NO-RISE REPORT FOR REMOVAL OF STRUCTURES ALONG CAMAS SLOUGH

IN-WATER AND OVERWATER REMOVALS PROJECT
CAMAS MILL, CAMAS, WASHINGTON

Prepared for:

GEORGIA-PACIFIC
CONSUMER OPERATIONS LLC

Camas, Washington

FEBRUARY 23, 2023

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February 23, 2023

ENGINEERING CERTIFICATION

NO-RISE REPORT FOR REMOVAL OF STRUCTURES ALONG CAMAS SLOUGH

IN-WATER AND OVERWATER REMOVALS PROJECT

CAMAS MILL, CAMAS, WASHINGTON
GEORGIA-PACIFIC CONSUMER OPERATIONS LLC

February 23, 2023

I certify that I am a duly qualified registered professional engineer licensed to practice in the State of Washington. The attached report supports the finding that the proposed demolition of piles and other structures and associated changes to ground surface along Camas Slough, a side channel of the Columbia River, as proposed by Georgia-Pacific Consumer Operations LLC (GP), if constructed in substantial accordance with the horizontal and vertical alignments shown on the design drawings dated November 2, 2022 July, prepared by Tetra Tech, Inc., will not increase the 100-year regulatory flood elevations on Camas Slough, and thus on the Washougal River or Columbia River. The Flood Insurance Study (FIS) for Clark County, Washington, by the Federal Emergency Management Agency (FEMA) maps Camas Slough as a detail-study area with regulatory floodway and base flood elevations; however, those were interpolations from the Columbia River main channel. Camas Slough was not studied in detail for the FIS. The FIS was dated January 19, 2018, with some maps dated September 5, 2012. This report dated January 30, 2023, supports this finding. In addition to this report, its attachments, and referenced documents, a hydraulic model and work map files were provided in support of these findings.

This certification was prepared exclusively for GP by WSP. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in WSP services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This No-Rise Certification is intended to be used by GP for this demolition project only, subject to the terms and conditions of its contract with WSP. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

While this report was prepared in accordance with standard engineering practice by qualified engineering professionals, GP should understand that this report evaluated a specific storm recurrence interval and assumes free-flowing hydraulic conditions. It is reasonable to assume that a storm event of greater magnitude or that changes in waterway conveyance capacity might cause higher stages than estimated for this assignment.

Engineering Certification by:

WSP USA Environment & Infrastructure Inc.

SETH L. JELEN
STATE OF WASHINGTON
31539
REGISTERED PROFESSIONAL ENGINEER
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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

BFE	Base Flood Elevation (100-year flood)
cfs	cubic feet per second
CRD	Columbia River Datum
DNR	Washington Department of Natural Resources
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map (part of FEMA FIS)
FIS	Flood Insurance Study (by FEMA)
GP	Georgia-Pacific Consumer Operations LLC
LA	lease area
NAVD88	North American Vertical Datum of 1988
NOAA	National Oceanic and Atmospheric Administration
SFHA	Special Flood Hazard Area
SR	State Route
USACE	U.S. Army Corps of Engineers
WS	water surface

1 INTRODUCTION

Georgia-Pacific Consumer Operations LLC (GP) plans to abate and demolish structures located in-water and/or overwater at the Camas Mill along the Columbia River and Camas Slough in the City of Camas and unincorporated Clark County, Washington. The demolition will result in small areas of net cut and fill within the Camas Slough, a side channel of the Columbia River. This no-rise report and certification documents that the project will meet the requirements of the City of Camas Code 16.57 E 1:

> *Development in Floodways. New Development Requires Certification by an Engineer. Encroachments, including new construction, substantial improvements, fill, and other development, are prohibited within designated floodways unless certified by a registered professional engineer. Such certification shall demonstrate through hydrologic and hydraulic analyses, performed in accordance with standard engineering practice that the proposed encroachment will not result in any increase in flood levels during the occurrence of the base flood discharge. ...*

The requirement for this study and certification was triggered because fill is being placed in areas inside the regulatory floodway. Other than these small areas of fill, the proposed project consists entirely of demolition and removal of existing man-made encroachments consisting of piles, piers, dolphins, and structures that would not require a study.

The finding presented herein is based on a hydrologic and hydraulic study of Camas Slough that compared existing to proposed conditions and found no rise in 100-year flood elevations. This study included preparation of a hydraulic model, which should be submitted to the City along with this report.

A detailed hydraulic model for existing conditions was prepared for the full length of Camas Slough using 69 cross-sections to model base flood elevations. Encroachment by fields of piles and by other structures were modeled as increases in channel roughness and as solid obstructions to flow, respectively. The Federal Emergency Management Agency (FEMA) profile for the Columbia River was used for the downstream and upstream base flood elevations (BFEs, commonly called 100-year flood elevations), and the flow in the slough was set so the upstream modeled elevation was an acceptable match to the FEMA profile.

The model of proposed conditions (following demolition) for Camas Slough removed these encroachments and updated the ground elevations of those cross-sections where cut or fill would occur. The model was otherwise unchanged, with the same flow and the same cross-section locations. Comparison of BFEs between the two models for existing conditions versus proposed conditions showed that BFEs would either drop or stay unchanged but not rise.

The existing conditions and proposed conditions models were revised to find that the no-rise finding also would apply to the Washougal River, which flows into the slough near its upstream end. Four upstream cross-sections on the slough near the State Route (SR) 14 bridge were replaced with three cross-sections on the Washougal River. The FEMA base flow for the Washougal River at its mouth was used, and the downstream flood elevation was set to the 10-year FEMA profile on the Columbia River. Comparison showed that BFEs on the Washougal River would also either drop or stay unchanged but not rise.

2 BACKGROUND

The following sections describe the study approach, project activity, and its context within regulatory flood mapping. **Appendix A** presents site plans for the proposed demolition in relation to key regulatory flood mapping information followed by proposed demolition plans from GP dated November 2, 2022.

2.1 REGULATORY FLOODPLAIN MAPPING

The area of proposed activity lies in the Special Flood Hazard Area (SFHA) and floodway on the north bank of the Columbia River including Camas Slough, which is treated as part of the Columbia River in the FEMA Flood

Insurance Study (FIS). This reach has been studied in detail by the FEMA as part of the FIS for Clark County, Washington, and Incorporated Areas dated June 19, 2018 (FEMA, 2018) and the accompanying Flood Insurance Rate Maps (FIRMs).

The proposed demolitions would be in an area that lies in FIRM Panels 529 (downstream of Lady Island), 533 (most of the island and Camas Slough), and 534 (the eastern portion of Lady Island and areas upstream) published by FEMA dated effective September 5, 2012 (panels 529 and 533), and January 19, 2018 (panel 534).

The area includes the north bank of the Columbia River and both banks of Camas Slough upstream of FEMA cross-section "AB" (BFE 34.2 feet relative to the North American Vertical Datum of 1988 [NAVD88]), downstream of section "AD" (34.9 feet NAVD88) and including section "AC" (34.6 feet NAVD88, for the Columbia River not Camas Slough).

All structures to be removed are in the City of Camas (FEMA community ID 530026) except for one dolphin that is located about 2,200 feet downstream of section "AB" and 65 feet downstream of the city-county boundary, and just inside the jurisdiction of unincorporated Clark County (community ID 530024). A separate certification of no-rise is being made to Clark County for this single dolphin.

The cross-section labels and BFEs are from the FEMA national flood hazard map layer (accessed July 2020) and the FEMA Flood Insurance Study report (two volumes, dated effective January 19, 2018).

Appendix B includes the following information from the FIS:

- FIRM panels 529, 533, and 534; the proposed activities begin at the city boundary near river mile 117.5 (measured at the profile baseline near the river centerline) and extend upstream to about river mile 120.4;
- Floodway Data Table (FIS Report Table 9) highlighting lettered cross-sections AB through AD, which include the reach of the proposed activities;
- Flood Profile 22P of the Columbia River from river mile 117.0 to 122.2, which encompasses the reach of the proposed activity;
- FEMA map cross-sections AB, AC, and AD on the Columbia River; and
- Table of flood flows (peak discharges) showing the base flood flow for the Washougal River at its mouth (FIS Table 6).

The site plans in **Appendix A** present the proposed demolition along with this same information from the FIS for reference, followed by demolition plans from GP dated November 2, 2022. Areas of net cut and net fill are also shown (**Appendix A, Figure 5**).

2.2 PROJECT DESCRIPTION

GP is planning to remove and/or demolish several structures associated with GP's prior operations at the Camas Mill in the City of Camas, Washington. The structures to be removed are located in-water and/or overwater on the Columbia River and Camas Slough and are located within the City of Camas or Clark County Shoreline Management Zones. The structures to be removed and/or demolished are no longer supporting GP operations.

The structures to be removed include approximately 3,000 piles and dolphins, one building-like industrial structure, five docks/piers including the Tug Dock, an aboveground storage tank and its pumps, and a conveyor housing. Where piles, dolphins, and structures are to be removed, the riverbank will not be changed, except at two locations:

- In the area of the PECO Dock, the bank will be graded back to a more gradual slope than currently existing.
- At the large concrete foundation of the former Berger Crane, the concrete will be removed to well below water surface, and the riverbank will be regraded to bury the remaining obstruction, resulting in net fill in the floodway.

The drawings in **Appendix A** show in detail the locations of the structures to be removed in relation to the SFHA, the floodway boundary, lettered FIS cross-sections AB and AC, and cross-section locations from the hydraulic model developed for this study. These are followed by demolition plans from GP dated November 2, 2022.

No development or fill will occur in the Columbia River, and almost no ground elevations will change in the channel and floodplain (SFHA) of Camas Slough, except small areas of net fill (and other areas of net cut) will occur within the floodway mapped for Camas Slough and result from the demolition. This fill triggers the requirement that this no-rise certification and hydrologic and hydraulic analysis be completed for Camas Slough.

The project footprint extends along approximately 3 miles of shoreline near the Camas Mill, including area along the shoreline within the Camas Mill site and at several other locations in Camas Slough.

Figure 1 shows a map of Camas Slough, including the FEMA SFHA, floodway, model cross-sections (described later), and major features of the demolition project.

The proposed project will require work below the ordinary high water (OHW) elevation. Some of the structures to be removed are located on state-owned land currently leased by GP through the Washington Department of Natural Resources (DNR).

2.3 STUDY APPROACH

This study involved creating and comparing two hydraulic models—one of existing, pre-project conditions and the other of proposed, post-project conditions. The no-rise finding resulted when the water surface elevations modeled for the proposed condition were the same or lower than the elevations modeled for the existing condition at each cross-section. WSP developed the hydraulic models of Camas Slough for this study, including existing bathymetry, encroachments, and obstructions. The new models were required because no previous detailed model for the slough was available.

2.3.1 PREVIOUSLY EXISTING MODELS

WSP identified two existing hydraulic models for the project area, but neither was suitable for this evaluation.

The existing FIS hydraulic model for the Columbia River does not explicitly model Camas Slough. Its floodway boundary was apparently estimated (for example based on base flood depth) but not modeled explicitly, and flood elevations were interpolated from the Columbia River between FIS cross-sections AB and AD. The FIRMs show that cross-section AC stops on Lady Island and does not include Camas Slough.

WSP obtained data on the regulatory hydraulic model of the Columbia River from the FEMA Map Library. However, data were only provided as scans of microfiche records that were nearly illegible. In addition, the regulatory model dates from the 1970s and is almost 50 years old.

A second model was obtained for the Columbia River-Willamette River system that was developed by the U.S. Army Corps of Engineers (USACE). That model dates from about 2010 and is considered the best available model for the Columbia River.

Neither model of the Columbia River could be used for this study of Camas Slough because the slough is not explicitly included in either model, and the slough could not be added because another side channel diverges from the Columbia River across from Lady Island. The “braided” geometry that would result from including both side channels cannot be modeled using normal one-dimension software from USACE (either HEC-RAS or the previous standard HEC-2 computer programs). Instead, Camas Slough was modeled separately and matched to the Columbia River profile at the upstream and downstream confluences.

2.3.2 OVERVIEW OF MODELING APPROACH

A detailed hydraulic model was prepared for the full length of Camas Slough to model BFEs for existing conditions. A second model of existing conditions was developed to check the no-rise condition on the Washougal River, because the river flows into the slough near its upstream end. Effects of the proposed demolition activities were evaluated by constructing a second set of models identical to the existing condition models but with features slated for demolition removed from the models and with proposed changes to bathymetry incorporated into the models. The difference in model output between the models of existing conditions versus the proposed conditions was used to assess the effects of the demolition on future flood conditions.

Version 6.3.1 of the HEC-RAS computer program (USACE, 2022) was used for hydraulic modeling. **Appendix C** summarizes output data for all model runs.

2.4 VERTICAL DATUM

All elevations in this study are measured in feet above the North American Vertical Datum of 1988 (NAVD88), consistent with published FEMA elevations. Values expressed above NAVD88 are 6.95 feet greater than those above the USACE's Columbia River Datum (CRD) in this vicinity, which are used for the proposed design drawings. For example, an elevation of 20 feet CRD on the proposed design drawings corresponds to 26.95 feet NAVD88 (SWLS, 2020).

Note that the CRD is not "flat" relative to NAVD88 but increases upstream on the Columbia River, approximately following the low-water profile of the river.

3 EXISTING BASE FLOOD ELEVATION ANALYSIS

A detailed hydraulic model was prepared for the full length of Camas Slough to model BFEs for existing conditions. Version 6.3.1 of the HEC-RAS computer program (USACE, 2022) was used for hydraulic modeling.

The model represented the slough using 69 cross-sections (plus 2 internal cross-sections at each bridge used for constructing their input). The locations of these cross-sections are shown on **Figure 1** along with the FEMA floodplain (red hatching) and floodway (thick red line), lease areas (labeled "LA-number"), structures to be demolished, and areas of proposed regrading that would result in net cut or fill. **Figure 2** shows a schematic diagram of the cross-section alignments in the hydraulic model. **Appendix D** presents the model output for the existing conditions model.

The existing model was built using best available ground and bathymetric elevations. The default source was the Lower Columbia River Digital Terrain Model (USACE, 2010) that combined LiDAR elevations above water with bathymetric surveys from the National Oceanic and Atmospheric Administration (NOAA) and dredge surveys from the USACE. The data were supplemented by bathymetry and survey points collected for the design.

Channel and floodplain hydraulic roughness was modeled using Manning's *n*-values. The channel was modeled with a uniform *n*-value of 0.025. Floodplain *n*-values varied by land cover type, including 0.040 for grass and 0.120 for forest or dense brush.

The existing conditions model included the following features:

- Two bridges are present where SR14 crosses the slough—the West Bridge (oriented north-south, state file number SR14/25) and the East Bridge (oriented east-west, number SR14/27N-S). Only the bridge piers and highway embankments can affect hydraulics; the bridge deck structures cannot affect flood elevations because they are many feet above the base flood. The model input includes the structure and the structure obstruction. Cross-sections of the bridges are shown on **Figure 3** (East Bridge; model ID 12168 [feet above cross-section AB]) and **Figure 4** (West Bridge; model ID 6428).

- Areas with dense numbers of piles (totaling about 3,000 piles) were modeled as increased channel roughness (Manning *n*-value) of 0.055 versus the normal value of 0.025. This value is conservatively low to underestimate the benefit provided by demolition and removal of these piles. **Figure 5** shows an example at cross-section 8982, which includes two such areas: LA-19 on the left (south) and LA-17 on the right (north) portion of the channel. These areas affect multiple cross-sections, as shown in the plots in **Appendix D**. Other areas modeled with higher *n*-values include LA-3 and LA-12, downstream of the west bridge.
- Concrete or steel supports for the Berger Crane foundation or the piers east of the PECO Dock were modeled as part of the areas with many piles and higher *n*-values, as illustrated on **Figure 5**.
- Buildings on the mill site, including the PECO Dock, were modeled as obstructions. **Figure 6** shows an example in cross-section 9198. Many other cross-sections have building obstructions.
- Dolphins (clusters of piles) were modeled as 6-foot-diameter obstructions. **Figure 7** shows an example for LA-14 in cross-section 7220. Many other cross-sections have dolphins.
- Dense accumulation of floating wood, including a wooden walkway, were modeled as a floating obstruction in three downstream cross-sections. **Figure 9** shows an example for cross-section 1589. Sections 1265 and 975 have similar floating obstructions. The elevations of the structures are fixed in the model; they do not actually "float." (Their elevations must be changed manually to model other flood elevations.)

The model was forced to match the FEMA regulatory flood profile for the Columbia River. Its downstream flood elevation was set to the 39.2-foot BFE, which was interpolated at the mouth of the slough 552 feet upstream of FEMA cross-section AB. The upstream BFE was set to 39.7 feet, interpolated to where the slough diverges 4,121 feet downstream of cross-section AD.

FEMA had not defined flows for Camas Slough, so this study "solved" for a base flow by modeling a range of flows to find that 35,000 cubic feet per second (cfs) matched the FEMA BFE profile at the upstream end of the slough model, 39.7 feet. The modeled elevation was slightly less than the FEMA profile elevation to allow for expected loss from the bifurcation and sudden change in flow direction from west in the river to north into the slough. **Figure 9** shows the water surface profiles for a range of flows and highlights the base flow of 35,000 cfs identified by this study.

Appendix D provides the following model outputs for the hydraulic model developed for existing conditions on the Camas Slough:

- Schematic layout of hydraulic model cross-sections;
- Profile plots of the flood profile for existing and proposed conditions; and
- Plots of model outputs for individual cross-sections.

A second model of existing conditions was developed to check the no-rise condition on the Washougal River, because the river flows into the slough near its upstream end. Four upstream cross-sections on the slough near the SR14 bridge were replaced with three cross-sections on the Washougal River. **Figure 1** shows the locations of the cross-sections added for the Washougal River.

The watershed areas for the Columbia River and Washougal River are very different, so a concurrent base flood on both rivers would be inappropriate. Instead, the FEMA base (100-year) flow of 56,672 cfs for the Washougal River at its mouth was used. The downstream flood elevation was set to a lower elevation corresponding to the 10-year FEMA profile on the Columbia River of 27.9 feet. The downstream elevation was lower, so the modeled obstruction was also lowered in the three affected downstream cross-sections. **Appendix B** provides additional FIS data used for this model.

Appendix C summarizes output data for all model runs. **Appendix E** shows the following outputs for the hydraulic model developed for the Washougal River and downstream Camas Slough under existing conditions:

- Schematic layout of hydraulic model cross-sections (including the three sections added for the Washougal River);

- Plots of the flood profile for existing and proposed conditions; and
- Plots of model outputs for individual cross-sections.

4 PROPOSED FLOOD ELEVATION ANALYSIS

The model of proposed conditions in Camas Slough following demolition was constructed by modifying the existing-condition model to remove features that would be demolished. The model was otherwise identical to the existing model described above, including locations of and distances between cross-sections, downstream starting water surface elevation, flow, bridges, and hydraulic surface roughness (Manning *n*-values).

The proposed conditions model included the following changes:

- Removed buildings: These obstructions were removed from affected cross-sections.
- Areas with removed dense numbers of piles: The greater roughness value (Manning *n*-value) of 0.055 was restored to 0.025 for affected cross-sections to match the rest of the channel.
- Removed dolphins (clusters of piles): The obstructions were removed from affected cross-sections.
- Removed dense accumulation of floating wood downstream: The horizontal obstruction used to model floating wood was removed from cross-sections 1589, 1265, and 975.
- Changes to grade (cut and fill) near the PECO dock and Berger Crane foundation demolition areas: Ground and bathymetric elevations were changed in 13 cross-sections. **Appendix F** presents plots comparing existing to proposed cross-sections for these cross-sections. **Figure 10** shows an example for cross-section 9099.

Appendix C summarizes output data for all model runs.

Appendix F presents the following model outputs for the proposed-condition hydraulic model developed for Camas Slough:

- Plots comparing 13 cross-sections with cut or fill; and
- Plots of all cross-sections (including those unchanged from the existing model).

The cross-section layout and profiles in **Appendix D** show the existing-condition data.

A second proposed model was developed to check the no-rise condition on the Washougal River. This model was prepared like the existing-conditions model that included the river and was described above. The same four upstream cross-sections were replaced with the same three cross-sections on the lower Washougal River. Those cross-sections are the same for the existing and proposed conditions. The same flow (56,672 cfs) and downstream starting water surface elevation (27.9 feet NAVD88) were used. No change occurred for the three downstream cross-sections with the horizontal obstruction because it had been removed for the proposed-condition model.

Appendix C summarizes output data for all model runs. No separate appendix is provided for the Washougal River proposed-conditions scenario because the cross-section layout is in **Appendix E** and the cross-sections for this model are the same (the upstream three cross-sections are the same for existing and proposed models) or **Appendix F** (proposed cross-sections on Camas Slough downstream of the east bridge).

5 CONCLUSION AND FINDING OF NO-RISE

Based on the detailed analysis described above, the proposed demolition of structures associated with prior operations that are located in-water and/or overwater on Camas Slough meet hydraulic performance standards of no-rise set by the City of Camas.

The models of existing versus proposed conditions were compared to find that no rise in base flood elevations would result on Camas Slough or the studied reach of the Washougal River. The lack of any rise on the slough or the lower Washougal River also meant that no rise would be physically possible upstream on the Columbia River or the Washougal River.

Table 1 summarizes the flood elevations modeled for existing and proposed conditions in Camas Slough. The results show that no increase in water surface elevation occurs. In the table, River Station (RS) is the model cross-section identifier and corresponds to feet upstream of FEMA cross-section AB; "WS" is the water surface elevation in feet above NAVD88, and "Rise" is the proposed WS minus existing (base) WS.

Table 2 summarizes similar information for the models of the Washougal River and downstream Camas Slough and shows that no increase in water surface elevation occurs. In the table, the three upstream cross-sections with (*) are the new sections added on the Washougal River.

Hydraulic energy grades were also compared for both models. These results are summarized in **Appendix C** for both the Camas Slough and Washougal River models.

Table 1. No-Rise Analysis for Camas Slough Model

River Station	Bottom Elev (ft)	Base WS (ft) (Plan P01)	Proposed WS (ft) (Plan P02)	Rise (ft)
13120	6.27	34.69	34.58	-0.11
12625	3.58	34.66	34.55	-0.11
12222	-4.99	34.37	34.25	-0.12
12168		East Bridge (SR-14/27N-S)		
11974	-0.22	34.25	34.22	-0.03
11507	-1.19	34.36	34.33	-0.03
11240	6.94	34.35	34.33	-0.02
11204	-2.00	34.35	34.32	-0.03
11153	0.49	34.35	34.32	-0.03
11078	0.07	34.35	34.32	-0.03
10998	0.61	34.34	34.32	-0.02
10651	-1.34	34.34	34.31	-0.03
10312	0.67	34.33	34.30	-0.03
10251	-2.15	34.33	34.30	-0.03
10231	-0.94	34.33	34.30	-0.03
10201	-1.29	34.32	34.30	-0.02
10119	-2.39	34.32	34.30	-0.02
9857	-3.94	34.32	34.29	-0.03
9798	-7.83	34.32	34.29	-0.03
9760	-7.17	34.32	34.29	-0.03
9716	-6.84	34.32	34.30	-0.02
9622	-8.14	34.32	34.30	-0.02
9494	-9.49	34.31	34.30	-0.01
9319	-13.13	34.31	34.30	-0.01
9198	-14.95	34.31	34.29	-0.02
9099	-12.43	34.30	34.28	-0.02
8982	-10.92	34.28	34.27	-0.01
8876	-7.24	34.29	34.28	-0.01
8708	-6.84	34.29	34.28	-0.01
8557	-7.77	34.29	34.28	-0.01
8486	-8.48	34.29	34.28	-0.01
8428	-9.02	34.29	34.27	-0.02
8363	-9.05	34.28	34.27	-0.01
8279	-8.81	34.28	34.27	-0.01
8060	-10.14	34.27	34.26	-0.01
7881	-12.00	34.26	34.25	-0.01
7804	-12.29	34.26	34.25	-0.01
7728	-12.48	34.25	34.25	0
7637	-14.15	34.25	34.25	0
7570	-15.32	34.25	34.25	0
7281	-22.16	34.24	34.23	-0.01
7220	-22.28	34.24	34.23	-0.01
7151	-21.65	34.24	34.23	-0.01
6864	-18.39	34.25	34.24	-0.01
6440	-15.13	34.24	34.24	0
6428		West Bridge (SR-14/25)		
6343	-14.63	34.24	34.23	-0.01
6148	-14.90	34.23	34.23	0
5580	-16.11	34.23	34.23	0
5008	-19.62	34.22	34.22	0
4887	-19.87	34.22	34.22	0
4834	-19.86	34.22	34.22	0
4784	-20.06	34.22	34.22	0
4710	-19.46	34.22	34.22	0
4632	-19.40	34.22	34.22	0
4580	-19.08	34.22	34.22	0
4017	-21.17	34.22	34.22	0
3962	-21.47	34.22	34.22	0
3890	-21.09	34.22	34.22	0
3467	-18.81	34.22	34.22	0
2856	-13.11	34.22	34.22	0
2287	-16.77	34.22	34.22	0
1911	-18.58	34.22	34.22	0
1782	-29.48	34.22	34.22	0
1670	-40.87	34.23	34.22	-0.01
1589	1.75	34.22	34.22	0
1265	-10.40	34.22	34.22	0
975	0.89	34.22	34.22	0
689	-14.95	34.20	34.20	0
612	-20.24	34.19	34.19	0
552	-24.96	34.20	34.20	0

Table 2. No-Rise Analysis for Washougal River-Camas Slough Model

River Station	Bottom Elev (ft)	Base WS (ft) (Plan P11)	Proposed WS (ft) (Plan P12)	Rise (ft)
13159 (*)	9.39	28.68	28.56	-0.12
12653 (*)	8.61	28.55	28.43	-0.12
12111 (*)	5.98	28.55	28.43	-0.12
11507	-1.19	28.61	28.49	-0.12
11240	6.94	28.57	28.45	-0.12
11204	-2.00	28.56	28.44	-0.12
11153	0.49	28.56	28.44	-0.12
11078	0.07	28.56	28.44	-0.12
10998	0.61	28.54	28.42	-0.12
10651	-1.34	28.52	28.4	-0.12
10312	0.67	28.47	28.35	-0.12
10251	-2.15	28.47	28.36	-0.11
10231	-0.94	28.47	28.35	-0.12
10201	-1.29	28.45	28.34	-0.11
10119	-2.39	28.44	28.32	-0.12
9857	-3.94	28.41	28.3	-0.11
9798	-7.83	28.42	28.3	-0.12
9760	-7.17	28.41	28.3	-0.11
9716	-6.84	28.42	28.31	-0.11
9622	-8.14	28.45	28.34	-0.11
9494	-9.49	28.41	28.33	-0.08
9319	-13.13	28.41	28.33	-0.08
9198	-14.95	28.38	28.31	-0.07
9099	-12.43	28.35	28.28	-0.07
8982	-10.92	28.27	28.22	-0.05
8876	-7.24	28.29	28.25	-0.04
8708	-6.84	28.3	28.26	-0.04
8557	-7.77	28.29	28.25	-0.04
8486	-8.48	28.28	28.24	-0.04
8428	-9.02	28.27	28.22	-0.05
8363	-9.05	28.27	28.22	-0.05
8279	-8.81	28.26	28.22	-0.04
8060	-10.14	28.21	28.18	-0.03
7881	-12.00	28.15	28.12	-0.03
7804	-12.29	28.15	28.13	-0.02
7728	-12.48	28.13	28.1	-0.03
7637	-14.15	28.13	28.11	-0.02
7570	-15.32	28.14	28.11	-0.03
7281	-22.16	28.07	28.05	-0.02
7220	-22.28	28.08	28.05	-0.03
7151	-21.65	28.09	28.06	-0.03
6864	-18.39	28.11	28.08	-0.03
6440	-15.13	28.1	28.07	-0.03
6428		**West Bridge (SR-14/25)**		
6343	-14.63	28.08	28.06	-0.02
6148	-14.90	28.06	28.04	-0.02
5580	-16.11	28.04	28.03	-0.01
5008	-19.62	28.01	28	-0.01
4887	-19.87	28.01	28	-0.01
4834	-19.86	28.01	28	-0.01
4784	-20.06	28.01	28	-0.01
4710	-19.46	28.01	28	-0.01
4632	-19.40	28.01	28.01	0
4580	-19.08	28	28	0
4017	-21.17	28	27.99	-0.01
3962	-21.47	27.99	27.99	0
3890	-21.09	27.99	27.99	0
3467	-18.81	27.99	27.98	-0.01
2856	-13.11	27.99	27.99	0
2287	-16.77	27.99	27.99	0
1911	-18.58	27.99	27.98	-0.01
1782	-29.48	27.99	27.98	-0.01
1670	-40.87	28	28	0
1589	1.75	28	27.99	-0.01
1265	-10.40	27.98	27.98	0
975	0.89	27.97	27.97	0
689	-14.95	27.89	27.89	0
612	-20.24	27.87	27.87	0
552	-24.96	27.9	27.9	0

6 LIMITATIONS

This report was prepared exclusively for Georgia-Pacific Consumer Operations LLC by WSP. The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in WSP's services and is based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This No-Rise Certification is intended to be used by GP for this demolition project only, subject to the terms and conditions of its contract with WSP. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

While this report was prepared in accordance with standard engineering practice by qualified engineering professionals, GP should understand that this report evaluated a specific storm recurrence interval and assumes free-flowing hydraulic conditions. It is reasonable to assume that a storm event of greater magnitude or changes in waterway conveyance capacity might cause higher stages than estimated for this assignment.

The report was prepared by WSP at the instruction of, and for use by, our client named on the front of the report. It does not in any way constitute advice to any third party who is able to access it by any means. WSP excludes to the fullest extent lawfully permitted all liability whatsoever for any loss or damage howsoever arising from reliance on the contents of this report. We do not however exclude our liability (if any) for personal injury or death resulting from our negligence, for fraud, or any other matter in relation to which we cannot legally exclude liability.

7 REFERENCES

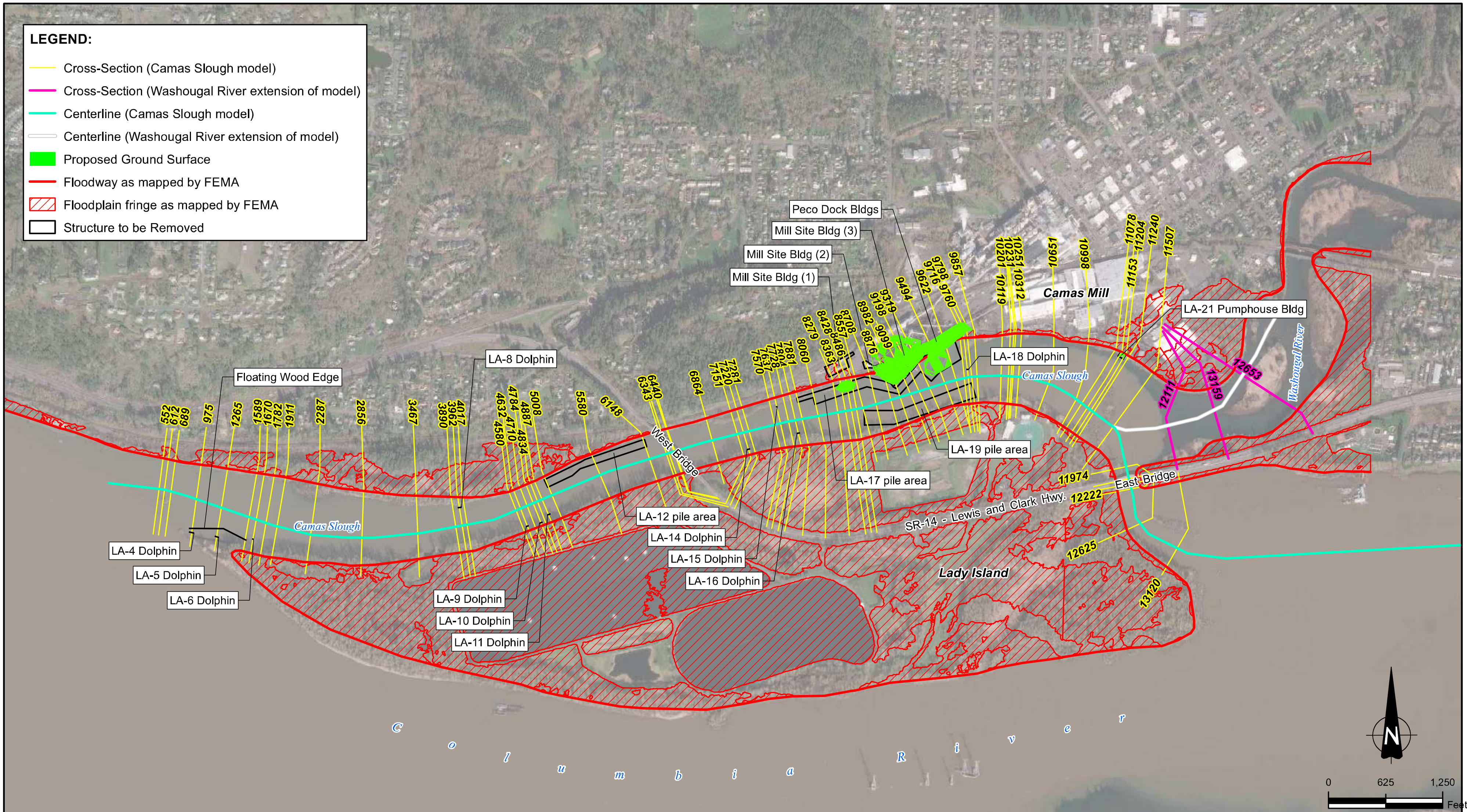
Federal Emergency Management Agency (FEMA), 2018, Flood Insurance Study, Clark County, Washington, and Incorporated Areas, June 19.

SWLS, 2020. Draft Memorandum: Vertical and Hydraulic Definitions, Statewide Land Surveying, June 10.

U.S. Army Corps of Engineers (USACE), 2010, Lower Columbia River Digital Elevation Model. Downloaded from: https://www.estuarypartnership.org/lower-columbia-digital-elevation-model-2010. U.S. Army Corps of Engineers Portland District. Accessed August 2020.

———, 2022, HEC-RAS River Analysis System Version 6.3.1 Computer Program. U.S. Army Corps of Engineers (USACE) Hydraulic Engineering Center, September.

FIGURES



GEORGIA-PACIFIC
CONSUMER OPERATIONS, LLC

WSP USA
Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

wsp

NO RISE REPORT

STUDY AREA MAP

DATE	JANUARY 2023
SCALE	1 " = 1,000 '
PROJECT NO.	7650191188
FIGURE	1

DRAWN BY: SD CHECKED BY: KD

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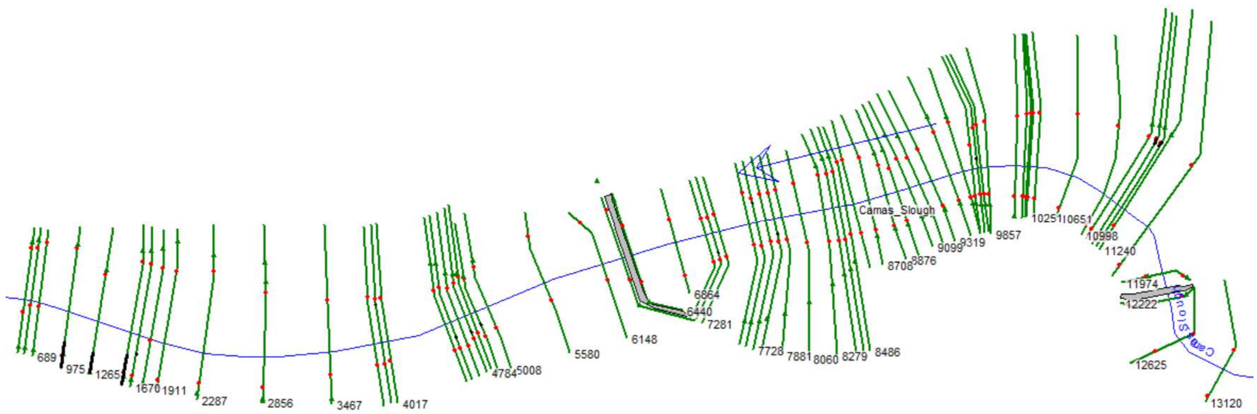


Figure 2. Schematic of Hydraulic Model Cross-Sections

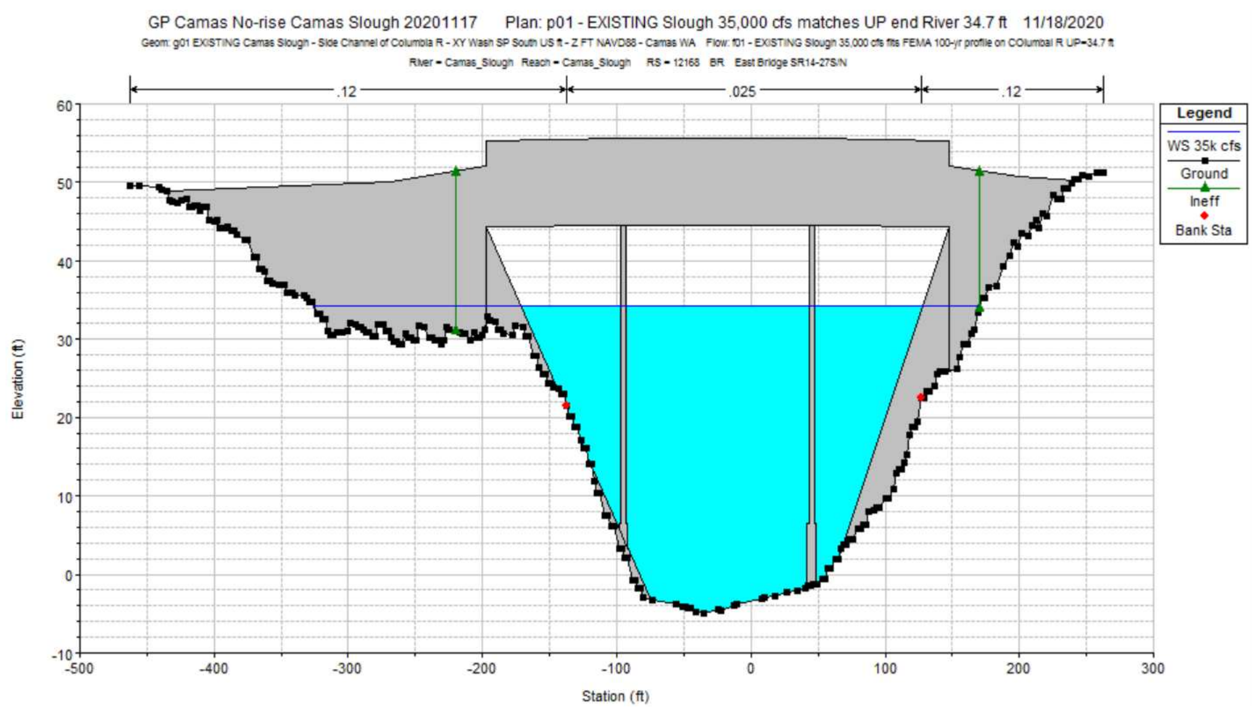


Figure 3. Model Cross-Section of East Bridge: SR 14/27 N-S (ID 12168)

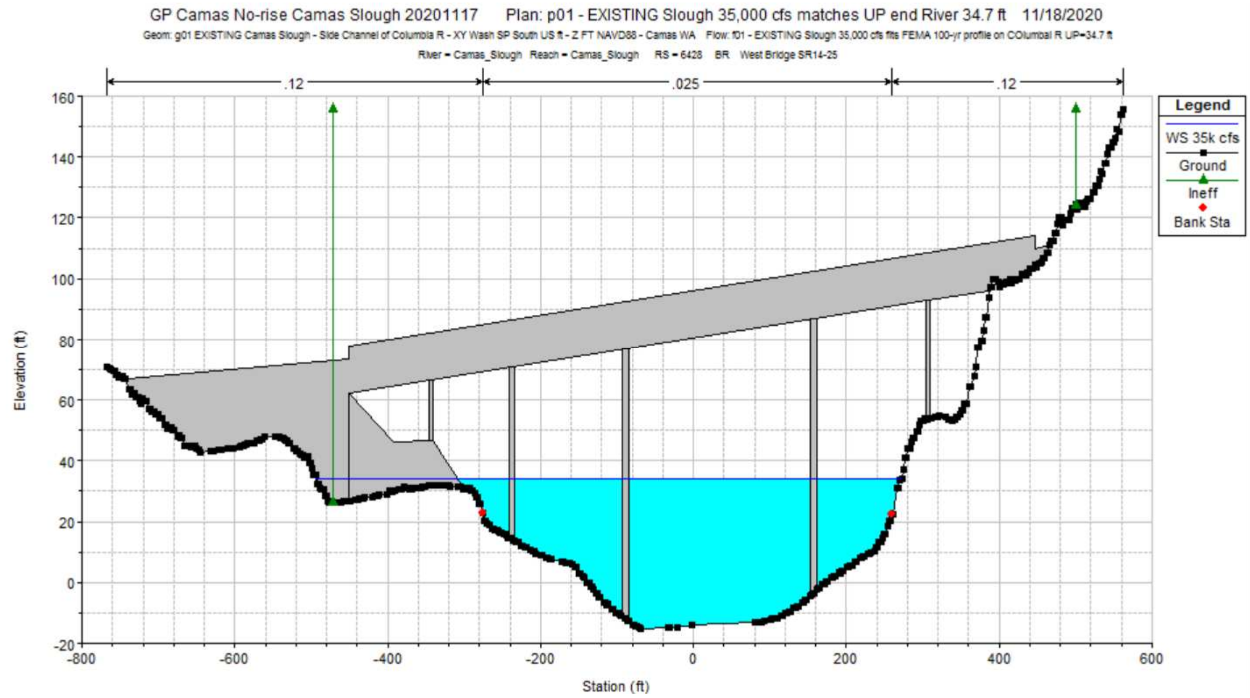


Figure 4. Model Cross-Section of West Bridge: SR 14/25 (ID 6428)

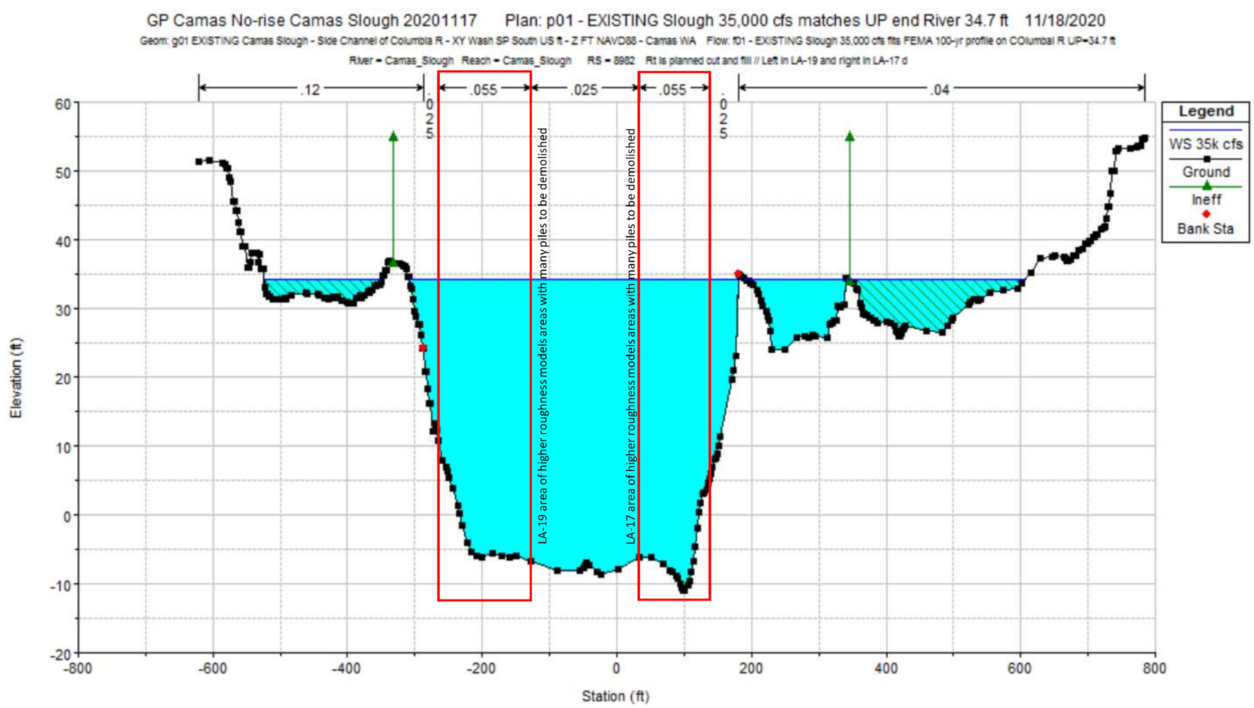


Figure 5. Model Cross-Section with Pile Areas (ID 8982)

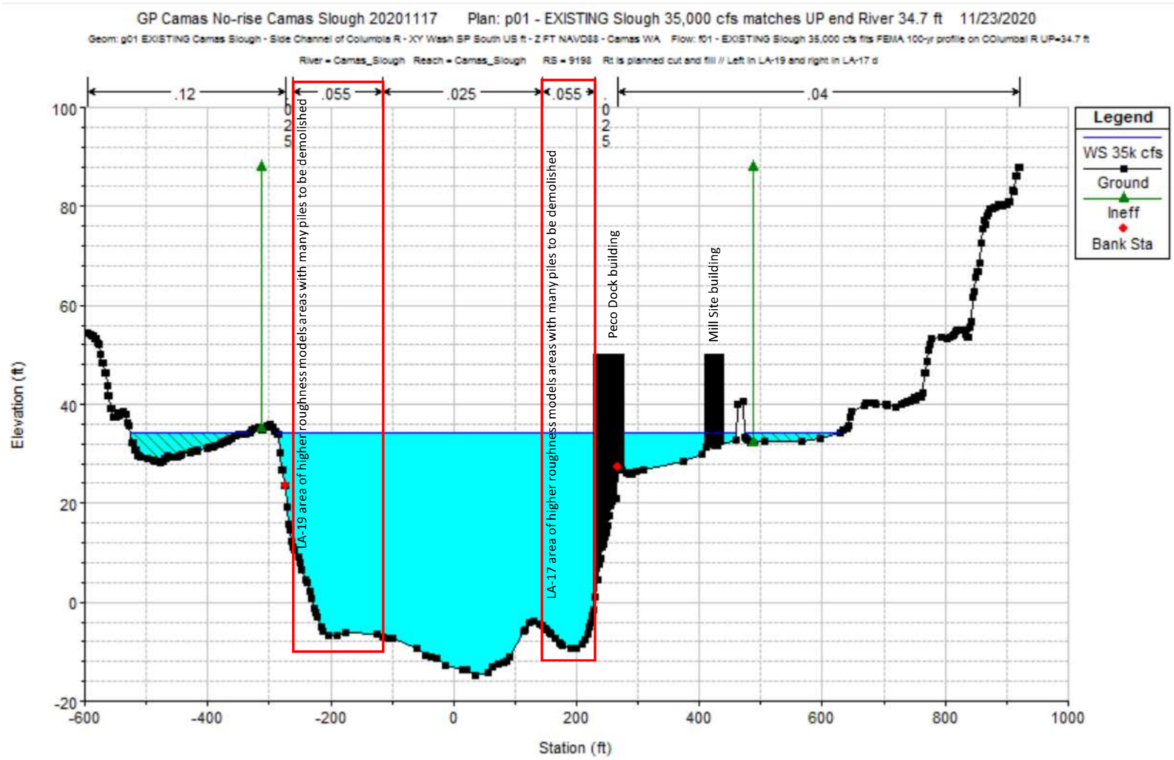


Figure 6. Model Cross-Section with PECO dock and mill site buildings (ID 9198)

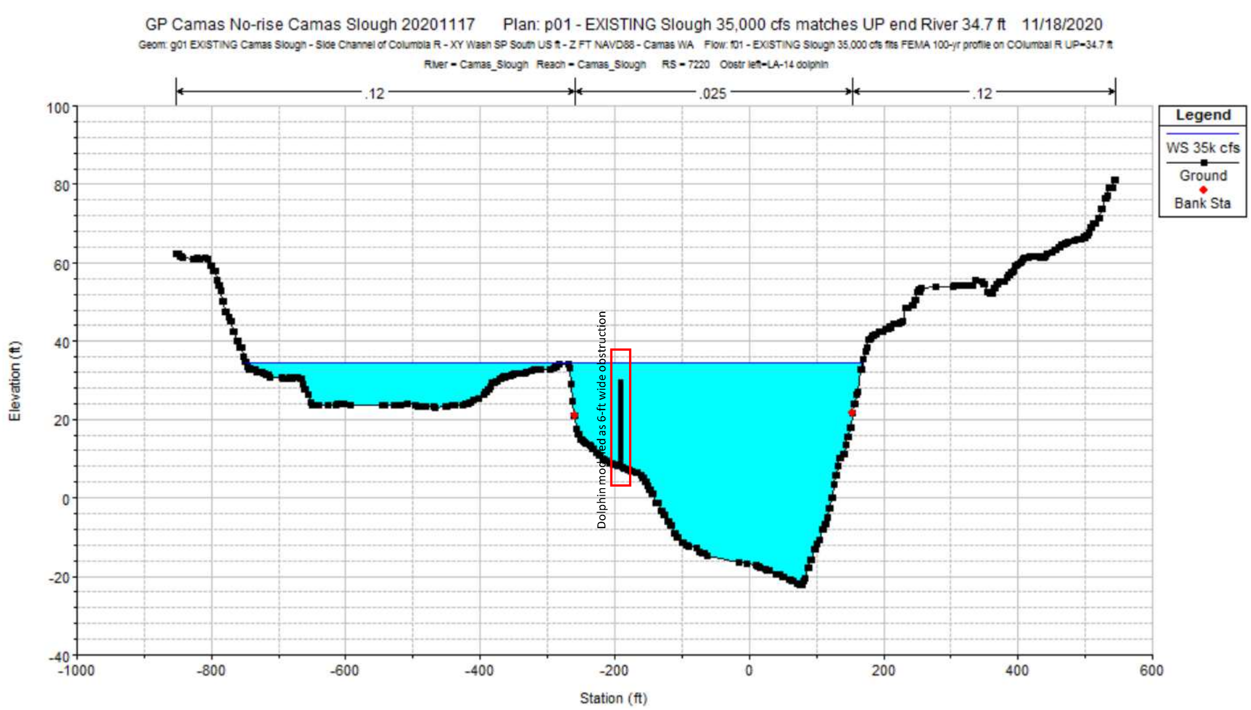


Figure 7. Model Cross-Section with Dolphin (ID 7220)

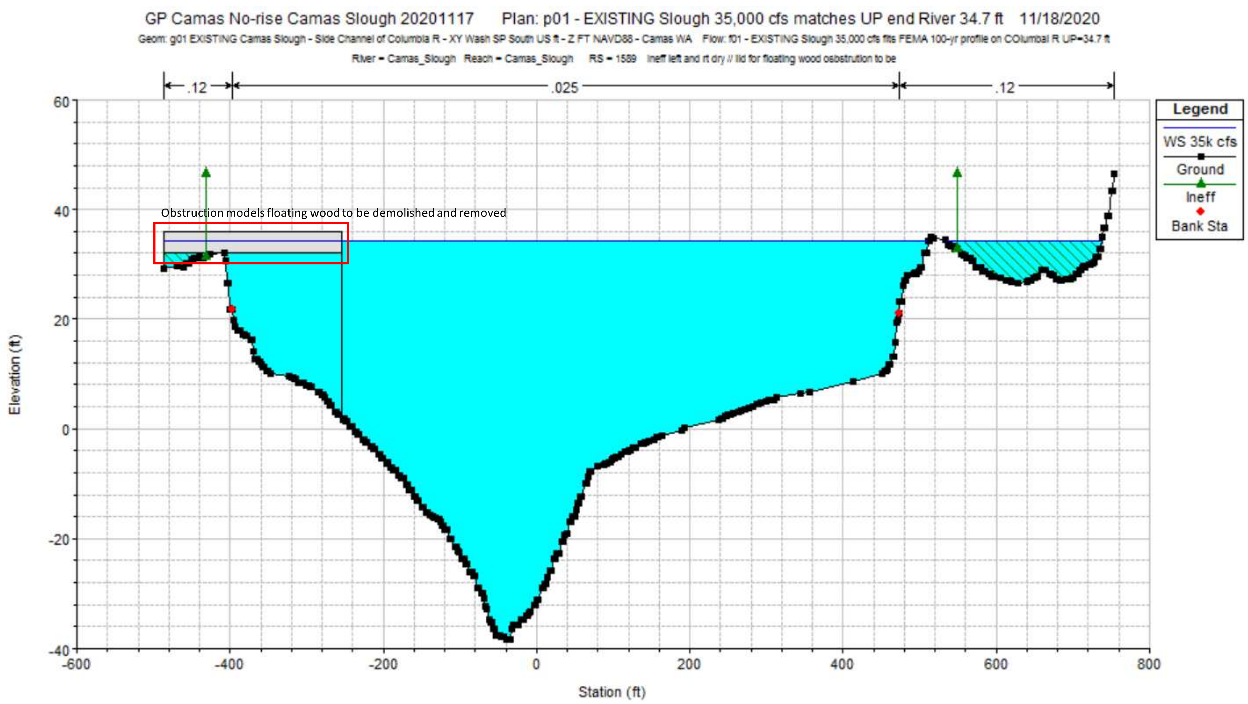


Figure 8. Model Cross-Section with Horizontal Obstruction (ID 1589)

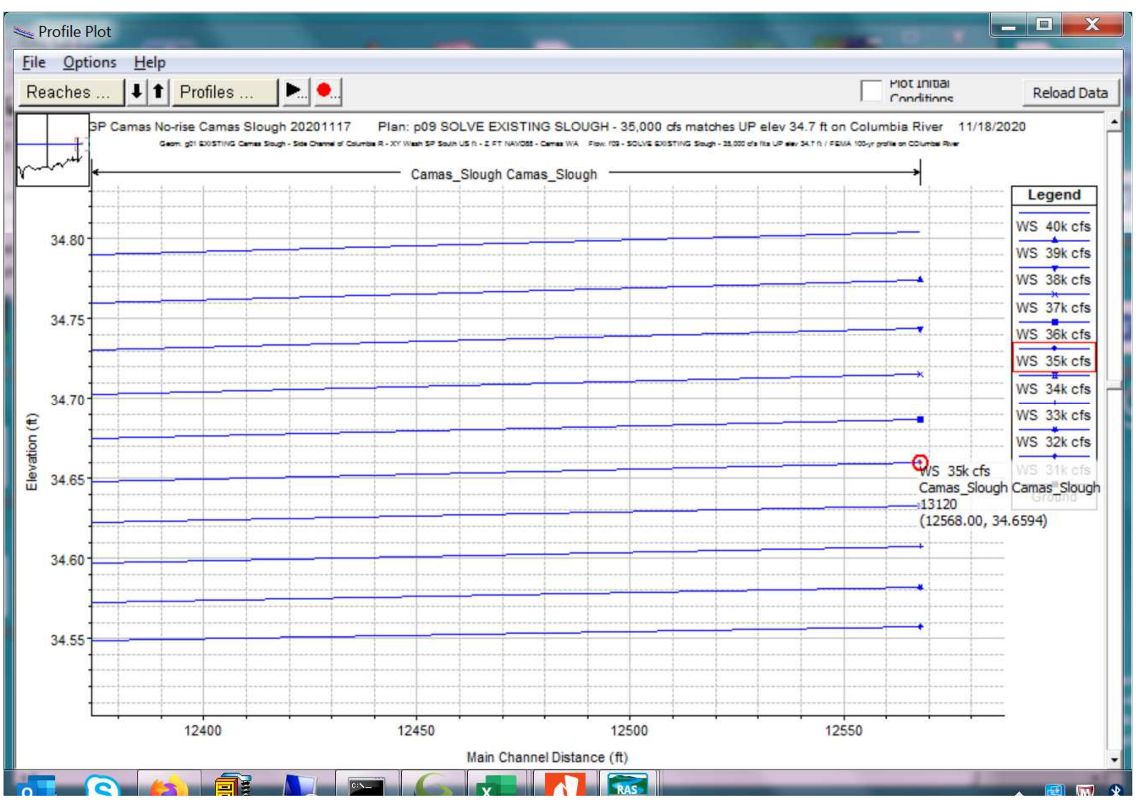


Figure 9. Profiles of Multiple Flows Finding 35,000 cfs Base Flow

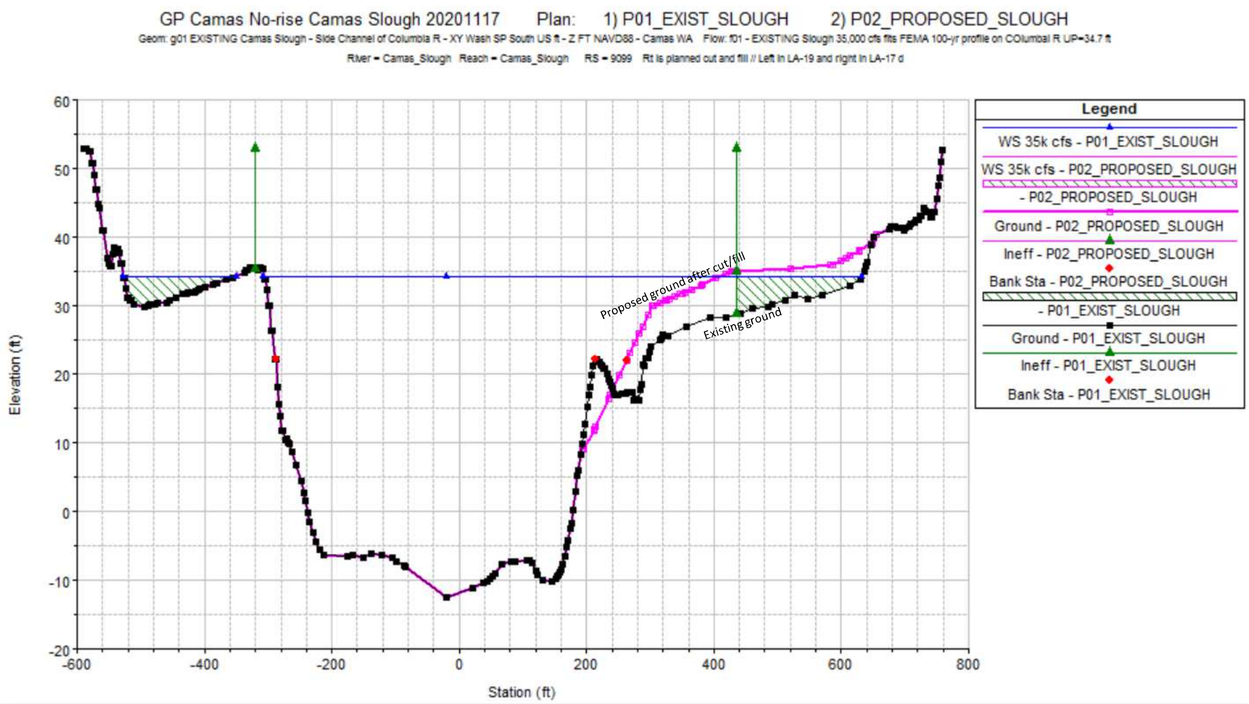
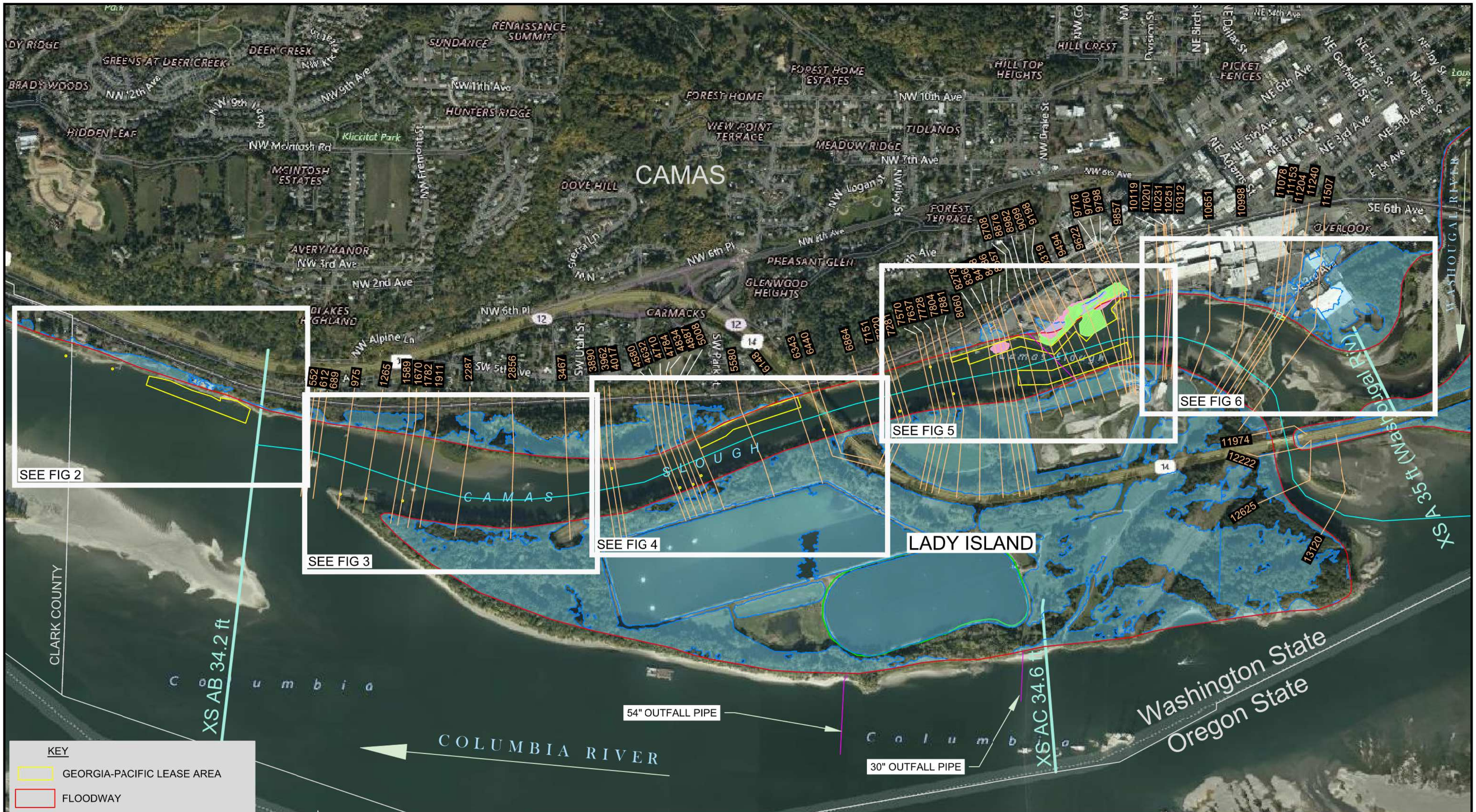


Figure 10. Model Cross-Section with Cut/Fill Changes (ID 9099)

APPENDIX A:

PROPOSED DEMOLITION PLANS DATED NOVEMBER 2, 2022



Georgia-Pacific
CAMAS MILL
Camas, Washington 98607

WSP USA
Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

PROJECT
IN-WATER/OVER WATER REMOVALS PROJECT
GEORGIA-PACIFIC CONSUMER OPERATIONS LLC
CAMAS MILL
CAMAS, WASHINGTON

TITLE
FLOOD HAZARD AREAS
INDEX SHEET

DATE: JANUARY 2023
SCALE: AS SHOWN
PROJECT NO. 4614222152.01
FIGURE 1

DRAWN BY: APS CHECKED BY: KO

Georgia-Pacific CAMAS MILL Camas, Washington 98607	wsp	PROJECT IN-WATER/OVER WATER REMOVALS PROJECT GEORGIA-PACIFIC CONSUMER OPERATIONS LLC CAMAS MILL CAMAS, WASHINGTON	DATE JANUARY 2023	SCALE AS SHOWN
WSP USA Environment & Infrastructure Inc. 4020 Lake Washington Blvd NE, Suite 200 Kirkland, Washington 98033		TITLE FLOOD HAZARD AREAS LEASE AREAS 1, 2, AND 3	PROJECT NO. 4614222152.01	FIGURE 2

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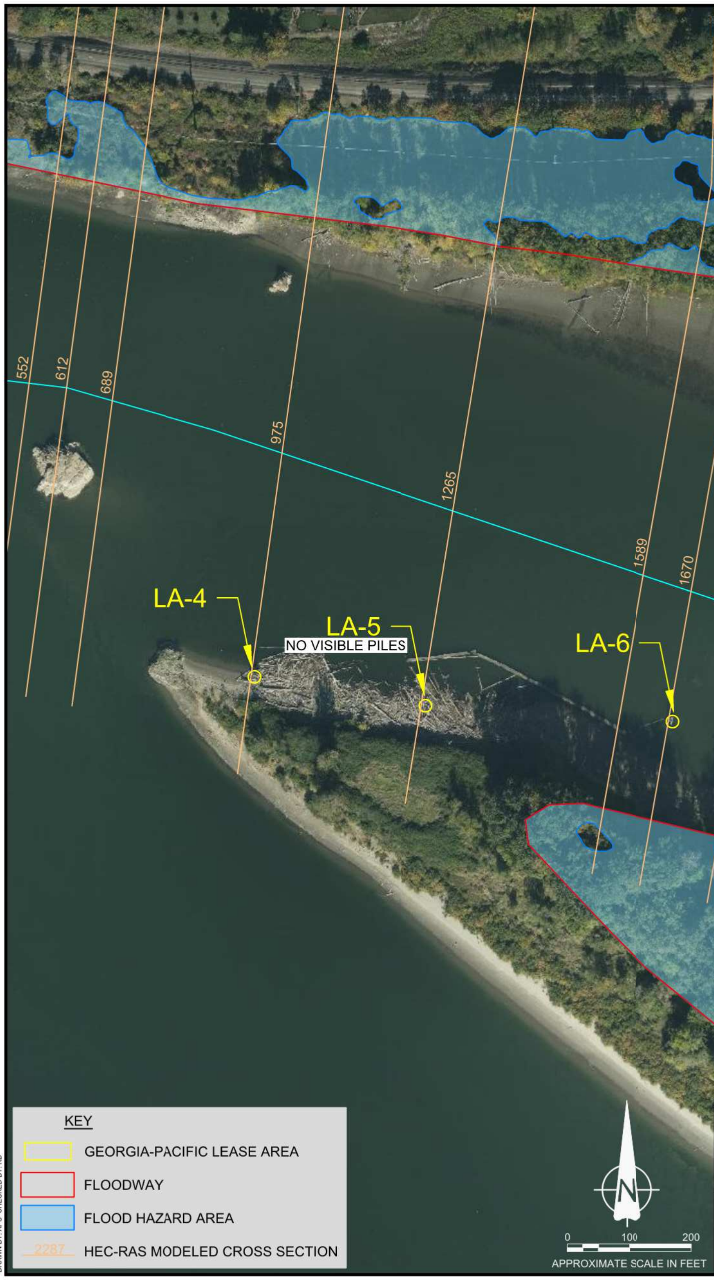

Georgia-Pacific
CAMAS MILL
Camas, Washington 98607

WSP USA
Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

wsp

PROJECT
IN-WATER/OVER WATER REMOVALS PROJECT
GEORGIA-PACIFIC CONSUMER OPERATIONS LLC
CAMAS MILL
CAMAS, WASHINGTON

TITLE
FLOOD HAZARD AREAS
LEASE AREAS 4, 5, AND 6

DATE
JANUARY 2023
SCALE
AS SHOWN
PROJECT NO.
4614222152.01
FIGURE
3

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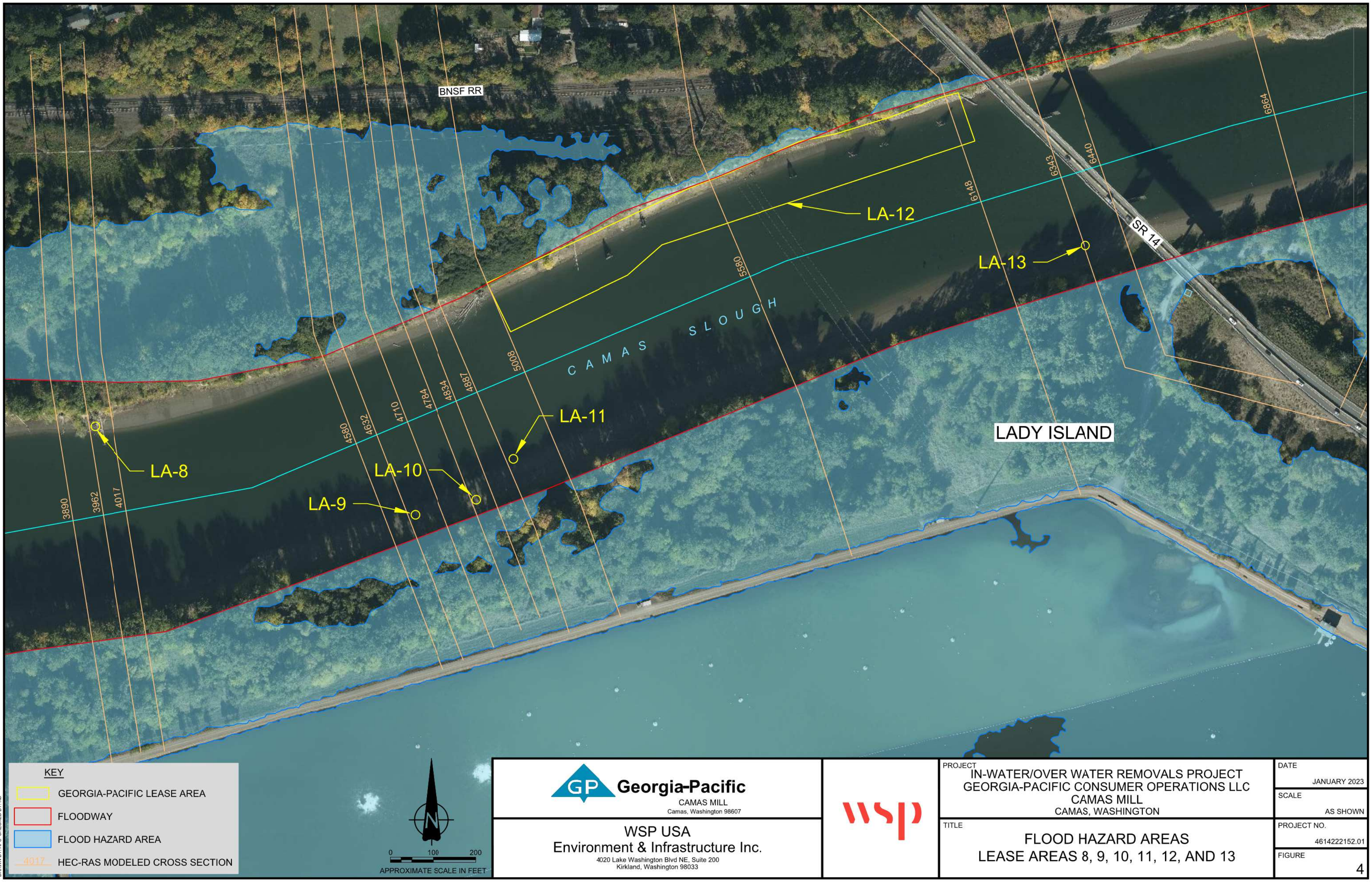

Georgia-Pacific
CAMAS MILL
Camas, Washington 98607

WSP USA
Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

wsp

PROJECT
IN-WATER/OVER WATER REMOVALS PROJECT
GEORGIA-PACIFIC CONSUMER OPERATIONS LLC
CAMAS MILL
CAMAS, WASHINGTON

TITLE
FLOOD HAZARD AREAS
LEASE AREAS 8, 9, 10, 11, 12, AND 13

DATE: JANUARY 2023
SCALE: AS SHOWN
PROJECT NO.: 4614222152.01
FIGURE: 4

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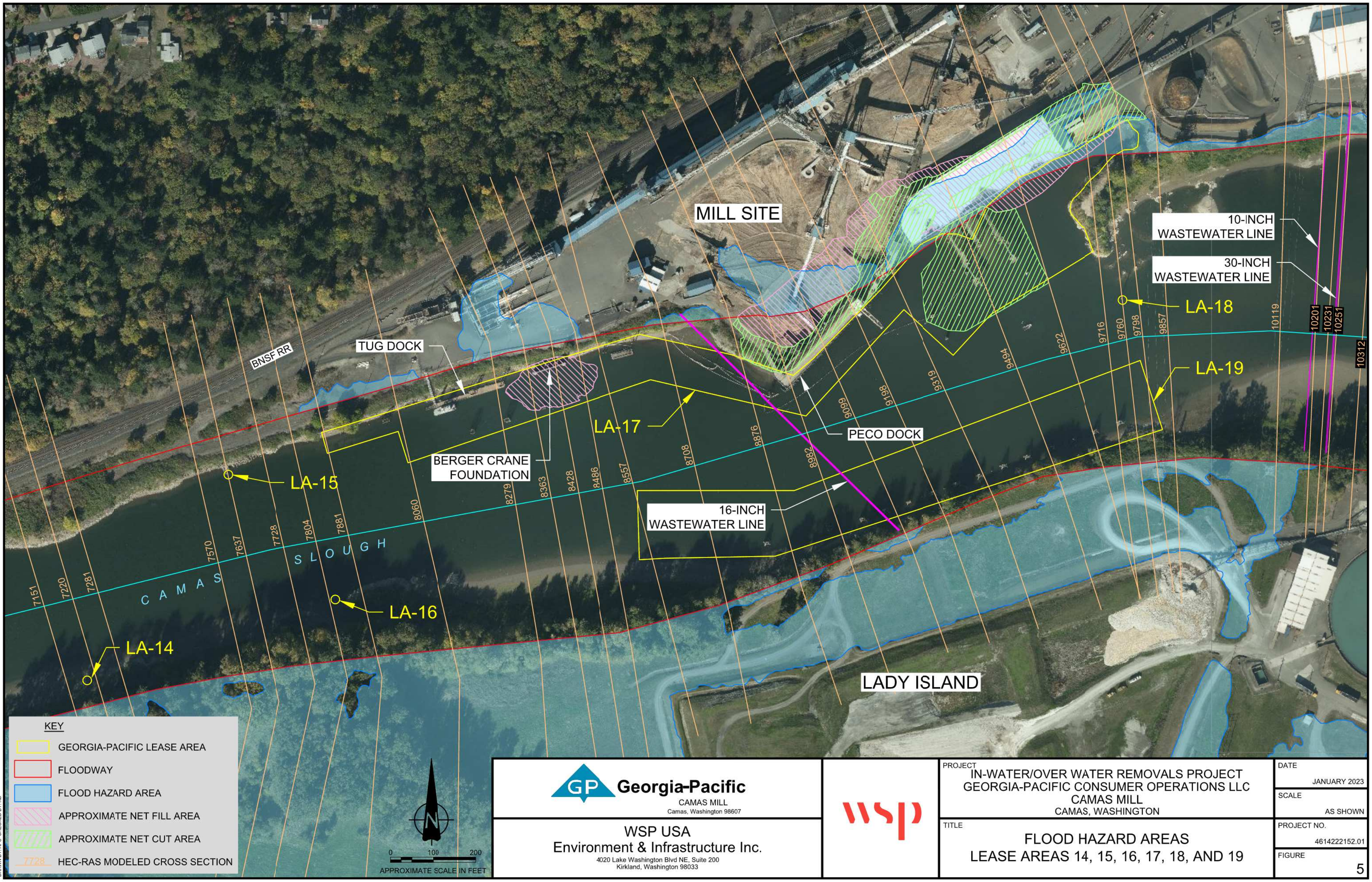
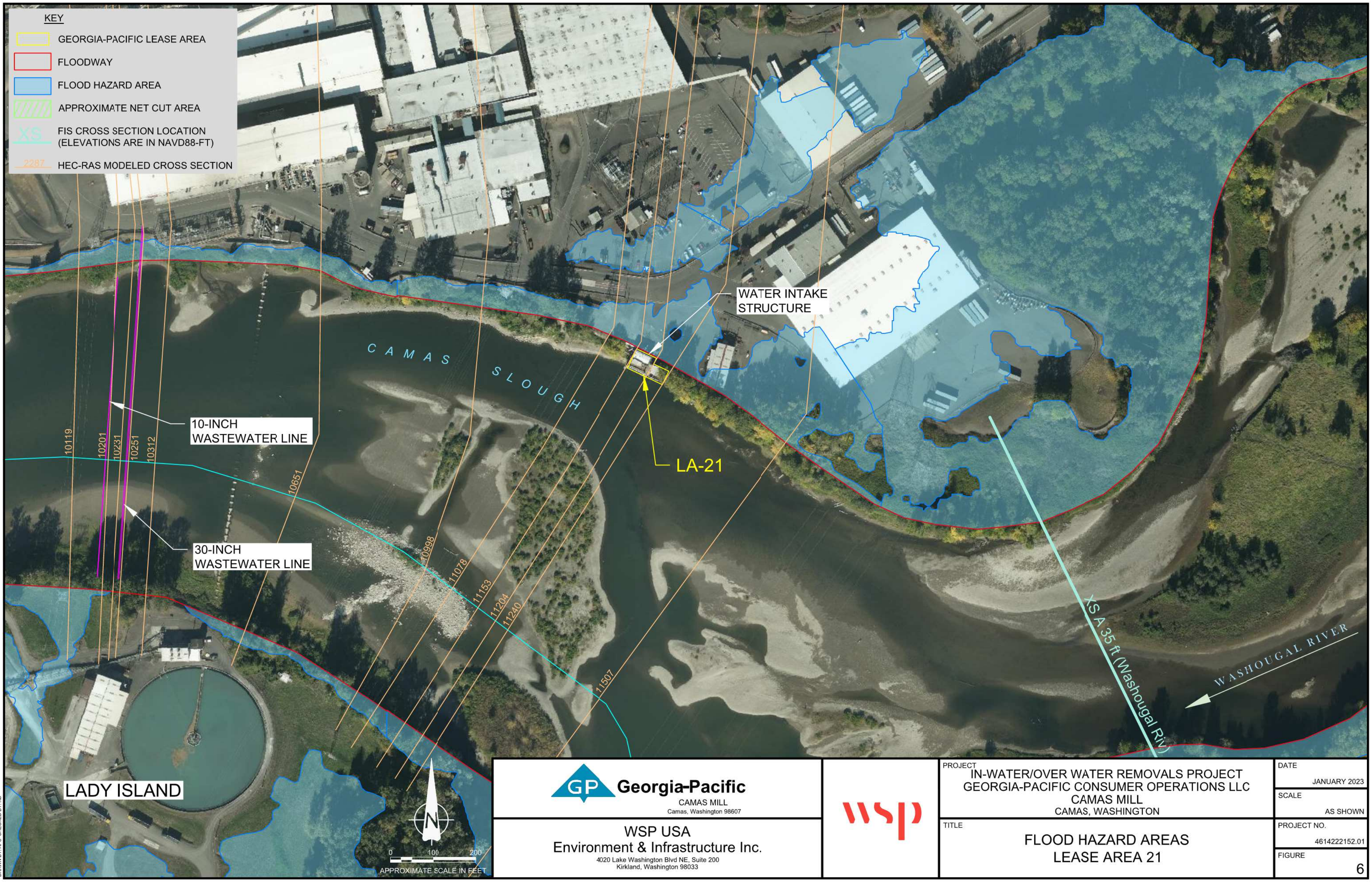
Exhibit 7 SHOR23-01





Georgia-Pacific
CAMAS MILL
Camas, Washington 98607

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Environment & Infrastructure Inc.
4020 Lake Washington Blvd NE, Suite 200
Kirkland, Washington 98033

PROJECT	IN-WATER/OVER WATER REMOVALS PROJECT GEORGIA-PACIFIC CONSUMER OPERATIONS LLC CAMAS MILL CAMAS, WASHINGTON
DATE	JANUARY 2023
SCALE	AS SHOWN
TITLE	FLOOD HAZARD AREAS LEASE AREA 21
PROJECT NO.	4614222152.01
FIGURE	6

DRAWN BY: APS CHECKED BY: KD

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APPENDIX B:

FEMA FLOOD INSURANCE STUDY (FIS) INFORMATION

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) Report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS Report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study Report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study Report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was Universal Transverse Mercator (UTM) zone 10. The **horizontal datum** was NAD 83, GRS 1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base Map information shown on this FIRM was derived from the U.S.D.A. Farm Service Agency National Agriculture Imagery Program (NAIP) produced at a scale of 1:12,000 from photography dated 2009.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

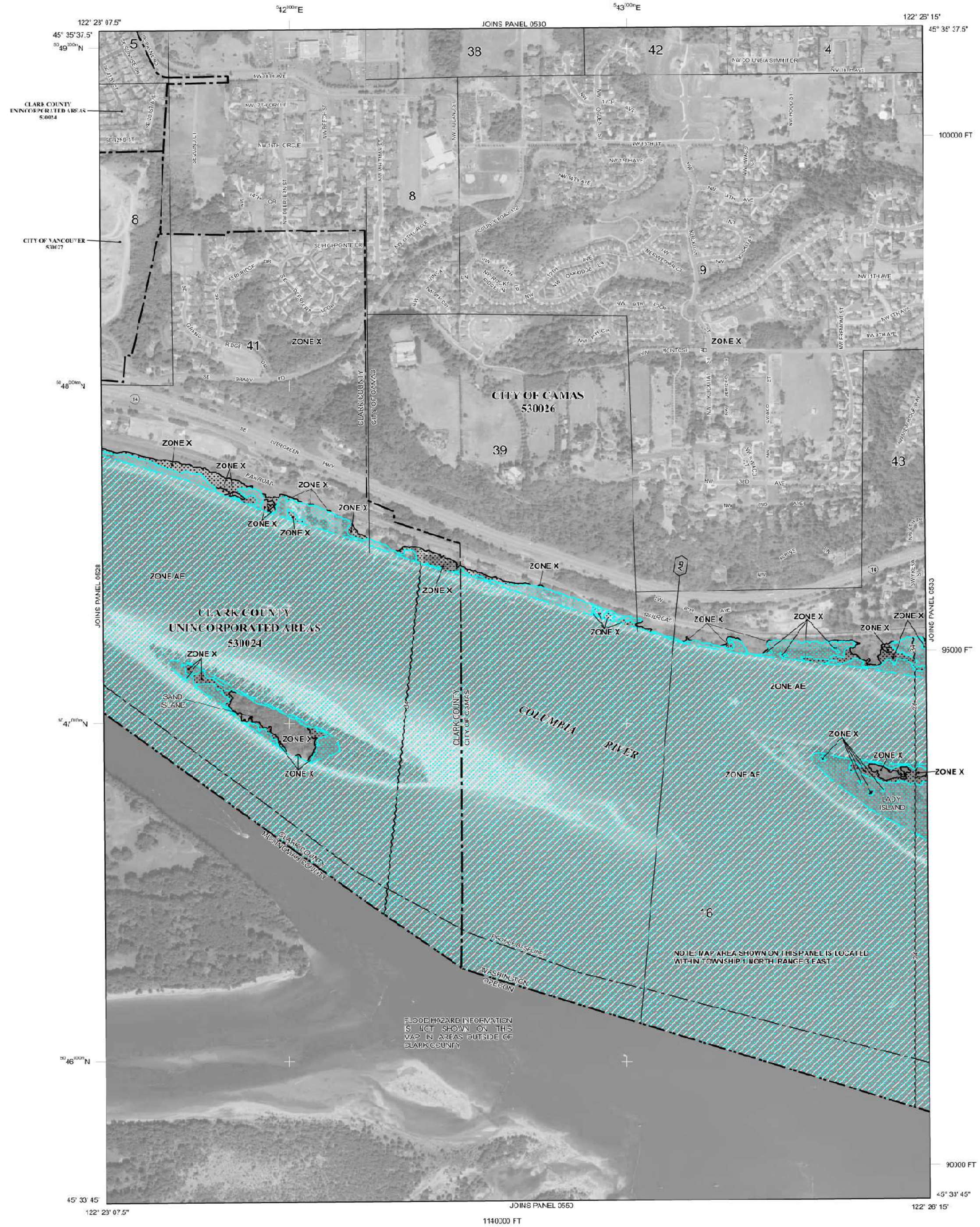
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

~~513~~	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

(A)——(A)	Cross section line
(23)- - - -(23)	Transect line
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Washington State Plane South Zone (FIPS Zone 4602), Lambert Conformal Conic projection
$^{48}89^{000m}$ N	1000-meter Universal Transverse Mercator grid values, zone 10
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 5, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0529D

FIRM
FLOOD INSURANCE RATE MAP
CLARK COUNTY, WASHINGTON AND INCORPORATED AREAS

PANEL 529 OF 600
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CAMAS, CITY OF	530026	0529	D
CLARK COUNTY	530024	0529	D
VANCOUVER, CITY OF	530027	0529	D

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

MAP NUMBER
53011C0529D

EFFECTIVE DATE
SEPTEMBER 5, 2012

Federal Emergency Management Agency

NOTES TO USERS

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NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713- 3242**, or visit its website at http://www.ngs.noaa.gov.

Base Map information shown on this FIRM was derived from the U.S.D.A. Farm Service Agency National Agriculture Imagery Program (NAIP) produced at a scale of 1:12,000 from photrgraphy dated 2009.

The **profile baselines** depicted on this map represent the hydraulic modeling baselines that match the flood profiles in the FIS report. As a result of improved topographic data, the **profile baseline**, in some cases, may deviate significantly from the channel centerline or appear outside the SFHA.

