



Senn Road MP 0.89 Bridge Scour Repair Project

Wetland, Stream, and Shoreline Vegetation Restoration Plan

Submitted to:

Lewis County Public Works
57 West Main Street
Chehalis, WA 98532

Prepared by:

Otak, Inc.
808 SW Third Avenue
Suite 800
Portland, OR 97204

July 2026

Project No. 21588.A

Table of Contents

	Page
Section 1. Introduction	1
1.1 Project Description and Location	1
1.2 Existing Conditions.....	1
Section 2. Mitigation Sequencing and Restoration Plan	2
2.1 Mitigation Sequencing	2
2.2 Onsite Restoration Plan	4
2.3 Monitoring Plan, Performance Standards, and Reporting Schedule	5
2.4 No Net Loss Determination	5
TABLES	
Table 1—Impacts Summary	4
APPENDICES	
Appendix A Delineated Wetlands and Streams	
Appendix B JARPA Plans	

Section 1. Introduction

1.1 Project Description and Location

Lewis County Department of Public Works (County) is planning the Senn Road MP 0.89 Bridge Scour Repair Project (Project). The 60-foot three span bridge was originally constructed in 1966 and is currently classified as scour critical. The project includes completing necessary repairs to the bridge in order to maintain vehicular access and protect public safety along Senn Road.

The project will involve the need to excavate the channel bed under and near the bridge to place appropriate riprap protection for the piers and banks. Mitigation for these disturbances will be achieved via the placement of large woody material log jams upstream and downstream of the bridge and filling riprap voids with blended streambed aggregate to optimize streambed habitat post-project.

The project is located on Senn Road at the crossing of Lucas Creek in unincorporated Lewis County, Washington (Appendix B: Figure 1—Vicinity Map). It is located in Section 2, Township 13 North, Range 1 West, in Water Resource Inventory Area (WRIA) 23 – Upper Chehalis. The project area generally includes areas along Senn Road within 100 feet of the Lucas Creek bridge. Land abutting the project area includes agricultural and forested. Lucas Creek flows through the project area from northeast to southwest passing under Senn Road at mile post (MP) 0.89. The project area is entirely within the 100-year floodplain of Lucas Creek.

1.2 Existing Conditions

Otak biologists conducted field investigations on December 3 and 4, 2024. The study area for this project included areas along both sides of Senn Road and Lucas Creek, upstream and downstream of Bridge No. 77. Areas immediately beyond the study area were also visually assessed to identify any wetlands and streams with buffers that could extend into the study area.

Six wetlands (Wetlands 1 – 6) were identified in the study area. Wetlands 1, 2, and 6 are depressional wetlands which rated as Category III with habitat scores of 6 according to the Washington State Wetland Rating System for Western Washington 2014 Update Version 2.0 (Hruby & Yhanke 2023). Wetland 3, 4, and 5 are riverine wetlands along Lucas Creek which also rated as Category III with habitat scores of 6. All wetlands in the study area have a standard buffer width of 75 feet.

Three watercourse (Lucas Creek, Tributary 1, and Tributary 2) were identified in the study area. Lucas Creek is a Type S (Shoreline of the State) stream with an assigned buffer of 0 feet per the Lewis County Shoreline Master Program (Table 4-1, Section 4.04.02). Tributary 1 is a Type F (fish habitat) stream with a buffer width of 100 feet. Tributary 2 is a Type Ns (seasonal non-fish) stream with a buffer width of 75 feet. Water types were determined as required in LCC 17.38.420 – Fish and Wildlife Habitat Conservation Areas: Designation and Classification and buffers were assigned per LCC 17.38.430 Stream buffer widths.

The project is located entirely within the 100-year floodplain of Lucas Creek. The project area is within the Rural Conservancy Shoreline Environment Designation per the Lewis County Shoreline Master Program.

Section 2. Mitigation Sequencing and Restoration Plan

2.1 Mitigation Sequencing

The scour countermeasures for the Senn Road MP 0.89 Bridge will occur within the OHWM of Lucas Creek, within its 100-year floodplain, and within shoreline jurisdiction. All work will occur during the WDFW-approved in-water work window, anticipated to be from August 1 to September 30.

As required per LCC 17.38.080 (General Mitigation Requirements) and LCC 17.38.510 (Fish and wildlife habitat mitigation plan), the project has been designed to mitigate impacts to Lucas Creek in the following prioritized order:

- Avoiding the adverse impact altogether by not taking a certain action or parts of an action, or by moving the action
- Minimizing adverse impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology and engineering, or by taking affirmative steps to avoid or reduce adverse impacts
- Rectifying the adverse impact by repairing, rehabilitating or restoring the affected environment
- Reducing or eliminating the adverse impact over time by preservation and maintenance operations during the life of the action
- Compensating for the adverse impact by replacing, enhancing, or providing similar substitute resources or environments, monitoring any adverse impact and mitigation, and taking appropriate corrective or adaptive management measures
- Monitoring the impact and taking appropriate corrective measures

Avoidance and Minimization

Impacts to wetlands in the project area and Tributary 2 have been completely avoided and impacts to Lucas Creek and Tributary 1 have been minimized to the extent practicable. Construction Best Management Practices (BMPs) and temporary erosion and sediment control (TESC) measures will be employed to minimize impacts. Clearing limits will be established using high visibility fencing. Equipment staging will occur within upland areas adjacent to the road to minimize temporary impacts to vegetation. Tree removal has been minimized and avoided where practicable.

