	5356.7	532.2	5354.3	5354.22	423.3	3687.0	1.3	0.0	0.0	
	58+63	5863	5338.6	1511	3597	4632	6556	5346.5	5350.7	5354.2	5356.7	577.2	5354.3	5354.23	446.2	3630.9	1.3	0.0	0.0	
	61+55	6155	5340.4	1511	3597	4632	6556	5347.3	5350.5	5354.2	5356.7	455.2	5354.3	5354.2	329.5	2575.2	2.4	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	64+91	6491	5343.2	1511	3597	4632	6556	5351.1	5352.4	5354.0	5356.8	600.4	5354.7	5354.15	257.2	914.9	5.1	0.1	0.1	
DS of Pedestrian Bridge	65+29	6529	5344.2	1511	3597	4632	6556	5352.0	5352.7	5353.9	5356.5	594.8	5355.3	5354.04	226.5	656.9	7.1	0.1	0.0	
US of Pedestrian Bridge	65+52	6552	5344.4	1511	3597	4632	6556	5352.6	5354.3	5355.2	5356.3	637.3	5356.1	5355.2	239.6	813.6	6.0	0.1	0.0	
	66+56	6656	5345.4	1511	3597	4632	6556	5352.8	5355.0	5355.9	5357.1	627.6	5356.4	5355.92	158.8	860.2	5.4	0.0	0.0	
DS of Pedestrian Bridge	68+19	6819	5346.0	1511	3597	4632	6556	5353.2	5355.5	5356.4	5357.8	567.4	5357.2	5356.46	153.9	844.4	6.6	0.0	0.0	Floodway is not drawn in the IEFA on ROB.
US of Pedestrian Bridge	68+99	6899	5346.7	1511	3597	4632	6556	5354.3	5356.7	5357.2	5358.3	140.5	5358.8	5357.44	140.5	666.7	7.0	0.2	0.1	
	70+24	7024	5347.7	1511	3597	4632	6556	5354.7	5357.8	5358.8	5360.3	234.4	5359.2	5358.8	234.4	939.2	4.9	0.1	0.0	
	72+81	7281	5348.1	1507	3587	4630	6550	5356.5	5357.5	5358.6	5360.3	78.4	5361.4	5358.67	78.4	384.7	12.0	0.1	0.0	
	75+37	7537	5348.7	1507	3587	4630	6550	5357.3	5360.5	5361.8	5363.8	151.7	5362.7	5361.74	151.7	718.1	6.5	0.0	0.0	
	77+85	7785	5351.9	1507	3587	4630	6550	5359.5	5363.1	5363.8	5364.9	211.5	5365.5	5363.78	211.5	545.3	9.4	0.0	0.0	
	80+10	8010	5353.4	1507	3587	4630	6550	5362.2	5365.1	5365.9	5366.4	143.7	5366.6	5365.88	143.7	803.6	5.8	0.0	0.0	Model top width includes ineffective flow area
	81+91	8191	5354.0	1507	3587	4630	6550	5362.7	5365.3	5366.0	5366.5	86.8	5367.5	5365.98	86.8	524.8	8.8	0.0	0.0	
	83+39	8339	5354.9	1507	3587	4630	6550	5363.7	5366.2	5367.1	5369.1	64.2	5370.2	5367.08	64.2	362.2	12.8	0.0	0.0	
	84+30	8430	5355.2	1507	3587	4630	6550	5365.3	5369.0	5370.4	5372.4	95.5	5371.1	5370.43	95.5	737.6	6.3	0.0	0.0	
DS of Pedestrian Bridge	84+62	8462	5355.3	1507	3587	4630	6550	5365.3	5369.3	5370.8	5372.9	132.7	5371.3	5370.82	132.7	912.3	5.1	0.0	0.0	
US of Pedestrian Bridge	85+11	8511	5356.4	1507	3587	4630	6550	5366.1	5369.9	5371.3	5373.9	172.1	5371.6	5371.34	172.1	1257.3	3.7	0.0	0.0	
	86+25	8625	5356.6	1507	3587	4630	6550	5365.9	5369.3	5370.6	5373.3	94.7	5372.1	5370.63	94.7	595.5	7.8	0.0	0.0	
	87+05	8705	5357.5	1507	3587	4630	6550	5365.9	5369.2	5370.5	5373.2	78.4	5372.7	5370.53	78.4	480.7	9.6	0.0	0.0	
	88+36	8836	5359.7	1507	3587	4630	6550	5367.0	5370.4	5372.0	5374.3	104.6	5373.3	5372.04	104.6	602.1	7.7	0.0	0.0	
DS of W Lehow Ave	88+64	8864	5360.3	1507	3587	4630	6550	5368.7	5370.5	5371.9	5373.8	54.2	5373.7	5371.92	54.2	461.1	10.2	0.0	0.0	
US of W Lehow Ave	89+66	8966	5361.5	1507	3587	4630	6550	5370.6	5373.1	5374.5	5379.3	97.0	5376.0	5374.47	97.0	733.7	9.6	0.0	0.0	
	90+40	9040	5361.9	1499	3568	4612	6530	5370.8	5374.2	5375.9	5380.6	132.3	5376.4	5375.89	132.3	923.6	5.0	0.0	0.0	
	90+71	9071	5362.0	1499	3568	4612	6530	5371.0	5374.3	5376.0	5380.6	141.2	5376.4	5375.95	141.2	922.8	5.2	0.0	0.0	
	93+56	9356	5365.0	1499	3568	4612	6530	5372.0	5375.0	5376.5	5380.8	122.4	5377.3	5376.53	122.4	700.4	6.6	0.0	0.0	
	99+44	9944	5366.6	1499	3568	4612	6530	5375.5	5377.8	5378.7	5381.7	312.1	5379.1	5378.72	312.1	1050.6	4.4	0.0	0.0	
	99+77	9977	5367.9	1499	3568	4612	6530	5375.5	5377.8	5378.7	5381.7	321.7	5379.2	5378.69	321.7	853.6	5.4	0.0	0.0	Overtopping of Pedestrian Bridge, top width adjusted for Flood Map delineations.
DS of Pedestrian Bridge	100+14	10014	5369.6	1499	3568	4612	6530	5375.4	5378.0	5378.7	5381.6	318.9	5380.2	5378.7	318.9	592.2	7.8	0.0	0.0	Overtopping of Pedestrian Bridge, top width adjusted for Flood Map delineations.
US of Pedestrian Bridge	100+53	10053	5369.8	1499	3568	4612	6530	5378.1	5379.9	5380.2	5381.4	336.3	5381.2	5380.24	336.3	799.8	5.8	0.0	0.0	
	100+82	10082	5370.0	1499	3568	4612	6530	5378.4	5380.5	5381.1	5382.1	358.5	5381.3	5381.07	358.5	1301.1	3.5	0.0	0.0	
	103+50	10350	5370.9	1499	3568	4612	6530	5378.6	5380.8	5381.3	5382.4	350.2	5382.3	5381.31	350.2	721.5	6.4	0.0	0.0	
	107+21	10721	5373.5	1499	3568	4612	6530	5381.6	5383.9	5384.6	5385.6	157.4	5386.0	5384.64	157.4	534.0	8.6	0.0	0.0	
DS of Pedestrian Bridge	107+49	10749	5376.3	1499	3568	4612	6530	5382.5	5385.6	5386.2	5387.1	159.7	5387.7	5386.16	159.7	558.5	8.3	0.0	0.0	
US of Pedestrian Bridge	108+09	10809	5377.1	1499	3568	4612	6530	5385.0	5387.9	5388.9	5390.4	131.1	5389.6	5388.91	131.1	711.9	6.5	0.0	0.0	
	109+29	10929	5377.1	1499	3568	4612	6530	5385.7	5387.3	5388.4	5390.3	63.3	5391.5	5388.44	63.3	371.5	12.4	0.0	0.0	
DS of S Broadway	109+94	10994	5377.1	1499	3568	4612	6530	5386.8	5390.5	5391.9	5394.2	87.4	5392.4	5391.94	87.4	879.3	5.3	0.0	0.0	
US of S Broadway	111+52	11152	5377.9	1499	3568	4612	6530	5387.2	5391.1	5392.6	5395.0	76.9	5393.1	5392.63	76.9	901.2	5.1	0.0	0.0	
	111+88	11188	5378.6	1487	3527	4572	6461	5386.8	5390.4	5391.9	5394.1	68.4	5393.5	5391.86	68.4	546.0	8.4	0.0	0.0	
	112+99	11299	5379.0	1487	3527	4572	6461	5387.4	5391.0	5392.5	5394.7	60.9	5394.0	5392.47	60.9	491.7	9.3	0.0	0.0	
	116+39	11639	5381.0	1487	3527	4572	6461	5389.6	5393.0	5394.4	5396.7	78.1	5395.7	5394.44	78.1	555.7	8.2	0.0	0.0	
	122+77	12277	5387.8	1487	3527	4572	6461	5396.1	5399.3	5400.5	5402.2	59.6	5403.5	5400.48	59.6	347.2	13.2	0.0	0.0	
	129+21	12921	5392.4	1487	3527	4572	6461	5401.9	5405.3	5406.6	5408.6	121.8	5407.3	5406.57	121.8	742.5	6.2	0.0	0.0	
	129+43	12943	5392.9	1487	3527	4572	6461	5402.1	5405.5	5406.8	5409.0	569.1	5407.3	5406.8	138.6	857.3	5.3	0.0	0.0	
	130+69	13069	5394.4	1487	3527	4572	6461	5401.9	5405.2	5407.0	5409.5	443.9	5407.7	5407.02	357.5	830.5	5.5	0.0	0.0	
	136+27	13627	5397.4	1487	3527	4572	6461	5406.8	5408.9	5409.2	5410.1	498.5	5409.6	5409.3	258.3	900.6	5.1	0.1	0.3	
	140+36	14036	5399.6	1487	3527	4572	6461	5408.8	5410.0	5411.3	5413.8	72.9	5414.1	5411.38	72.9	378.9	12.1	0.1	0.0	
	140+68	14068	5399.7	1487	3527	4572	6461	5409.3	5412.3	5413.7	5414.7	133.9	5414.6	5413.65	133.9	639.9	7.2	0.0	0.0	
	143+93	14393	5401.7	1487	3527	4572	6461	5411.4	5414.5	5415.6	5416.9	157.8	5416.8	5415.56	157.8	544.3	8.4	0.0	0.0	
	146+69	14669	5403.4	1487	3527	4572	6461	5413.2	5416.5	5417.4	5418.9	95.7	5419.0	5417.44	95.7	500.0	9.1	0.0	0.0	
DS of E Littleton Blvd	147+36	14736	5405.2	1487	3527	4572	6461	5413.7	5417.3	5418.6	5420.5	153.0	5419.5	5418.59	153.0	689.1	6.6	0.0	0.0	Roadway overtopping of E Littleton Blvd, top width adjusted for Flood Map delineations.
US of E Littleton Blvd	148+10	14810	5405.4	1487	3527	4572	6461	5414.2	5419.5	5421.0	5422.6	330.5	5421.3	5421	330.5	1113.5	4.2	0.0	0.0	
	148+89	14889	5405.7	1476	3460	4486	6299	5414.2	5419.5	5420.9	5422.3	97.4	5421.5	5420.9	97.4	782.5	5.7	0.0	0.0	
	150+91	15091	5406.3	1476	3460	4486	6299	5415.1	5420.0	5421.5	5423.2	119.6	5421.9	5421.52	119.6	991.7	4.5	0.0	0.0	
	151+17	15117	5406.3	1476	3460	4486	6299	5415.2	5420.0	5421.5	5423.1	106.3	5421.9	5421.5	106.3	926.1	4.8	0.0	0.0	
	151+65	15165	5406.8	1476	3460	4486	6299	5415.3	5420.1	5421.6	5423.2	100.5	5422.0	5421.55	100.5	837.2	5.4	0.0	0.0	
	153+29	15329	5407.3	1476	3460	4486	6299	5416.3	5420.4	5421.8	5423.5	97.9	5422.6	5421.81	97.9	686.4	6.5	0.0	0.0	
	156+44	15644	5409.6	1476	3460	4486	6299	5418.1	5421.6	5422.9	5424.7	144.6	5423.9	5422.94	144.6	677.6	6.6	0.0	0.0	
	159+76	15976	5411.8	1476	3460	4486	6299	5419.9	5423.0	5424.1	5425.6	158.2	5425.7	5424.09	158.2	508.1	8.8	0.0	0.0	
	160+05	16005	5412.6	1476	3460	4486	6299	5420.0	5423.0	5424.5	5425.8	166.8	5426.0	5424.47	166.8	505.2	8.9	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	161+88	16188	5414.3	1476	3460	4486	6299	5421.9	5425.0	5426.3	5427.4	235.6	5426.9	5426.25	235.6	779.6	5.8	0.0	0.0	
	162+08	16208	5414.3	1476	3460	4486	6299	5421.9	5425.0	5426.2	5427.3	228.8	5427.1	5426.19	228.8	728.5	6.2	0.0	0.0	
	162+68	16268	5414.3	1476	3460	4486	6299	5421.6	5424.5	5426.0	5427.0	182.8	5427.6	5425.98	182.8	540.6	8.3	0.0	0.0	
	165+41	16541	5415.9	1476	3460	4486	6299	5424.8	5427.7	5428.3	5429.2	150.8	5429.1	5428.27	150.8	641.4	7.0	0.0	0.0	
	165+76	16576	5417.1	1476	3460	4486	6299	5424.6	5427.5	5428.4	5429.9	222.9	5429.5	5428.36	222.9	573.3	7.8	0.0	0.0	
	167+54	16754	5418.3	1476	3460	4486	6299	5426.1	5428.9	5429.3	5430.2	196.5	5430.6	5429.34	196.5	609.1	7.4	0.0	0.0	
	170+69	17069	5420.5	1476	3460	4486	6299	5427.7	5430.9	5431.4	5432.4	338.3	5432.4	5431.38	338.3	708.3	6.3	0.0	0.0	
	171+12	17112	5421.1	1476	3460	4486	6299	5428.6	5431.4	5431.7	5432.6	333.5	5432.7	5431.7	333.5	627.7	7.2	0.0	0.0	
	173+19	17319	5422.8	1476	3460	4486	6299	5431.1	5432.8	5433.2	5433.8	576.6	5433.5	5433.24	576.6	1252.0	3.6	0.0	0.0	
	173+74	17374	5423.1	1476	3460	4486	6299	5431.2	5432.9	5433.4	5434.0	567.8	5433.7	5433.4	567.8	1176.9	3.8	0.0	0.0	
	176+09	17609	5426.0	1476	3460	4486	6299	5432.7	5433.7	5434.0	5434.5	387.1	5434.4	5434.04	387.1	971.4	4.6	0.0	0.0	