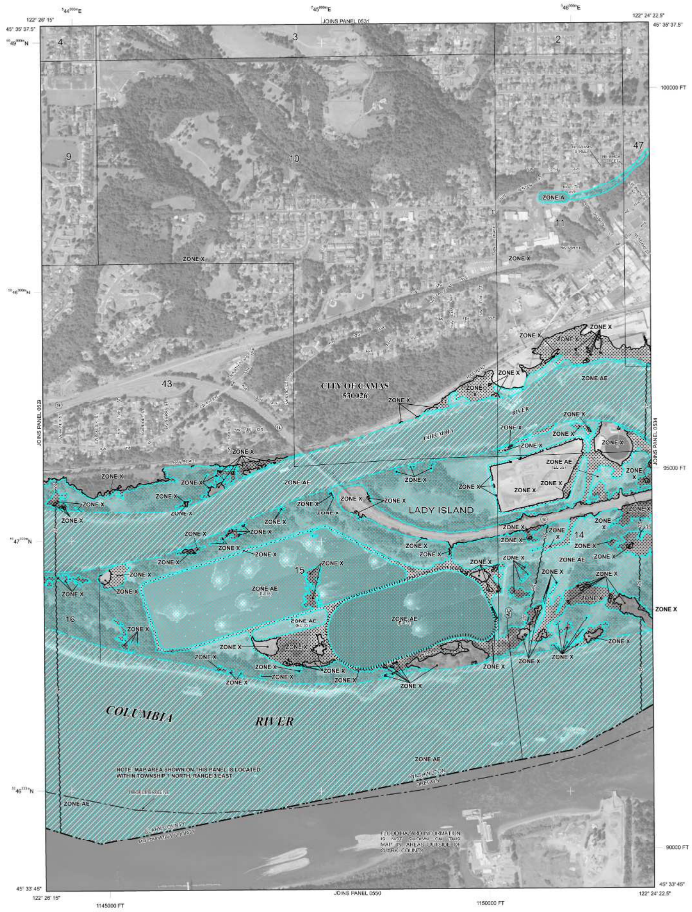
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables for multiple streams in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map,** how to order products, or the National Flood Insurance Program in general, please call the **FEMA Map Information eXchange (FMIX)** at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/business/nfip.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary
0.2% Annual Chance Floodplain Boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A—A Cross section line
23- - -23 Transect line
45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT — 5000-foot ticks: Washington State Plane South Zone (FIPS Zone 4602), Lambert Conformal Conic projection
4989000m N — 1000-meter Universal Transverse Mercator grid values, zone 10
DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
September 5, 2012

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET
150 0 150 300 METERS

NFIP

PANEL 0533D

FIRM

FLOOD INSURANCE RATE MAP

CLARK COUNTY, WASHINGTON
AND INCORPORATED AREAS

PANEL 533 OF 600
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CAMAS, CITY OF	530026	0533	D

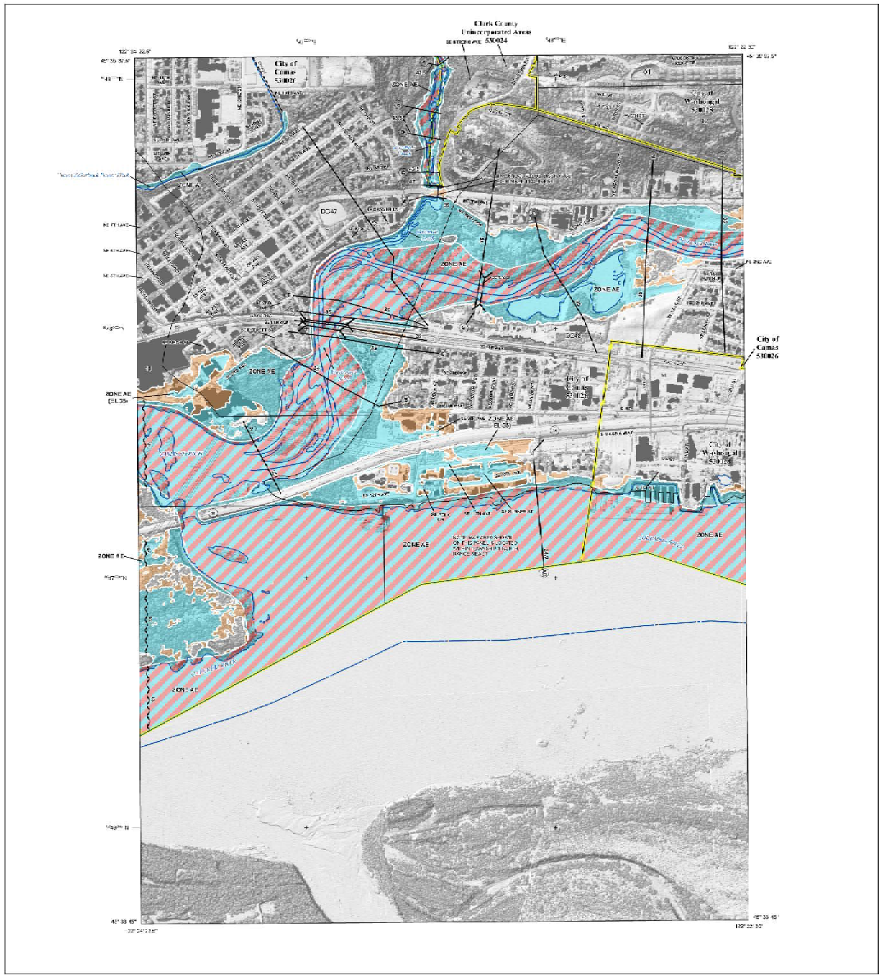
Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
53011C0533D

EFFECTIVE DATE
SEPTEMBER 5, 2012

Federal Emergency Management Agency

NATIONAL FLOOD INSURANCE PROGRAM



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

HTTP://MSC.FEMA.GOV

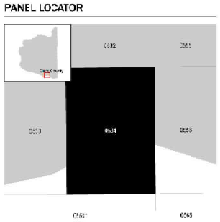
SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, A99
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS	NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

SCALE

1 inch = 500 feet 1:6,000

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

CLARK COUNTY, WASHINGTON
and Incorporated Areas

PANEL 534 OF 600

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

VERSION NUMBER
2.2.2.1

MAP NUMBER
53011C0534E

MAP REVISED
JANUARY 19, 2018

FLOODING SOURCE		FLOODWAY			1-PERCENT ANNUAL CHANCE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FT.)	SECTION AREA (SQ. FT.)	MEAN VELOCITY (F. P. S.)	REGULATORY (NAVD88)	WITHOUT FLOODWAY (NAVD88)	WITH FLOODWAY (NAVD88)	INCREASE
COLUMBIA RIVER								
AA	116.10	4,773 / 1,206[2]	178,406	3.2	33.7	33.2	34.1	0.9
AB	118.06	6,731 / 3,745[2]	210,779	2.7	34.2	33.6	34.4	0.8
AC	119.88	2,280 / 1,367[2]	127,035	4.4	34.6	33.9	35.0	0.9
AD	121.37	4,250 / 1,101[2]	157,277	3.6	34.9	34.3	35.1	0.8
AE	122.86	5,500 / 1,856[2]	189,310	2.9	35.1	34.7	35.5	0.8
AF	123.43	5,700 / 2,039[2]	197,499	2.8	35.3	34.8	35.7	0.9
AG	123.98	5,800 / 2,475[2]	206,916	2.7	35.4	34.8	35.7	0.9
AH	125.53	6,950 / 4,728[2]	198,505	2.8	35.6	35.1	36.0	0.9
AI	126.58	5,900 / 5,498[2]	173,646	3.2	35.8	35.2	36.1	0.9

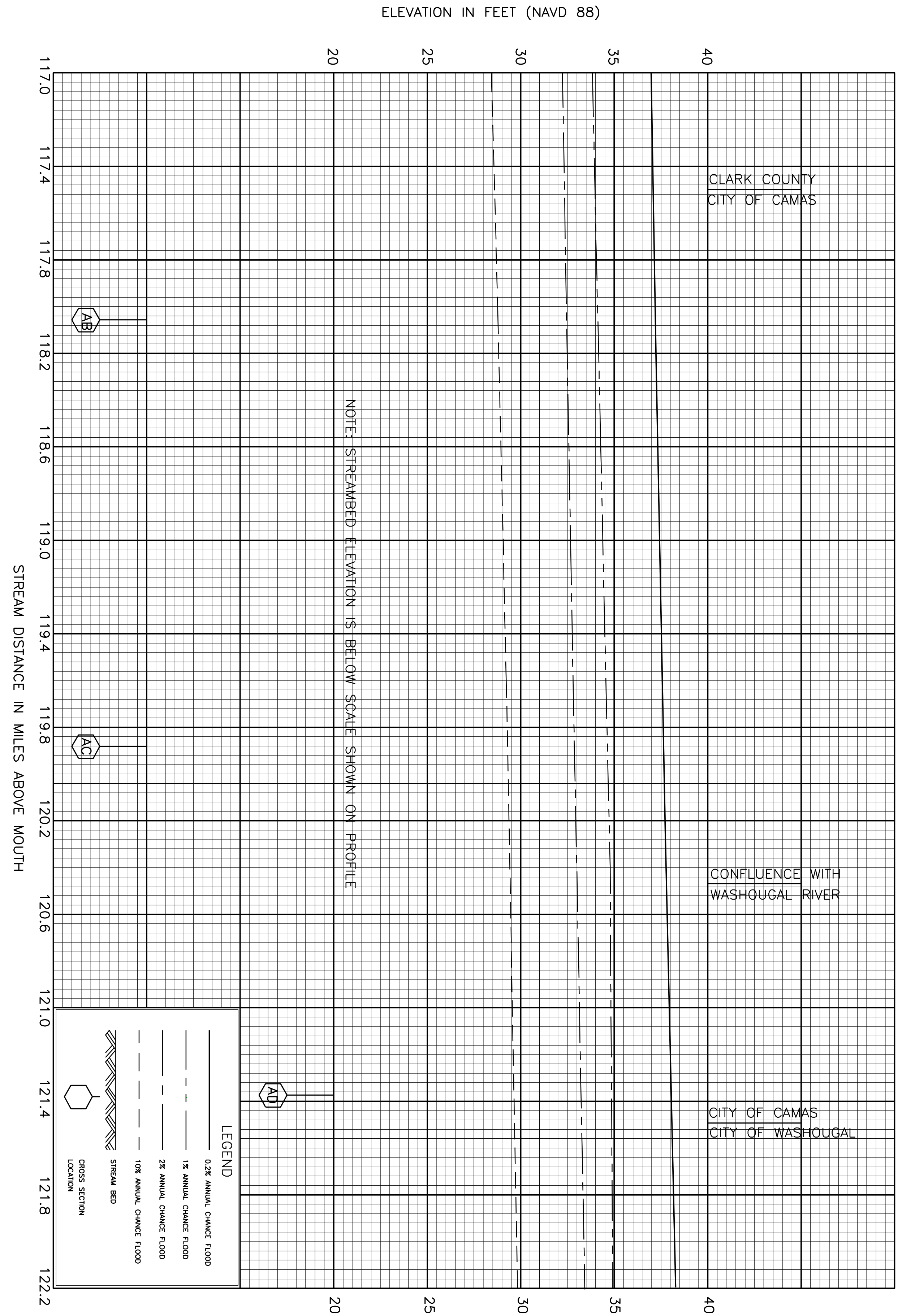
(1)Stream distance in miles above mouth
(2)Elevations computed without consideration of backwater from Columbia River
(3)Elevations based on HEC-2 hydraulic model
(4)Width/width within county limits
(5)Width excluding island/right channel width looking downstream/width of right channel within corporate limits

TABLE 9

FEDERAL EMERGENCY MANAGEMENT AGENCY
CLARK COUNTY, WASHINGTON
AND INCORPORATED AREAS

FLOODWAY DATA

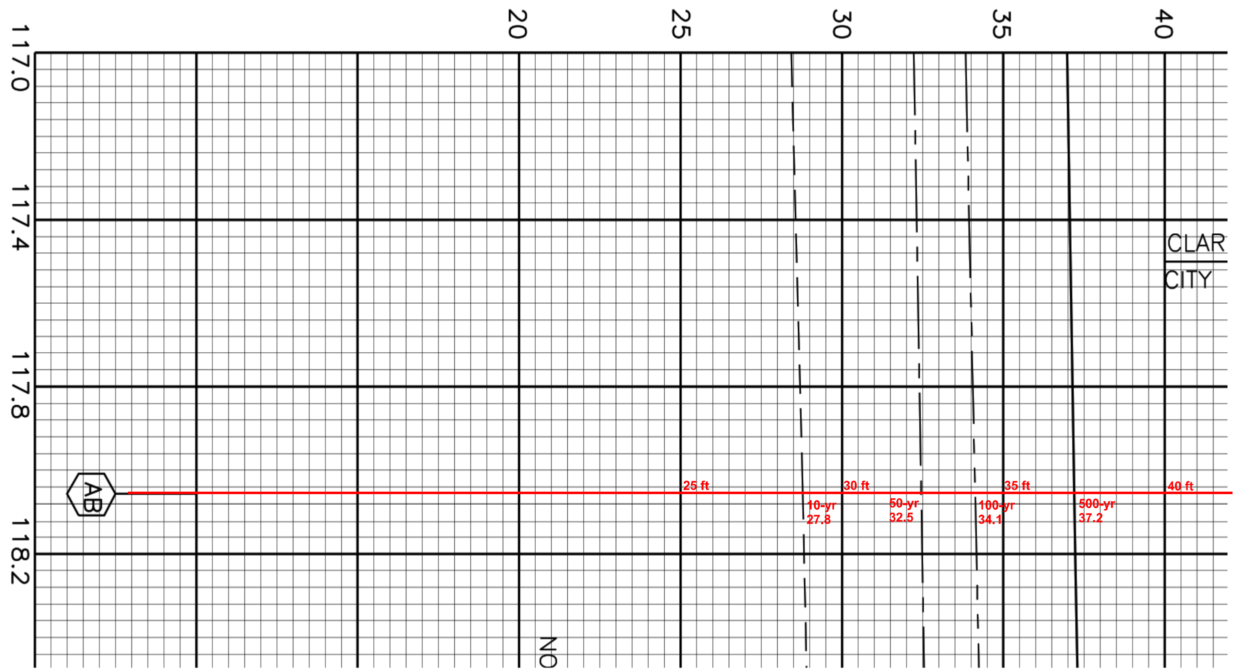
COLUMBIA RIVER



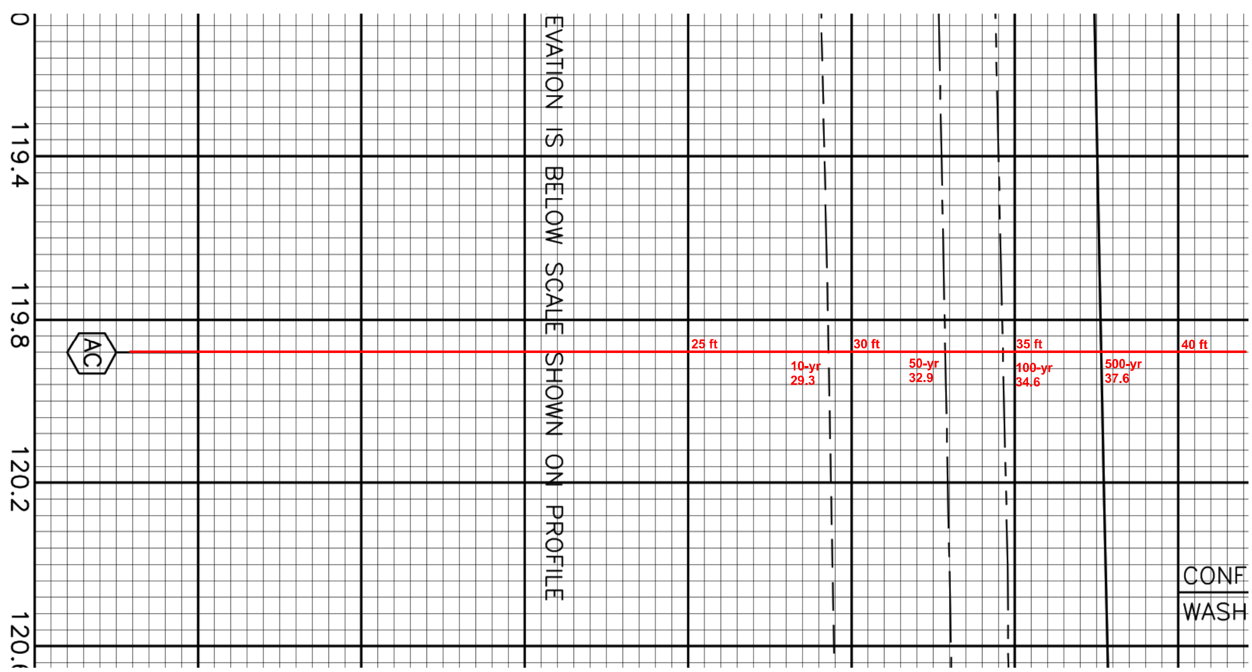
22P	FEDERAL EMERGENCY MANAGEMENT AGENCY CLARK COUNTY, WA AND INCORPORATED AREAS	FLOOD PROFILES COLUMBIA RIVER

Exhibit 7 SHOR23-01

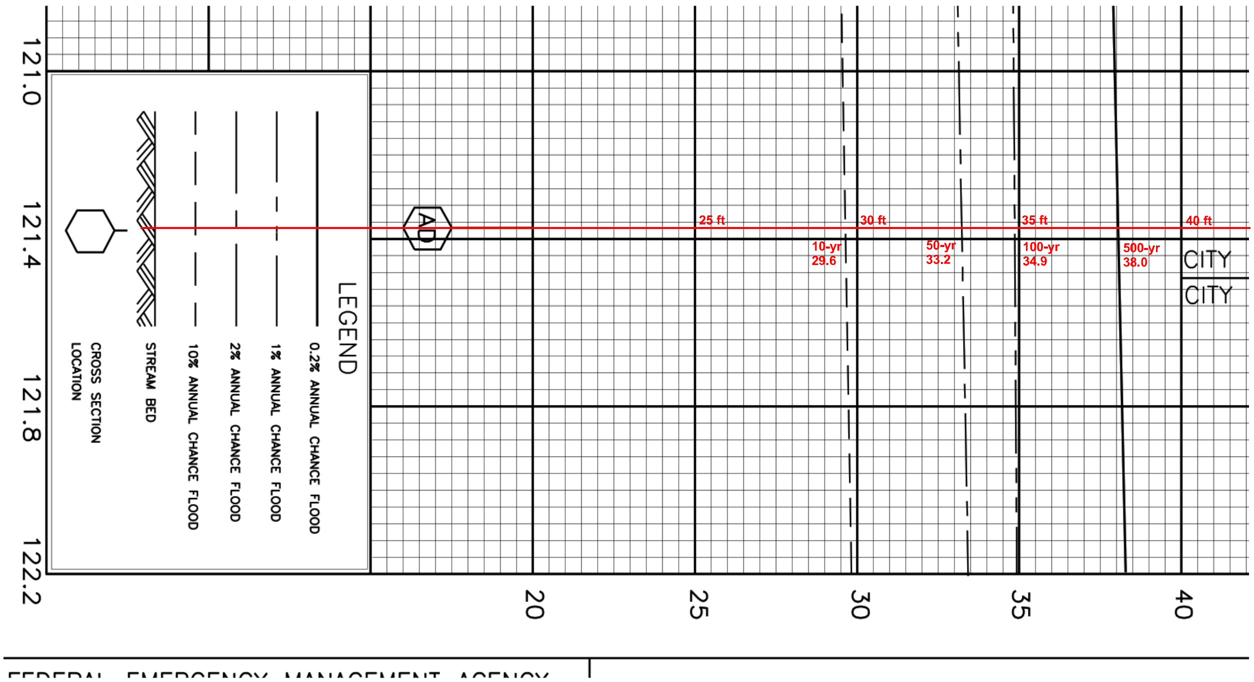
Appendix B. FEMA Flood Profiles near Camas Slough



FIRM Cross-Section AB on Columbia River Downstream of Camas Slough: 100-Year Water Level 34.1 ft



FIRM Cross-Section AC on Columbia River South of Lady Island: 100-Year Water Level 34.6 ft



FIRM Cross-Section AD on Columbia River Upstream of Camas Slough: 100-Year Water Level 34.9 ft

Cross-Section Location	River Mile	Feet	Water Surface Elevations (ft) 100-yr	10-yr
FEMA "AB"	**118.06**	**0**	34.2	27.8
Model "522" (Downstream)	**n/a**	**522**	34.2	27.9
FEMA "AC"	**119.88**	**9610**	34.6	29.3
Model "13120" (Upstream)	**n/a**	**13356**	34.7	n/a
FEMA "AD"	**121.37**	**17477**	34.9	n/a

Interpolation of Downstream and Upstream Elevations for Camas Slough Model

Notes: *River Mile from the Floodway Data Table (miles above mouth)*
Feet are calculated upstream of FEMA "AB".
100-yr Water Elevations from Floodway Data Table (34.2 ft); Others from FEMA Profiles.
10-yr water elevations used for the downstream boundary of the model with Washougal River.
Upstream model cross-section (ID 13120) is 4121 ft downstream of FEMA "AD".
Elevations are feet above the North American Vertical Datum of 1988 (NAVD88).

Table 6 – Summary of Discharges (Continued)
PEAK DISCHARGES (cfs)

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (SQ. MILES)	10%-ANNUAL-CHANCE	2%-ANNUAL-CHANCE	1%-ANNUAL-CHANCE	0.2%-ANNUAL-CHANCE
Below Mill Creek	72.0	2,710	3,730	4,210	5,430
Downstream of Confluence with Curtin Creek	60.0	2,330	3,250	3,700	4,860
Salmon Creek (Continued)					
At County Gage SMN045, NE 156th Street	45.0	1,960	2,740	3,110	4,090
Downstream of Confluence with Morgan Creek	31.0	1,290	1,920	2,240	3,140
At County Gage S-01, Battle Ground, WA	18.0	1,130	1,770	2,110	3,120
Spring Branch Creek					
At mouth	2.0	105	140	155	190
Unnamed Tributary to Gee Creek					
At mouth	2.0	85	100	105	125
Washougal River					
At Mouth	211	39,522	51,453	56,672	68,976
At Camas	146	28,063	36,534	40,241	48,977
At 3rd Street	146	27,971	36,416	40,110	48,818
At Route 140	144	27,703	36,066	39,725	48,350
Just Upstream of Little Washougal River	117	22,838	29,733	32,749	39,859
At Gage	107	21,017	27,362	30,138	36,681
Upstream of					

Flows for Washougal River at Mouth: 100-Year Flow 56,672 cfs

APPENDIX C:

MODEL OUTPUT TABLES

Table C-1. Camas Slough Output		**EXISTING CAMAS SLOUGH - 100 YR / 35k cfs**			**PROPOSED CAMAS SLOUGH - DEMO OF PIERS / ETC**			**Rise in Elevations**	
		Existing / Base Flood Model - Plan "p01"			Proposed Flood Model - Plan "p02"			(proposed minus base)	
River Station	Bottom Elev (ft)	Base WS Elev (ft)	Base Vel CH (ft/s)	Base EG (ft)	Proposed WS Elev (ft)	Proposed Vel CH (ft/s)	Proposed EG (ft)	WS Rise (ft)	EG Rise (ft)
13120	6.27	34.69	1.34	34.71	34.58	1.34	34.6	-0.11	-0.11
12625	3.58	34.66	1.84	34.71	34.55	1.85	34.6	-0.11	-0.11
12222	-4.99	34.37	4.15	34.63	34.25	4.16	34.52	-0.12	-0.11
12168		**East Bridge (SR-14/27N-S)**							
11974	-0.22	34.25	4.04	34.5	34.22	4.04	34.48	-0.03	-0.02
11507	-1.19	34.36	1.16	34.38	34.33	1.16	34.35	-0.03	-0.03
11240	6.94	34.35	1.23	34.38	34.33	1.23	34.35	-0.02	-0.03
11204	-2	34.35	1.36	34.38	34.32	1.36	34.35	-0.03	-0.03
11153	0.49	34.35	1.36	34.38	34.32	1.36	34.35	-0.03	-0.03
11078	0.07	34.35	1.33	34.38	34.32	1.33	34.35	-0.03	-0.03
10998	0.61	34.34	1.4	34.37	34.32	1.4	34.35	-0.02	-0.02
10651	-1.34	34.34	1.45	34.37	34.31	1.45	34.35	-0.03	-0.02
10312	0.67	34.33	1.6	34.37	34.3	1.6	34.34	-0.03	-0.03
10251	-2.15	34.33	1.57	34.37	34.3	1.57	34.34	-0.03	-0.03
10231	-0.94	34.33	1.59	34.37	34.3	1.59	34.34	-0.03	-0.03
10201	-1.29	34.32	1.64	34.37	34.3	1.64	34.34	-0.02	-0.03
10119	-2.39	34.32	1.68	34.37	34.3	1.68	34.34	-0.02	-0.03
9857	-3.94	34.32	1.75	34.36	34.29	1.75	34.34	-0.03	-0.02
9798	-7.83	34.32	1.67	34.36	34.29	1.67	34.34	-0.03	-0.02
9760	-7.17	34.32	1.67	34.36	34.29	1.68	34.34	-0.03	-0.02
9716	-6.84	34.32	1.57	34.36	34.3	1.67	34.33	-0.02	-0.03
9622	-8.14	34.32	1.4	34.35	34.3	1.42	34.33	-0.02	-0.02
9494	-9.49	34.31	1.53	34.35	34.3	1.44	34.33	-0.01	-0.02
9319	-13.13	34.31	1.51	34.35	34.3	1.44	34.33	-0.01	-0.02
9198	-14.95	34.31	1.6	34.35	34.29	1.55	34.33	-0.02	-0.02
9099	-12.43	34.3	1.69	34.34	34.28	1.68	34.33	-0.02	-0.01
8982	-10.92	34.28	1.98	34.34	34.27	1.87	34.33	-0.01	-0.01
8876	-7.24	34.29	1.77	34.33	34.28	1.64	34.32	-0.01	-0.01
8708	-6.84	34.29	1.55	34.33	34.28	1.55	34.32	-0.01	-0.01
8557	-7.77	34.29	1.56	34.33	34.28	1.56	34.32	-0.01	-0.01
8486	-8.48	34.29	1.58	34.33	34.28	1.6	34.32	-0.01	-0.01
8428	-9.02	34.29	1.59	34.32	34.27	1.64	34.32	-0.02	0
8363	-9.05	34.28	1.61	34.32	34.27	1.65	34.32	-0.01	0
8279	-8.81	34.28	1.6	34.32	34.27	1.61	34.31	-0.01	-0.01
8060	-10.14	34.27	1.75	34.32	34.26	1.76	34.31	-0.01	-0.01
7881	-12	34.26	1.99	34.32	34.25	1.99	34.31	-0.01	-0.01
7804	-12.29	34.26	1.96	34.31	34.25	1.95	34.31	-0.01	0
7728	-12.48	34.25	2	34.31	34.25	2	34.31	0	0
7637	-14.15	34.25	1.96	34.31	34.25	1.94	34.3	0	-0.01
7570	-15.32	34.25	1.92	34.31	34.25	1.92	34.3	0	-0.01
7281	-22.16	34.24	2.13	34.31	34.23	2.13	34.3	-0.01	-0.01
7220	-22.28	34.24	2.1	34.3	34.23	2.09	34.3	-0.01	0

Table C-1. Camas Slough Output (Continued)		EXISTING CAMAS SLOUGH - 100 YR / 35k cfs Existing / Base Flood Model - Plan "p01"			PROPOSED CAMAS SLOUGH - DEMO OF PIERS / ETC Proposed Flood Model - Plan "p02"			Rise in Elevations (proposed minus base)	
River Station	Bottom Elev (ft)	Base WS Elev (ft)	Base Vel CH (ft/s)	Base EG (ft)	Proposed WS Elev (ft)	Proposed Vel CH (ft/s)	Proposed EG (ft)	WS Rise (ft)	EG Rise (ft)
7151	-21.65	34.24	2.04	34.3	34.23	2.04	34.3	-0.01	0
6864	-18.39	34.25	1.8	34.3	34.24	1.8	34.29	-0.01	-0.01
6440	-15.13	34.24	1.78	34.29	34.24	1.78	34.29	0	0
6428		**West Bridge (SR-14/25)**							
6343	-14.63	34.24	1.71	34.29	34.23	1.71	34.28	-0.01	-0.01
6148	-14.9	34.23	1.77	34.28	34.23	1.77	34.28	0	0
5580	-16.11	34.23	1.72	34.28	34.23	1.72	34.27	0	-0.01
5008	-19.62	34.22	1.76	34.27	34.22	1.76	34.27	0	0
4887	-19.87	34.22	1.73	34.27	34.22	1.72	34.27	0	0
4834	-19.86	34.22	1.72	34.27	34.22	1.72	34.27	0	0
4784	-20.06	34.22	1.72	34.27	34.22	1.71	34.27	0	0
4710	-19.46	34.22	1.68	34.27	34.22	1.68	34.27	0	0
4632	-19.4	34.22	1.67	34.27	34.22	1.66	34.26	0	-0.01
4580	-19.08	34.22	1.69	34.27	34.22	1.69	34.26	0	-0.01
4017	-21.17	34.22	1.63	34.26	34.22	1.63	34.26	0	0
3962	-21.47	34.22	1.64	34.26	34.22	1.63	34.26	0	0
3890	-21.09	34.22	1.59	34.26	34.22	1.59	34.26	0	0
3467	-18.81	34.22	1.56	34.26	34.22	1.56	34.26	0	0
2856	-13.11	34.22	1.33	34.25	34.22	1.33	34.25	0	0
2287	-16.77	34.22	1.23	34.25	34.22	1.23	34.25	0	0
1911	-18.58	34.22	1.2	34.25	34.22	1.2	34.24	0	-0.01
1782	-29.48	34.22	1.21	34.24	34.22	1.21	34.24	0	0
1670	-40.87	34.23	1.04	34.24	34.22	1.04	34.24	-0.01	0
1589	-38.32	34.22	1.06	34.24	34.22	1.05	34.24	0	0
1265	-21.1	34.22	1.16	34.24	34.22	1.15	34.24	0	0
975	-15.93	34.22	1.17	34.24	34.22	1.16	34.24	0	0
689	-14.95	34.2	1.64	34.24	34.2	1.64	34.24	0	0
612	-20.24	34.19	1.74	34.24	34.19	1.74	34.24	0	0
552	-24.96	34.2	1.48	34.23	34.2	1.48	34.23	0	0

WS (ft) - Water surface elevation (ft NAVD88)
Vel CH (ft/s) - Velocity of flow in channel (ft/second)
EG (ft) - Energy grade (ft NAVD88)

Table C-2. Washougal River / Camas Slough Output		EXISTING WASHOUGAL / CAMAS SLOUGH - 100 YR Existing / Base Flood Model - Plan "p11" - 56672 cfs			PROPOSED WASHOUGAL / CAMAS SLOUGH - DEMO OF PIERS / ETC Proposed Flood Model - Plan "p12"			Rise in Elevations (proposed minus base)	
River Station	Bottom Elev (ft)	Base WS Elev (ft)	Base Vel CH (ft/s)	Base EG (ft)	Proposed WS Elev (ft)	Proposed Vel CH (ft/s)	Proposed EG (ft)	WS Rise (ft)	EG Rise (ft)
13159 (*)	9.39	28.68	4.07	28.91	28.56	4.1	28.8	-0.12	-0.11
12653 (*)	8.61	28.55	4.47	28.85	28.43	4.5	28.73	-0.12	-0.12
12111 (*)	5.98	28.55	3.74	28.77	28.43	3.76	28.65	-0.12	-0.12
11507	-1.19	28.61	2.41	28.7	28.49	2.43	28.59	-0.12	-0.11
11240	6.94	28.57	2.54	28.69	28.45	2.55	28.57	-0.12	-0.12
11204	-2	28.56	2.84	28.69	28.44	2.86	28.57	-0.12	-0.12
11153	0.49	28.56	2.83	28.68	28.44	2.85	28.57	-0.12	-0.11
11078	0.07	28.56	2.78	28.68	28.44	2.8	28.56	-0.12	-0.12
10998	0.61	28.54	2.94	28.67	28.42	2.95	28.56	-0.12	-0.11
10651	-1.34	28.52	2.98	28.66	28.4	3	28.54	-0.12	-0.12
10312	0.67	28.47	3.29	28.64	28.35	3.3	28.52	-0.12	-0.12
10251	-2.15	28.47	3.21	28.63	28.36	3.23	28.52	-0.11	-0.11
10231	-0.94	28.47	3.25	28.63	28.35	3.27	28.52	-0.12	-0.11
10201	-1.29	28.45	3.37	28.63	28.34	3.39	28.51	-0.11	-0.12
10119	-2.39	28.44	3.44	28.63	28.32	3.46	28.51	-0.12	-0.12
9857	-3.94	28.41	3.55	28.61	28.3	3.57	28.49	-0.11	-0.12
9798	-7.83	28.42	3.47	28.6	28.3	3.49	28.49	-0.12	-0.11
9760	-7.17	28.41	3.51	28.6	28.3	3.53	28.48	-0.11	-0.12
9716	-6.84	28.42	3.26	28.58	28.31	3.46	28.48	-0.11	-0.1
9622	-8.14	28.45	2.74	28.56	28.34	2.79	28.46	-0.11	-0.1
9494	-9.49	28.41	3.02	28.55	28.33	2.8	28.46	-0.08	-0.09
9319	-13.13	28.41	2.88	28.54	28.33	2.77	28.45	-0.08	-0.09
9198	-14.95	28.38	3.07	28.53	28.31	2.98	28.45	-0.07	-0.08
9099	-12.43	28.35	3.32	28.52	28.28	3.25	28.44	-0.07	-0.08
8982	-10.92	28.27	3.89	28.5	28.22	3.67	28.43	-0.05	-0.07
8876	-7.24	28.29	3.5	28.48	28.25	3.26	28.41	-0.04	-0.07
8708	-6.84	28.3	3.04	28.45	28.26	3.04	28.4	-0.04	-0.05
8557	-7.77	28.29	3.07	28.44	28.25	3.07	28.4	-0.04	-0.04
8486	-8.48	28.28	3.12	28.43	28.24	3.18	28.39	-0.04	-0.04
8428	-9.02	28.27	3.15	28.43	28.22	3.28	28.39	-0.05	-0.04
8363	-9.05	28.27	3.19	28.42	28.22	3.29	28.39	-0.05	-0.03
8279	-8.81	28.26	3.18	28.42	28.22	3.19	28.38	-0.04	-0.04
8060	-10.14	28.21	3.5	28.4	28.18	3.5	28.37	-0.03	-0.03
7881	-12	28.15	3.94	28.39	28.12	3.94	28.36	-0.03	-0.03
7804	-12.29	28.15	3.84	28.38	28.13	3.82	28.35	-0.02	-0.03
7728	-12.48	28.13	3.96	28.37	28.1	3.96	28.34	-0.03	-0.03
7637	-14.15	28.13	3.88	28.37	28.11	3.84	28.34	-0.02	-0.03
7570	-15.32	28.14	3.79	28.36	28.11	3.8	28.33	-0.03	-0.03
7281	-22.16	28.07	4.15	28.34	28.05	4.15	28.31	-0.02	-0.03
7220	-22.28	28.08	4.07	28.33	28.05	4.04	28.31	-0.03	-0.02

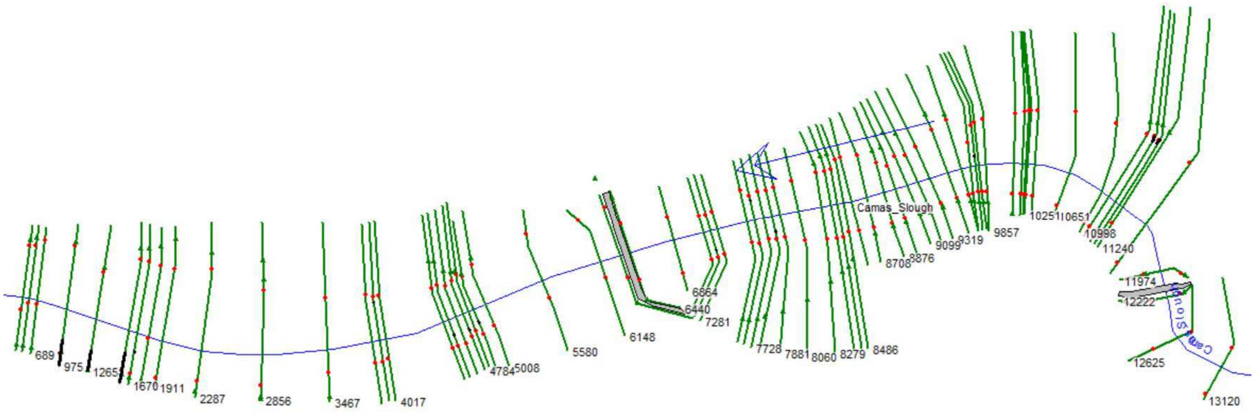
Table C-2. Washougal River / Camas Slough Output (continued)		**EXISTING WASHOUGAL / CAMAS SLOUGH - 100 YR** Existing / Base Flood Model - Plan "p11"			**PROPOSED WASHOUGAL / CAMAS SLOUGH - DEMO OF PIERS / ETC** Proposed Flood Model - Plan "p12"			**Rise in Elevations** (proposed minus base)	
River Station	Bottom Elev (ft)	Base WS Elev (ft)	Base Vel CH (ft/s)	Base EG (ft)	Proposed WS Elev (ft)	Proposed Vel CH (ft/s)	Proposed EG (ft)	WS Rise (ft)	EG Rise (ft)
7151	-21.65	28.09	3.94	28.33	28.06	3.94	28.3	-0.03	-0.03
6864	-18.39	28.11	3.48	28.3	28.08	3.48	28.27	-0.03	-0.03
6440	-15.13	28.1	3.46	28.28	28.07	3.46	28.26	-0.03	-0.02
6428		**West Bridge (SR-14/25)**							
6343	-14.63	28.08	3.36	28.26	28.06	3.37	28.23	-0.02	-0.03
6148	-14.9	28.06	3.45	28.25	28.04	3.46	28.22	-0.02	-0.03
5580	-16.11	28.04	3.34	28.22	28.03	3.35	28.2	-0.01	-0.02
5008	-19.62	28.01	3.4	28.19	28	3.4	28.18	-0.01	-0.01
4887	-19.87	28.01	3.34	28.18	28	3.31	28.17	-0.01	-0.01
4834	-19.86	28.01	3.32	28.18	28	3.32	28.17	-0.01	-0.01
4784	-20.06	28.01	3.3	28.18	28	3.28	28.17	-0.01	-0.01
4710	-19.46	28.01	3.24	28.17	28	3.24	28.17	-0.01	0
4632	-19.4	28.01	3.21	28.17	28.01	3.19	28.16	0	-0.01
4580	-19.08	28	3.25	28.17	28	3.25	28.16	0	-0.01
4017	-21.17	28	3.13	28.15	27.99	3.13	28.14	-0.01	-0.01
3962	-21.47	27.99	3.17	28.15	27.99	3.15	28.14	0	-0.01
3890	-21.09	27.99	3.08	28.14	27.99	3.08	28.14	0	0
3467	-18.81	27.99	3.01	28.13	27.98	3.01	28.12	-0.01	-0.01
2856	-13.11	27.99	2.66	28.1	27.99	2.66	28.1	0	0
2287	-16.77	27.99	2.49	28.09	27.99	2.49	28.08	0	-0.01
1911	-18.58	27.99	2.39	28.08	27.98	2.39	28.07	-0.01	-0.01
1782	-29.48	27.99	2.43	28.07	27.98	2.43	28.07	-0.01	0
1670	-40.87	28	2.03	28.06	28	2.01	28.06	0	0
1589	-38.32	28	2.06	28.06	27.99	2.04	28.06	-0.01	0
1265	-21.1	27.98	2.25	28.06	27.98	2.21	28.05	0	-0.01
975	-15.93	27.97	2.29	28.05	27.97	2.26	28.05	0	0
689	-14.95	27.89	3.19	28.04	27.89	3.19	28.04	0	0
612	-20.24	27.87	3.38	28.03	27.87	3.38	28.03	0	0
552	-24.96	27.9	2.83	28.02	27.9	2.83	28.02	0	0

WS (ft) - Water surface elevation (ft NAVD88)
Vel CH (ft/s) - Velocity of flow in channel (ft/second)
EG (ft) - Energy grade (ft NAVD88)
(*) Three cross-sections added for Washougal River above Camas Slough

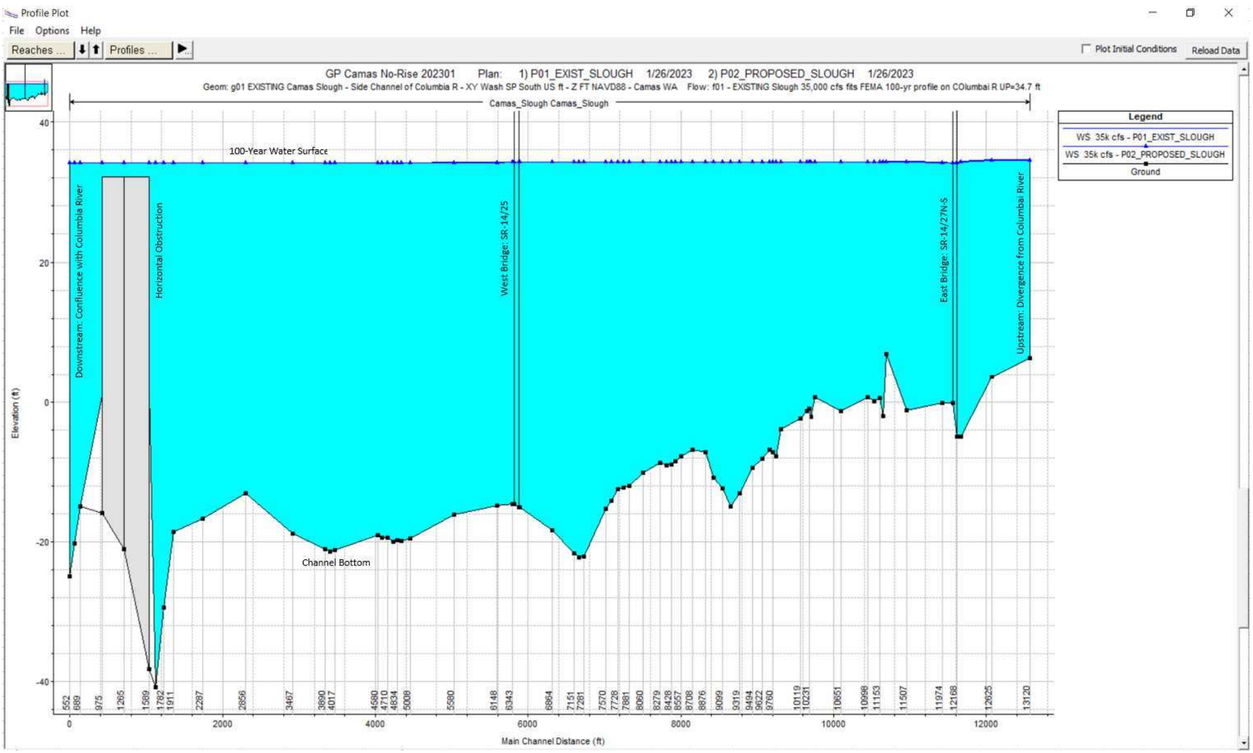
APPENDIX D:

EXISTING-CONDITION DATA FOR CAMAS SLOUGH MODEL

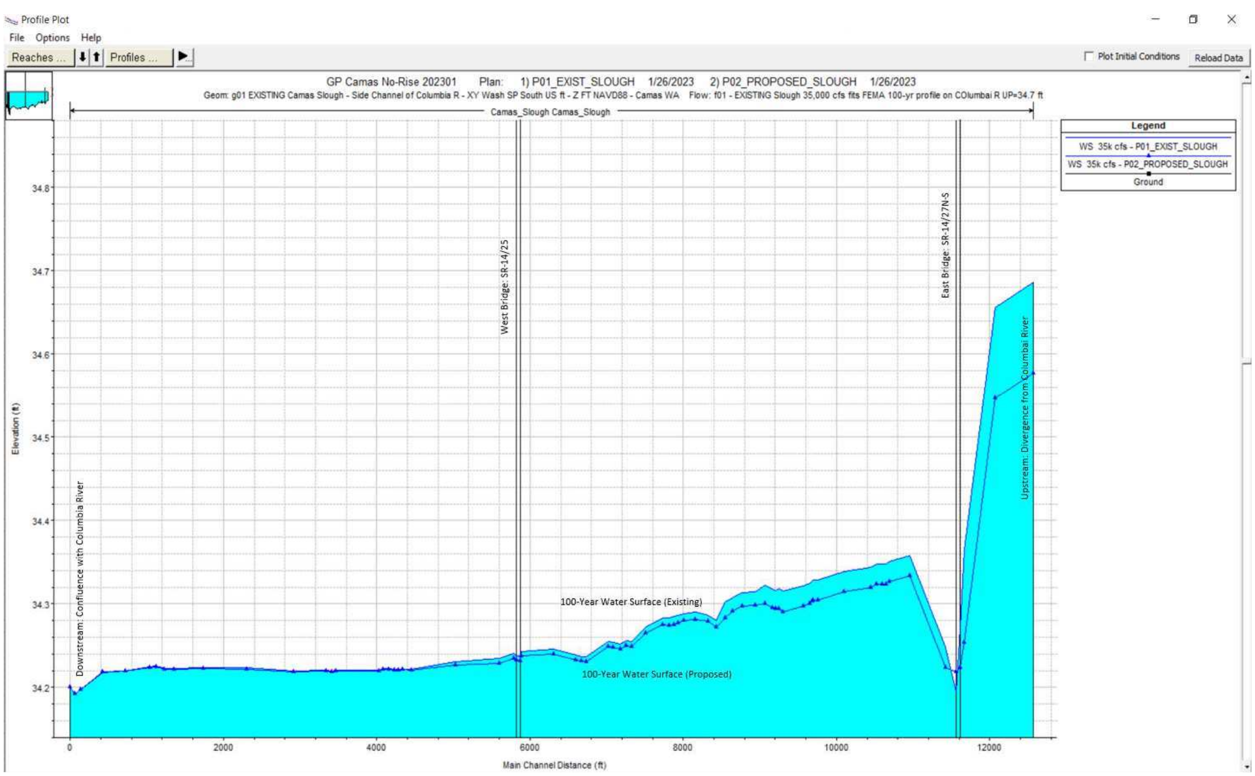
Appendix D. HEC-RAS Hydraulic Model Data for Existing Conditions



Schematic of Camas Slough Model Cross-Section Locations



Profile of Camas Slough Model (Full-Scale; Cross-Sections Labeled)

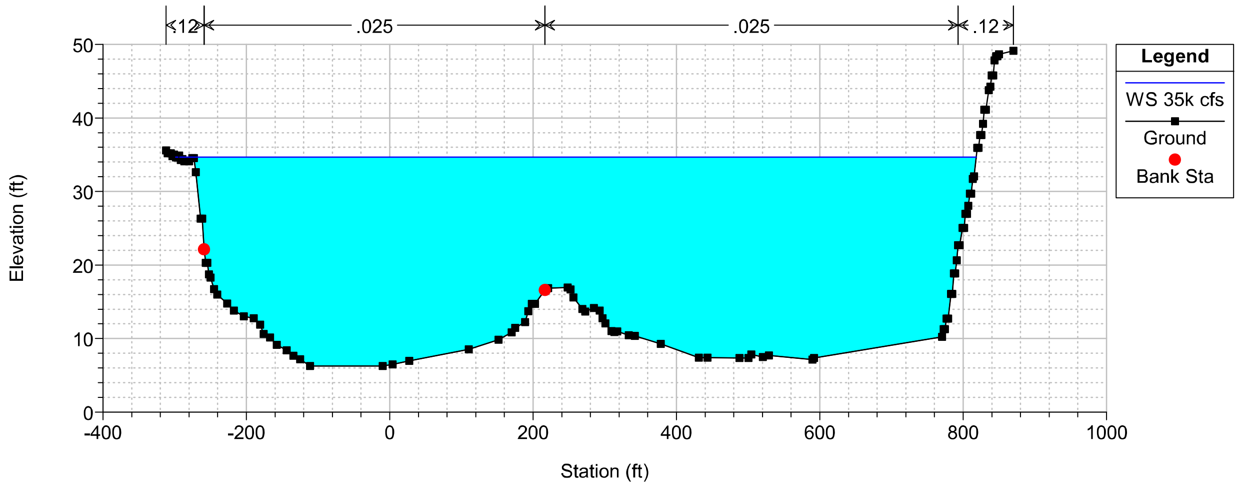


Profile of Camas Slough Model (Expanded Scale)

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

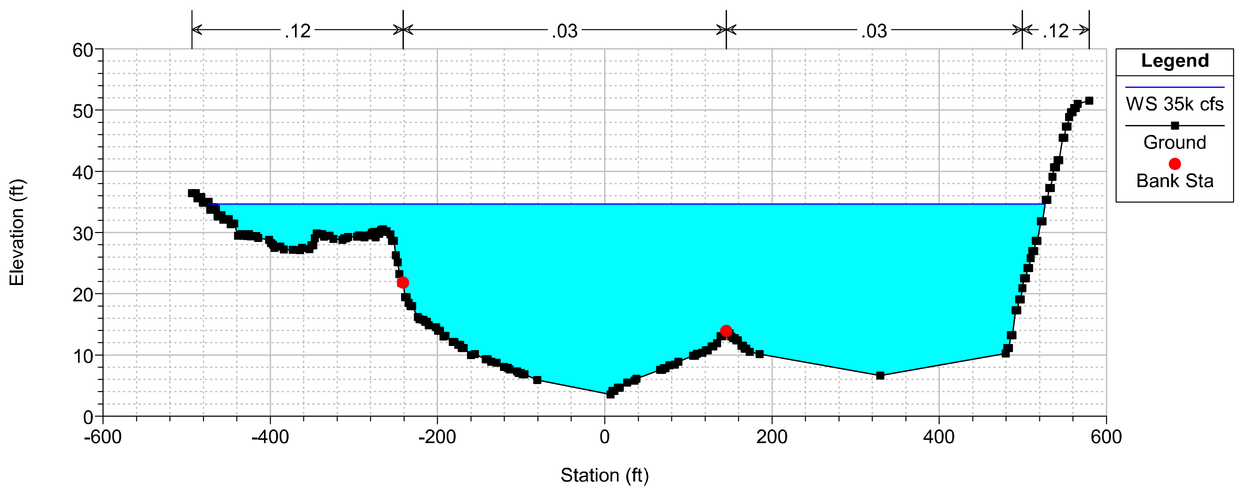
River = Camas_Slough Reach = Camas_Slough RS = 13120 Uppermost XS=4121 ft ds of FIRM XS 'AD'



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

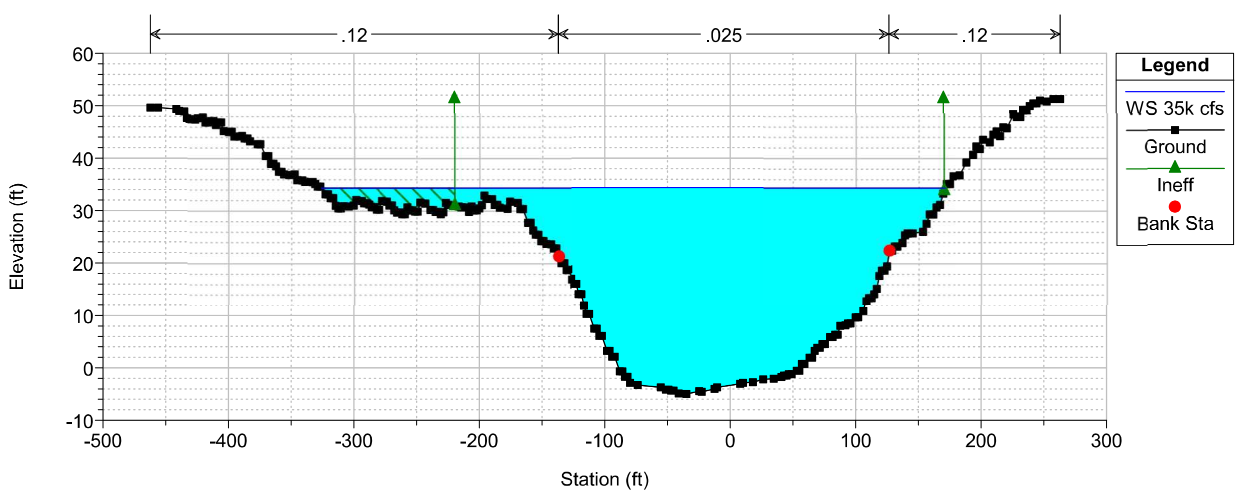
River = Camas_Slough Reach = Camas_Slough RS = 12625 Above East Bridge SR14-27S/N

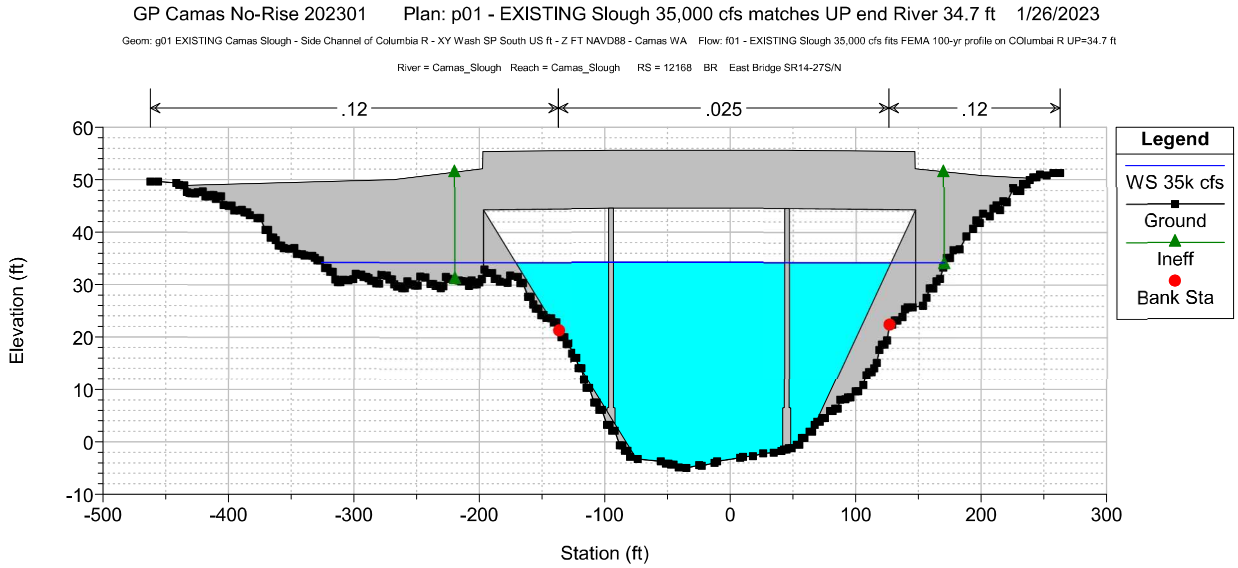


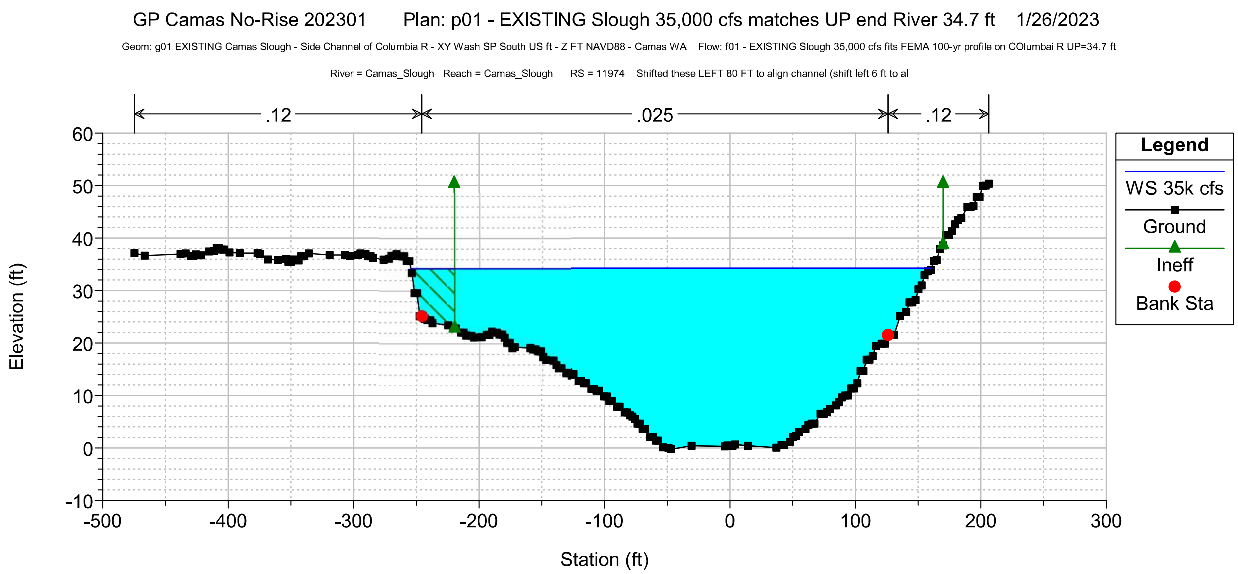
GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

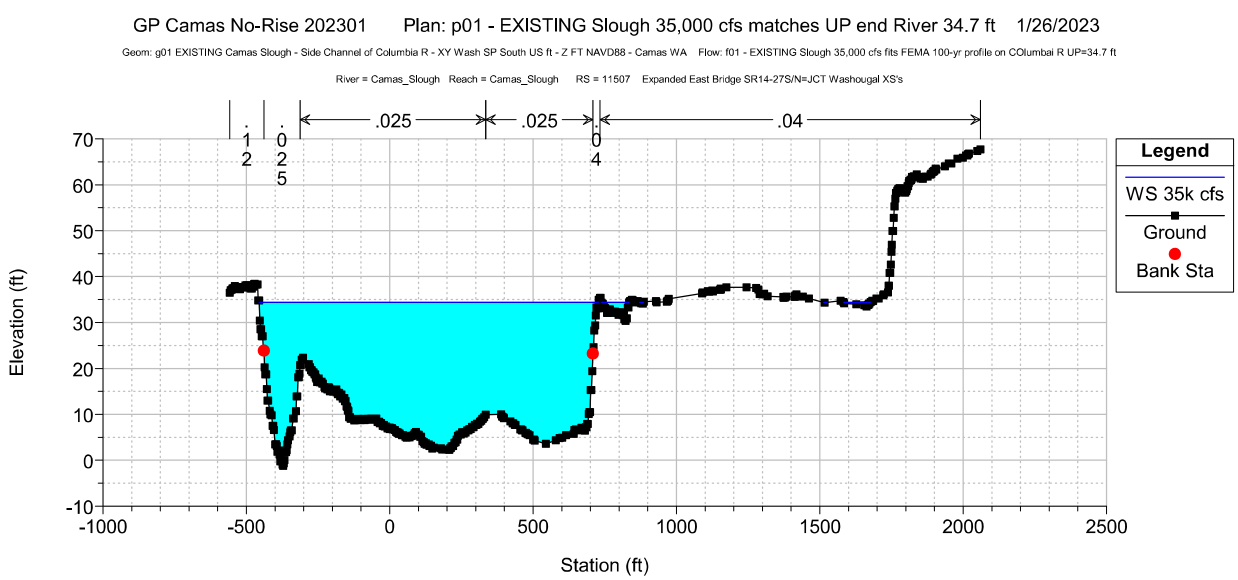
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

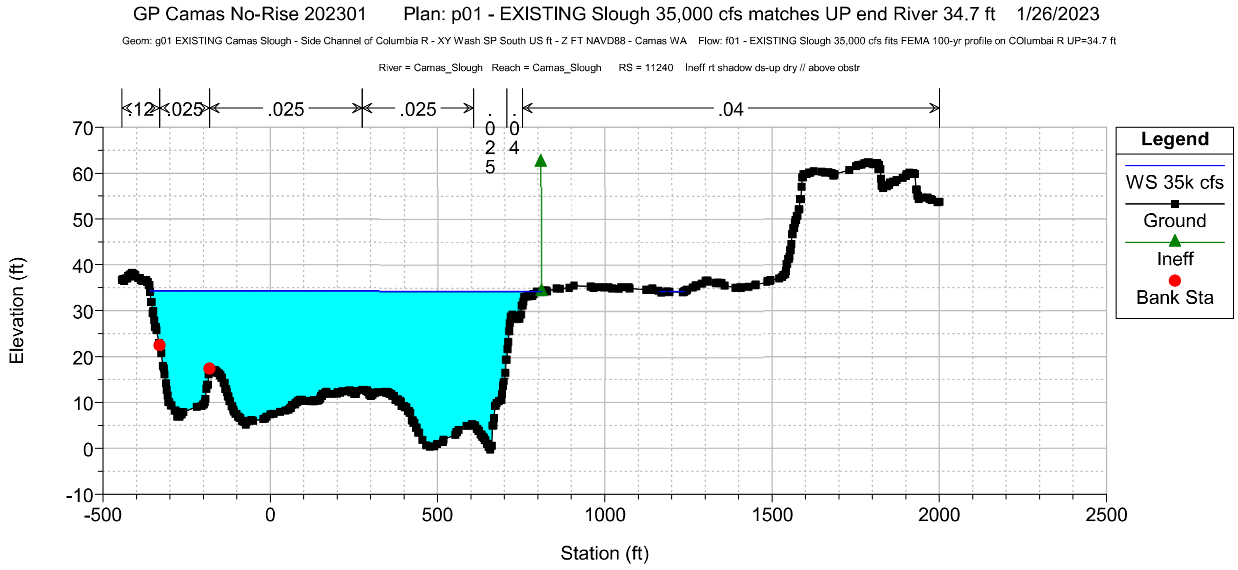
River = Camas_Slough Reach = Camas_Slough RS = 12222 UP East Bridge SR14-27S/N

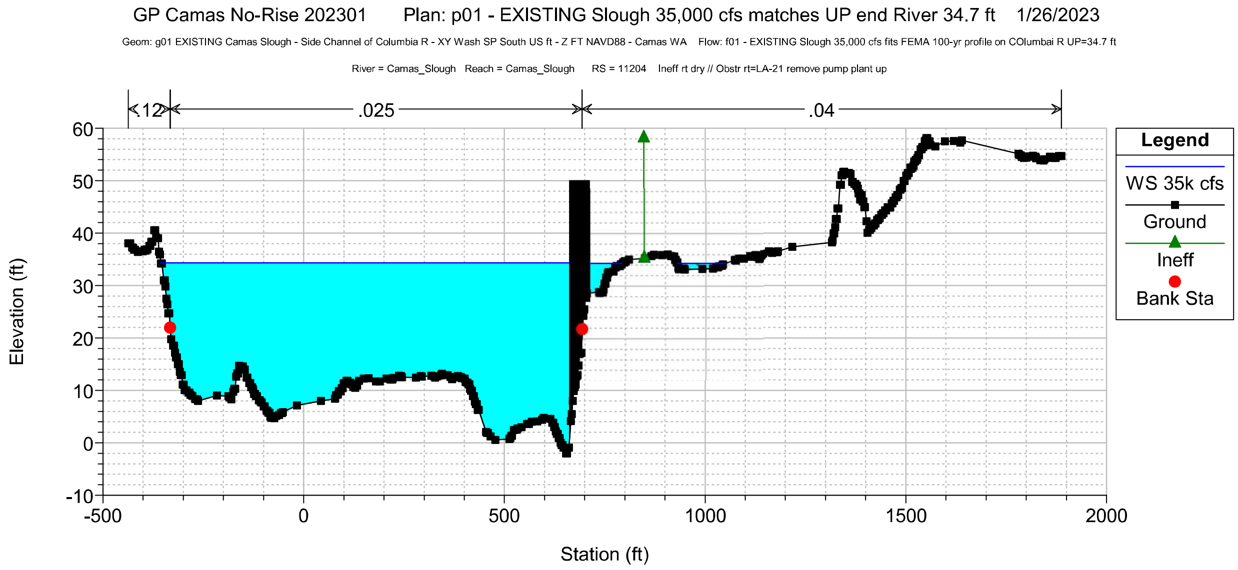


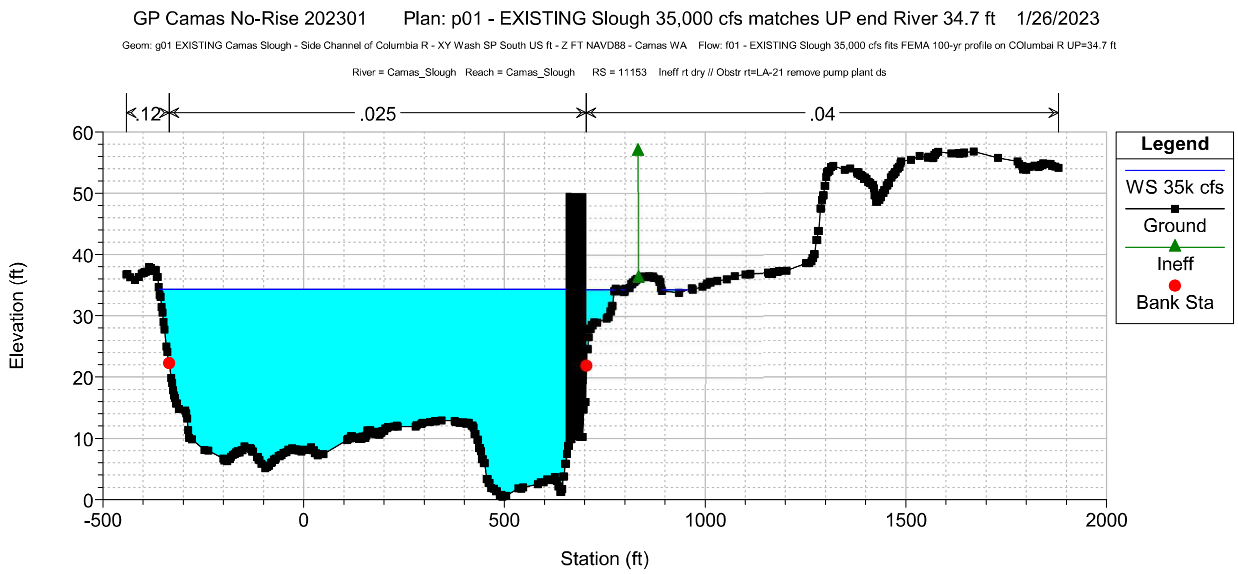

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 12168 BR East Bridge SR14-27S/N
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-500
-400
-300
-200
-100
0
100
200
300

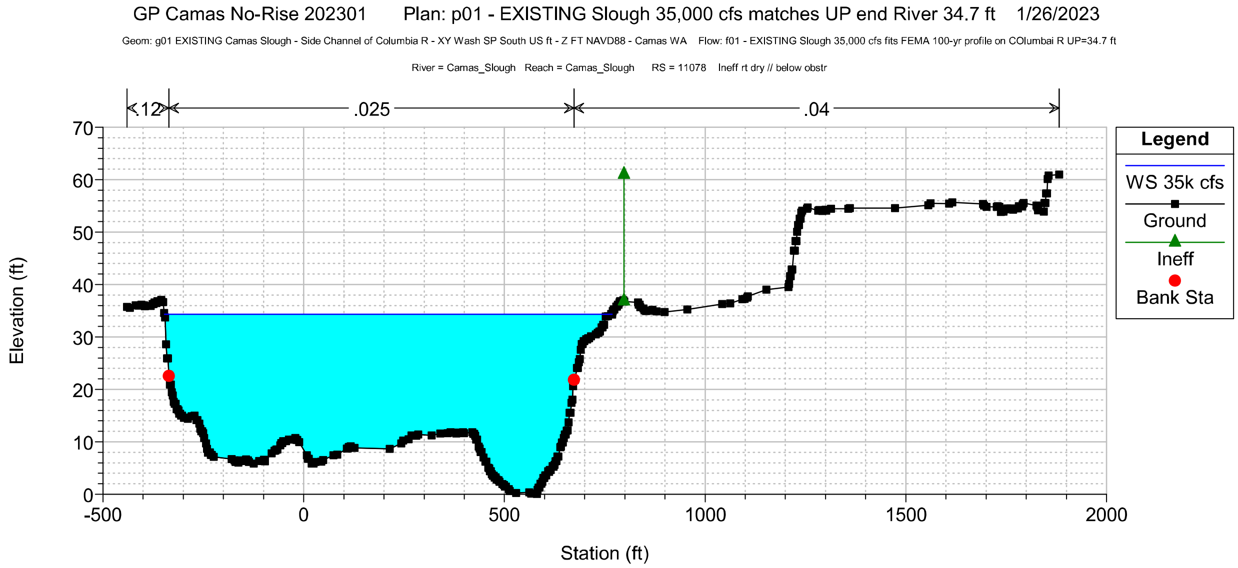

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11974 Shifted these LEFT 80 FT to align channel (shift left 6 ft to al
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-500
-400
-300
-200
-100
0
100
200
300

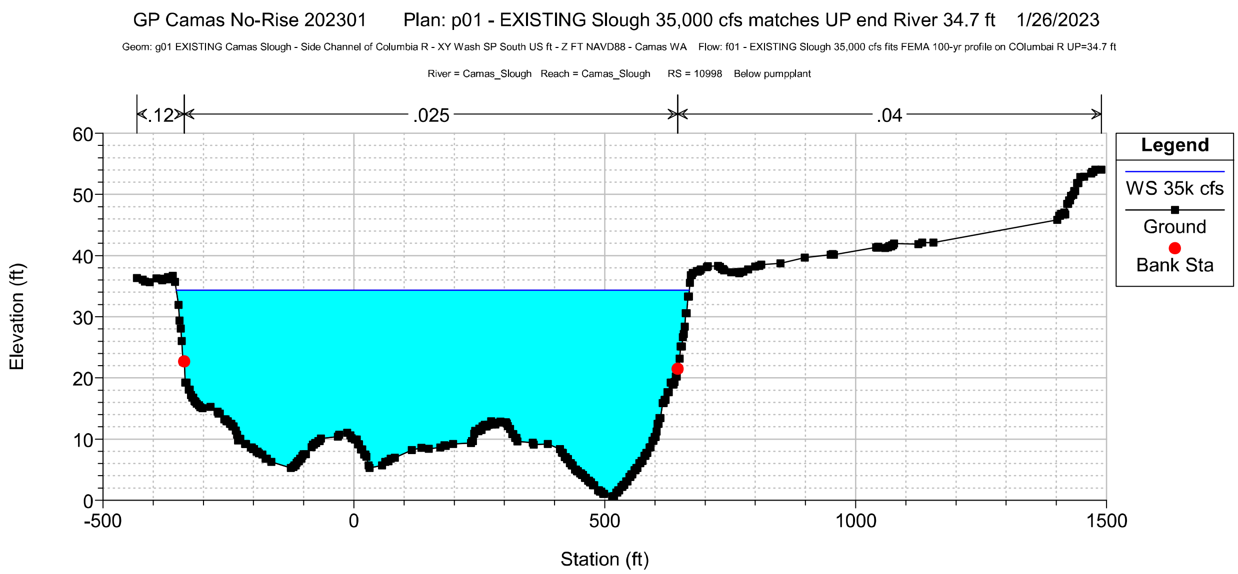

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11507 Expanded East Bridge SR14-27S/N=JCT Washougal XS's
.12
.025
.025
.025
.04
.04
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-10
-1000
-500
0
500
1000
1500
2000
2500

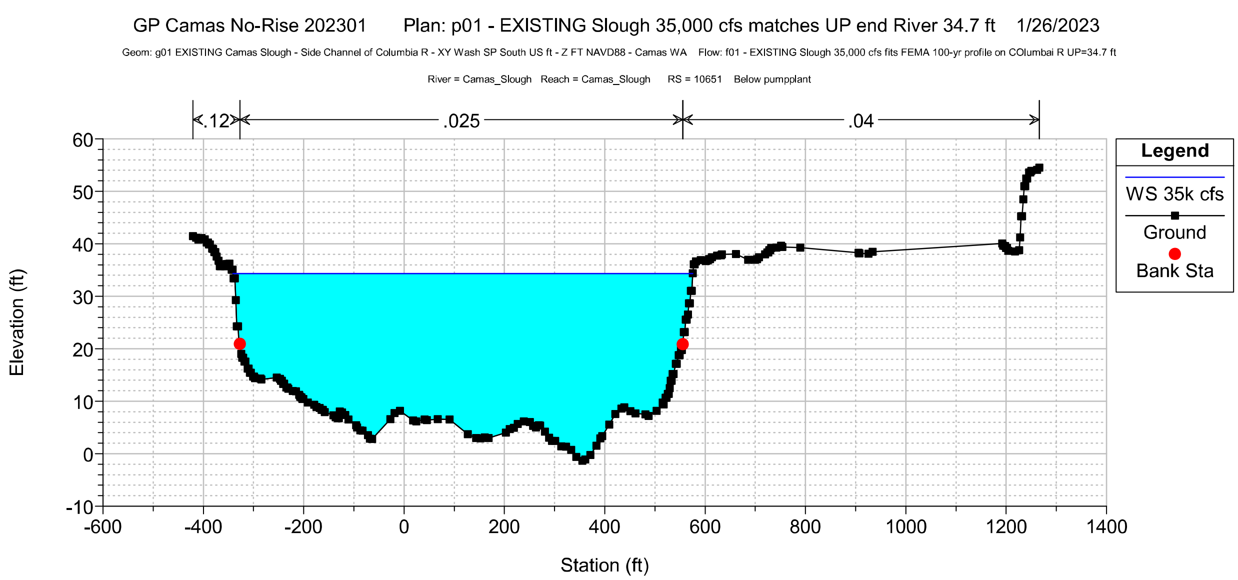

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11240 Ineff rt shadow ds-up dry // above obstr
.12
.025
.025
.025
.025
.04
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta

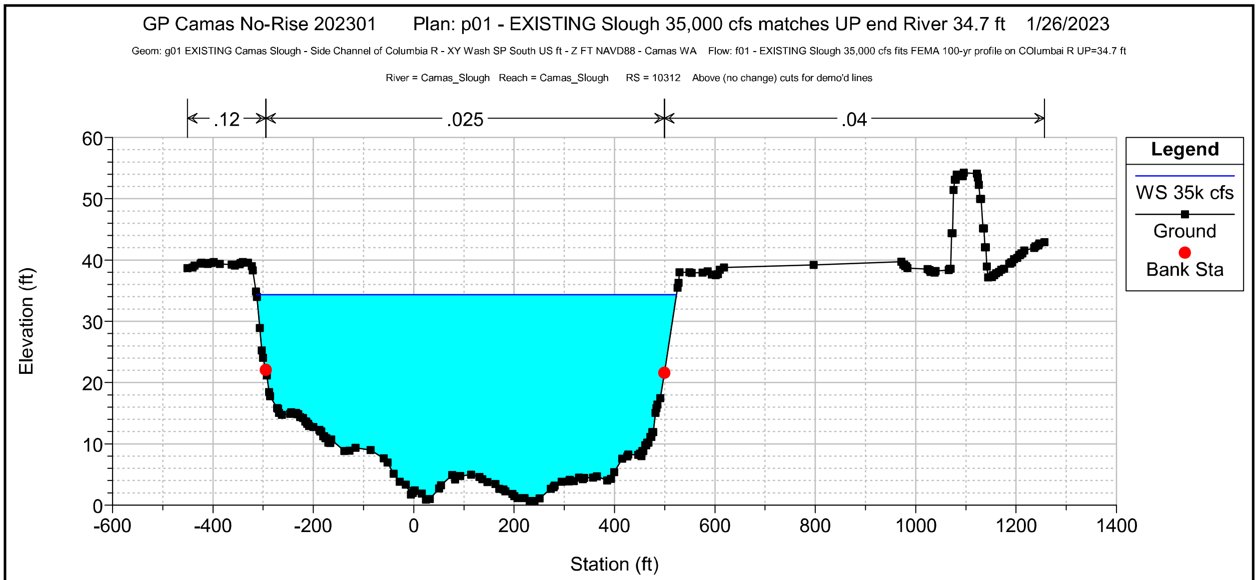

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11204 Ineff rt dry // Obstr rt=LA-21 remove pump plant up
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11153 Ineff rt dry // Obstr rt=LA-21 remove pump plant ds
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta

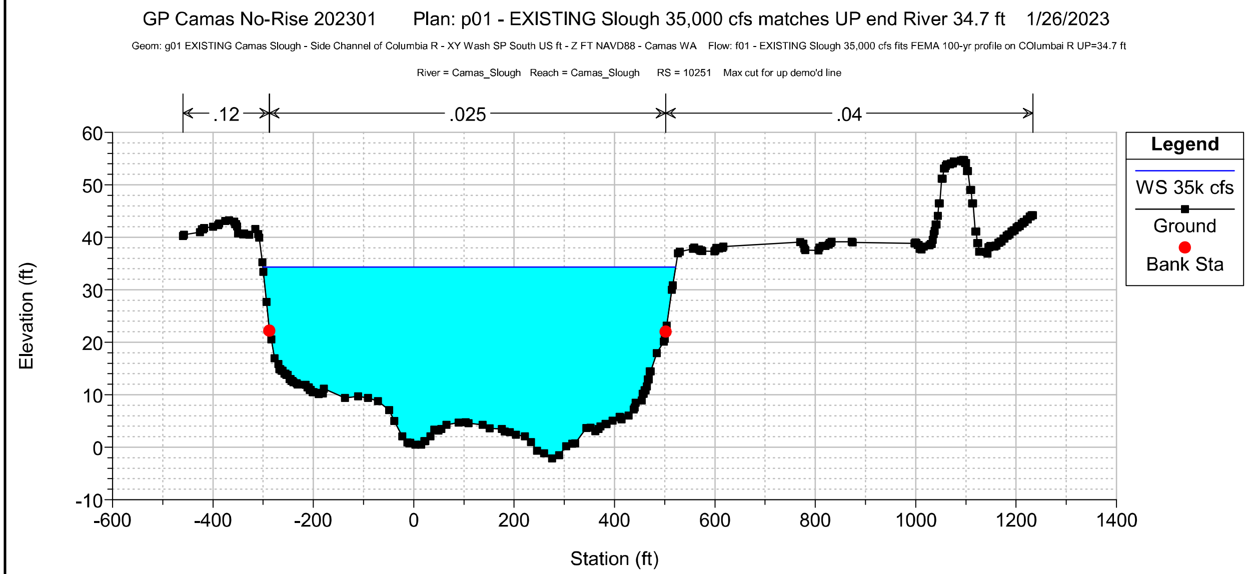

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11078 Ineff rt dry // below obstr
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10998 Below pumpplant
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta

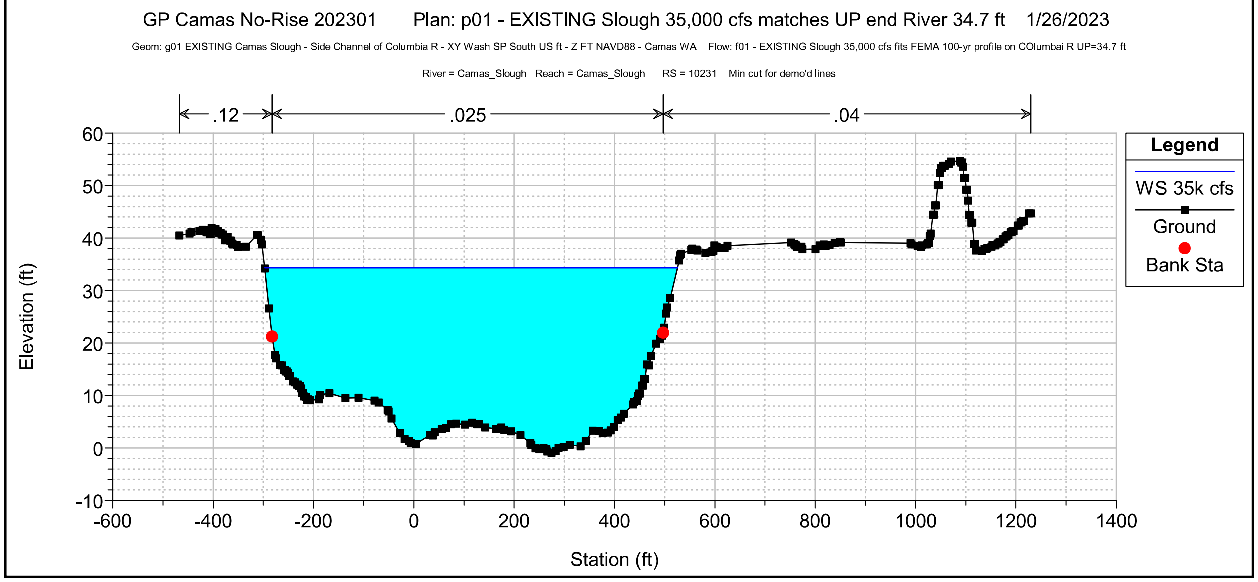

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10651 Below pumpplant
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta



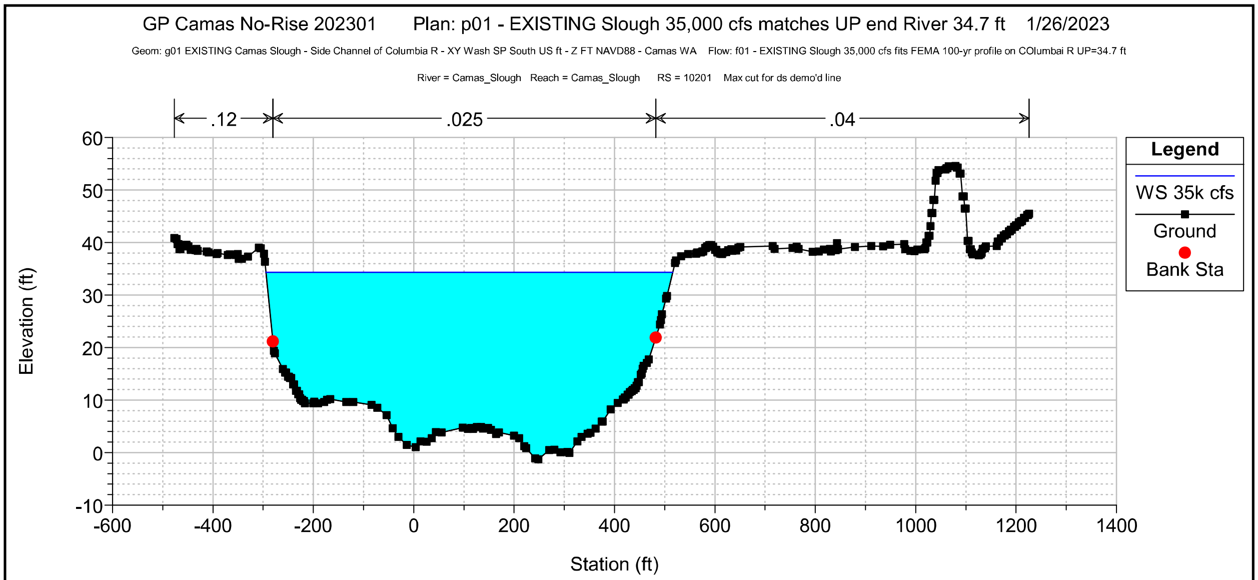
GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10312 Above (no change) cuts for demo'd lines
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta

