

ENERGYPLEX PARK
NEW MEXICO

FLOODPLAIN STUDY and MAPPING

PREPARED FOR:

Lea County
100 N Main
Lovington, NM 88260

Date: May 21, 2015

Project Number: 2013.1355



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Introduction

The purpose of this study is to analyze current flooding conditions at the EnergyPlex® Park (EPP) to be located in the area between Hobbs Industrial Air Park (HIAP) and Arkansas Junction (NM Highway 483). Figure 1 shows the location of the EPP.



Figure 1: EnergyPlex® Park location (in blue)

The EPP area consists of approximately 15 square miles covering the entire Sections 29, 30, 31, 32, 33 and the Southwest ¼ Section 34 within Township 17S 37E, Sections 1, 2 and 3 within Township 18S 36E and Sections 3, 4, 5, 6, 7, North ½ Section 8, Southwest ¼ Section 8, North ½ Section 9, and North ½ Section 10 within Township 18S 37E. Appendix A contains a map showing the EPP site and watershed with respect to the Public Land Survey System (PLSS) of New Mexico. Figure 2 depicts the area covering EPP.



Figure 2: EPP site (in blue)

The 25 and 100-year peak runoff volumes and flow rates were determined through hydrologic analyses consistent with the methods utilized in the FEMA (Federal Emergency Management Agency) Flood Insurance Study Number 35025CV000A for Lea County, New Mexico and Corps of Engineers hydrologic modeling software HEC-HMS.

The hydraulic analysis was performed using Corps of Engineers hydraulic modeling software HEC-RAS in accordance with the criteria established by the Guidelines and Specifications for Flood Hazard Mapping Partners Appendix E: Guidance for Shallow Flooding Analyses and Mapping by FEMA April 2003. These peak flows were determined to assess the existing conditions at EPP and to establish a base flood elevation for future development that will help prevent flooding.

FEMA Flood Insurance Rate Map

The FEMA Flood Insurance Rate Map (FIRM) map number 35025C1165D with an effective date of December 16, 2008 covers approximately 320 acres within the downstream portion of the EPP site. Approximately 100 acres are designated Zone AO with a depth of 1 foot while the

remaining area is designated Zone X (unshaded). The area outside the limit of study within the EPP site is considered Zone D.

According to FEMA, the vast majority of the EPP site and watershed has not been mapped. Appendix B shows the FEMA FIRM availability at the EPP site and watershed.

Mapping

The topography of the watershed and EPP was obtained from the National Elevation Dataset (NED) produced by USGS and remote sensing method Light Detection and Ranging (LIDAR) performed at the EPP area. Appendix A contains a topographic map of the EPP site and watershed.

Watershed Delineation

The EPP site and watershed area was delineated in two separate areas. The offsite watershed encompasses the contributing area to the EPP upstream boundary. The onsite watershed encompasses the defined streams within the EPP site. The runoff flow direction is Northwest to Southeast. Figure 3 shows the extent of the EPP site and watershed.

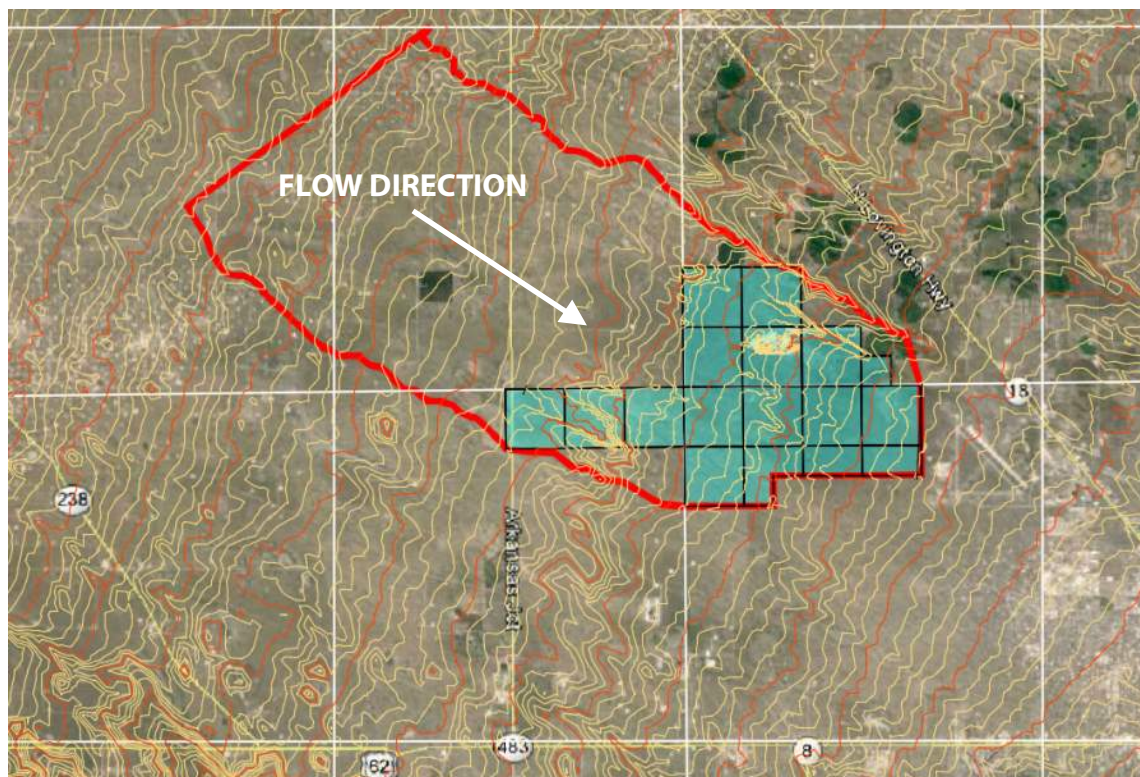


Figure 3: EPP site and Watershed

Legacy Watershed

The EPP site and watershed lies within the Monument-Seminole Draw watershed as established by United States Environmental Protection Agency (EPA). The Monument-Seminole Draw watershed covers approximately 2,650 square miles, extending from northeastern Lea County, New Mexico to central Andrews County, Texas. Figure 4 depicts the EPP area and watershed with respect to the Monument-Seminole Draw watershed as shown in the MyWATERS Mapper.

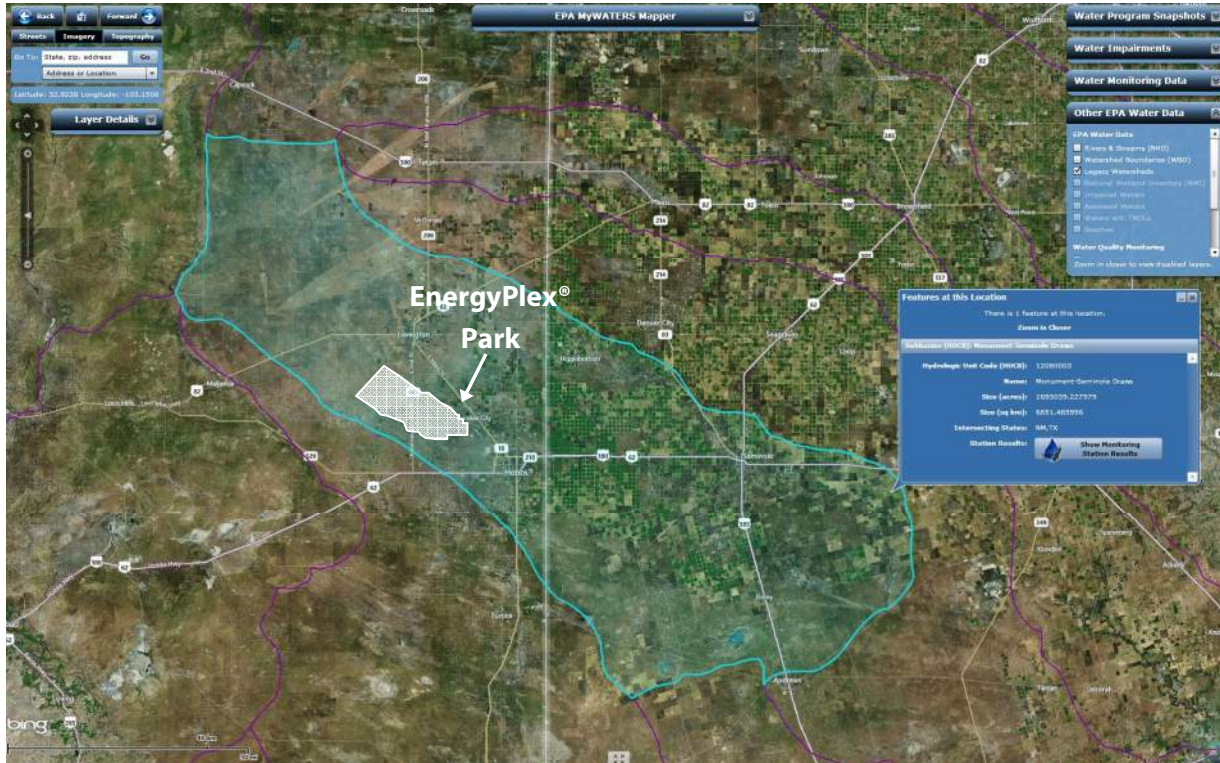


Figure 4: Monument-Seminole Draw Watershed in blue (EPA MyWATERS Mapper)

EPP Offsite Watershed

The watershed delineation is based on the criteria established by the FEMA Flood Insurance Study Number 35025CV000A for Lea County, New Mexico¹ where “the larger drainage basins that lie northwest of the City of Hobbs were found to be noncontributing beyond a length of approximately 10 miles. This is due to large amounts of channel infiltration occurring in the broad shallow channels or draws. In addition to channel infiltration, there are numerous small closed basins within the larger basins that reduce the amount of runoff. These small closed basins are called playa lakes or sinkholes. Storage in these areas was accounted in the curve number selection”.

¹ FEMA Flood Insurance Study Number 35025CV000A Lea County New Mexico, Effective Date: December 16, 2008

Offsite Subwatershed Boundaries

The EPP offsite watershed was divided into subwatersheds based on the topographic information. This subdivision allowed for determination of specific flow rates at selected locations at the upstream boundary of the EPP site. Figure 5 depicts the offsite subwatershed layout. Appendix C contains a map showing the extent and numbering of the offsite subwatersheds.

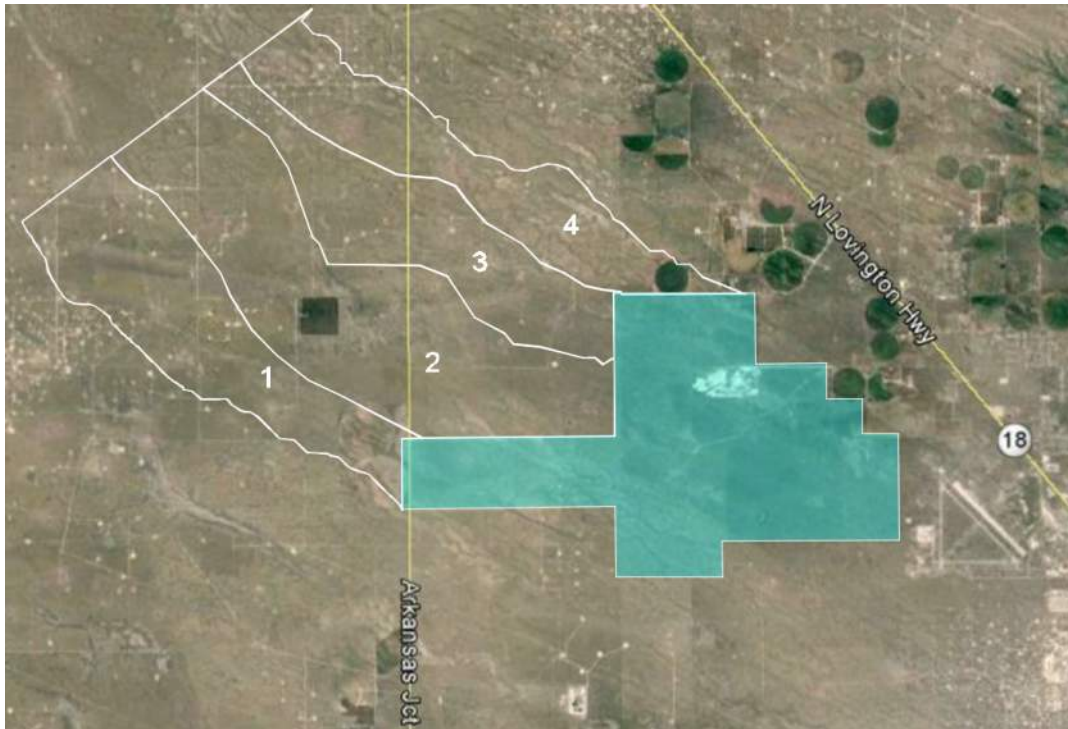


Figure 5: Offsite Subwatershed Areas

The areas corresponding to each offsite watershed are summarized in Table 1. The total area of the offsite watershed is approximately 34.3 square miles.

Table 1: EPP Offsite Subwatershed Areas

EPP OFFSITE SUBWATERSHEDS			
SUBWATERSHED	AREA (ft²)	AREA (acres)	AREA (mi²)
1	222,522,328	5,108	7.98
2	358,414,945	8,228	12.86
3	187,930,880	4,314	6.74
4	186,517,881	4,282	6.69
TOTAL	955,386,034	21,933	34.27

Highway 483 (Arkansas Junction) profile was analyzed to determine possible runoff diversions. At the time of this study, no hydraulic structures were found crossing the roadway

within the area. Based on this analysis, it was concluded that the highway elevation and alignment would not modify nor divert the flow path of upstream runoff. The total area of the watershed contributing to EPP was found to be 52 square miles including the EPP site.

EPP Onsite Watershed

The EPP onsite watershed was subdivided into six smaller subwatersheds. This subdivision allowed for determination of specific flow rates at the upstream and downstream boundaries of the EPP site. Appendix C contains a map showing the extent and numbering of the onsite subwatersheds. Figure 6 depicts the onsite subwatersheds layout.



Figure 6: EPP Onsite Subwatershed boundaries

The areas corresponding to each onsite subwatershed are summarized in Table 2. The total area of the onsite watershed is approximately 14.2 square miles.

Table 2: EPP Onsite Subwatershed Areas

EPP ONSITE SUBWATERSHEDS			
SUBWATERSHED	AREA (ft²)	AREA (acres)	AREA (mi²)
5	60935517	1399	2.19
6	219067077	5029	7.86
7	43021053	988	1.54
7a	47056492	1080	1.69
7b	58019540	1332	2.08
8	61819699	1419	2.22
TOTAL	489,919,380	11,247	17.57



Hydrologic Analysis

The hydrologic analysis for the watershed affecting the EPP site was performed to determine the 100-year 6-hour and 25-year 6-hour peak flow rates at the upstream and downstream boundaries of the site. The peak runoff was developed using HEC-HMS software and determined using the Soil Conservation Service (SCS) Transform Method. Engineering judgment was applied to interpret the results and select the most appropriate peak flows affecting the area.

Rainfall

Point Precipitation Frequency Estimates for New Mexico – Hobbs 13 W data from the National Oceanographic and Atmospheric Administration (NOAA) Atlas 14 were utilized in the hydrologic modeling. At this location, the rainfall for a 100-year, 6-hour storm and a 25-year, 6-hour storm was determined to be 5.30 and 4.03 inches respectively.

The frequency storm method was used in HEC-HMS as the meteorological model. This method is designed to recreate a storm event from statistical precipitation data. A 6-hour storm was selected for intensities and duration, while the frequencies were set to be 1% and 4%. The position of the peak runoff was selected at 33% of the 6 hour rainfall event. Appendix D shows the Point Precipitation Frequency Estimates for New Mexico – Hobbs 13 W data from NOAA.

Soil Data

Soil reports and hydrologic soil group classifications for the EPP offsite and onsite subwatershed areas were obtained from the USDA Web Soil Survey. The predominant hydrologic soil group was found to have moderate to slow infiltration rates.

Curve Number Selection

As established by the FEMA Flood Insurance Study² “a curve number of 55 was selected for use in the model for undeveloped areas around the City. This curve number was found by superimposing an infiltration rate curve with a rainfall hyetograph. The difference in area between these two curves produced a volume of runoff equivalent to that produced using curve number 55. Two ring infiltration tests were performed in the vicinity of the City to produce the infiltration curve used in selecting the curve number. There was little or no antecedent moisture at the time of the infiltration tests”.

² FEMA Flood Insurance Study Number 35025CV000A Lea County New Mexico, Effective Date: December 16, 2008

Based on the information provided in this study, a consistent curve number of 55 was used to perform the hydrologic analysis. The loss method selected in HEC-HMS was the SCS curve number.

Time of Concentration and Lag Time

Time of Concentration within the offsite and onsite subwatersheds was determined using the Kirpich formula. The variables required in this formula are slope and longest flow path length within a particular subwatershed.

The SCS loss method requires Lag Time as an input parameter for peak runoff calculation. Based on observations by the SCS, the Lag Time is generally 60% of the Time of Concentration. This relationship was used for the determination of the Lag Time.

Tables 3 and 4 summarize the times of concentration (TOC) and lag time calculated for the EPP offsite and onsite subwatersheds.

Table 3: EPP Offsite Subwatersheds Time of Concentration and Lag Time

EPP OFFSITE SUBWATERSHEDS							
SUBWATERSHED	AREA (acres)	LONGEST FLOW PATH (ft)	SLOPE (ft/ft)	TOC (min)	TOC (hrs)	LAG TIME (min)	LAG TIME (hrs)
1	5,108	33,134	0.003	221	3.68	132	2.21
2	8,228	38,458	0.004	222	3.69	133	2.22
3	4,314	38,777	0.004	223	3.72	134	2.23
4	4,282	34,932	0.004	206	3.43	124	2.06

Table 4: EPP Onsite Subwatersheds Time of Concentration and Lag Time

EPP ONSITE SUBWATERSHEDS							
SUBWATERSHED	AREA (acres)	LONGEST FLOW PATH (ft)	SLOPE (ft/ft)	TOC (min)	TOC (hrs)	LAG TIME (min)	LAG TIME (hrs)
5	1,399	19,647	0.004	132	2.20	79	1.32
6	5,029	19,920	0.003	149	2.49	90	1.49
7	988	9,747	0.004	77	1.28	46	0.77
7a	1,080	18,928	0.003	143	2.39	86	1.43
7b	1,332	13,873	0.003	113	1.88	68	1.13
8	1,419	19,124	0.004	129	2.16	78	1.29



Figure 7 illustrates the upstream and downstream boundaries of EPP.

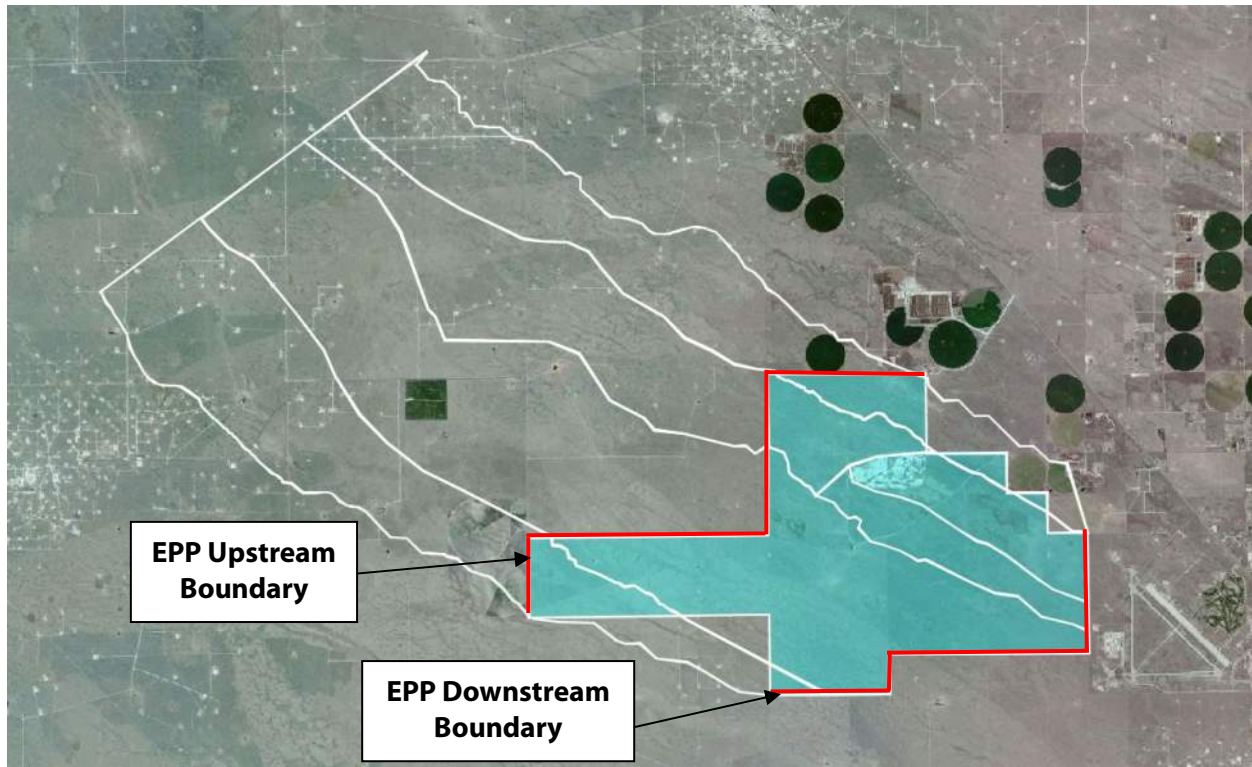


Figure 7: Upstream and Downstream boundaries of the EPP

EPP Upstream Boundary Runoff

The peak runoff rate for the 100-year 6-hour and 25-year 6-hour peak flow rates at the EPP offsite subwatersheds was calculated using the SCS Unit Hydrograph Transform Method on HEC-HMS. Table 5 shows the results from this analysis.

Table 5: EPP Upstream Boundary Peak Discharge

EPP UPSTREAM BOUNDARY							
SUBWATERSHED	AREA (mi ²)	25-YEAR STORM EVENT			100-YEAR STORM EVENT		
		Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)	Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)
1	7.98	572	7.33	171	1,177	7.20	378
2	12.86	919	7.33	275	1,892	7.20	609
3	6.74	479	7.33	145	988	7.27	320
4	6.69	502	7.20	143	1,026	7.13	317

EPP Onsite Runoff

The peak runoff rate for the 100-year 6-hour and 25-year 6-hour peak flow rates at the EPP onsite watersheds was calculated using the SCS Unit hydrograph Transform Method on HEC-HMS. Table 6 shows the results from this analysis.

Table 6: EPP Onsite Subwatersheds Peak Discharges

EPP ONSITE SUBWATERSHEDS							
SUBWATERSHED	AREA (mi ²)	25-YEAR STORM EVENT			100-YEAR STORM EVENT		
		Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)	Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)
5	2.19	209	6.67	47	410	6.53	104
6	7.86	707	6.73	169	1,405	6.67	373
7	1.54	177	6.27	33	334	6.20	73
7a	1.69	155	6.73	37	307	6.67	80
7b	2.08	212	6.47	45	410	6.40	99
8	2.22	214	6.60	48	419	6.53	106

Existing Materials Pit

The existing materials pit located at the west end of Alabama Street significantly impacts the downstream conditions of onsite subwatersheds 7a and 7b. Based on current topography, approximately 65% of the runoff accumulated at Junction 3 will route to the pit. The remaining 35% is assumed to route through onsite subwatershed 7b towards the downstream boundary of the EPP. The existing materials pit storage capacity is approximately 260 acre-feet prior to overflowing. As a result, peak discharges at Junction 5 will not experience significant contributions from offsite subwatersheds nor onsite subwatersheds immediately upstream of the pit.

EPP Downstream Boundary Runoff

The peak runoff rate for the 100-year 6-hour and 25-year 6-hour peak flow rates at the EPP downstream boundary was calculated using the SCS Unit Hydrograph Transform Method in HEC-HMS. Each junction represents the combined peak discharge of the upstream offsite subwatershed with the downstream onsite subwatershed.

Figure 8 shows a graphical representation of the HEC-HMS hydrologic model.

The peak discharges shown in Table 7 were used to perform the hydraulic modeling within the EPP site. Appendix E contains the HEC-HMS output from the hydrologic analysis.

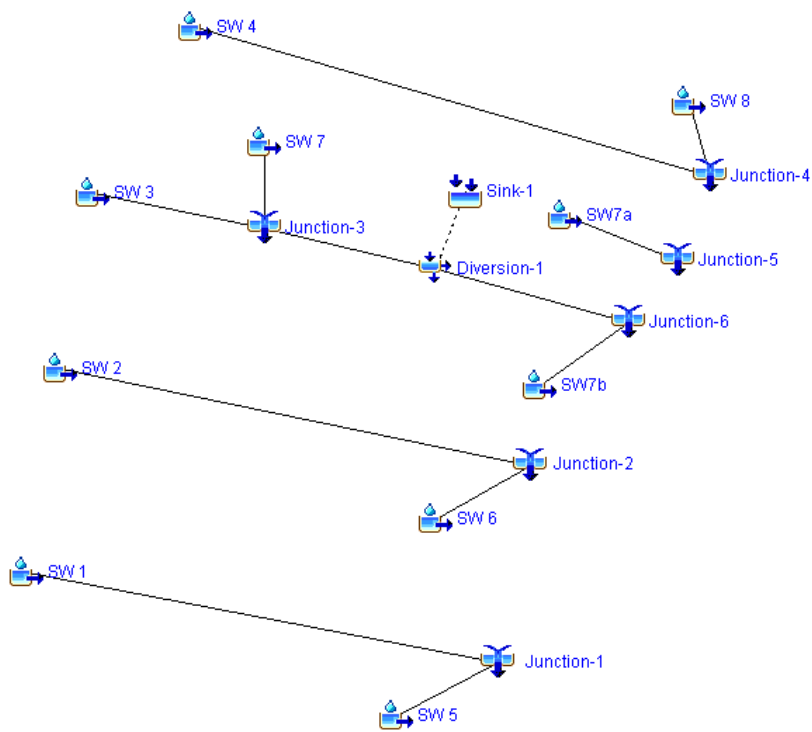


Figure 8: HEC-HMS hydrologic model layout

Table 7: EPP Downstream Boundary Peak Discharges

EPP ONSITE SUBWATERSHEDS						
JUNCTION	OFFSITE SUBWATERSHED	ONSITE SUBWATERSHED		COMBINED AREA (mi ²)		
Junction 1	1	5		10.17		
Junction 2	2	6		20.72		
Junction 3	3	7		8.28		
Junction 4	4	8		8.91		
Junction 5	N/A	7a		1.69		
Junction 6	3	7 and 7b		10.36		
JUNCTION	25-YEAR STORM EVENT			100-YEAR STORM EVENT		
	Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)	Peak Discharge (cfs)	Time of Peak (hrs)	Volume (ac-ft)
Junction 1	743	7.07	218	1,529	6.93	482
Junction 2	1,568	7.00	443	3,209	6.93	982
Junction 3	553	6.73	177	1,169	6.60	393
Junction 4	687	6.93	191	1,403	6.87	422
Junction 5	155	6.73	37	307	6.67	80
Junction 6	402	6.53	107	817	6.47	236

Hydraulic Analysis

Drainage conditions at the EPP onsite subwatersheds were analyzed in accordance with FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix E: Guidance for Shallow Flooding Analyses and Mapping³. The flood elevations for a 24-year 6-hour storm and 100-year 6-hour storm return periods were determined using HEC-RAS.

Normal depth conditions and steady state flow were assumed in the hydraulic analysis. The peak discharge obtained at the EPP downstream boundary was used along the entire reach length.

The site is comprised of multiple flow paths, many of them converging and/or diverging at several locations with undefined riverbanks. Evidence of sheet flow can be found at the south and southeast portion of the EPP site. Figure 9 illustrates the amount of flow paths and high points obtained from the LiDAR contour data.

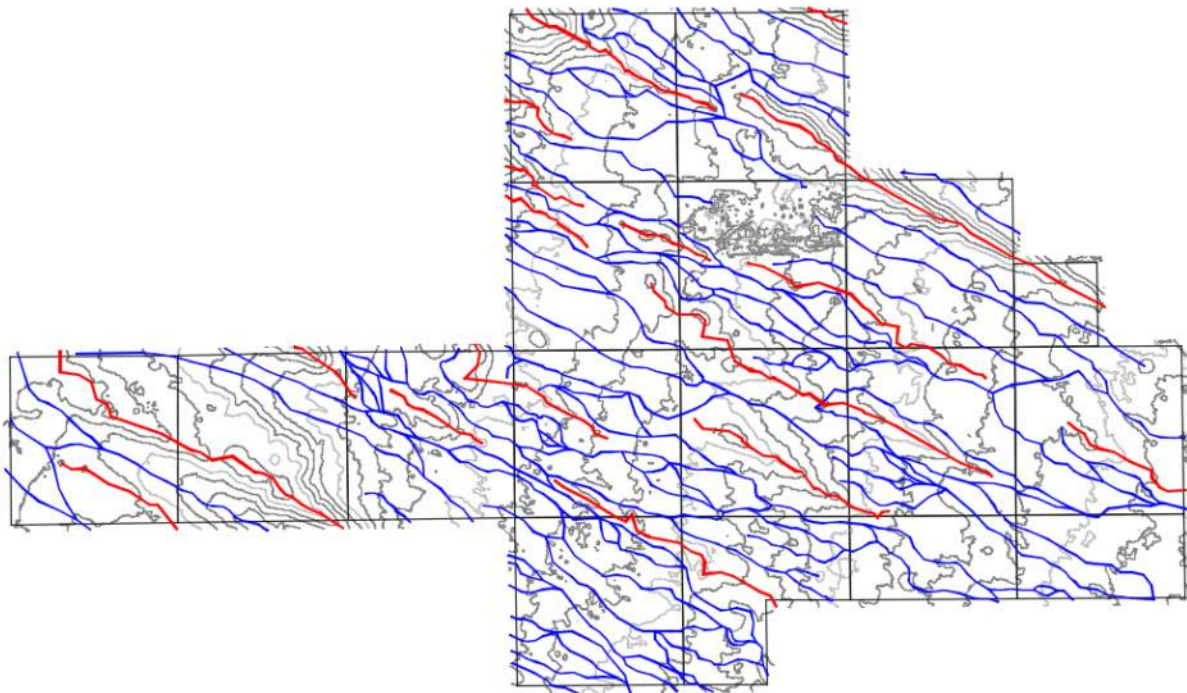


Figure 9: Identified flow paths (blue) and high points (red)

Six main reaches, one per onsite subwatershed, were used to analyze the topographic information and to extract cross sections. In order to account for areas susceptible to sheet

³ FEMA Guidelines and Specifications for Flood Hazard Mapping Partners, Appendix E: guidance for shallow flooding Analyses and Mapping, April 2003.

flow, cross sections were obtained at approximately 1,000 to 2,000 feet intervals and placed uniformly across each onsite subwatershed area.

Some cross sections within onsite subwatersheds 6, 7, 7a and 7b were skewed at selected locations to maintain uniformity of riverbank elevations. LiDAR contour data (1 foot contours) was used to obtain cross sections within onsite subwatersheds 6, 7, 7a and 7b. A combination of LiDAR and National Elevation Dataset (NED) contours (5 feet contours) were used to obtain cross sections within onsite subwatersheds 5 and 8. Cross section layouts can be found in Appendix F. Figure 10 shows the location of the six reaches used for the hydraulic analysis.

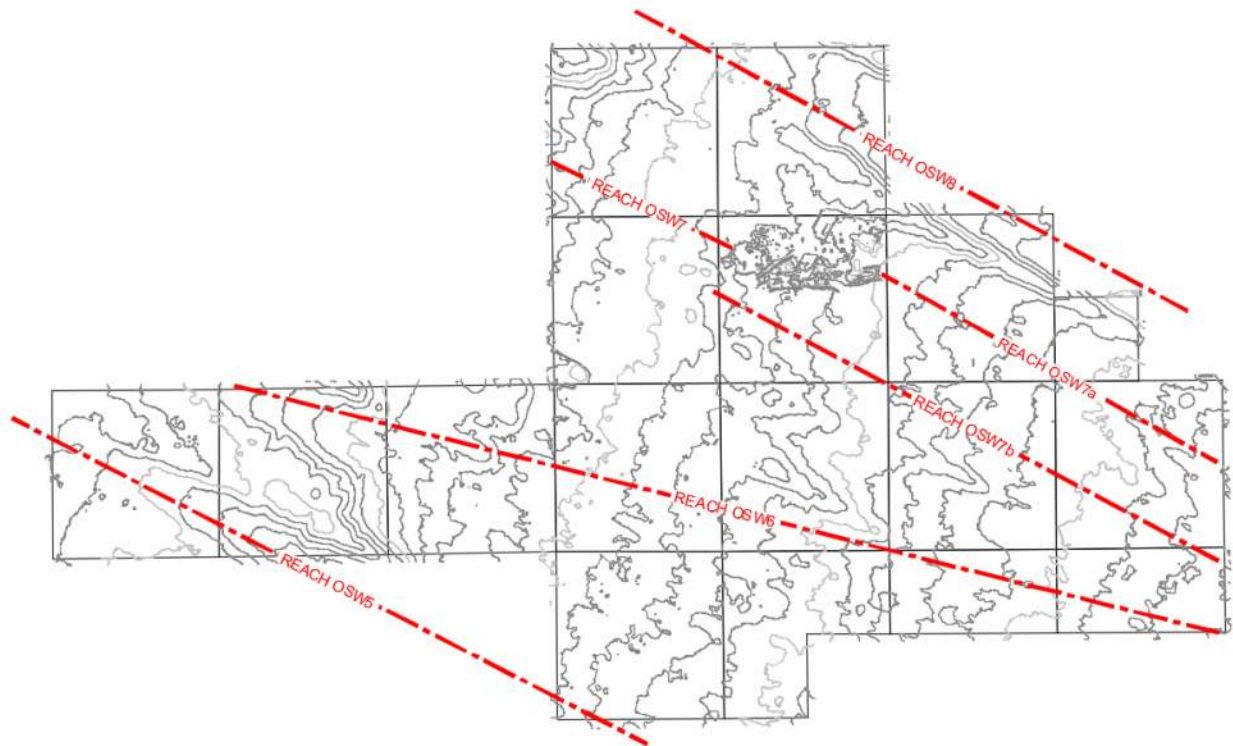



Figure 10: Six main onsite reaches

The hydraulic analysis of the cross sections was performed using a Manning's roughness coefficient of 0.050 corresponding to scattered brush and heavy weeds within a flood plain. This coefficient was maintained constant along the entire cross-section width and length.

According to FEMA Guidelines, "Generally, the average flow depth at a cross section in a shallow flooding (ZONE AO) area is obtained by dividing the flow area with the water-surface top width. A weighted average of all the average flow depths at all cross sections within a selected reach length would be used to define the extent of shallow flooding. For National Flood Insurance Program purposes, areas of shallow flooding with average depths of 1.0 foot or less are designated as Zone X".



Based on these guidelines, the flood elevations for a 24-year 6-hour storm and 100-year 6-hour storm return periods were determined. Average flow depths along reaches OSW5, OSW6, OSW7 and OSW8 were calculated below one foot and designated as Zone X (undefined).

Results from the HEC-RAS analysis are shown in Appendix G. Appendix H contains wetted boundary maps for a 25-year 6-hour storm and a 100-year 6-hour storm.

Conclusions and Recommendations

According to FEMA FIRM zones⁴, areas of moderate to low risk are defined as:

- **Zone B and X (shaded)** Area of moderate flood hazard, usually the area between the limits of the 100-year and 500-year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100-year flood, or shallow flooding areas with average depths of less than one foot or drainage areas less than 1 square mile.
- **Zone C and X (unshaded)** Area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level. Zone C may have ponding and local drainage problems that don't warrant a detailed study or designation as base floodplain. Zone X is the area determined to be outside the 500-year flood and protected by levee from 100-year flood.


Under current conditions, the EnergyPlex® Park was designated as Zone X with moderate to low risk of flooding. Since the 500-year flood was not analyzed in this report, the flood risk within the designated Zone X areas are either moderate or low and remains undefined.

Pettigrew & Associates recommends the establishment of finished floor elevations at 18 inches (minimum) above the 100-year flood water surface elevation determined at the nearest cross section.

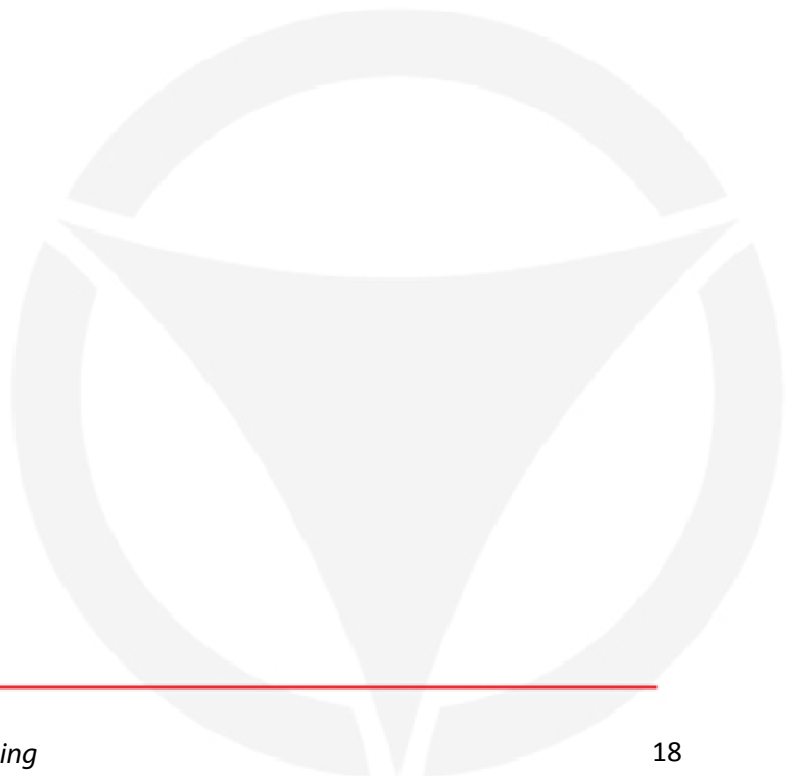
Limitations

The results provided within this report consist of opinions and conclusions of the consulting engineer. The only warranty or guarantee made by the engineer, in connection with this report, is that the analyses contained herein are performed with the care and skill ordinarily exercised by members of the same profession practicing under similar circumstances, at the

⁴ FEMA Managing Floodplain Development Through the NFIP, Unit 3 NFIP Flood Studies and Maps. March 5, 3007

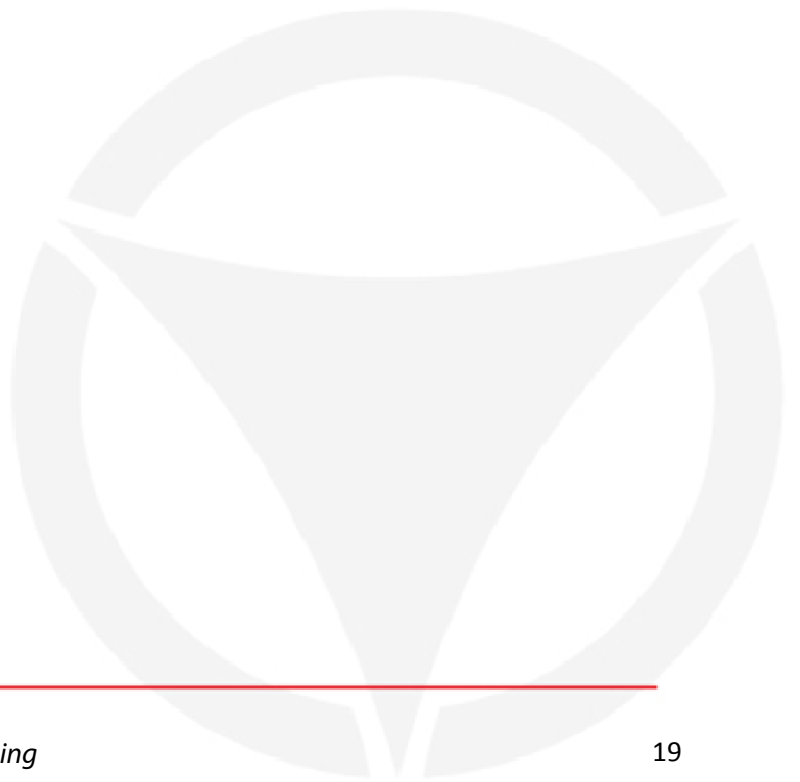


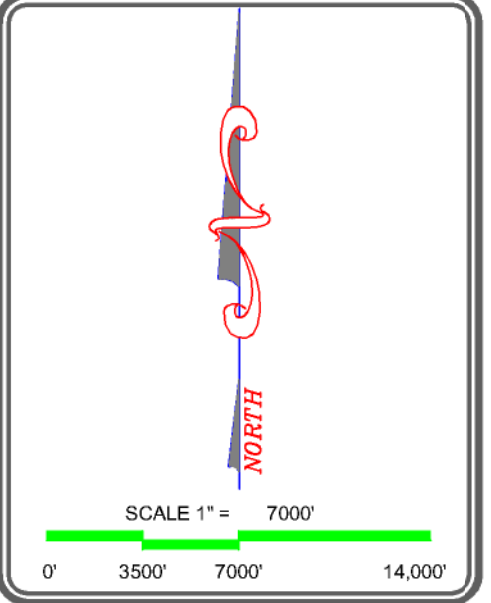
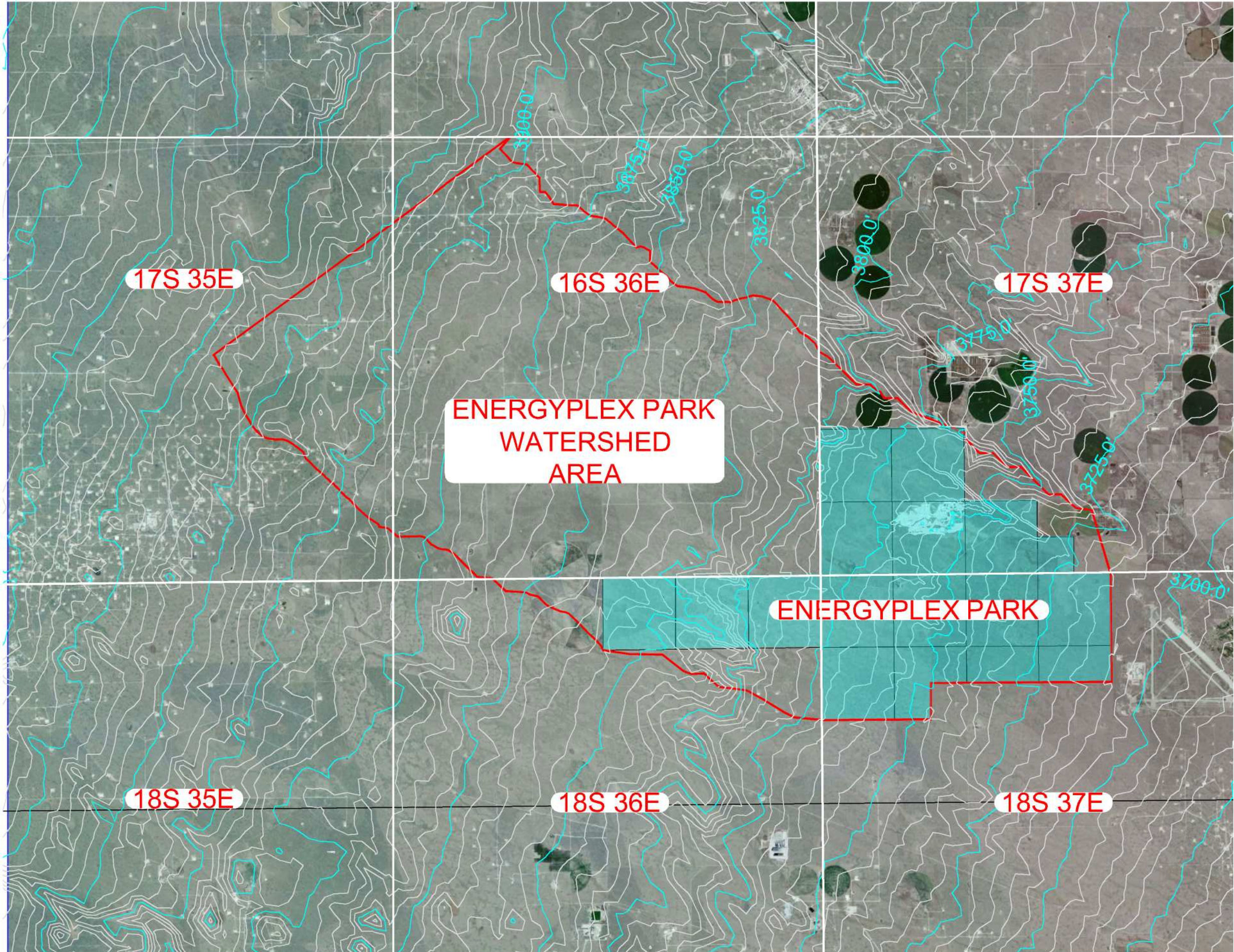
same time, and in the same or similar locality. No other warranty, expressed or implied, is made or intended to be made by submitting this report. Any deviation or adjustment to or from the above recommendations or any change in site conditions or intended development of the project may nullify the conclusions of this report.





APPENDIX A – TOPOGRAPHIC and SITE MAP





PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX A
 TOPOGRAPHIC AND
 SITE PLAN

ENERGYPLEX PARK

LEA COUNTY, NM

PETTIGREW
 & ASSOCIATES PA

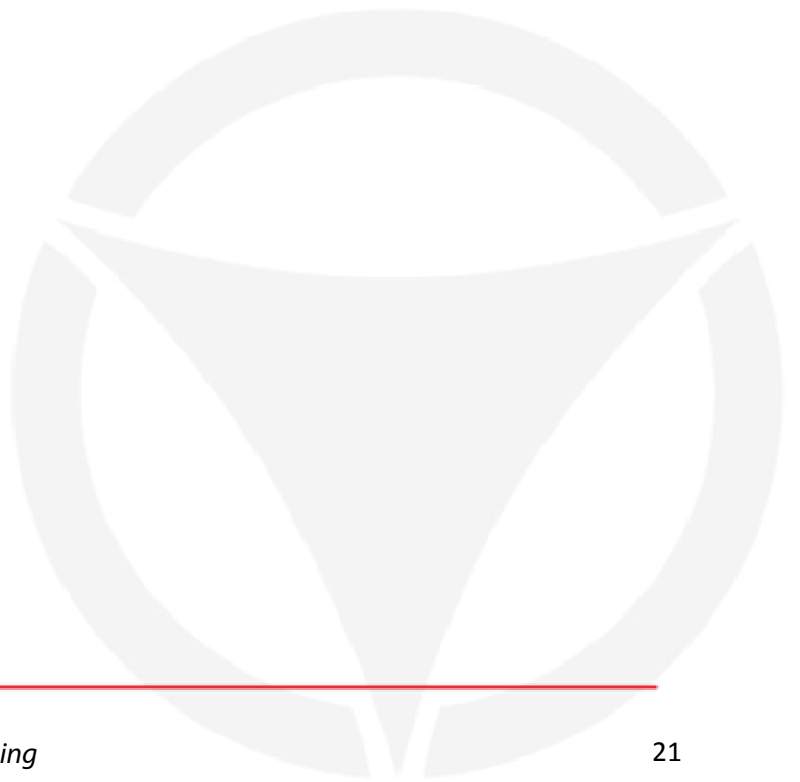
ENGINEERING | SURVEYING | TESTING
 DEFINING QUALITY SINCE 1965
 100 E. Navajo Drive Suite 100 Hobbs New Mexico
 88240
 T 575 393 9827 F 575 393 1543
 Pettigrew.us

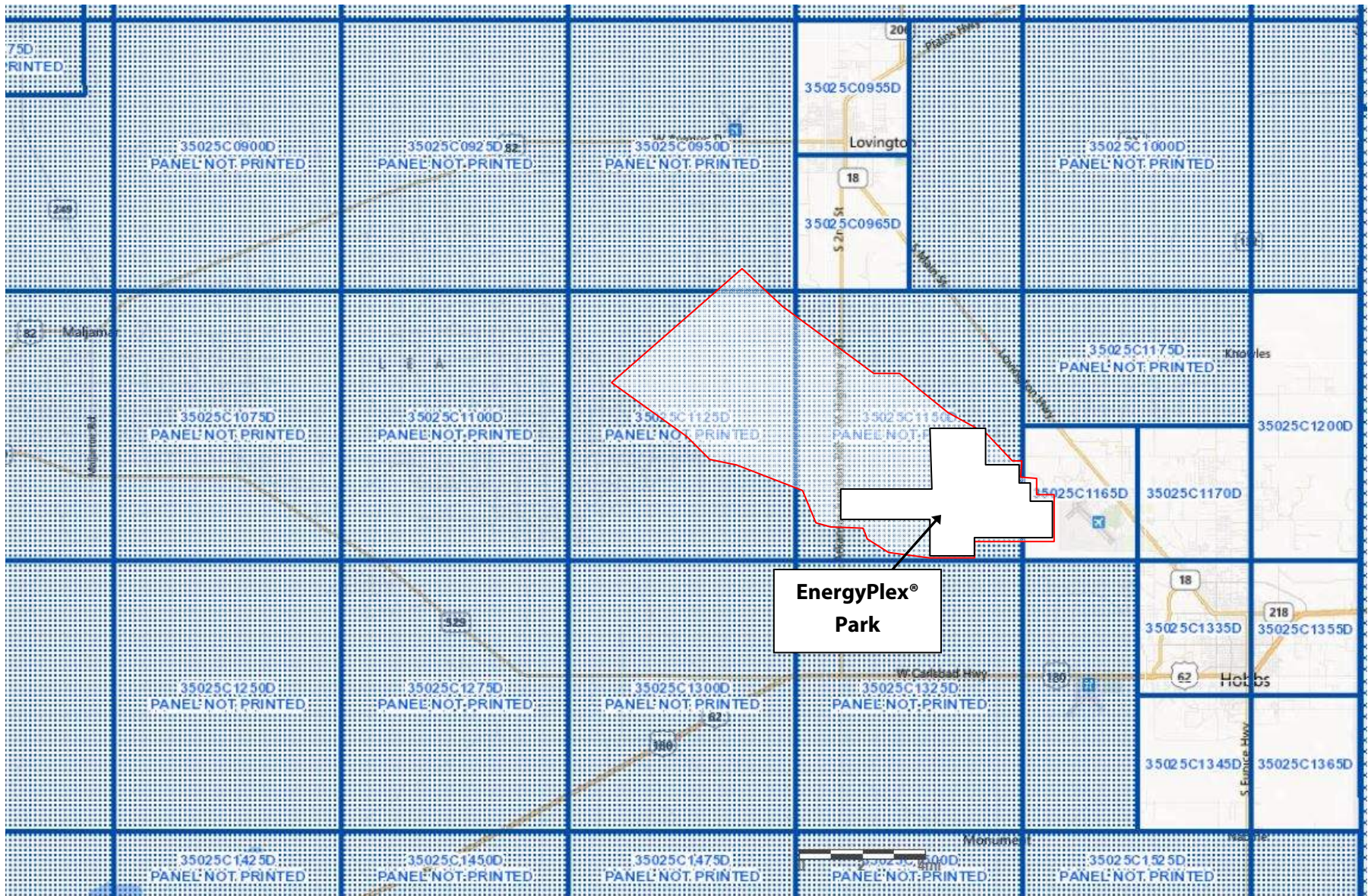
PROJECT NUMBER: 2013.1355

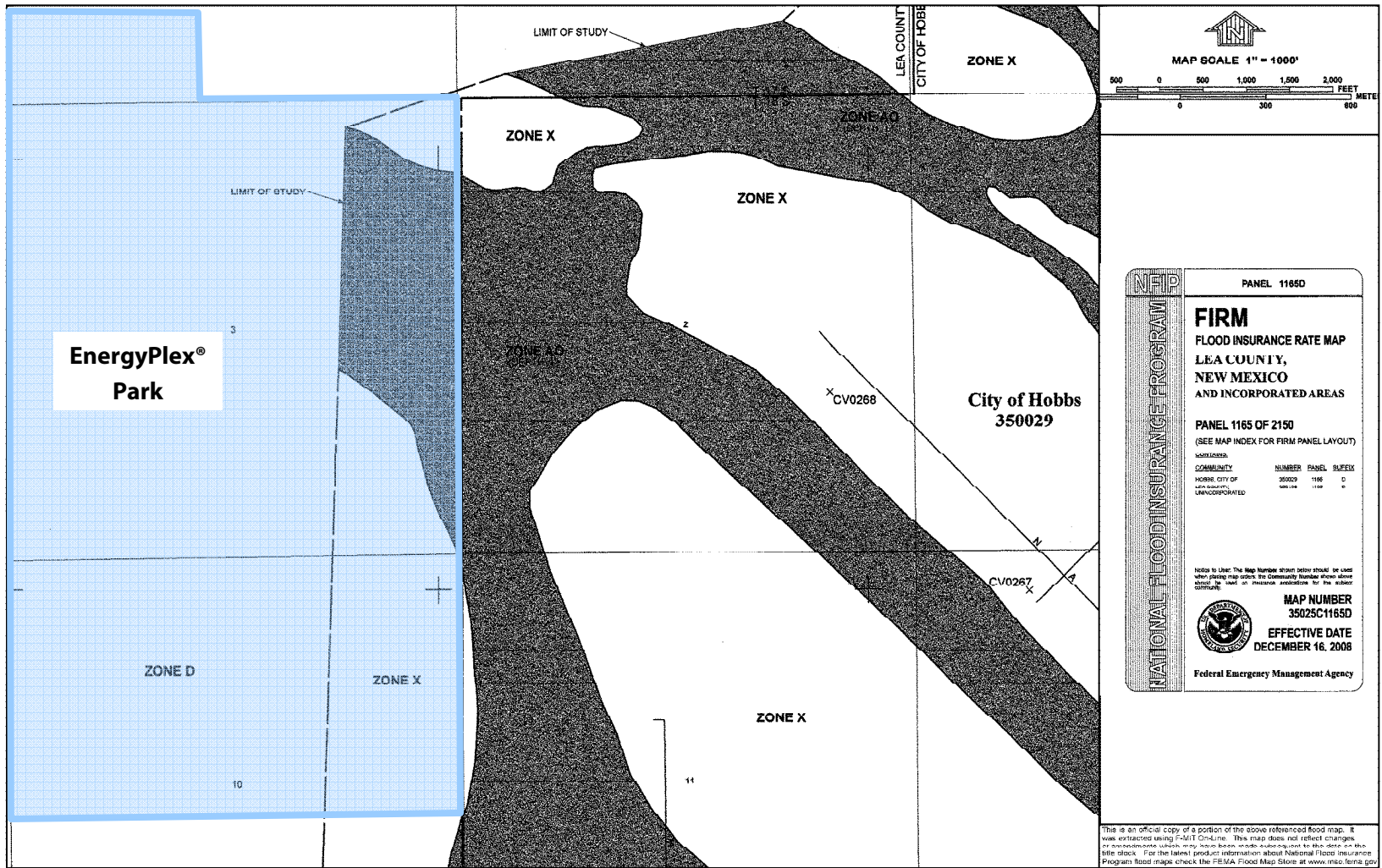
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APPENDIX B – FEMA FIRM

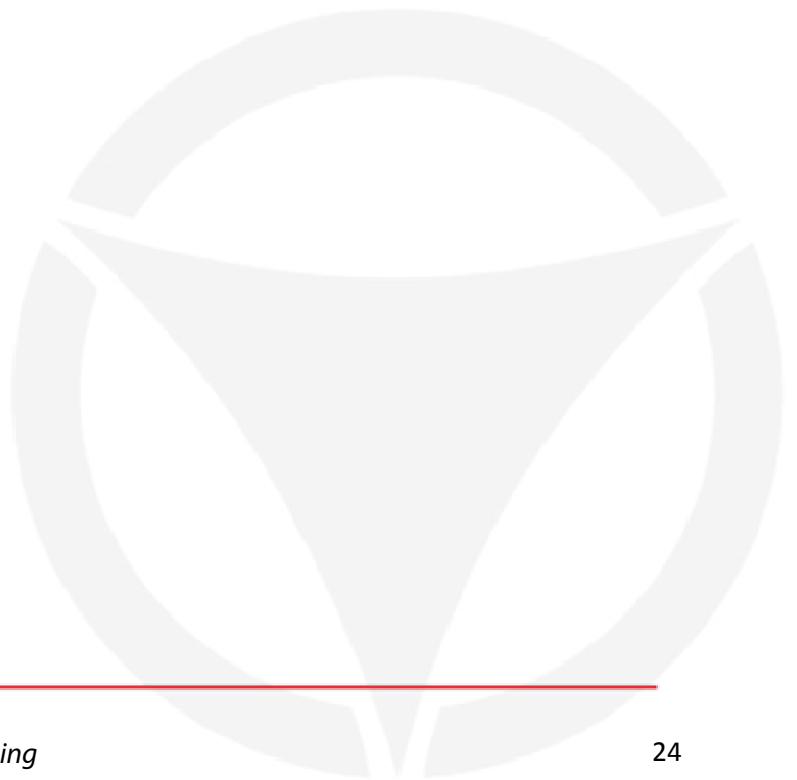


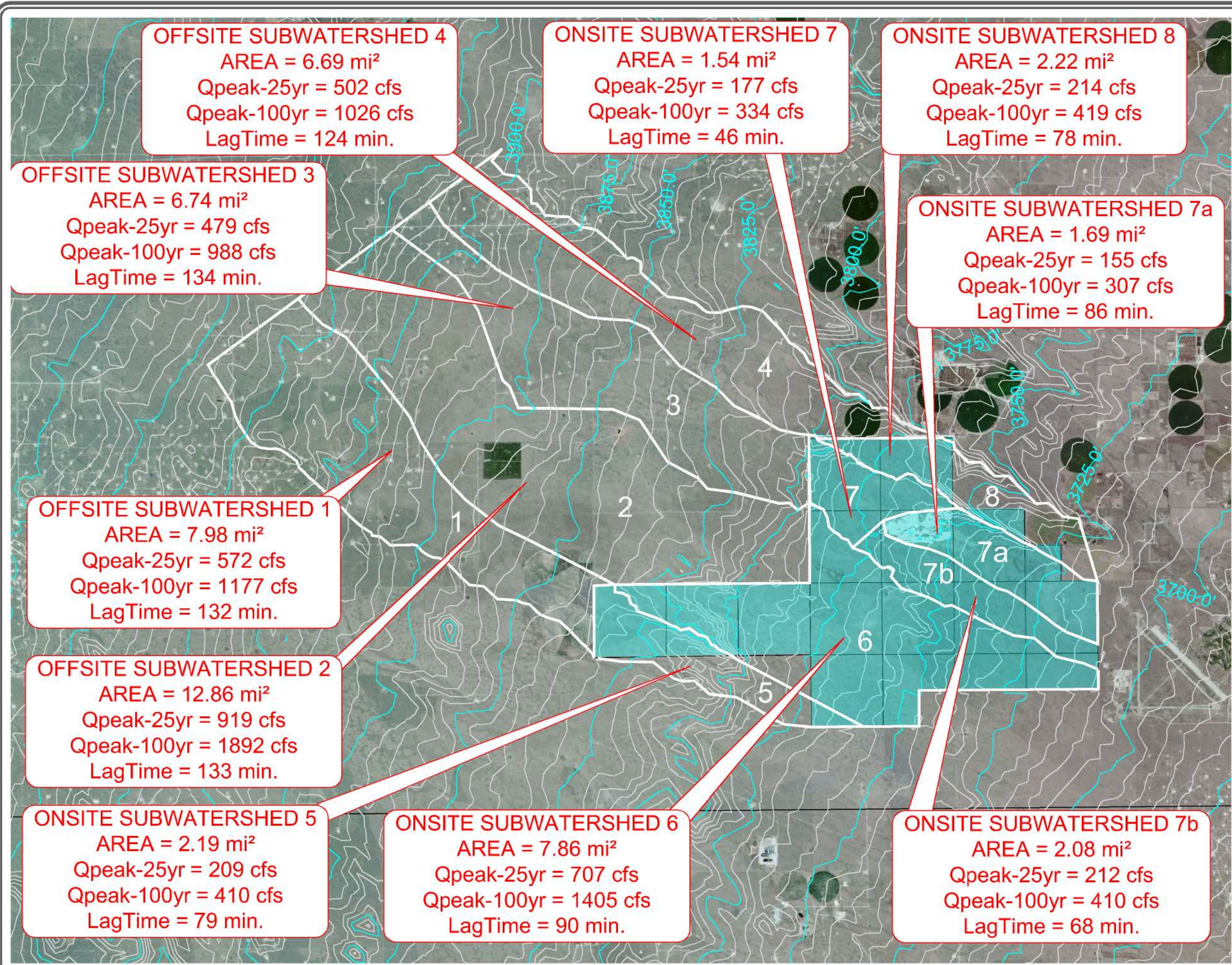






APPENDIX C – OFFSITE and ONSITE SUBWATERSHEDS LAYOUT





OFFSITE SUBWATERSHED 4
 AREA = 6.69 mi²
 Q_{peak-25yr} = 502 cfs
 Q_{peak-100yr} = 1026 cfs
 LagTime = 124 min.

ONSITE SUBWATERSHED 7
 AREA = 1.54 mi²
 Q_{peak-25yr} = 177 cfs
 Q_{peak-100yr} = 334 cfs
 LagTime = 46 min.

ONSITE SUBWATERSHED 8
 AREA = 2.22 mi²
 Q_{peak-25yr} = 214 cfs
 Q_{peak-100yr} = 419 cfs
 LagTime = 78 min.

OFFSITE SUBWATERSHED 3
 AREA = 6.74 mi²
 Q_{peak-25yr} = 479 cfs
 Q_{peak-100yr} = 988 cfs
 LagTime = 134 min.

ONSITE SUBWATERSHED 7a
 AREA = 1.69 mi²
 Q_{peak-25yr} = 155 cfs
 Q_{peak-100yr} = 307 cfs
 LagTime = 86 min.

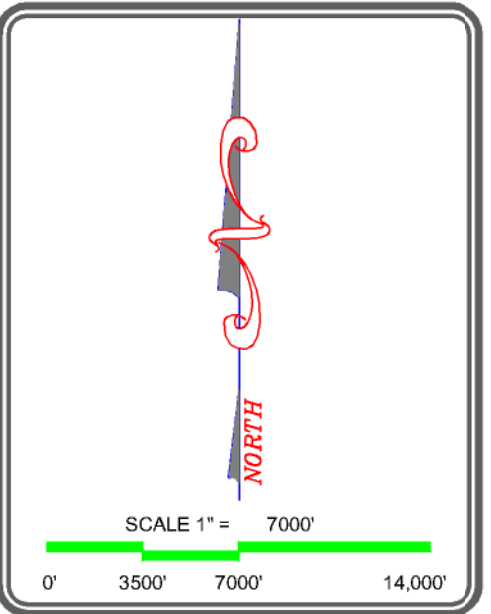
OFFSITE SUBWATERSHED 1
 AREA = 7.98 mi²
 Q_{peak-25yr} = 572 cfs
 Q_{peak-100yr} = 1177 cfs
 LagTime = 132 min.

OFFSITE SUBWATERSHED 2
 AREA = 12.86 mi²
 Q_{peak-25yr} = 919 cfs
 Q_{peak-100yr} = 1892 cfs
 LagTime = 133 min.

ONSITE SUBWATERSHED 5
 AREA = 2.19 mi²
 Q_{peak-25yr} = 209 cfs
 Q_{peak-100yr} = 410 cfs
 LagTime = 79 min.

ONSITE SUBWATERSHED 6
 AREA = 7.86 mi²
 Q_{peak-25yr} = 707 cfs
 Q_{peak-100yr} = 1405 cfs
 LagTime = 90 min.

ONSITE SUBWATERSHED 7b
 AREA = 2.08 mi²
 Q_{peak-25yr} = 212 cfs
 Q_{peak-100yr} = 410 cfs
 LagTime = 68 min.



PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX C
 OFFSITE AND ONSITE
 SUBWATERSHEDS LAYOUT

ENERGYPLEX PARK

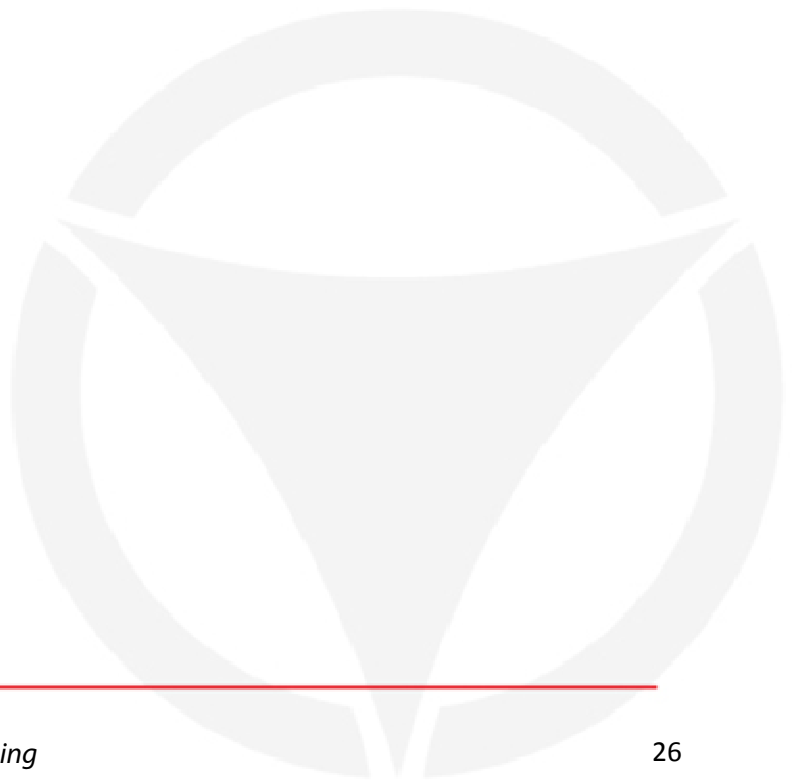
LEA COUNTY, NM

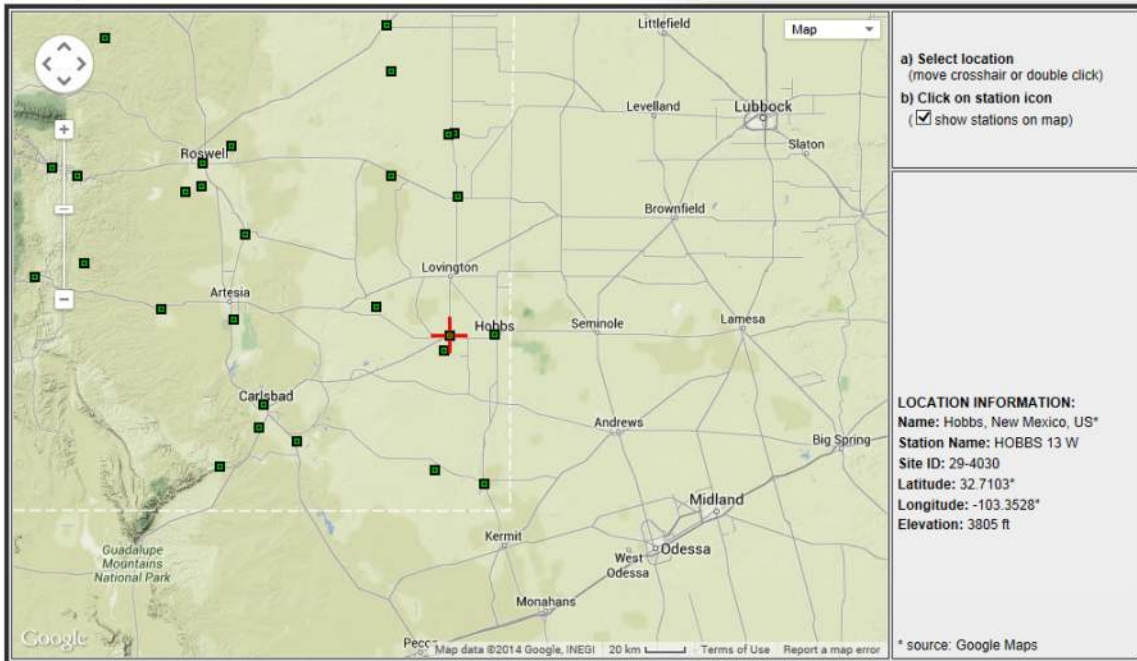
PETTIGREW & ASSOCIATES PA
 ENGINEERING | SURVEYING | TESTING
 DEFINING QUALITY SINCE 1965
 100 E. Navajo Drive Suite 100 Hobbs New Mexico 88240
 T 575 393 9827 F 575 393 1543
 Pettigrew.us

PROJECT NUMBER: 2013.1355 SHEET: CF-002



APPENDIX D –NOAA POINT PRECIPITATION FREQUENCY ESTIMATES





PDS-based precipitation frequency estimates with 90% confidence intervals (in inches)¹

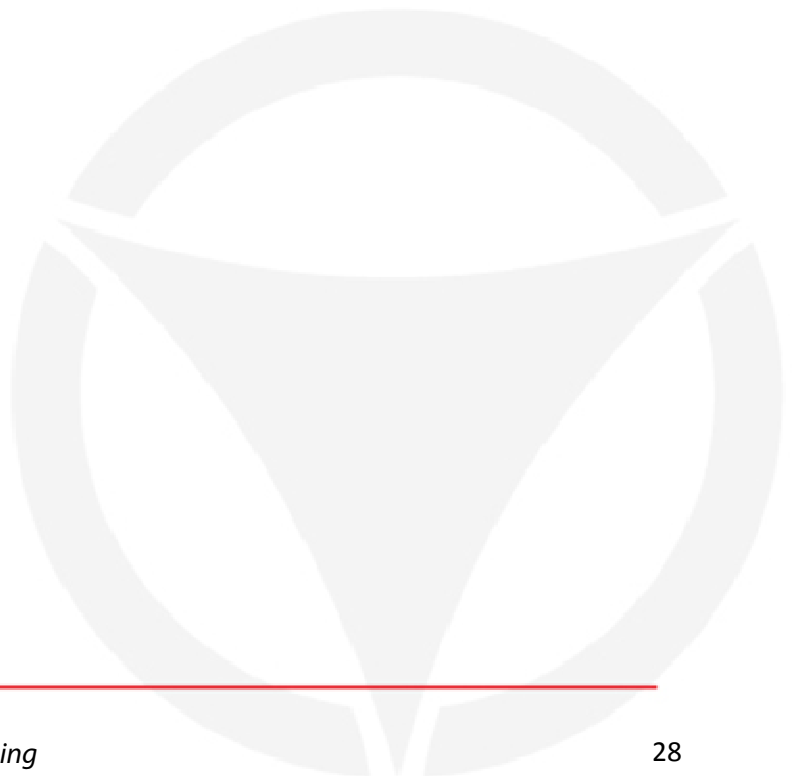
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.338 (0.303-0.377)	0.436 (0.391-0.485)	0.581 (0.520-0.646)	0.693 (0.618-0.769)	0.844 (0.749-0.935)	0.960 (0.847-1.07)	1.08 (0.952-1.20)	1.21 (1.06-1.34)	1.38 (1.20-1.53)	1.52 (1.30-1.69)
10-min	0.514 (0.461-0.573)	0.664 (0.594-0.738)	0.884 (0.791-0.983)	1.06 (0.941-1.17)	1.28 (1.14-1.42)	1.46 (1.29-1.62)	1.65 (1.45-1.83)	1.84 (1.61-2.04)	2.10 (1.82-2.33)	2.31 (1.98-2.57)
15-min	0.637 (0.572-0.710)	0.822 (0.737-0.914)	1.10 (0.981-1.22)	1.31 (1.17-1.45)	1.59 (1.41-1.77)	1.81 (1.60-2.01)	2.04 (1.80-2.26)	2.28 (1.99-2.53)	2.61 (2.26-2.89)	2.86 (2.45-3.18)
30-min	0.858 (0.770-0.957)	1.11 (0.992-1.23)	1.48 (1.32-1.64)	1.76 (1.57-1.96)	2.14 (1.90-2.38)	2.44 (2.15-2.71)	2.75 (2.42-3.05)	3.07 (2.68-3.41)	3.51 (3.04-3.89)	3.86 (3.31-4.29)
60-min	1.06 (0.953-1.18)	1.37 (1.23-1.52)	1.83 (1.63-2.03)	2.18 (1.94-2.42)	2.65 (2.36-2.94)	3.02 (2.66-3.35)	3.41 (2.99-3.77)	3.80 (3.32-4.22)	4.35 (3.76-4.82)	4.77 (4.09-5.31)
2-hr	1.27 (1.13-1.43)	1.64 (1.46-1.85)	2.20 (1.95-2.48)	2.65 (2.34-2.97)	3.26 (2.86-3.65)	3.74 (3.26-4.19)	4.26 (3.69-4.75)	4.80 (4.12-5.35)	5.54 (4.70-6.19)	6.14 (5.17-6.88)
3-hr	1.37 (1.22-1.54)	1.77 (1.58-1.99)	2.36 (2.10-2.64)	2.83 (2.51-3.16)	3.49 (3.08-3.89)	4.01 (3.52-4.46)	4.57 (3.99-5.09)	5.15 (4.45-5.75)	5.98 (5.09-6.67)	6.64 (5.60-7.42)
6-hr	1.62 (1.44-1.81)	2.07 (1.85-2.33)	2.73 (2.43-3.06)	3.27 (2.90-3.66)	4.03 (3.55-4.50)	4.64 (4.06-5.18)	5.30 (4.60-5.89)	5.98 (5.15-6.66)	6.95 (5.92-7.74)	7.74 (6.53-8.64)
12-hr	1.79 (1.60-2.02)	2.29 (2.04-2.59)	3.02 (2.68-3.40)	3.60 (3.18-4.06)	4.43 (3.89-4.97)	5.10 (4.44-5.71)	5.82 (5.03-6.50)	6.56 (5.62-7.33)	7.63 (6.46-8.53)	8.49 (7.11-9.51)
24-hr	1.92 (1.75-2.10)	2.46 (2.25-2.70)	3.29 (3.00-3.61)	3.95 (3.58-4.33)	4.88 (4.40-5.35)	5.63 (5.06-6.17)	6.43 (5.73-7.03)	7.27 (6.42-7.96)	8.47 (7.38-9.30)	9.43 (8.13-10.4)
2-day	2.12 (1.92-2.34)	2.73 (2.47-3.02)	3.67 (3.32-4.05)	4.45 (4.01-4.89)	5.55 (4.96-6.10)	6.47 (5.73-7.09)	7.46 (6.56-8.18)	8.52 (7.42-9.35)	10.1 (8.63-11.1)	11.3 (9.59-12.5)
3-day	2.25 (2.04-2.50)	2.90 (2.62-3.22)	3.91 (3.53-4.32)	4.74 (4.26-5.23)	5.93 (5.29-6.53)	6.91 (6.11-7.60)	7.97 (7.00-8.78)	9.11 (7.92-10.0)	10.8 (9.21-11.9)	12.1 (10.3-13.4)
4-day	2.38 (2.15-2.65)	3.07 (2.78-3.42)	4.15 (3.74-4.60)	5.04 (4.52-5.58)	6.30 (5.62-6.96)	7.35 (6.49-8.12)	8.49 (7.44-9.38)	9.71 (8.42-10.7)	11.5 (9.79-12.7)	12.9 (10.9-14.4)
7-day	2.68 (2.42-2.98)	3.46 (3.12-3.85)	4.65 (4.19-5.17)	5.61 (5.03-6.23)	6.96 (6.20-7.72)	8.05 (7.13-8.92)	9.23 (8.10-10.3)	10.5 (9.12-11.6)	12.2 (10.5-13.6)	13.7 (11.6-15.3)
10-day	2.95 (2.67-3.25)	3.80 (3.45-4.19)	5.10 (4.62-5.61)	6.13 (5.54-6.74)	7.61 (6.82-8.36)	8.80 (7.84-9.65)	10.1 (8.91-11.1)	11.4 (10.0-12.6)	13.3 (11.5-14.7)	14.9 (12.7-16.5)
20-day	3.66 (3.34-3.99)	4.68 (4.28-5.12)	6.13 (5.59-6.68)	7.25 (6.59-7.89)	8.76 (7.92-9.53)	9.93 (8.95-10.8)	11.1 (9.97-12.1)	12.4 (11.0-13.5)	14.1 (12.4-15.4)	15.4 (13.5-16.9)
30-day	4.25 (3.88-4.63)	5.43 (4.96-5.92)	7.01 (6.39-7.64)	8.20 (7.47-8.91)	9.78 (8.87-10.6)	11.0 (9.92-12.0)	12.2 (11.0-13.3)	13.4 (12.0-14.6)	15.0 (13.4-16.4)	16.3 (14.4-17.9)
45-day	5.05 (4.62-5.48)	6.43 (5.90-6.99)	8.29 (7.58-9.01)	9.69 (8.85-10.5)	11.6 (10.5-12.5)	13.0 (11.8-14.1)	14.4 (13.0-15.7)	15.8 (14.2-17.3)	17.7 (15.8-19.4)	19.1 (16.9-21.1)
60-day	5.79 (5.33-6.27)	7.37 (6.79-7.96)	9.39 (8.64-10.2)	10.9 (9.99-11.8)	12.8 (11.7-13.9)	14.2 (13.0-15.4)	15.6 (14.2-16.9)	17.0 (15.4-18.5)	18.8 (16.9-20.5)	20.1 (17.9-22.0)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

Estimates from the table in csv format:



APPENDIX E – HEC-HMS OUTPUT



25-YEAR STORM SIMULATION

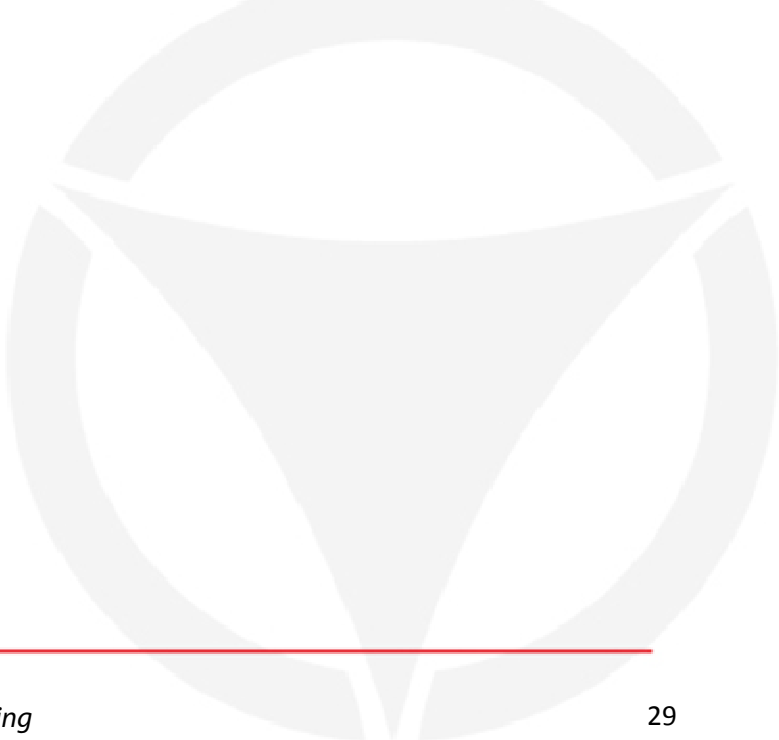
Global Summary Results for Run "25 year"

Project: EPP Model Simulation Run: 25 year

Start of Run: 10May2015, 00:00 Basin Model: EPP Basin
 End of Run: 11May2015, 12:00 Meteorologic Model: 25_year
 Compute Time: 15May2015, 18:41:56 Control Specifications: Timeframe

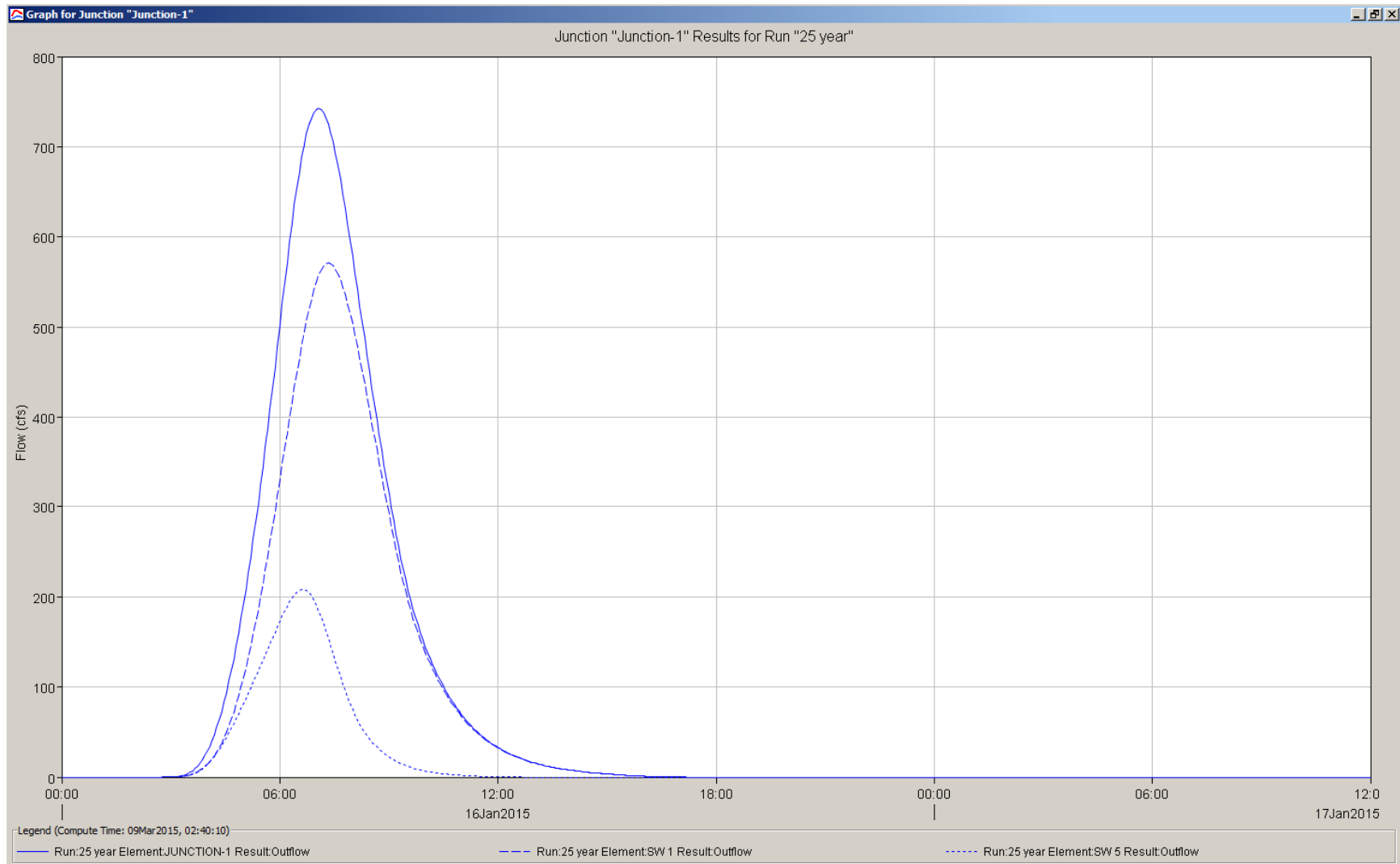
Show Elements:
 Volume Units: IN AC-FT
 Sorting:

Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Diversion-1	8.28	192.7	10May2015, 06:44	61.8
Junction-1	10.17	742.0	10May2015, 07:04	217.4
Junction-2	20.72	1567.2	10May2015, 07:00	443.0
Junction-3	8.28	552.1	10May2015, 06:44	177.0
Junction-4	8.91	686.4	10May2015, 06:56	190.5
Junction-5	1.69	154.8	10May2015, 06:44	36.1
Junction-6	10.36	401.9	10May2015, 06:32	106.3
Sink-1	0.00	359.4	10May2015, 06:44	115.2
SW 1	7.98	571.1	10May2015, 07:20	170.6
SW 2	12.86	918.1	10May2015, 07:20	275.0
SW 3	6.74	478.9	10May2015, 07:20	144.1
SW 4	6.69	501.2	10May2015, 07:12	143.0
SW 5	2.19	208.3	10May2015, 06:40	46.8
SW 6	7.86	706.2	10May2015, 06:44	168.1
SW 7	1.54	176.5	10May2015, 06:16	32.9
SW7a	1.69	154.8	10May2015, 06:44	36.1
SW7b	2.08	211.1	10May2015, 06:28	44.5
SW 8	2.22	213.2	10May2015, 06:36	47.5