	178+47	17847	5427.0	1476	3460	4486	6299	5434.0	5435.1	5435.6	5436.2	289.9	5436.1	5435.55	289.9	808.8	5.6	0.0	0.0	
	181+39	18139	5427.6	1476	3460	4486	6299	5435.0	5437.4	5438.1	5439.4	186.1	5439.8	5438.07	186.1	673.9	7.6	0.0	0.0	
DS of E Orchard Rd	182+73	18273	5428.6	1476	3460	4486	6299	5436.6	5438.2	5438.9	5440.3	331.8	5441.4	5438.91	331.8	360.2	12.5	0.0	0.0	Roadway overtopping of E Orchard Rd, top width adjusted for Flood Map delineations.
US of E Orchard Rd	184+06	18406	5430.3	1476	3460	4486	6299	5437.0	5442.4	5443.6	5444.6	308.4	5443.9	5443.59	308.4	1028.5	4.4	0.0	0.0	Model top width includes ineffective flow area.
	185+85	18585	5431.4	1469	3445	4425	6197	5439.3	5442.7	5443.6	5444.3	171.7	5444.6	5443.55	171.7	553.9	8.0	0.0	0.0	
	186+94	18694	5432.9	1469	3445	4425	6197	5441.9	5444.1	5444.7	5445.6	270.9	5445.1	5444.67	230.6	946.5	4.7	0.0	0.0	
	188+48	18848	5433.7	1469	3445	4425	6197	5442.6	5444.6	5445.2	5446.2	283.7	5445.6	5445.18	264.3	913.3	4.9	0.0	0.0	
DS of S Cherrywood Cir	189+74	18974	5434.6	1469	3445	4425	6197	5442.9	5446.3	5447.1	5447.6	438.3	5448.0	5447.08	398.6	688.8	6.4	0.0	0.1	
US of S Cherrywood Cir	190+41	19041	5434.5	1469	3445	4425	6197	5444.0	5447.4	5448.0	5448.7	529.0	5448.4	5448.35	426.3	1025.7	4.3	0.4	0.4	
	191+06	19106	5435.0	1467	3438	4382	6174	5444.1	5447.5	5448.1	5448.8	564.6	5448.4	5448.52	392.4	1080.0	4.1	0.5	0.4	Model does not include obstruction in floodway top width.
	191+63	19163	5435.0	1467	3438	4382	6174	5444.3	5447.4	5448.0	5448.7	316.9	5448.6	5448.51	316.9	913.9	4.8	0.5	0.3	
	191+71	19171	5435.5	1467	3438	4382	6174	5444.1	5447.7	5448.3	5449.0	331.2	5448.7	5448.65	314.8	1066.7	4.1	0.4	0.3	Floodplain top width includes obstruction on workmap
	192+31	19231	5436.4	1467	3438	4382	6174	5445.0	5447.7	5448.3	5449.0	528.2	5448.8	5448.61	348.0	1035.1	4.2	0.4	0.3	Model does not include obstruction in floodway top width.
	194+24	19424	5437.2	1467	3438	4382	6174	5445.9	5448.2	5448.8	5449.7	432.2	5449.3	5449.04	275.9	840.4	5.2	0.3	0.2	Model does not include obstruction in floodway top width.
	196+63	19663	5438.4	1467	3438	4382	6174	5447.3	5449.4	5450.0	5450.7	282.8	5451.5	5449.99	130.3	504.3	8.7	0.0	0.0	Overtopping of Pedestrian Bridge, top width adjusted for Flood Map delineations.
	198+64	19864	5438.6	1467	3438	4382	6174	5448.9	5451.7	5452.6	5453.9	319.8	5453.3	5452.55	319.8	832.1	5.3	0.0	0.0	
DS of Pedestrian Bridge	200+34	20034	5438.8	1467	3438	4382	6174	5449.9	5452.9	5453.5	5454.6	275.9	5454.0	5453.54	275.9	957.5	4.6	0.0	0.0	
US of Pedestrian Bridge	200+58	20058	5438.8	1467	3438	4382	6174	5450.2	5453.9	5454.6	5455.7	297.5	5455.2	5454.61	297.5	1028.8	5.0	0.0	0.0	
	201+58	20158	5442.6	1467	3438	4382	6174	5450.3	5454.4	5455.1	5456.2	302.1	5455.5	5455.15	302.1	1082.6	4.1	0.0	0.0	
	203+36	20336	5442.6	1467	3438	4382	6174	5451.5	5454.5	5455.1	5456.0	165.9	5456.5	5455.12	165.9	561.5	7.8	0.0	0.0	
	206+12	20612	5444.4	1467	3438	4382	6174	5453.4	5456.1	5457.1	5458.5	256.4	5458.4	5457.14	256.4	617.8	7.1	0.0	0.0	
DS of S Franklin St	206+89	20689	5445.4	1467	3438	4382	6174	5454.7	5458.3	5457.4	5457.7	265.4	5459.4	5457.37	265.4	436.1	11.3	0.0	0.0	Roadway overtopping of S Franklin St, top width adjusted for Flood Map delineations.
US of S Franklin St	207+39	20739	5446.2	1467	3438	4382	6174	5454.8	5459.0	5461.4	5462.0	313.1	5462.0	5461.42	313.1	1182.8	5.1	0.0	0.0	
	208+33	20833	5446.5	1462	3428	4357	6157	5454.4	5459.8	5461.8	5462.6	215.7	5462.2	5461.84	215.7	1137.8	3.8	0.0	0.0	
	208+97	20897	5446.7	1462	3428	4357	6157	5456.1	5460.0	5461.9	5462.7	212.3	5462.3	5461.93	212.3	1016.8	4.3	0.0	0.0	
	209+31	20931	5451.9	1462	3428	4357	6157	5457.6	5460.0	5462.0	5462.8	205.9	5462.4	5461.96	205.9	881.2	4.9	0.0	0.0	
	209+87	20987	5452.2	1462	3428	4357	6157	5459.2	5460.8	5462.2	5463.0	196.1	5462.7	5462.18	196.1	856.1	5.1	0.0	0.0	
	213+72	21372	5452.8	1462	3428	4357	6157	5461.1	5463.3	5464.0	5465.1	145.7	5464.8	5464.02	145.7	669.1	6.5	0.0	0.0	
	217+56	21756	5454.7	1462	3428	4357	6157	5463.4	5465.8	5466.5	5467.8	199.0	5467.2	5466.53	199.0	688.5	6.3	0.0	0.0	
	219+37	21937	5456.1	1526	3387	4247	6071	5464.6	5466.8	5467.4	5468.5	190.9	5468.1	5467.44	190.9	749.8	5.7	0.0	0.0	
	219+92	21992	5460.2	1526	3387	4247	6071	5465.1	5467.2	5467.8	5468.8	168.2	5469.4	5467.81	168.2	498.4	8.5	0.0	0.0	
	223+43	22343	5462.7	1526	3387	4247	6071	5468.7	5470.5	5471.1	5472.2	348.0	5471.6	5471.1	348.0	1076.2	4.0	0.0	0.0	
	228+05	22805	5465.9	1526	3387	4247	6071	5470.9	5472.5	5472.9	5473.8	359.1	5473.4	5472.94	359.1	901.3	4.7	0.0	0.0	
	232+00	23200	5467.1	1526	3387	4247	6071	5473.7	5475.0	5475.2	5475.7	373.4	5476.1	5475.23	373.4	719.8	5.9	0.0	0.0	
	233+46	23346	5467.3	1526	3387	4247	6071	5474.7	5475.6	5476.0	5476.8	294.7	5477.2	5476.04	294.7	580.6	7.3	0.0	0.0	
	236+55	23655	5468.7	1526	3387	4247	6071	5476.4	5479.8	5480.2	5480.9	231.5	5481.4	5480.16	231.5	608.2	7.0	0.0	0.0	
	240+69	24069	5470.7	1526	3387	4247	6071	5480.9	5482.5	5483.0	5483.8	288.3	5483.4	5482.97	288.3	856.8	5.0	0.0	0.0	
	242+17	24217	5471.2	1526	3387	4247	6071	5481.3	5482.7	5482.7	5484.7	86.9	5485.1	5482.65	86.9	350.6	12.1	0.0	0.0	Workmap top width includes high ground
DS of Pedestrian Bridge	242+63	24263	5471.6	1526	3387	4247	6071	5481.7	5484.1	5485.5	5486.3	224.1	5486.0	5485.48	224.1	844.9	5.0	0.0	0.0	
US of Pedestrian Bridge	242+96	24296	5471.8	1526	3387	4247	6071	5482.7	5485.5	5486.7	5487.8	262.7	5487.0	5486.66	262.7	1109.7	4.1	0.0	0.0	
	243+21	24321	5471.8	1526	3387	4247	6071	5482.7	5485.6	5486.8	5487.9	272.6	5487.0	5486.75	272.6	1183.6	3.6	0.0	0.0	
	244+71	24471	5472.7	1526	3387	4247	6071	5483.0	5485.8	5486.9	5488.0	250.8	5487.2	5486.89	250.8	1045.7	4.1	0.0	0.0	
DS of Pedestrian Bridge	247+85	24785	5475.4	1526	3387	4247	6071	5484.0	5486.2	5486.9	5488.7	88.2	5489.0	5486.85	88.2	390.5	10.9	0.0	0.0	
US of Pedestrian Bridge	248+09	24809	5475.5	1526	3387	4247	6071	5485.6	5488.2	5488.8	5490.1	190.4	5489.6	5488.83	190.4	668.6	6.4	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	251+17	25117	5477.3	1526	3387	4247	6071	5486.7	5489.5	5490.2	5491.4	267.0	5490.5	5490.17	267.0	979.5	4.3	0.0	0.0	
	251+51	25151	5477.9	1526	3387	4247	6071	5486.8	5489.5	5490.2	5491.4	251.1	5490.6	5490.22	251.1	938.2	4.5	0.0	0.0	
	255+12	25512	5479.7	1526	3387	4247	6071	5488.5	5489.8	5492.4	5493.0	315.0	5493.4	5492.35	315.0	615.0	6.9	0.0	0.0	
DS of Pedestrian Bridge	256+46	25646	5482.2	1526	3387	4247	6071	5489.9	5493.7	5493.9	5494.6	403.8	5494.2	5493.85	403.8	1043.7	4.1	0.0	0.0	
US of Pedestrian Bridge	256+65	25665	5482.5	1526	3387	4247	6071	5491.2	5493.8	5494.0	5494.7	392.6	5494.3	5494.02	392.6	1164.6	3.7	0.0	0.0	
	258+13	25813	5483.0	1526	3387	4247	6071	5491.4	5493.5	5493.8	5494.7	317.2	5495.1	5493.82	317.2	714.4	5.9	0.0	0.0	
	258+42	25842	5487.4	1526	3387	4247	6071	5493.0	5494.1	5494.5	5495.6	339.8	5495.3	5494.51	339.8	748.3	5.7	0.0	0.0	
	262+32	26232	5487.9	1526	3387	4247	6071	5495.4	5496.3	5496.6	5497.2	591.1	5496.8	5496.62	591.1	1227.3	3.5	0.0	0.0	
	264+17	26417	5488.4	1526	3387	4247	6071	5496.0	5496.9	5497.2	5497.7	632.0	5497.7	5497.15	632.0	816.2	5.2	0.0	0.0	
	267+27	26727	5489.9	1526	3387	4247	6071	5498.7	5499.6	5499.9	5500.3	748.2	5500.6	5499.86	748.2	755.7	5.6	0.0	0.0	
DS of Pedestrian Bridge	267+55	26755	5490.1	1526	3387	4247	6071	5499.0	5499.8	5500.0	5500.8	770.8	5501.1	5499.99	770.8	623.2	6.8	0.0	0.0	
Between Ped Bridge and Low Water Crossing	267+79	26779	5490.5	1526	3387	4247	6071	5500.1	5501.1	5501.4	5502.0	801.9	5501.7	5501.42	801.9	1156.5	3.7	0.0	0.0	Map top width exceeds RAS top width due to overtopping of High Line Canal berm. Top width in table only includes portion of cross section within floodplain/floodway and has not been extrapolated to floodplain boundary.
US of Low Water Crossing	267+95	26795	5492.2	1526	3387	4247	6071	5500.0	5501.0	5501.3	5502.0	810.2	5501.8	5501.33	810.2	943.9	4.5	0.0	0.0	
	269+66	26966	5492.5	1526	3387	4247	6071	5500.2	5502.0	5502.2	5502.6	917.2	5502.9	5502.15	917.2	776.8	5.5	0.0	0.0	
	271+18	27118	5492.8	1526	3387	4247	6071	5502.0	5503.3	5503.6	5504.1	835.4	5504.0	5503.62	835.4	1015.7	4.2	0.0	0.0	
DS of Pedestrian Bridge	271+75	27175	5493.2	1526	3387	4247	6071	5502.4	5503.3	5503.5	5503.6	803.2	5504.7	5503.49	803.2	759.7	7.4	0.0	0.0	
US of Pedestrian Bridge	271+99	27199	5493.5	1526	3387	4247	6071	5503.3	5504.7	5505.2	5505.9	770.3	5505.6	5505.19	770.3	1249.0	4.2	0.0	0.0	
	272+13	27213	5496.1	1526	3387	4247	6071	5503.4	5504.9	5505.3	5506.1	756.6	5505.6	5505.34	756.6	1694.9	3.2	0.0	0.0	
	272+46	27246	5496.3	1526	3387	4247	6071	5503.4	5504.7	5505.0	5505.2	673.2	5505.9	5504.96	673.2	1119.3	7.3	0.0	0.0	
DS of HLC Gate Structure	272+95	27295	5496.6	1526	3387	4247	6071	5503.4	5504.8	5505.1	5505.6	85.9	5506.0	5505.1	85.9	553.6	7.7	0.0	0.0	High Line Canal area
US of HLC Gate Structure	273+37	27337	5499.3	1526	3387	4247	6071	5506.2	5508.7	5509.1	5509.9	1175.6	5509.3	5509.12	1175.6	1448.8	2.9	0.0	0.0	Map top width includes HLC area blocked in RAS.