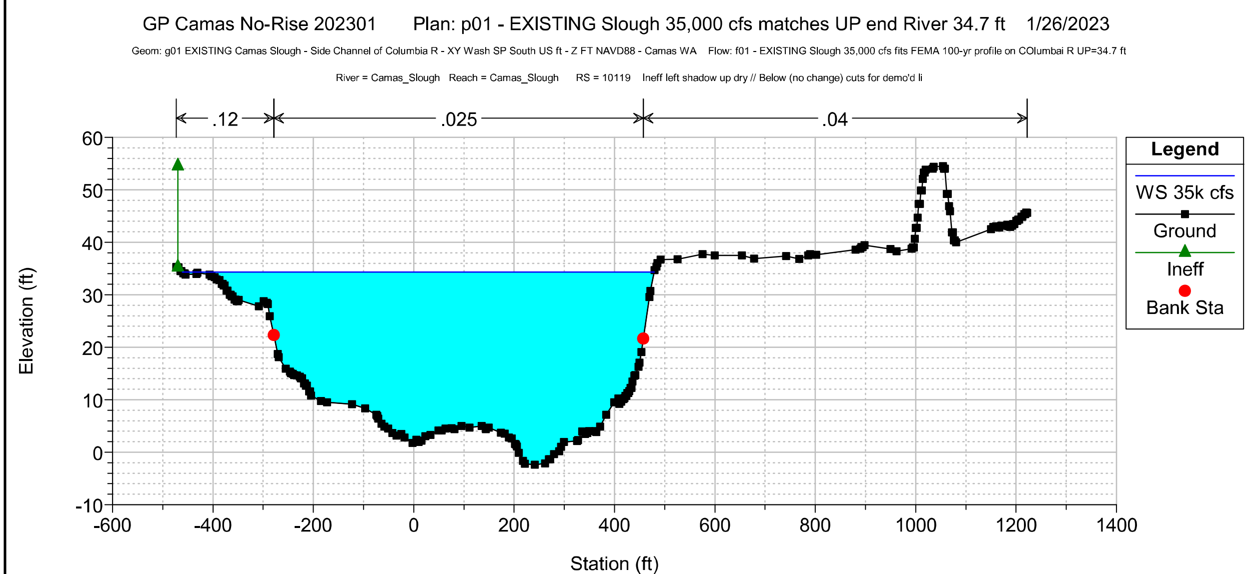


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10251 Max cut for up demo'd line
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10231 Min cut for demo'd lines
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10201 Max cut for ds demo'd line
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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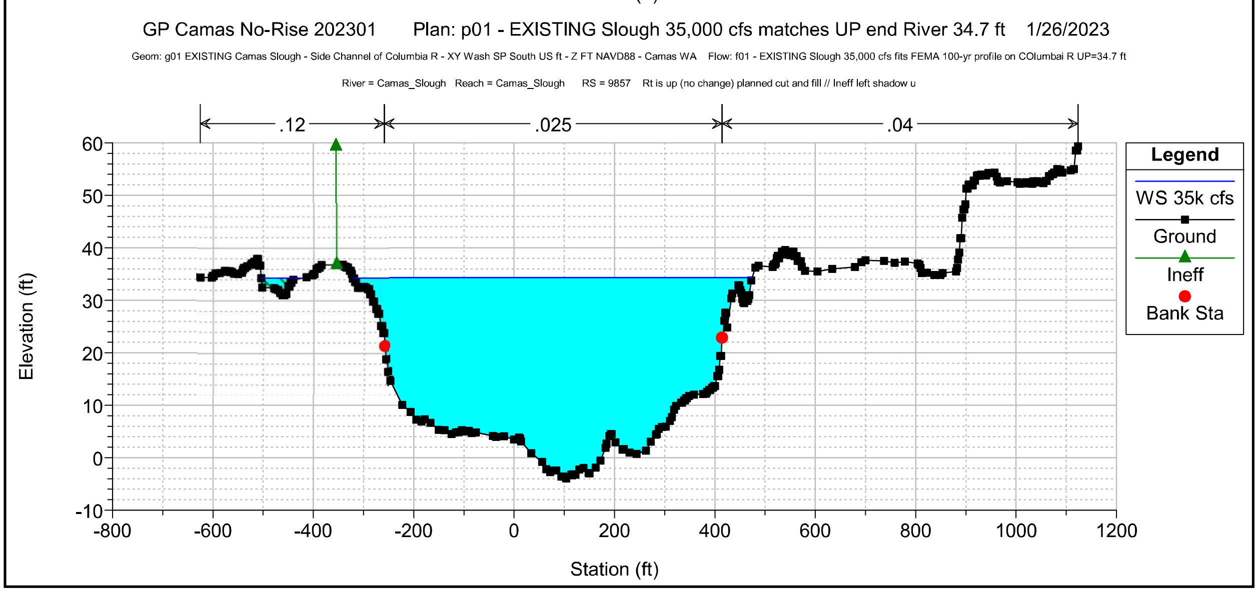
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10119 Ineff left shadow up dry // Below (no change) cuts for demo'd li
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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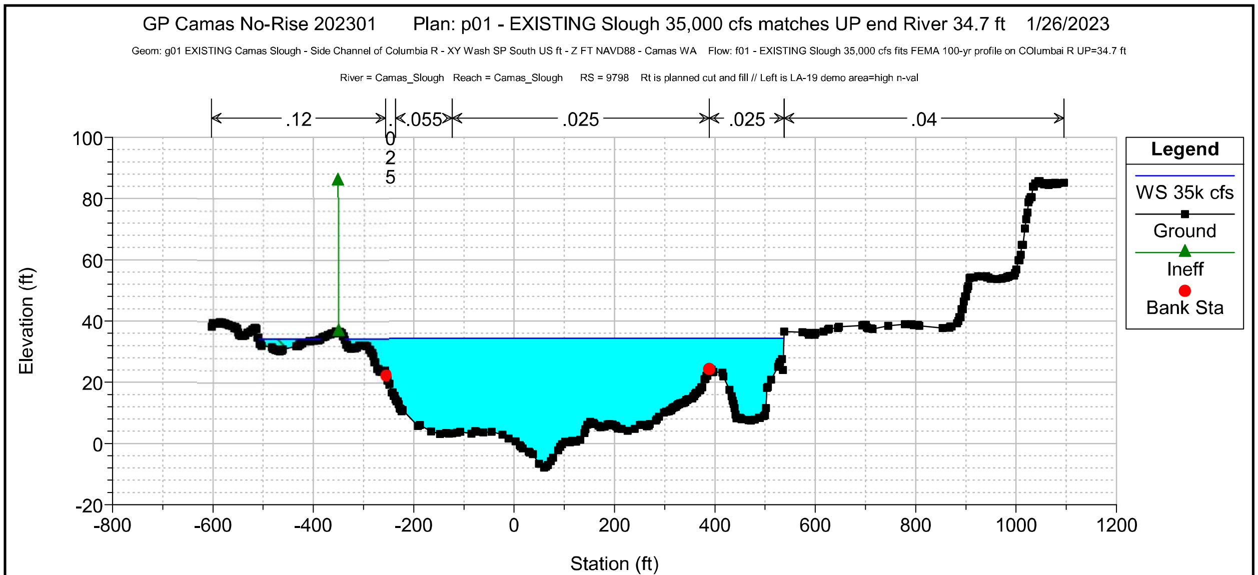
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9857 Rt is up (no change) planned cut and fill // Ineff left shadow u
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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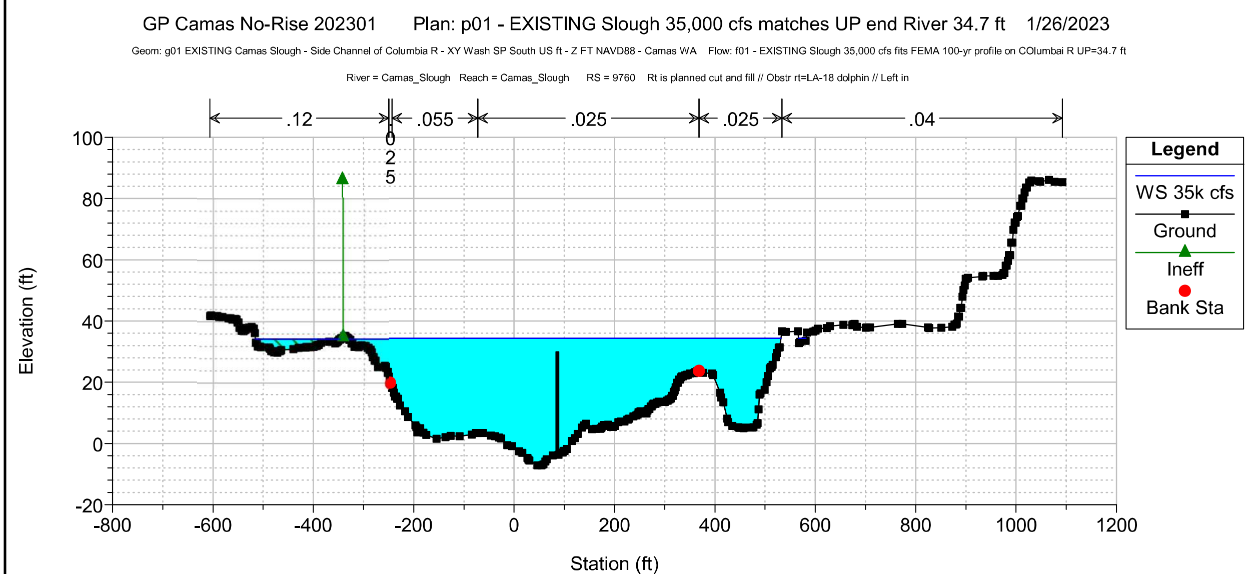
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9798 Rt is planned cut and fill // Left is LA-19 demo area=high n-val
.12
.025
.055
.025
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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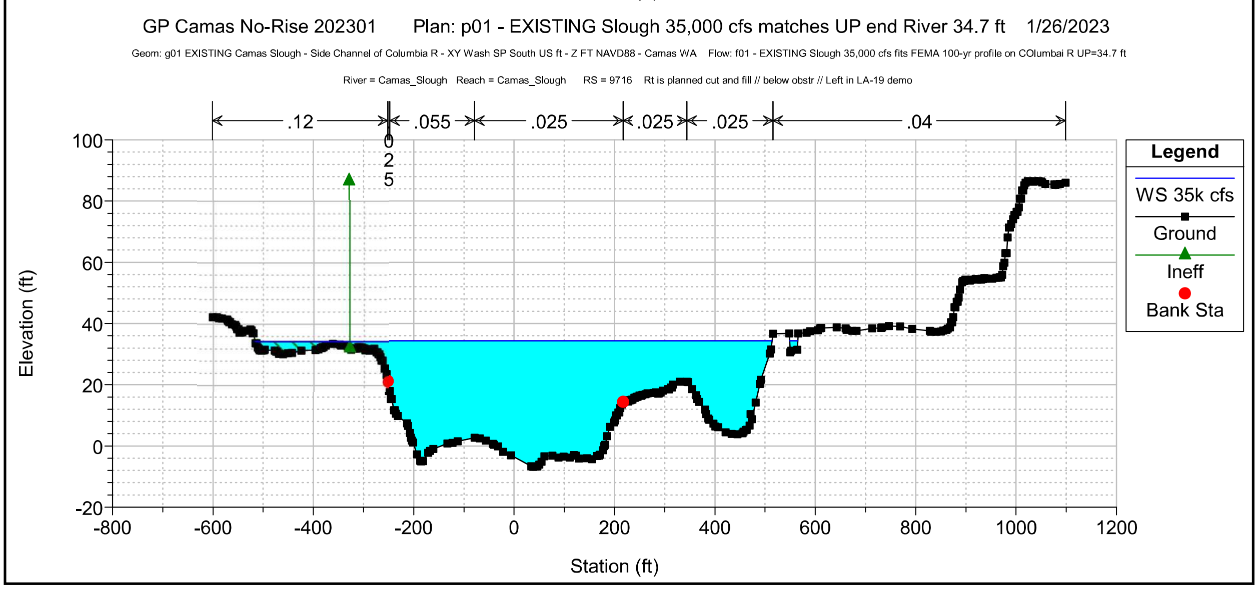
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9760 Rt is planned cut and fill // Obstr rt=LA-18 dolphin // Left in
.12
.025
.055
.025
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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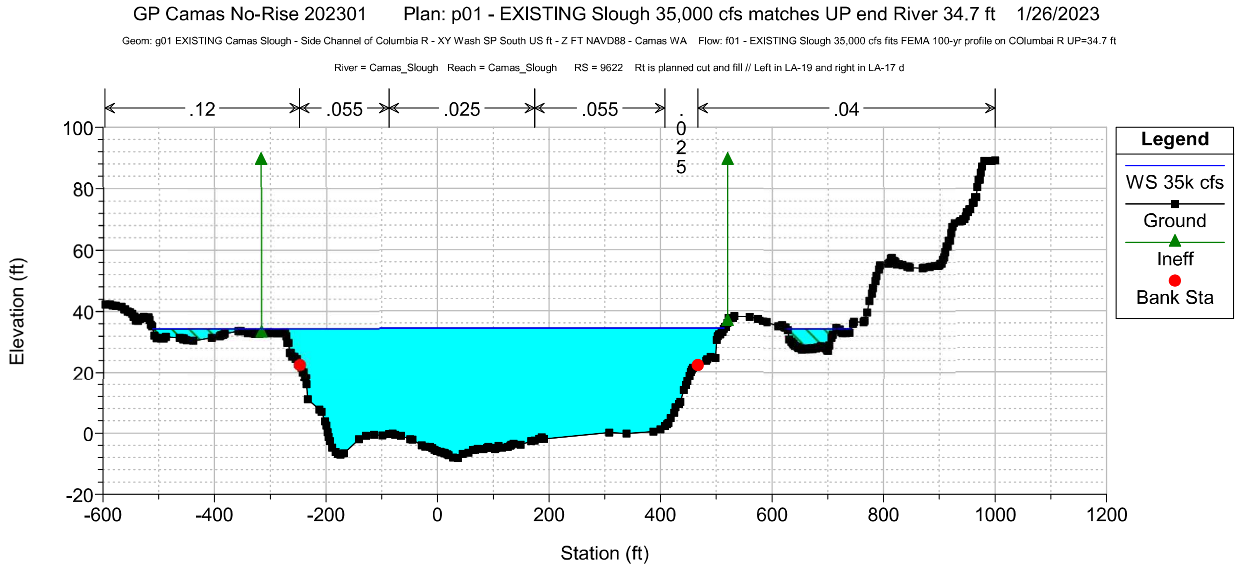
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9716 Rt is planned cut and fill // below obstr // Left in LA-19 demo
.12
.025
.055
.025
.025
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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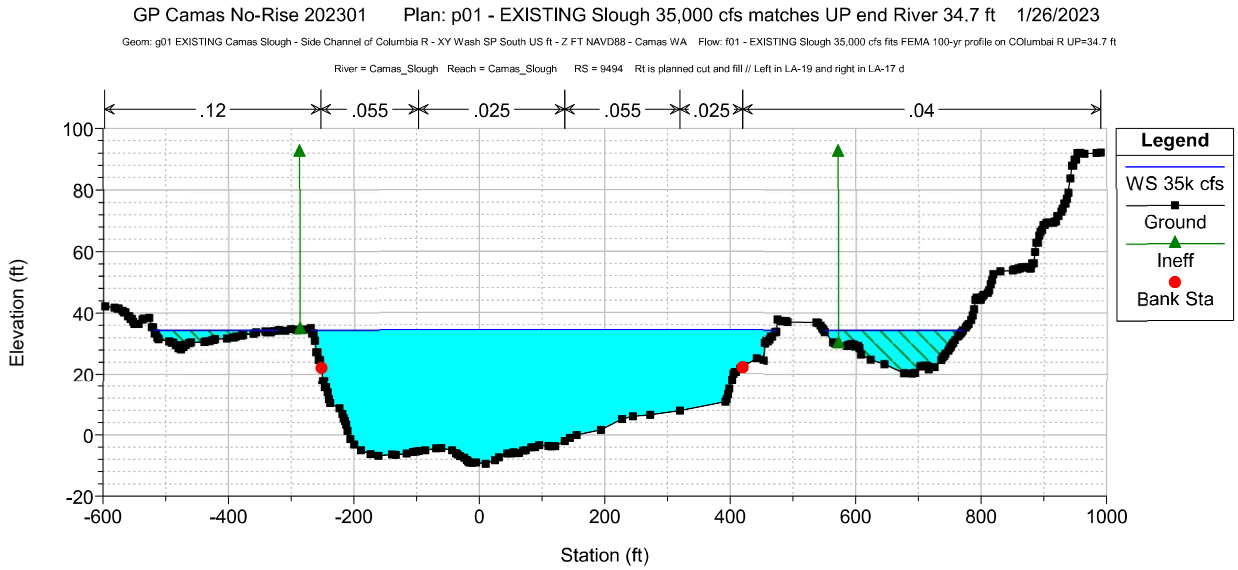
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9622 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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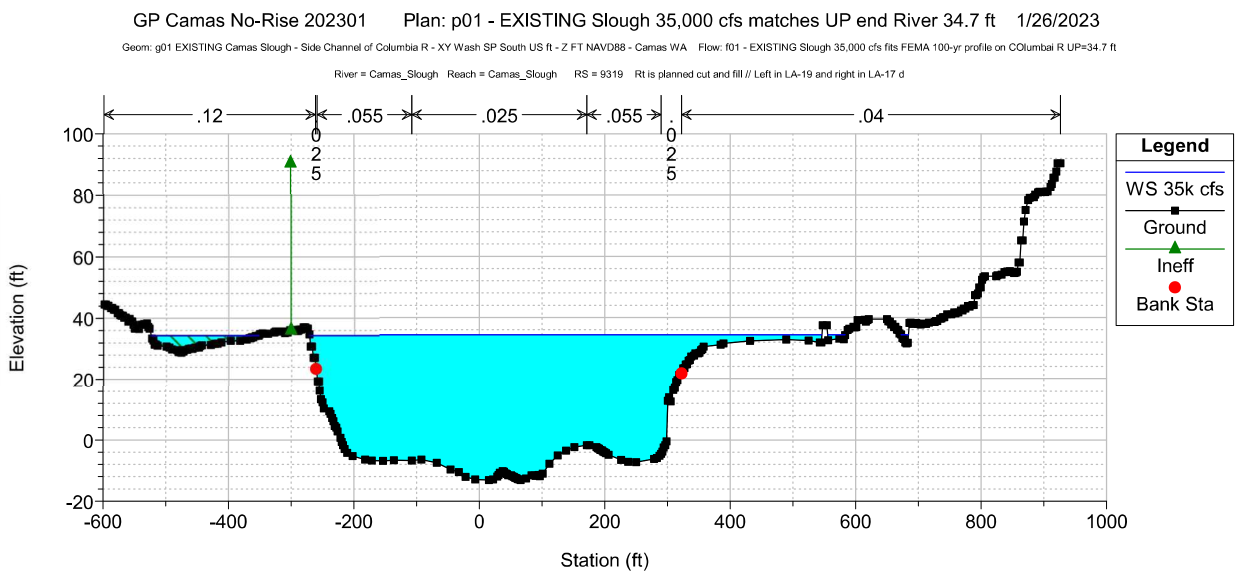
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9494 Rt is planned cut and fill // Left in LA-19 and right in LA-17
.12
.055
.025
.055
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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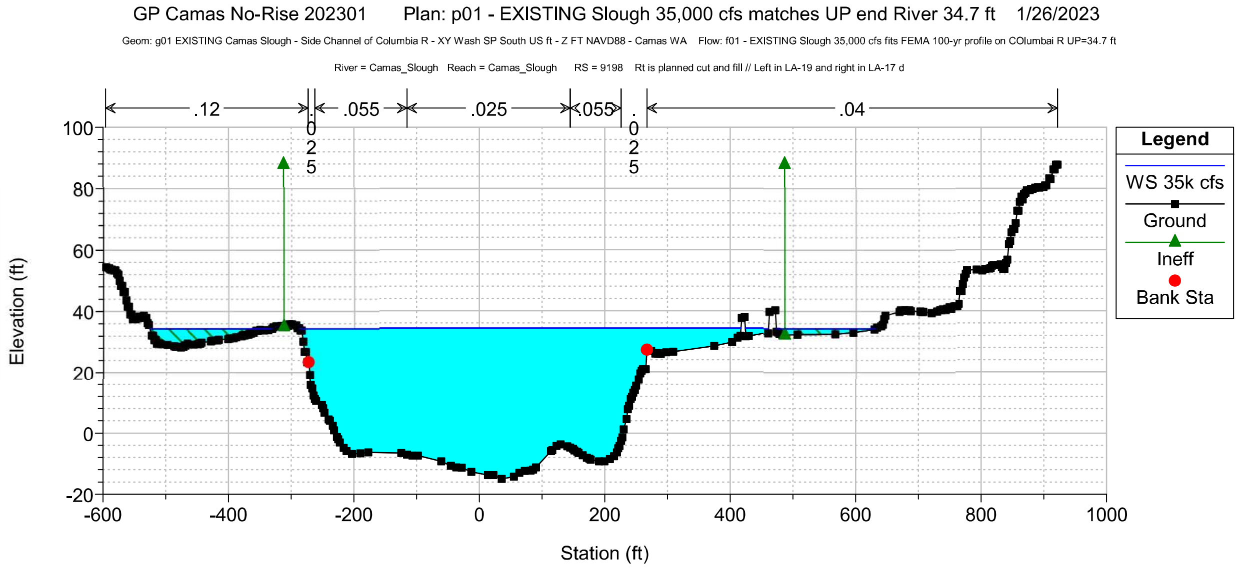
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9319 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.025
.055
.025
.055
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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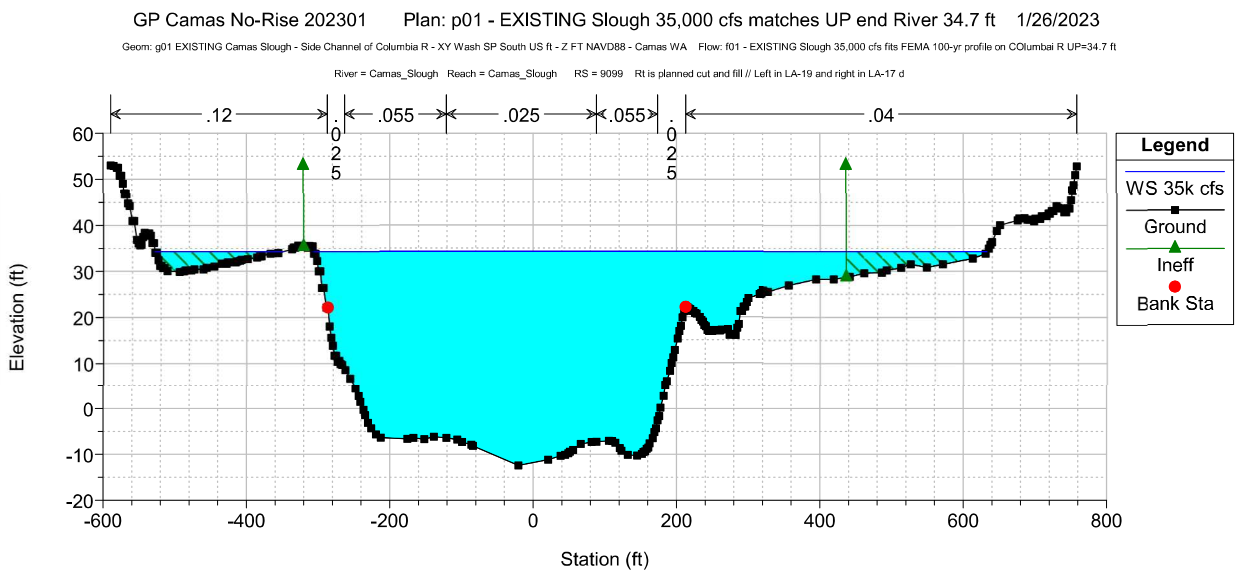
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9198 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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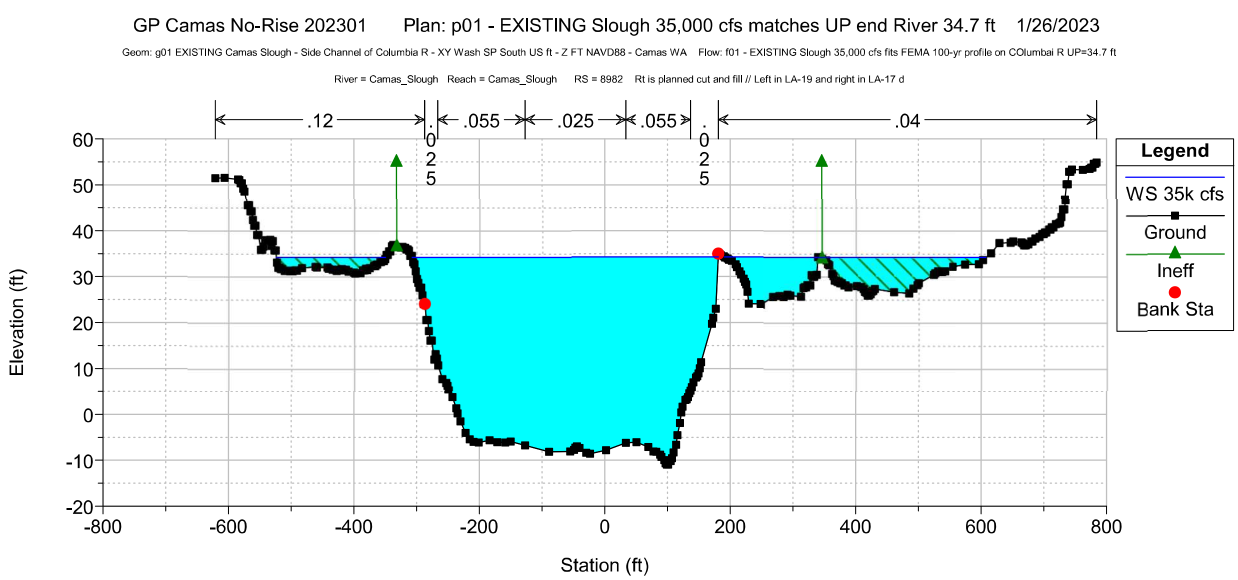
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9099 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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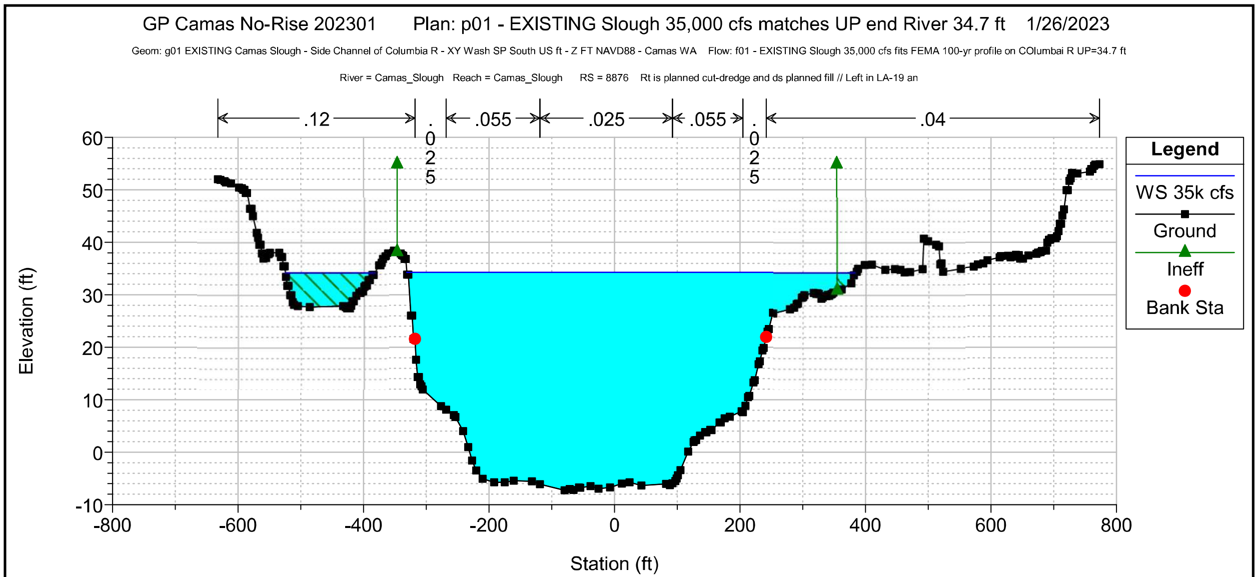
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8982 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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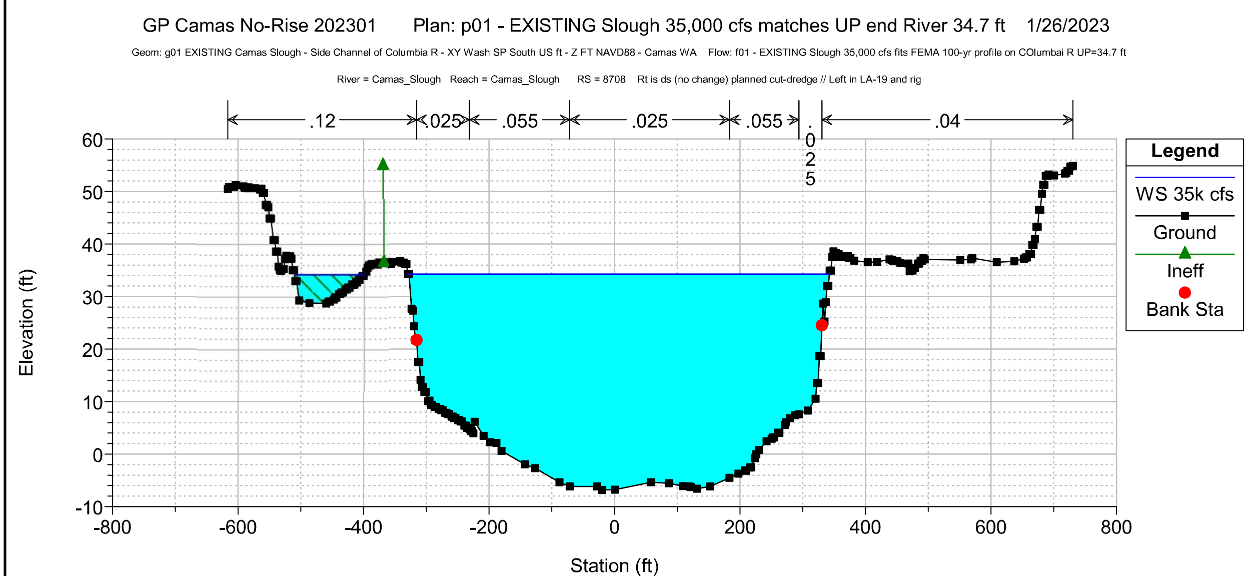
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8876 Rt is planned cut-dredge and ds planned fill // Left in LA-19 an
.12
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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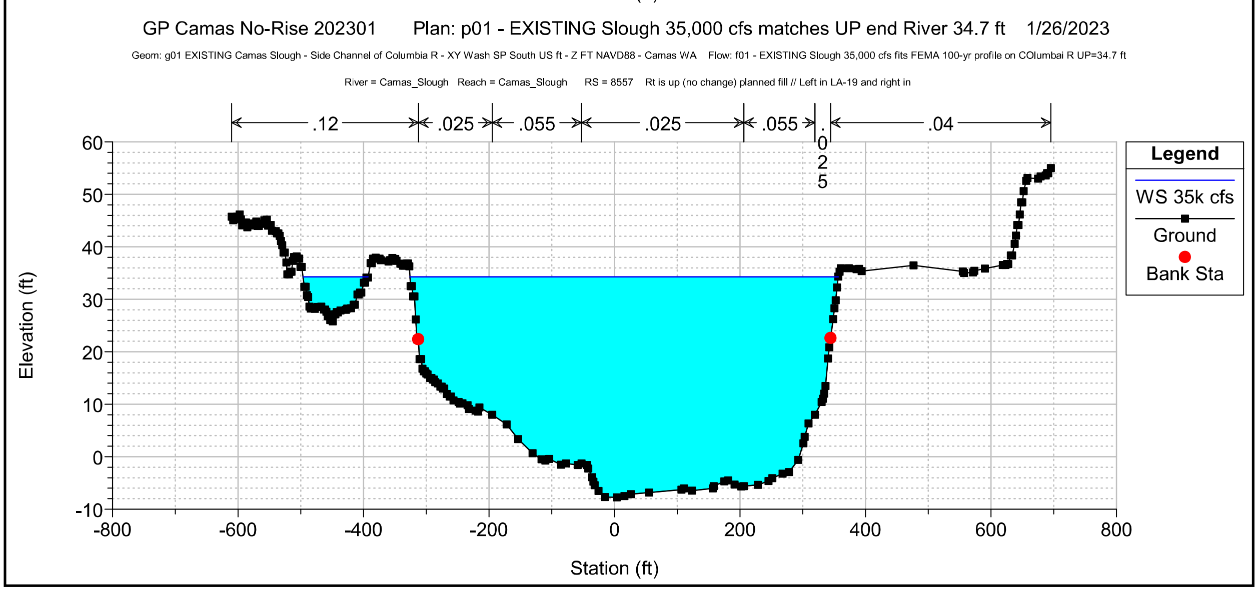
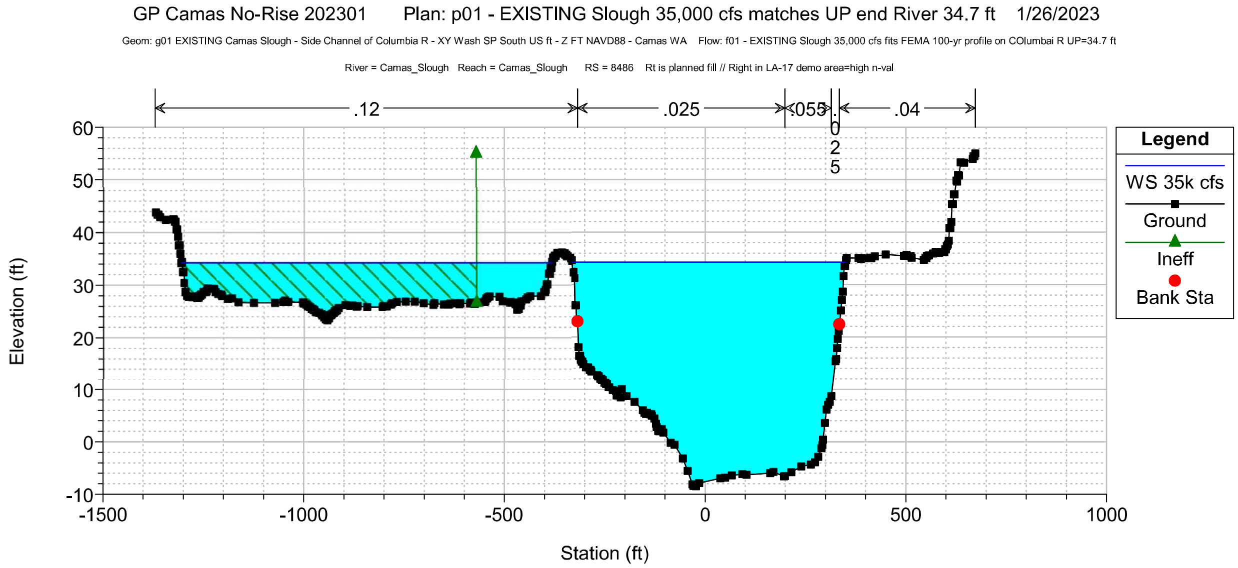
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8708 Rt is ds (no change) planned cut-dredge // Left in LA-19 and rig
.12
.025
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8557 Rt is up (no change) planned fill // Left in LA-19 and right in
.12
.025
.055
.025
.055
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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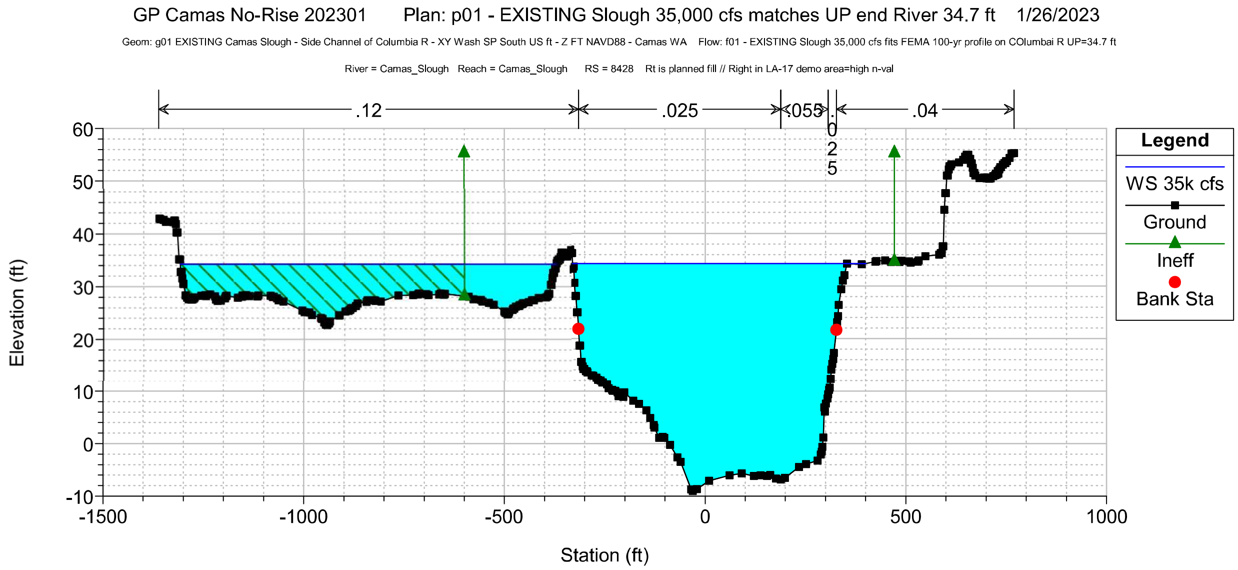
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8486 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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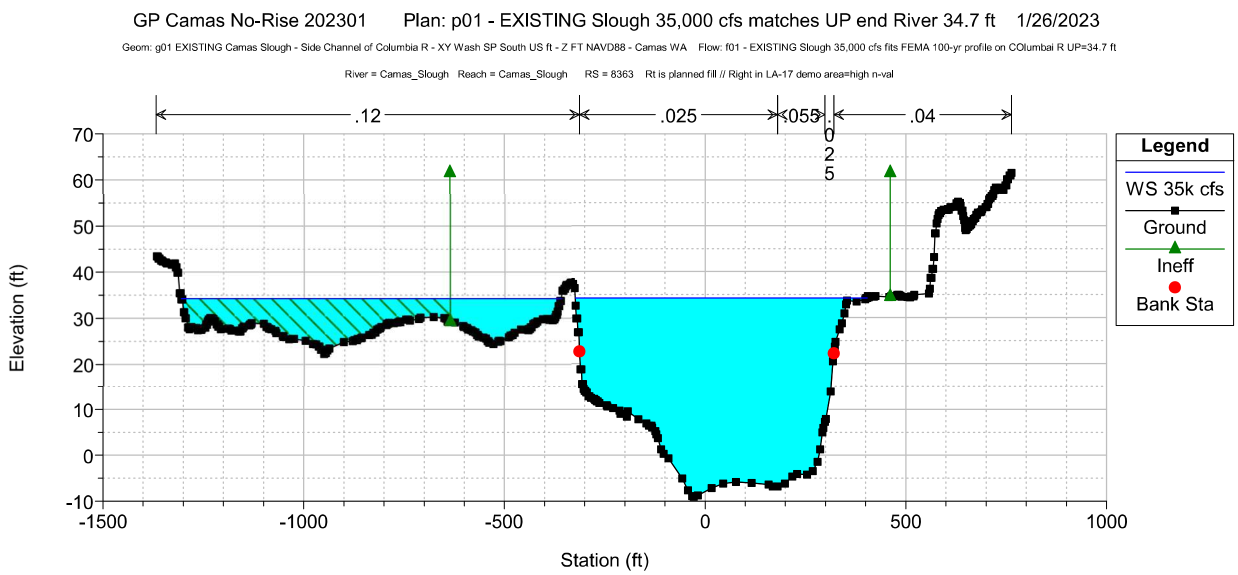
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8428 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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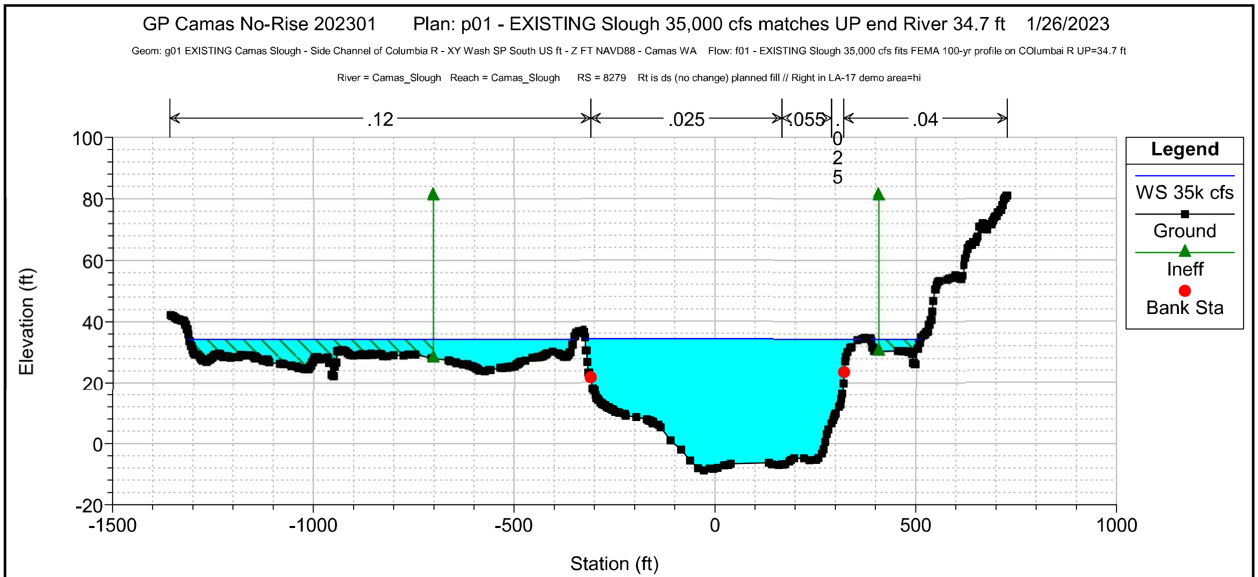
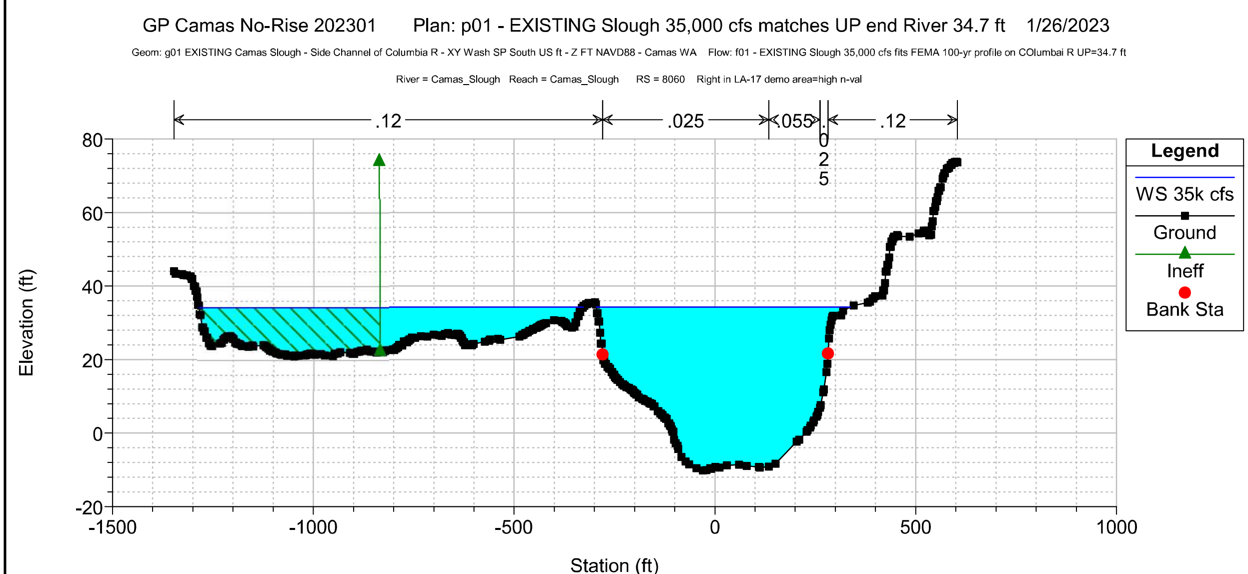
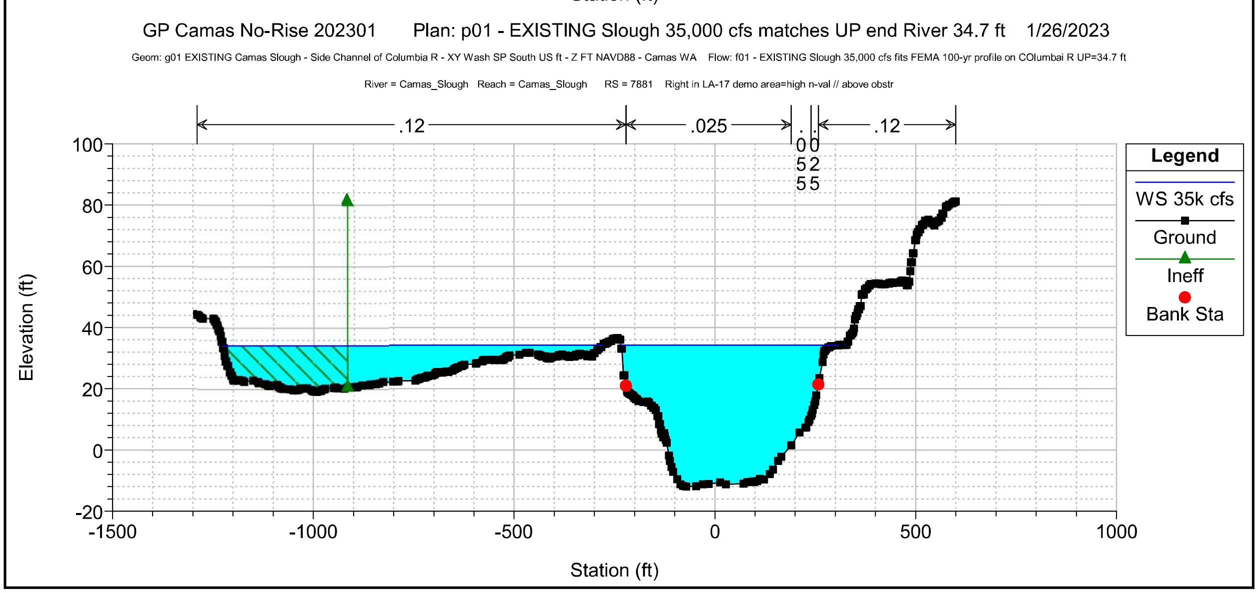
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8363 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta



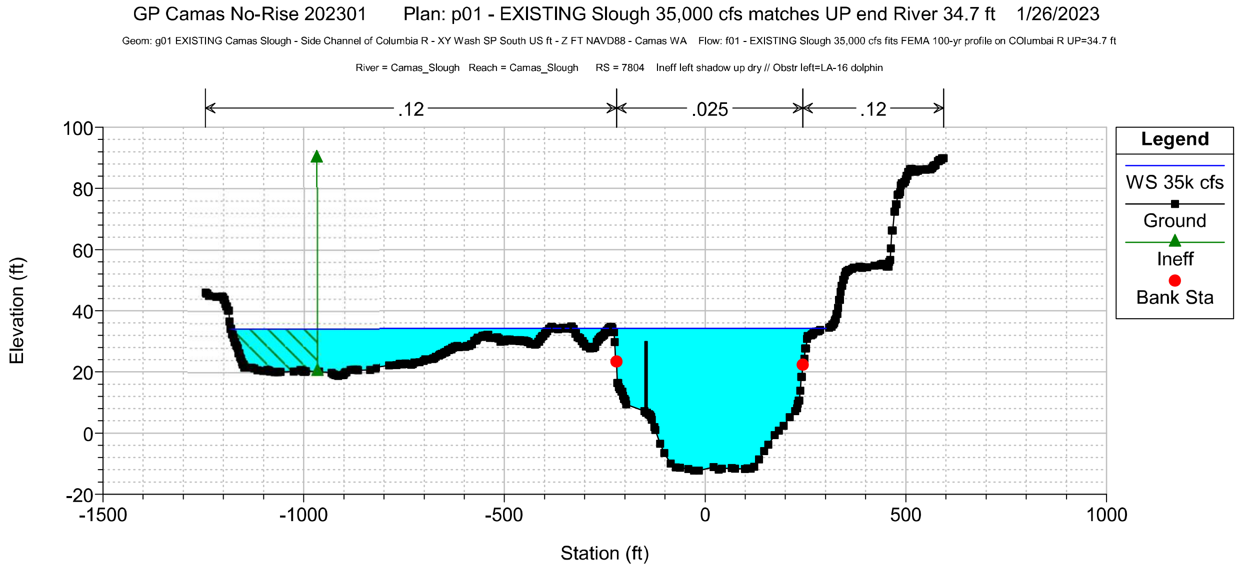
GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8279 Rt is ds (no change) planned fill // Right in LA-17 demo area=hi
.12
.025
.055
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8060 Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7881 Right in LA-17 demo area=high n-val // above obstr
.12
.025
.055
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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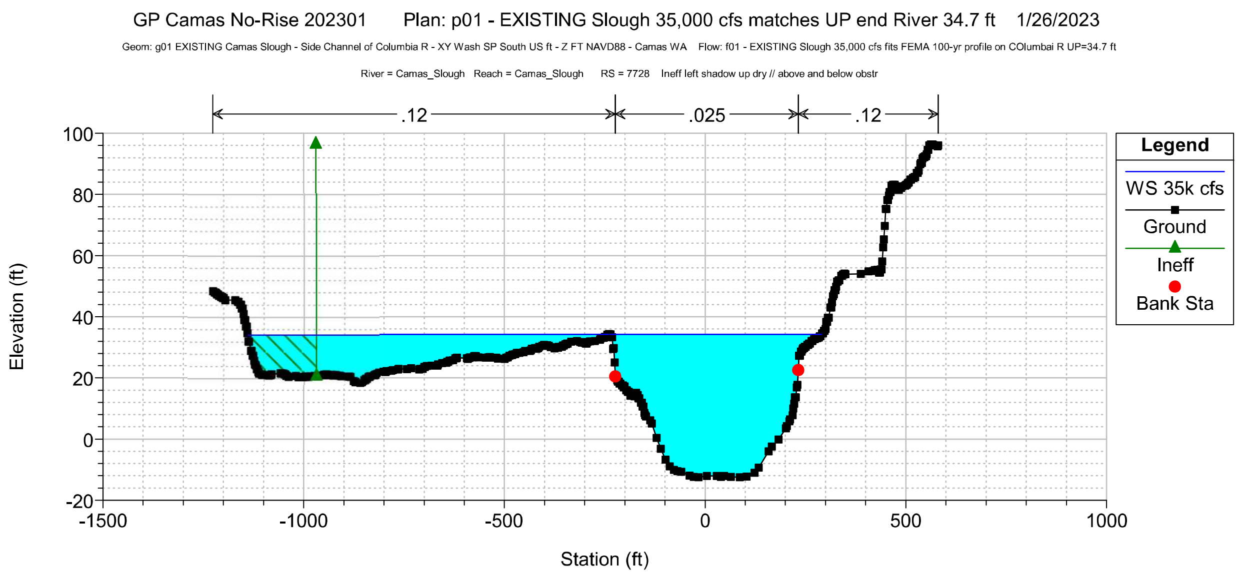
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7804 Ineff left shadow up dry // Obstr left=LA-16 dolphin
.12
.025
.12
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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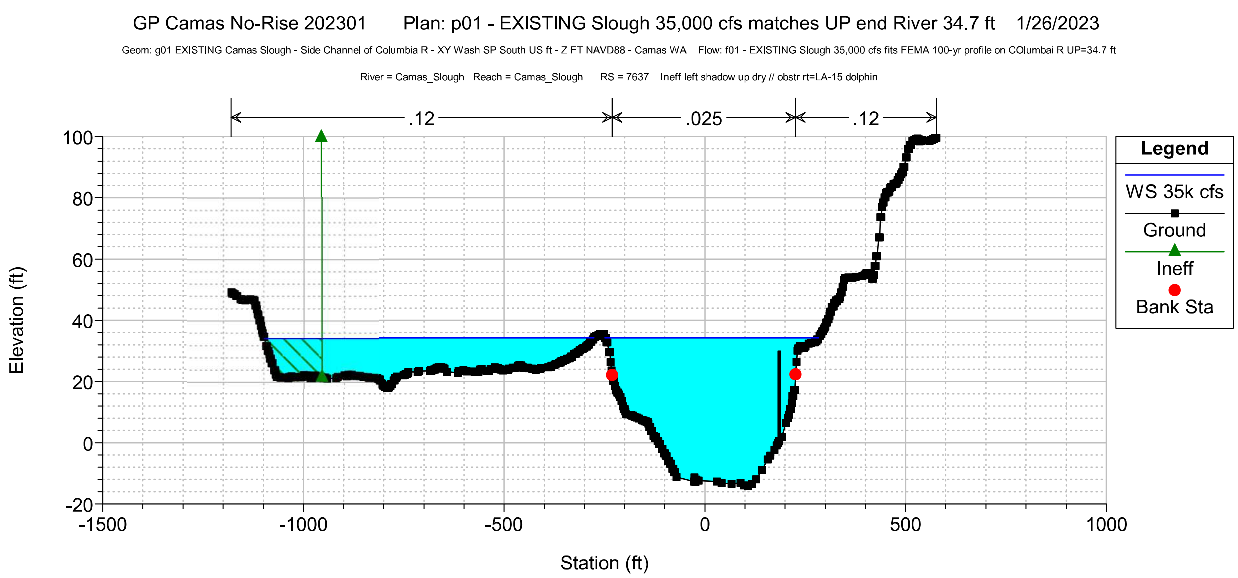
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7728 Ineff left shadow up dry // above and below obstr
.12
.025
.12
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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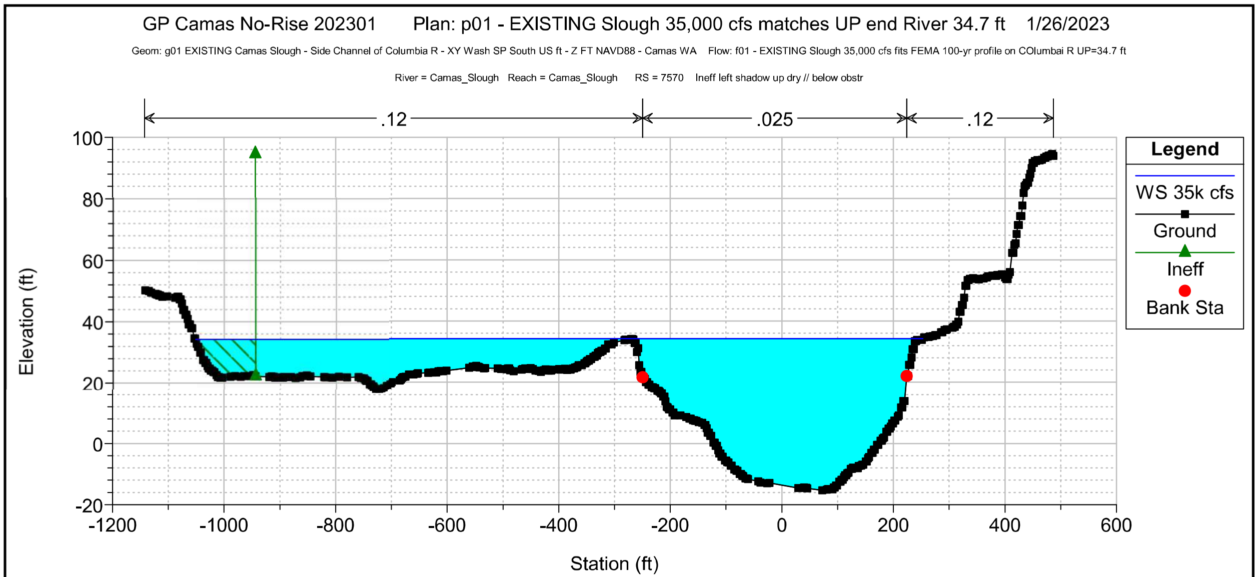
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7637 Ineff left shadow up dry // obstr rt=LA-15 dolphin
.12
.025
.12
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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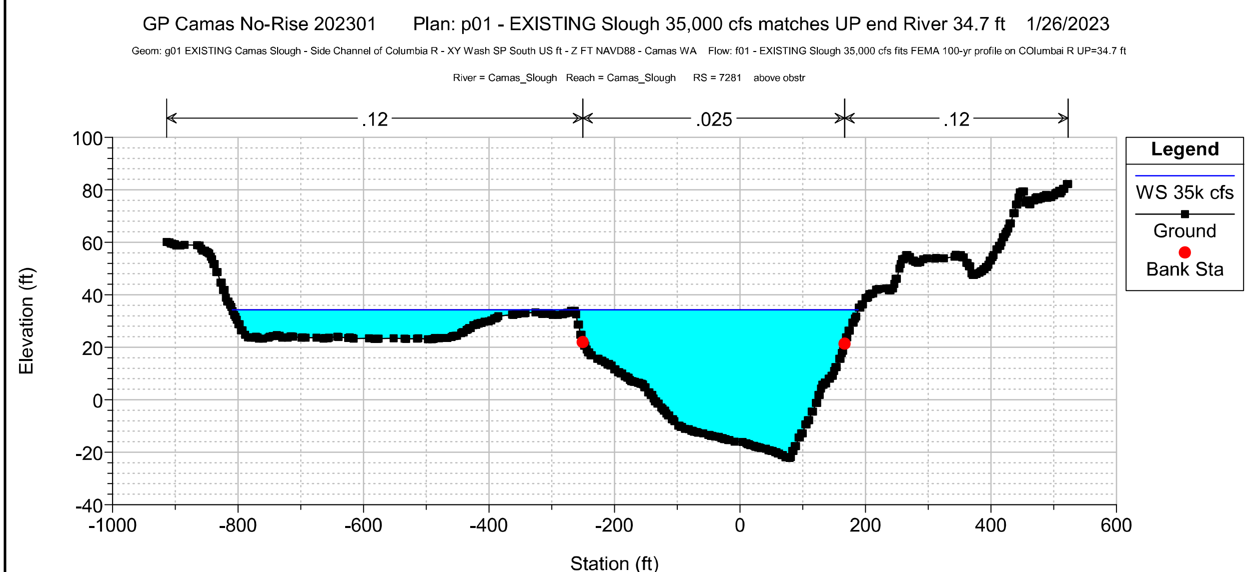
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7570 Ineff left shadow up dry // below obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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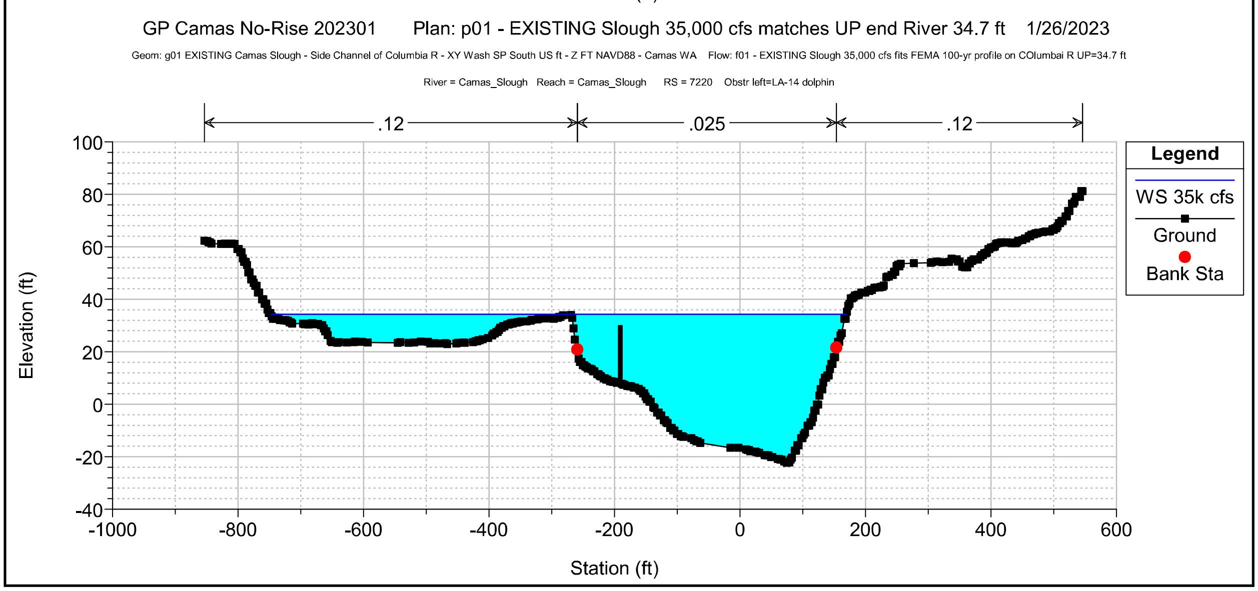
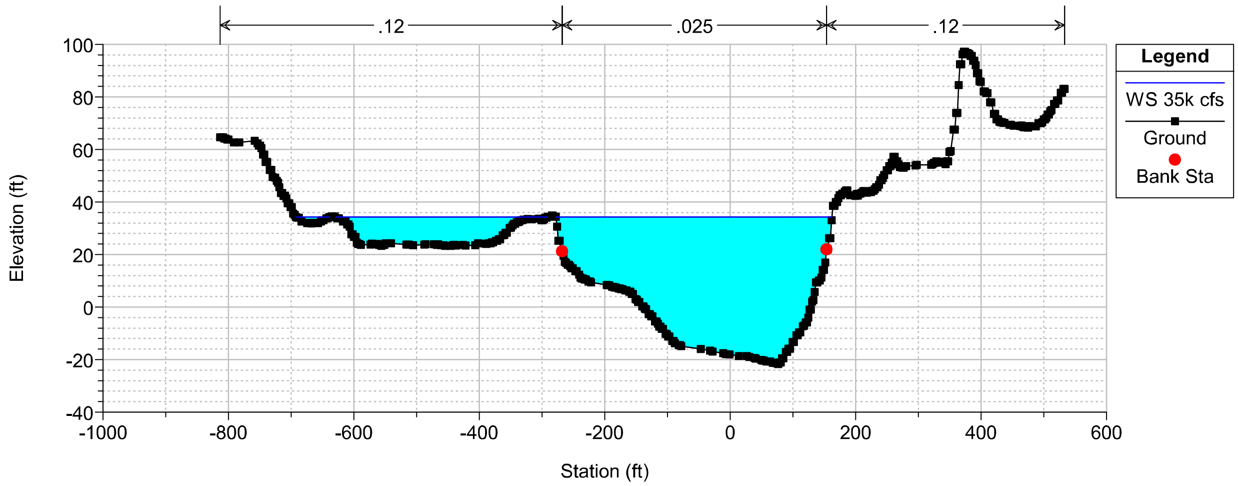
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7281 above obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 7220 Obstr left=LA-14 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

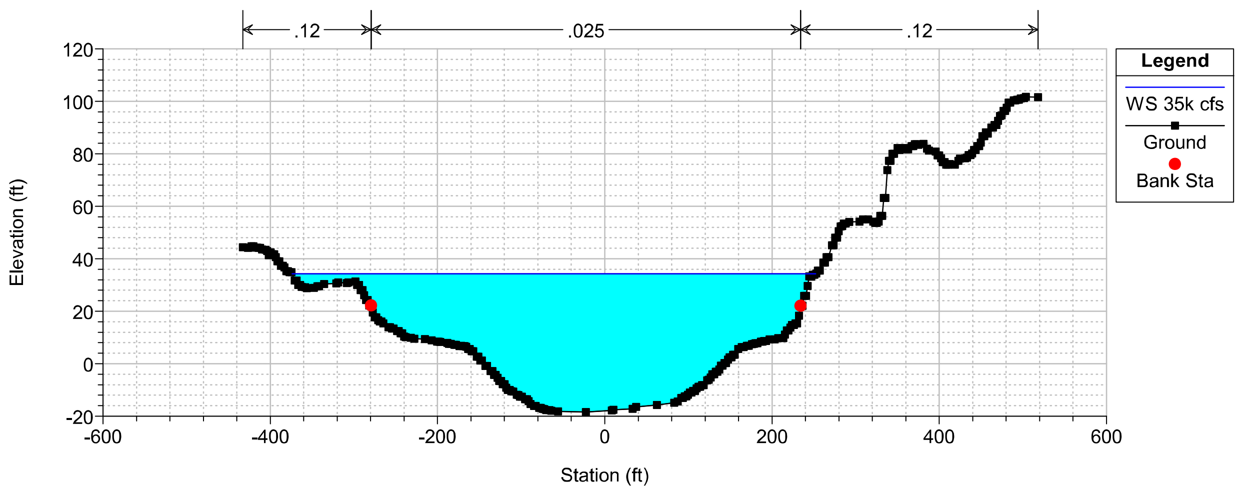
River = Camas_Slough Reach = Camas_Slough RS = 7151 below obstr



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

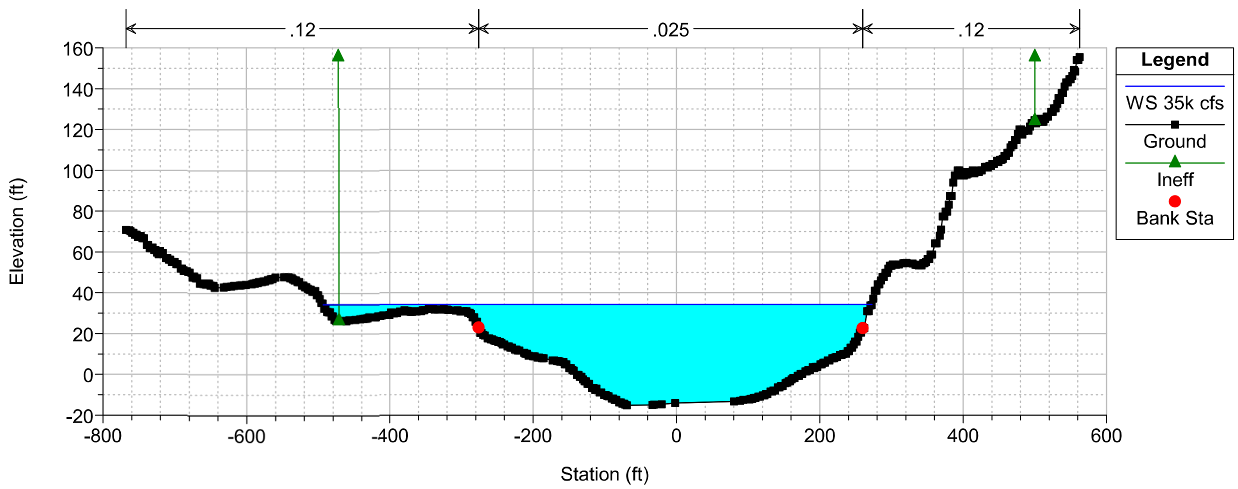
River = Camas_Slough Reach = Camas_Slough RS = 6864 Above West Bridge SR14-25

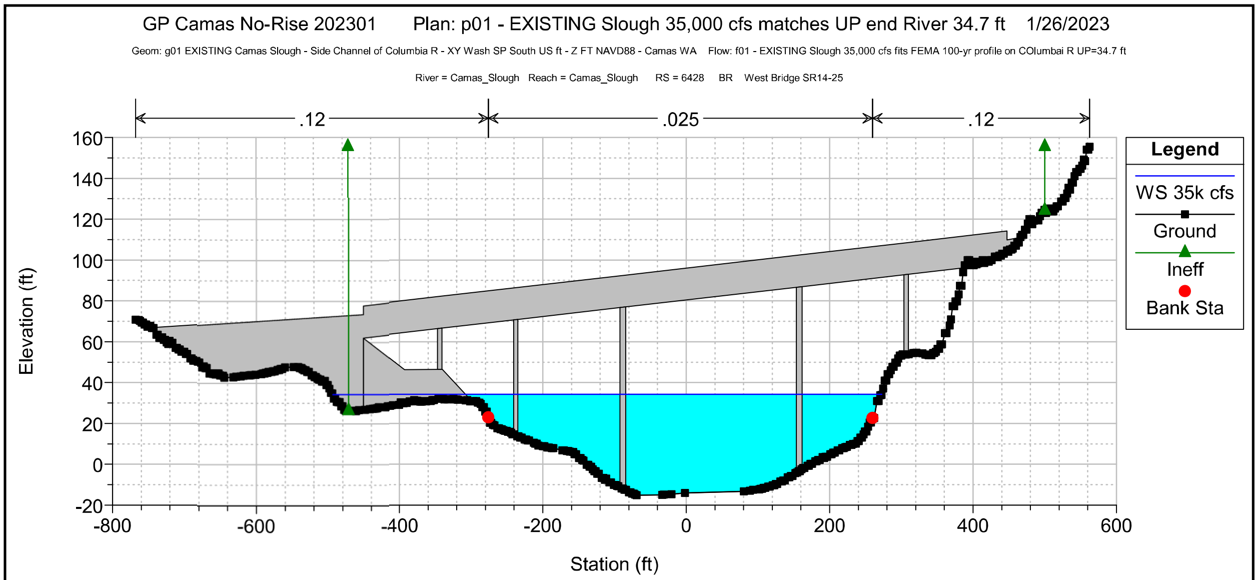


GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 6440 UP West Bridge SR14-25

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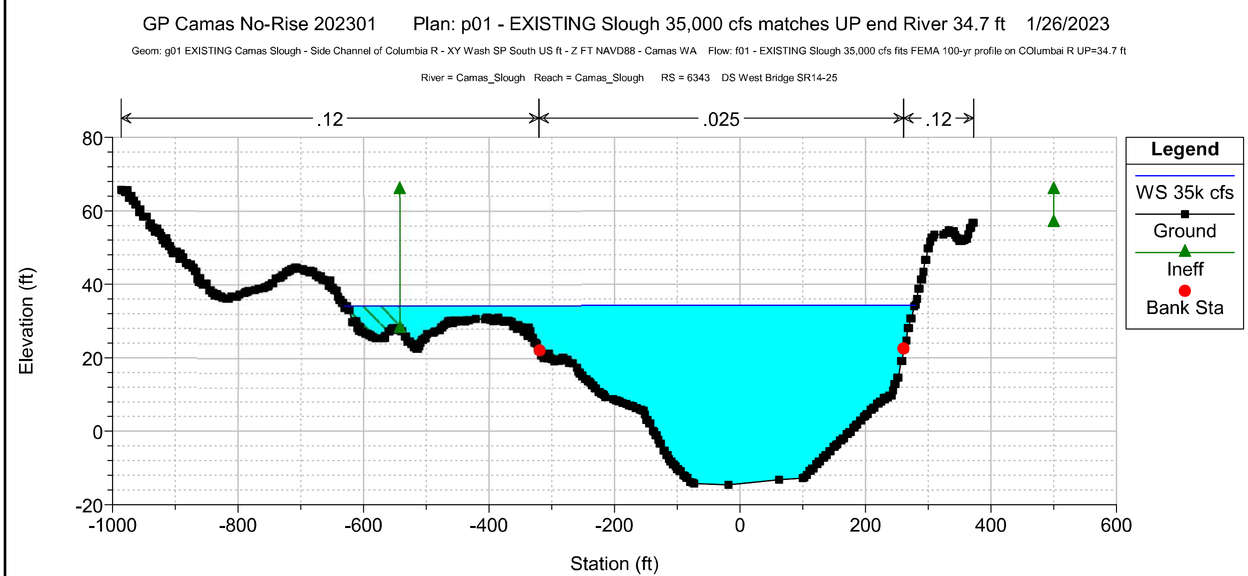
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6428 BR West Bridge SR14-25
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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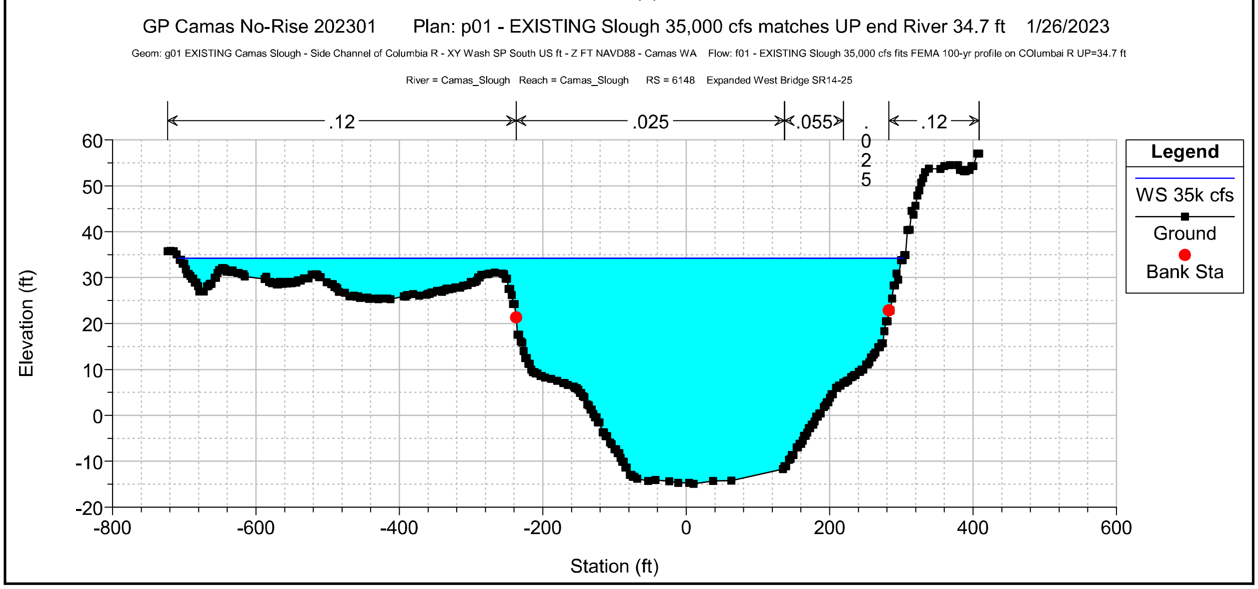
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6343 DS West Bridge SR14-25
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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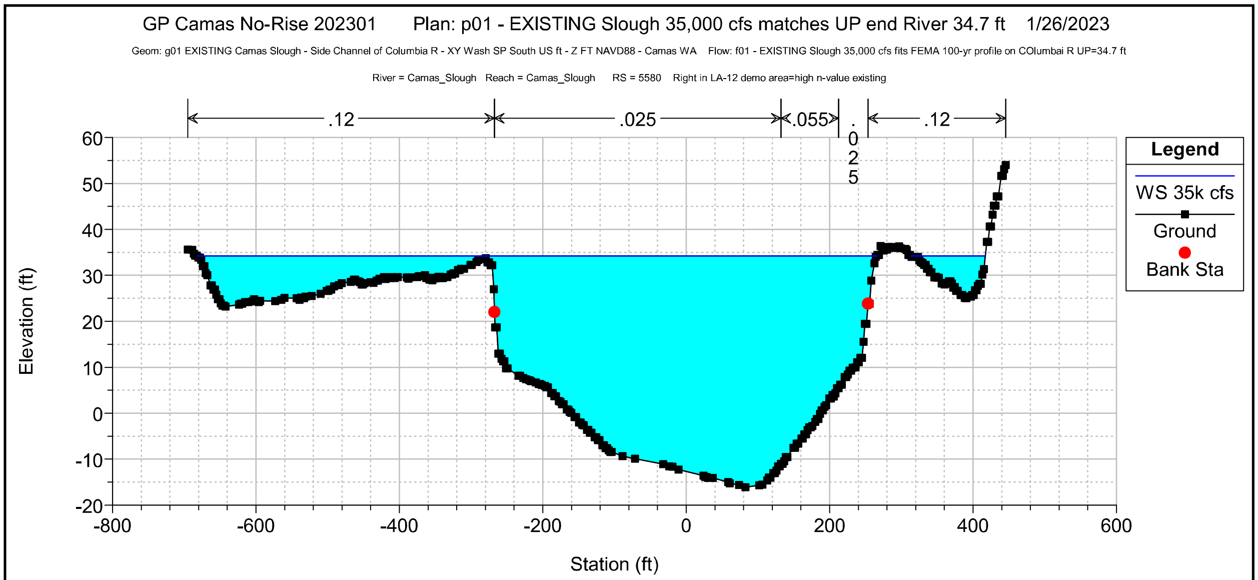
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6148 Expanded West Bridge SR14-25
.12
.025
.055
.025
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
Station (ft)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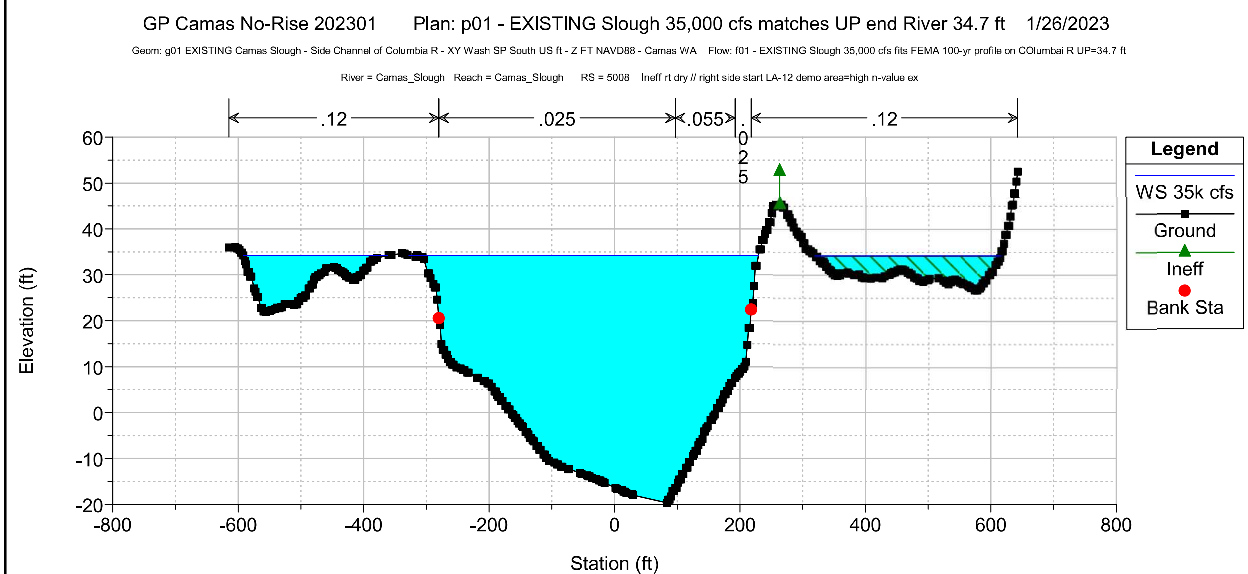
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 5580 Right in LA-12 demo area=high n-value existing
.12
.025
.055
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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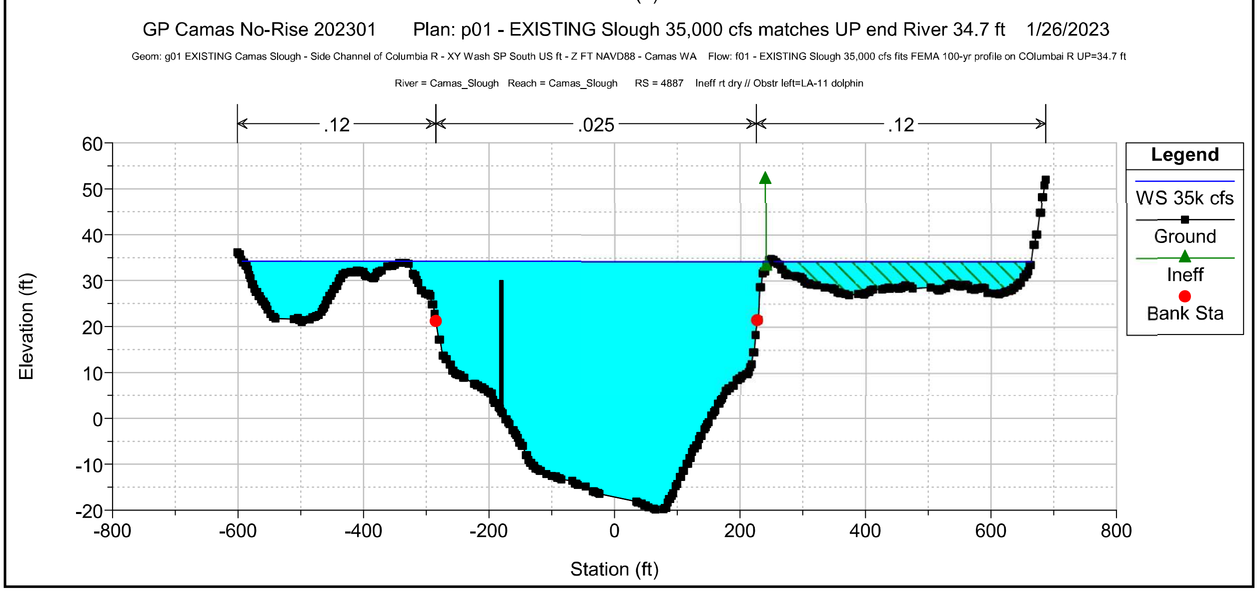
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 5008 Ineff rt dry // right side start LA-12 demo area=high n-value ex
.12
.025
.055
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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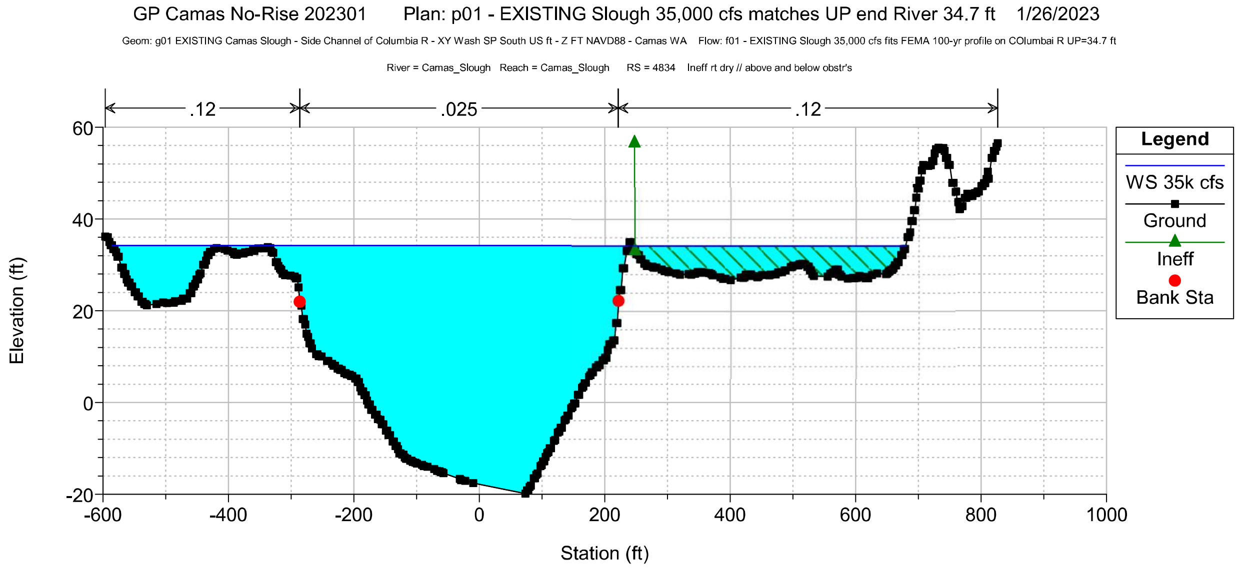
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4887 Ineff rt dry // Obstr left=LA-11 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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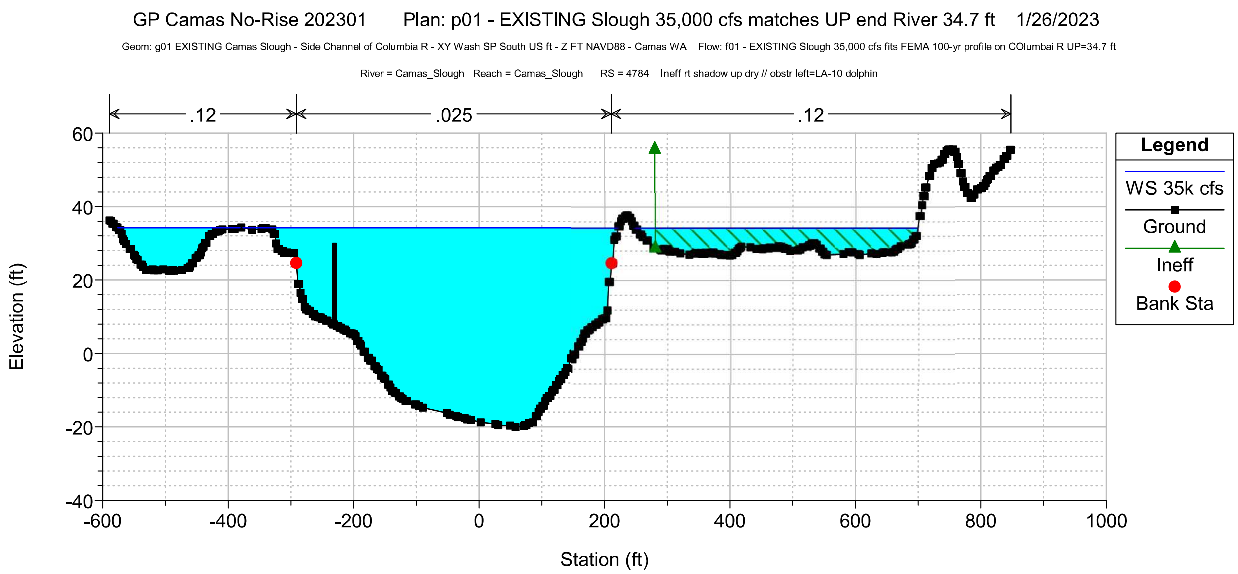
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4834 Ineff rt dry // above and below obstr's
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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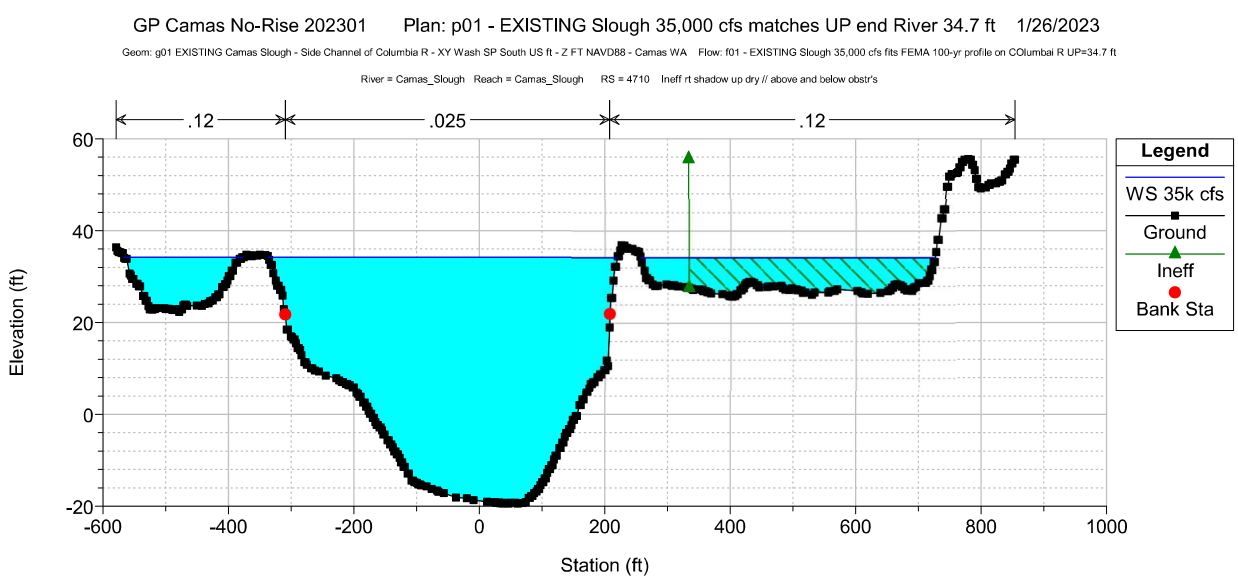
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4784 Ineff rt shadow up dry // obstr left=LA-10 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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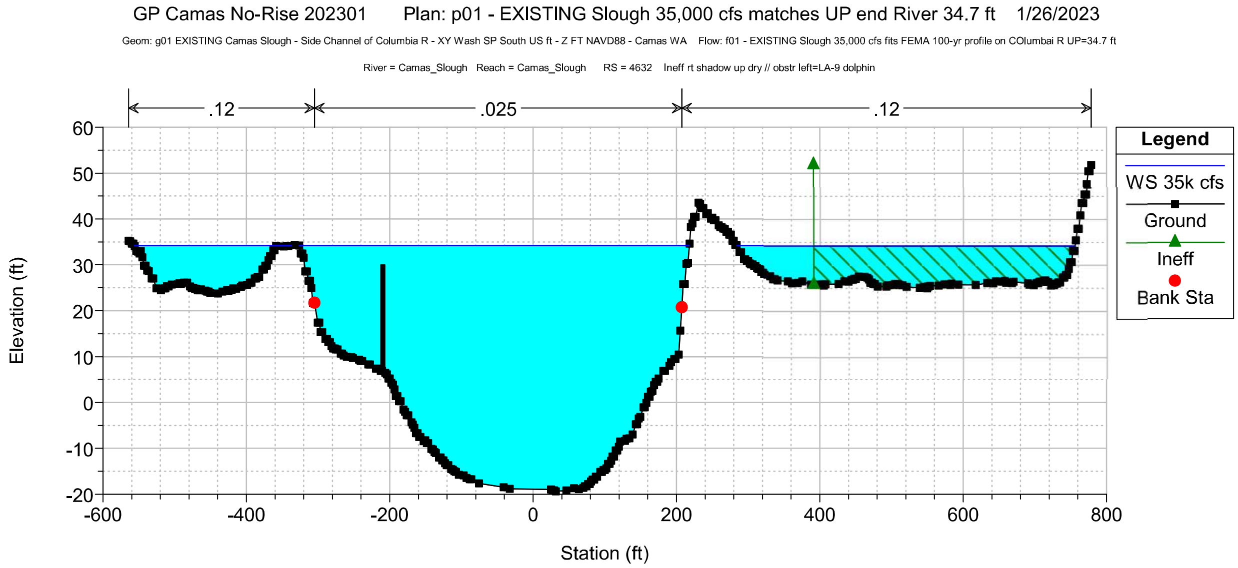
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4710 Ineff rt shadow up dry // above and below obstr's
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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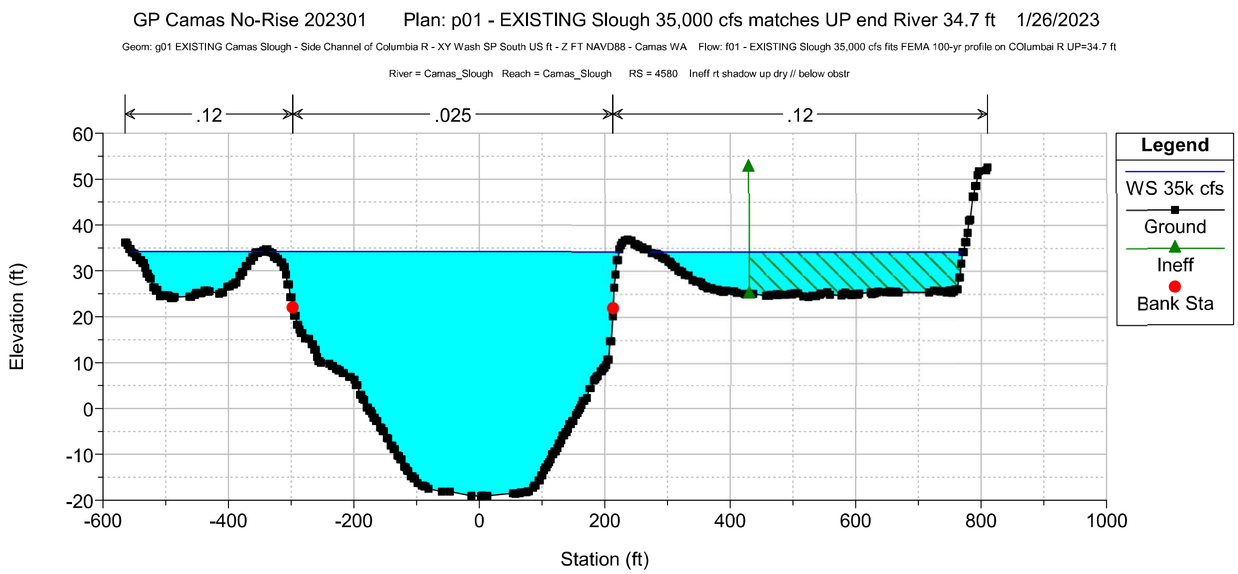
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4632 Ineff rt shadow up dry // obstr left=LA-9 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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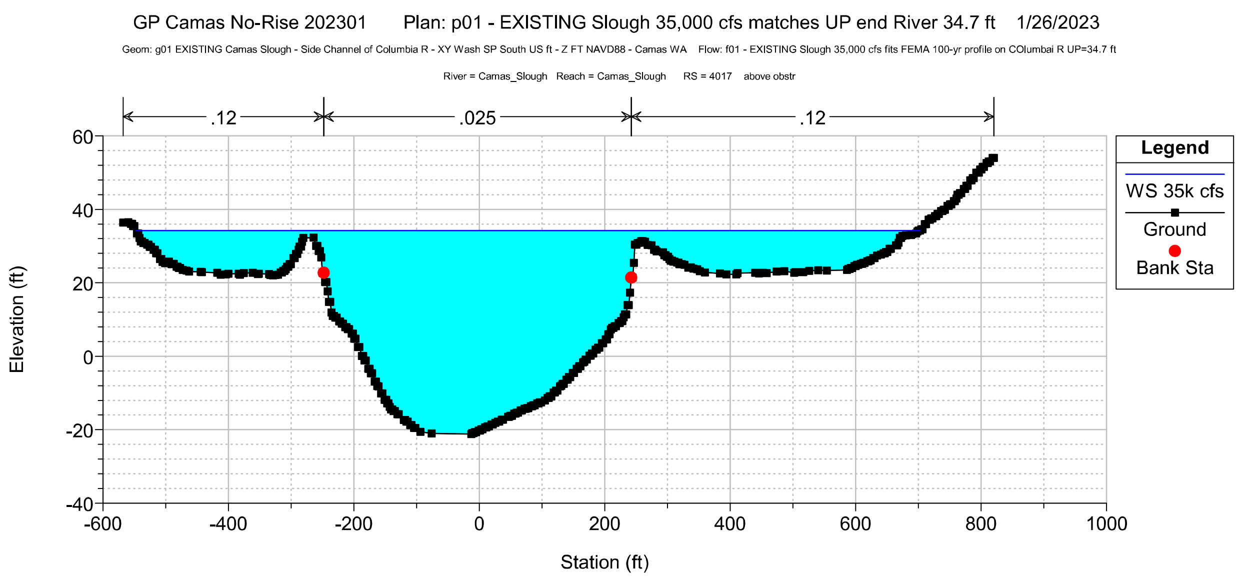
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4580 Ineff rt shadow up dry // below obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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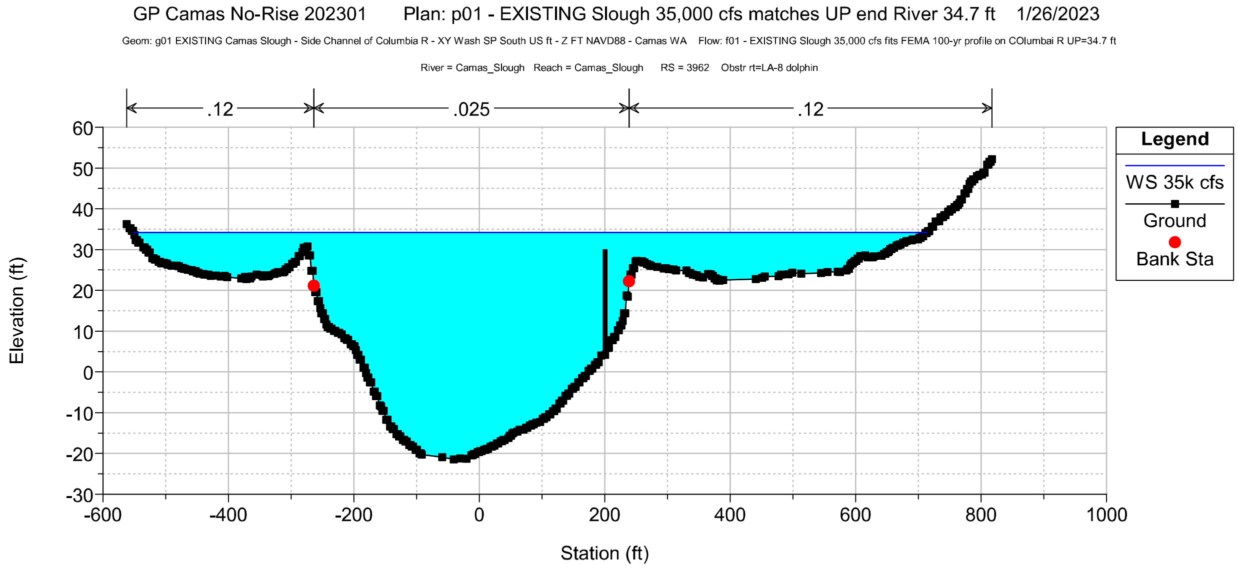
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4017 above obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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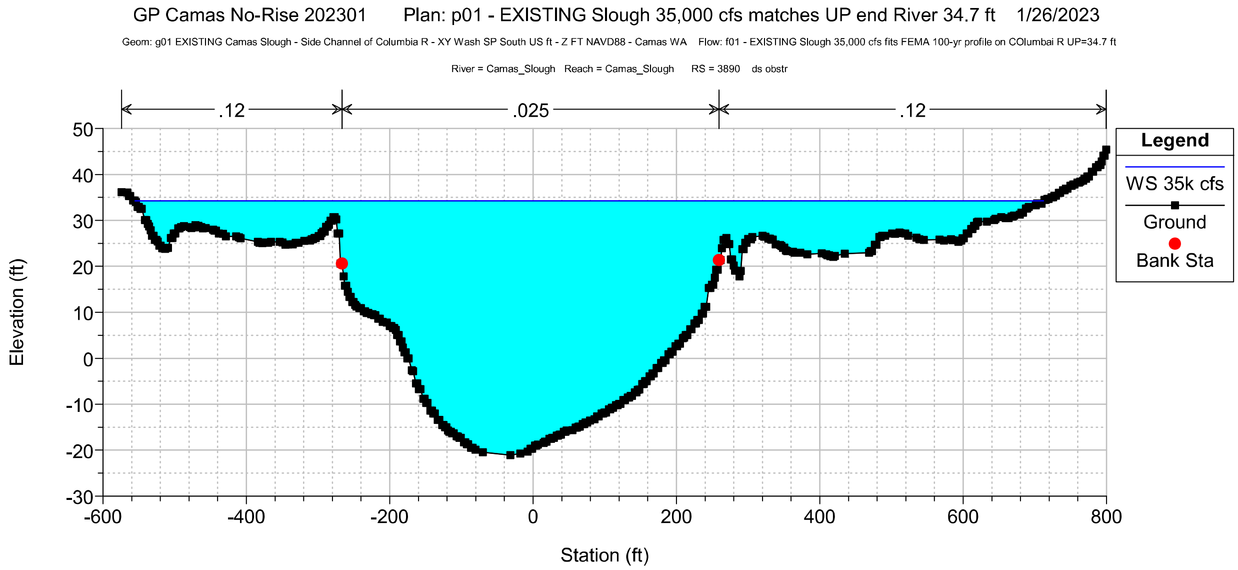
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 3962 Obstr rt=LA-8 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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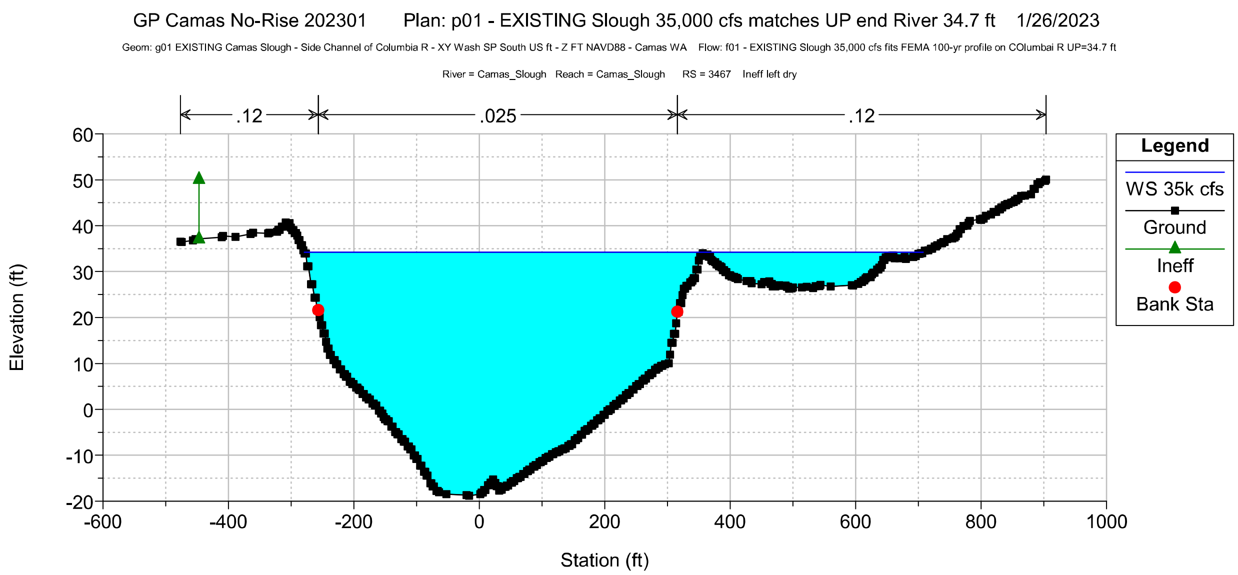
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 3890 ds obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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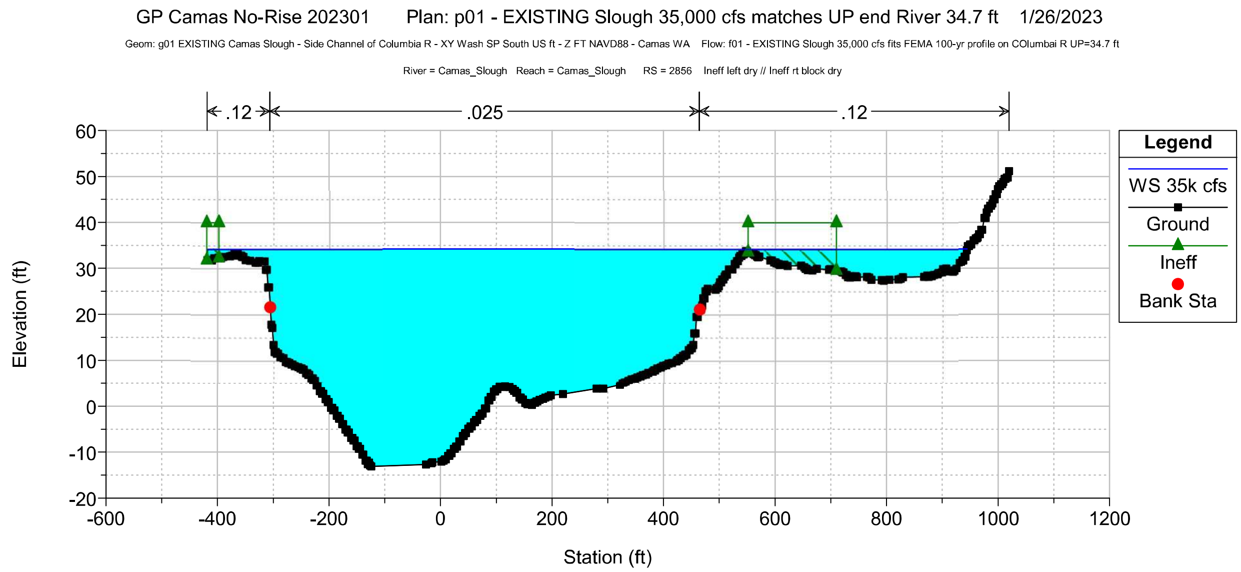
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 3467 Ineff left dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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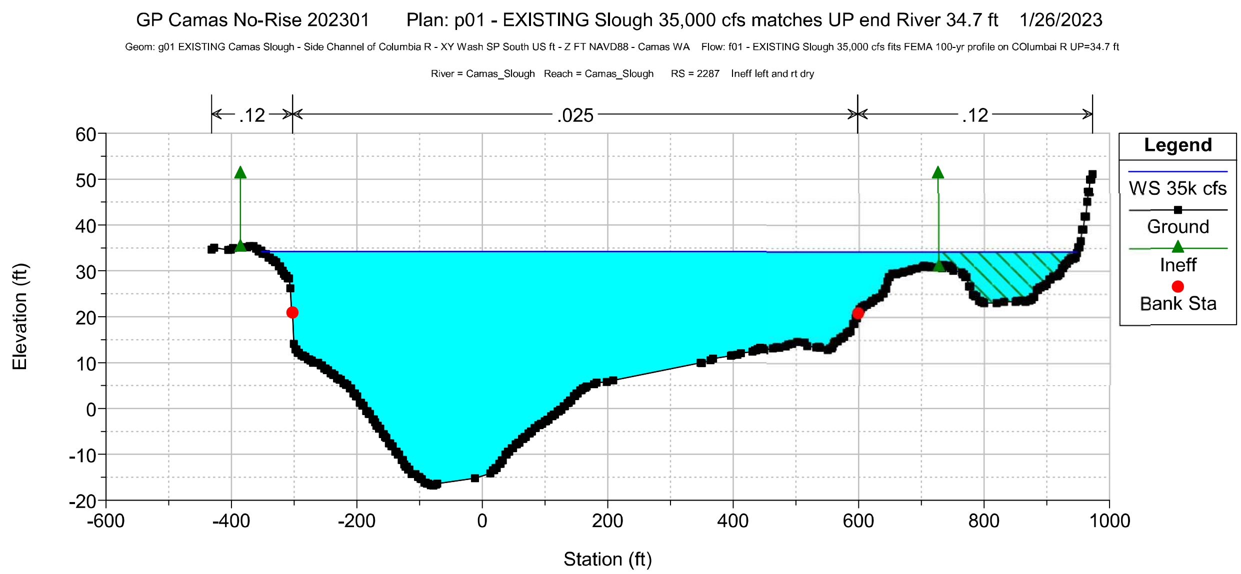
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 2856 Ineff left dry // Ineff rt block dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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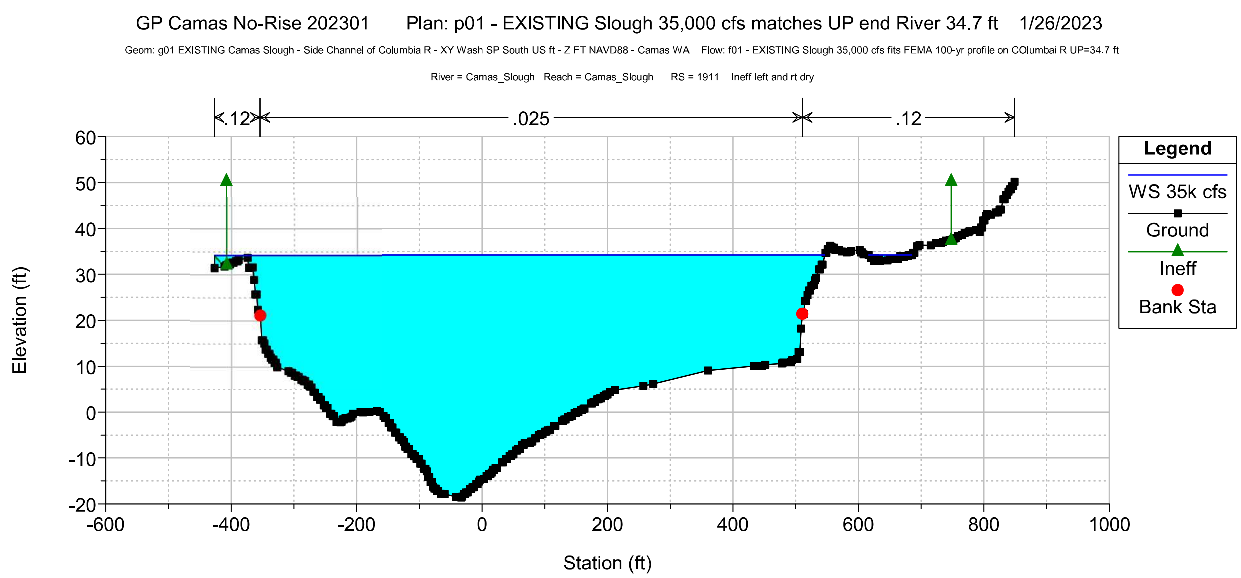
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 2287 Ineff left and rt dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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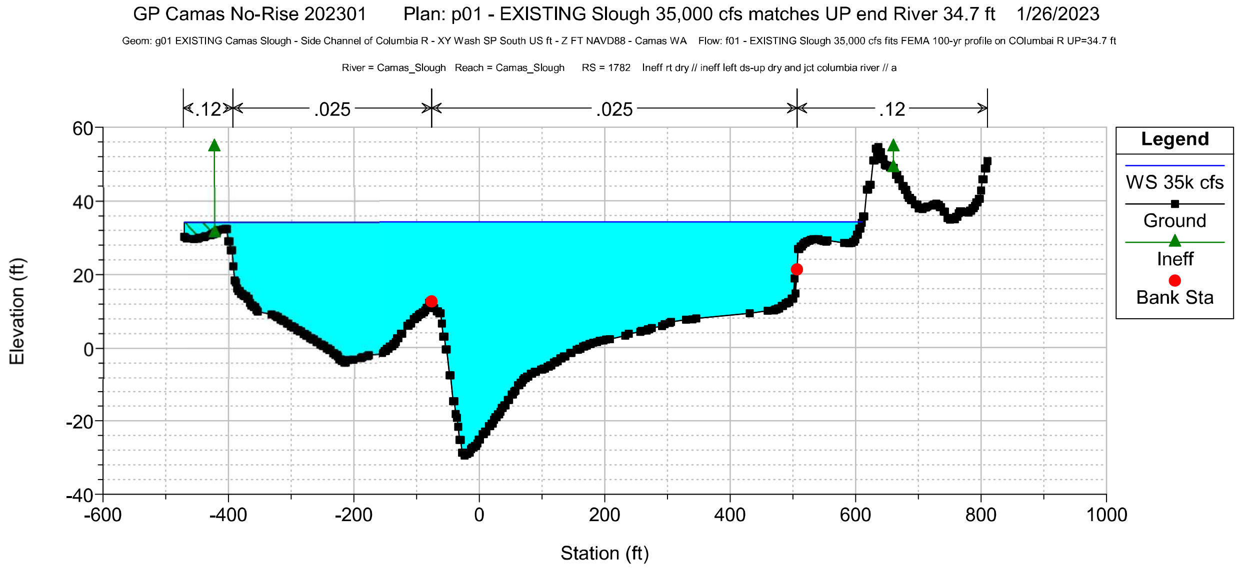
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1911 Ineff left and rt dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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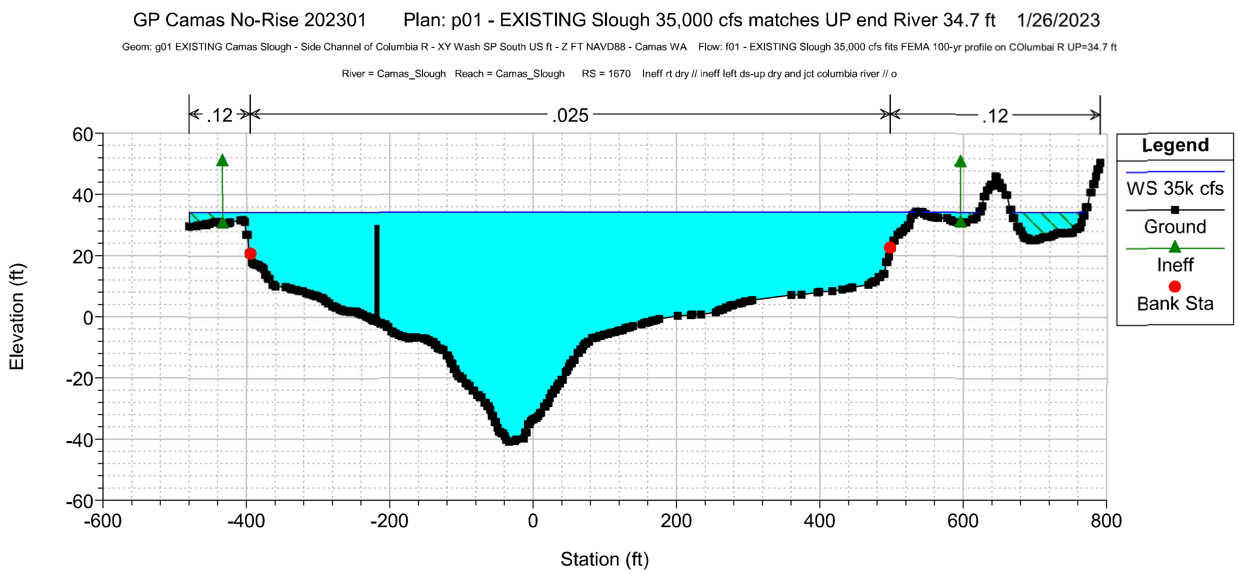
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1782 Ineff rt dry // ineff left ds-up dry and jct columbia river // a
.12
.025
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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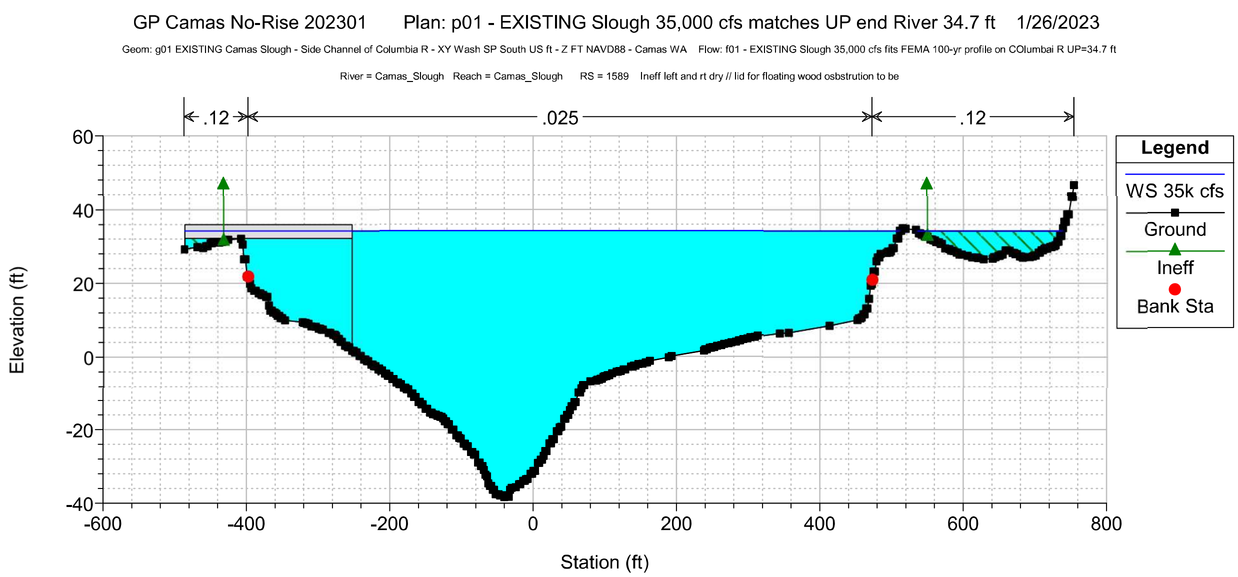
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1670 Ineff rt dry // ineff left ds-up dry and jct columbia river // o
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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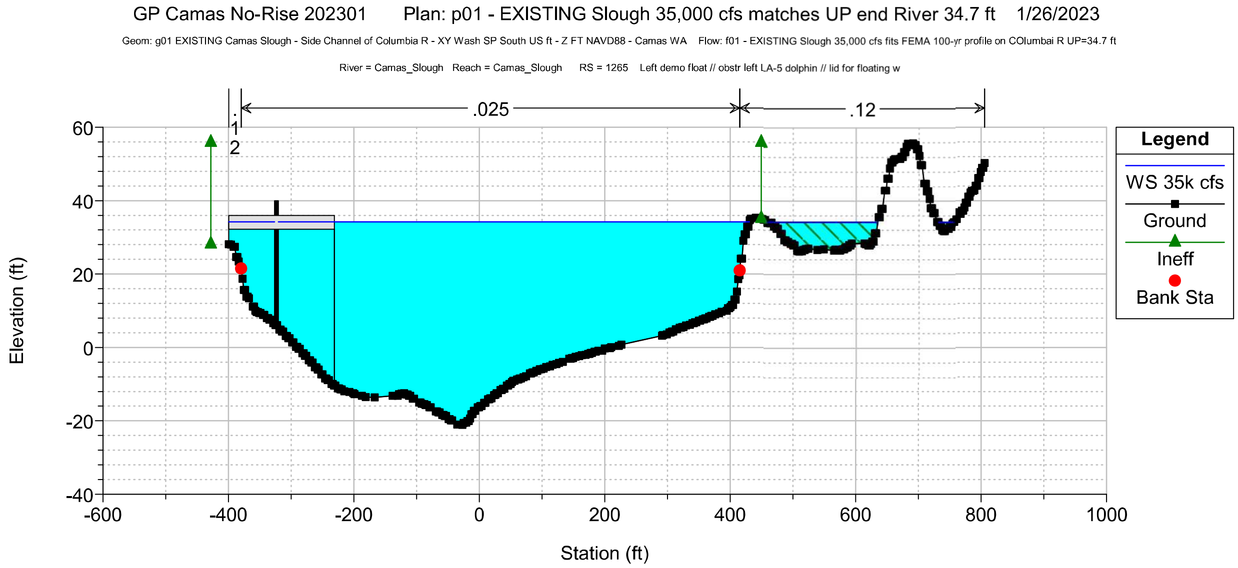
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1589 Ineff left and rt dry // lid for floating wood osbstrution to be
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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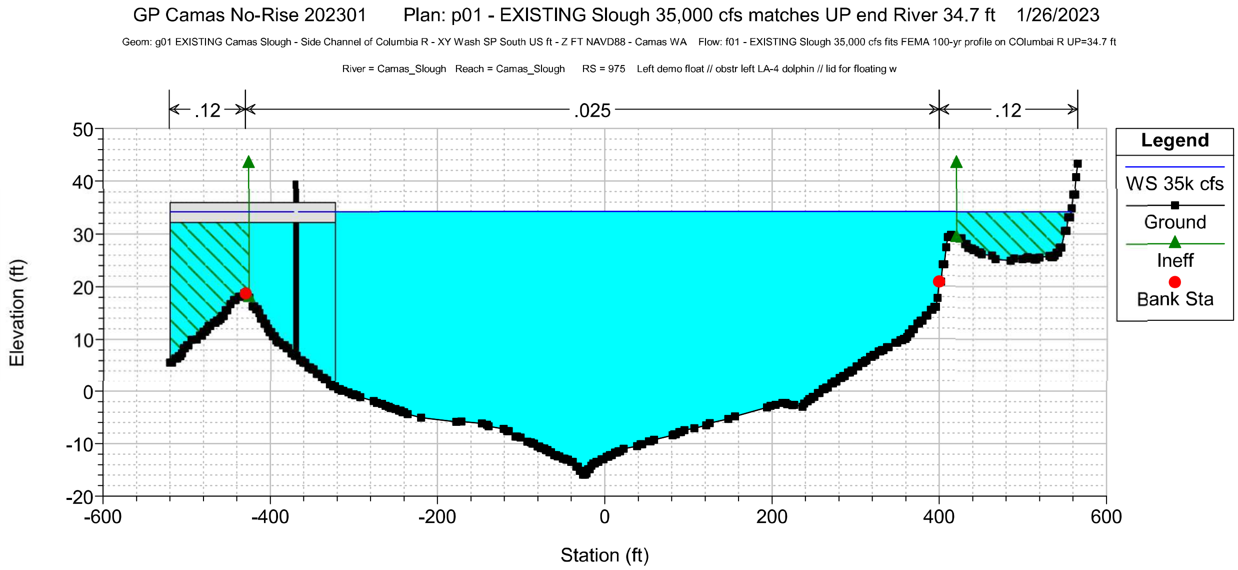
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1265 Left demo float // obstr left LA-5 dolphin // lid for floating w
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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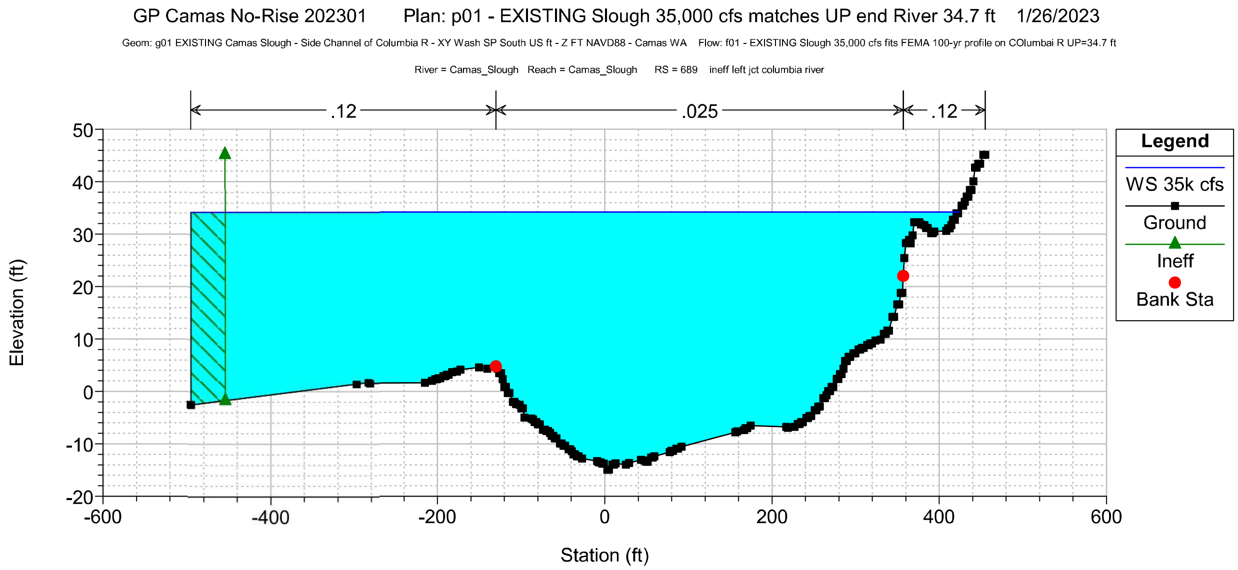
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 975 Left demo float // obstr left LA-4 dolphin // lid for floating w
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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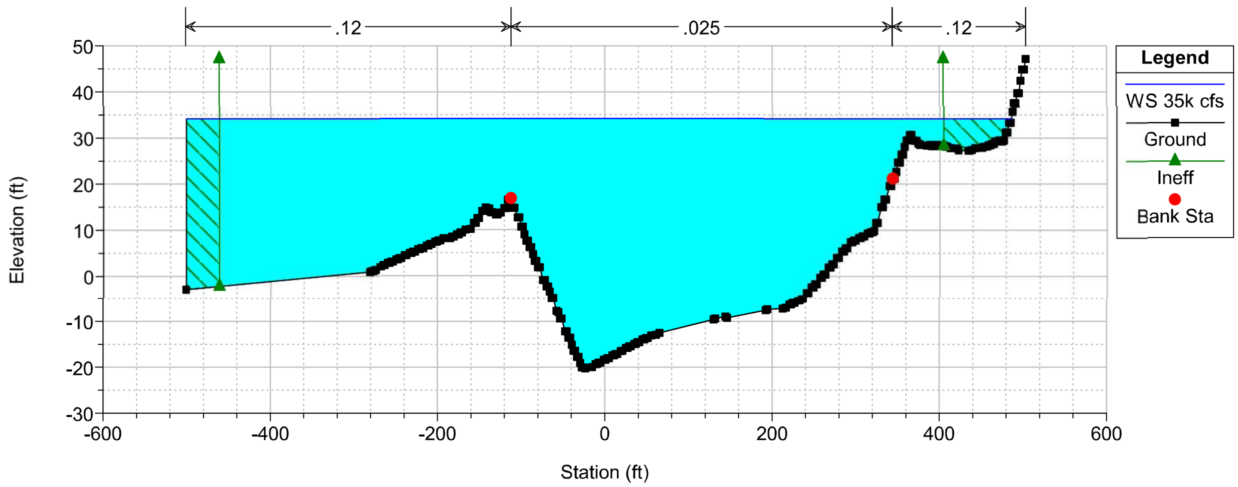
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 689 ineff left jct columbia river
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