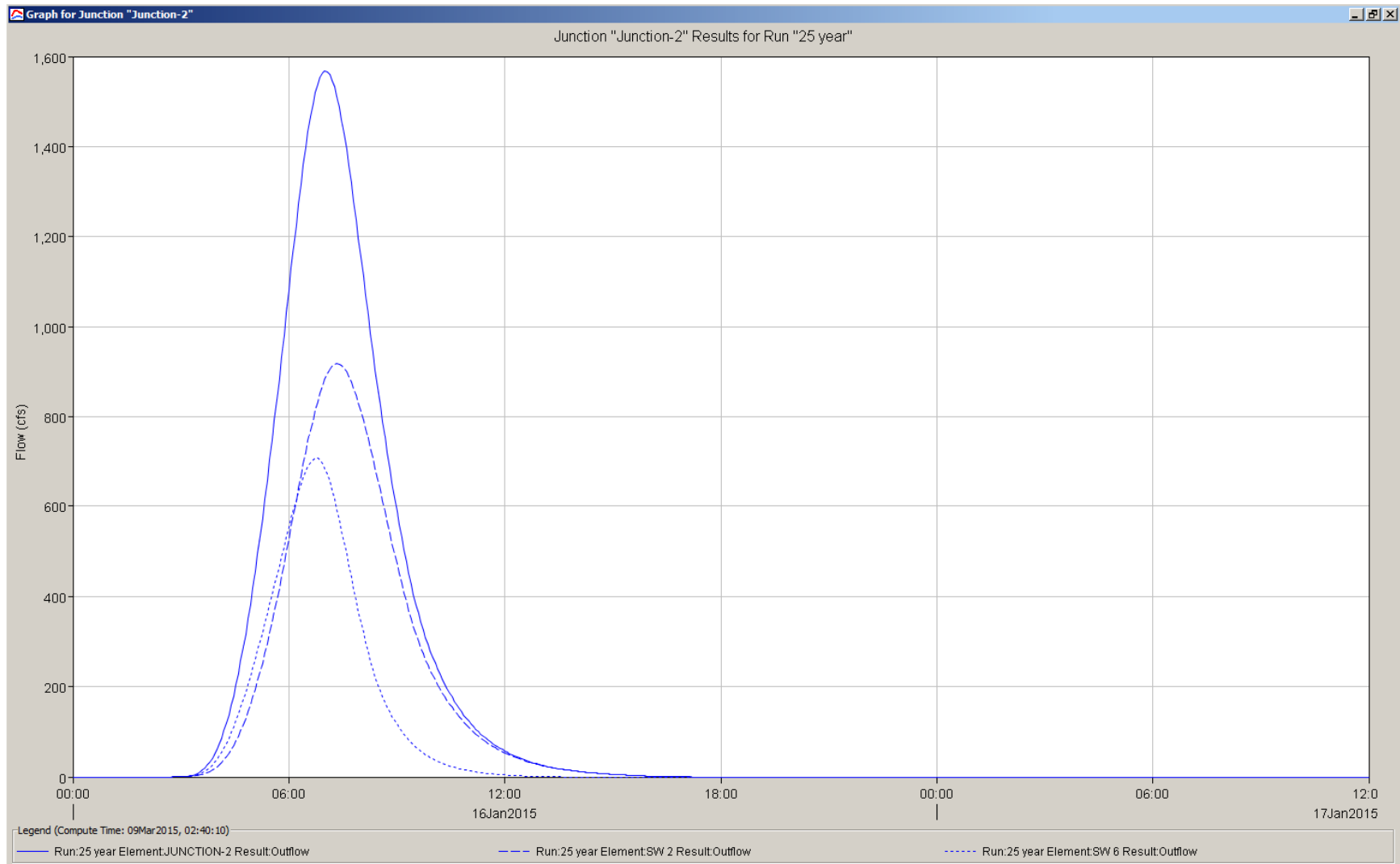


25-YEAR STORM JUNCTION 1



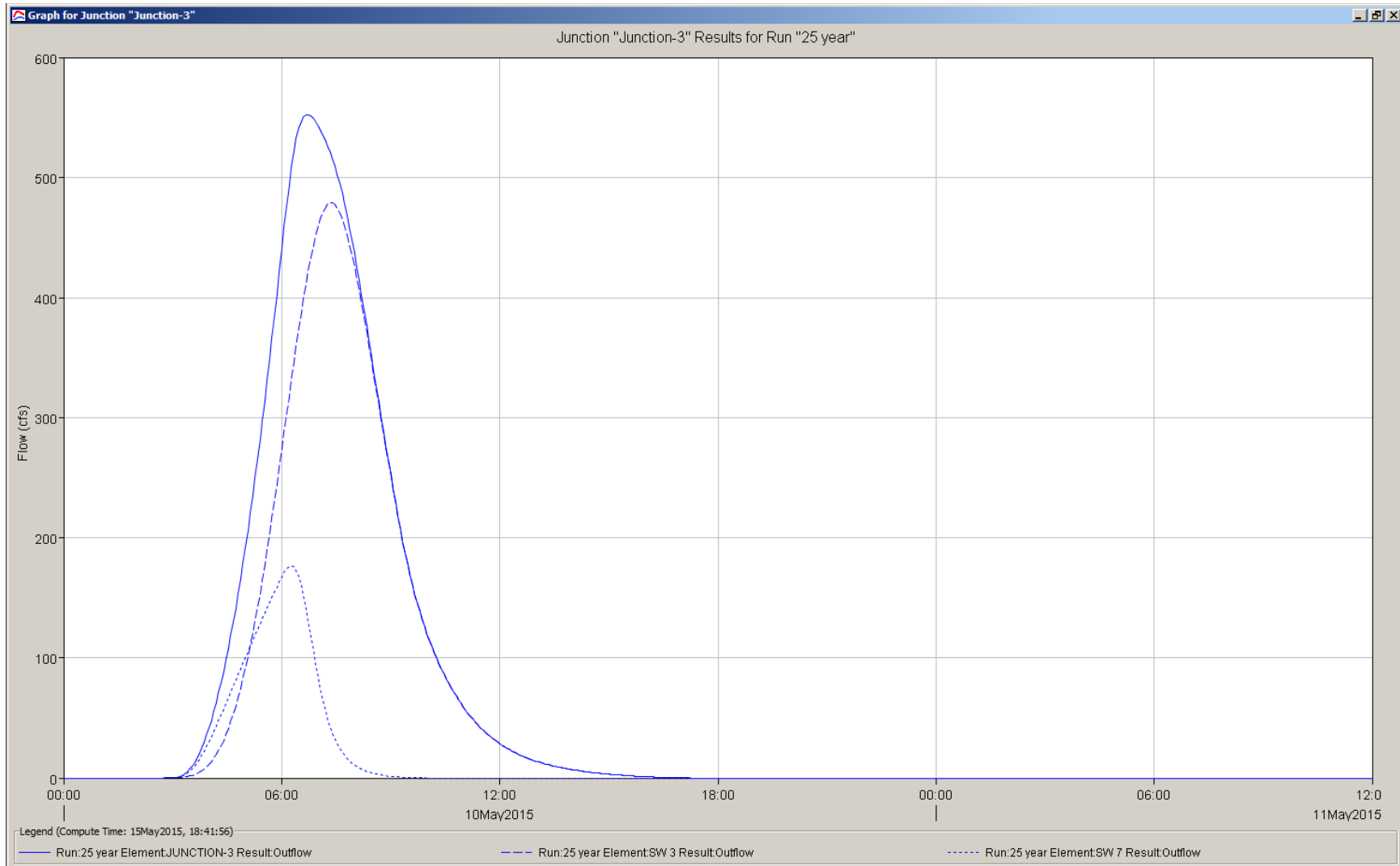


25-YEAR STORM JUNCTION 2



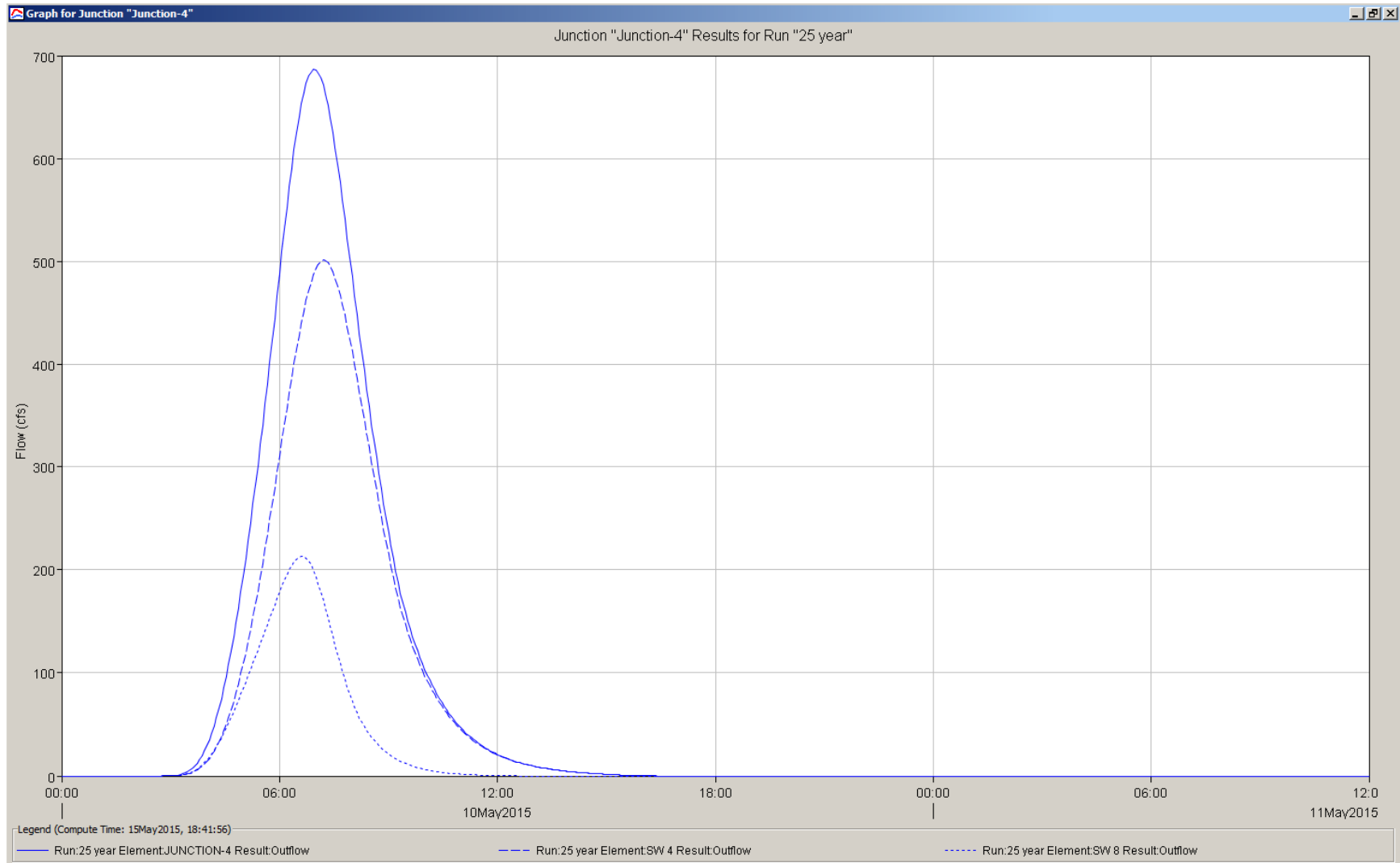


25-YEAR STORM JUNCTION 3



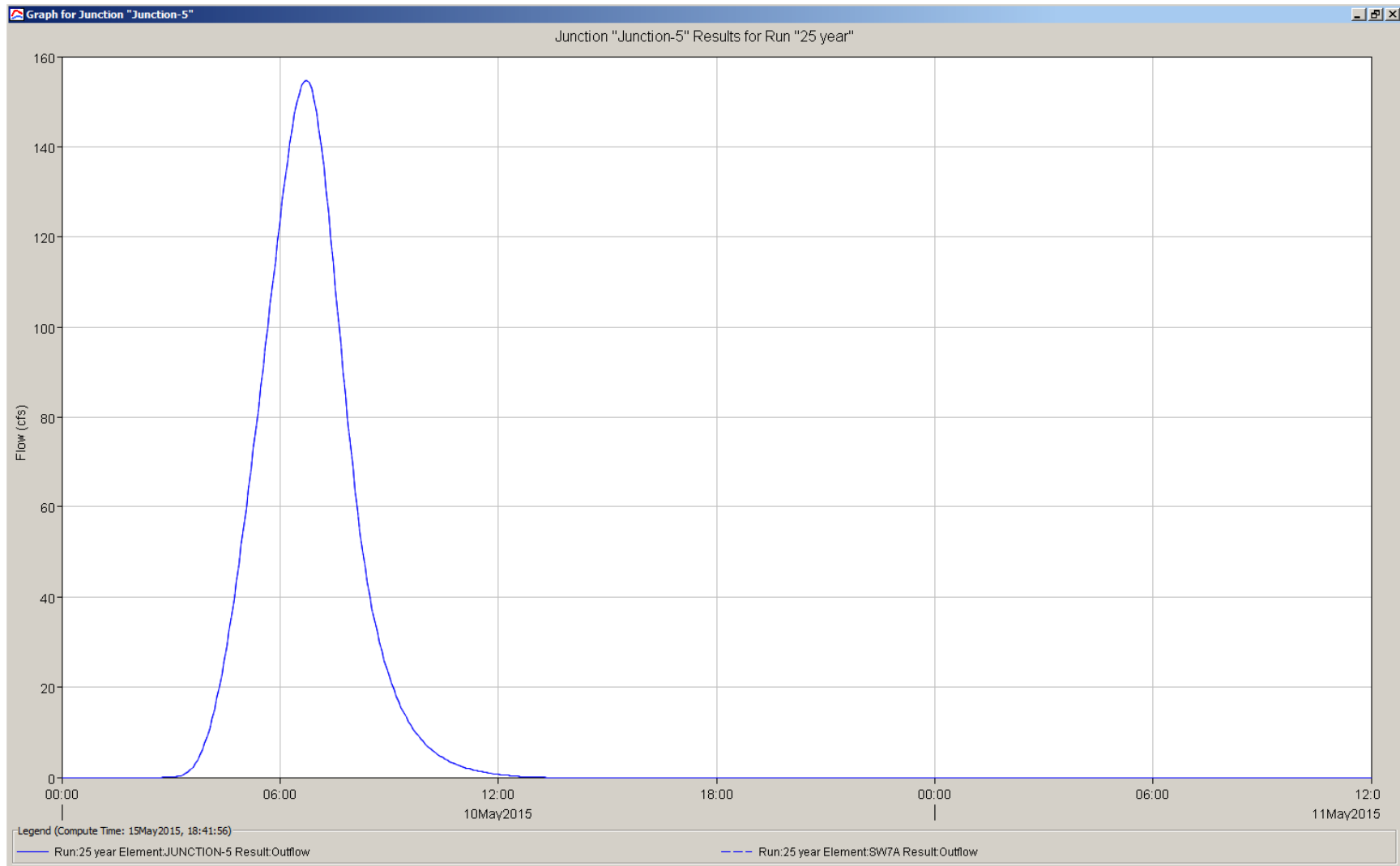


25-YEAR STORM JUNCTION 4



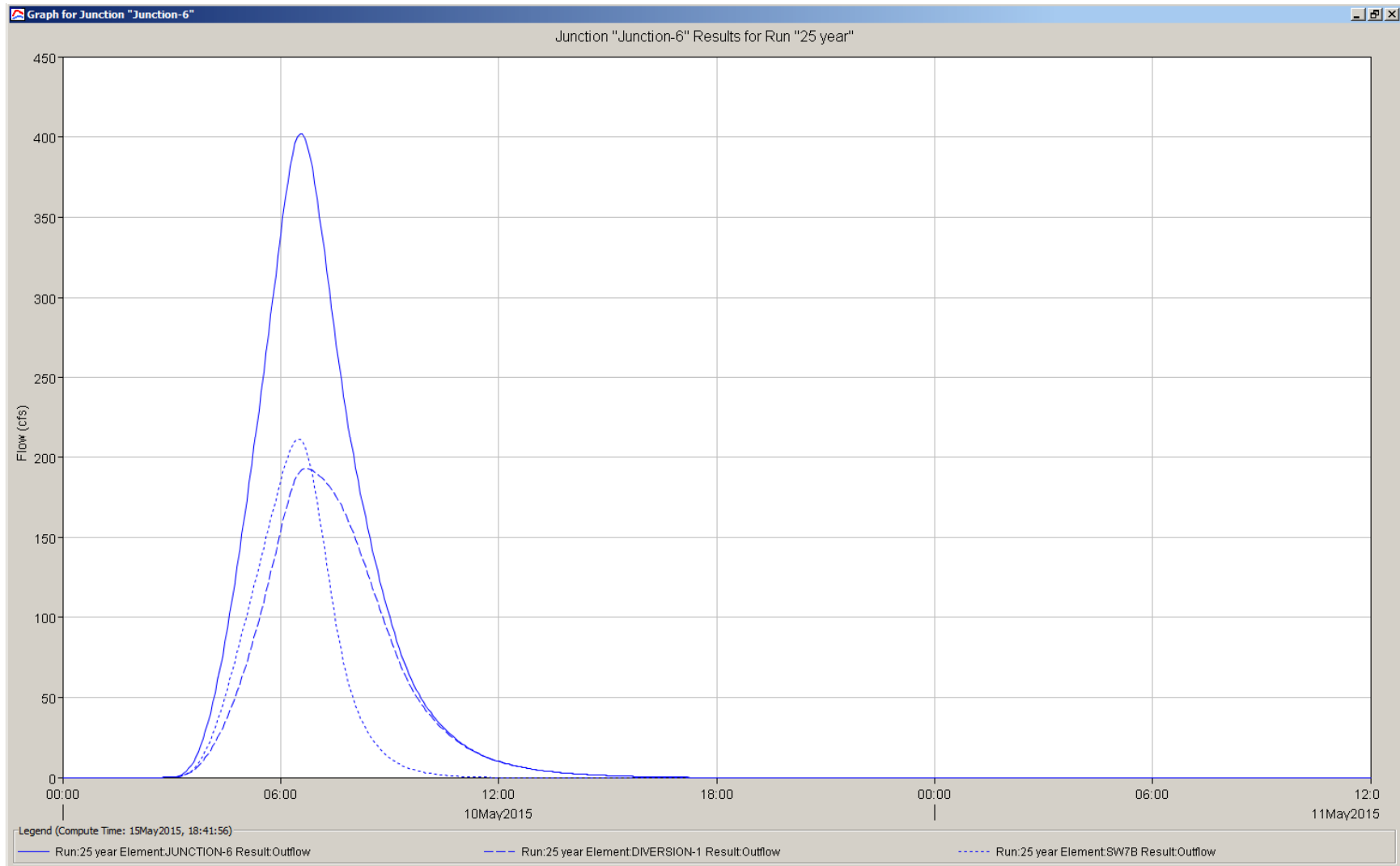


25-YEAR STORM JUNCTION 5



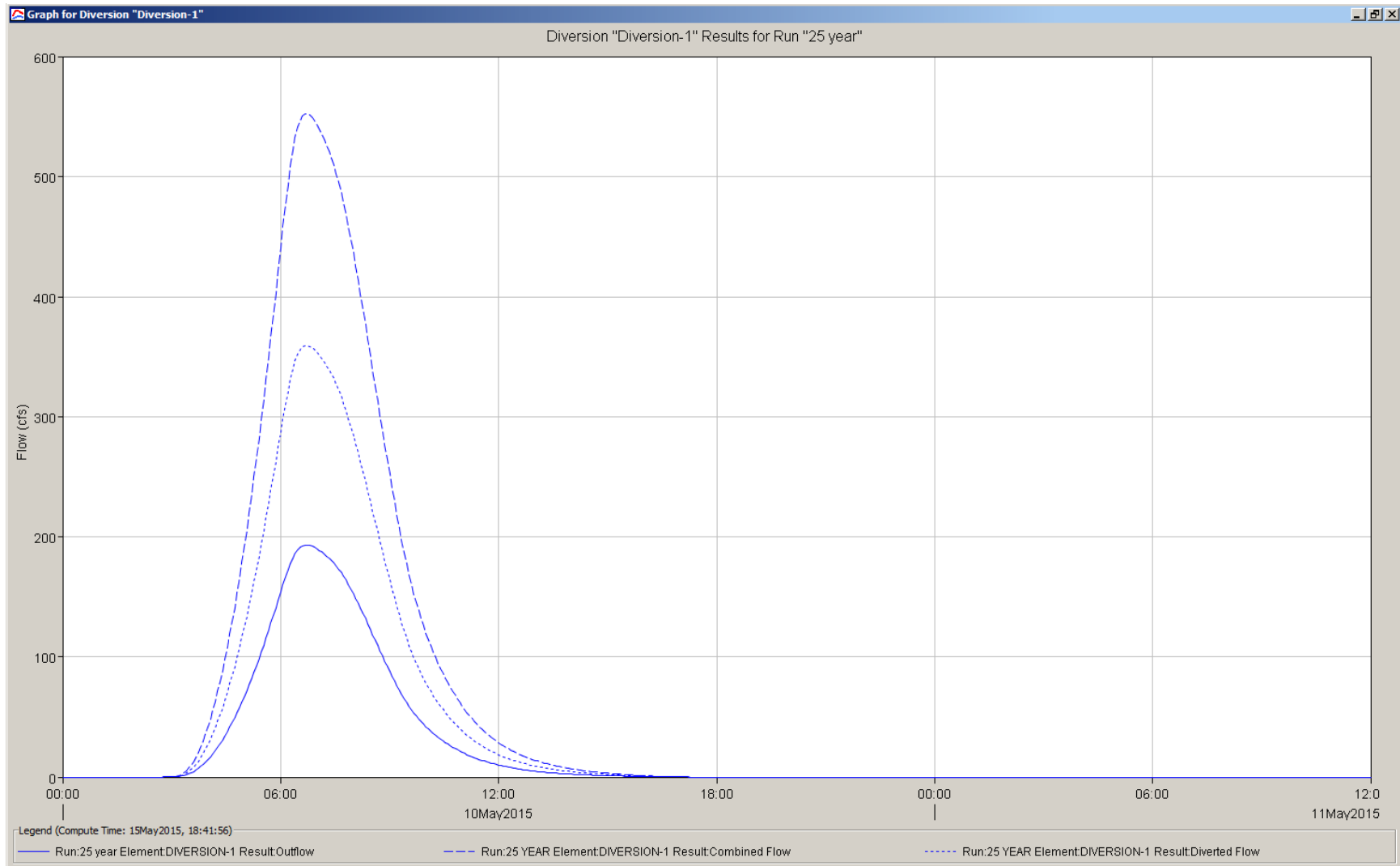


25-YEAR STORM JUNCTION 6



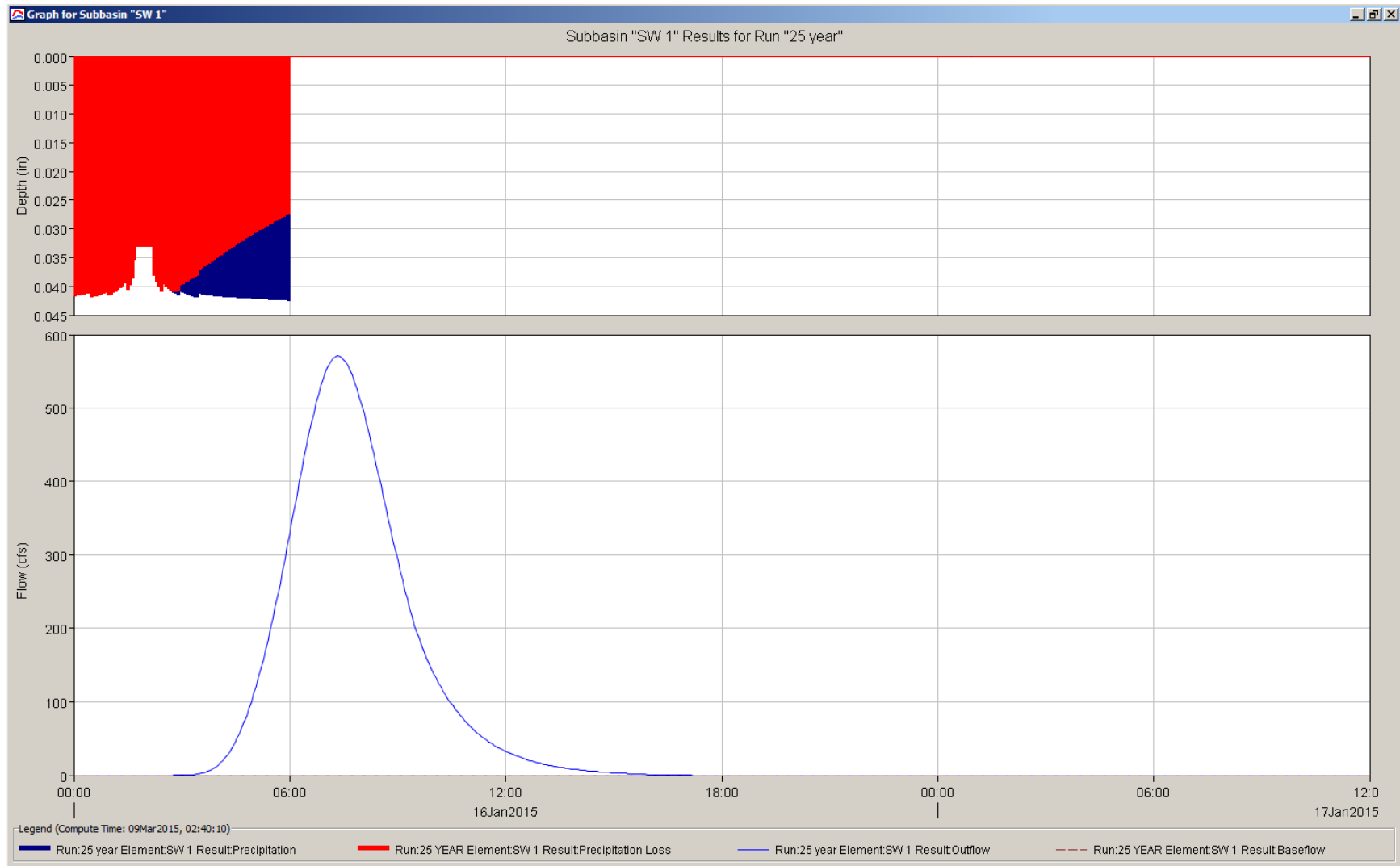


25-YEAR STORM DIVERSION 1



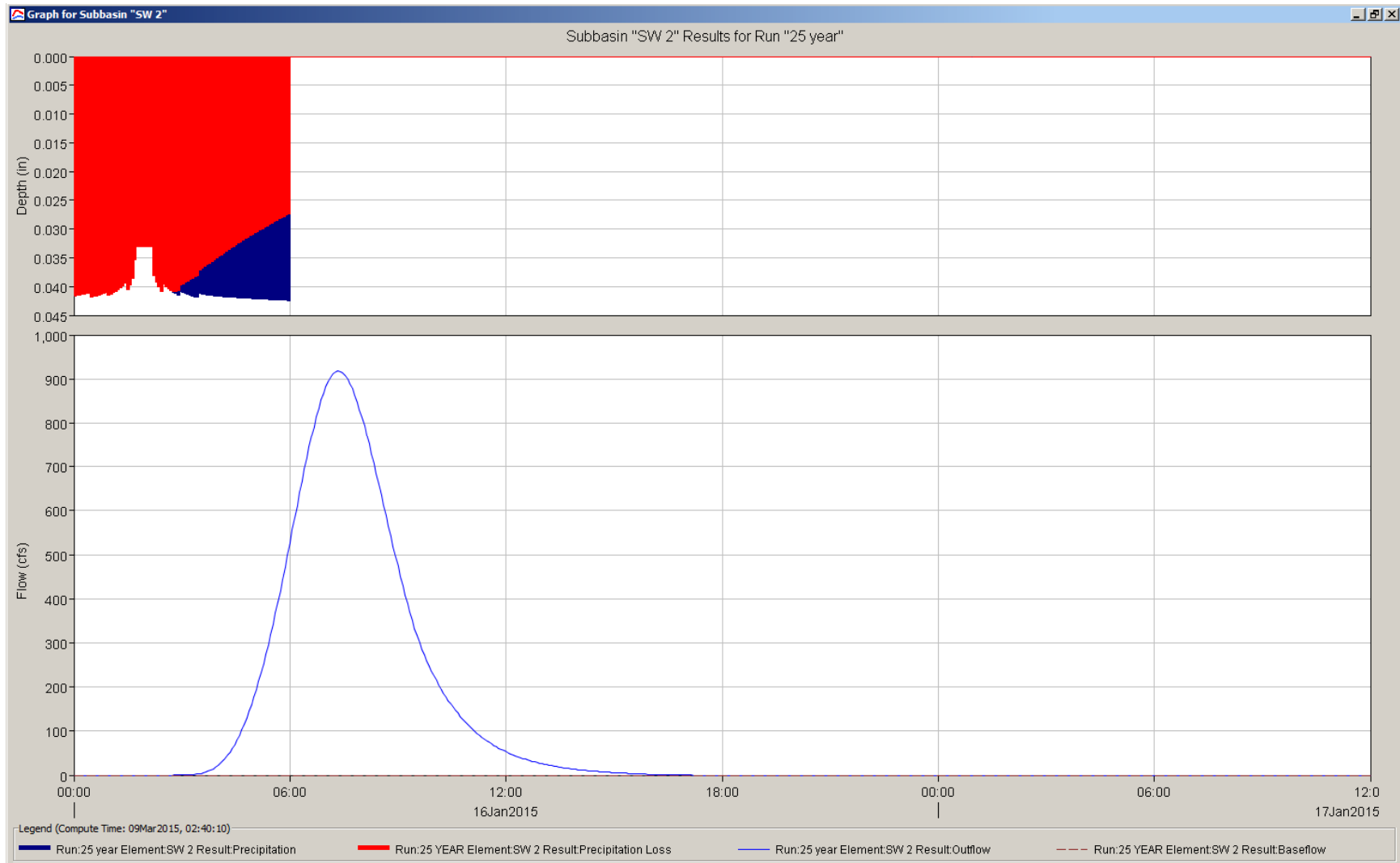


25-YEAR STORM OFFSITE SUBWATERSHED 1



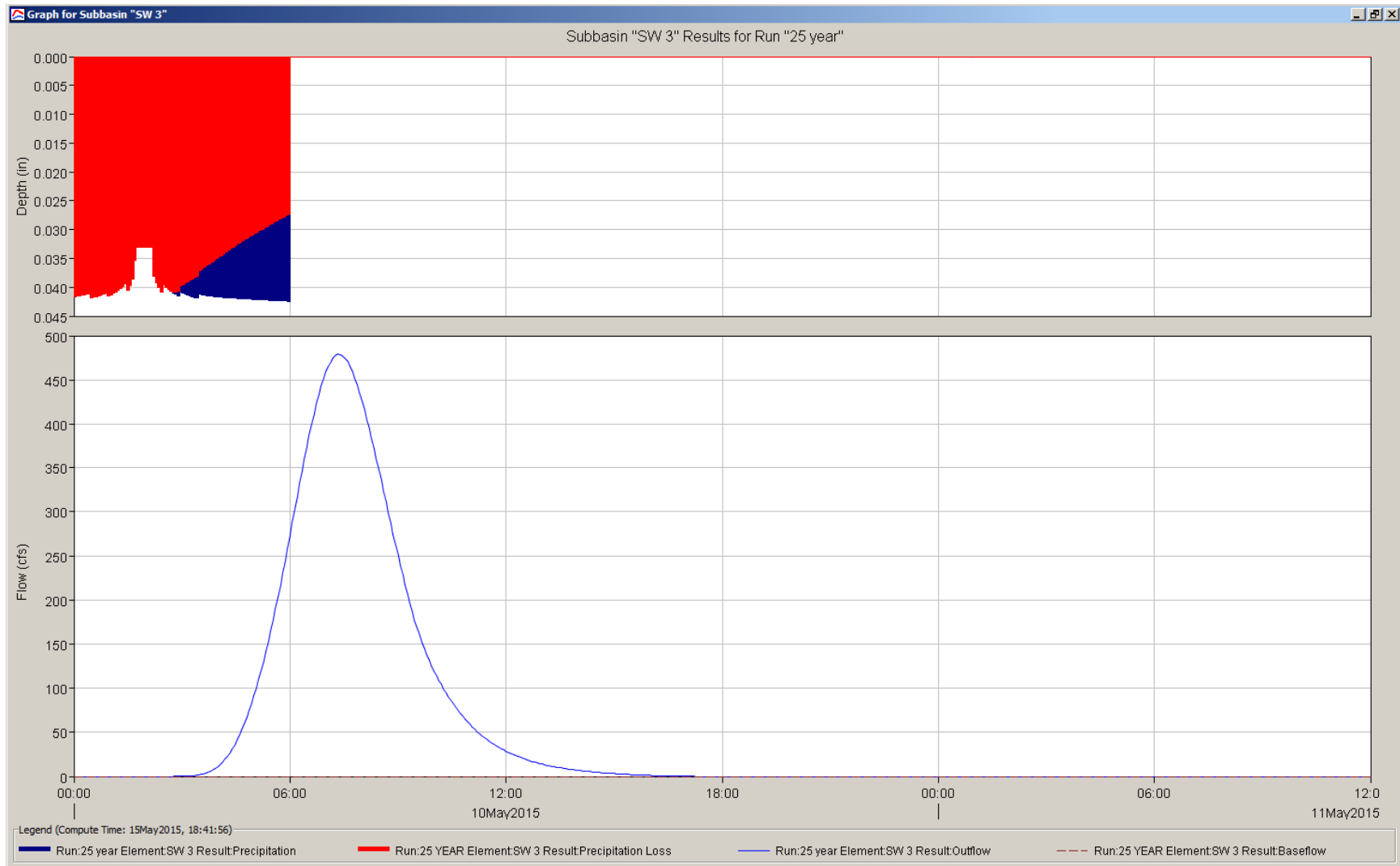


25-YEAR STORM OFFSITE SUBWATERSHED 2



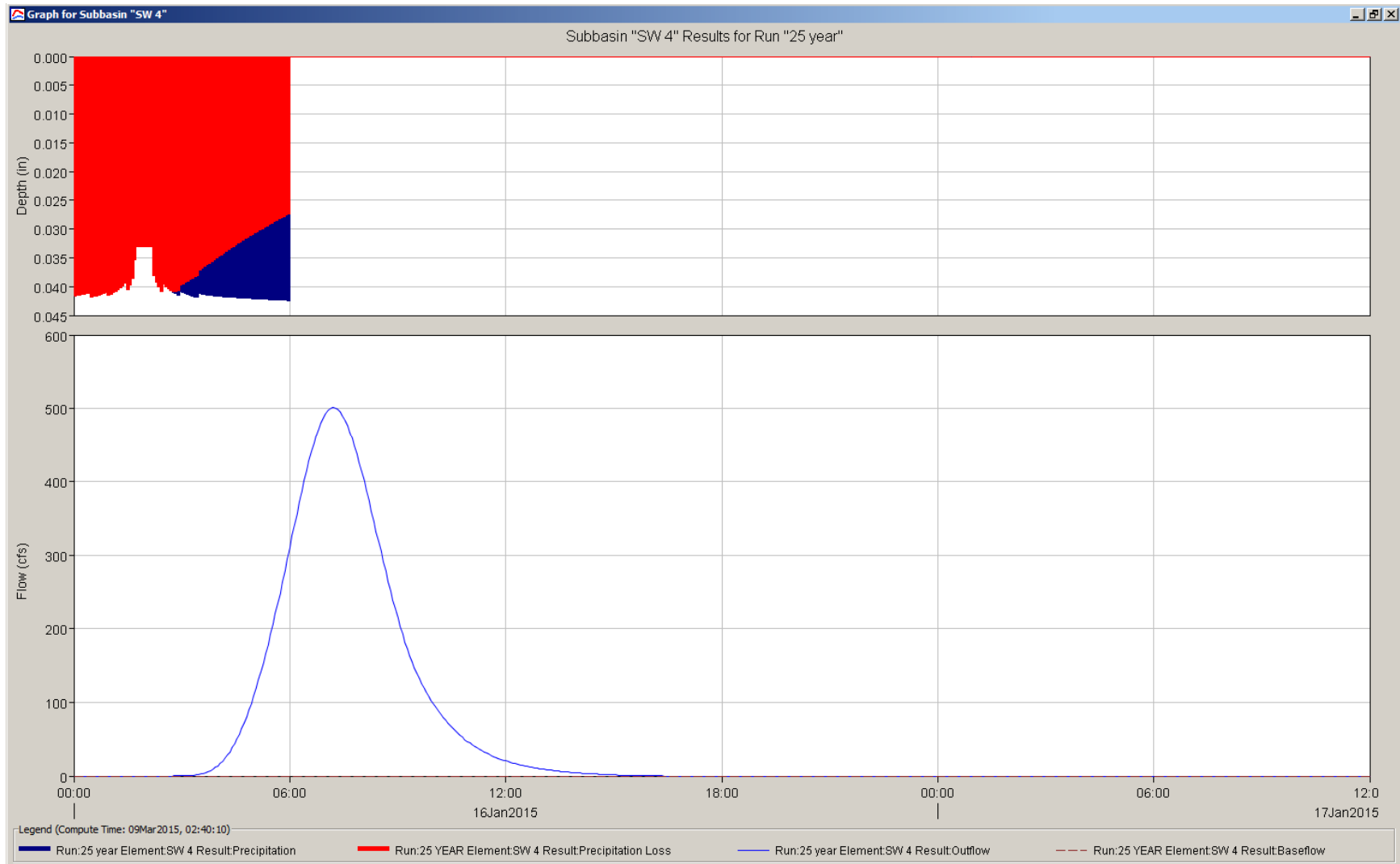


25-YEAR STORM OFFSITE SUBWATERSHED 3



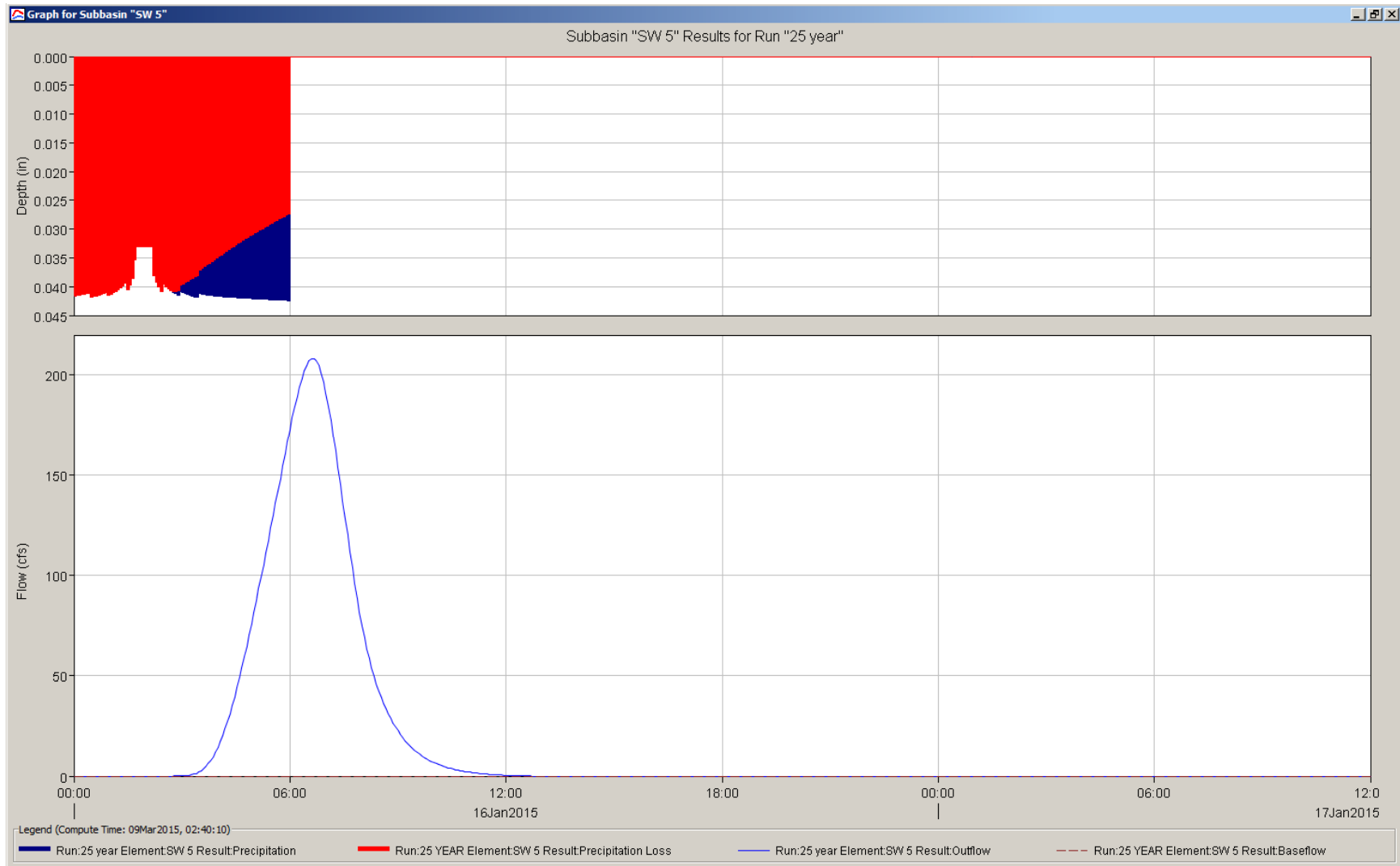


25-YEAR STORM OFFSITE SUBWATERSHED 4



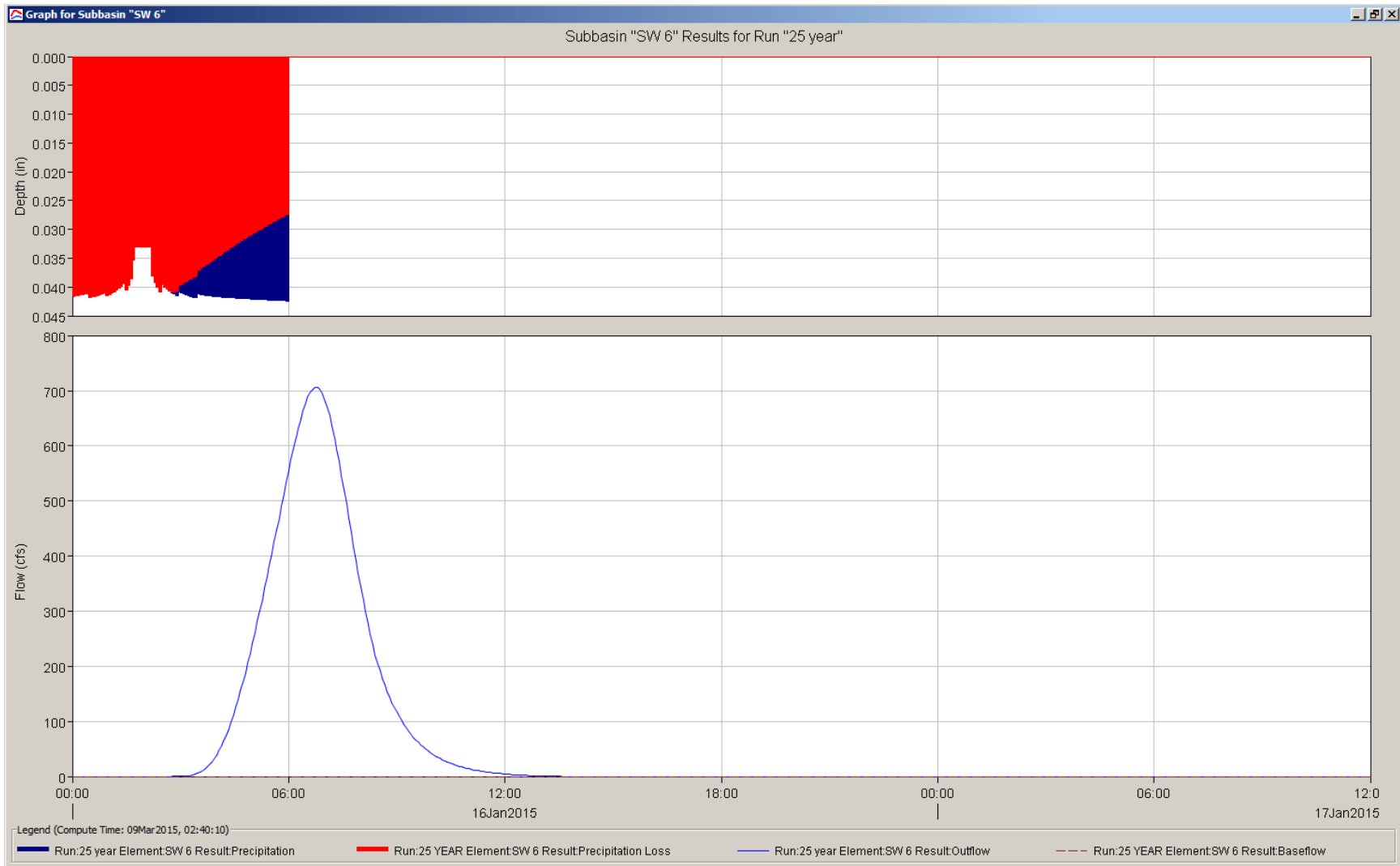


25-YEAR STORM ONSITE SUBWATERSHED 5



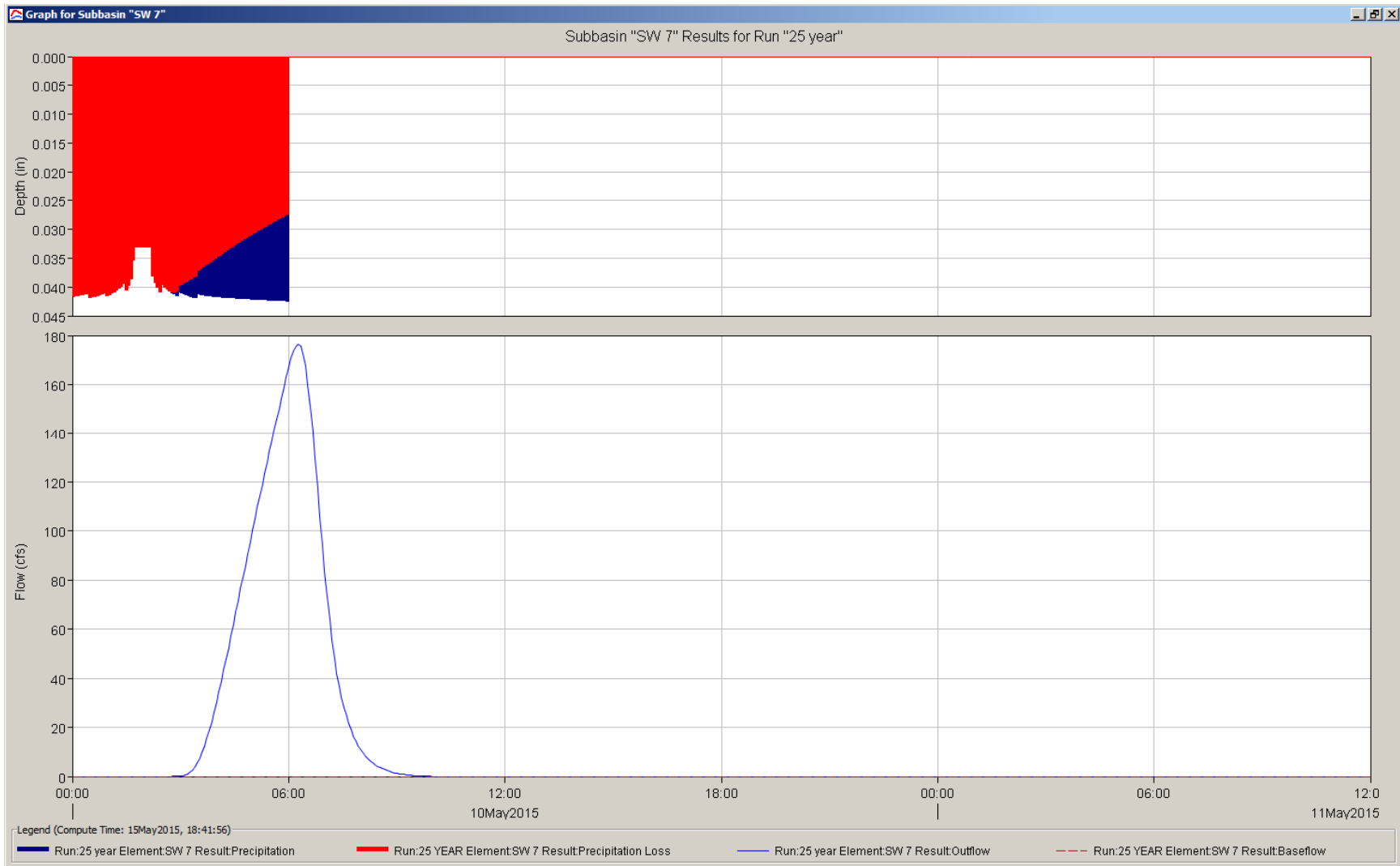


25-YEAR STORM ONSITE SUBWATERSHED 6



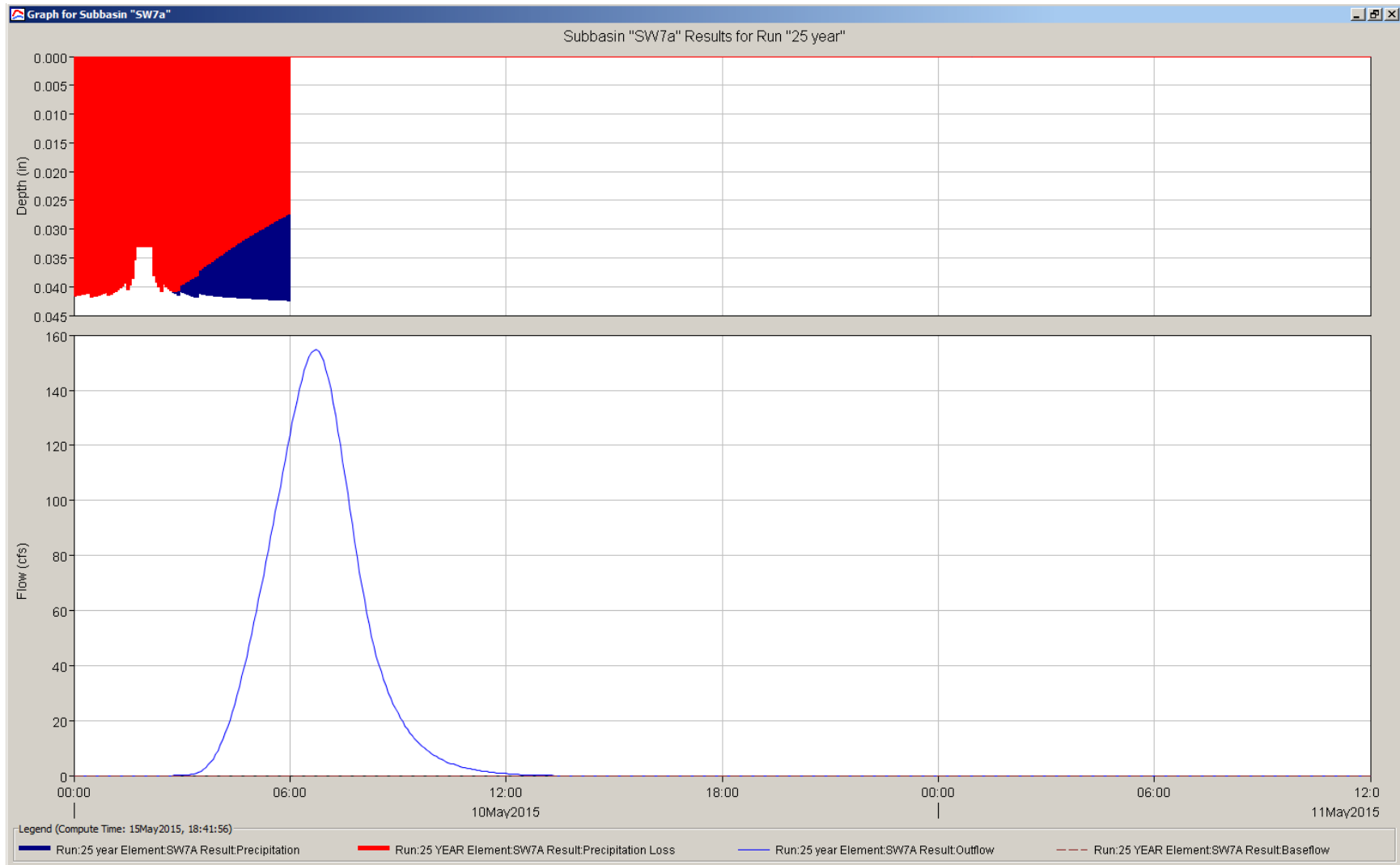


25-YEAR STORM ONSITE SUBWATERSHED 7



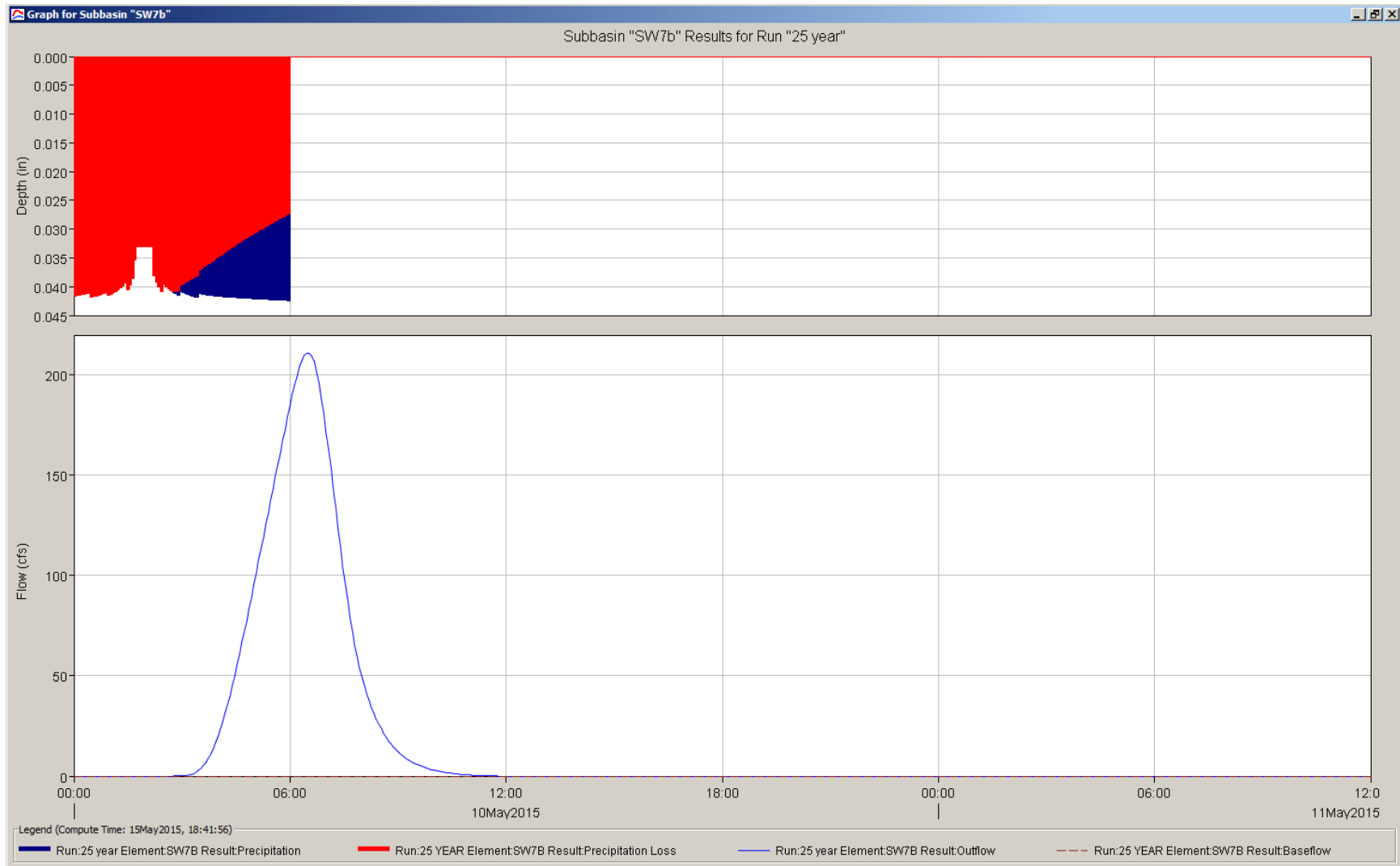


25-YEAR STORM ONSITE SUBWATERSHED 7a



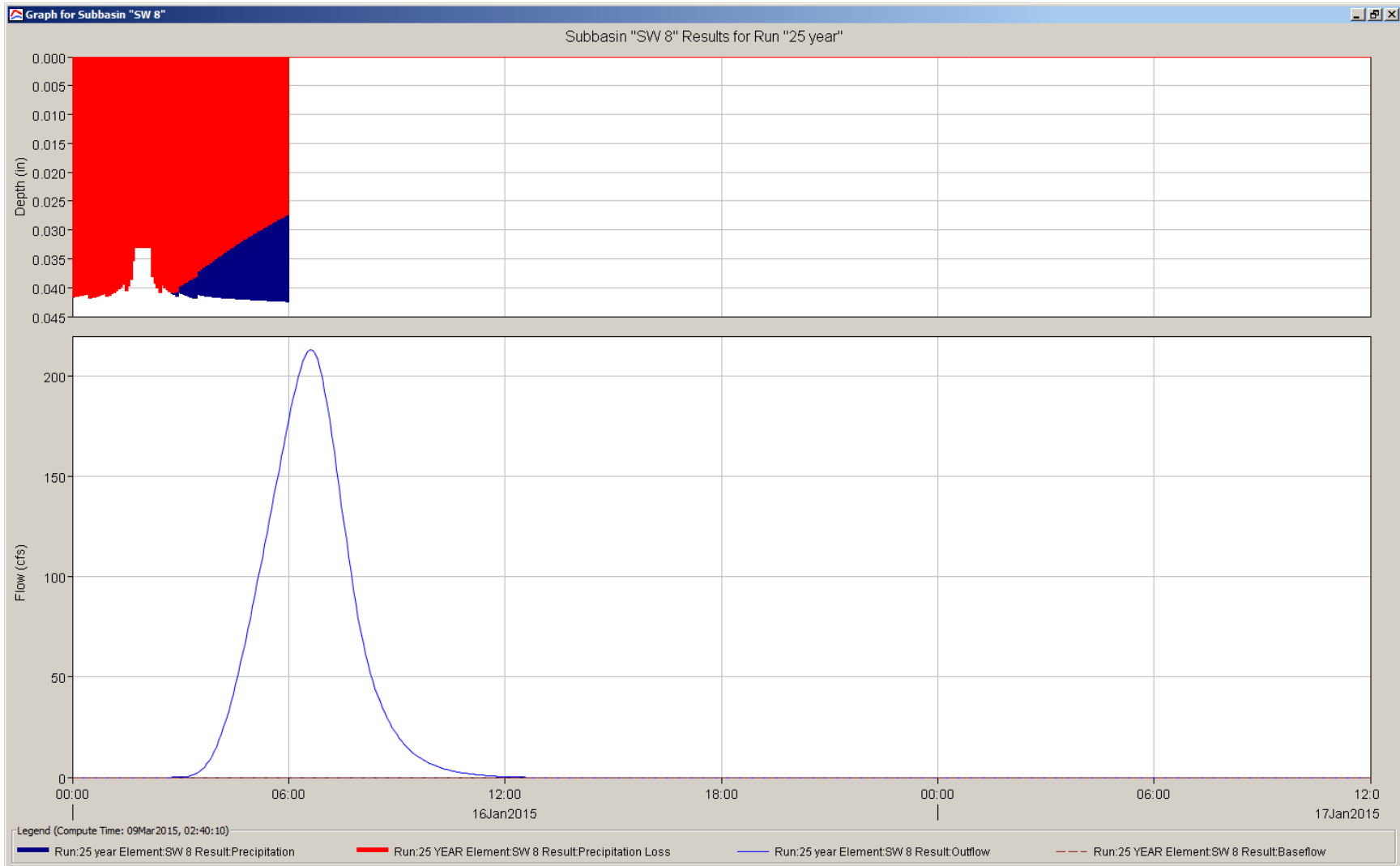


25-YEAR STORM ONSITE SUBWATERSHED 7b





25-YEAR STORM ONSITE SUBWATERSHED 8

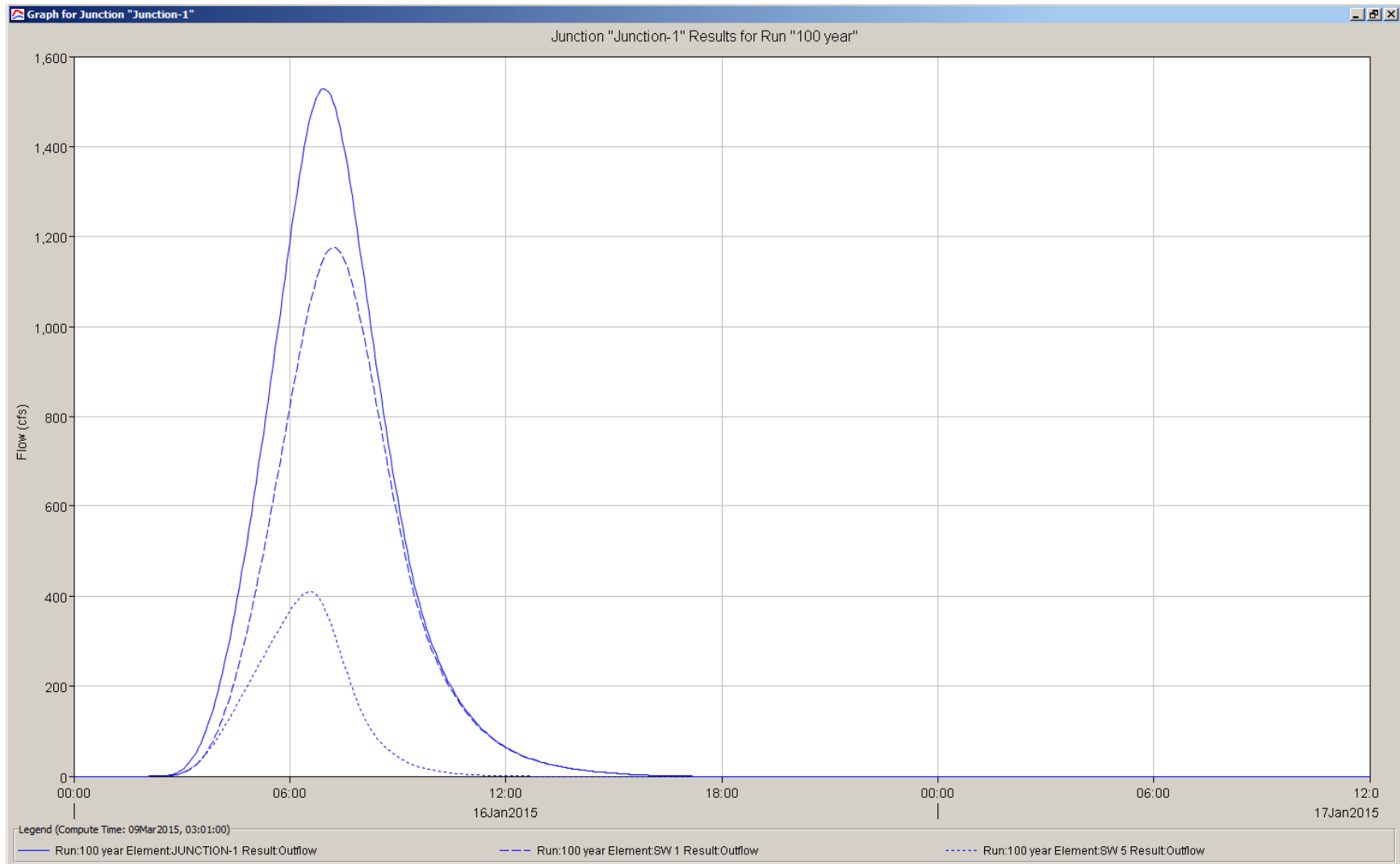


100-YEAR STORM SIMULATION

Global Summary Results for Run "100 year"				
Project: EPP Model		Simulation Run: 100 year		
Start of Run:	10May2015, 00:00	Basin Model:	EPP Basin	
End of Run:	11May2015, 12:00	Meteorologic Model:	100_year	
Compute Time:	15May2015, 18:54:52	Control Specifications:	Timeframe	
Show Elements:	All Elements	Volume Units:	<input type="radio"/> IN <input checked="" type="radio"/> AC-FT	Sorting: Alphabetic
Hydrologic Element	Drainage Area (MI ²)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
Diversion-1	8.28	408.7	10May2015, 06:36	137.2
Junction-1	10.17	1528.3	10May2015, 06:56	481.6
Junction-2	20.72	3208.3	10May2015, 06:56	981.2
Junction-3	8.28	1168.2	10May2015, 06:36	392.1
Junction-4	8.91	1402.8	10May2015, 06:52	422.0
Junction-5	1.69	306.6	10May2015, 06:40	80.0
Junction-6	10.36	816.1	10May2015, 06:28	235.7
Sink-1	0.00	759.5	10May2015, 06:36	254.9
SW 1	7.98	1176.5	10May2015, 07:12	377.9
SW 2	12.86	1891.6	10May2015, 07:12	609.0
SW 3	6.74	987.5	10May2015, 07:16	319.2
SW 4	6.69	1025.8	10May2015, 07:08	316.8
SW 5	2.19	410.0	10May2015, 06:32	103.7
SW 6	7.86	1404.9	10May2015, 06:40	372.2
SW 7	1.54	333.4	10May2015, 06:12	72.9
SW7a	1.69	306.6	10May2015, 06:40	80.0
SW7b	2.08	409.9	10May2015, 06:24	98.5
SW 8	2.22	418.8	10May2015, 06:32	105.1

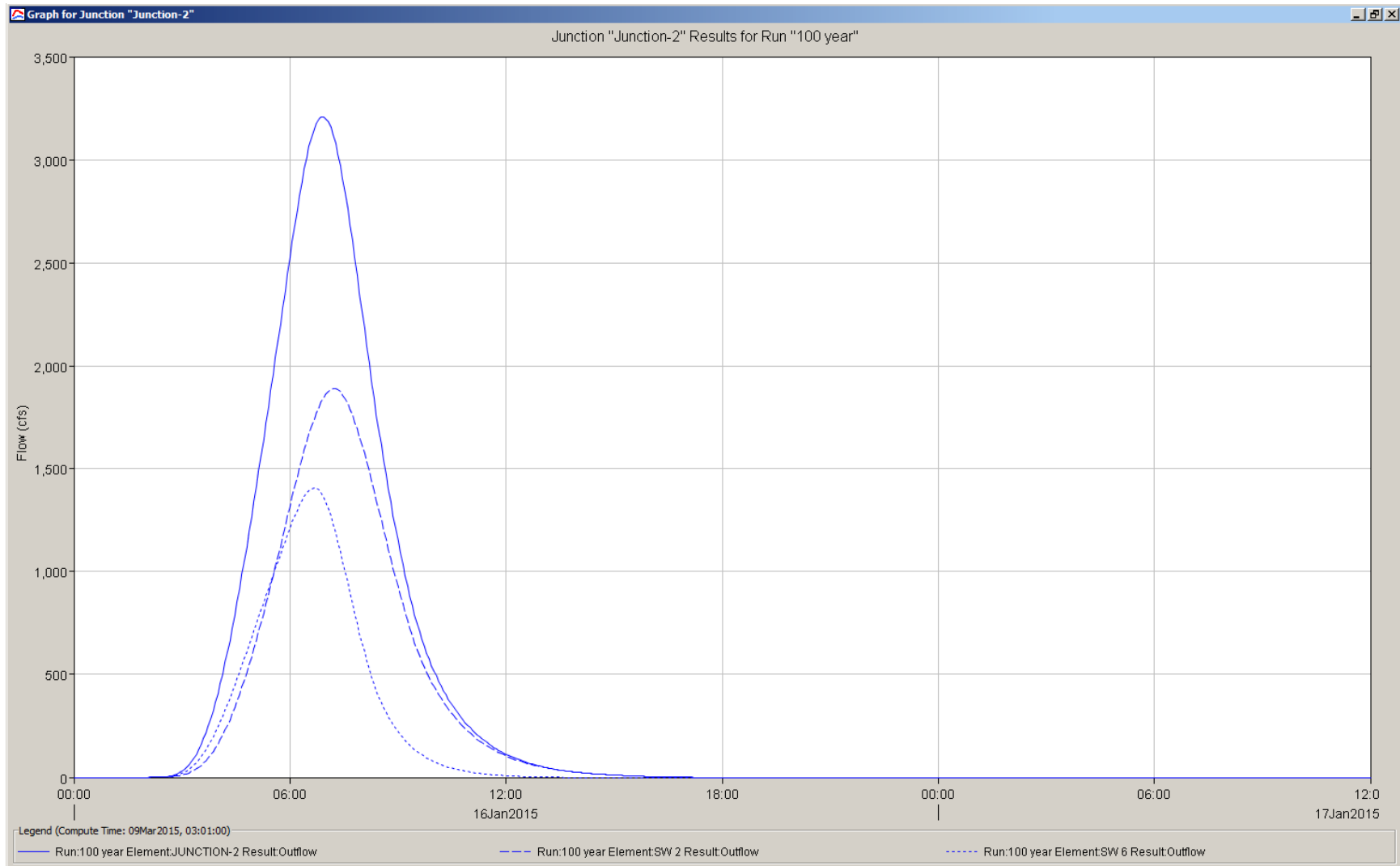


100-YEAR STORM JUNCTION 1



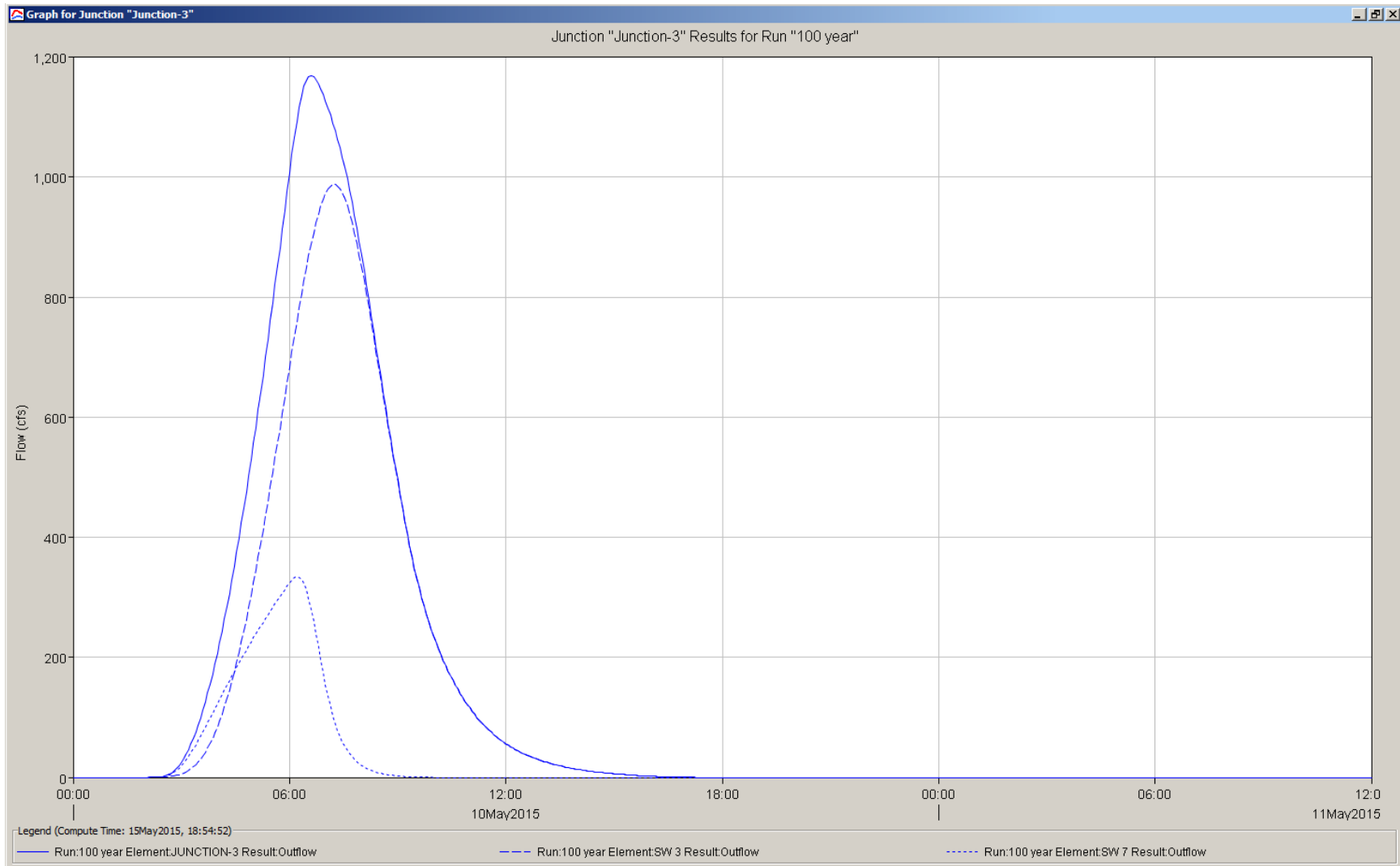


100-YEAR STORM JUNCTION 2



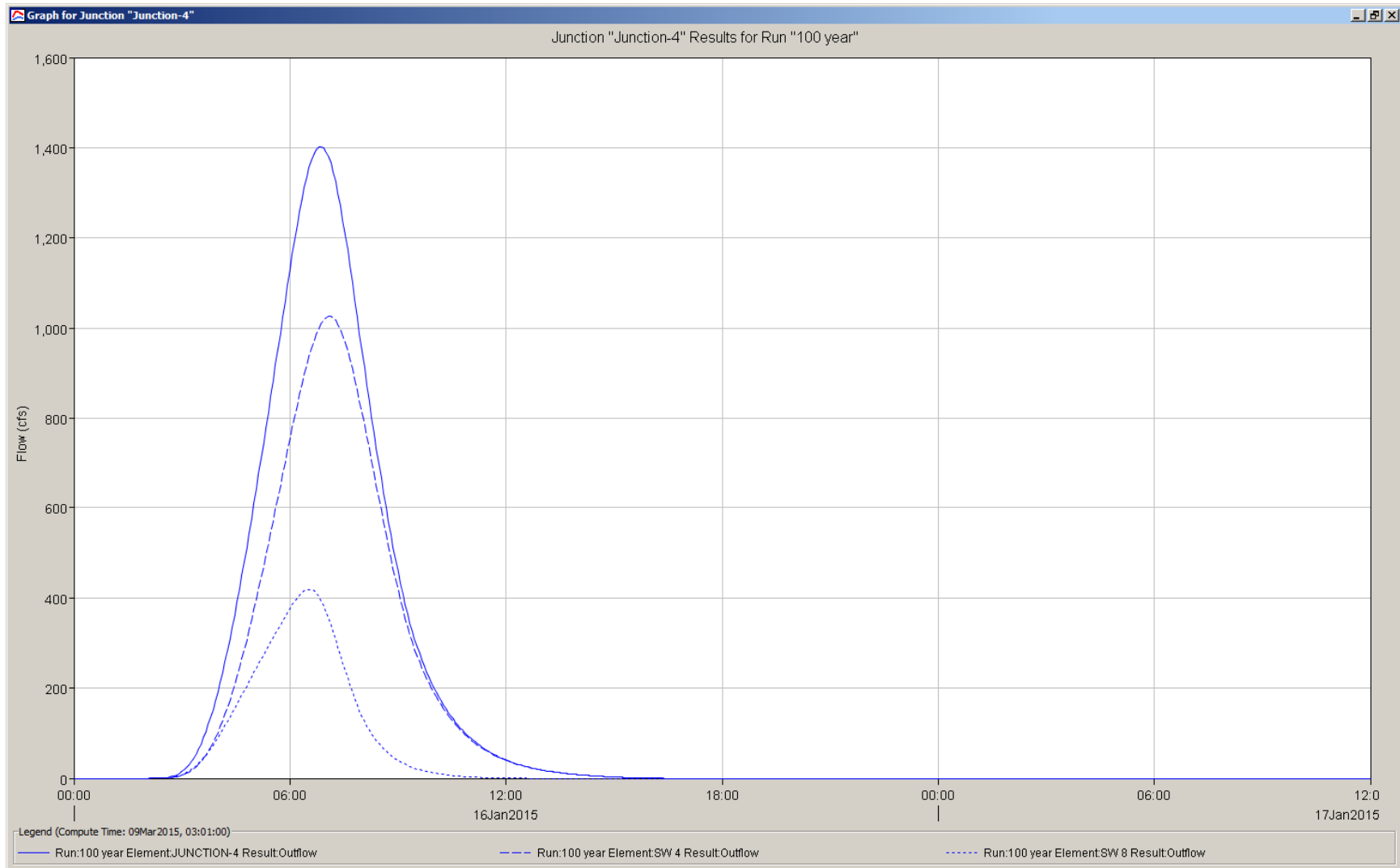


100-YEAR STORM JUNCTION 3



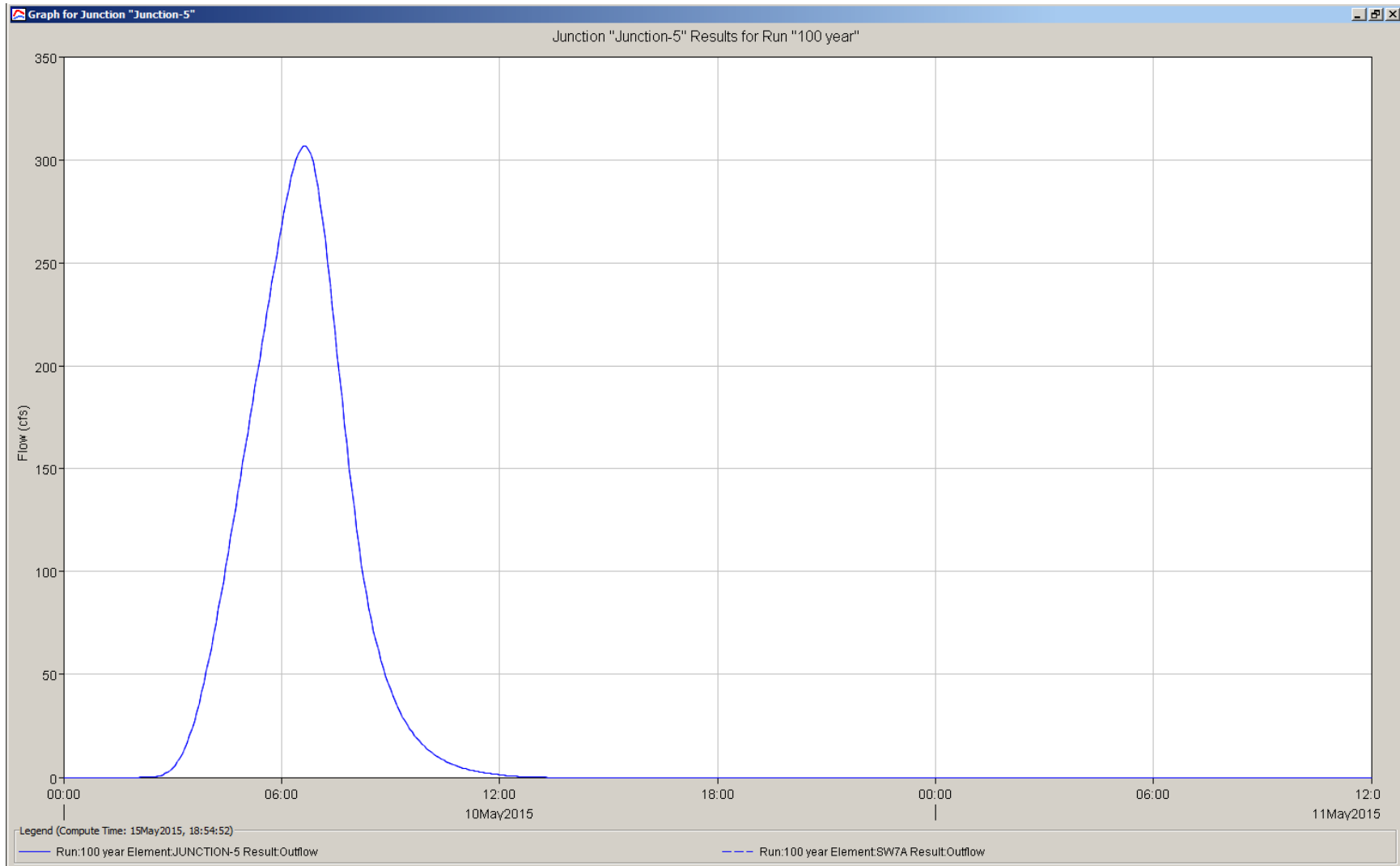


100-YEAR STORM JUNCTION 4



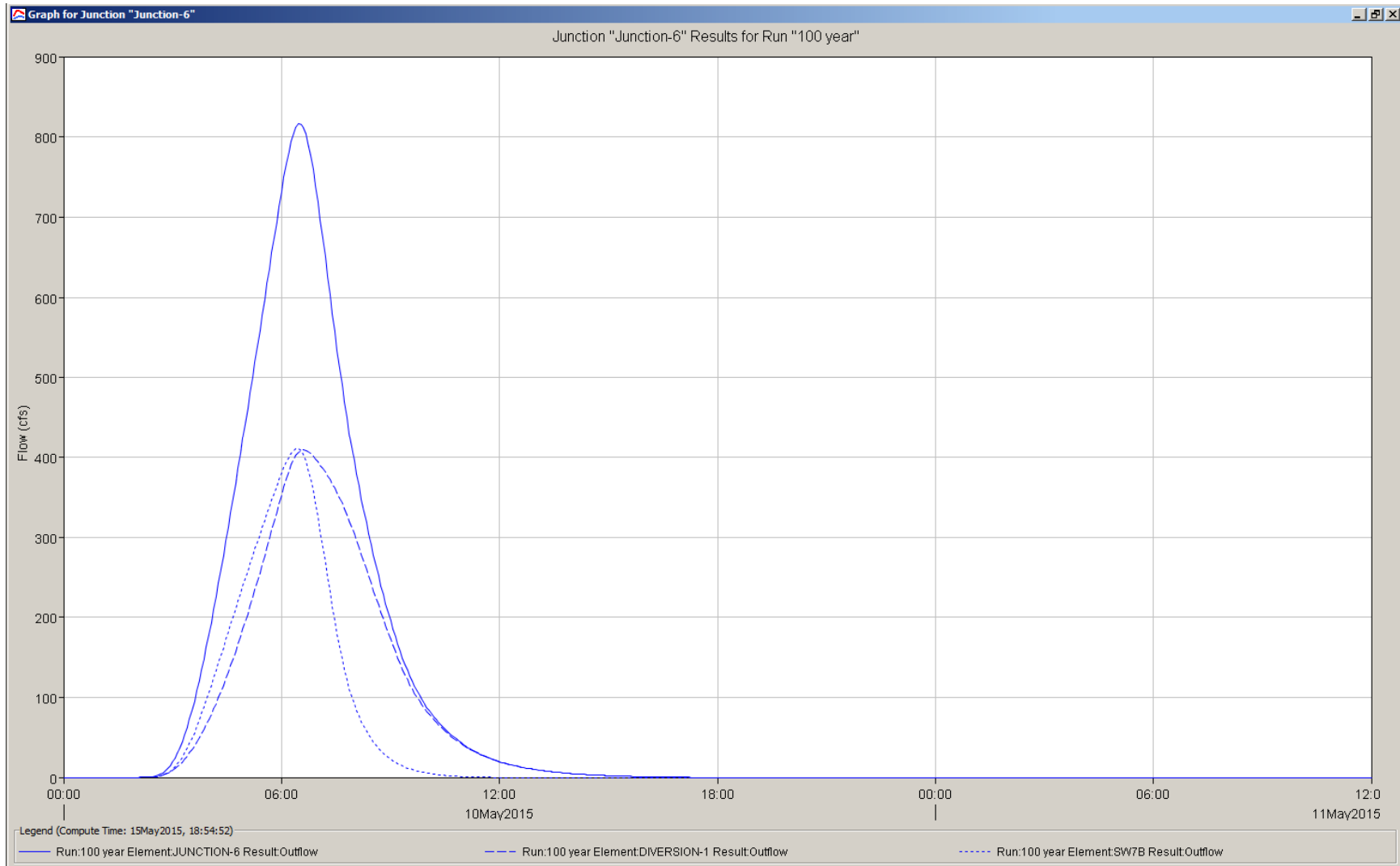


100-YEAR STORM JUNCTION 5



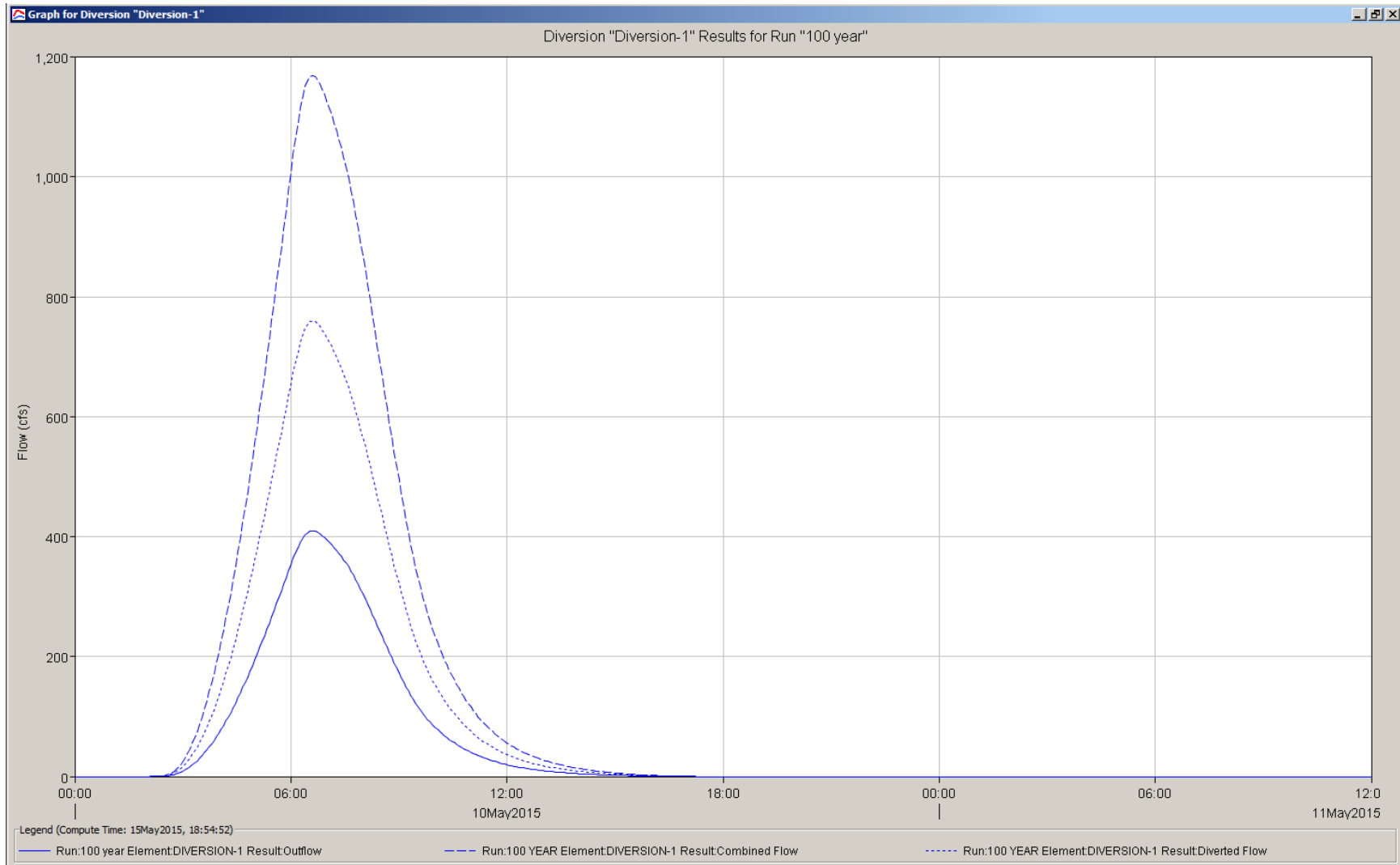


100-YEAR STORM JUNCTION 6



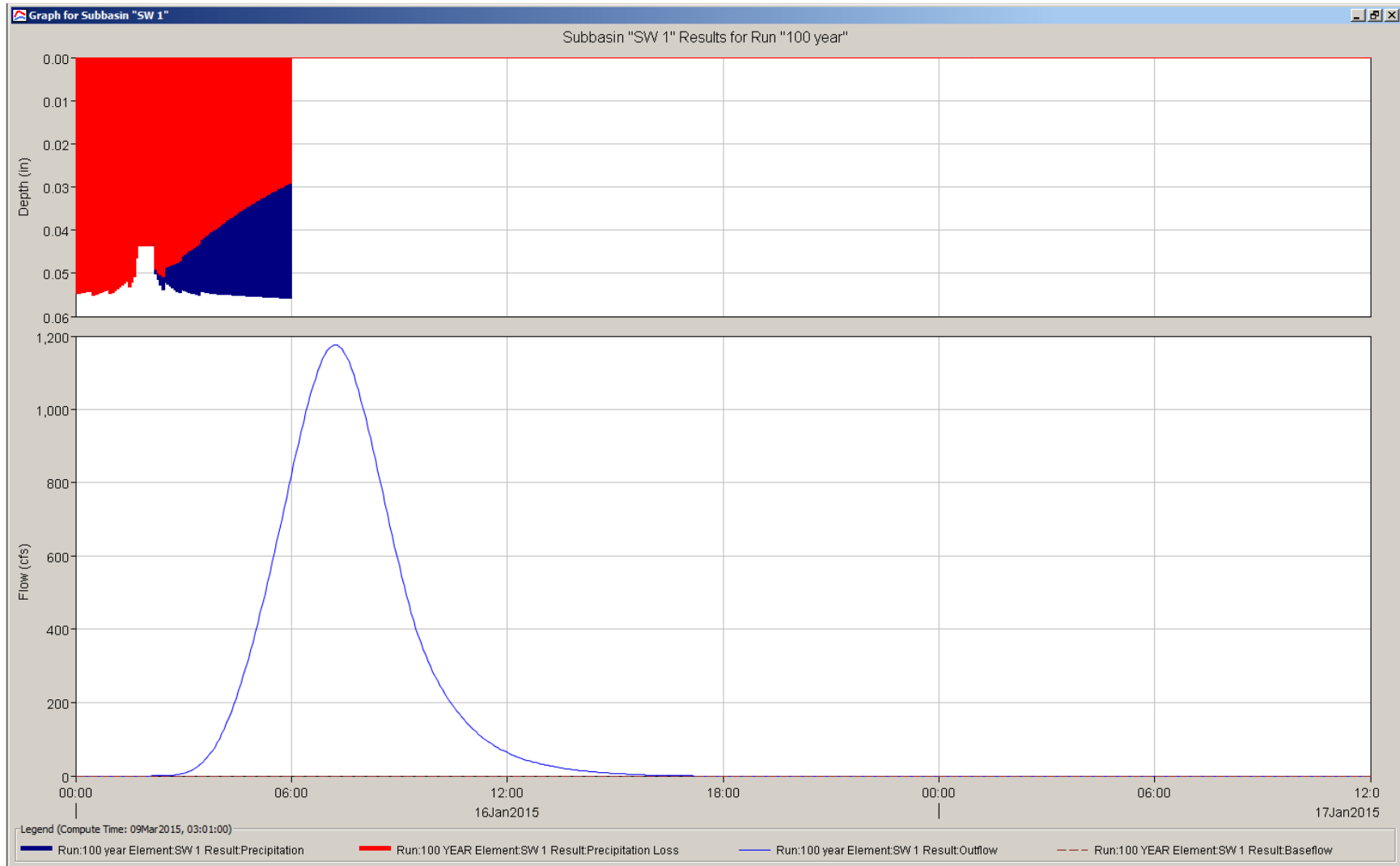


100-YEAR STORM DIVERSION 1



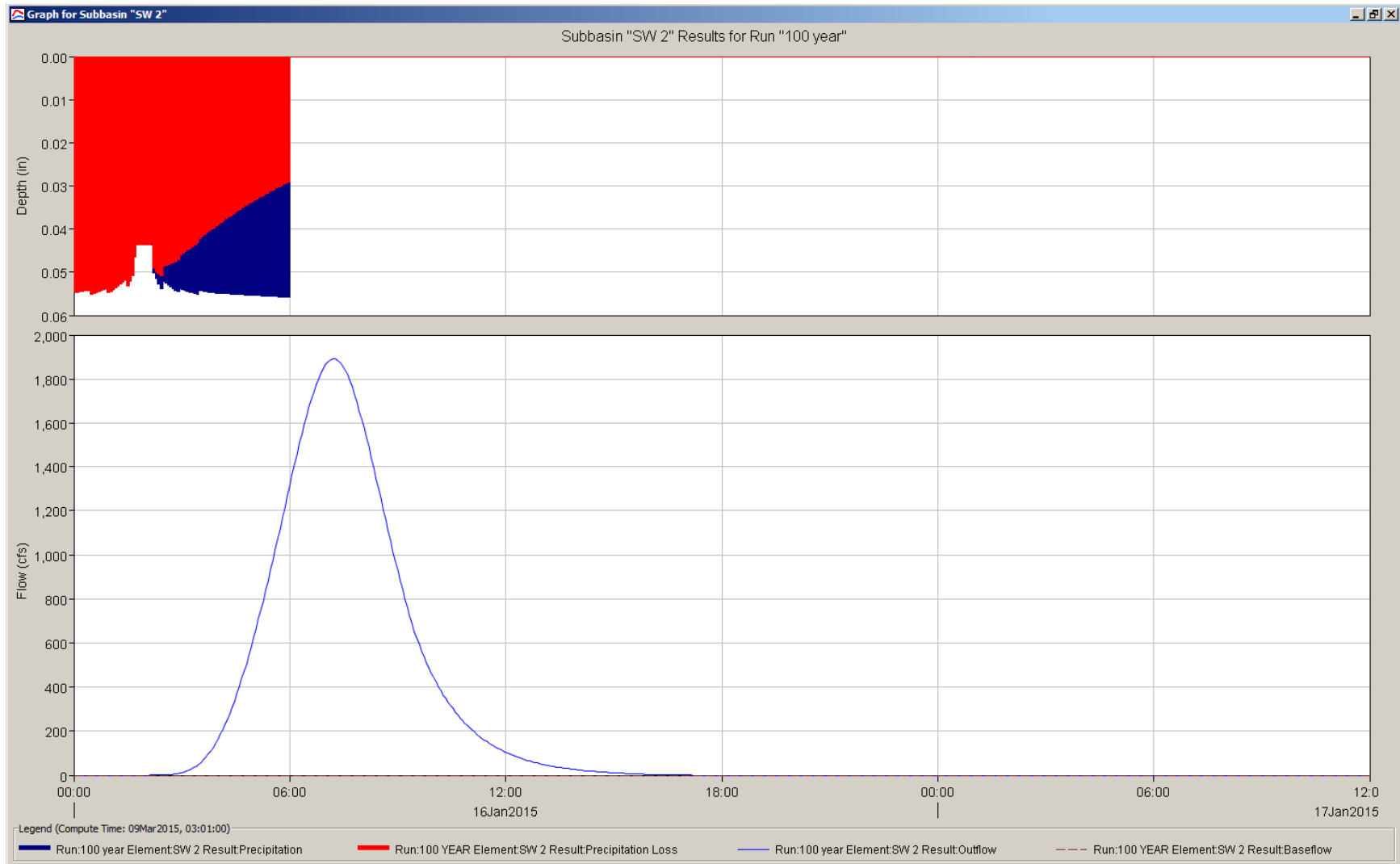


100-YEAR STORM OFFSITE SUBWATERSHED 1



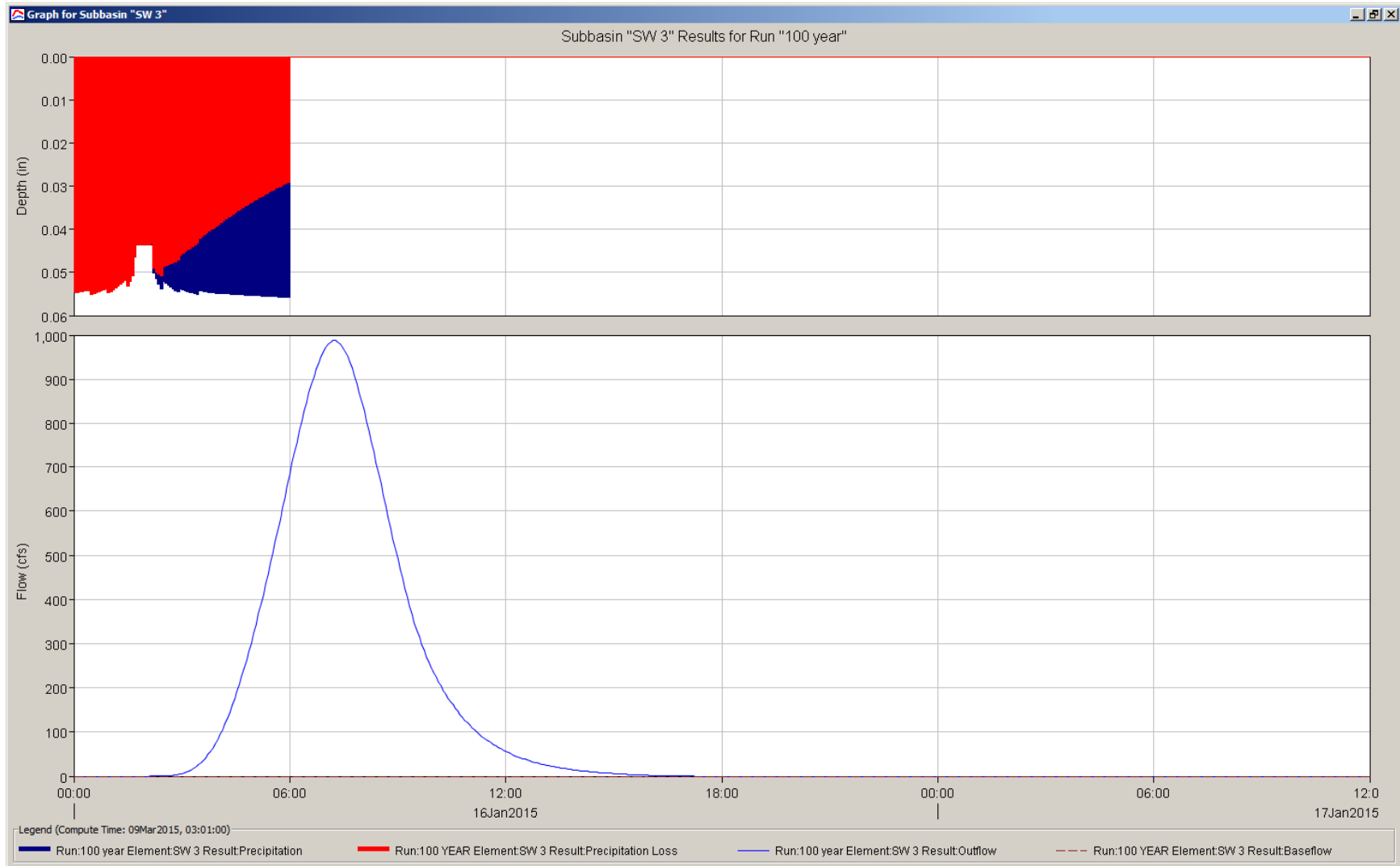


100-YEAR STORM OFFSITE SUBWATERSHED 2



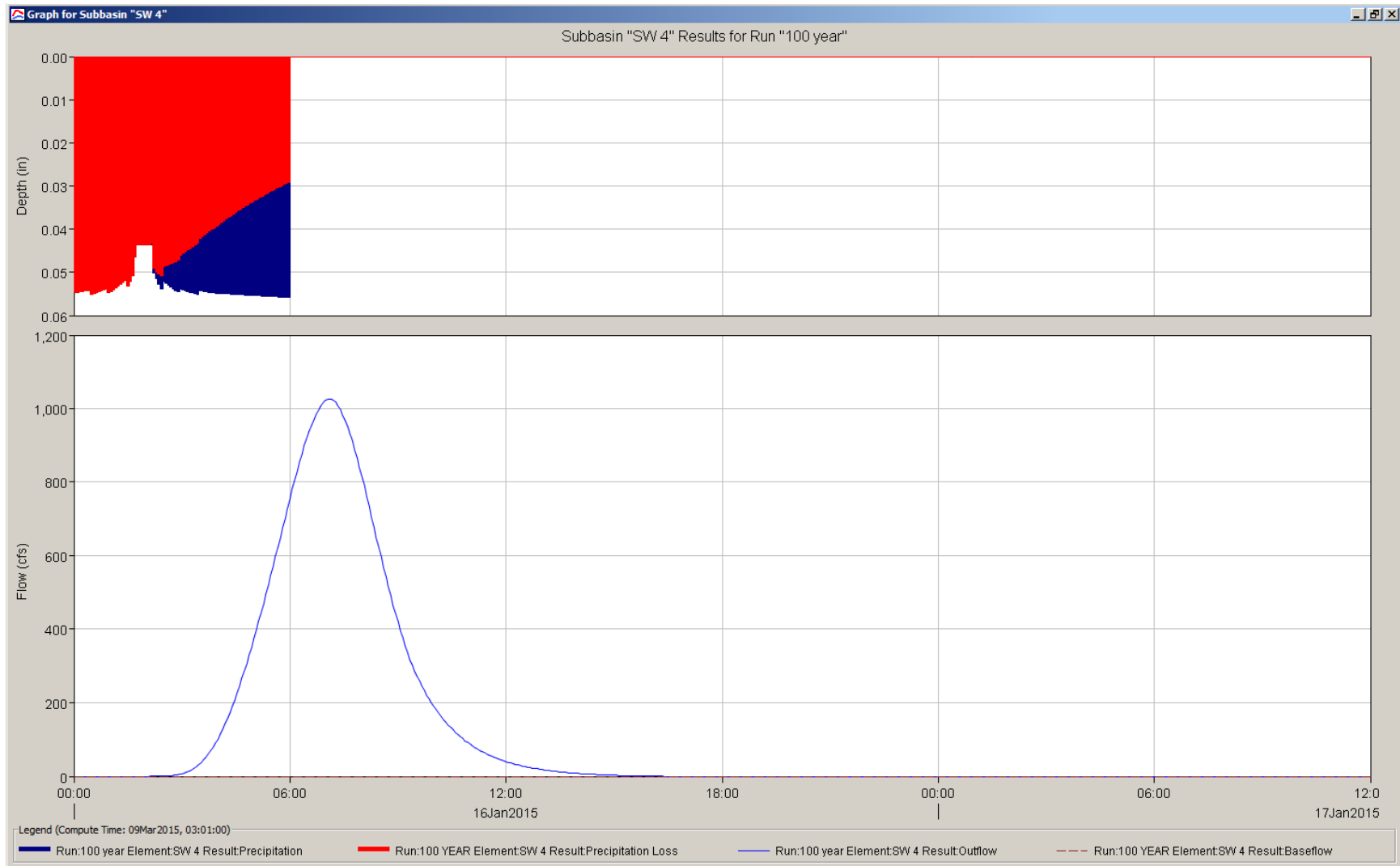


100-YEAR STORM OFFSITE SUBWATERSHED 3



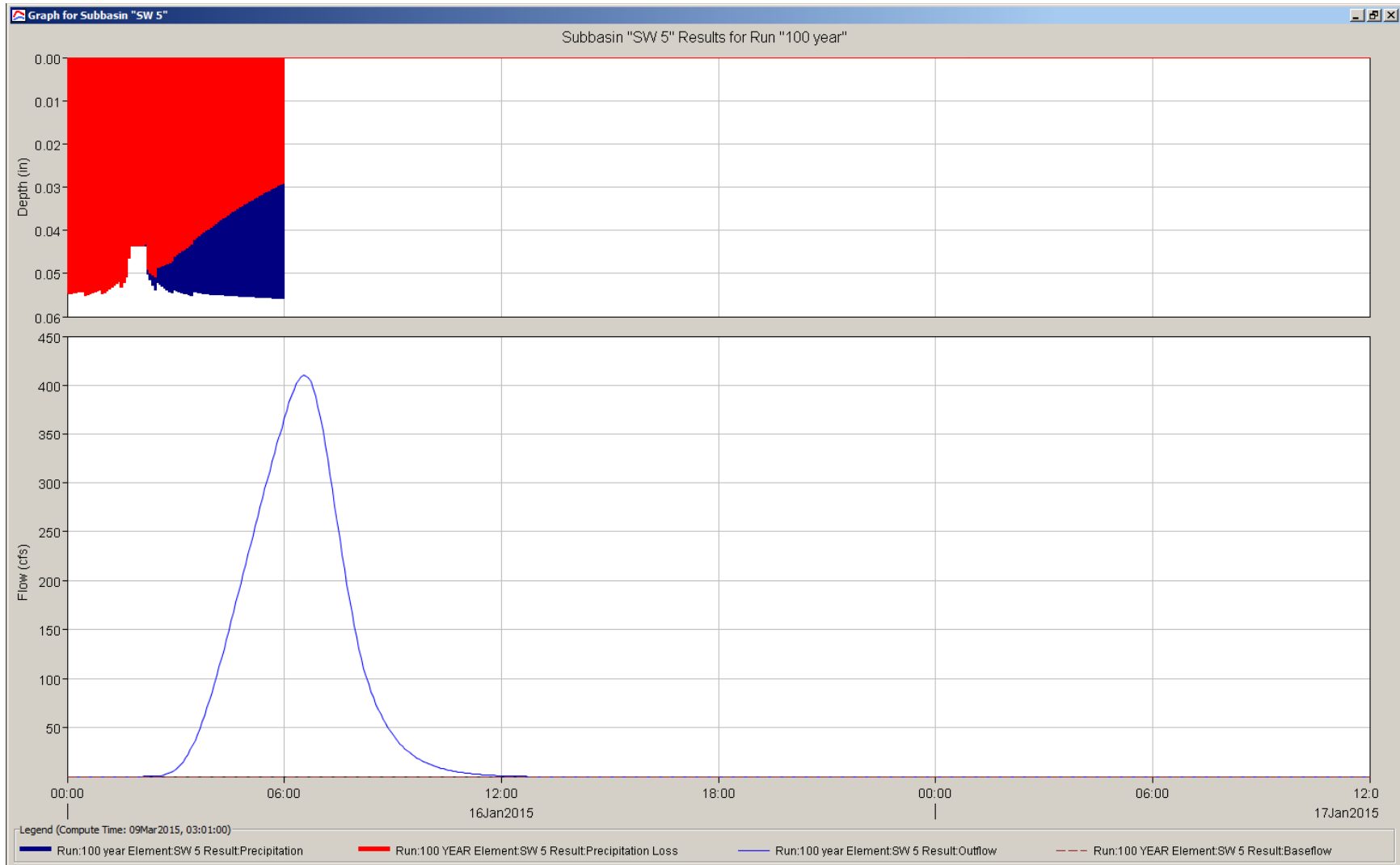


100-YEAR STORM OFFSITE SUBWATERSHED 4



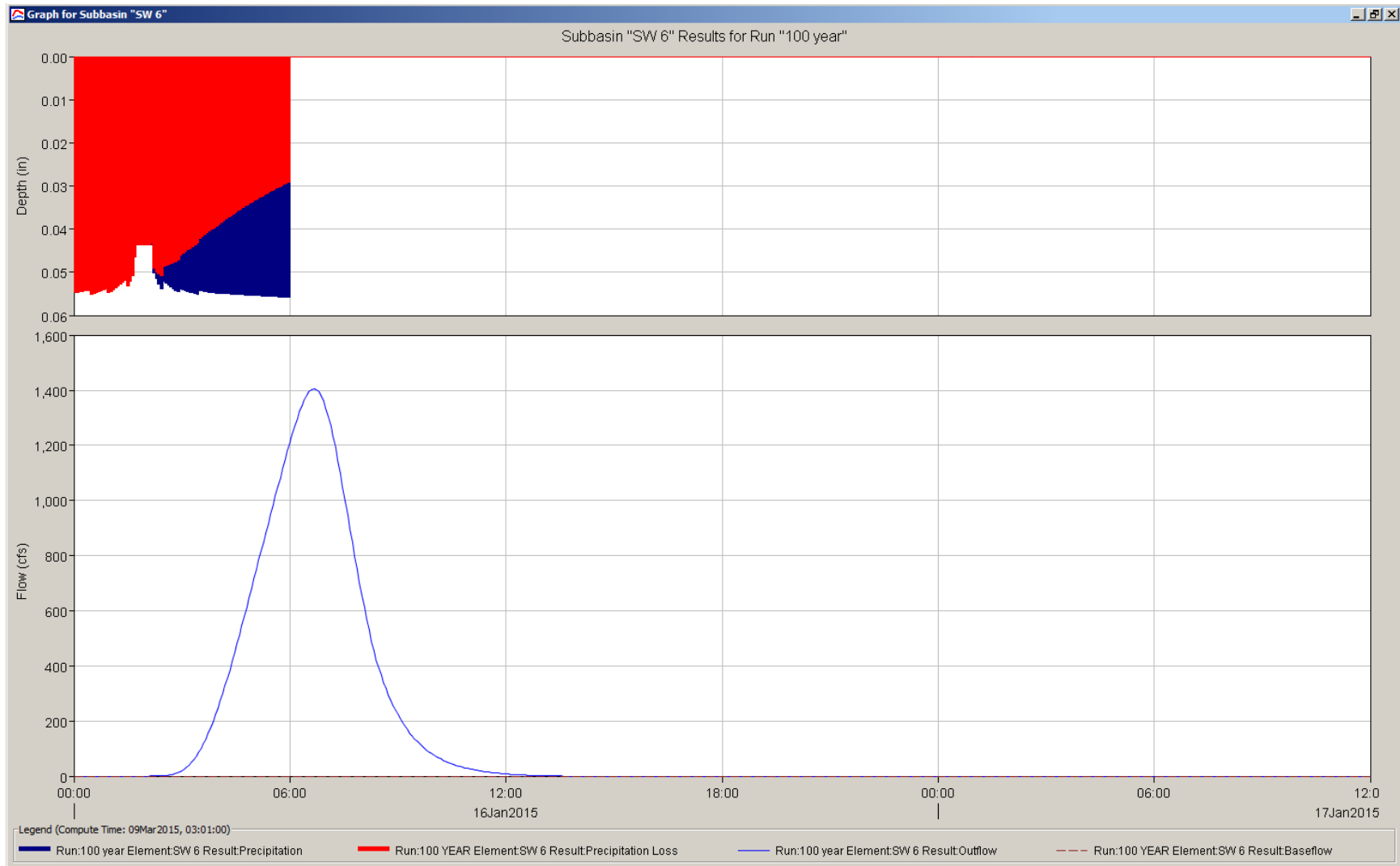


100-YEAR STORM ONSITE SUBWATERSHED 5



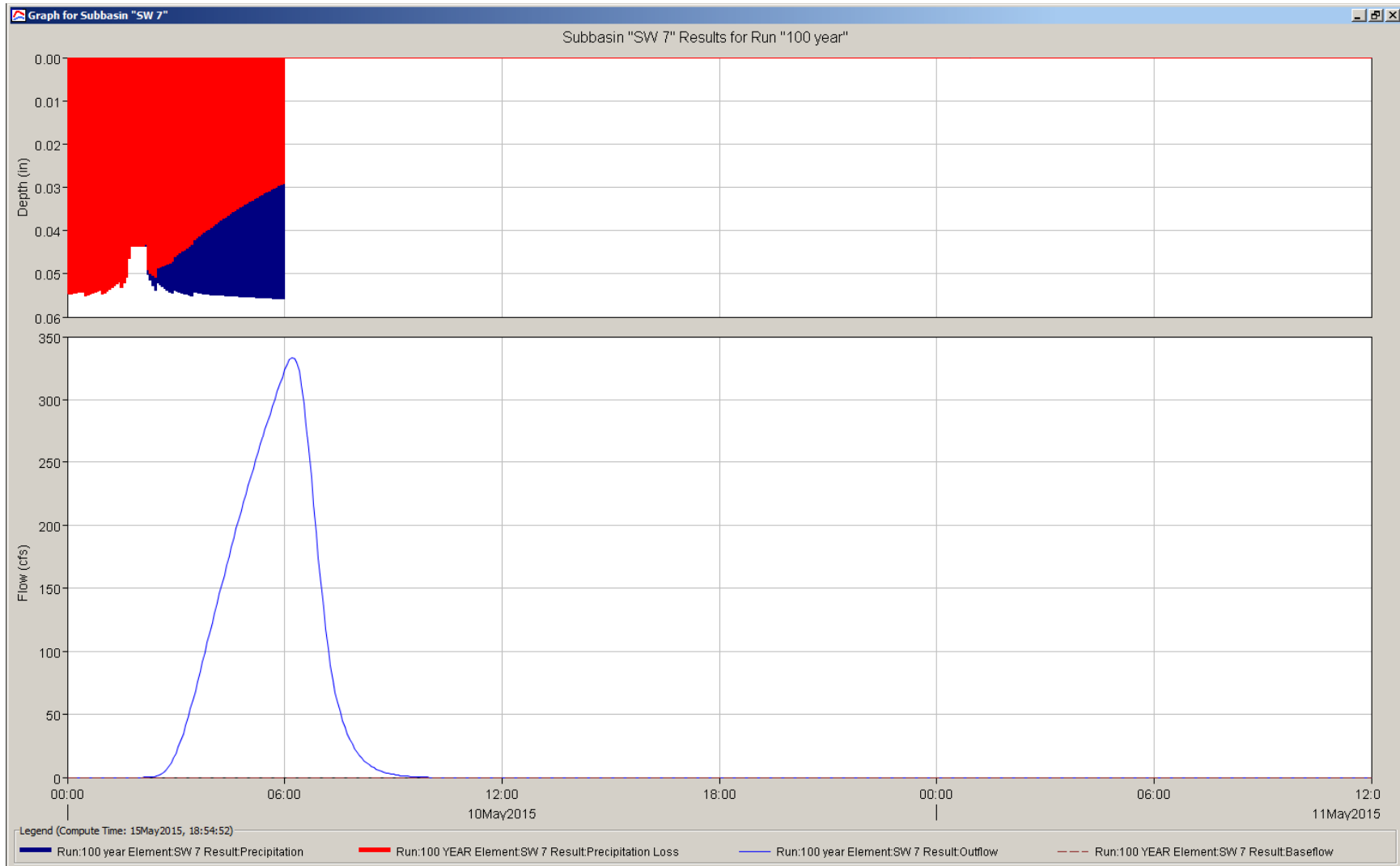


100-YEAR STORM ONSITE SUBWATERSHED 6



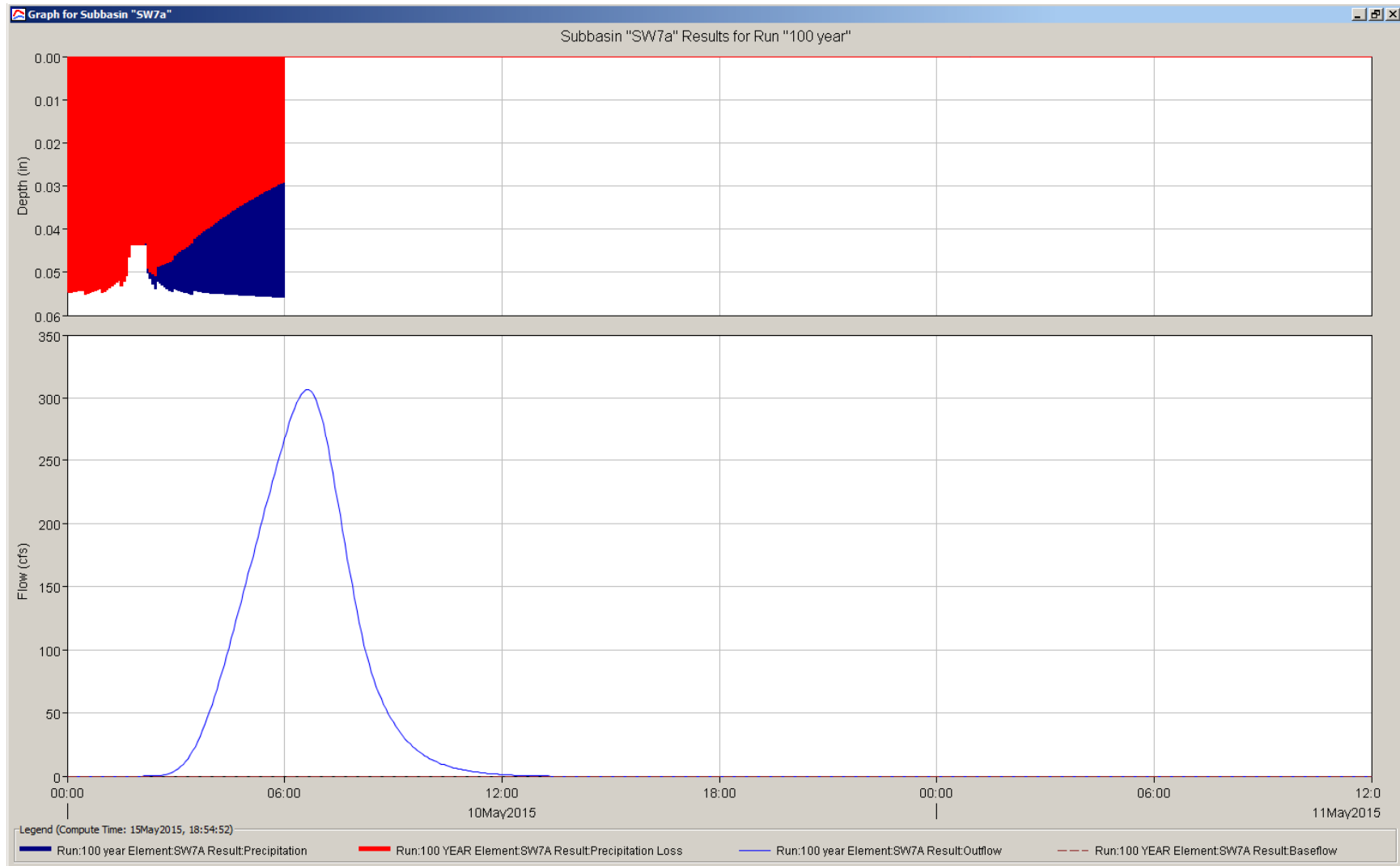


100-YEAR STORM ONSITE SUBWATERSHED 7



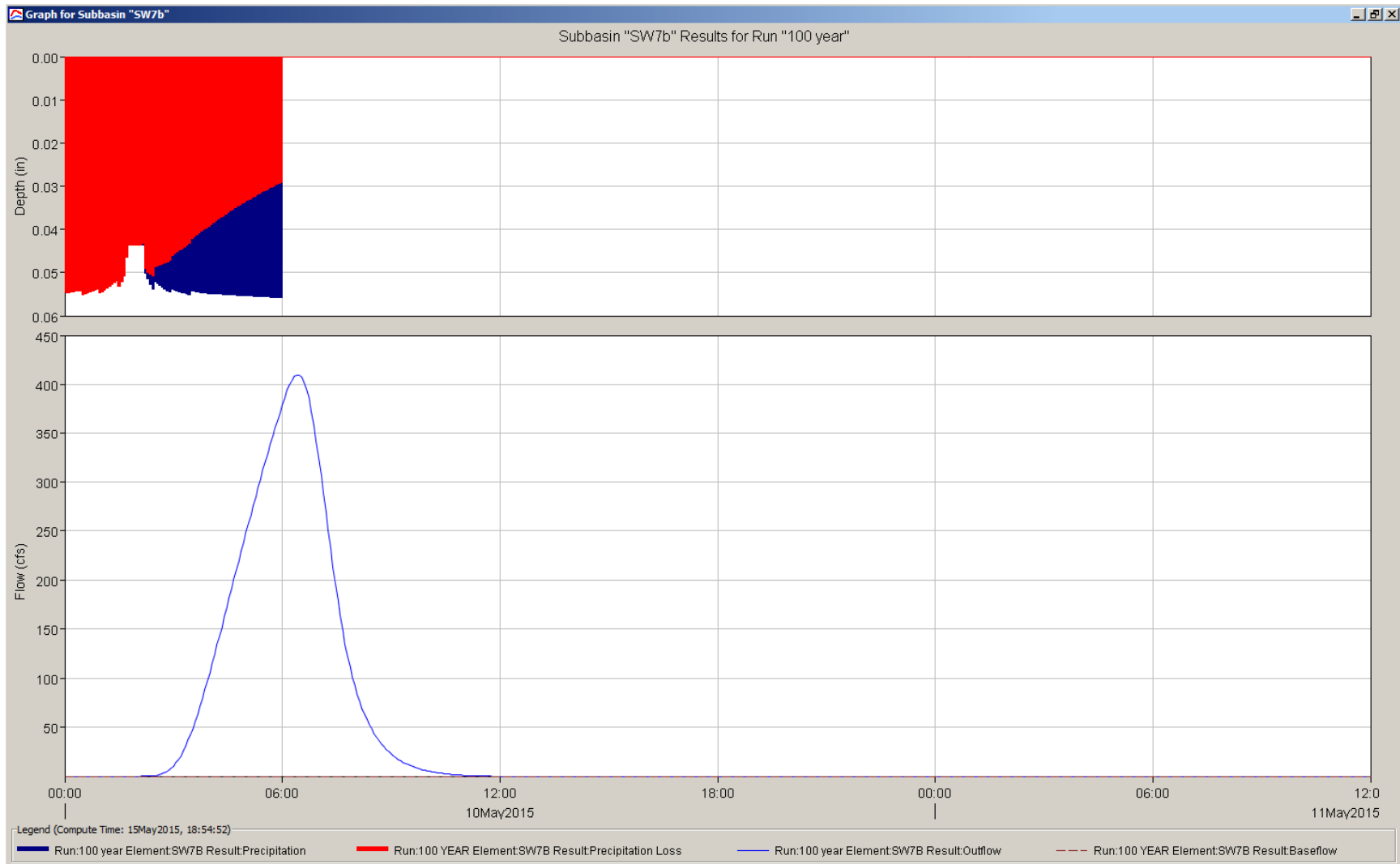


100-YEAR STORM ONSITE SUBWATERSHED 7a



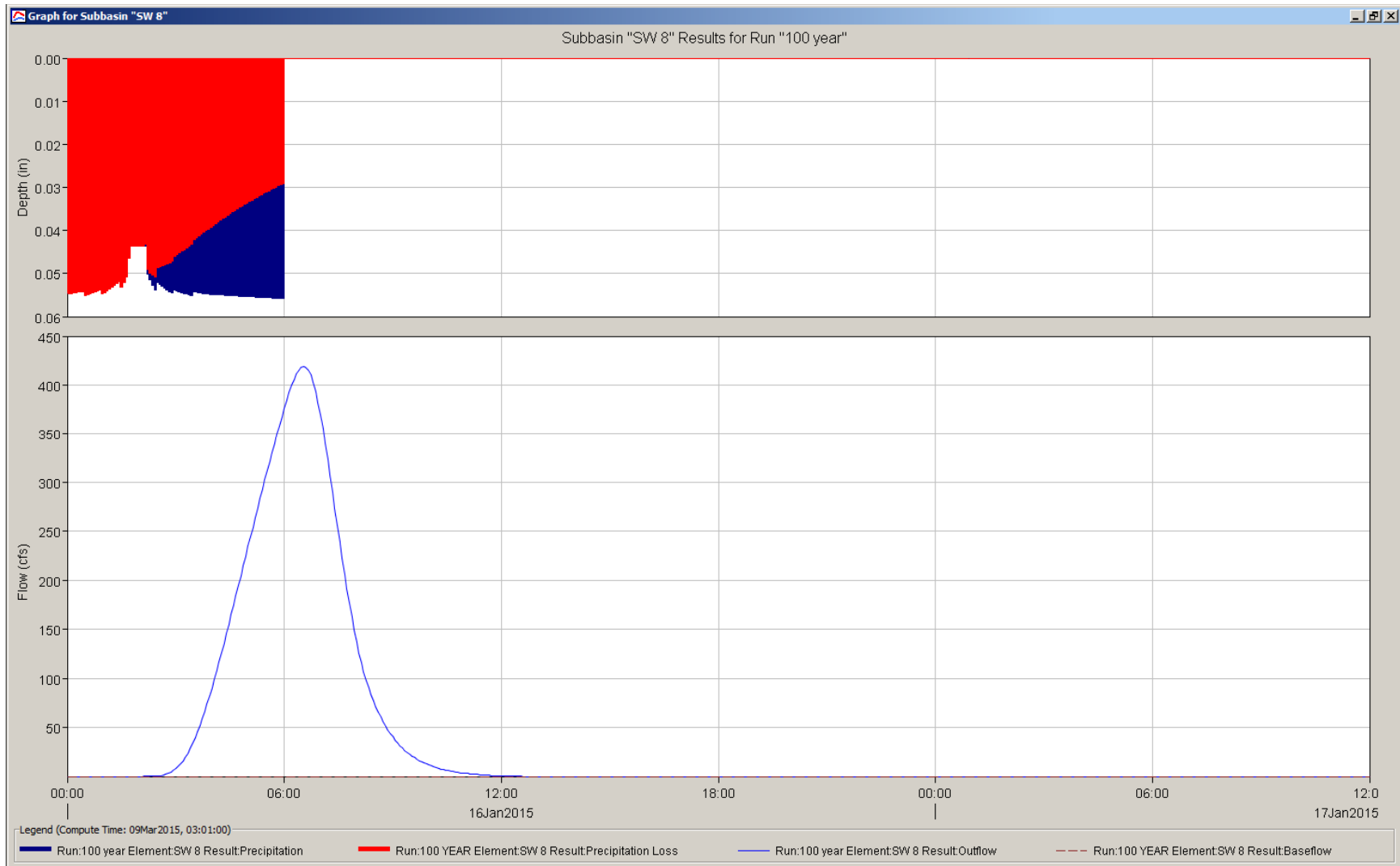


100-YEAR STORM ONSITE SUBWATERSHED 7b



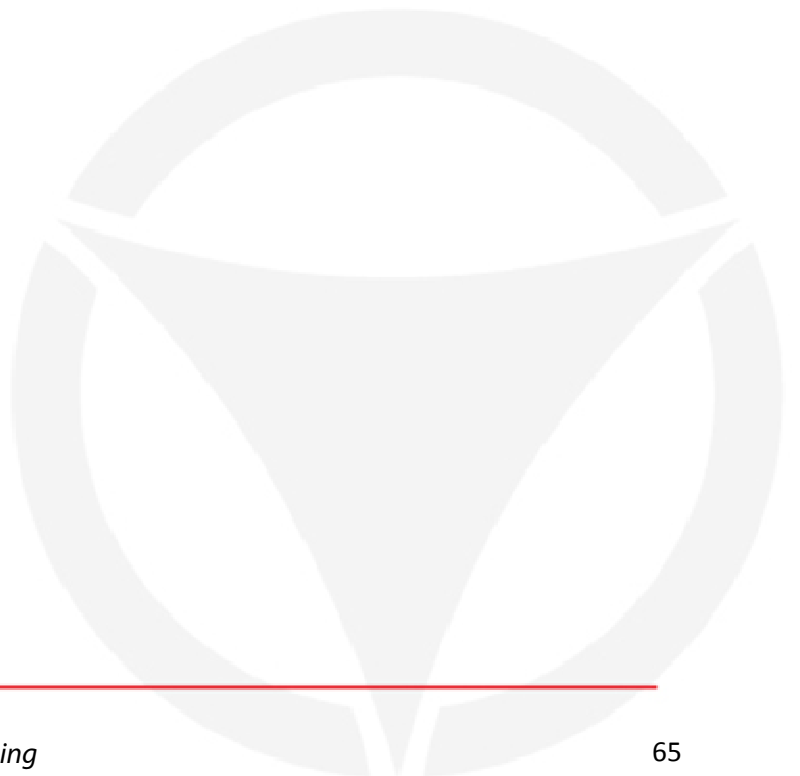


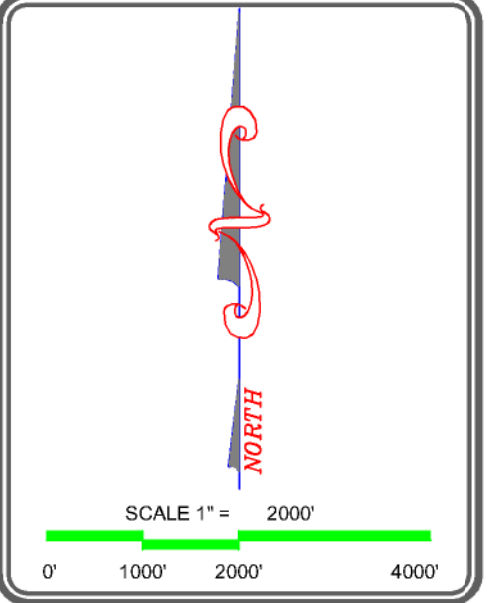
100-YEAR STORM ONSITE SUBWATERSHED 8





APPENDIX F – CROSS SECTIONS MAPS





PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX F
 REACH OSW5
 CROSS SECTIONS