A temporary gravity-fed stream bypass system will be installed prior to installation of the scour countermeasures to protect water quality. Gravel bags or similar material will be placed across the channel upstream and downstream of the work area, and a stream bypass pipe installed to convey the river water through the work area. Within the work area, sediment-laden seepage and groundwater will be pumped out of the construction area and discharged upslope of the river through filter bags and discharged downstream outside of the work area. Fish moving will be completed for the work area prior to dewatering. Dewatering of the work area shall occur at a rate slow enough to allow for the safe capture and relocation of fish to avoid stranding. Approximately 4,881 square feet (SF) of Lucas Creek and 221 SF of Tributary 1 will be temporarily impacted from dewatering as shown on Sheet 10 of the JARPA drawings (Appendix B).

Temporary and permanent vegetation clearing within riparian areas is unavoidable because installation of the scour countermeasures and protection of the bridge piers and abutments requires access through riparian habitat. Impacts to vegetation in shoreline jurisdiction have been minimized to the extent

practicable. Approximately 2,970 SF of shoreline vegetation will be permanently impacted, and approximately 35,713 SF of temporarily impacted vegetation within shoreline jurisdiction will be restored and replanted with willow stakes, riparian and upland seed mixes, and native trees and shrubs. Two deciduous trees will be removed near the bridge because they occur within the limits of the scour countermeasures. The proposed riparian habitat restoration will include willow stakes around the edges of the rock blanket to provide shading and allochthonous inputs to support aquatic habitat. In addition, nine logs with rootwads will be installed in Lucas Creek and three logs with rootwads will be installed in Tributary 1 to improve habitat quality and cover for fish in the project area following construction.

Following isolation of the work areas, existing streambed material will be excavated to a depth of approximately three to six feet and replaced with riprap on top of geotextile fabric with blended streambed aggregate placed on top of the riprap as shown on JARPA drawing Sheets 5, 6 and 7 (Appendix B). The streambed will be over excavated and replaced with the scour protection to achieve no-rise within the mapped floodway. The stream bypass system will be removed following construction prior to the end of the approved in-water work window.

Unavoidable, Minimized Project Effects

Following isolation of the work area, existing riprap, debris, and streambed material will be excavated and hauled away for installation of buried riprap overlaid with blended streambed aggregate. The in-water stream impacts are expected to result in minor benefit to stream habitat within Lucas Creek and Tributary 1 from removing the existing angular rock and replacing it with buried riprap with streambed material on top, and adding twelve large wood pieces. Streambed grading will comply with no-rise requirements for work in the regulated floodway, and there will be no loss of stream habitat below the existing OHWM. The proposed scour countermeasures will extend up the bank to protect the bridge abutments, and will result in the permanent loss of 2,970 SF of shrub and grass vegetation in shoreline jurisdiction that is typical of maintained roadside areas. Two deciduous trees will be removed near the bridge. The proposed impacts are shown on JARPA drawing Sheet 14 (Appendix B).

The project will result in approximately 3,130 SF of permanent impacts Lucas Creek and approximately 448 SF of permanent impacts to Tributary 1 from the installation of scour countermeasures. The permanent stream impacts will not result in a loss of stream habitat because streambed material will be placed over the angular rock used for scour protection. Approximately 4,881 SF of temporary impacts to Lucas Creek and approximately 221 SF of temporary impacts to Tributary 1 will result from dewatering activities during construction.

Overall, approximately 2,970 SF of permanent vegetation clearing within shoreline jurisdiction will occur, and approximately 35,713 SF of vegetation will be temporarily impacted. The whole project occurs within shoreline jurisdiction. Of the 2,970 SF of permanent vegetation impacts in shoreline jurisdiction, 7 SF are to wetland buffer, 1,343 SF are to overlapping wetland and stream buffer, and 1,620 SF are to vegetated areas in shoreline jurisdiction not classified as wetland or stream buffer (Table 2).

The in-stream work area will be isolated to minimize the impacts of excavation to water quality and aquatic wildlife. The stabilization measures to be installed have been selected specifically for the ecological lift they will provide to the river. Large woody material log jams will contribute roughness and habitat diversity for aquatic life. Native willow stakes will be planted around the rock revetment to provide bank stabilization and erosion control, water quality improvement, stream shading, and habitat structural complexity. The streambed will be restored with 8-inch streambed cobbles and regraded to pre-existing contours. Upon completion of construction, all impacts to Lucas Creek and Tributary 1 will be restored.