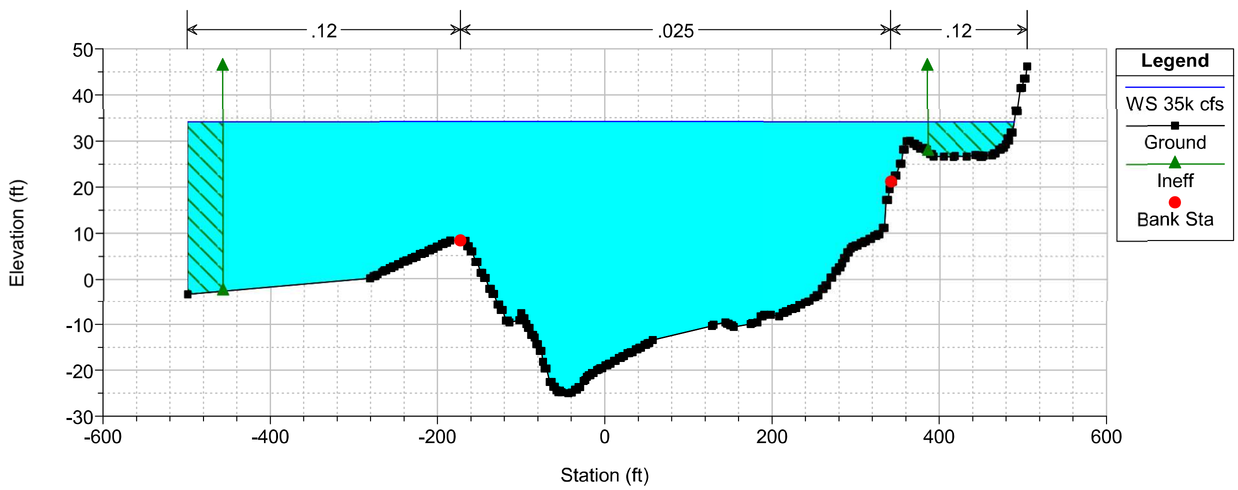
River = Camas_Slough Reach = Camas_Slough RS = 612 Ineff rt shadow b/c ds dry // ineff left jct columbia river



GP Camas No-Rise 202301 Plan: p01 - EXISTING Slough 35,000 cfs matches UP end River 34.7 ft 1/26/2023

Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

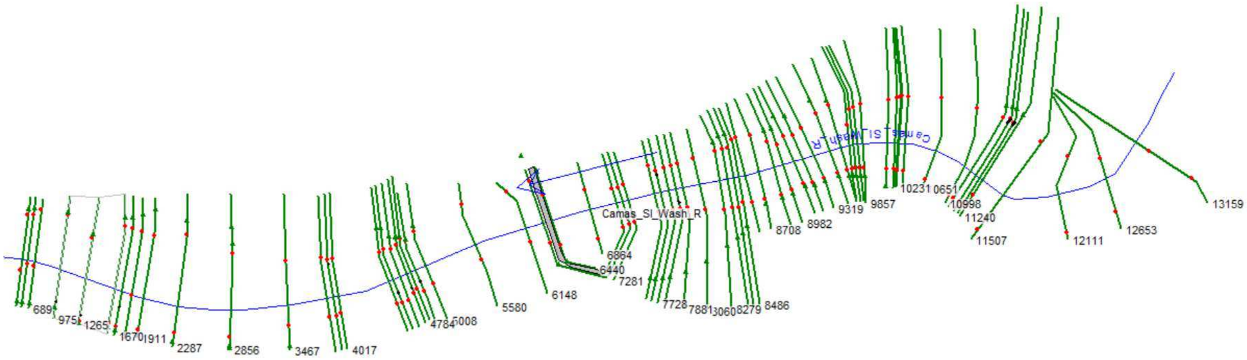
River = Camas_Slough Reach = Camas_Slough RS = 552 Lowermost XS=552 ft up of FIRM XS 'AB'



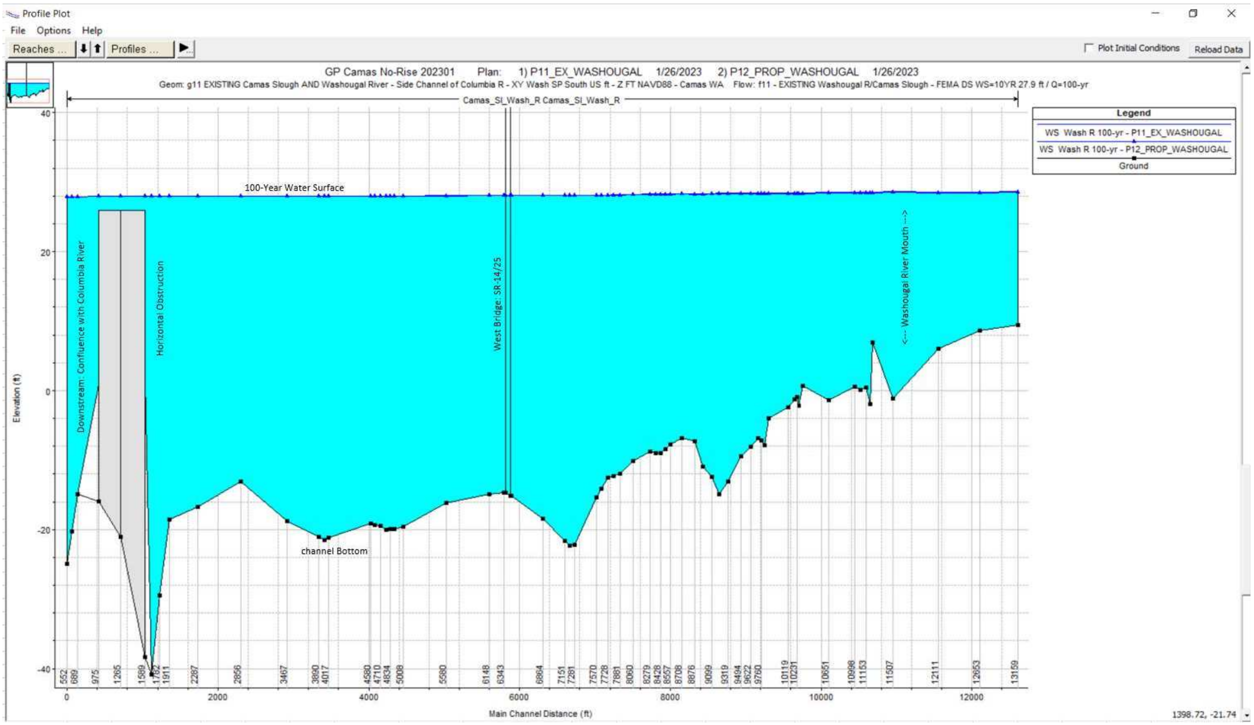
APPENDIX E:

EXISTING-CONDITION DATA FOR WASHOUGAL RIVER WITH CAMAS SLOUGH MODEL

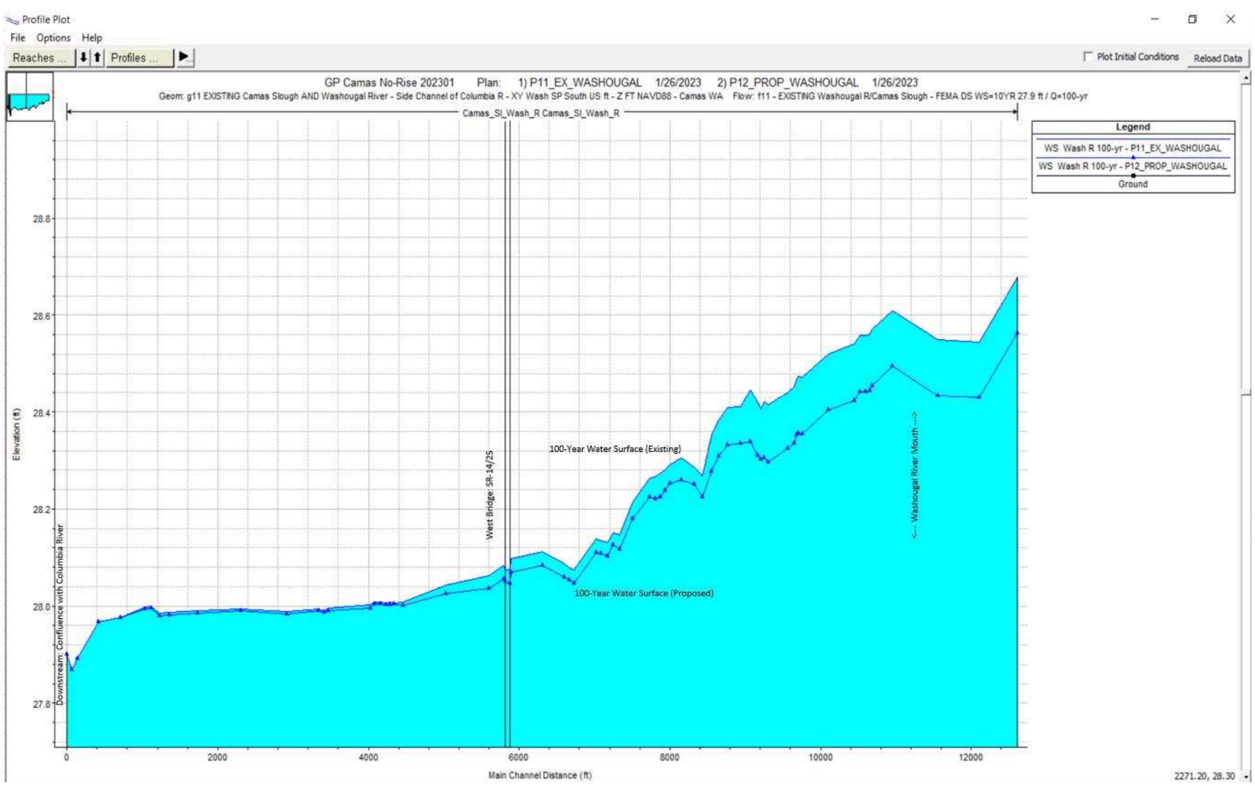
Appendix E. HEC-RAS Hydraulic Model Data for Washougal River/ Camas Slough Existing Conditions



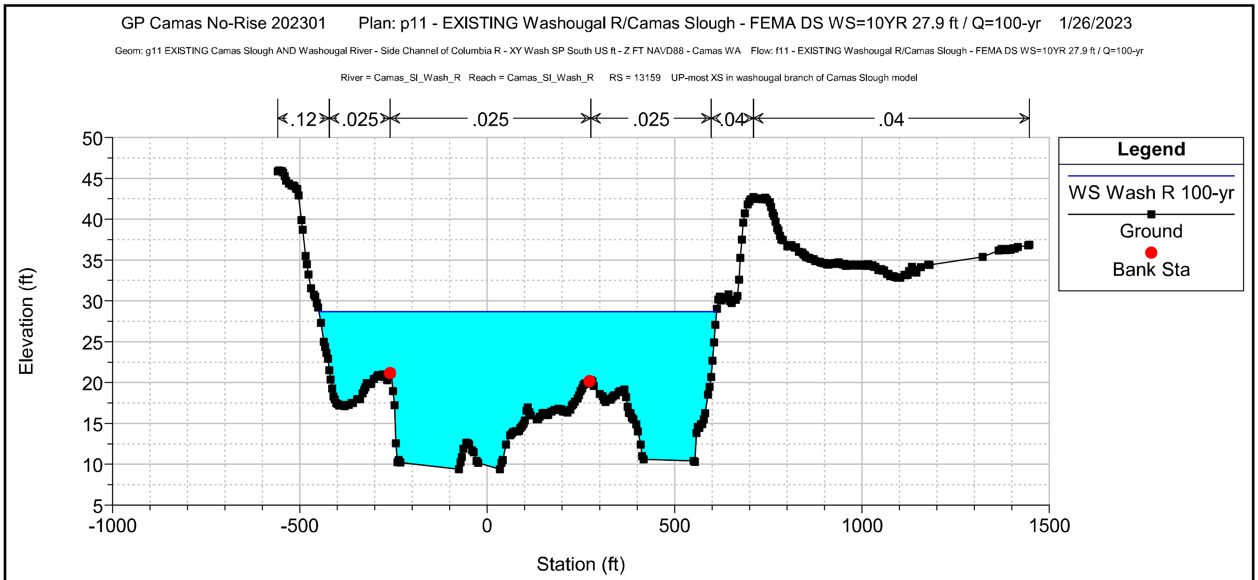
Schematic of Washougal River/ Camas Slough Model Cross-Section Locations

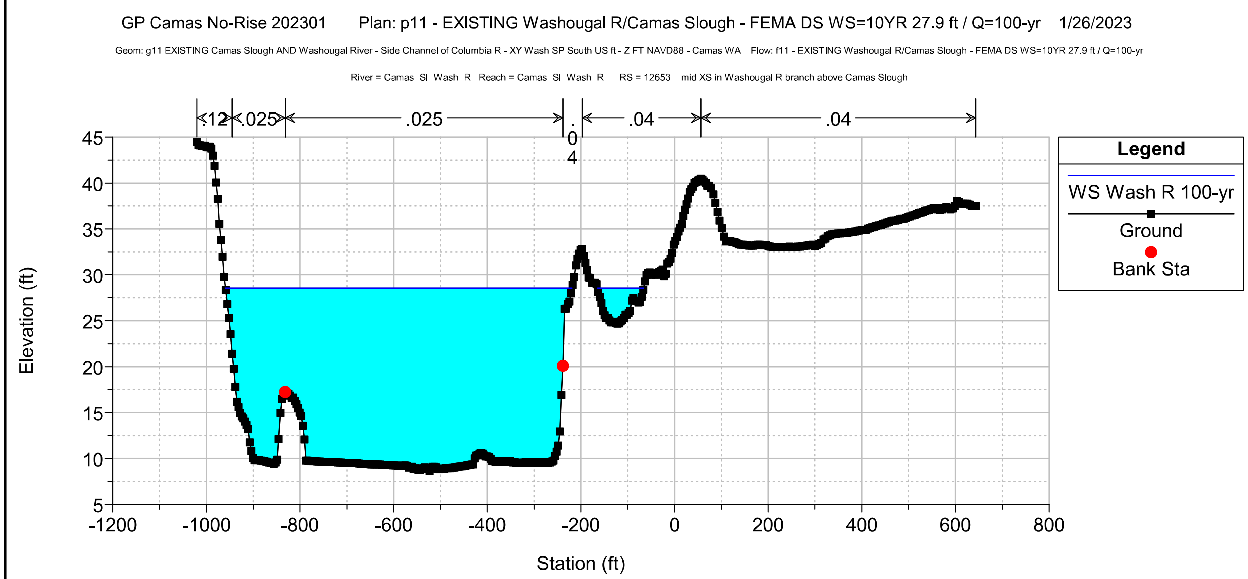


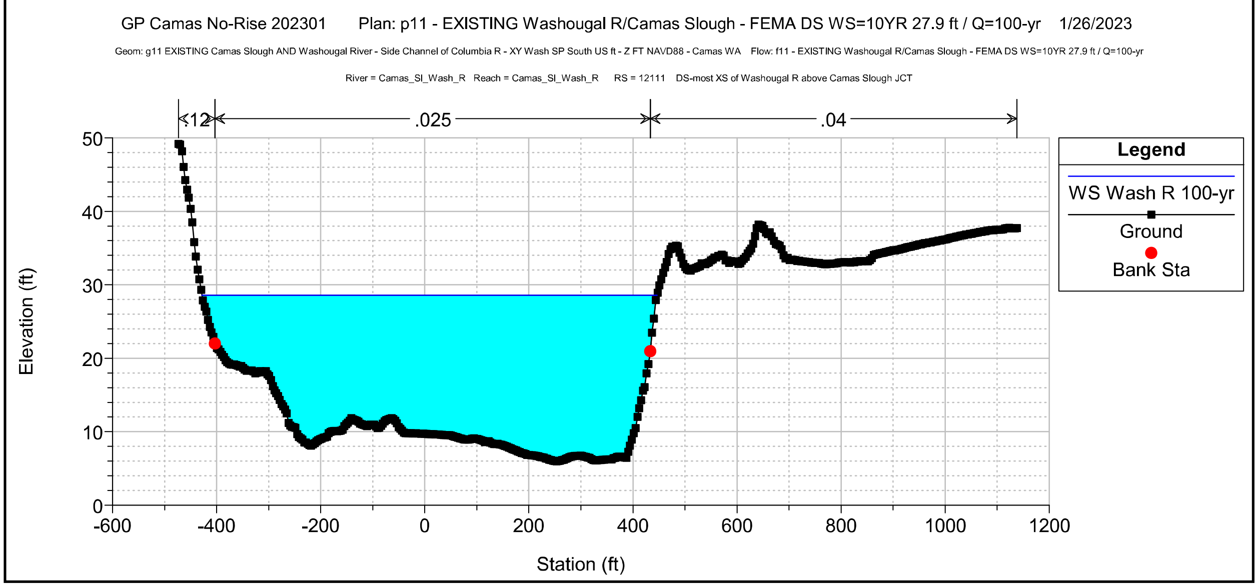
Profile of Washougal River/ Camas Slough Model (Full-Scale; Cross-Sections Labeled)

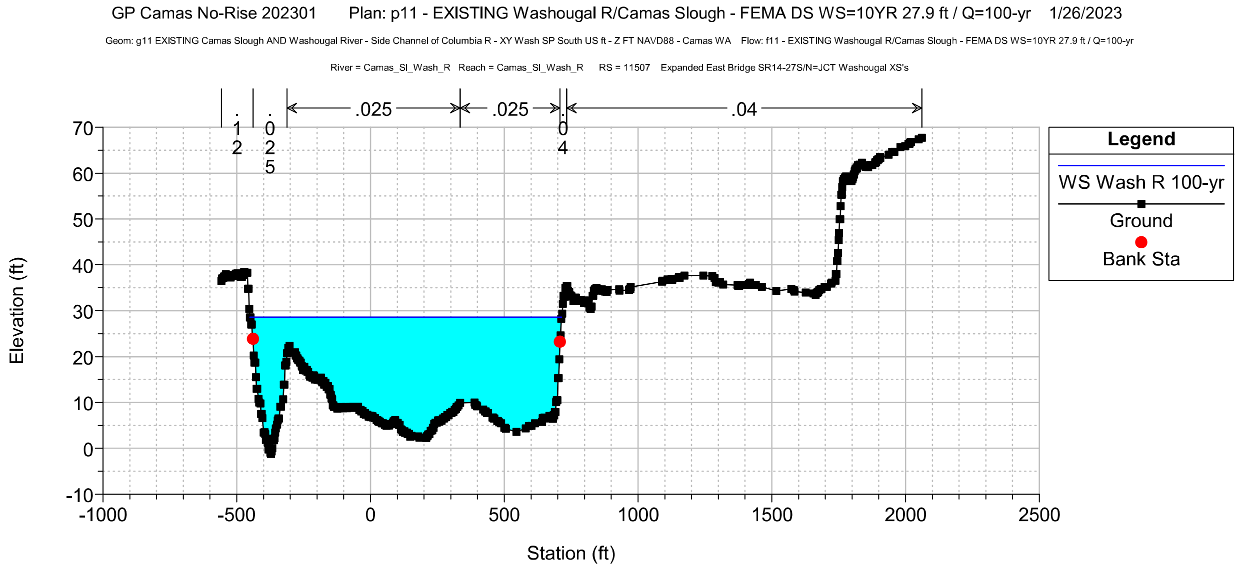


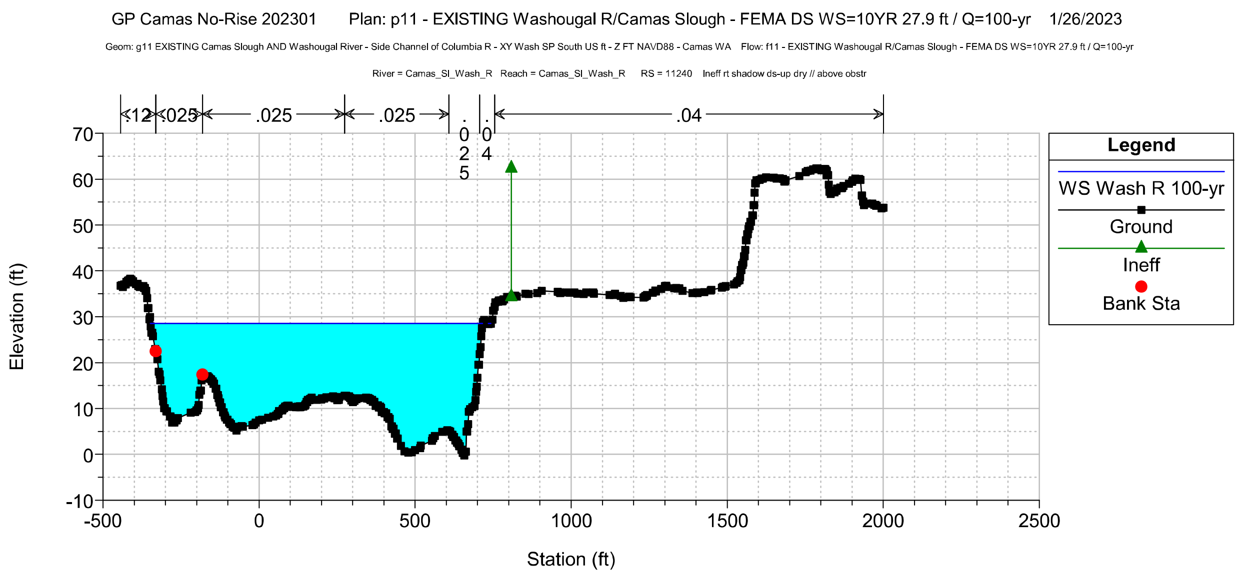
Profile of Washougal River/ Camas Slough Model (Expanded Scale)

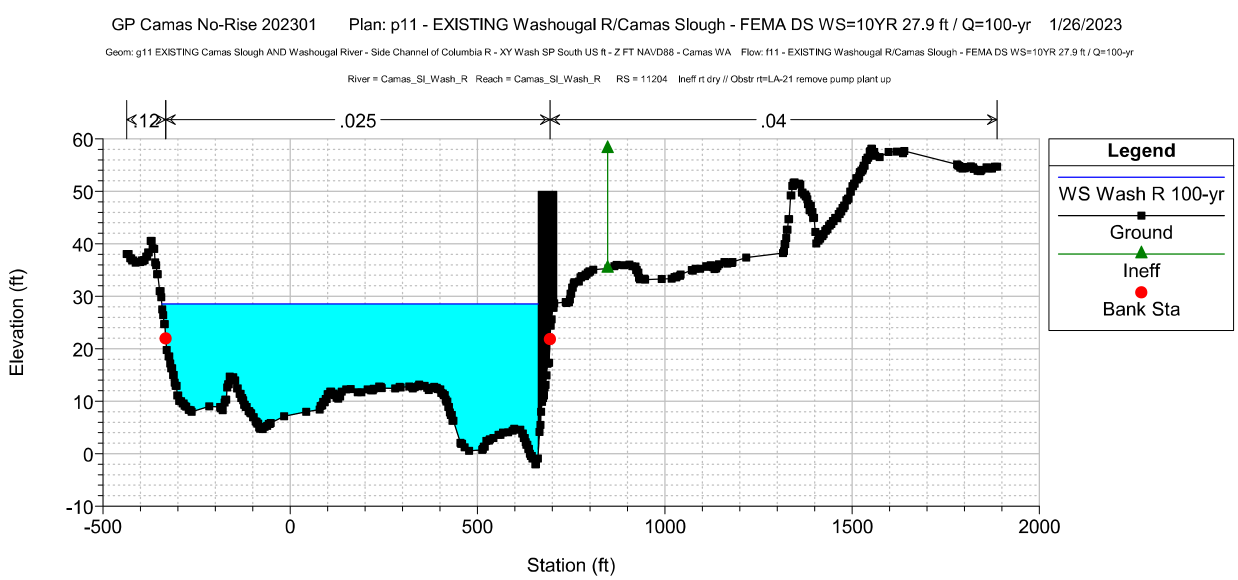

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 13159 UP-most XS in washougal branch of Camas Slough model
.12
.025
.025
.025
.04
.04
Elevation (ft)
50
45
40
35
30
25
20
15
10
5
-1000
-500
0
500
1000
1500
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 12653 mid XS in Washougal R branch above Camas Slough
.12
.025
.025
.04
.04
.04
Elevation (ft)
45
40
35
30
25
20
15
10
5
-1200
-1000
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 12111 DS-most XS of Washougal R above Camas Slough JCT
.12
.025
.04
Elevation (ft)
50
40
30
20
10
0
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 11507 Expanded East Bridge SR14-27S/N=JCT Washougal XS's
.12
.025
.025
.025
.04
.04
Legend
WS Wash R 100-yr
Ground
Bank Sta
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-10
-1000
-500
0
500
1000
1500
2000
2500

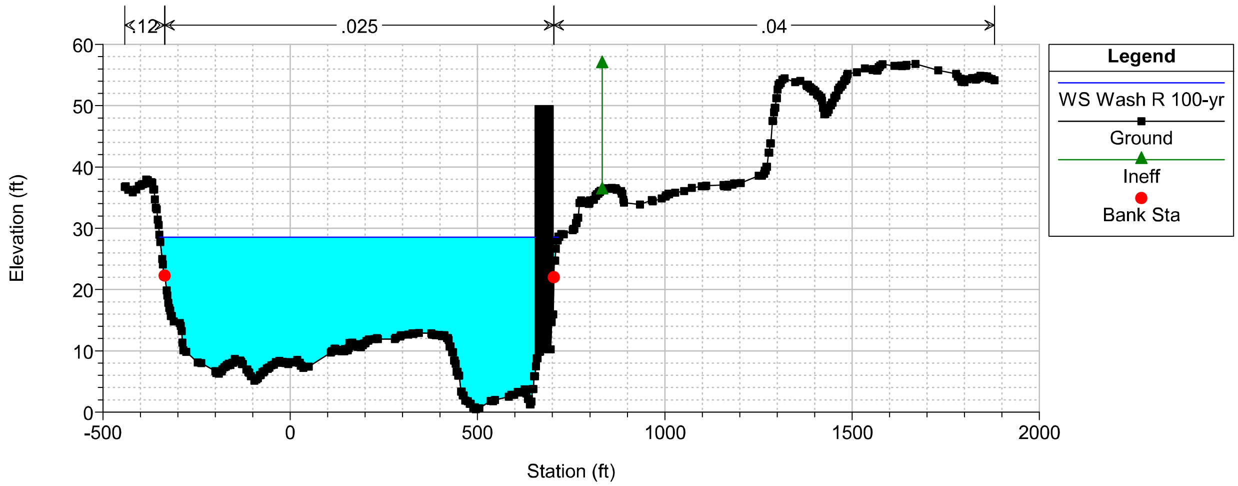

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 11240 Ineff rt shadow ds-up dry // above obstr
.12
.025
.025
.025
.025
.04
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-10
-500
0
500
1000
1500
2000
2500


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 11204 Ineff rt dry // Obstr rt=LA-21 remove pump plant up
.12
.025
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-500
0
500
1000
1500
2000

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

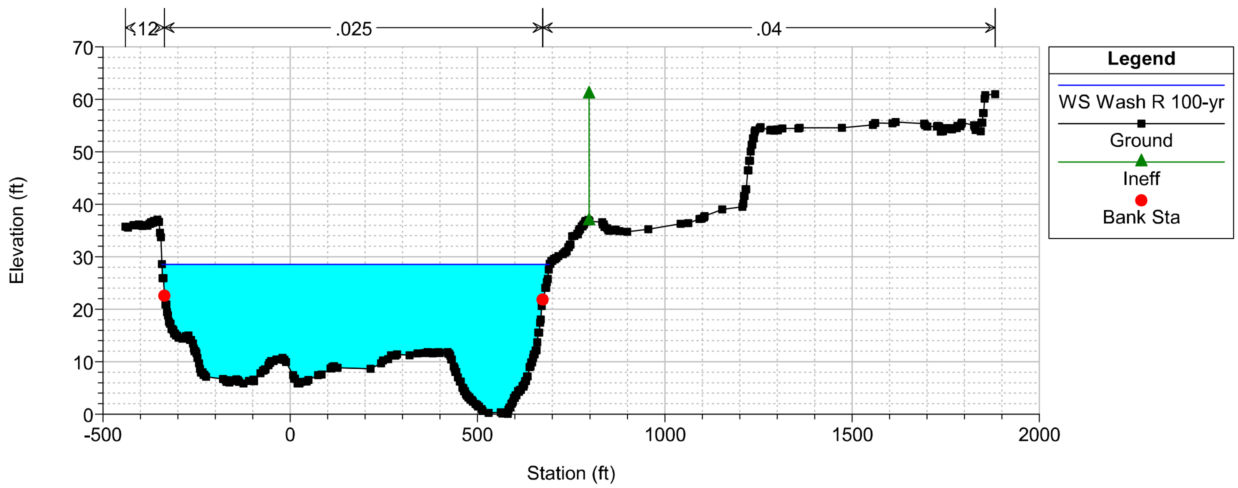
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 11153 Ineff rt dry // Obstr rt=LA-21 remove pump plant ds



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

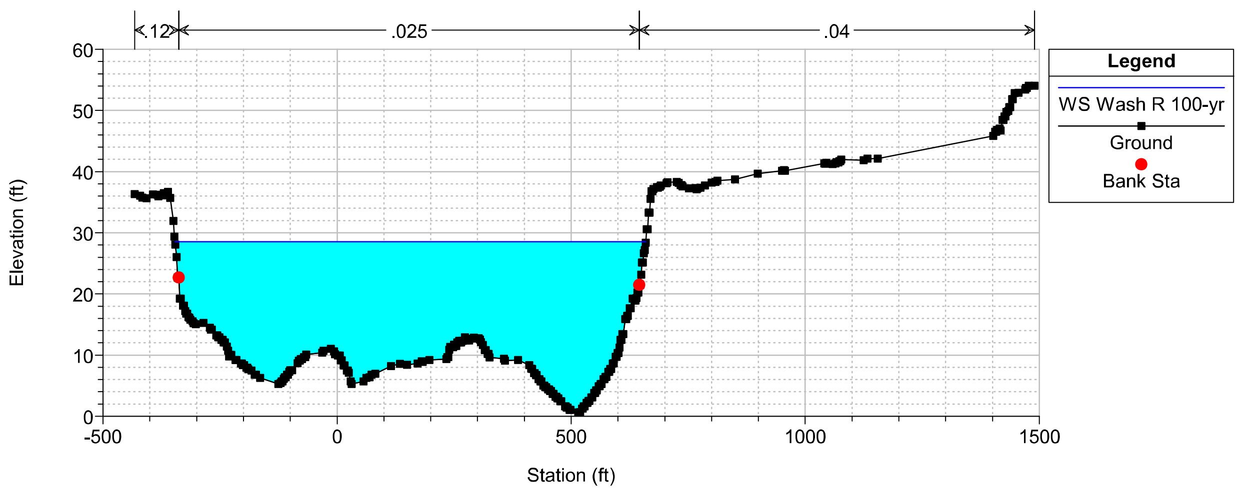
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 11078 Ineff rt dry // below obstr

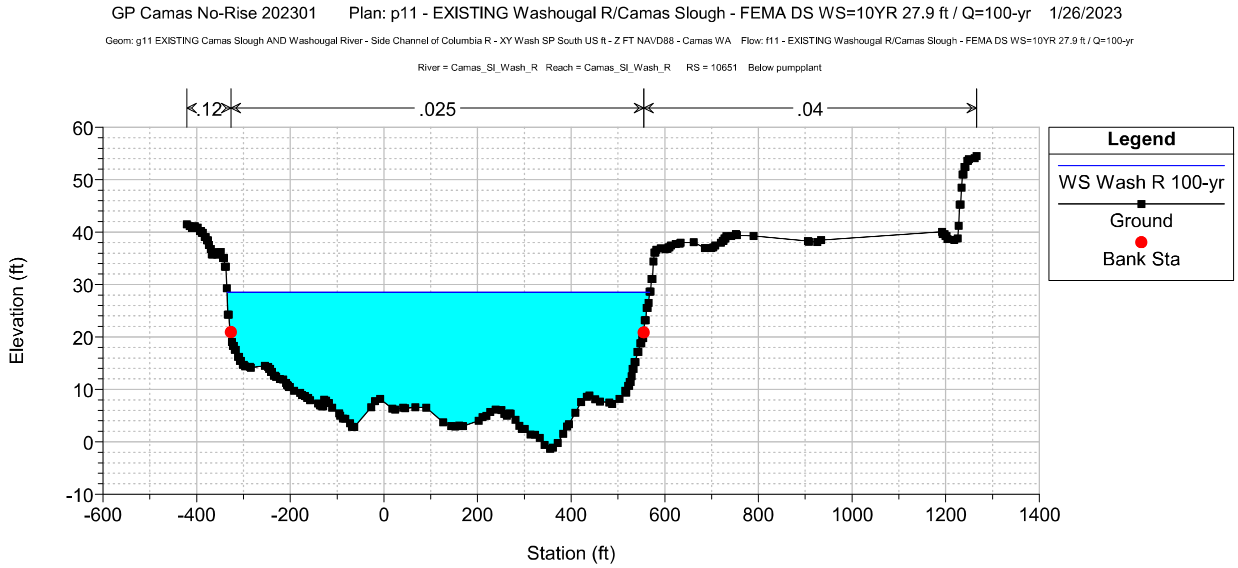


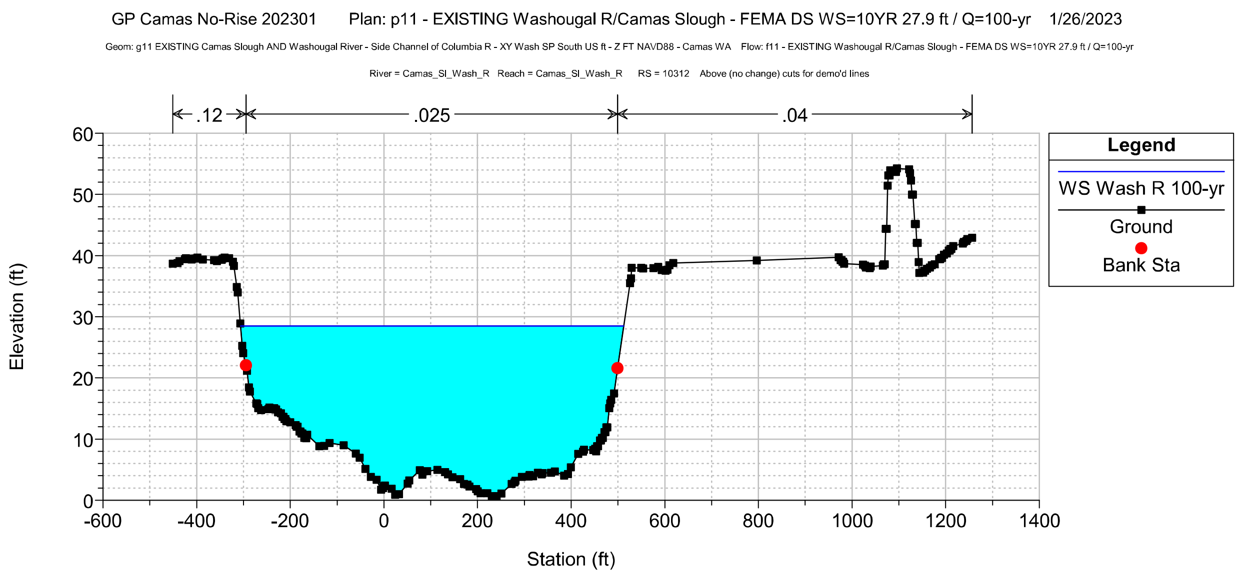
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

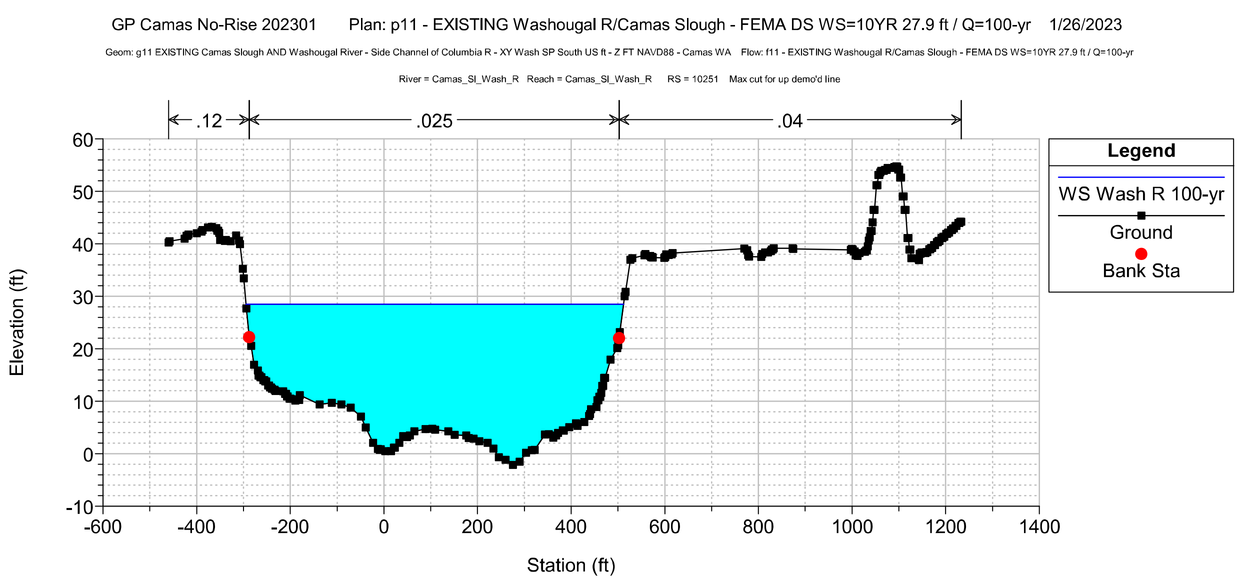
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10998 Below pumpplant




GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10651 Below pumpplant
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta

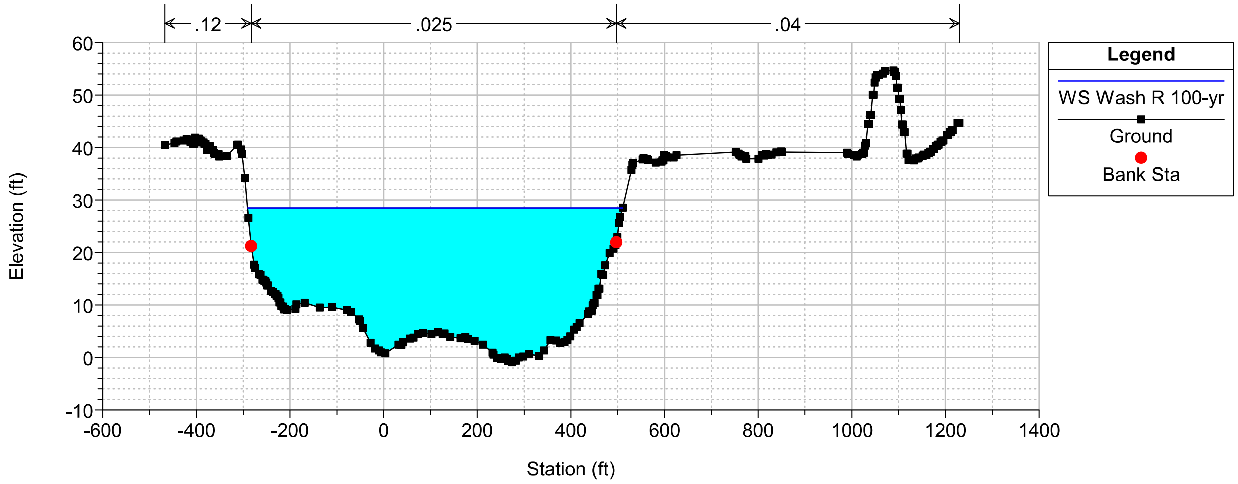

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10312 Above (no change) cuts for demo'd lines
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10251 Max cut for up demo'd line
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

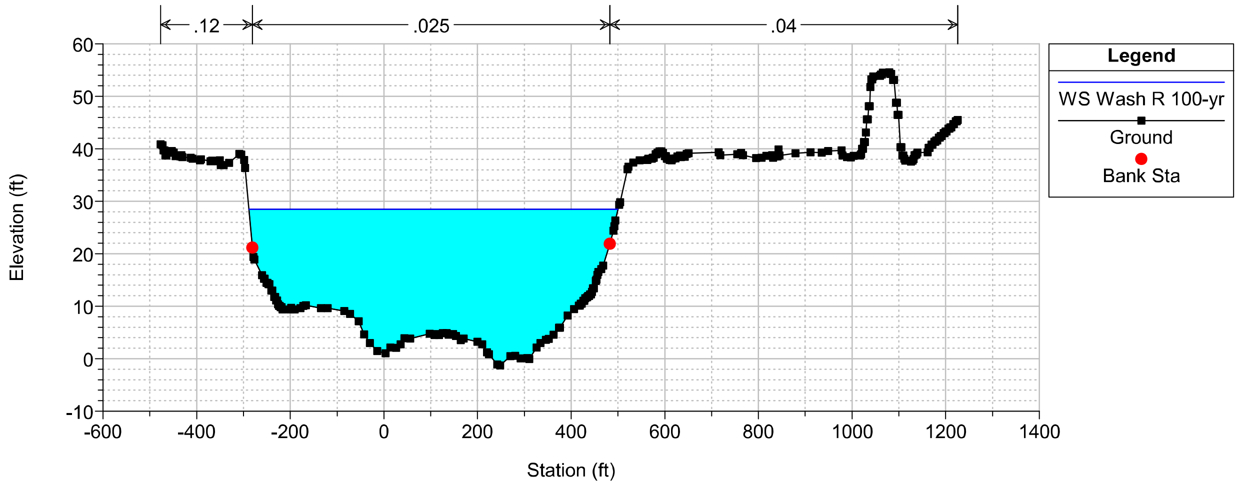
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10231 Min cut for demo'd lines



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

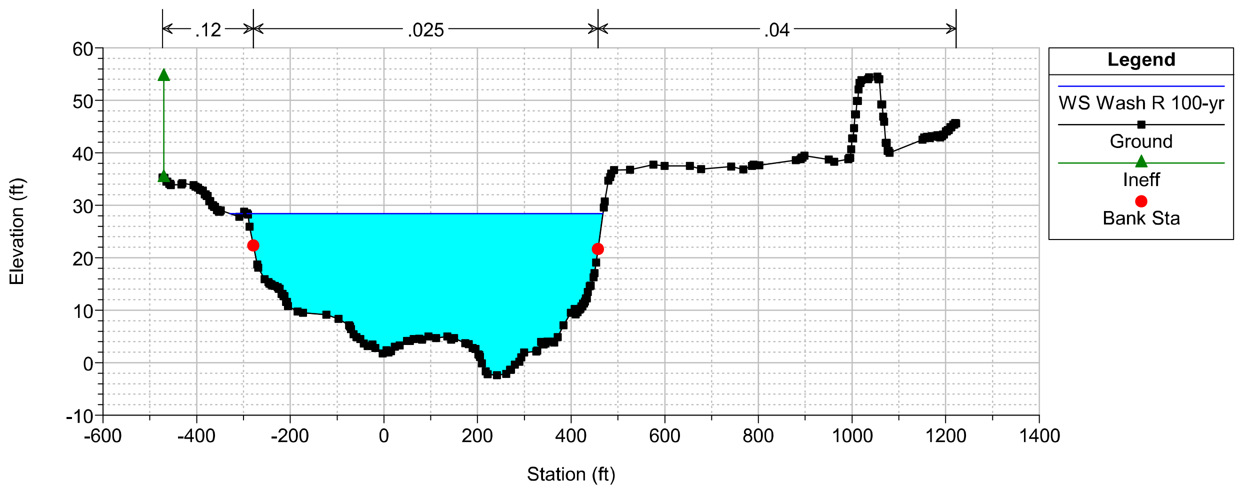
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10201 Max cut for ds demo'd line

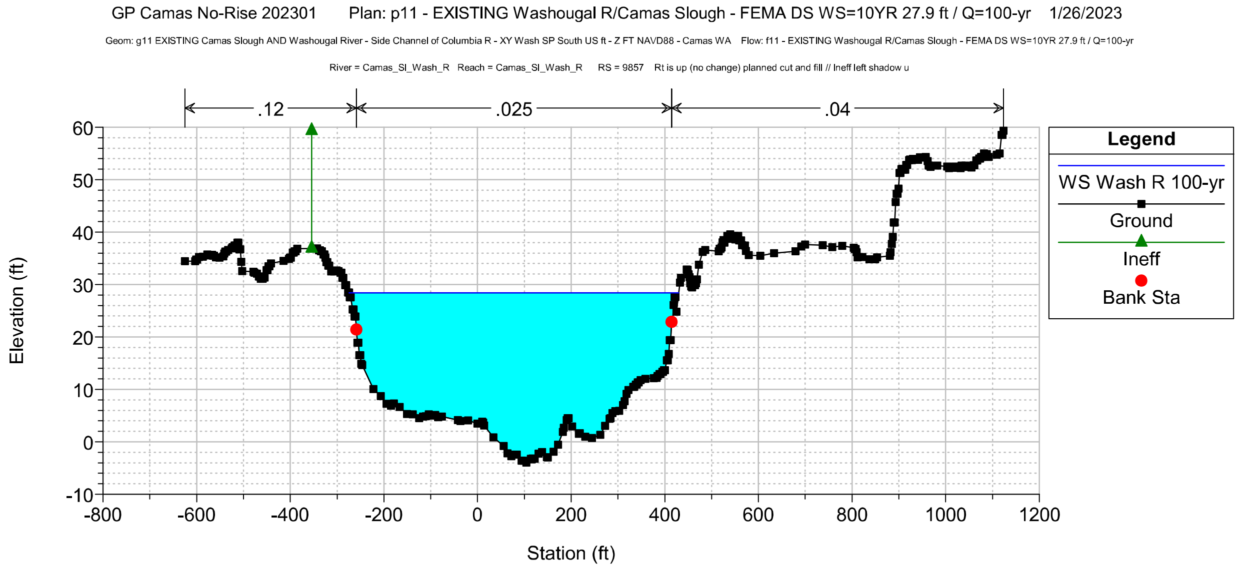


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

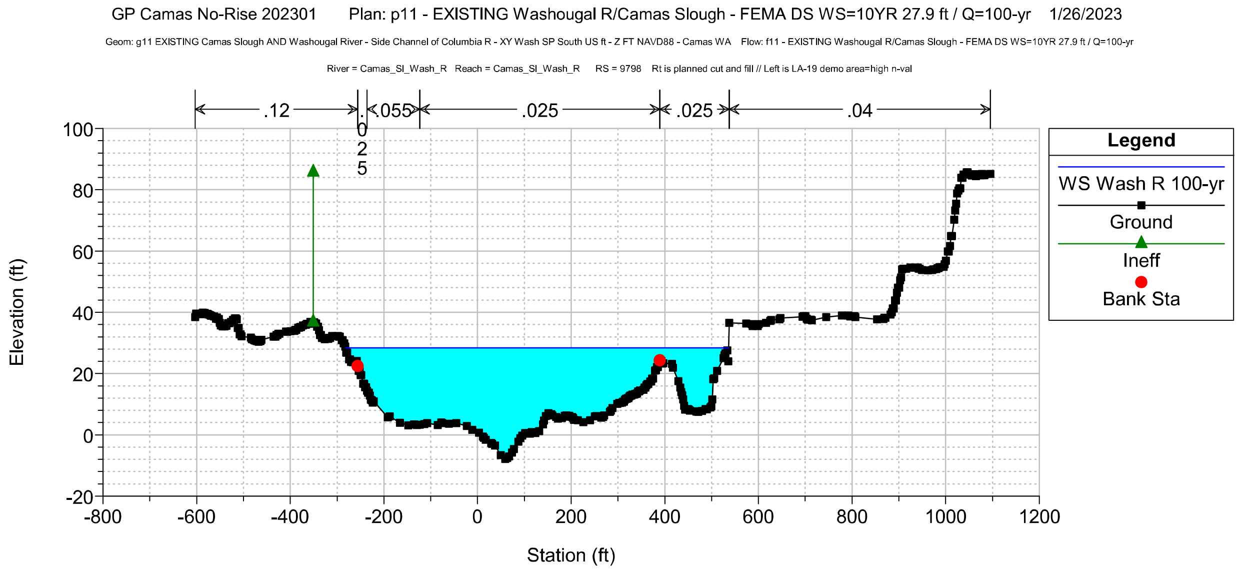
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 10119 Ineff left shadow up dry // Below (no change) cuts for demo'd li

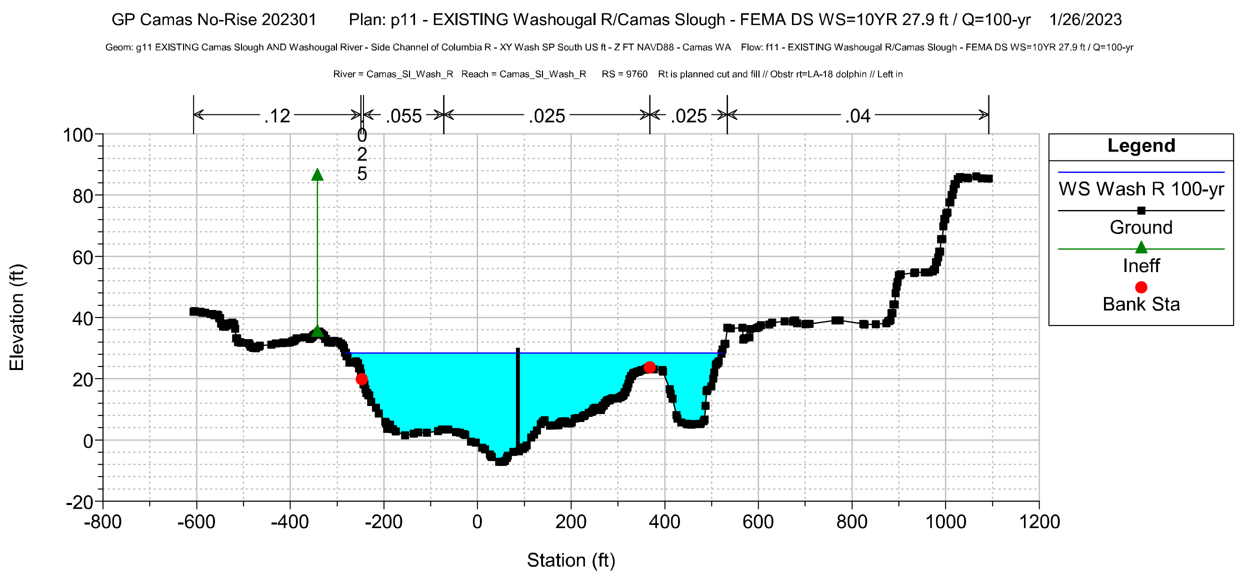




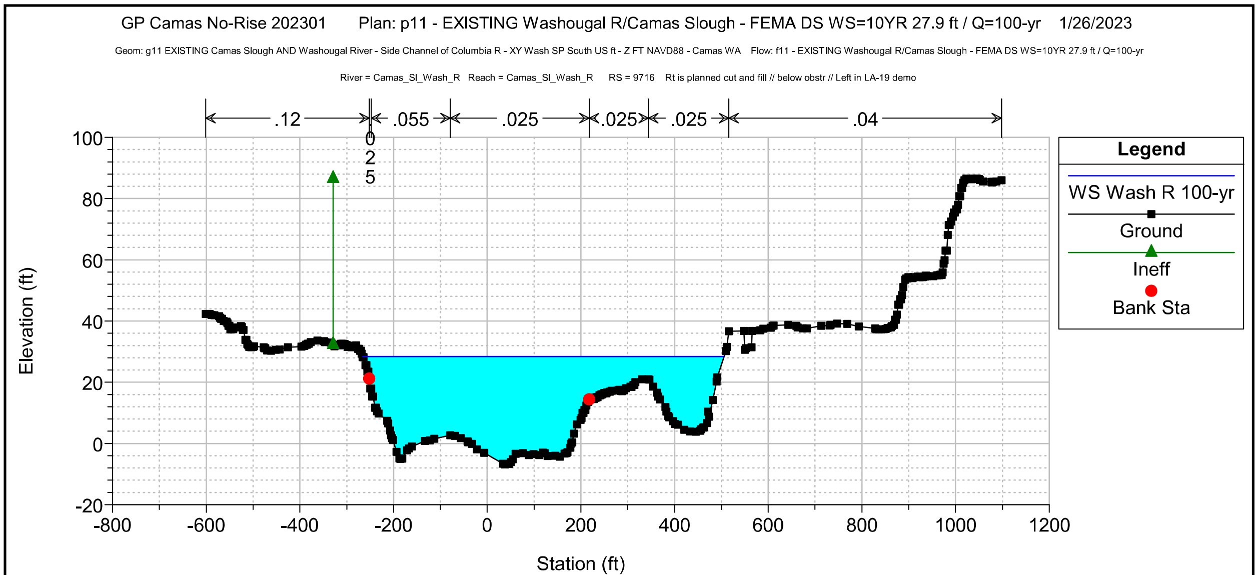
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9857 Rt is up (no change) planned cut and fill // Ineff left shadow u
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



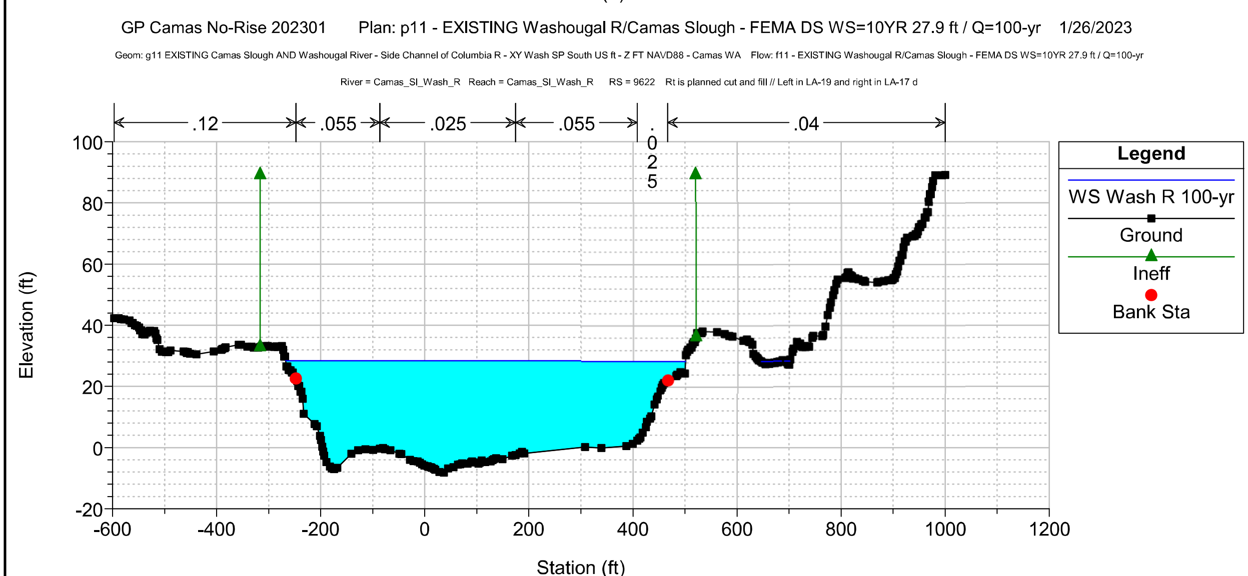
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9798 Rt is planned cut and fill // Left is LA-19 demo area=high n-val
.12
.025
.055
.025
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



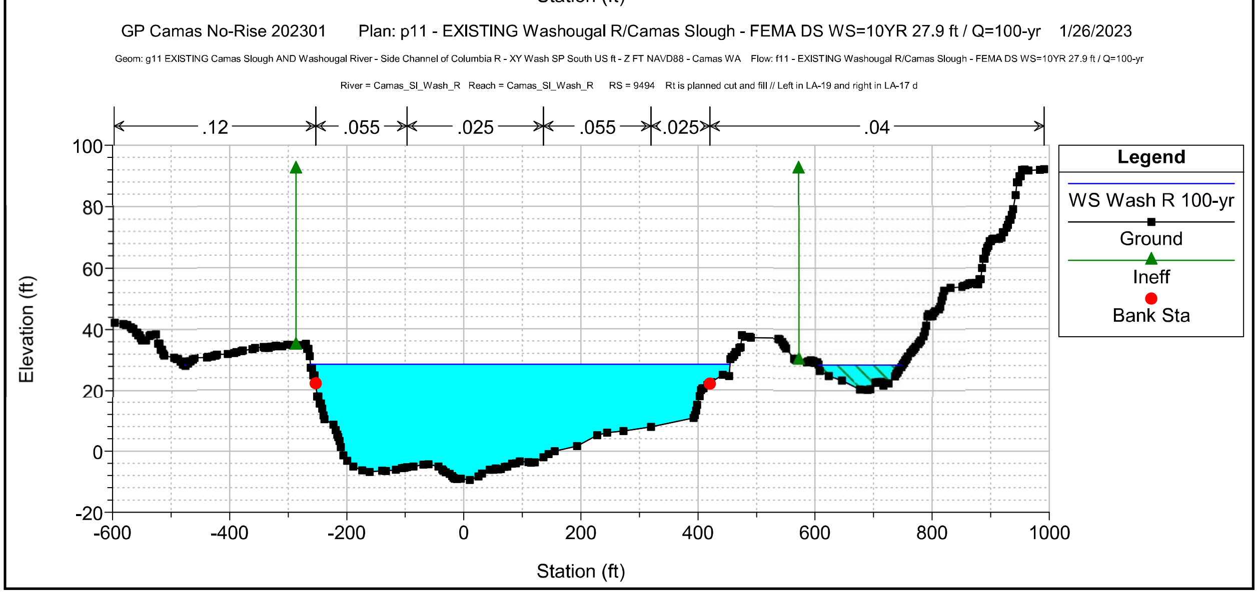
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9760 Rt is planned cut and fill // Obstr rt=LA-18 dolphin // Left in
.12
.025
.055
.025
.025
.04
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9716 Rt is planned cut and fill // below obstr // Left in LA-19 demo
.12
.055
.025
.025
.025
.04
0
2
5
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9622 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.
0
2
5
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

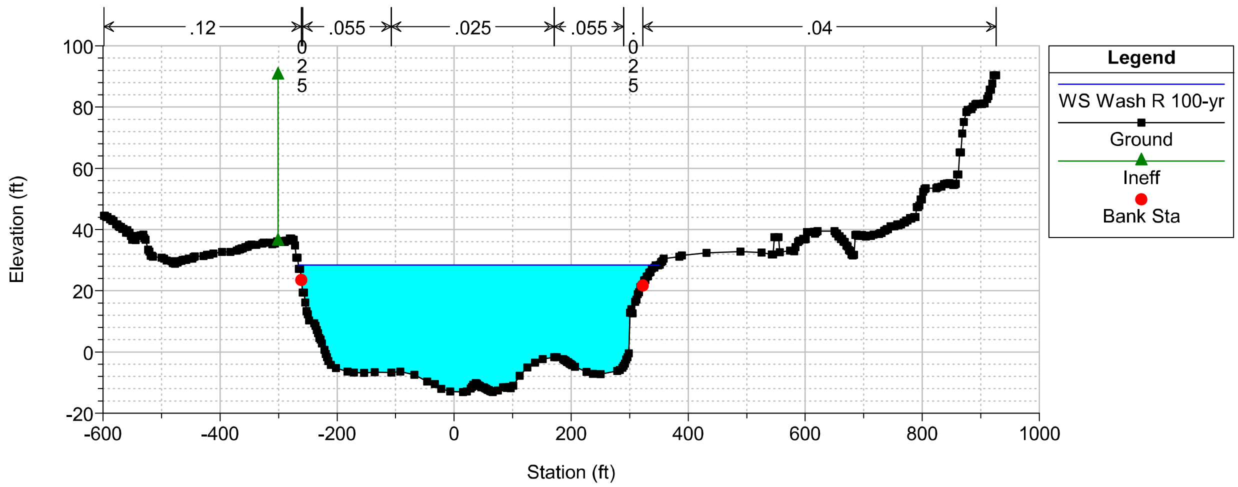


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9494 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.055
.025
.055
.025
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

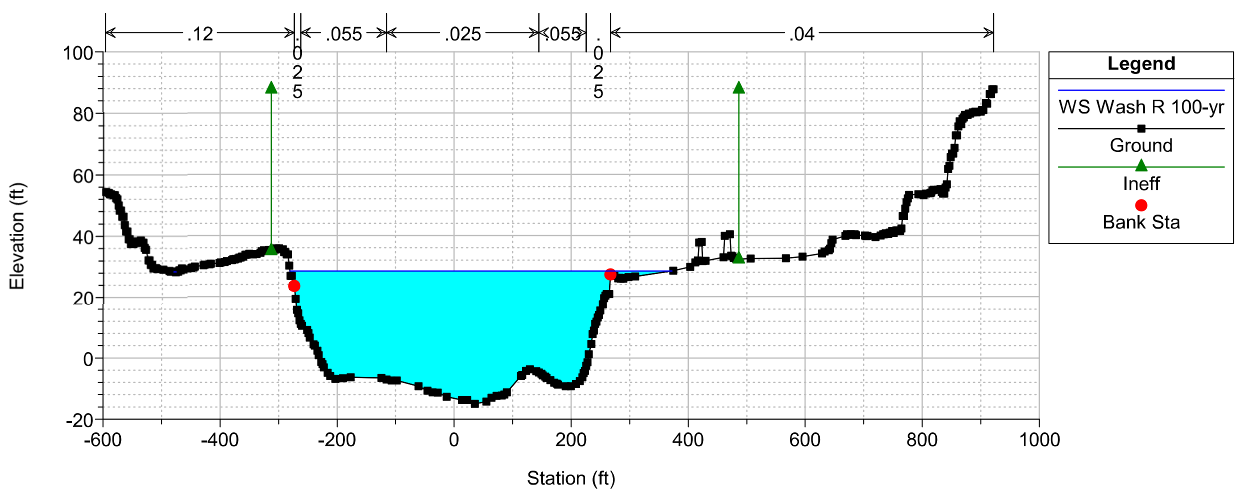
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9319 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

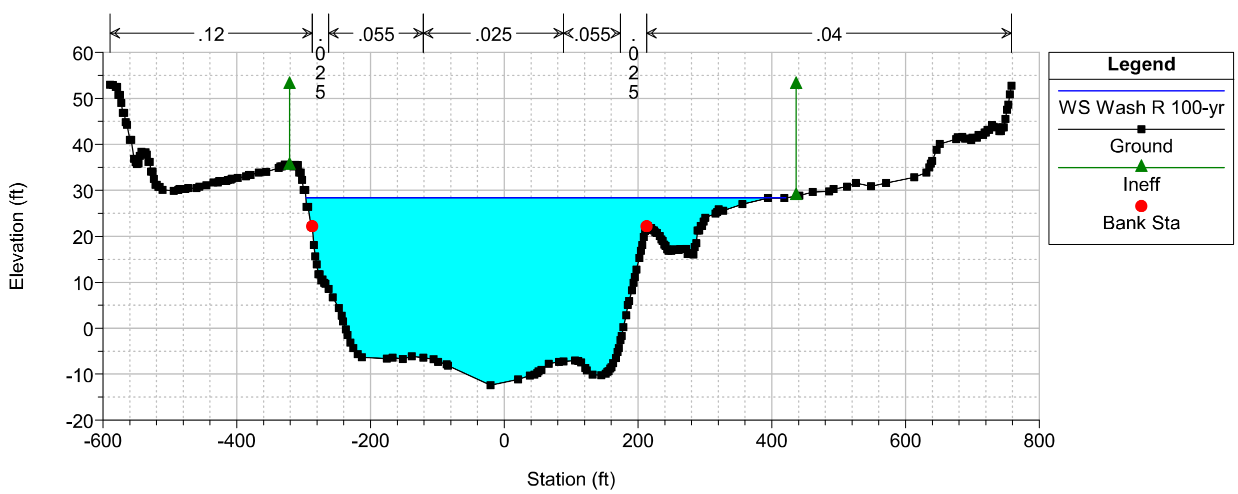
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9198 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d

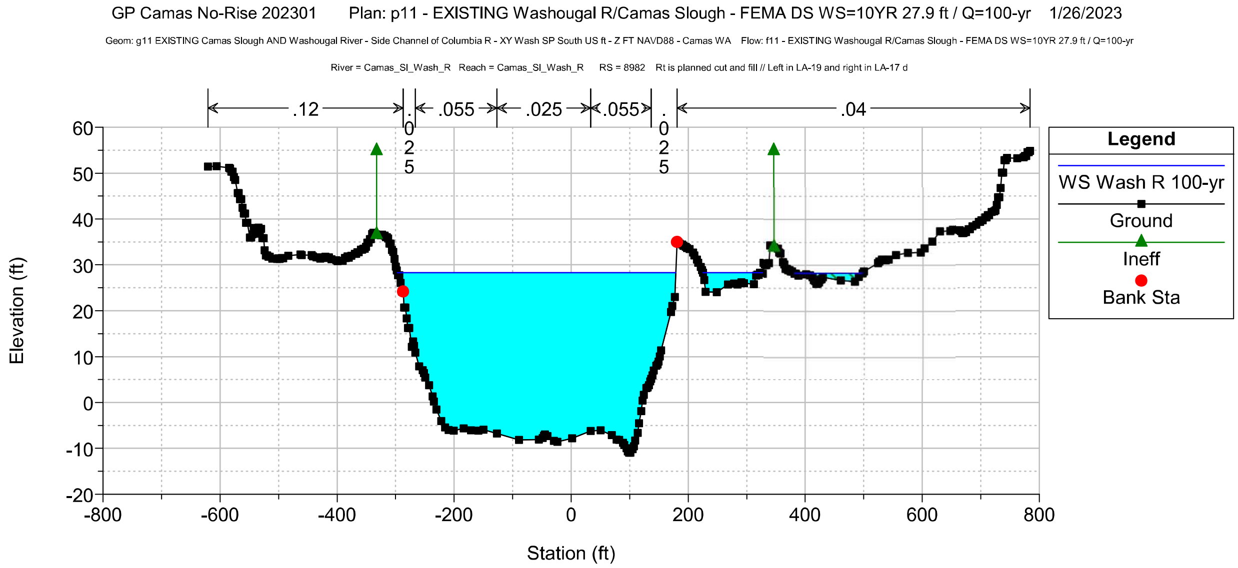


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

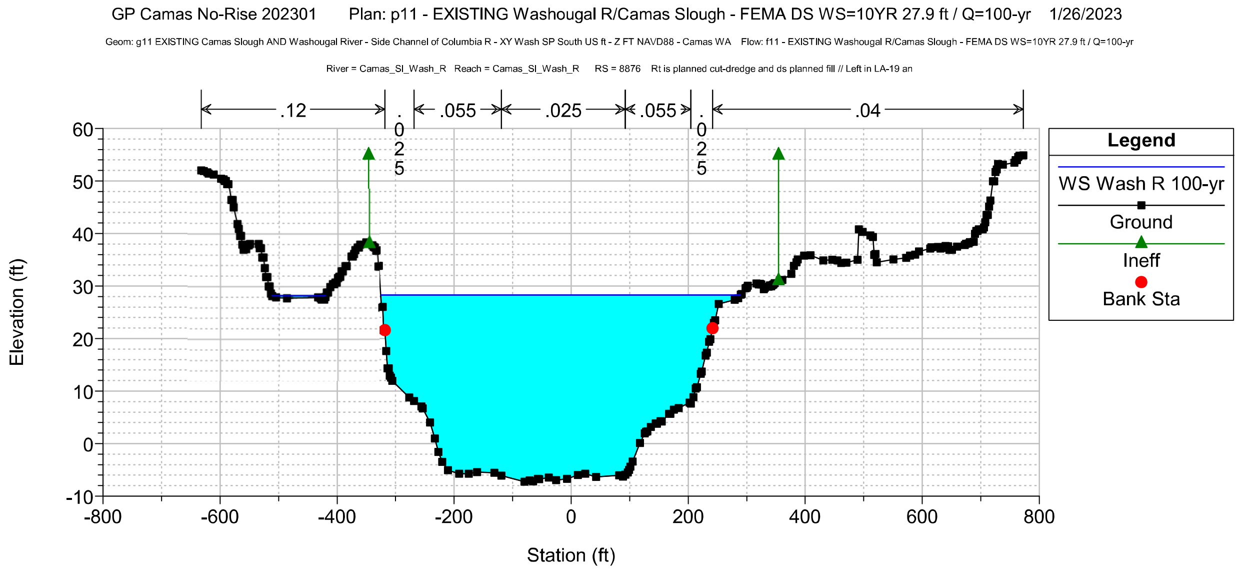
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 9099 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d

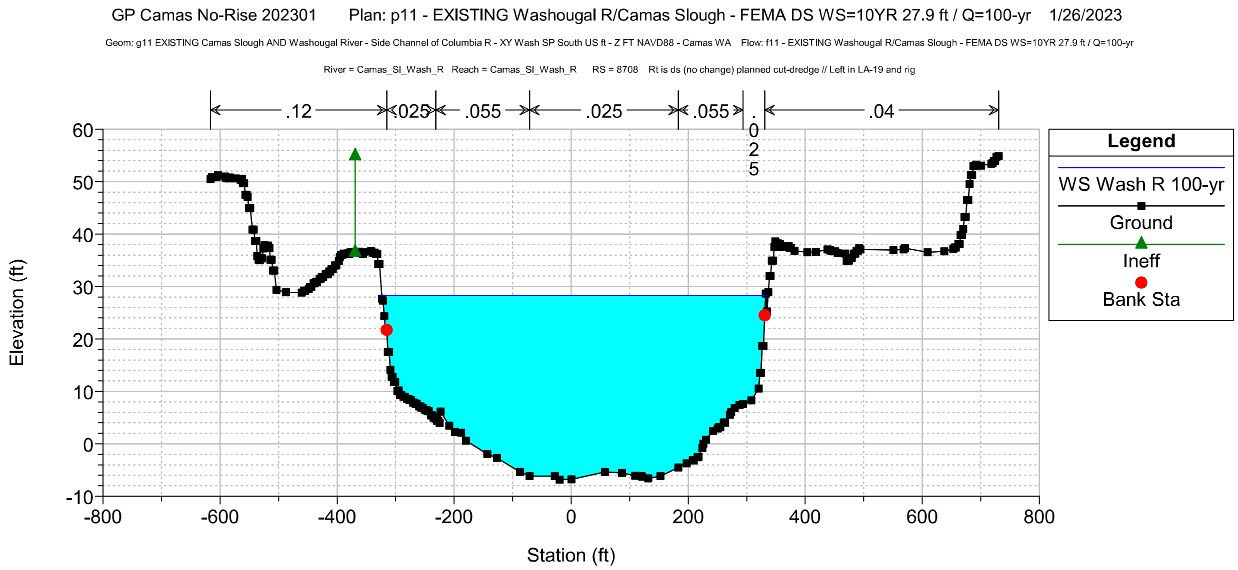




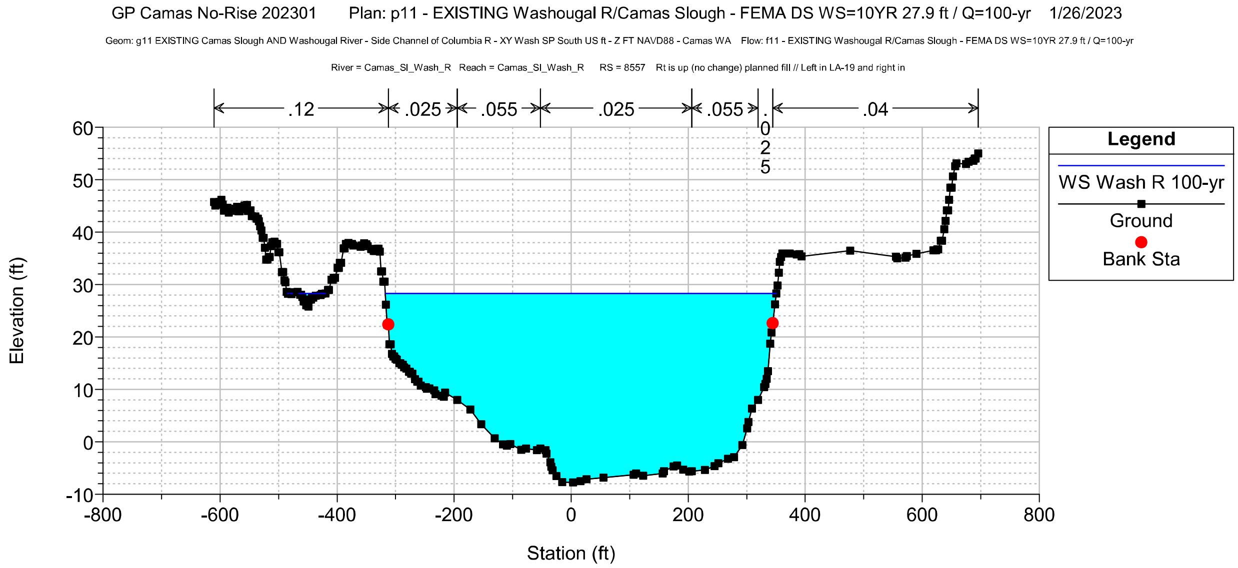
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8982 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
.12
.025
.055
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



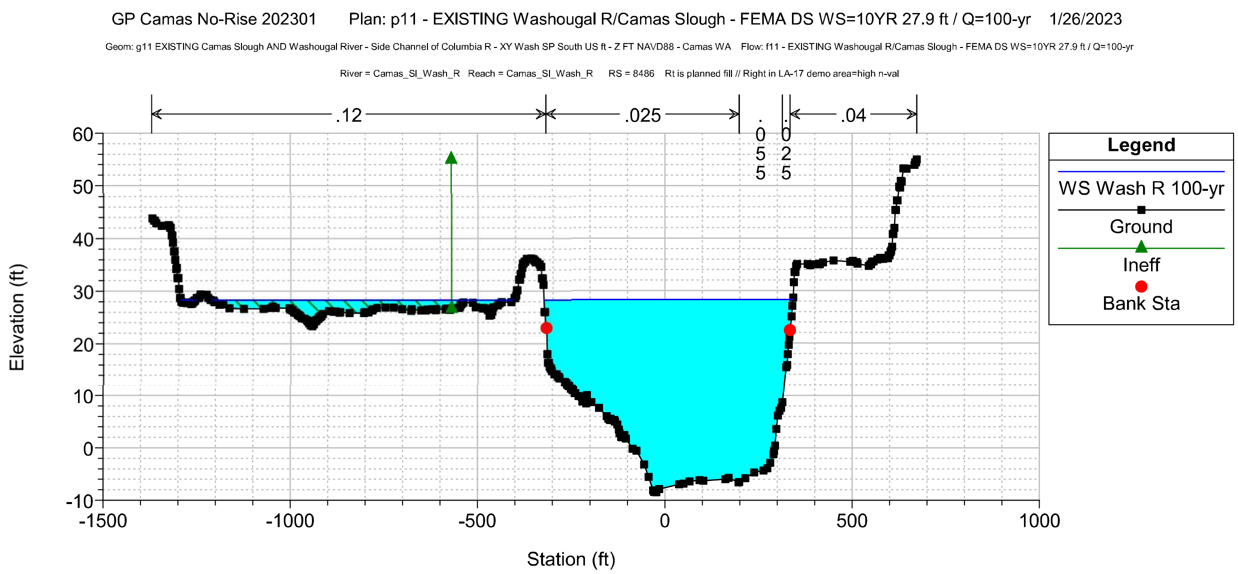
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8876 Rt is planned cut-dredge and ds planned fill // Left in LA-19 an
.12
.025
.055
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



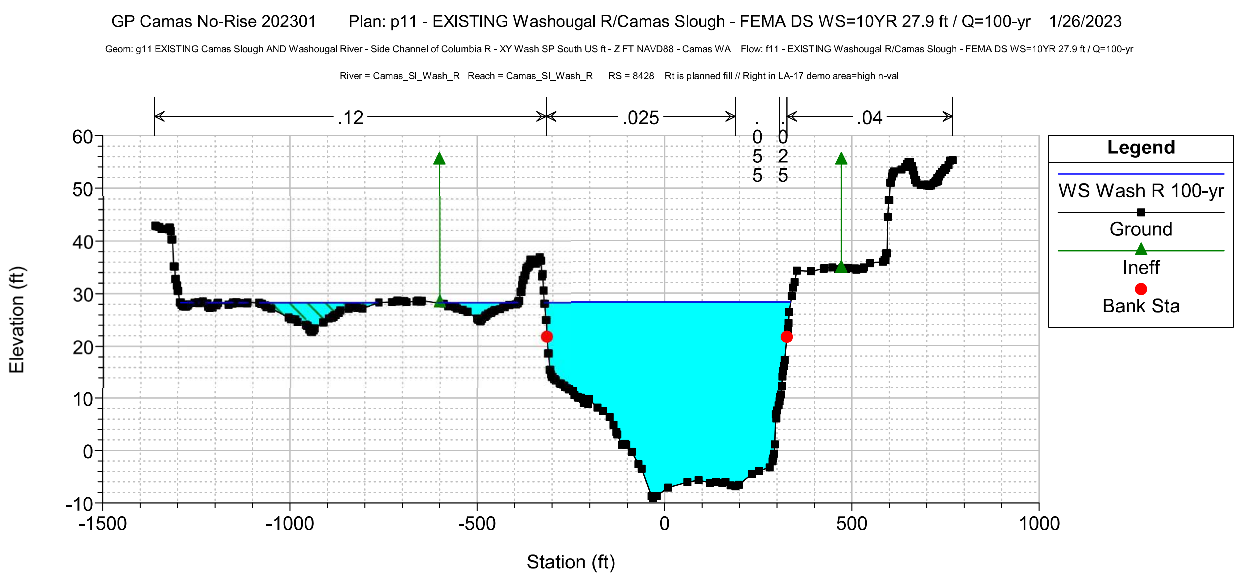
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8708 Rt is ds (no change) planned cut-dredge // Left in LA-19 and rig
.12
.025
.055
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