ENERGYPLEX PARK

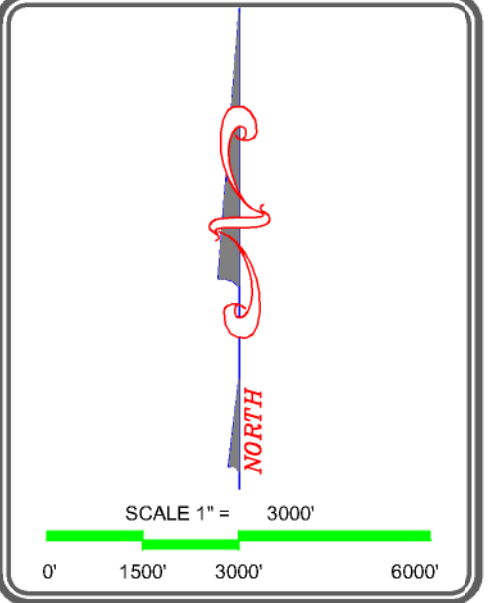
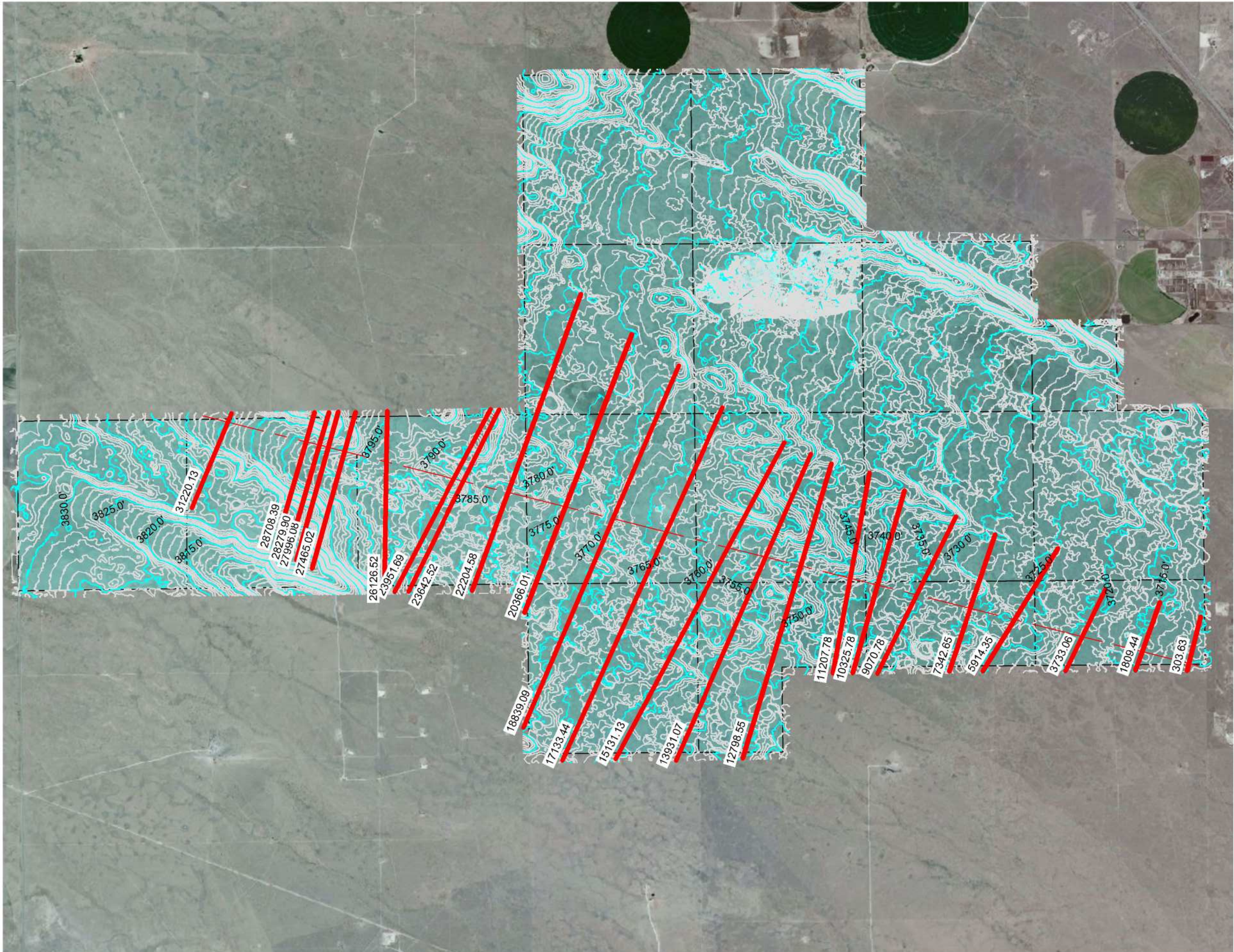
LEA COUNTY, NM

PETTIGREW
 & ASSOCIATES PA

ENGINEERING | SURVEYING | TESTING
 DEFINING QUALITY SINCE 1965
 100 E. Navajo Drive Suite 100 Hobbs New Mexico
 88240
 T 575 393 9827 F 575 393 1543
 Pettigrew.us

PROJECT NUMBER:
 2013.1355

SHEET
 CF-003



PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX F
 REACH OSW6
 CROSS SECTIONS

ENERGYPLEX PARK

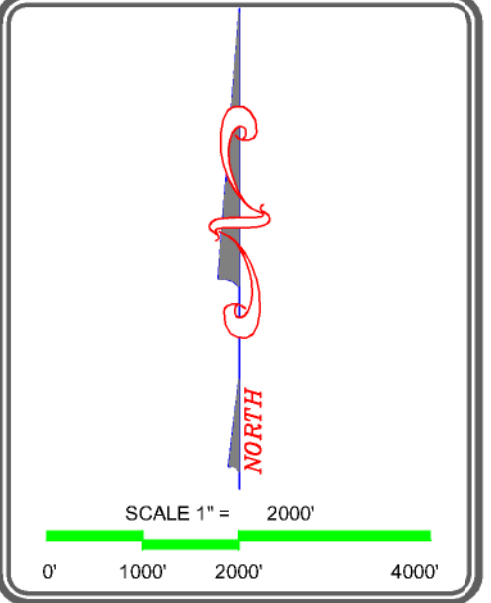
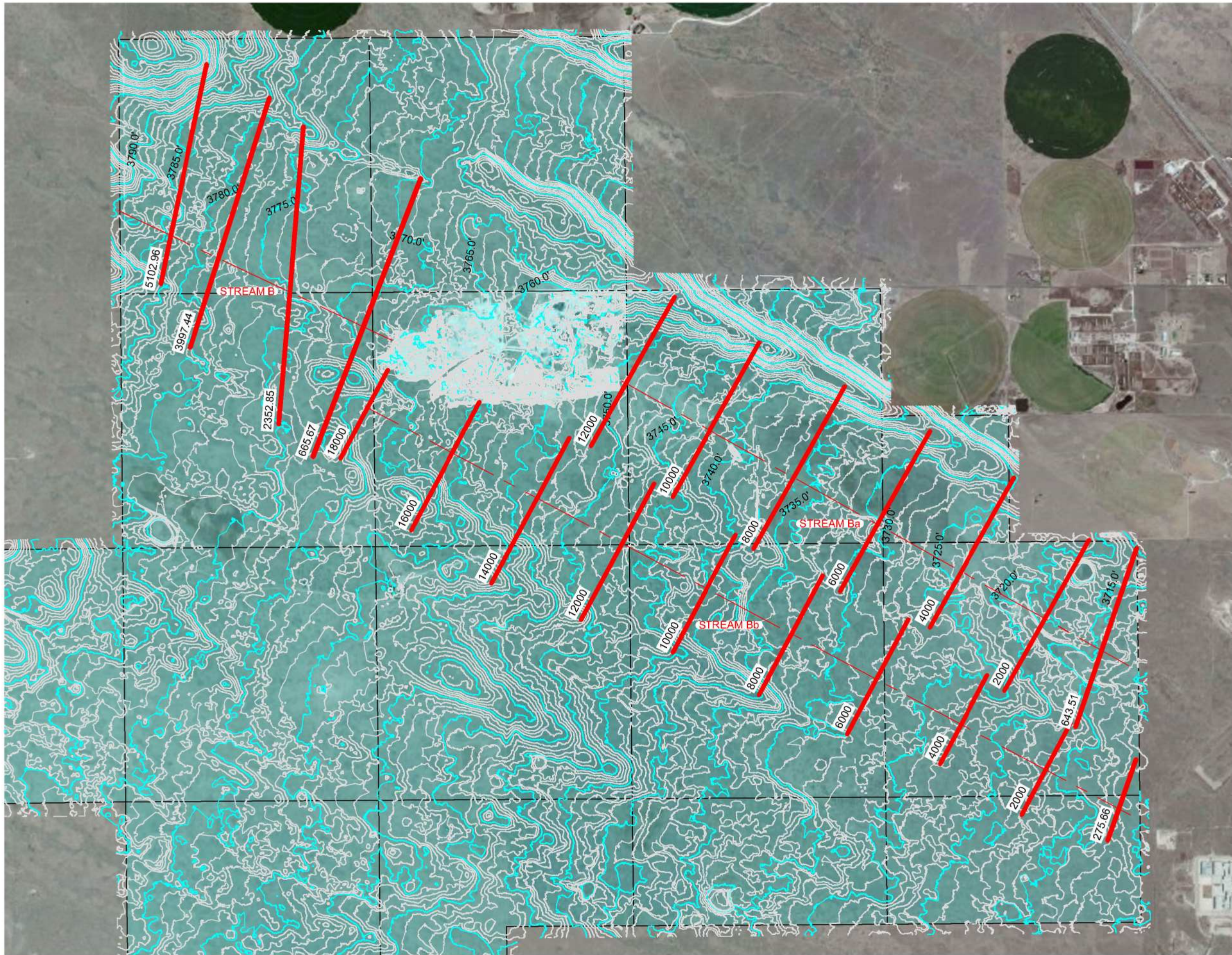
LEA COUNTY, NM

PETTIGREW
 & ASSOCIATES PA

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 REFINING QUALITY SINCE 1965
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 Pettigrew.us

PROJECT NUMBER: 2013.1355

SHEET CF-004



PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX F
 REACHES OSW7, OSW7A, AND OSW7B
 CROSS SECTIONS

ENERGYPLEX PARK

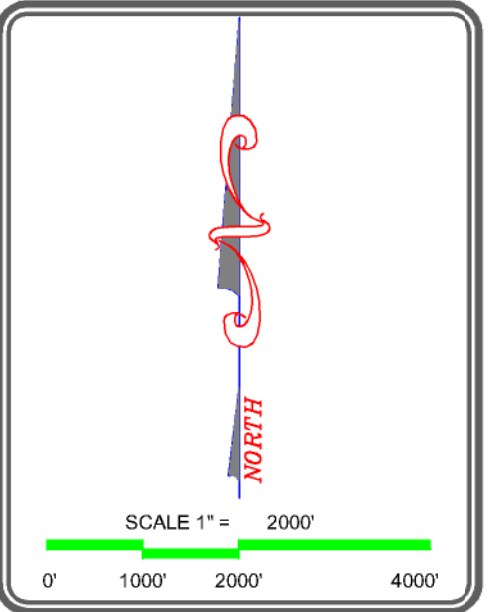
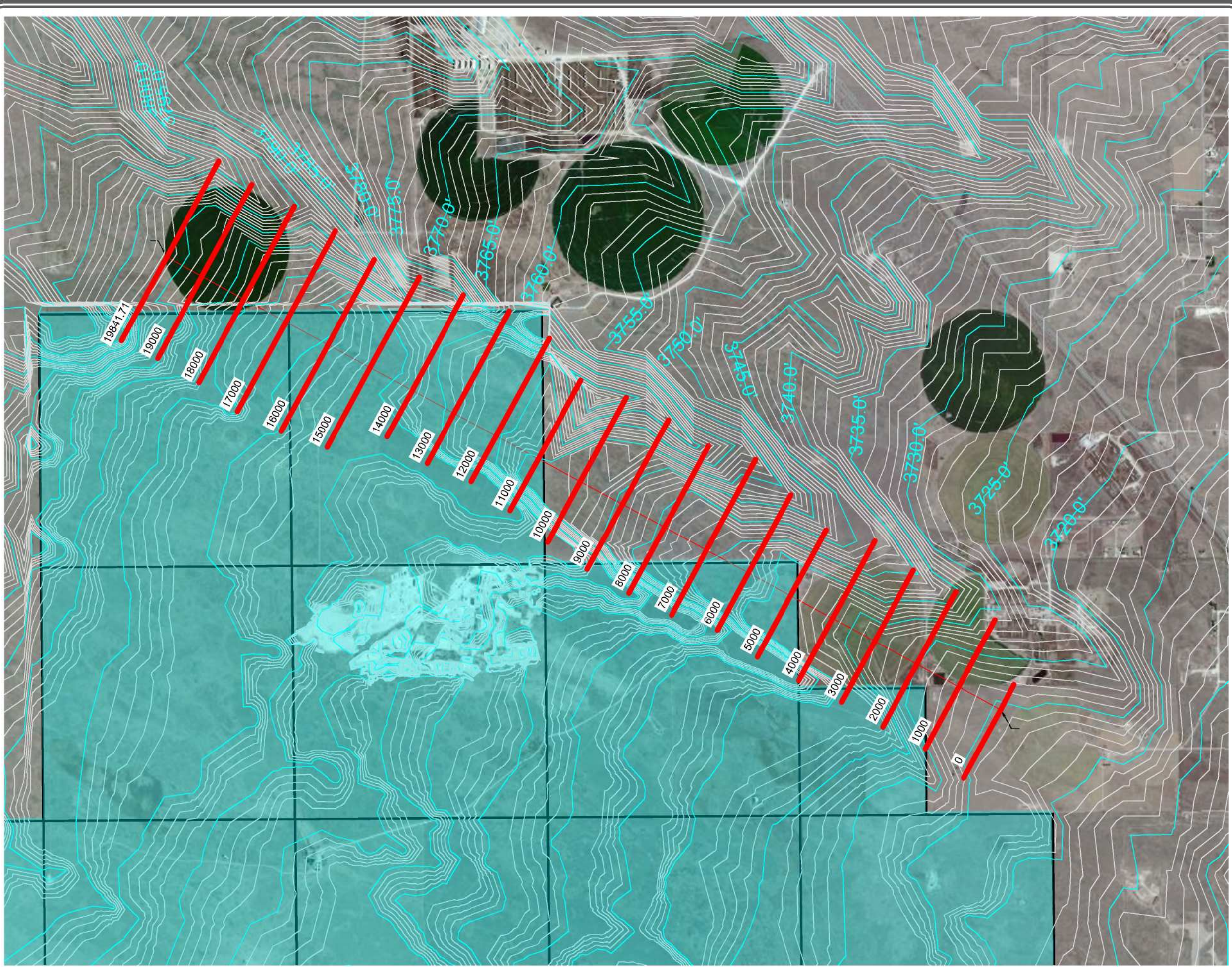
LEA COUNTY, NM

PETTIGREW & ASSOCIATES PA

ENGINEERING | SURVEYING | TESTING
 REFINING QUALITY SINCE 1965
 100 E. Navajo Drive Suite 100 Hobbs New Mexico 88240
 T 575 393 9827 F 575 393 1543
 Pettigrew.us

PROJECT NUMBER: 2013.1355

SHEET CF-005



PROJECT ENGINEER: DPH
 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

REVISIONS		
No.	DATE	DESCRIPTION

APPENDIX F
 REACH OSW8
 CROSS SECTIONS

ENERGYPLEX PARK

LEA COUNTY, NM

PETTIGREW & ASSOCIATES PA

ENGINEERING | SURVEYING | TESTING
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 100 E. Navajo Drive Suite 100 Hobbs New Mexico 88240
 T 575 393 9827 F 575 393 1543
 Pettigrew.us

PROJECT NUMBER: 2013.1355

SHEET CF-006

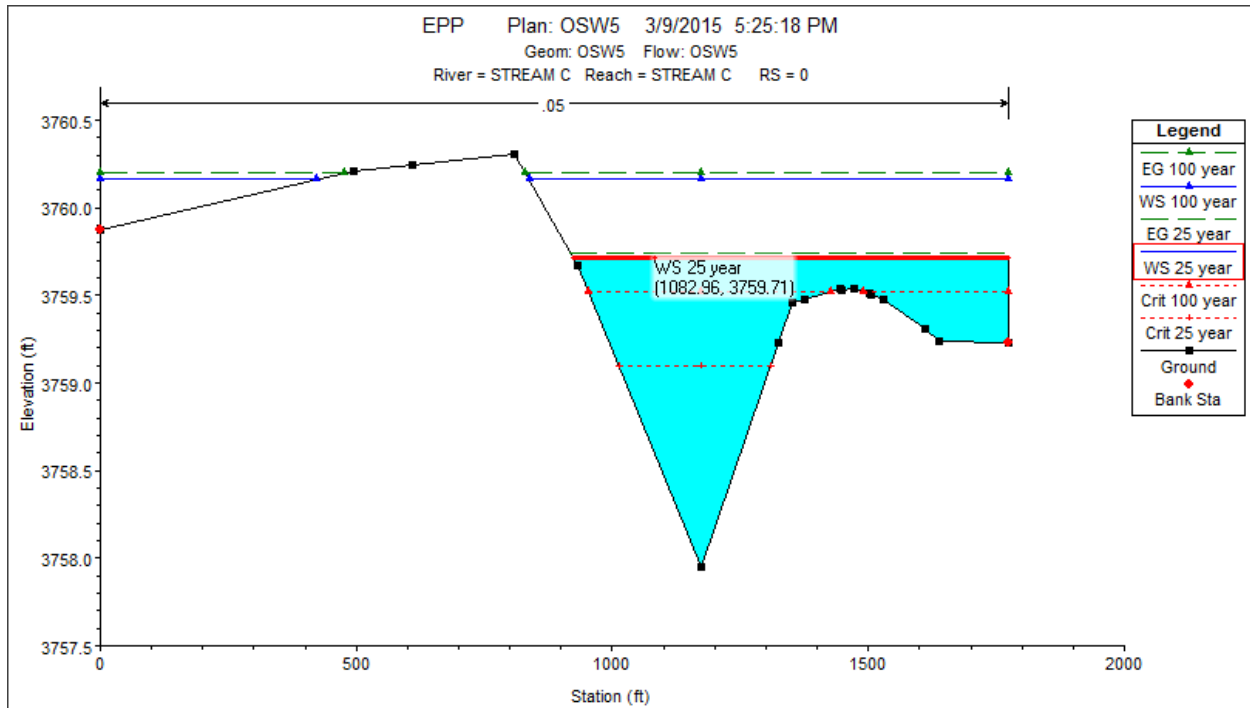


APPENDIX G – HEC-RAS OUTPUT

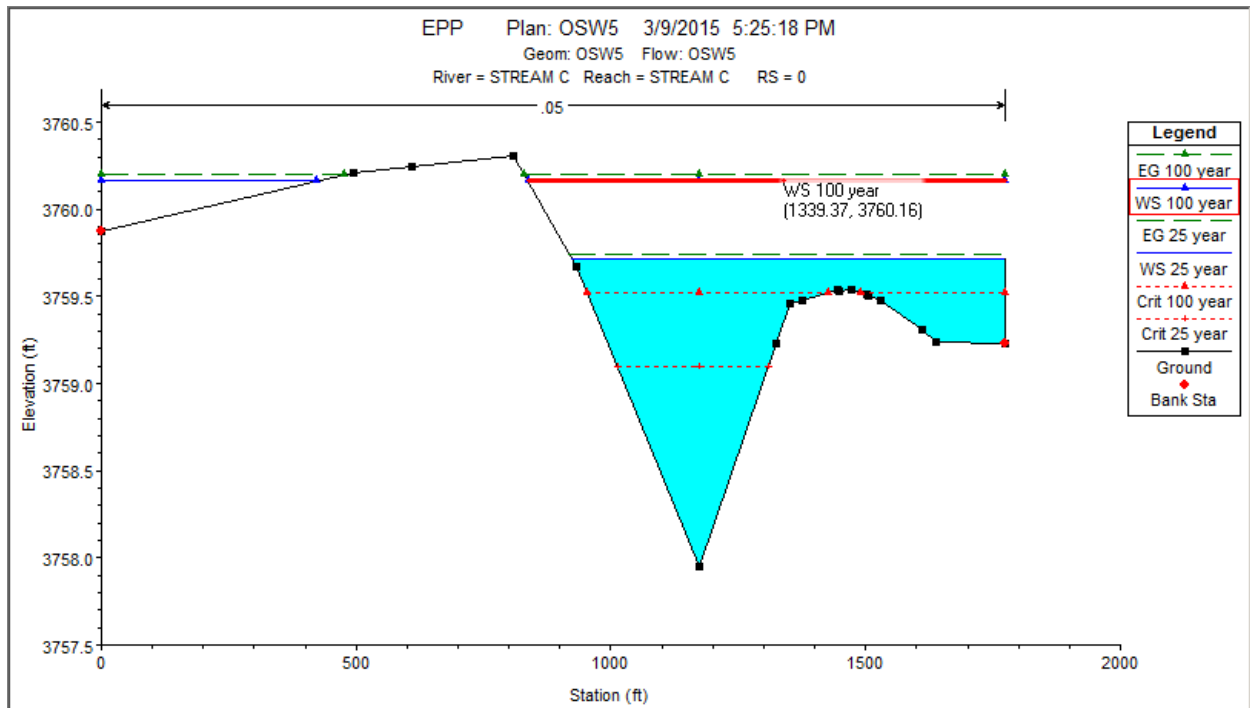
LEGEND FOR FOLLOWING HEC-RAS FIGURES	
EG	Energy Grade Line
WS	Water Surface
Crit	Critical Depth



REACH OSW5 25-YR CS 0

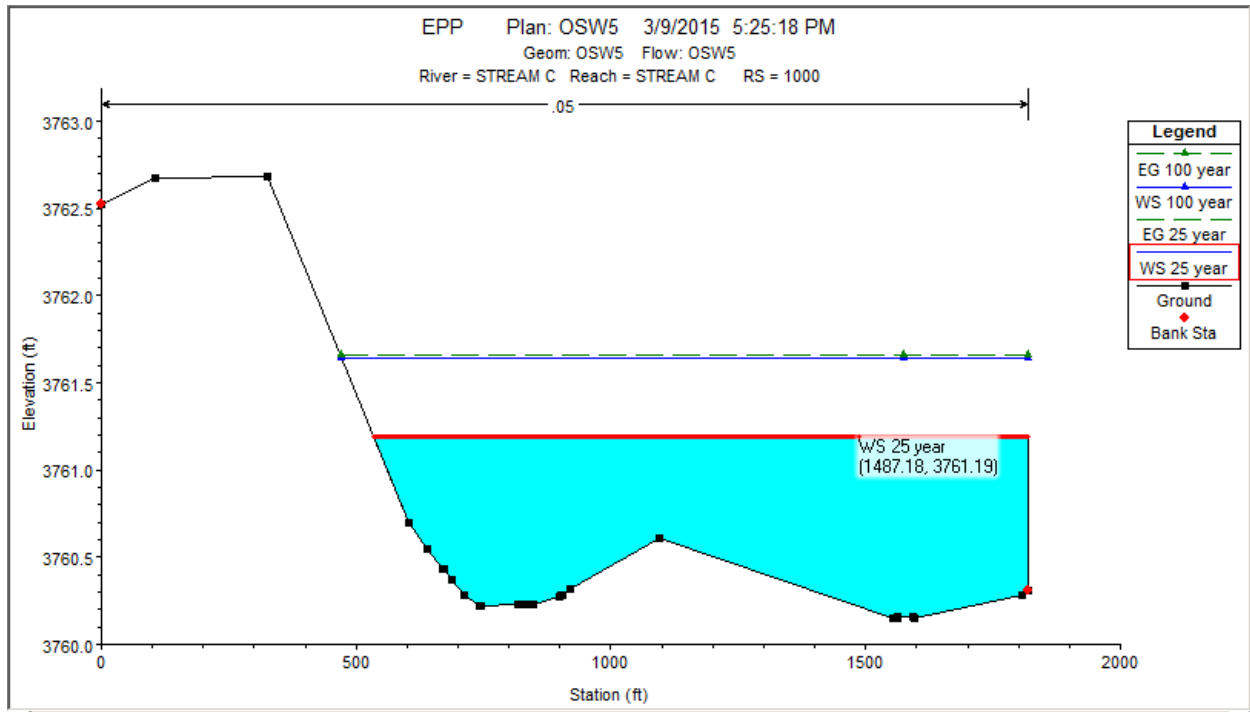


REACH OSW5 100-YR CS 0

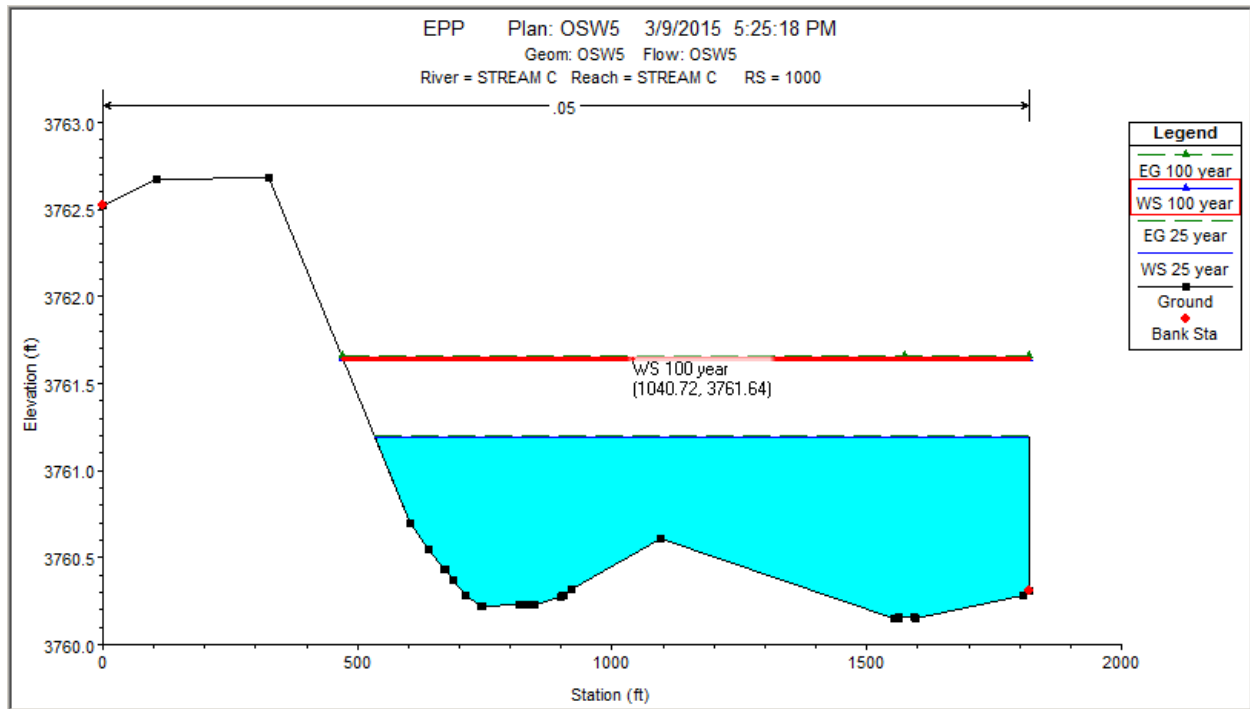




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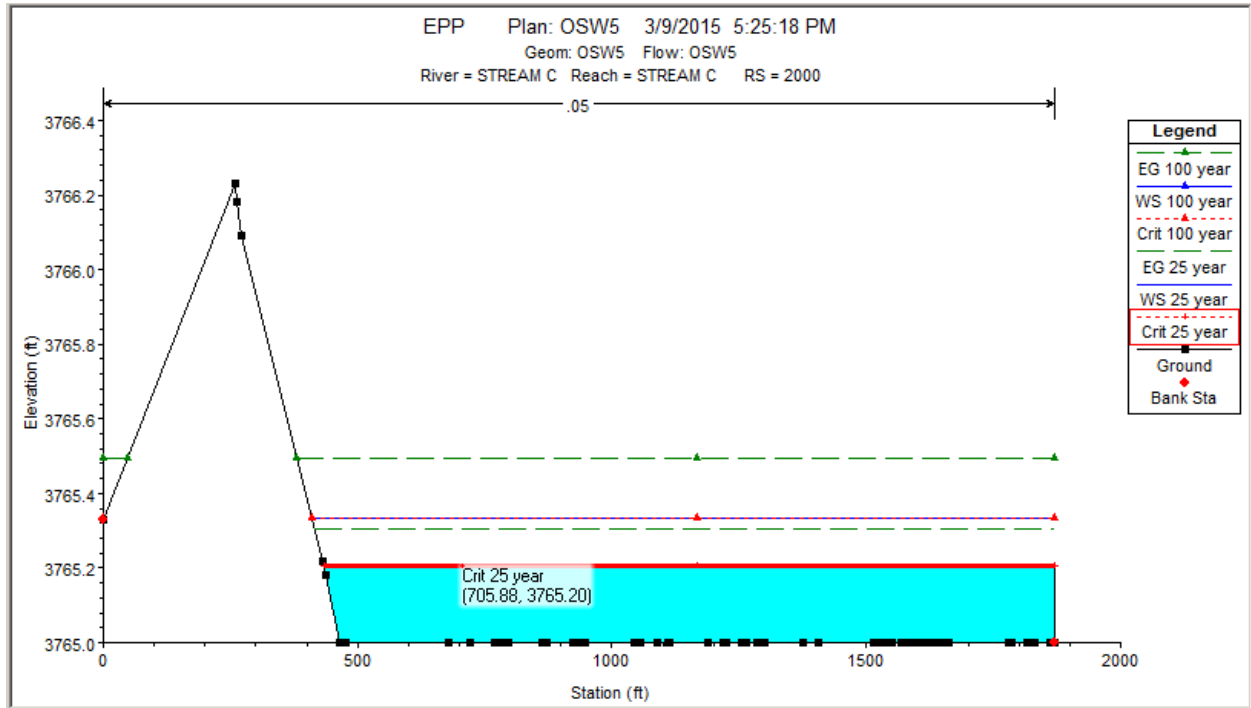


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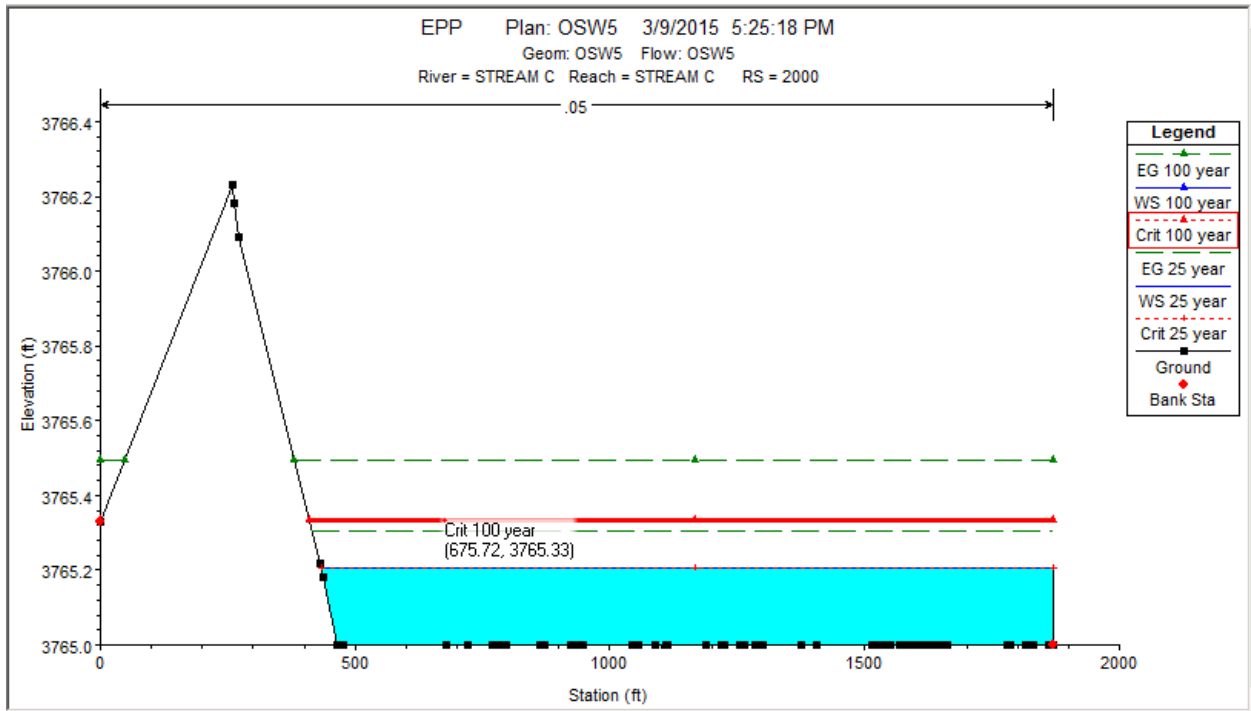




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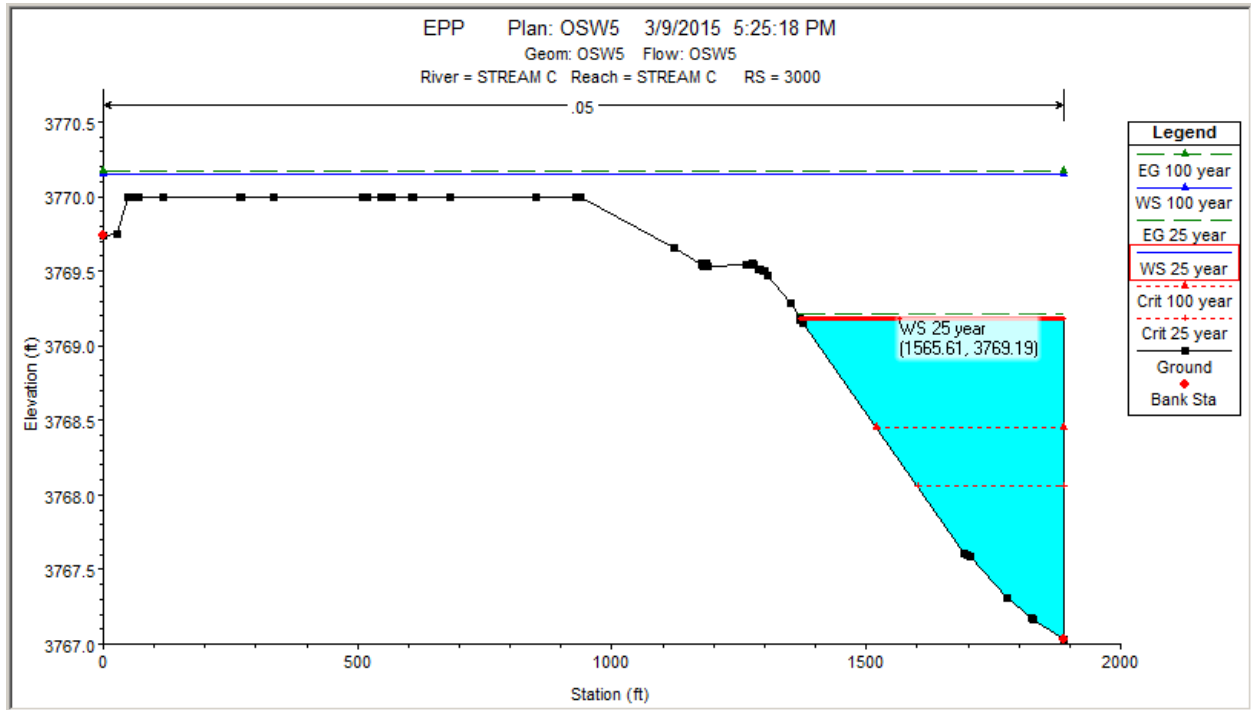


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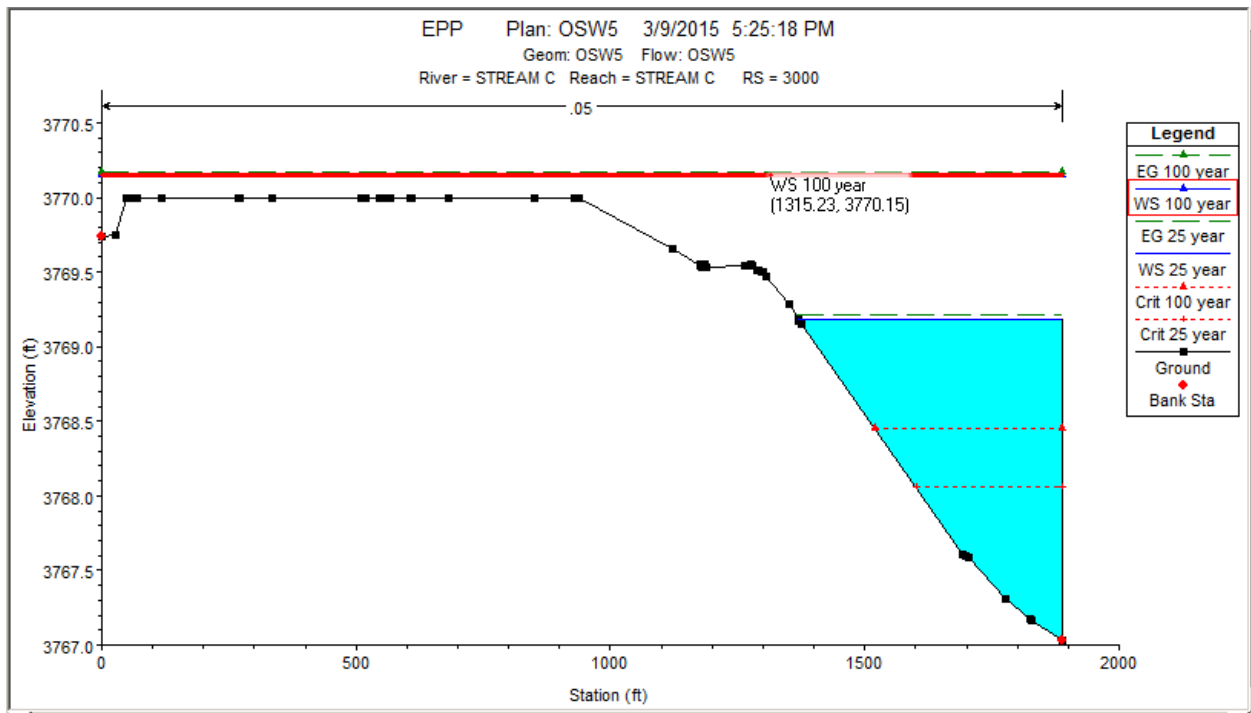




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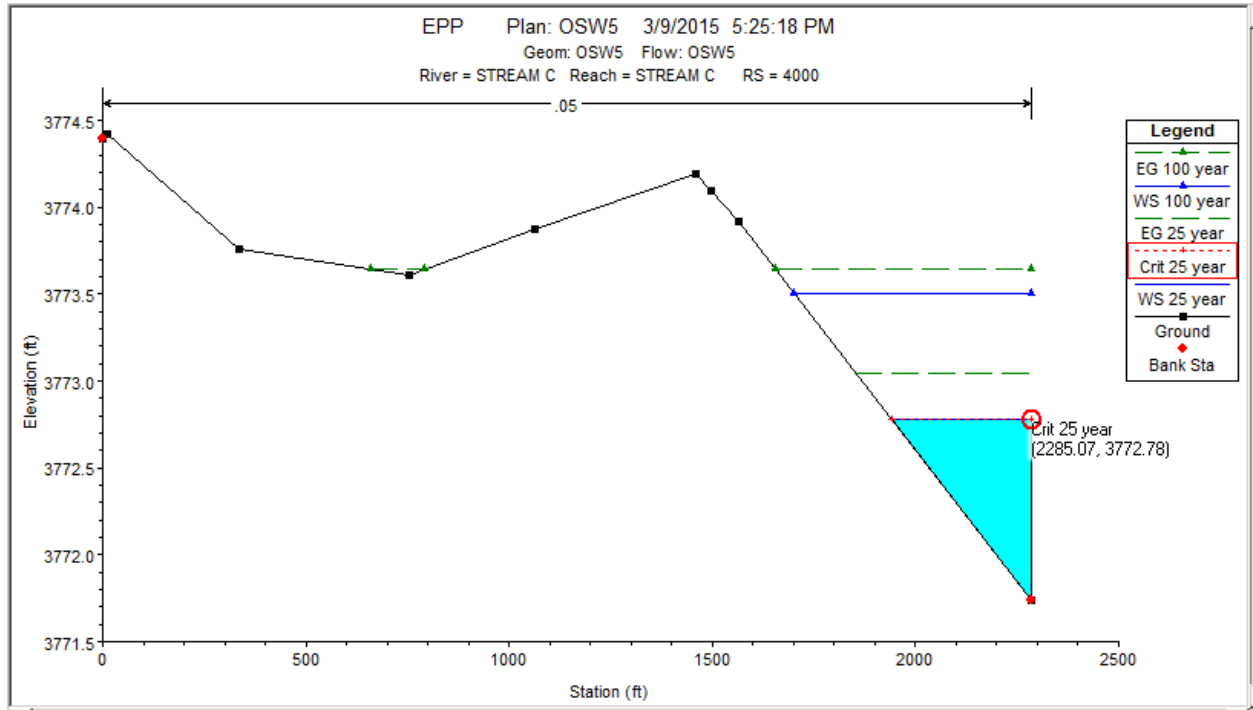


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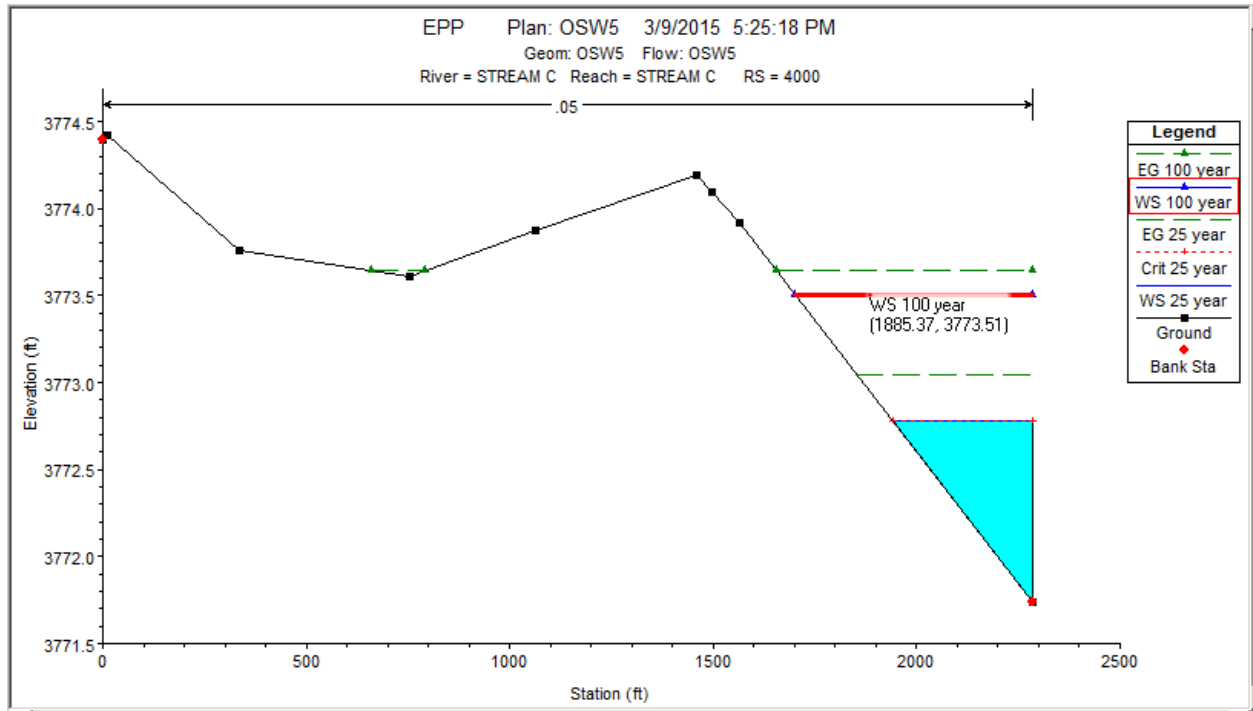




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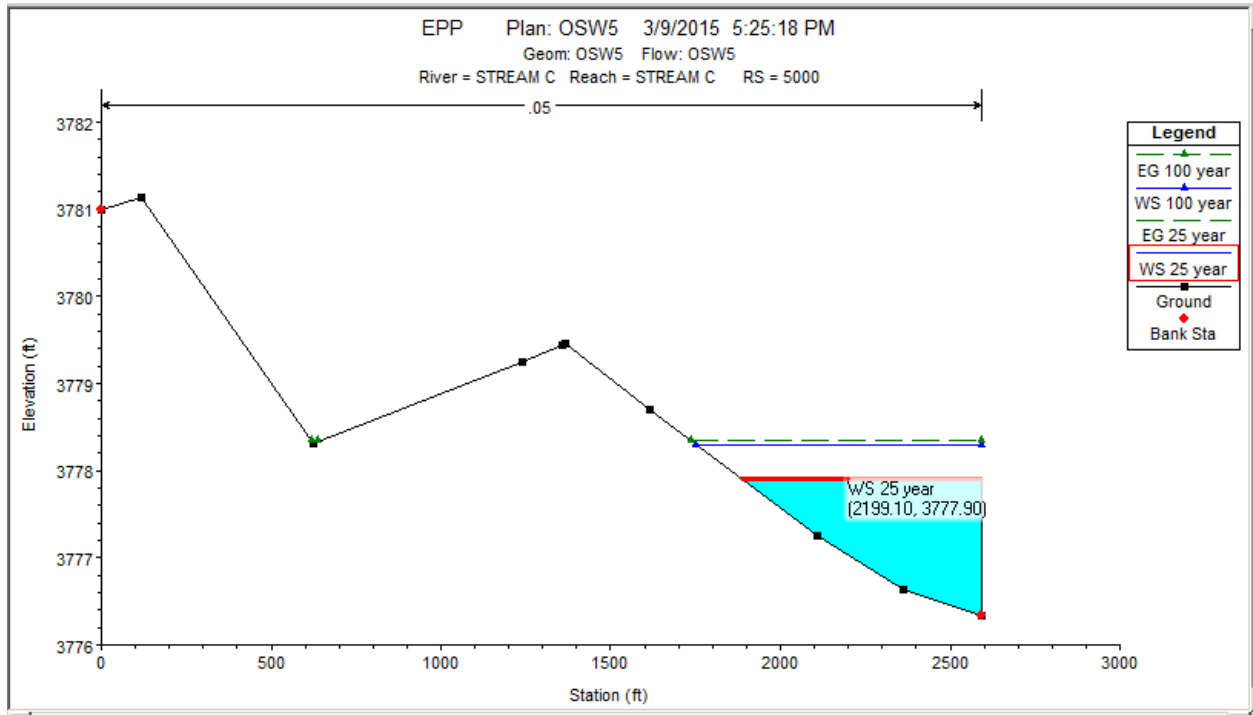


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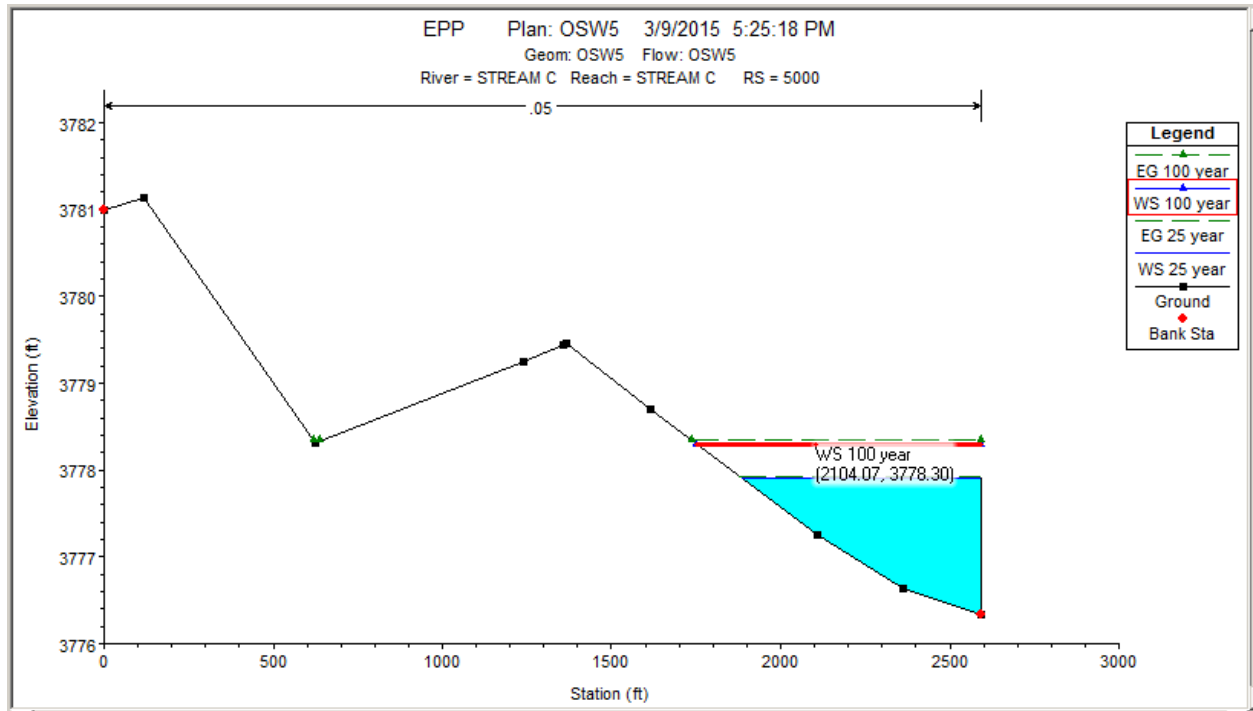




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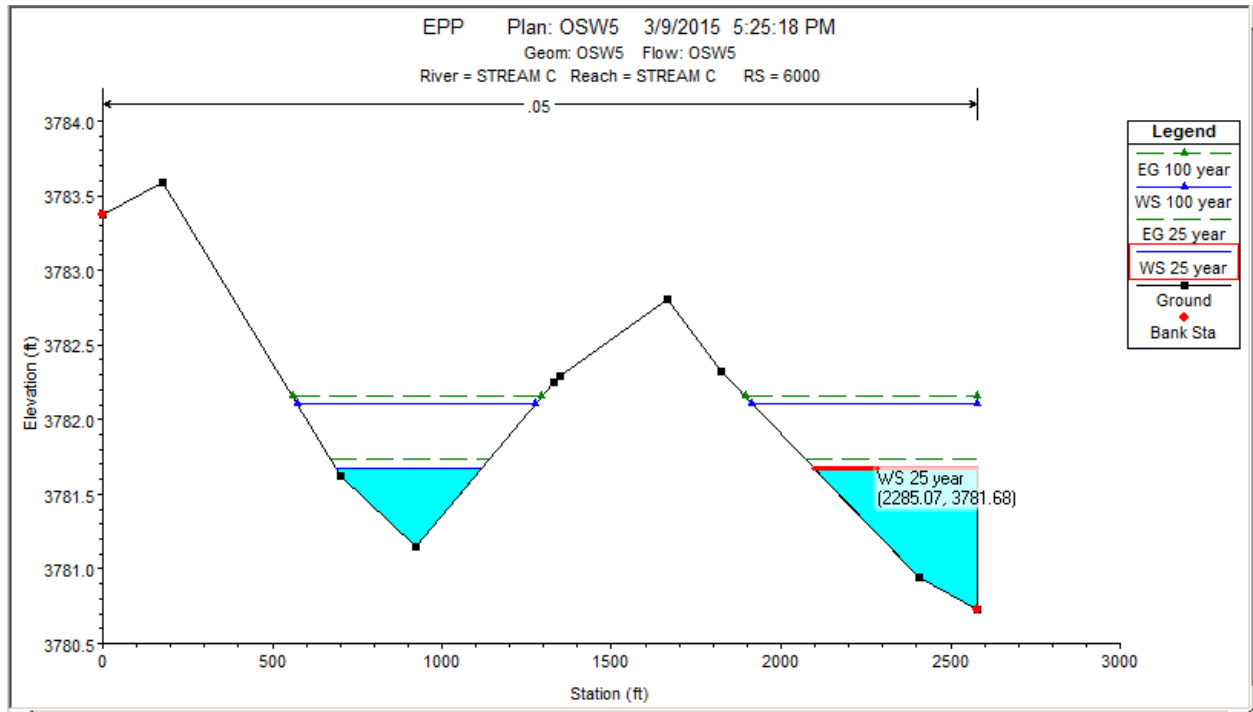


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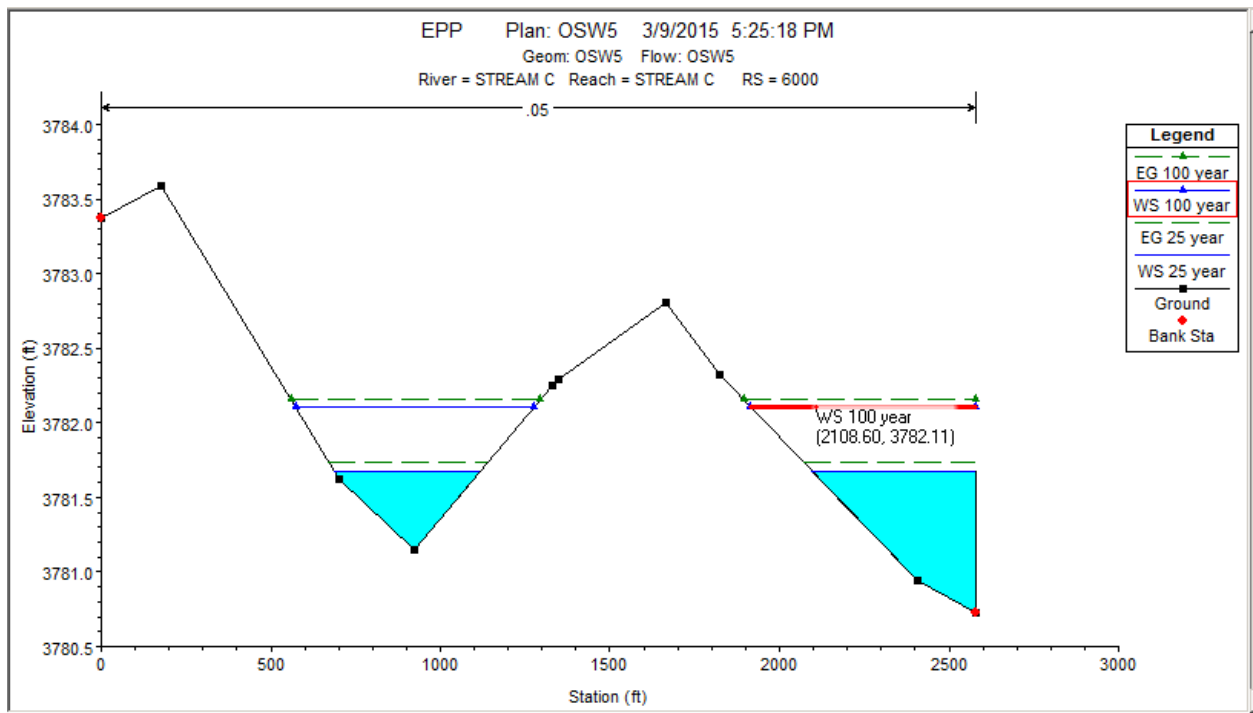




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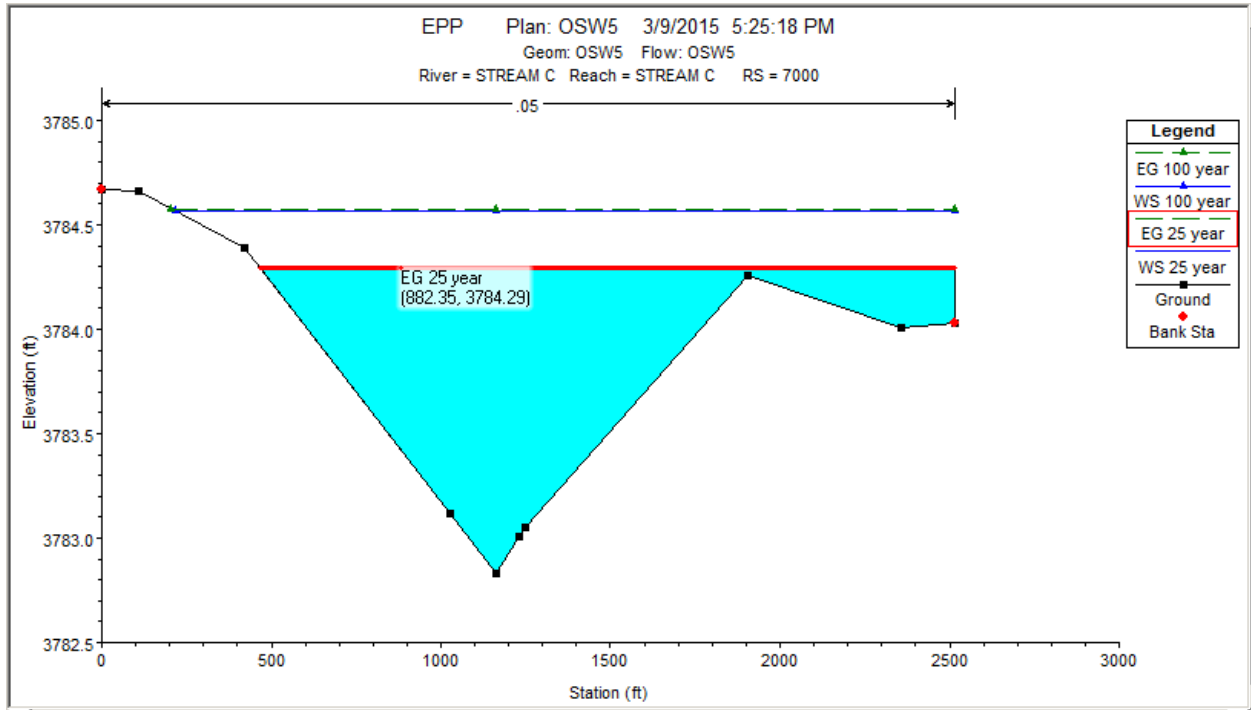


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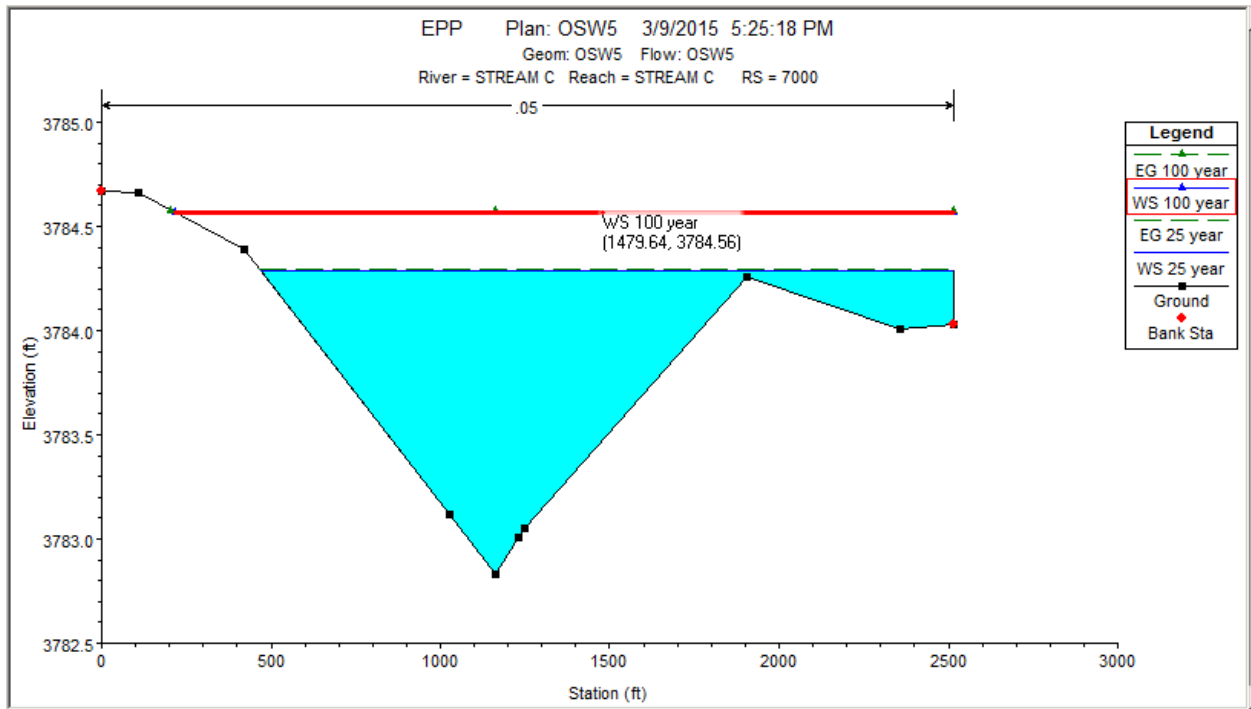




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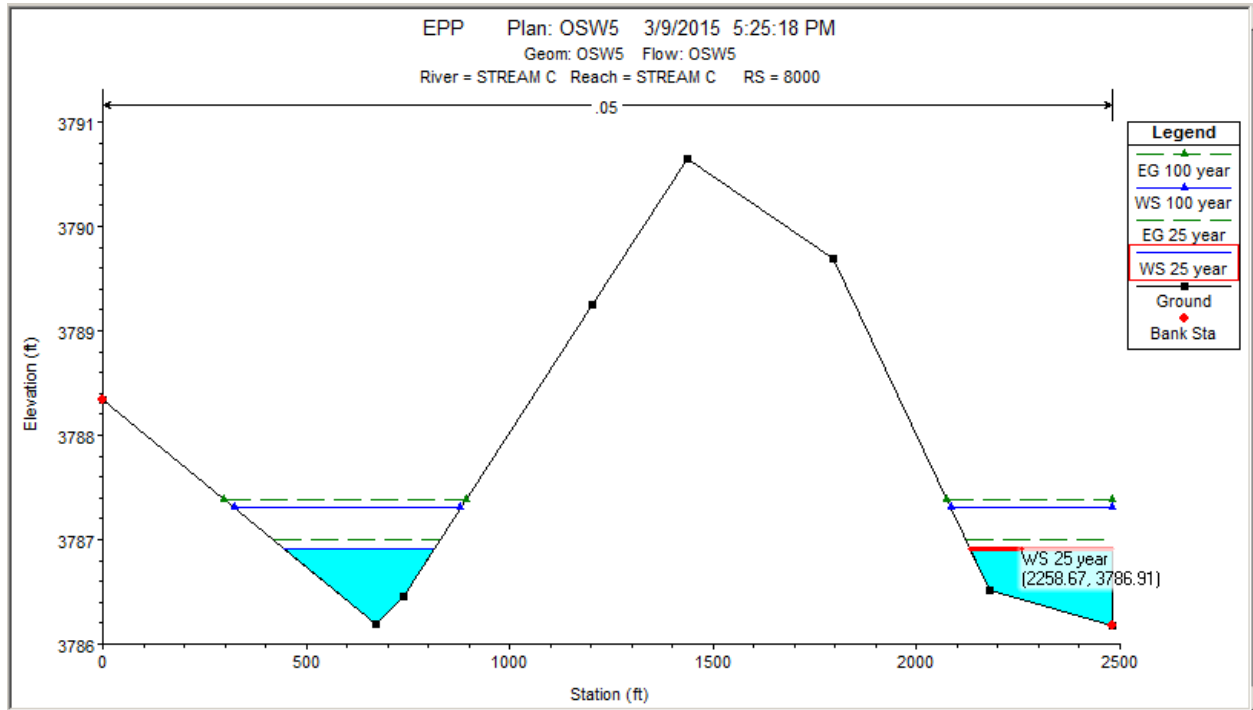


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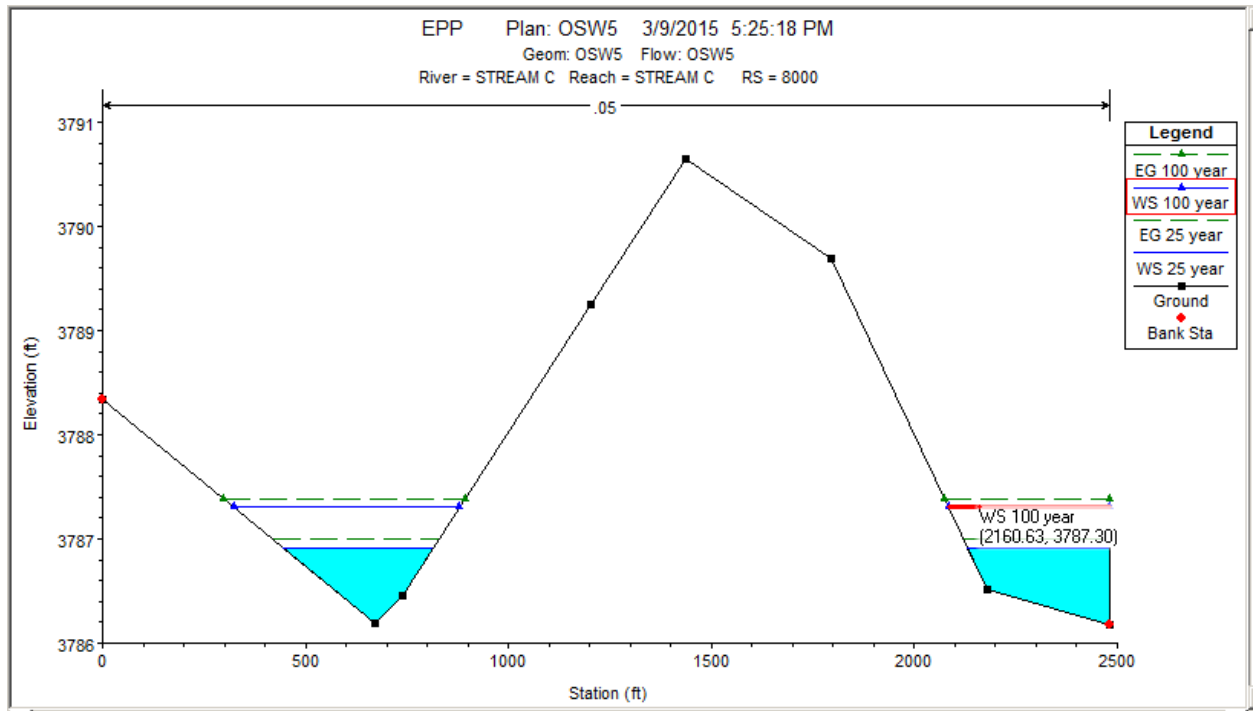




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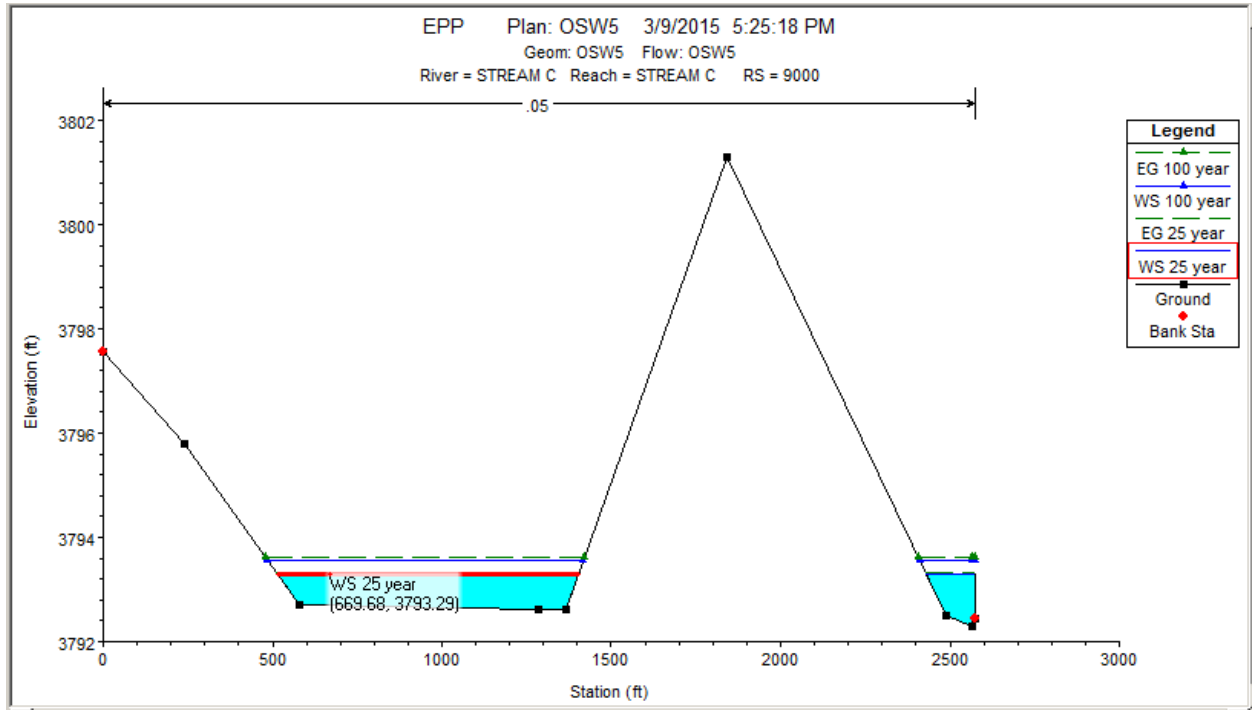


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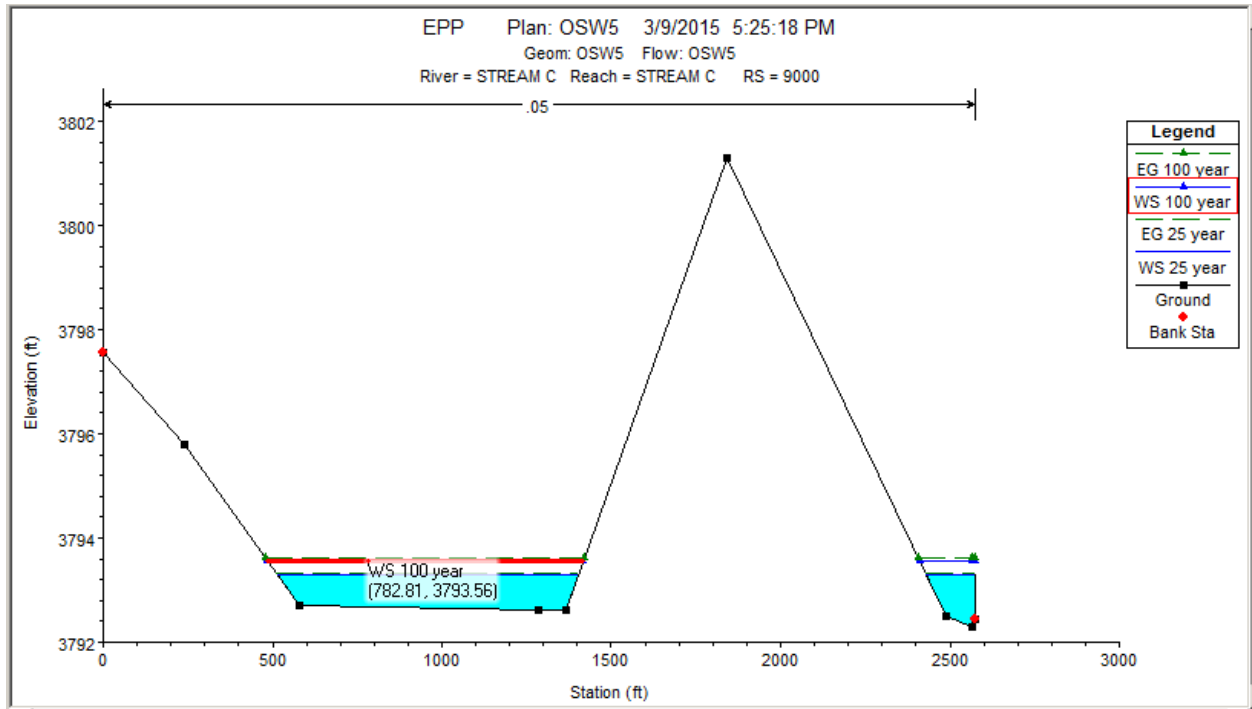




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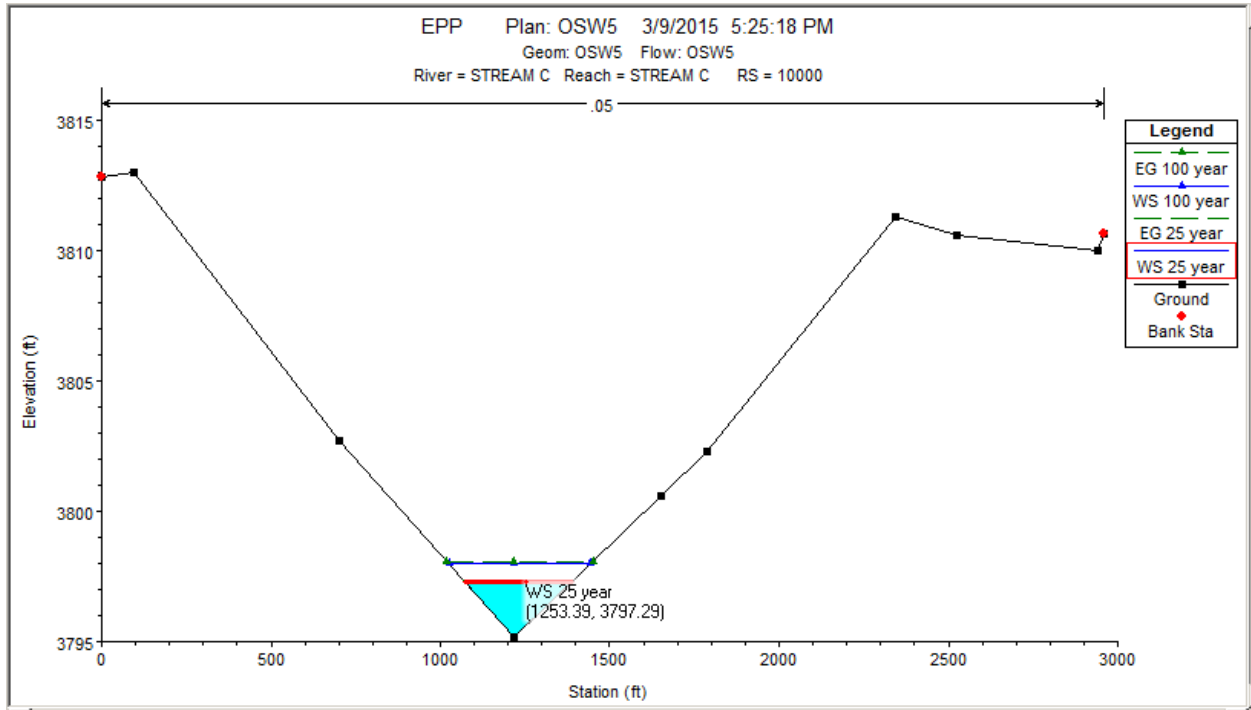


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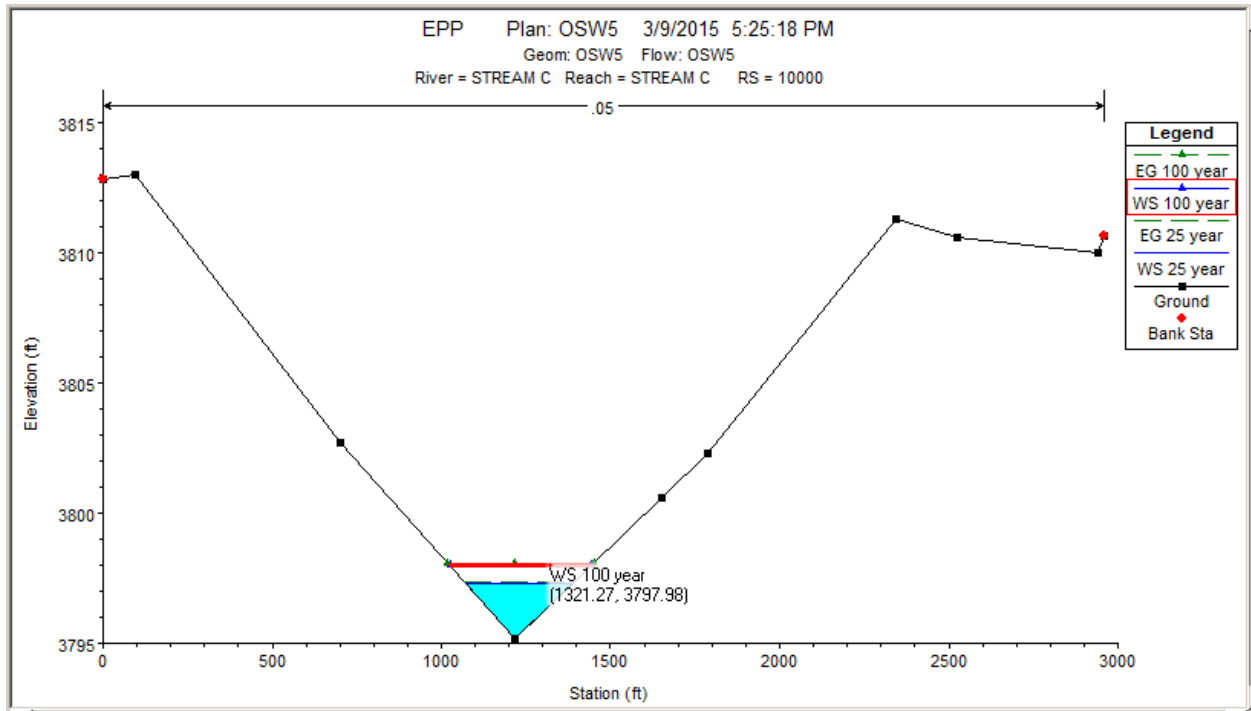




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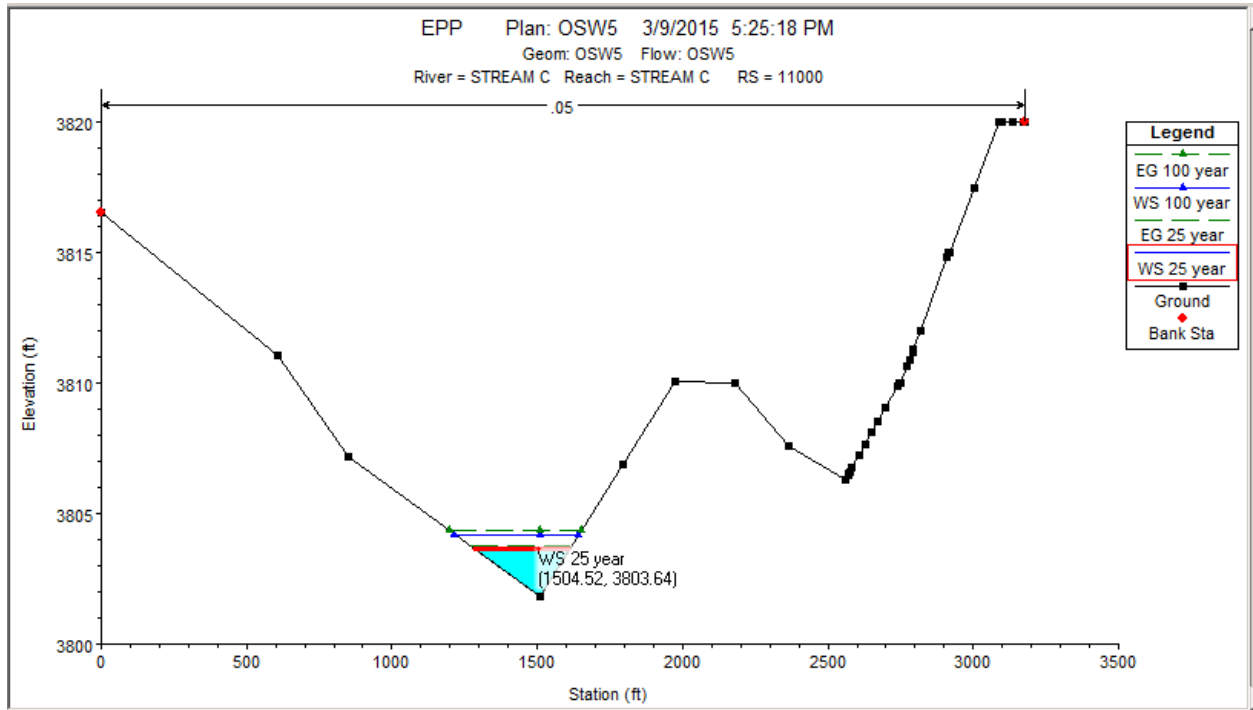


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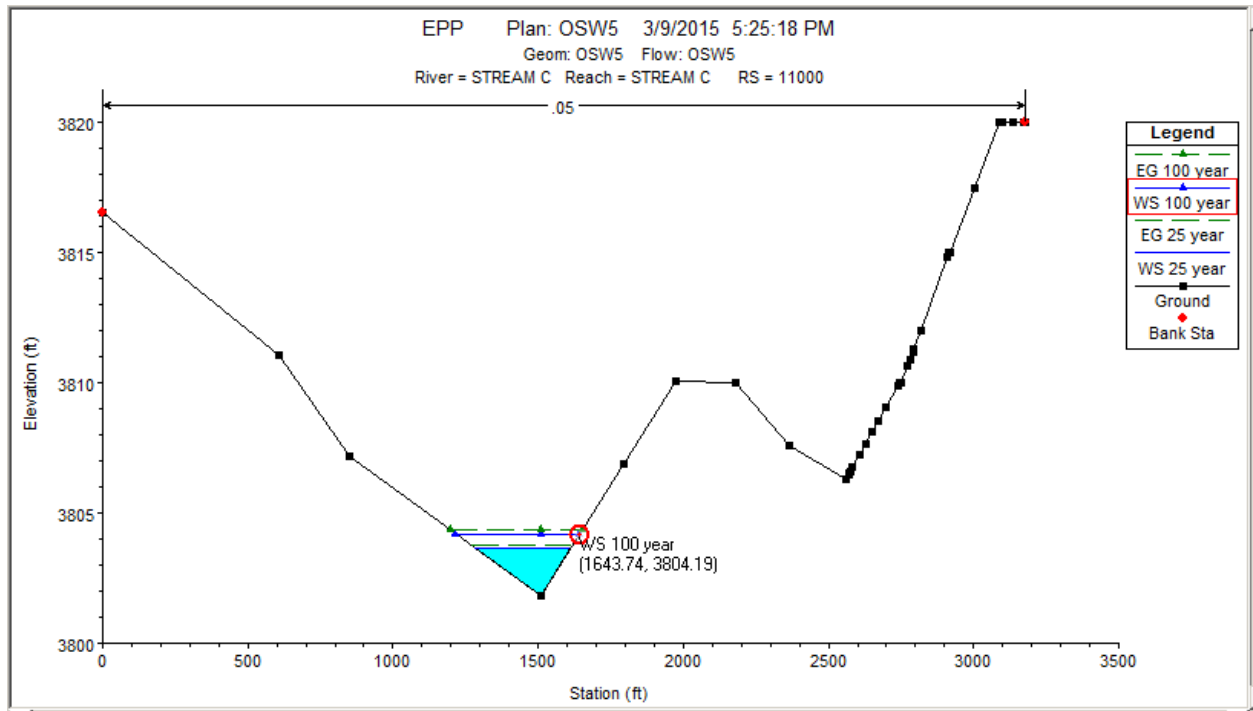




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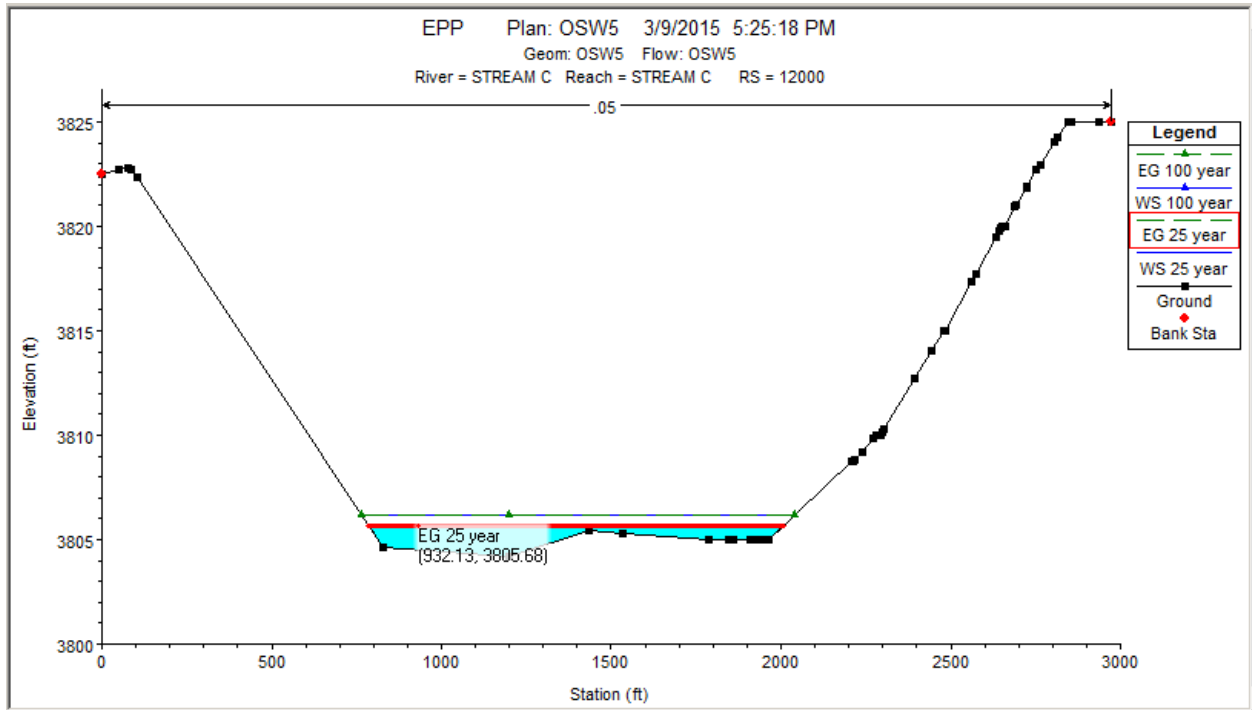


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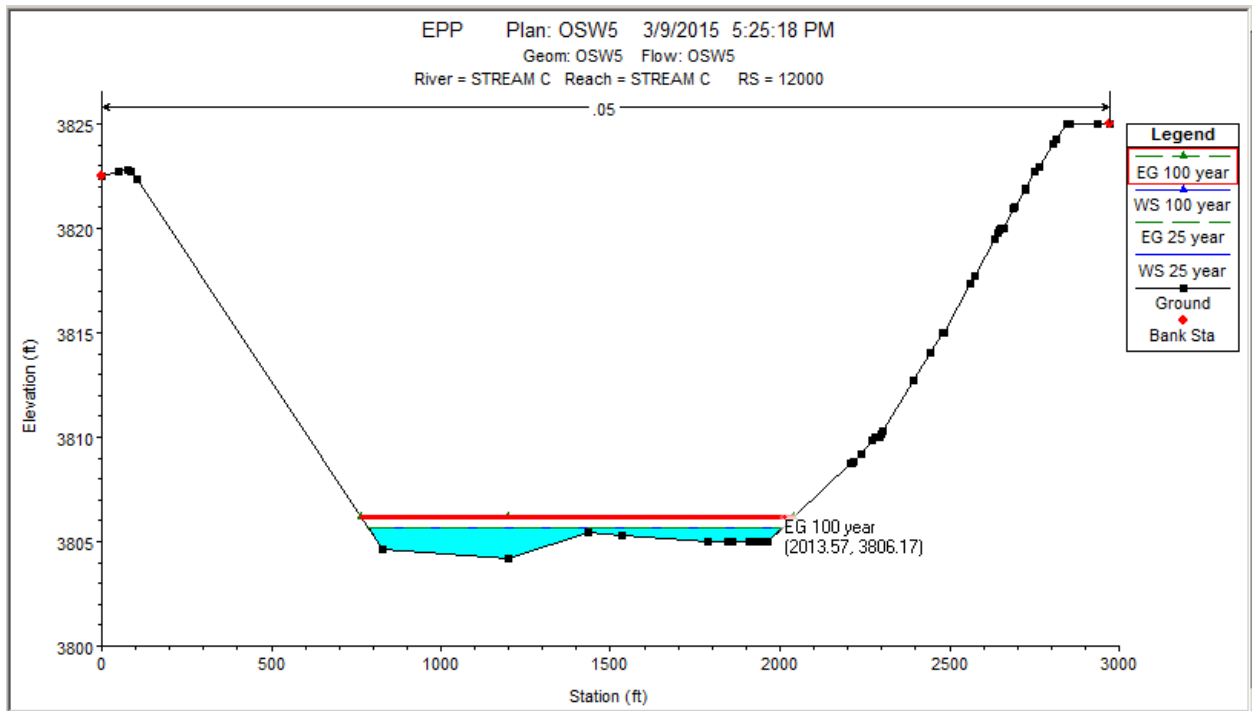




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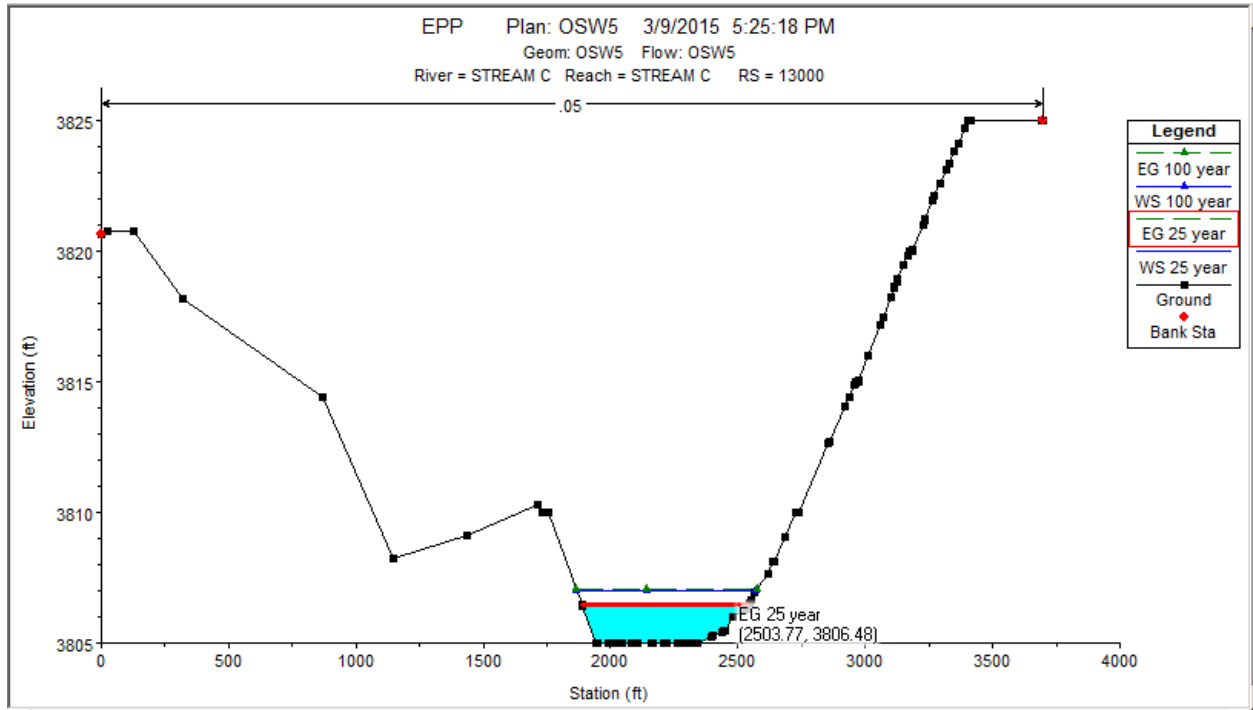