DS of Pedestrian Bridge	274+17	27417	5499.6	1526	3387	4247	6071	5506.1	5508.8	5509.2	5510.1	701.3	5509.4	5509.19	701.3	1622.2	2.6	0.0	0.0	
US of Pedestrian Bridge	274+32	27432	5499.5	1526	3387	4247	6071	5506.3	5509.0	5509.4	5510.2	1702.2	5509.5	5509.37	1702.2	1773.7	2.4	0.0	0.0	Roadway overtopping of S University Blvd, top width adjusted for Flood Map delineations.
DS of S University Blvd/US of Confluence with HLC	276+09	27609	5499.0	1526	3387	4247	6071	5506.9	5509.2	5509.6	5510.4	982.8	5509.7	5509.59	982.8	2702.1	2.6	0.0	0.0	Roadway overtopping of S University Blvd, top width adjusted for Flood Map delineations.
US of S University Blvd	278+26	27826	5501.5	1452	3208	4000	6054	5508.5	5516.0	5517.1	5518.5	302.9	5517.3	5517.08	302.9	1133.7	3.8	0.0	0.0	Floodplain delineation includes ineffective flow area
	278+51	27851	5504.2	1452	3208	4000	6054	5510.0	5515.6	5516.7	5517.7	293.3	5517.6	5516.67	293.3	730.9	5.7	0.0	0.0	Floodplain delineation includes ineffective flow area
	279+28	27928	5505.5	1452	3208	4000	6054	5512.2	5516.1	5517.2	5518.8	271.0	5517.9	5517.23	271.0	692.1	6.0	0.0	0.0	Floodplain delineation includes ineffective flow area
	281+90	28190	5505.5	1452	3208	4000	6054	5514.1	5517.2	5518.3	5520.0	84.9	5519.1	5518.26	84.9	578.5	6.9	0.0	0.0	
	282+72	28272	5505.5	1452	3208	4000	6054	5514.7	5517.8	5518.9	5520.8	94.8	5519.5	5518.86	94.8	659.6	6.1	0.0	0.0	
	283+72	28372	5505.7	1452	3208	4000	6054	5515.0	5518.0	5519.1	5521.1	98.1	5519.9	5519.1	98.1	649.8	6.2	0.0	0.0	
DS of E Arapahoe Rd	284+17	28417	5505.7	1452	3208	4000	6054	5515.1	5518.1	5519.1	5521.6	92.3	5520.1	5519.11	92.3	613.8	7.5	0.0	0.0	
US of E Arapahoe Rd	285+42	28542	5506.8	1452	3208	4000	6054	5516.1	5520.4	5521.2	5523.8	239.4	5521.5	5521.17	239.4	1176.9	4.3	0.0	0.0	
	286+20	28620	5509.1	1429	3157	3940	6054	5516.2	5520.6	5521.5	5523.9	231.3	5521.6	5521.47	231.3	1367.4	2.9	0.0	0.0	
	288+52	28852	5509.3	1429	3157	3940	6054	5517.1	5520.7	5521.6	5524.0	217.4	5521.7	5521.56	217.4	1293.6	3.1	0.0	0.0	
	288+72	28872	5509.8	1429	3157	3940	6054	5517.1	5520.7	5521.6	5524.0	218.4	5521.7	5521.56	218.4	1236.5	3.2	0.0	0.0	
	288+83	28883	5510.4	1429	3157	3940	6054	5517.2	5520.7	5521.6	5524.0	220.3	5521.7	5521.57	220.3	1238.4	3.2	0.0	0.0	
	288+91	28891	5511.2	1429	3157	3940	6054	5517.2	5520.7	5521.6	5524.0	220.8	5521.7	5521.57	220.8	1229.1	3.2	0.0	0.0	
	288+97	28897	5510.9	1429	3157	3940	6054	5517.3	5520.7	5521.6	5524.0	221.5	5521.7	5521.57	221.5	1232.6	3.2	0.0	0.0	
	289+60	28960	5510.2	1429	3157	3940	6054	5517.6	5520.8	5521.6	5524.0	221.9	5521.8	5521.61	221.9	1243.9	3.2	0.0	0.0	
DS of Pedestrian Bridge	290+69	29069	5510.8	1429	3157	3940	6054	5517.8	5520.8	5521.7	5524.1	270.2	5521.8	5521.67	270.2	1240.0	3.2	0.0	0.0	
US of Pedestrian Bridge	290+89	29089	5510.9	1429	3157	3940	6054	5518.1	5520.9	5521.7	5524.1	269.9	5521.9	5521.73	269.9	1188.4	3.3	0.0	0.0	
	292+28	29228	5511.6	1429	3157	3940	6054	5518.8	5520.9	5521.8	5524.1	288.0	5522.1	5521.77	288.0	989.3	4.0	0.0	0.0	
	294+07	29407	5512.2	1429	3157	3940	6054	5520.2	5521.4	5522.1	5524.3	397.8	5522.4	5522.14	397.8	1040.0	3.8	0.0	0.0	
	297+18	29718	5512.8	1429	3157	3940	6054	5521.4	5522.6	5522.9	5524.6	459.1	5523.3	5522.94	459.1	955.0	4.1	0.0	0.0	
	297+35	29735	5513.6	1429	3157	3940	6054	5521.4	5522.6	5523.0	5524.6	460.1	5523.3	5522.99	460.1	913.9	4.3	0.0	0.0	
	298+28	29828	5514.5	1429	3157	3940	6054	5522.0	5523.0	5523.4	5524.7	439.8	5523.7	5523.35	439.8	833.8	4.7	0.0	0.0	
	299+60	29960	5515.5	1429	3157	3940	6054	5522.9	5523.8	5524.0	5525.0	443.9	5524.5	5524.02	443.9	787.9	5.0	0.0	0.0	
	300+47	30047	5515.6	1429	3157	3940	6054	5523.2	5524.6	5524.8	5525.4	424.1	5525.6	5524.81	424.1	764.7	5.2	0.0	0.0	
DS of Pedestrian Bridge	300+75	30075	5516.3	1429	3157	3940	6054	5523.3	5524.8	5525.1	5525.9	424.1	5525.8	5525.14	424.1	793.8	5.0	0.0	0.0	
US of Pedestrian Bridge	301+01	30101	5517.3	1429	3157	3940	6054	5524.4	5525.5	5525.9	5526.6	440.8	5526.2	5525.87	440.8	959.6	4.1	0.0	0.0	
	301+72	30172	5518.3	1429	3157	3940	6054	5525.4	5526.0	5526.2	5526.7	403.8	5526.9	5526.18	403.8	689.0	5.7	0.0	0.0	
	302+69	30269	5518.4	1429	3157	3940	6054	5525.3	5526.9	5527.1	5527.7	413.6	5528.0	5527.14	413.6	686.1	5.7	0.0	0.0	
	302+84	30284	5518.8	1429	3157	3940	6054	5526.4	5527.2	5527.4	5528.0	412.8	5528.2	5527.41	412.8	703.2	5.6	0.0	0.0	
	304+52	30452	5520.5	1429	3157	3940	6054	5527.5	5528.5	5528.8	5529.5	382.6	5529.2	5528.82	382.6	797.7	4.9	0.0	0.0	
	307+18	30718	5521.1	1429	3157	3940	6054	5529.2	5530.6	5530.9	5531.5	294.3	5531.7	5530.85	294.2	567.4	6.9	0.0	0.0	
	309+02	30902	5522.6	1429	3157	3940	6054	5530.6	5531.7	5533.2	5534.3	254.9	5534.4	5533.18	254.9	510.3	7.7	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
DS of E Easter Ave	309+81	30981	5524.4	1429	3157	3940	6054	5530.9	5532.3	5532.9	5535.1	206.3	5536.1	5532.92	206.3	303.4	14.2	0.0	0.0	Overtopping of Easter Ave causes map top width to exceed RAS. Cross section is skewed in RAS, exaggerating discrepancy.
US of E Easter Ave	311+08	31108	5526.0	1429	3157	3940	6054	5533.7	5538.5	5539.6	5541.0	354.8	5539.9	5539.6	354.8	1335.2	3.5	0.0	0.0	Top width discrepancy is due to skew in RAS.
	311+80	31180	5526.2	1418	3156	3952	6054	5533.8	5538.7	5539.8	5541.2	344.3	5540.0	5539.75	344.3	1535.2	2.6	0.0	0.0	
	313+70	31370	5526.8	1418	3156	3952	6054	5533.8	5538.9	5539.9	5541.4	261.1	5540.1	5539.93	261.1	1265.0	3.1	0.0	0.0	
	314+95	31495	5528.7	1418	3156	3952	6054	5535.7	5539.1	5540.1	5541.6	341.9	5540.2	5540.09	341.9	1733.5	2.7	0.0	0.0	
	315+64	31564	5531.2	1418	3156	3952	6054	5536.7	5539.2	5540.2	5541.6	386.0	5540.3	5540.17	386.0	2166.2	2.9	0.0	0.0	
	317+24	31724	5532.1	1418	3156	3952	6054	5538.4	5539.5	5540.4	5541.8	511.7	5540.6	5540.38	511.7	2981.9	3.3	0.0	0.0	
	320+72	32072	5533.8	1418	3156	3952	6054	5540.5	5541.7	5541.6	5542.5	209.4	5542.7	5541.55	209.4	482.6	8.2	0.0	0.0	
	327+29	32729	5537.5	1418	3156	3952	6054	5545.1	5547.5	5548.2	5549.7	100.7	5550.2	5548.19	100.7	390.2	10.1	0.0	0.0	
	327+33	32733	5537.8	1418	3156	3952	6054	5545.9	5548.6	5549.3	5551.2	132.7	5550.3	5549.34	132.7	561.1	7.0	0.0	0.0	
DS of Pedestrian Bridge	327+41	32741	5538.6	1418	3156	3952	6054	5546.4	5549.2	5550.1	5551.9	216.5	5550.5	5550.11	216.5	858.1	4.6	0.0	0.0	
US of Pedestrian Bridge	327+65	32765	5538.6	1418	3156	3952	6054	5547.6	5549.5	5550.3	5552.1	258.9	5550.7	5550.28	258.9	907.0	4.4	0.0	0.0	
DS of Fillmore Confluence	327+69	32769	5538.9	1418	3156	3952	6054	5547.6	5549.4	5550.2	5552.0	224.5	5550.7	5550.19	224.5	766.4	5.2	0.0	0.0	
US of Fillmore Confluence	330+22	33022	5541.6	1330	2981	3662	6054	5548.2	5550.3	5551.0	5552.7	198.6	5551.4	5551	198.6	792.8	4.6	0.0	0.0	
DS of Pedestrian Bridge	330+38	33038	5542.9	1330	2981	3662	6054	5548.3	5550.3	5551.0	5552.7	272.3	5551.5	5551.03	272.3	836.7	4.4	0.0	0.0	
US of Pedestrian Bridge	330+57	33057	5542.9	1330	2981	3662	6054	5549.0	5550.5	5551.3	5553.0	279.9	5551.6	5551.26	279.9	932.6	3.9	0.0	0.0	
	334+69	33469	5544.6	1330	2981	3662	6054	5551.6	5554.1	5554.7	5556.2	207.7	5556.2	5554.72	207.7	513.4	7.1	0.0	0.0	
DS of Pedestrian Bridge	335+30	33530	5544.6	1330	2981	3662	6054	5553.4	5556.0	5556.5	5557.9	180.1	5556.8	5556.53	180.1	1000.7	3.7	0.0	0.0	
US of Pedestrian Bridge	335+55	33555	5544.9	1330	2981	3662	6054	5553.7	5556.0	5556.6	5558.0	168.3	5556.9	5556.59	168.3	857.6	4.3	0.0	0.0	
	335+87	33587	5545.3	1330	2981	3662	6054	5553.4	5555.2	5555.7	5557.3	121.8	5557.6	5555.72	121.8	471.5	7.8	0.0	0.0	
	337+32	33732	5545.6	1330	2981	3662	6054	5554.8	5557.4	5558.1	5560.1	109.5	5558.7	5558.14	109.5	622.8	5.9	0.0	0.0	
	338+89	33889	5548.1	1330	2981	3662	6054	5555.8	5558.2	5559.0	5561.0	109.2	5559.7	5558.95	109.2	572.9	6.4	0.0	0.0	
	339+40	33940	5549.1	1330	2981	3662	6054	5555.8	5557.9	5558.5	5560.0	76.7	5560.4	5558.53	76.7	381.8	9.6	0.0	0.0	
	342+37	34237	5550.1	1330	2981	3662	6054	5558.1	5560.7	5561.5	5564.3	91.7	5562.7	5561.54	91.7	510.5	7.2	0.0	0.0	
	346+08	34608	5554.6	1330	2981	3662	6054	5561.7	5563.9	5564.7	5566.9	170.4	5565.8	5564.69	170.4	517.6	7.1	0.0	0.0	
	350+20	35020	5556.1	1330	2981	3662	6054	5565.2	5567.4	5568.1	5569.8	177.8	5568.8	5568.13	177.8	628.1	5.8	0.0	0.0	
	355+22	35522	5559.2	1330	2981	3662	6054	5568.1	5570.5	5571.0	5572.6	187.5	5571.6	5570.99	187.5	706.6	5.2	0.0	0.0	
	356+12	35612	5559.3	1330	2981	3662	6054	5568.5	5570.6	5571.1	5571.9	176.7	5572.3	5571.05	176.7	496.7	7.8	0.0	0.0	
	358+04	35804	5560.1	1330	2981	3662	6054	5569.1	5571.9	5572.7	5575.1	194.9	5573.1	5572.67	194.9	865.2	4.2	0.0	0.0	
	358+23	35823	5560.4	1330	2981	3662	6054	5569.2	5572.0	5572.7	5575.2	189.7	5573.1	5572.72	189.7	842.6	4.4	0.0	0.0	
	358+46	35846	5560.7	1330	2981	3662	6054	5569.4	5572.0	5572.8	5575.2	186.4	5573.2	5572.76	186.4	786.4	4.7	0.0	0.0	
	358+68	35868	5560.7	1330	2981	3662	6054	5569.5	5571.9	5572.6	5575.1	169.1	5573.4	5572.63	169.1	646.6	5.7	0.0	0.0	
	359+17	35917	5560.9	1330	2981	3662	6054	5569.7	5571.8	5572.4	5574.9	112.1	5573.9	5572.42	112.1	444.8	8.2	0.0	0.0	
	359+51	35951	5562.9	1330	2981	3662	6054	5570.3	5572.5	5573.3	5574.8	123.8	5575.0	5573.25	123.8	418.3	8.8	0.0	0.0	