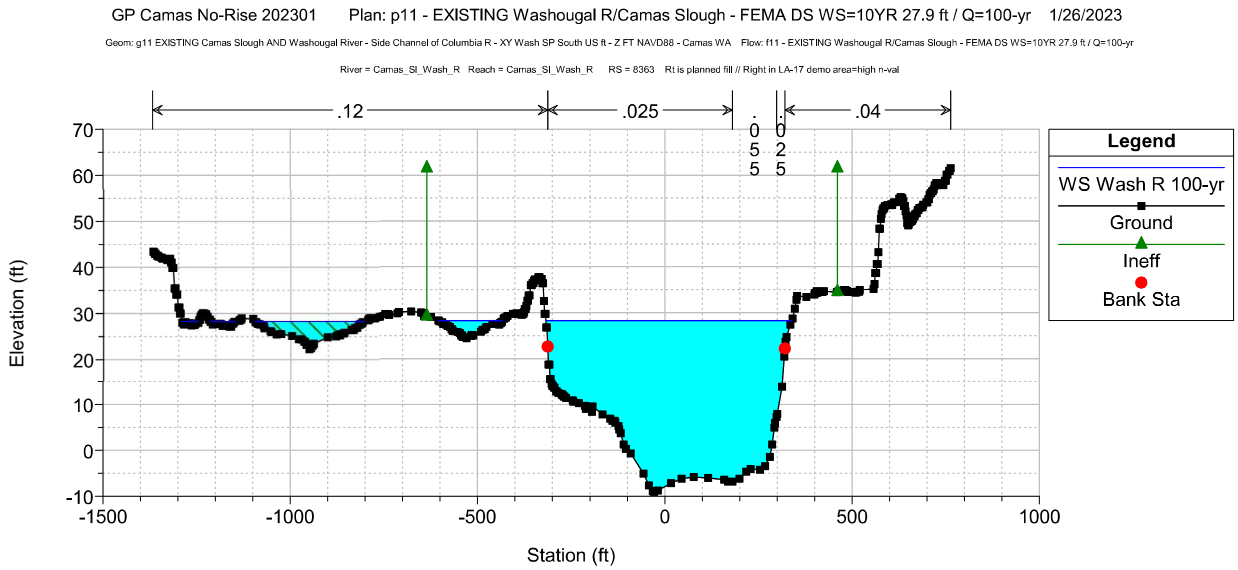
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8557 Rt is up (no change) planned fill // Left in LA-19 and right in
.12
.025
.055
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8486 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8428 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta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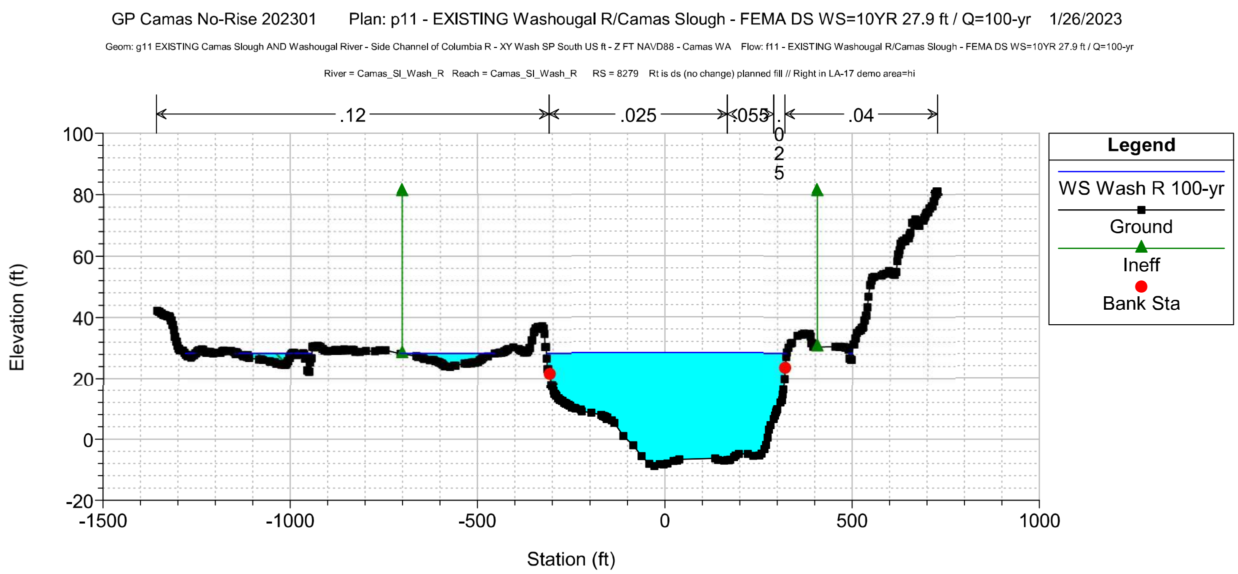
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8363 Rt is planned fill // Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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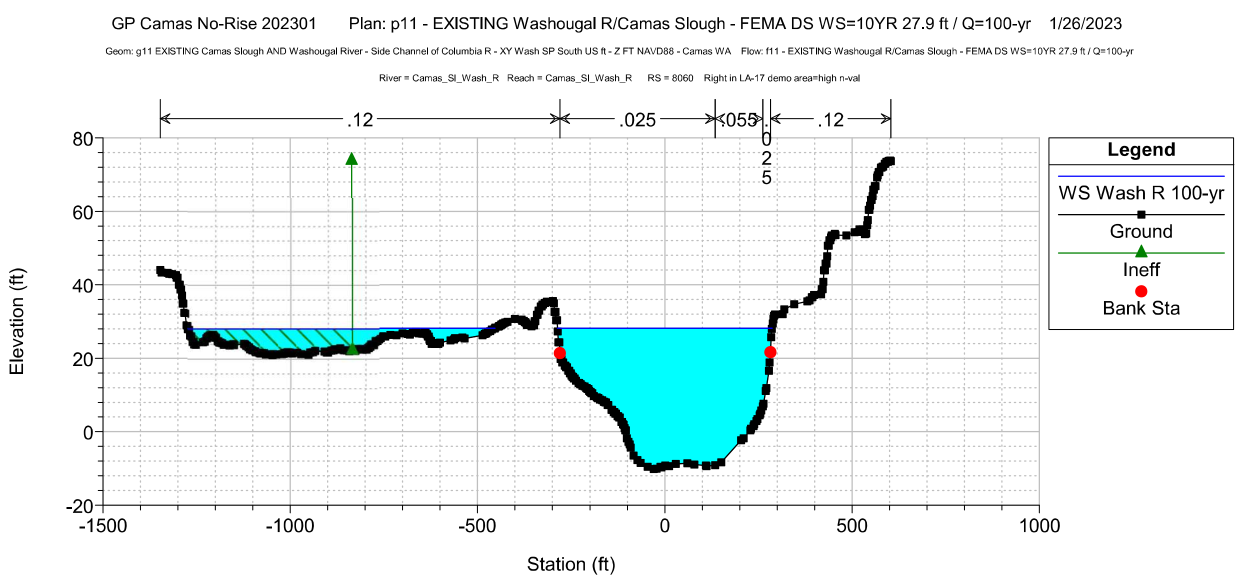
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8279 Rt is ds (no change) planned fill // Right in LA-17 demo area=hi
.12
.025
.055
.025
.04
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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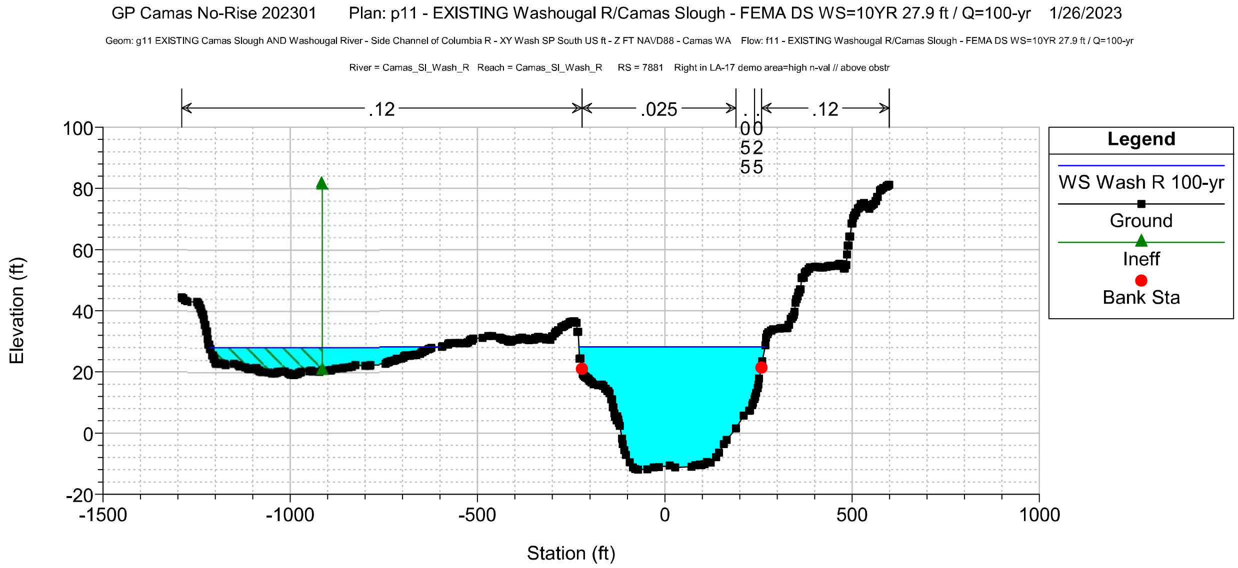
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 8060 Right in LA-17 demo area=high n-val
.12
.025
.055
.025
.12
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)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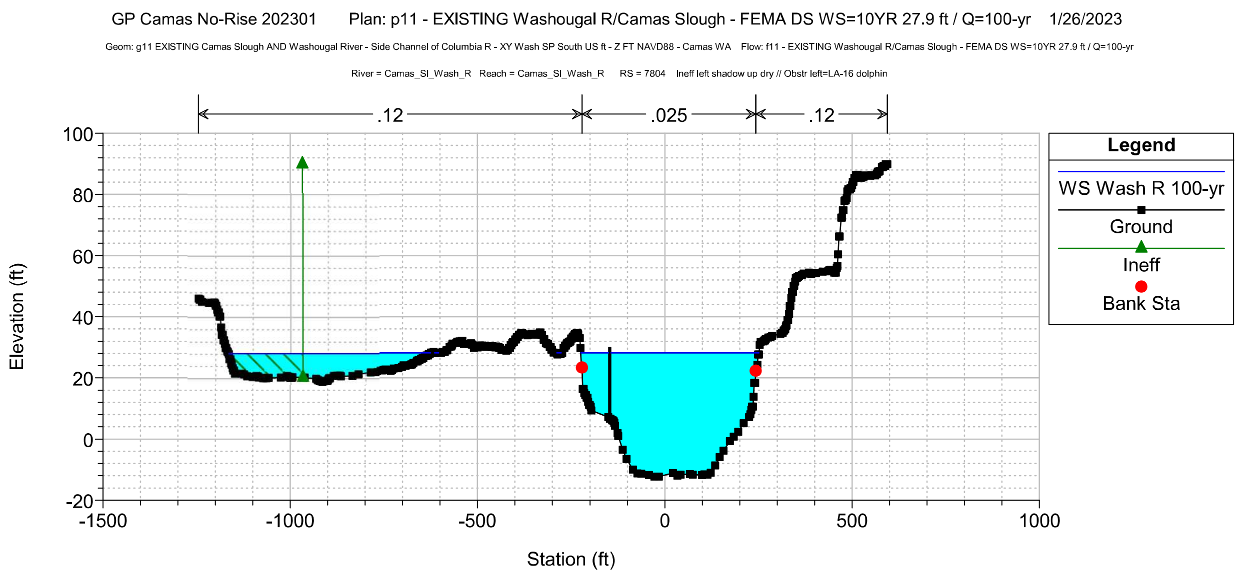
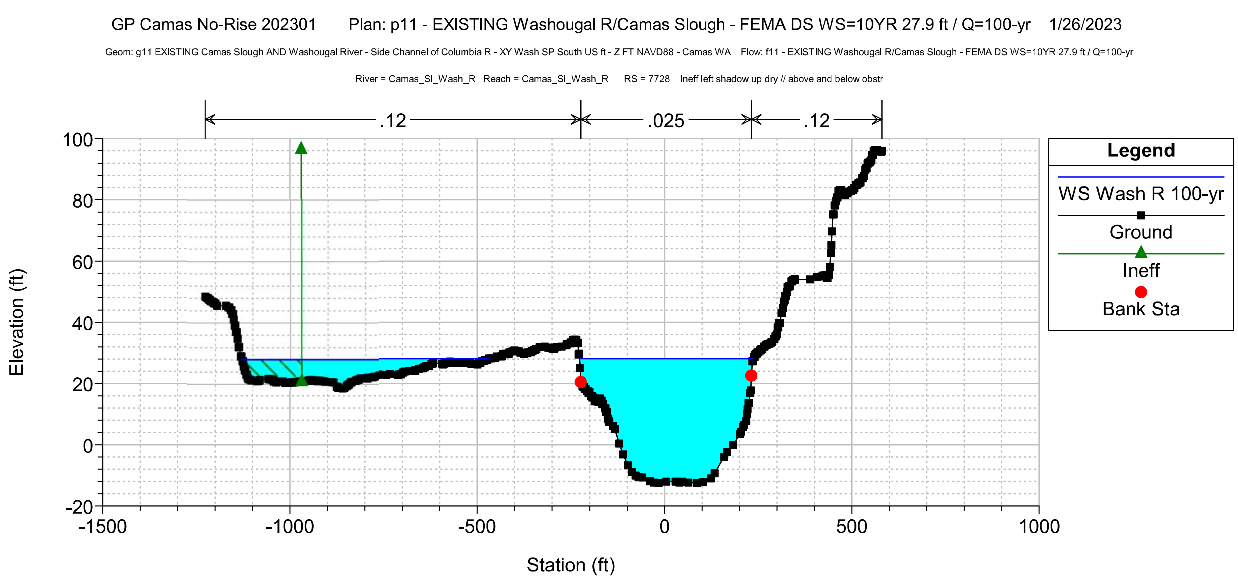
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7881 Right in LA-17 demo area=high n-val // above obstr
.12
.025
.00 .52 .55
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

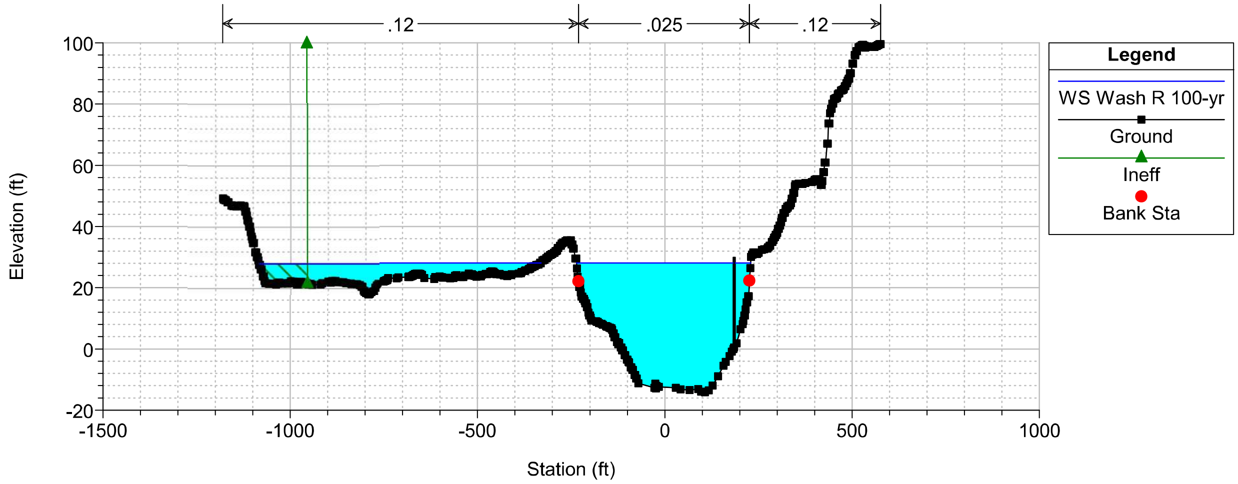

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7804 Ineff left shadow up dry // Obstr left=LA-16 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7728 Ineff left shadow up dry // above and below obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

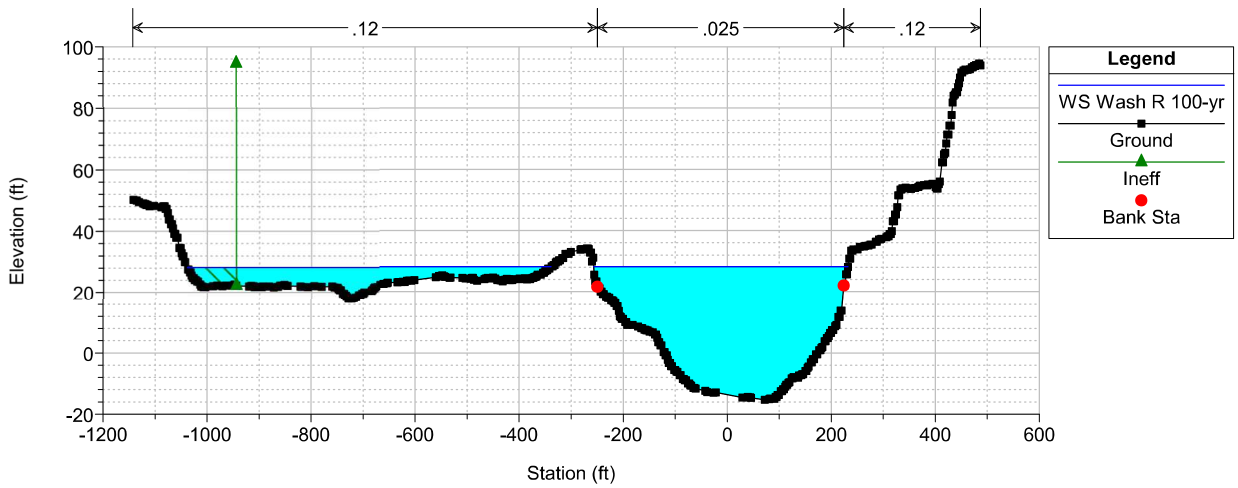
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7637 Ineff left shadow up dry // obstr rt=LA-15 dolphin



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

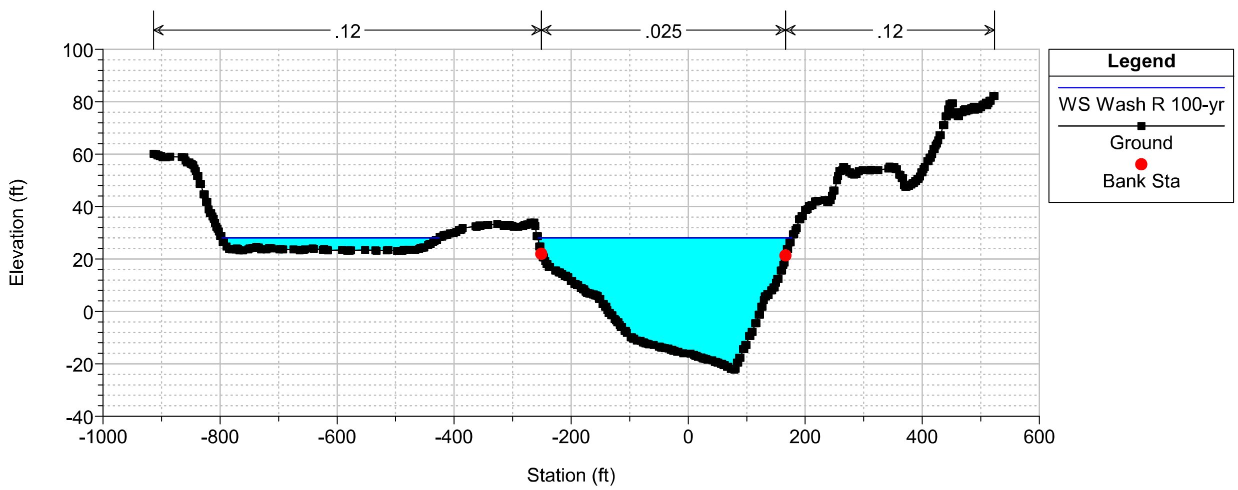
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7570 Ineff left shadow up dry // below obstr

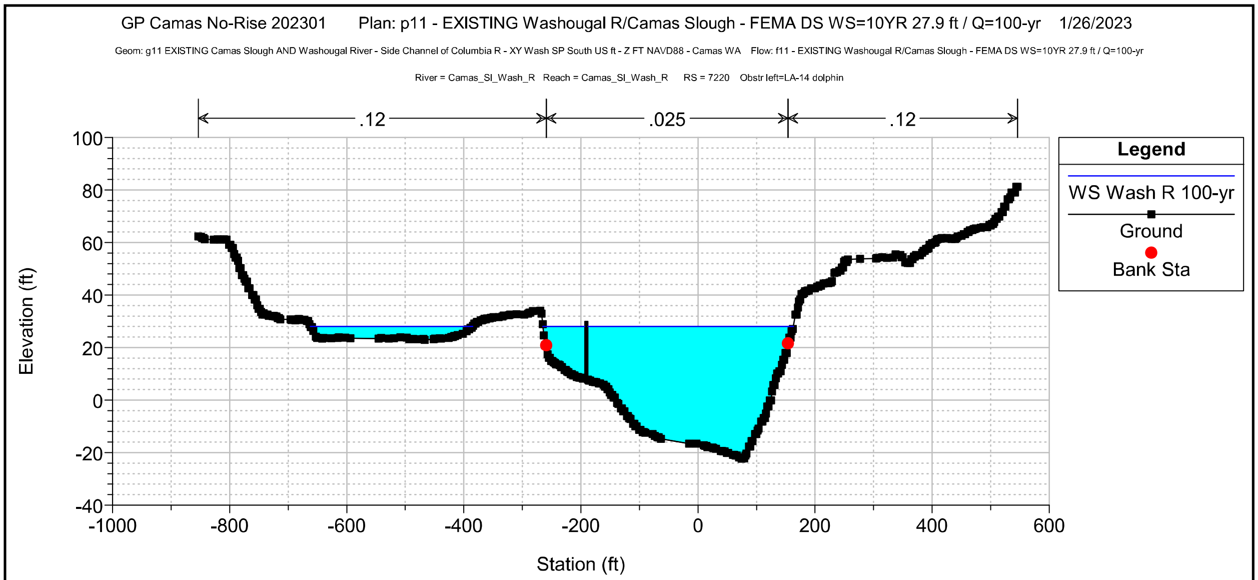


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7281 above obstr





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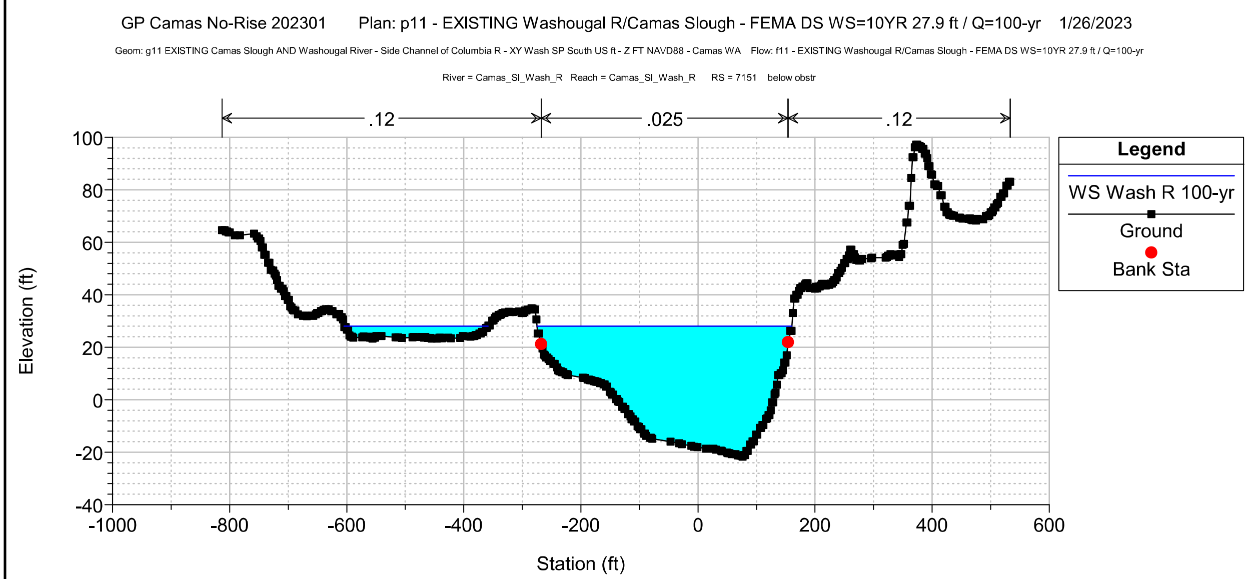
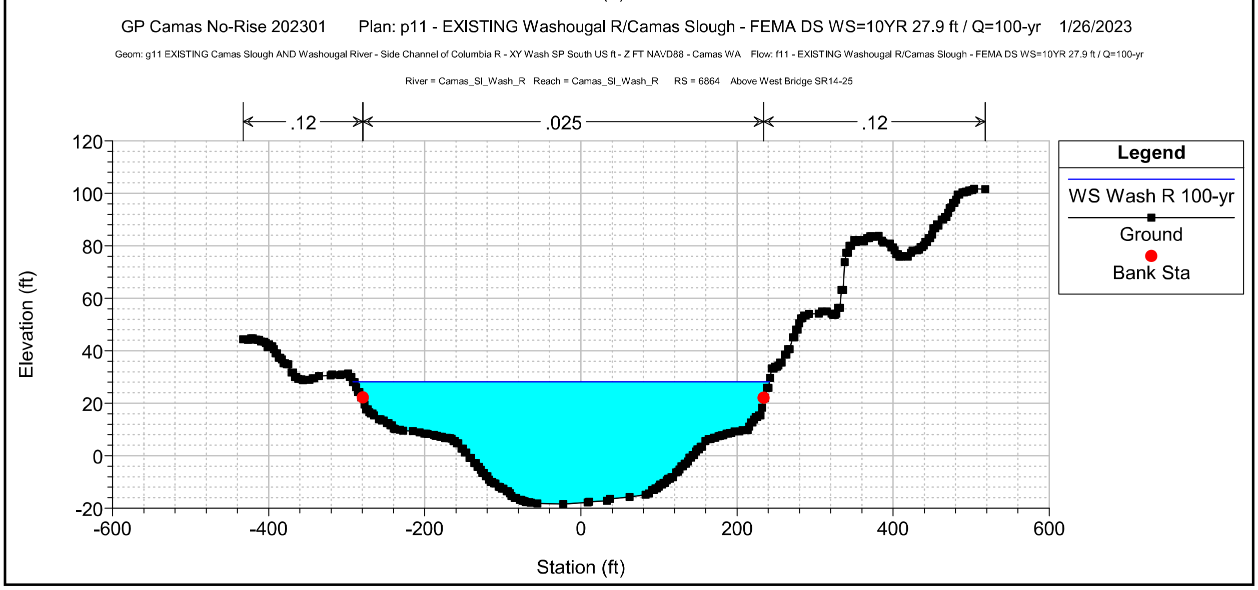
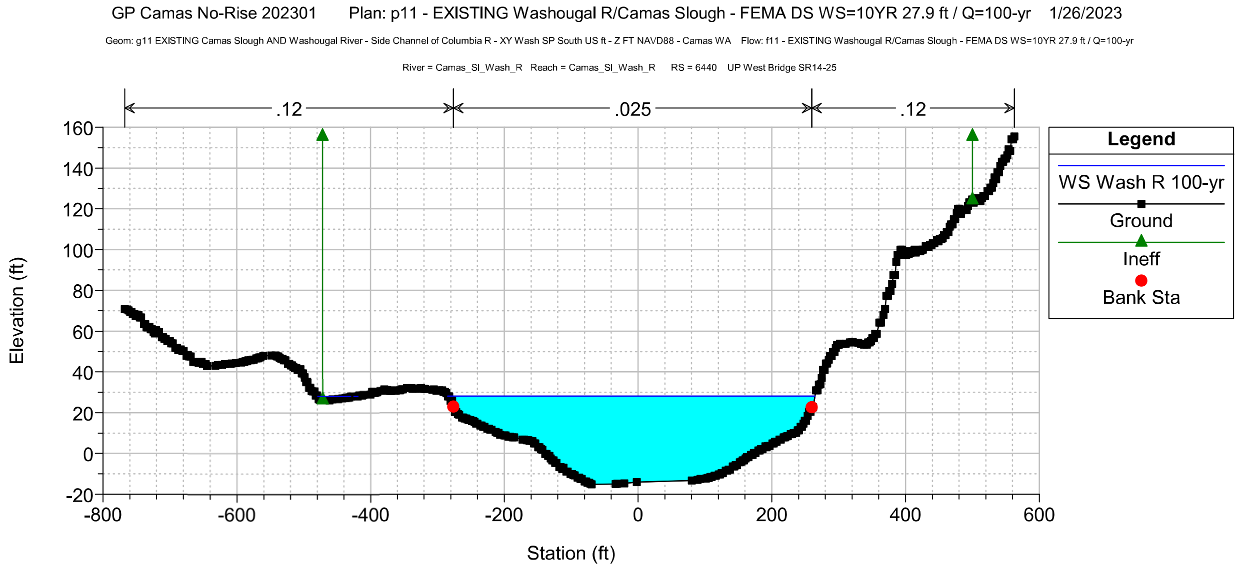
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7220 Obstr left=LA-14 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 7151 below obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 6864 Above West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta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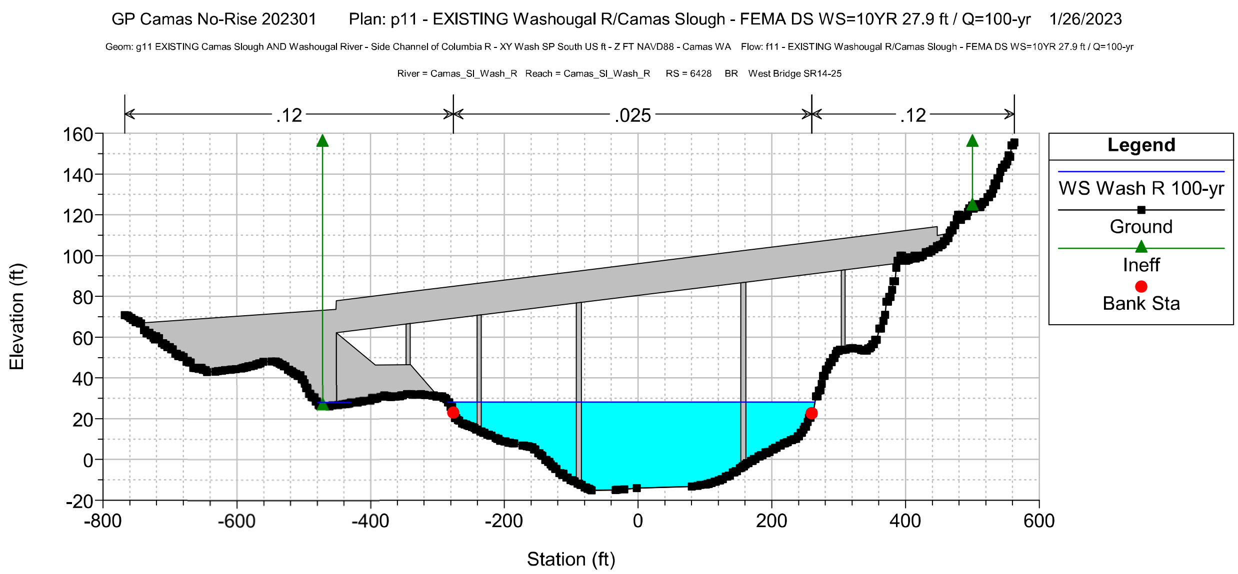
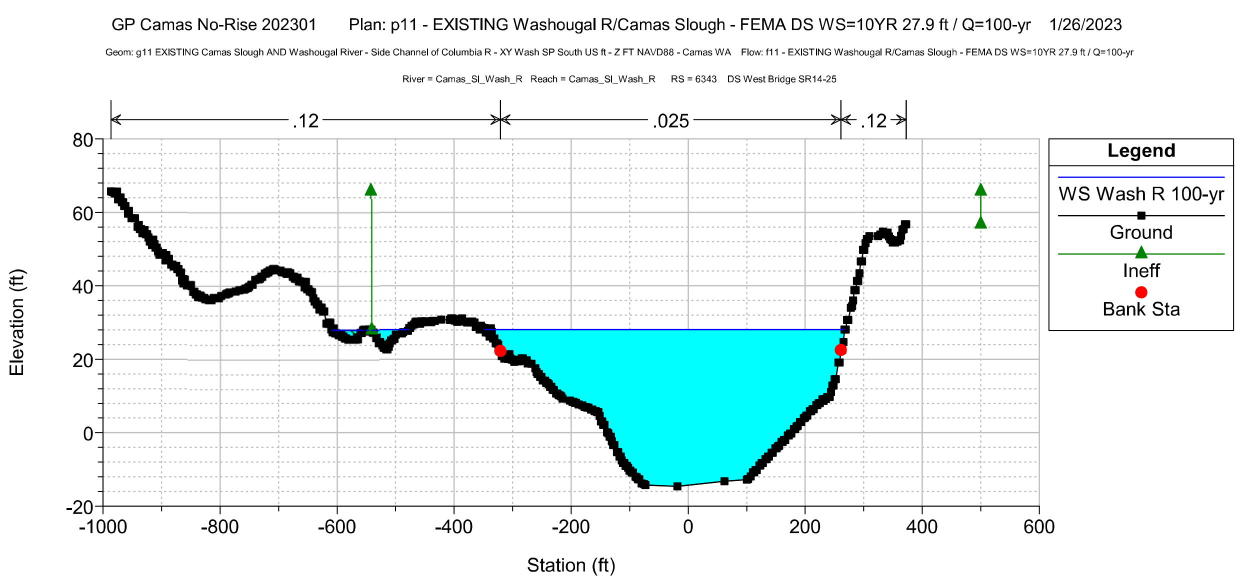
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 6440 UP West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 6428 BR West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta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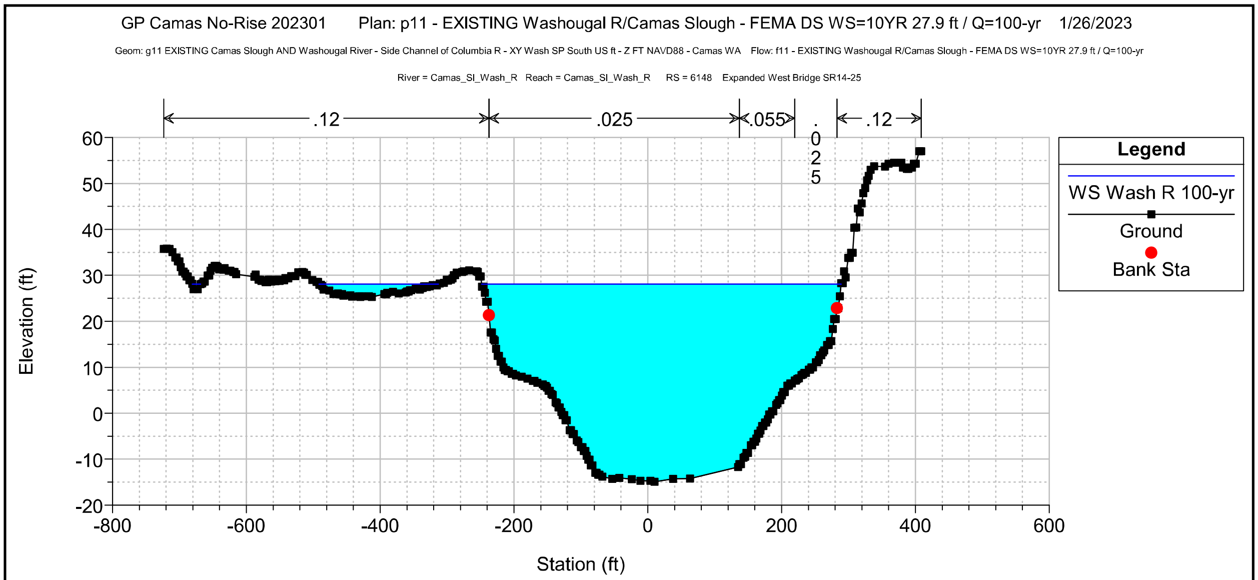
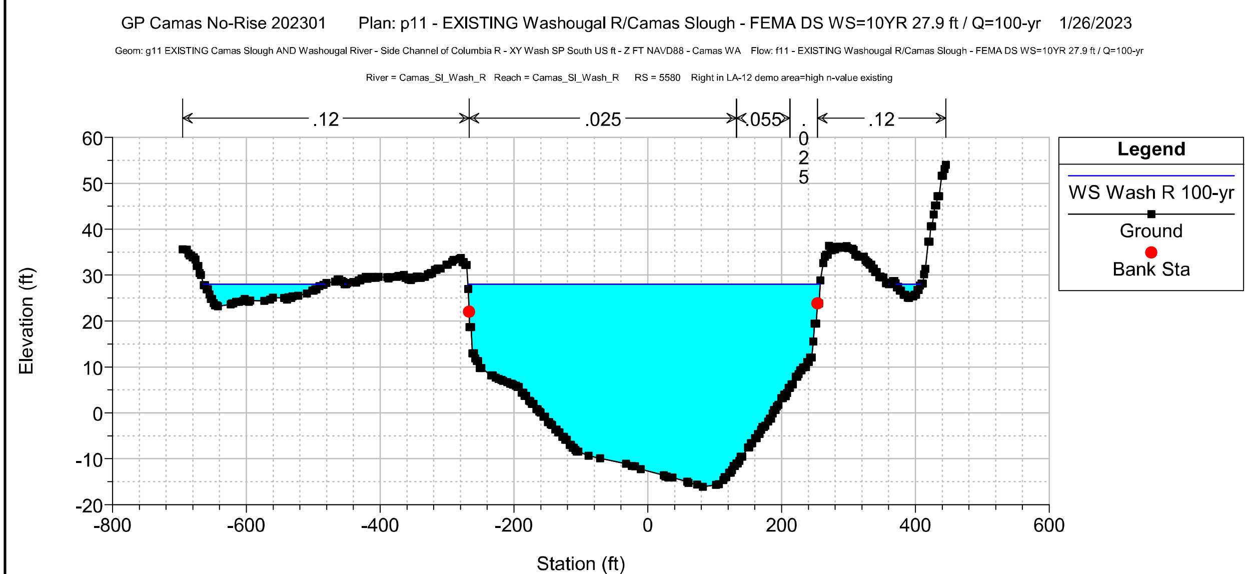
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 6343 DS West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 6148 Expanded West Bridge SR14-25
.12
.025
.055
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta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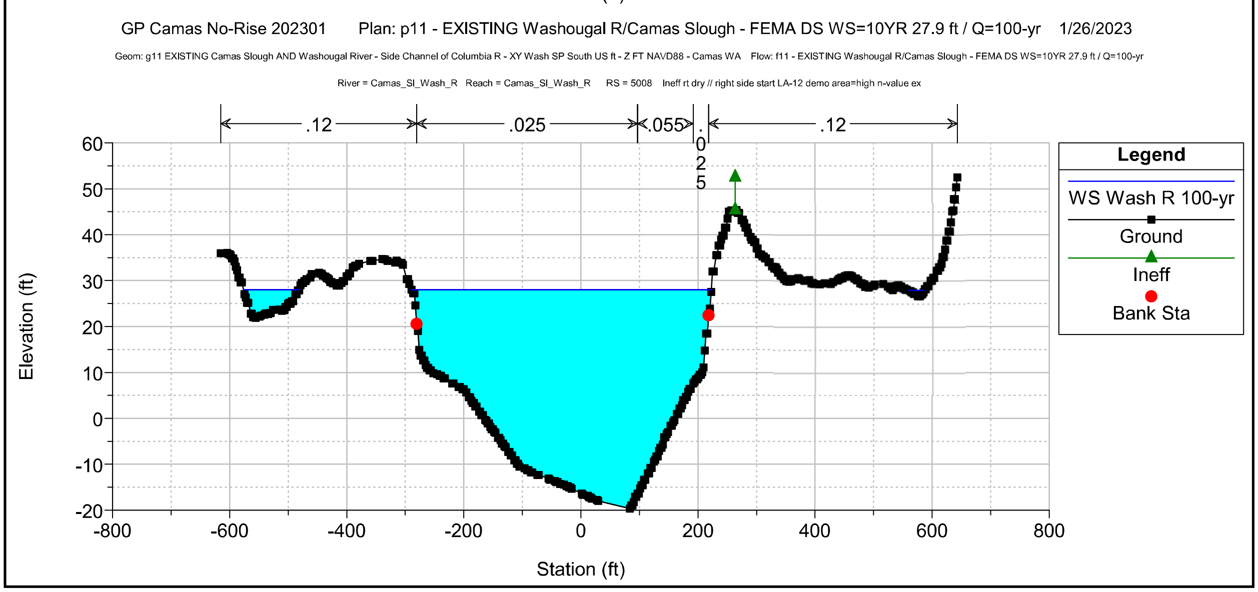
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 5580 Right in LA-12 demo area=high n-value existing
.12
.025
.055
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta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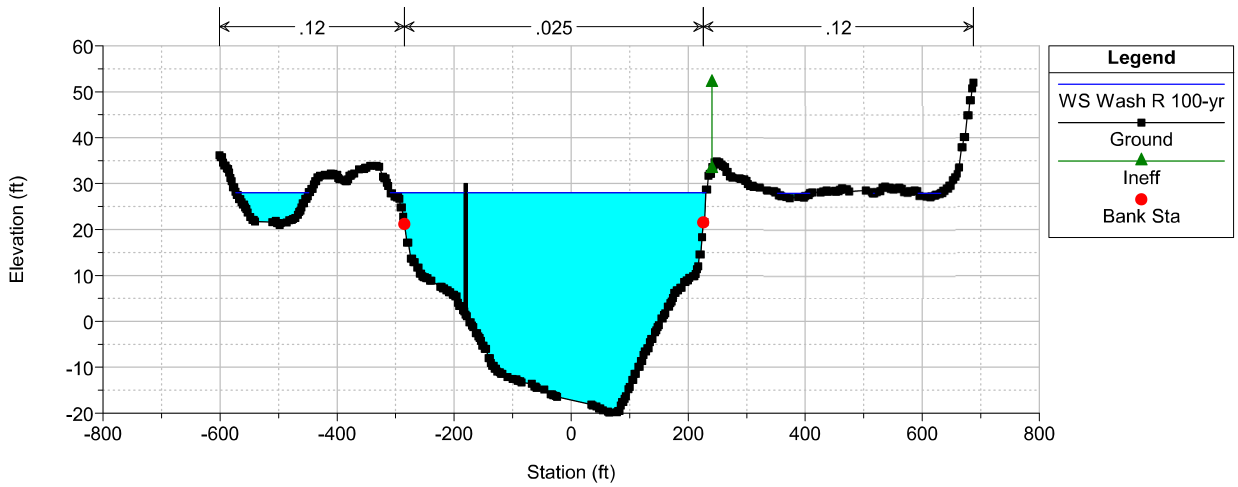
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 5008 Ineff rt dry // right side start LA-12 demo area=high n-value ex
.12
.025
.055
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

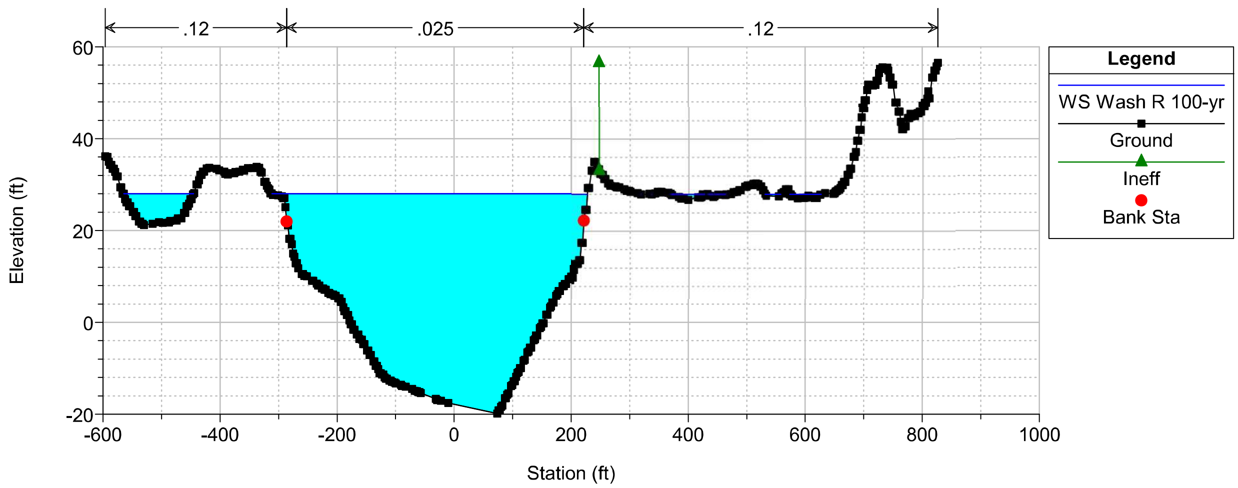
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4887 Ineff rt dry // Obstr left=LA-11 dolphin



GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

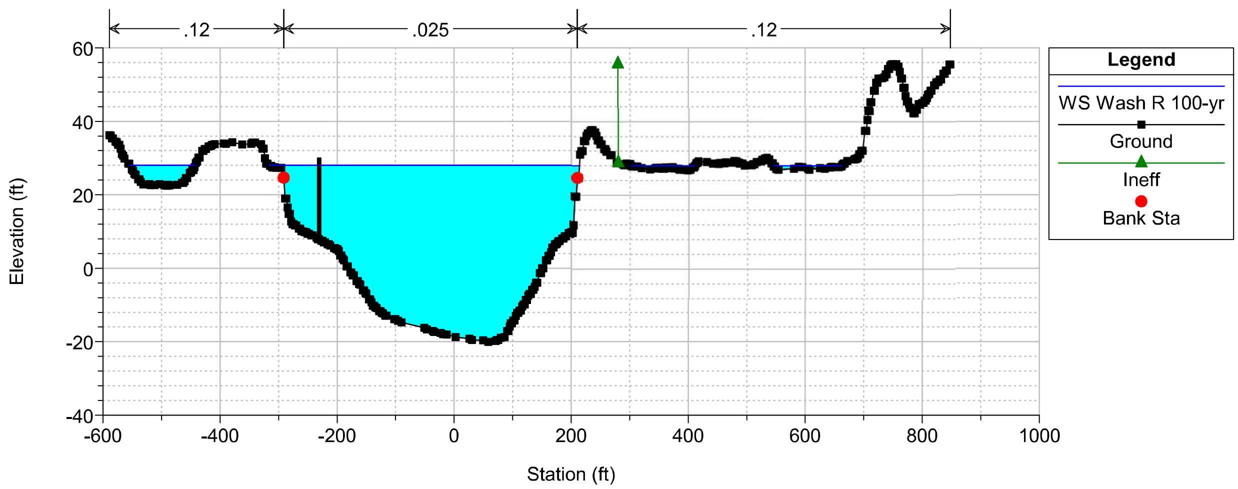
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4834 Ineff rt dry // above and below obstr's

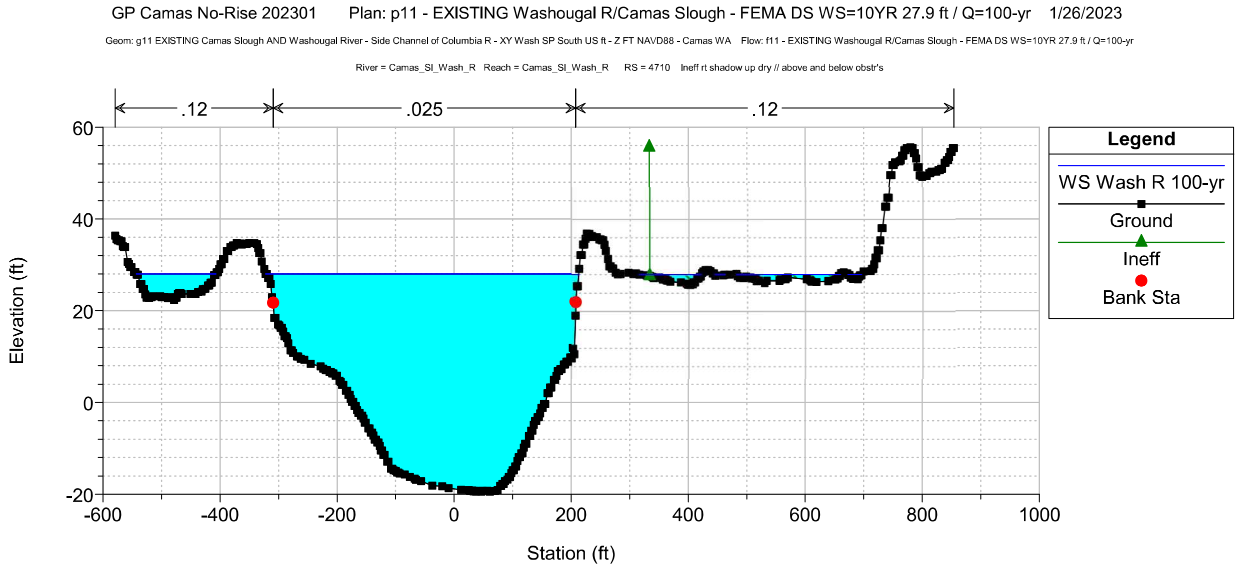


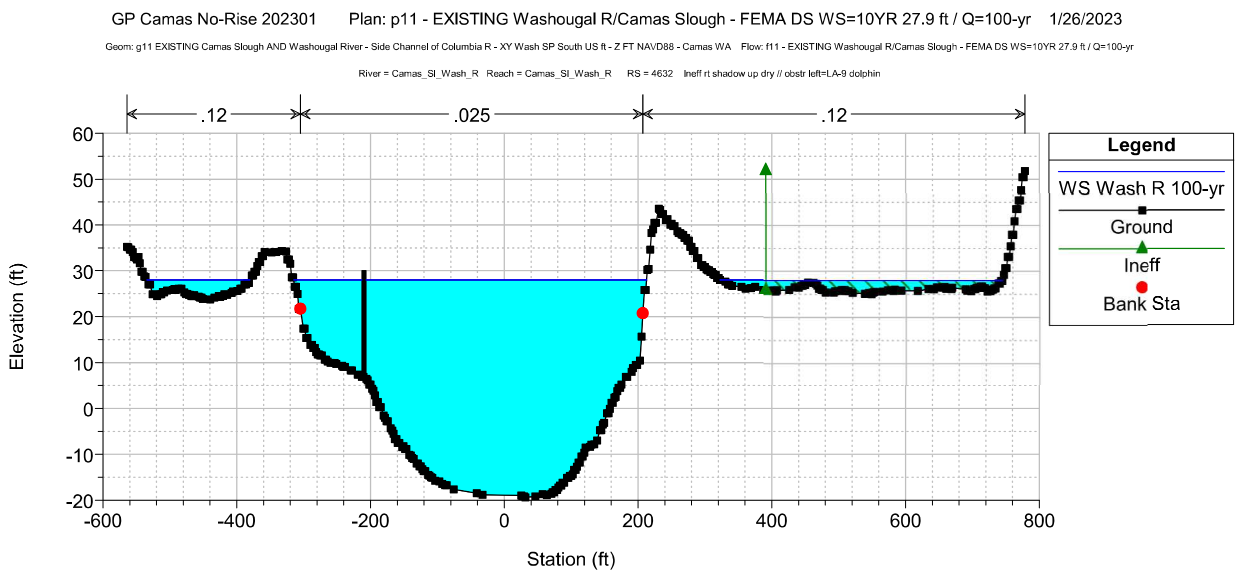
GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023

Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr

River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4784 Ineff rt shadow up dry // obstr left=LA-10 dolphin




GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4710 Ineff rt shadow up dry // above and below obstr's
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta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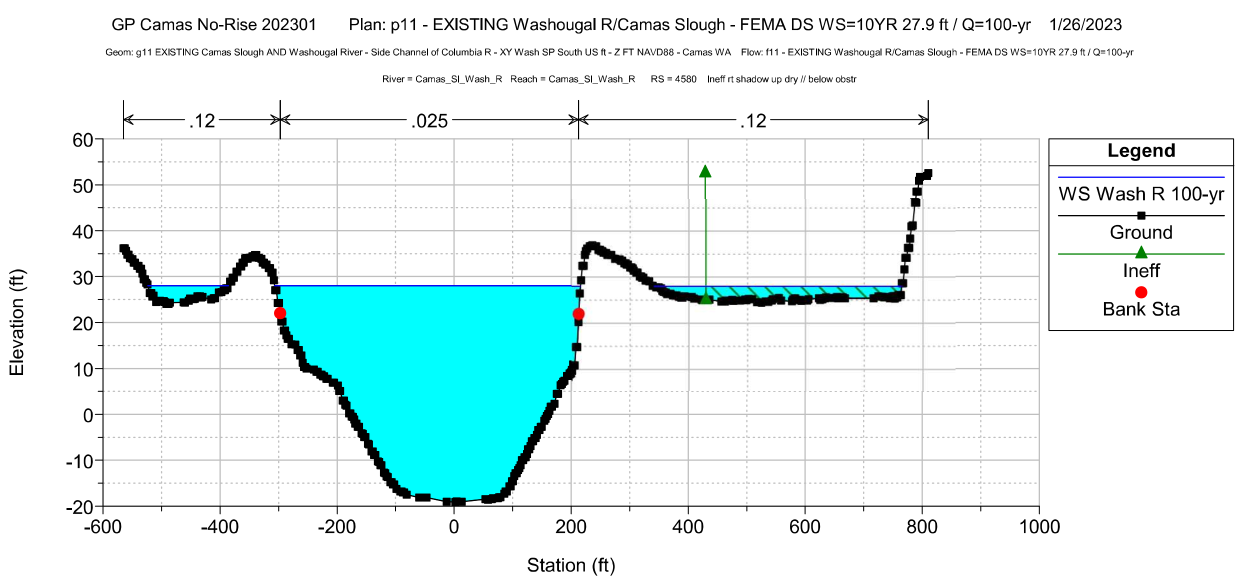
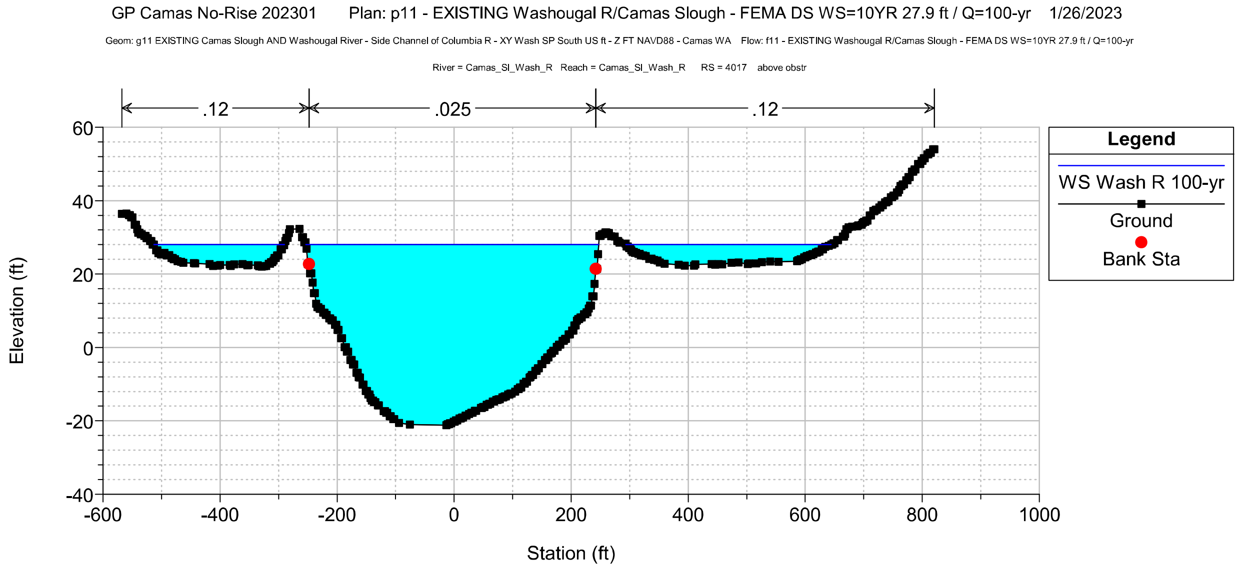
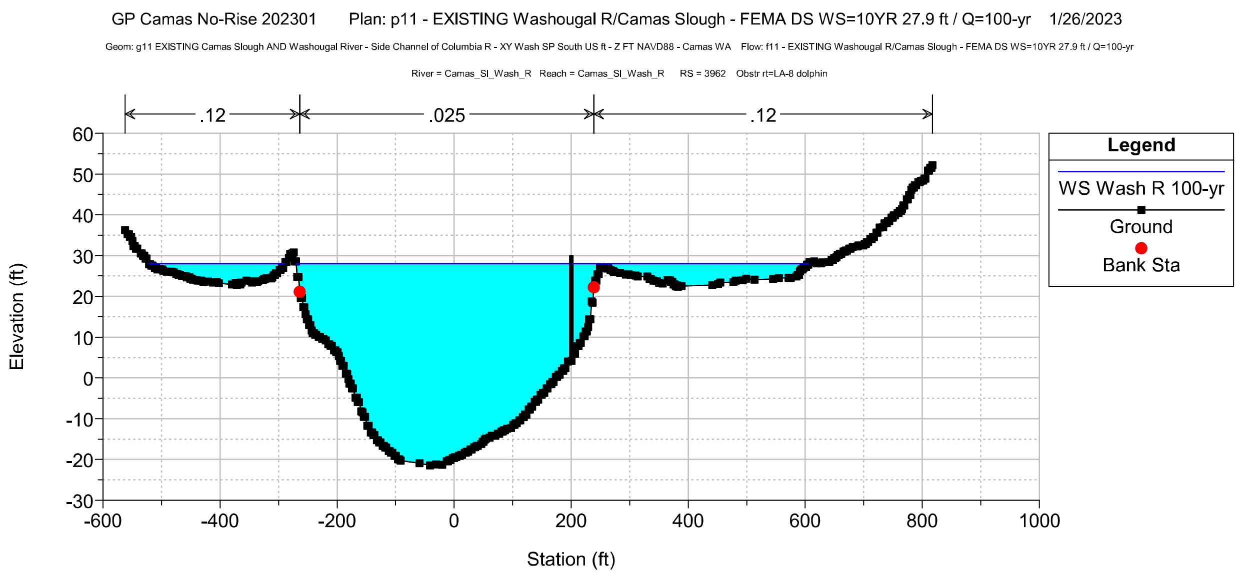
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4632 Ineff rt shadow up dry // obstr left=LA-9 dolphin
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4580 Ineff rt shadow up dry // below obstr
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 4017 above obstr
.12
.025
.12
Elevation (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta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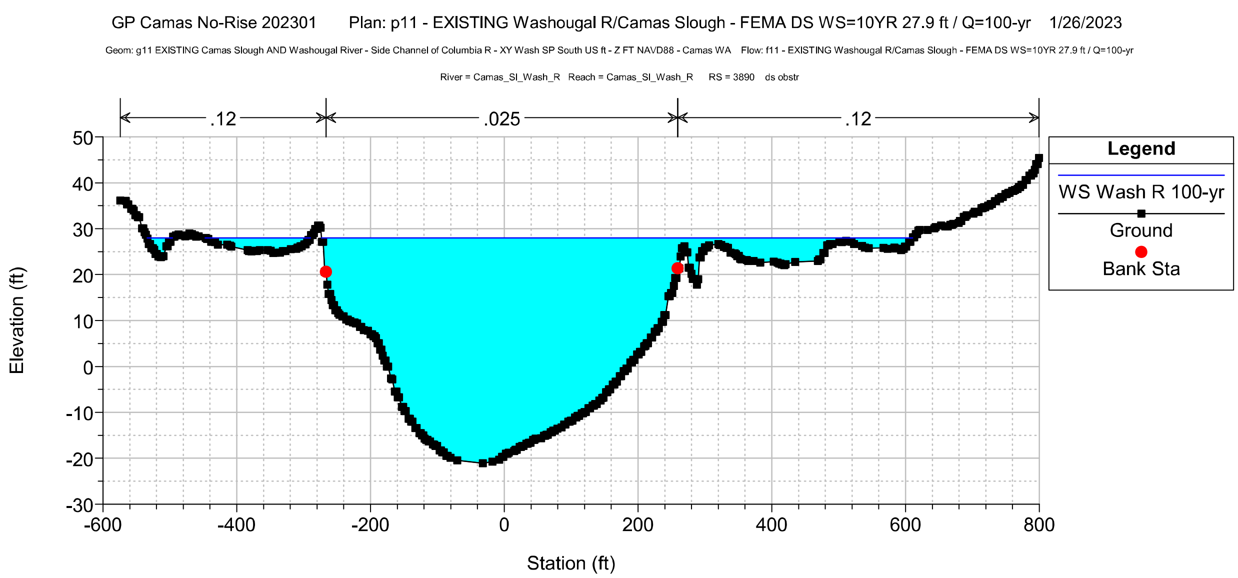
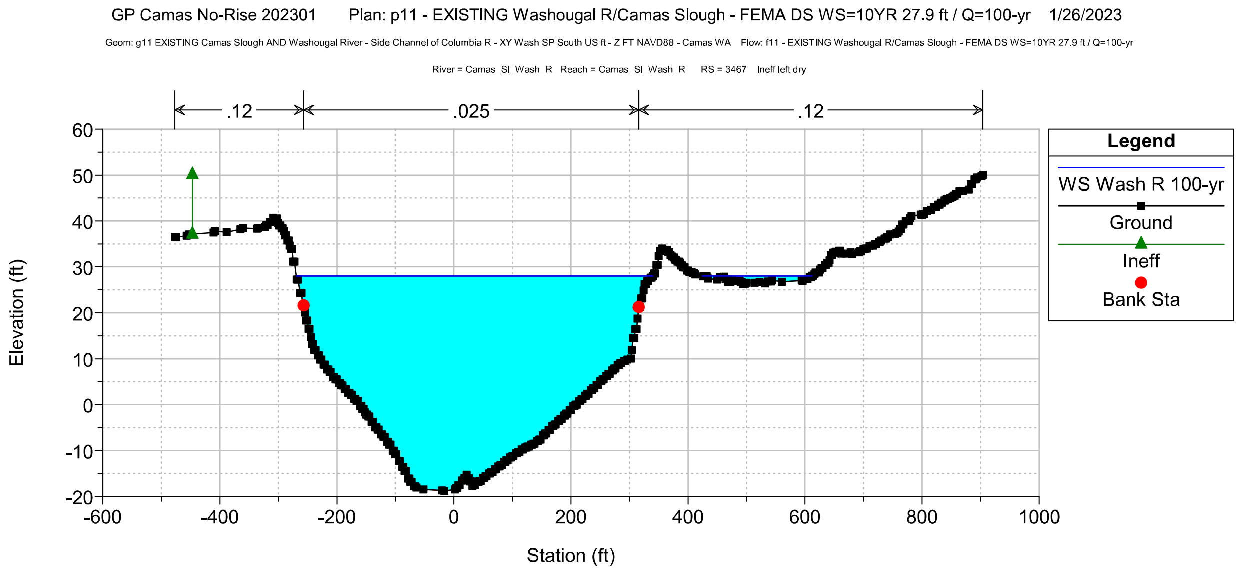
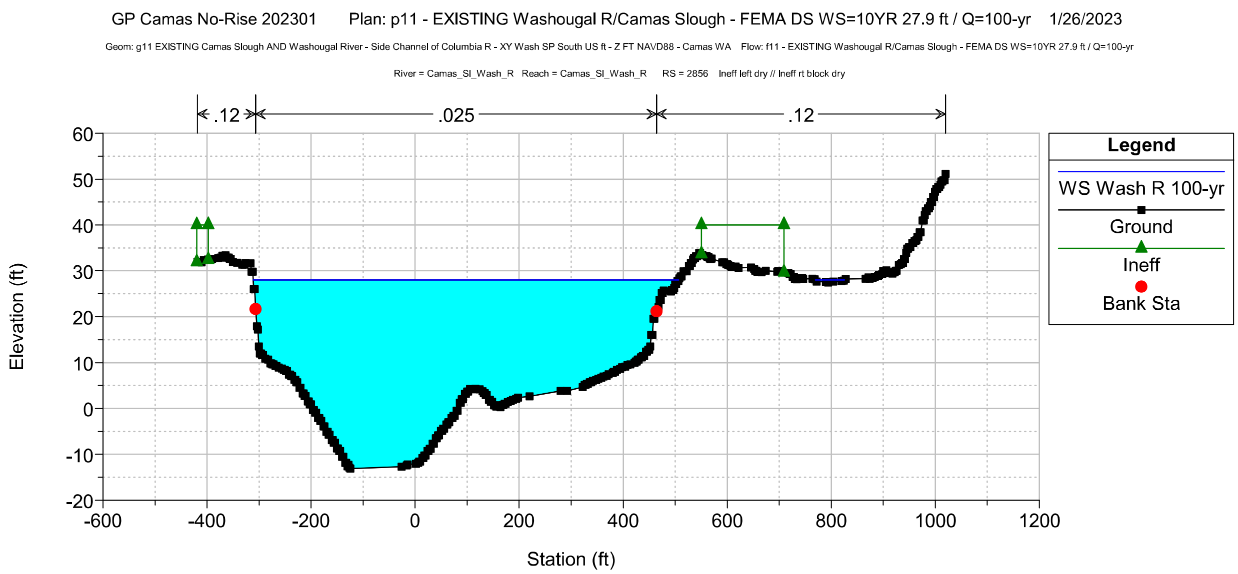
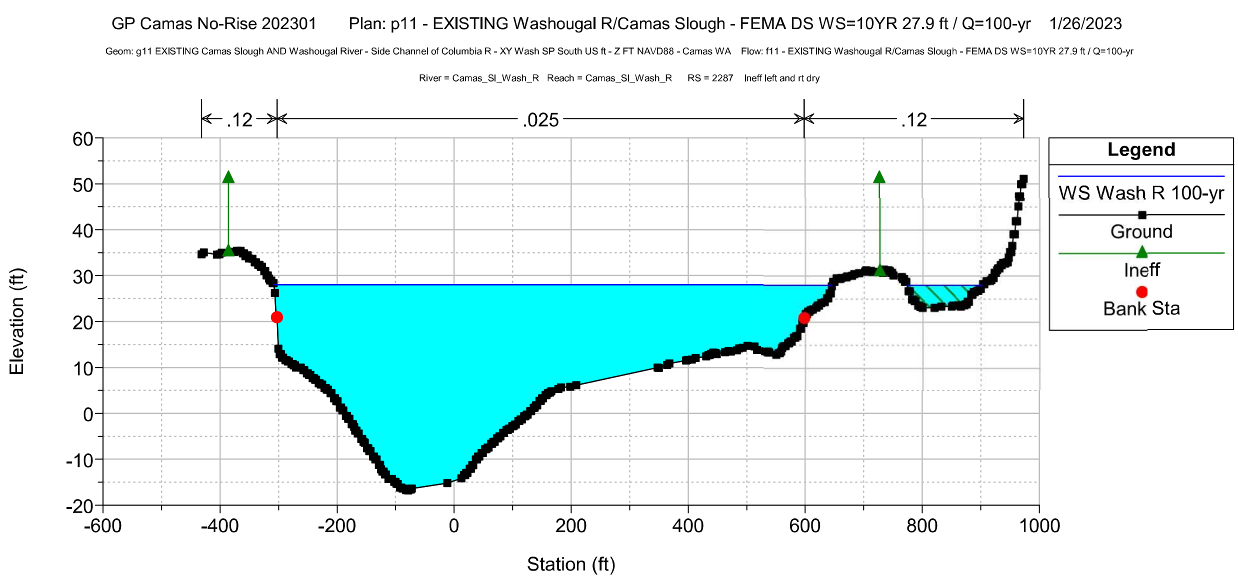
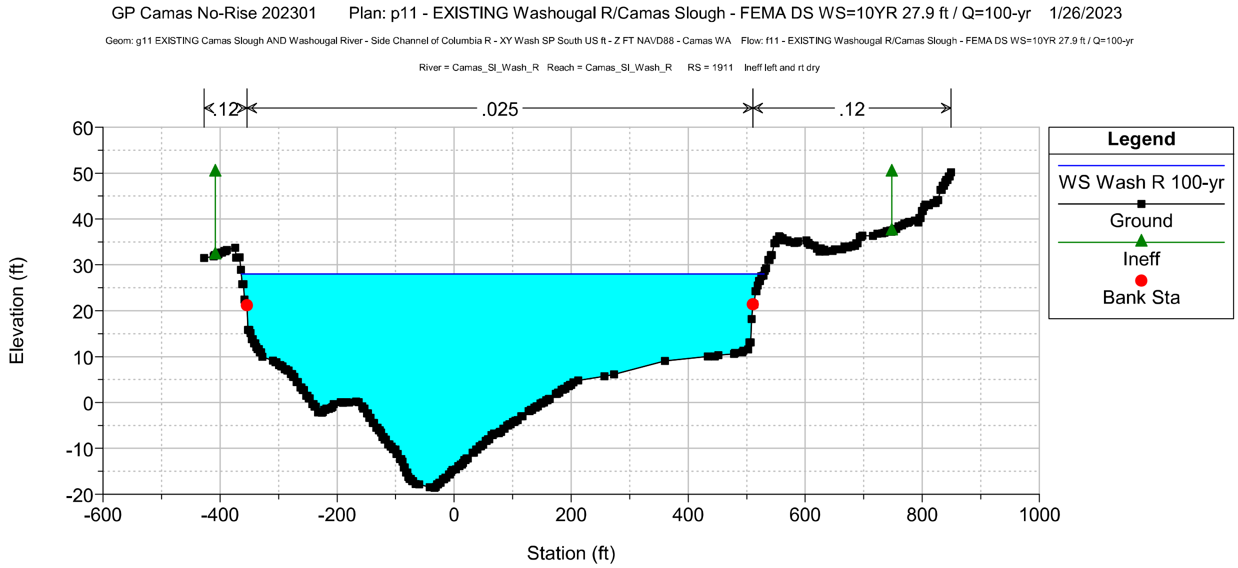
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 3962 Obstr rt=LA-8 dolphin
.12
.025
.12
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-30
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta

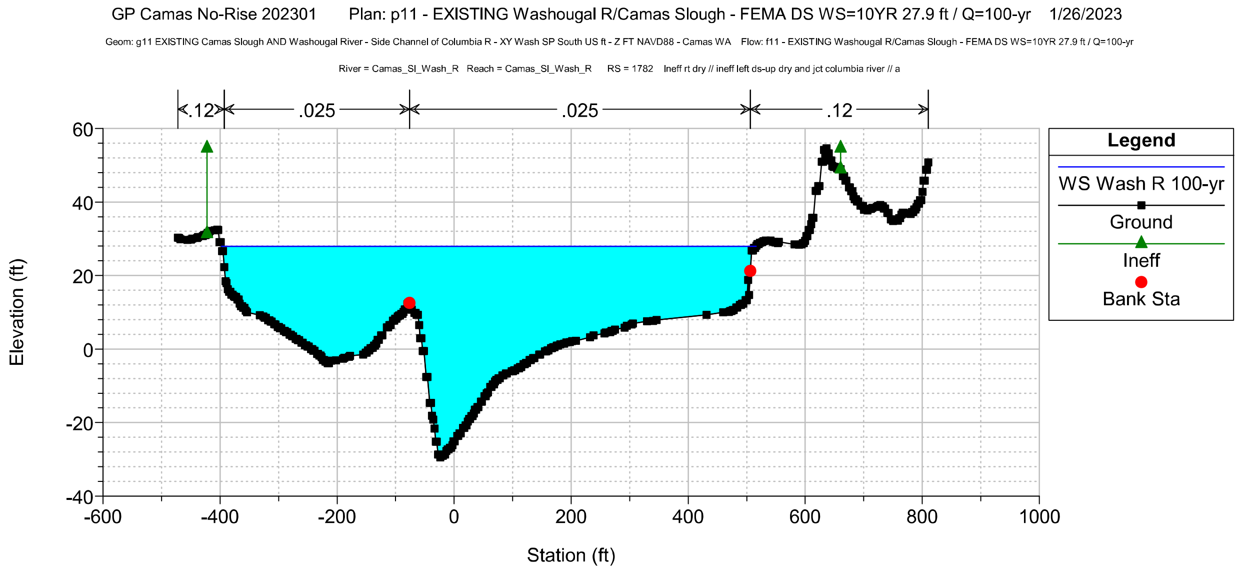

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 3890 ds obstr
.12
.025
.12
Elevation (ft)
50
40
30
20
10
0
-10
-20
-30
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS Wash R 100-yr
Ground
Bank Sta

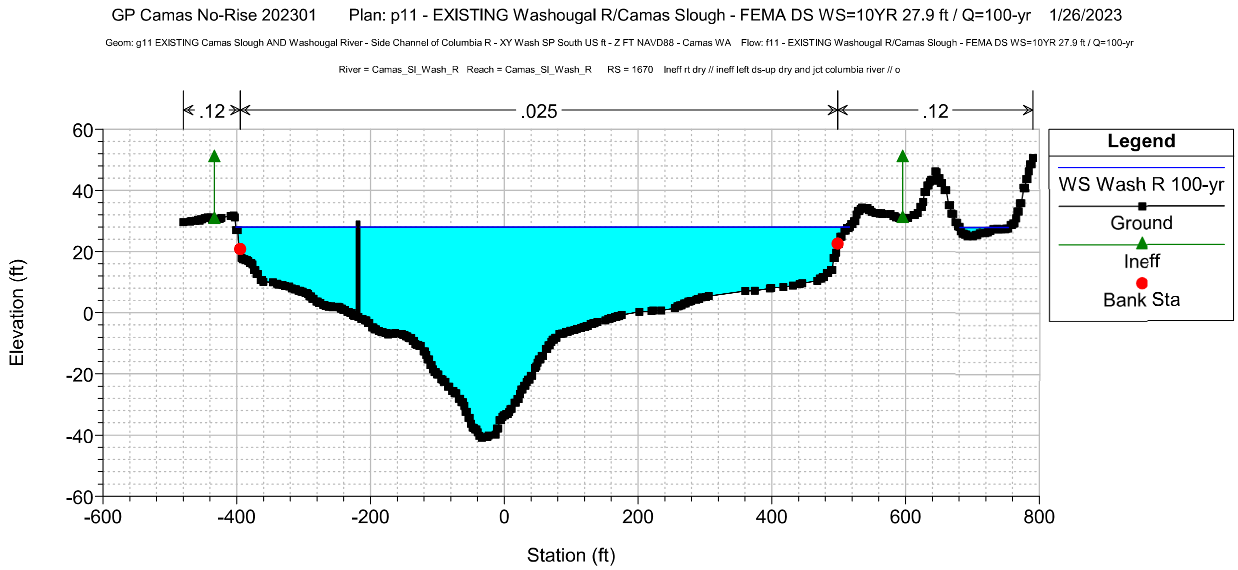

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 3467 Ineff left dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

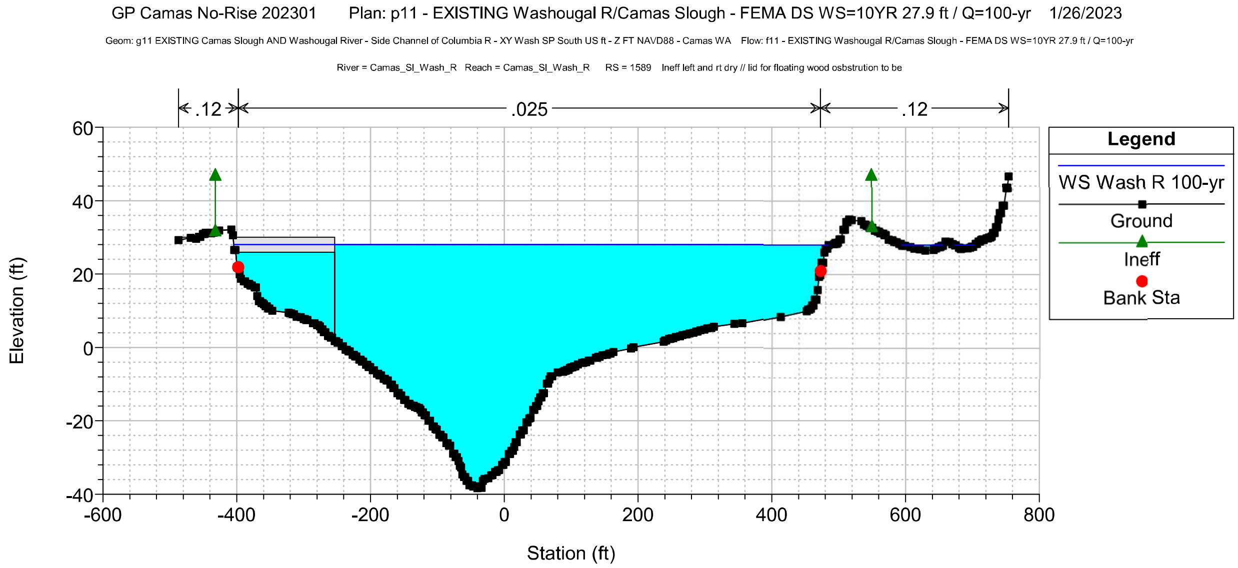

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 2856 Ineff left dry // Ineff rt block dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

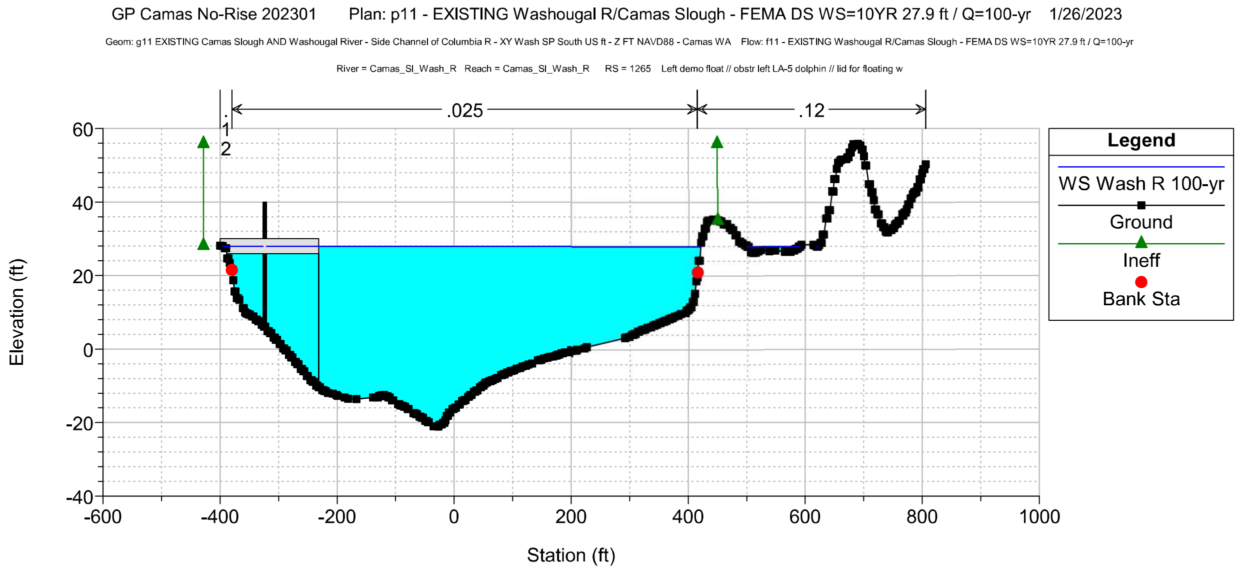

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 2287 Ineff left and rt dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

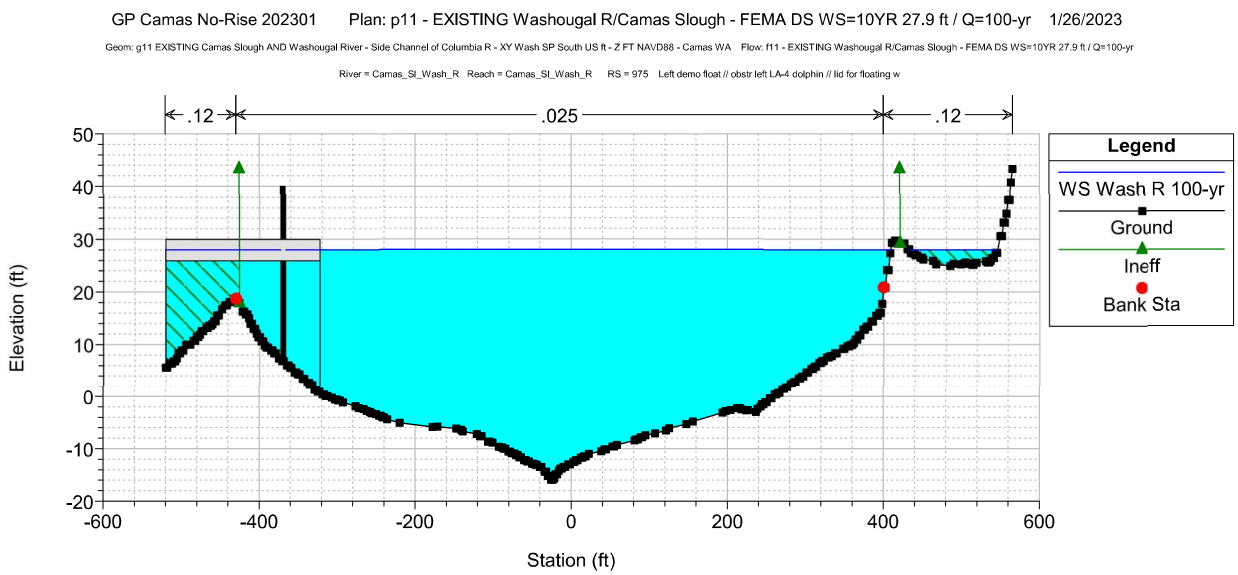

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 1911 Ineff left and rt dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 1782 Ineff rt dry // ineff left ds-up dry and jct columbia river // a
.12
.025
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 1670 Ineff rt dry // ineff left ds-up dry and jct columbia river // o
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 1589 Ineff left and rt dry // lid for floating wood osbstrution to be
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 1265 Left demo float // obstr left LA-5 dolphin // lid for floating w
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta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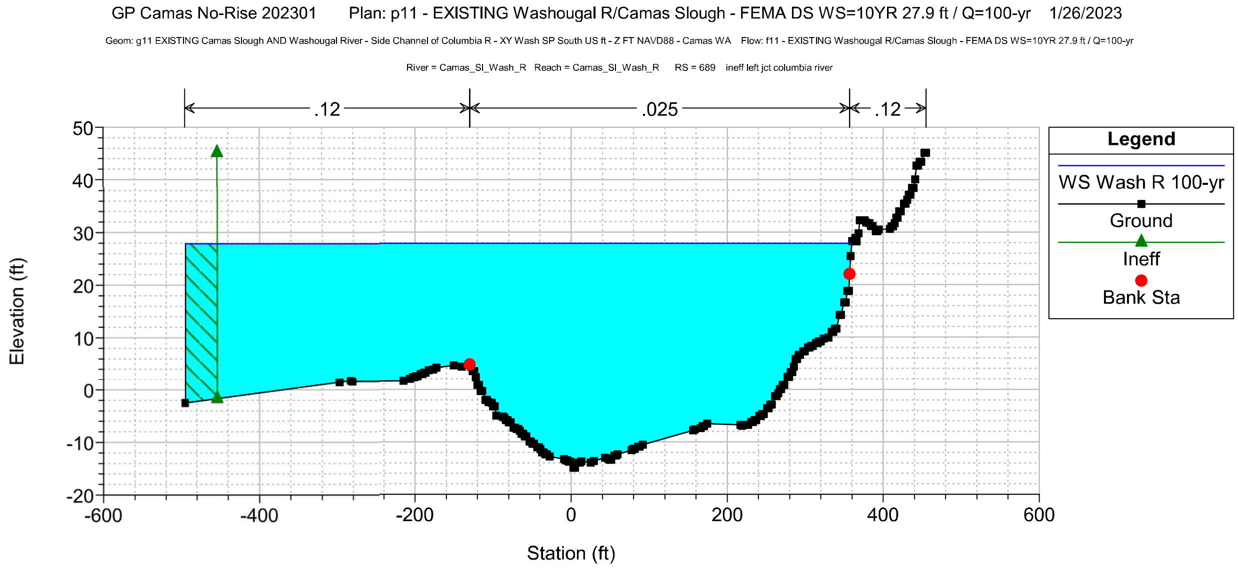
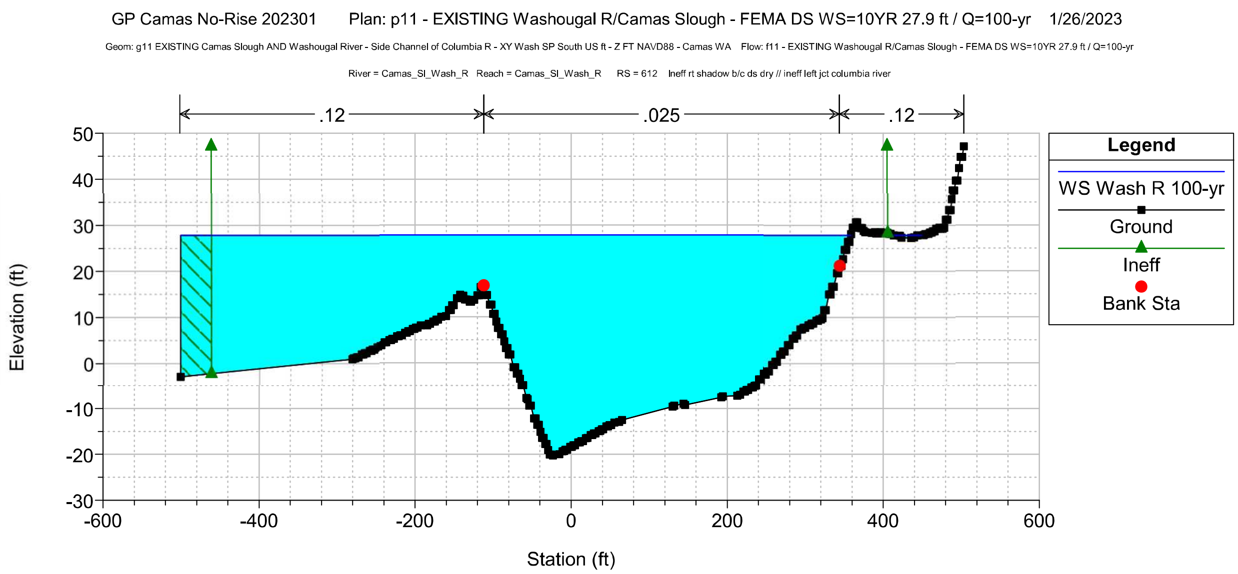
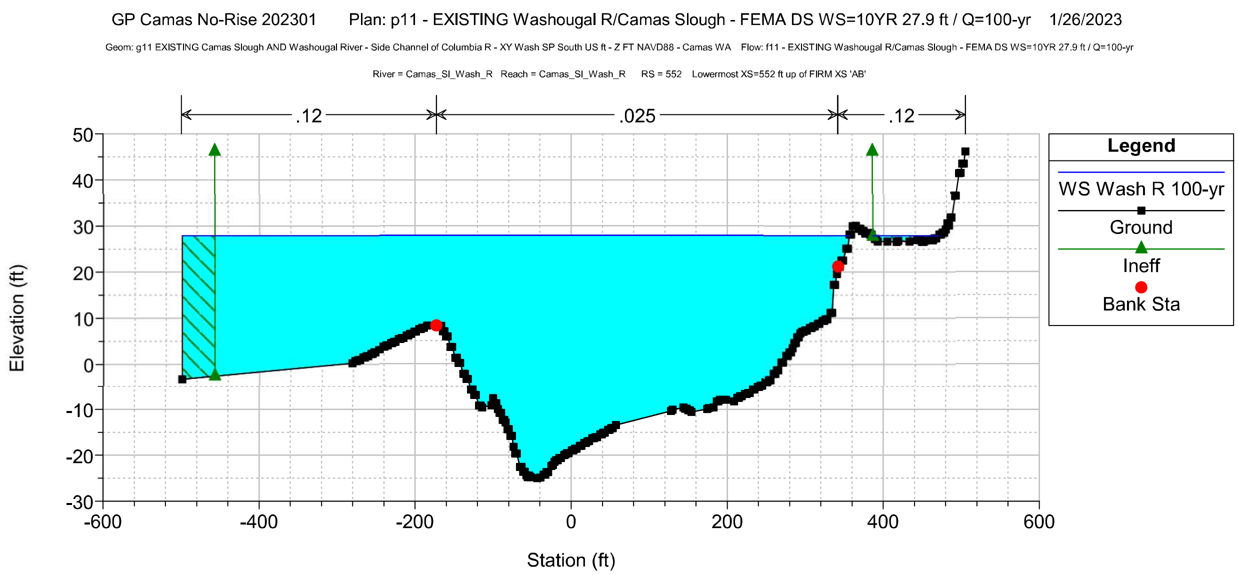
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 975 Left demo float // obstr left LA-4 dolphin // lid for floating w
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

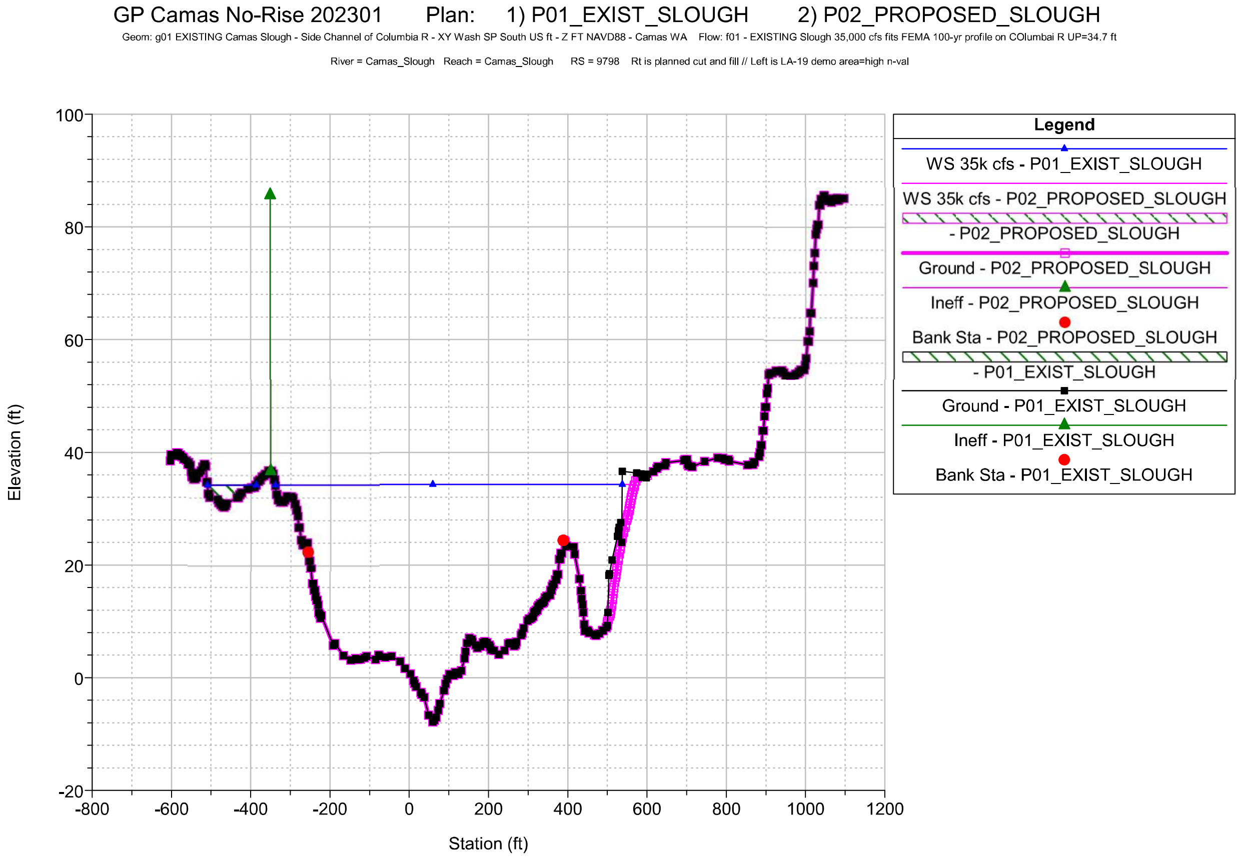

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 689 ineff left jct columbia river
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

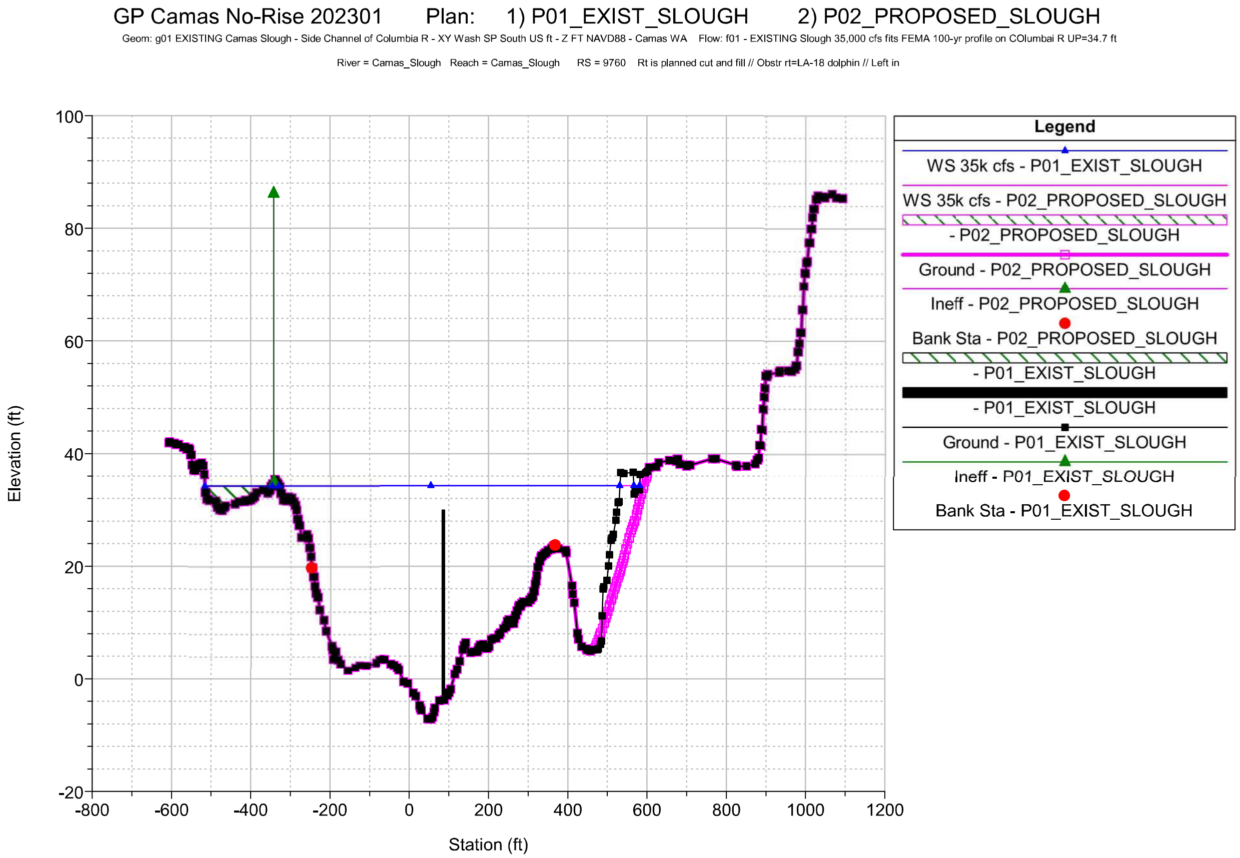

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 612 Ineff rt shadow b/c ds dry // ineff left jct columbia river
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

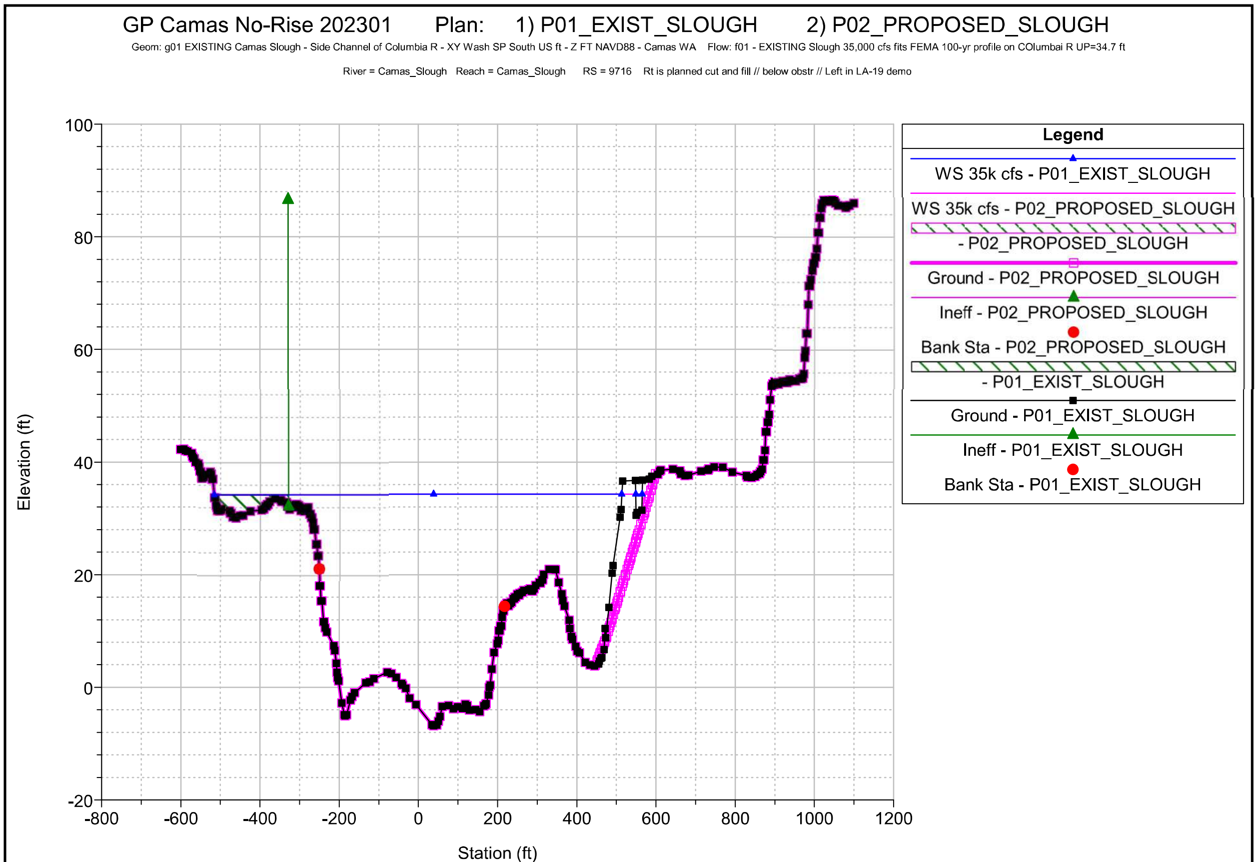

GP Camas No-Rise 202301 Plan: p11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr 1/26/2023
Geom: g11 EXISTING Camas Slough AND Washougal River - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f11 - EXISTING Washougal R/Camas Slough - FEMA DS WS=10YR 27.9 ft / Q=100-yr
River = Camas_Sl_Wash_R Reach = Camas_Sl_Wash_R RS = 552 Lowermost XS=552 ft up of FIRM XS 'AB'
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS Wash R 100-yr
Ground
Ineff
Bank Sta