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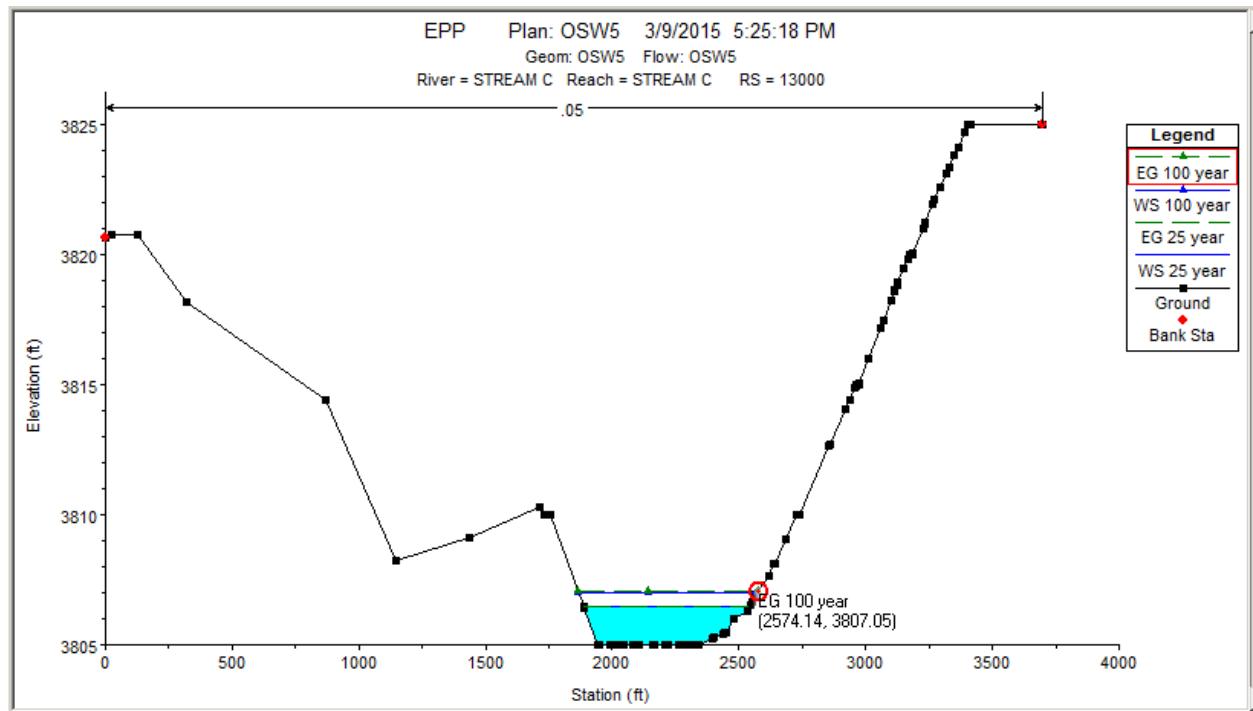




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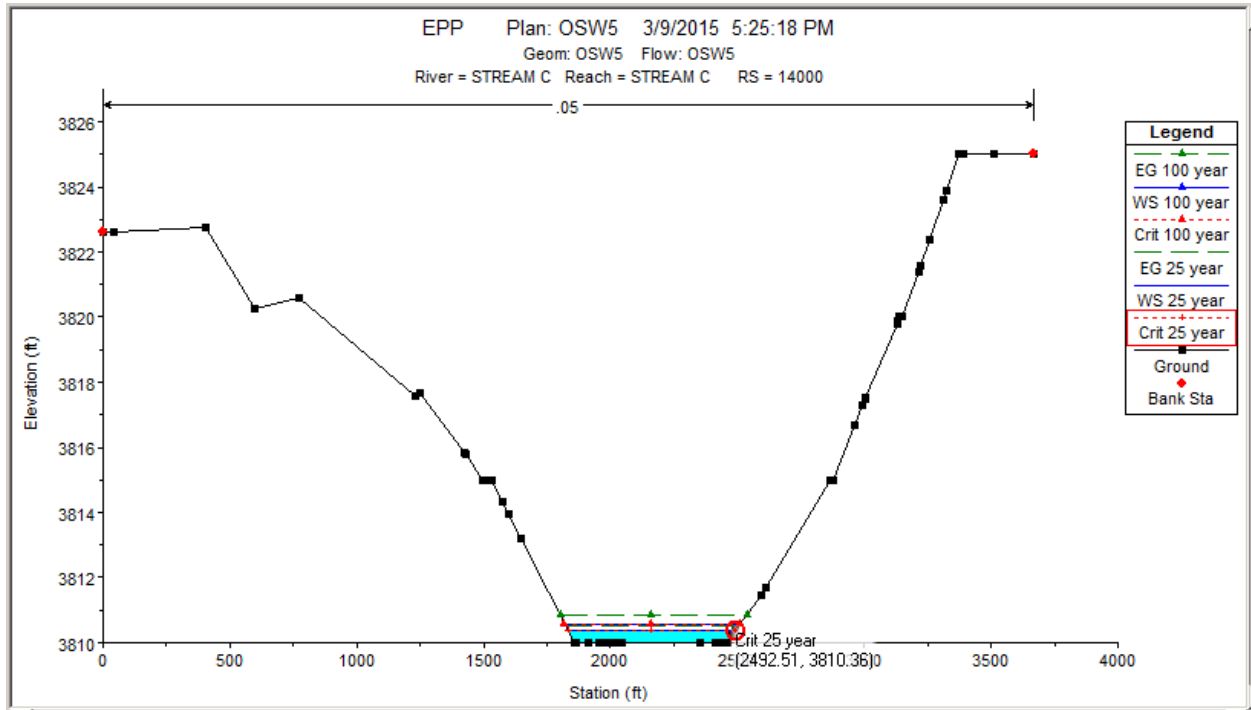


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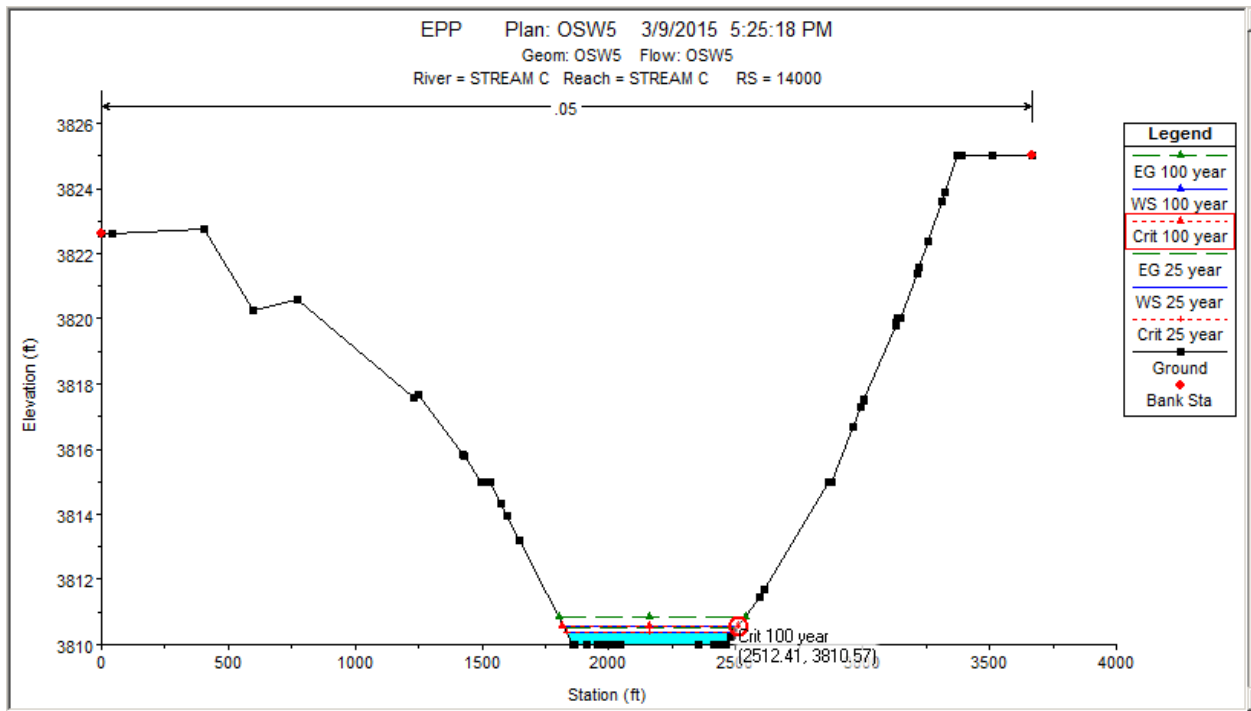




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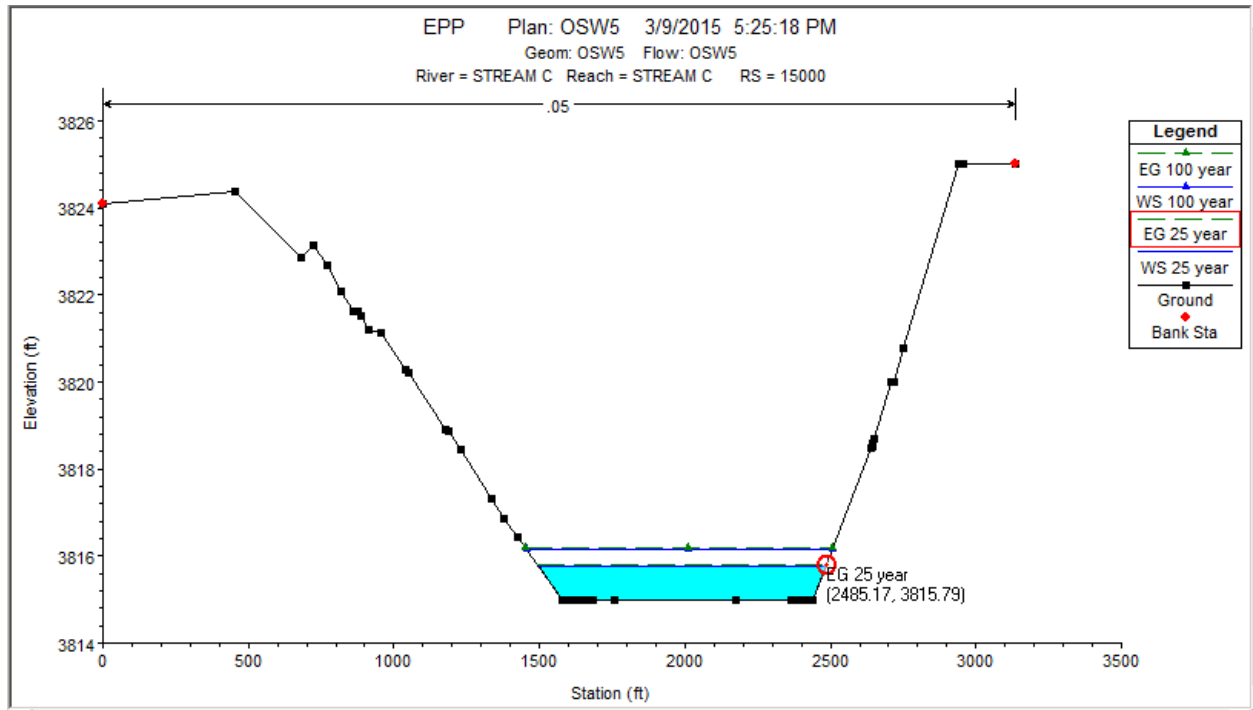


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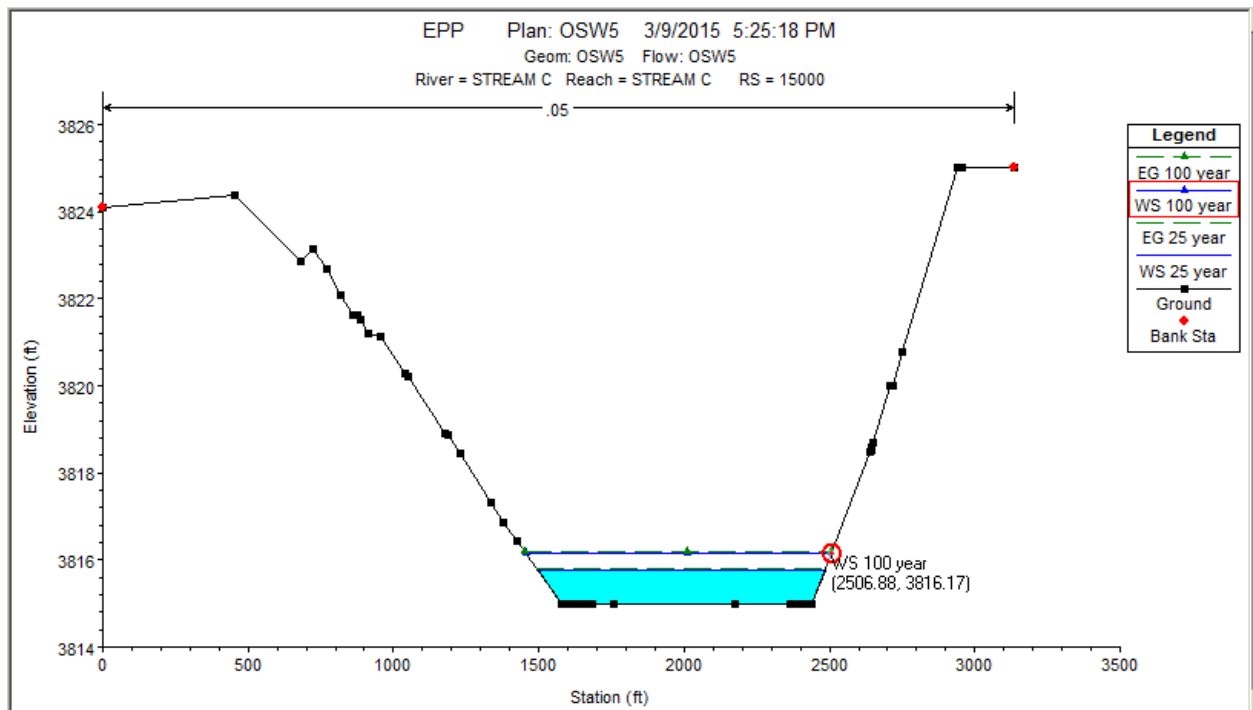




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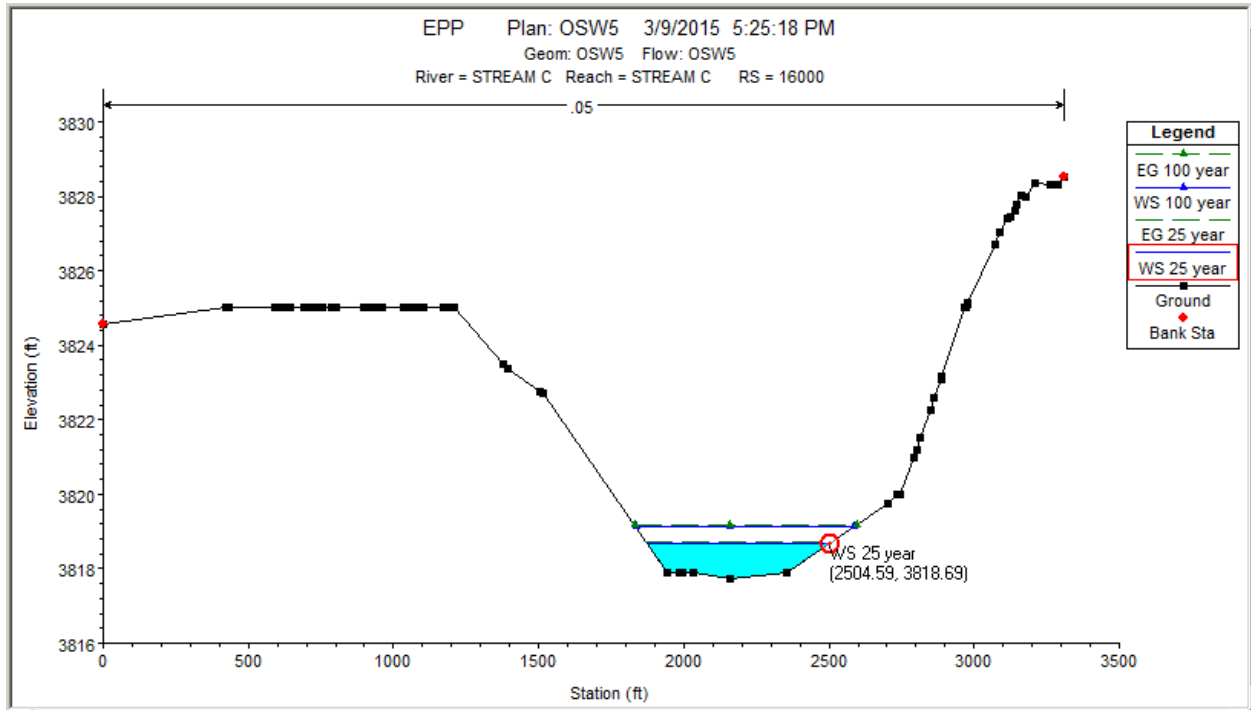


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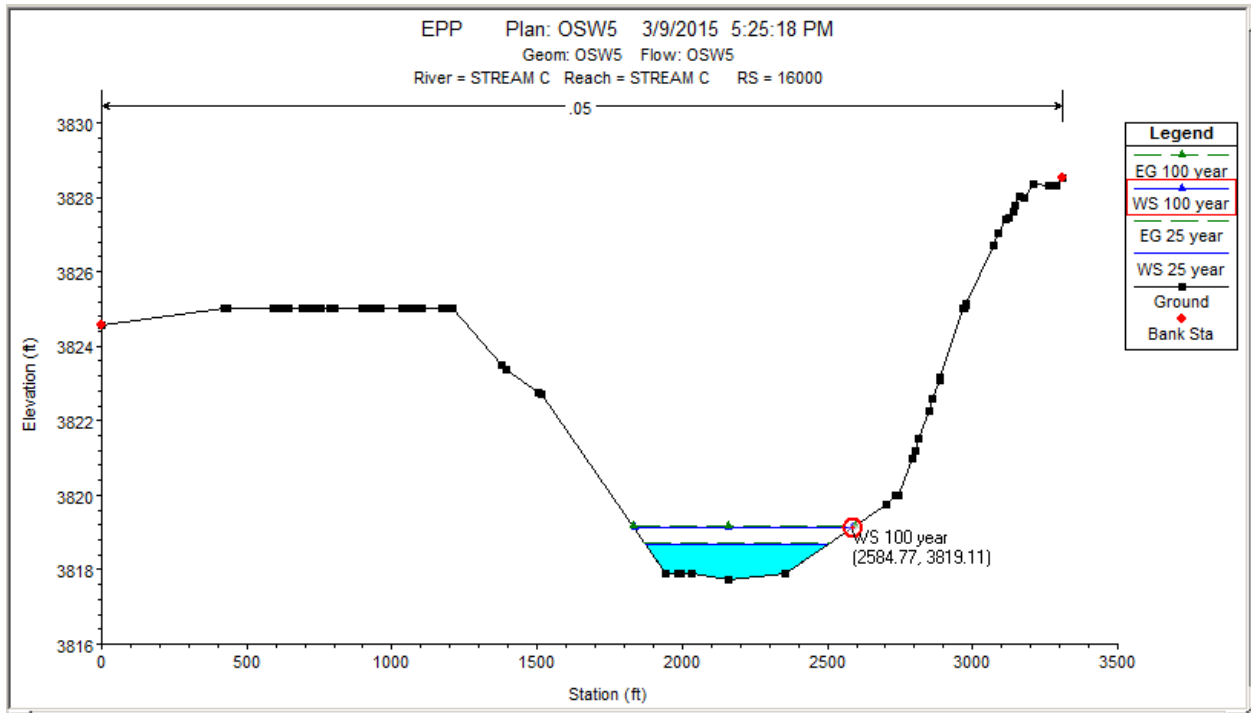




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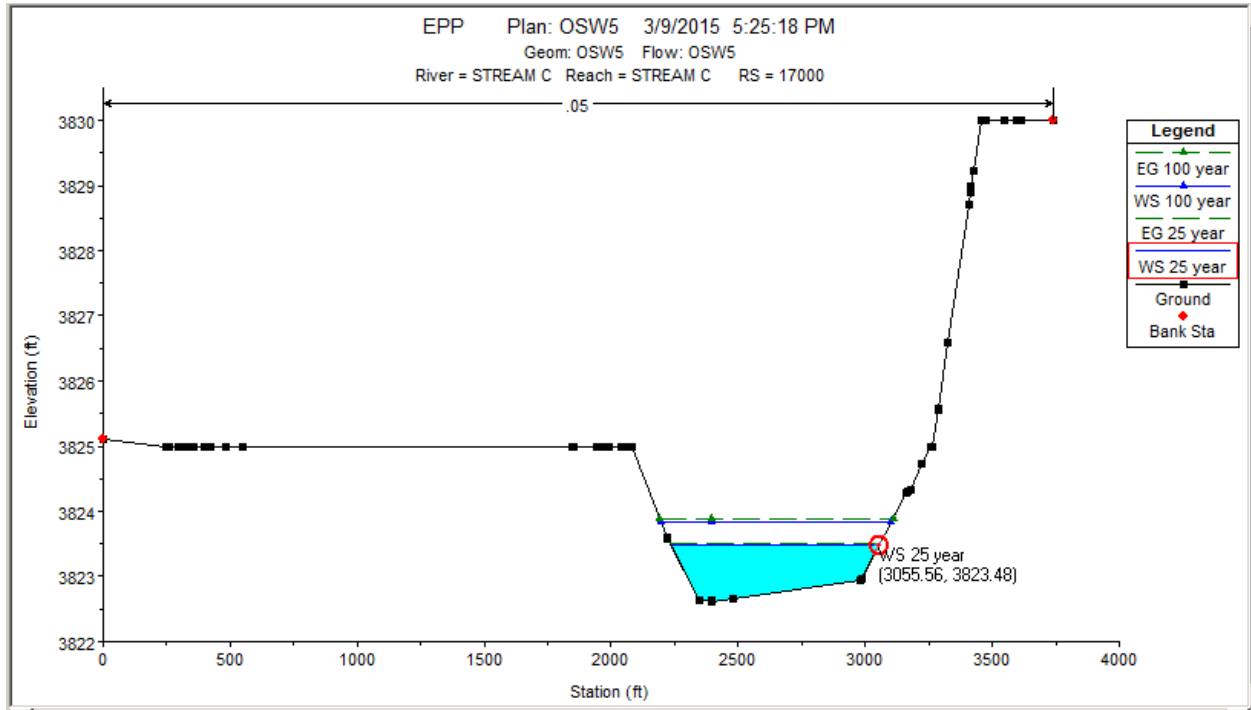


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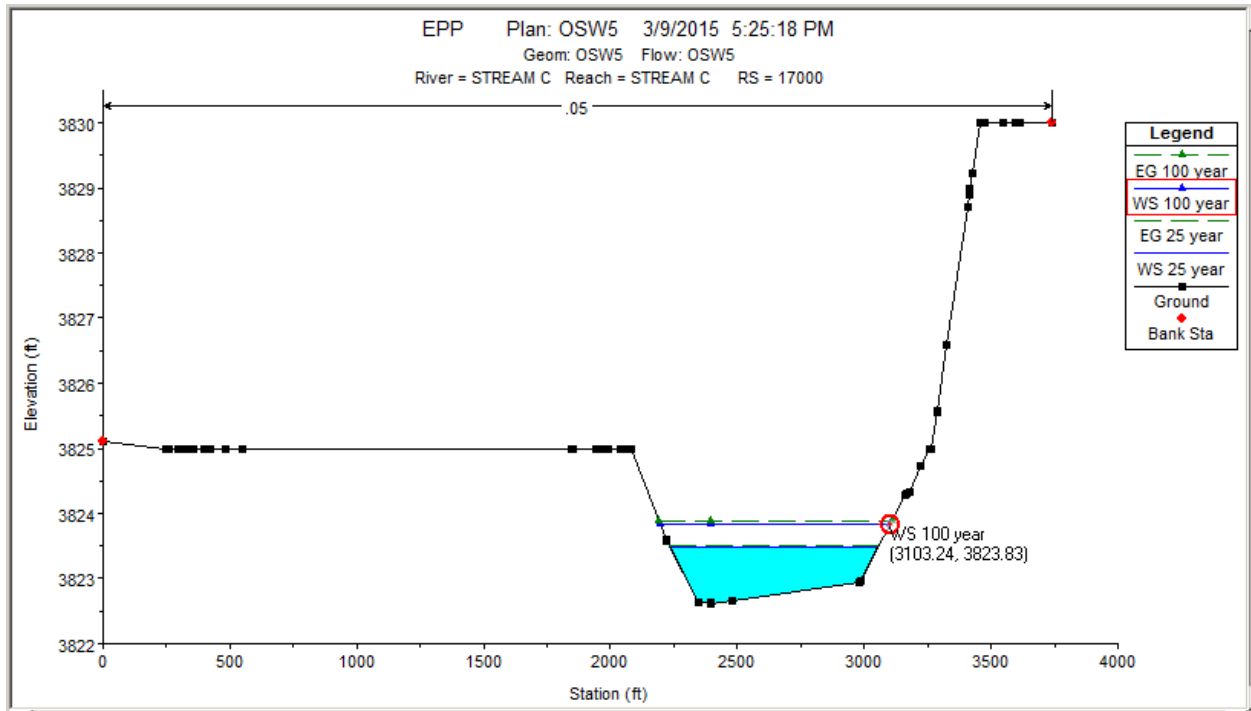




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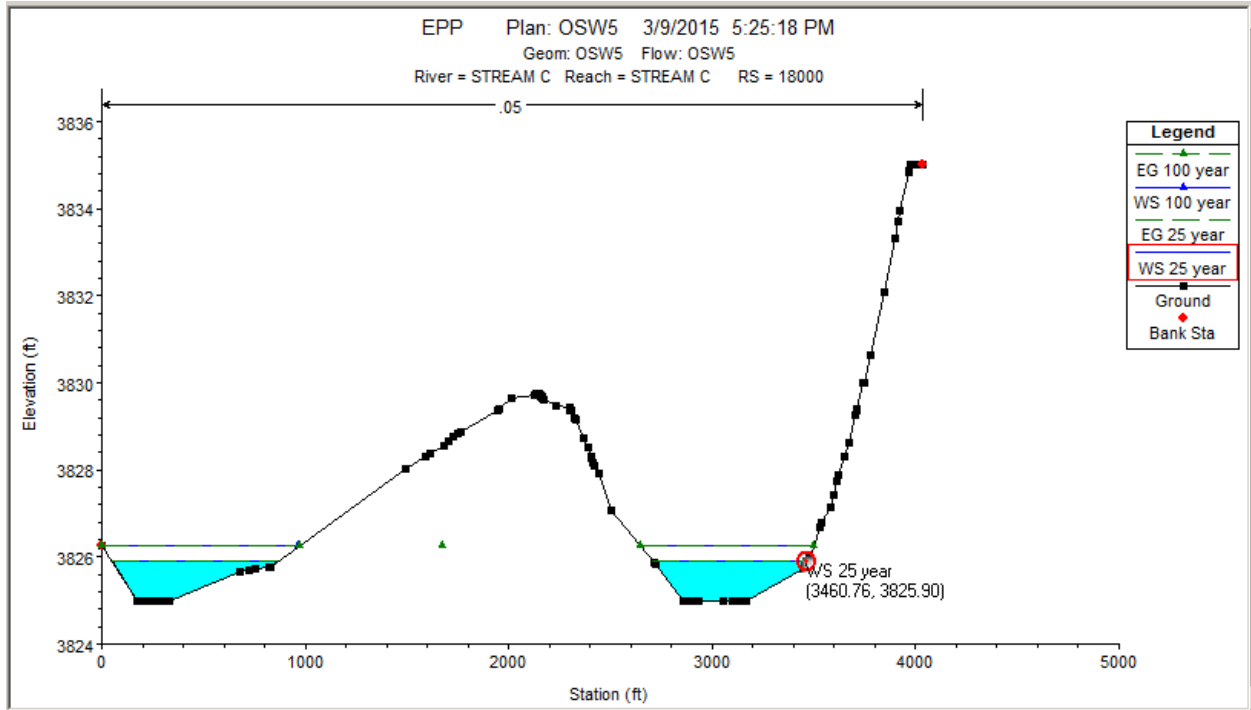


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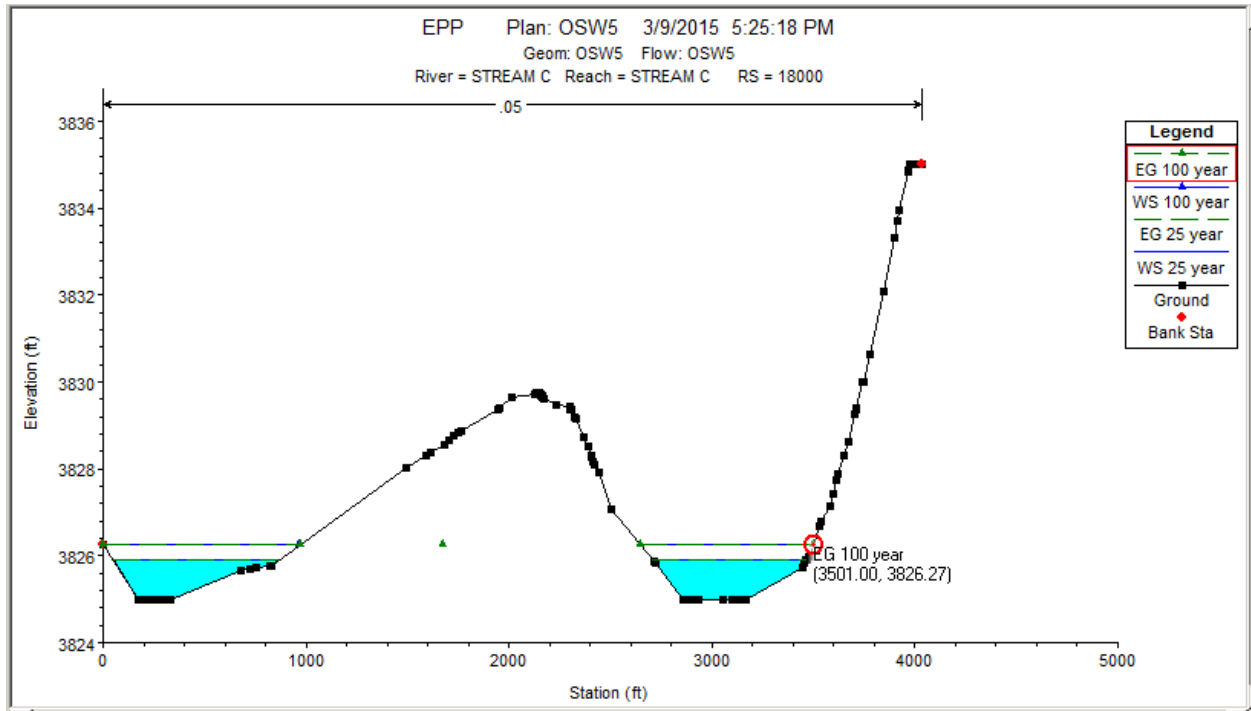




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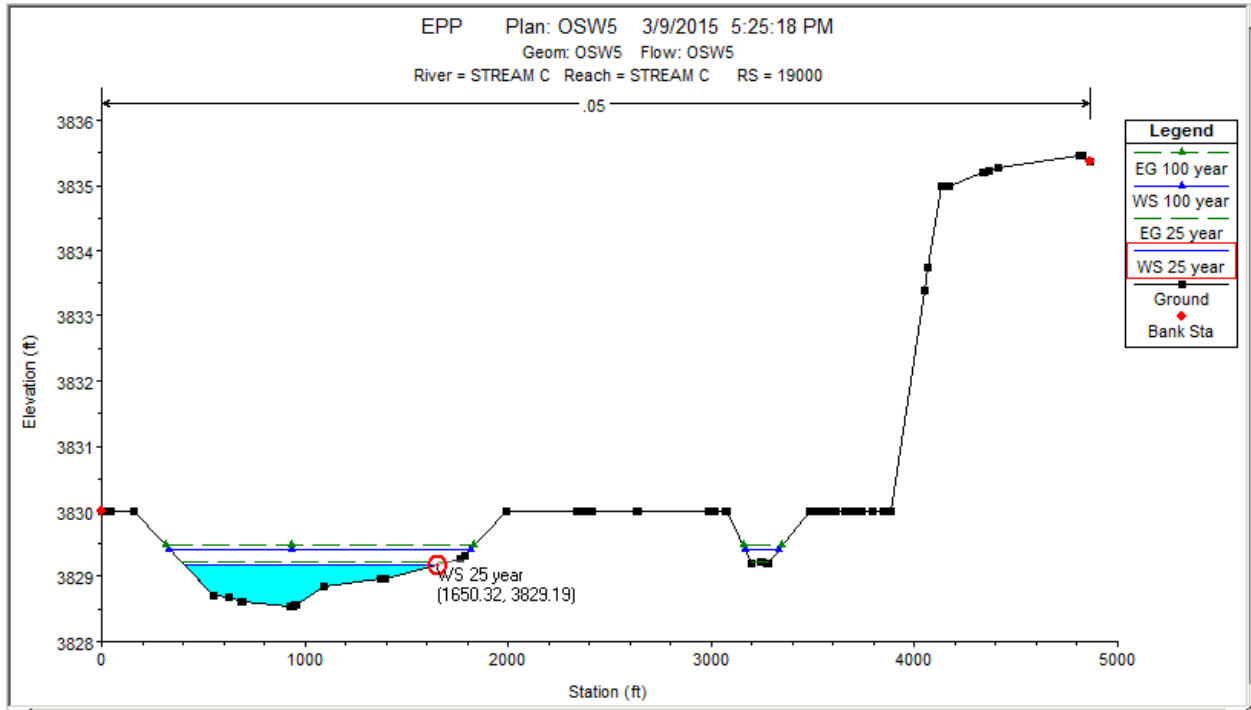


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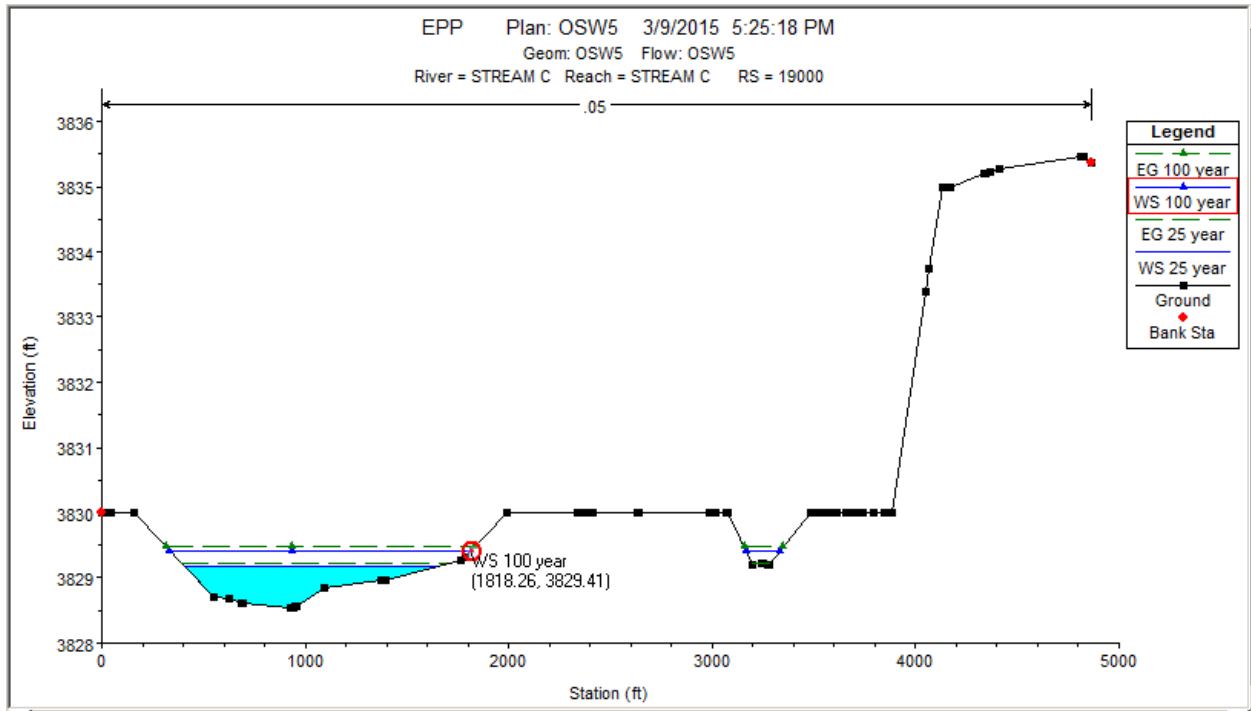




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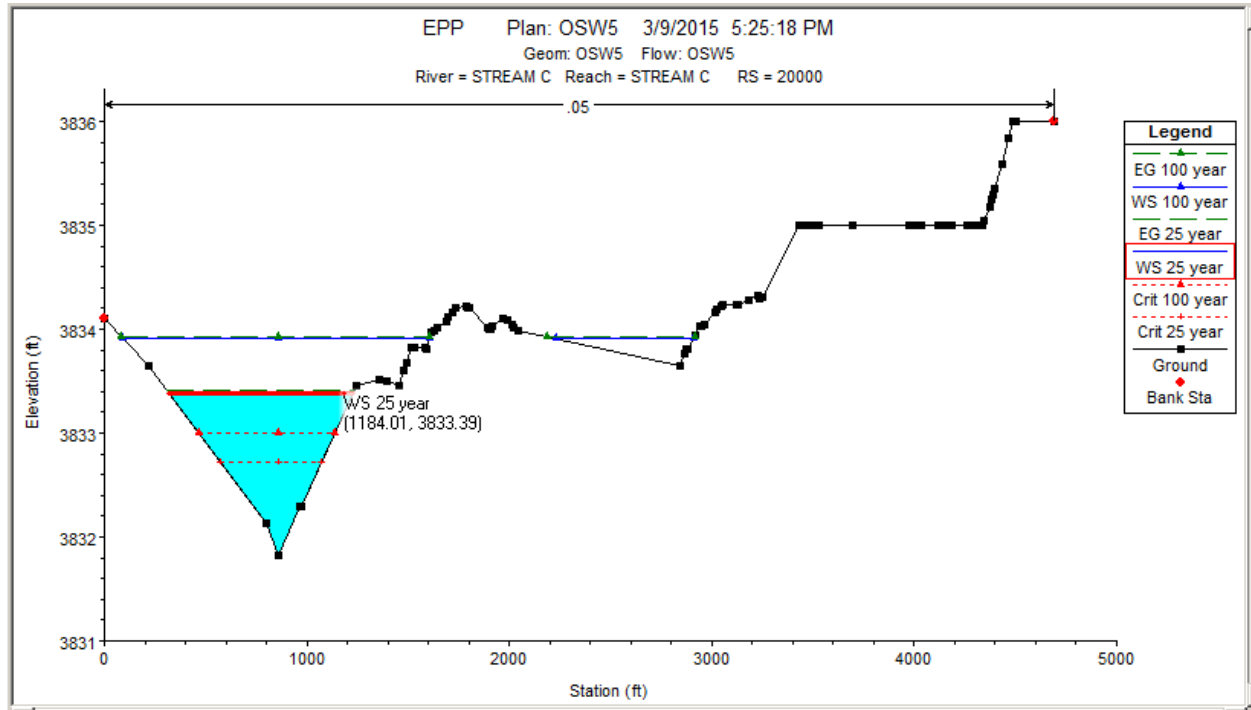


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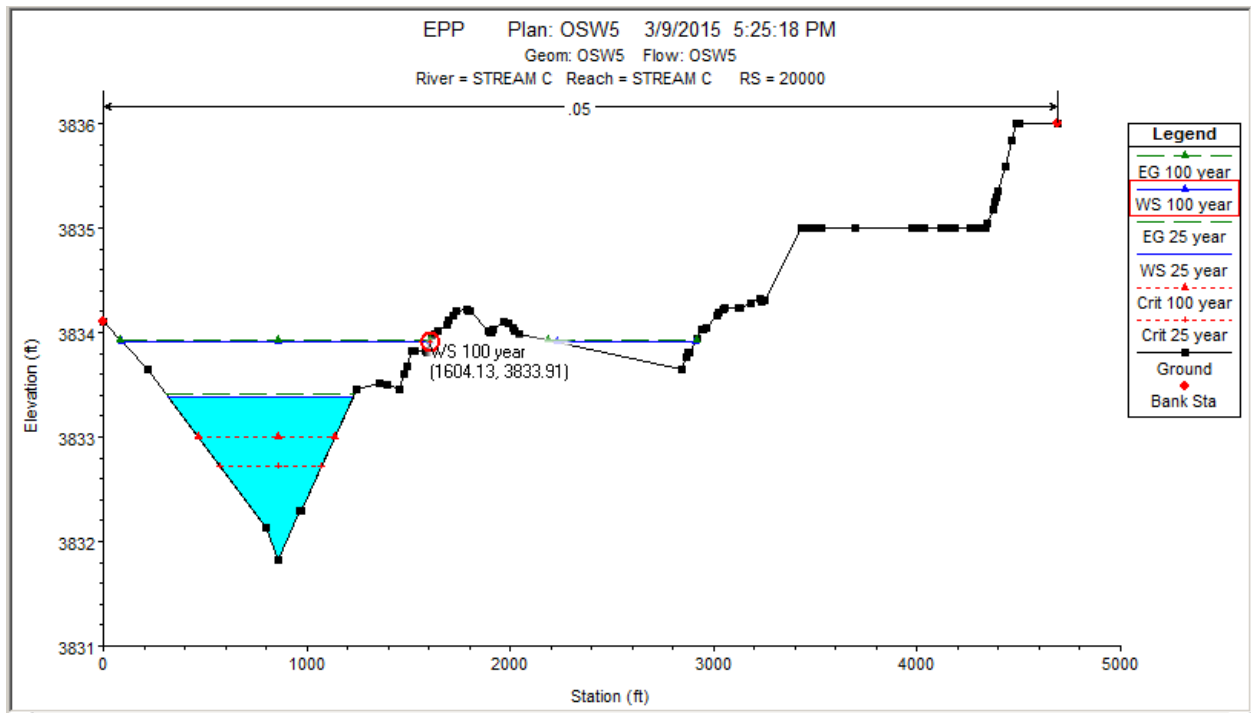




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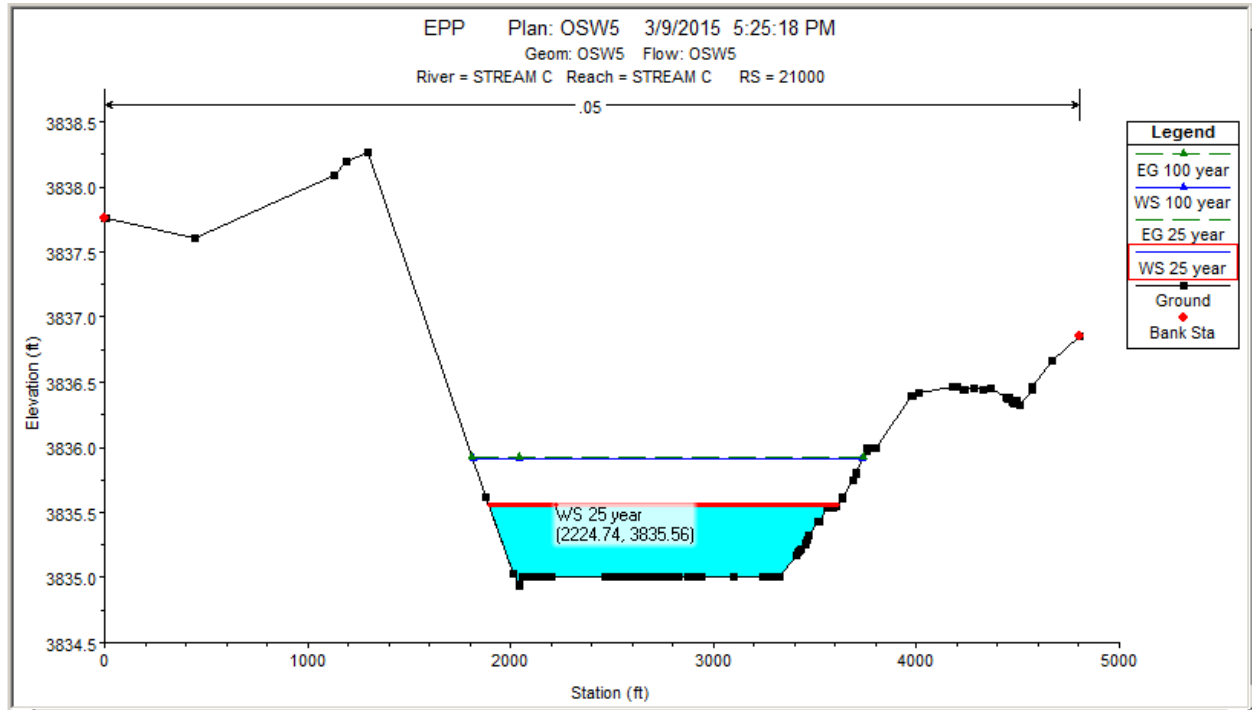


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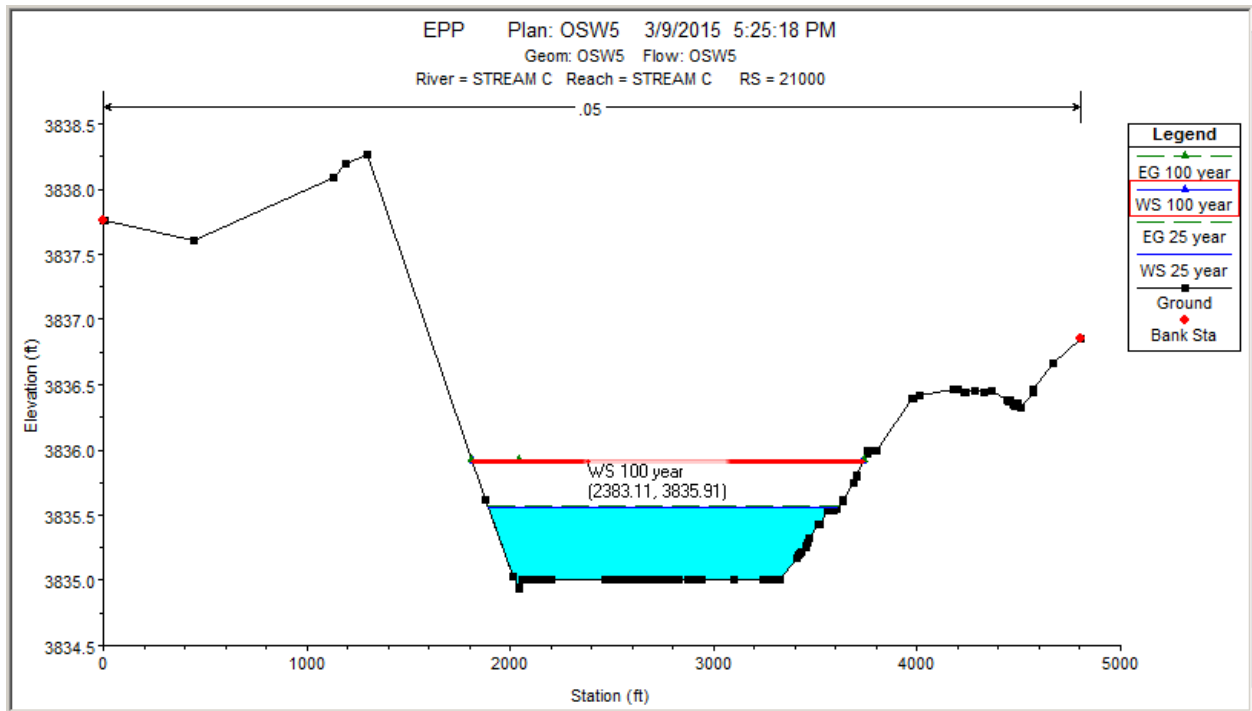




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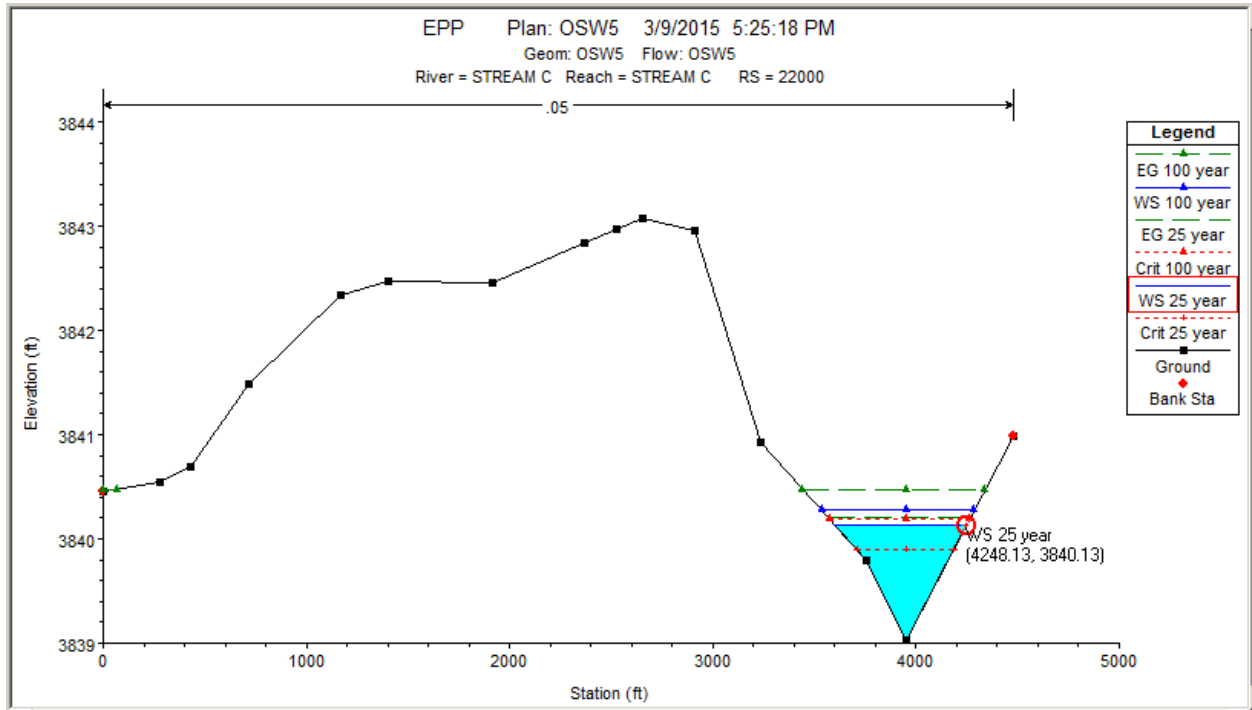


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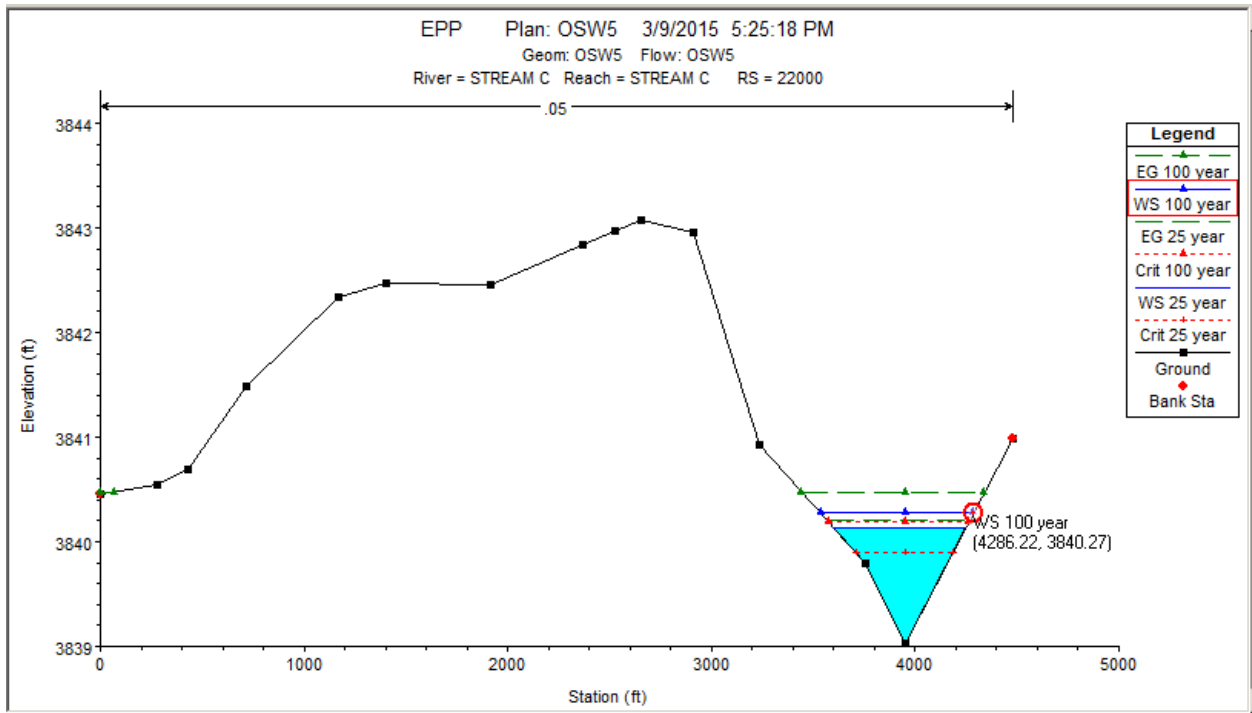




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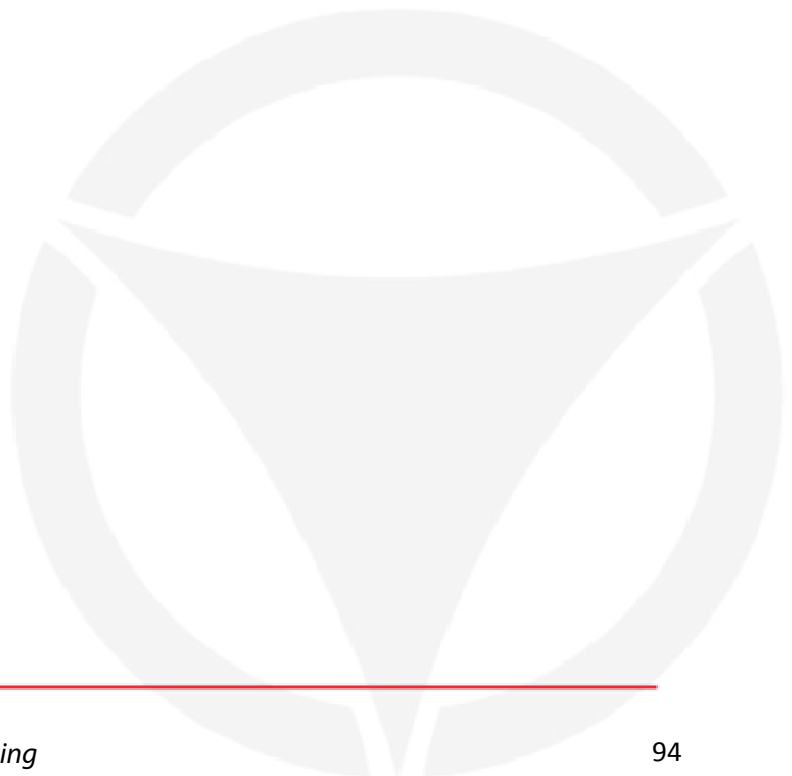
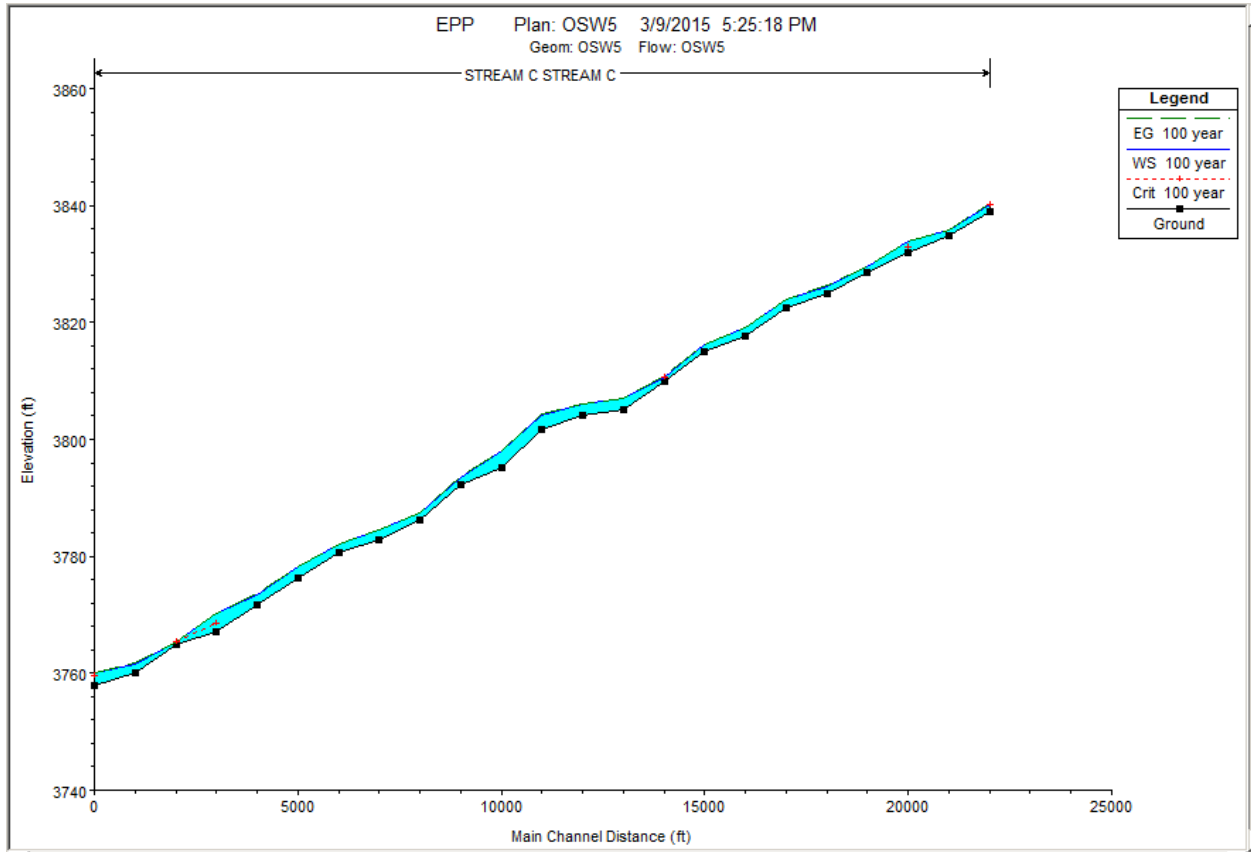


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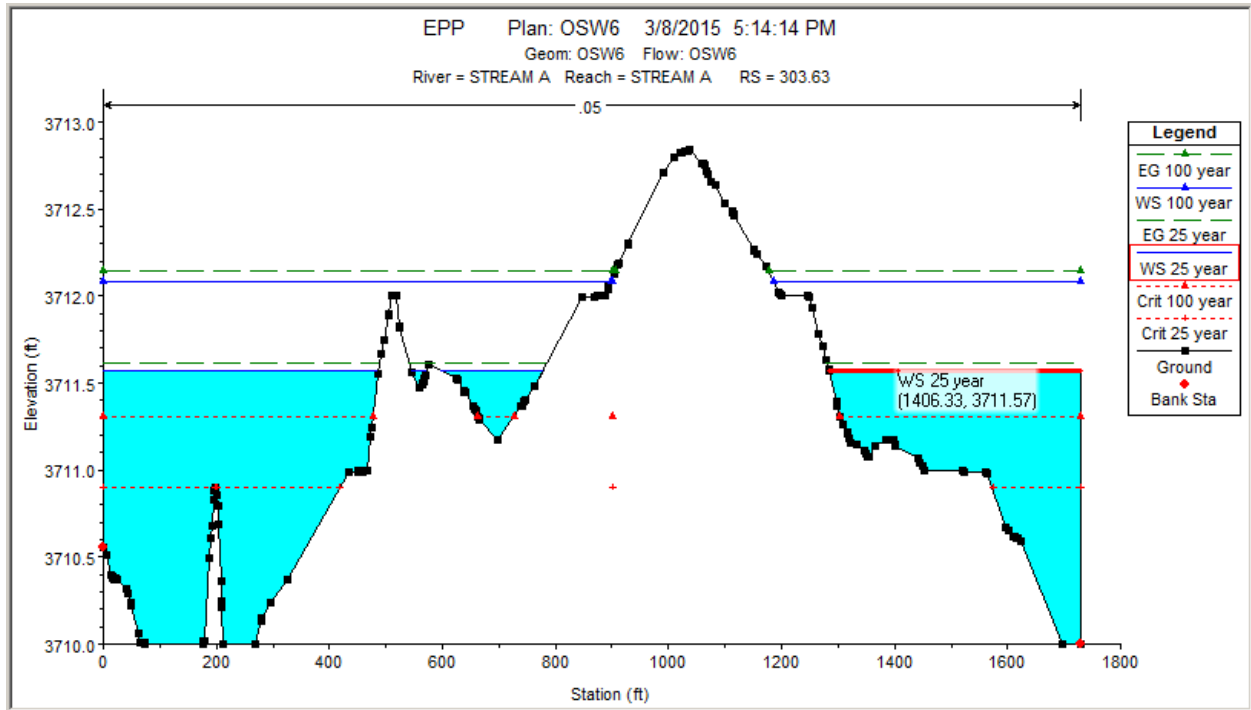


REACH OSW5 PROFILE

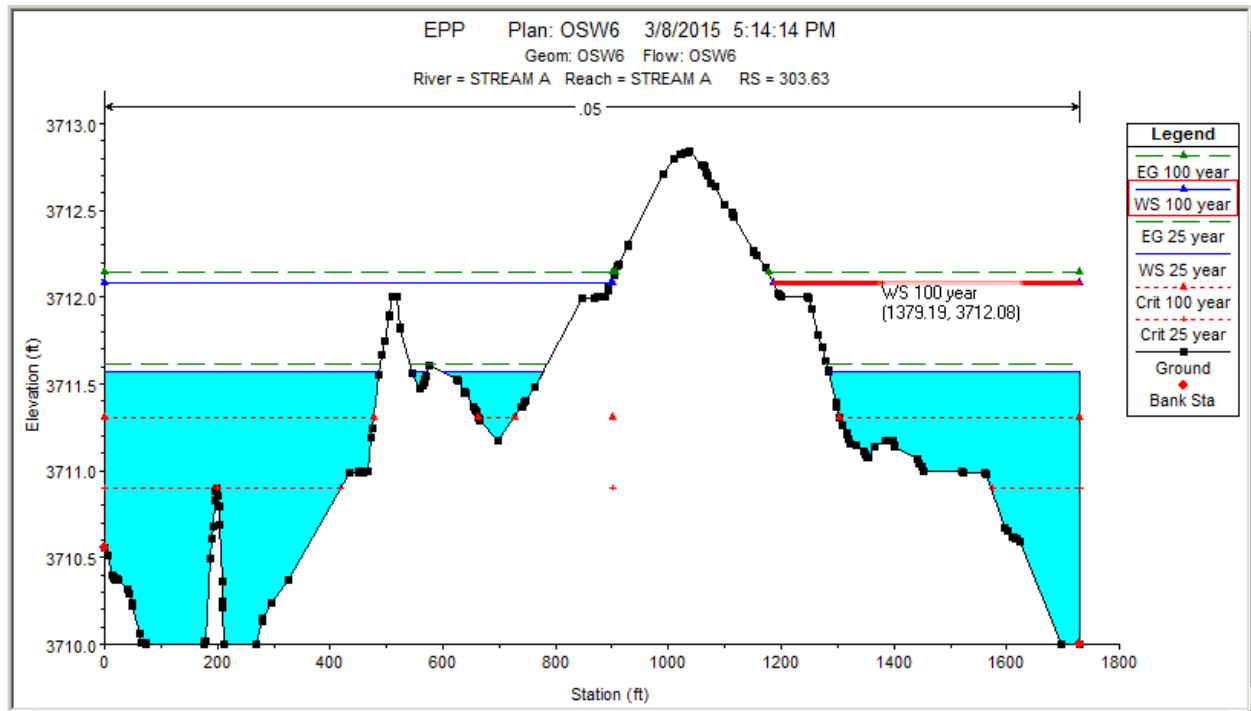




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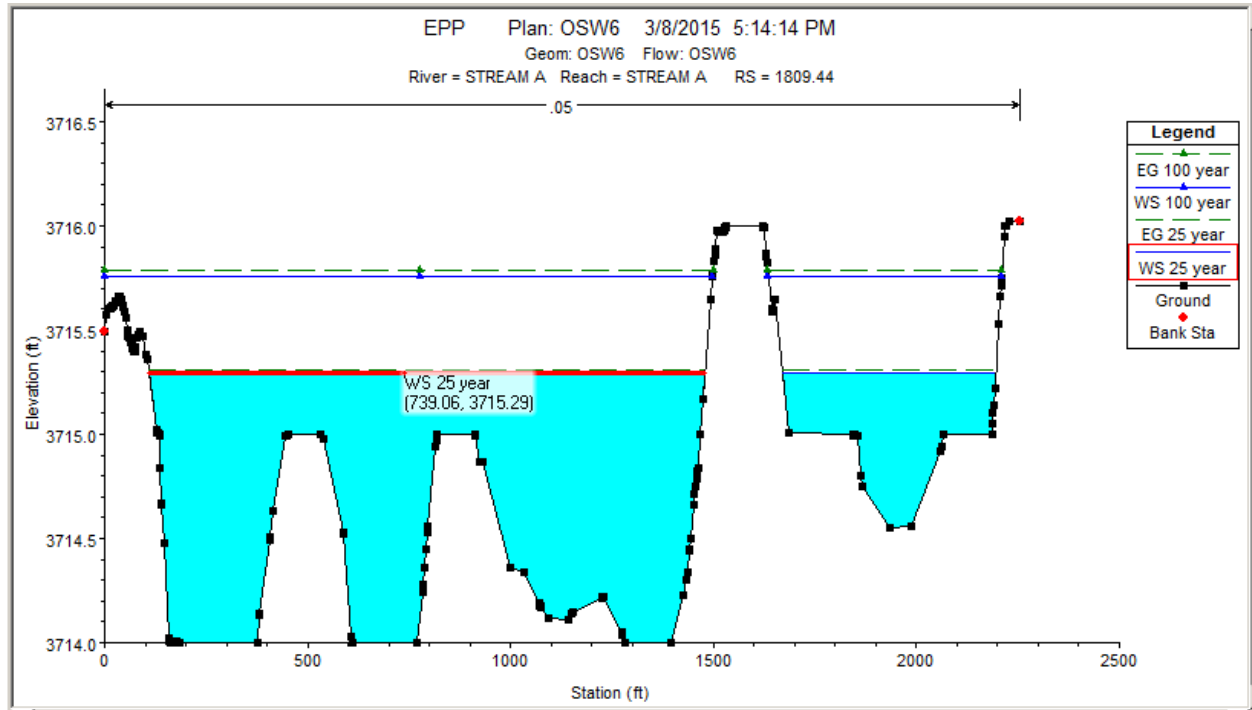


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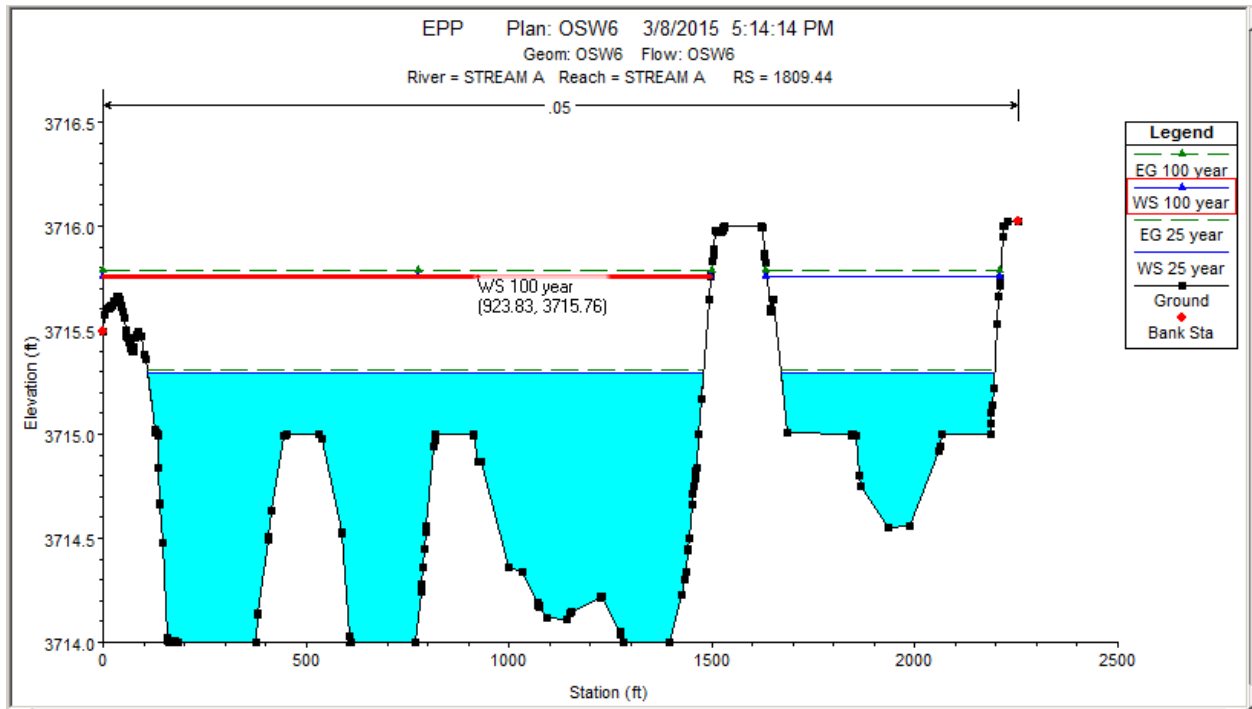




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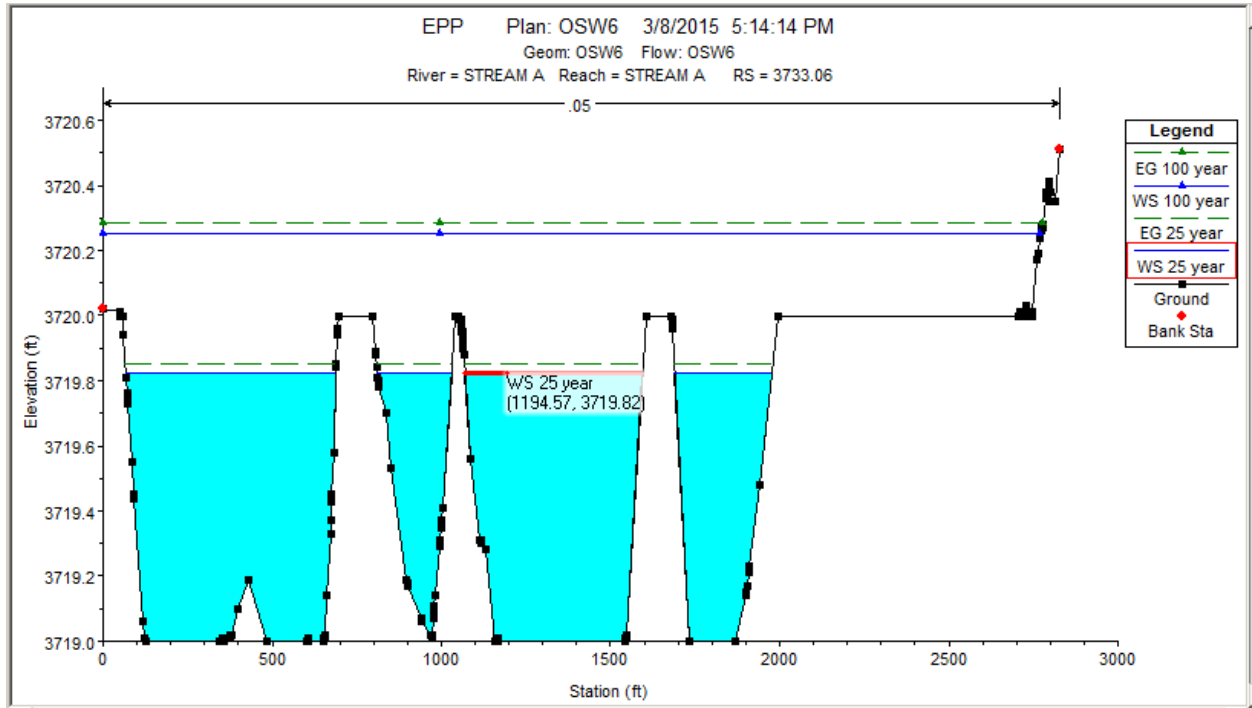


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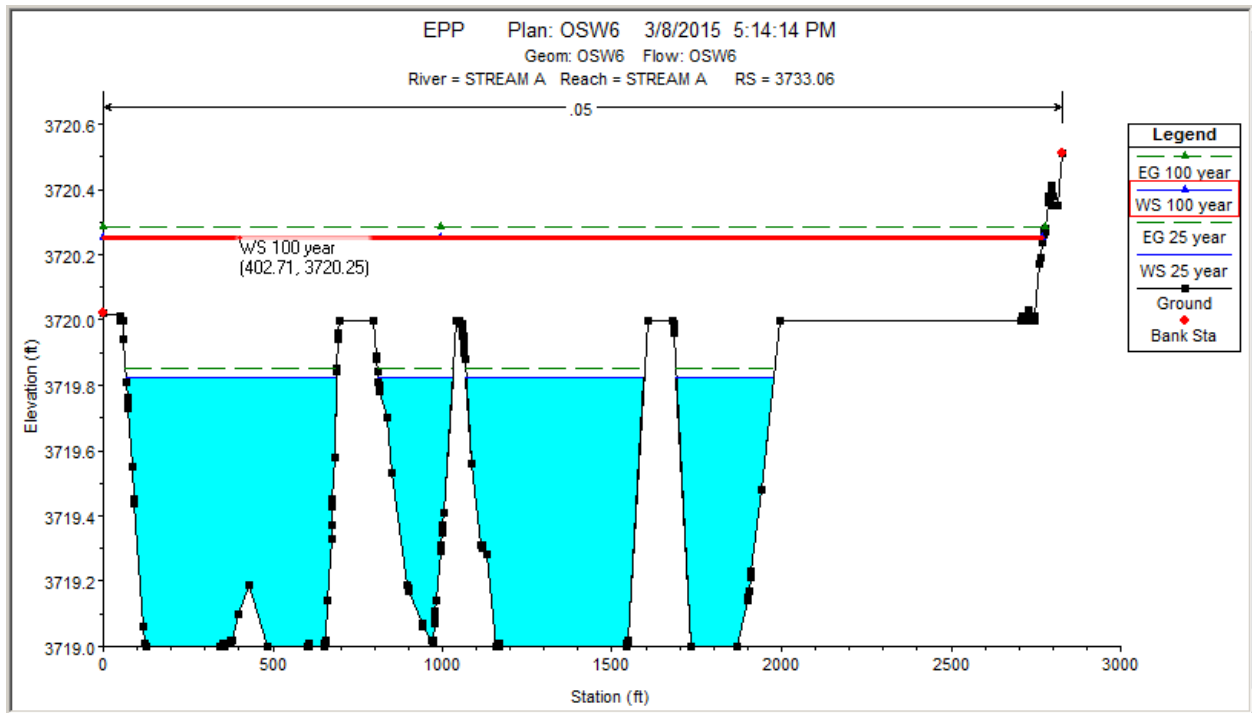




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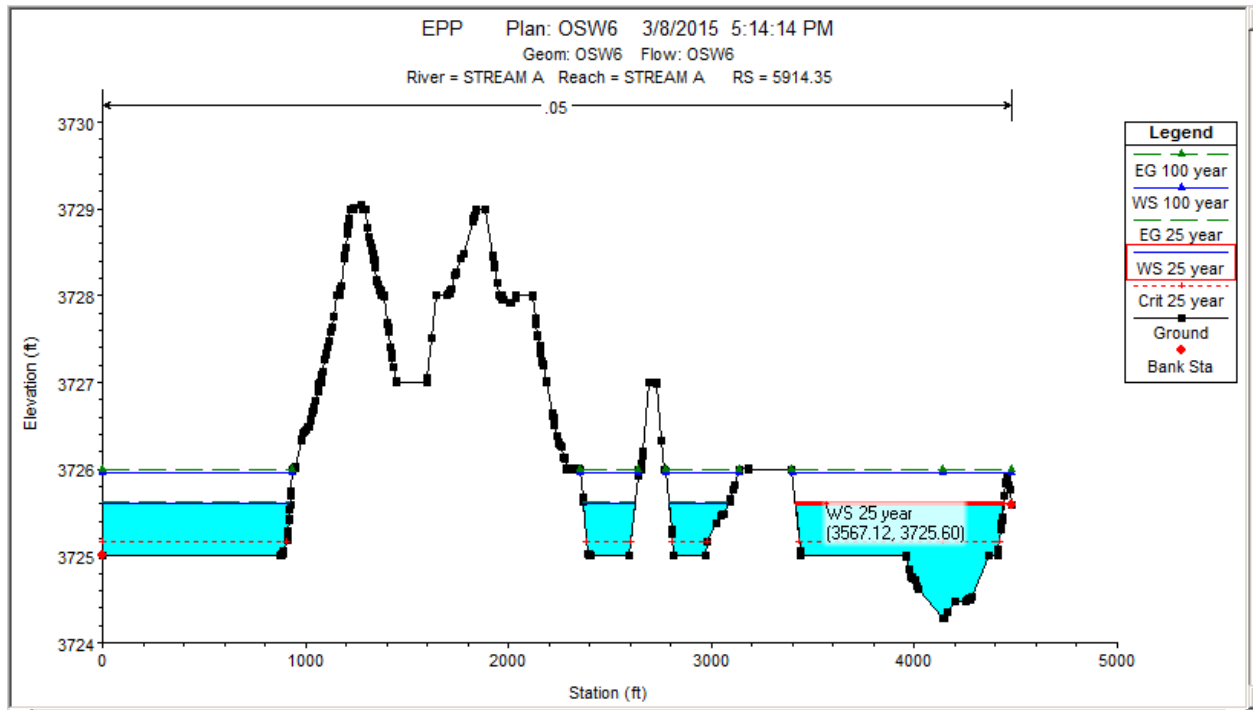


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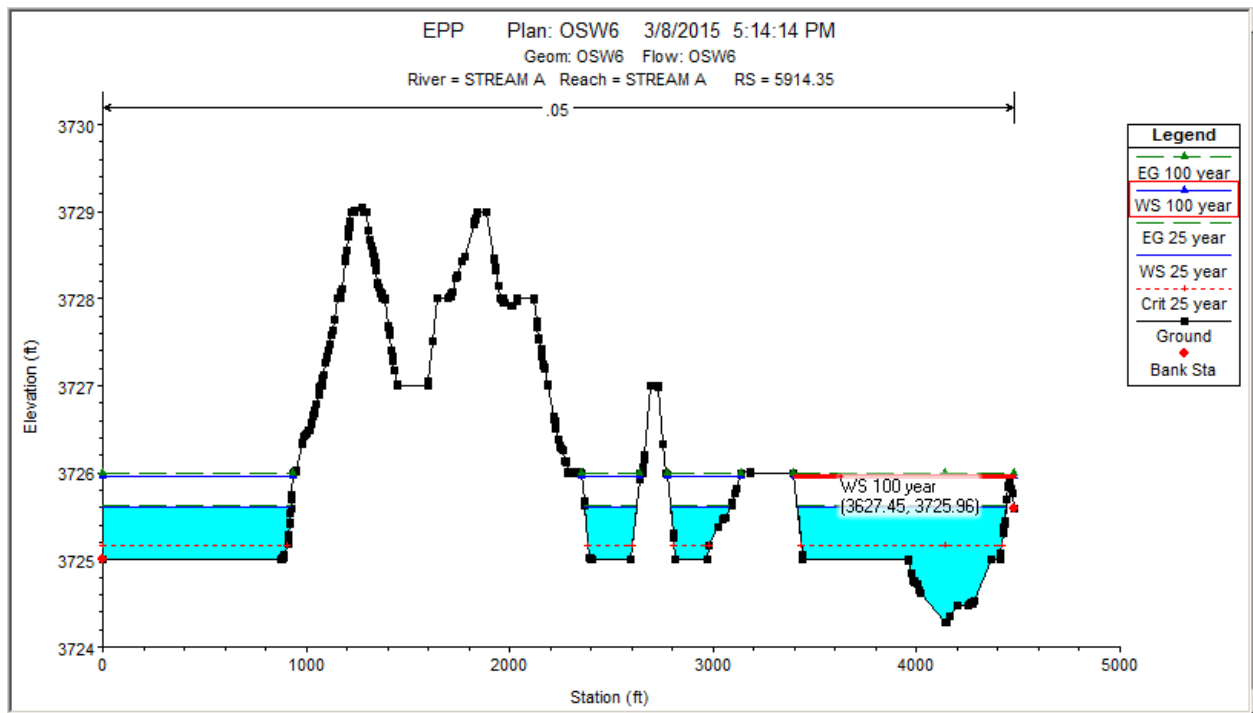




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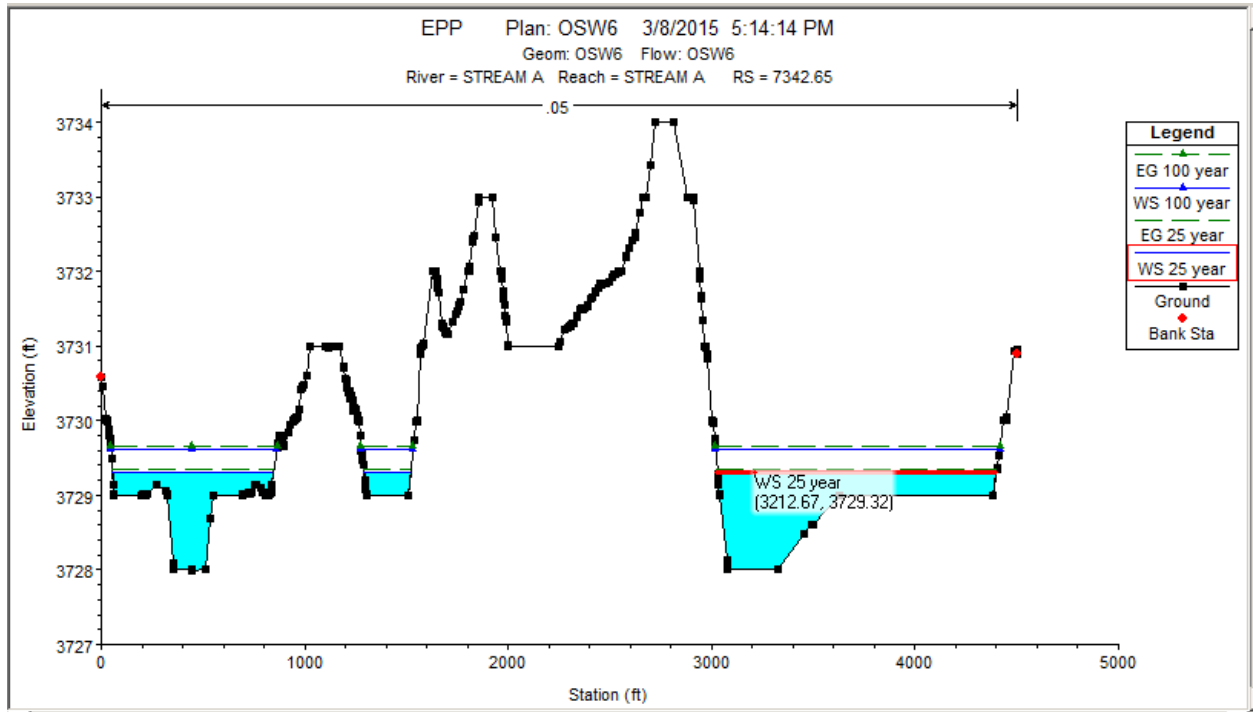


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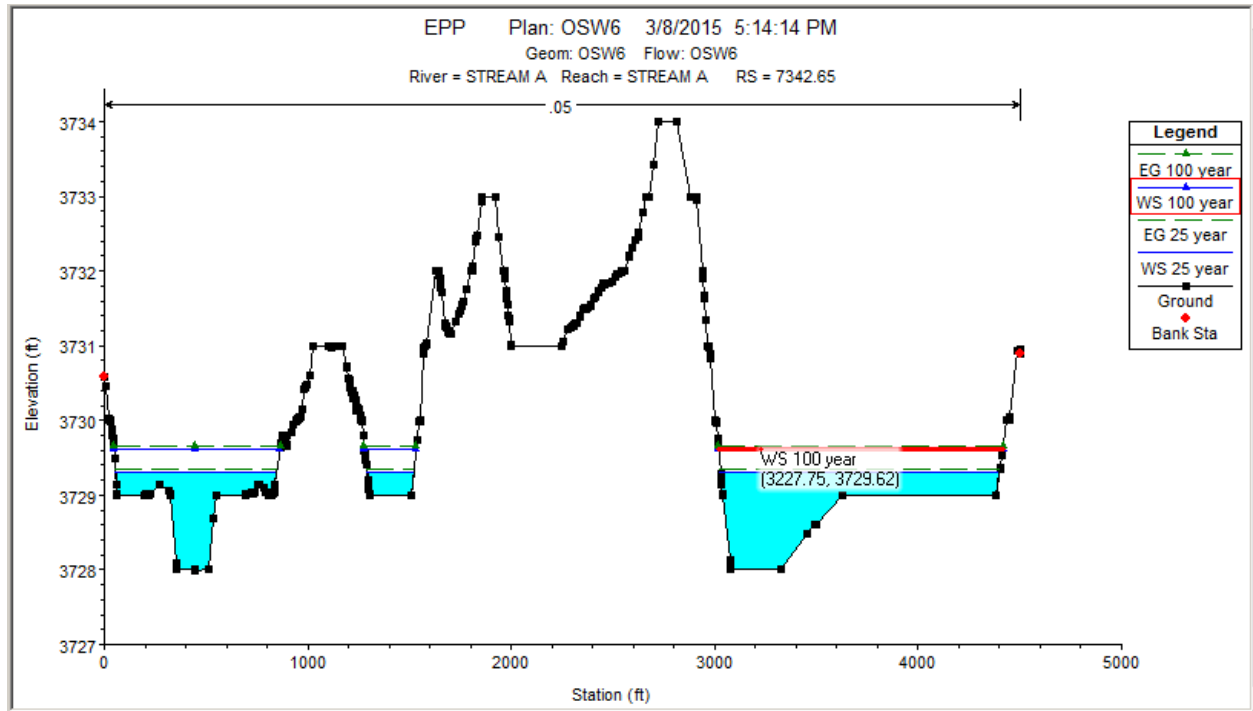




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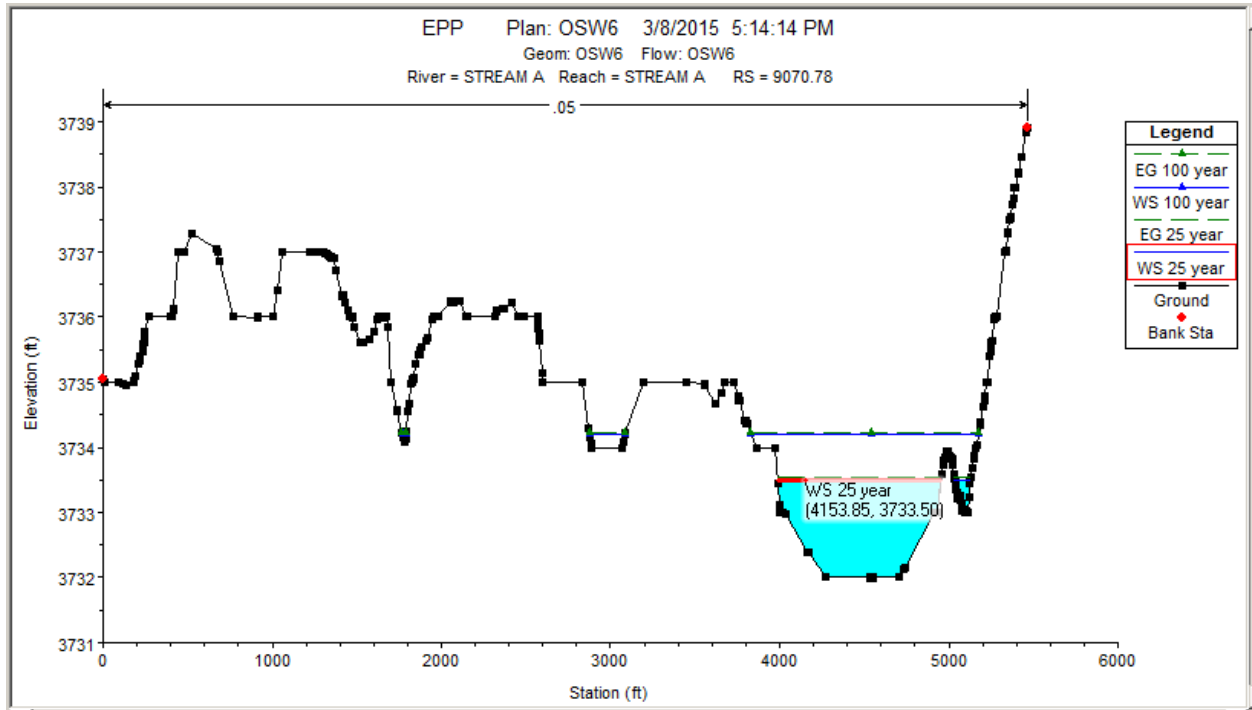


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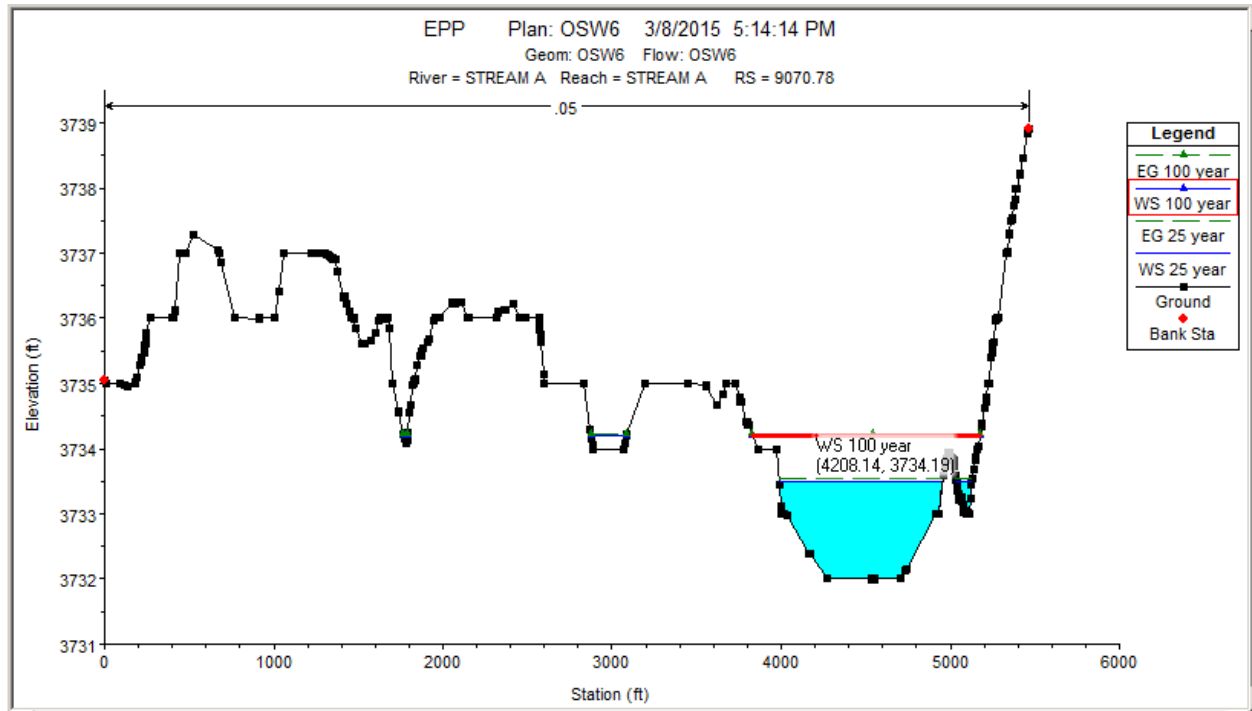




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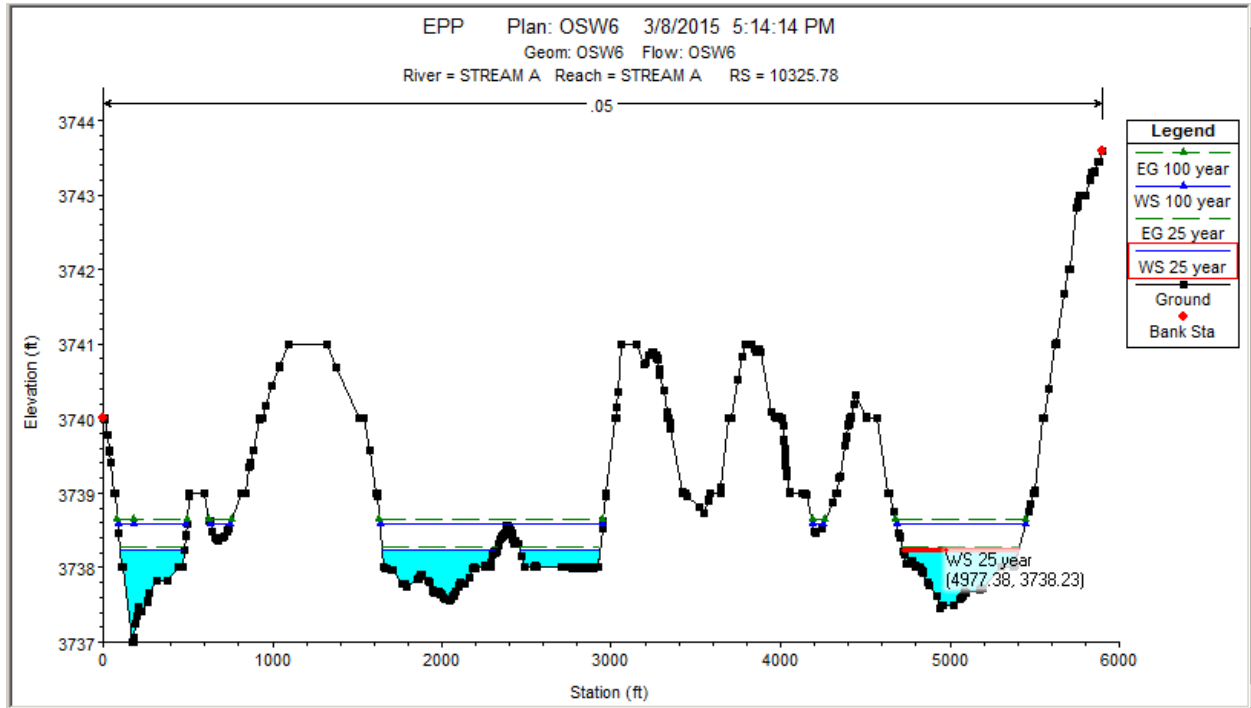


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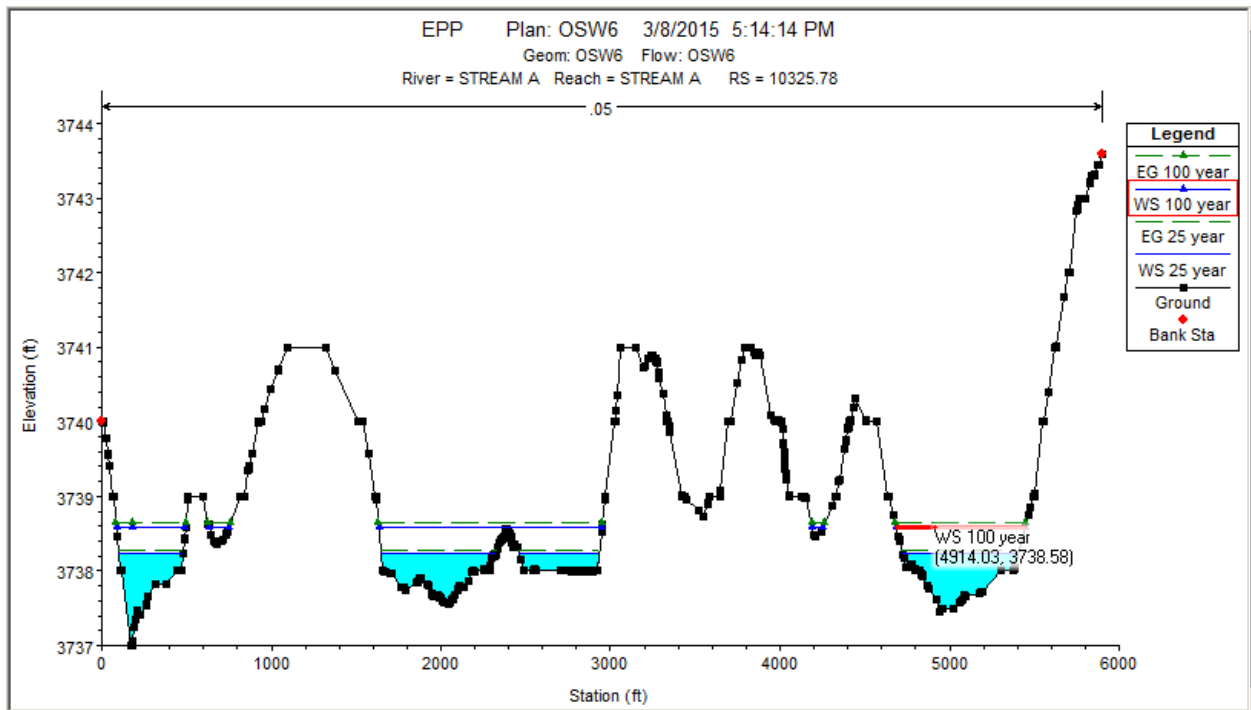




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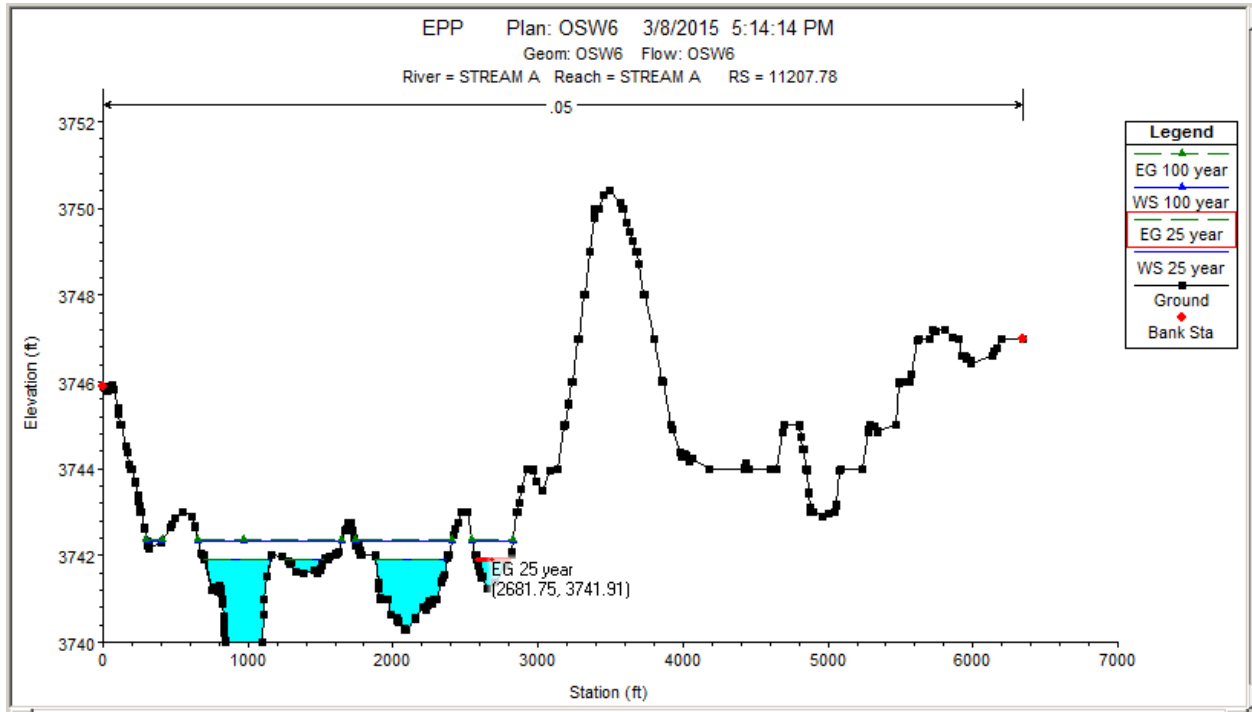