DS of Pedestrian Bridge	359+66	35966	5563.9	1330	2981	3662	6054	5571.6	5574.1	5574.8	5576.3	154.8	5575.4	5574.75	154.8	638.8	5.7	0.0	0.0	
US of Pedestrian Bridge/DS of Otero Confluence	359+92	35992	5564.2	1330	2981	3662	6054	5573.2	5575.1	5575.6	5577.2	164.9	5576.2	5575.63	164.9	717.0	5.1	0.0	0.0	
US of Otero Confluence	367+34	36734	5569.3	1193	2925	3608	6054	5576.0	5578.4	5579.0	5580.8	179.4	5579.7	5579.04	179.4	693.3	5.2	0.0	0.0	
	370+88	37088	5571.0	1193	2925	3608	6054	5579.5	5581.1	5581.8	5584.3	312.5	5584.0	5581.8	210.5	390.9	9.6	0.0	0.0	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
	372+66	37266	5572.2	1193	2925	3608	6054	5581.0	5584.0	5584.8	5585.8	346.9	5585.2	5584.84	346.9	870.0	4.2	0.0	0.0	
DS of Pedestrian Bridge	373+02	37302	5575.1	1193	2925	3608	6054	5581.4	5584.4	5585.0	5586.0	354.8	5585.3	5584.99	354.8	935.3	3.9	0.0	0.0	
US of Pedestrian Bridge	373+30	37330	5575.4	1193	2925	3608	6054	5582.8	5584.6	5584.9	5585.9	343.5	5585.5	5584.93	343.5	798.8	4.5	0.0	0.0	
DS of E Dry Creek Rd	373+72	37372	5576.2	1193	2925	3608	6054	5582.6	5584.5	5585.2	5587.0	303.3	5587.4	5585.17	303.3	339.5	10.6	0.0	0.0	
US of E Dry Creek Rd	375+32	37532	5578.6	1193	2925	3608	6054	5584.3	5587.2	5588.2	5592.9	150.5	5588.7	5588.16	150.5	648.6	5.6	0.0	0.0	
	376+29	37629	5579.9	1185	2931	3609	6086	5585.9	5589.3	5589.6	5593.1	294.3	5590.5	5589.6	294.3	557.0	6.5	0.0	0.0	
	380+16	38016	5580.8	1185	2931	3609	6086	5589.7	5591.6	5592.1	5593.5	241.0	5592.5	5592.05	241.0	762.0	4.7	0.0	0.0	
	382+82	38282	5582.7	1185	2931	3609	6086	5590.6	5592.7	5593.1	5594.4	184.1	5594.0	5593.08	184.1	516.9	7.1	0.0	0.0	
	383+62	38362	5582.8	1185	2931	3609	6086	5590.7	5593.0	5593.5	5594.7	127.9	5594.5	5593.5	127.9	548.9	6.6	0.0	0.0	
	384+31	38431	5583.0	1185	2931	3609	6086	5591.0	5593.2	5593.8	5595.5	120.5	5595.0	5593.8	120.5	467.0	7.7	0.0	0.0	
	384+59	38459	5584.3	1185	2931	3609	6086	5591.1	5593.2	5593.9	5595.8	111.9	5595.7	5593.88	111.9	386.0	9.4	0.0	0.0	
	385+45	38545	5587.9	1185	2931	3609	6086	5593.3	5595.2	5595.8	5597.4	133.1	5597.4	5595.77	133.1	413.3	8.7	0.0	0.0	
	385+58	38558	5588.2	1185	2931	3609	6086	5594.1	5596.2	5596.8	5598.3	163.1	5597.6	5596.77	163.1	600.3	6.0	0.0	0.0	
DS of Pedestrian Bridge	387+05	38705	5589.4	1185	2931	3609	6086	5594.7	5596.9	5597.5	5599.1	187.0	5598.7	5597.5	187.0	607.7	5.9	0.0	0.0	
US of Pedestrian Bridge	387+29	38729	5589.4	1185	2931	3609	6086	5596.3	5598.0	5598.4	5599.6	195.3	5599.0	5598.37	195.3	742.4	4.9	0.0	0.0	
	389+10	38910	5590.9	1185	2931	3609	6086	5596.4	5599.4	5599.9	5601.3	218.5	5601.4	5599.87	218.5	466.4	7.7	0.0	0.0	Overtopping of Pedestrian Bridge, top width adjusted for Flood Map delineations.
DS of Pedestrian Bridge	390+43	39043	5591.2	1185	2931	3609	6086	5598.6	5601.1	5601.7	5603.0	237.9	5602.4	5601.7	237.9	741.0	4.9	0.0	0.0	
US of Pedestrian Bridge	390+78	39078	5591.0	1185	2931	3609	6086	5599.2	5601.0	5601.6	5602.4	199.9	5602.5	5601.55	199.9	702.4	5.1	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	391+16	39116	5591.4	1185	2931	3609	6086	5599.2	5601.2	5601.7	5602.6	161.6	5602.7	5601.72	161.6	576.9	6.3	0.0	0.0	
	393+48	39348	5592.6	1185	2931	3609	6086	5600.1	5602.3	5602.8	5604.4	109.5	5604.3	5602.81	109.5	455.5	7.9	0.0	0.0	
	397+17	39717	5593.9	1185	2931	3609	6086	5601.9	5604.9	5605.8	5608.0	72.8	5607.2	5605.78	72.8	417.5	8.7	0.0	0.0	
	400+36	40036	5597.4	1185	2931	3609	6086	5603.8	5607.1	5608.1	5610.8	126.2	5608.9	5608.09	126.2	578.8	6.2	0.0	0.0	
	400+77	40077	5597.5	1185	2931	3609	6086	5603.9	5607.2	5608.3	5611.0	134.4	5609.1	5608.28	134.4	603.0	6.0	0.0	0.0	
	403+87	40387	5600.0	1185	2931	3609	6086	5606.6	5608.7	5609.4	5611.6	115.0	5610.4	5609.41	115.0	548.3	6.6	0.0	0.0	
DS of S Colorado Blvd	404+64	40464	5600.3	1185	2931	3609	6086	5606.9	5609.4	5610.2	5612.6	140.0	5610.7	5610.2	140.0	700.3	5.2	0.0	0.0	
US of S Colorado Blvd	405+58	40558	5601.0	1185	2931	3609	6086	5607.5	5609.9	5610.6	5613.0	133.8	5611.1	5610.64	133.8	680.6	5.3	0.0	0.0	
	406+06	40606	5601.1	1031	2506	3005	5957	5607.6	5610.0	5610.9	5613.1	153.0	5611.2	5610.86	153.0	696.1	4.3	0.0	0.0	
DS of Pedestrian Bridge	407+27	40727	5602.0	1031	2506	3005	5957	5607.9	5610.1	5610.8	5612.8	82.6	5611.7	5610.82	82.6	403.2	7.5	0.0	0.0	
US of Pedestrian Bridge	408+47	40847	5609.4	1031	2506	3005	5957	5617.9	5619.2	5619.5	5621.0	199.1	5620.2	5619.51	199.1	724.1	4.6	0.0	0.0	Adjacent on-site detention pond.
DS of Pedestrian Bridge	409+65	40965	5610.4	1031	2506	3005	5957	5618.2	5619.8	5620.2	5621.8	137.7	5620.6	5620.2	137.7	1335.3	5.1	0.0	0.0	Adjacent on-site detention pond.
US of Pedestrian Bridge	409+93	40993	5610.3	1031	2506	3005	5957	5618.4	5620.0	5620.3	5621.9	147.7	5620.9	5620.33	147.7	1472.4	5.9	0.0	0.0	Adjacent on-site detention pond.
	412+02	41202	5611.5	1031	2506	3005	5957	5619.4	5621.2	5621.7	5623.6	122.0	5622.3	5621.66	122.0	1146.9	5.8	0.0	0.0	Adjacent on-site detention pond.
	415+10	41510	5612.7	1031	2506	3005	5957	5620.4	5622.7	5623.2	5625.5	160.5	5624.1	5623.2	160.5	569.1	6.2	0.0	0.0	
	415+24	41524	5614.0	1031	2506	3005	5957	5620.5	5622.6	5623.1	5625.2	156.6	5624.2	5623.14	156.6	479.9	7.4	0.0	0.0	
DS of Pedestrian Bridge	415+42	41542	5614.6	1031	2506	3005	5957	5620.5	5622.7	5623.2	5626.6	118.5	5624.4	5623.23	118.5	412.3	7.3	0.0	0.0	
US of Pedestrian Bridge	415+61	41561	5614.8	1031	2506	3005	5957	5620.6	5623.4	5624.8	5628.3	119.4	5625.8	5624.82	119.4	454.8	6.6	0.0	0.0	
	415+80	41580	5615.5	1031	2506	3005	5957	5621.0	5623.5	5624.1	5627.4	90.0	5626.3	5624.06	90.0	318.1	9.5	0.0	0.0	
	420+89	42089	5618.1	1031	2506	3005	5957	5625.1	5627.6	5627.7	5630.4	326.8	5627.8	5627.68	326.8	1244.2	2.4	0.0	0.0	
	422+89	42289	5620.2	1031	2506	3005	5957	5626.1	5628.1	5628.6	5630.7	219.4	5630.5	5628.63	219.4	421.5	9.5	0.0	0.0	
DS of Pedestrian Bridge	423+05	42305	5620.4	1031	2506	3005	5957	5626.4	5630.1	5630.8	5632.1	219.7	5631.0	5630.78	219.7	805.1	3.7	0.0	0.0	
US of Pedestrian Bridge	423+18	42318	5621.1	1031	2506	3005	5957	5626.4	5630.4	5631.1	5632.7	243.1	5631.4	5631.05	243.1	826.0	3.6	0.0	0.0	
	423+51	42351	5621.7	1031	2506	3005	5957	5626.9	5630.4	5631.1	5632.8	285.2	5631.4	5631.09	285.2	854.0	3.5	0.0	0.0	
	426+22	42622	5623.5	1031	2506	3005	5957	5629.6	5631.2	5631.6	5633.1	141.9	5632.2	5631.55	141.9	512.1	5.9	0.0	0.0	
	428+66	42866	5625.3	1031	2506	3005	5957	5631.1	5633.4	5634.0	5636.7	66.4	5636.2	5633.99	66.4	294.1	10.2	0.0	0.0	
DS of Pedestrian Bridge	430+39	43039	5625.7	1031	2506	3005	5957	5633.2	5635.8	5636.5	5640.4	141.1	5637.9	5636.45	141.1	384.2	7.8	0.0	0.0	
US of Pedestrian Bridge	430+53	43053	5625.9	1031	2506	3005	5957	5634.0	5637.8	5638.6	5640.8	186.3	5638.8	5638.55	186.3	724.9	4.2	0.0	0.0	Model top width includes ineffective flow area
	431+04	43104	5626.9	1031	2506	3005	5957	5634.2	5637.7	5638.3	5640.2	130.0	5639.2	5638.29	130.0	450.5	7.1	0.0	0.0	
	432+34	43234	5626.9	1031	2506	3005	5957	5634.8	5638.3	5639.1	5641.3	183.1	5639.5	5639.05	183.1	661.3	4.5	0.0	0.0	
DS of Pedestrian Bridge	432+81	43281	5627.1	1031	2506	3005	5957	5635.1	5638.7	5639.4	5641.8	220.4	5639.6	5639.41	220.4	887.9	3.4	0.0	0.0	
US of Pedestrian Bridge	433+07	43307	5627.4	1031	2506	3005	5957	5635.0	5639.3	5639.9	5642.0	216.4	5640.2	5639.93	216.4	793.5	3.8	0.0	0.0	
	433+54	43354	5628.1	1031	2506	3005	5957	5635.4	5639.3	5639.9	5641.9	176.2	5640.3	5639.89	176.2	651.2	4.6	0.0	0.0	
	435+58	43558	5628.6	1031	2506	3005	5957	5636.7	5639.8	5640.3	5641.7	76.6	5641.3	5640.26	76.6	386.0	7.8	0.0	0.0	
	438+46	43846	5629.6	1031	2506	3005	5957	5638.8	5642.0	5642.6	5645.9	99.2	5643.1	5642.63	99.2	585.3	5.1	0.0	0.0	
	441+74	44174	5632.1	1031	2506	3005	5957	5639.9	5642.8	5643.5	5646.9	168.8	5644.0	5643.5	168.8	763.0	3.9	0.0	0.0	
	446+51	44651	5636.0	1031	2506	3005	5957	5641.6	5644.6	5645.3	5649.0	40.6	5648.1	5645.34	40.6	226.4	13.3	0.0	0.0	
	447+46	44746	5641.5	1031	2506	3005	5957	5646.0	5647.6	5648.1	5652.1	112.9	5649.5	5648.1	112.9	335.0	9.0	0.0	0.0	
DS of Pedestrian Bridge	447+60	44760	5641.9	1031	2506	3005	5957	5646.4	5648.6	5649.0	5652.1	129.7	5650.4	5648.98	129.7	351.7	8.5	0.0	0.0	
US of Pedestrian Bridge	447+85	44785	5641.9	1031	2506	3005	5957	5648.7	5650.2	5650.3	5653.0	195.7	5651.6	5650.32	195.7	423.4	7.1	0.0	0.0	
	451+27	45127	5644.3	1031	2506	3005	5957	5650.3	5652.5	5653.0	5655.2	147.0	5655.0	5653.02	147.0	315.2	10.9	0.0	0.0	
	453+59	45359	5645.4	1031	2506	3005	5957	5651.9	5654.8	5655.6	5659.7	120.6	5656.2	5655.63	120.6	574.1	5.2	0.0	0.0	
DS of Pedestrian Bridge	454+90	45490	5645.7	1031	2506	3005	5957	5652.6	5655.3	5656.1	5660.0	93.3	5657.5	5656.05	93.3	315.1	9.5	0.0	0.0	
US of Pedestrian Bridge	455+15	45515	5646.0	1031	2506	3005	5957	5652.9	5655.8	5658.1	5660.6	124.7	5658.8	5658.14	124.7	547.7	5.5	0.0	0.0	
	460+14	46014	5649.7	1031	2506	3005	5957	5656.6	5658.8	5659.6	5662.1	187.5	5660.0	5659.6	187.5	641.9	4.7	0.0	0.0	
DS of Pedestrian Bridge	460+37	46037	5651.9	1031	2506	3005	5957	5657.7	5658.8	5659.4	5661.9	203.3	5660.3	5659.37	203.3	412.8	7.3	0.0	0.0	Skewed Cross Section