APPENDIX F:

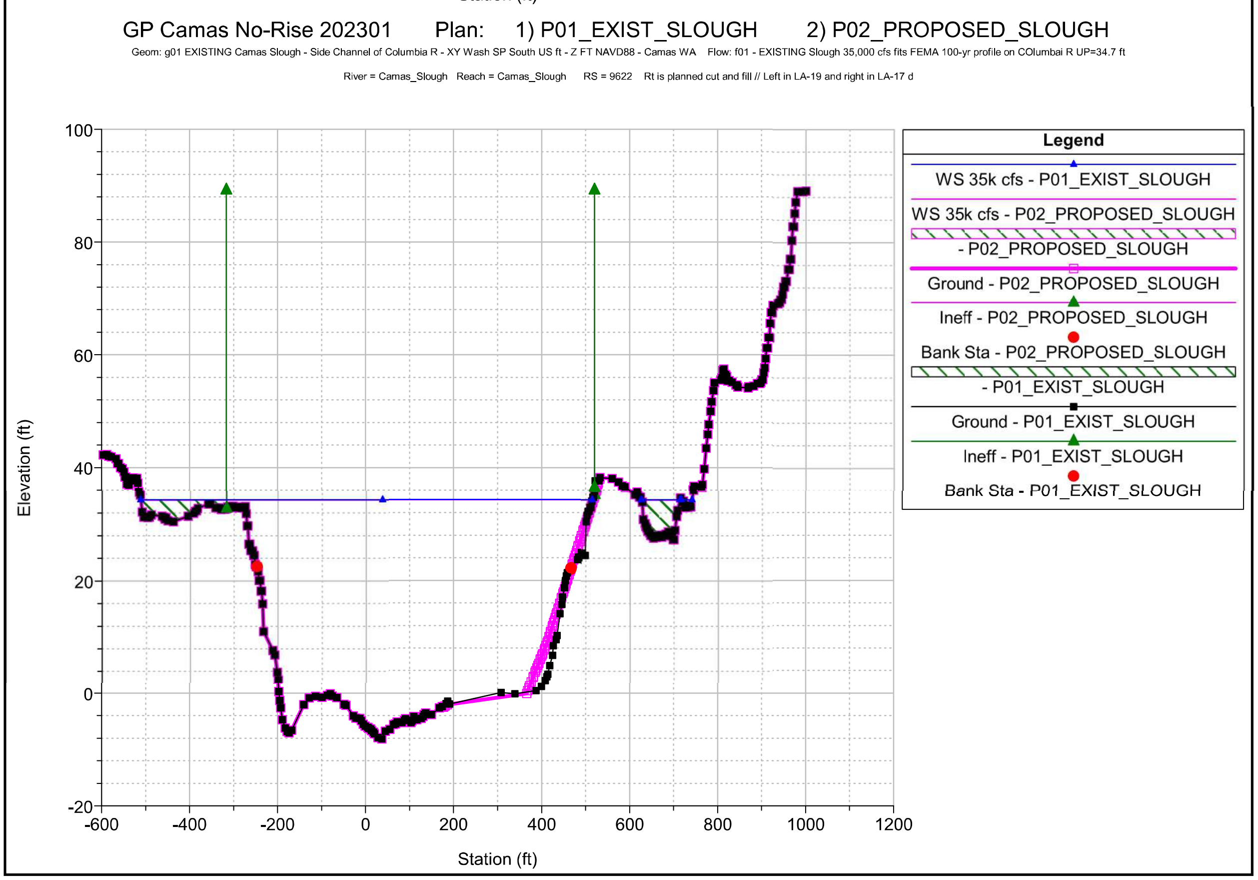
PROPOSED-CONDITION CROSS-SECTION DATA FOR BOTH MODELS


GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9798 Rt is planned cut and fill // Left is LA-19 demo area=high n-val
Elevation (ft)
100
80
60
40
20
0
-20
-800
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

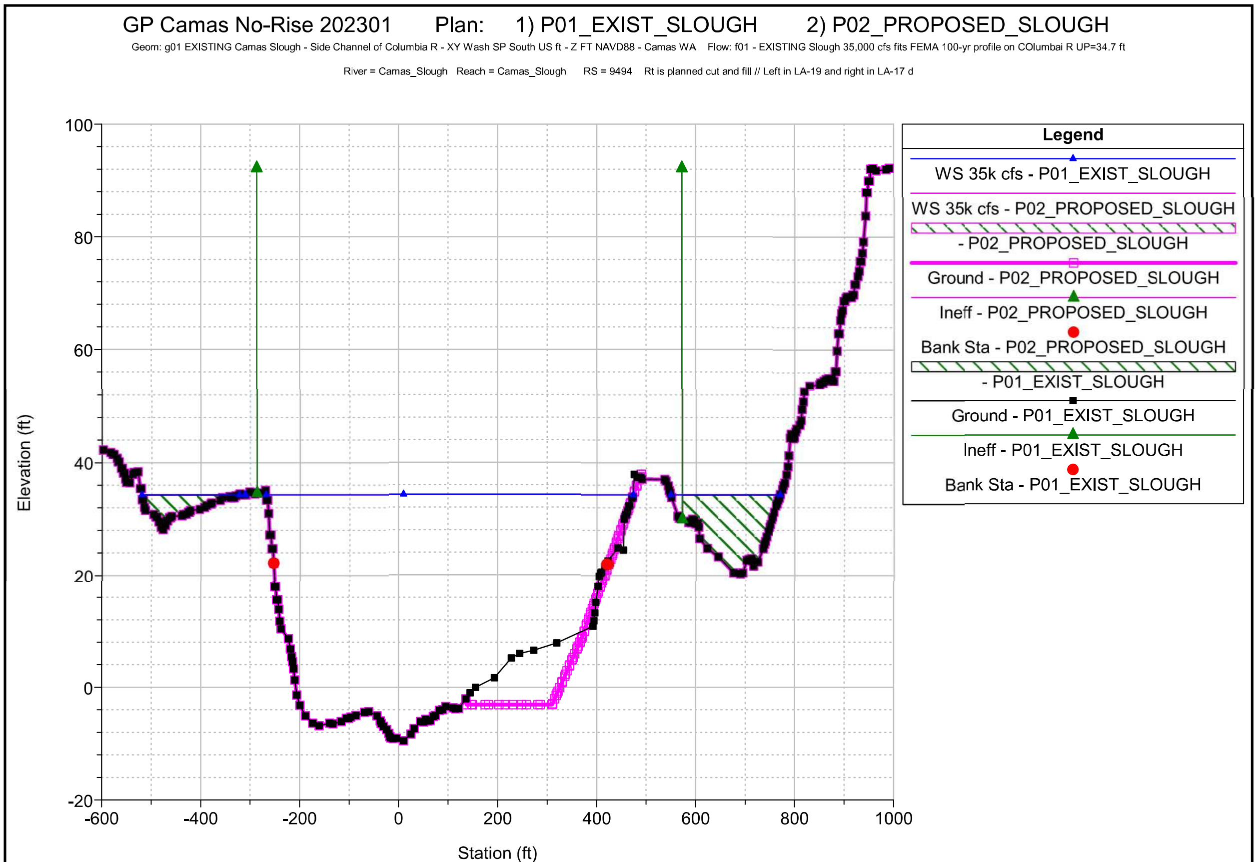

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9760 Rt is planned cut and fill // Obstr rt=LA-18 dolphin // Left in
Elevation (ft)
100
80
60
40
20
0
-20
-800
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

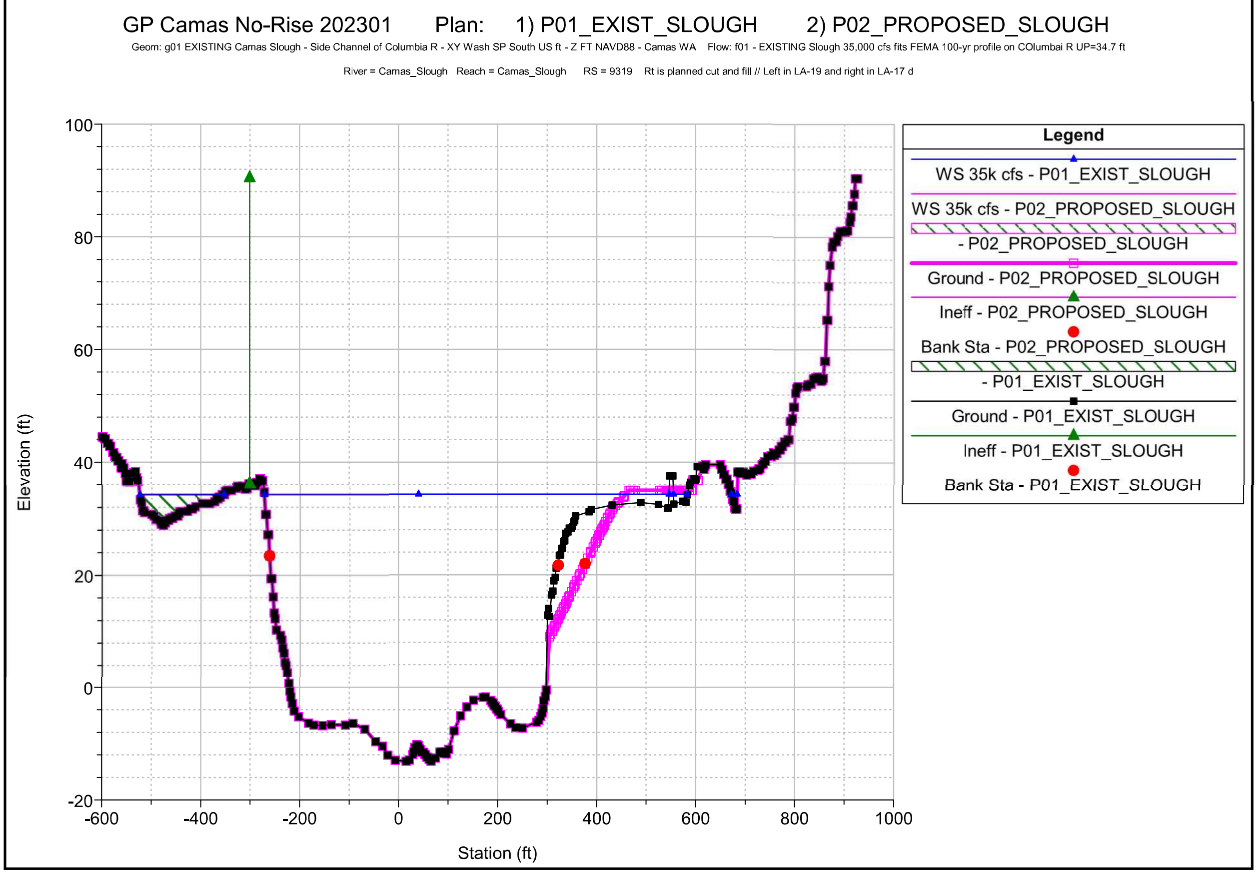


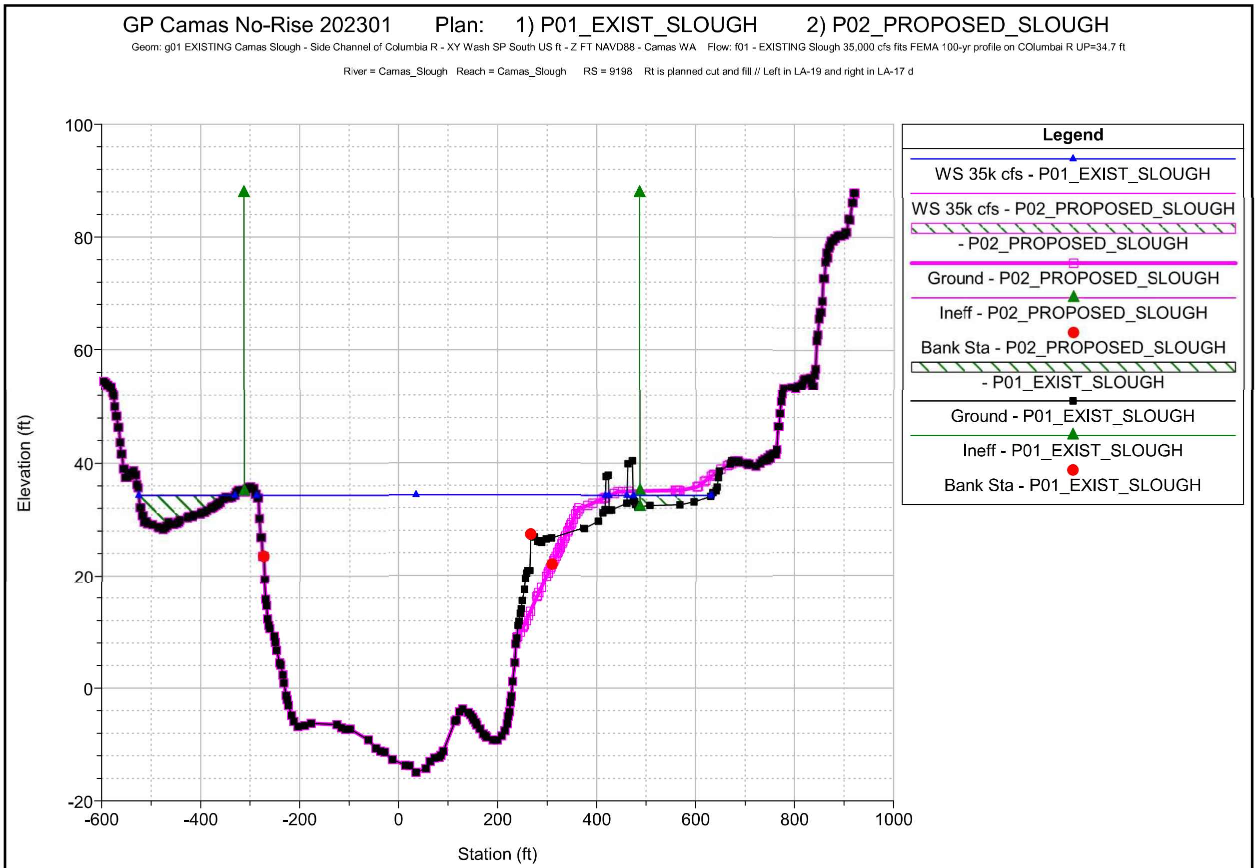
GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9716 Rt is planned cut and fill // below obstr // Left in LA-19 demo
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

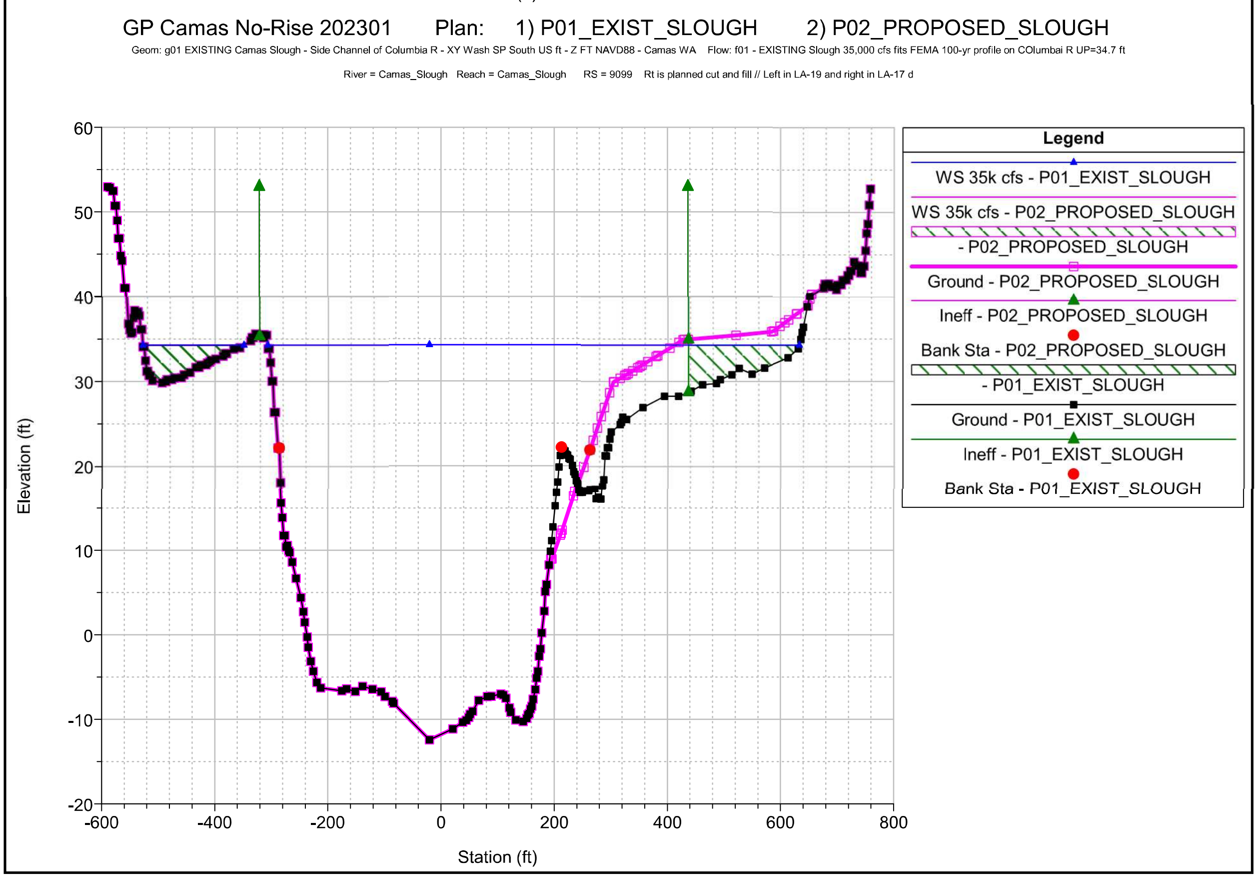


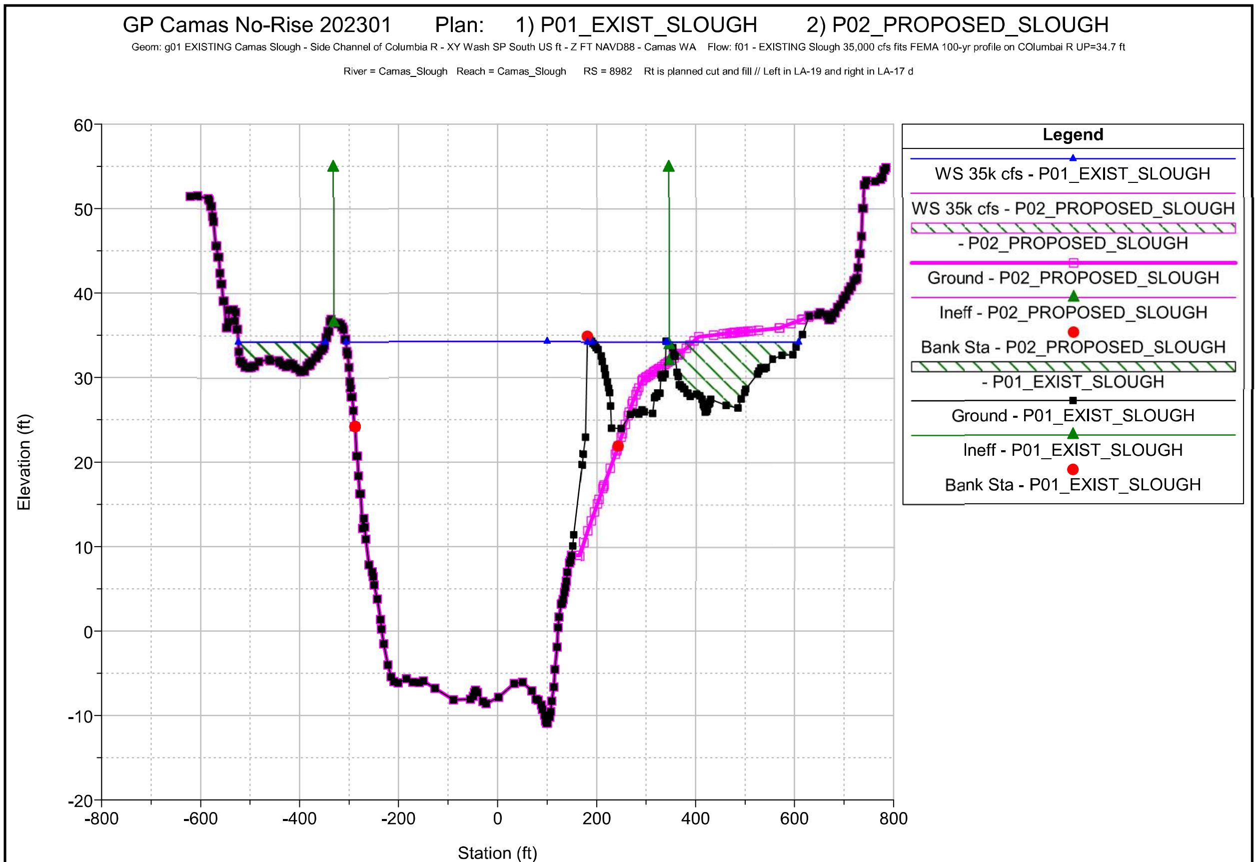
GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9622 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

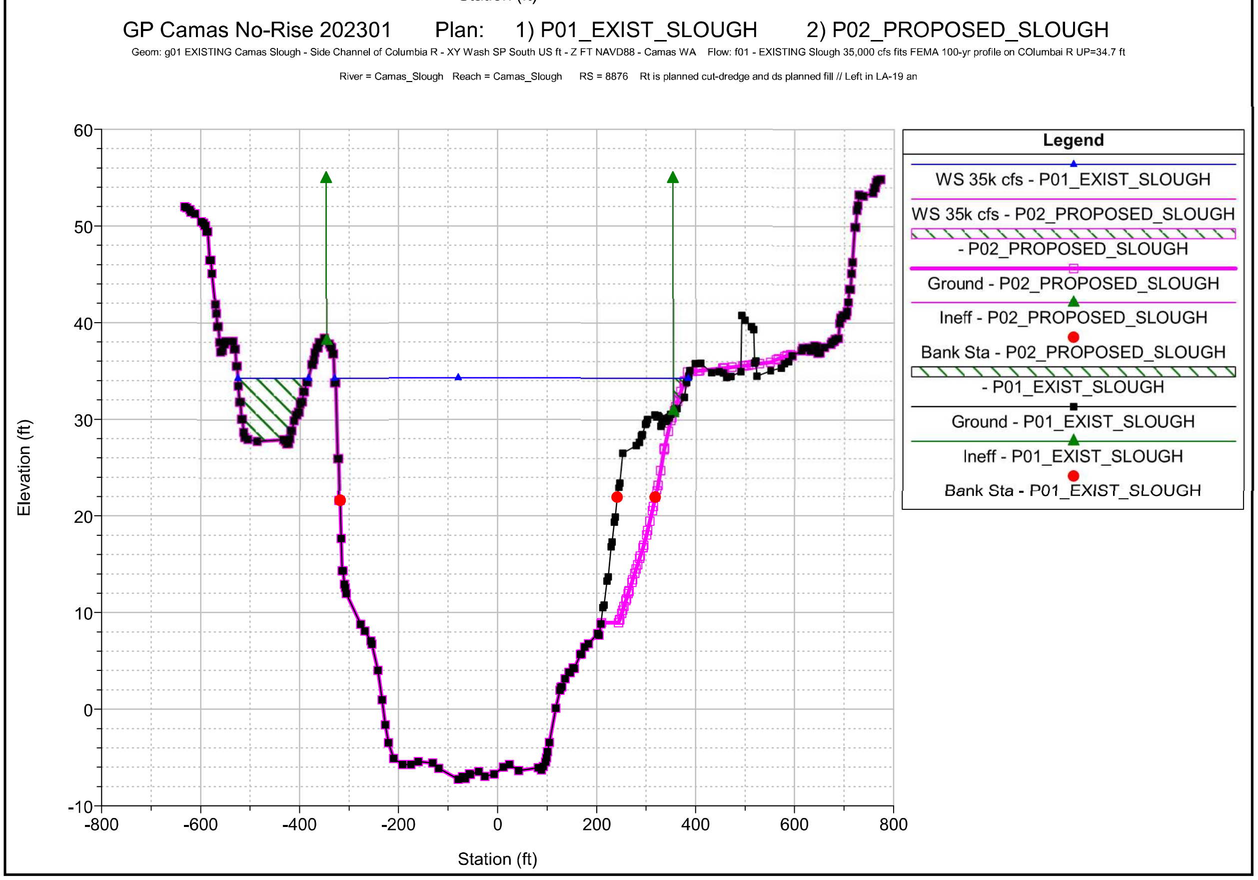

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9494 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

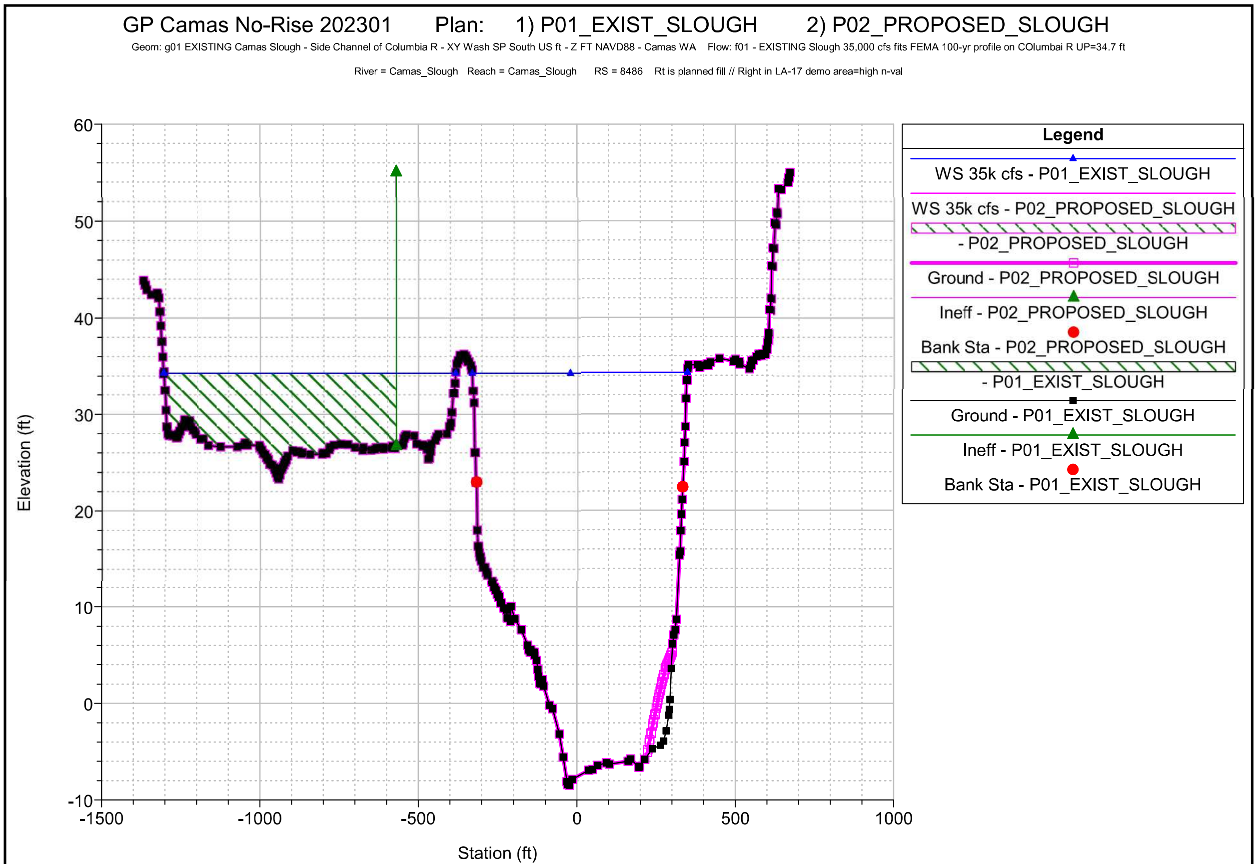

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9319 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

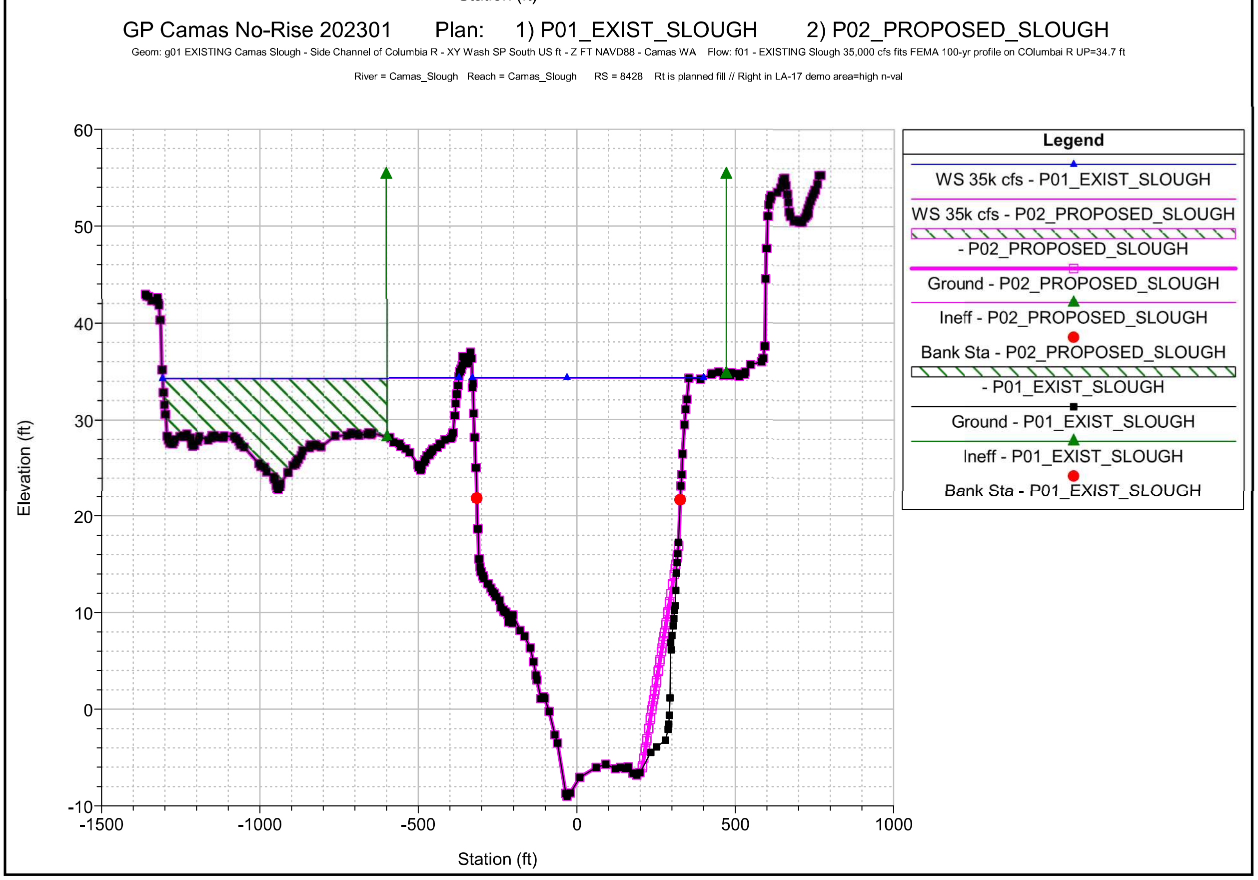

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9198 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

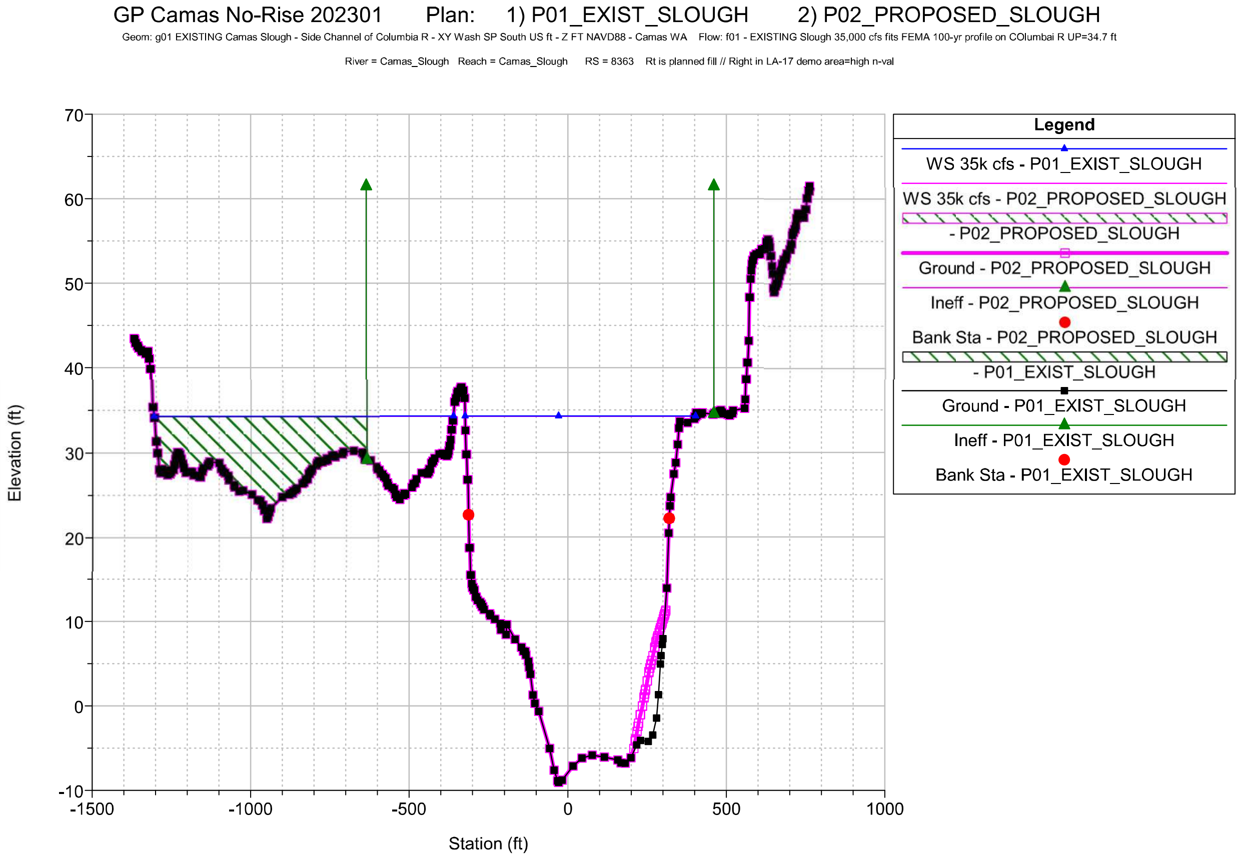

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9099 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Elevation (ft)
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH


GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8982 Rt is planned cut and fill // Left in LA-19 and right in LA-17 d
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600
800
Station (ft)

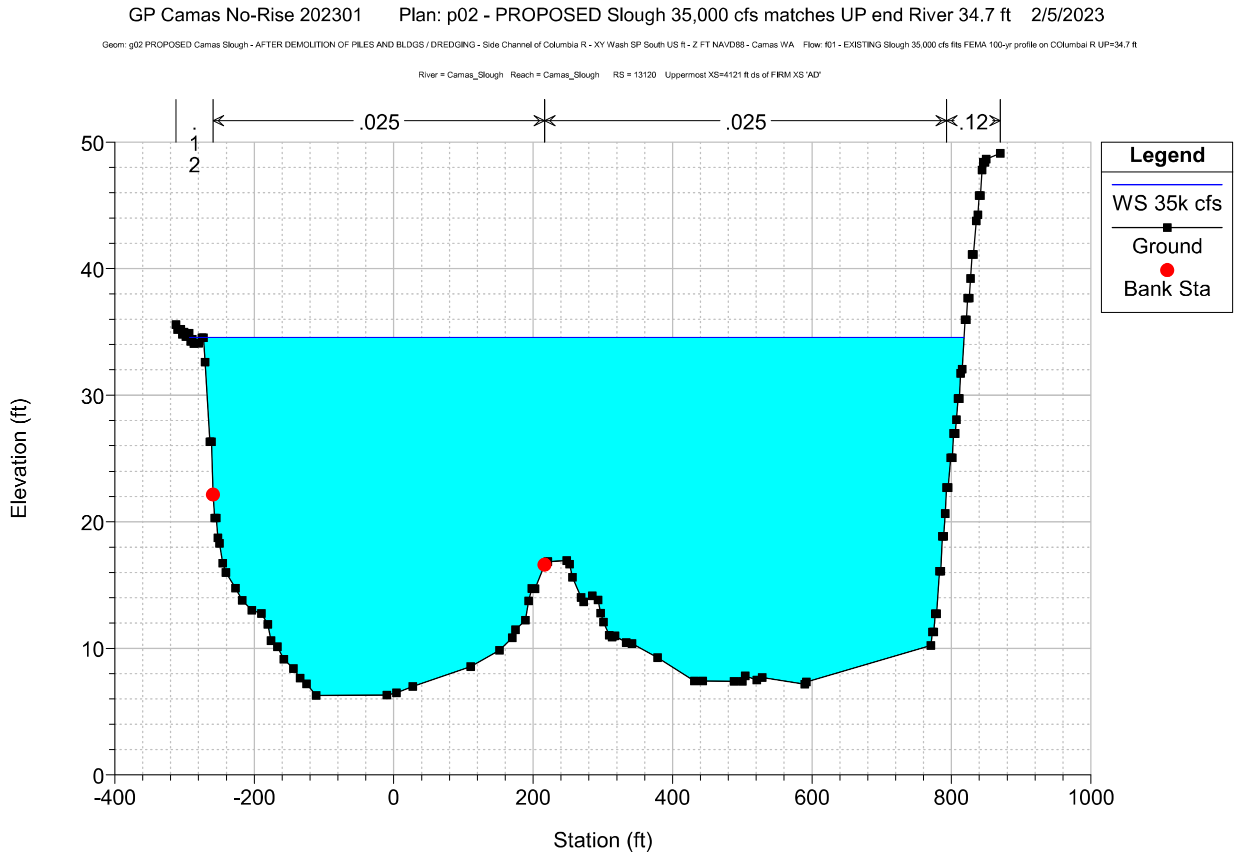

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8876 Rt is planned cut-dredge and ds planned fill // Left in LA-19 an
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)

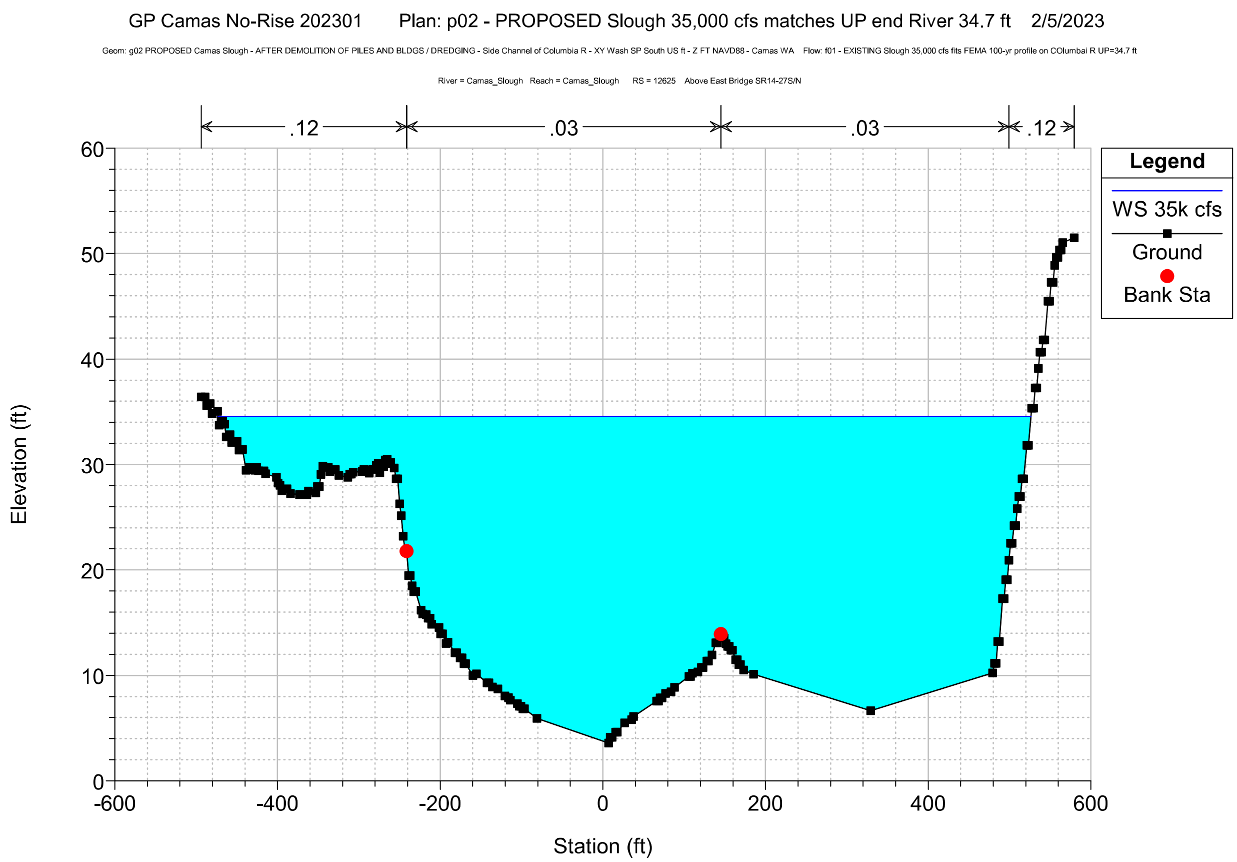

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8486 Rt is planned fill // Right in LA-17 demo area=high n-val
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-1500
-1000
-500
0
500
1000
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

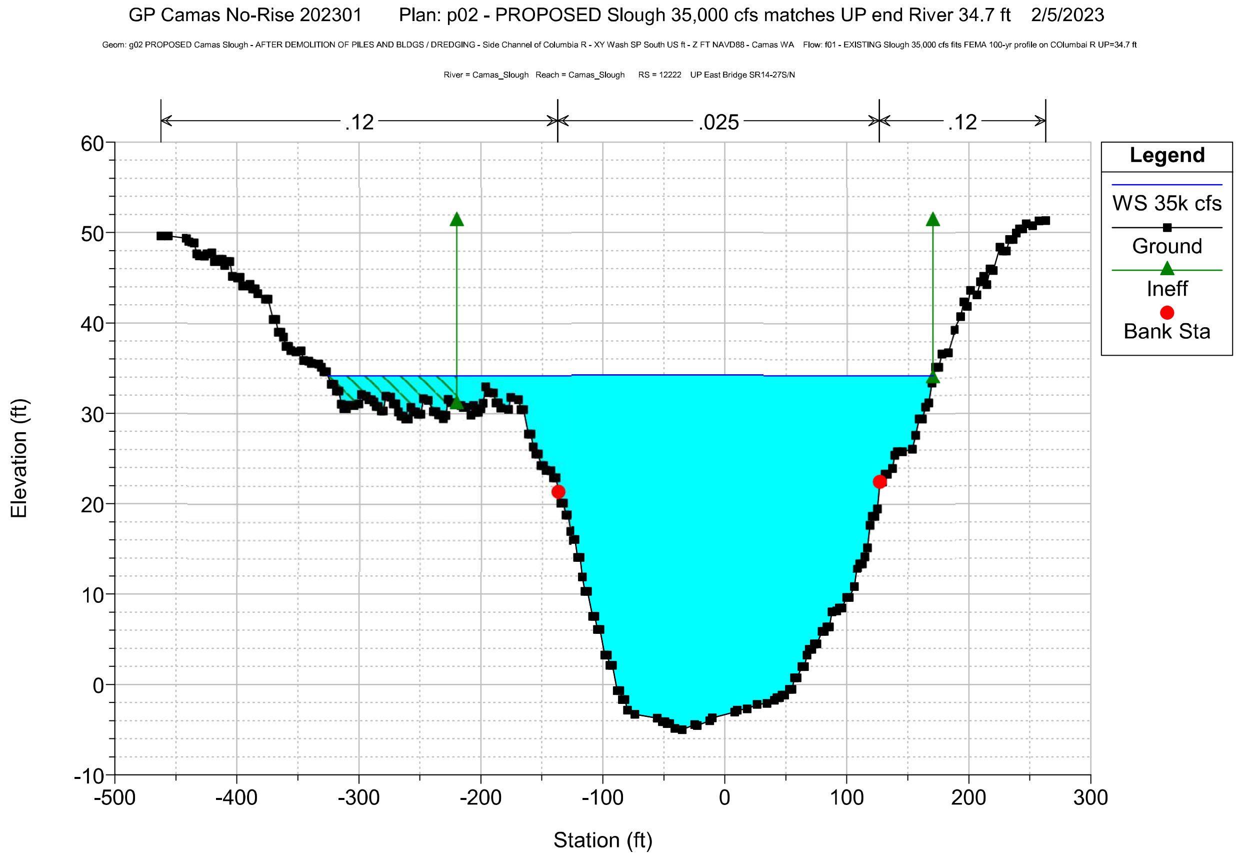

GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8428 Rt is planned fill // Right in LA-17 demo area=high n-val
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-1500
-1000
-500
0
500
1000
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH

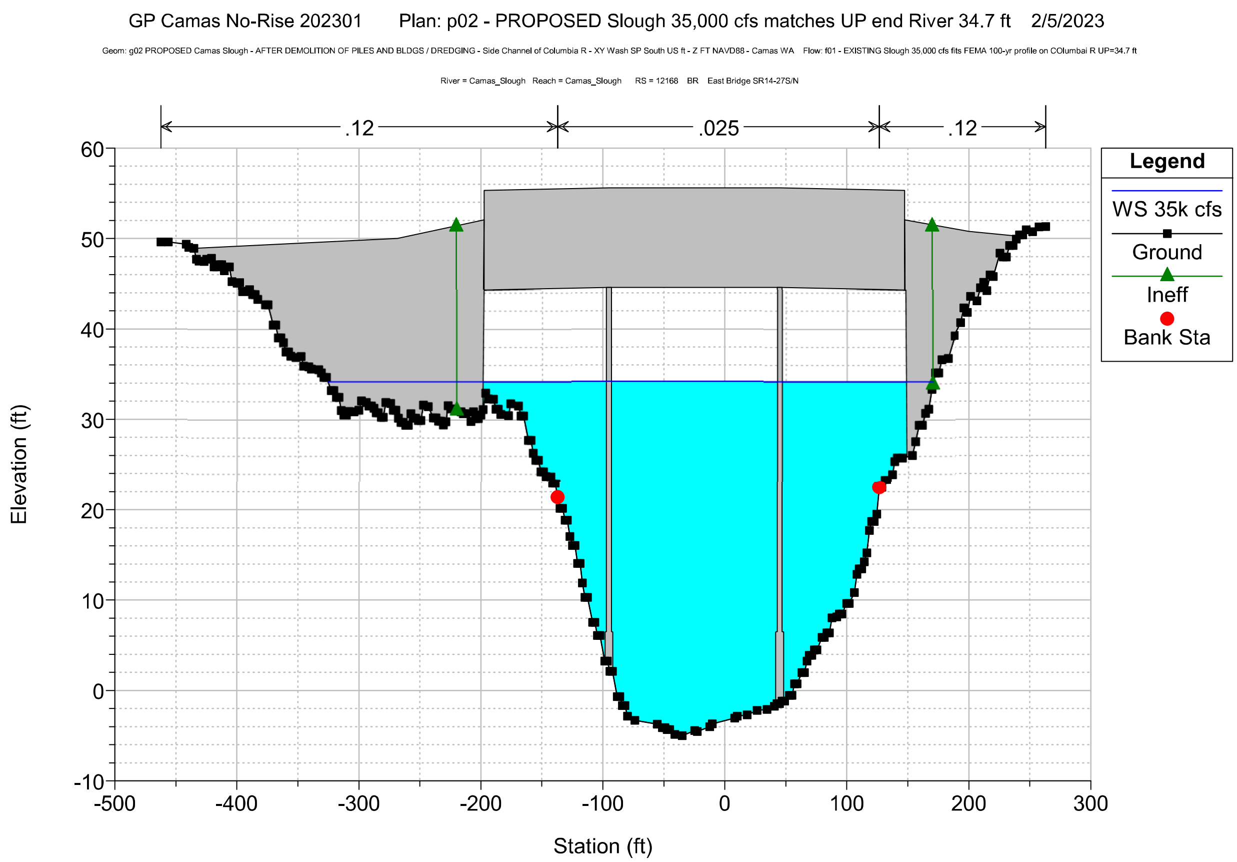


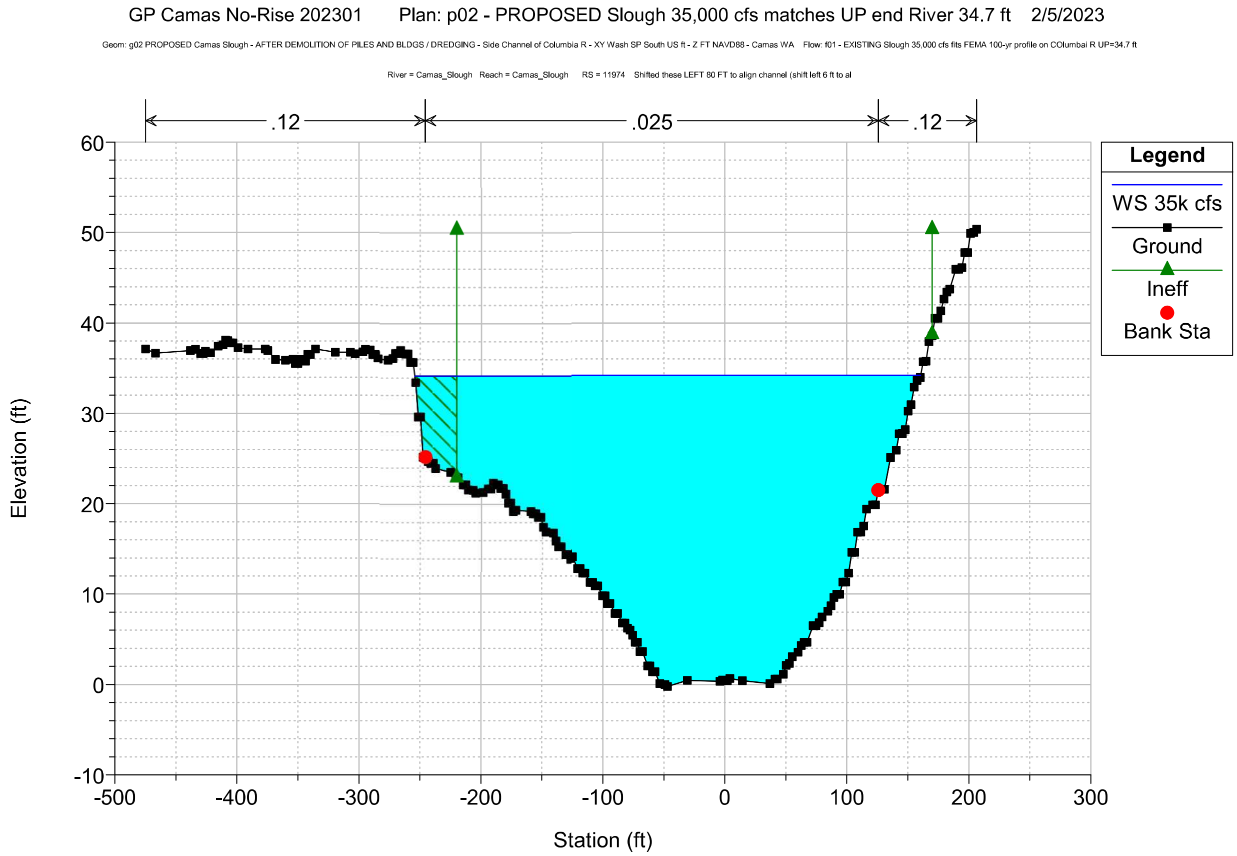
GP Camas No-Rise 202301 Plan: 1) P01_EXIST_SLOUGH 2) P02_PROPOSED_SLOUGH
Geom: g01 EXISTING Camas Slough - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8363 Rt is planned fill // Right in LA-17 demo area=high n-val
Elevation (ft)
70
60
50
40
30
20
10
0
-10
-1500
-1000
-500
0
500
1000
Station (ft)
Legend
WS 35k cfs - P01_EXIST_SLOUGH
WS 35k cfs - P02_PROPOSED_SLOUGH
- P02_PROPOSED_SLOUGH
Ground - P02_PROPOSED_SLOUGH
Ineff - P02_PROPOSED_SLOUGH
Bank Sta - P02_PROPOSED_SLOUGH
- P01_EXIST_SLOUGH
Ground - P01_EXIST_SLOUGH
Ineff - P01_EXIST_SLOUGH
Bank Sta - P01_EXIST_SLOUGH


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 13120 Uppermost XS=4121 ft ds of FIRM XS 'AD'
.025
.025
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
Station (ft)

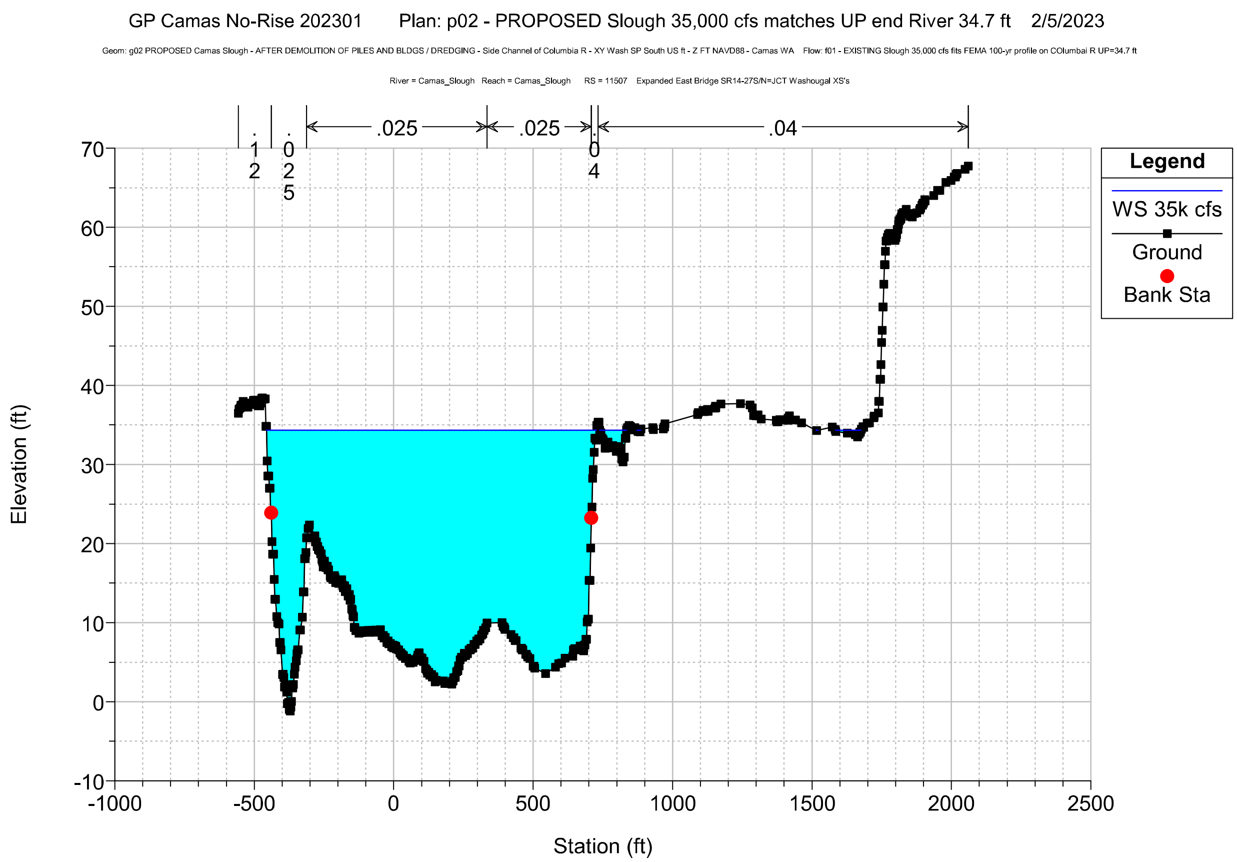

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 12625 Above East Bridge SR14-27S/N
.12
.03
.03
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 12222 UP East Bridge SR14-27S/N
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-500
-400
-300
-200
-100
0
100
200
300
Station (ft)

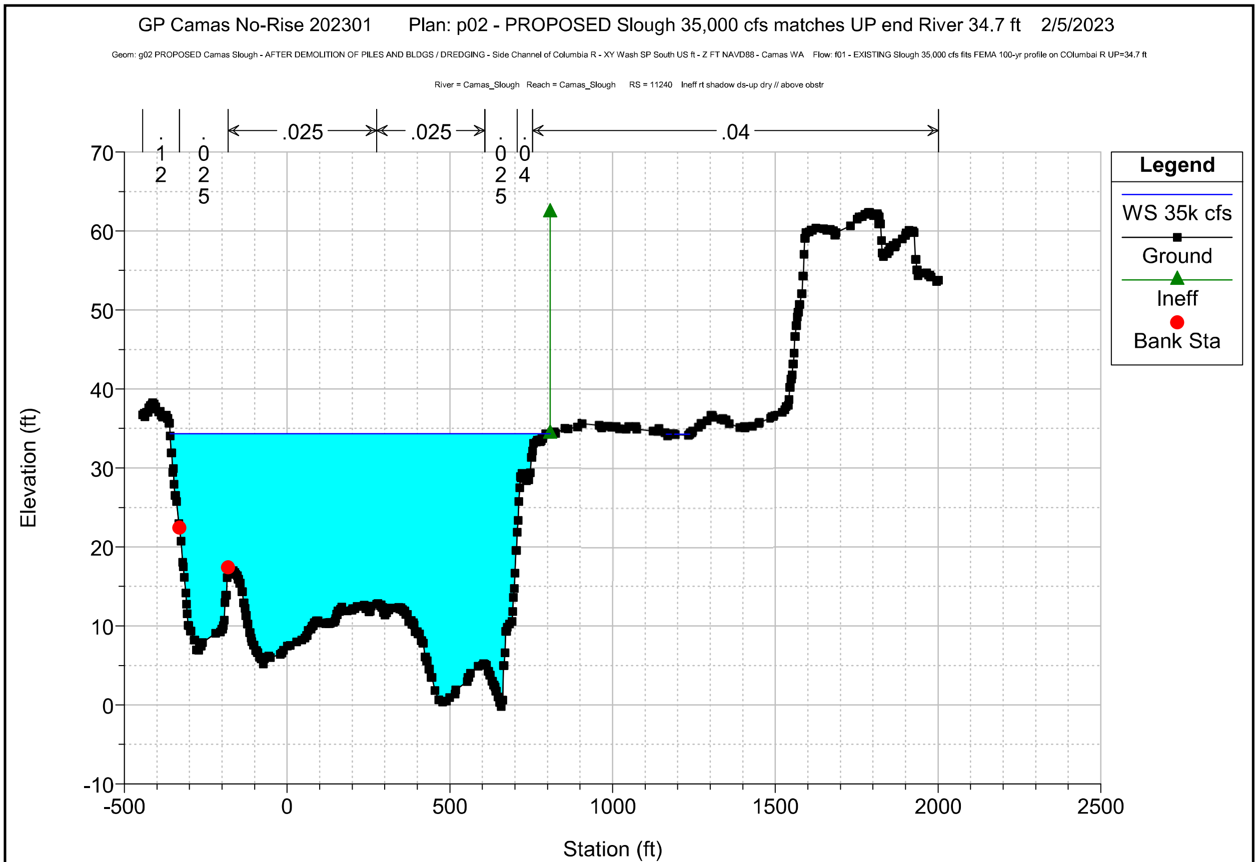

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 12168 BR East Bridge SR14-27S/N
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-500
-400
-300
-200
-100
0
100
200
300
Station (ft)

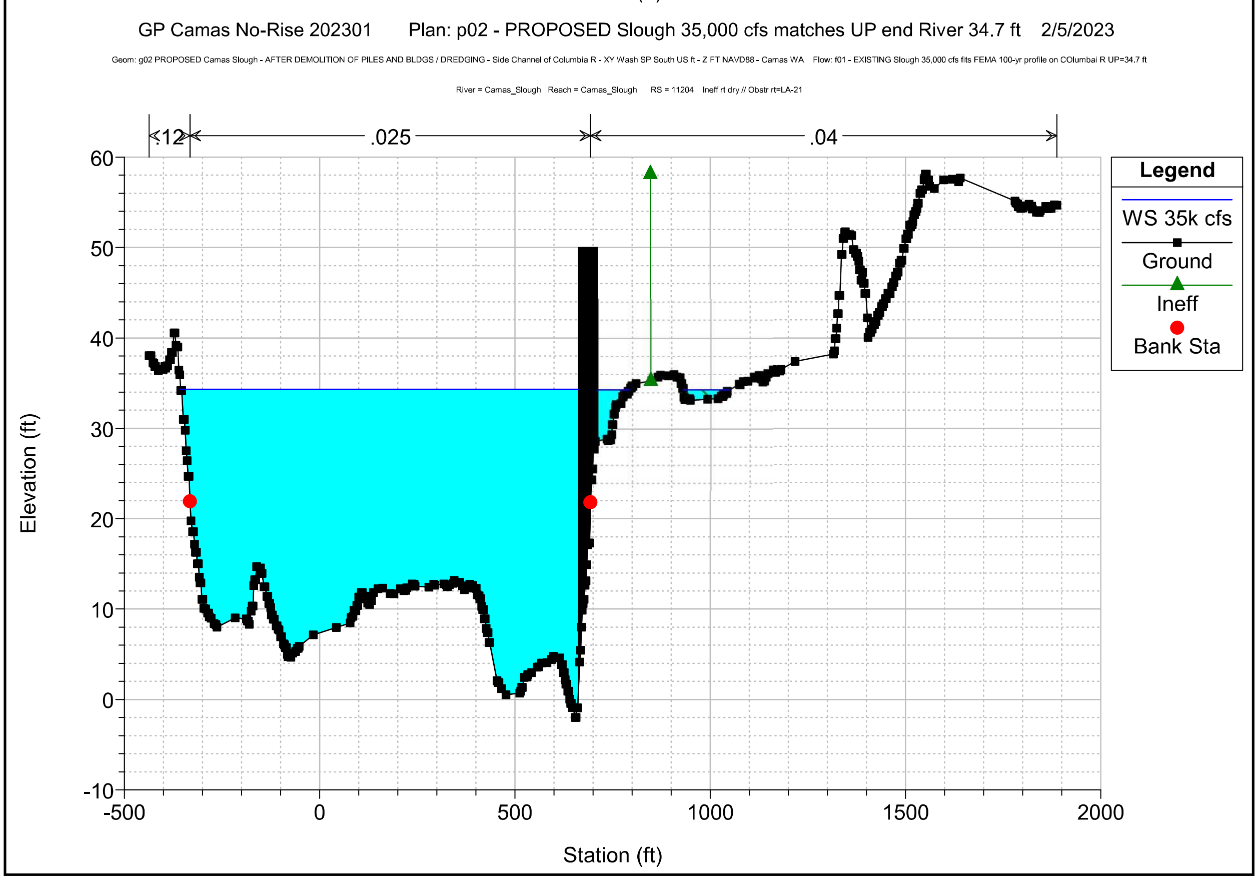


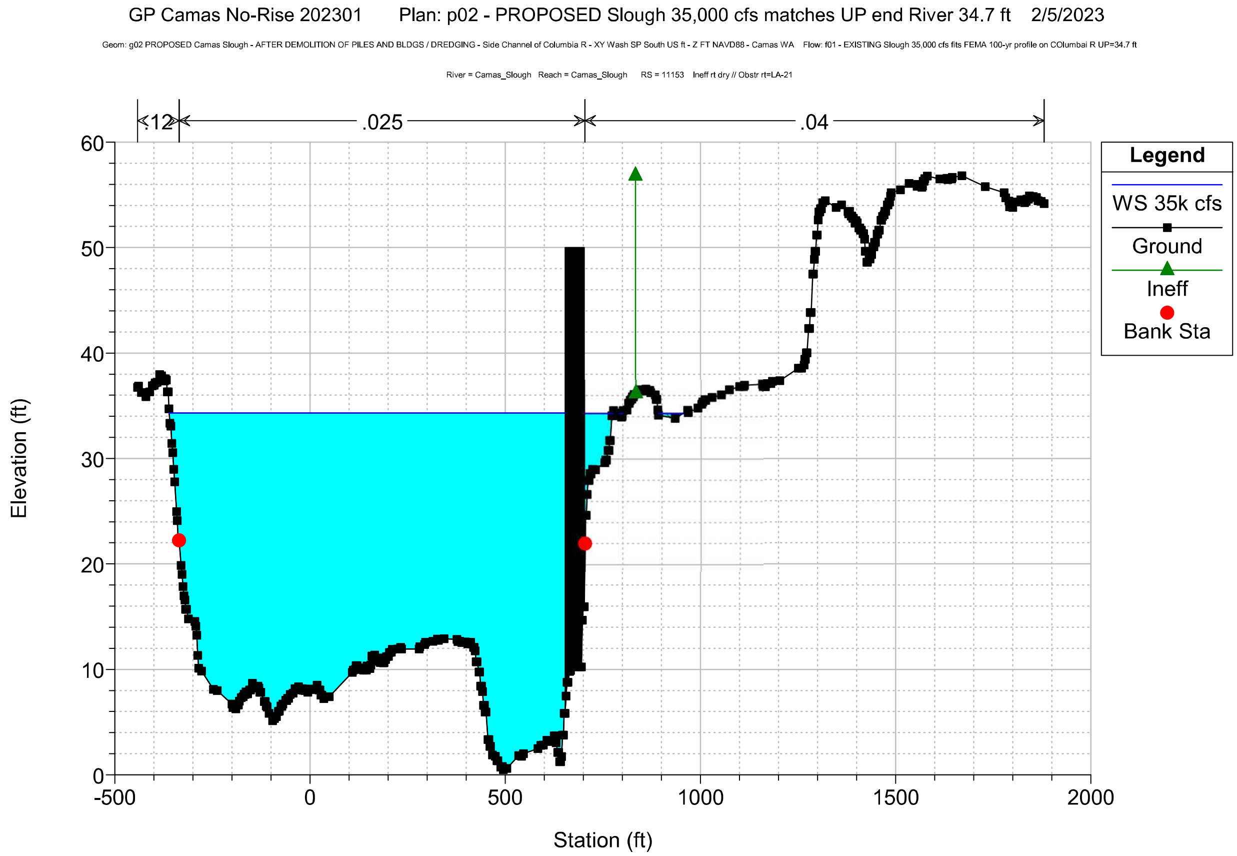
GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11974 Shifted these LEFT 80 FT to align channel (shift left 6 ft to al
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta

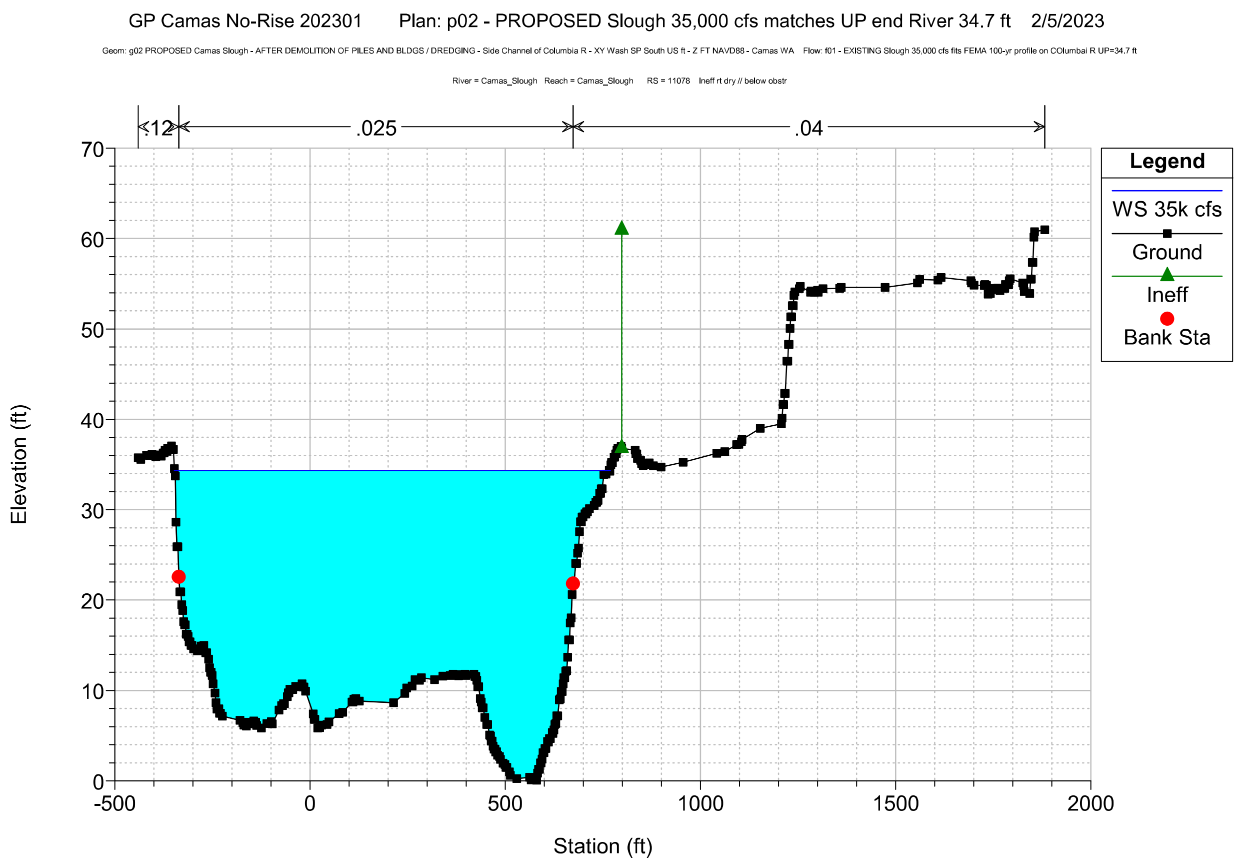


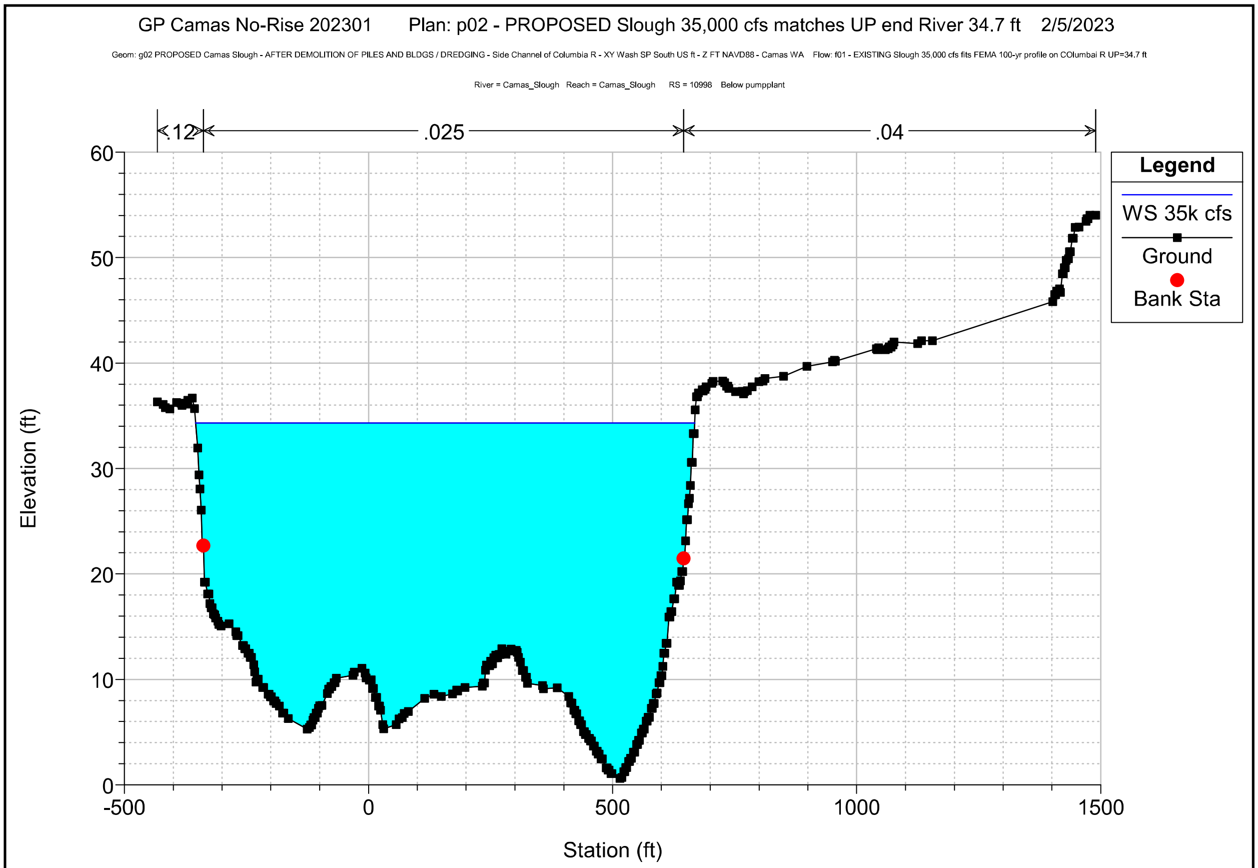
GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11507 Expanded East Bridge SR14-27S/N=JCT Washougal XS's
.12
.025
.025
.025
.04
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11240 Ineff rt shadow ds-up dry // above obstr
.12
.025
.025
.025
.025
.04
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
70
60
50
40
30
20
10
0
-10
-500
0
500
1000
1500
2000
2500


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11204 Ineff rt dry // Obstr rt=LA-21
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
60
50
40
30
20
10
0
-10
-500
0
500
1000
1500
2000


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11153 Ineff rt dry // Obstr rt=LA-21
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-500
0
500
1000
1500
2000


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 11078 Ineff rt dry // below obstr
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
70
60
50
40
30
20
10
0
-500
0
500
1000
1500
2000


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
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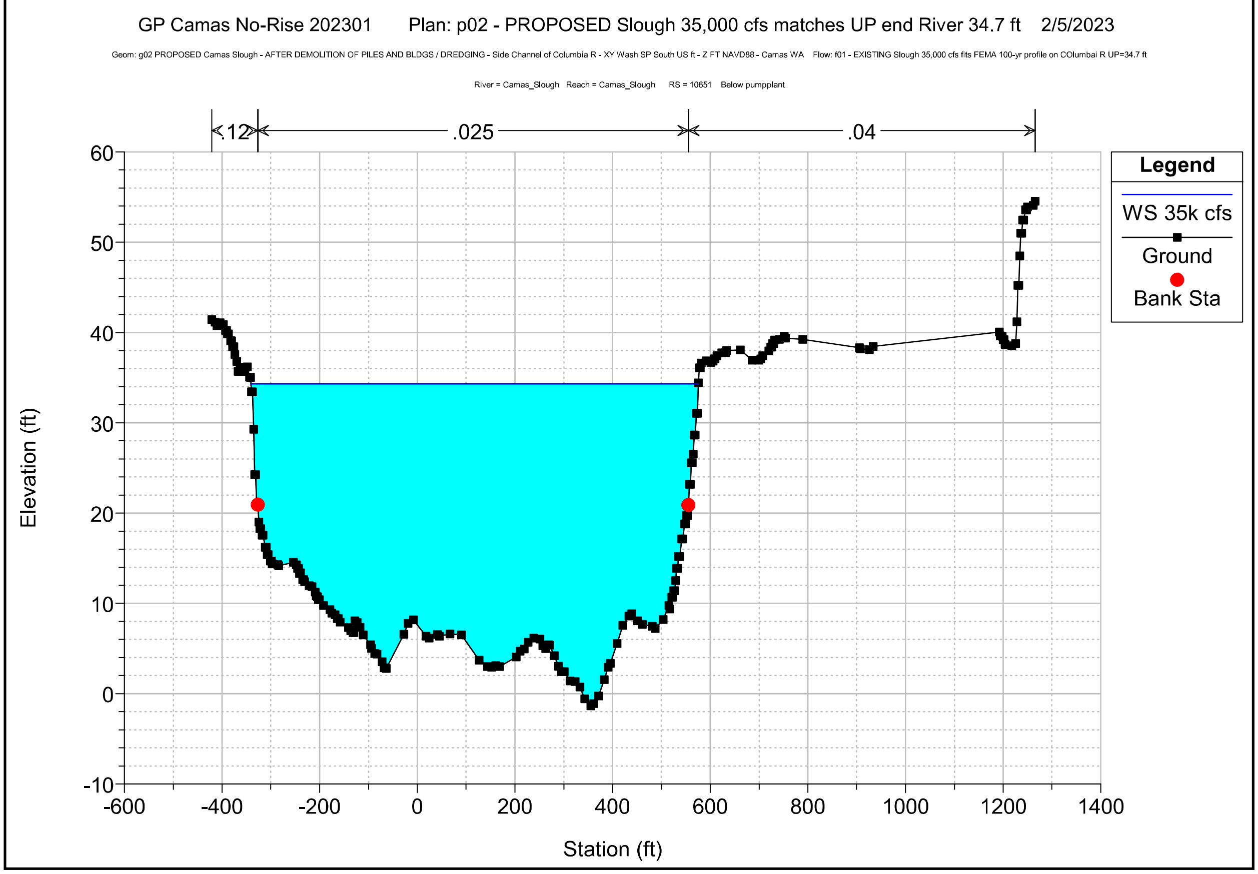
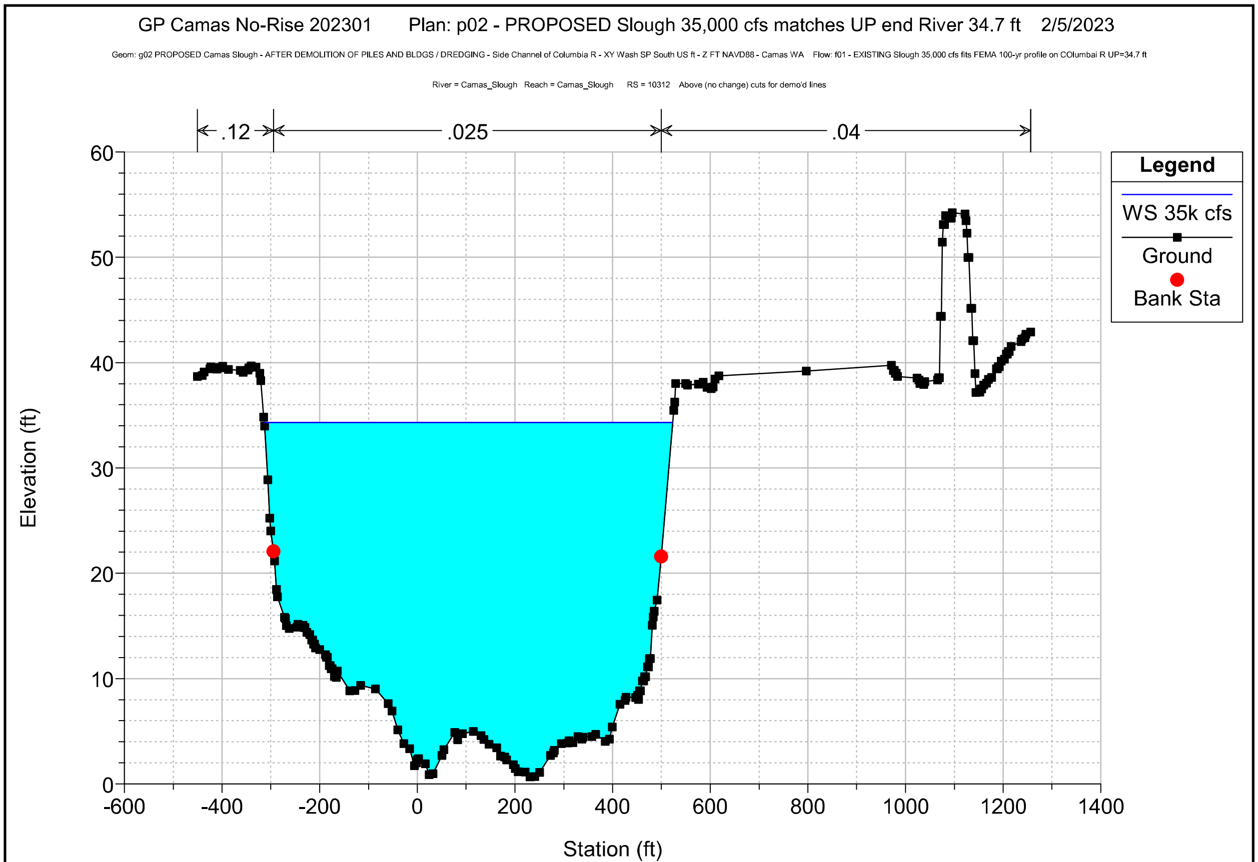
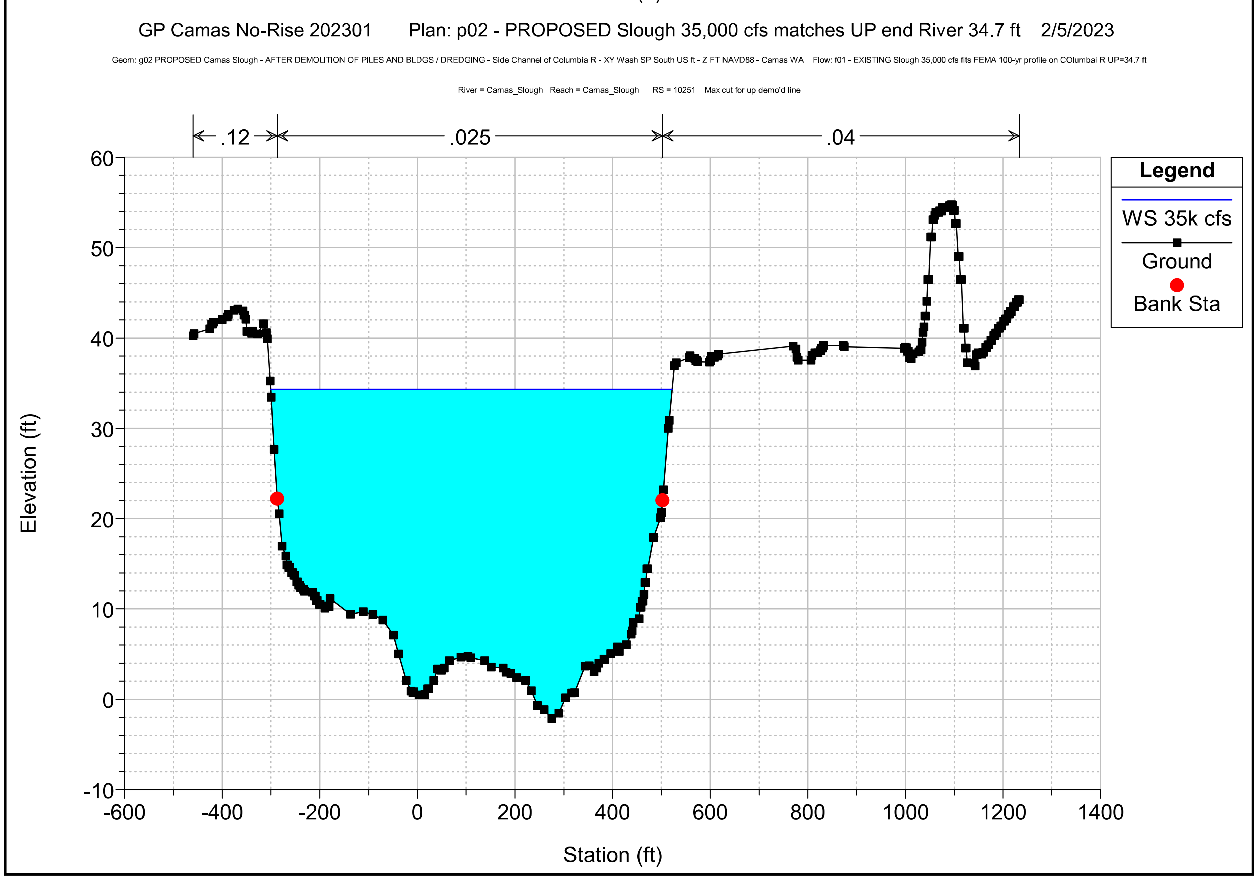
River = Camas_Slough Reach = Camas_Slough RS = 10998 Below pumpplant
.12
.025
.04
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-500
0
500
1000
1500
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10651 Below pumpplant
.12
.025
.04
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-600
-400
-200
0
200
400
600
800
1000
1200
1400
Station (ft)



GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10312 Above (no change) cuts for demo'd lines
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta

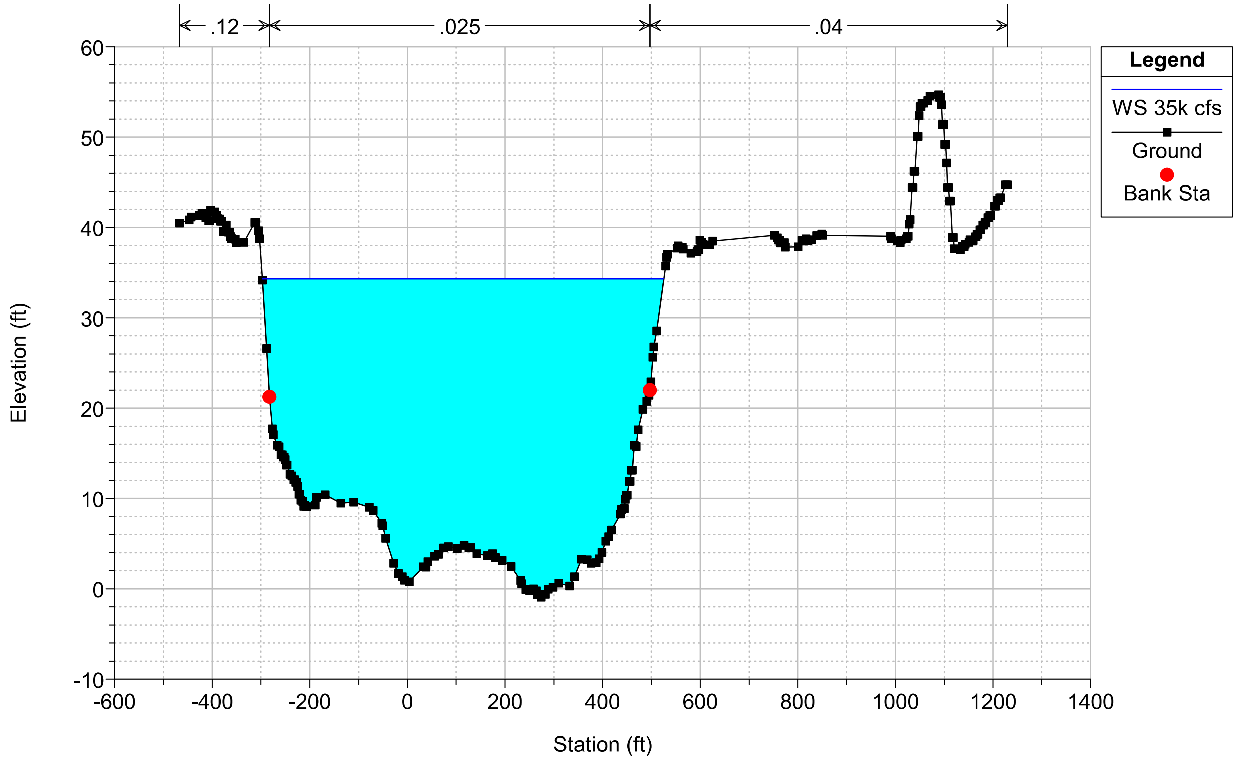


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10251 Max cut for up demo'd line
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

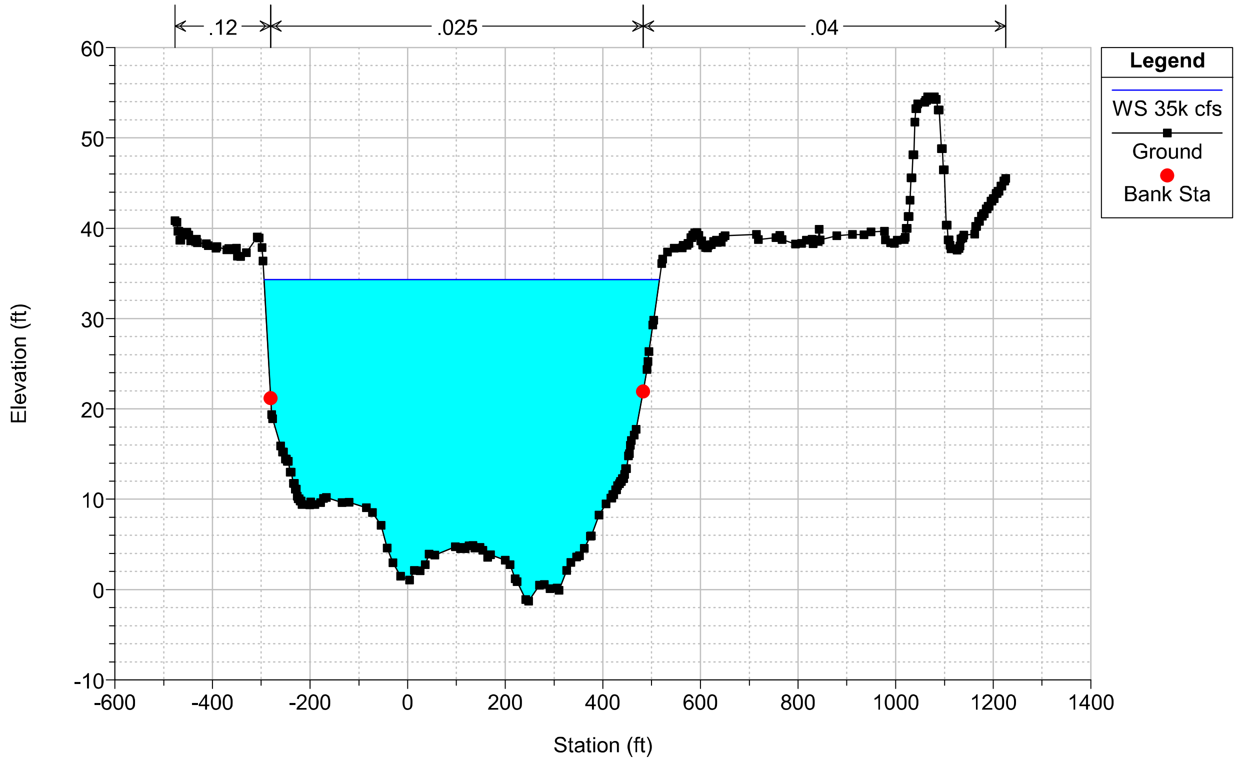
River = Camas_Slough Reach = Camas_Slough RS = 10231 Min cut for demo'd lines