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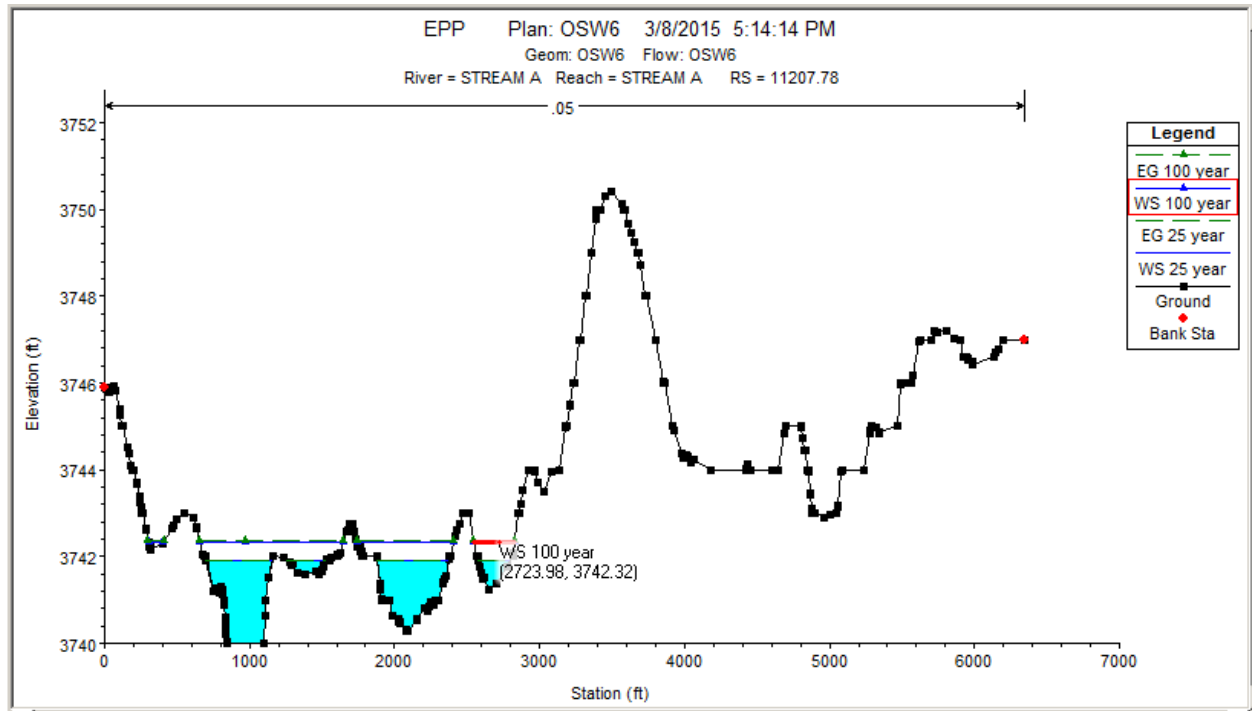




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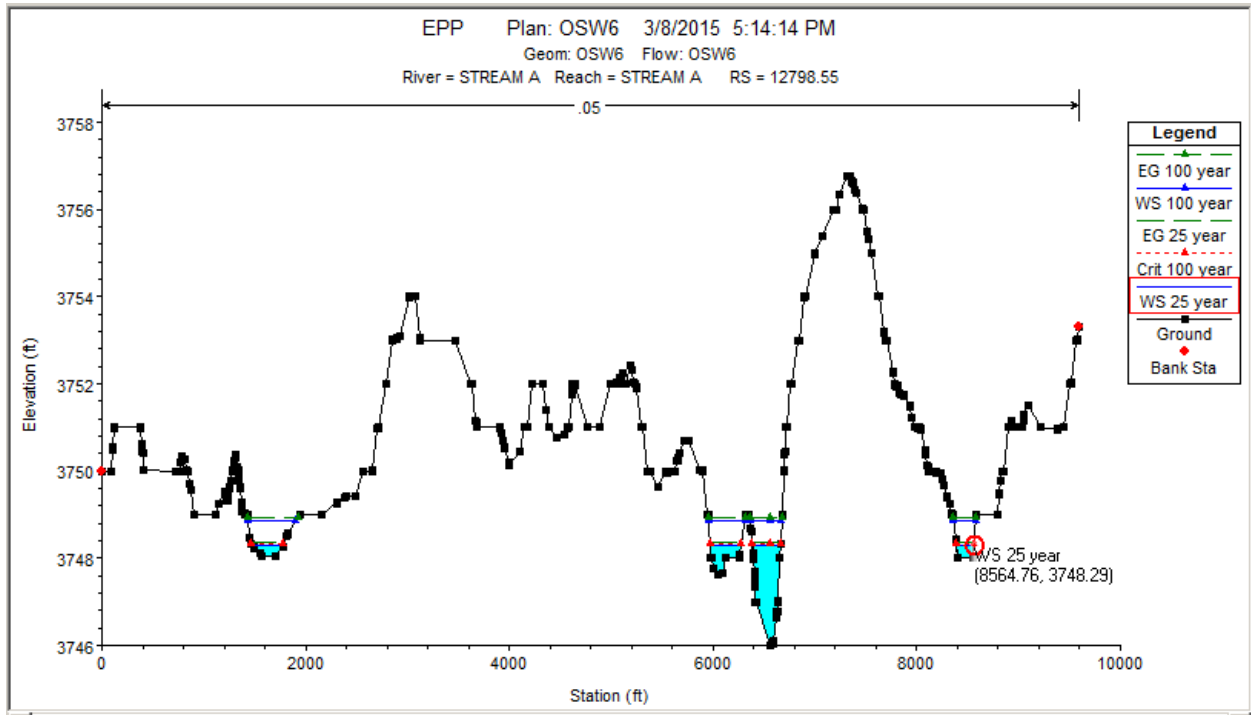


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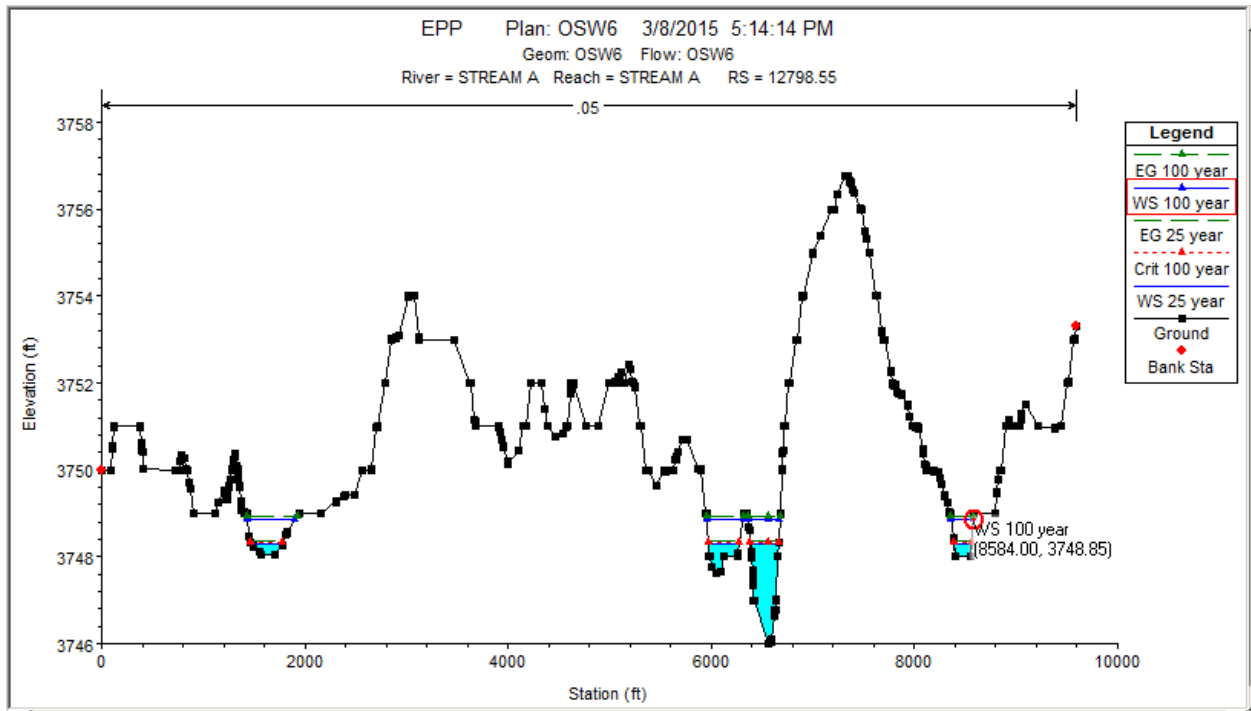




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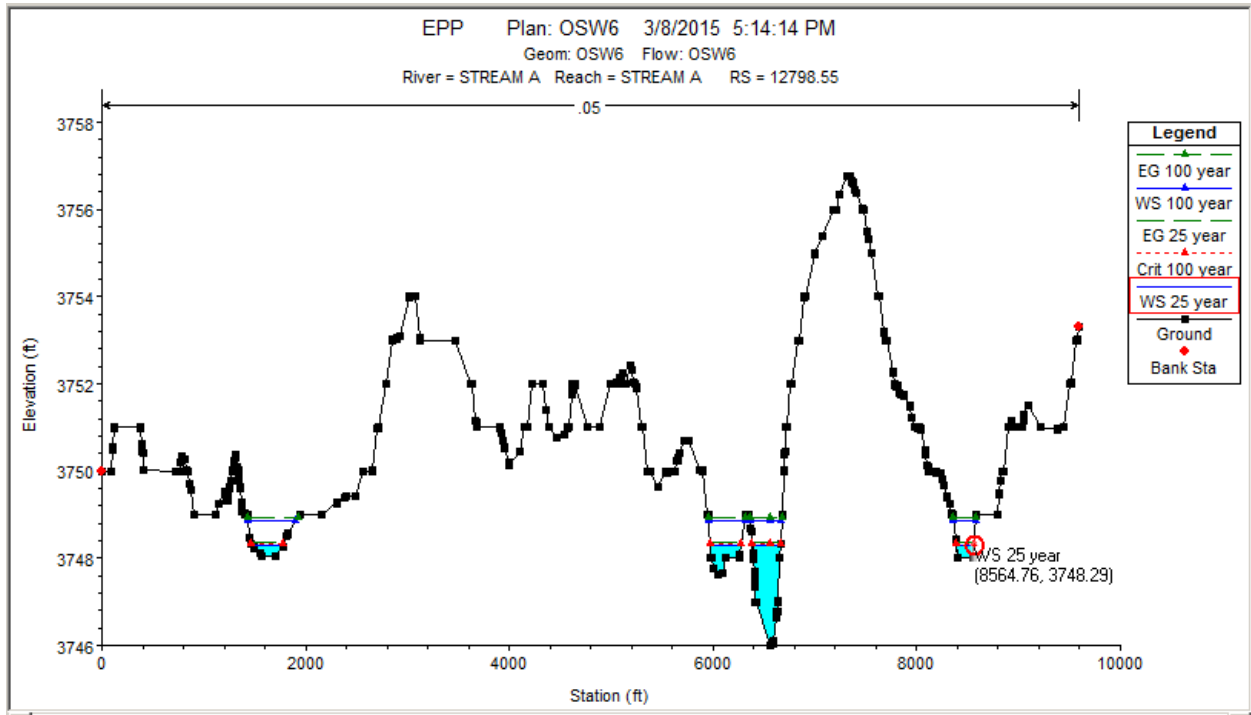


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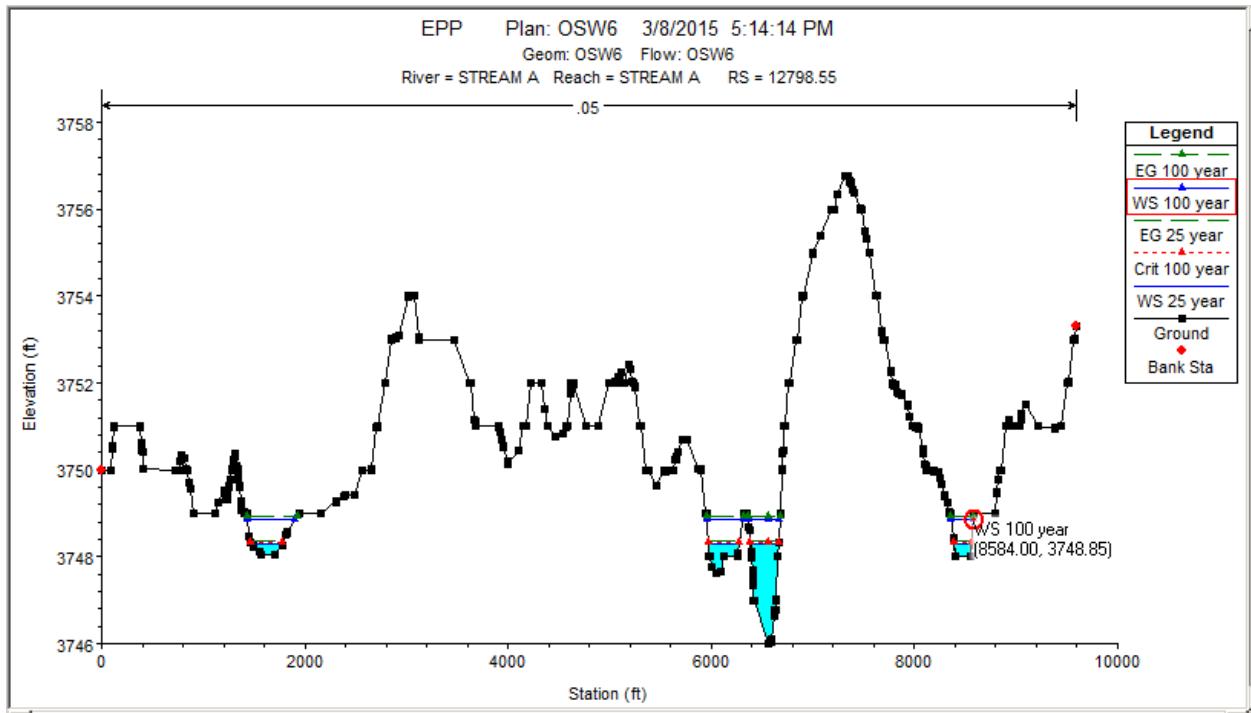




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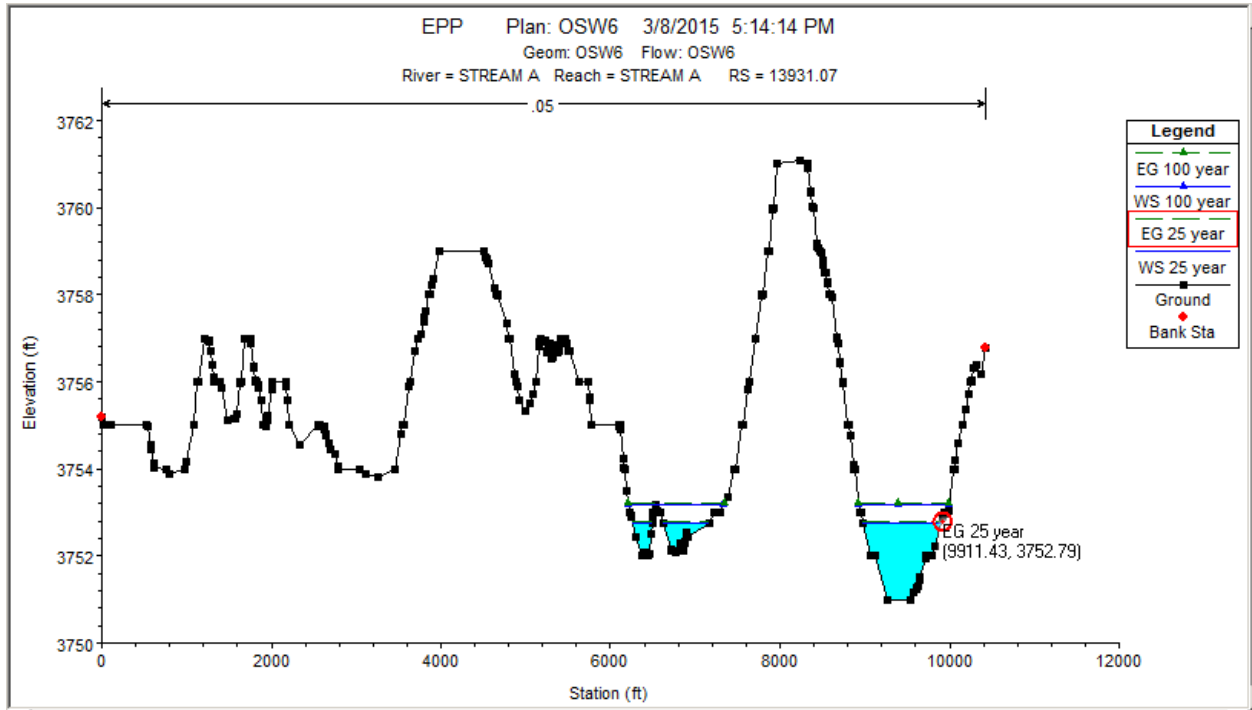


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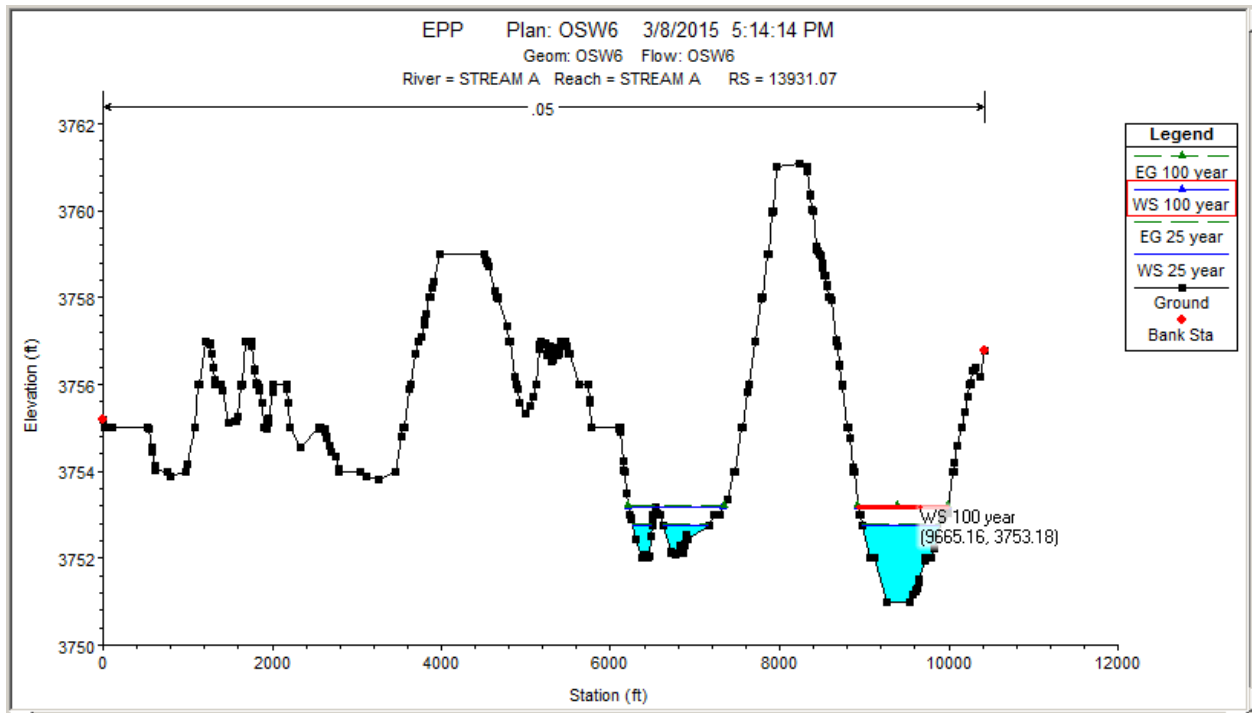




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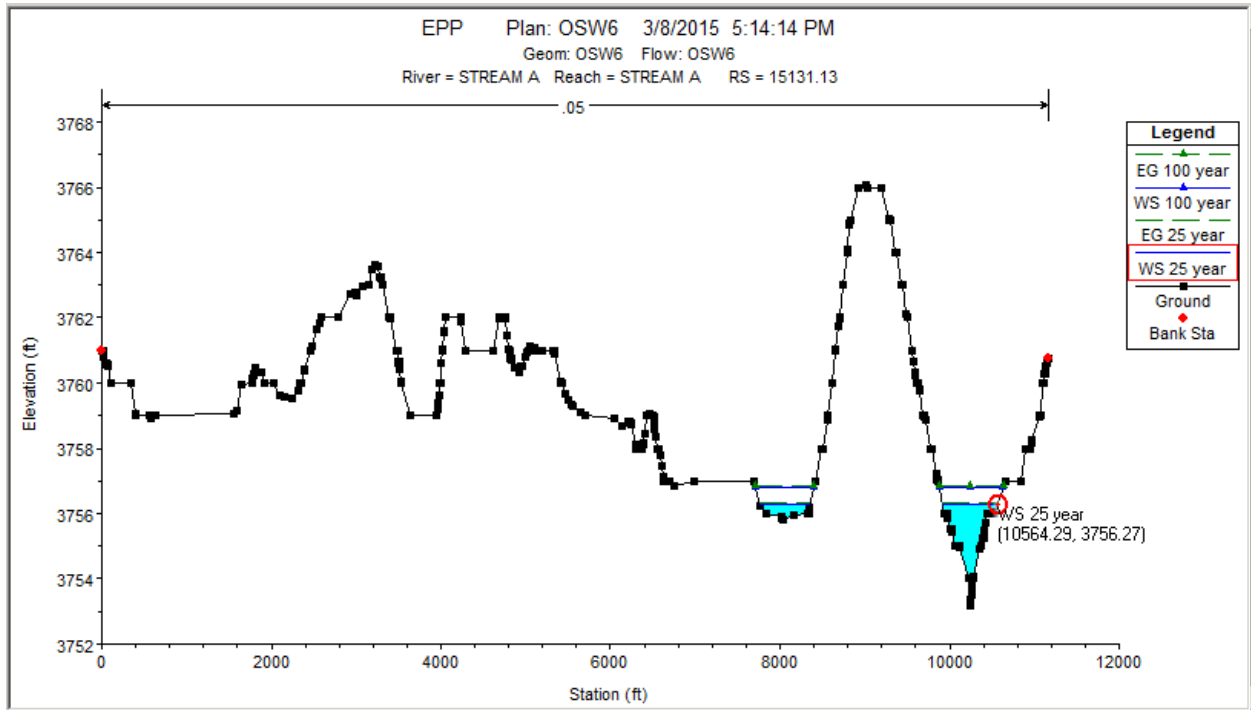


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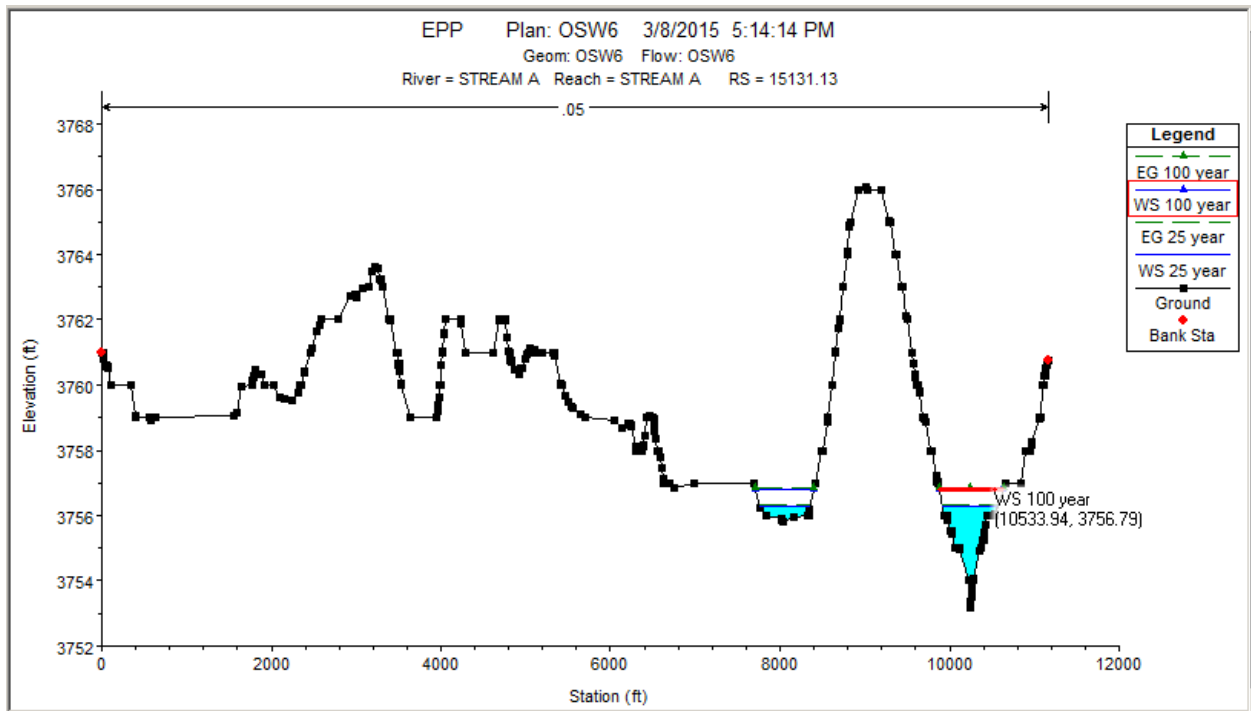




REACH OSW6 25-YR CS 15131.13

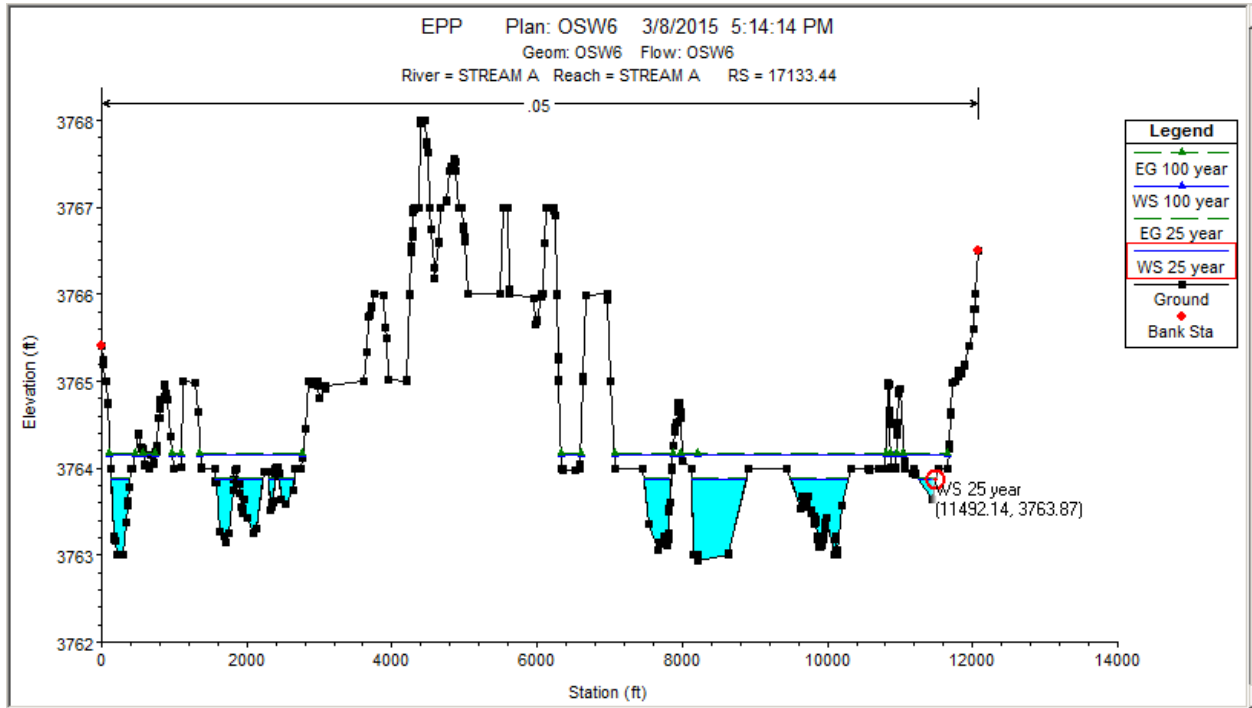


REACH OSW6 100-YR CS 15131.13

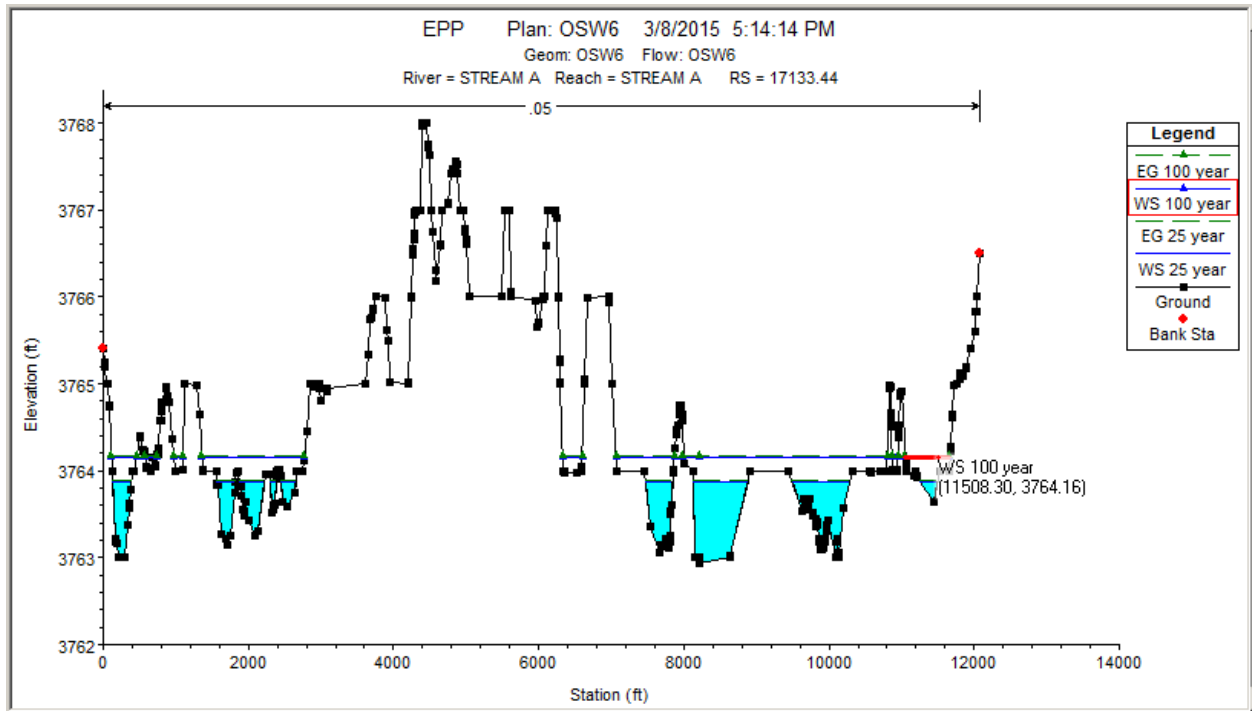




REACH OSW6 25-YR CS 17133.44

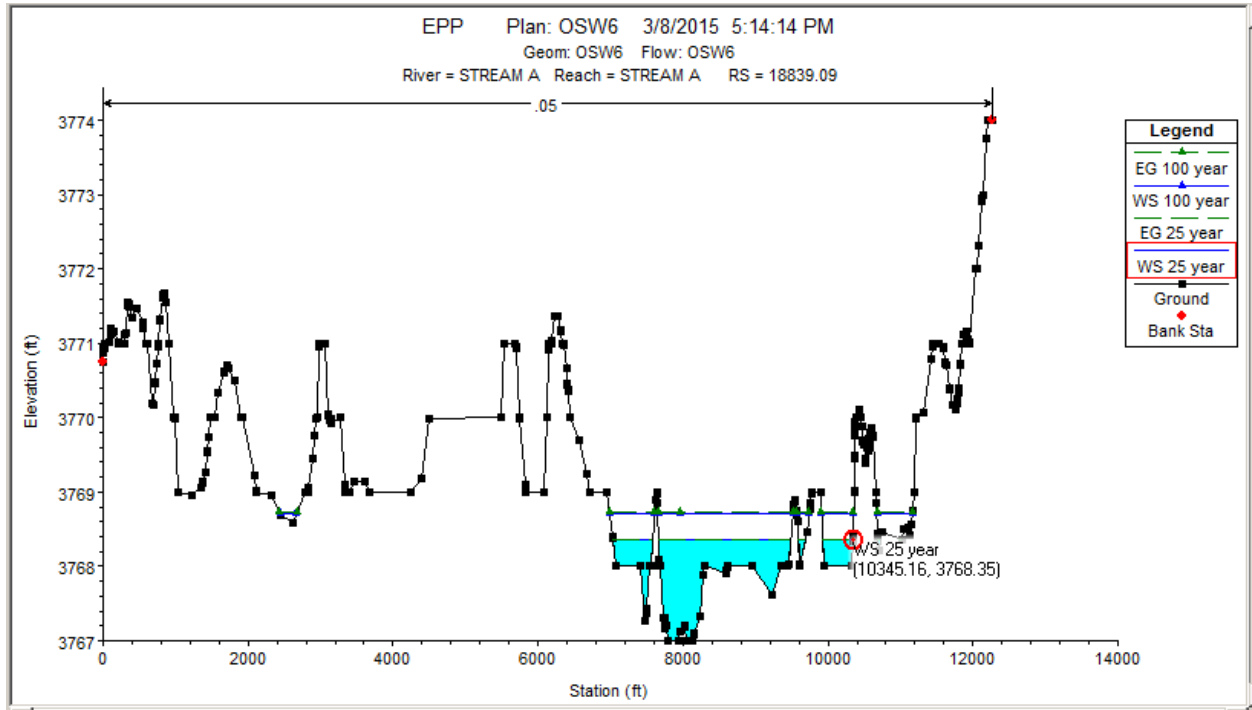


REACH OSW6 100-YR CS 17133.44

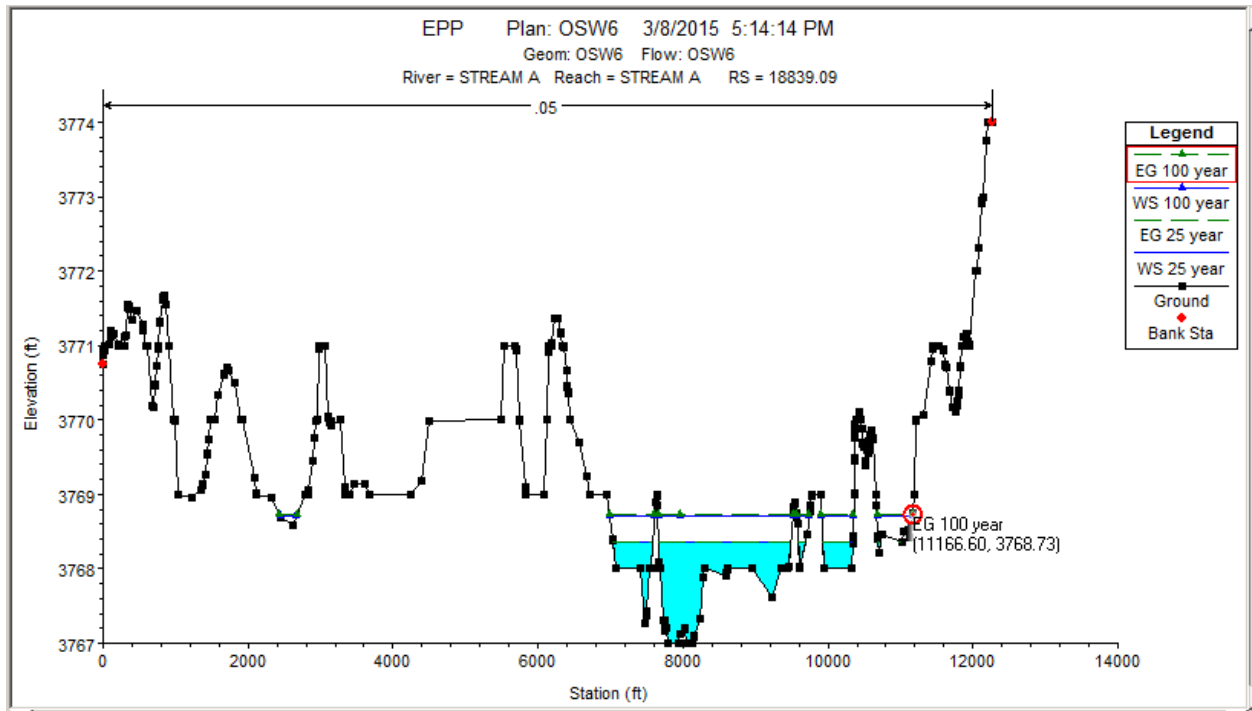




REACH OSW6 25-YR CS 18839.09

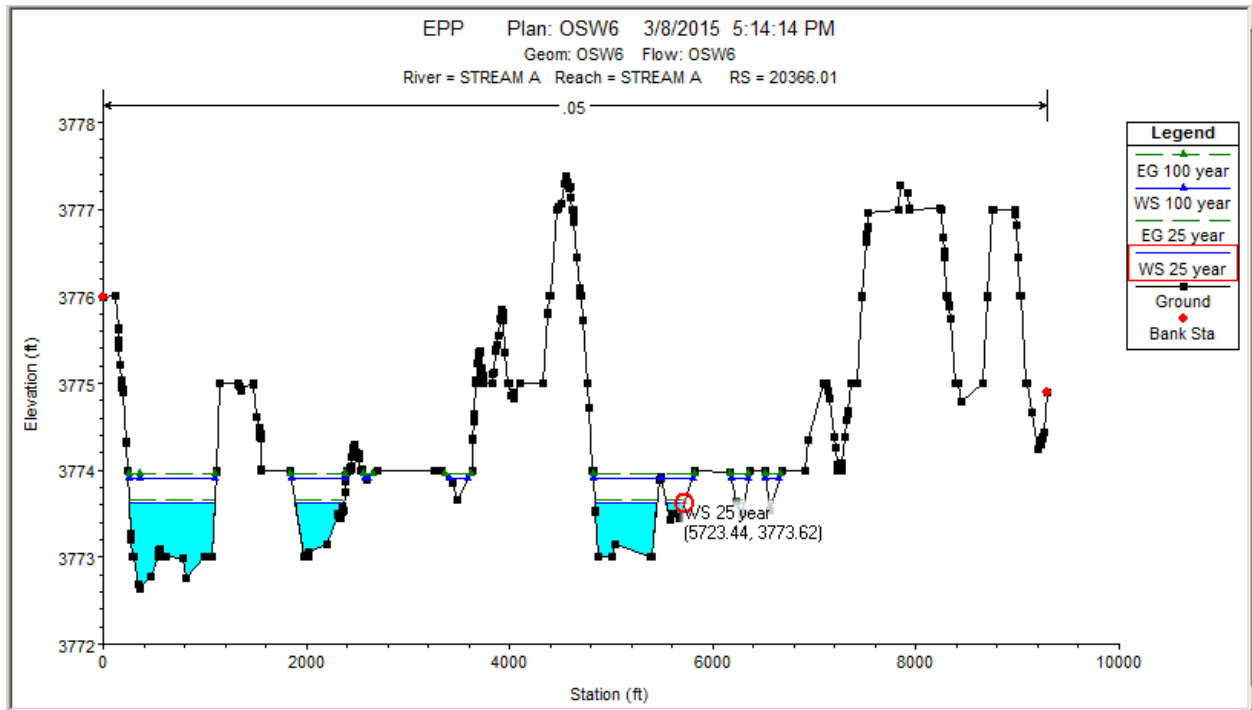


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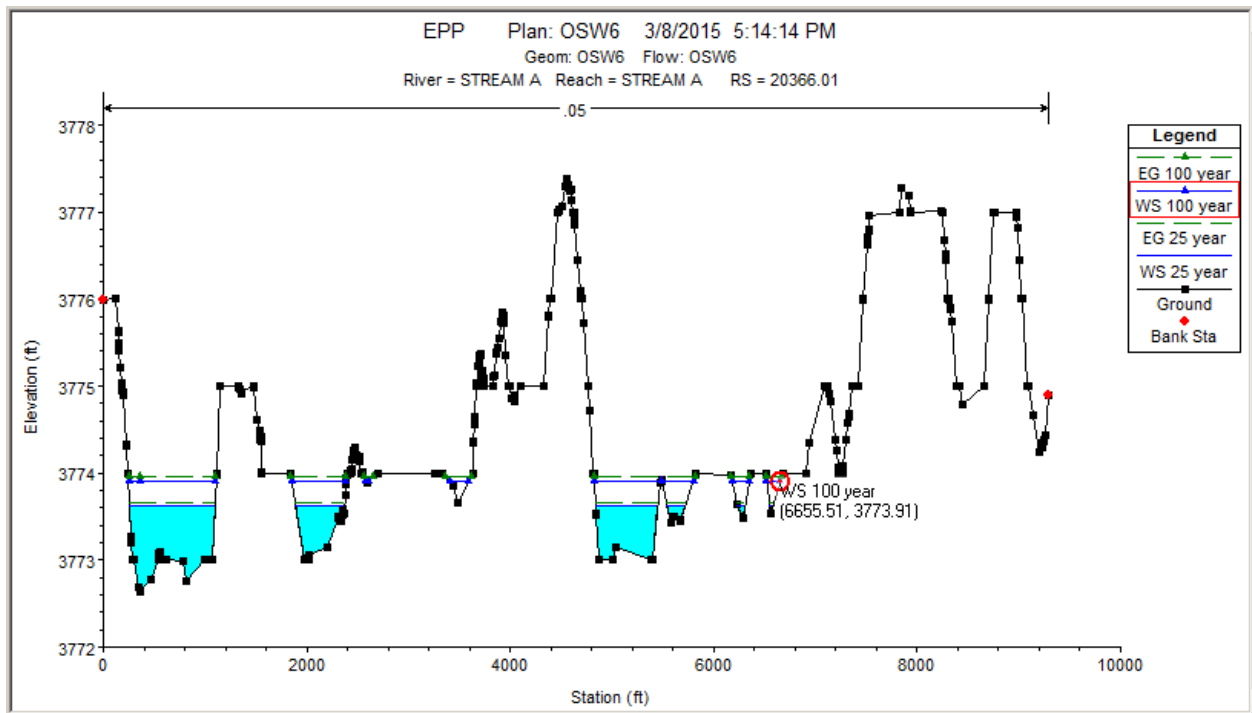




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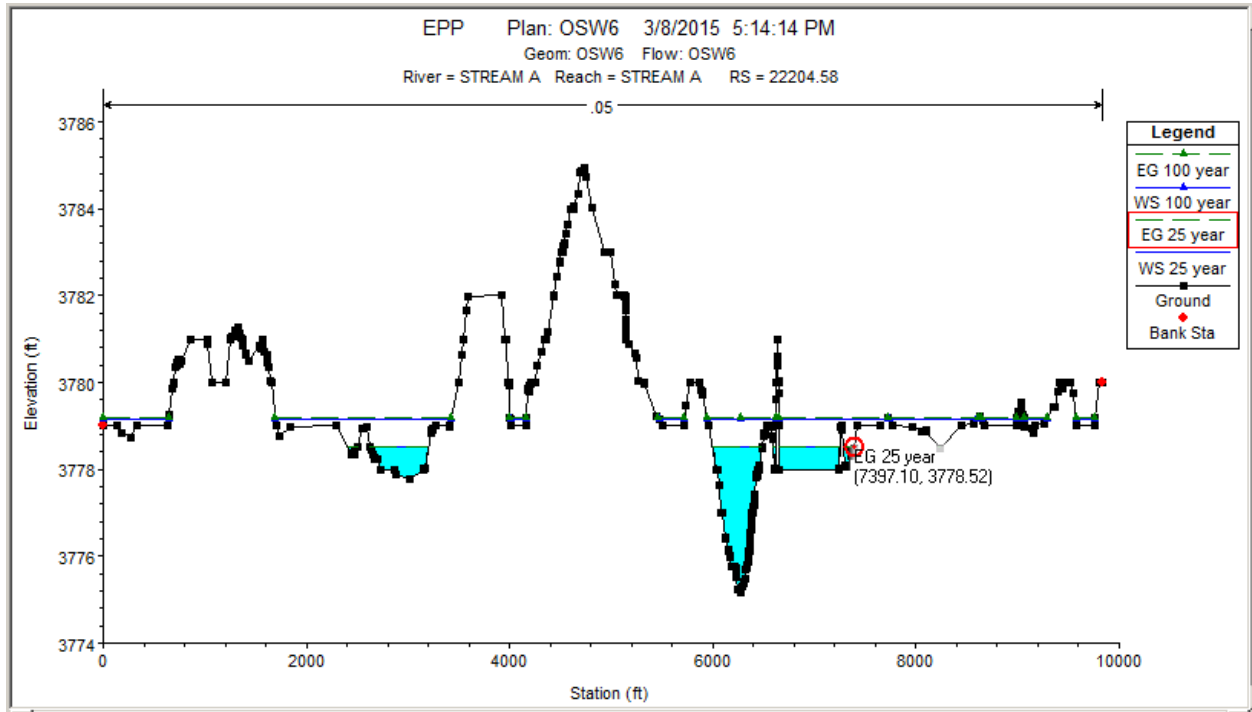


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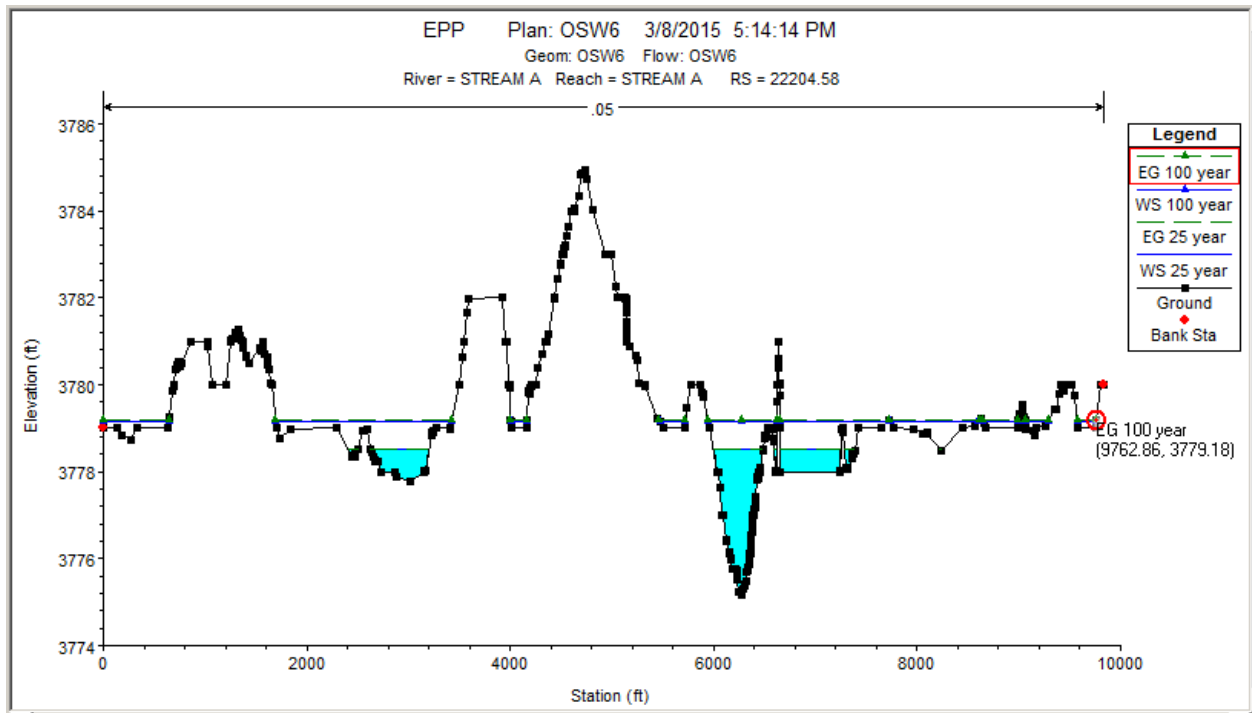




REACH OSW6 25-YR CS 22204.58

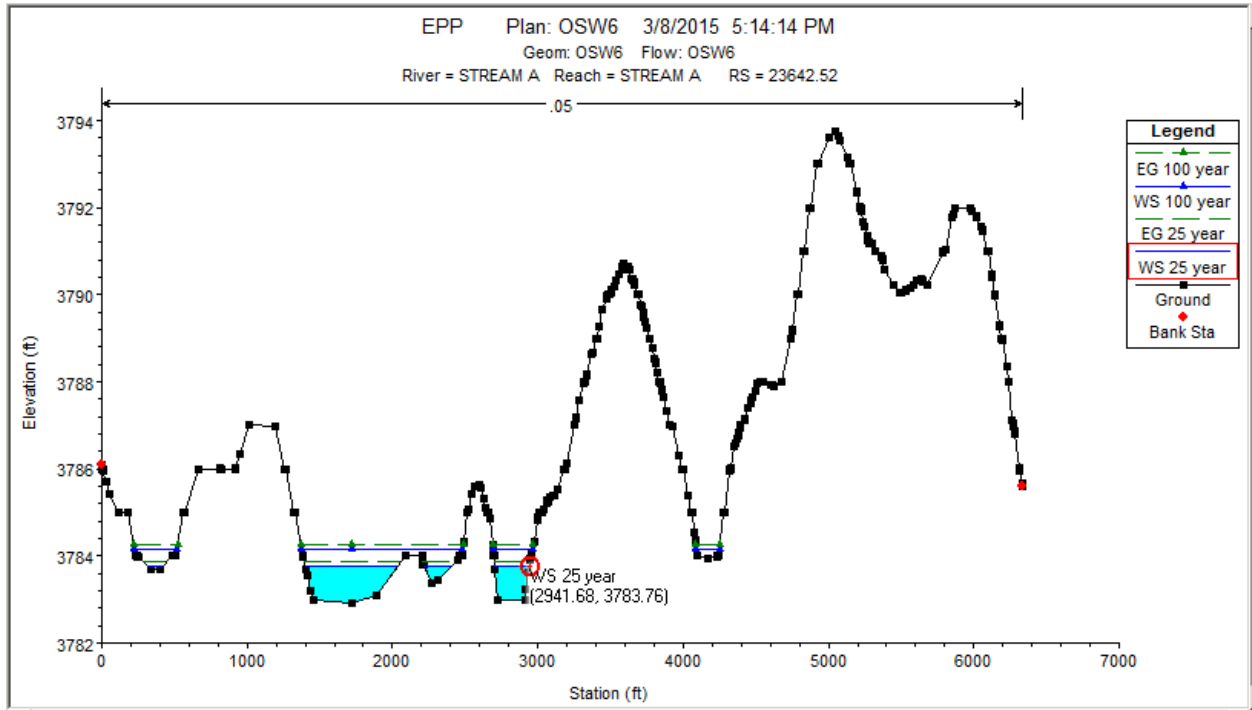


REACH OSW6 100-YR CS 22204.58

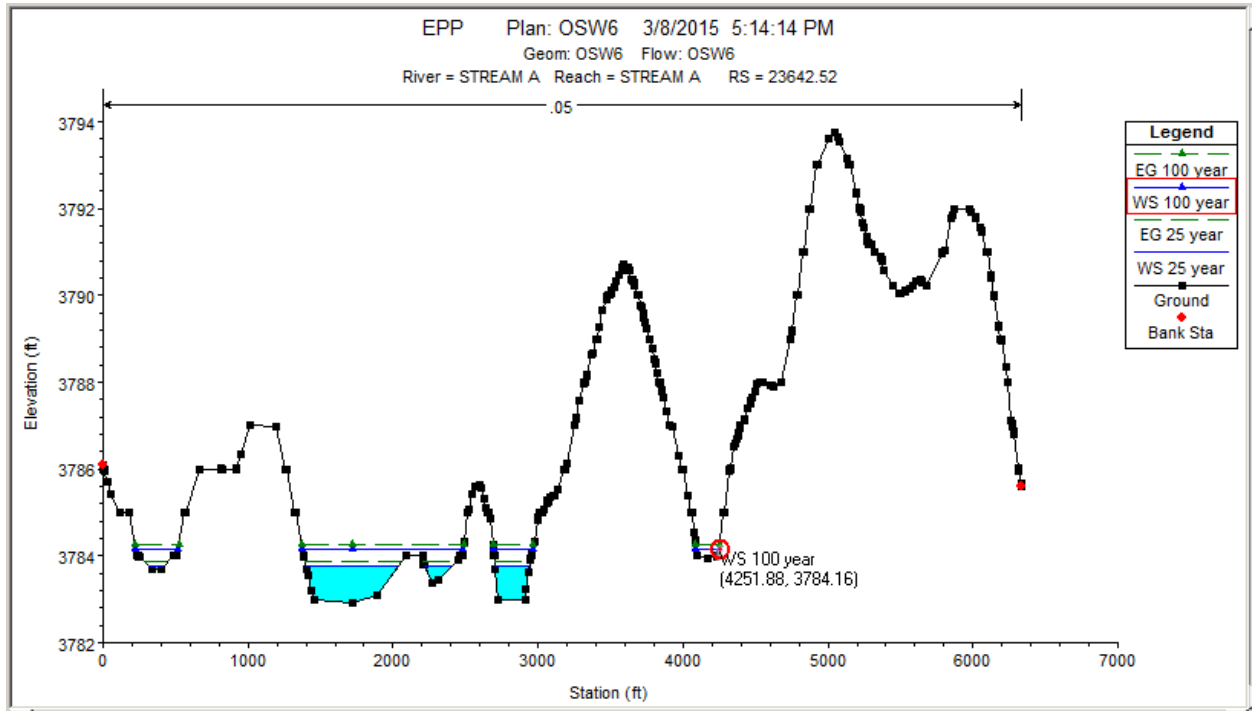




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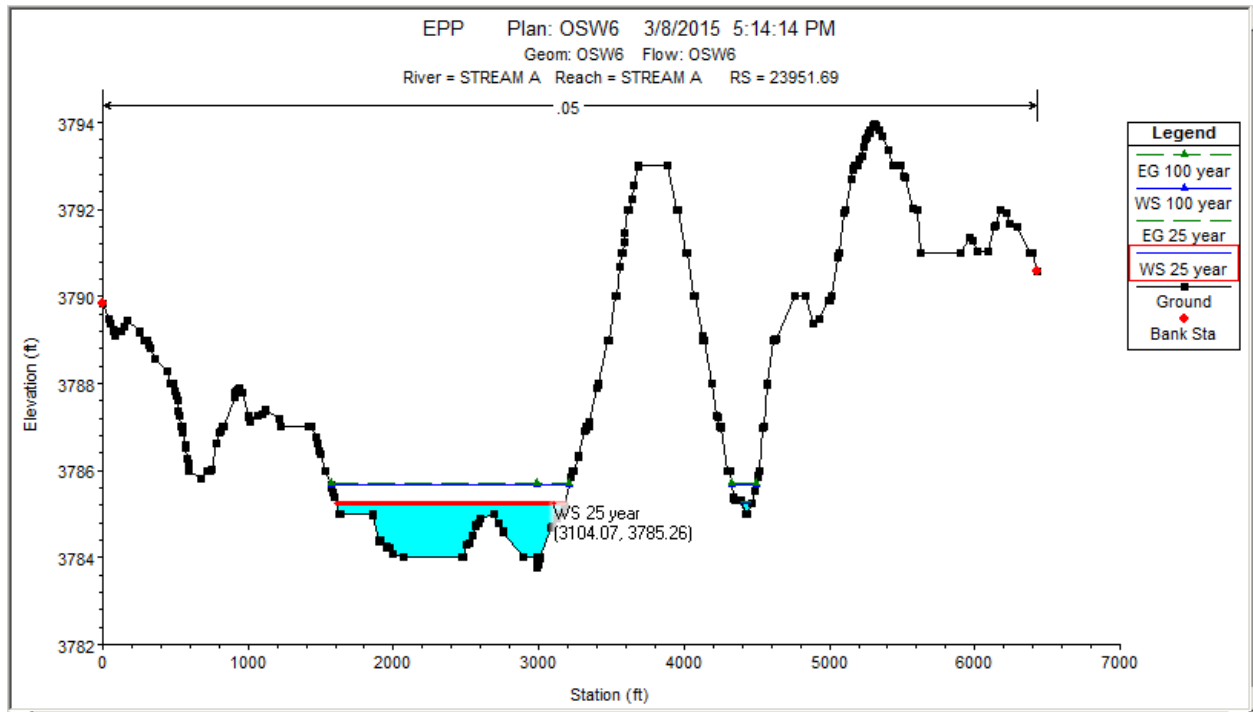


REACH OSW6 100-YR CS 23642.52

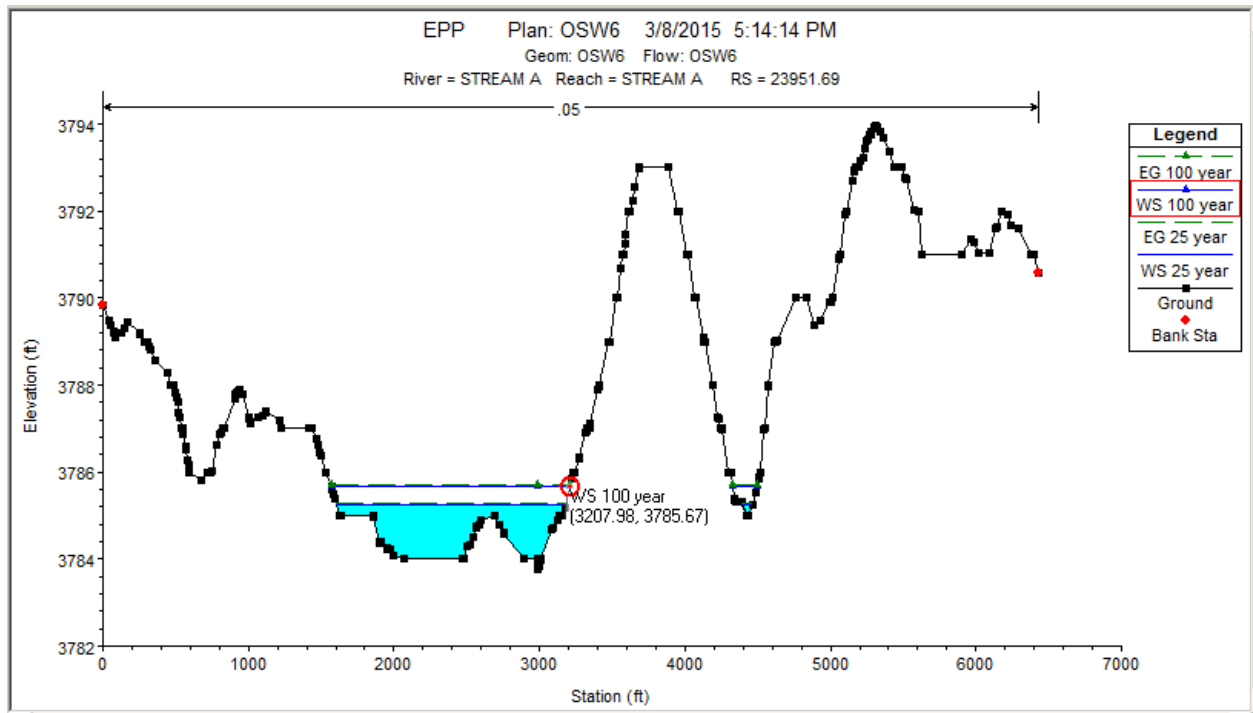




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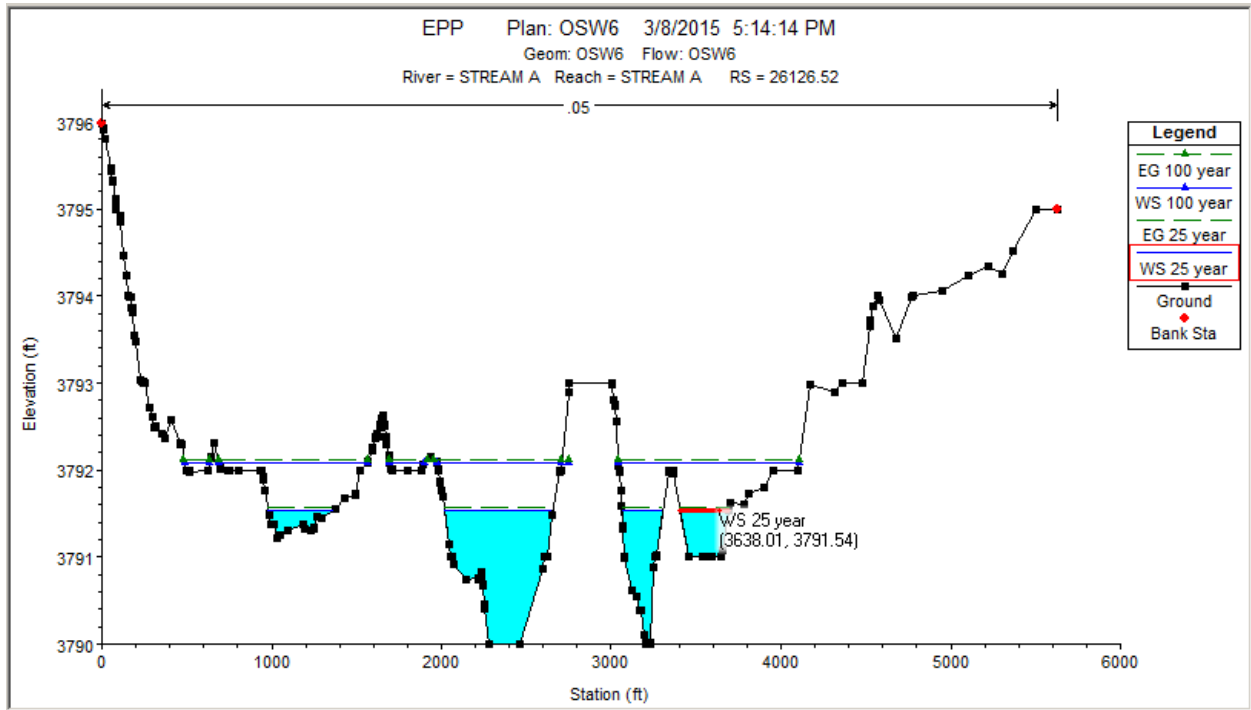


REACH OSW6 100-YR CS 23951.69

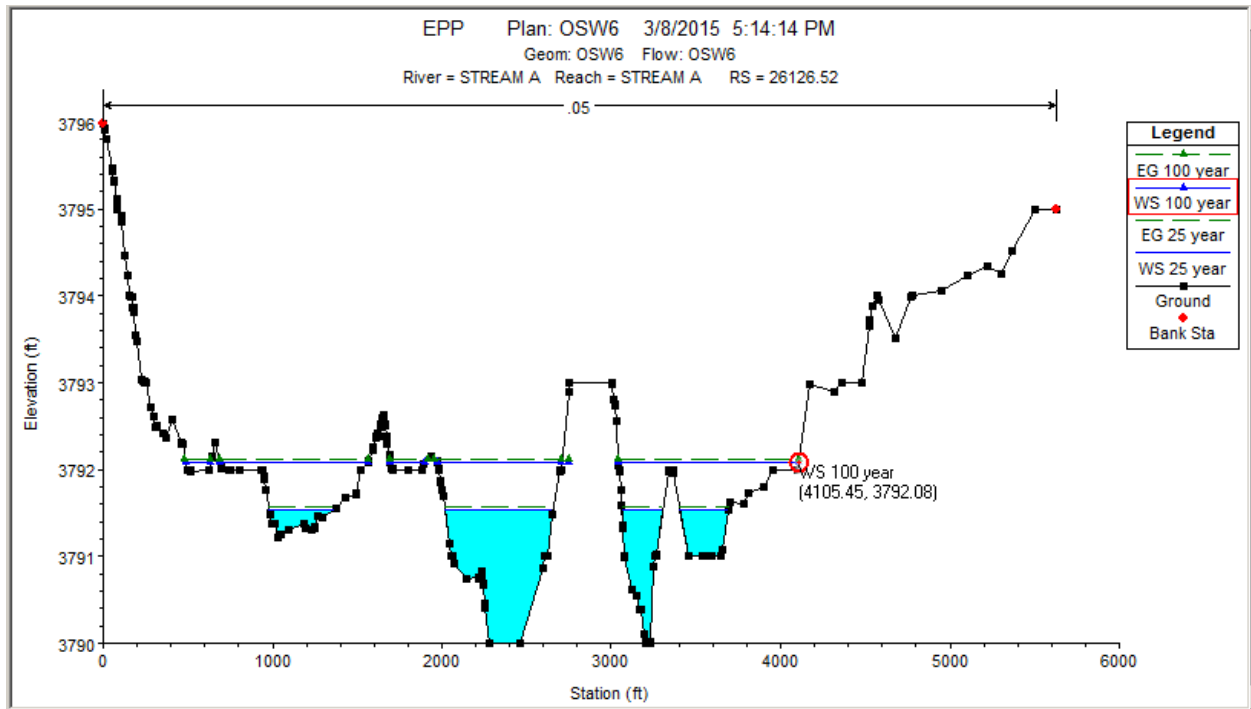




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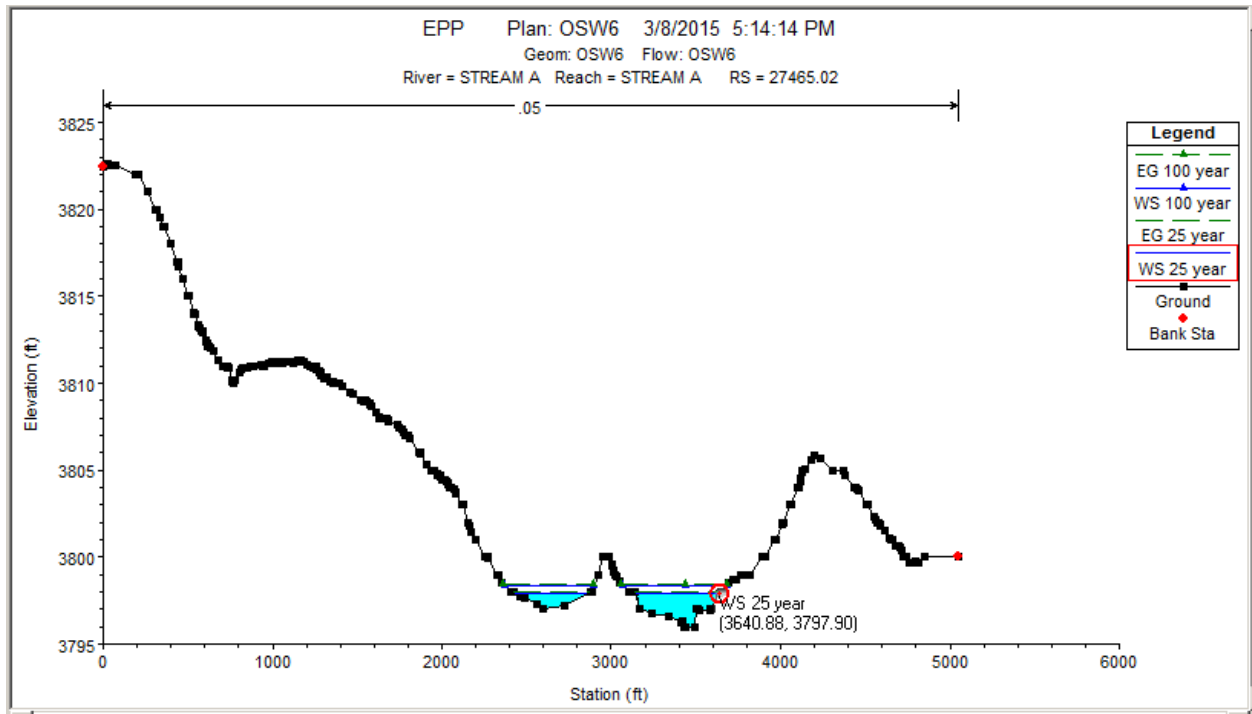


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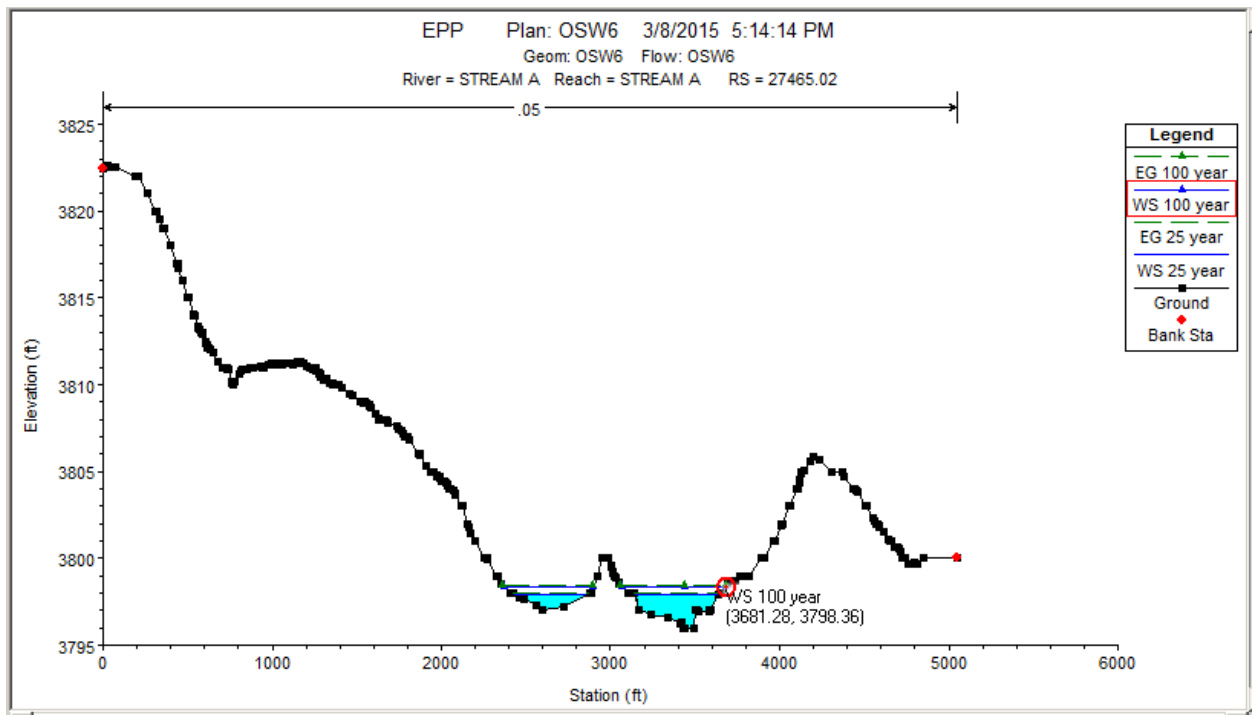




REACH OSW6 25-YR CS 27465.02

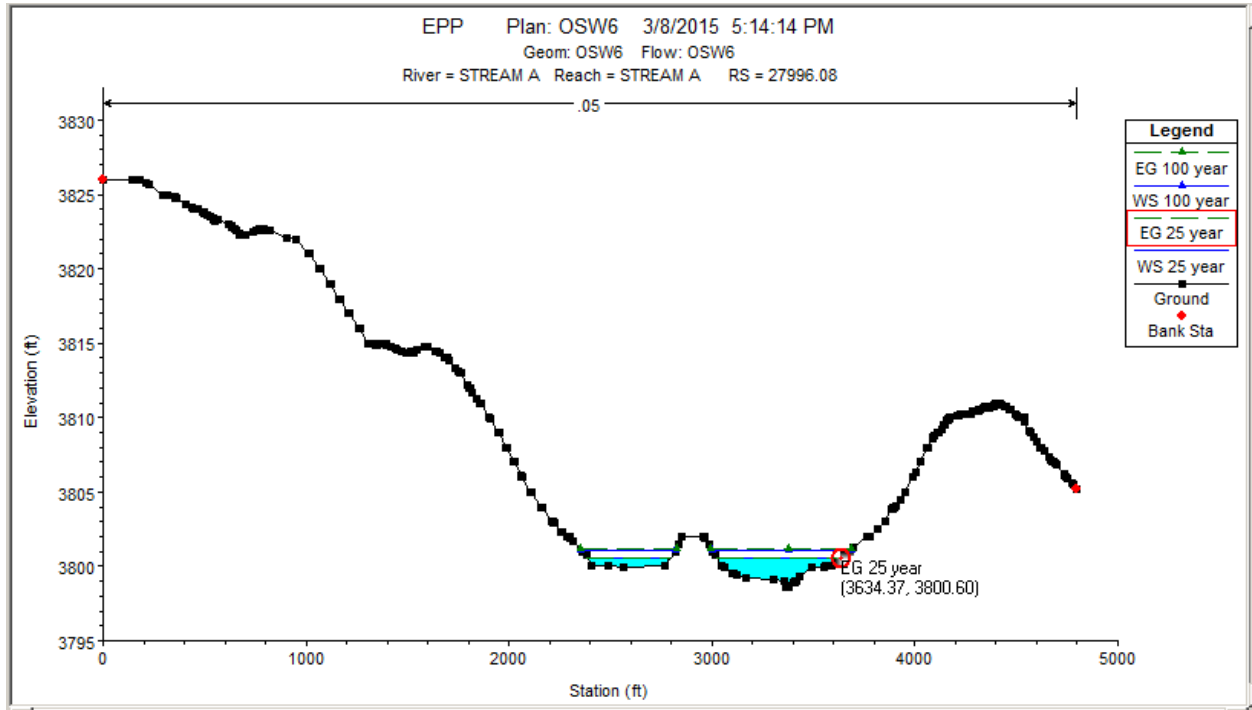


REACH OSW6 100-YR CS 27465.02

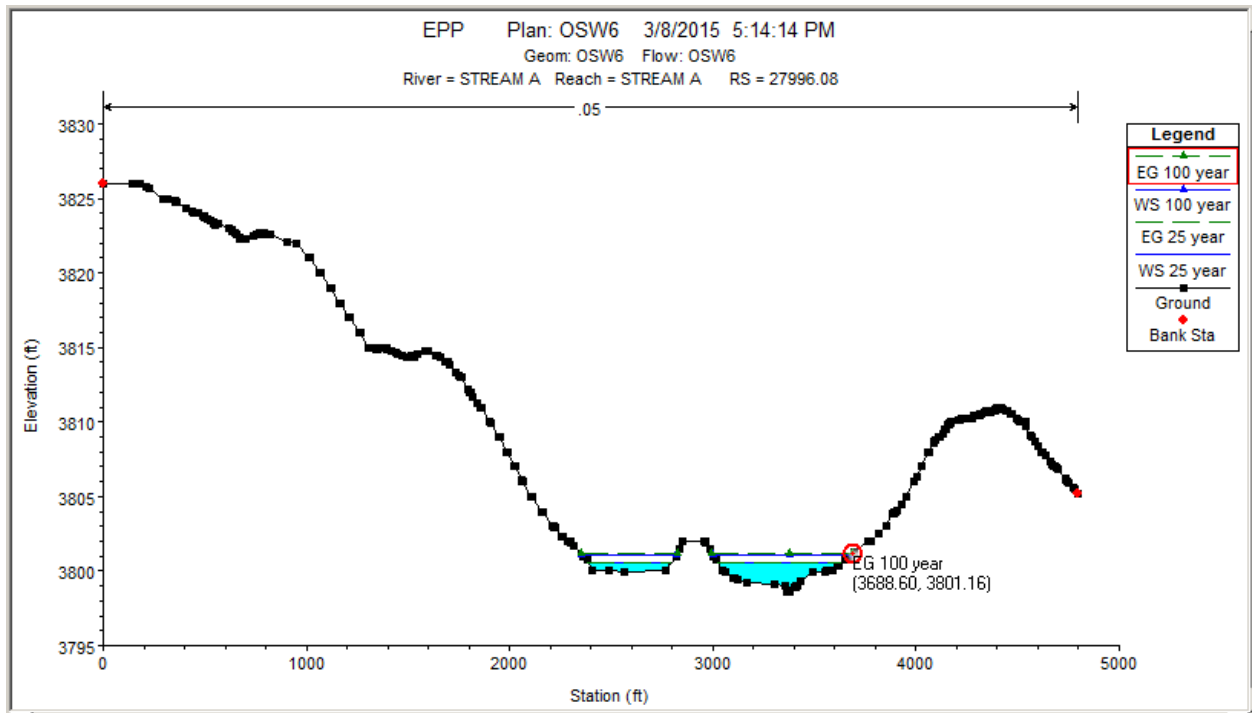




REACH OSW6 25-YR CS 27996.08

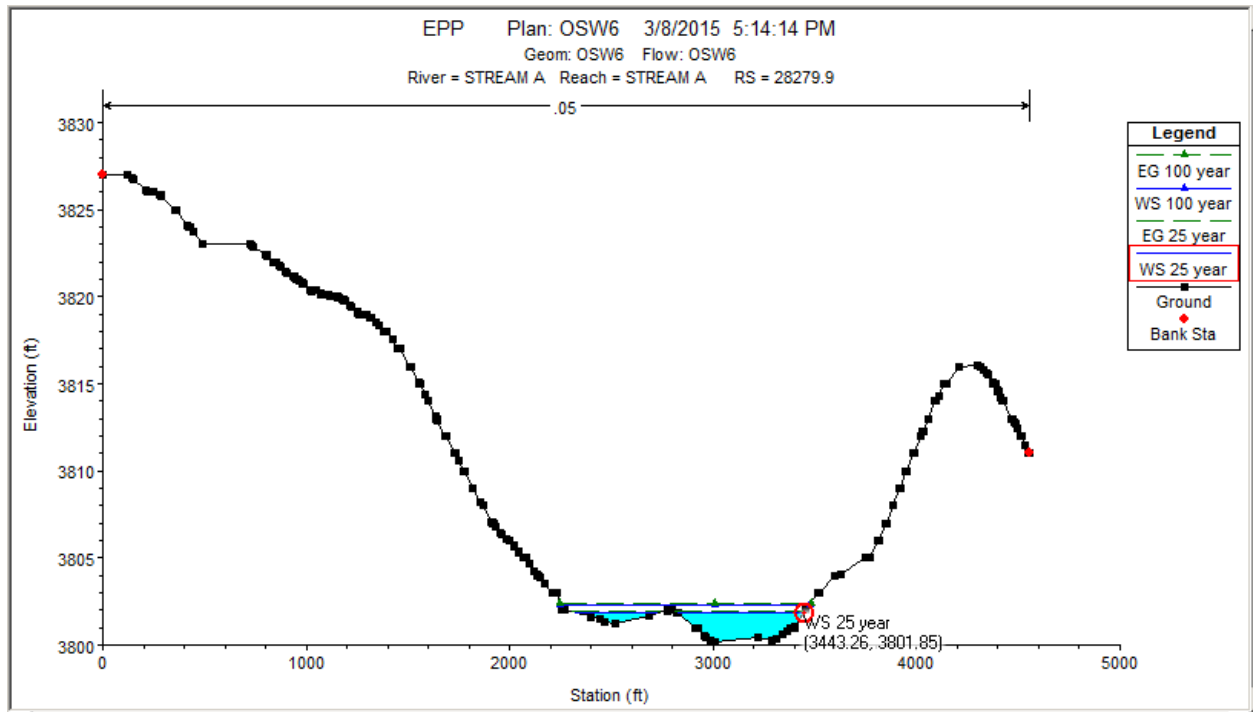


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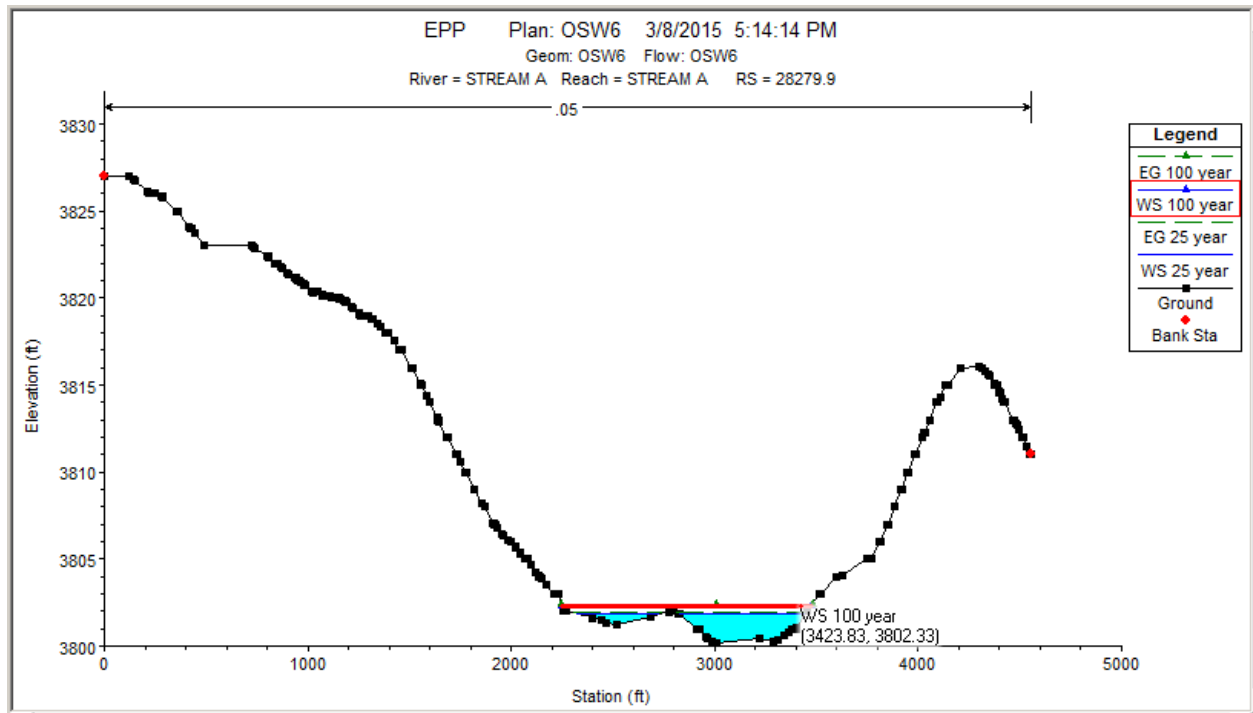




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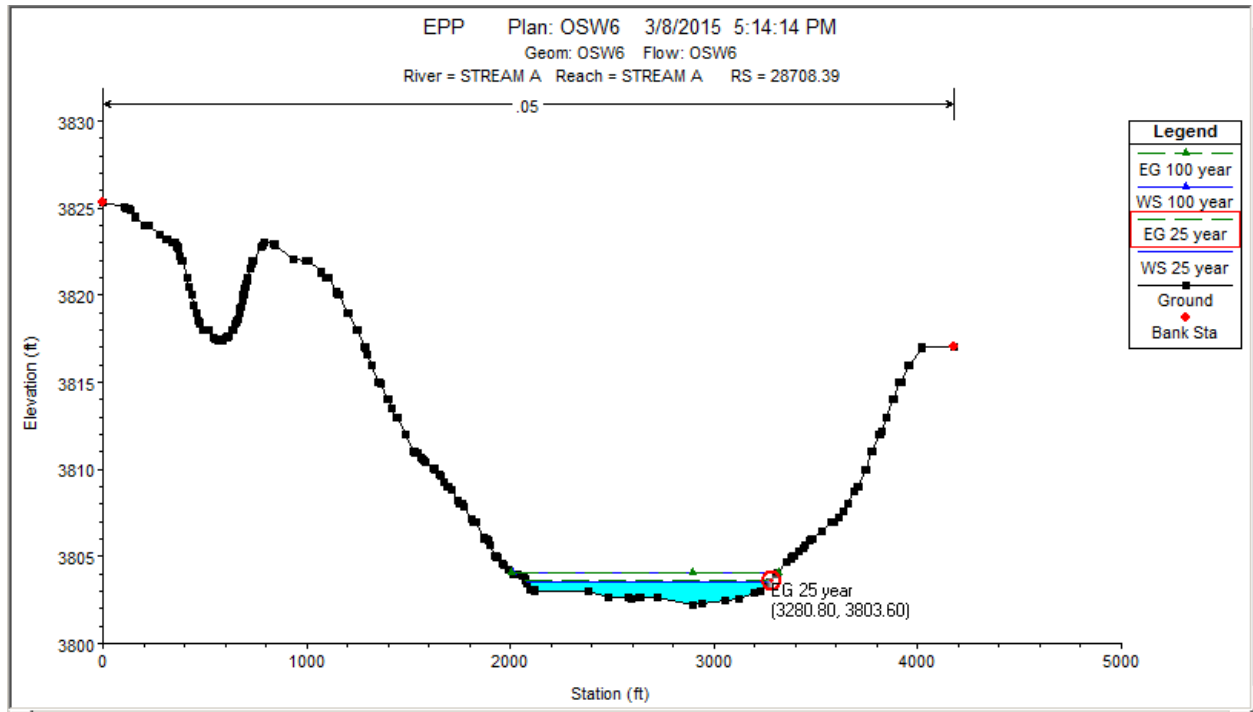


REACH OSW6 100-YR CS 28279.9

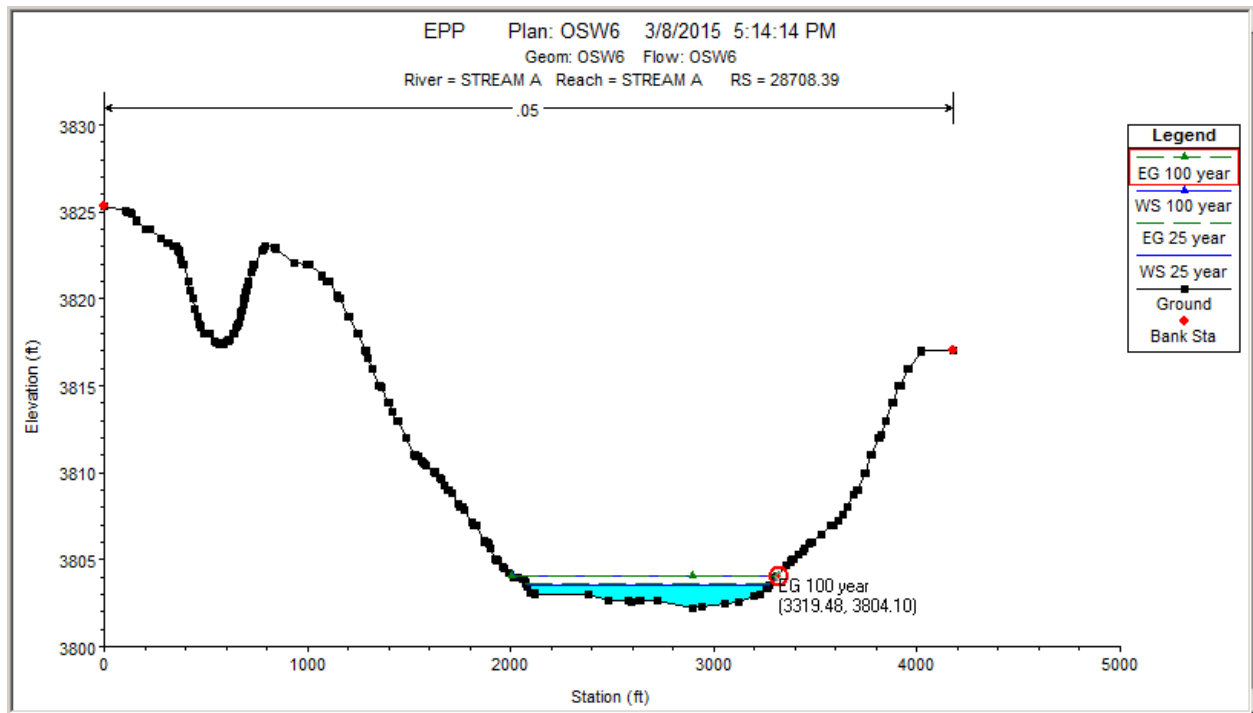




REACH OSW6 25-YR CS 28708.39

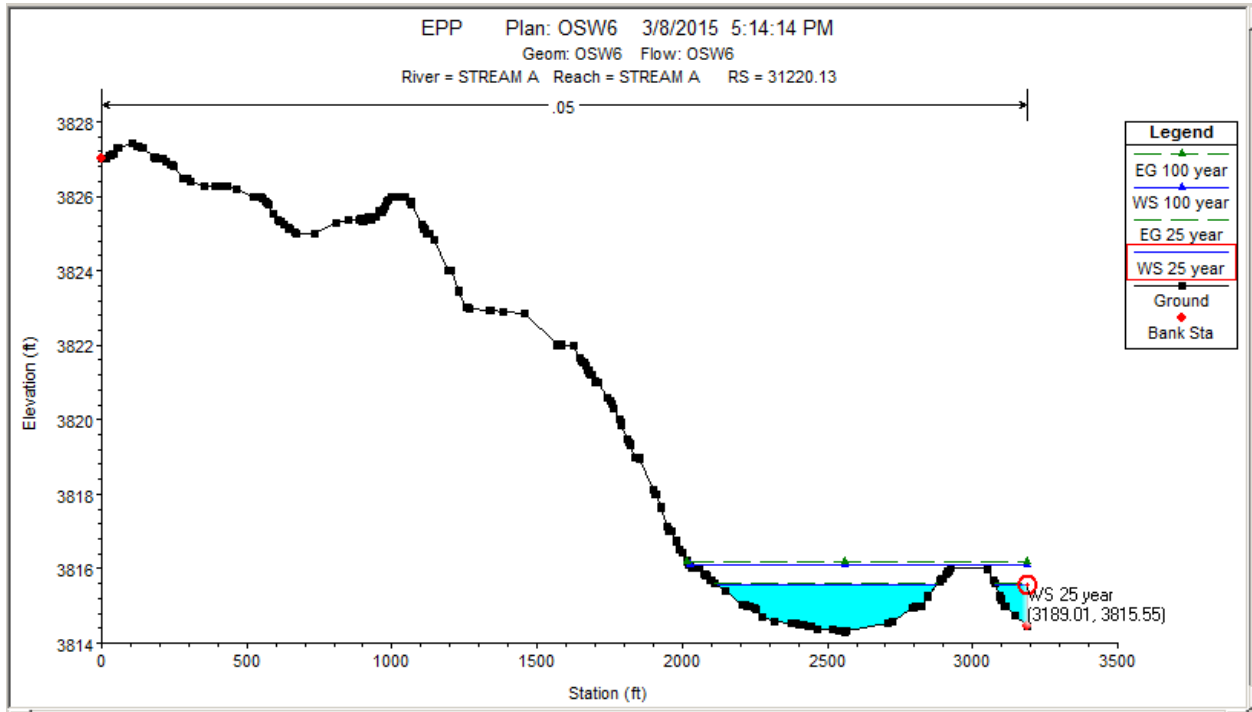


REACH OSW6 100-YR CS 28708.39

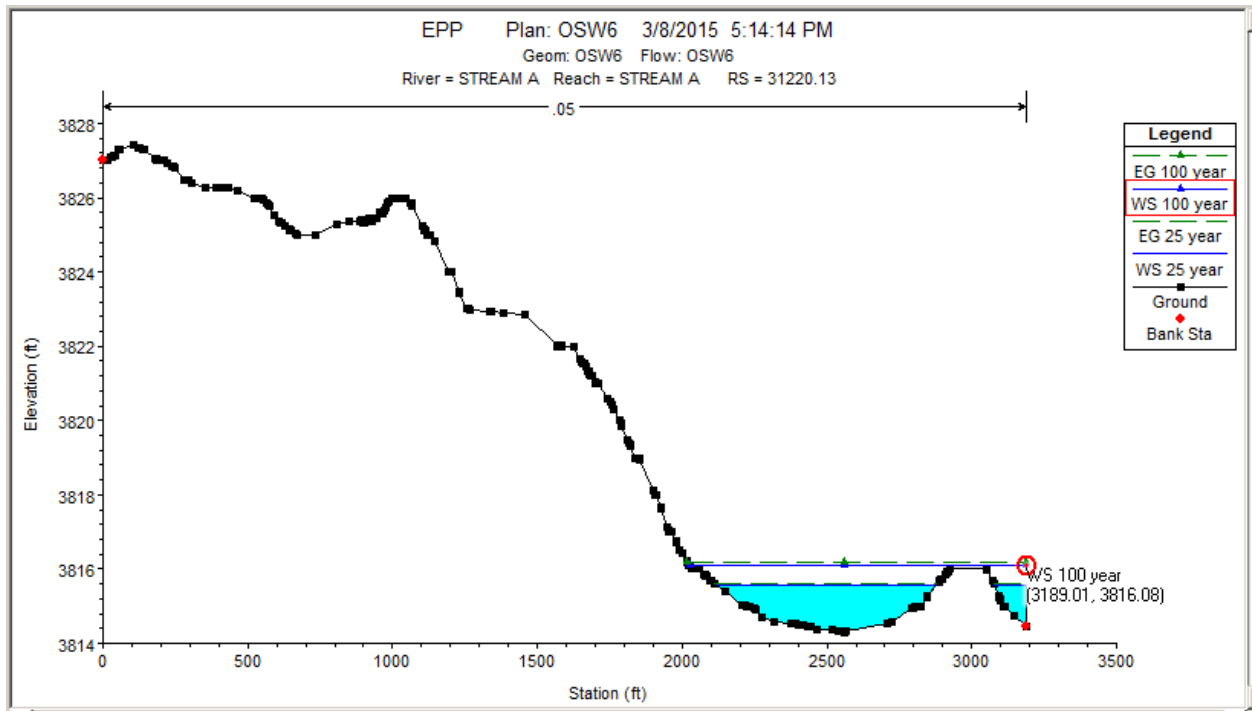




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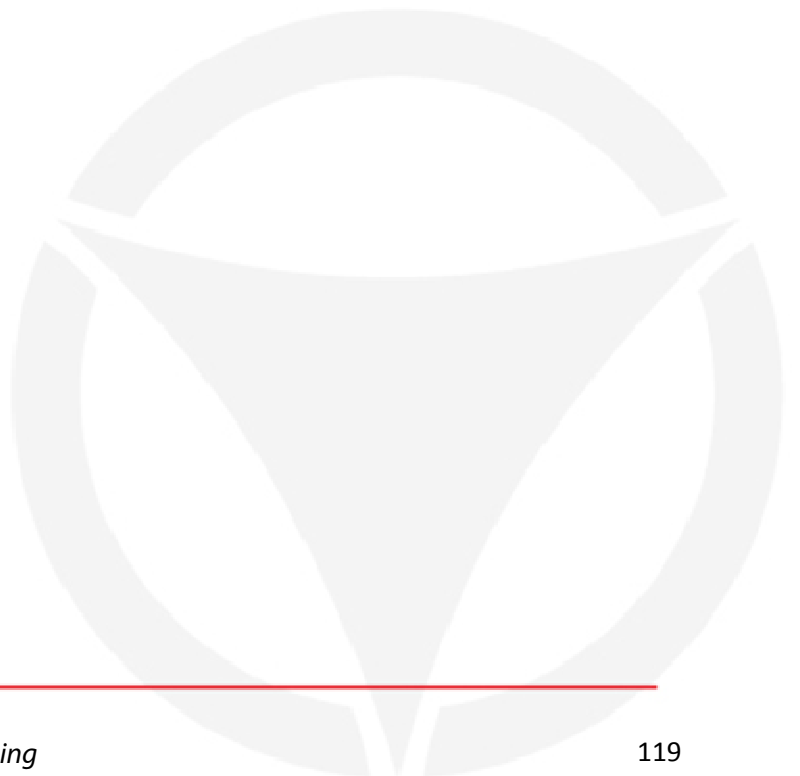
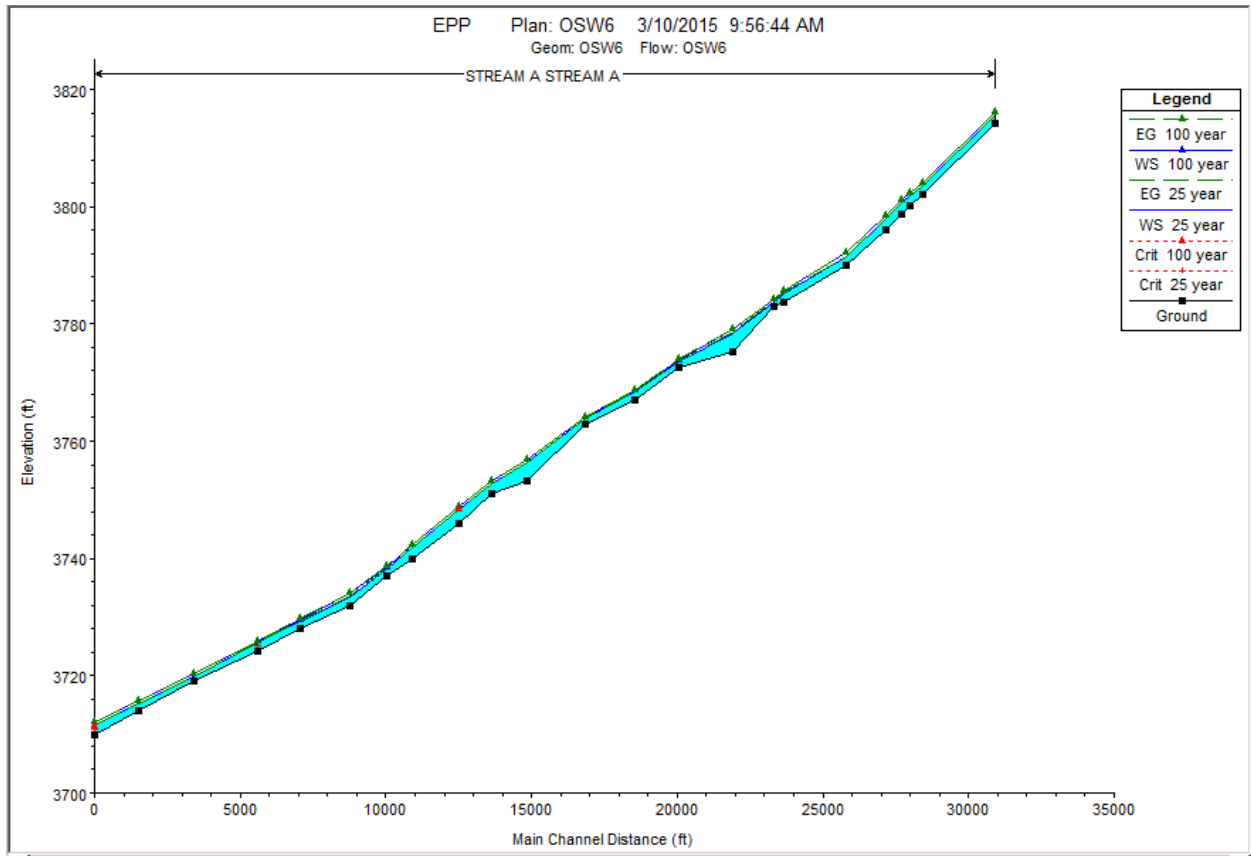


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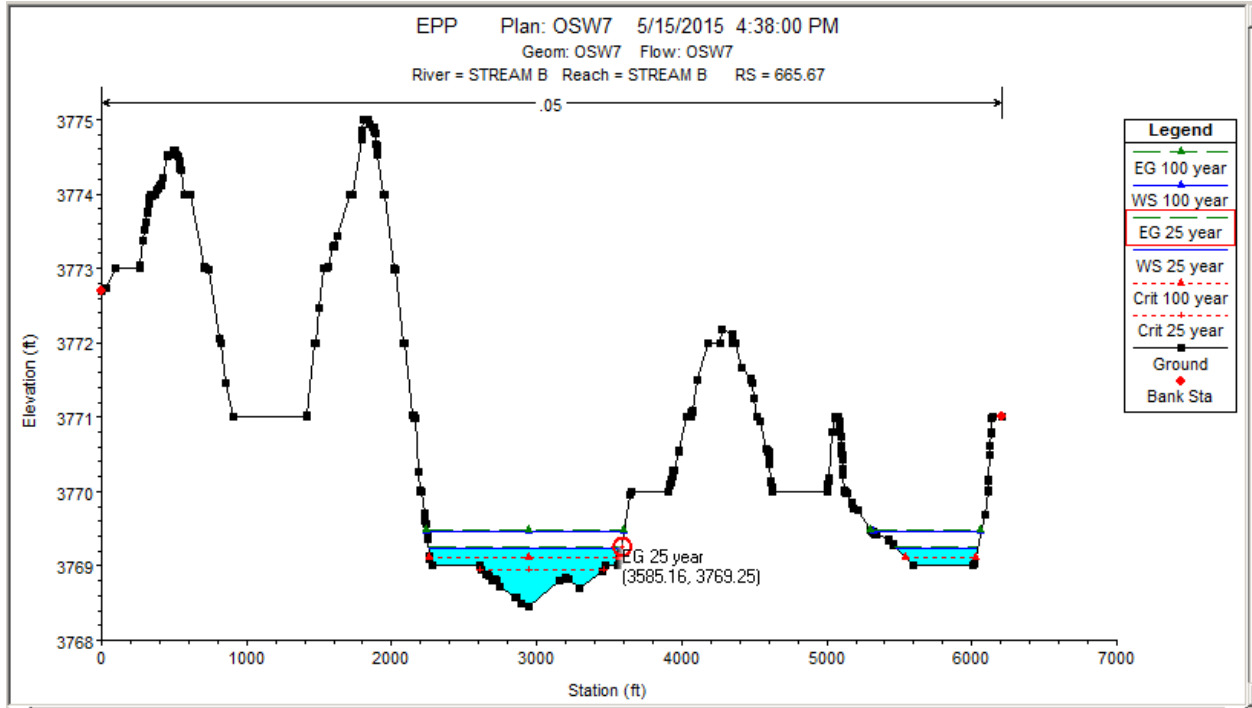