US of Pedestrian Bridge	460+57	46057	5652.6	1031	2506	3005	5957	5658.6	5660.4	5660.8	5662.8	229.1	5661.3	5660.83	229.1	594.0	5.1	0.0	0.0	Skewed Cross Section
	461+31	46131	5653.0	1031	2506	3005	5957	5659.1	5660.5	5661.0	5663.0	196.1	5661.6	5660.99	196.1	553.1	5.4	0.0	0.0	
	463+22	46322	5654.8	1031	2506	3005	5957	5660.5	5662.1	5662.4	5663.8	135.5	5663.6	5662.4	135.5	369.4	8.1	0.0	0.0	
	463+71	46371	5655.2	1031	2506	3005	5957	5660.8	5662.3	5663.0	5664.4	127.9	5664.3	5662.95	127.9	358.2	8.4	0.0	0.0	
DS of Pedestrian Bridge	464+37	46437	5655.7	1031	2506	3005	5957	5662.0	5664.3	5664.6	5666.3	165.3	5665.7	5664.6	165.3	414.6	7.3	0.0	0.0	
US of Pedestrian Bridge	464+71	46471	5656.8	1031	2506	3005	5957	5663.3	5664.4	5664.9	5667.1	128.6	5666.5	5664.88	128.6	372.5	8.1	0.0	0.0	
	465+75	46575	5657.5	1031	2506	3005	5957	5663.8	5665.8	5666.2	5667.6	110.0	5667.4	5666.23	110.0	411.7	7.3	0.0	0.0	
	468+32	46832	5657.8	1031	2506	3005	5957	5665.5	5667.6	5668.1	5670.8	135.6	5668.6	5668.11	135.6	644.0	4.7	0.0	0.0	
	470+42	47042	5659.4	1031	2506	3005	5957	5666.1	5668.3	5668.8	5671.4	108.5	5670.0	5668.82	108.5	397.9	7.6	0.0	0.0	
	471+63	47163	5660.5	1031	2506	3005	5957	5667.2	5669.1	5669.5	5672.1	74.7	5671.5	5669.47	74.7	300.5	10.0	0.0	0.0	
DS of Pedestrian Bridge	472+22	47222	5665.8	1031	2506	3005	5957	5670.7	5672.0	5672.4	5674.3	107.7	5673.9	5672.42	107.7	325.5	9.2	0.0	0.0	
US of Pedestrian Bridge	472+50	47250	5665.9	1031	2506	3005	5957	5671.0	5674.4	5675.2	5677.8	162.7	5675.6	5675.21	162.7	668.0	4.5	0.0	0.0	
	472+89	47289	5666.2	1031	2506	3005	5957	5671.9	5674.7	5675.4	5677.9	135.7	5675.8	5675.44	135.7	689.7	4.4	0.0	0.0	
	476+60	47660	5668.9	1031	2506	3005	5957	5674.3	5675.9	5676.4	5678.9	255.8	5678.5	5676.38	255.8	948.4	10.9	0.0	0.0	
DS of E County Line Rd	476+87	47687	5668.9	1031	2506	3005	5957	5674.7	5676.1	5676.7	5679.3	250.2	5678.8	5676.69	250.2	984.7	11.0	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
US of E County Line Rd/Study Limit	478+55	47855	5671.4	1031	2506	3005	5957	5675.4	5678.7	5679.7	5687.8	1399.3	5680.3	5679.67	1399.3	536.6	6.2	0.0	0.0	End of Study Limit, not delineated.
Fillmore Tributary																				
US of Big Dry Creek Confluence	601+04	60104	5540.5	600	1151	1412	1905	5547.9	5549.9	5550.7	5552.5	67.6	5551.0	5550.68	67.6	334.6	4.2	0.0	0.0	
	602+27	60227	5540.5	600	1151	1412	1905	5548.2	5550.2	5551.0	5552.7	67.0	5551.2	5550.99	67.2	402.7	3.5	0.0	0.0	
	602+81	60281	5551.6	600	1151	1412	1905	5554.3	5555.5	5556.0	5556.9	58.4	5557.3	5555.95	59.8	152.8	9.2	0.0	0.0	
	604+78	60478	5552.2	600	1151	1412	1905	5557.5	5558.8	5559.2	5559.6	56.5	5559.9	5559.2	56.5	225.4	6.3	0.0	0.0	
	605+08	60508	5556.6	600	1151	1412	1905	5559.5	5560.6	5561.1	5561.9	59.8	5562.4	5561.06	59.8	154.3	9.2	0.0	0.0	
	606+76	60676	5557.2	600	1151	1412	1905	5562.6	5563.9	5564.4	5565.0	62.2	5564.9	5564.38	62.2	243.9	5.8	0.0	0.0	
	606+90	60690	5558.4	600	1151	1412	1905	5562.6	5563.9	5564.3	5564.9	53.0	5565.2	5564.34	53.0	196.5	7.2	0.0	0.0	
	607+82	60782	5559.7	600	1151	1412	1905	5563.8	5565.0	5565.4	5566.1	44.0	5566.9	5565.38	44.0	147.2	9.6	0.0	0.0	
	608+10	60810	5562.3	600	1151	1412	1905	5566.1	5567.4	5567.9	5568.8	47.1	5569.5	5567.92	47.1	144.1	9.8	0.0	0.0	
	611+34	61134	5566.9	600	1151	1412	1905	5570.7	5572.0	5572.5	5573.2	65.0	5573.0	5572.45	65.1	241.4	5.9	0.0	0.0	
	611+90	61190	5574.1	600	1151	1412	1905	5577.2	5578.3	5578.7	5579.4	137.7	5580.2	5578.73	134.4	182.5	9.4	0.0	0.0	
	614+36	61436	5574.6	600	1151	1412	1905	5580.5	5581.9	5582.5	5582.7	134.3	5583.1	5582.47	52.2	228.6	6.2	0.0	0.0	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
	614+82	61482	5584.2	600	1151	1412	1905	5587.4	5588.8	5589.0	5589.4	141.4	5589.7	5589.02	142.2	230.9	6.1	0.0	0.0	
DS of E Dry Creek Rd	617+05	61705	5585.7	600	1151	1412	1905	5592.2	5592.9	5593.2	5593.9	57.1	5594.5	5593.24	56.8	189.3	8.9	0.0	0.0	
US of E Dry Creek Rd	619+43	61943	5587.8	600	1151	1412	1905	5592.5	5595.4	5596.6	5600.6	39.4	5597.2	5596.59	40.1	249.9	6.2	0.0	0.0	
	620+29	62029	5590.3	450	827	998	1321	5593.8	5596.2	5597.3	5601.1	45.8	5597.8	5597.29	45.6	187.8	5.3	0.0	0.0	
	622+11	62211	5593.5	450	827	998	1321	5598.0	5598.7	5599.0	5601.2	33.7	5600.3	5598.95	33.7	108.2	9.2	0.0	0.0	
	624+83	62483	5595.0	450	827	998	1321	5600.0	5601.4	5601.9	5602.8	58.7	5602.3	5601.92	58.7	216.7	4.6	0.0	0.0	
	625+01	62501	5596.4	450	827	998	1321	5599.8	5600.9	5601.4	5602.1	41.4	5602.8	5601.35	41.4	109.2	9.1	0.0	0.0	
	626+39	62639	5598.8	450	827	998	1321	5603.6	5604.5	5604.7	5605.2	76.0	5605.7	5604.71	76.0	147.4	6.8	0.0	0.0	
	627+53	62753	5599.8	450	827	998	1321	5604.7	5605.7	5606.0	5606.5	57.5	5606.4	5605.97	57.5	199.2	5.0	0.0	0.0	
	627+68	62768	5601.0	450	827	998	1321	5604.4	5605.5	5605.9	5606.6	43.1	5607.3	5605.85	43.1	108.4	9.2	0.0	0.0	
	629+09	62909	5602.4	450	827	998	1321	5606.3	5607.4	5607.9	5608.5	50.8	5608.6	5607.86	51.2	156.0	6.4	0.0	0.0	
	629+26	62926	5604.5	450	827	998	1321	5608.2	5609.4	5609.9	5610.4	64.4	5611.1	5609.86	64.4	133.6	7.5	0.0	0.0	
DS of E Jamison Ave	629+79	62979	5604.5	450	827	998	1321	5608.8	5610.6	5611.3	5612.5	89.7	5614.2	5611.28	89.7	194.5	13.7	0.0	0.0	
US of E Jamison Ave	632+29	63229	5609.3	450	827	998	1321	5624.5	5625.0	5625.2	5625.5	249.8	5625.2	5625.17	249.8	2413.9	0.4	0.0	0.0	
	633+37	63337	5612.5	450	827	998	1321	5624.5	5625.0	5625.2	5625.5	219.3	5625.2	5625.17	219.3	1920.1	0.5	0.0	0.0	
	636+17	63617	5614.9	450	827	998	1321	5624.5	5625.0	5625.2	5625.5	112.0	5625.2	5625.16	112.0	670.6	1.5	0.0	0.0	
	637+30	63730	5615.3	450	827	998	1321	5624.5	5625.0	5625.2	5625.5	323.3	5625.2	5625.17	323.3	864.2	1.6	0.0	0.0	
	639+78	63978	5621.6	450	827	998	1321	5624.5	5625.5	5626.1	5626.6	76.6	5627.1	5626.17	76.6	138.1	7.2	0.1	0.0	
	643+17	64317	5622.7	422	745	894	1177	5629.3	5630.6	5630.7	5631.2	129.3	5631.7	5630.69	43.0	122.0	7.3	0.0	0.0	Floodplain delineation includes ineffective flow area
	644+73	64473	5627.0	422	745	894	1177	5631.5	5632.7	5633.2	5634.0	26.9	5635.0	5633.24	26.9	89.1	10.0	0.1	0.0	
	646+57	64657	5632.5	422	745	894	1177	5635.6	5636.5	5636.8	5637.7	68.6	5638.1	5636.82	49.6	103.8	8.6	0.0	0.0	Mapped floodplain is wider than RAS due to backwater from upstream
	647+24	64724	5637.2	422	745	894	1177	5640.2	5641.3	5641.4	5641.8	114.7	5642.1	5641.42	114.7	159.9	5.6	0.0	0.0	
	650+12	65012	5640.9	314	555	667	877	5644.7	5645.5	5645.9	5646.6	25.2	5647.4	5645.9	25.5	70.3	9.5	0.0	0.0	
	653+02	65302	5647.5	314	555	667	877	5650.7	5651.2	5651.4	5651.8	118.4	5651.9	5651.39	118.2	143.9	4.6	0.0	0.0	
	654+77	65477	5653.1	314	555	667	877	5654.8	5655.1	5655.2	5655.3	135.5	5655.6	5655.15	135.5	133.4	5.0	0.0	0.0	
DS of S University Blvd	655+84	65584	5653.6	314	555	667	877	5656.6	5657.4	5657.6	5658.1	249.4	5658.5	5657.64	234.2	164.2	7.3	0.0	0.0	
US of S University Blvd	657+26	65726	5655.2	314	555	667	877	5660.6	5663.5	5663.8	5664.1	229.7	5663.9	5663.81	80.8	343.3	1.9	0.0	0.0	Floodplain top width includes obstruction.
	657+88	65788	5658.2	207	343	417	536	5660.6	5663.5	5663.8	5664.1	58.7	5663.9	5663.84	64.3	186.0	2.2	0.0	0.0	
	658+69	65869	5658.9	207	343	417	536	5661.8	5663.5	5663.9	5664.2	43.2	5664.1	5663.89	45.5	128.8	3.2	0.0	0.0	
	658+81	65881	5659.9	207	343	417	536	5662.1	5663.4	5663.8	5664.0	35.4	5664.2	5663.76	38.4	84.1	5.0	0.0	0.0	
	660+53	66053	5662.3	207	343	417	536	5665.9	5665.9	5666.3	5666.7	27.1	5667.3	5666.25	26.3	51.9	8.0	0.0	0.0	
DS of E Otero Cir/E Nichols Pl	660+90	66090	5662.4	207	343	417	536	5666.2	5667.0	5667.4	5668.1	12.9	5669.0	5667.43	14.7	41.9	10.0	0.0	0.0	
US of E Otero Cir/E Nichols Pl	664+02	66402	5665.6	207	343	417	536	5671.3	5674.0	5676.3	5677.4	97.2	5676.5	5676.29	97.2	432.3	3.7	0.0	0.0	
	665+68	66568	5667.2	207	343	417	536	5671.6	5674.3	5676.5	5677.5	77.4	5676.6	5676.53	77.4	357.6	1.2	0.0	0.0	
	665+88	66588	5668.4	207	343	417	536	5671.6	5674.3	5676.5	5677.5	76.4	5676.6	5676.53	76.4	299.0	1.4	0.0	0.0	
DS of Pedestrian Bridge	666+58	66658	5668.5	207	343	417	536	5672.0	5674.3	5676.5	5677.5	80.0	5676.6	5676.53	80.0	237.2	1.8	0.0	0.0	
US of Pedestrian Bridge	666+82	66682	5668.7	207	343	417	536	5675.3	5675.9	5676.6	5677.5	65.0	5676.7	5676.58	65.0	192.1	2.2	0.0	0.0	
	668+24	66824	5670.4	207	343	417	536	5675.5	5676.1	5676.8	5677.7	37.8	5676.9	5676.76	37.8	130.0	3.2	0.0	0.0	
	668+39	66839	5672.5	207	343	417	536	5675.3	5675.9	5676.6	5677.5	33.0	5677.1	5676.6	33.0	76.2	5.5	0.0	0.0	
	669+83	66983	5673.0	207	343	417	536	5676.8	5677.5	5677.7	5678.2	61.9	5678.4	5677.69	27.4	62.0	6.7	0.0	0.0	Roadway overtopping of E Phillips Cir, top width adjusted for Flood Map delineations.
DS of E Phillips Cir	670+22	67022	5673.3	207	343	417	536	5676.9	5677.4	5677.7	5678.3	95.0	5679.3	5677.71	18.5	46.1	10.1	0.0	0.0	Roadway overtopping of E Phillips Cir, top width adjusted for Flood Map delineations.
US of E Phillips Cir	672+21	67221	5683.0	207	343	417	536	5685.5	5688.6	5690.7	5691.3	83.7	5690.8	5690.73	83.7	346.9	2.5	0.0	0.0	
	672+90	67290	5682.8	207	343	417	536	5686.7	5689.2	5690.8	5691.3	72.4	5690.9	5690.83	72.4	298.1	1.4	0.0	0.0	