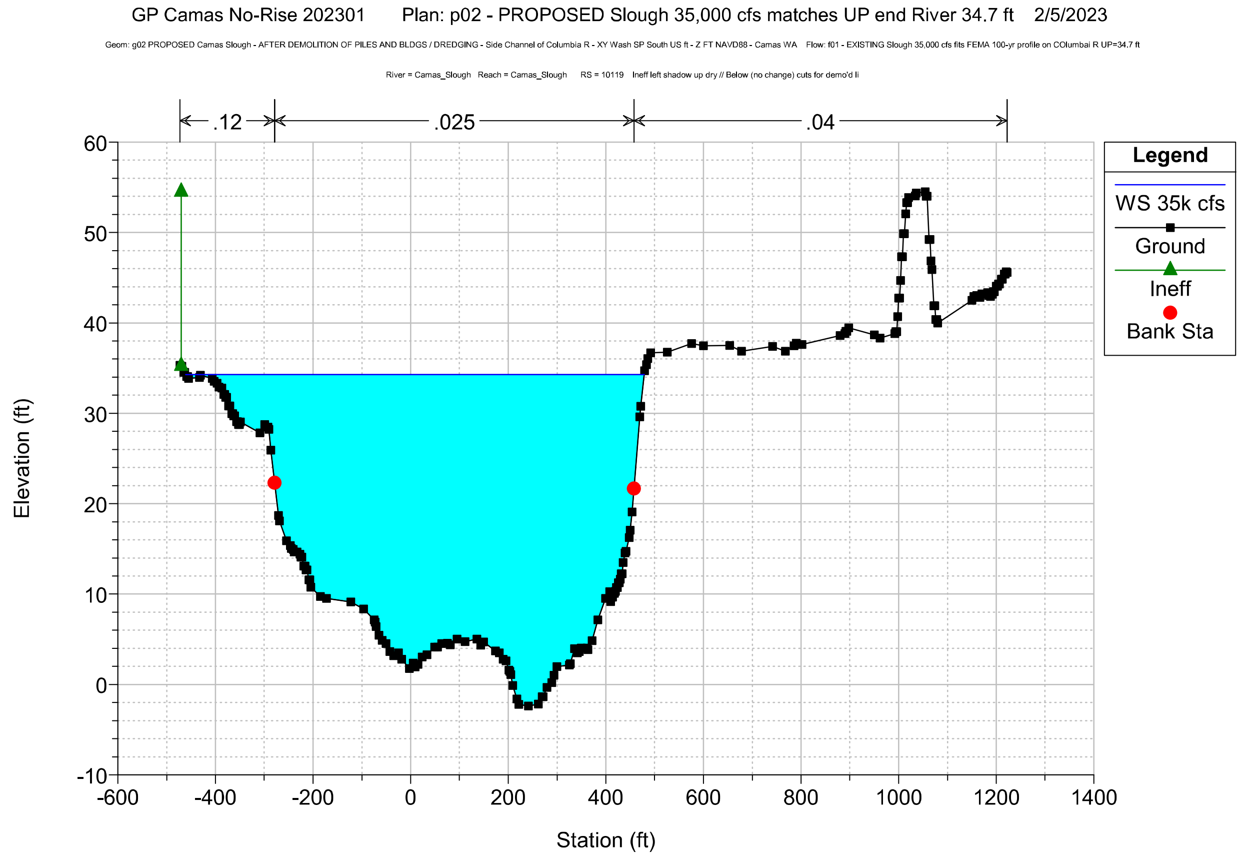


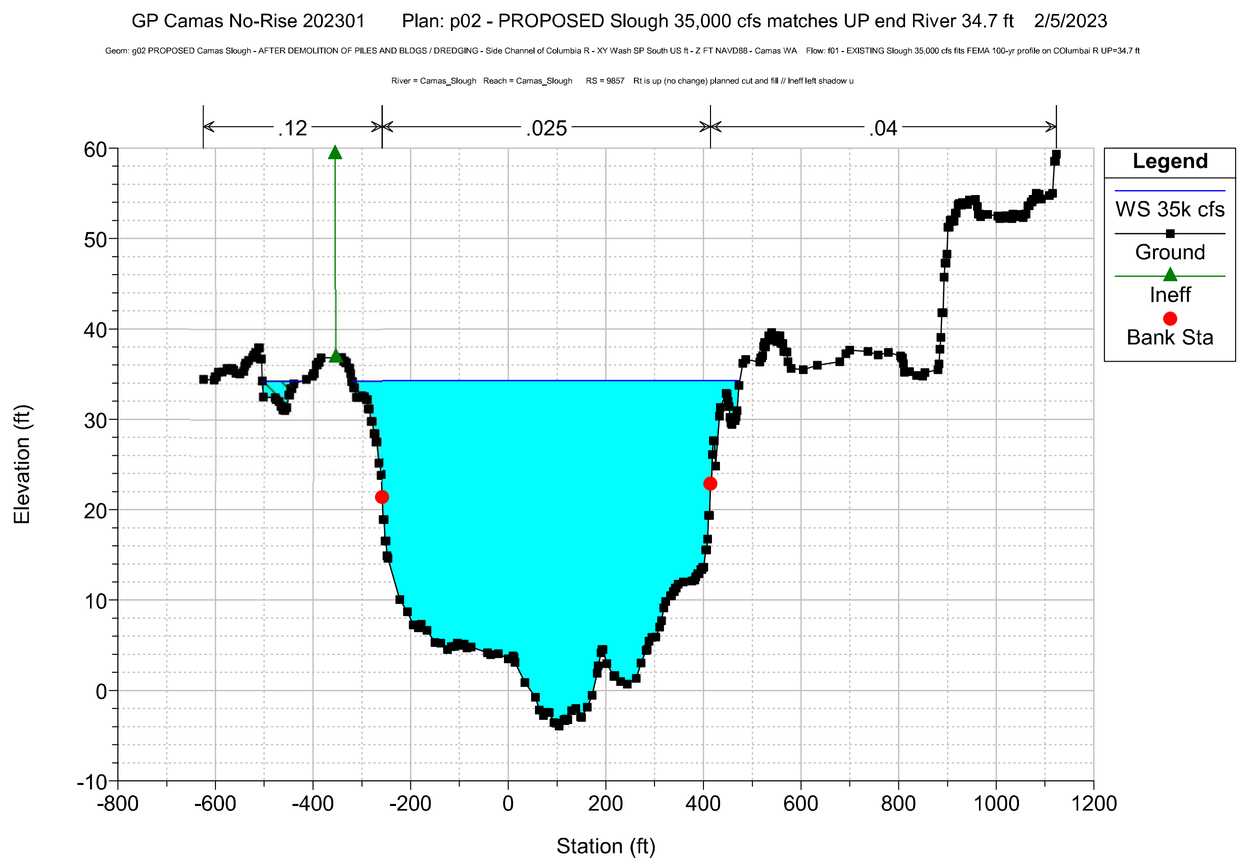
GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 10201 Max cut for ds demo'd line




GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 10119 Ineff left shadow up dry // Below (no change) cuts for demo'd li
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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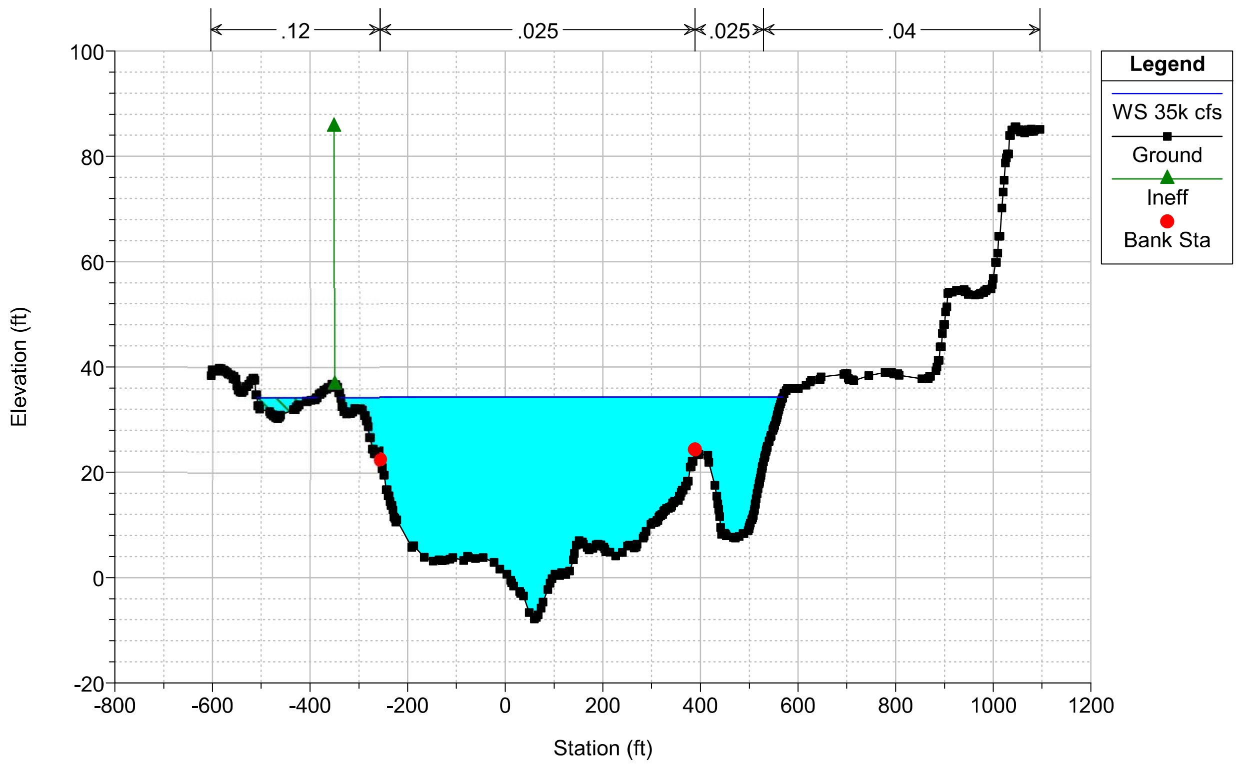
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9857 Rt is up (no change) planned cut and fill // Ineff left shadow u
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

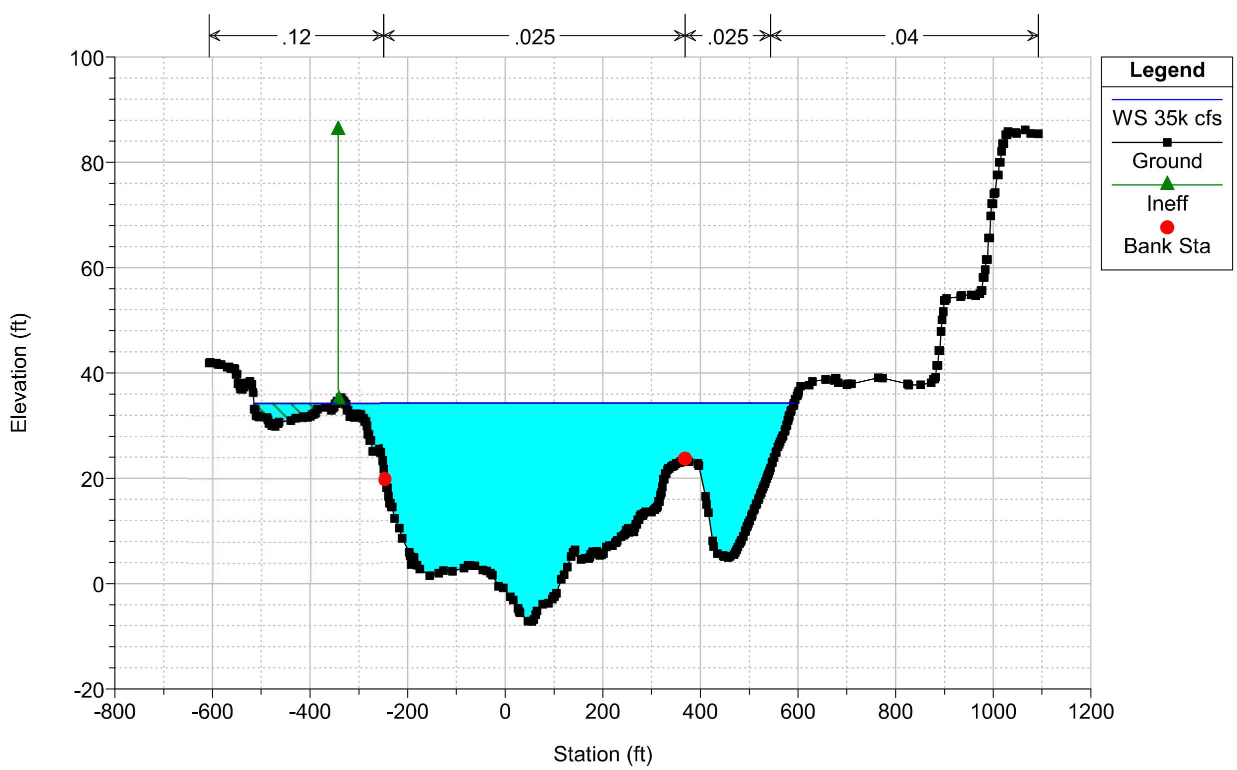
River = Camas_Slough Reach = Camas_Slough RS = 9798 NEW GRADING Stations (499.8 to 600.7)

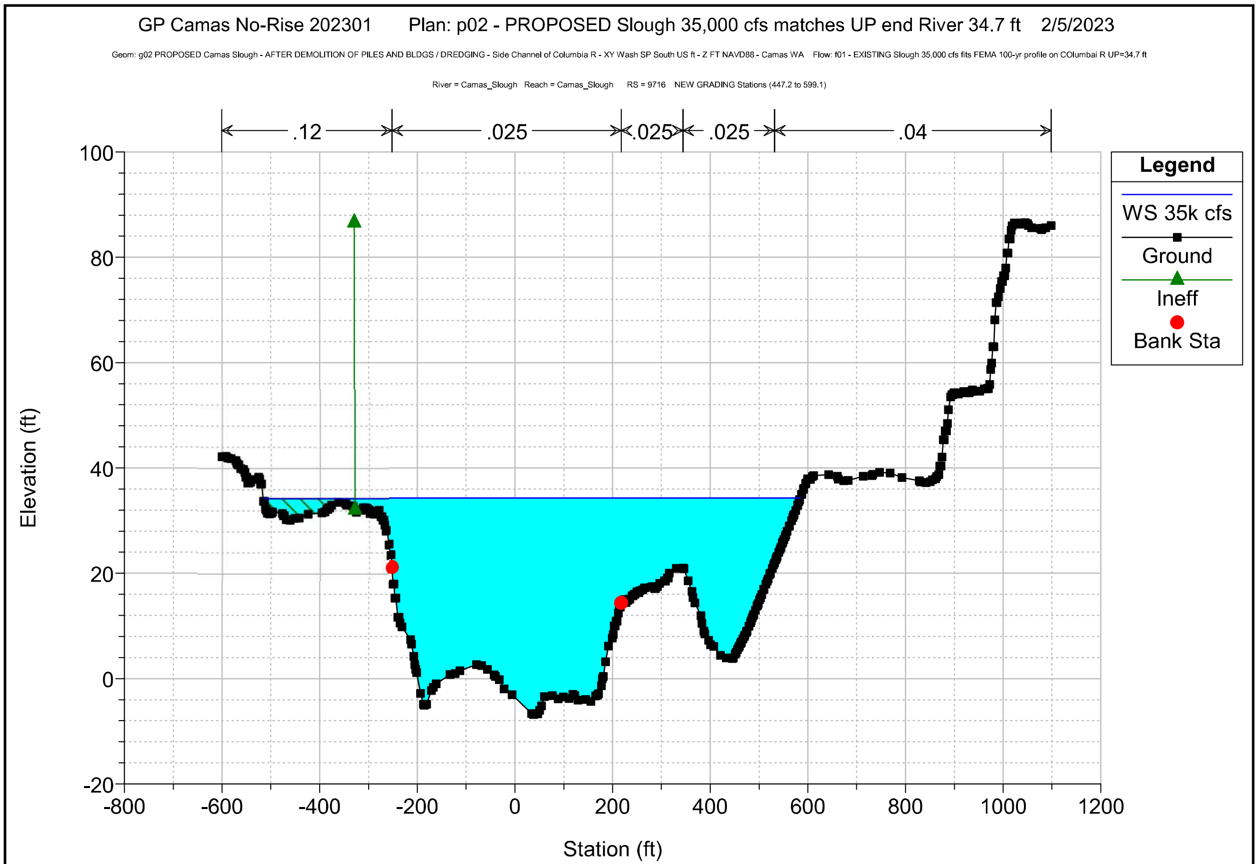


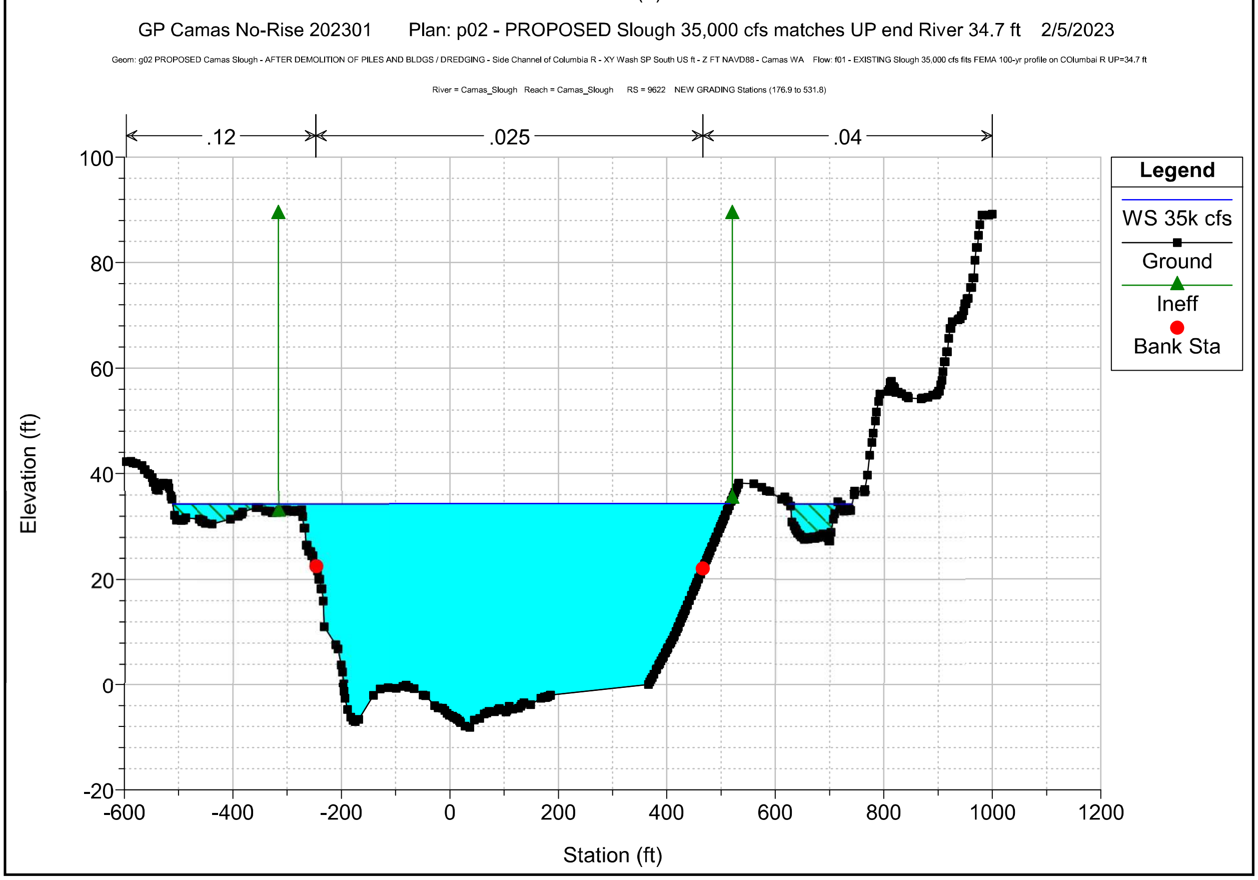
GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 9760 NEW GRADING Stations (469.1 to 601.4)



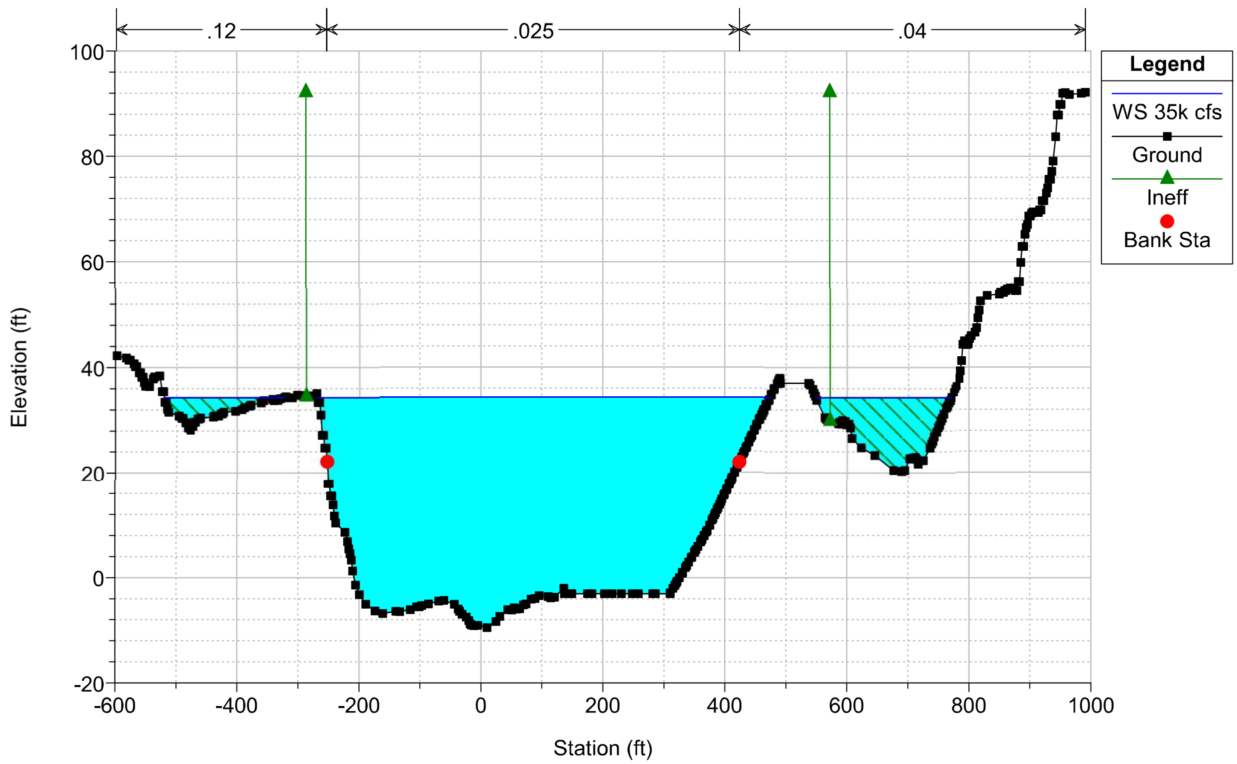

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9716 NEW GRADING Stations (447.2 to 599.1)
.12
.025
.025
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
100
80
60
40
20
0
-20
-800
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9622 NEW GRADING Stations (176.9 to 531.8)
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
100
80
60
40
20
0
-20
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)

GP Camas No-Rise 202301   Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft   2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA   Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

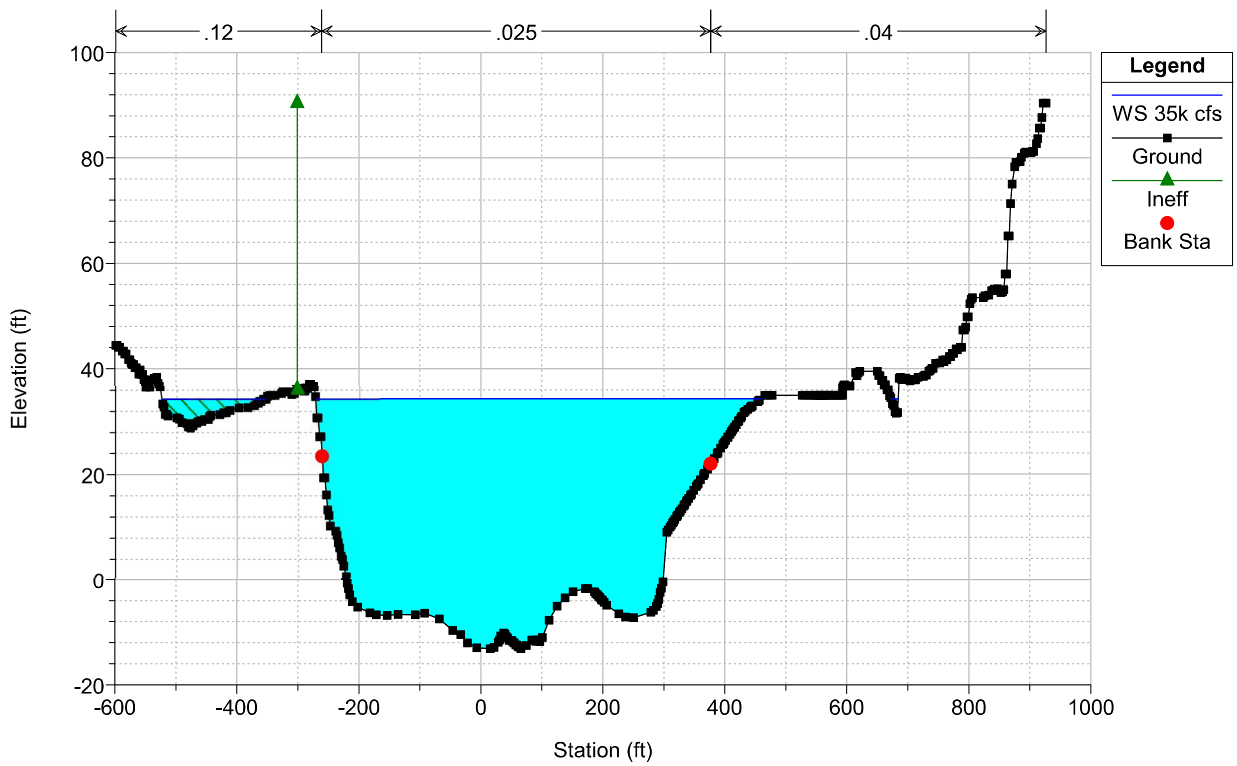
River = Camas_Slough   Reach = Camas_Slough   RS = 9494   NEW GRADING Stations (137.3 to 489.8)

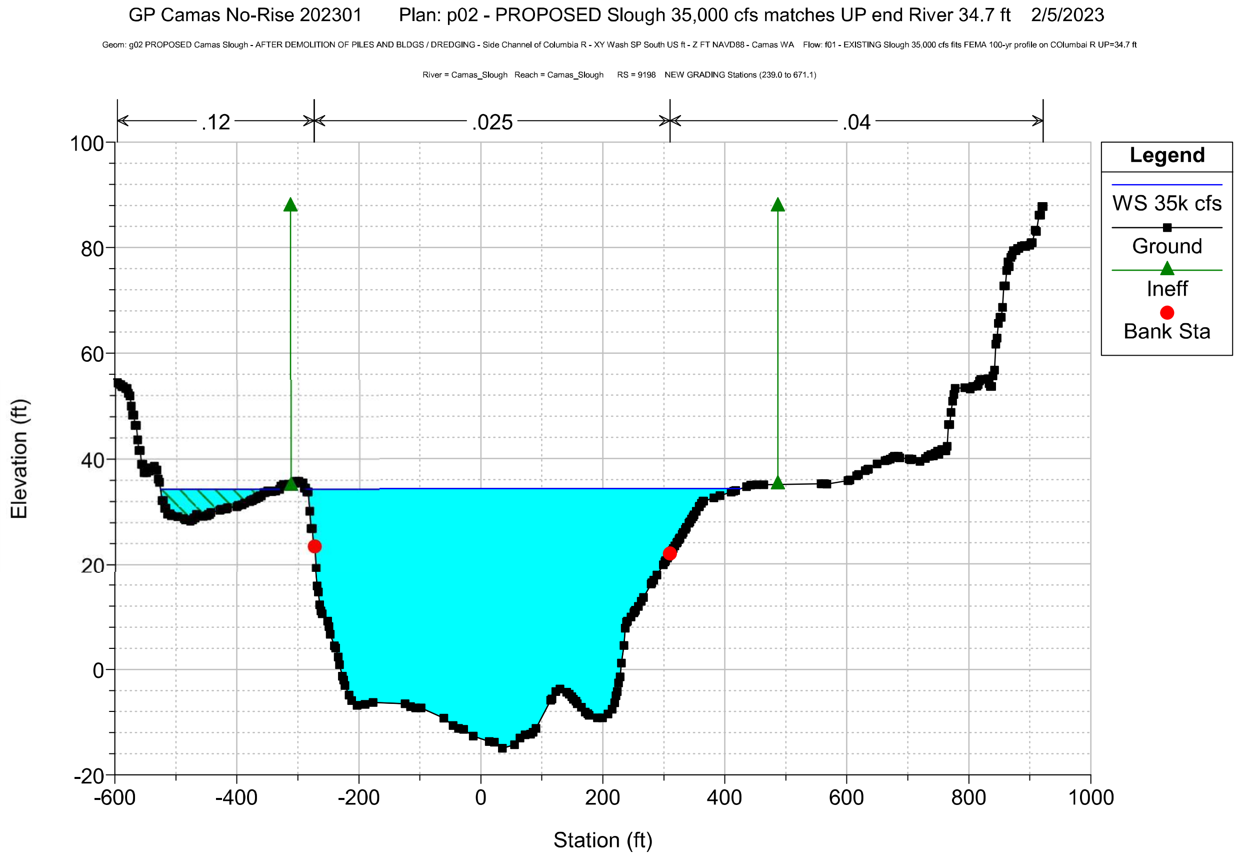


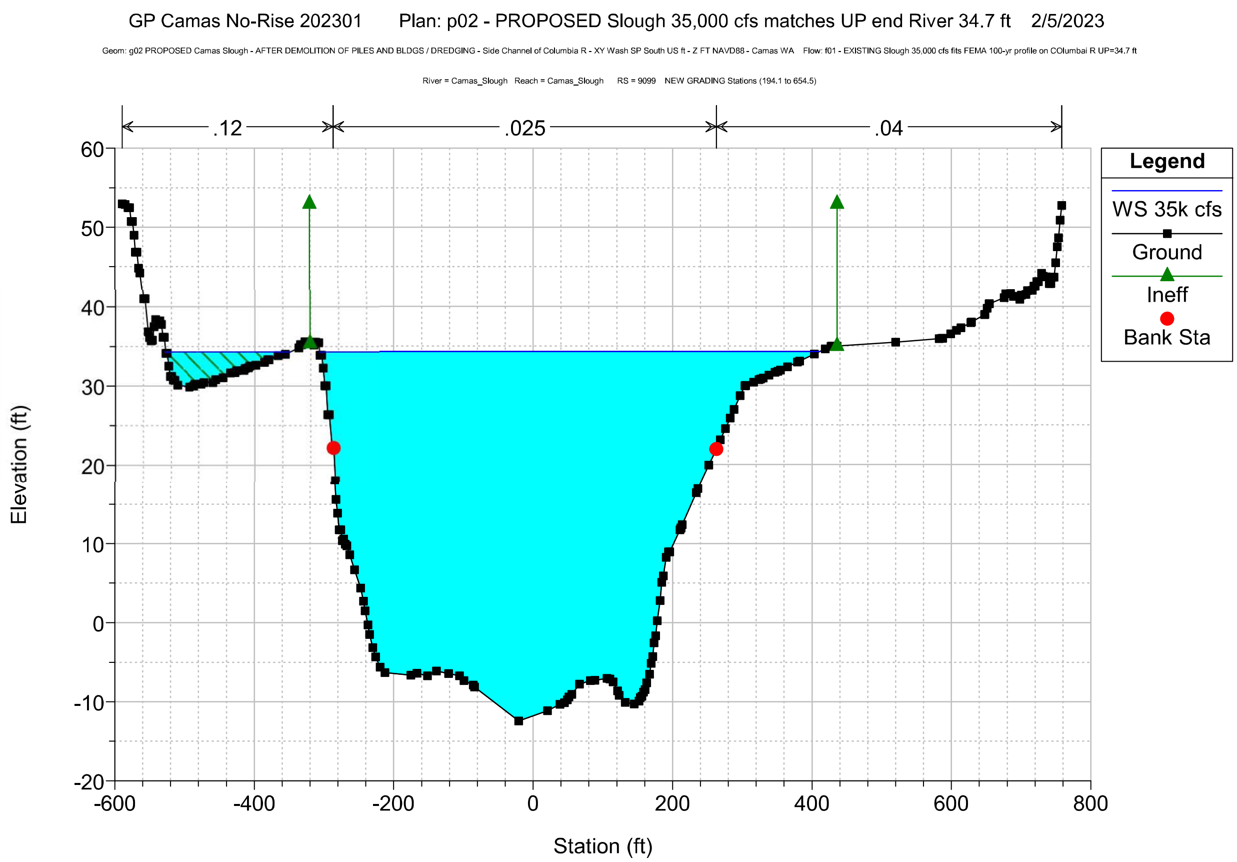
GP Camas No-Rise 202301   Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft   2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA   Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough   Reach = Camas_Slough   RS = 9319   NEW GRADING Stations (304.8 to 605.1)




GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9198 NEW GRADING Stations (239.0 to 671.1)
.12
.025
.04
Elevation (ft)
100
80
60
40
20
0
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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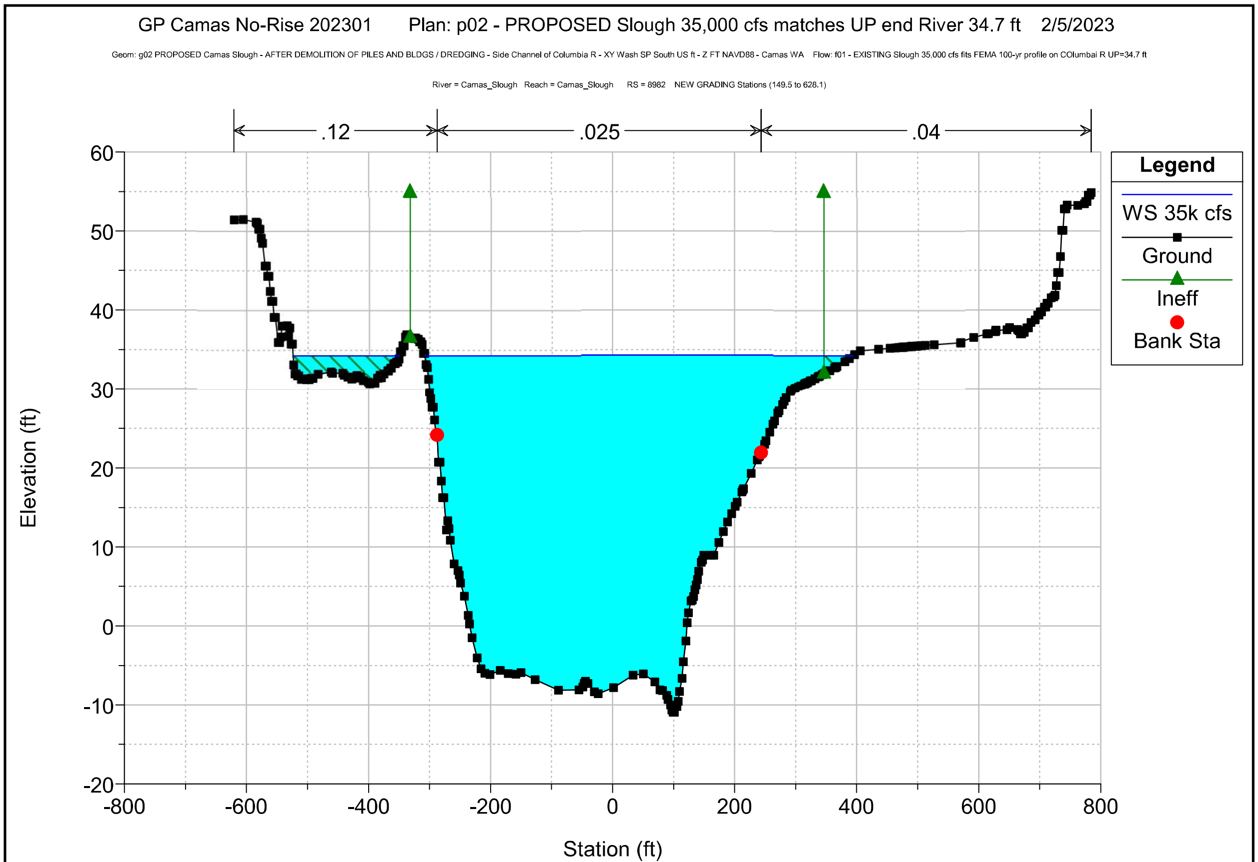
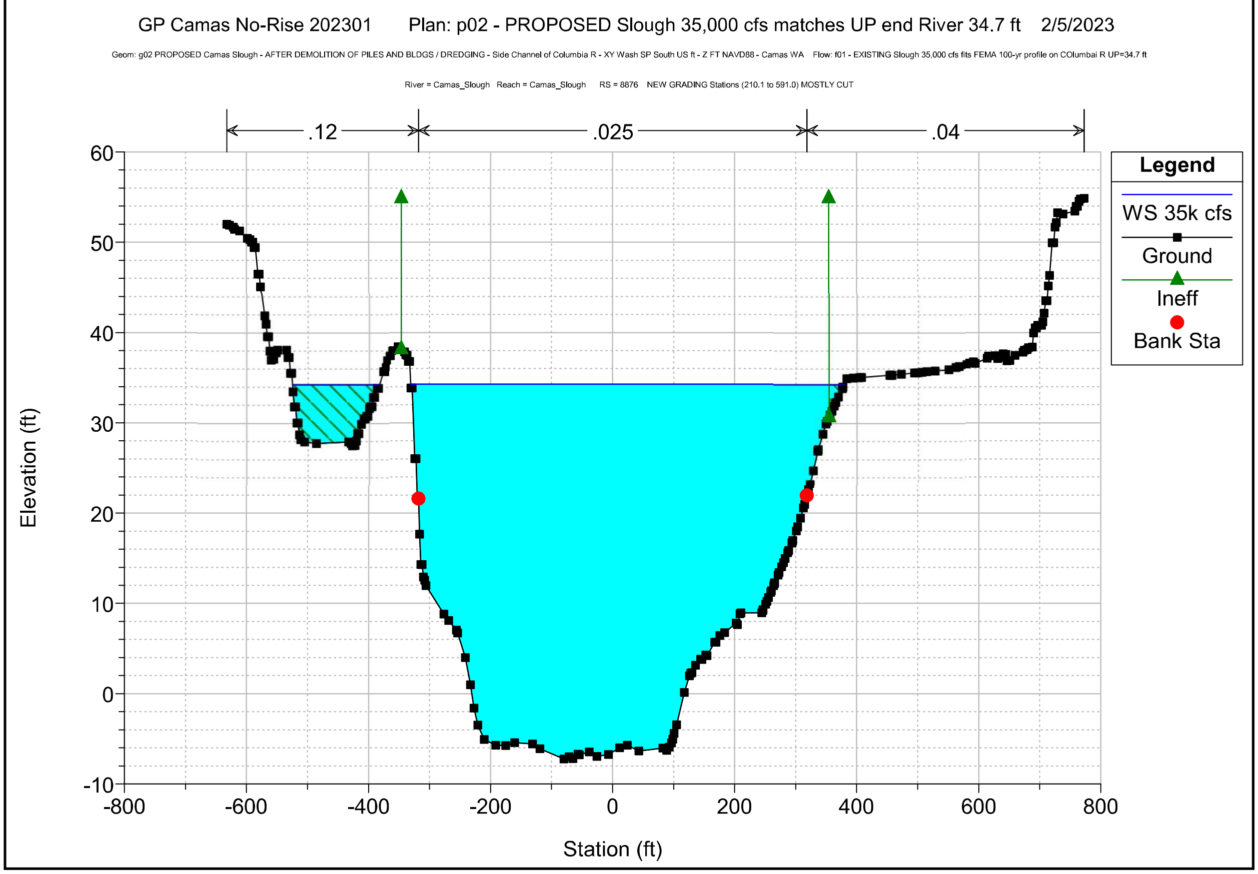
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 9099 NEW GRADING Stations (194.1 to 654.5)
.12
.025
.04
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8982 NEW GRADING Stations (149.5 to 628.1)
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600
800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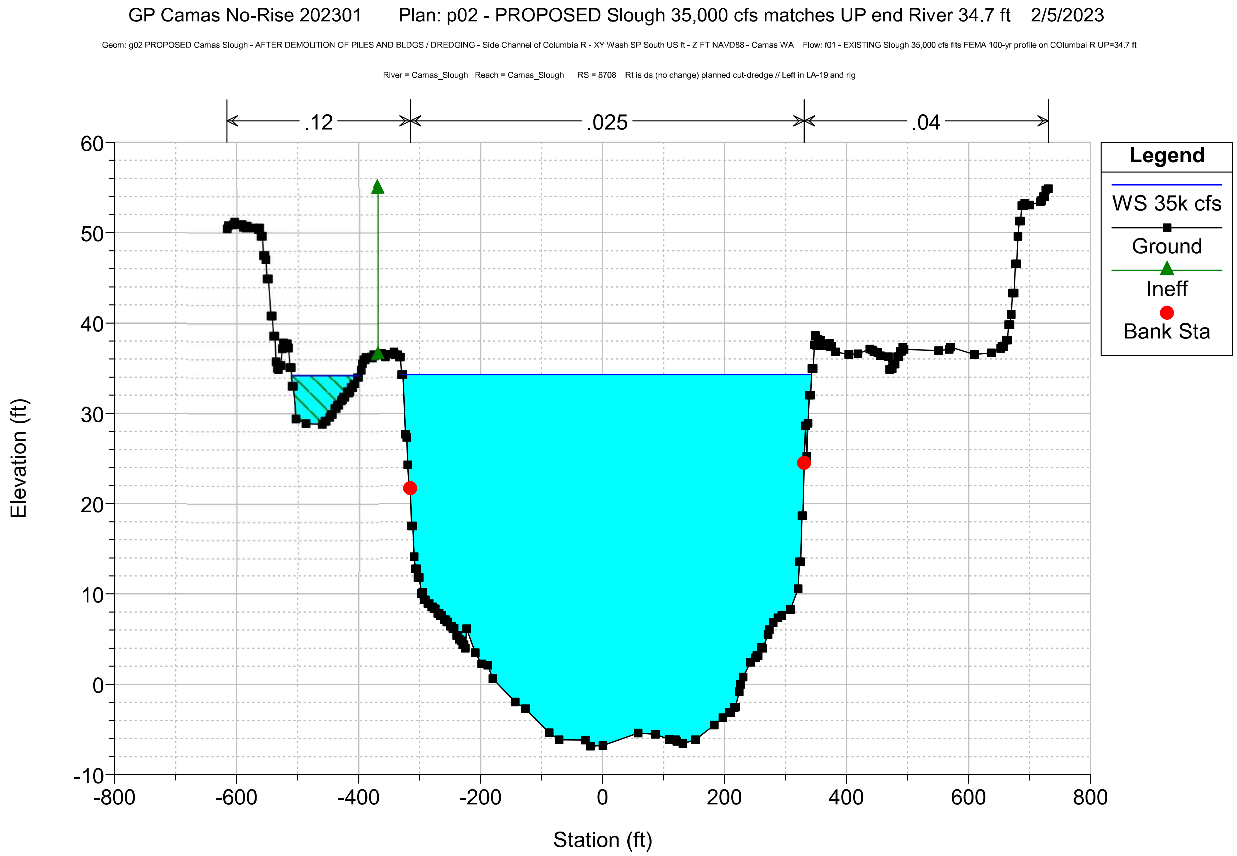
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8876 NEW GRADING Stations (210.1 to 591.0) MOSTLY CUT
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800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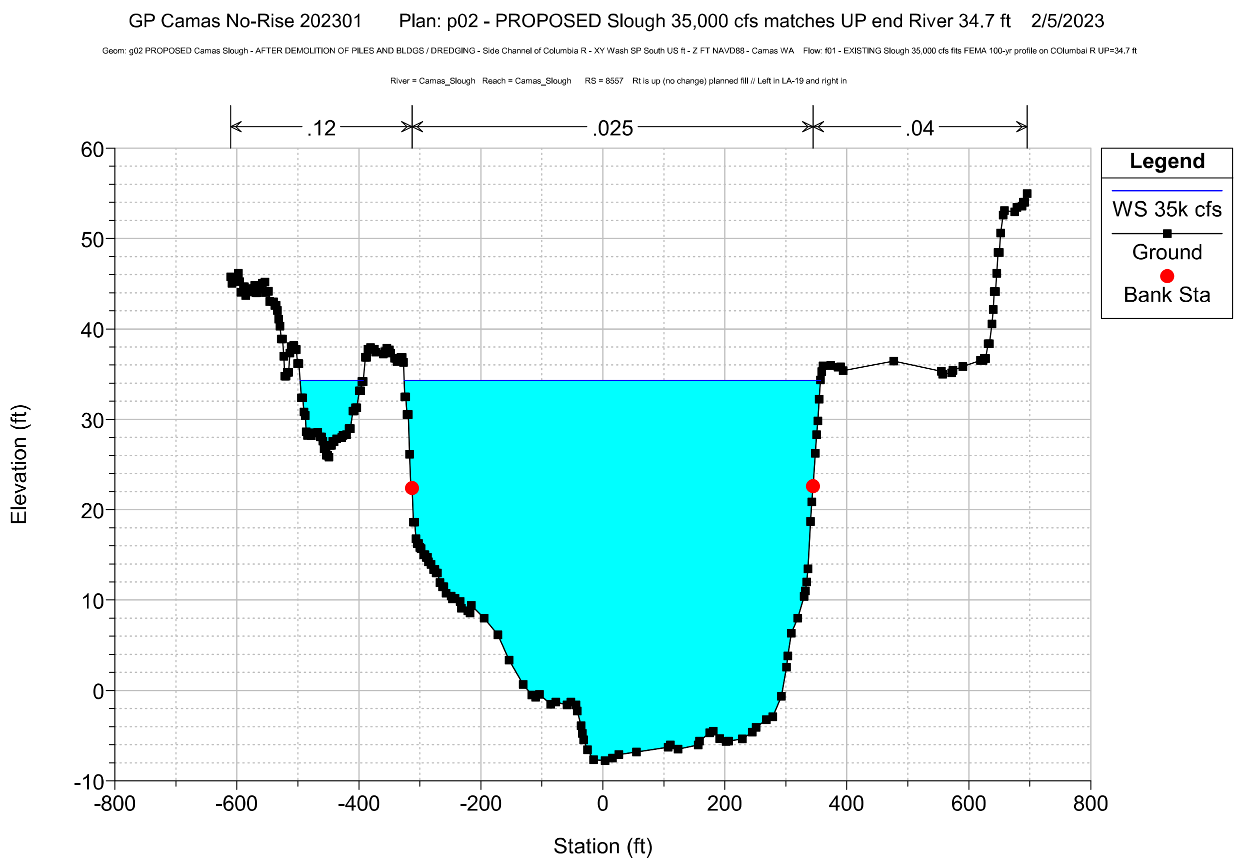
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8708 Rt is ds (no change) planned cut-dredge // Left in LA-19 and rig
.12
.025
.04
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)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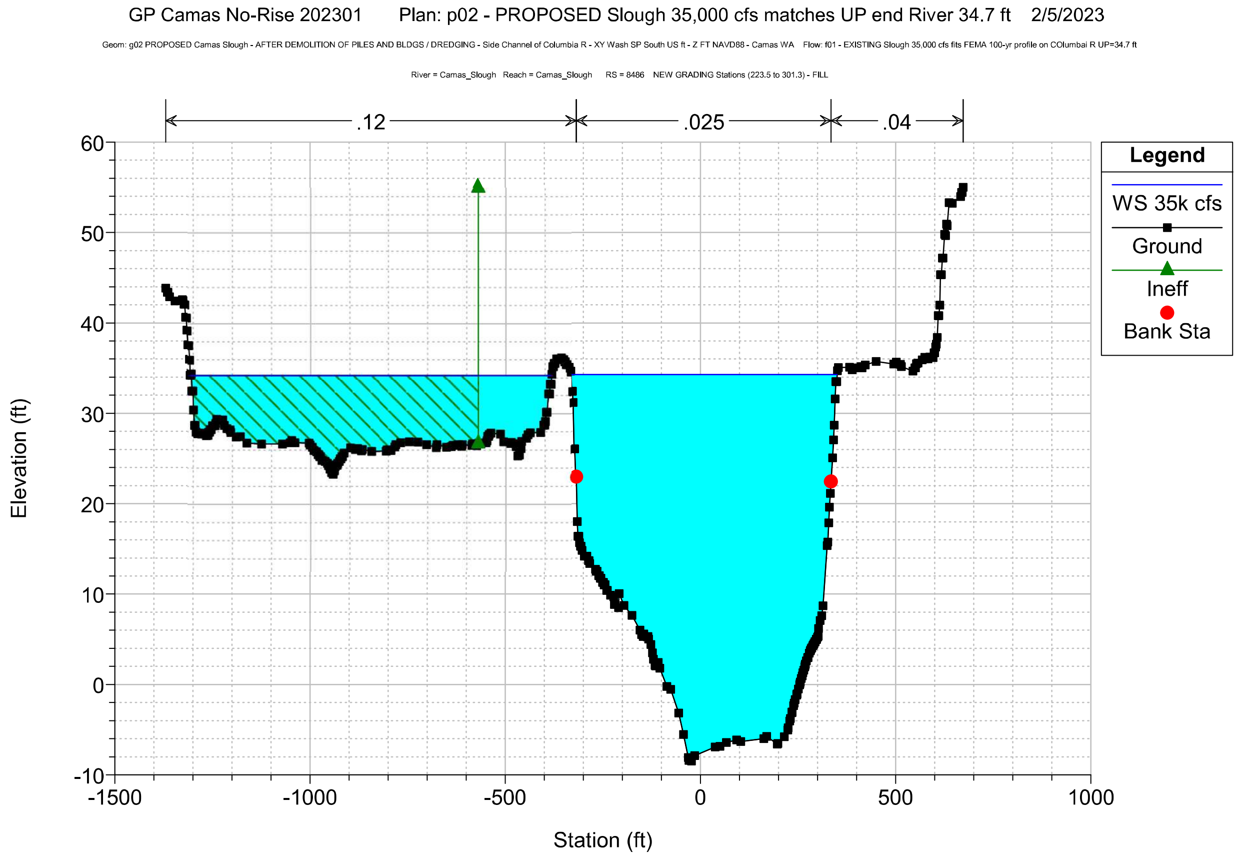
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8557 Rt is up (no change) planned fill // Left in LA-19 and right in
.12
.025
.04
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-800
-600
-400
-200
0
200
400
600
800
Station (ft)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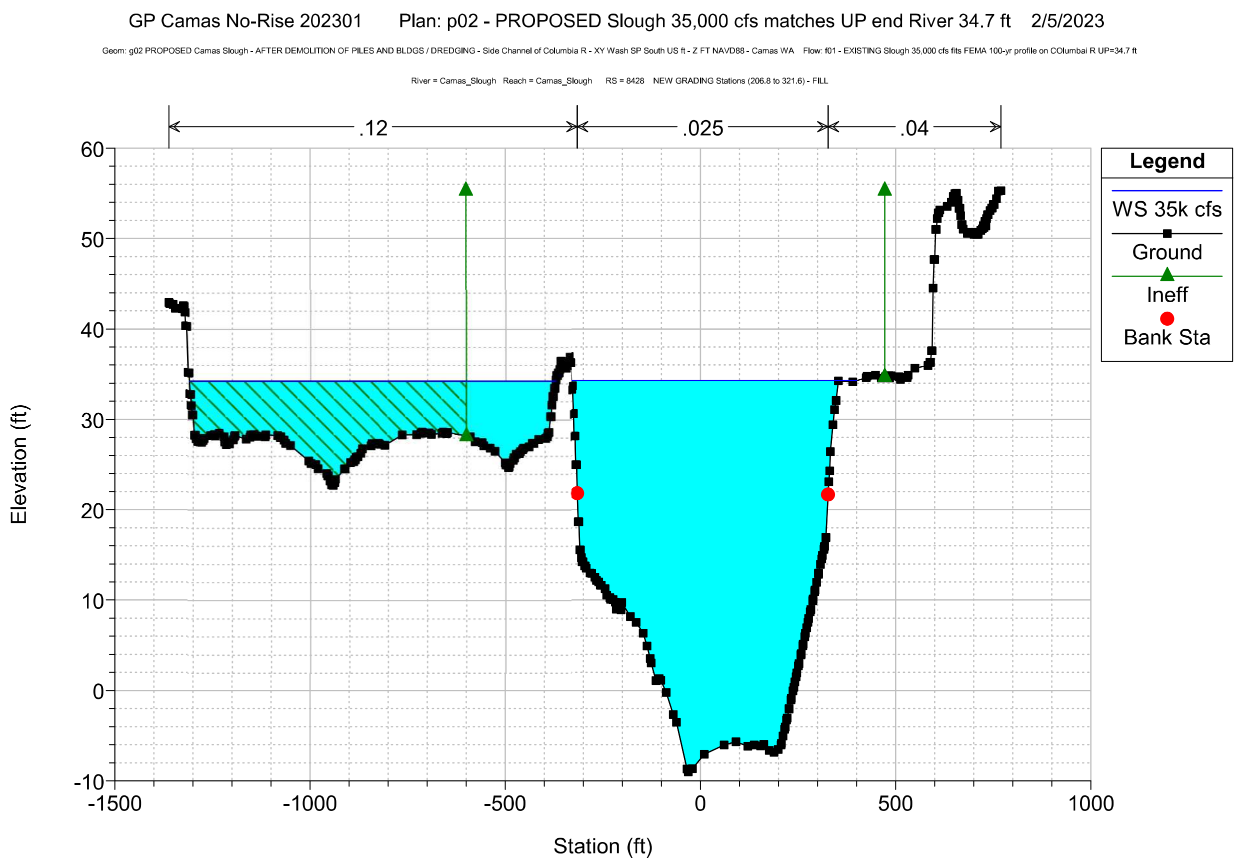
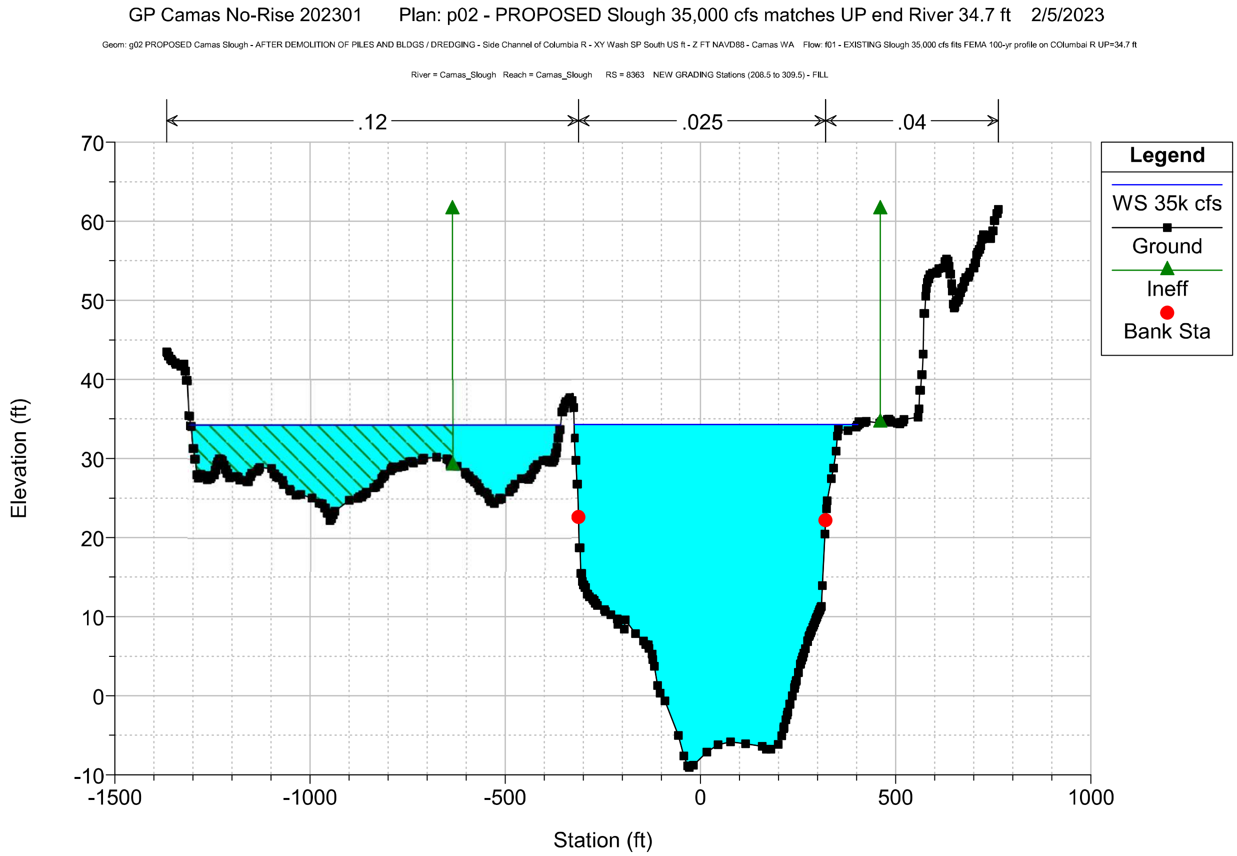
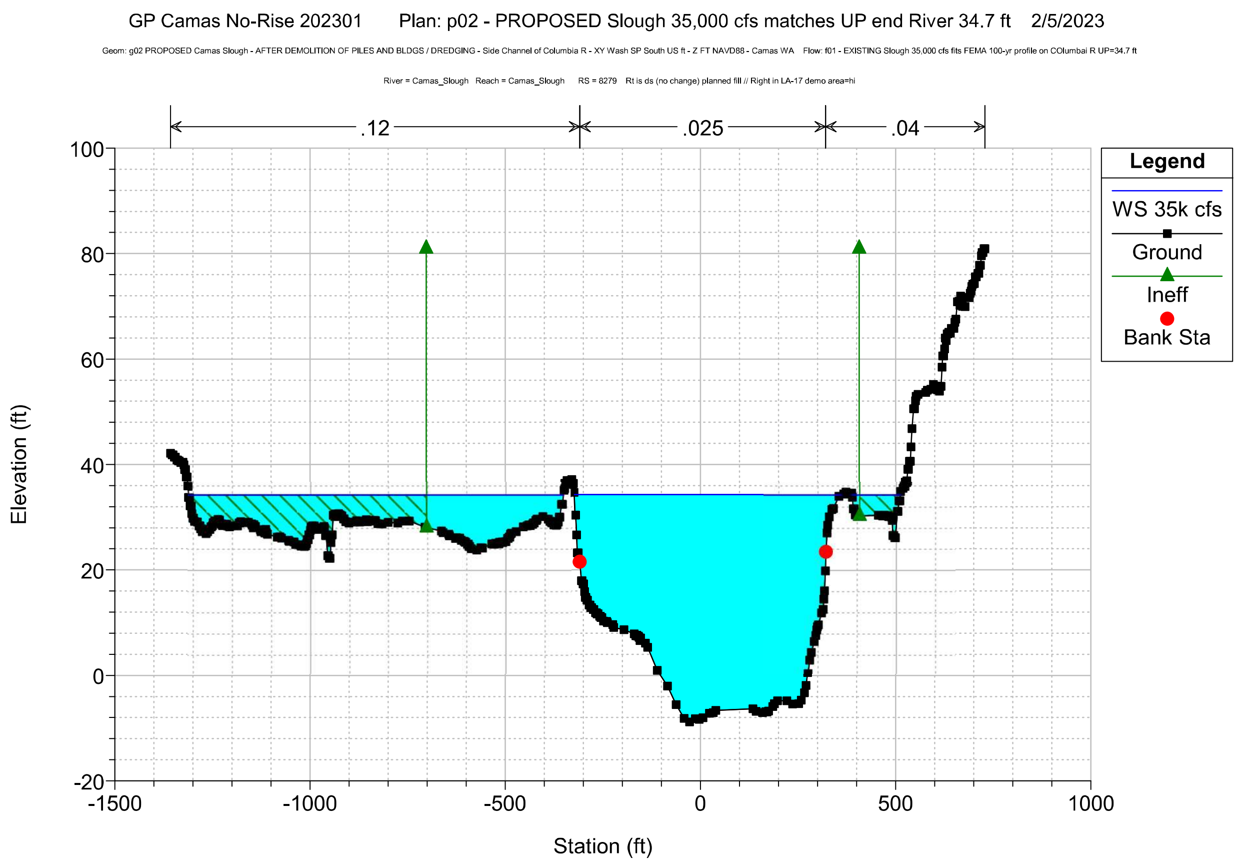
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8486 NEW GRADING Stations (223.5 to 301.3) - FILL
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8428 NEW GRADING Stations (206.8 to 321.6) - FILL
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 8363 NEW GRADING Stations (208.5 to 309.5) - FILL
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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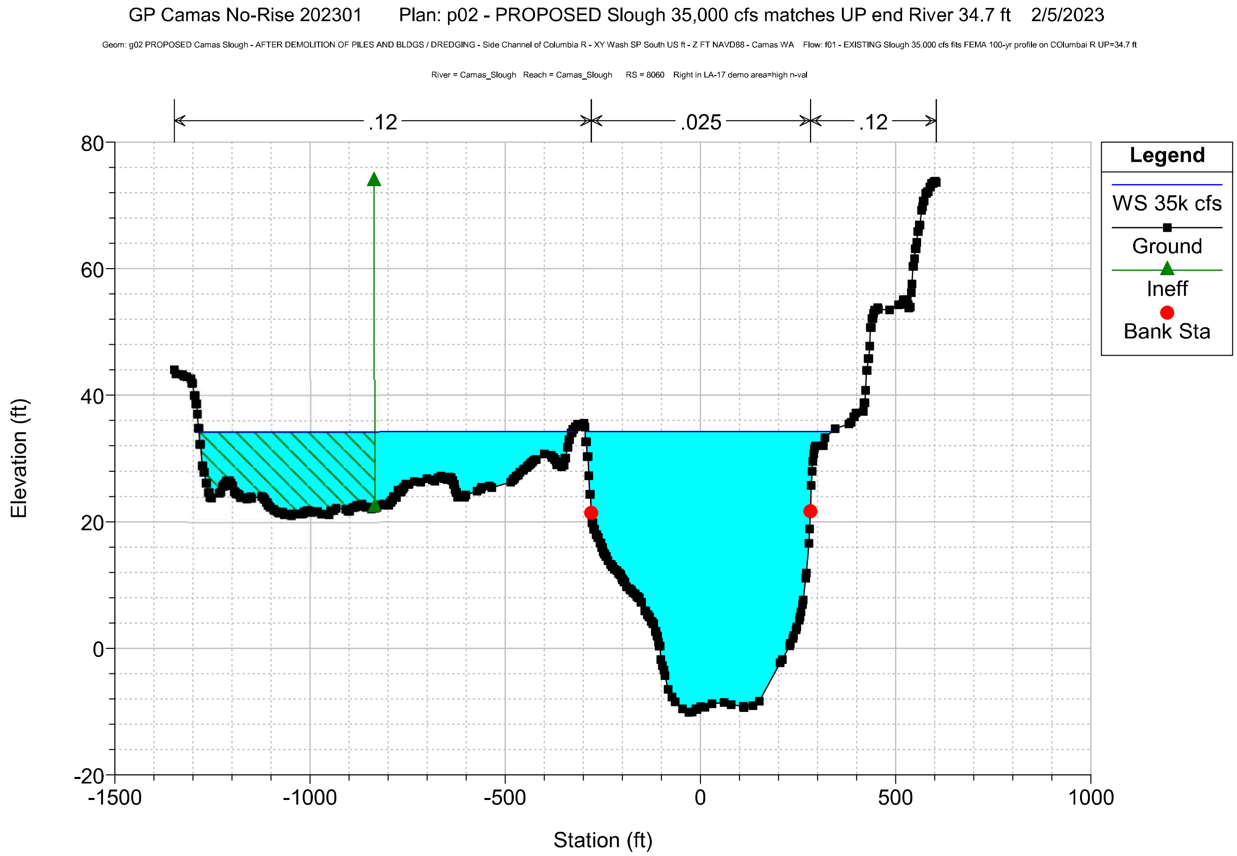
River = Camas_Slough Reach = Camas_Slough RS = 8279 Rt is ds (no change) planned fill // Right in LA-17 demo area=hi
.12
.025
.04
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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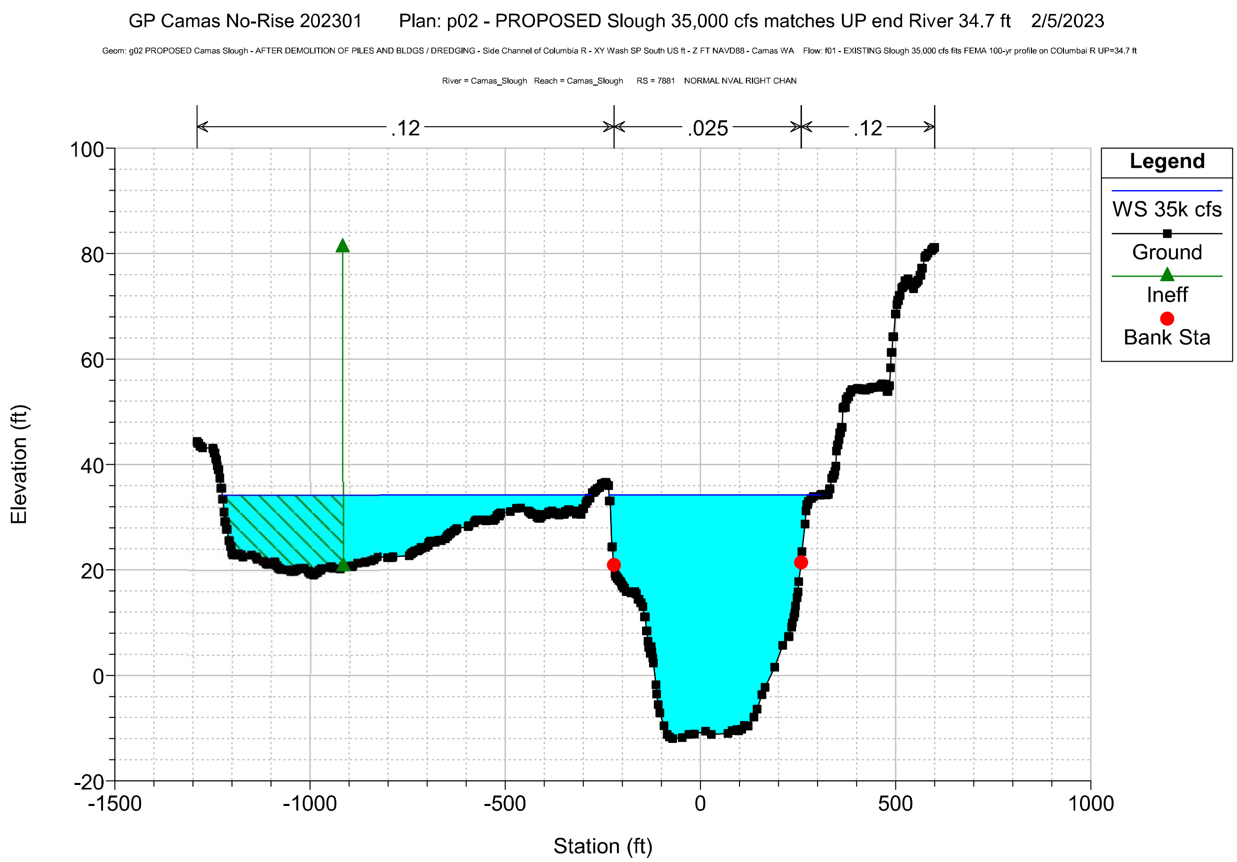
River = Camas_Slough Reach = Camas_Slough RS = 8060 Right in LA-17 demo area=high n-val
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)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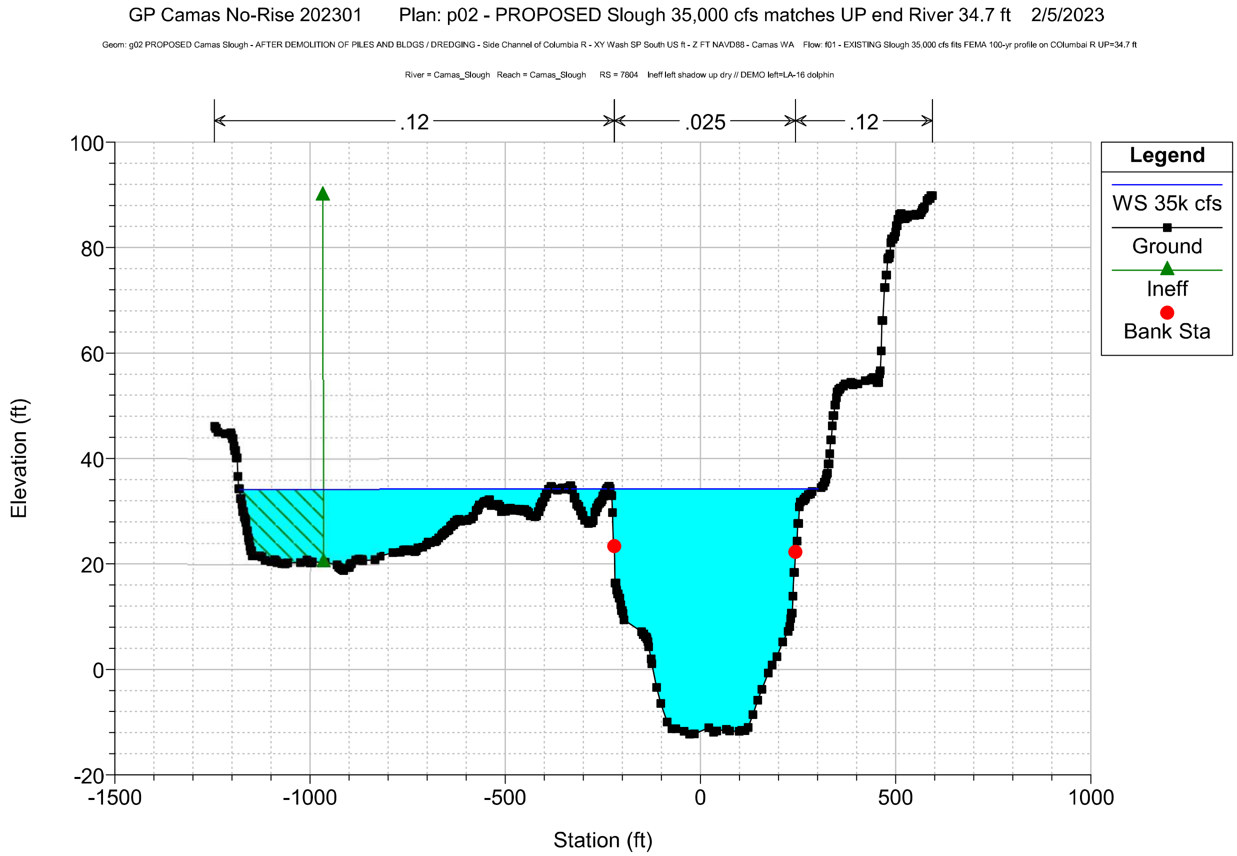
River = Camas_Slough Reach = Camas_Slough RS = 7881 NORMAL NVAL RIGHT CHAN
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)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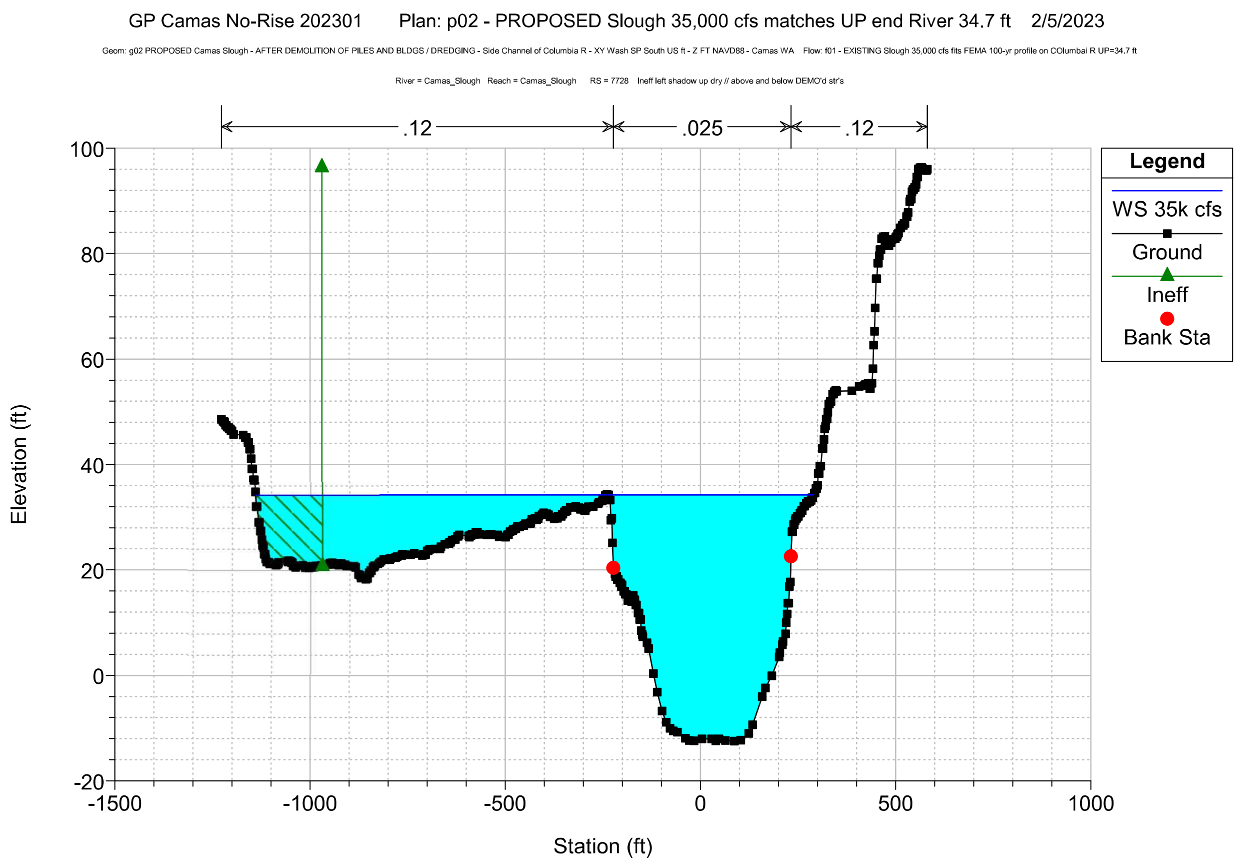
River = Camas_Slough Reach = Camas_Slough RS = 7804 Ineff left shadow up dry // DEMO left=LA-16 dolphin
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)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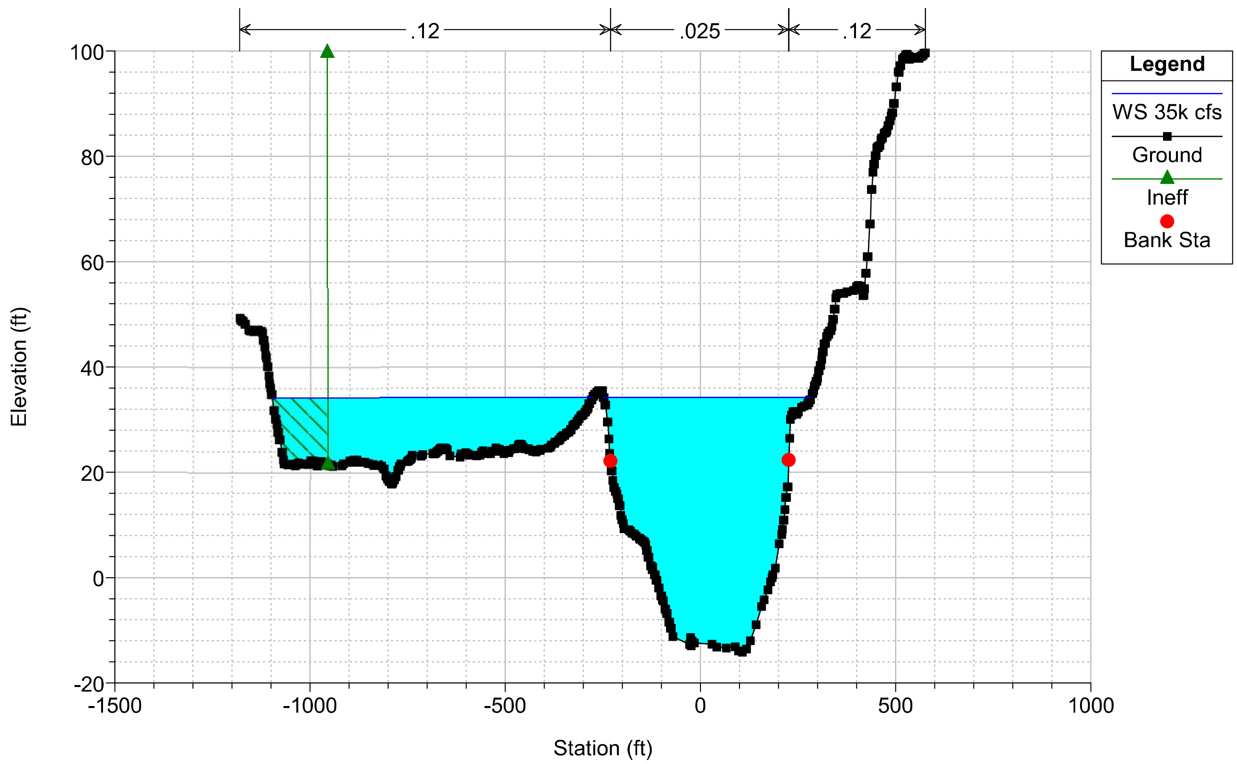
River = Camas_Slough Reach = Camas_Slough RS = 7728 Ineff left shadow up dry // above and below DEMO'd str's
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
100
80
60
40
20
0
-20
-1500
-1000
-500
0
500
1000
Station (ft)

GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 7637 Ineff left shadow up dry // DEMO rt LA-15 dolphin



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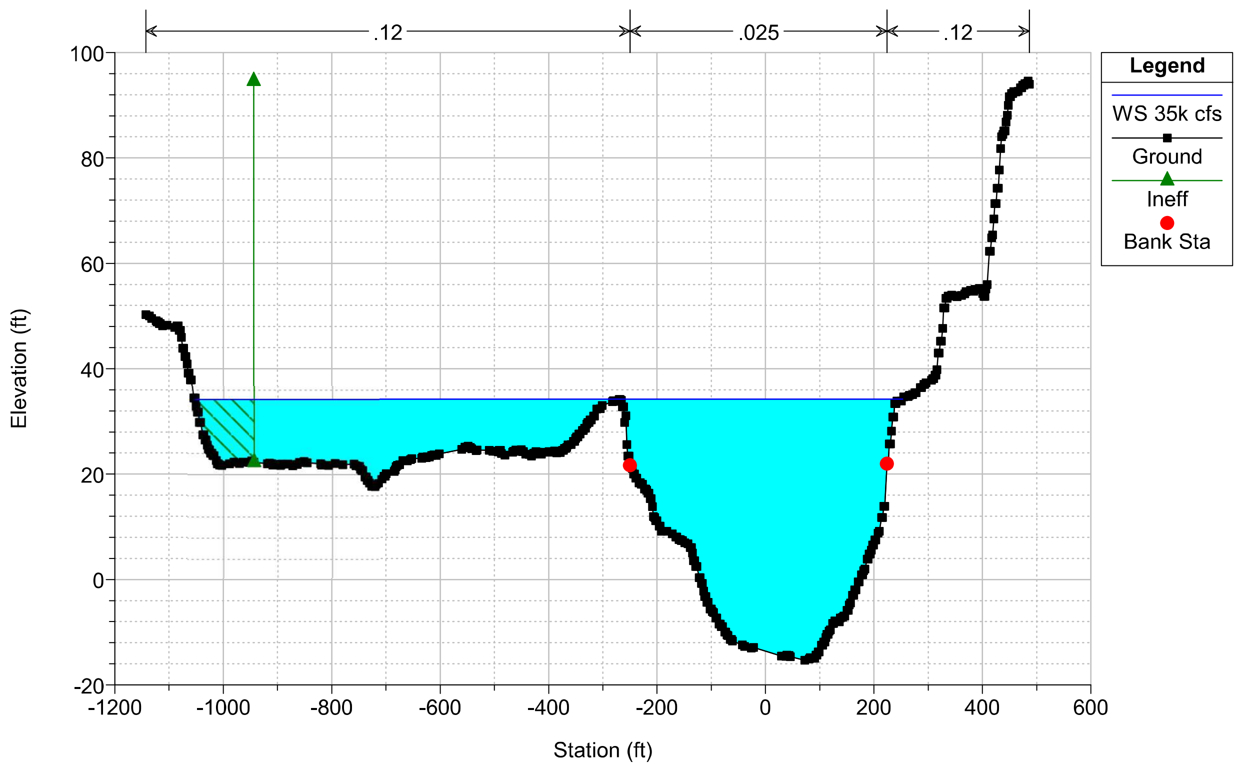
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 7570 Ineff left shadow up dry // below DEMO'd str



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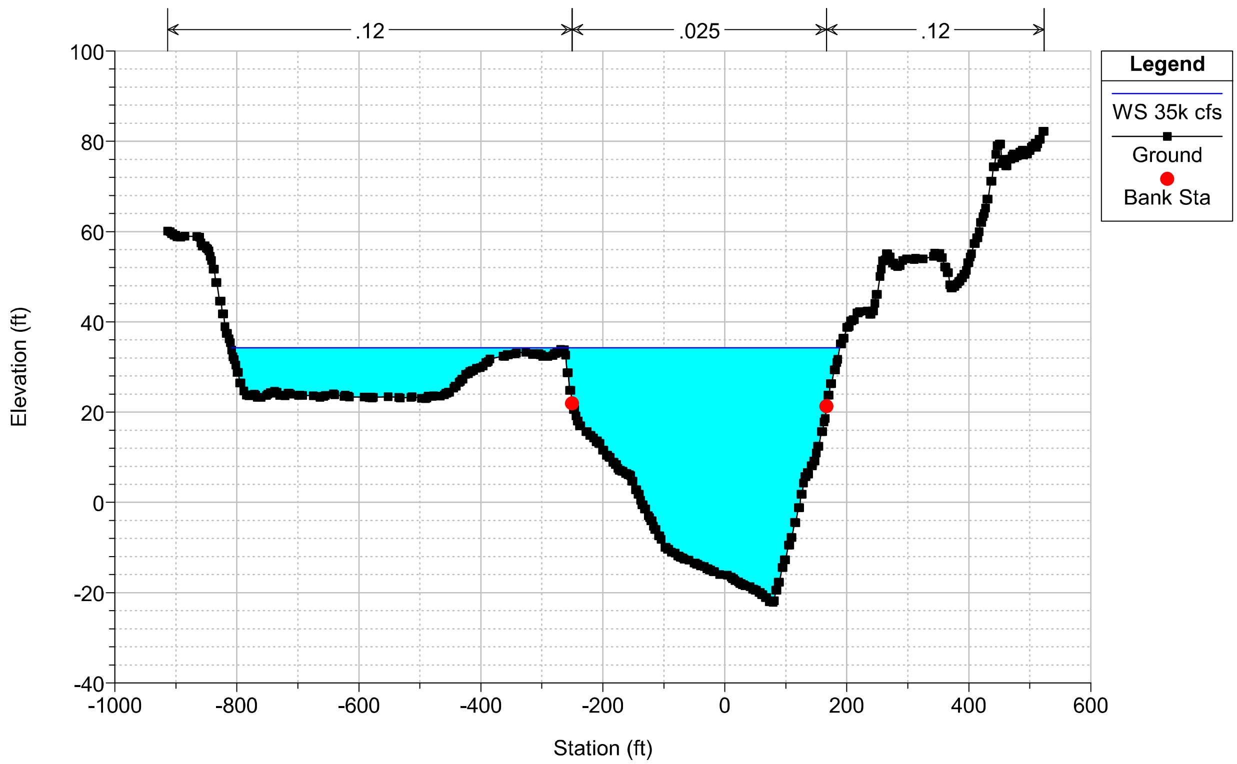
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

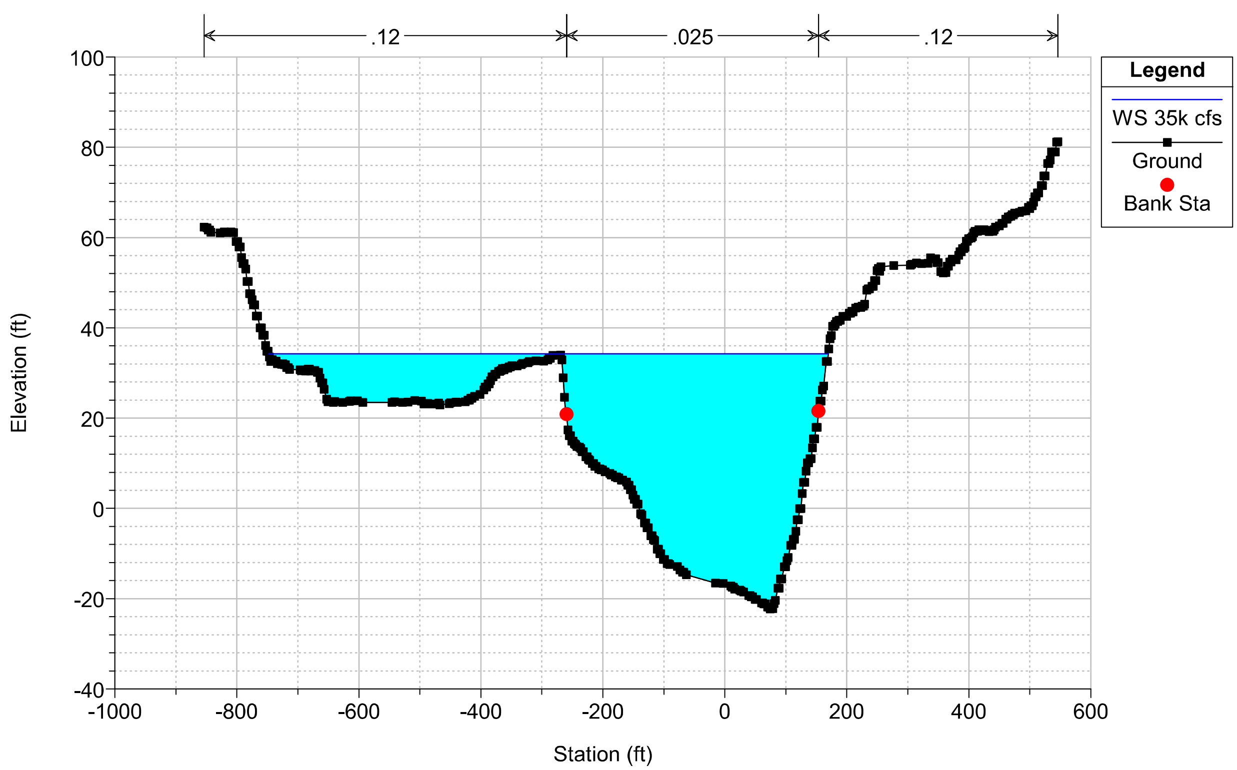
River = Camas_Slough Reach = Camas_Slough RS = 7281 above DEMO'd str



GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 7220 DEMO left=LA-14 dolphin



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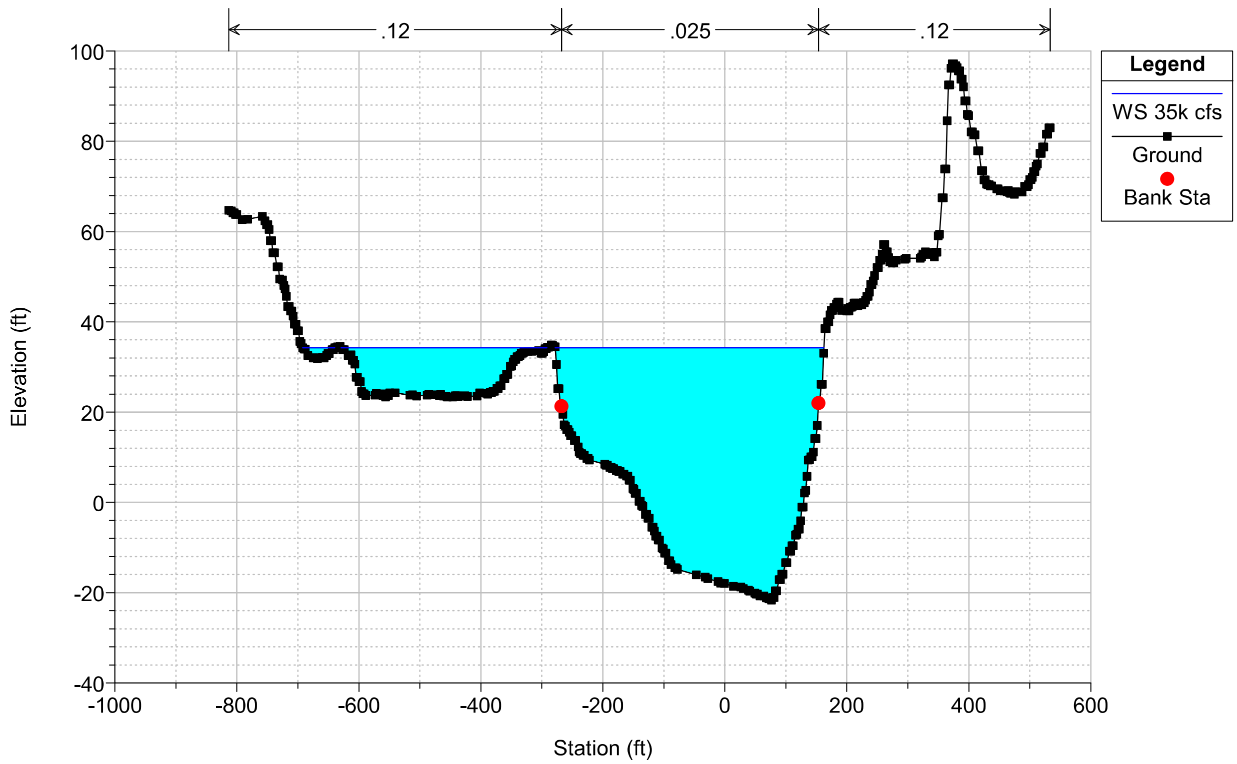
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

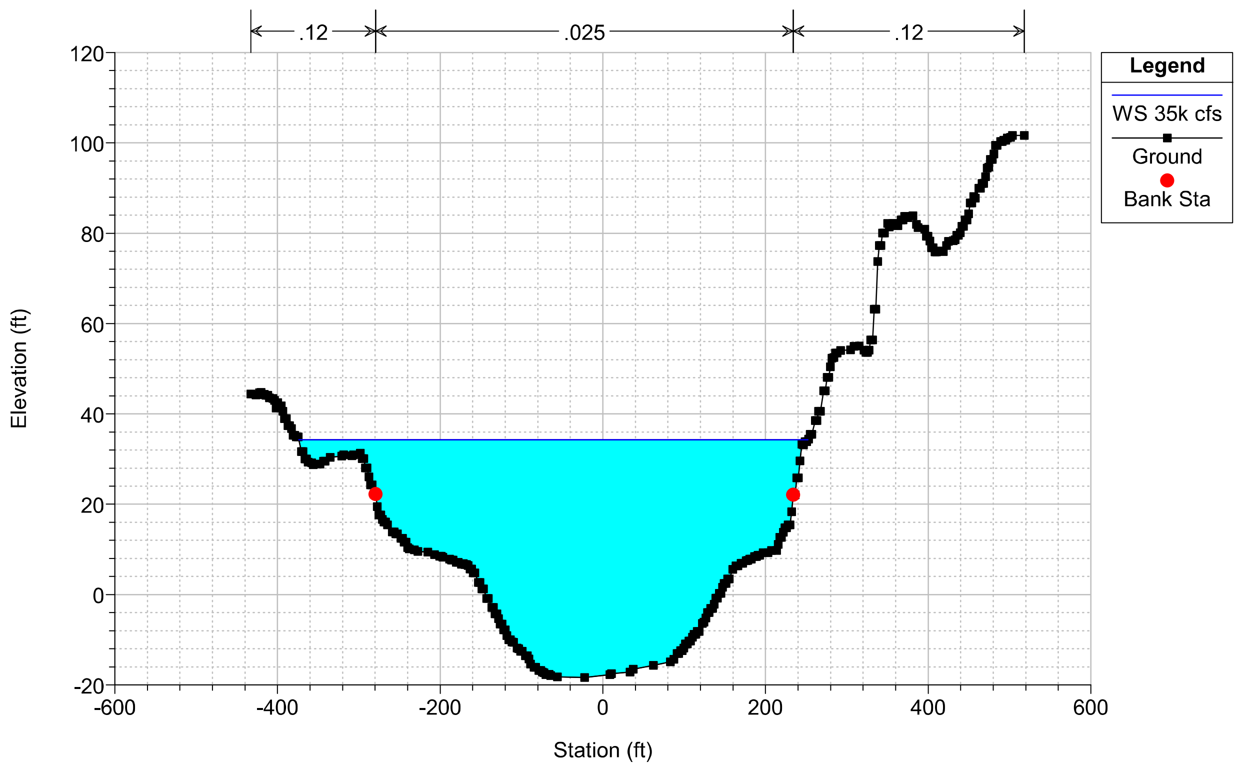
River = Camas_Slough Reach = Camas_Slough RS = 7151 below DEMO'd str