REACH OSW6 PROFILE

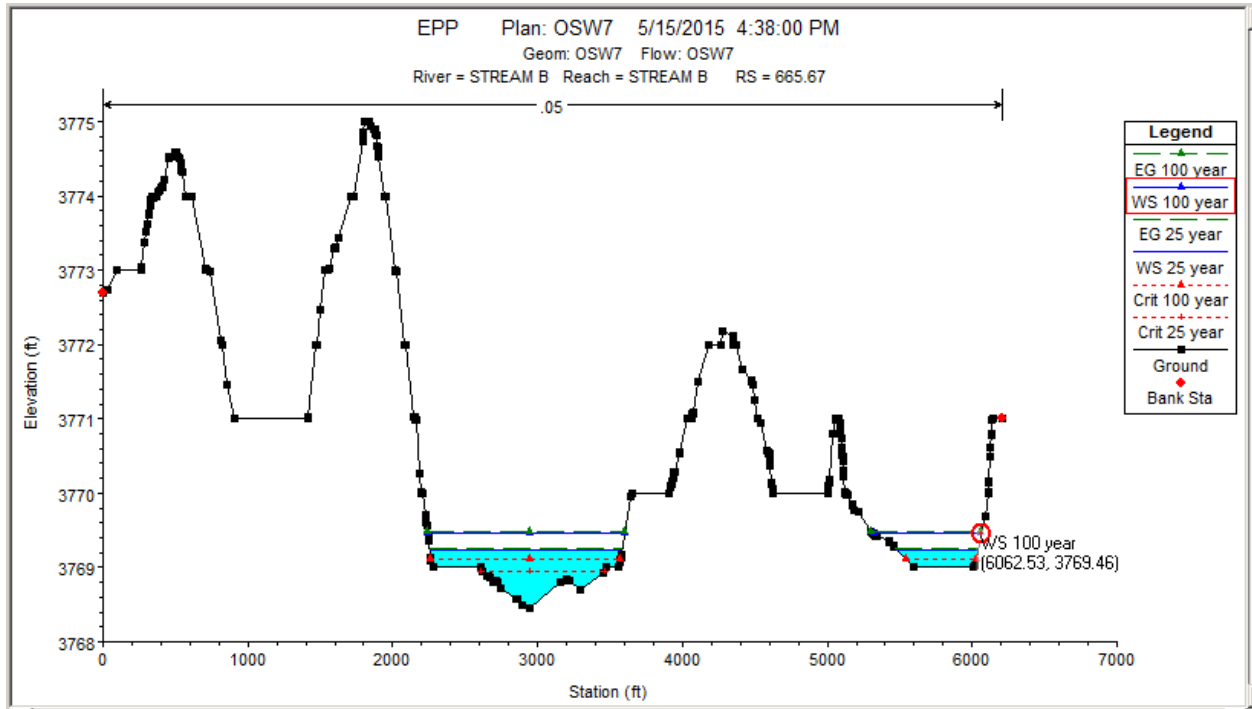




REACH OSW7 25-YR CS 665.67

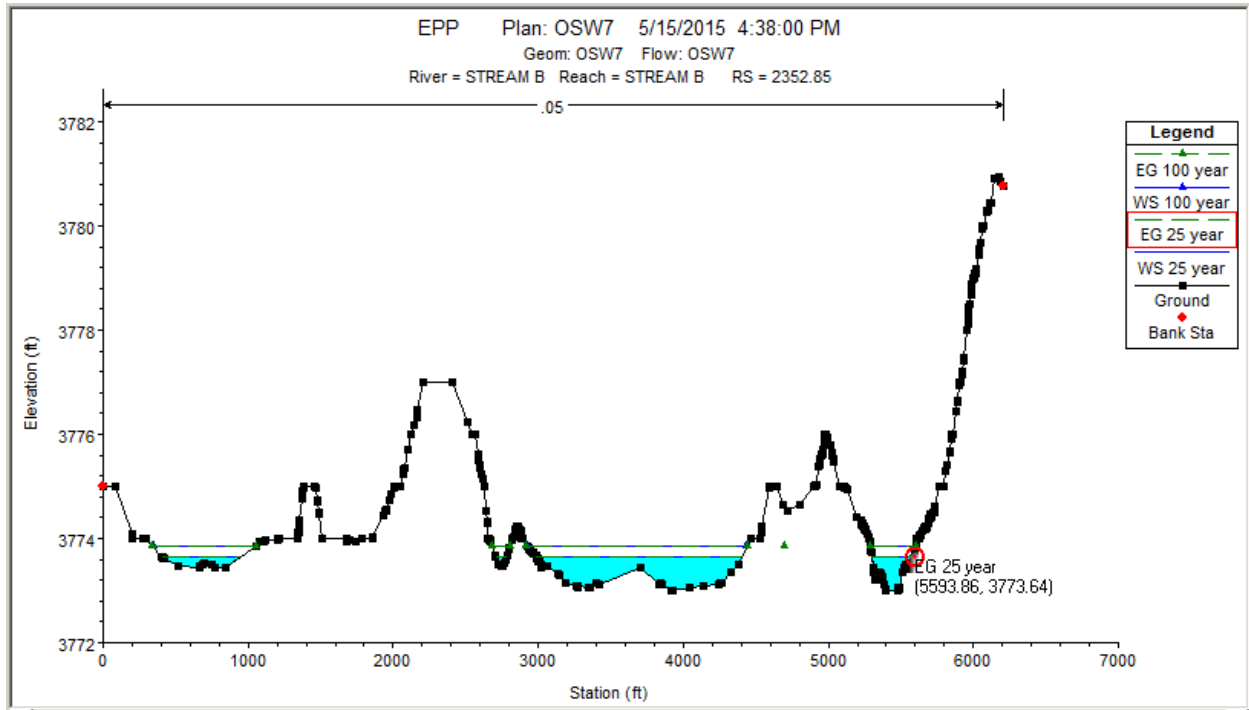


REACH OSW7 100-YR CS 665.67

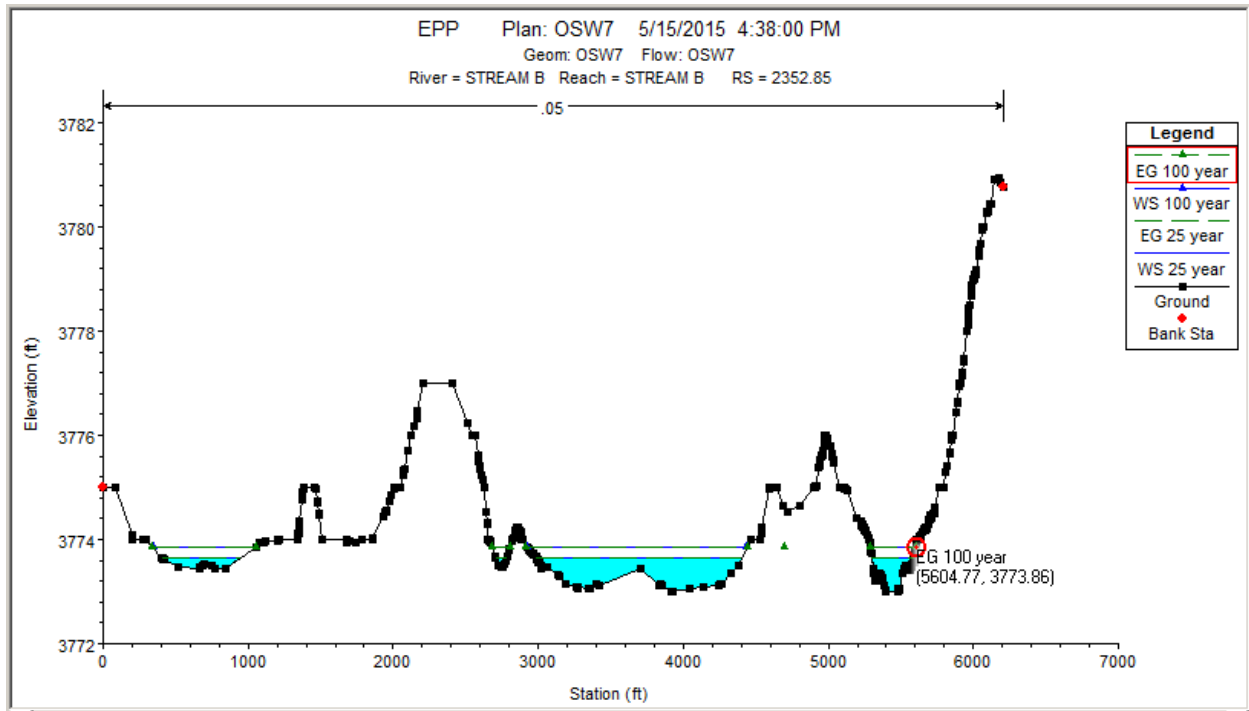




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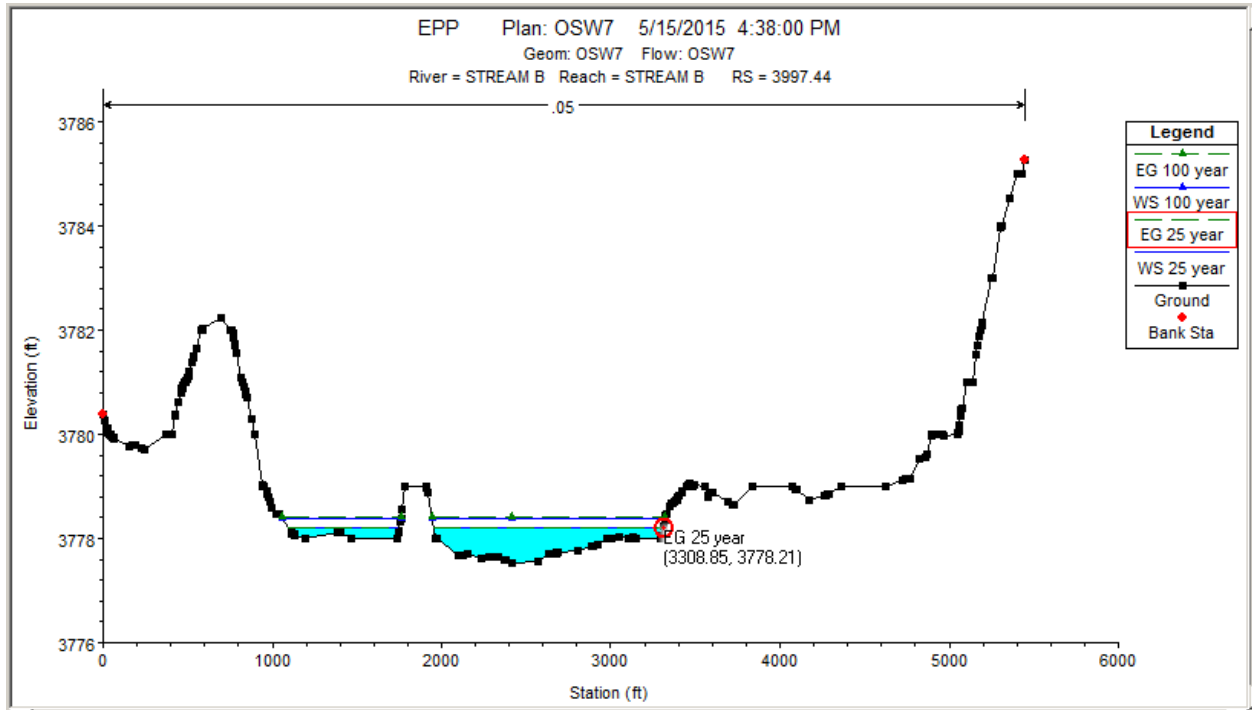


REACH OSW7 100-YR CS 2352.85

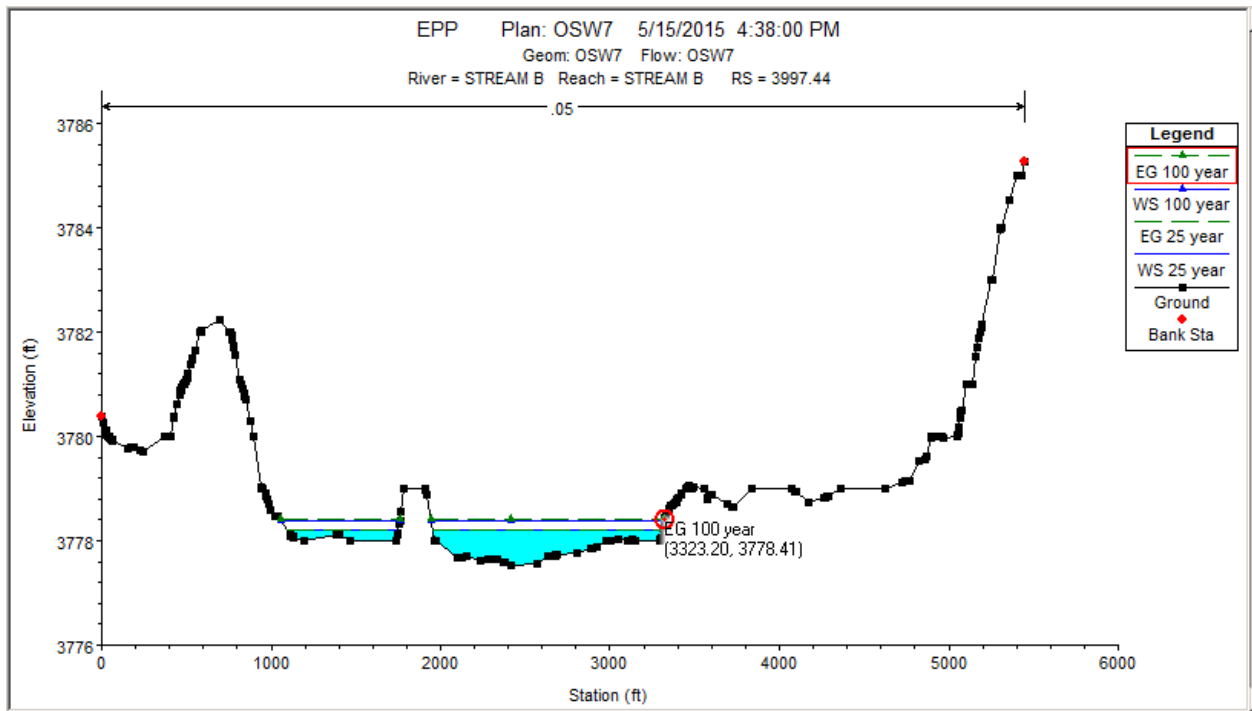




REACH OSW7 25-YR CS 3997.44

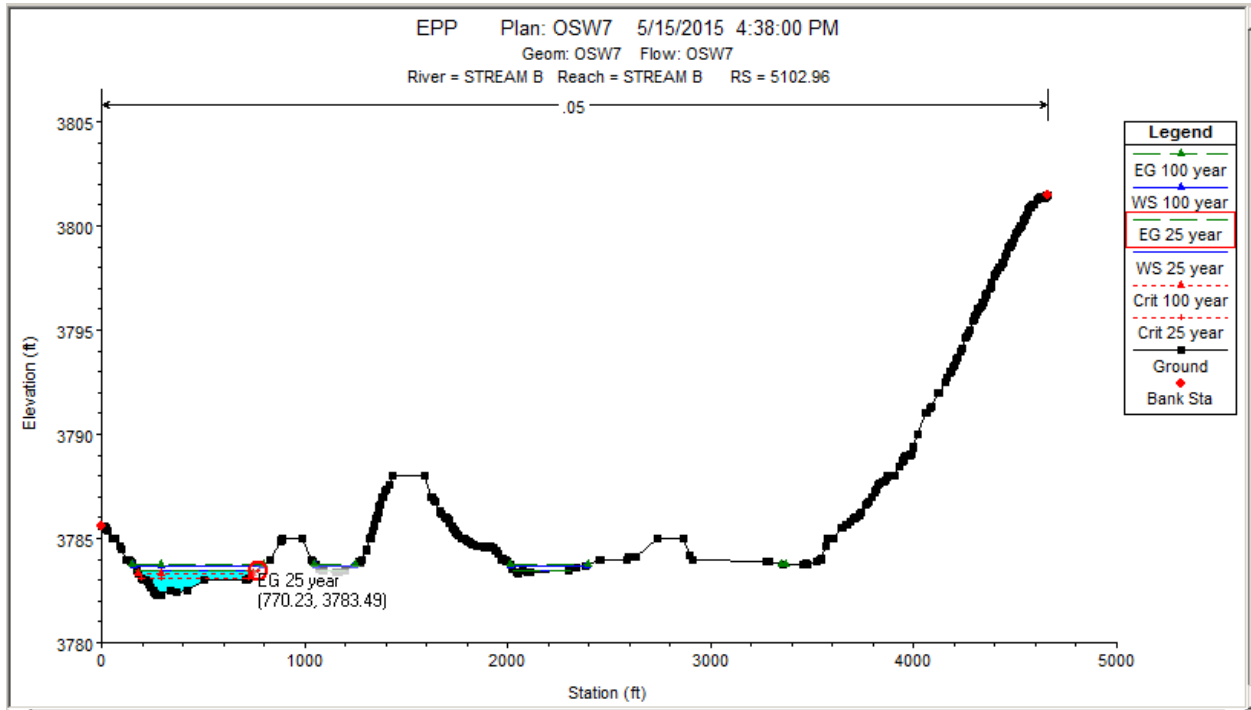


REACH OSW7 100-YR CS 3997.44

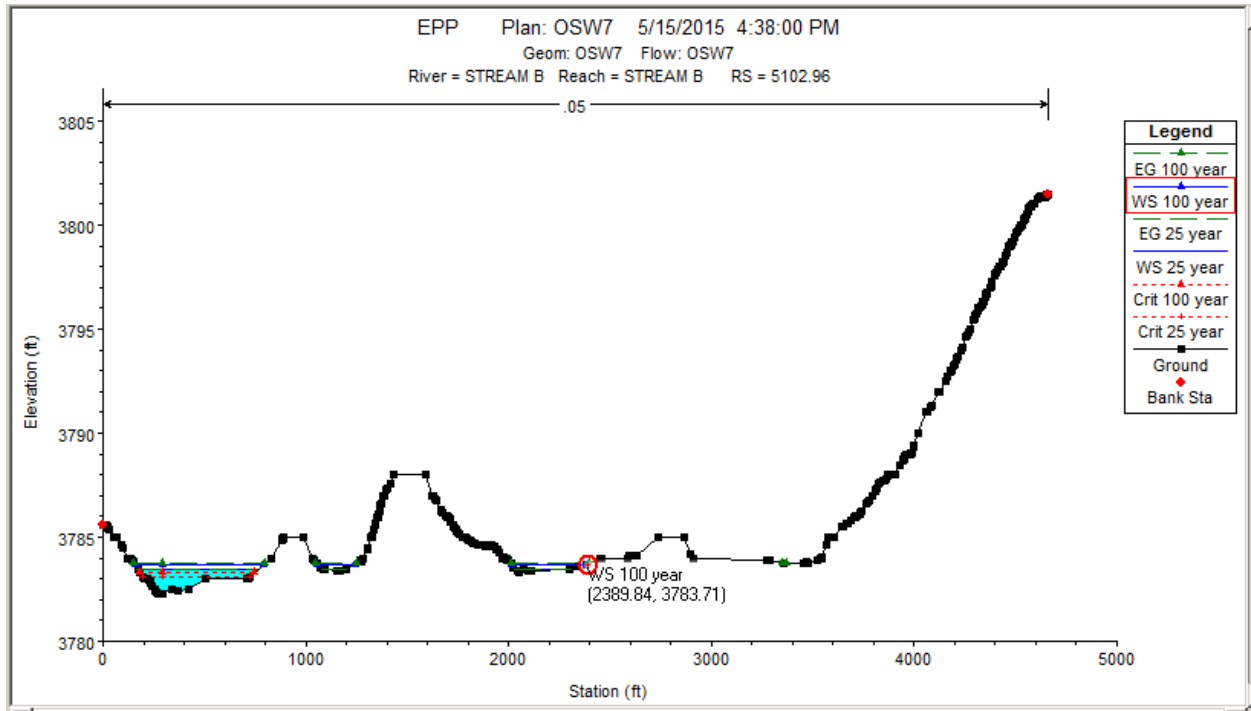




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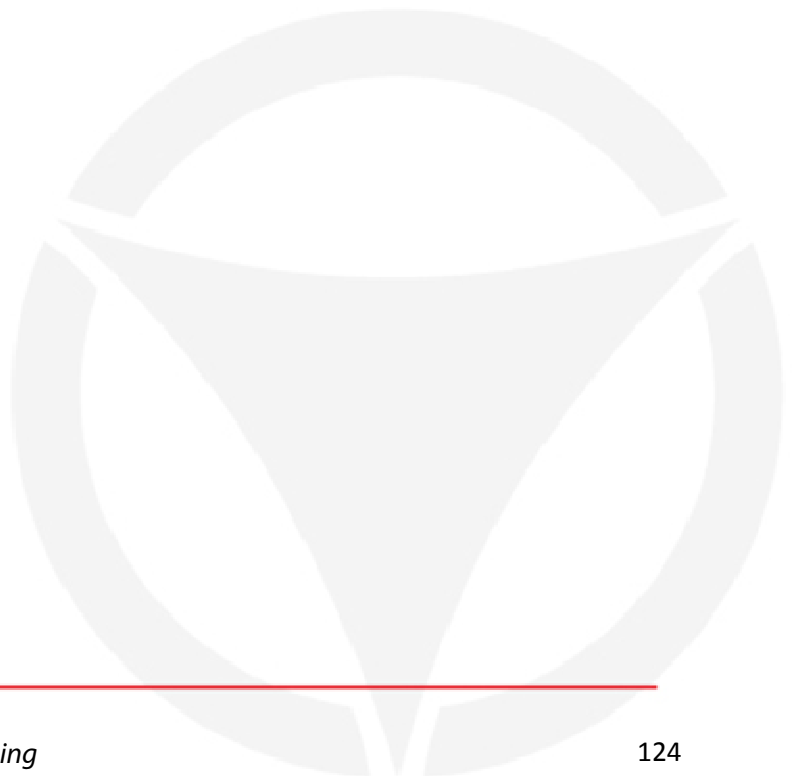
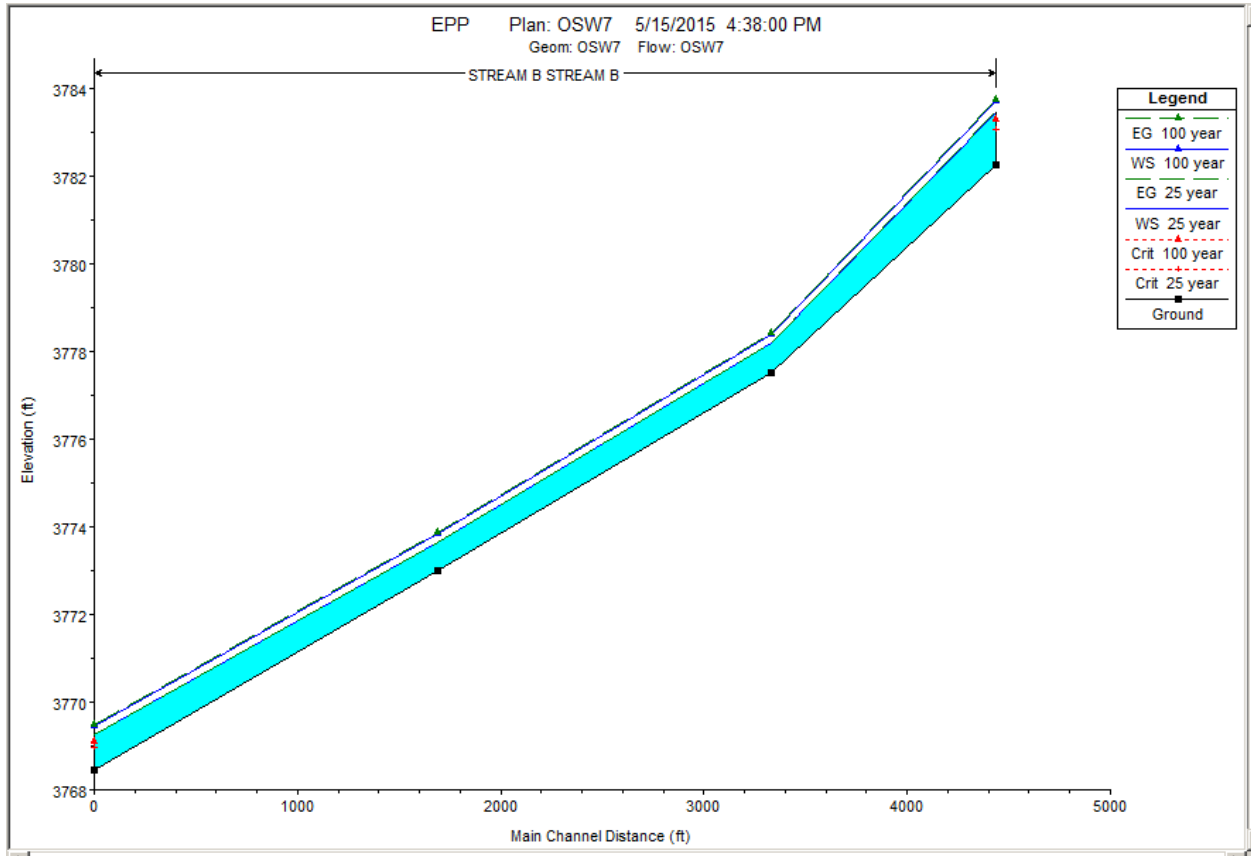


REACH OSW7 100-YR CS 5102.96



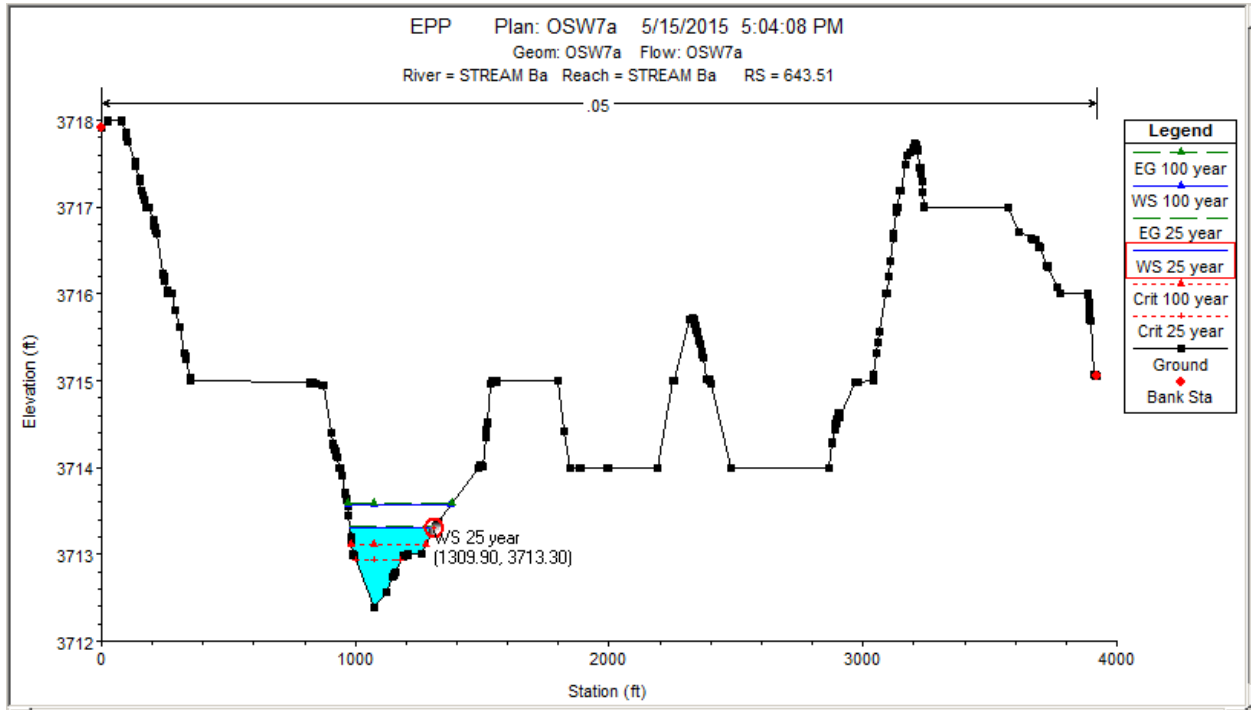


REACH OSW7 PROFILE

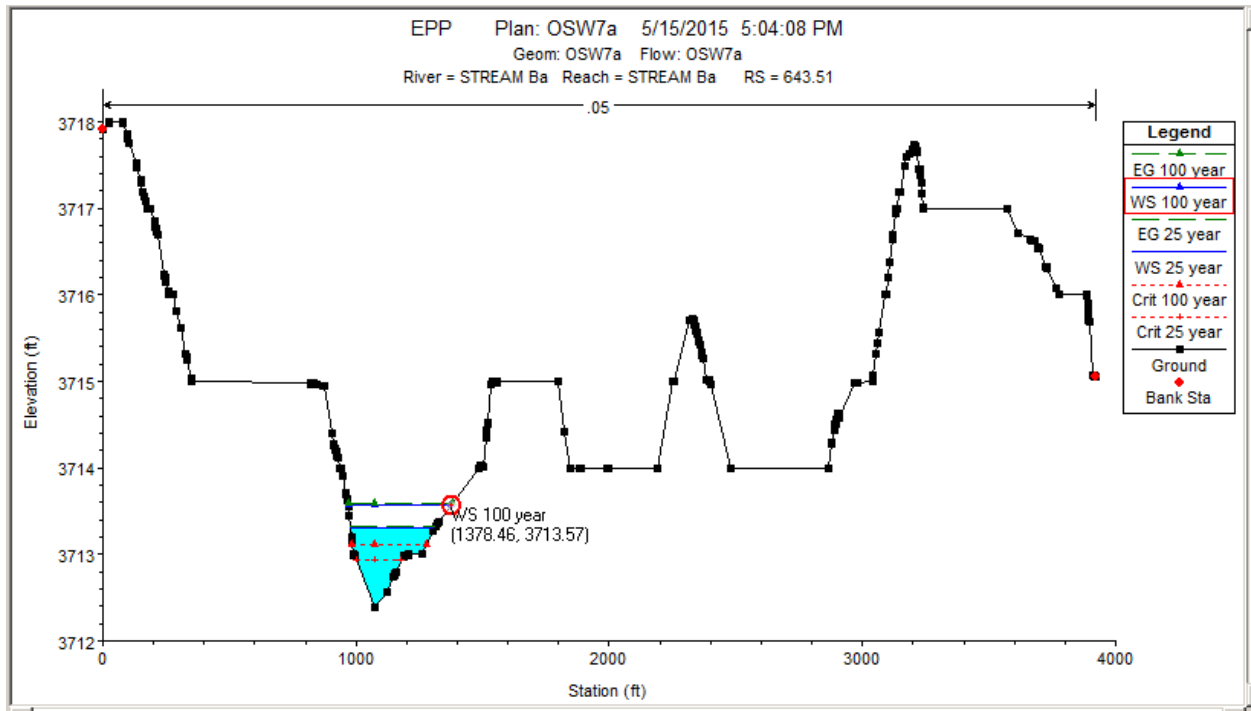




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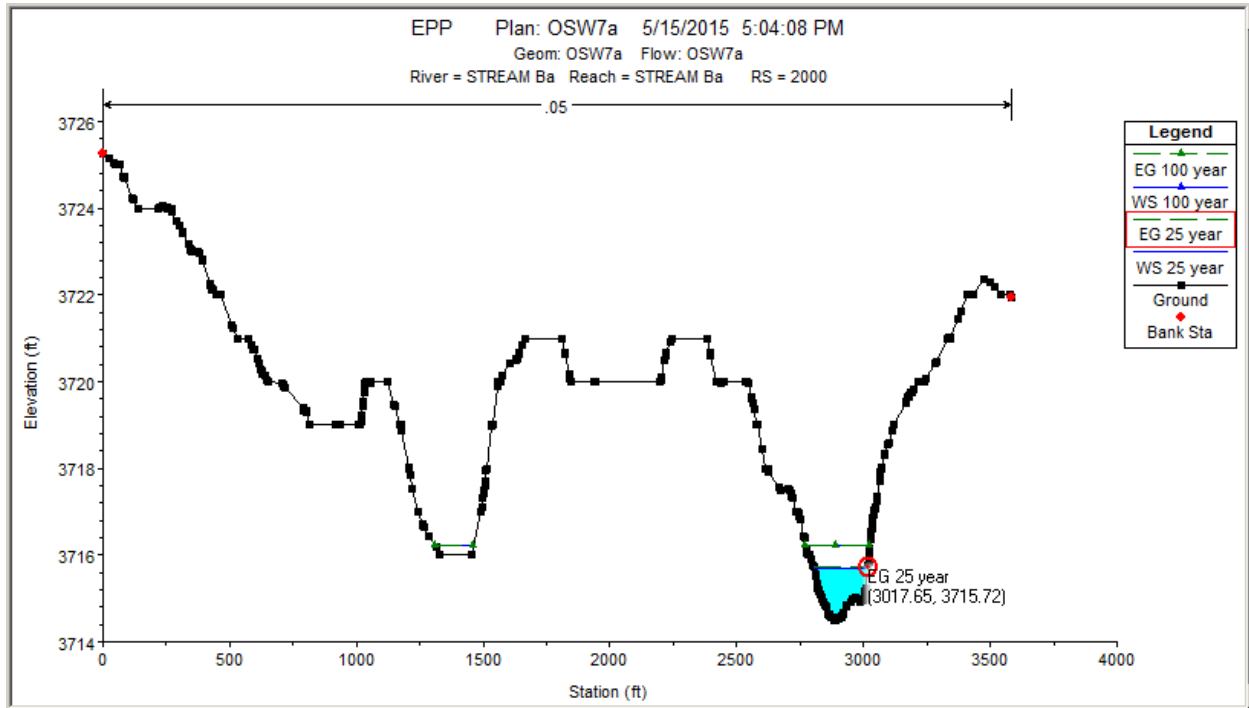


REACH OSW7 100-YR CS 643.51

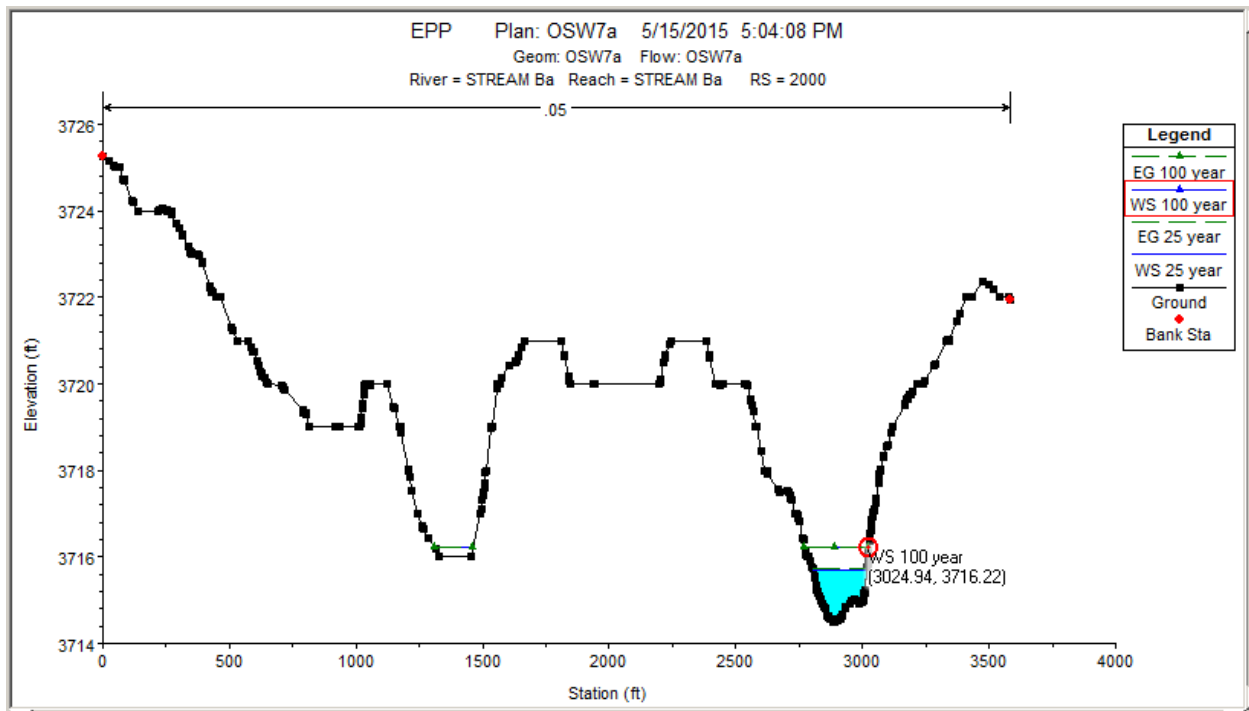




REACH OSW7a 25-YR CS 2000

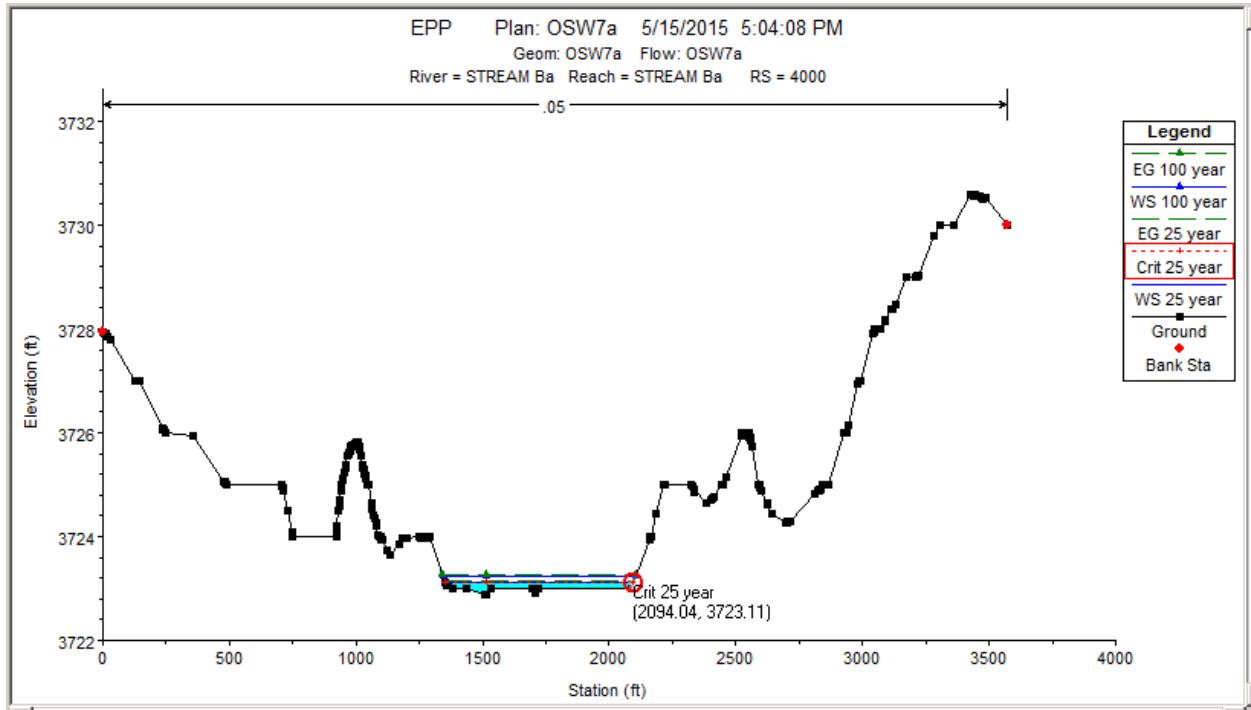


REACH OSW7a 100-YR CS 2000

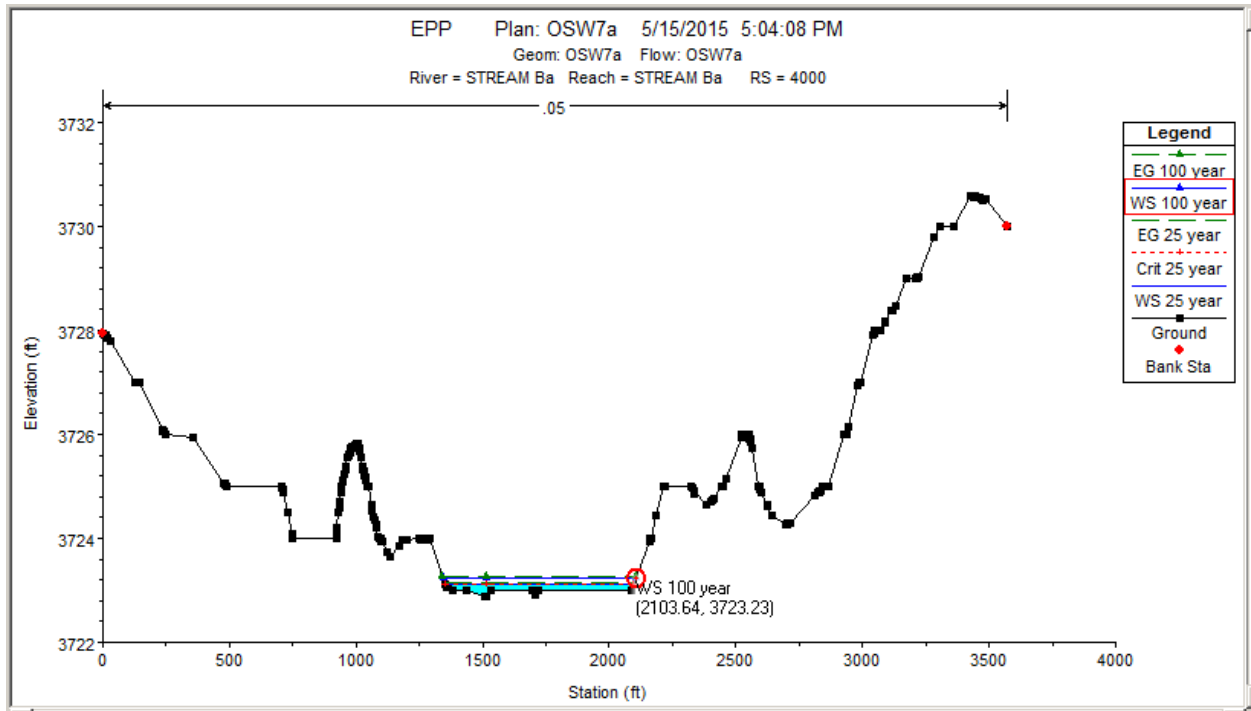




REACH OSW7a 25-YR CS 4000

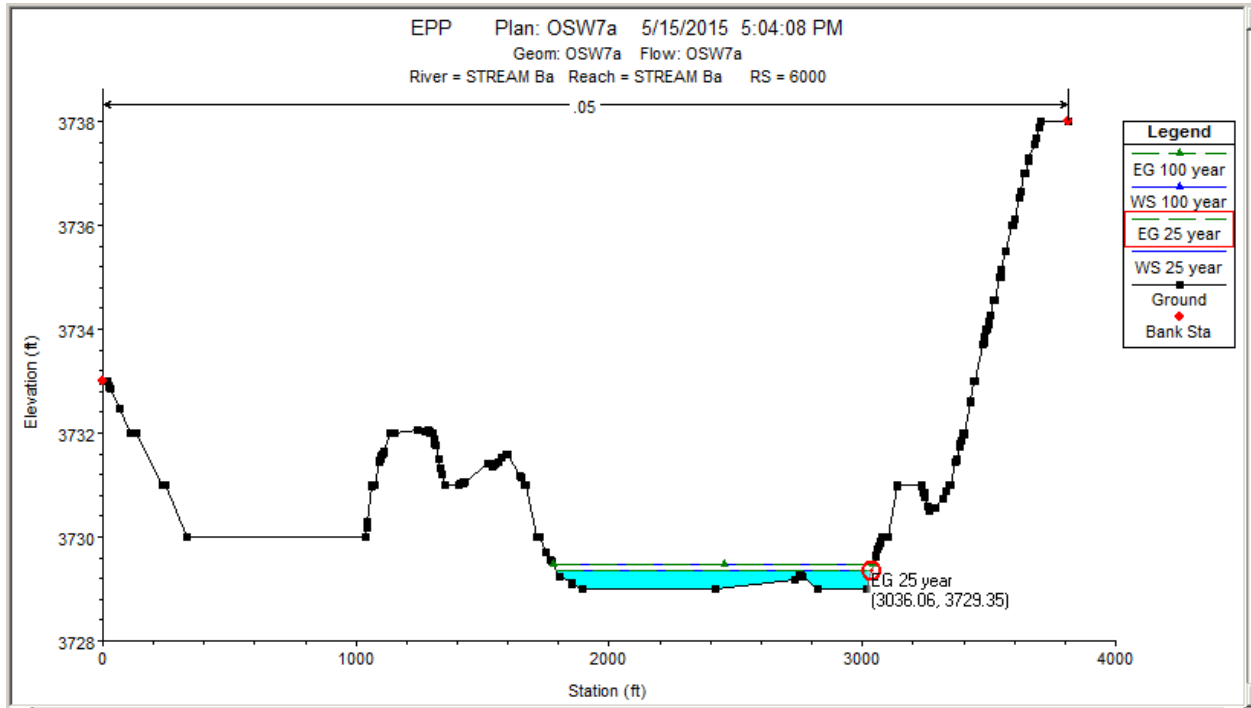


REACH OSW7a 100-YR CS 4000

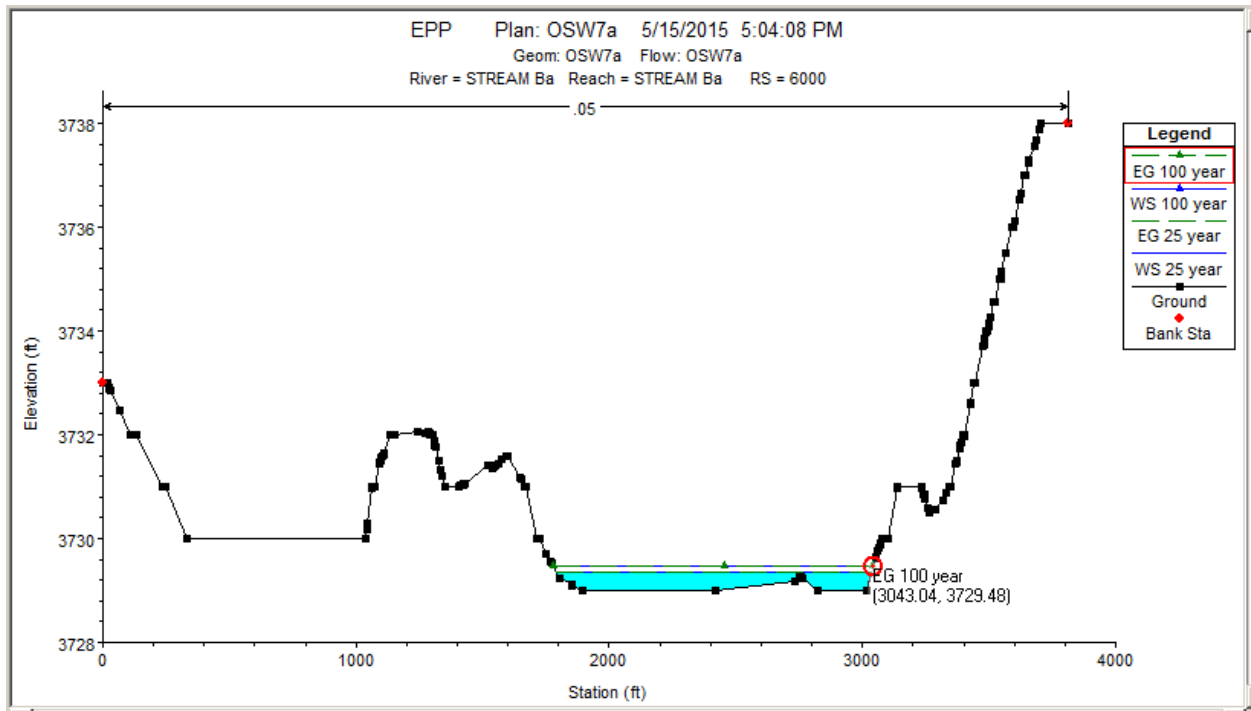




REACH OSW7a 25-YR CS 6000

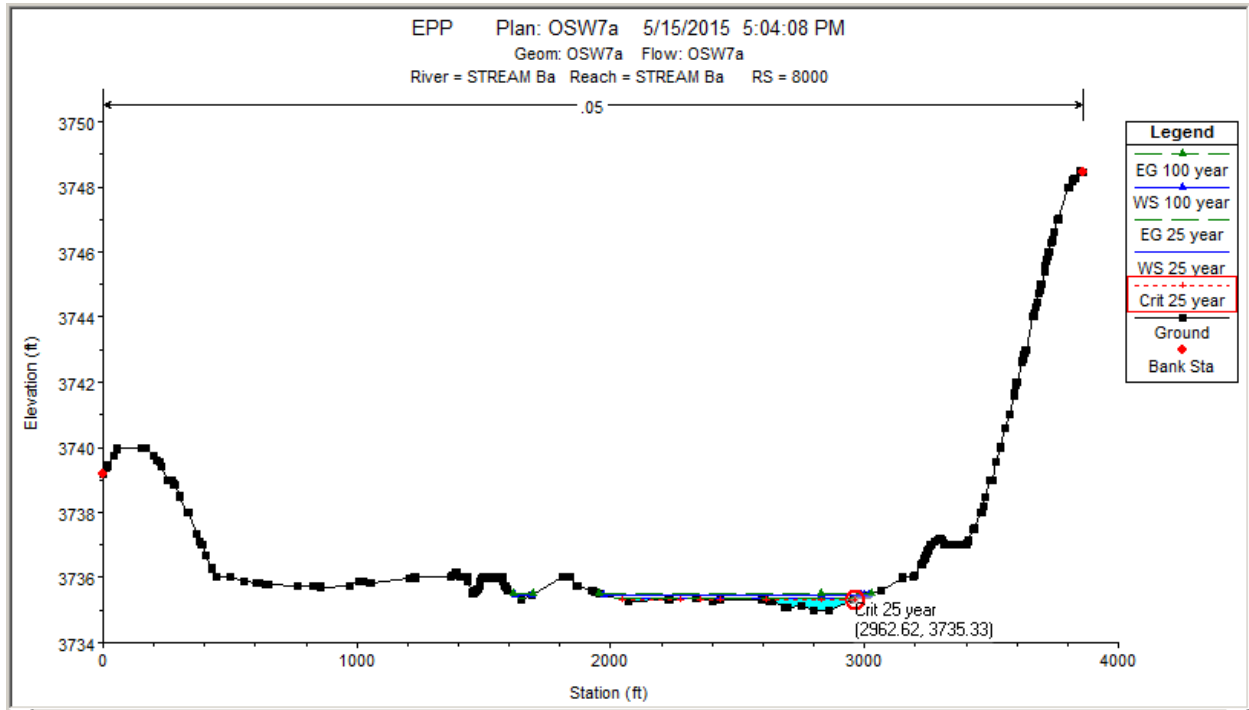


REACH OSW7a 100-YR CS 6000

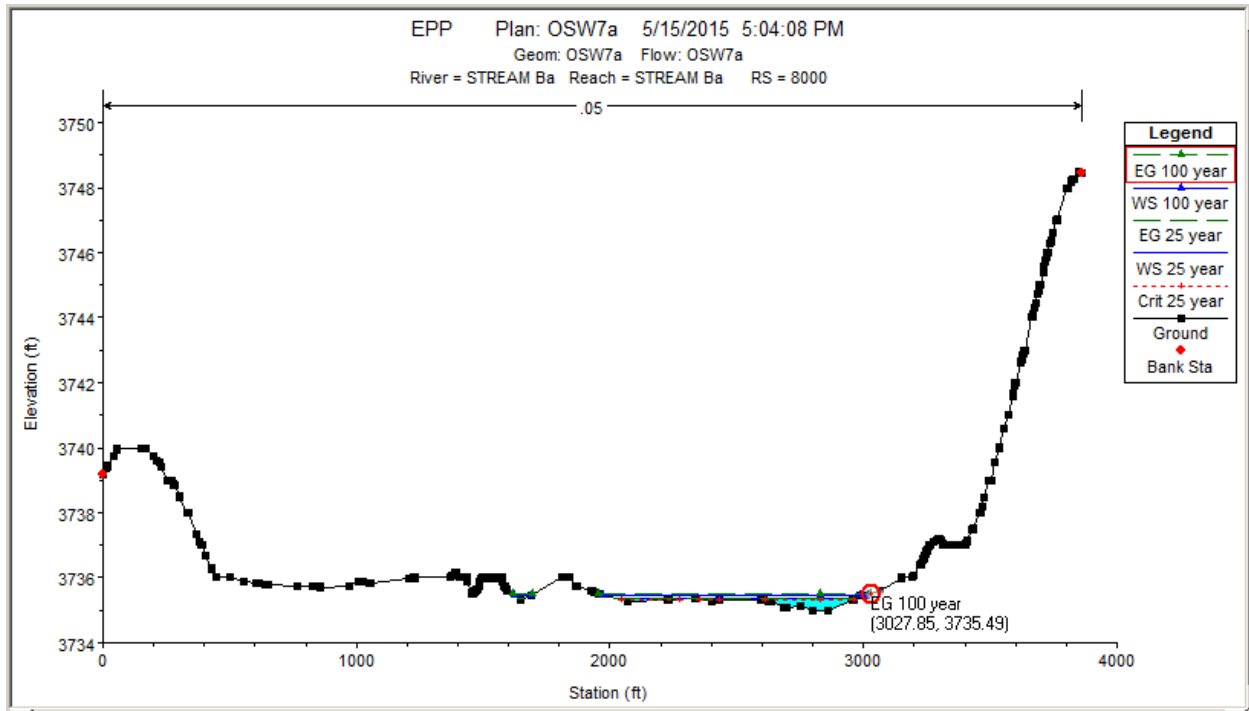




REACH OSW7a 25-YR CS 8000

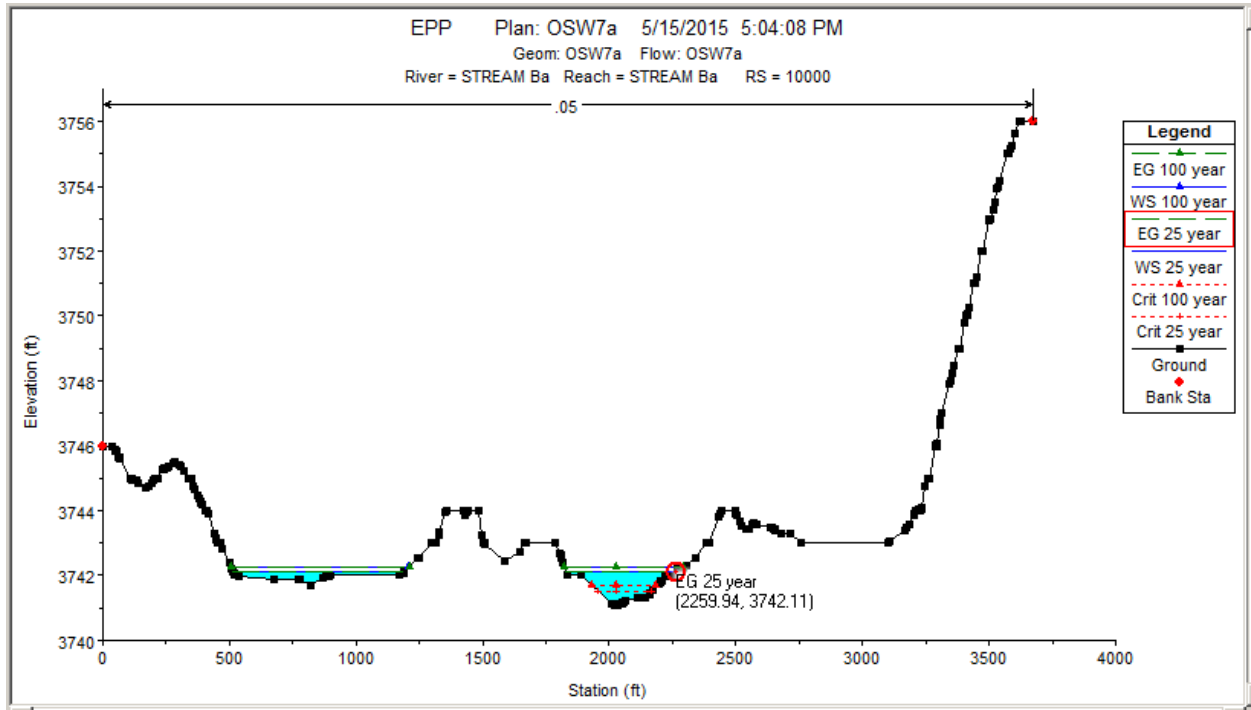


REACH OSW7a 100-YR CS 8000

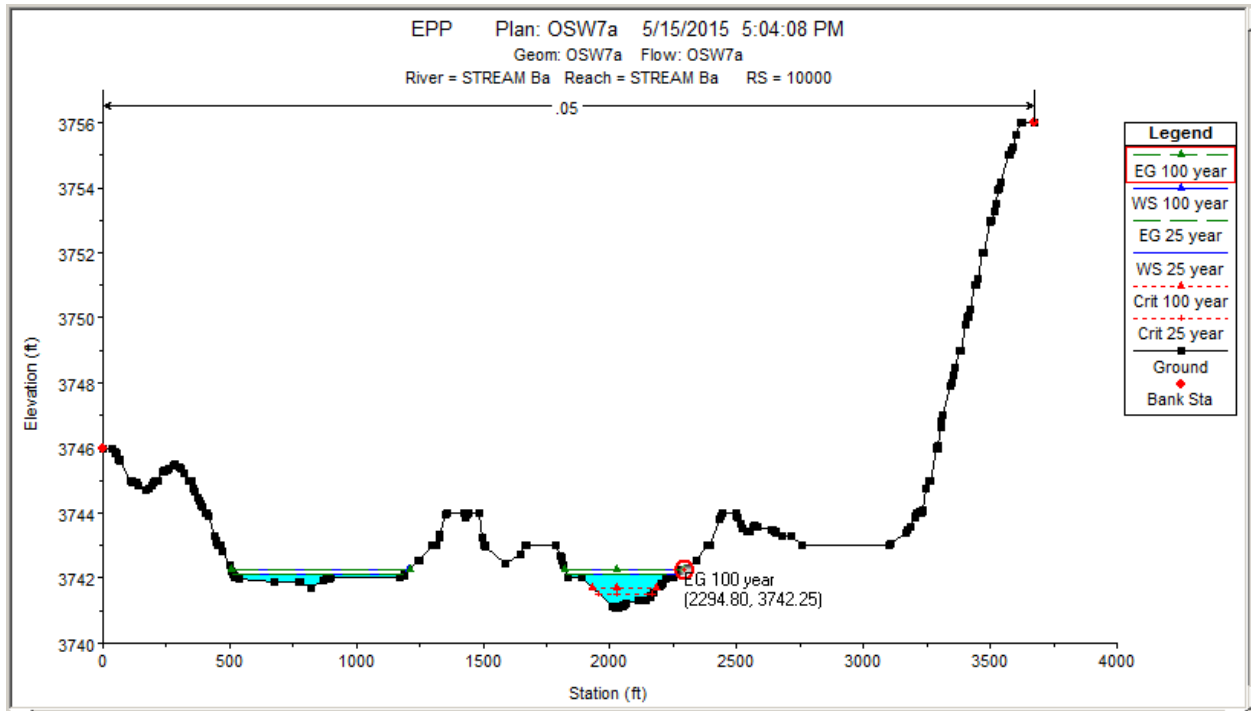




REACH OSW7a 25-YR CS 10000

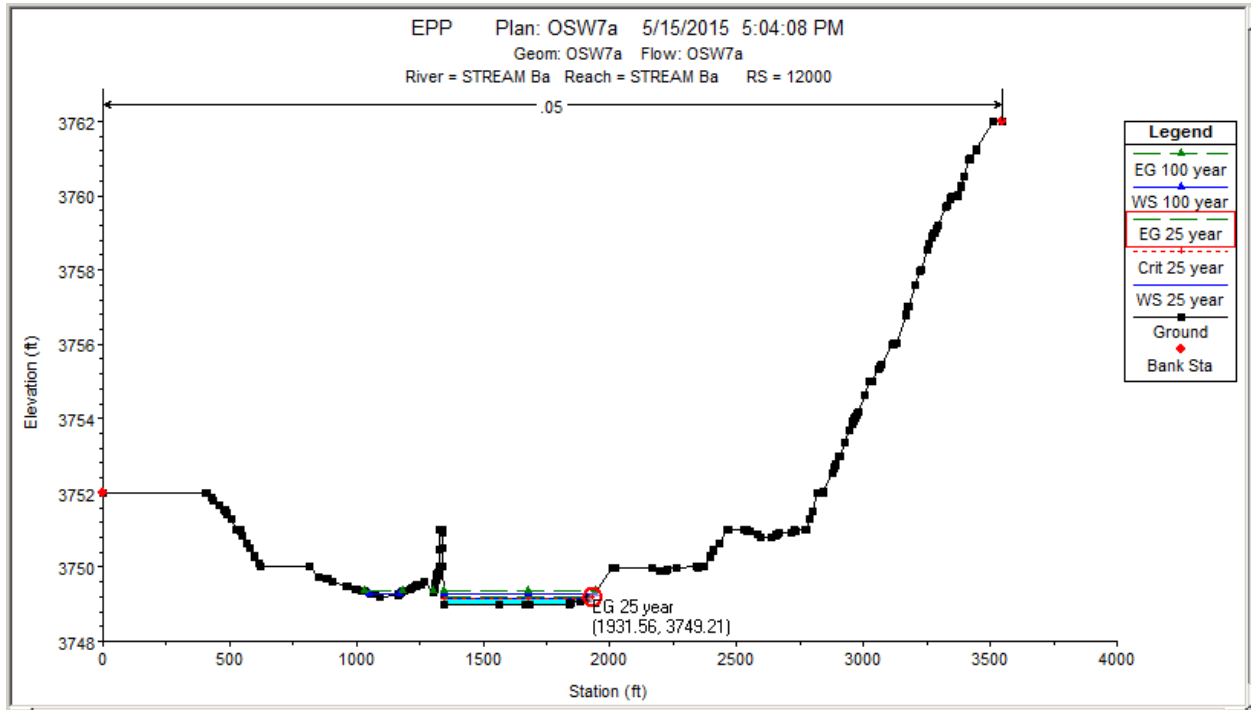


REACH OSW7a 100-YR CS 10000

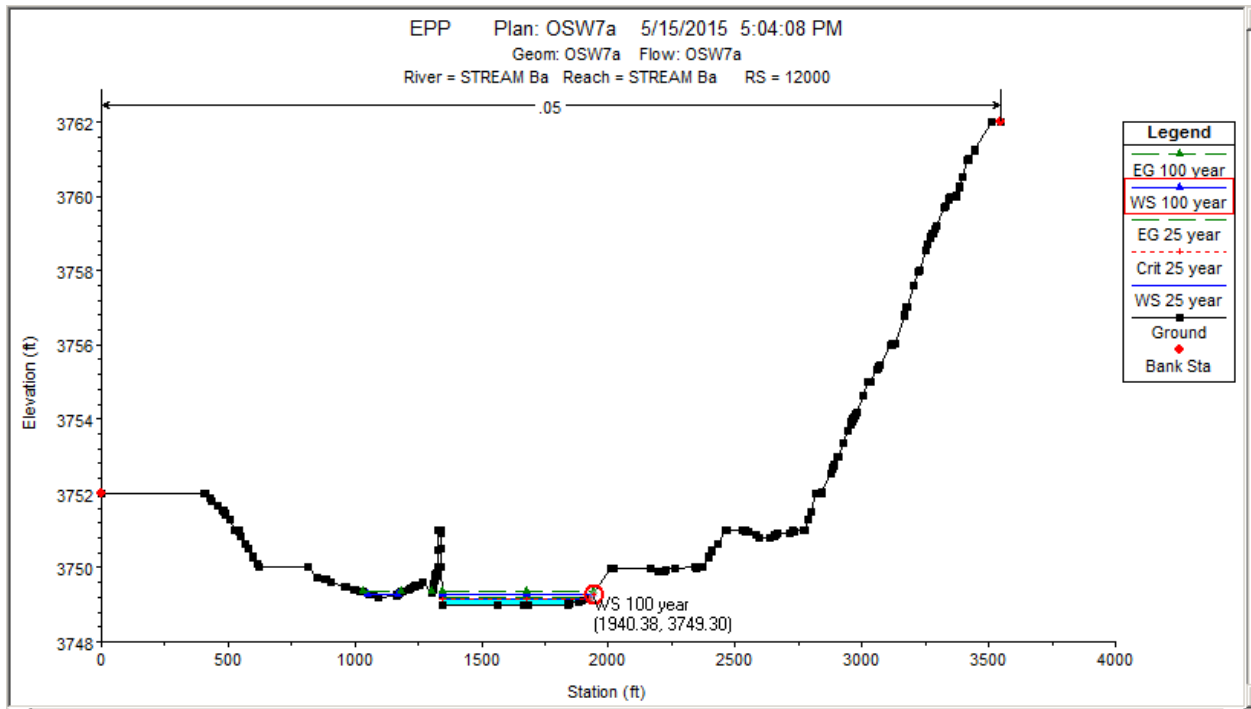




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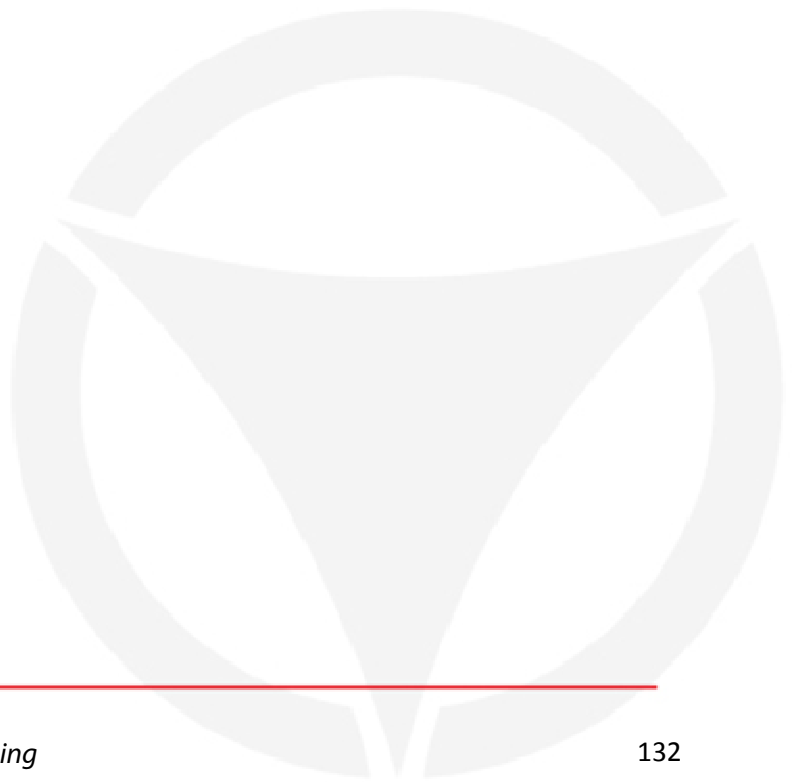
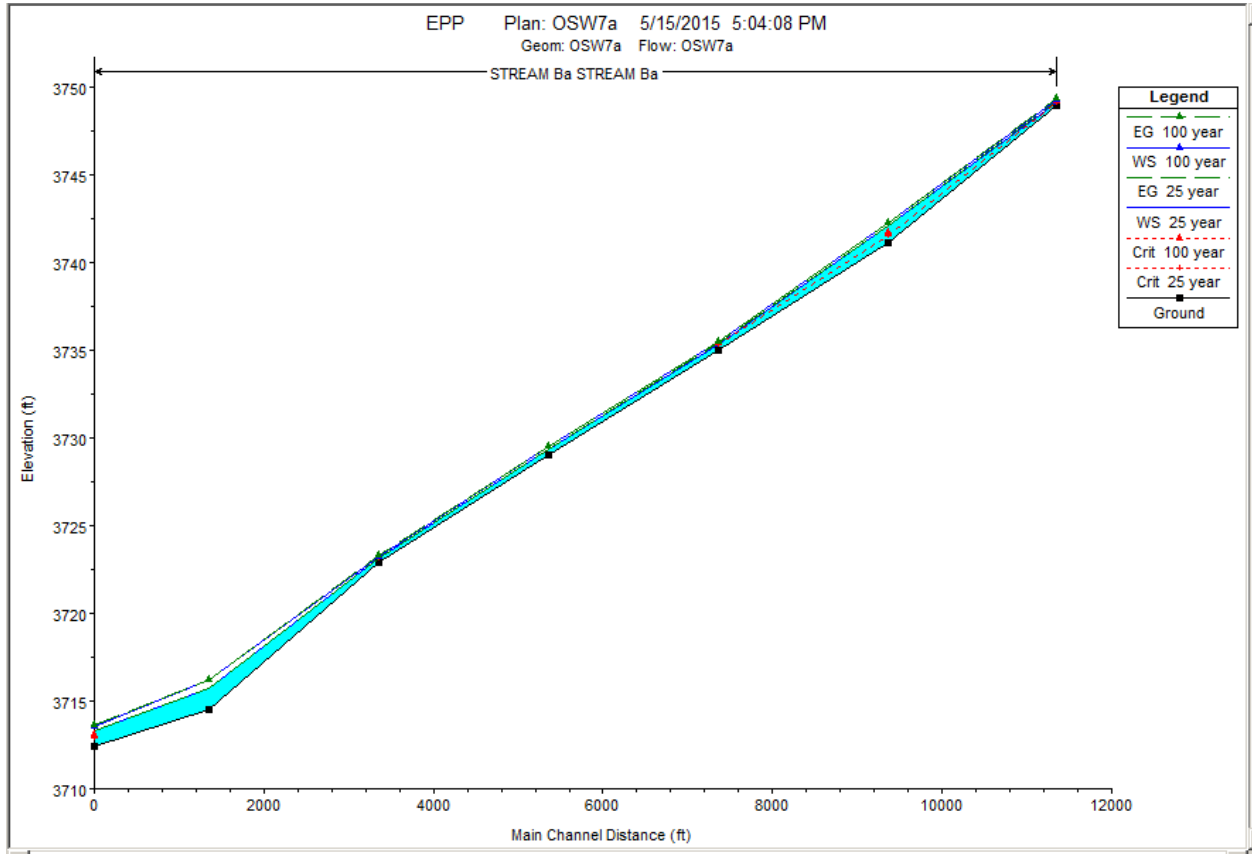