Floodplain and Floodway Data Table
Big Dry Creek FHAD

REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	674+25	67425	5683.4	207	343	417	536	5687.1	5689.2	5690.8	5691.3	43.2	5690.9	5690.83	43.2	186.6	2.2	0.0	0.0	
	674+42	67442	5686.1	207	343	417	536	5688.2	5688.8	5690.7	5691.2	36.6	5691.0	5690.74	36.6	106.1	3.9	0.0	0.0	
	674+90	67490	5686.6	207	343	417	536	5689.4	5690.0	5690.8	5691.2	28.9	5691.3	5690.78	29.0	73.0	5.7	0.0	0.0	
	675+07	67507	5688.5	207	343	417	536	5690.8	5691.5	5691.7	5692.1	26.5	5692.8	5691.74	26.5	51.8	8.1	0.0	0.0	
	677+01	67701	5690.5	207	343	417	536	5693.8	5694.5	5694.8	5695.2	29.2	5695.3	5694.78	29.2	71.3	5.9	0.0	0.0	
	677+11	67711	5692.5	207	343	417	536	5694.6	5695.2	5695.5	5695.8	29.5	5696.4	5695.48	29.5	53.7	7.8	0.0	0.0	
DS of E County Line Rd/Study Limit	679+58	67958	5696.5	207	343	417	536	5698.8	5699.4	5699.6	5699.9	36.1	5700.1	5699.6	36.1	72.2	5.8	0.0	0.0	
Otero Tributary																				
US of Big Dry Creek Confluence	702+59	70259	5570.2	417	760	932	1254	5575.1	5576.3	5576.8	5579.1	33.6	5578.4	5576.8	33.6	97.6	9.6	0.0	0.0	
DS of Pedestrian Bridge	702+68	70268	5570.3	417	760	932	1254	5576.0	5577.2	5577.7	5579.1	50.1	5578.7	5577.65	68.2	119.6	7.8	0.0	0.0	
US of Pedestrian Bridge	702+99	70299	5571.2	417	760	932	1254	5579.0	5579.9	5580.2	5580.8	112.2	5580.3	5580.21	112.2	350.1	2.7	0.0	0.0	
	703+89	70389	5574.7	417	760	932	1254	5579.1	5580.0	5580.4	5580.9	119.4	5580.4	5580.36	119.4	402.7	2.3	0.0	0.0	
	705+84	70584	5575.7	417	760	932	1254	5579.1	5580.1	5580.4	5581.0	55.0	5581.1	5580.43	55.0	142.7	6.5	0.0	0.0	
	706+26	70626	5575.8	417	760	932	1254	5580.1	5580.7	5581.1	5581.8	41.0	5582.5	5581.08	41.0	102.5	9.1	0.0	0.0	
DS of E Dry Creek Rd	707+00	70700	5576.2	417	760	932	1254	5580.8	5581.8	5582.1	5582.5	54.9	5583.2	5582.12	35.0	148.5	8.5	0.0	0.0	
US of E Dry Creek Rd	710+08	71008	5580.0	417	760	932	1254	5588.5	5593.4	5593.9	5594.5	357.2	5594.1	5593.89	186.3	535.1	3.6	0.0	0.0	Roadway overtopping of E Dry Creek Rd, top width adjusted for Flood Map delineations.
	712+16	71216	5584.1	417	760	932	1254	5589.1	5593.7	5594.2	5594.9	129.0	5594.2	5594.18	129.0	790.9	1.2	0.0	0.0	
	715+34	71534	5589.0	417	760	932	1254	5591.1	5593.7	5594.2	5594.9	93.5	5594.4	5594.21	93.5	301.0	3.1	0.0	0.0	
	718+31	71831	5591.9	417	760	932	1254	5595.3	5595.6	5595.9	5596.5	44.6	5597.1	5595.92	44.6	105.8	8.8	0.0	0.0	
	719+18	71918	5591.0	417	760	932	1254	5595.8	5596.8	5597.1	5597.7	40.2	5597.9	5597.13	40.3	138.0	6.8	0.0	0.0	
	719+70	71970	5595.5	417	760	932	1254	5598.4	5599.3	5599.7	5600.3	46.1	5600.9	5599.67	46.1	107.7	8.7	0.0	0.0	
	723+48	72348	5600.5	417	760	932	1254	5603.0	5603.7	5604.0	5604.5	76.1	5604.4	5604.01	76.1	181.4	5.1	0.0	0.0	
	726+15	72615	5603.6	417	760	932	1254	5608.5	5609.4	5609.7	5610.3	48.9	5610.9	5609.68	48.9	108.2	8.6	0.0	0.0	
DS of S Steele St	727+37	72737	5603.5	417	760	932	1254	5610.0	5610.9	5611.3	5611.8	115.0	5612.6	5611.3	27.6	116.9	9.3	0.0	0.0	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
US of S Steele St	728+28	72828	5603.8	417	760	932	1254	5617.4	5618.8	5619.2	5619.6	233.2	5619.3	5619.18	233.2	983.2	2.3	0.0	0.0	
	730+88	73088	5609.1	277	553	661	858	5617.5	5618.9	5619.3	5619.7	151.0	5619.3	5619.32	151.0	770.3	0.9	0.0	0.0	
	734+90	73490	5615.1	277	553	661	858	5617.5	5618.4	5618.8	5619.3	31.9	5620.0	5618.75	31.9	74.8	8.8	0.0	0.0	
	737+70	73770	5616.9	277	553	661	858	5621.5	5622.8	5623.2	5623.8	25.7	5624.0	5623.18	25.7	96.4	6.9	0.0	0.0	
DS of S Adams St	738+30	73830	5622.8	277	553	661	858	5626.2	5627.3	5627.6	5628.1	38.6	5628.9	5627.57	38.6	80.9	9.0	0.0	0.0	
US of S Adams St	739+75	73975	5630.9	277	553	661	858	5633.7	5636.9	5638.8	5642.1	112.7	5639.1	5638.78	112.7	368.9	4.4	0.0	0.0	
	741+08	74108	5632.7	154	373	427	507	5634.9	5637.5	5639.2	5642.4	200.2	5639.2	5639.19	200.2	787.1	0.5	0.0	0.0	
	742+94	74294	5634.1	154	373	427	507	5635.4	5637.5	5639.2	5642.4	123.2	5639.2	5639.19	123.2	384.2	1.1	0.0	0.0	
	746+38	74638	5636.8	154	373	427	507	5639.5	5639.7	5639.9	5642.3	49.3	5640.6	5639.88	50.4	66.4	6.4	0.0	0.0	
	750+55	75055	5645.7	136	325	374	421	5646.9	5647.5	5647.6	5647.7	47.4	5648.2	5647.59	47.4	59.7	6.3	0.0	0.0	
	751+57	75157	5646.4	136	325	374	421	5648.4	5649.1	5649.2	5649.4	49.5	5649.5	5649.24	49.5	86.5	4.3	0.0	0.0	
	751+68	75168	5647.6	136	325	374	421	5648.7	5649.3	5649.4	5649.6	39.8	5650.2	5649.42	39.8	55.2	6.8	0.0	0.0	
	752+67	75267	5649.3	136	325	374	421	5651.0	5651.8	5652.0	5652.1	40.7	5652.3	5651.97	40.7	80.8	4.6	0.0	0.0	
	755+87	75587	5653.8	136	325	374	421	5656.4	5657.4	5657.6	5657.8	28.3	5658.4	5657.62	28.3	54.1	6.9	0.0	0.0	
	759+35	75935	5664.1	136	325	374	421	5666.5	5667.6	5667.8	5668.4	21.7	5668.9	5667.82	22.9	45.5	8.2	0.0	0.0	
	761+38	76138	5668.5	136	325	374	421	5670.9	5671.6	5671.7	5671.9	50.1	5672.4	5671.73	50.1	62.9	6.0	0.0	0.0	
DS of E Phillips Ave	762+66	76266	5670.6	136	325	374	421	5673.1	5673.7	5673.9	5674.1	24.2	5675.1	5673.92	24.2	47.1	8.5	0.0	0.0	
US of E Phillips Ave	763+92	76392	5672.8	136	325	374	421	5677.0	5681.9	5683.4	5683.9	58.6	5683.4	5683.41	72.3	533.9	1.3	0.0	0.0	
	764+87	76487	5677.4	136	325	374	421	5678.4	5681.9	5683.4	5683.9	71.6	5683.5	5683.43	71.6	314.4	1.2	0.0	0.0	
	767+40	76740	5681.7	136	325	374	421	5683.4	5683.8	5684.0	5684.1	41.9	5684.7	5683.96	41.9	58.0	6.4	0.0	0.0	
DS of E County Line Rd/Study Limit	769+73	76973	5687.7	136	325	374	421	5688.7	5689.3	5689.4	5689.4	53.4	5689.9	5689.36	52.9	61.9	6.0	0.0	0.0	
Nobles Tributary																				
DS of S Univertsity BLvd	1+74	174	5500.1	778	1423	1719	2290	5506.1	5508.8	5509.2	5510.05	701.3	5509.8	-	-	-	-	-	-	Roadway overtopping of S University Blvd, top width adjusted for Flood Map delineations.
US of S Univertsity BLvd	3+22	322	5508.4	778	1423	1719	2290	5515.1	5516.5	5516.8	5517.28	485.5	5517.9	-	-	-	-	-	-	
	5+86	586	5506.6	778	1423	1719	2290	5517.3	5518.4	5518.8	5519.59	399.4	5519.2	-	-	-	-	-	-	
	9+87	987	5511.0	778	1423	1719	2290	5517.8	5519.4	5520.0	5520.92	197.0	5521.9	-	-	-	-	-	-	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
	10+17	1017	5513.0	778	1423	1719	2290	5519.2	5521.0	5521.6	5522.55	204.5	5522.3	-	-	-	-	-	-	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
DS of S Clayton St	13+04	1304	5515.6	778	1423	1719	2290	5522.2	5524.0	5524.5	5525.5	196.5	5525.4	-	-	-	-	-	-	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model
US of S Clayton St	14+04	1404	5516.3	778	1423	1719	2290	5527.8	5529.0	5529.4	5530.07	234.6	5529.6	-	-	-	-	-	-	Floodplain delineation includes shallow flooding area not reflected in the hydraulic model