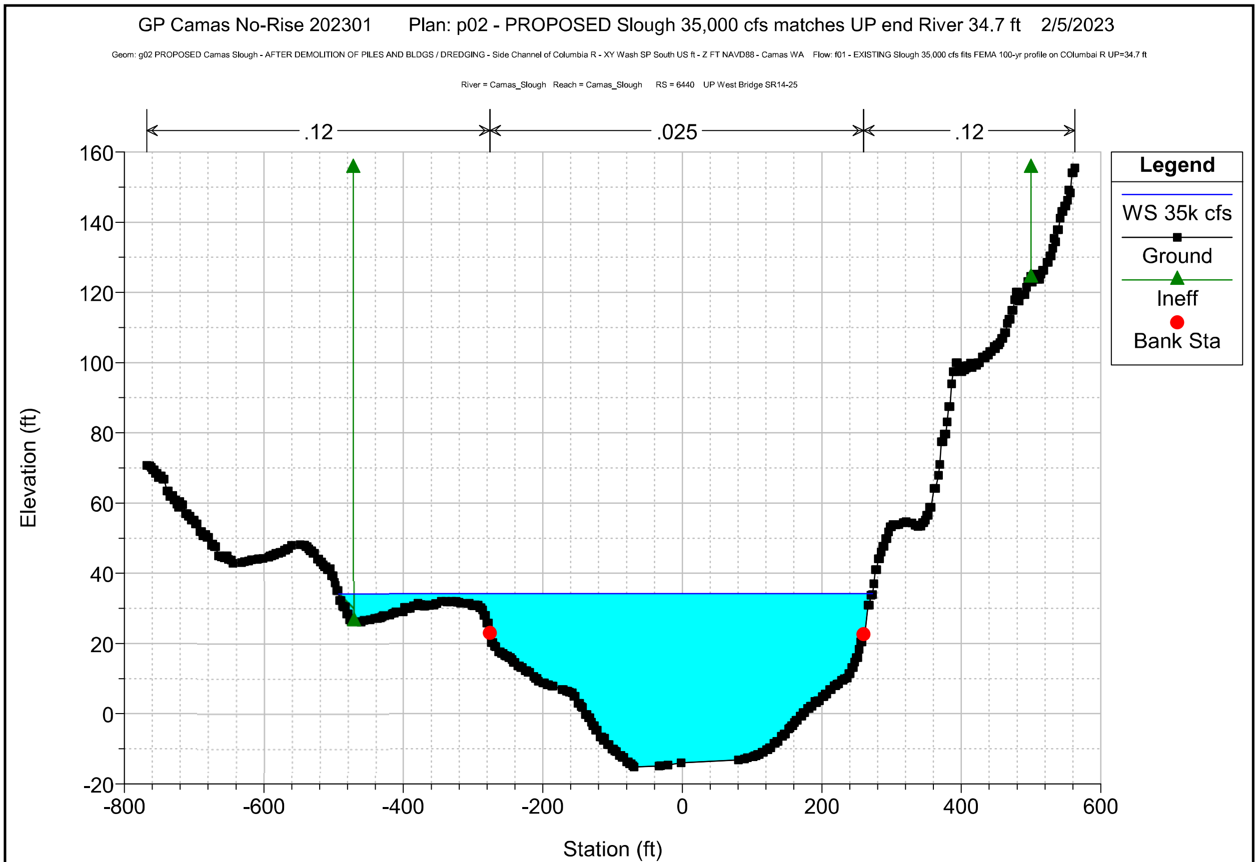


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023

Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft

River = Camas_Slough Reach = Camas_Slough RS = 6864 Above West Bridge SR14-25

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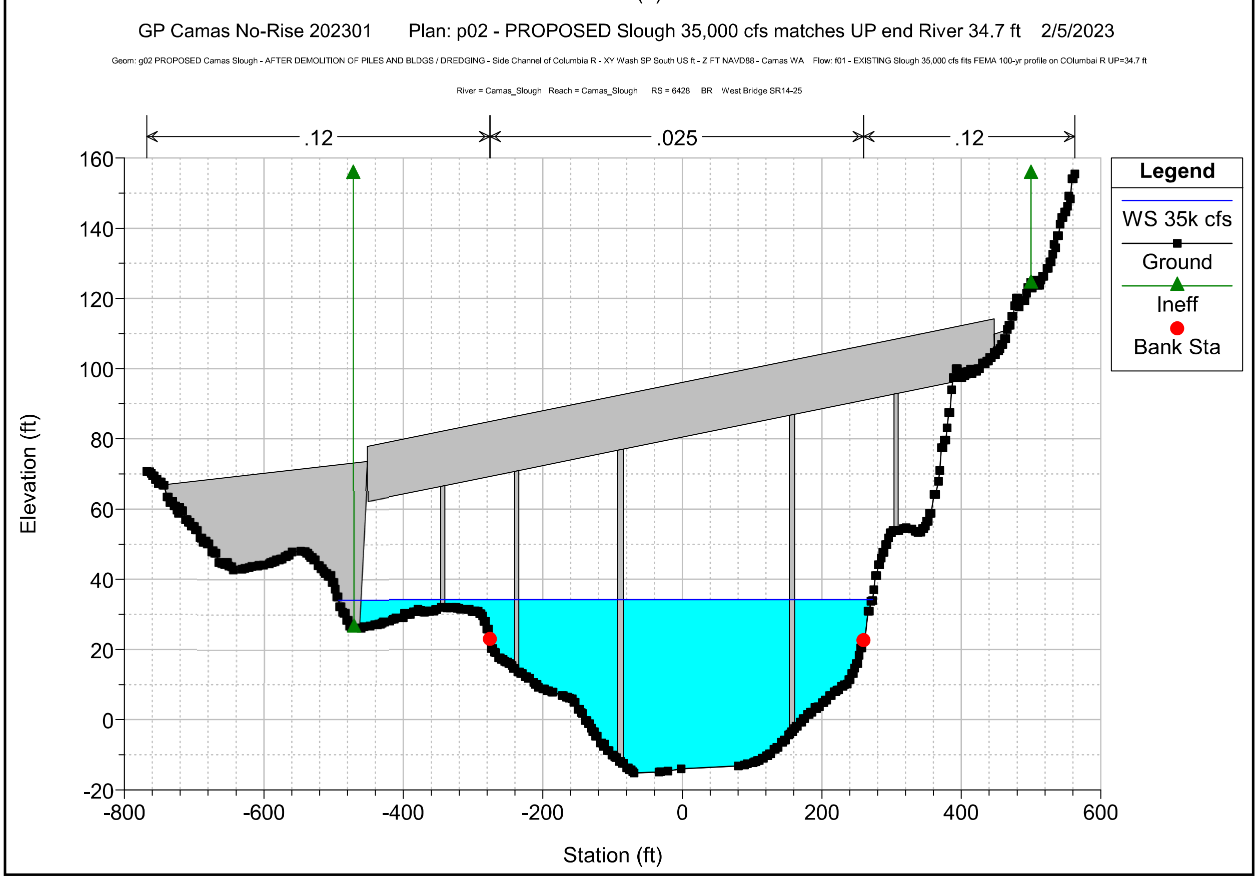
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6440 UP West Bridge SR14-25
.12
.025
.12
Elevation (ft)
160
140
120
100
80
60
40
20
0
-20
-800
-600
-400
-200
0
200
400
600
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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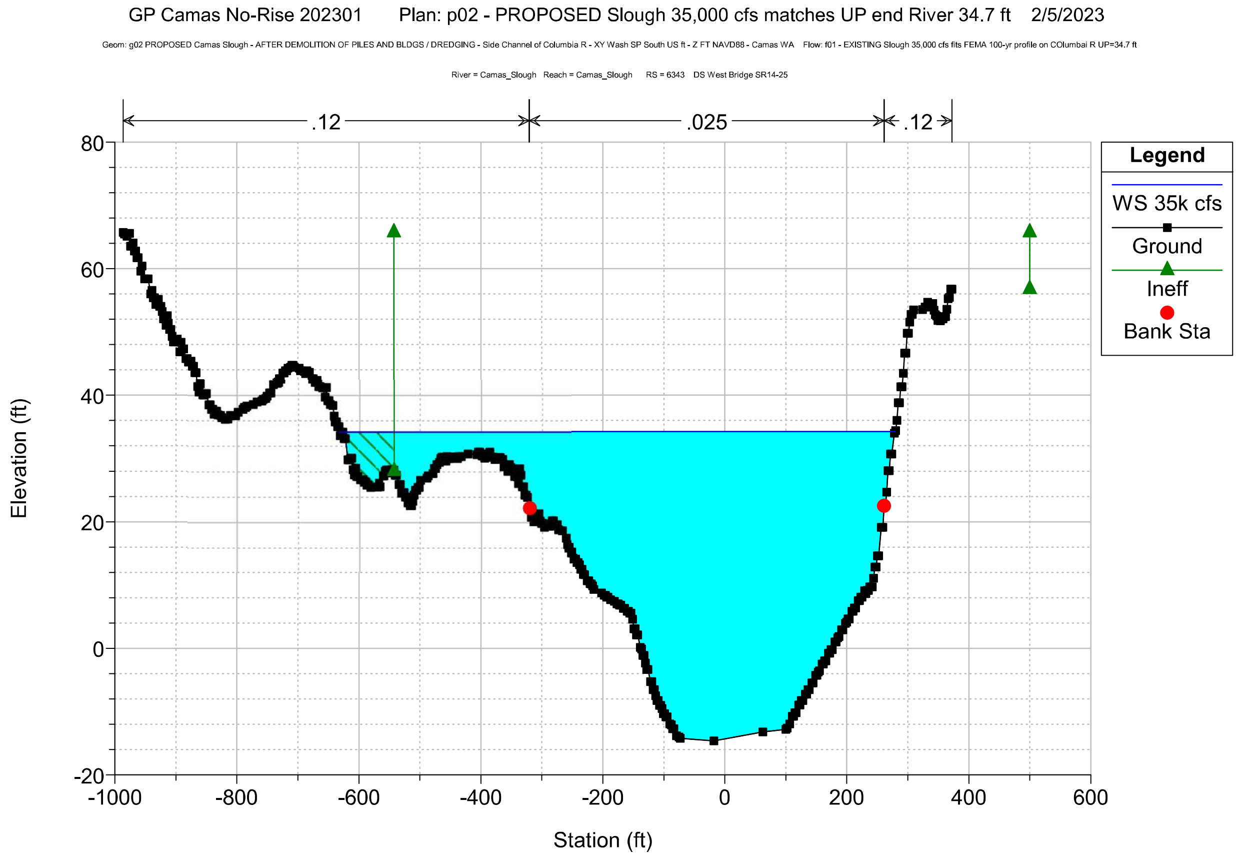
River = Camas_Slough Reach = Camas_Slough RS = 6428 BR West Bridge SR14-25
.12
.025
.12
Elevation (ft)
160
140
120
100
80
60
40
20
0
-20
-800
-600
-400
-200
0
200
400
600
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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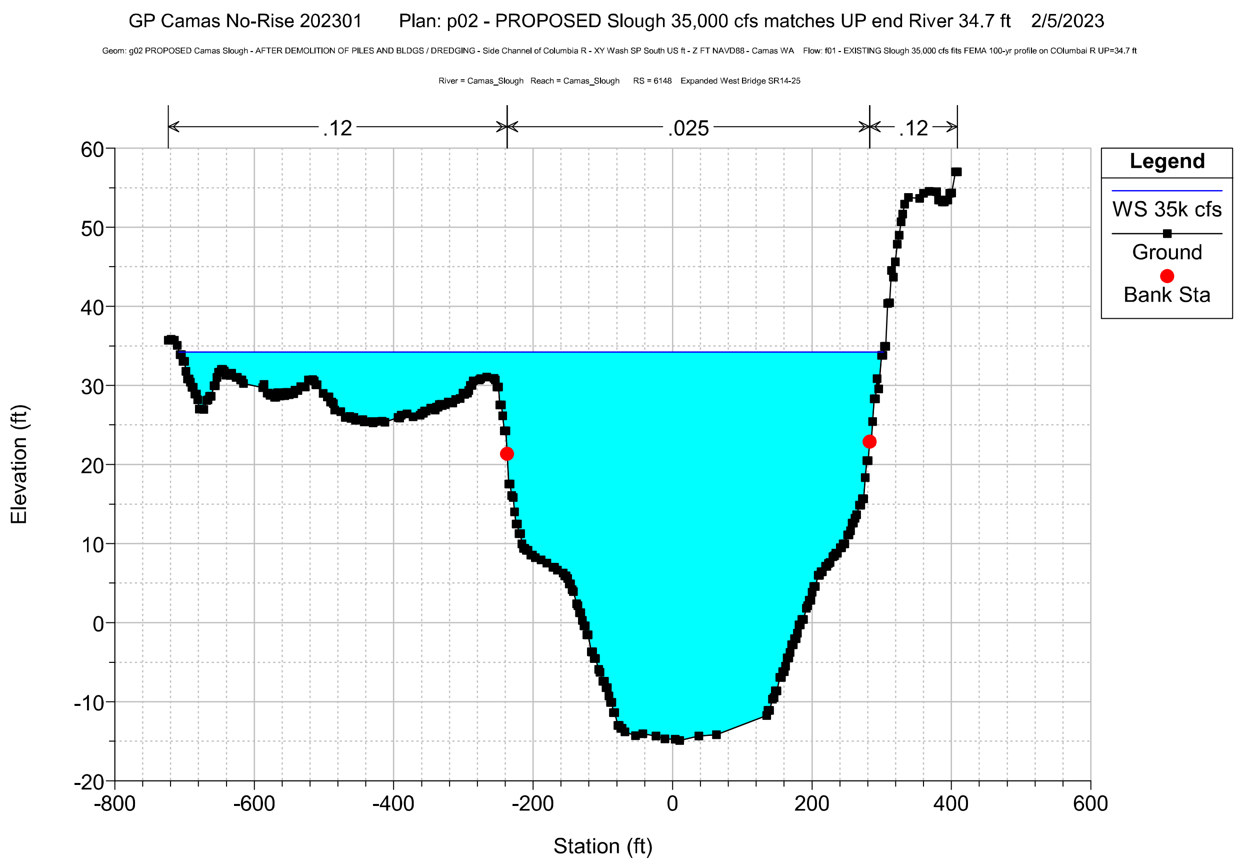
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6343 DS West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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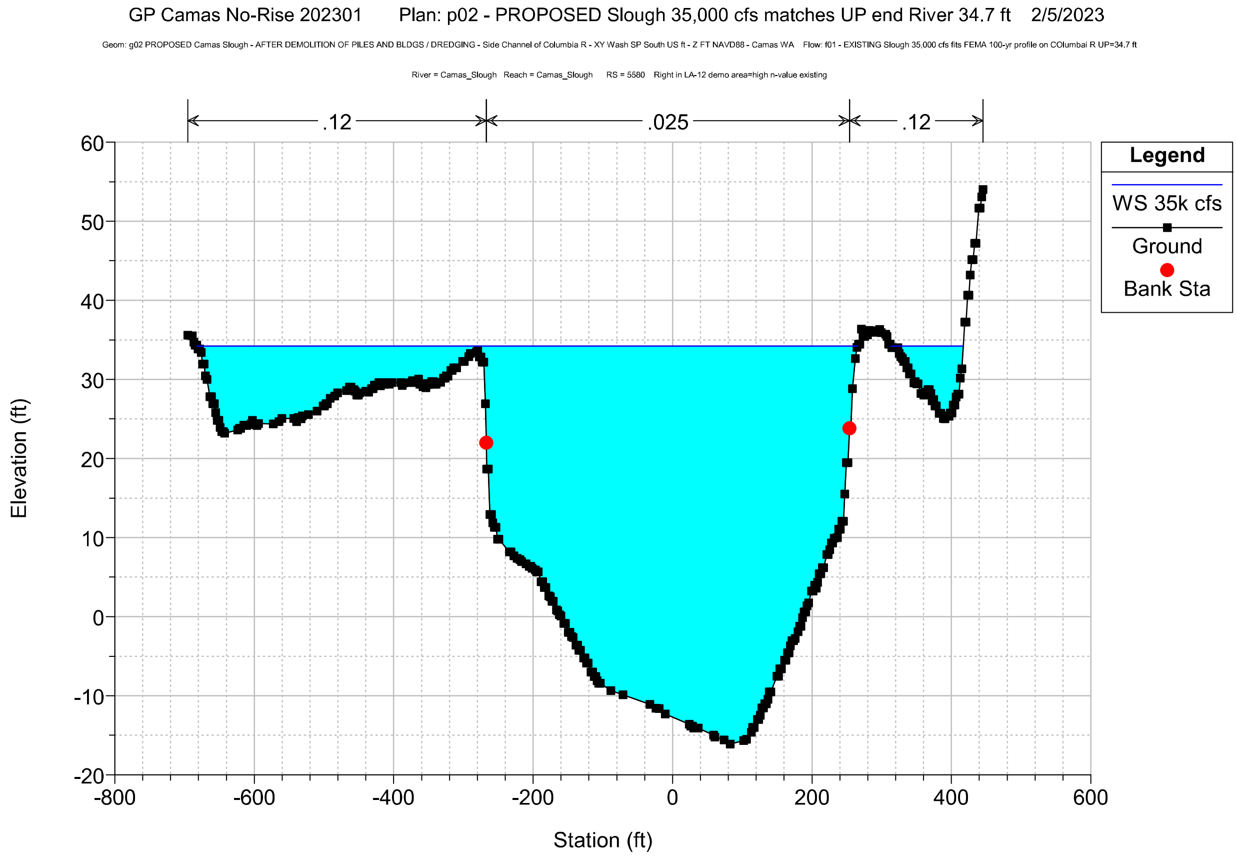
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 6148 Expanded West Bridge SR14-25
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta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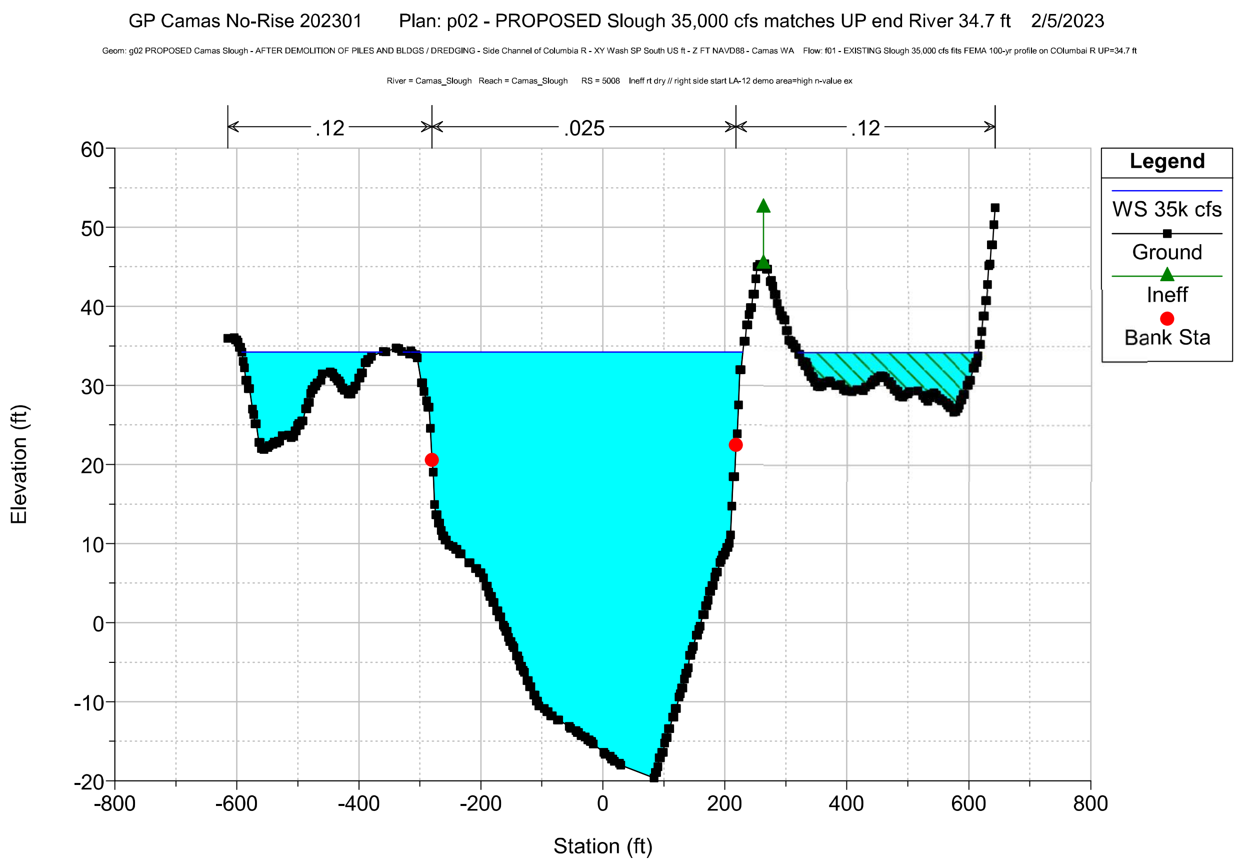
River = Camas_Slough Reach = Camas_Slough RS = 5580 Right in LA-12 demo area=high n-value existing
.12
.025
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600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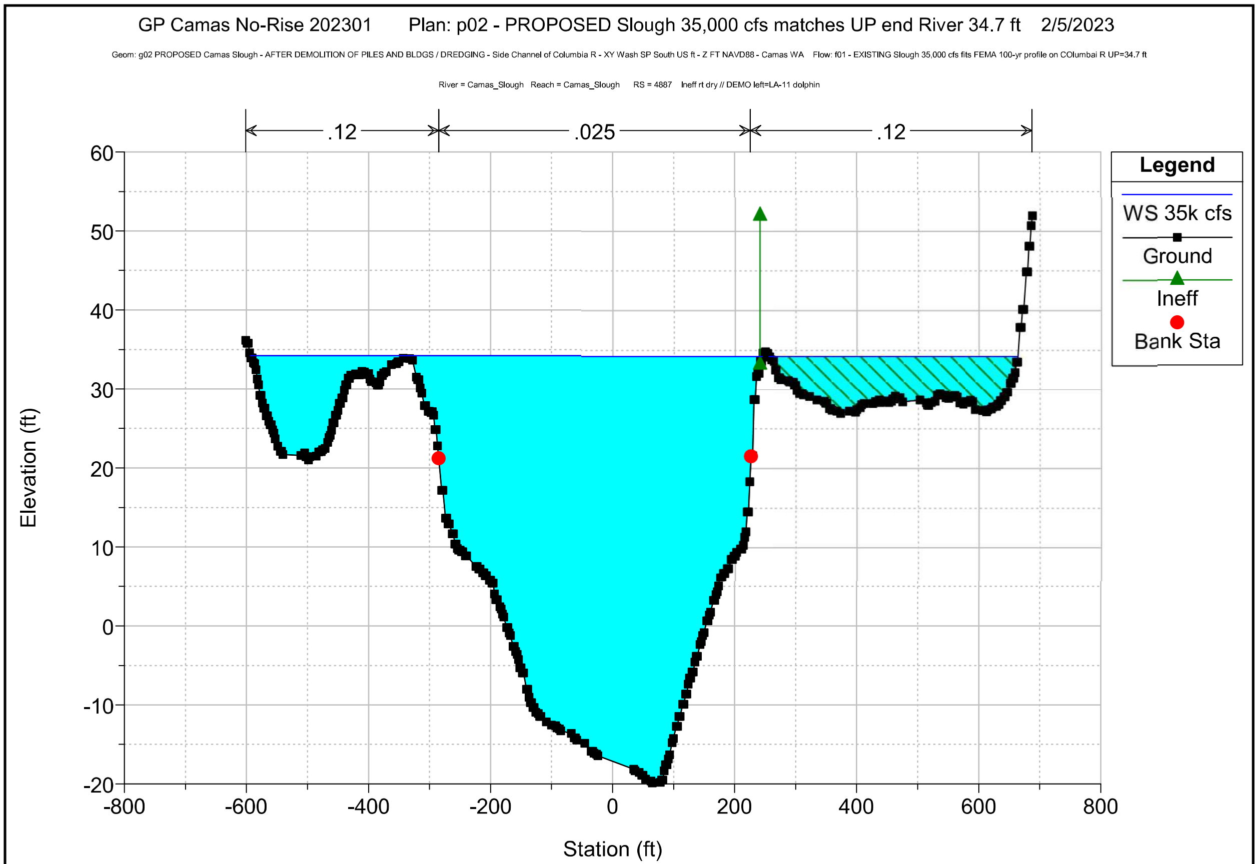
River = Camas_Slough Reach = Camas_Slough RS = 5008 Ineff rt dry // right side start LA-12 demo area=high n-value ex
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600
800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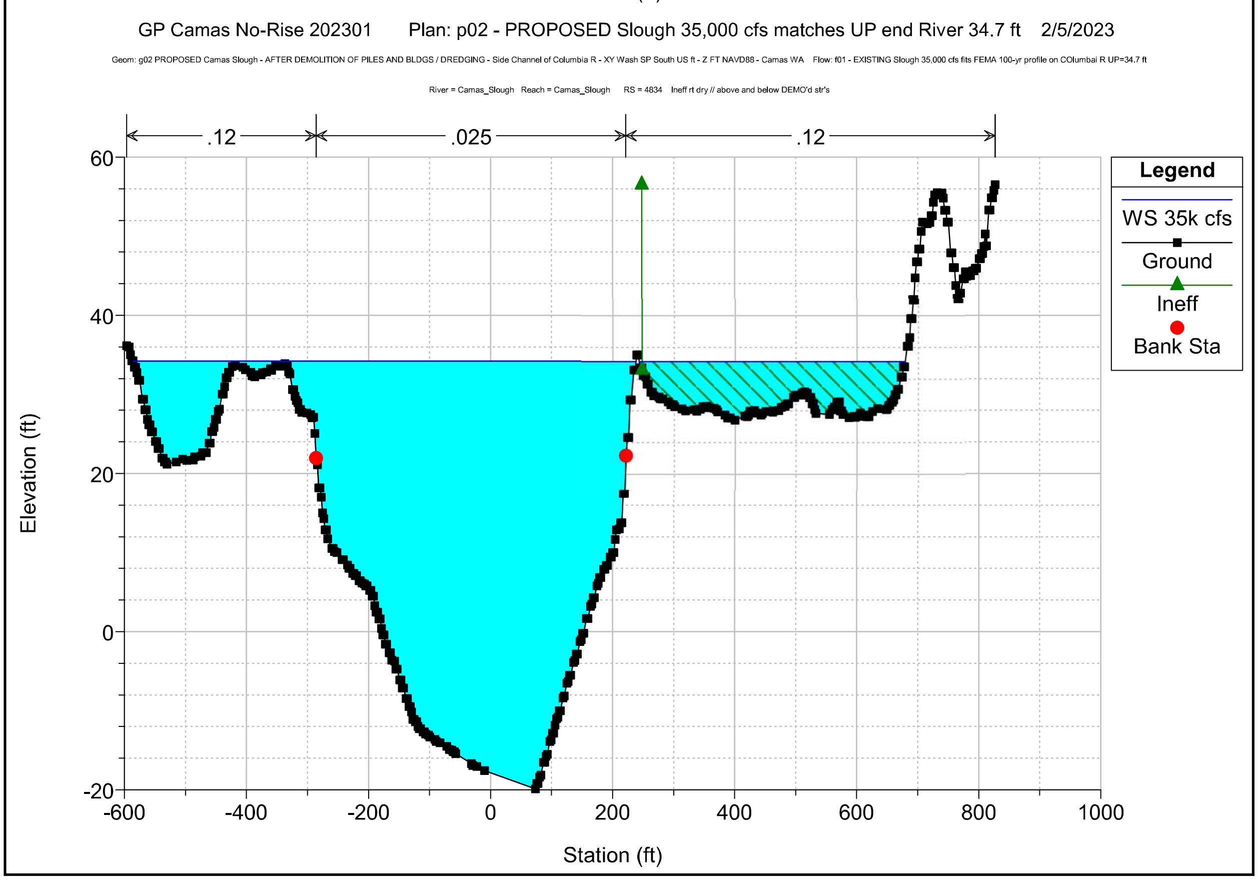
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4887 Ineff rt dry // DEMO left=LA-11 dolphin
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-800
-600
-400
-200
0
200
400
600
800
Station (ft)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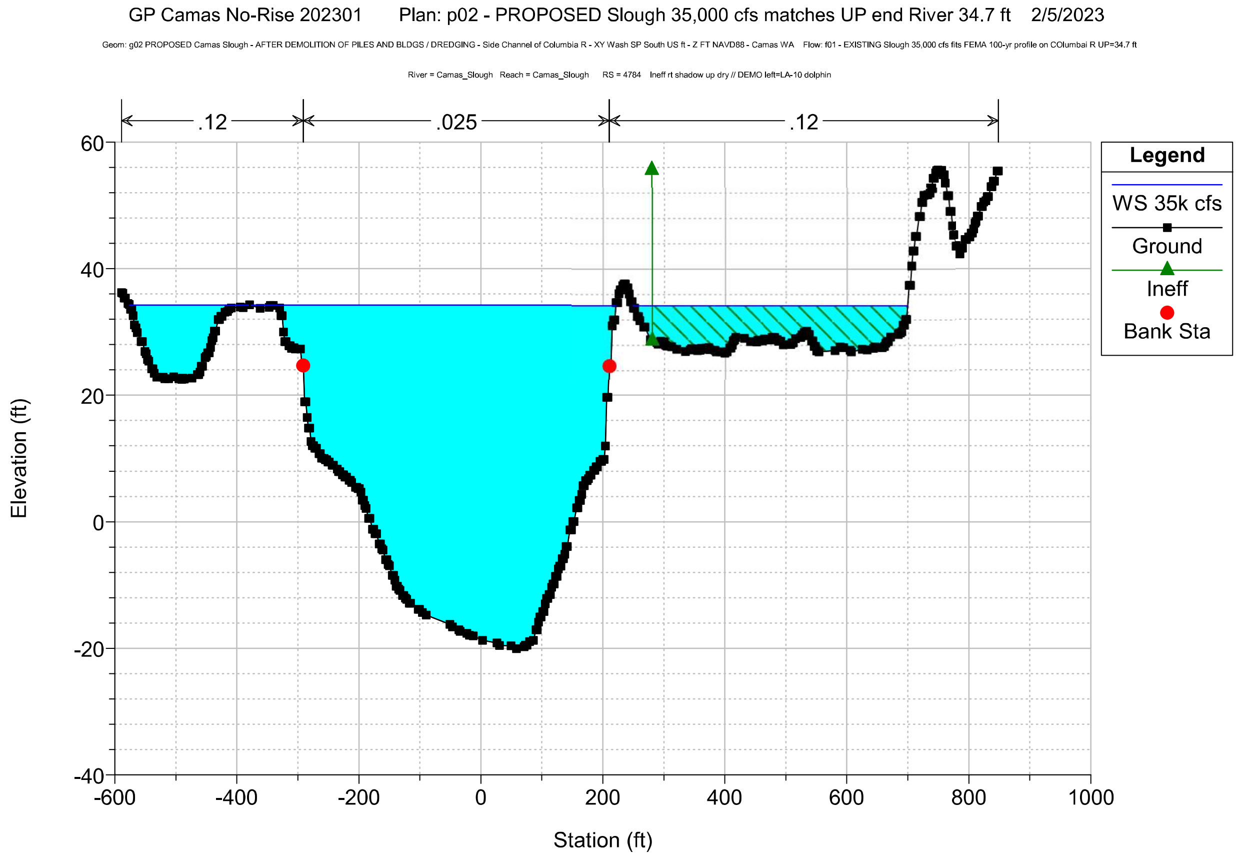
River = Camas_Slough Reach = Camas_Slough RS = 4834 Ineff rt dry // above and below DEMO'd str's
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
40
20
0
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)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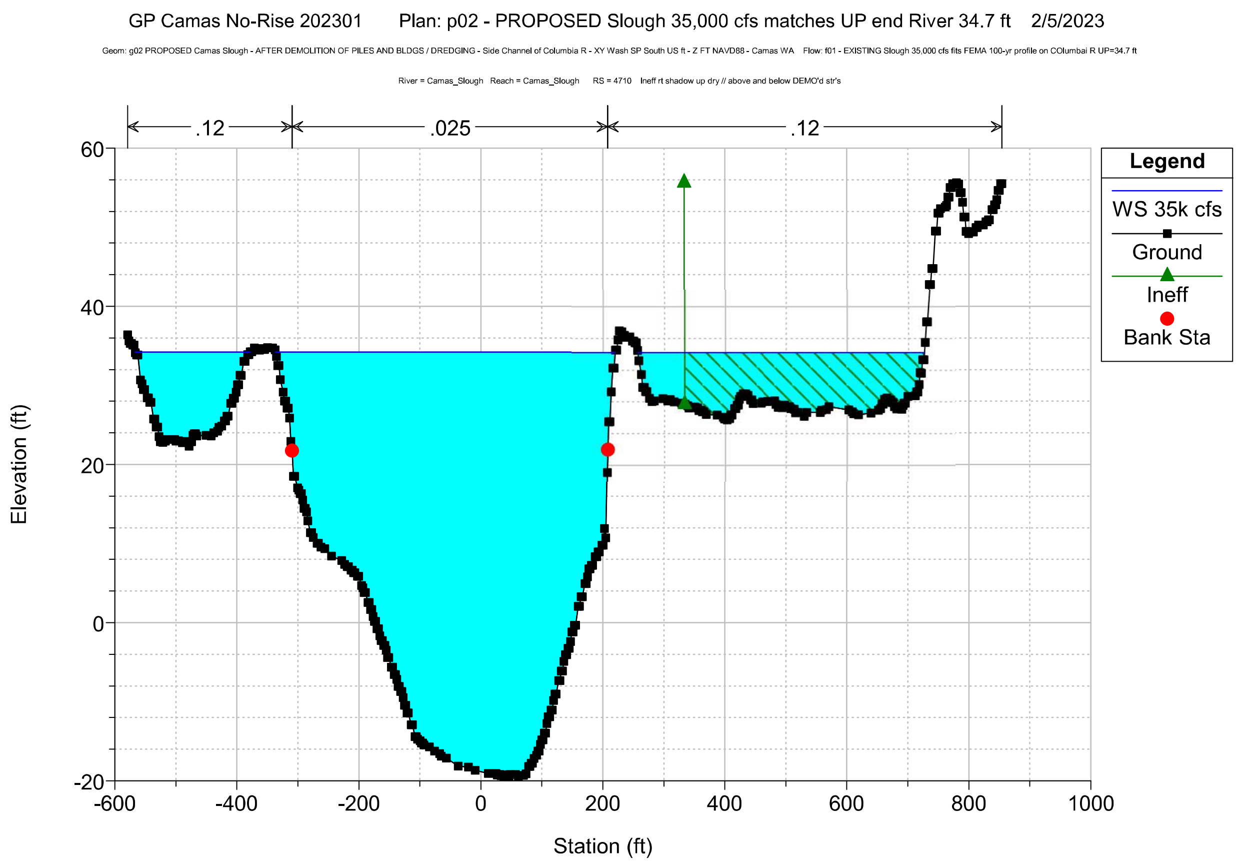
River = Camas_Slough Reach = Camas_Slough RS = 4784 Ineff rt shadow up dry // DEMO left=LA-10 dolphin
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800
1000
Station (ft)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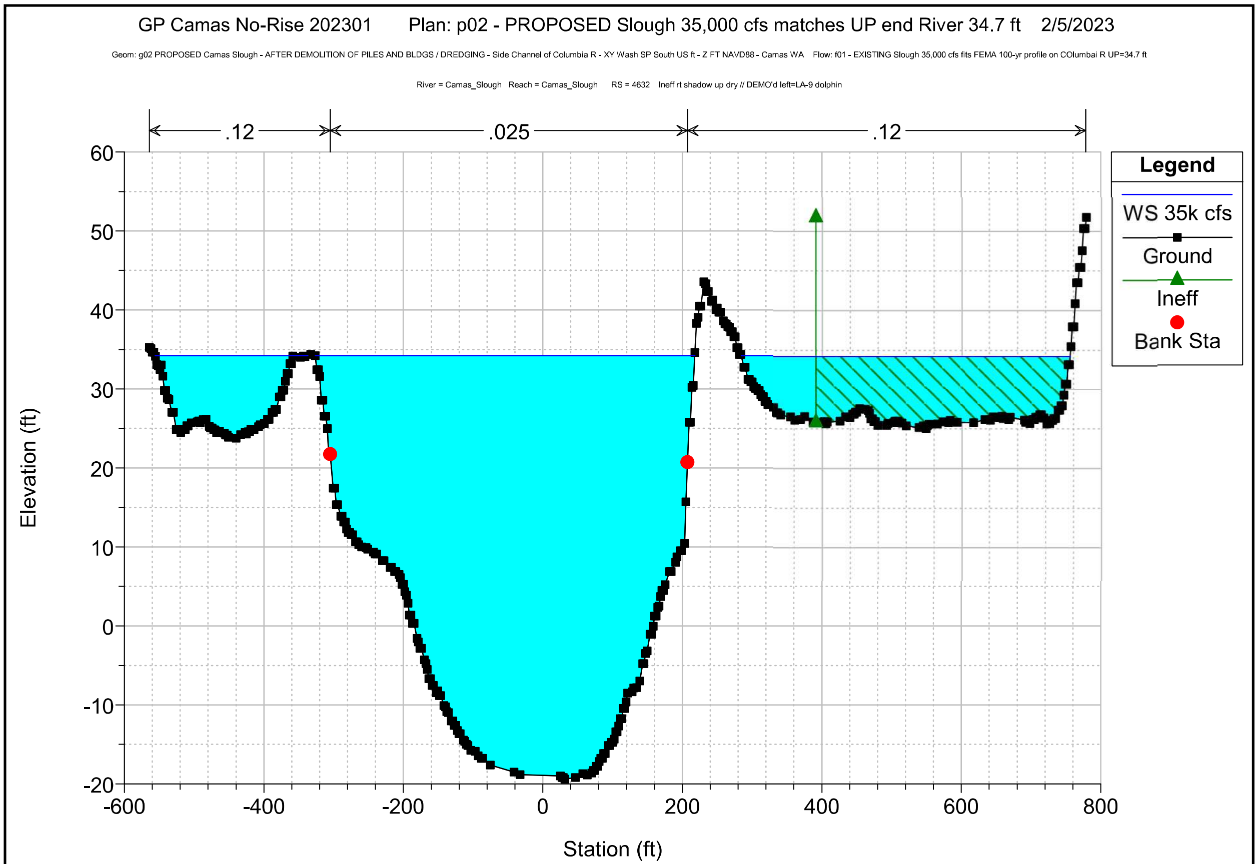
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4710 Ineff rt shadow up dry // above and below DEMO'd str's
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
40
20
0
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)



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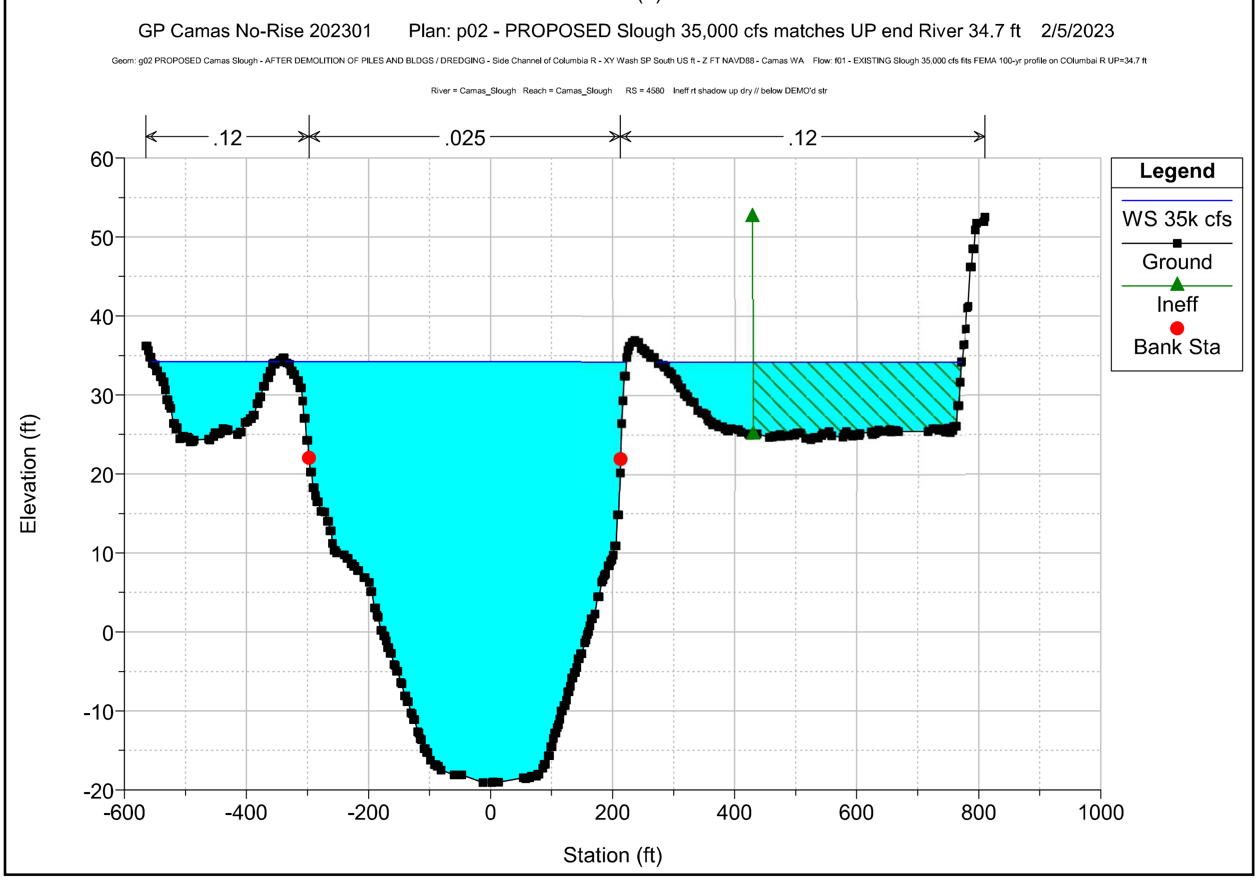
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4632 Ineff rt shadow up dry // DEMO'd left=LA-9 dolphin
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
Station (ft)



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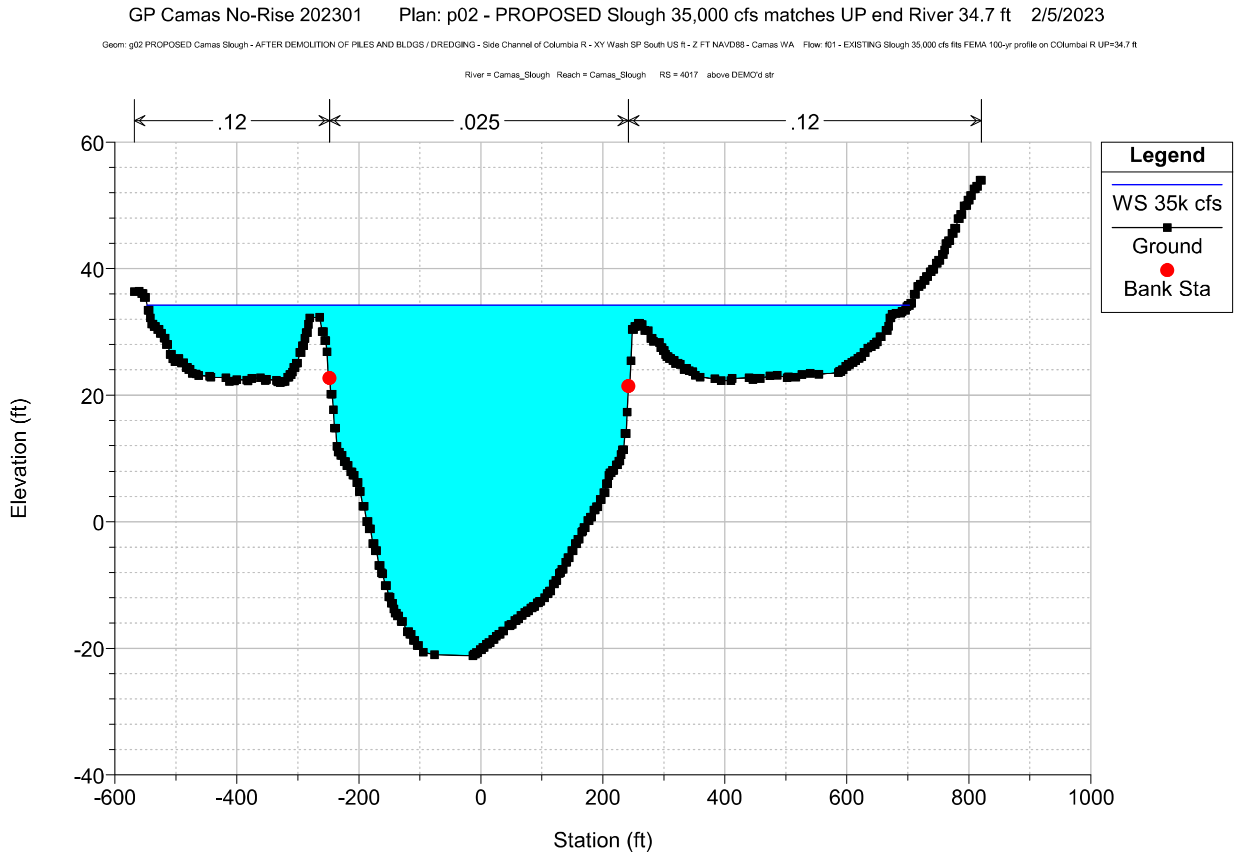
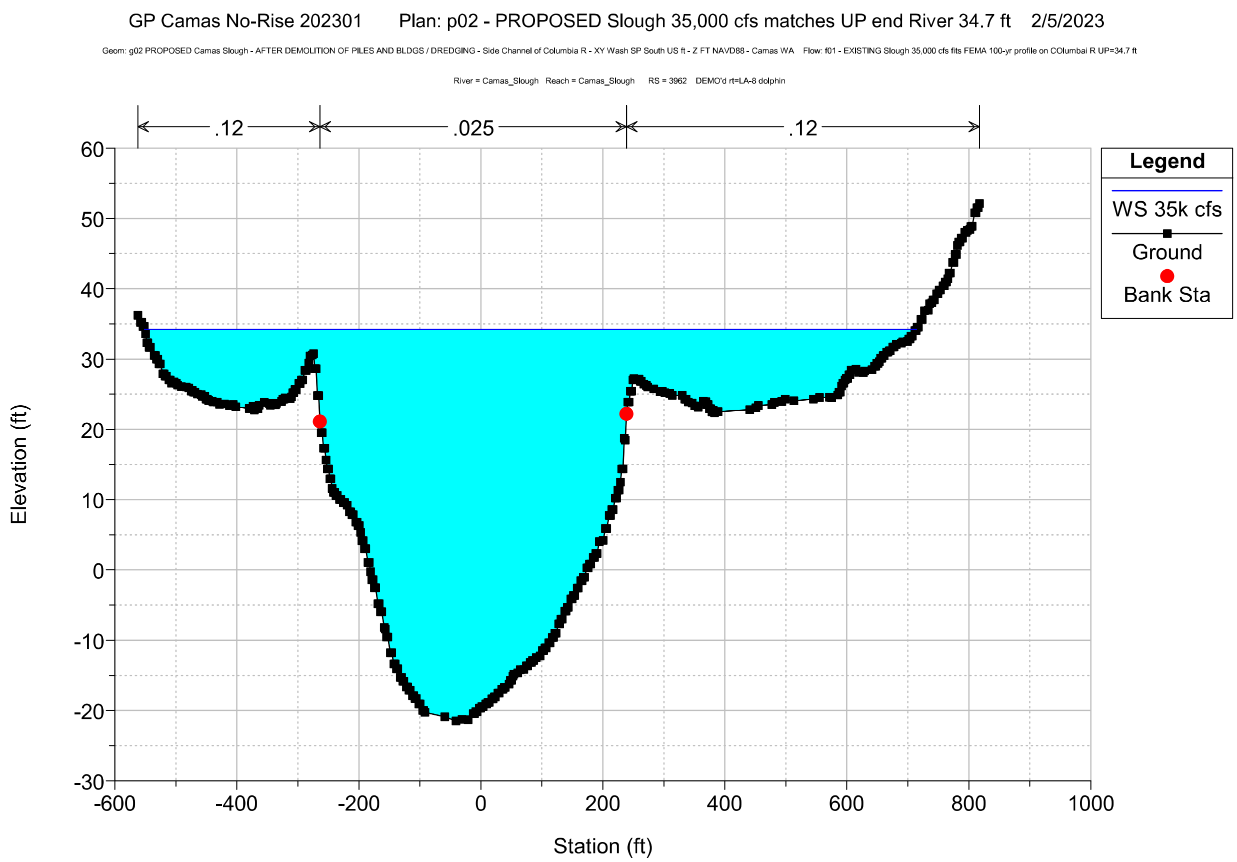
River = Camas_Slough Reach = Camas_Slough RS = 4580 Ineff rt shadow up dry // below DEMO'd str
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 4017 above DEMO'd str
.12
.025
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800
1000
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
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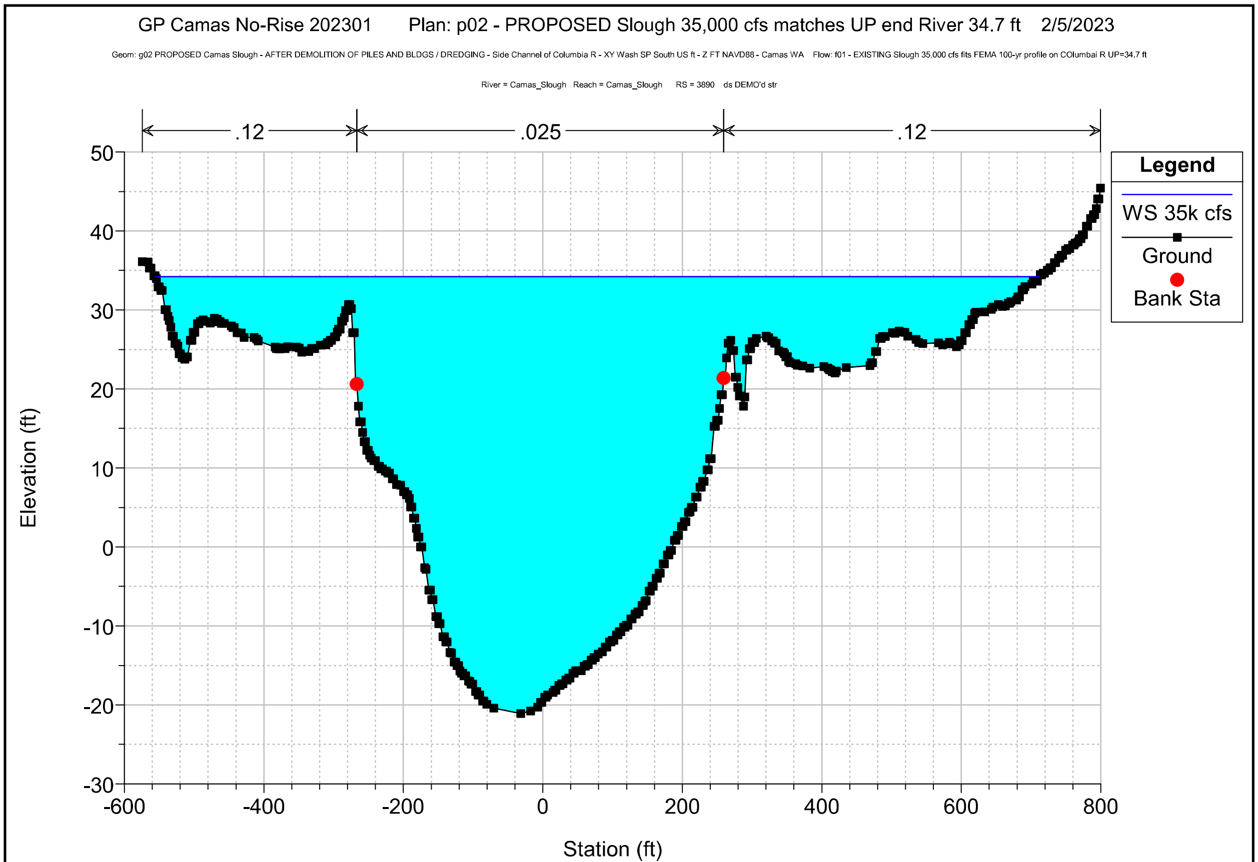
River = Camas_Slough Reach = Camas_Slough RS = 3962 DEMO'd rt=LA-8 dolphin
.12
.025
.12
Legend
WS 35k cfs
Ground
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-30
-600
-400
-200
0
200
400
600
800
1000
Station (ft)


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
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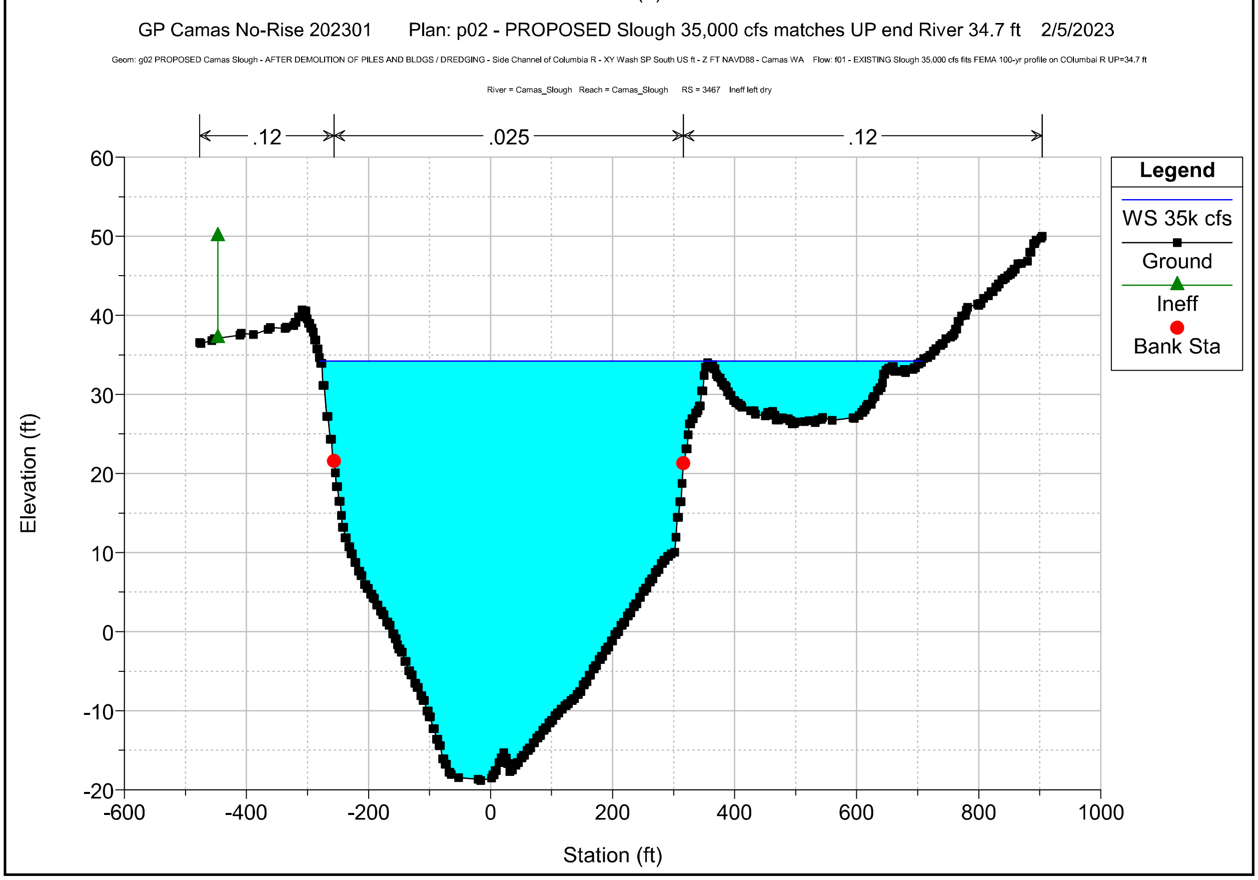
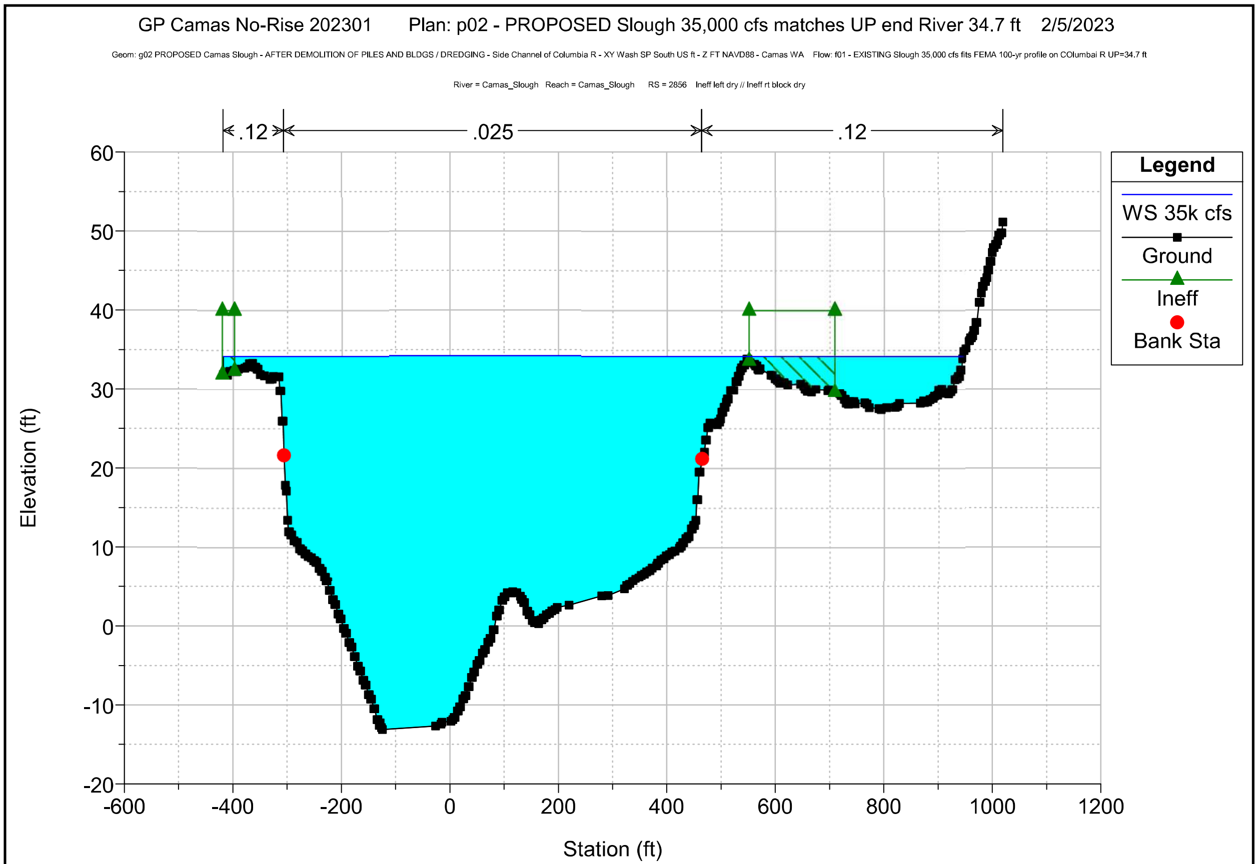
River = Camas_Slough Reach = Camas_Slough RS = 3890 ds DEMO'd str
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Bank Sta


GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 3467 Ineff left dry
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta



GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
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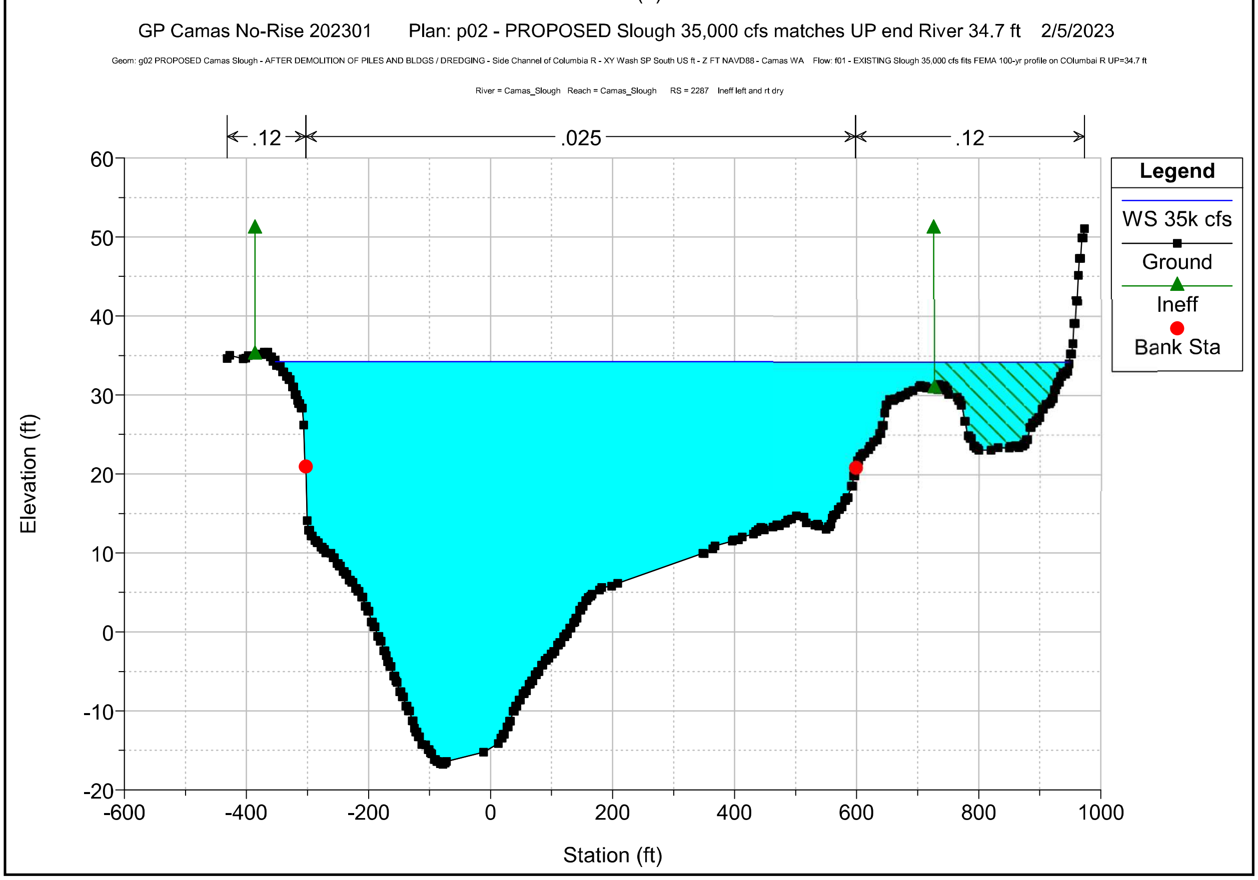
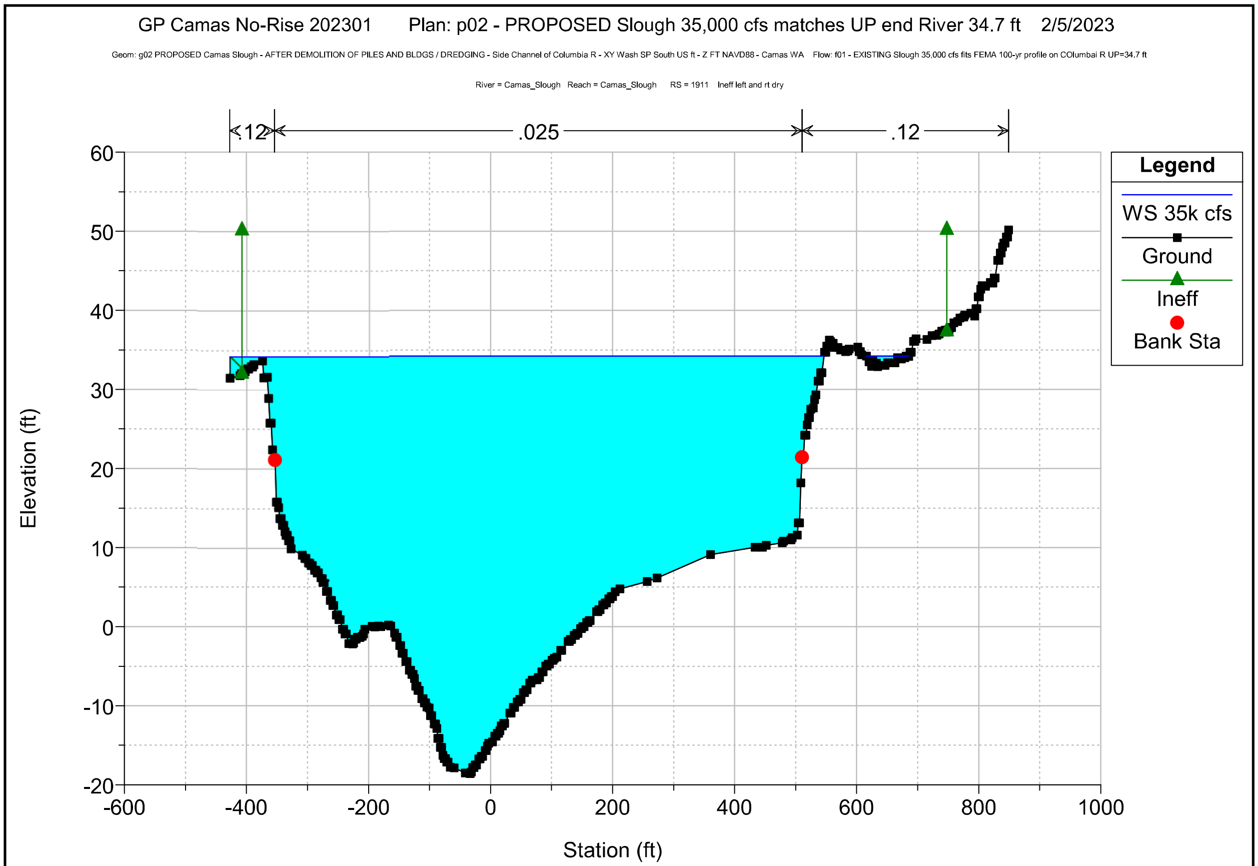
River = Camas_Slough Reach = Camas_Slough RS = 2856 Ineff left dry // Ineff rt block dry
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
1000
1200
Station (ft)



GP Camas No-Rise 202301 Plan: p02 - PROPOSED Slough 35,000 cfs matches UP end River 34.7 ft 2/5/2023
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 2287 Ineff left and rt dry
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)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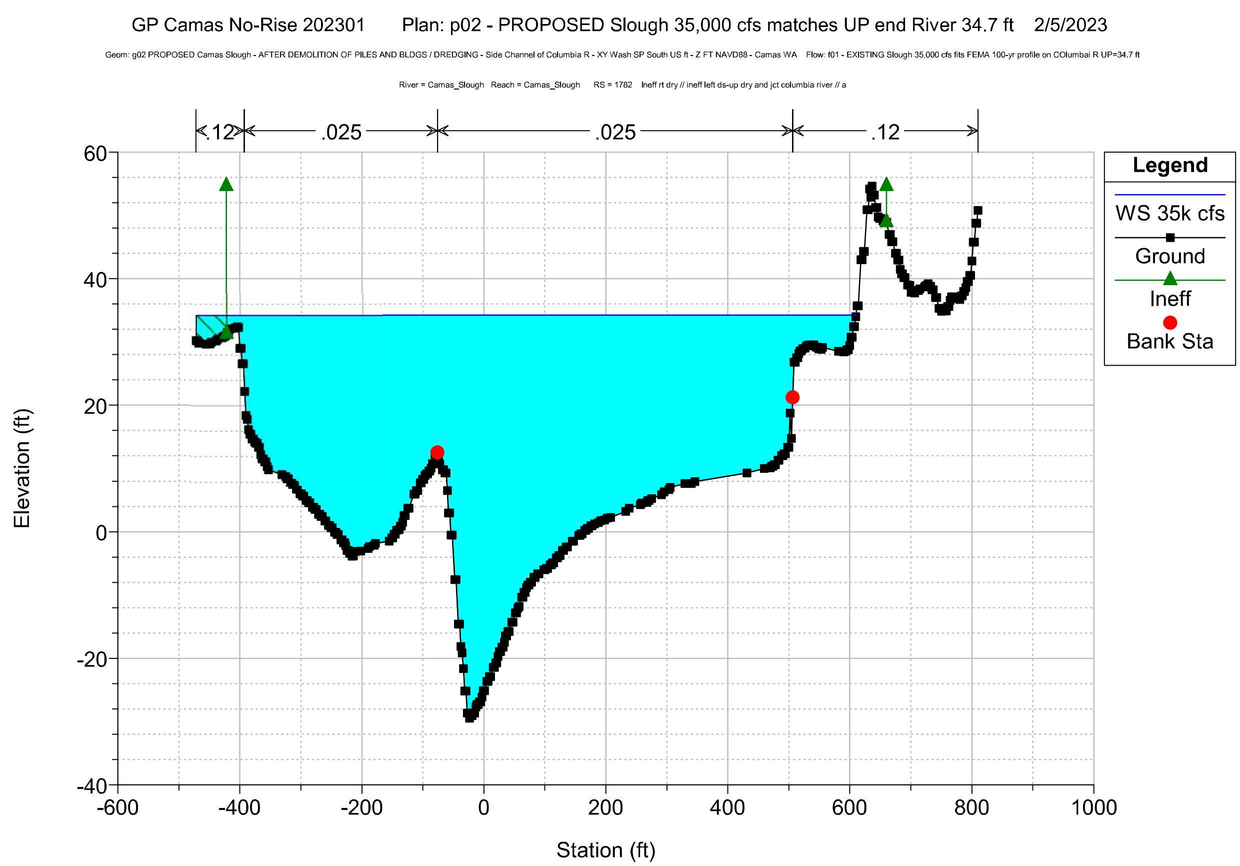
River = Camas_Slough Reach = Camas_Slough RS = 1911 Ineff left and rt dry
.12
.025
.12
Elevation (ft)
60
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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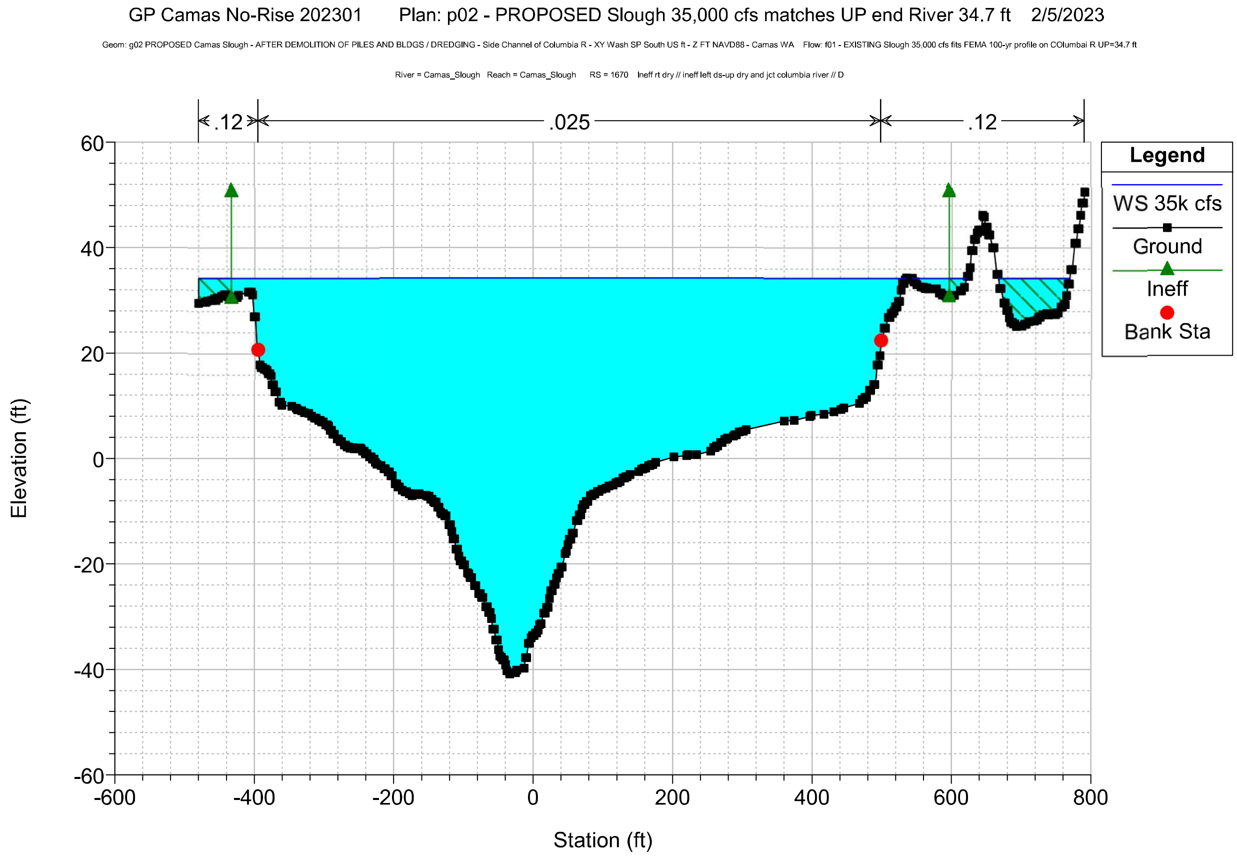
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1782 Ineff rt dry // ineff left ds-up dry and jct columbia river // a
.12
.025
.025
.12
Elevation (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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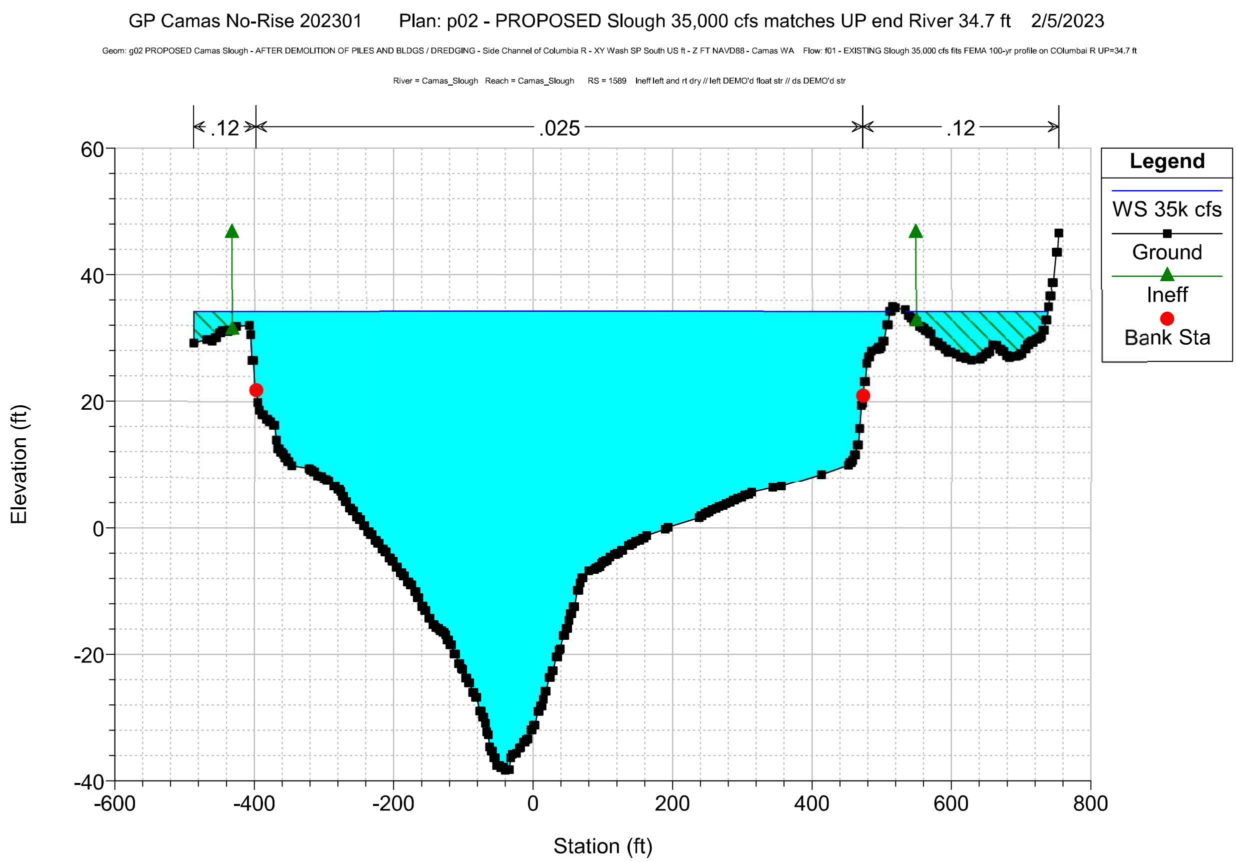
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1670 Ineff rt dry // ineff left ds-up dry and jct columbia river // D
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
40
20
0
-20
-40
-60
-600
-400
-200
0
200
400
600
800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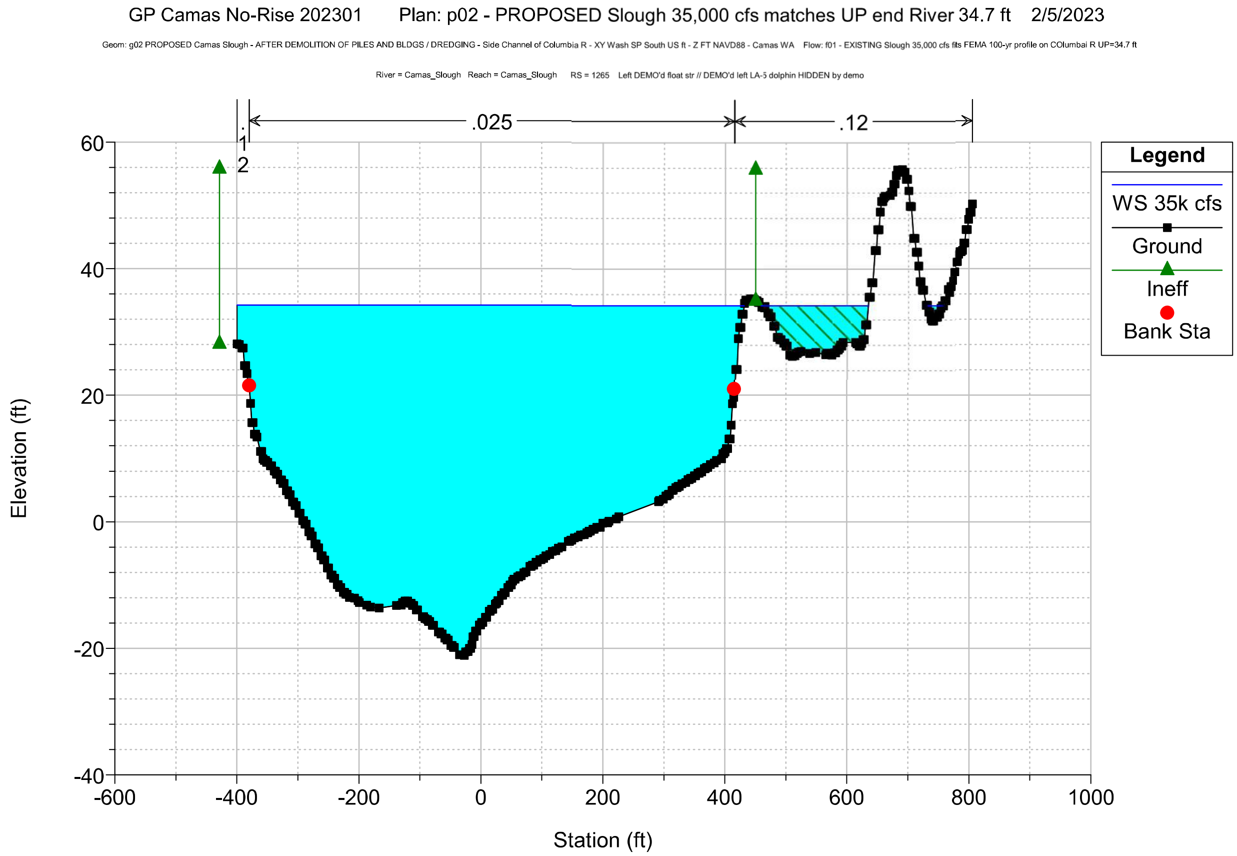
Geom: g02 PROPOSED Camas Slough - AFTER DEMOLITION OF PILES AND BLDGS / DREDGING - Side Channel of Columbia R - XY Wash SP South US ft - Z FT NAVD88 - Camas WA Flow: f01 - EXISTING Slough 35,000 cfs fits FEMA 100-yr profile on COlumbai R UP=34.7 ft
River = Camas_Slough Reach = Camas_Slough RS = 1589 Ineff left and rt dry // left DEMO'd float str // ds DEMO'd str
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800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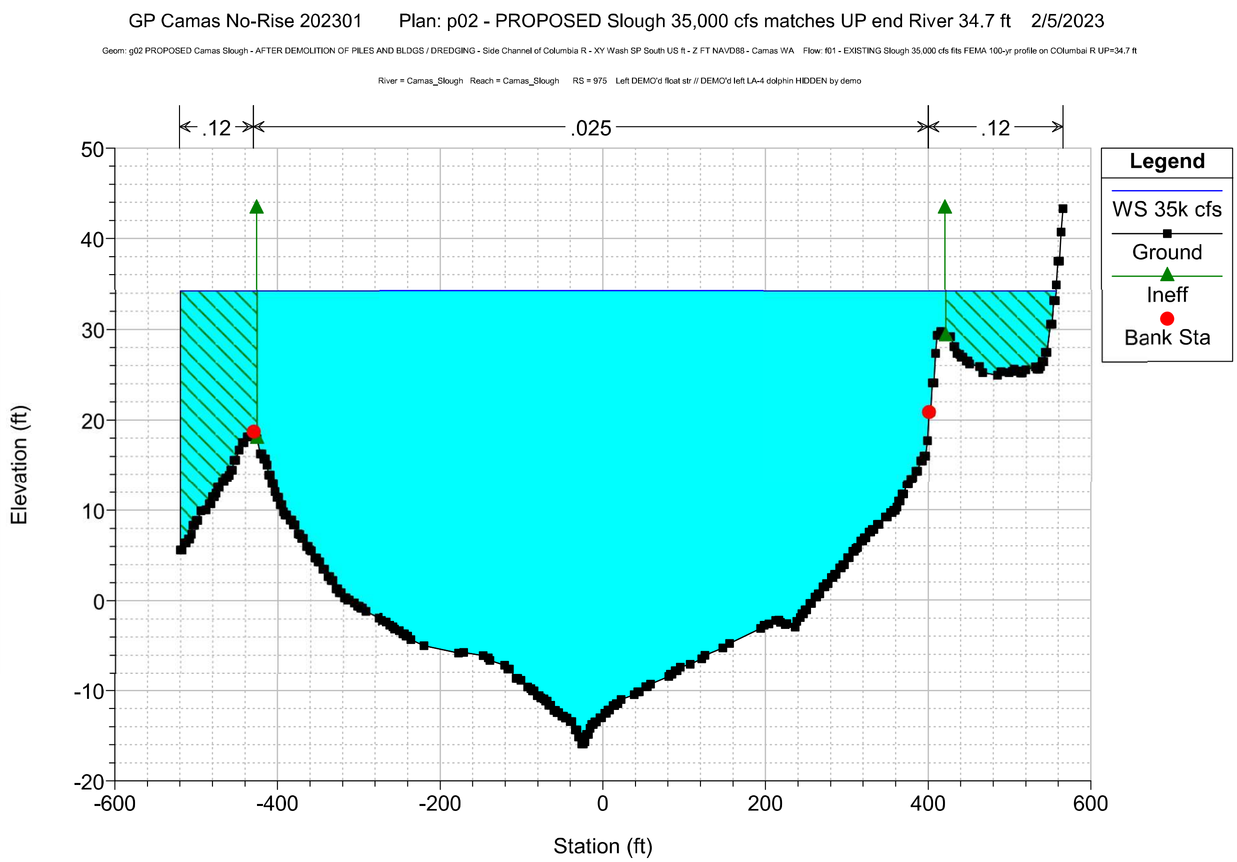
River = Camas_Slough Reach = Camas_Slough RS = 1265 Left DEMO'd float str // DEMO'd left LA-5 dolphin HIDDEN by demo
.
1
2
.025
.12
Elevation (ft)
60
40
20
0
-20
-40
-600
-400
-200
0
200
400
600
800
1000
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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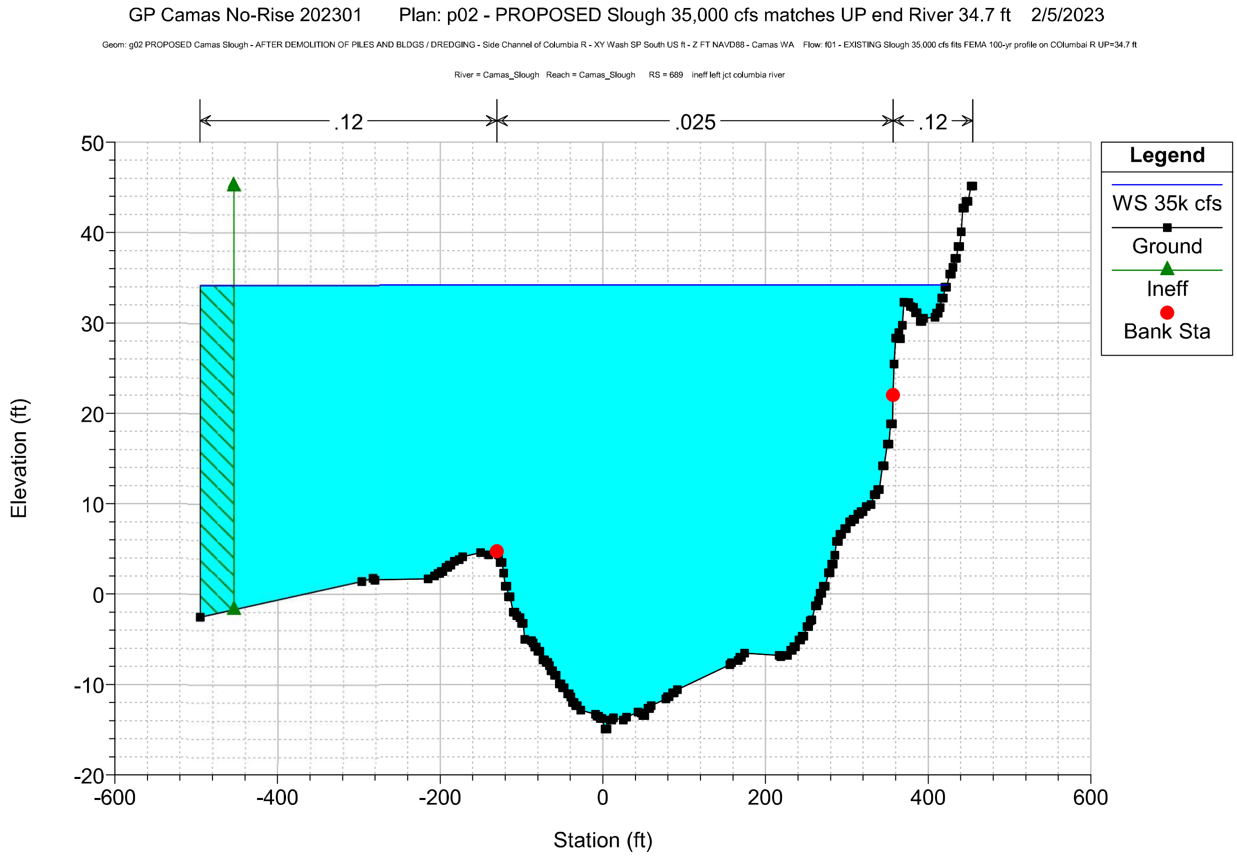
River = Camas_Slough Reach = Camas_Slough RS = 975 Left DEMO'd float str // DEMO'd left LA-4 dolphin HIDDEN by demo
.12
.025
.12
Elevation (ft)
50
40
30
20
10
0
-10
-20
-600
-400
-200
0
200
400
600
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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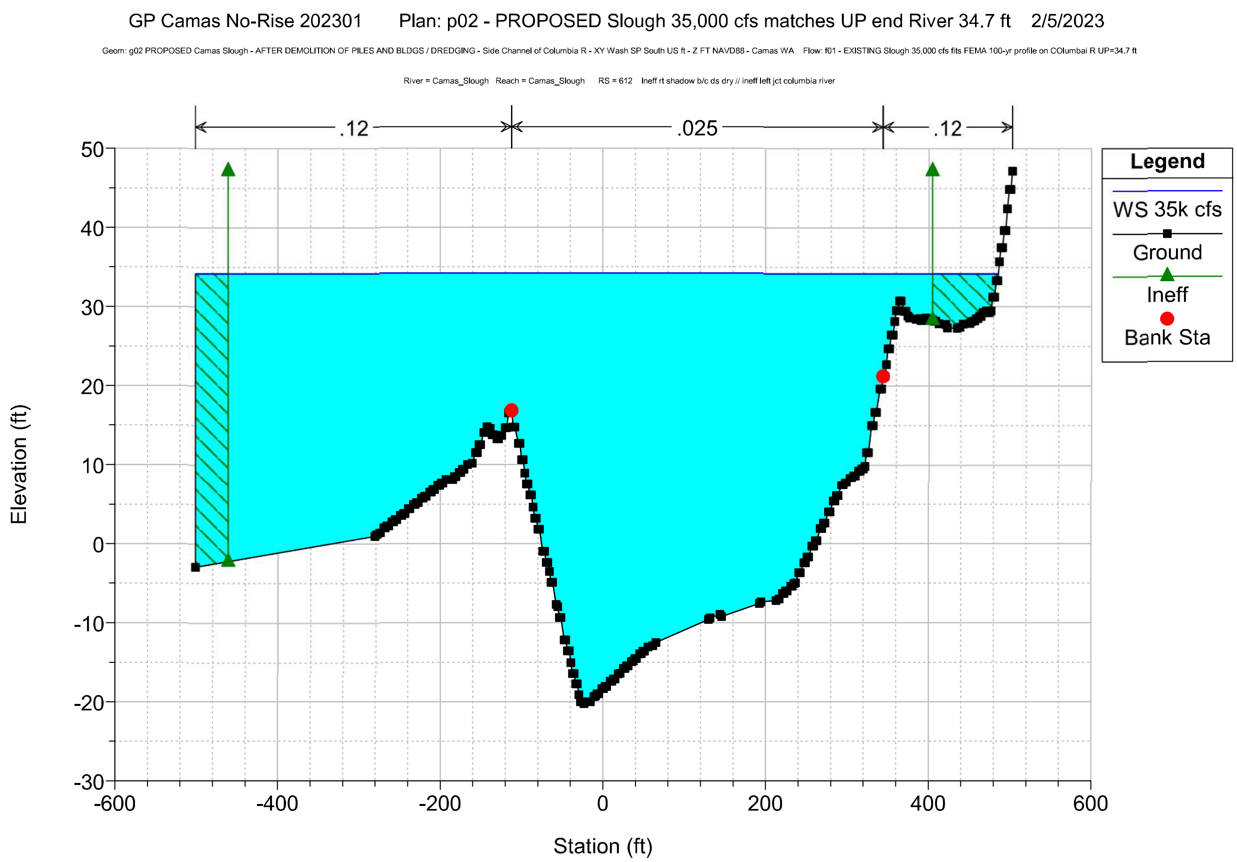
River = Camas_Slough Reach = Camas_Slough RS = 689 ineff left jct columbia river
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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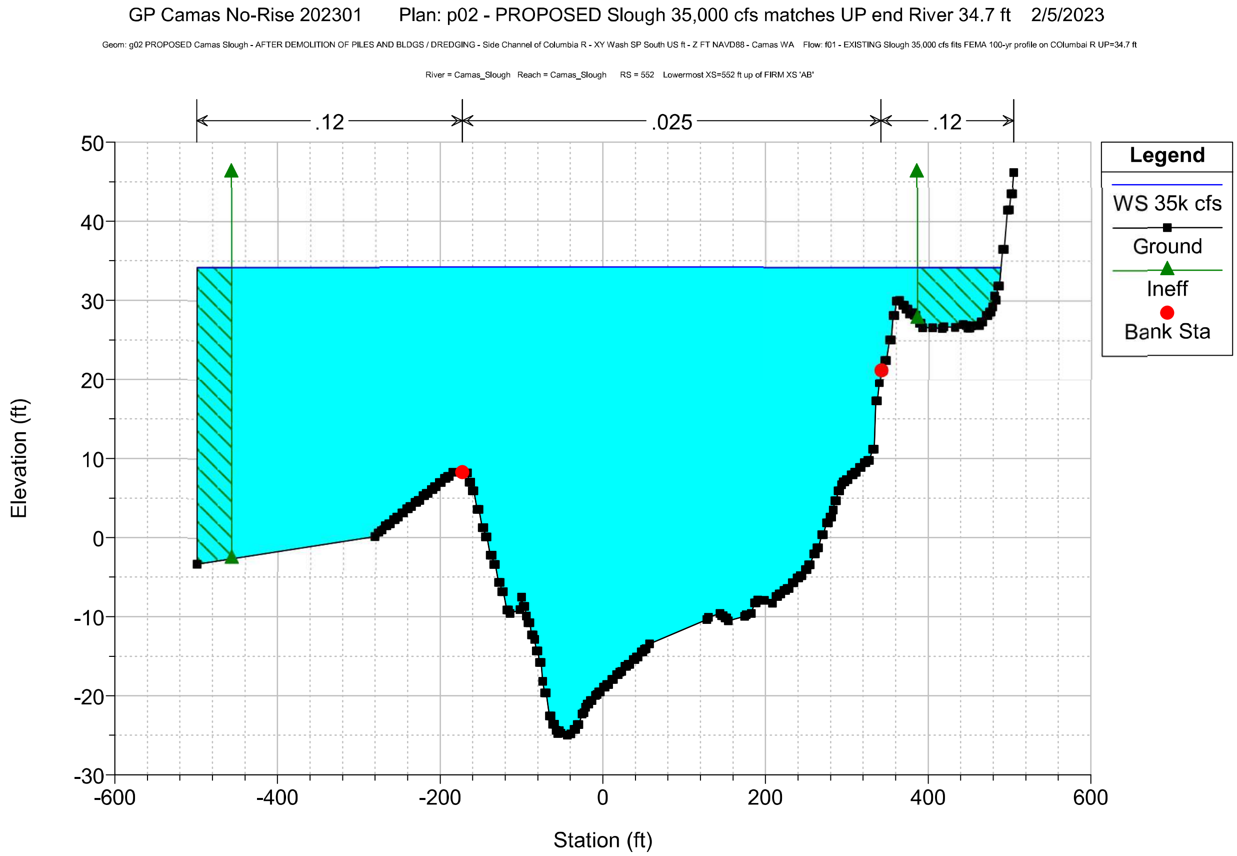
River = Camas_Slough Reach = Camas_Slough RS = 612 Ineff rt shadow b/c ds dry // ineff left jct columbia river
.12
.025
.12
Elevation (ft)
Station (ft)
Legend
WS 35k cfs
Ground
Ineff
Bank Sta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River = Camas_Slough Reach = Camas_Slough RS = 552 Lowermost XS=552 ft up of FIRM XS 'AB'
.12
.025
.12
Legend
WS 35k cfs
Ground
Ineff
Bank Sta
Elevation (ft)
50
40
30
20
10
0
-10
-20
-30
-600
-400
-200
0
200
400
600
Station (ft)