REACH OSW7a 100-YR CS 12000



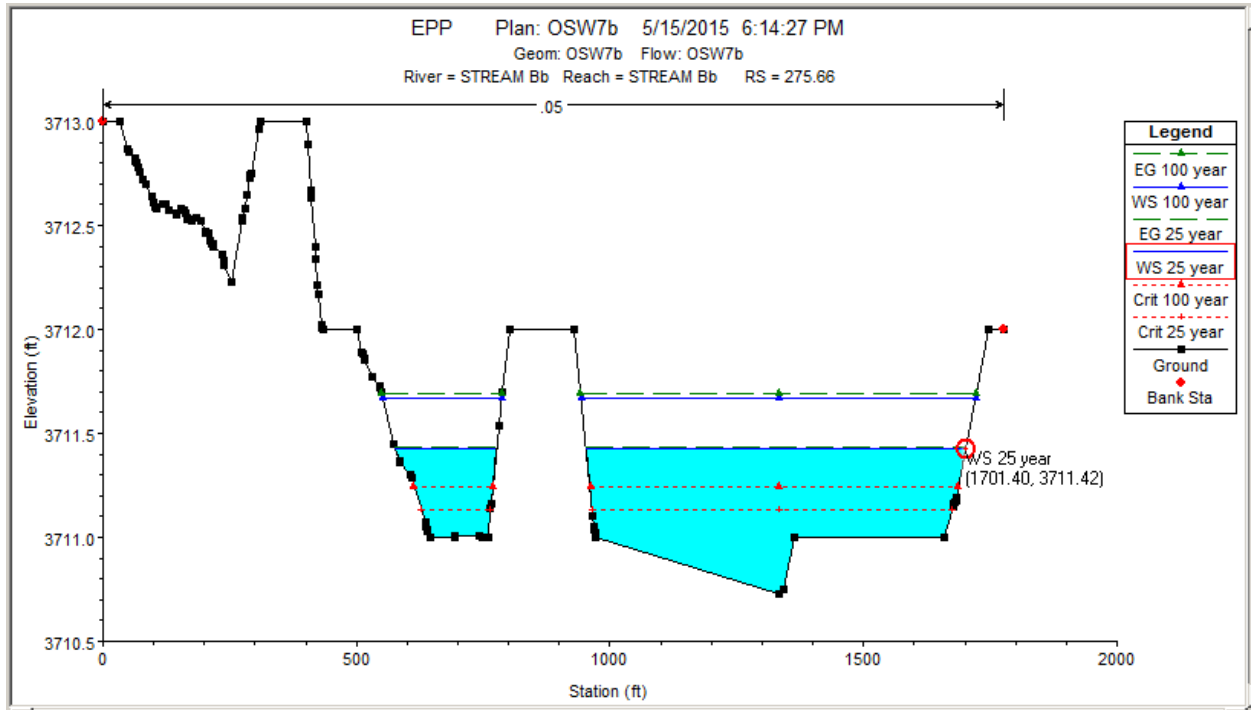


REACH OSW7a PROFILE

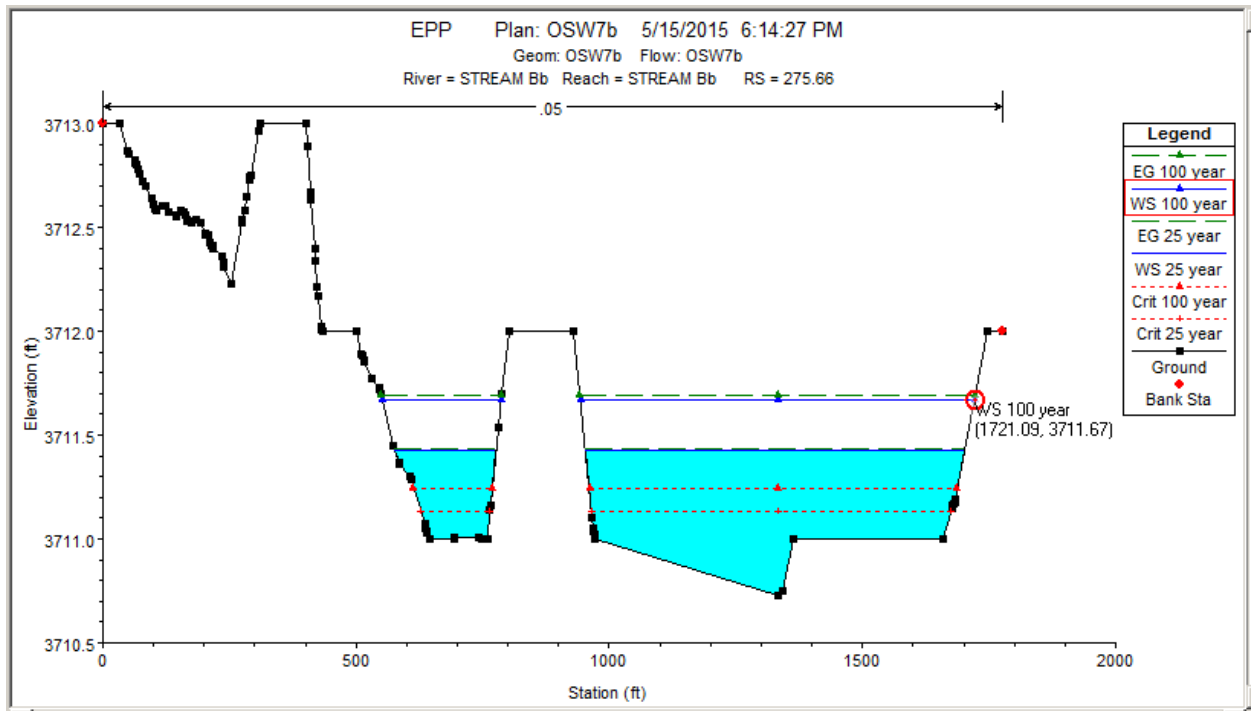




REACH OSW7b 25-YR CS 275.66

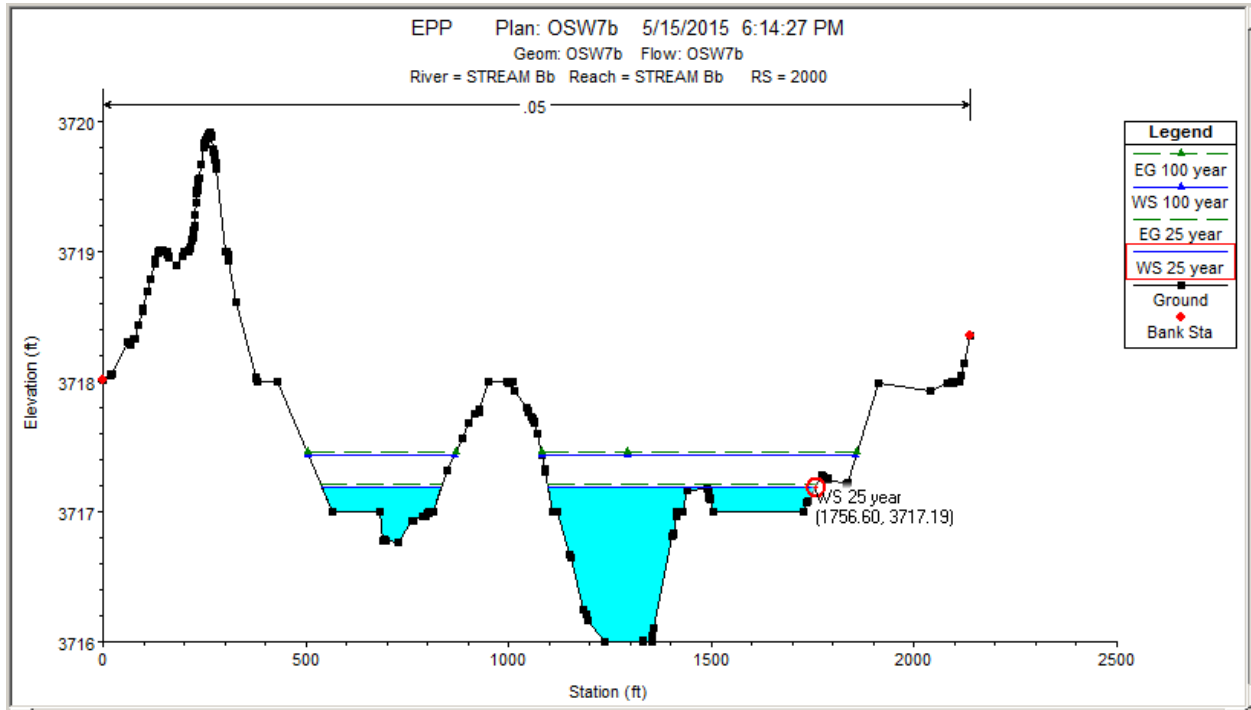


REACH OSW7b 100-YR CS 275.66

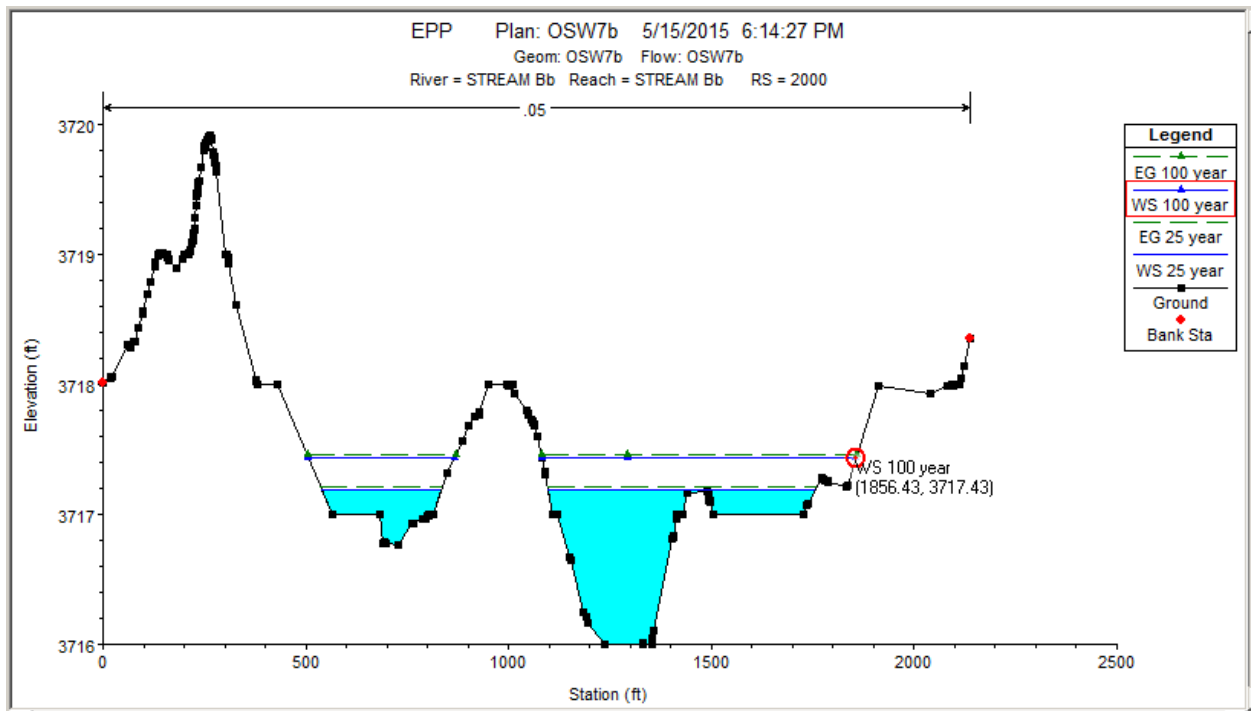




REACH OSW7b 25-YR CS 2000

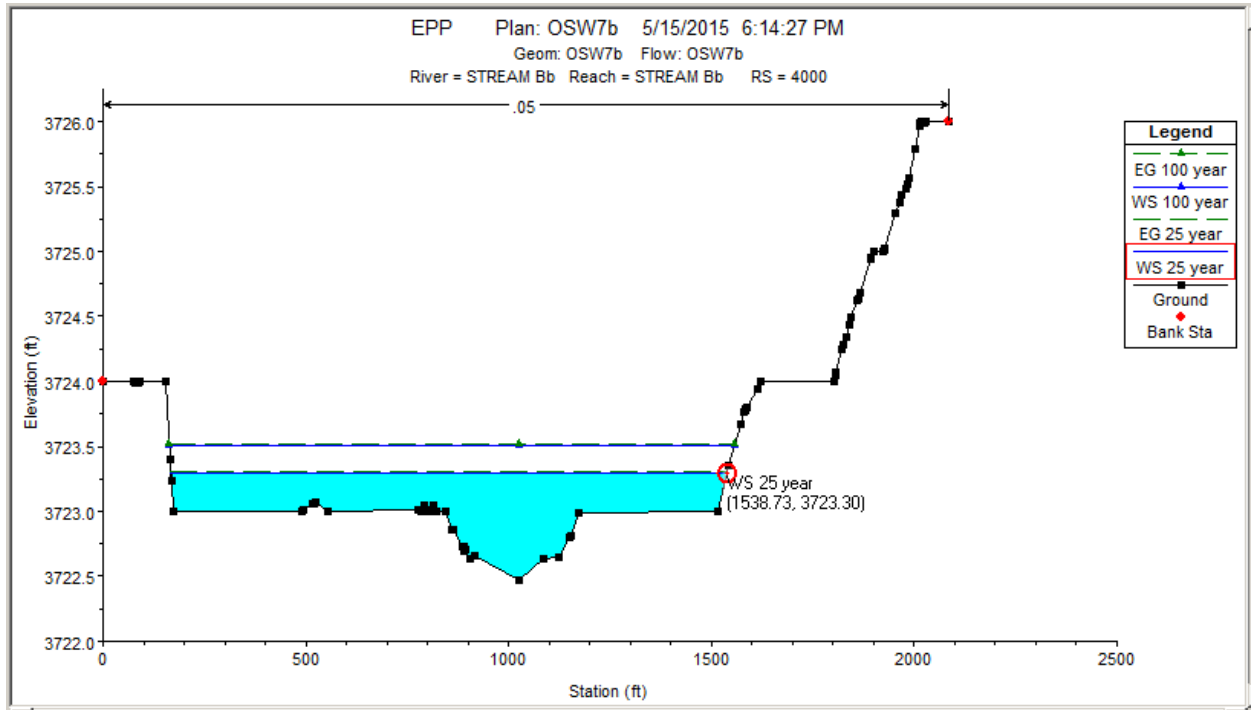


REACH OSW7b 100-YR CS 2000

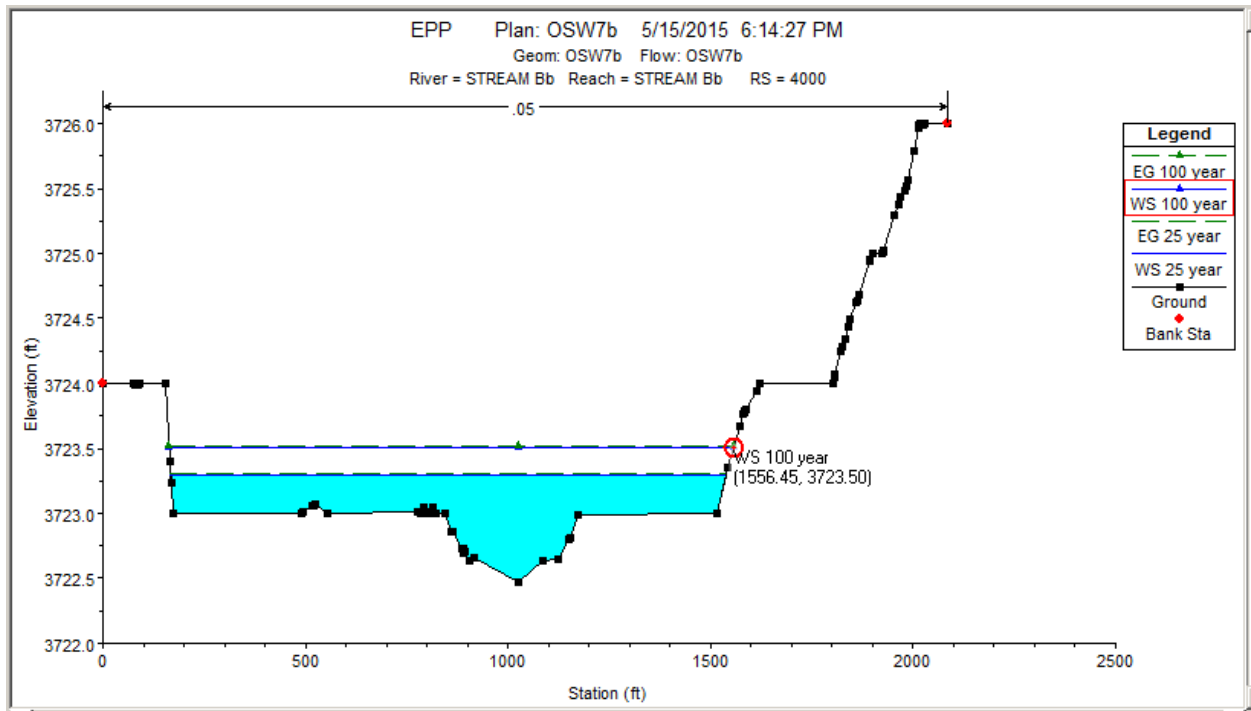




REACH OSW7b 25-YR CS 4000

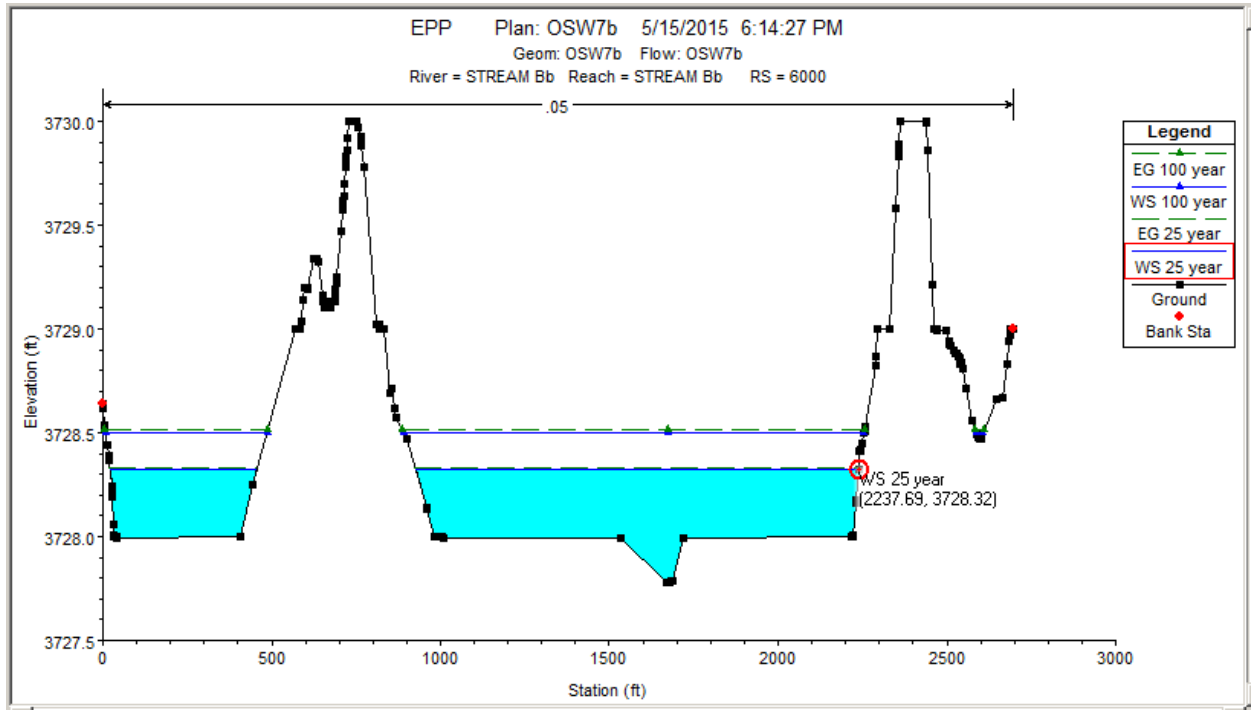


REACH OSW7b 100-YR CS 4000

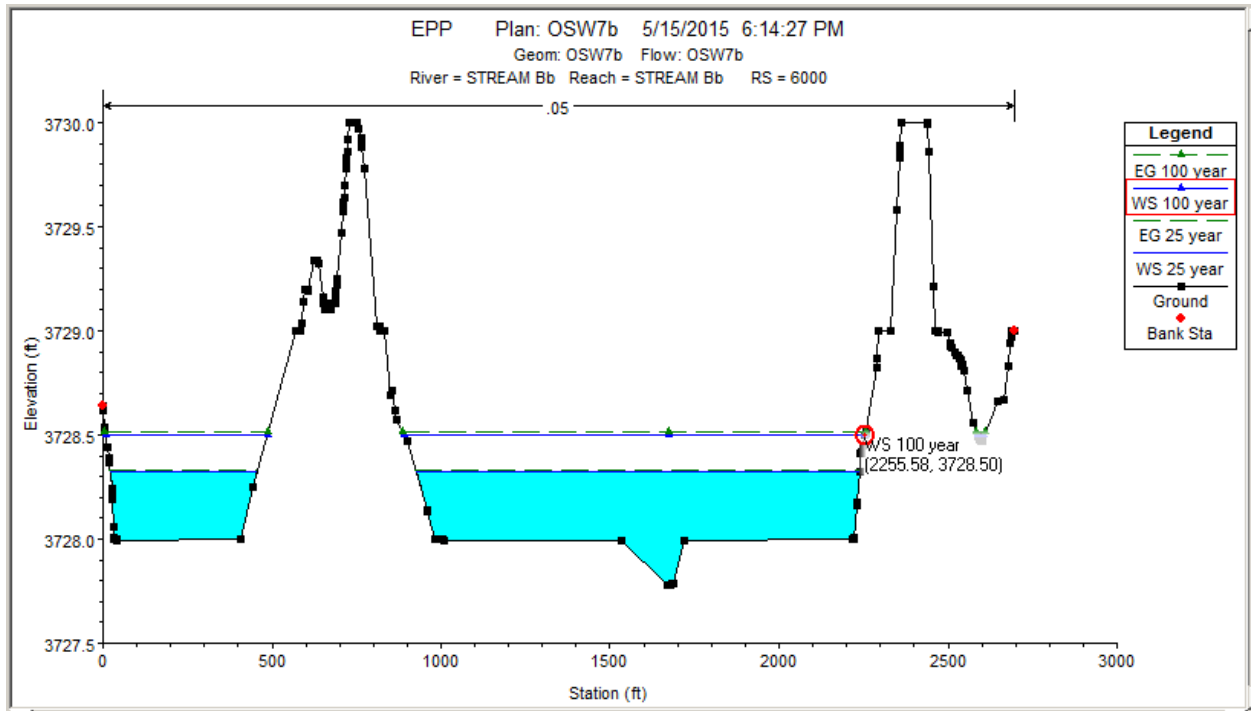




REACH OSW7b 25-YR CS 6000

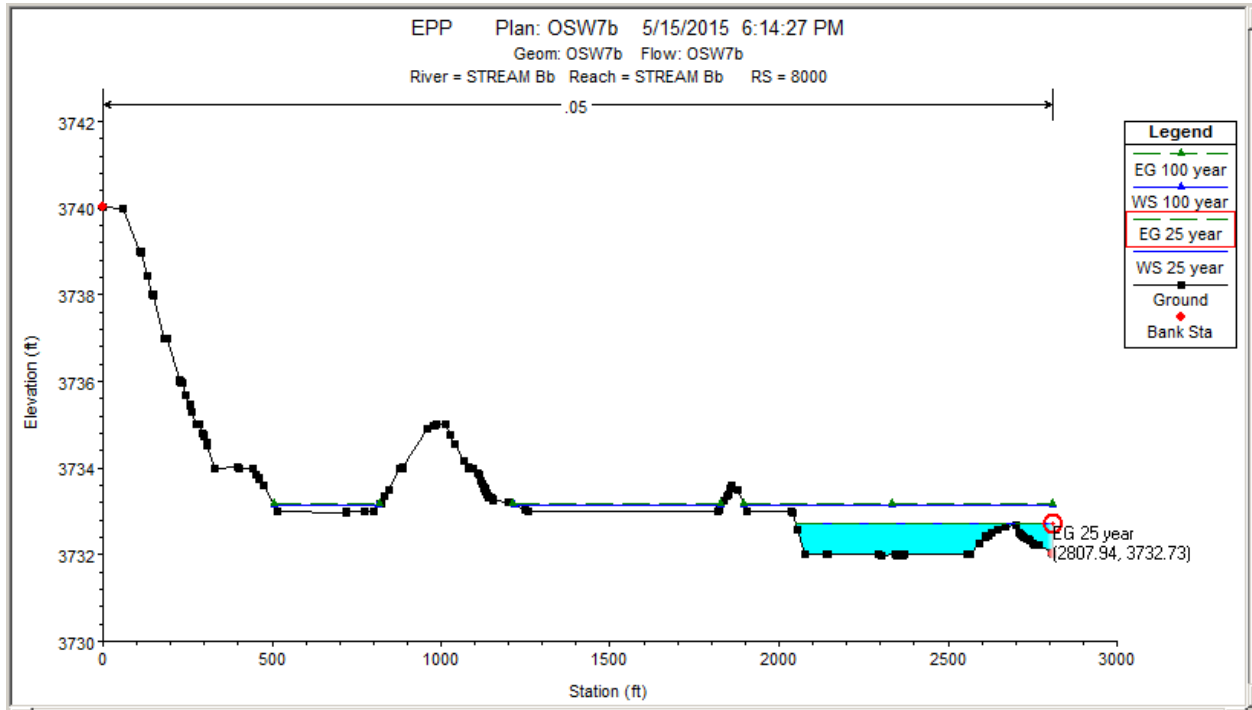


REACH OSW7b 100-YR CS 6000

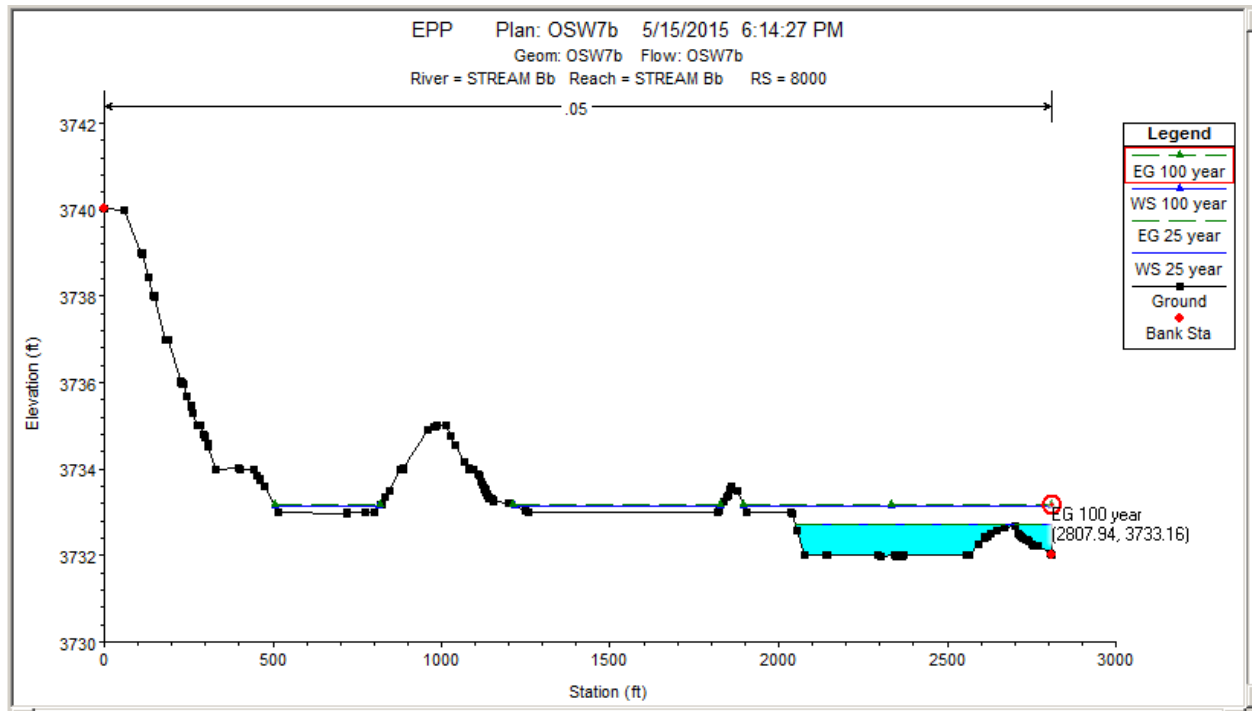




REACH OSW7b 25-YR CS 8000

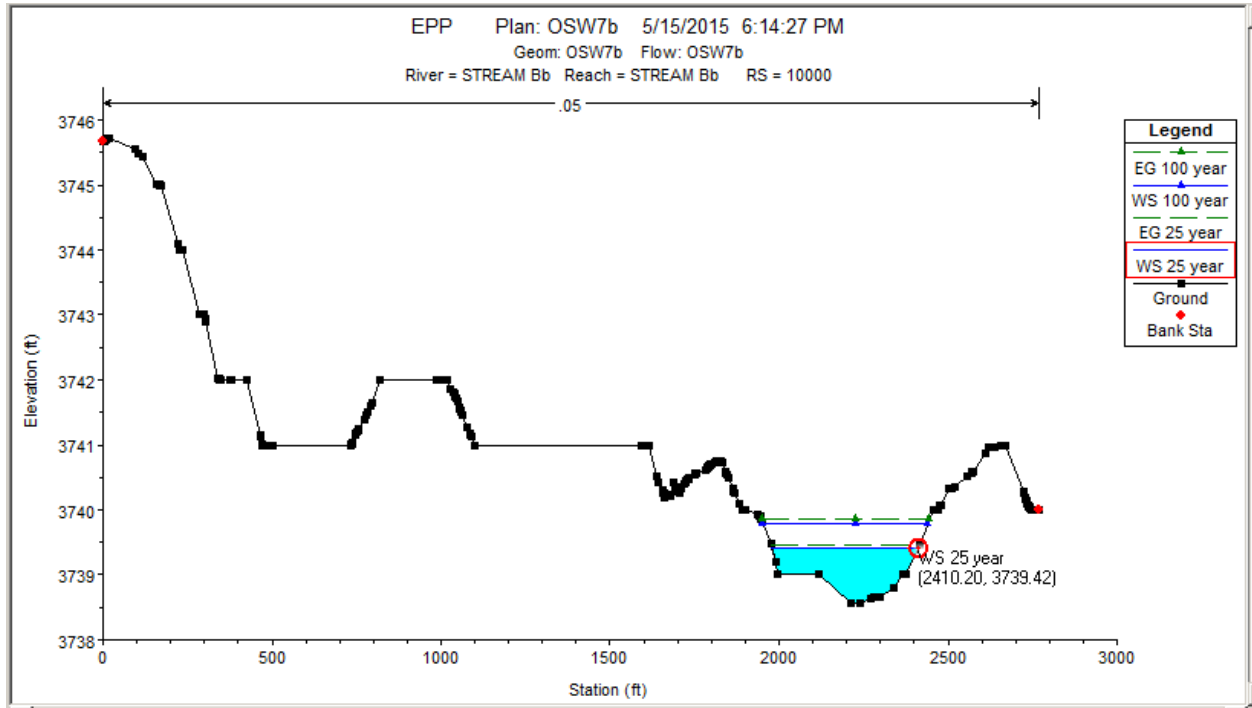


REACH OSW7b 100-YR CS 8000

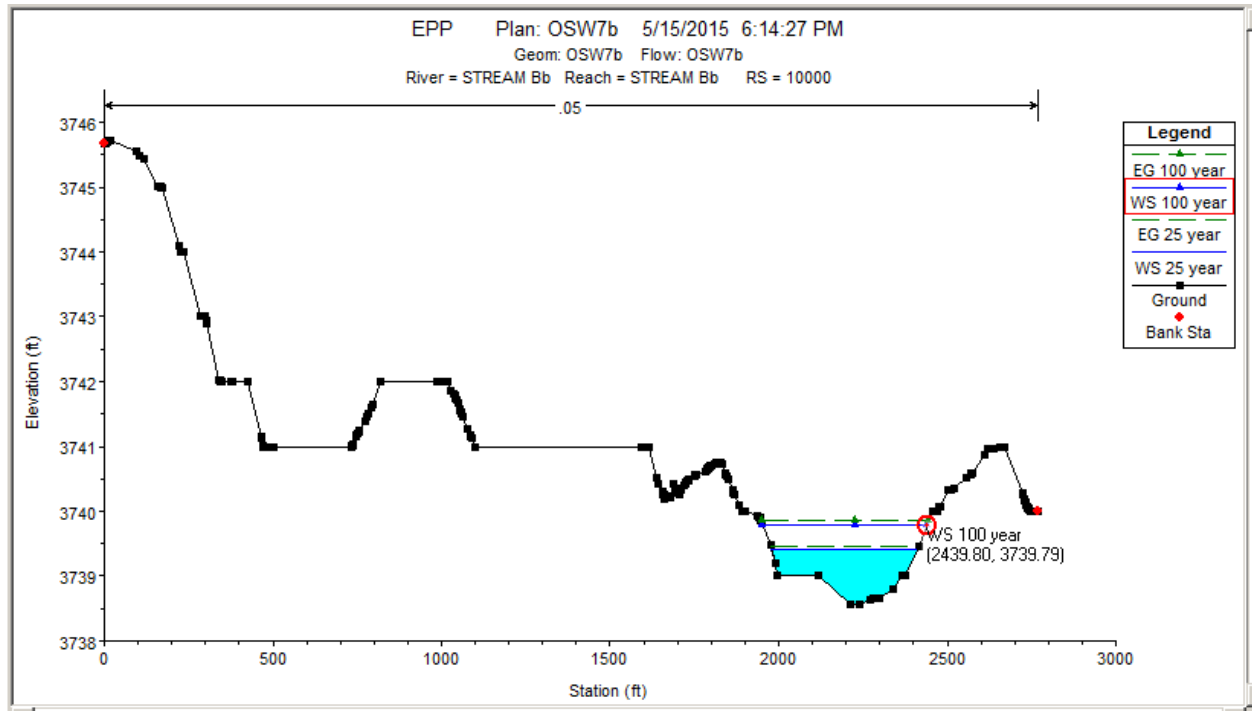




REACH OSW7b 25-YR CS 10000

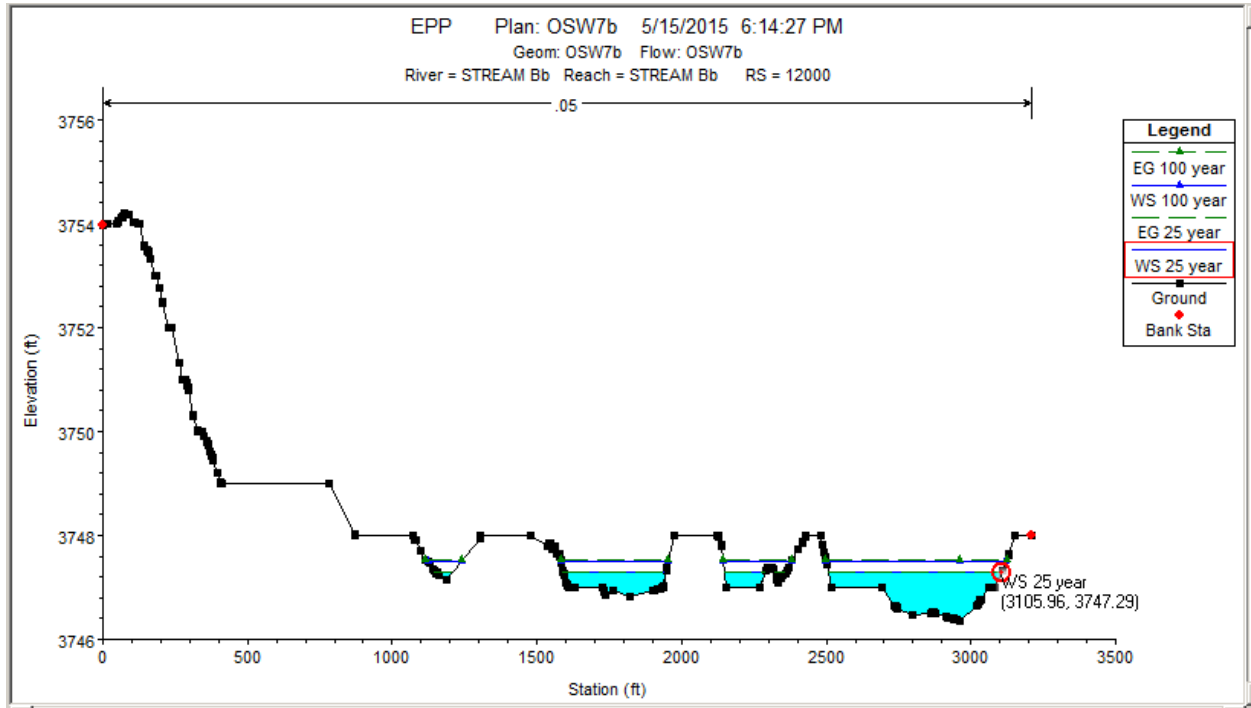


REACH OSW7b 100-YR CS 10000

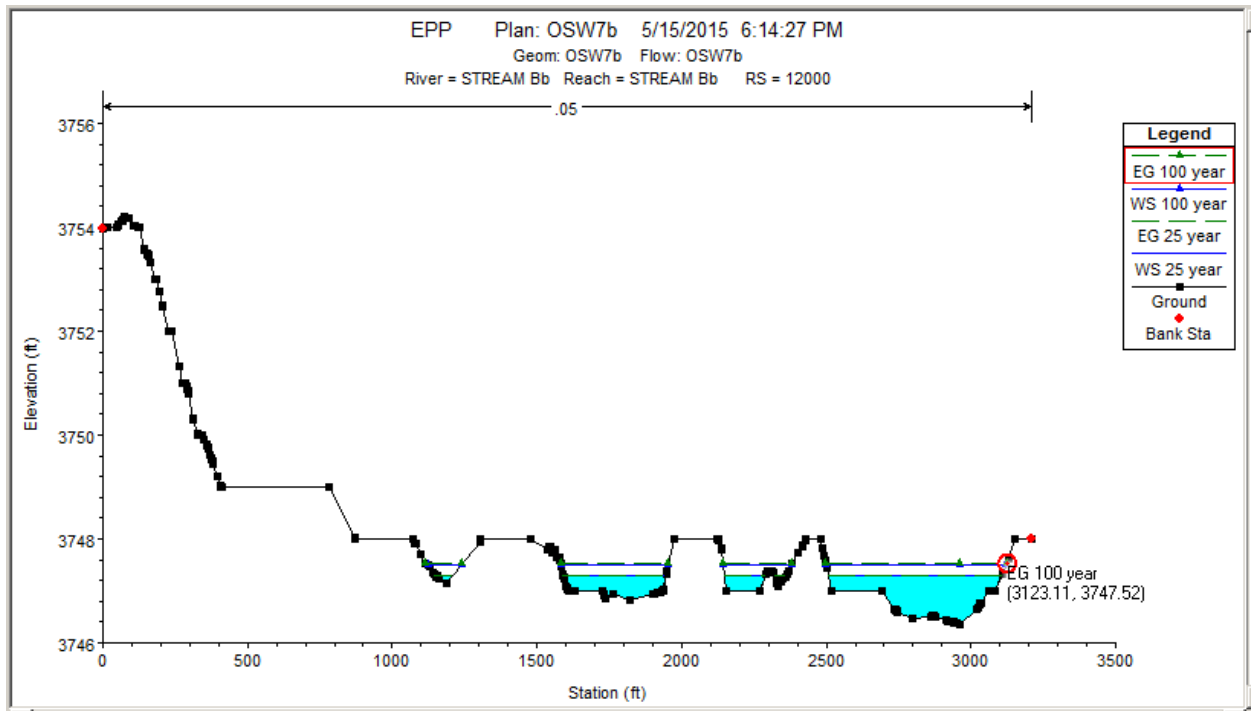




REACH OSW7b 25-YR CS 12000

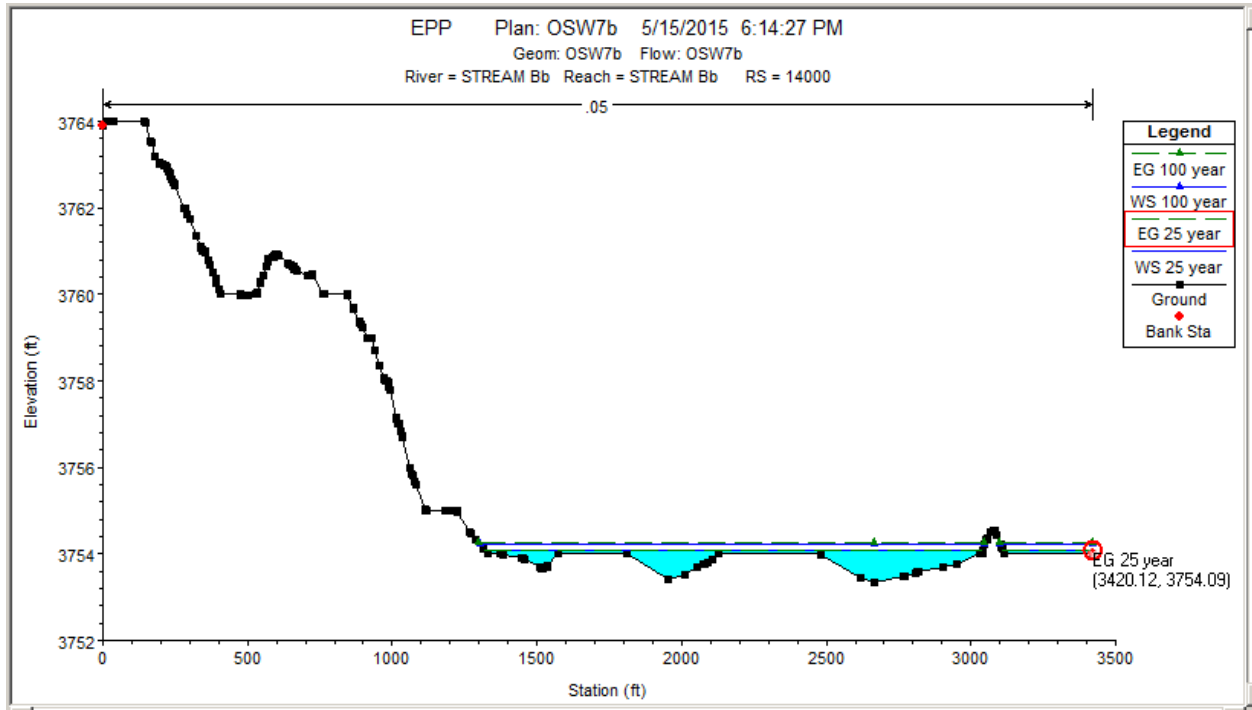


REACH OSW7b 100-YR CS 12000

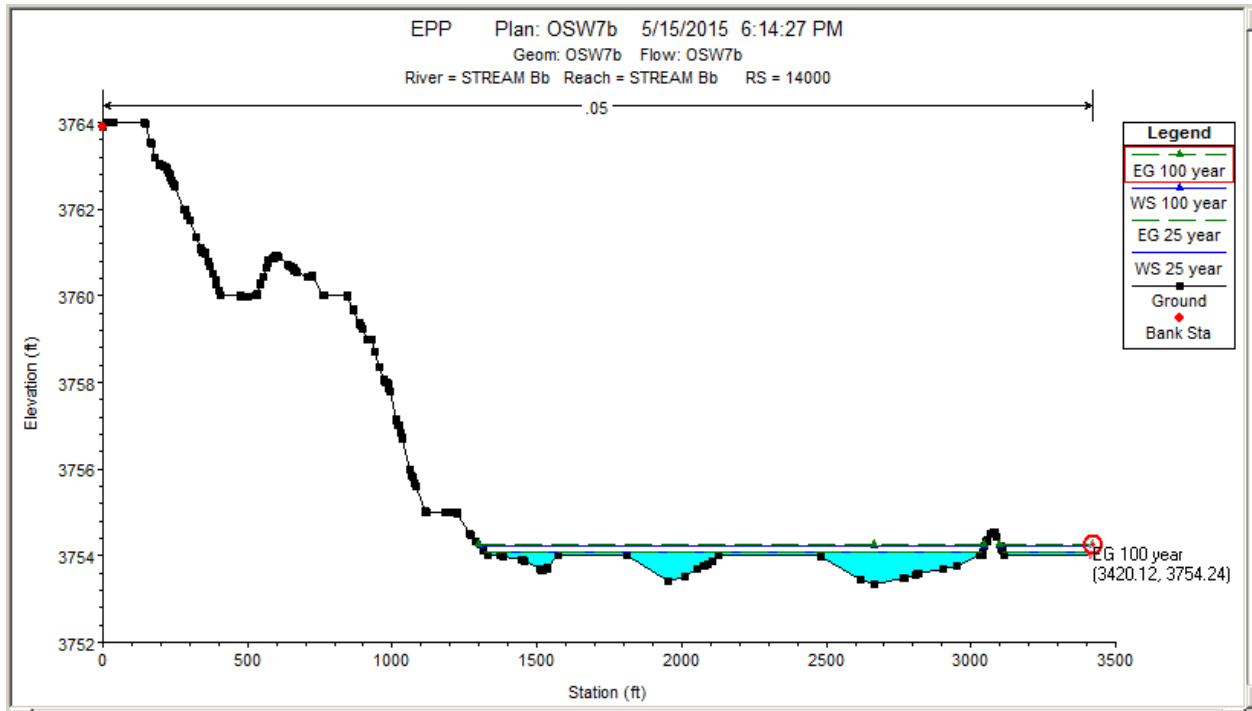




REACH OSW7b 25-YR CS 14000

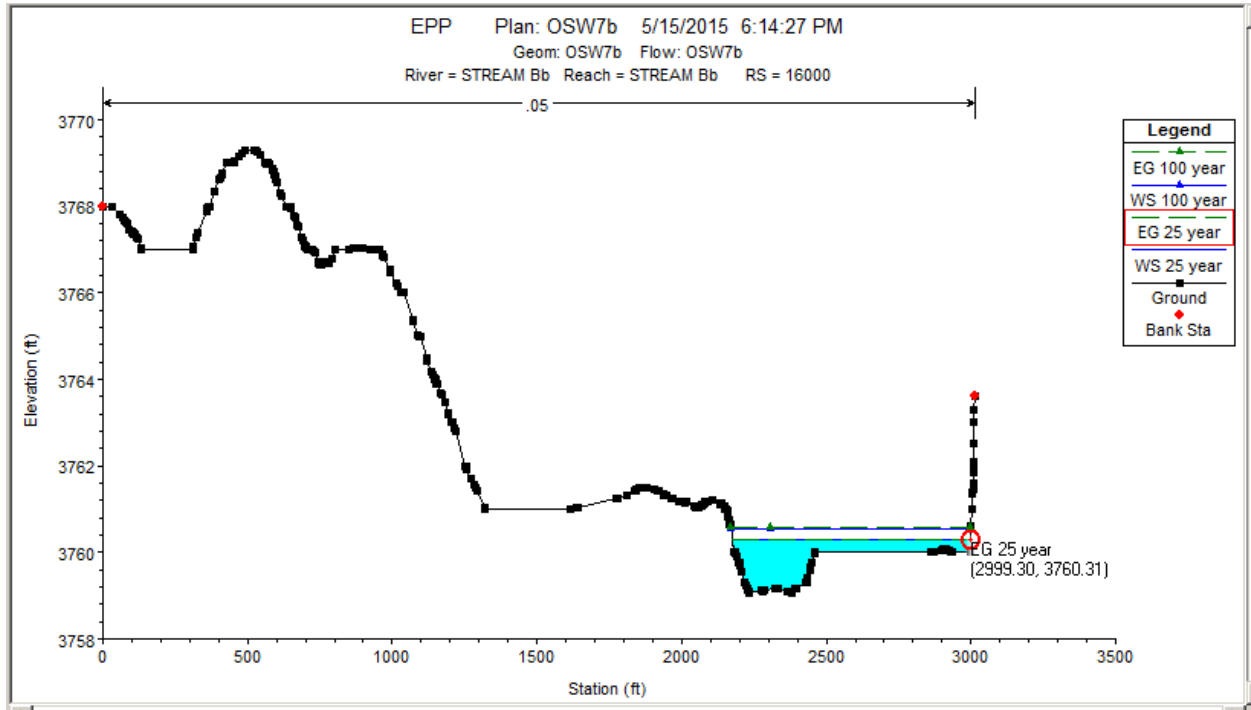


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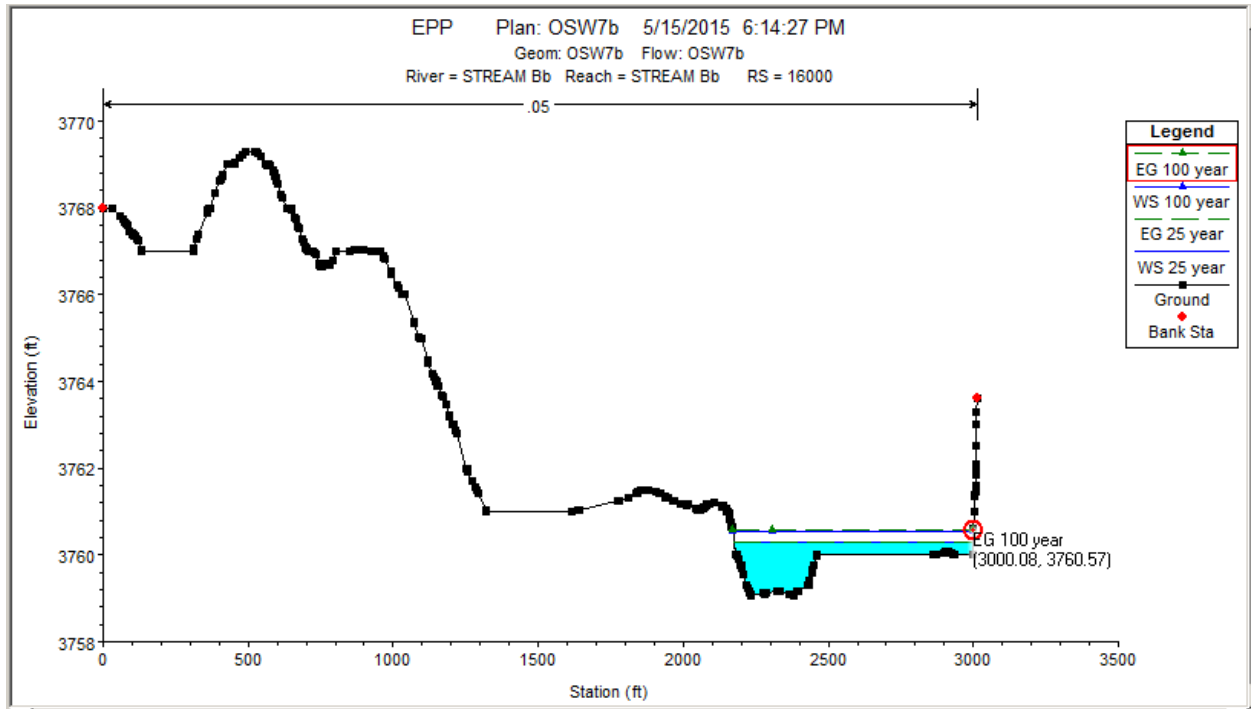




REACH OSW7b 25-YR CS 16000

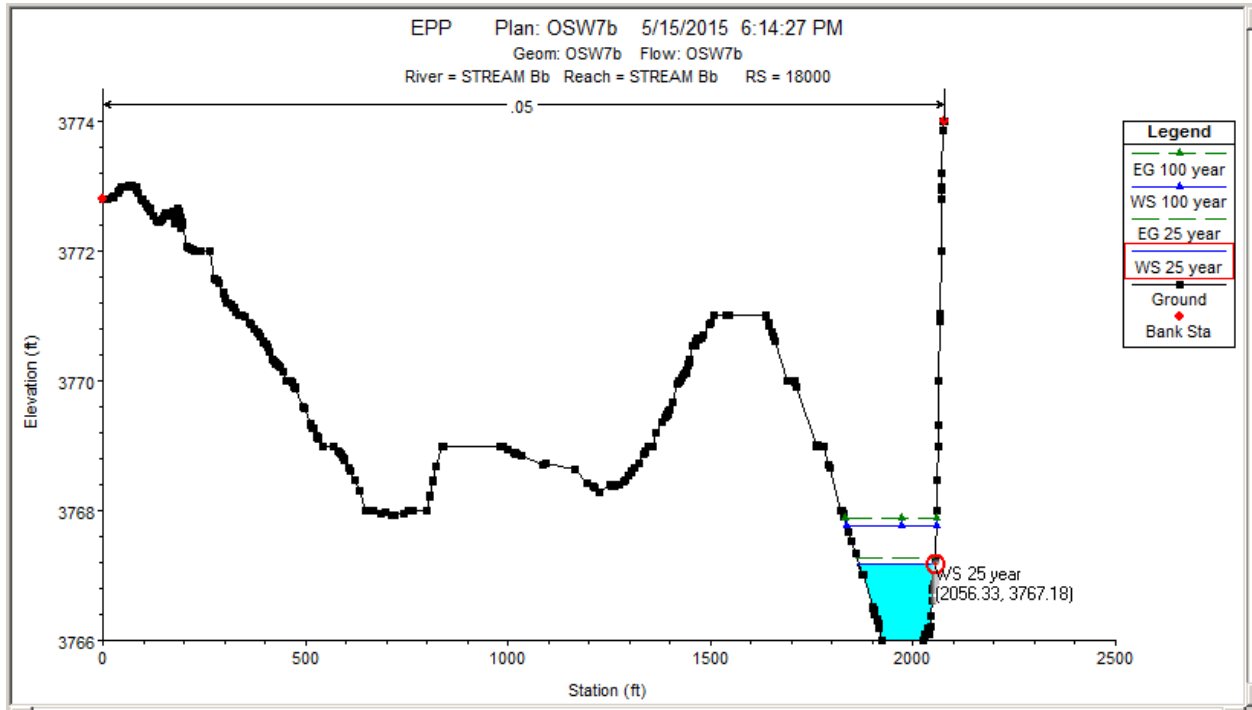


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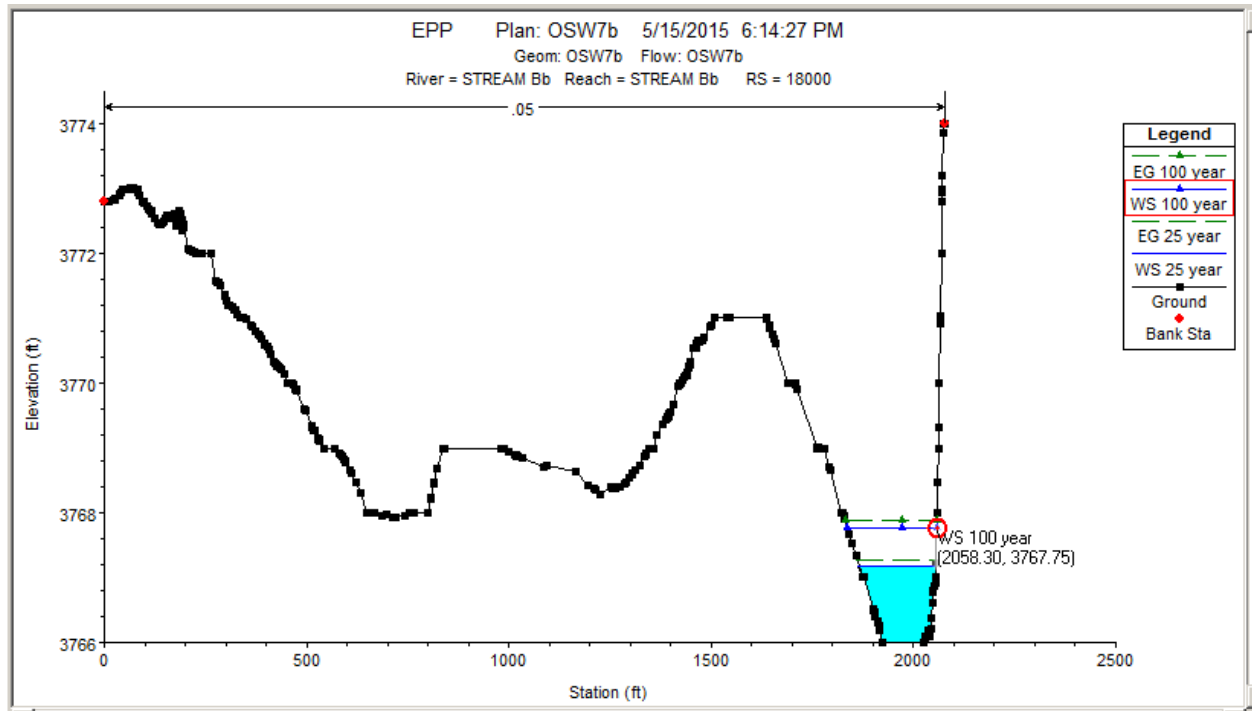




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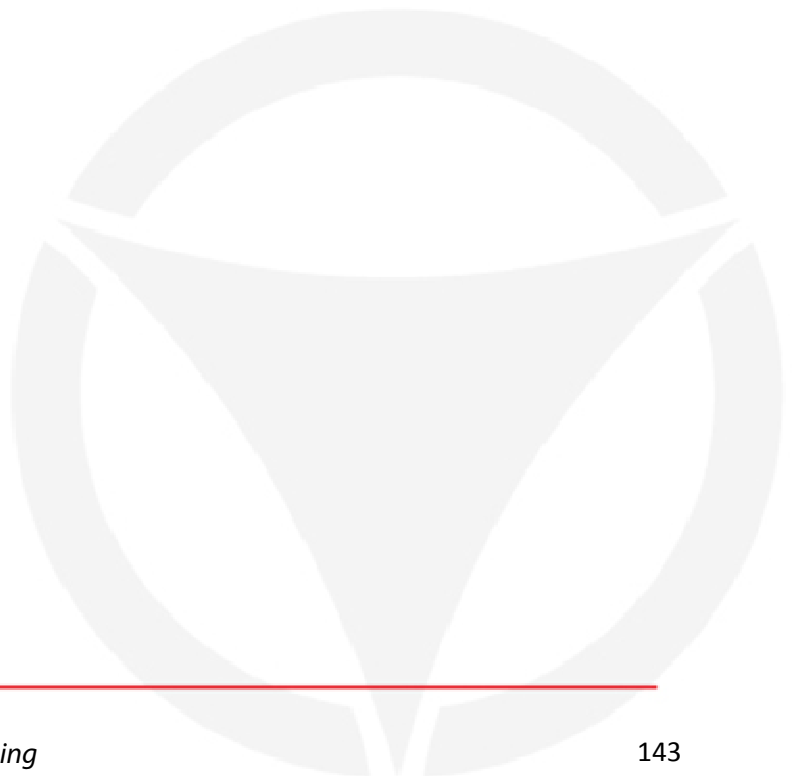
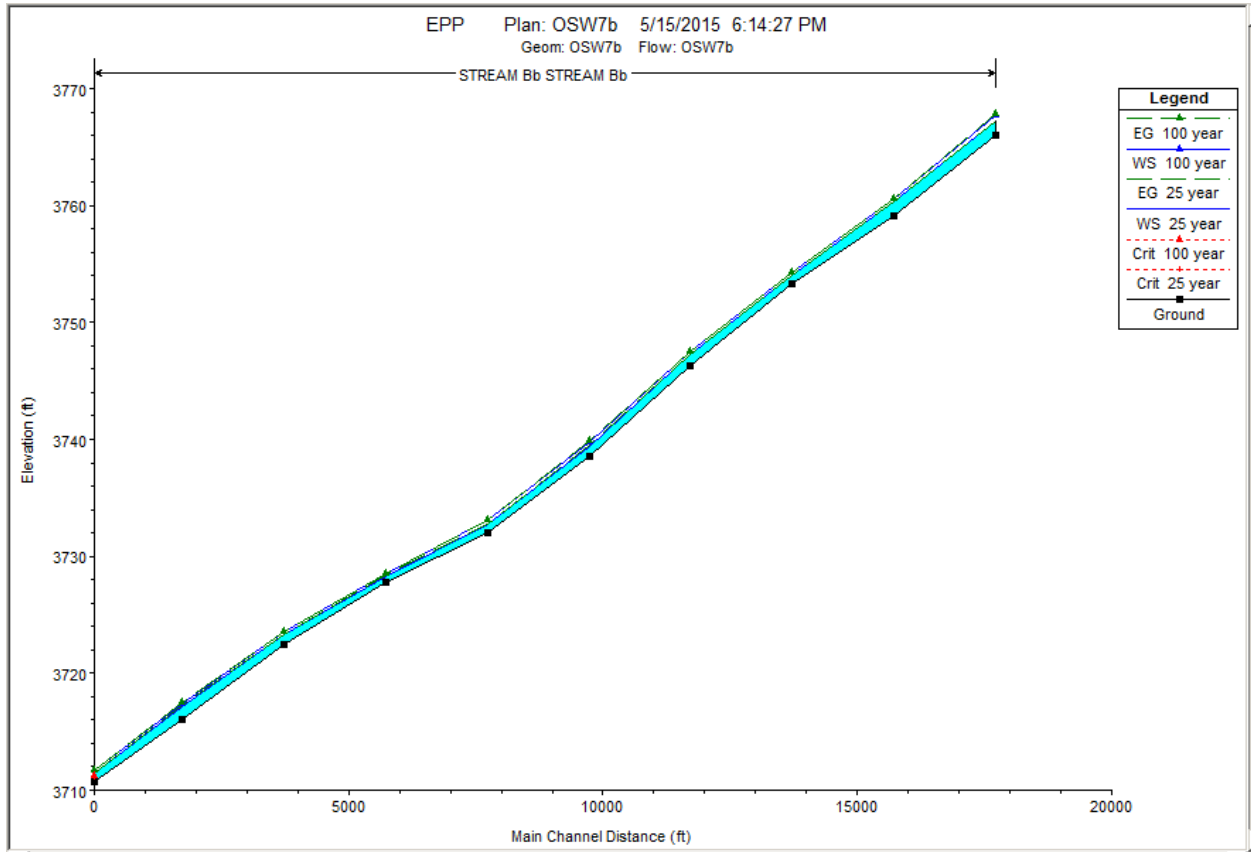


REACH OSW7b 100-YR CS 18000



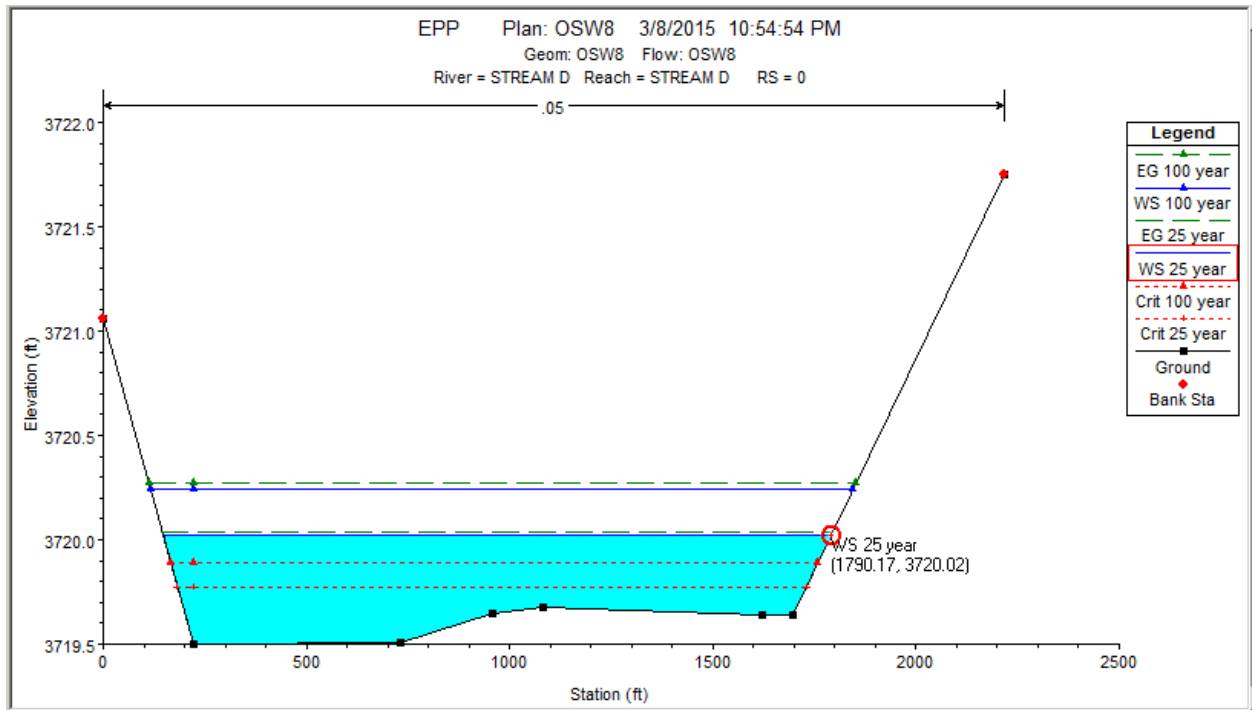


REACH OSW7b PROFILE

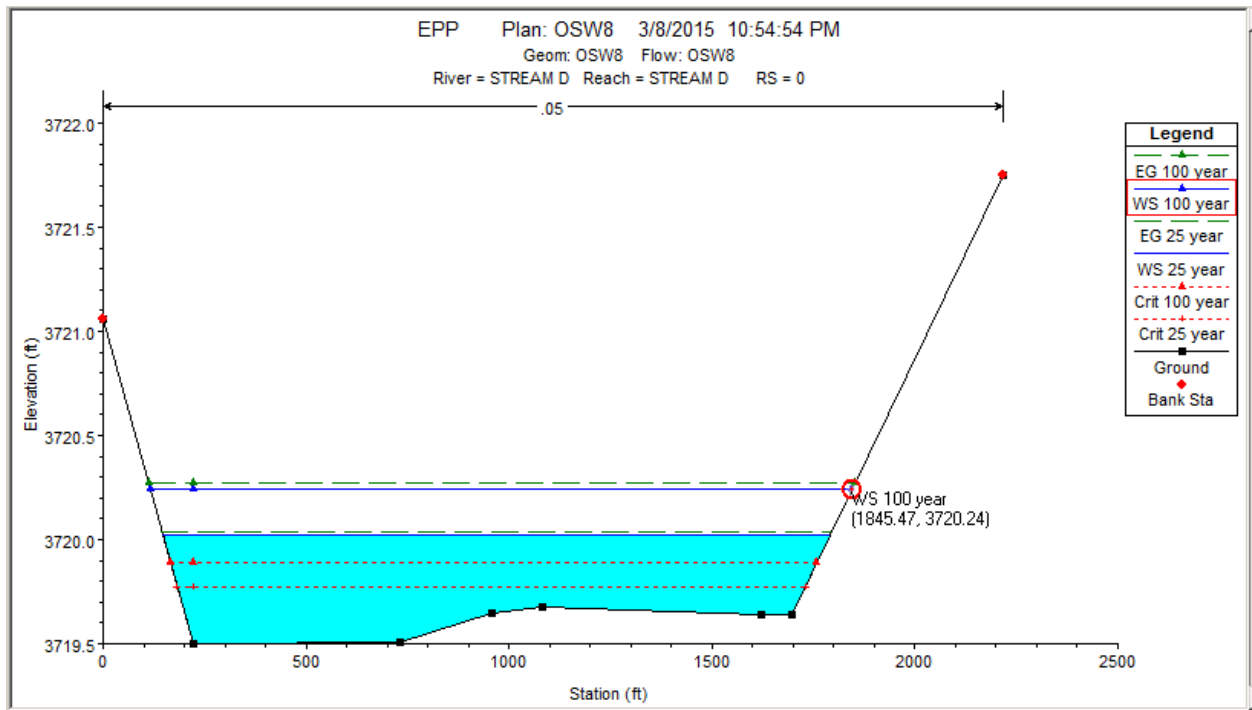




REACH OSW8 25-YR CS 0

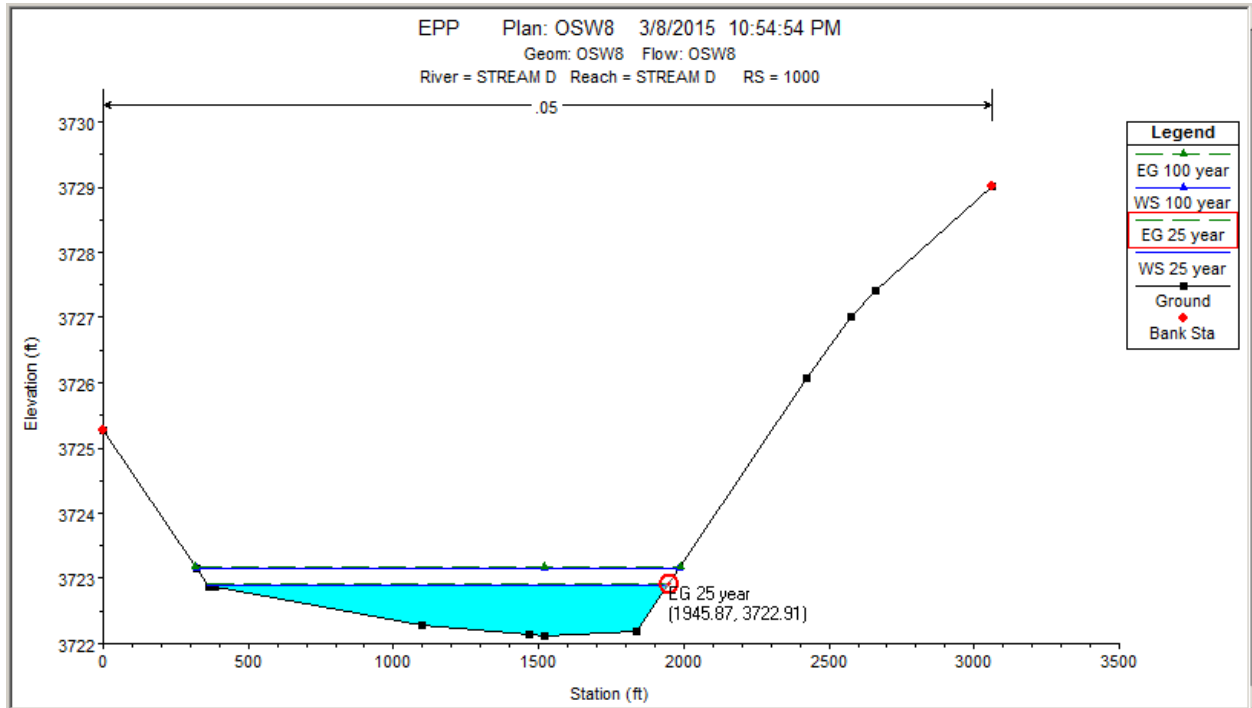


REACH OSW8 100-YR CS 0

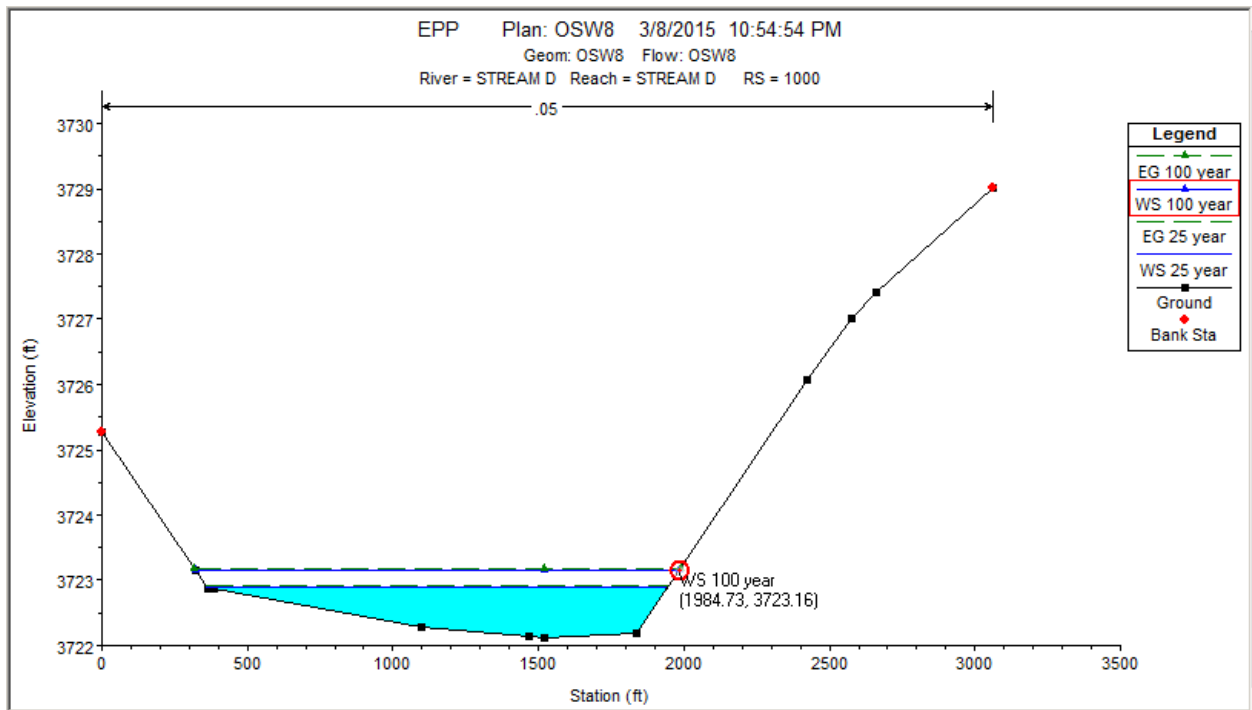




REACH OSW8 25-YR CS 1000

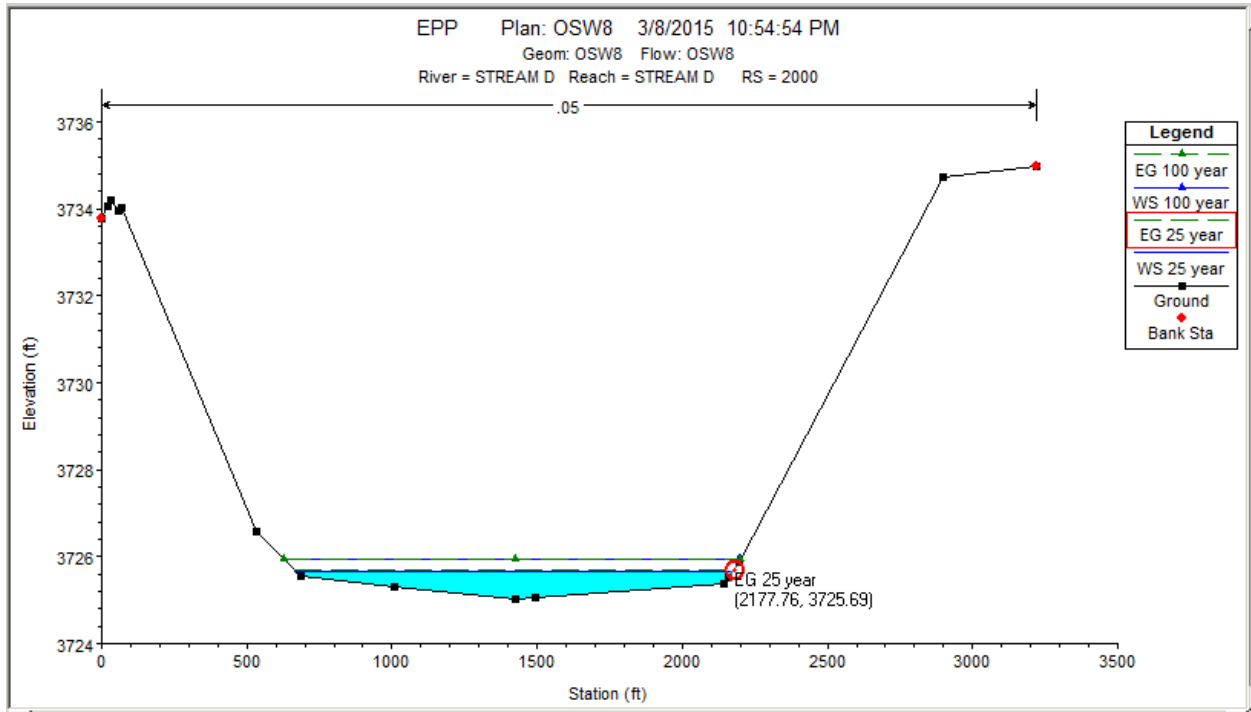


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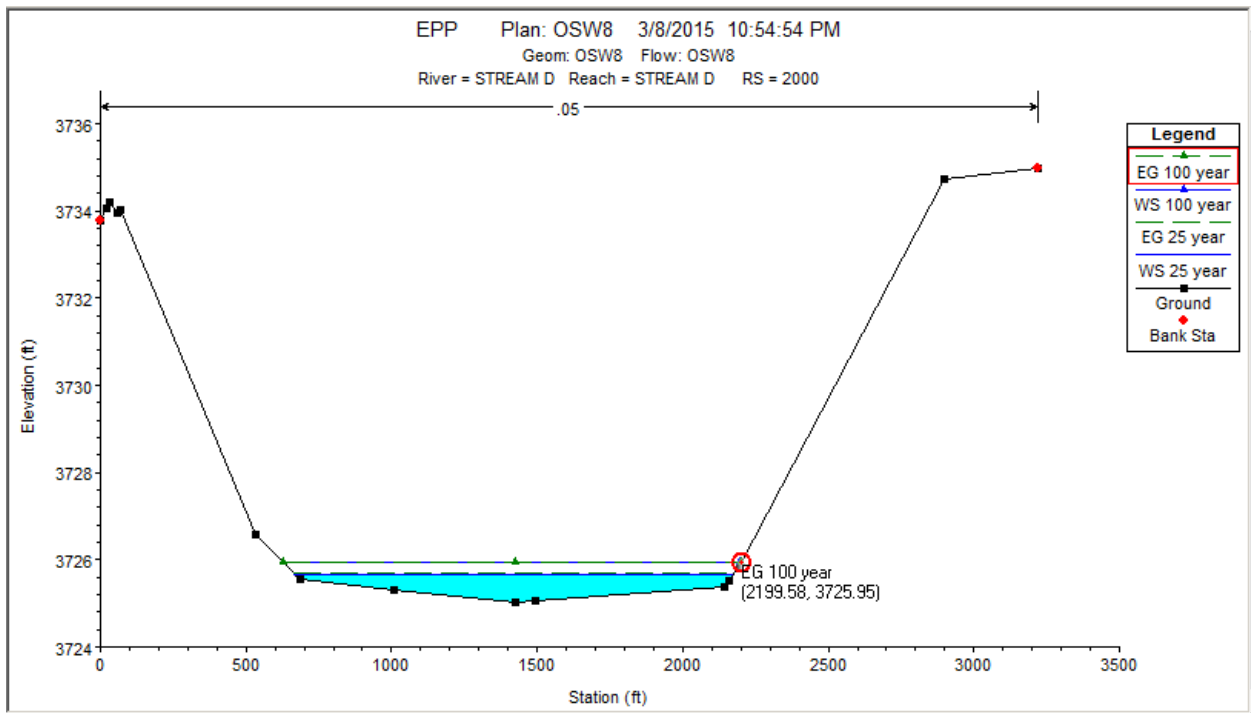




REACH OSW8 25-YR CS 2000

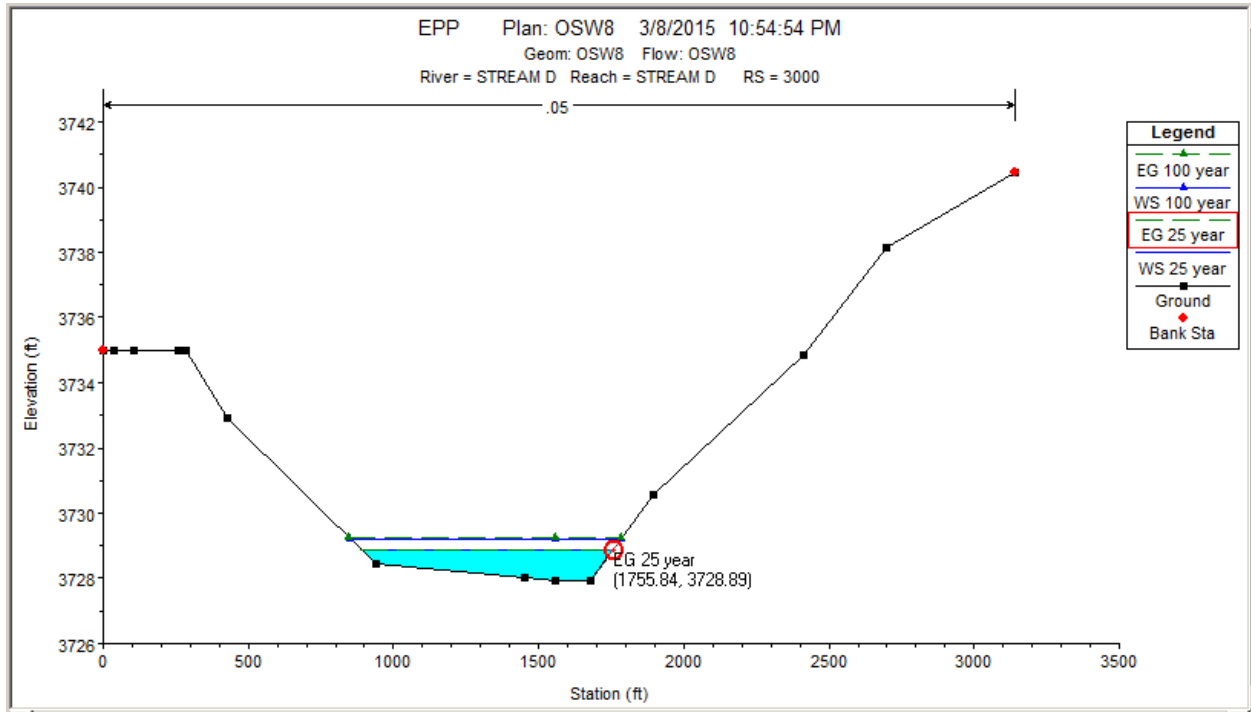


REACH OSW8 100-YR CS 2000

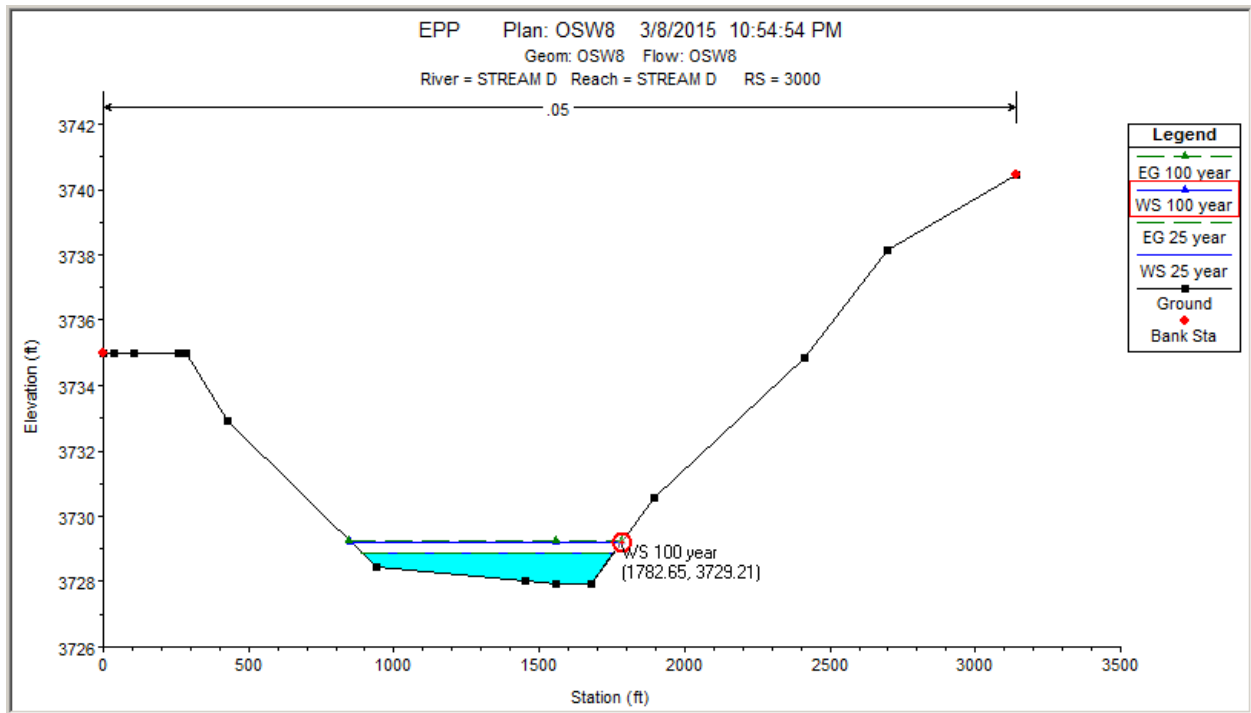




REACH OSW8 25-YR CS 3000

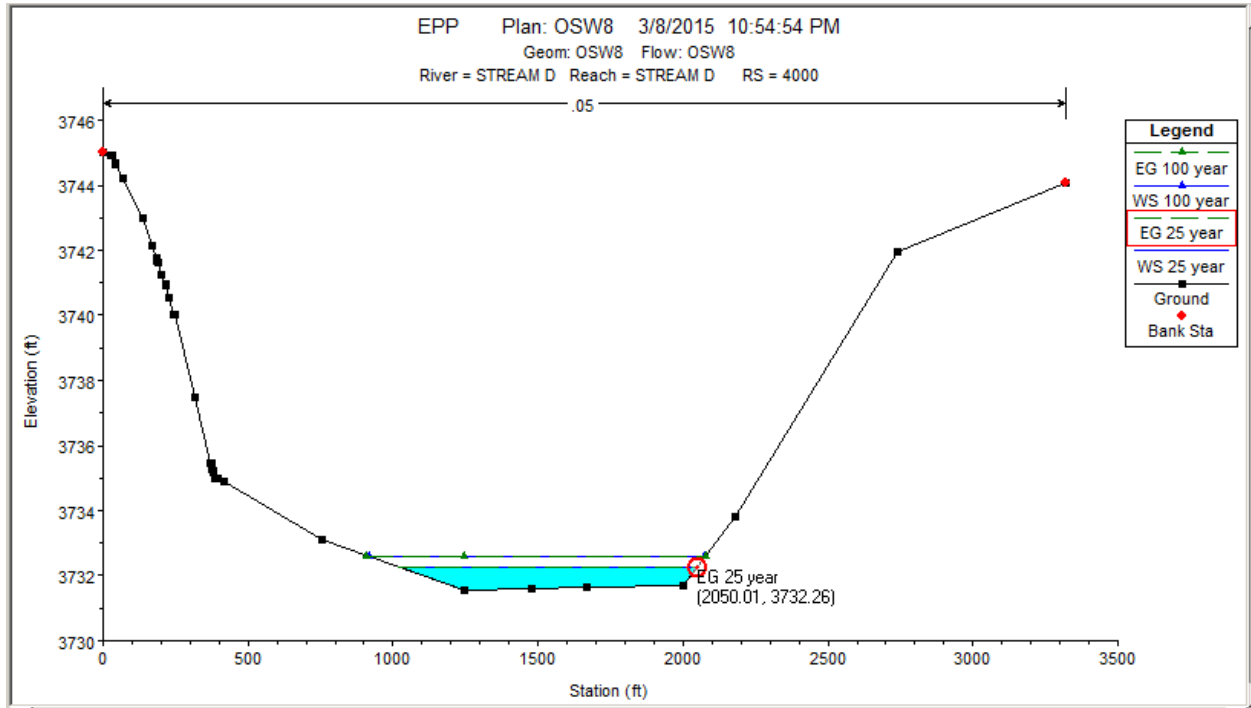


REACH OSW8 100-YR CS 3000

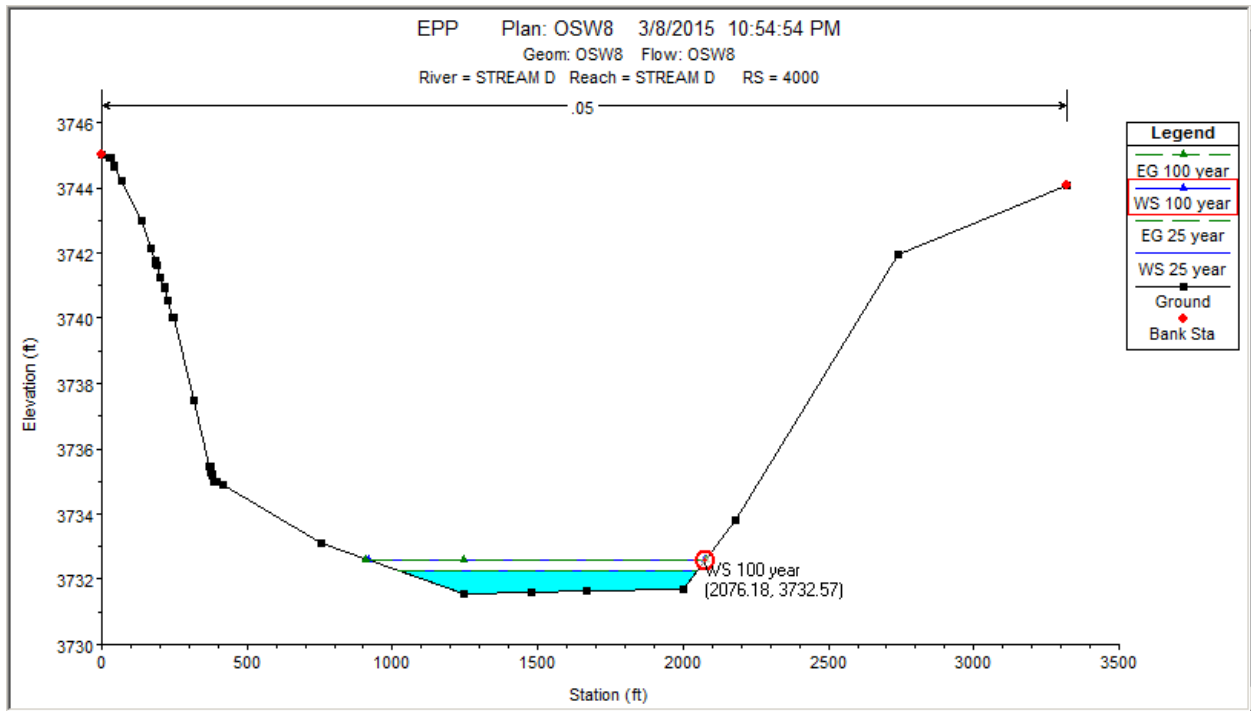




REACH OSW8 25-YR CS 4000

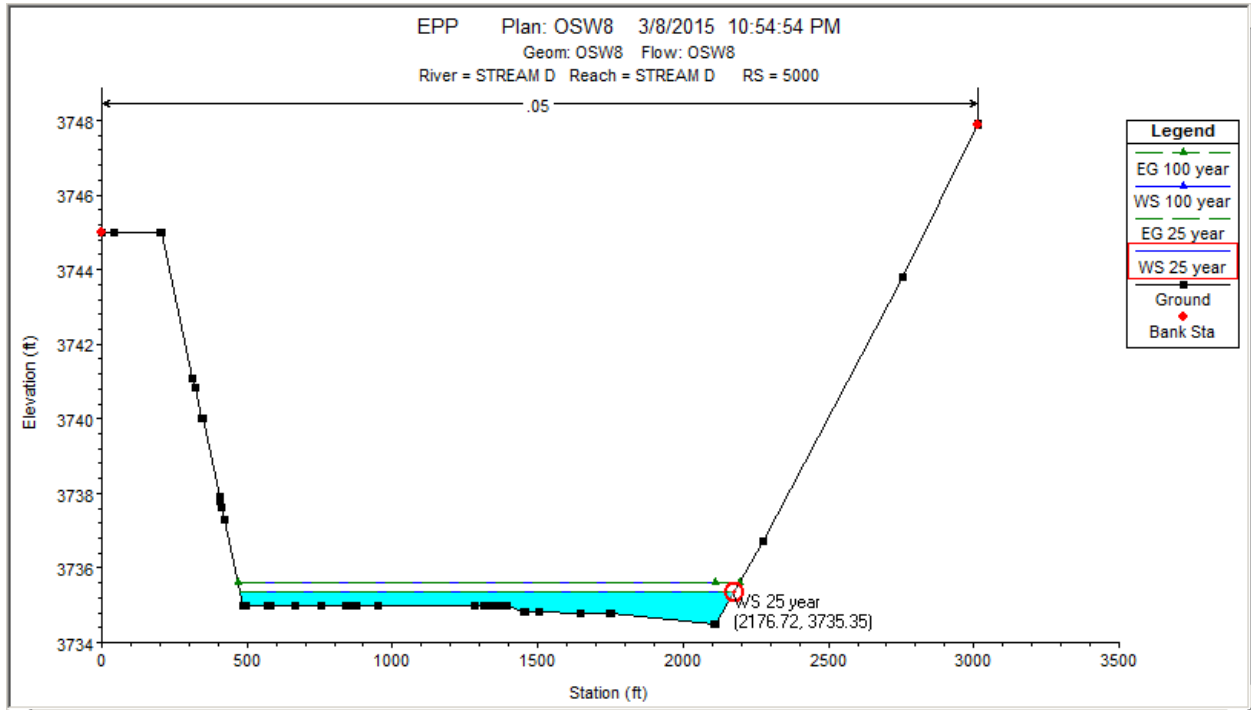


REACH OSW8 100-YR CS 4000

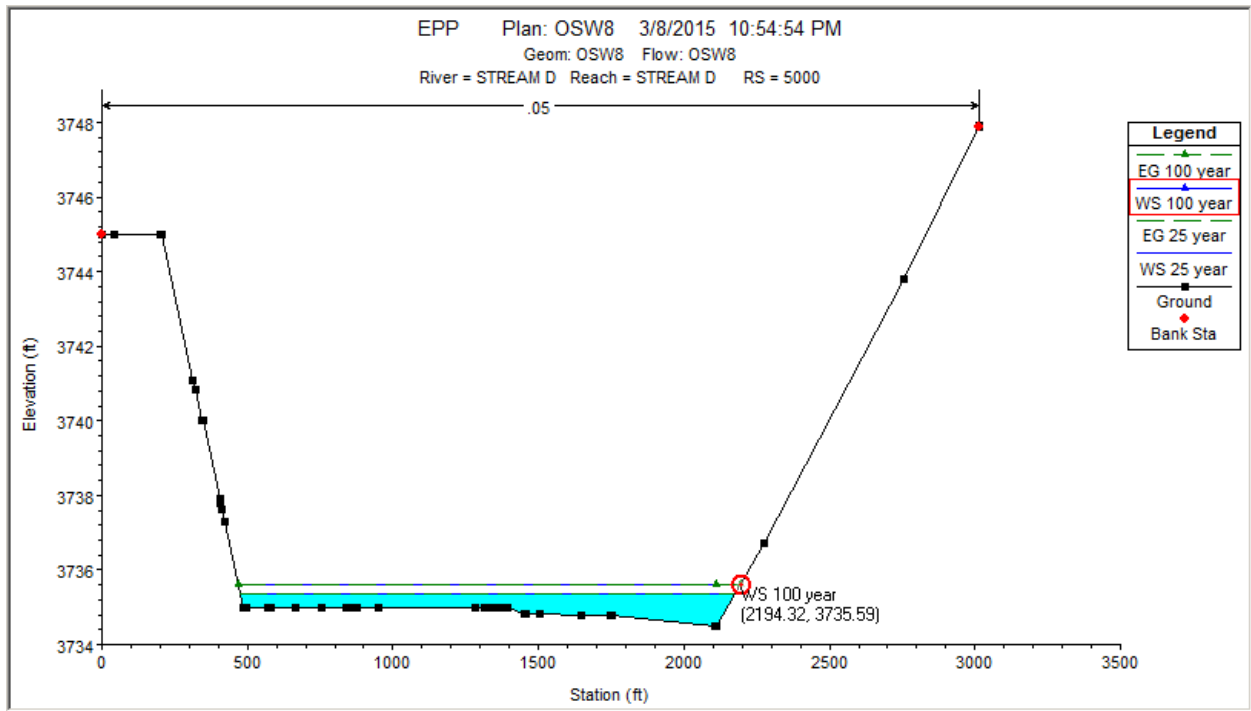




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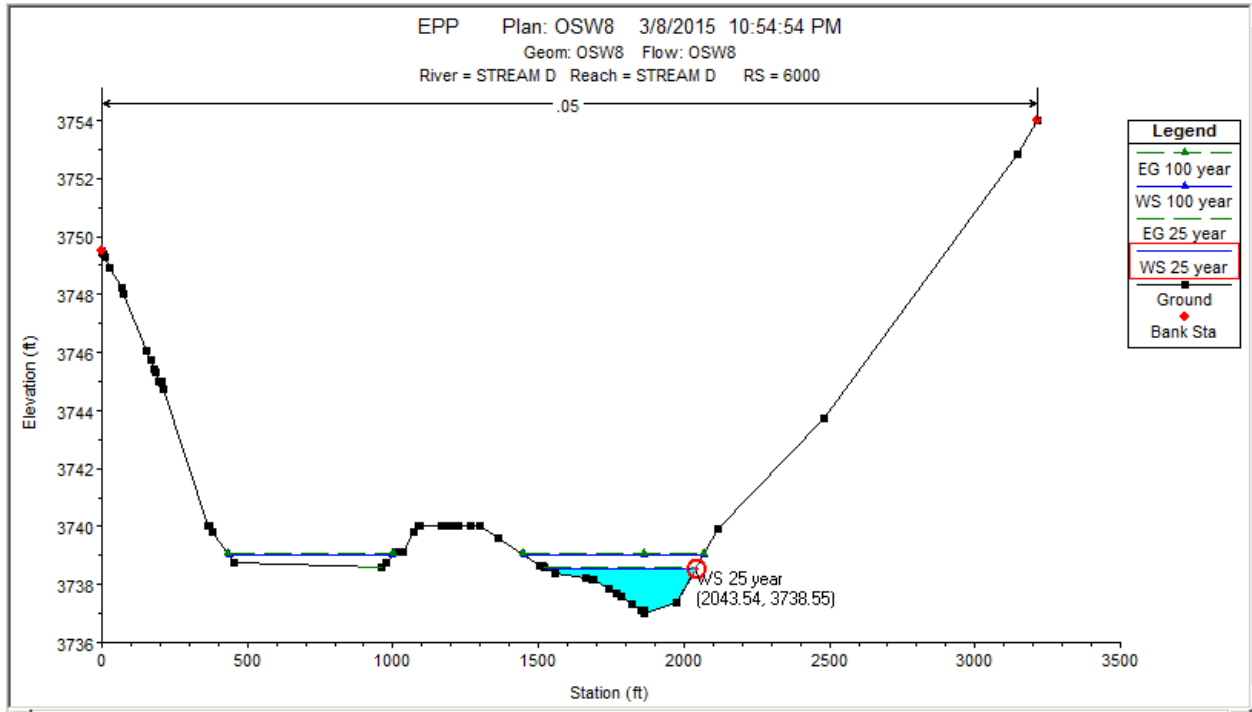


REACH OSW8 100-YR CS 5000

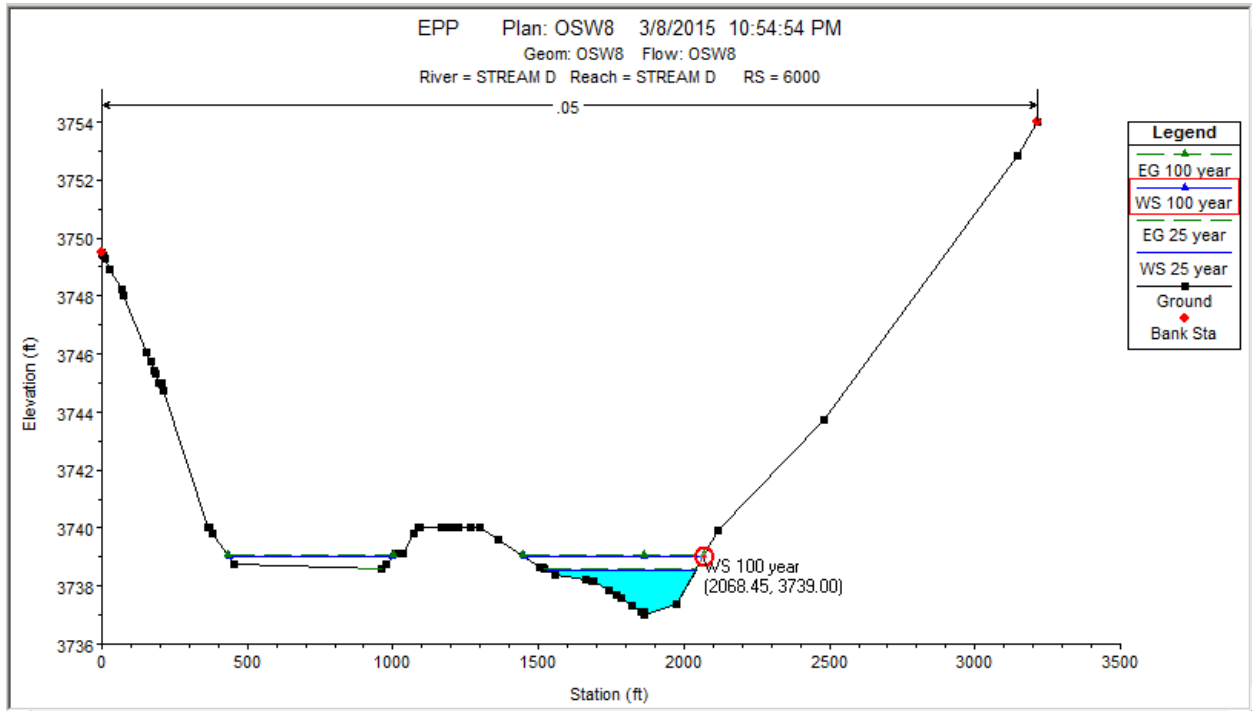




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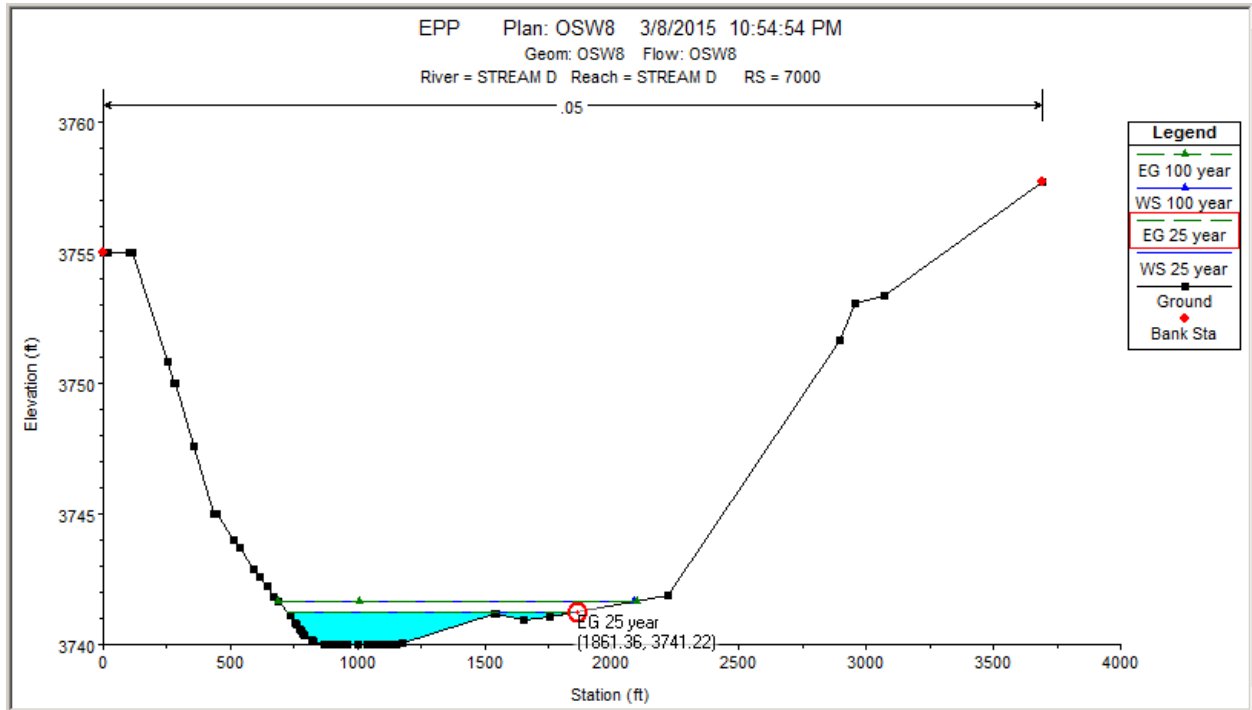


REACH OSW8 100-YR CS 6000

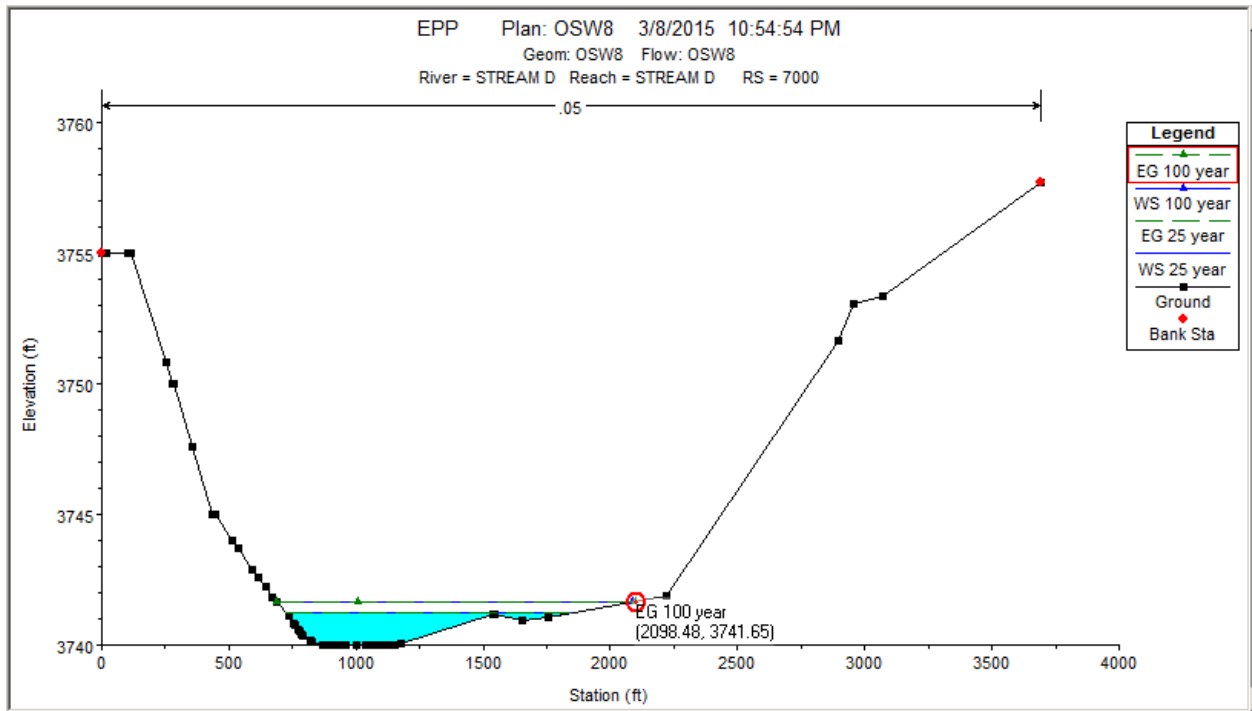




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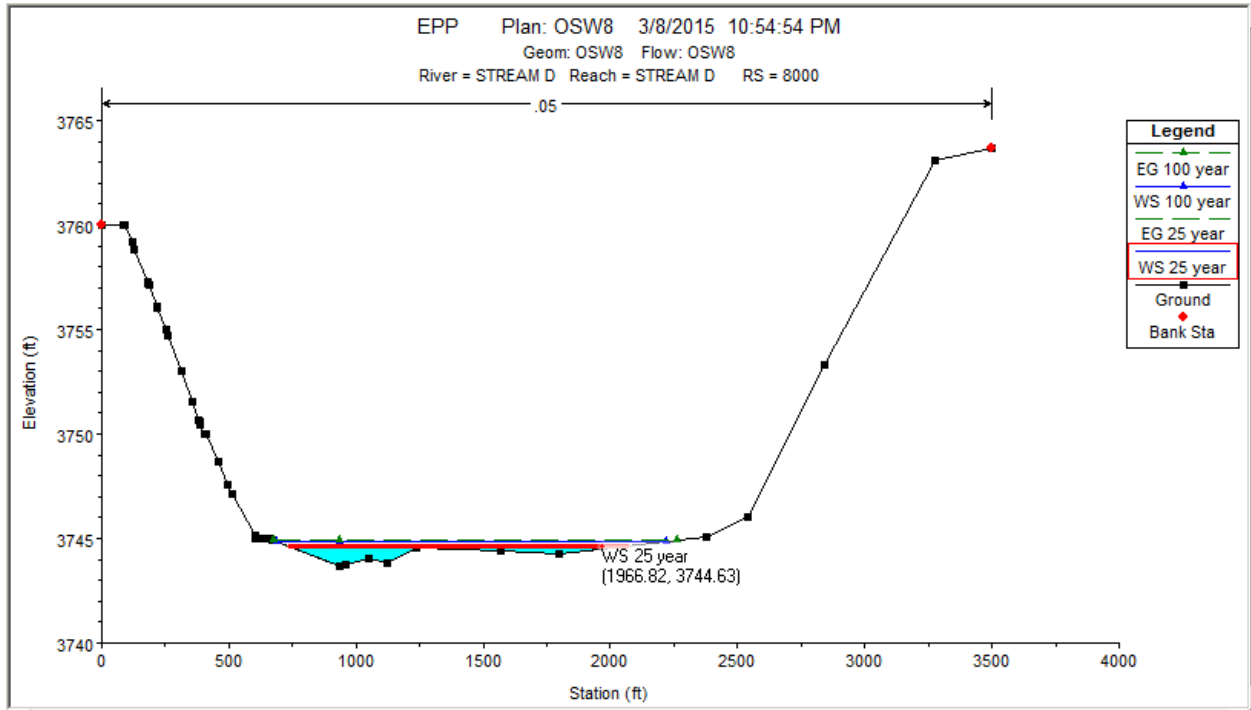


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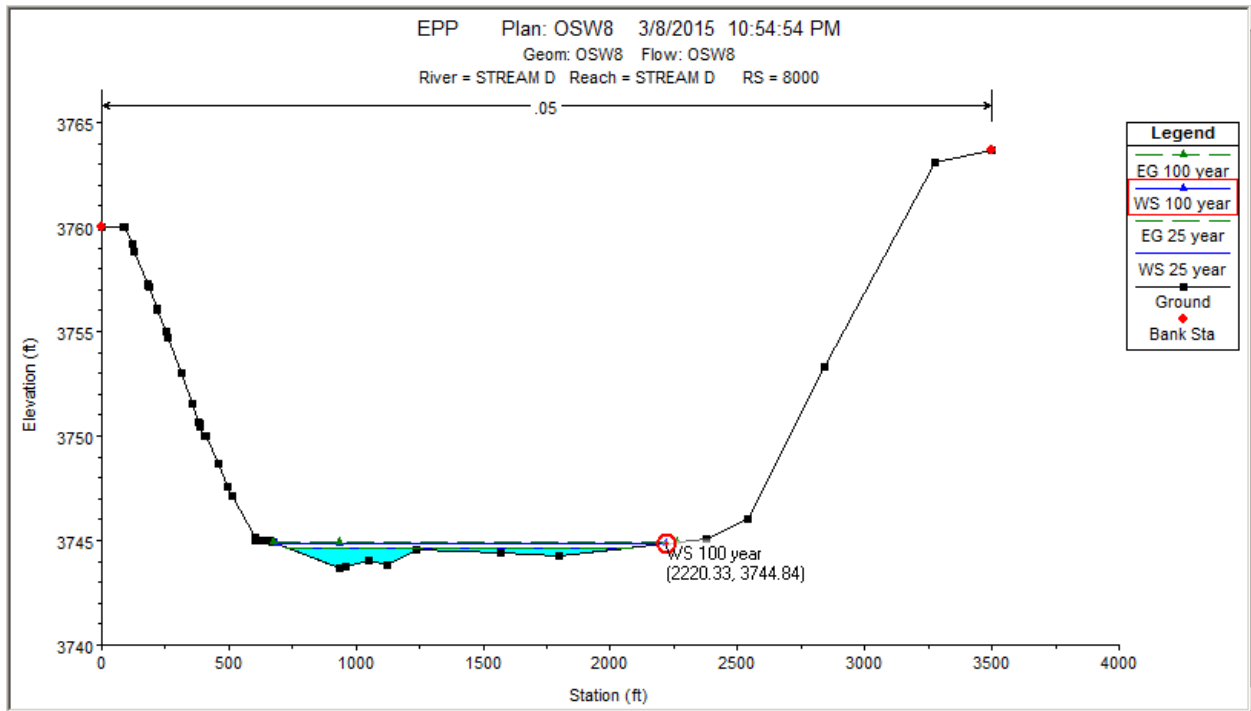




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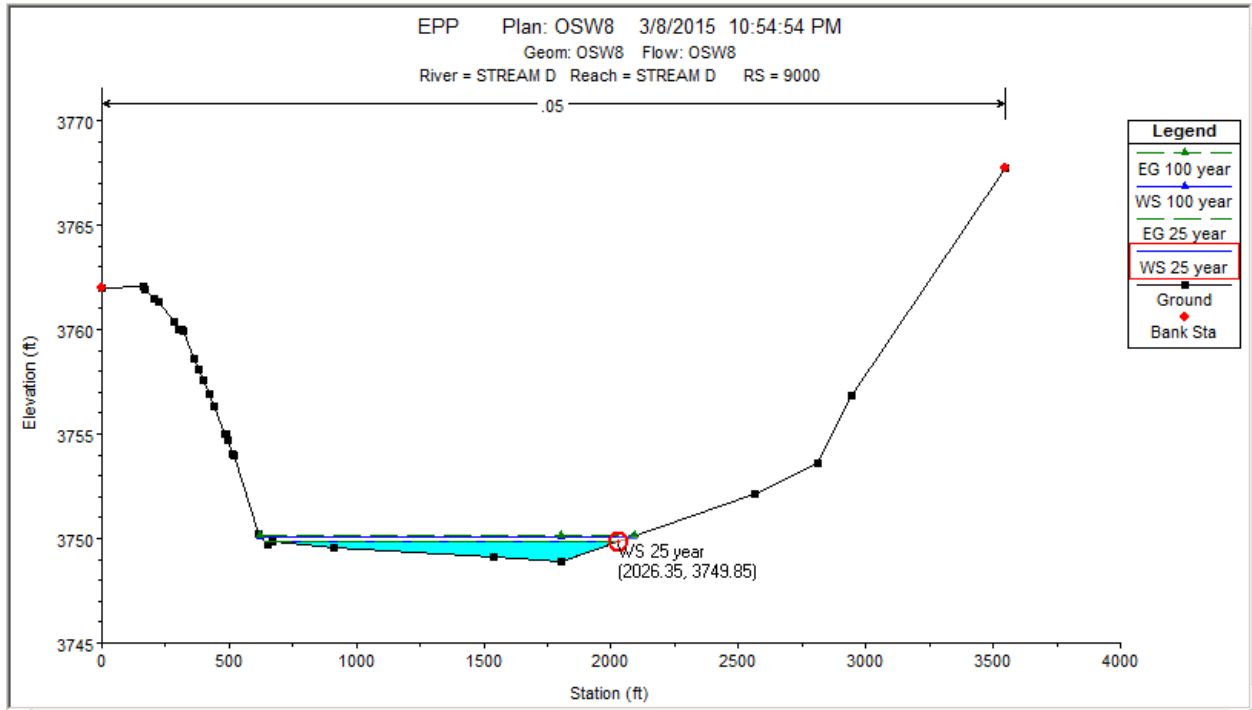


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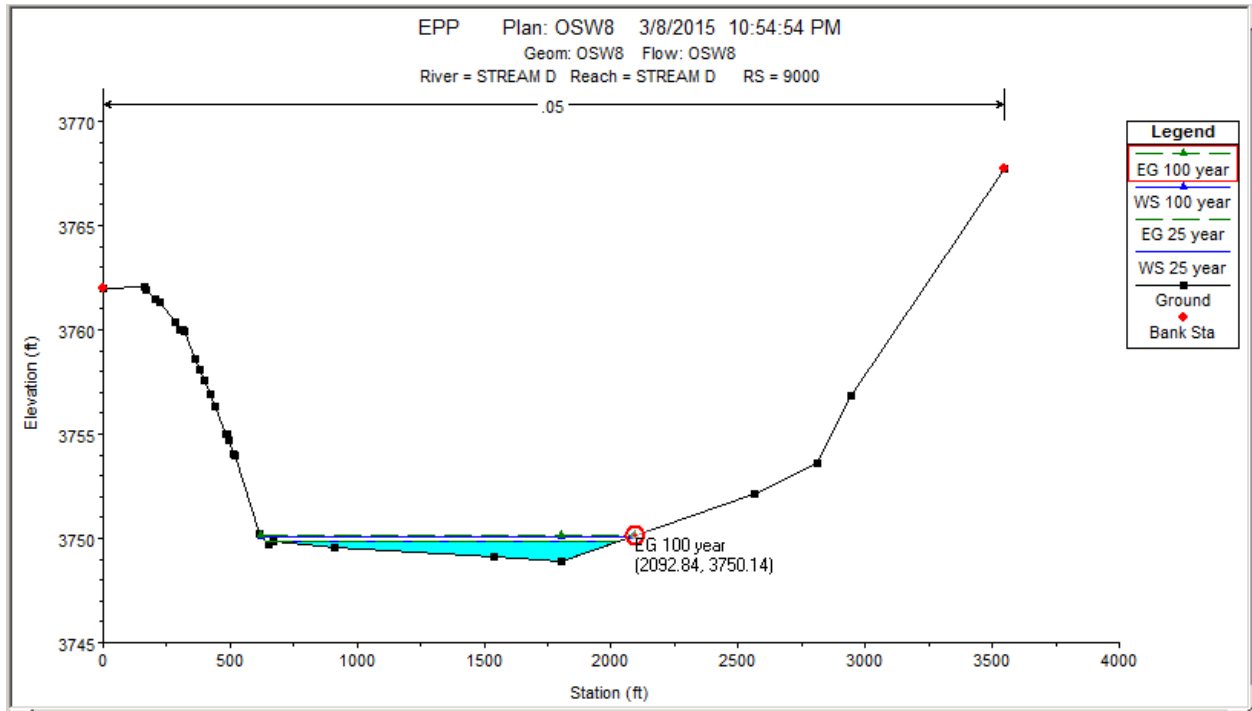




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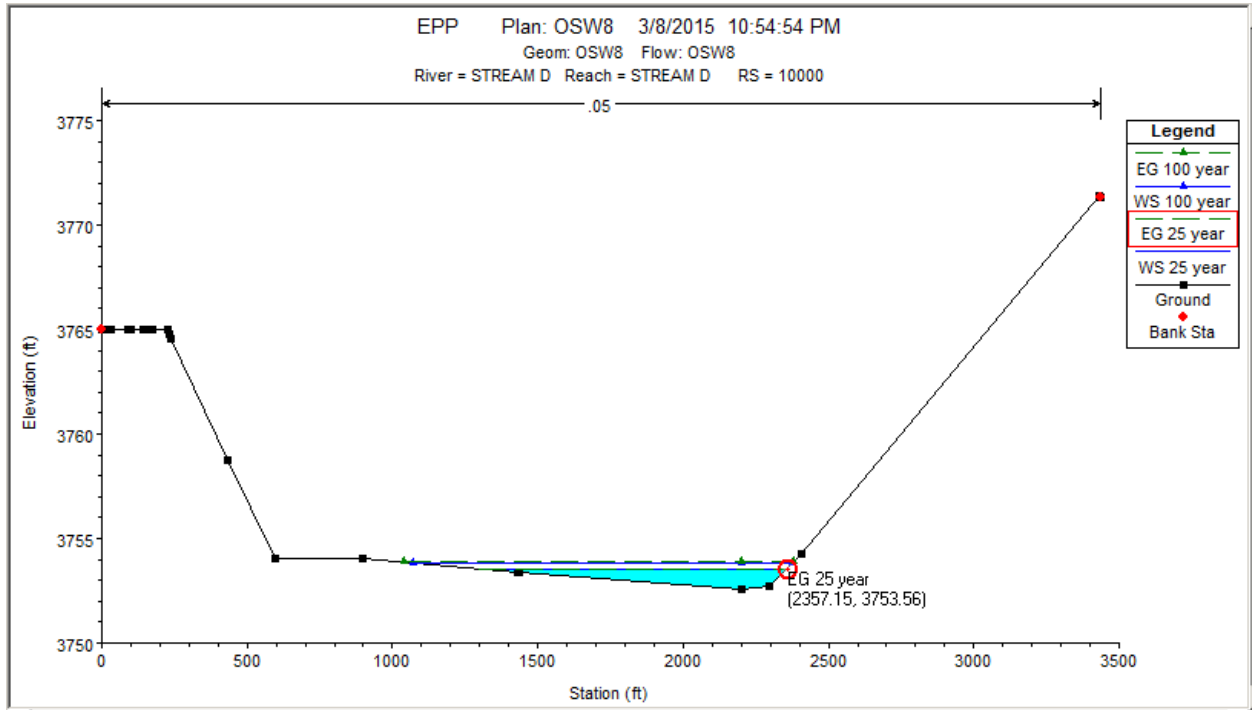


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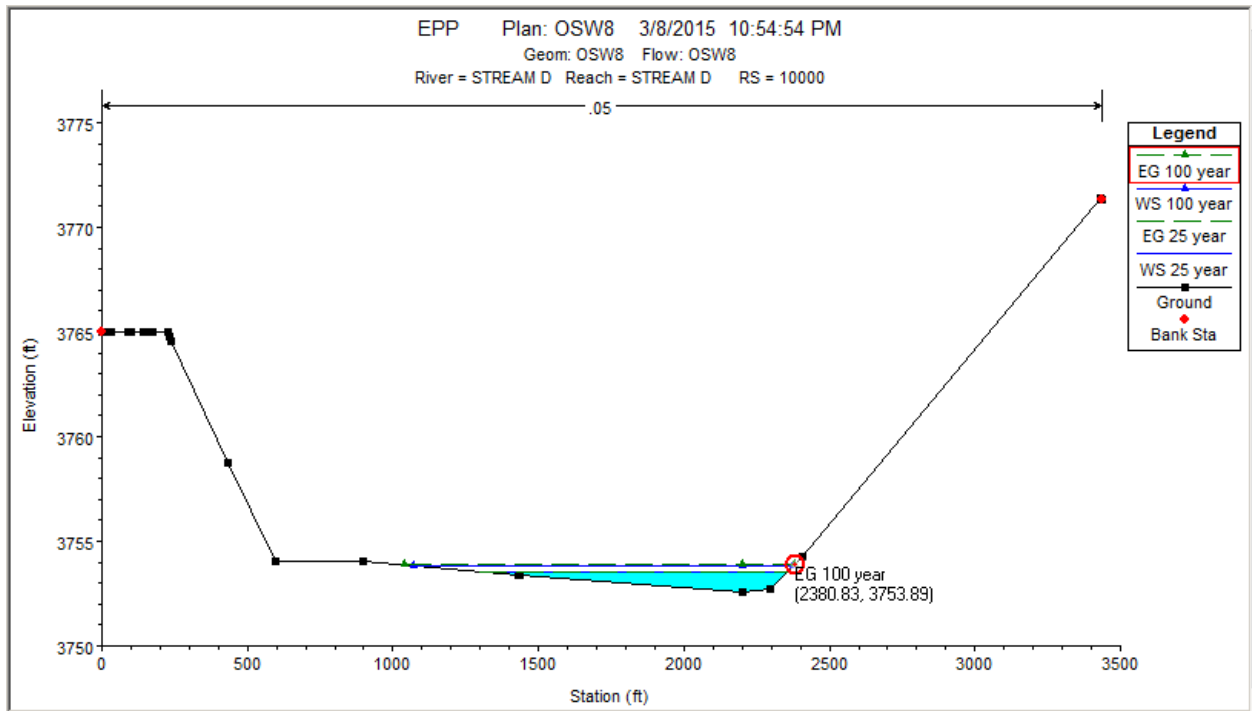




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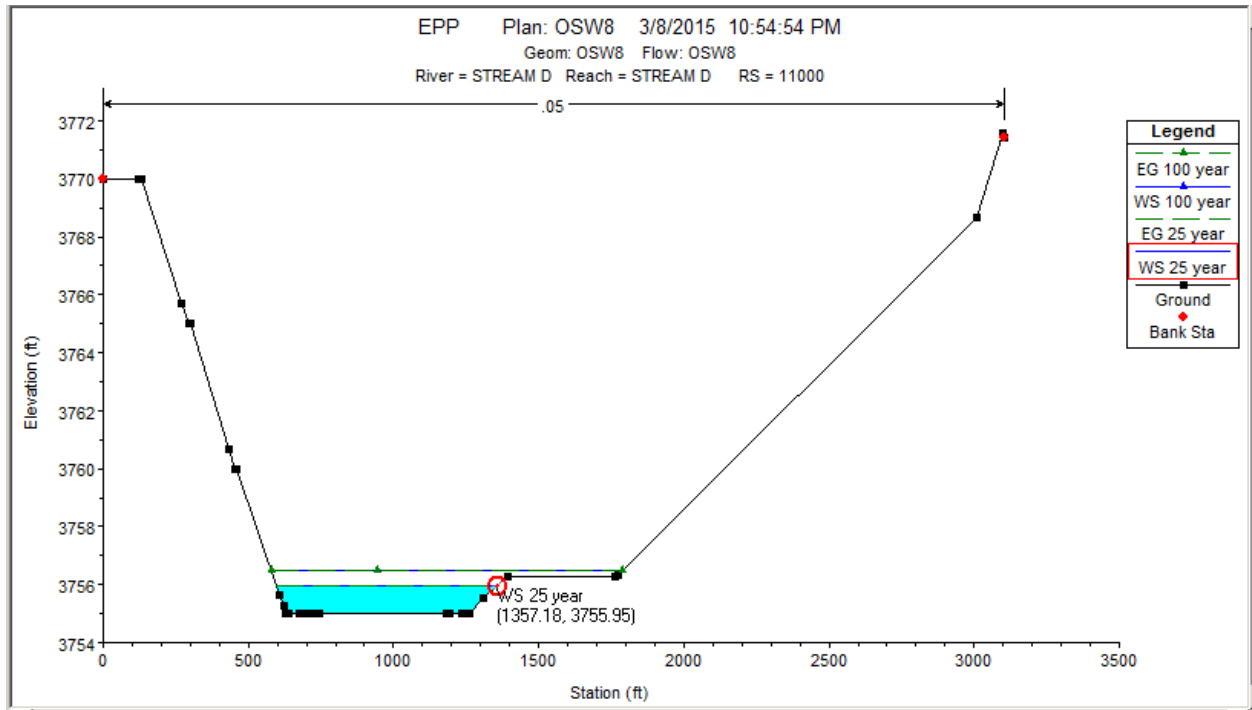


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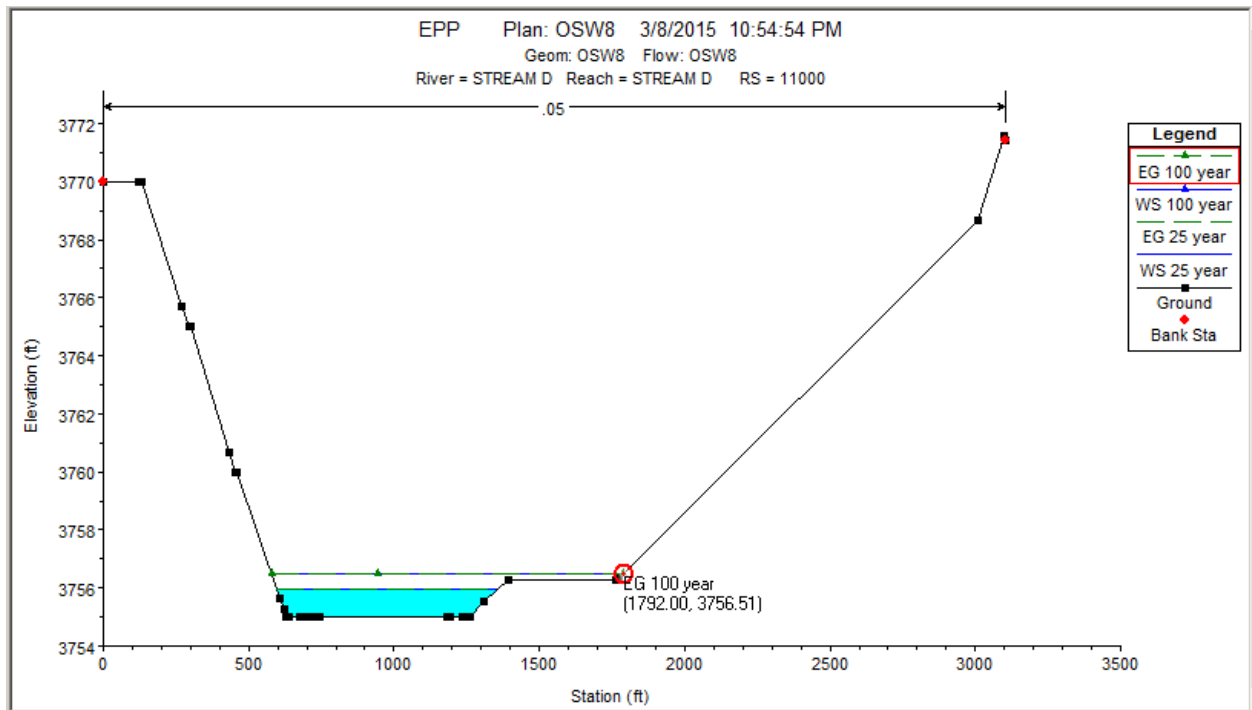




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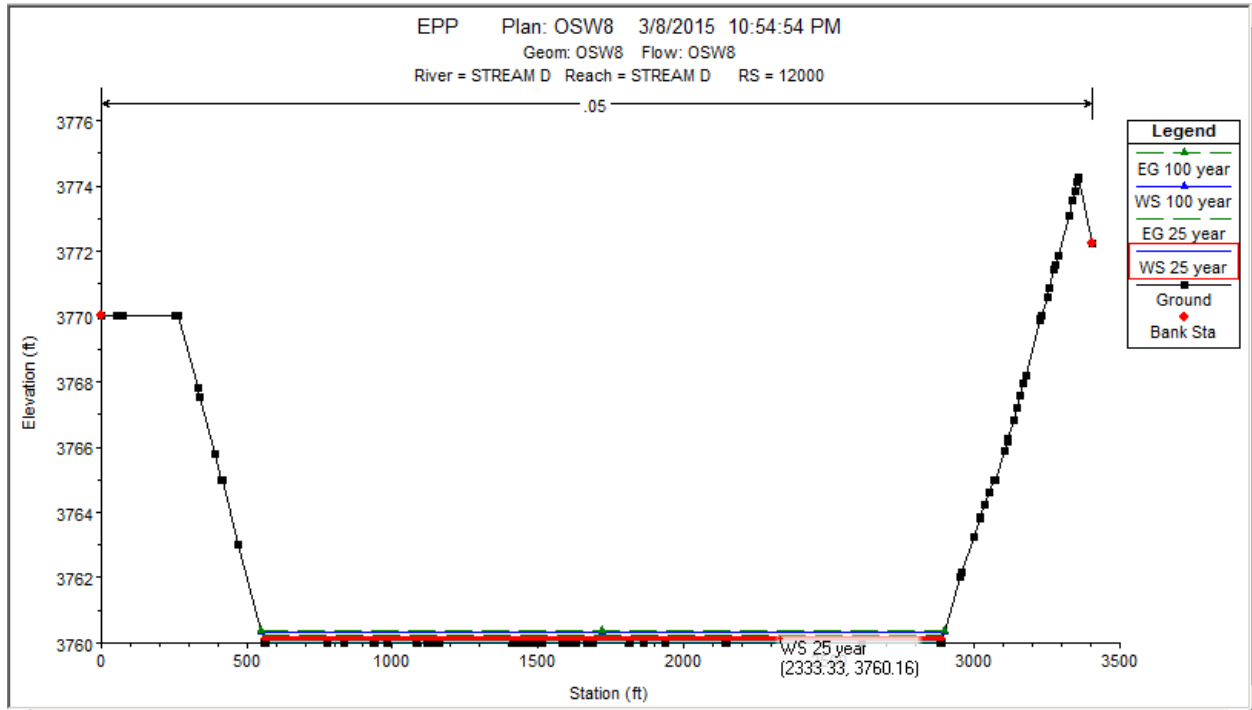