Floodplain and Floodway Data Table
Big Dry Creek FHAD

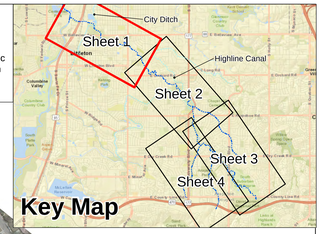
REFERENCE LOCATION	RIVER STATION	CROSS SECTION	THALWEG ELEVATION (FT)	PEAK DISCHARGE				WATER SURFACE ELEVATION				100-YEAR FLOODPLAIN		100-YEAR FLOODWAY (0.5' EGL)						COMMENT
				10-YR FLOW (CFS)	50-YR FLOW (CFS)	100-YR FLOW (CFS)	500-YR FLOW (CFS)	10-YR WSEL (FT)	50-YR WSEL (FT)	100-YR WSEL (FT)	500-YR WSEL (FT)	WIDTH (FT)	EGL (FT)	WSEL (FT)	WIDTH (FT)	AREA (SQ FT)	VELOCITY (FT/S)	SURCHARGE (HGL) (FT)	SURCHARGE (EGL) (FT)	
	15+49	1549	5518.5	778	1423	1719	2290	5527.8	5529.0	5529.4	5530	51.6	5530.3	-	-	-	-	-	-	
	15+76	1576	5520.5	778	1423	1719	2290	5528.1	5529.4	5529.9	5530.69	58.2	5530.7	-	-	-	-	-	-	
	16+76	1676	5521.7	778	1423	1719	2290	5529.2	5530.6	5531.2	5532.02	46.3	5532.4	-	-	-	-	-	-	
	17+69	1769	5522.7	778	1423	1719	2290	5530.7	5532.4	5533.0	5534.09	48.7	5533.8	-	-	-	-	-	-	
	17+96	1796	5524.7	778	1423	1719	2290	5530.8	5532.5	5533.1	5534.15	44.2	5534.3	-	-	-	-	-	-	
	19+94	1994	5526.7	778	1423	1719	2290	5534.0	5535.8	5536.4	5537.49	55.1	5537.1	-	-	-	-	-	-	
DS of S Steele St	20+80	2080	5526.9	778	1423	1719	2290	5534.7	5536.7	5537.4	5538.56	74.8	5537.8	-	-	-	-	-	-	
US of S Steele St	21+65	2165	5527.6	778	1423	1719	2290	5539.4	5540.8	5540.9	5541.38	312.3	5541.2	-	-	-	-	-	-	
	22+45	2245	5530.6	701	1269	1532	2042	5539.7	5541.1	5541.3	5541.85	268.6	5541.5	-	-	-	-	-	-	
DS of Pedestrian Crossing	23+40	2340	5531.9	701	1269	1532	2042	5539.9	5541.3	5541.6	5542.2	200.5	5541.6	-	-	-	-	-	-	
US of Pedestrian Crossing	23+63	2363	5532.1	701	1269	1532	2042	5539.9	5541.3	5541.6	5542.23	192.0	5541.7	-	-	-	-	-	-	
	25+11	2511	5534.6	701	1269	1532	2042	5539.9	5541.2	5541.4	5541.79	57.2	5542.3	-	-	-	-	-	-	
	26+73	2673	5542.5	701	1269	1532	2042	5545.0	5546.0	5546.3	5547	68.6	5547.6	-	-	-	-	-	-	
DS of Underground Conduit	28+68	2868	5555.2	353	755	941	1306	5556.7	5557.3	5557.5	5557.82	157.6	5558.1	-	-	-	-	-	-	
	29+20	2920	5554.6	353	755	941	1306	5557.2	5557.8	5558.1	5558.42	212.5	5558.2	-	-	-	-	-	-	Floodplain top width includes obstruction
	31+46	3146	5555.5	353	755	941	1306	5557.9	5558.3	5558.6	5558.89	214.8	5559.0	-	-	-	-	-	-	
	33+77	3377	5554.7	353	755	941	1306	5558.2	5559.0	5559.1	5559.63	221.1	5559.2	-	-	-	-	-	-	
	36+77	3677	5561.6	353	755	941	1306	5562.9	5563.4	5563.7	5564	114.0	5564.3	-	-	-	-	-	-	
	41+25	4125	5572.6	353	755	941	1306	5574.0	5574.5	5574.7	5575.04	126.1	5575.4	-	-	-	-	-	-	
	43+48	4348	5577.3	353	755	941	1306	5578.9	5579.4	5579.7	5580.01	106.1	5580.4	-	-	-	-	-	-	
	48+72	4872	5584.4	353	755	941	1306	5585.9	5586.5	5586.7	5587.09	184.3	5587.5	-	-	-	-	-	-	
	52+79	5279	5588.4	353	755	941	1306	5589.9	5590.5	5590.7	5591.15	91.6	5591.6	-	-	-	-	-	-	
	55+93	5593	5592.3	353	755	941	1306	5593.9	5594.5	5594.7	5595.15	109.0	5595.6	-	-	-	-	-	-	Floodplain top width includes obstruction
	59+49	5949	5602.8	353	755	941	1306	5604.3	5605.0	5605.2	5605.65	90.9	5606.1	-	-	-	-	-	-	
	63+07	6307	5613.5	353	755	941	1306	5614.9	5615.4	5615.6	5615.97	219.3	5616.3	-	-	-	-	-	-	
	64+67	6467	5617.2	353	755	941	1306	5618.6	5619.1	5619.3	5619.59	291.6	5619.9	-	-	-	-	-	-	
	65+14	6514	5617.9	353	755	941	1306	5619.2	5619.6	5619.8	5620.06	234.5	5620.3	-	-	-	-	-	-	
US of Underground Conduit	66+87	6687	5614.4	550	952	1138	1503	5620.1	5620.7	5621.0	5621.26	59.0	5621.5	-	-	-	-	-	-	
	69+32	6932	5618.8	298	480	558	723	5621.4	5622.4	5622.9	5623.69	40.1	5623.4	-	-	-	-	-	-	
DS of E Easter Pl	72+21	7221	5619.2	298	480	558	723	5623.7	5624.3	5624.5	5625.04	28.0	5625.2	-	-	-	-	-	-	
US of E Easter Pl	73+01	7301	5621.4	298	480	558	723	5628.2	5628.6	5628.8	5629.08	197.8	5629.0	-	-	-	-	-	-	Floodplain delineation includes ineffective flow area
	75+90	7590	5626.3	298	480	558	723	5629.2	5629.8	5630.0	5630.38	35.4	5630.6	-	-	-	-	-	-	
	79+58	7958	5631.1	298	480	558	723	5634.2	5634.9	5635.4	5635.71	87.8	5636.0	-	-	-	-	-	-	Floodplain delineation includes ineffective flow area
DS of E Geddes Ave	81+66	8166	5631.1	298	480	558	723	5636.2	5636.9	5637.0	5637.38	26.8	5637.7	-	-	-	-	-	-	
US of E Geddes Ave	84+38	8438	5633.8	298	480	558	723	5641.3	5642.2	5642.5	5643.07	44.9	5642.7	-	-	-	-	-	-	
	85+76	8576	5639.3	298	480	558	723	5642.2	5643.1	5643.4	5643.97	30.7	5644.3	-	-	-	-	-	-	
	85+84	8584	5640.5	298	480	558	723	5643.1	5643.7	5643.9	5644.3	33.4	5645.0	-	-	-	-	-	-	
	86+49	8649	5642.2	298	480	558	723	5644.7	5645.4	5645.6	5646	33.0	5646.6	-	-	-	-	-	-	
	87+27	8727	5643.3	298	480	558	723	5646.0	5646.7	5646.9	5647.43	30.8	5648.1	-	-	-	-	-	-	
	87+38	8738	5644.3	298	480	558	723	5646.9	5647.5	5647.8	5648.21	34.9	5648.8	-	-	-	-	-	-	
	90+37	9037	5646.9	298	480	558	723	5649.7	5650.2	5650.4	5650.73	47.3	5651.0	-	-	-	-	-	-	
	92+19	9219	5648.0	298	480	558	723	5650.8	5651.3	5651.6	5652.12	29.2	5652.8	-	-	-	-	-	-	
	92+32	9232	5648.7	298	480	558	723	5651.3	5652.0	5652.2	5652.69	31.9	5653.3	-	-	-	-	-	-	
	93+99	9399	5651.1	298	480	558	723	5653.4	5654.0	5654.2	5654.63	36.0	5655.3	-	-	-	-	-	-	
	94+61	9461	5652.2	298	480	558	723	5654.3	5655.0	5655.3	5655.83	65.3	5655.6	-	-	-	-	-	-	

APPENDIX G
FLOOD MAPS

Instructions to print an area smaller than the full page to scale:
1. Using the "Snapshot" tool, select the desired area to print.
2. Click File>Print...
3. Select your printer from the printer dropdown menu.
4. Set the desired paper size using the printer "Properties" menu.
5. Choose the "Selected Graphic" option under "Print Range".
6. Select "None" from the "Page Scaling" dropdown menu.
7. Unselect "Choose Paper Source by PDF Page Size".
8. Click "OK" to print selection.

BIG DRY CREEK FHAD
Flood Maps
February 2018

Notes:
Vertical Datum: NAVD 88
Horizontal Datum: NAD83
Contour Interval: 2 Feet
Topographic Information Provided by: USGS 2008 Democratic National Convetion LiDAR, USGS 3-meter National Elevation Dataset (NED)
Aerial Provided by: UDFCD, 2012



STUDY LIMIT
MATCHLINE
SOUTH PLATTE RIVER
BIG DRY CREEK
City Ditch
Existing Certified Floodwall
City of Sheridan
City of Englewood
City of Littleton
City of Centennial
US 85/S. SANTA FE DR
W. TUFTS AVE
W. LAYTON AVE
W. CHENANGO AVE
W. BELLEVIEW AVE
W. PRENTICE AVE
W. BERRY AVE
W. POSER AVE
E. LITTLETON BLVD
S. WASHINGTON ST
S. CLARKSON ST
S. BROADWAY
S. DELAWARE ST
S. HURON ST
S. SHERMAN ST
S. WINDERMERE ST
S. RIO GRANDE ST
S. MARIPOSA DR
S. INCA DR
S. LIPAN DR
S. BANNOCK ST

SHEET 1 OF 4

0 400 800 1,600 2,400 Feet
1 inch = 200 feet

Map Legend

- 100-Year Flood Elevation
- Channel Alignment
- Matchline / Study Limit
- Minor (2 Foot) Contour
- Major (10 Foot) Contour
- Culvert/Bridge
- County Limits
- Municipality Limits
- Railroad
- Canal/Ditch
- 100-Year Floodplains (1% Annual Exceedance Probability)
- 100-Year Shallow Flooding
- 500 Year Floodplain (2% Annual Exceedance Probability)
- 0.5' Floodway
- Structures in 100-Year Floodplain
- 5123.4 100-Year Flood Elevation
- # Hydraulic Structure Survey No. (T# = Tributary Survey No., NS = Not Surveyed)

RESPEC

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BIG DRY CREEK FHAD
Flood Maps
February 2018

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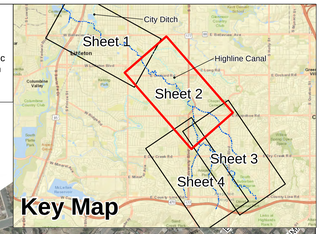
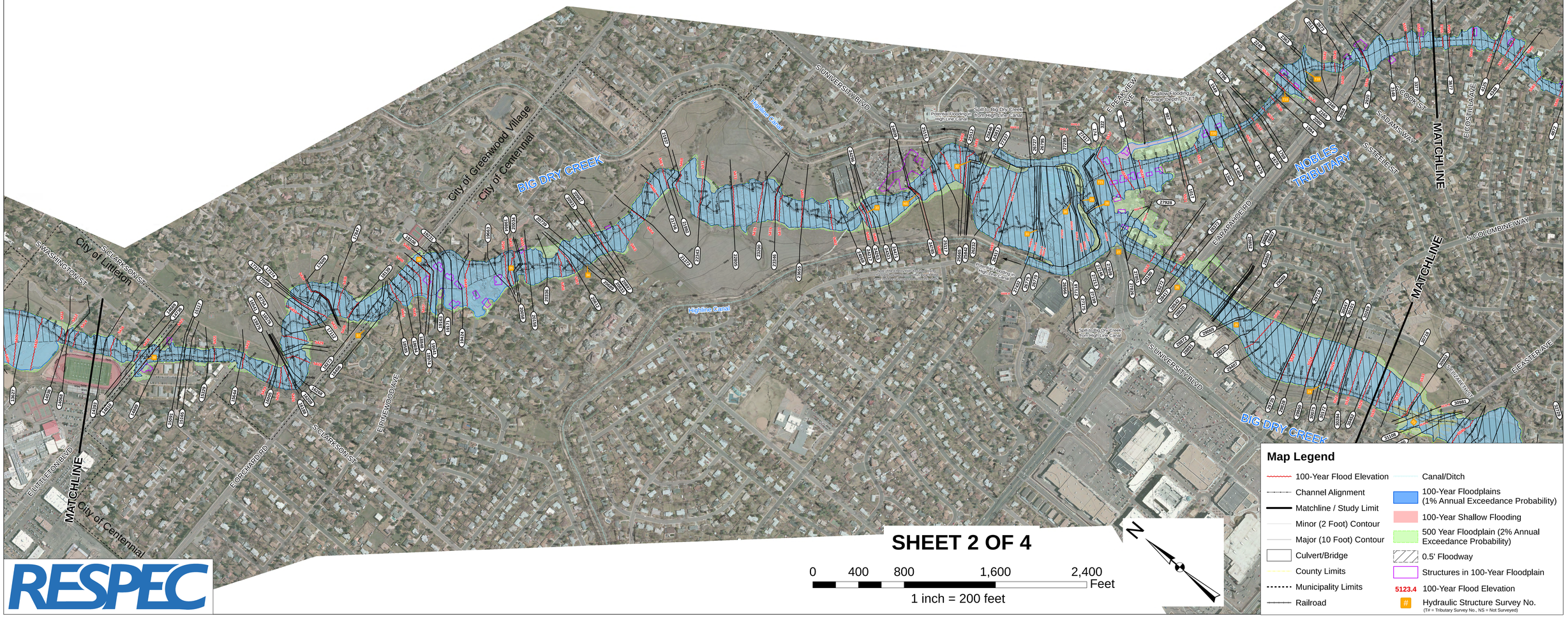
Horizontal Datum: NAD83
Contour Interval: 2 Feet
Topographic Information Provided by: USGS 2008 Democratic National Convetion LiDAR, USGS 3-meter National Elevation Dataset (NED)
Aerial Provided by: UDFCD, 2012





SHEET 2 OF 4

0 400 800 1,600 2,400 Feet

1 inch = 200 feet

N

Map Legend

- 100-Year Flood Elevation
- Channel Alignment
- Matchline / Study Limit
- Minor (2 Foot) Contour
- Major (10 Foot) Contour
- Culvert/Bridge
- County Limits
- Municipality Limits
- Railroad
- Canal/Ditch
- 100-Year Floodplains (1% Annual Exceedance Probability)
- 100-Year Shallow Flooding
- 500 Year Floodplain (2% Annual Exceedance Probability)
- 0.5' Floodway
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- 5123.4 100-Year Flood Elevation
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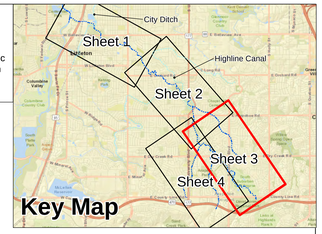
BIG DRY CREEK FHAD
Flood Maps
February 2018