REACH OSW8 100-YR CS 11000

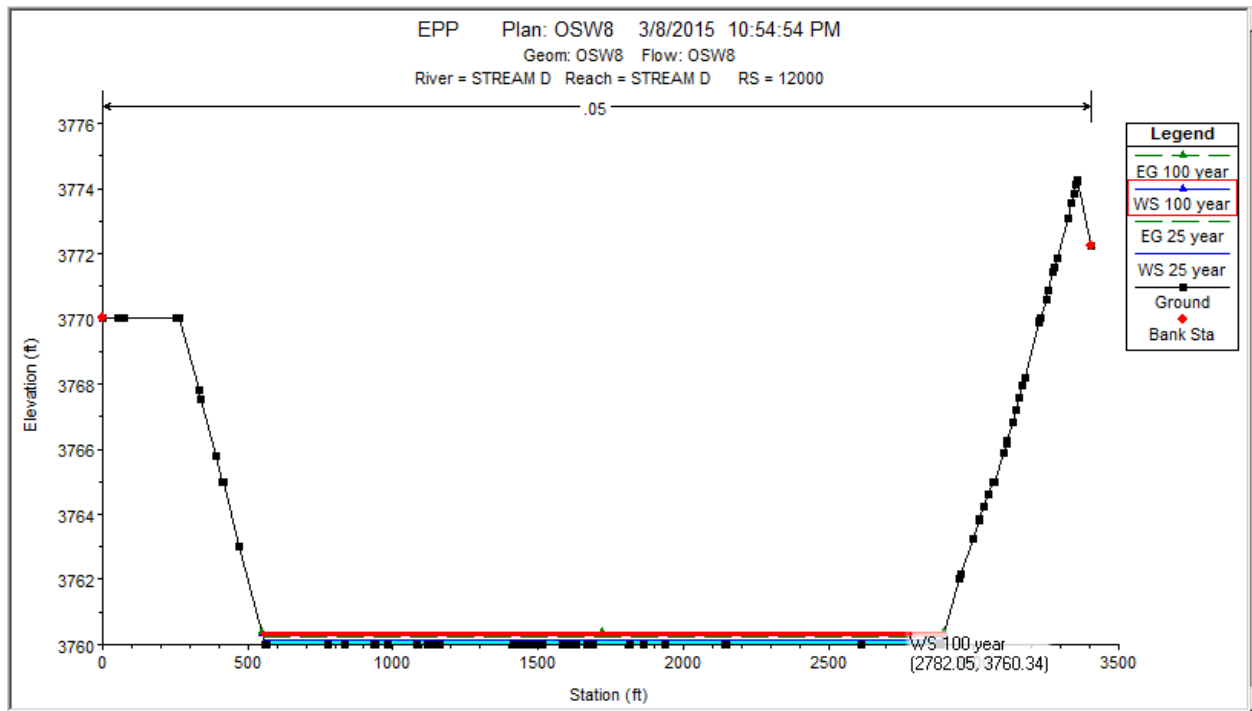




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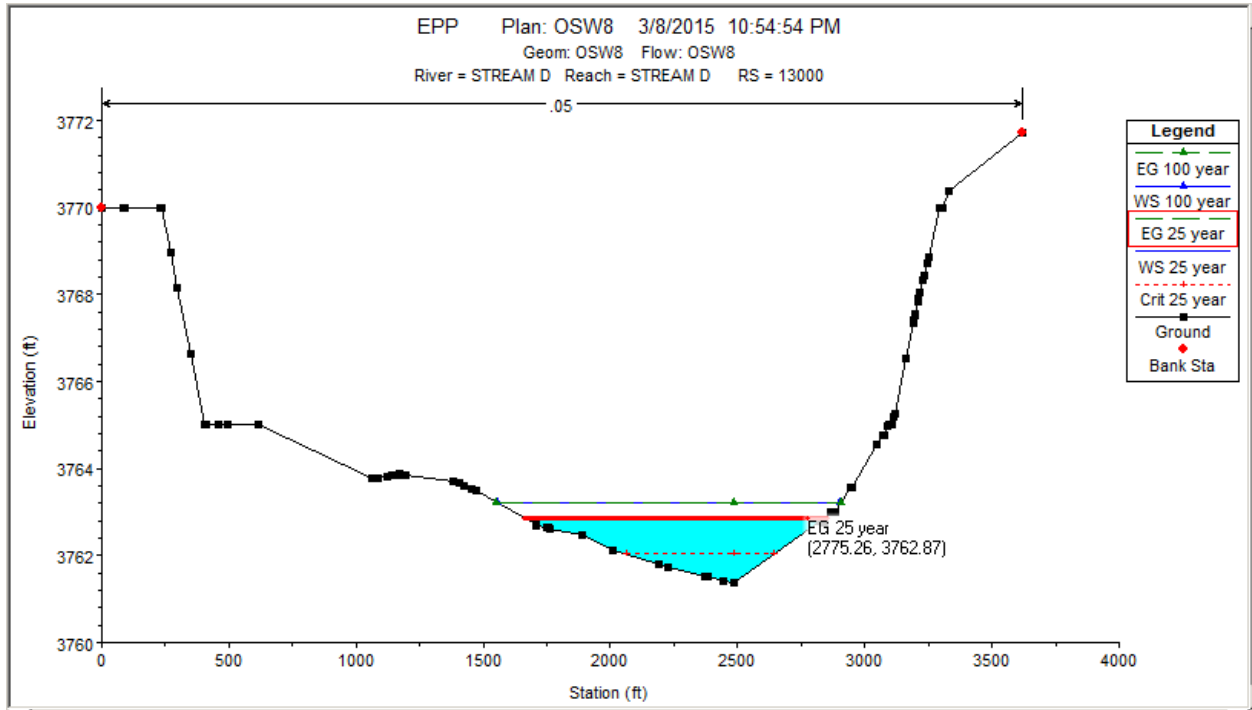


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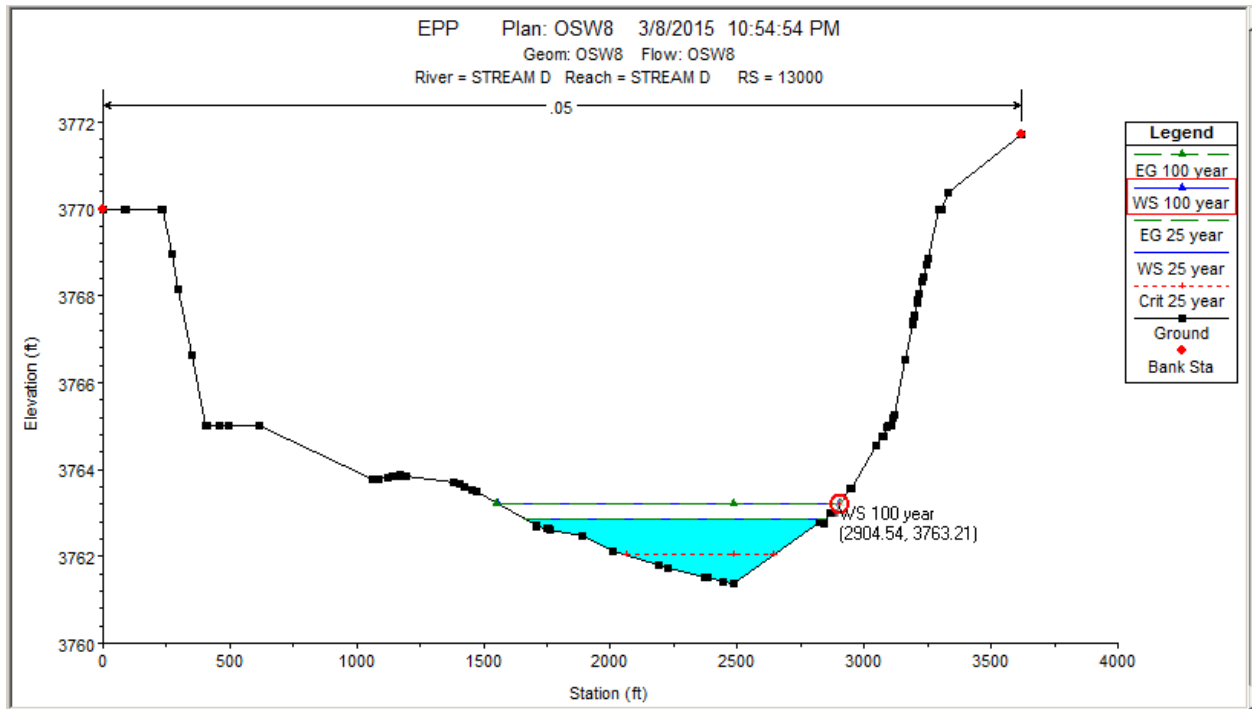




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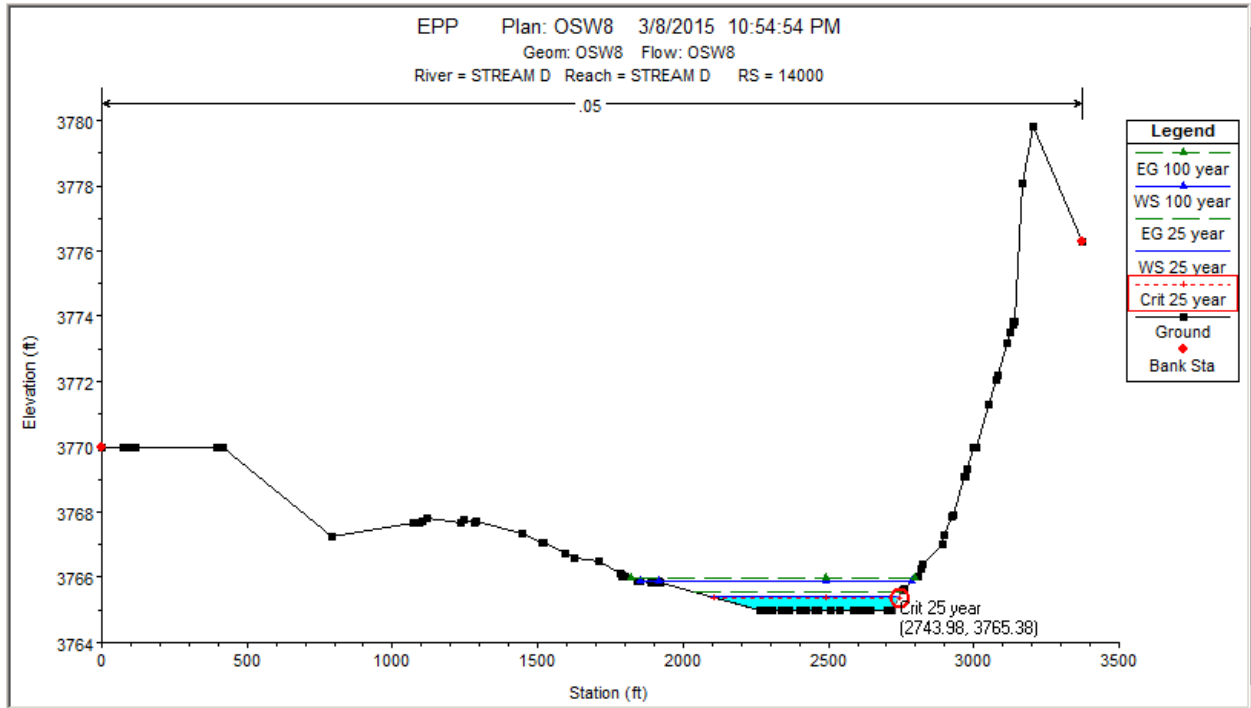


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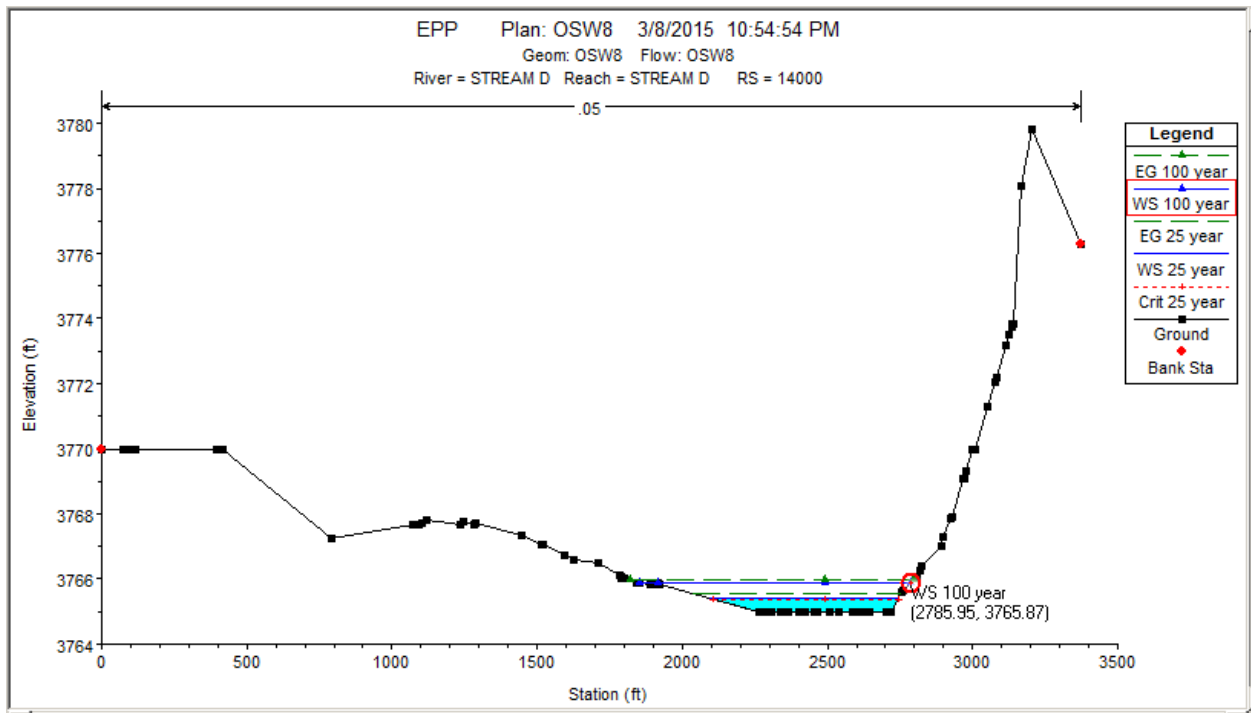




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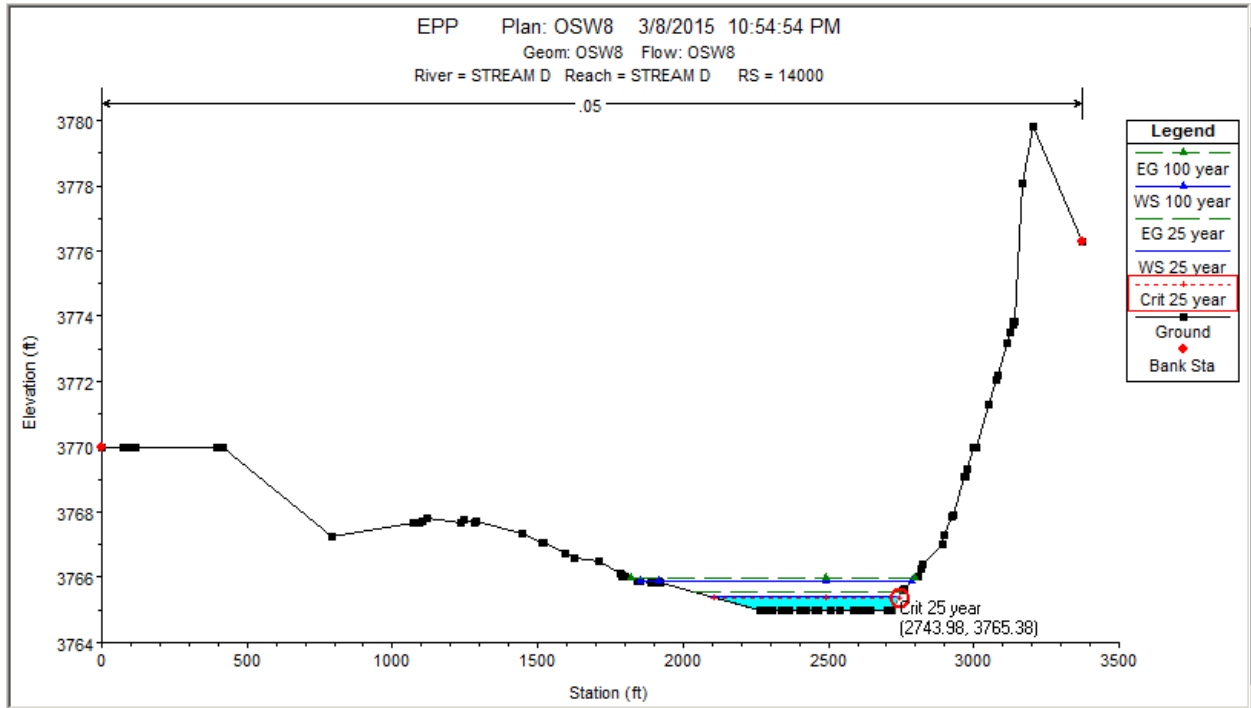


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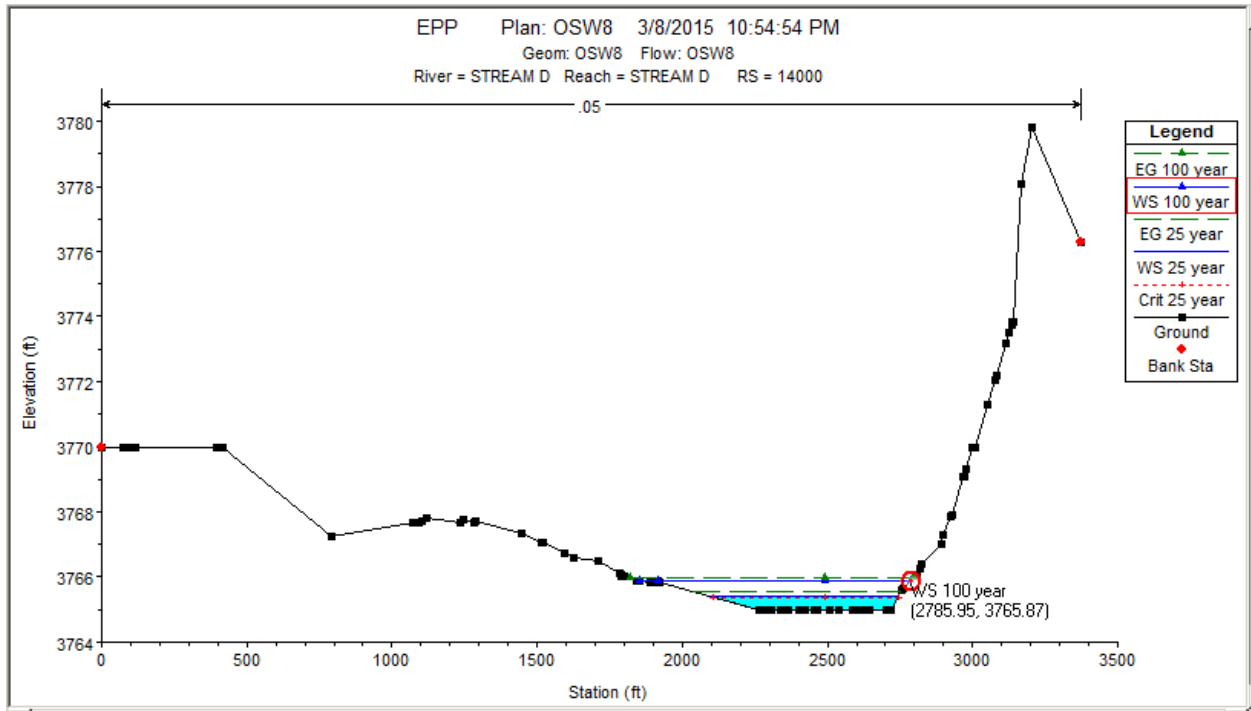




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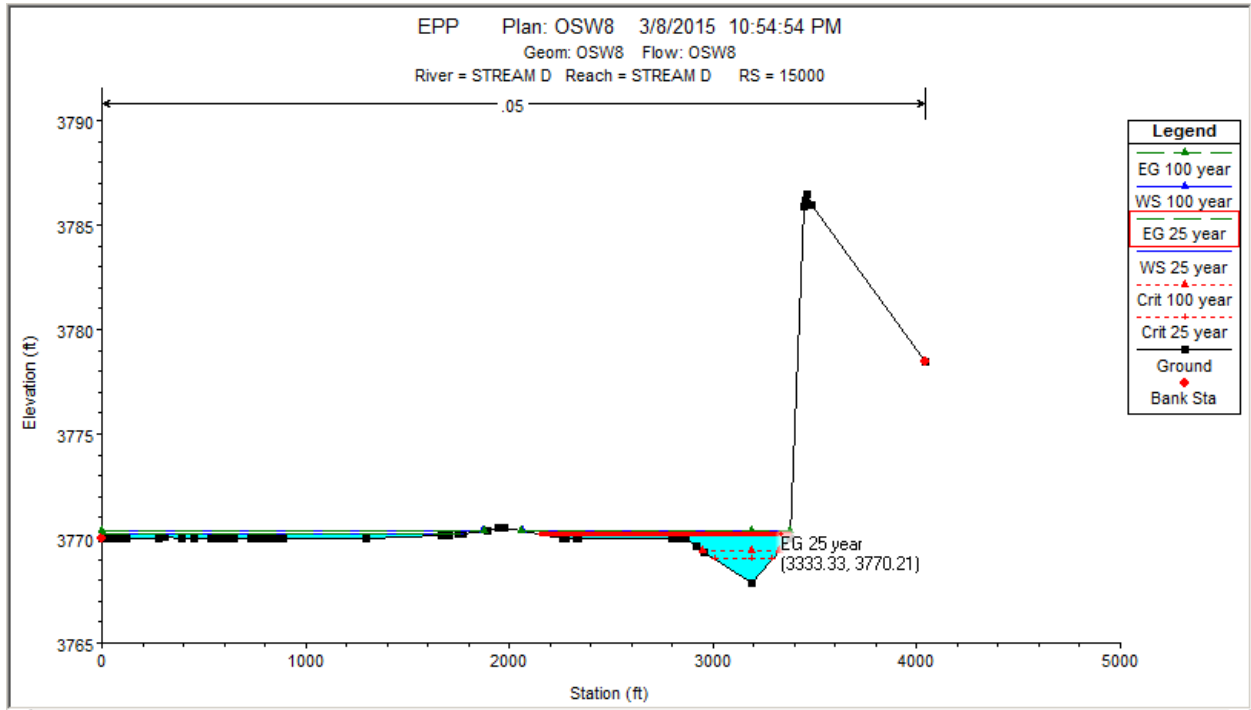


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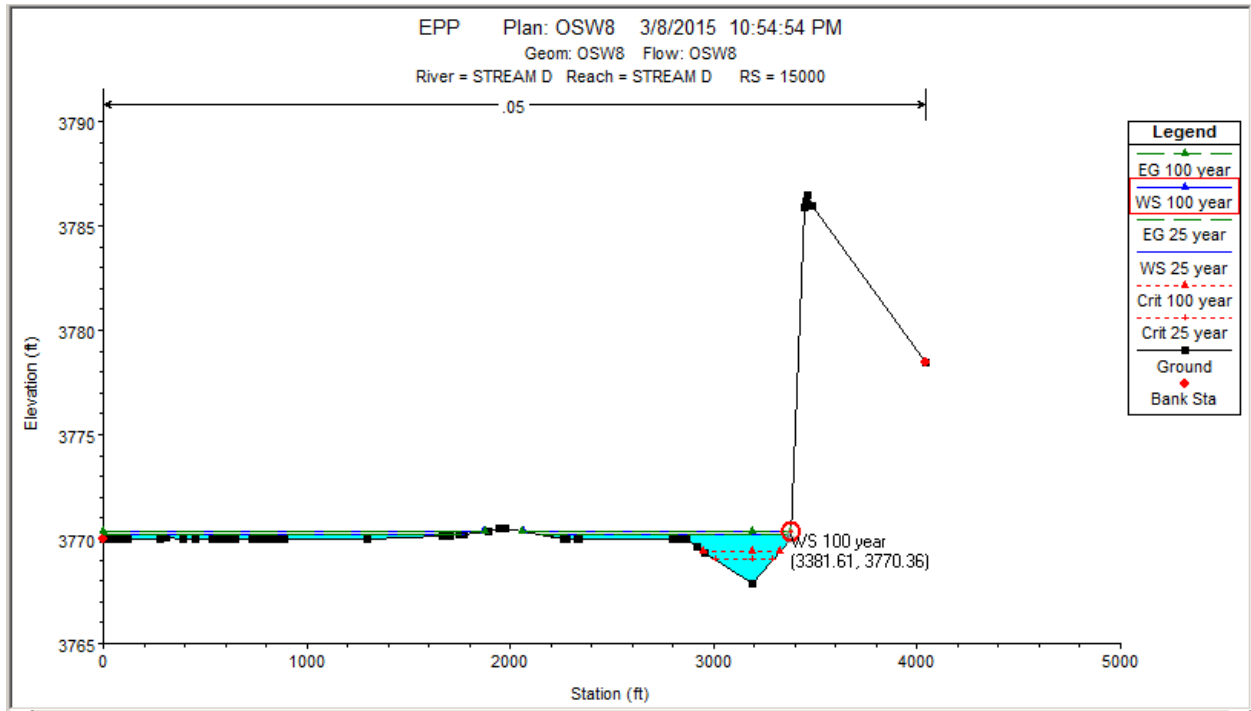




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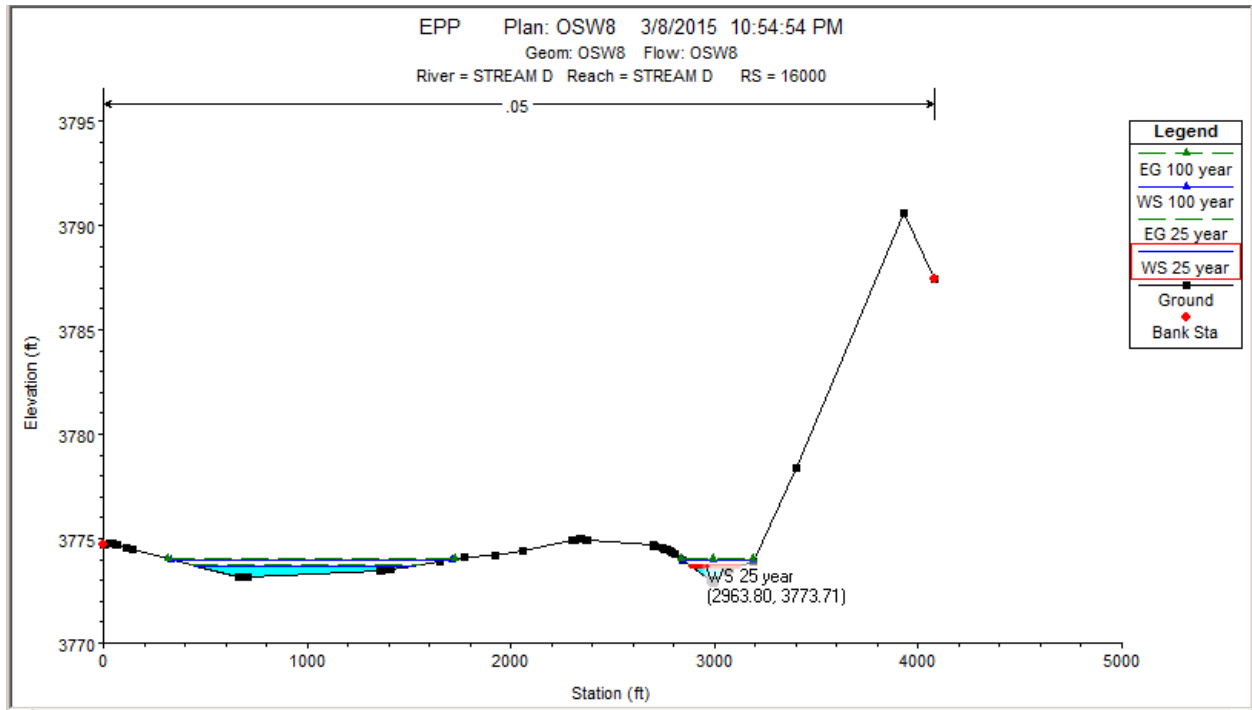


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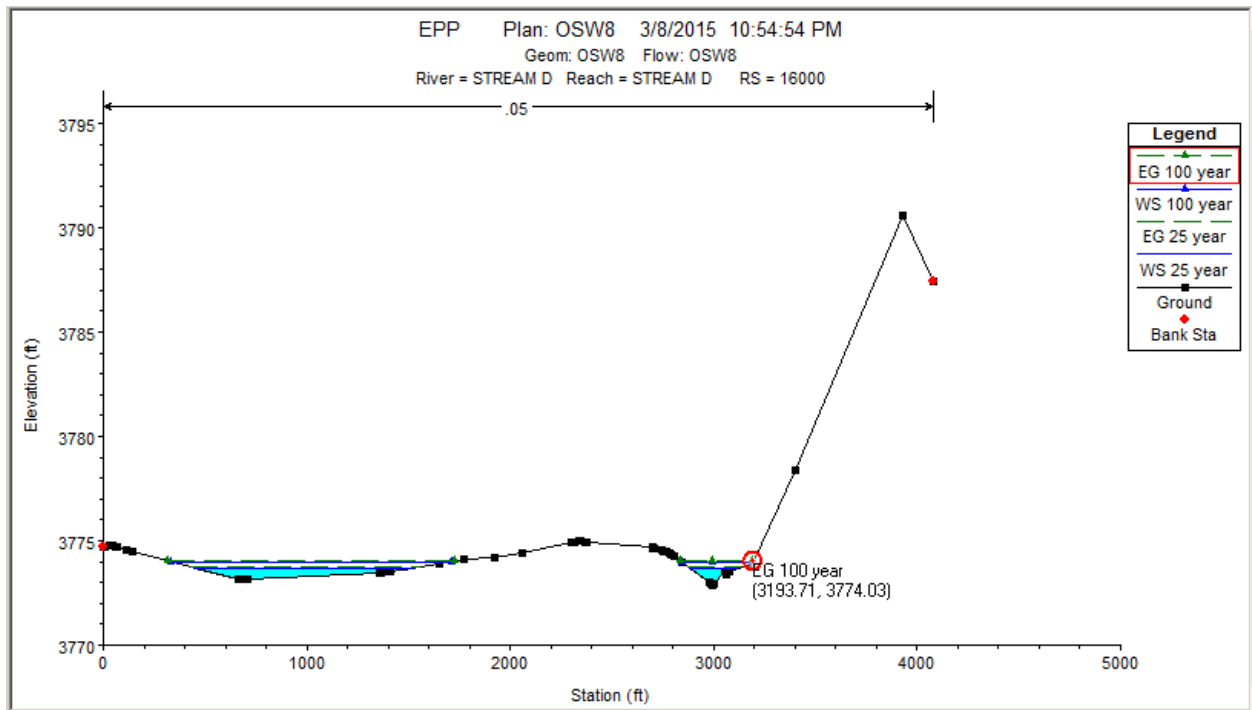




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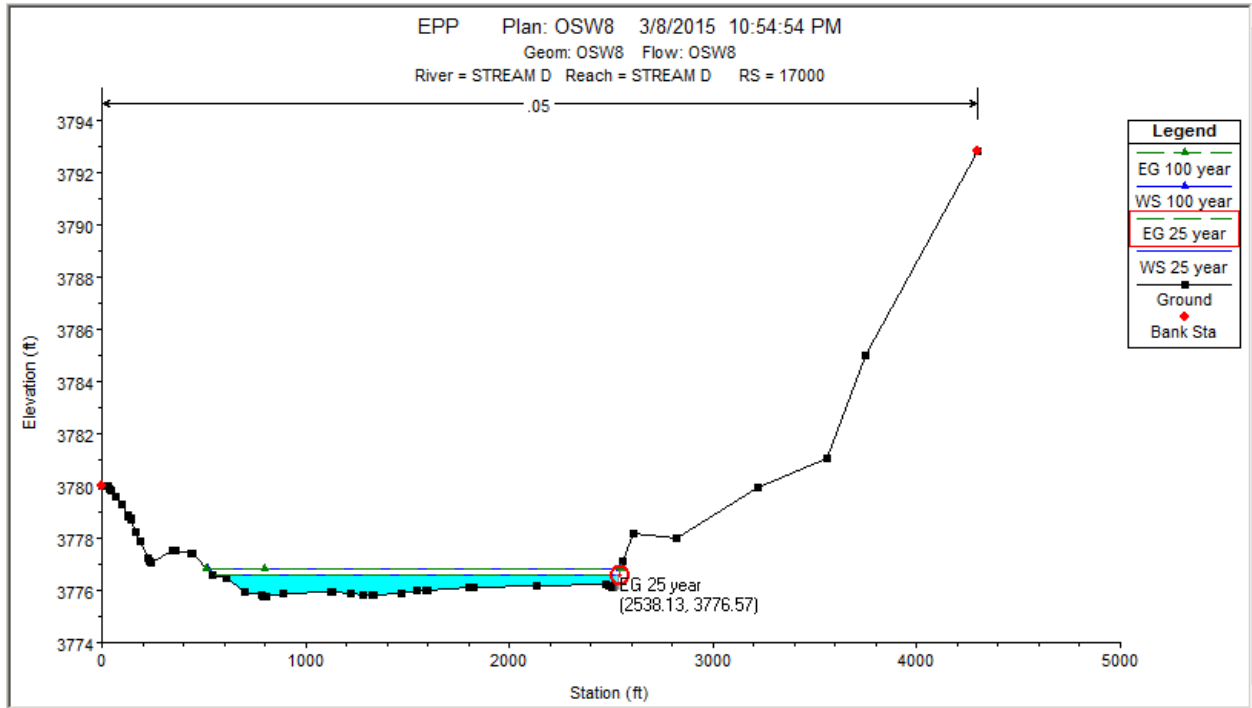


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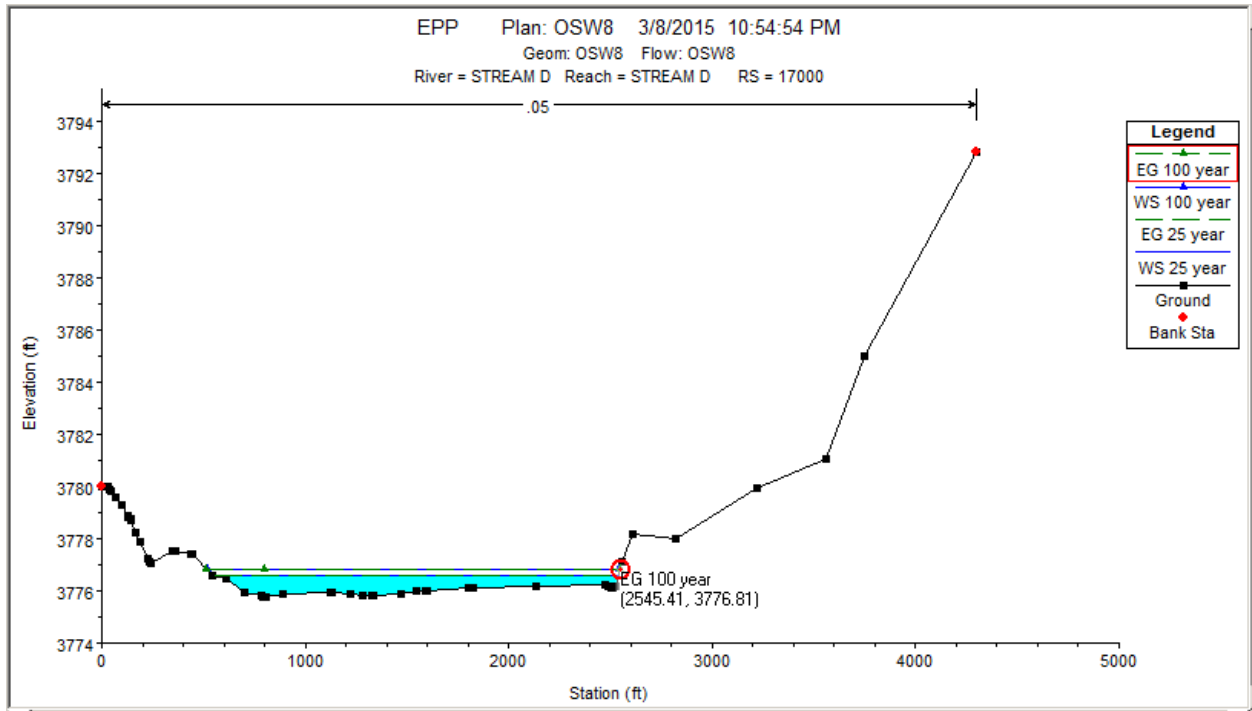




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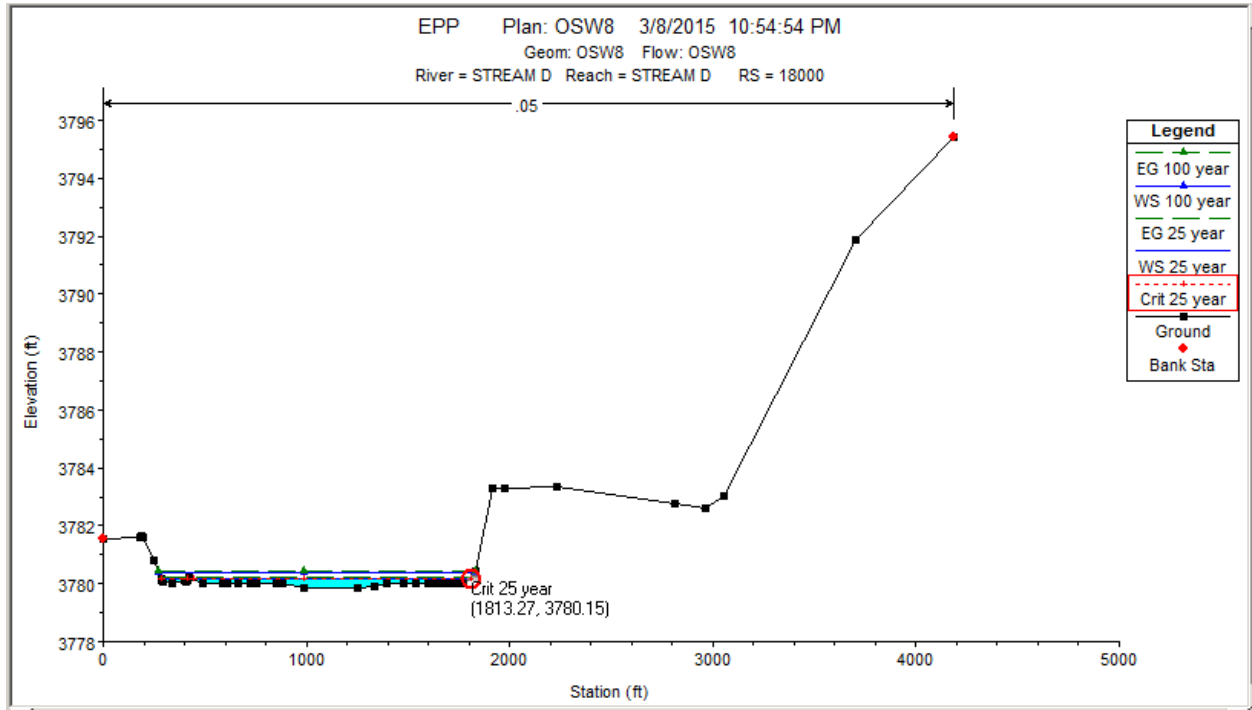


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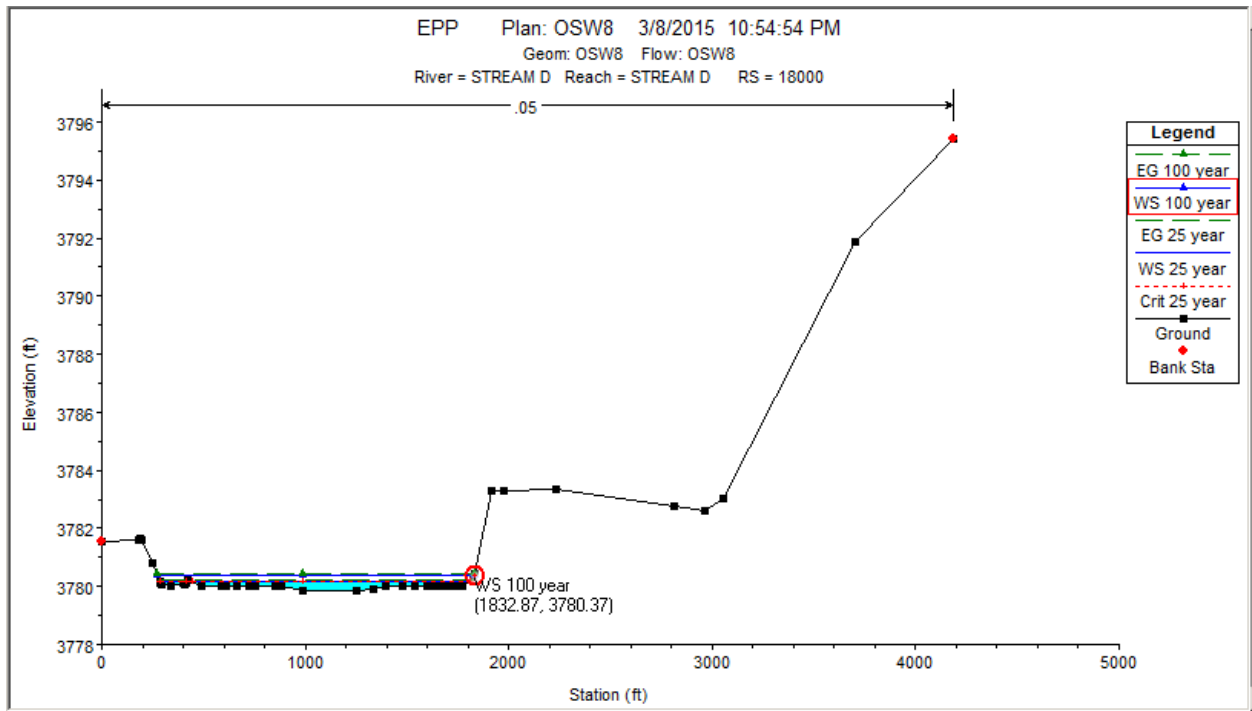




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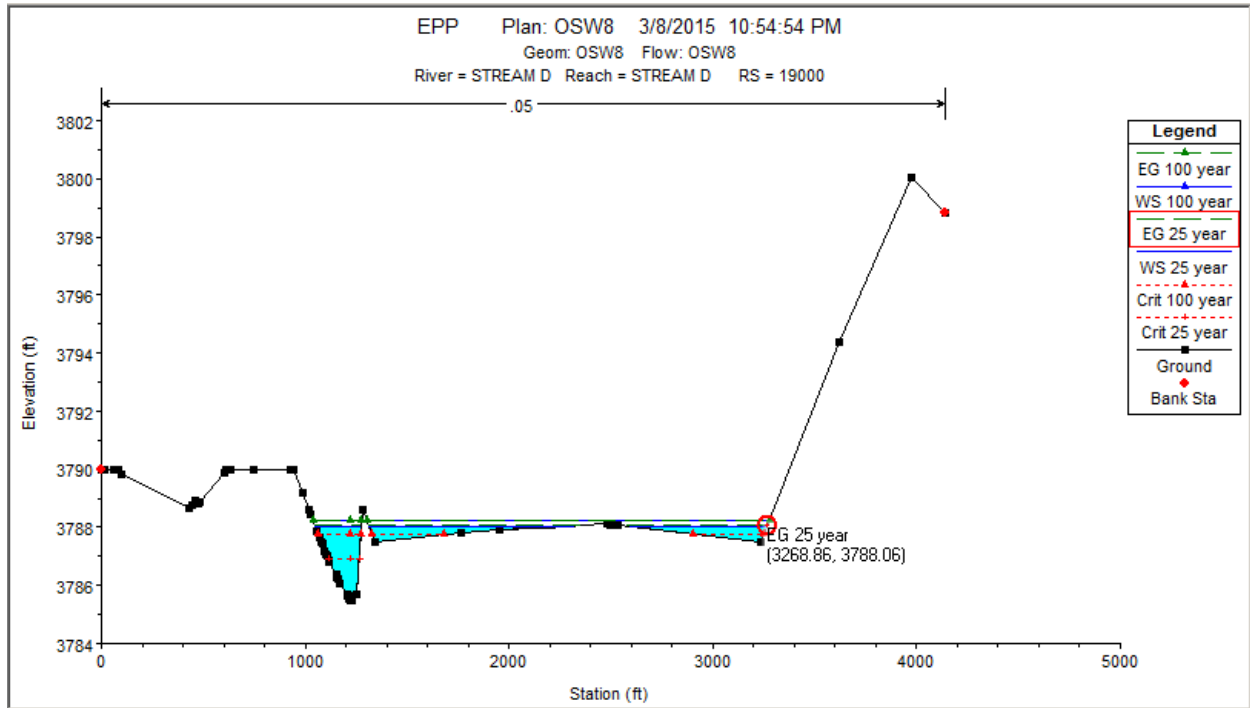


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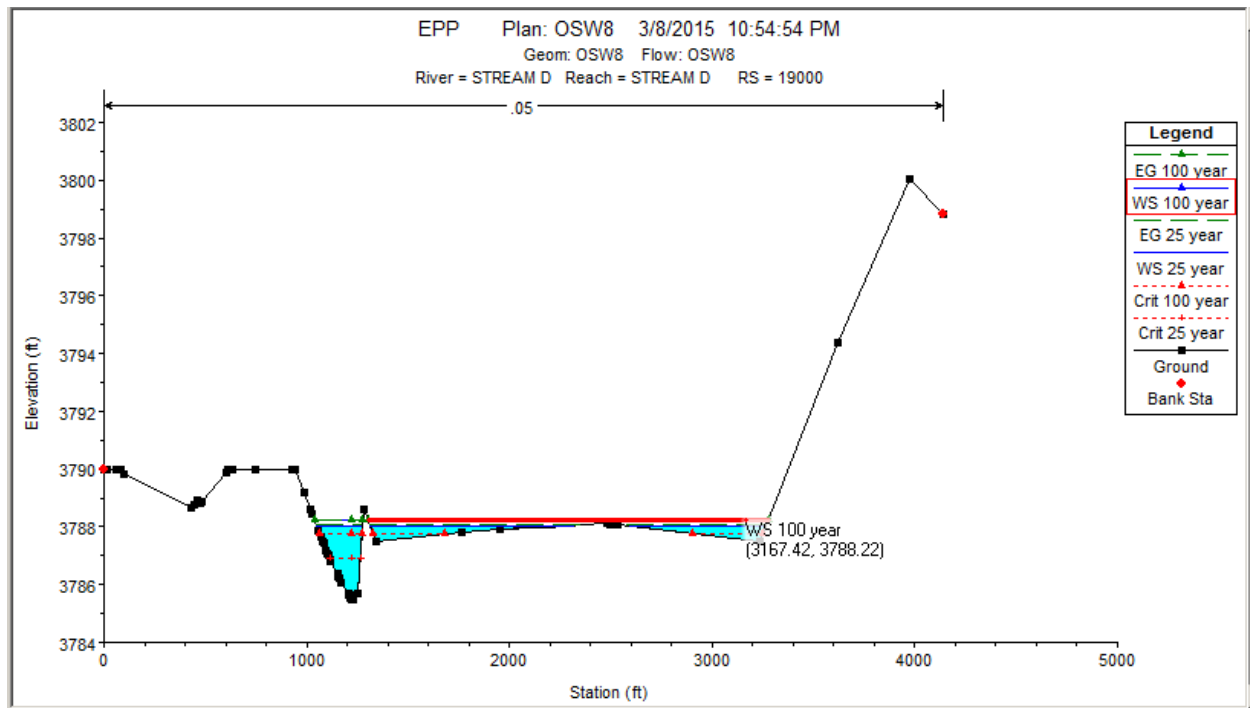




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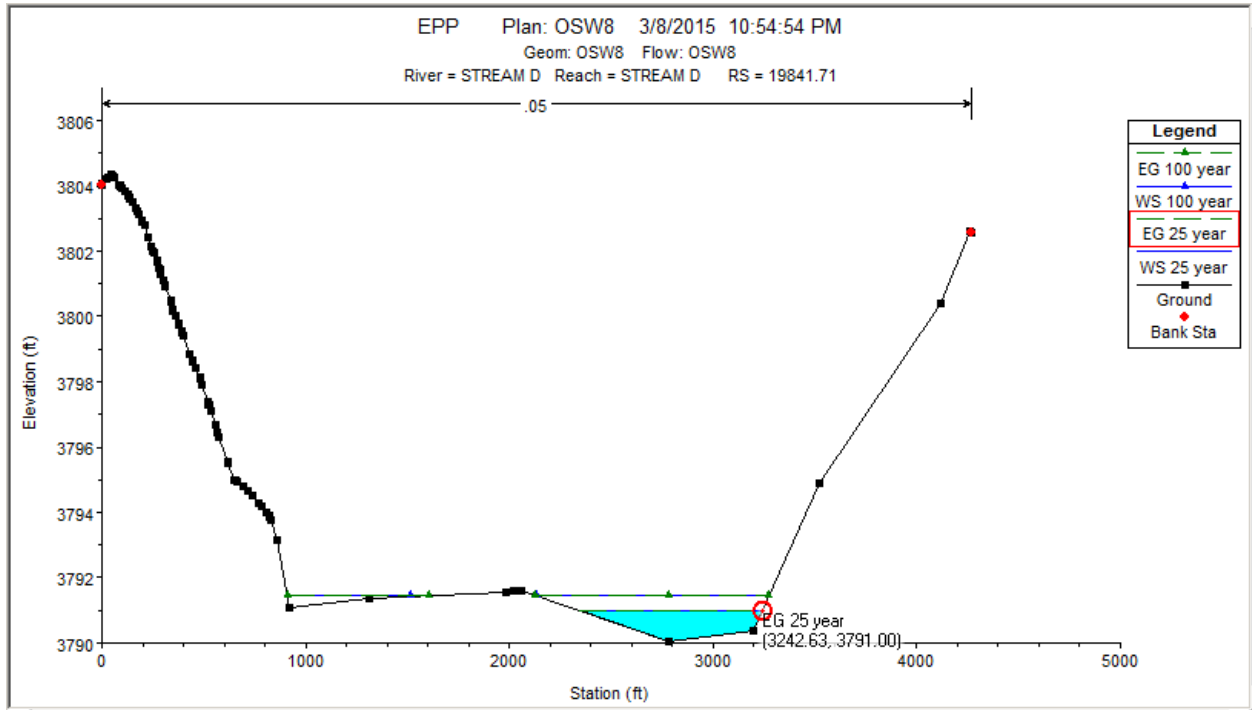


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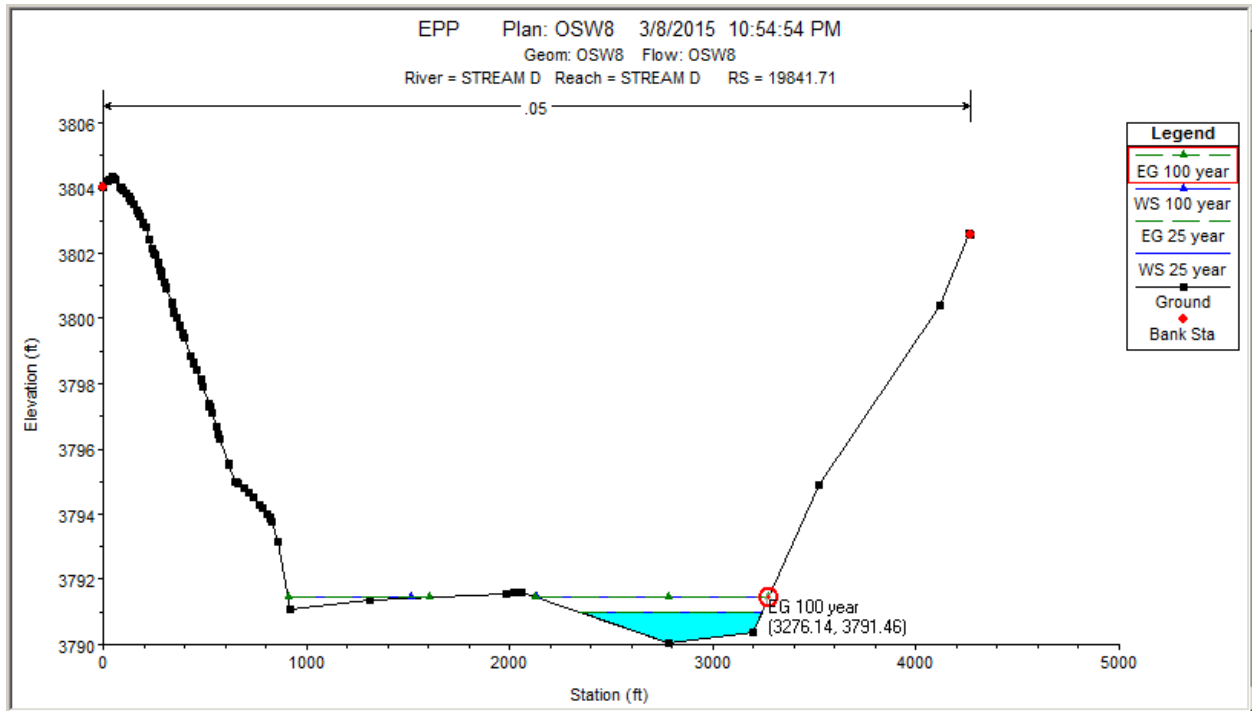




REACH OSW8 25-YR CS 19841.71

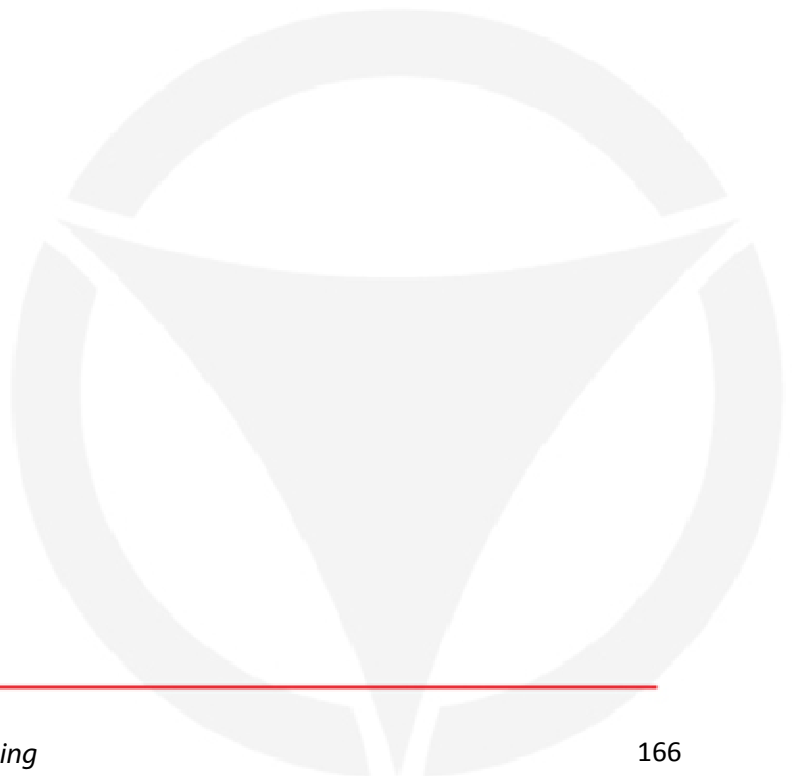
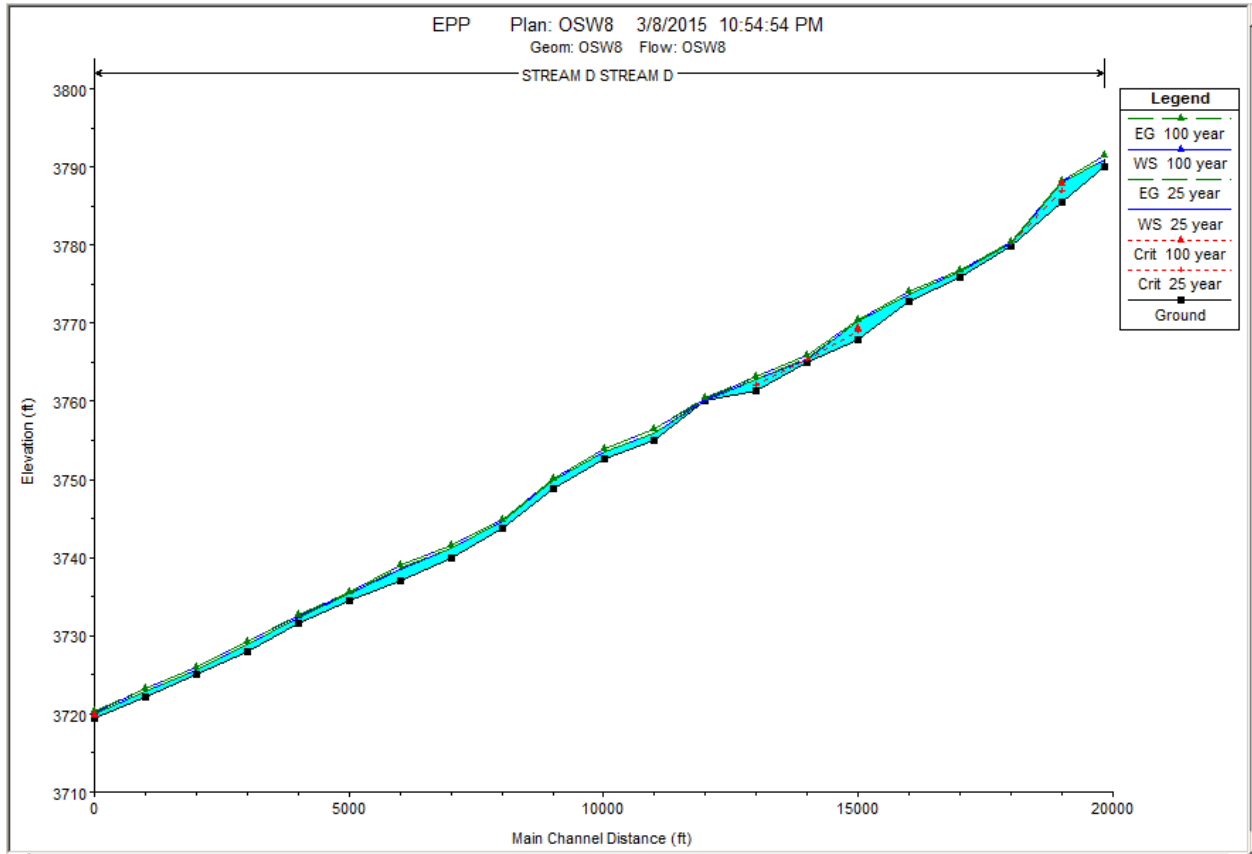


REACH OSW8 100-YR CS 19841.71





REACH OSW8 PROFILE





Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		ft
OSW5	22000	25 year	743	3839.03	3840.13	3839.9	3840.21	0.014177	2.26	329.49	647.67	0.56	0.51
OSW5	22000	100 year	1529	3839.03	3840.27	3840.19	3840.47	0.03057	3.57	428.23	751.77	0.83	0.57
OSW5	21000	25 year	743	3834.94	3835.56		3835.57	0.00226	0.88	844.81	1719.99	0.22	0.49
OSW5	21000	100 year	1529	3834.94	3835.91		3835.93	0.001715	1.03	1478.55	1919.34	0.21	0.77
OSW5	20000	25 year	743	3831.82	3833.39	3832.72	3833.41	0.002084	1.11	671.45	911.57	0.23	0.74
OSW5	20000	100 year	1529	3831.82	3833.91	3833	3833.93	0.002365	1.08	1416.66	2195.41	0.24	0.65
OSW5	19000	25 year	743	3828.55	3829.19		3829.23	0.012114	1.66	448.62	1245.14	0.49	0.36
OSW5	19000	100 year	1529	3828.55	3829.41		3829.47	0.011283	1.93	790.67	1649.07	0.49	0.48
OSW5	18000	25 year	743	3825	3825.9		3825.91	0.001522	0.81	915.07	1561.27	0.19	0.59
OSW5	18000	100 year	1529	3825	3826.25		3826.27	0.001486	1.01	1509.39	1814.98	0.2	0.83
OSW5	17000	25 year	743	3822.61	3823.48		3823.51	0.00436	1.44	515.48	818.86	0.32	0.63
OSW5	17000	100 year	1529	3822.61	3823.84		3823.89	0.004387	1.85	826.19	906.25	0.34	0.91
OSW5	16000	25 year	743	3817.73	3818.69		3818.73	0.005271	1.69	438.76	631.04	0.36	0.70
OSW5	16000	100 year	1529	3817.73	3819.11		3819.18	0.005073	2.09	732.91	749.07	0.37	0.98
OSW5	15000	25 year	743	3815	3815.78		3815.79	0.001857	1.04	717.68	987.36	0.21	0.73
OSW5	15000	100 year	1529	3815	3816.17		3816.2	0.001955	1.37	1117.39	1051.49	0.23	1.06
OSW5	14000	25 year	743	3810	3810.36	3810.36	3810.53	0.05164	3.3	225.3	660.2	0.99	0.34
OSW5	14000	100 year	1529	3810	3810.57	3810.57	3810.84	0.044683	4.13	370.09	693.88	1	0.53
OSW5	13000	25 year	743	3805	3806.47		3806.48	0.00076	0.93	795.07	652.42	0.15	1.22
OSW5	13000	100 year	1529	3805	3807.02		3807.05	0.000986	1.31	1169.49	705.01	0.18	1.66
OSW5	12000	25 year	743	3804.2	3805.67		3805.68	0.00086	0.75	984.66	1221.97	0.15	0.81
OSW5	12000	100 year	1529	3804.2	3806.15		3806.17	0.000784	0.96	1586.93	1273.63	0.15	1.25
OSW5	11000	25 year	743	3801.81	3803.64		3803.74	0.007794	2.47	300.39	328.15	0.46	0.92
OSW5	11000	100 year	1529	3801.81	3804.19		3804.33	0.008104	3.01	508.62	427	0.49	1.19
OSW5	10000	25 year	743	3795.18	3797.29		3797.37	0.005292	2.24	331.6	314.22	0.38	1.06
OSW5	10000	100 year	1529	3795.18	3797.98		3798.09	0.004949	2.62	584.24	417.09	0.39	1.40
OSW5	9000	25 year	743	3792.3	3793.29		3793.31	0.003175	1.19	622.19	1032.31	0.27	0.60
OSW5	9000	100 year	1529	3792.3	3793.56		3793.61	0.004044	1.67	914.44	1097.69	0.32	0.83
OSW5	8000	25 year	743	3786.17	3786.91		3787	0.018046	2.33	319.25	716.53	0.61	0.45
OSW5	8000	100 year	1529	3786.17	3787.3		3787.39	0.010708	2.37	644.68	950.72	0.51	0.68
OSW5	7000	25 year	743	3782.83	3784.29		3784.29	0.001027	0.65	1147.02	2044.92	0.15	0.56



OSW5	7000	100 year	1529	3782.83	3784.56		3784.58	0.001258	0.88	1742.81	2295.08	0.18	0.76
OSW5	6000	25 year	743	3780.73	3781.68		3781.74	0.014362	1.97	377.02	915.02	0.54	0.41
OSW5	6000	100 year	1529	3780.73	3782.11		3782.16	0.006474	1.76	867.71	1370.21	0.39	0.63
OSW5	5000	25 year	743	3776.33	3777.9		3777.93	0.001724	1.16	641.73	704.59	0.21	0.91
OSW5	5000	100 year	1529	3776.33	3778.3		3778.34	0.002508	1.61	948.95	840.33	0.27	1.13
OSW5	4000	25 year	743	3771.74	3772.78	3772.78	3773.05	0.046114	4.13	180.01	345.02	1.01	0.52
OSW5	4000	100 year	1529	3771.74	3773.51		3773.64	0.011762	2.96	516.25	584.29	0.56	0.88
OSW5	3000	25 year	743	3767.03	3769.19	3768.06	3769.21	0.001269	1.19	622.78	518.36	0.19	1.20
OSW5	3000	100 year	1529	3767.03	3770.15	3768.45	3770.17	0.001613	1.02	1496.9	1887.22	0.2	0.79
OSW5	2000	25 year	743	3765	3765.2	3765.2	3765.31	0.06263	2.56	290.22	1436.74	1	0.20
OSW5	2000	100 year	1529	3765	3765.33	3765.33	3765.49	0.052168	3.21	475.78	1460.12	0.99	0.33
OSW5	1000	25 year	743	3760.15	3761.19		3761.2	0.000746	0.71	1048.65	1284.45	0.14	0.82
OSW5	1000	100 year	1529	3760.15	3761.64		3761.66	0.000748	0.93	1646.6	1347.68	0.15	1.22
OSW5	0	25 year	743	3757.95	3759.71	3759.1	3759.74	0.003996	1.38	537.34	850.38	0.31	0.63
OSW5	0	100 year	1529	3757.95	3760.16	3759.52	3760.2	0.004001	1.53	999.13	1359.02	0.31	0.74

OSW 5 Average Reach Depth	25 year	0.668542	ft
	100 year	0.881383	ft



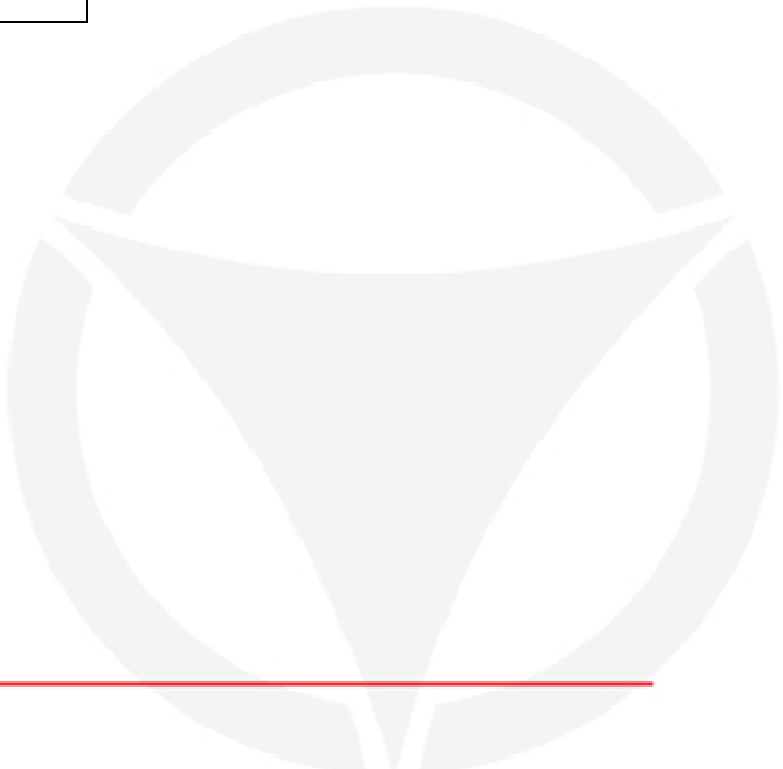


Reach	River Sta	Profile	Q Total	Min Ch	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	El (ft)									ft
OSW6	31220.13	25 year	1568	3814.3	3815.55		3815.63	0.006998	2.19	715.62	863.8	0.42	0.83
OSW6	31220.13	100 year	3209	3814.3	3816.08		3816.19	0.007092	2.6	1233.05	1161.13	0.45	1.06
OSW6	28708.39	25 year	1568	3802.17	3803.56		3803.6	0.003478	1.56	1005.7	1198.5	0.3	0.84
OSW6	28708.39	100 year	3209	3802.17	3804.04		3804.1	0.003474	2.01	1599.26	1304.24	0.32	1.23
OSW6	28279.9	25 year	1568	3800.17	3801.85		3801.9	0.004581	1.8	869.56	1024.43	0.34	0.85
OSW6	28279.9	100 year	3209	3800.17	3802.33		3802.41	0.004557	2.23	1439.5	1228.94	0.36	1.17
OSW6	27996.08	25 year	1568	3798.64	3800.55		3800.6	0.004614	1.82	863.13	1010.98	0.35	0.85
OSW6	27996.08	100 year	3209	3798.64	3801.08		3801.16	0.004303	2.25	1426.89	1151.59	0.36	1.24
OSW6	27465.02	25 year	1568	3795.99	3797.9		3797.96	0.005365	1.97	794.51	920.24	0.37	0.86
OSW6	27465.02	100 year	3209	3795.99	3798.36		3798.46	0.006036	2.51	1280.66	1132.67	0.42	1.13
OSW6	26126.52	25 year	1568	3790	3791.54		3791.57	0.004269	1.5	1048.23	1550.21	0.32	0.68
OSW6	26126.52	100 year	3209	3790	3792.09		3792.12	0.003791	1.47	2183.3	3032.39	0.31	0.72
OSW6	23951.69	25 year	1568	3783.75	3785.26		3785.28	0.00209	1.18	1331.83	1650.76	0.23	0.81
OSW6	23951.69	100 year	3209	3783.75	3785.67		3785.71	0.002353	1.57	2045.69	1802.36	0.26	1.14
OSW6	23642.52	25 year	1568	3782.92	3783.76		3783.86	0.017079	2.54	617.3	1167.05	0.62	0.53
OSW6	23642.52	100 year	3209	3782.92	3784.16		3784.27	0.012783	2.58	1242.02	1841.91	0.55	0.67
OSW6	22204.58	25 year	1568	3775.17	3778.5		3778.52	0.001564	1.02	1543.69	1920.93	0.2	0.80
OSW6	22204.58	100 year	3209	3775.17	3779.17		3779.18	0.00162	0.86	3748.61	6191.52	0.19	0.61
OSW6	20366.01	25 year	1568	3772.64	3773.62		3773.65	0.00543	1.39	1124.37	2212.45	0.34	0.51
OSW6	20366.01	100 year	3209	3772.64	3773.91		3773.96	0.006207	1.74	1847.96	2893.1	0.38	0.64
OSW6	18839.09	25 year	1568	3767	3768.35		3768.37	0.002389	0.98	1606.4	2916.3	0.23	0.55
OSW6	18839.09	100 year	3209	3767	3768.71		3768.73	0.002157	1.13	2835.7	3820.11	0.23	0.74
OSW6	17133.44	25 year	1568	3762.93	3763.87		3763.89	0.002895	0.99	1591.29	3289.06	0.25	0.48
OSW6	17133.44	100 year	3209	3762.93	3764.16		3764.18	0.003384	1.04	3089.54	6634.07	0.27	0.47
OSW6	15131.13	25 year	1568	3753.16	3756.27		3756.32	0.005135	1.73	905.83	1235.98	0.36	0.73
OSW6	15131.13	100 year	3209	3753.16	3756.79		3756.86	0.003954	2.01	1600.1	1439.22	0.34	1.11
OSW6	13931.07	25 year	1568	3751	3752.77		3752.79	0.001901	1.13	1388.24	1705.63	0.22	0.81
OSW6	13931.07	100 year	3209	3751	3753.18		3753.22	0.002399	1.46	2199.46	2191.56	0.26	1.00
OSW6	12798.55	25 year	1568	3746	3748.29		3748.38	0.01203	2.39	654.86	1040.02	0.53	0.63
OSW6	12798.55	100 year	3209	3746	3748.85	3748.33	3748.94	0.006795	2.42	1326.87	1352.54	0.43	0.98
OSW6	11207.78	25 year	1568	3740	3741.89		3741.92	0.00201	1.23	1270.93	1426.43	0.23	0.89



OSW6	11207.78	100 year	3209	3740	3742.32		3742.36	0.002772	1.57	2045.8	2038.12	0.28	1.00
OSW6	10325.78	25 year	1568	3737	3738.23		3738.28	0.012714	1.8	870.72	2210.15	0.51	0.39
OSW6	10325.78	100 year	3209	3737	3738.58		3738.64	0.007144	1.87	1713.43	2661.4	0.41	0.64
OSW6	9070.78	25 year	1568	3731.99	3733.5		3733.53	0.00179	1.34	1166.42	1055.05	0.23	1.11
OSW6	9070.78	100 year	3209	3731.99	3734.19		3734.23	0.00207	1.59	2013.23	1572.98	0.25	1.28
OSW6	7342.65	25 year	1568	3727.99	3729.32		3729.34	0.003484	1.18	1326.11	2396.35	0.28	0.55
OSW6	7342.65	100 year	3209	3727.99	3729.62		3729.66	0.003501	1.56	2060.92	2473.11	0.3	0.83
OSW6	5914.35	25 year	1568	3724.28	3725.6	3725.16	3725.62	0.002013	0.99	1590.38	2500.62	0.22	0.64
OSW6	5914.35	100 year	3209	3724.28	3725.96		3725.99	0.001955	1.27	2525.92	2655.65	0.23	0.95
OSW6	3733.06	25 year	1568	3719	3719.82		3719.85	0.003616	1.39	1130.34	1652.88	0.3	0.68
OSW6	3733.06	100 year	3209	3719	3720.25		3720.29	0.003682	1.51	2124.5	2770.96	0.3	0.77
OSW6	1809.44	25 year	1568	3714	3715.29		3715.31	0.001661	1.04	1507.04	1892.4	0.21	0.80
OSW6	1809.44	100 year	3209	3714	3715.76		3715.78	0.001616	1.32	2422.04	2073.17	0.22	1.17
OSW6	303.63	25 year	1568	3710	3711.58	3710.9	3711.62	0.004002	1.66	946.2	1140.71	0.32	0.83
OSW6	303.63	100 year	3209	3710	3712.08	3711.31	3712.15	0.004003	2.01	1596.32	1440.3	0.34	1.11

OSW6 Average Reach Depth	25 year	0.72426	ft
	100 year	0.941842	ft





Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)		ft
OSW7	5102.96	25 year	553	3782.25	3783.46	3783.07	3783.49	0.006989	1.38	400.74	968.02	0.38	0.41
OSW7	5102.96	100 year	1169	3782.25	3783.71	3783.3	3783.76	0.007281	1.73	676.01	1200.38	0.41	0.56
OSW7	3997.44	25 year	553	3777.52	3778.2		3778.21	0.003452	0.83	662.77	2006.37	0.26	0.33
OSW7	3997.44	100 year	1169	3777.52	3778.39		3778.41	0.00344	1.11	1054.86	2080.67	0.27	0.51
OSW7	2352.85	25 year	553	3773	3773.63		3773.64	0.002278	0.7	794.8	2313.68	0.21	0.34
OSW7	2352.85	100 year	1169	3773	3773.84		3773.86	0.002272	0.89	1318.62	2663.03	0.22	0.50
OSW7	665.67	25 year	553	3768.46	3769.24	3768.96	3769.25	0.003001	0.82	674.74	1889.06	0.24	0.36
OSW7	665.67	100 year	1169	3768.46	3769.46	3769.11	3769.48	0.002998	1.06	1104.18	2104	0.26	0.52

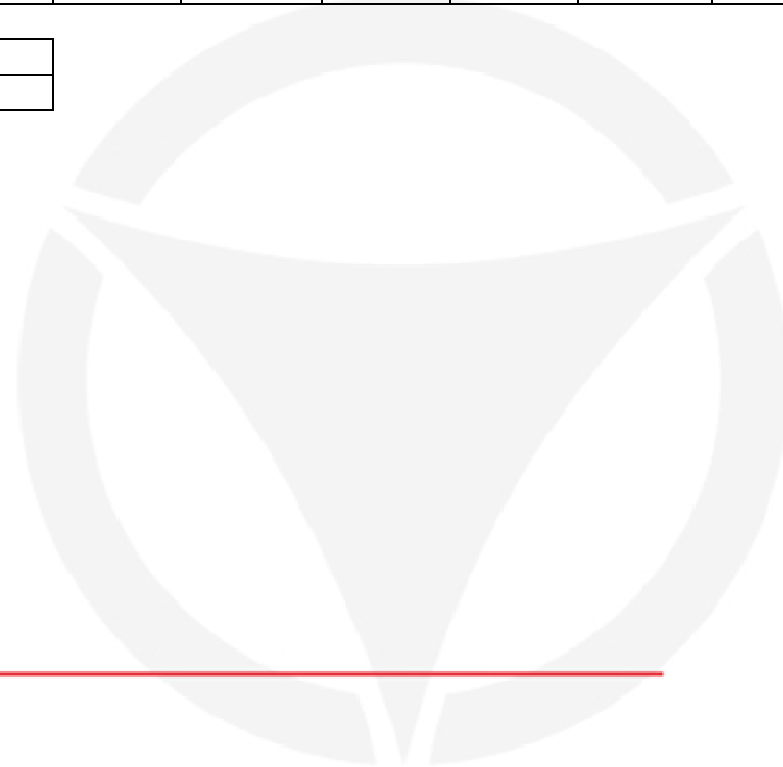
OSW 7 Average Reach Depth	25 year	0.36	ft
	100 year	0.52	ft





Reach	River Sta	Profile	Q Total	Min Ch	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	El (ft)									(ft)
OSW7a	12000	25 year	155	3748.98	3749.14	3749.14	3749.21	0.070999	2.04	75.91	579.72	0.99	0.13
OSW7a	12000	100 year	307	3748.98	3749.3		3749.35	0.024152	1.78	172.18	717.76	0.64	0.24
OSW7a	10000	25 year	155	3741.1	3742.11	3741.52	3742.11	0.001095	0.45	343.65	1105.99	0.14	0.31
OSW7a	10000	100 year	307	3741.1	3742.25	3741.67	3742.25	0.001352	0.62	497.3	1171.12	0.17	0.42
OSW7a	8000	25 year	155	3735	3735.35	3735.33	3735.38	0.054956	1.58	98.35	914.06	0.85	0.11
OSW7a	8000	100 year	307	3735	3735.46		3735.5	0.019298	1.4	218.94	1106.12	0.56	0.20
OSW7a	6000	25 year	155	3729	3729.35		3729.35	0.000965	0.41	374.04	1243.52	0.13	0.30
OSW7a	6000	100 year	307	3729	3729.48		3729.49	0.001164	0.57	536.3	1264.5	0.15	0.42
OSW7a	4000	25 year	155	3722.88	3723.11	3723.11	3723.16	0.069836	1.84	84.13	740.48	0.96	0.11
OSW7a	4000	100 year	307	3722.88	3723.23		3723.28	0.022878	1.72	178.97	759.13	0.62	0.24
OSW7a	2000	25 year	155	3714.48	3715.71		3715.72	0.00117	0.89	174.2	212.67	0.17	0.82
OSW7a	2000	100 year	307	3714.48	3716.22		3716.23	0.001363	0.95	324.68	405.71	0.19	0.80
OSW7a	643.51	25 year	155	3712.39	3713.3	3712.93	3713.32	0.003006	0.99	156.83	331.94	0.25	0.47
OSW7a	643.51	100 year	307	3712.39	3713.57	3713.1	3713.6	0.003001	1.19	257.08	409.23	0.27	0.63

OSW 7a Average Reach Depth	25 year	0.32	ft
	100 year	0.42	ft





Reach	River Sta	Profile	Q Total	Min Ch	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	El (ft)									ft
OSW7b	18000	25 year	402	3766	3767.18		3767.26	0.006533	2.27	176.85	192.01	0.42	0.92
OSW7b	18000	100 year	817	3766	3767.76		3767.87	0.005921	2.77	295.26	221.65	0.42	1.33
OSW7b	16000	25 year	402	3759.06	3760.3		3760.31	0.002146	0.91	442.33	824.55	0.22	0.54
OSW7b	16000	100 year	817	3759.06	3760.55		3760.57	0.002459	1.25	651.91	831.05	0.25	0.78
OSW7b	14000	25 year	402	3753.33	3754.08		3754.09	0.00492	0.81	494.47	2029.98	0.29	0.24
OSW7b	14000	100 year	817	3753.33	3754.23		3754.24	0.004227	1.03	797.04	2062.49	0.29	0.39
OSW7b	12000	25 year	402	3746.35	3747.29		3747.3	0.002479	0.82	490.81	1191.73	0.22	0.41
OSW7b	12000	100 year	817	3746.35	3747.5		3747.52	0.002732	1.07	766.49	1348.23	0.25	0.57
OSW7b	10000	25 year	402	3738.57	3739.42		3739.46	0.007095	1.69	238.33	430.9	0.4	0.55
OSW7b	10000	100 year	817	3738.57	3739.79		3739.85	0.005767	2	407.73	487.34	0.39	0.84
OSW7b	8000	25 year	402	3731.99	3732.72		3732.73	0.001958	0.91	439.95	758.76	0.21	0.58
OSW7b	8000	100 year	817	3731.99	3733.15		3733.16	0.002169	0.88	929.31	1834.32	0.22	0.51
OSW7b	6000	25 year	402	3727.78	3728.32		3728.33	0.002482	0.7	571.9	1748	0.22	0.33
OSW7b	6000	100 year	817	3727.78	3728.5		3728.52	0.002492	0.91	897.58	1867.7	0.23	0.48
OSW7b	4000	25 year	402	3722.47	3723.3		3723.31	0.002535	0.78	515.79	1371.99	0.22	0.38
OSW7b	4000	100 year	817	3722.47	3723.5		3723.52	0.002506	1.03	796.89	1393.07	0.24	0.57
OSW7b	2000	25 year	402	3716	3717.19		3717.21	0.003743	1.01	396.97	954.99	0.28	0.42
OSW7b	2000	100 year	817	3716	3717.43		3717.45	0.003751	1.26	649.92	1132.28	0.29	0.57
OSW7b	275.66	25 year	402	3710.73	3711.42	3711.13	3711.44	0.003001	0.95	422.76	947.09	0.25	0.45
OSW7b	275.66	100 year	817	3710.73	3711.67	3711.25	3711.69	0.003	1.23	664.76	1013.16	0.27	0.66

OSW 7a Average Reach Depth	25 year	0.48	ft
	100 year	0.67	ft



Reach	River Sta	Profile	Q Total	Min Ch	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Flow Area/Top Width
			(cfs)	El (ft)									(ft)
OSW8	19841.71	25 year	687	3790.06	3790.97		3791	0.004001	1.32	520.57	884.97	0.3	0.59
OSW8	19841.71	100 year	1403	3790.06	3791.44		3791.46	0.003575	1.29	1084.38	1745.41	0.29	0.62
OSW8	19000	25 year	687	3785.5	3788.05	3786.9	3788.06	0.003055	0.89	767.95	1910.61	0.25	0.40
OSW8	19000	100 year	1403	3785.5	3788.22	3787.77	3788.25	0.004111	1.23	1143.11	2210.91	0.3	0.52
OSW8	18000	25 year	687	3779.83	3780.17	3780.15	3780.25	0.048557	2.25	305.18	1514.21	0.88	0.20
OSW8	18000	100 year	1403	3779.83	3780.37		3780.45	0.01996	2.27	618.66	1558.49	0.63	0.40
OSW8	17000	25 year	687	3775.78	3776.56		3776.57	0.00123	0.67	1023.34	1979.52	0.16	0.52
OSW8	17000	100 year	1403	3775.78	3776.8		3776.81	0.001463	0.93	1505.4	2027.41	0.19	0.74
OSW8	16000	25 year	687	3772.85	3773.71		3773.75	0.012007	1.56	440.6	1329.74	0.48	0.33
OSW8	16000	100 year	1403	3772.85	3774		3774.04	0.007156	1.6	876.91	1727.24	0.4	0.51
OSW8	15000	25 year	687	3767.88	3770.21	3769.02	3770.21	0.001662	0.62	1104.91	3005.13	0.18	0.37
OSW8	15000	100 year	1403	3767.88	3770.36	3769.39	3770.38	0.00221	0.88	1593.9	3186.2	0.22	0.50
OSW8	14000	25 year	687	3765	3765.41	3765.39	3765.55	0.043253	3.05	225.11	648.79	0.91	0.35
OSW8	14000	100 year	1403	3765	3765.87		3765.96	0.012786	2.44	576.07	933.64	0.55	0.62
OSW8	13000	25 year	687	3761.37	3762.86	3762.04	3762.87	0.000859	0.74	929.93	1190.74	0.15	0.78
OSW8	13000	100 year	1403	3761.37	3763.21		3763.23	0.001149	1.02	1374.38	1347.54	0.18	1.02
OSW8	12000	25 year	687	3760	3760.16		3760.21	0.043967	1.84	373.98	2336.43	0.81	0.16
OSW8	12000	100 year	1403	3760	3760.34		3760.39	0.015241	1.78	790.21	2347.32	0.54	0.34
OSW8	11000	25 year	687	3755	3755.95		3755.97	0.001486	1.04	659.21	759.71	0.2	0.87
OSW8	11000	100 year	1403	3755	3756.49		3756.51	0.001726	1.2	1165.46	1210.64	0.22	0.96
OSW8	10000	25 year	687	3752.6	3753.53		3753.56	0.004582	1.29	532.37	1036.19	0.32	0.51
OSW8	10000	100 year	1403	3752.6	3753.85		3753.89	0.004489	1.55	902.29	1307.49	0.33	0.69
OSW8	9000	25 year	687	3748.9	3749.85		3749.87	0.003039	1.02	676.54	1386.5	0.26	0.49
OSW8	9000	100 year	1403	3748.9	3750.11		3750.14	0.00319	1.34	1045.54	1462.53	0.28	0.71
OSW8	8000	25 year	687	3743.7	3744.63		3744.67	0.010781	1.51	455.84	1335.46	0.45	0.34
OSW8	8000	100 year	1403	3743.7	3744.84		3744.89	0.010128	1.86	752.9	1530.86	0.47	0.49
OSW8	7000	25 year	687	3740	3741.21		3741.23	0.001672	0.92	745.35	1128.35	0.2	0.66
OSW8	7000	100 year	1403	3740	3741.63		3741.65	0.001574	1.11	1268.91	1397.52	0.2	0.91
OSW8	6000	25 year	687	3737.02	3738.56		3738.6	0.004676	1.72	399.97	514.73	0.34	0.78
OSW8	6000	100 year	1403	3737.02	3739		3739.05	0.005063	1.68	834.45	1177	0.35	0.71
OSW8	5000	25 year	687	3734.49	3735.35		3735.36	0.00237	0.87	791.28	1701.85	0.22	0.46



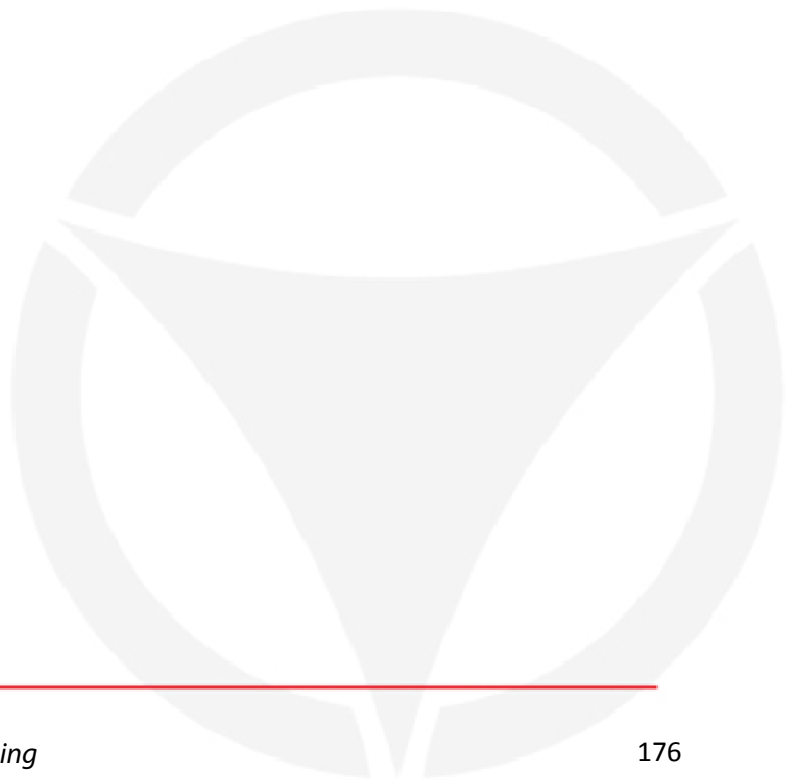
OSW8	5000	100 year	1403	3734.49	3735.59		3735.61	0.002472	1.16	1205.97	1726.16	0.25	0.70
OSW8	4000	25 year	687	3731.54	3732.24		3732.26	0.004222	1.27	542.52	1021.64	0.31	0.53
OSW8	4000	100 year	1403	3731.54	3732.57		3732.61	0.003712	1.54	909.42	1156.35	0.31	0.79
OSW8	3000	25 year	687	3727.94	3728.87		3728.89	0.00276	1.19	576.31	863.72	0.26	0.67
OSW8	3000	100 year	1403	3727.94	3729.21		3729.25	0.003066	1.59	883.3	931.31	0.29	0.95
OSW8	2000	25 year	687	3725.01	3725.68		3725.69	0.003734	1.04	657.89	1508.77	0.28	0.44
OSW8	2000	100 year	1403	3725.01	3725.93		3725.95	0.003533	1.35	1042.44	1567.41	0.29	0.67
OSW8	1000	25 year	687	3722.12	3722.9		3722.91	0.002167	0.87	789.65	1583.36	0.22	0.50
OSW8	1000	100 year	1403	3722.12	3723.16		3723.19	0.002218	1.14	1227.61	1663.56	0.23	0.74
OSW8	0	25 year	687	3719.5	3720.02	3719.77	3720.04	0.004	1.03	666.74	1642.75	0.29	0.41
OSW8	0	100 year	1403	3719.5	3720.24	3719.89	3720.27	0.004001	1.34	1044.67	1729.83	0.3	0.60

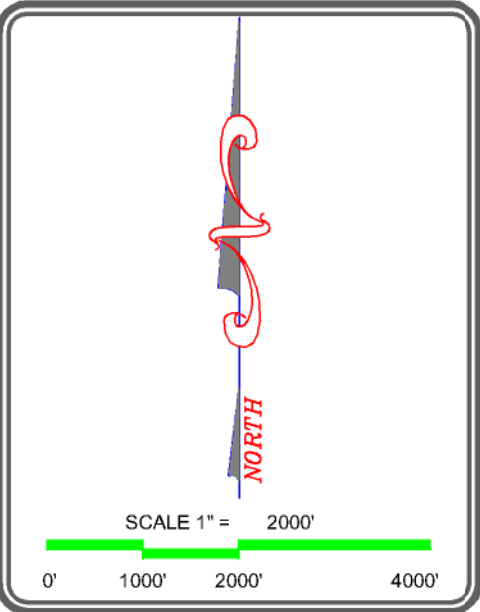
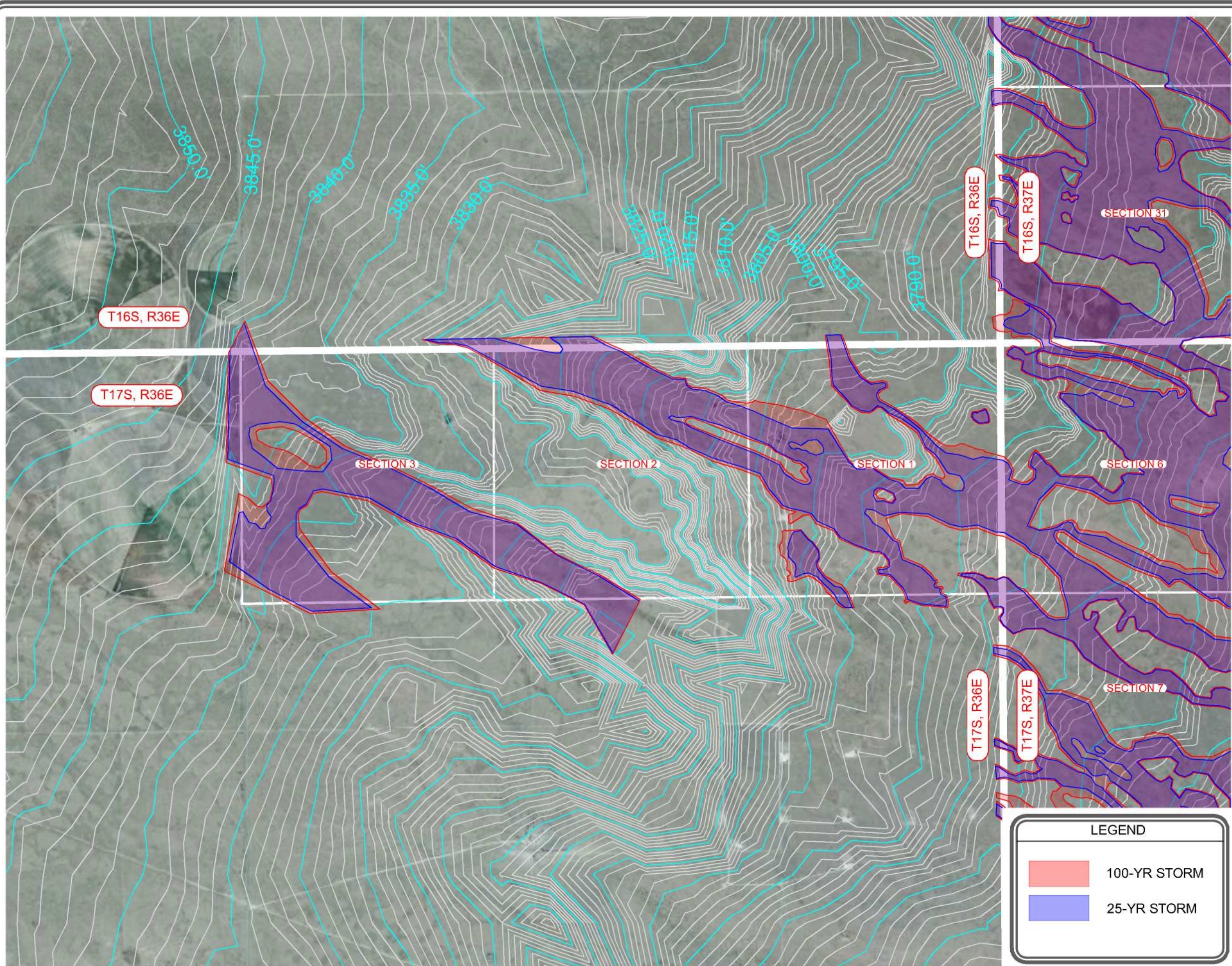
OSW 8 Average Reach Depth	25 year	0.492759	ft
	100 year	0.675057	ft





APPENDIX H – WETTED BOUNDARY MAPS







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 PROJECT DESIGNER: CSC, JMC
 DRAWN BY: JMC, MM

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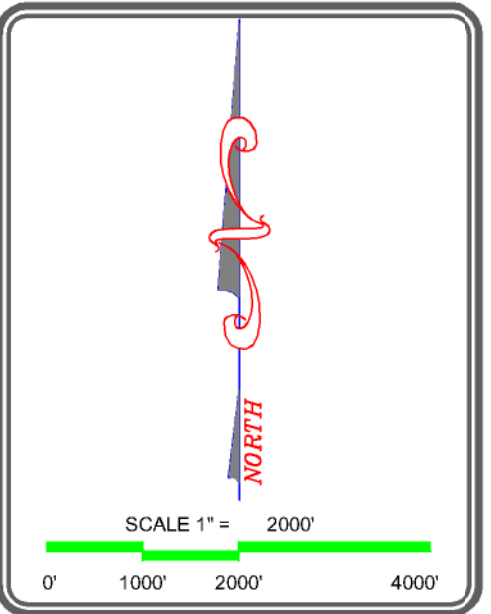
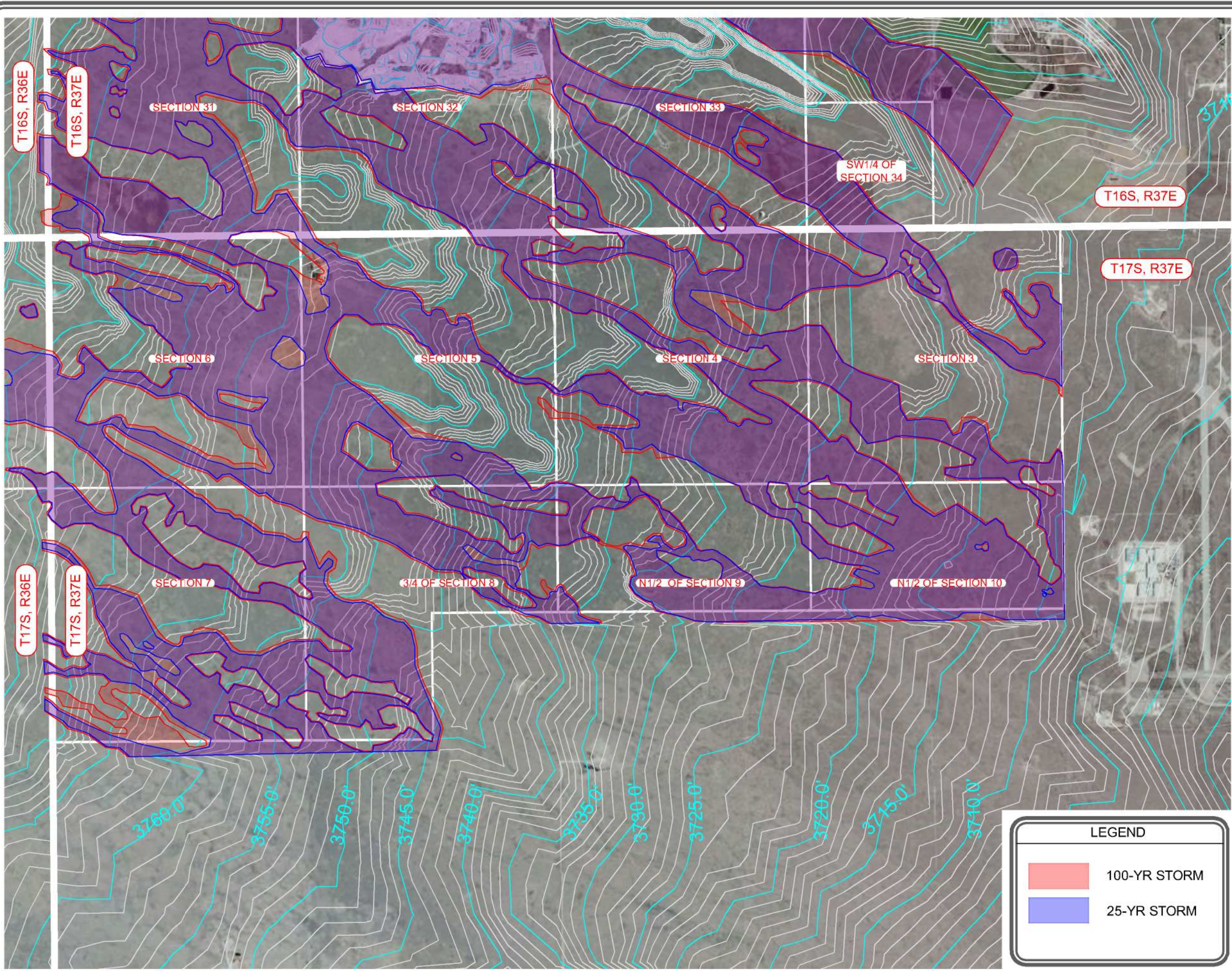
APPENDIX H
 25-YR STORM
 100-YR STORM
 WETTED BOUNDARY MAP
ENERGYPLEX PARK
 LEA COUNTY, NM

LEGEND	
	100-YR STORM
	25-YR STORM

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PROJECT ENGINEER: DPH
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No.	DATE	DESCRIPTION

APPENDIX H
 25-YR STORM
 100-YR STORM
 WETTED BOUNDARY MAP
ENERGYPLEX PARK
 LEA COUNTY, NM

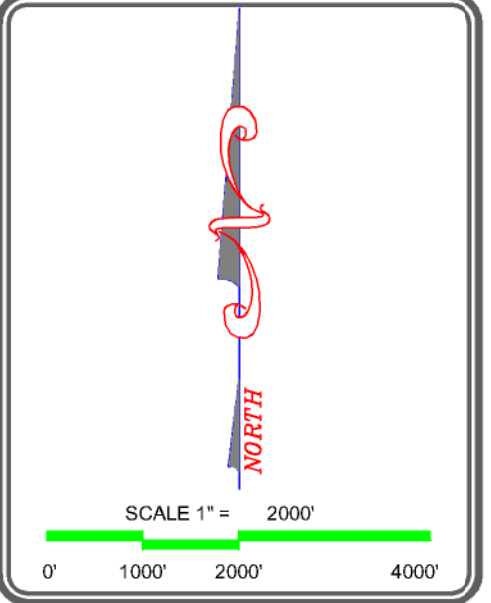
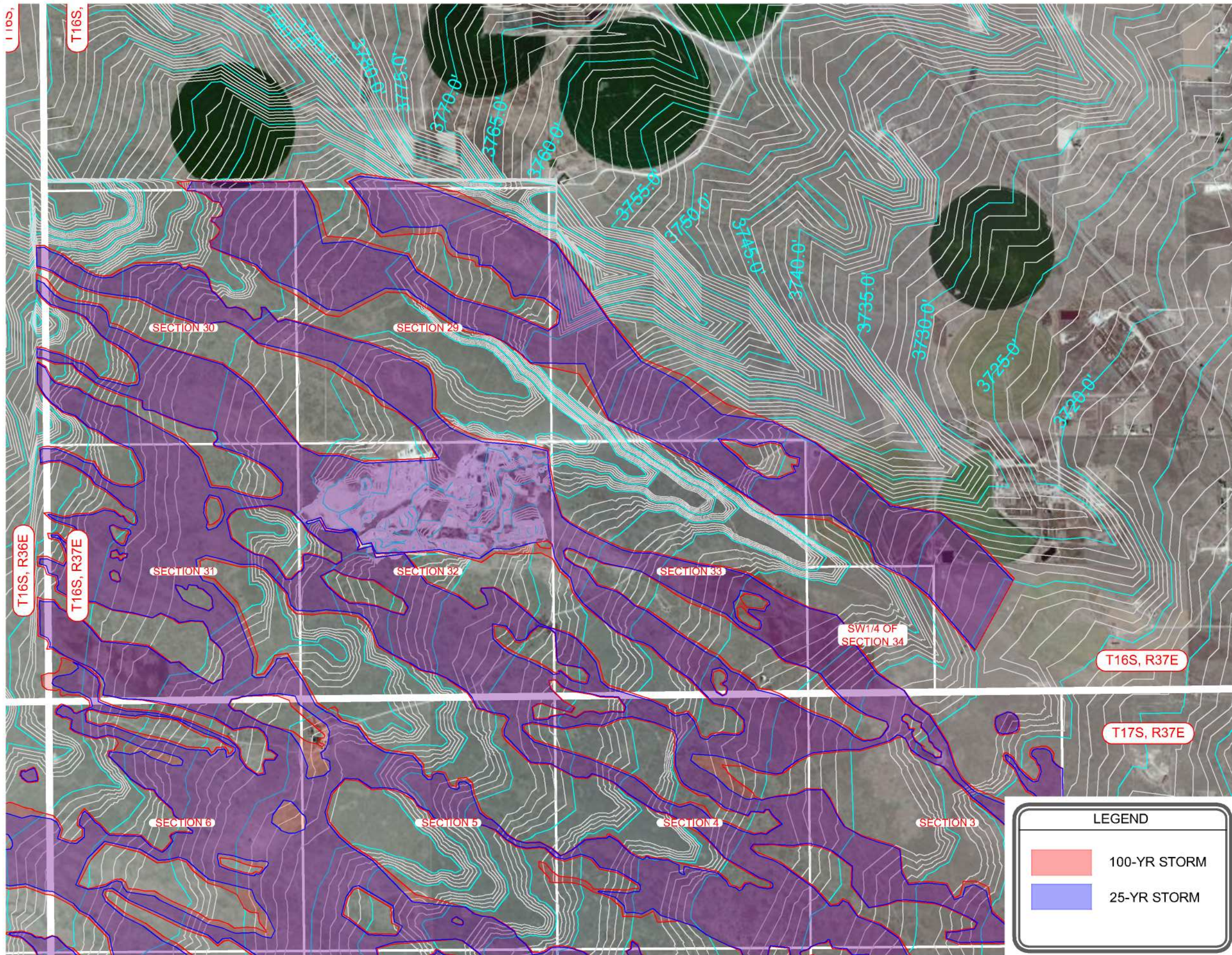
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100-YR STORM

25-YR STORM

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APPENDIX H
 25-YR STORM
 100-YR STORM
 WETTED BOUNDARY MAP
ENERGYPLEX PARK
 LEA COUNTY, NM

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100-YR STORM

25-YR STORM

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