Notes:
Vertical Datum: NAVD 88
Horizontal Datum: NAD83
Contour Interval: 2 Feet
Topographic Information Provided by: USGS 2008 Democratic National Convetion LiDAR, USGS 3-meter National Elevation Dataset (NED)
Aerial Provided by: UDFCD, 2012



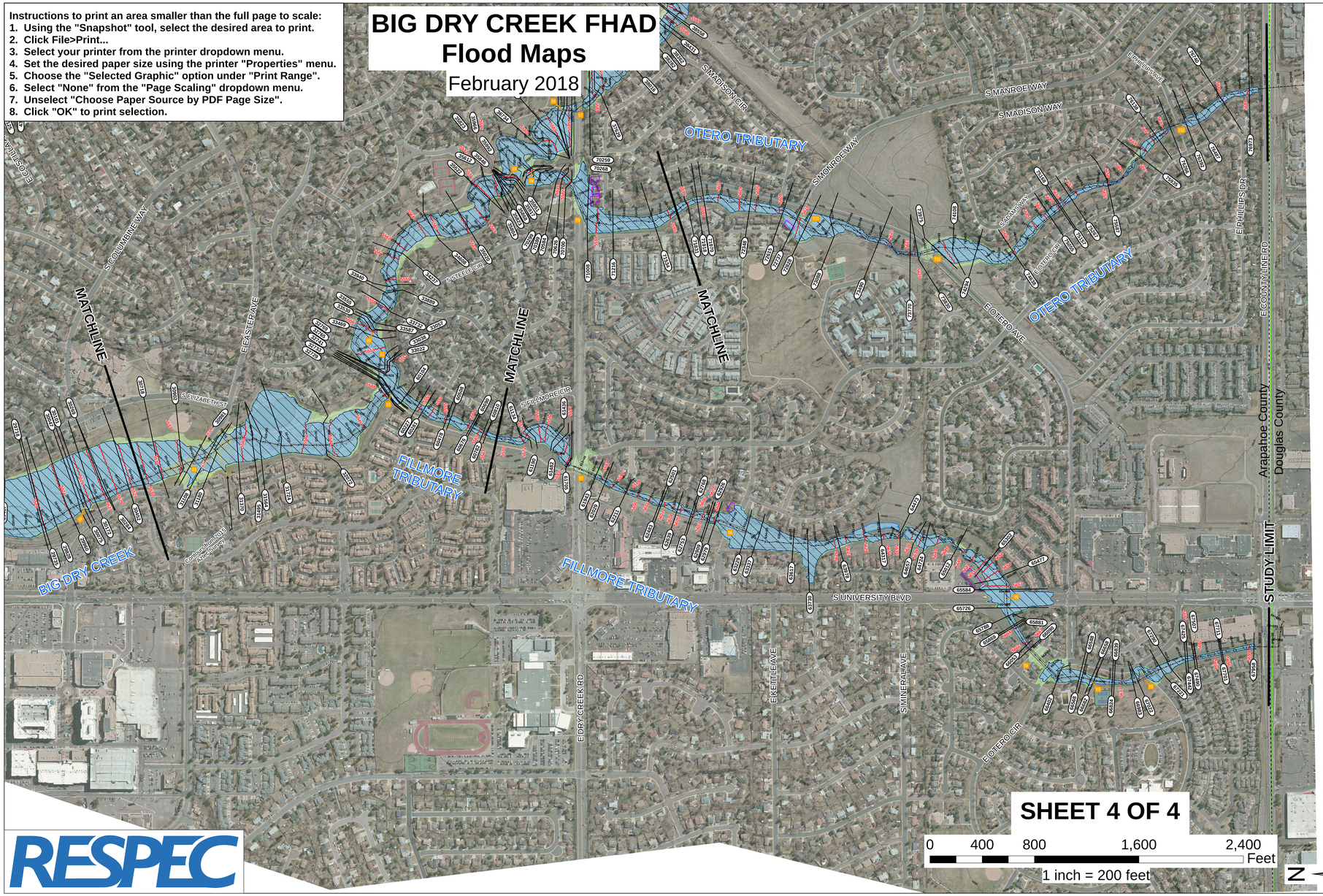
City of Centennial

MATCHLINE
NOBLES TRIBUTARY
BIG DRY CREEK
OTERO TRIBUTARY
FILLMORE TRIBUTARY
STUDY LIMIT
E DRY CREEK RD
E EASTER AVE
S COLUMBINE WAY
S HARRISON ST
S COLORADO BLVD
S BIRCH ST
S JACKSON ST
S MADISON CIR
S MONROE WAY
S FILLMORE CIR
S STEELE CIR
S ADAMS WAY
S COOK ST
E EASTER DR
E EASTER PL
E FREMONT AVE
E FREMONT PL
E FREMONT DR
E FREMONT CIR
E FREMONT WAY
E FREMONT LN
E FREMONT PKWY
E FREMONT CT

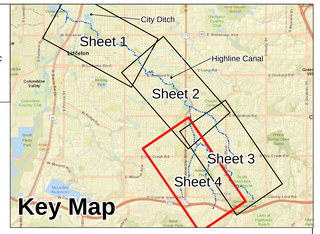
Instructions to print an area smaller than the full page to scale:
1. Using the "Snapshot" tool, select the desired area to print.
2. Click File>Print...
3. Select your printer from the printer dropdown menu.
4. Set the desired paper size using the printer "Properties" menu.
5. Choose the "Selected Graphic" option under "Print Range".
6. Select "None" from the "Page Scaling" dropdown menu.
7. Unselect "Choose Paper Source by PDF Page Size".
8. Click "OK" to print selection.

BIG DRY CREEK FHAD Flood Maps

February 2018



Notes:
Vertical Datum: NAVD 88
Horizontal Datum: NAD83
Contour Interval: 2 Feet
Topographic Information Provided by: USGS 2008 Democratic National Convetion LiDAR, USGS 3-meter National Elevation Dataset (NED)
Aerial Provided by: UDFCD, 2012



SHEET 4 OF 4

0 400 800 1,600 2,400 Feet

1 inch = 200 feet

N

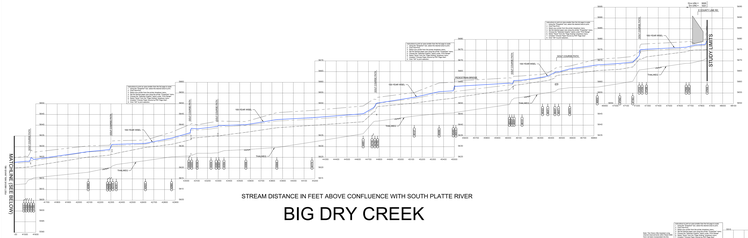
Map Legend

- 100-Year Flood Elevation
- Channel Alignment
- Matchline / Study Limit
- Minor (2 Foot) Contour
- Major (10 Foot) Contour
- Culvert/Bridge
- County Limits
- Municipality Limits
- Railroad
- Canal/Ditch
- 100-Year Floodplains (1% Annual Exceedance Probability)
- 100-Year Shallow Flooding
- 500 Year Floodplain (2% Annual Exceedance Probability)
- 0.5' Floodway
- Structures in 100-Year Floodplain
- 5123.4 100-Year Flood Elevation
- # Hydraulic Structure Survey No. (T# = Tributary Survey No., NS = Not Surveyed)

RESPEC

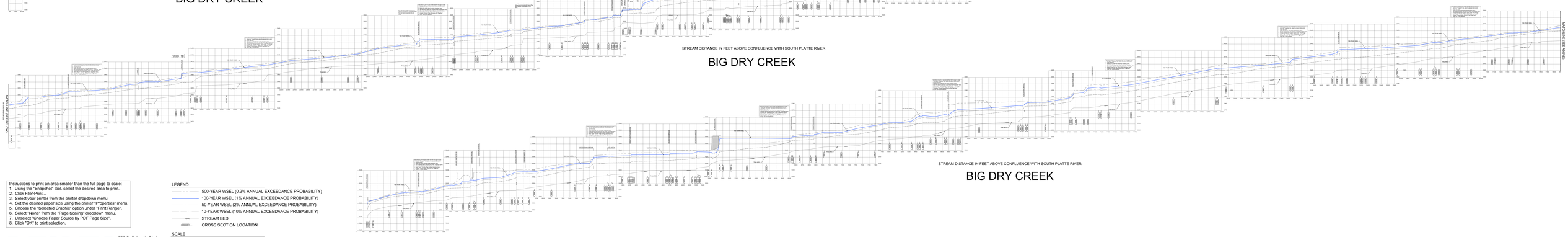
APPENDIX H
FLOOD PROFILES

BIG DRY CREEK FHAD
Flood Profile
February 2018



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SOUTH PLATTE RIVER

BIG DRY CREEK



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SOUTH PLATTE RIVER

BIG DRY CREEK

STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SOUTH PLATTE RIVER

BIG DRY CREEK

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7. Unselect "Choose Paper Source by PDF Page Size".
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LEGEND

- 500-YEAR WSEL (0.2% ANNUAL EXCEEDANCE PROBABILITY)
- 100-YEAR WSEL (1% ANNUAL EXCEEDANCE PROBABILITY)
- 50-YEAR WSEL (2% ANNUAL EXCEEDANCE PROBABILITY)
- 10-YEAR WSEL (10% ANNUAL EXCEEDANCE PROBABILITY)
- STREAM BED
- CROSS SECTION LOCATION

SCALE

200 0 100 200 400

SHEET 1 OF 2

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Denver, CO 80246
(303) 757-3655
(303) 300-1635 (fax)
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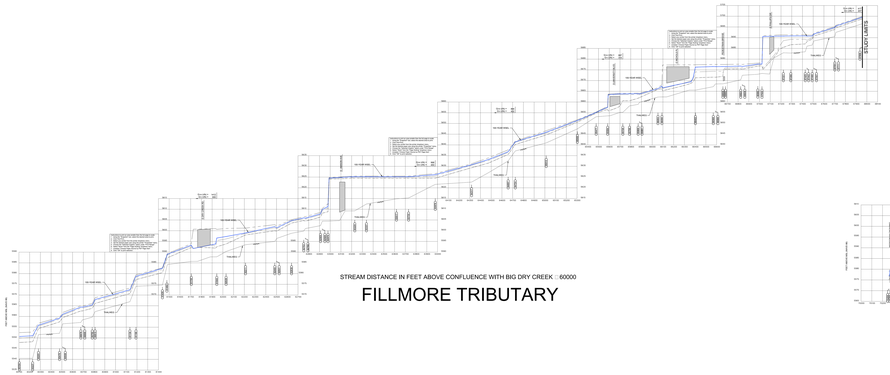
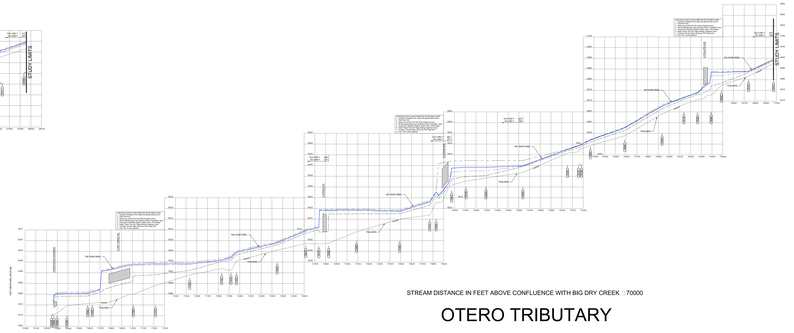
BIG DRY CREEK FHAD
Flood Profile
February 2018



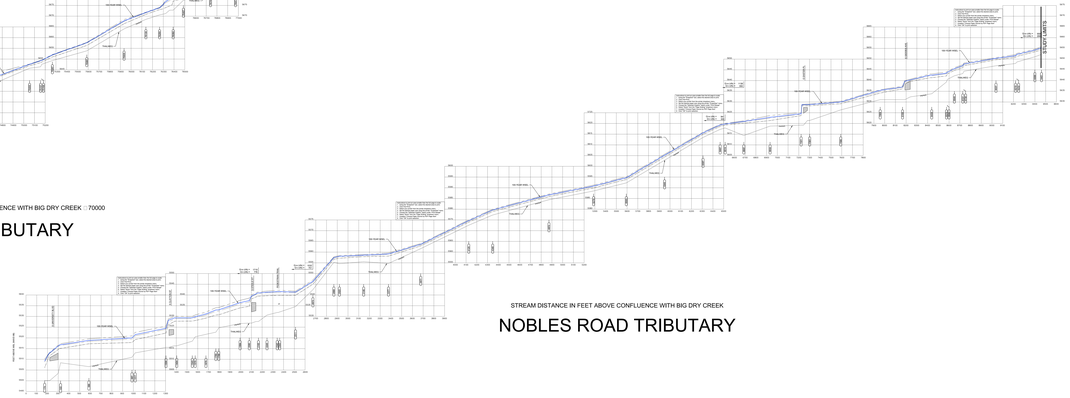
STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH BIG DRY CREEK :: 60000

FILLMORE TRIBUTARY



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH BIG DRY CREEK :: 70000

OTERO TRIBUTARY



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH BIG DRY CREEK

NOBLES ROAD TRIBUTARY

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7. Unselect "Choose Paper Source by PDF Page Size".
8. Click "OK" to print selection.

LEGEND

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- 100-YEAR WSEL (1% ANNUAL EXCEEDANCE PROBABILITY)
- 50-YEAR WSEL (2% ANNUAL EXCEEDANCE PROBABILITY)
- 10-YEAR WSEL (10% ANNUAL EXCEEDANCE PROBABILITY)
- STREAM BED
- CROSS SECTION LOCATION

SCALE

200 0 100 200 400

GRAPHIC SCALE 1" = 200'

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SHEET 2 OF 2