Permanent impacts to Lucas Creek and Tributary 1 will not result in a loss of stream habitat because the scour countermeasures will be installed below the existing grade with 8-inch streambed cobbles at the surface. The majority of impacted vegetation within shoreline jurisdiction is dominated by invasive Himalayan blackberry (*Rubus armeniacus*) and non-native roadside herbaceous plants. Project impacts are summarized in Tables 1 and 2.

Table 1—Stream Impacts Summary

Regulated Feature	Impact Area (Square Feet)	Duration
Lucas Creek	4,881	Temporary
	3,130	Permanent
Tributary 1	221	Temporary
	448	Permanent

Table 2—Riparian Vegetation Impacts Summary

Impact Type	Temporary Impacts (square feet)	Permanent Impacts (square feet)
Overlapping Wetland and Stream Buffer	9,793	1,343
Wetland Buffer	5,870	7
Vegetation in Shoreline Jurisdiction	20,050	1,620
Total Vegetation Impacts within Shoreline Jurisdiction	35,683	2,970

2.2 Onsite Restoration Plan

The restoration plan is meant to restore temporarily impacted vegetation communities and increase structural and species diversity along Lucas Creek and its tributaries in the project area so there is no loss of ecological functions after the scour countermeasures are installed. A watershed approach was used for the restoration design by focusing on restoring functions at the project site where the impacts occur rather than purchasing credits from a mitigation bank lower in the watershed. Restoration details are provided on Sheets 12 and 13 of the JARPA plan set (Appendix B).

The onsite restoration plan includes installing 2,024 SF of live stakes of native willows (*Salix sp.*) (Planting Zone 1) around the rock revetment to mitigate thermal impacts, increase shading and allochthonous inputs, and slow water velocities during high flow events. A total of 225 live stakes will be installed at three-foot on-center. The sloped banks of Lucas Creek and Tributary 1, an area of approximately 4,318 SF, will be planted with a riparian seed mix and 147 native shrubs (Planting Zone 2).

Temporarily disturbed areas east of Lucas Creek and Tributary 1 and above the sloped banks (Planting Zone 4), approximately 4,655 SF, will be seeded with an upland seed mix and planted with 24 native trees and 127 native shrubs. Planted native woody species will provide shading and additional cover in the project reaches of Lucas Creek and Tributary 1, and provide a functional lift relative to the current conditions by enhancing 6,342 SF of low functioning riparian area (e.g., grass) west of the bridge with native trees and shrubs. Disturbed areas above the banks of Lucas Creek and Tributary 1 and west of Senn Road (Planting Zone 3), approximately 25,519 SF, will be seeded with an upland seed mix to restore these pasture areas to pre-existing conditions. Plant areas, plant schedules, and planting details are provided on Sheets 12 and 13 of the JARPA plan set (Appendix B).

2.3 Monitoring Plan, Performance Standards, and Reporting Schedule

Replanting of vegetation within shoreline jurisdiction will occur during the first dormant season (late fall through late winter) after project completion. Per Section 4.04.02(F)(1) of the Lewis County SMP, revegetated areas will be monitored for three years. Monitoring will be performed by measurements of the percent survival of planted material, visual estimation of plant cover, stem density, and presence of invasive species in the restoration areas, including photographic documentation using established photo points for year over year comparison.

The performance standards for this site include:

- Replanted areas shall be planted and maintained such that within three years the vegetation cover is at least 90% reestablished.
- Invasives shrubs shall be less than 10% of the restoration area.
- 0% cover by knotweed (*Fallopia sp.*) in every monitoring year.

Failure to achieve the 90 percent cover in Year 3 will require a plan to be submitted with follow-up measures to achieve requirements or reasons to modify requirements. Site maintenance will occur each year as necessary to ensure performance standards are met.

Contingency planning will be coordinated with the County if performance standards are not being met due to plant mortality, animal browse, or other challenges. Such contingency measures may include supplemental plantings, browse protection around the plantings, spray deterrents, or other methods to protect the restoration plantings in order to achieve the site restoration goals and performance standards.

2.4 No Net Loss Determination

The project has been designed following the mitigation sequencing avoid and minimize unavoidable project impacts to critical areas as required per Section 4.04 (Critical Areas and Shoreline Vegetation Conservation) of the Lewis County SMP, LCC 17.38.080 (General Mitigation Requirements), LCC 17.38.510 (Fish and wildlife habitat mitigation plan). All temporary impacts will be restored following construction, and the installation of the scour countermeasures below the OHWM of Lucas Creek will not result in the loss of aquatic habitat. Installing the scour countermeasures will not result in a rise of the base flood elevation for compliance with the floodplain regulations. The project will result in a minor net benefit of ecological function in the project area from the removal of non-native, invasive vegetation and installation of native trees and shrubs along the riparian corridor that will provide increased shading, habitat diversity, and cover for aquatic wildlife. The project will not result in a loss of shoreline ecological functions.

Appendix A: Delineated Wetlands and Streams

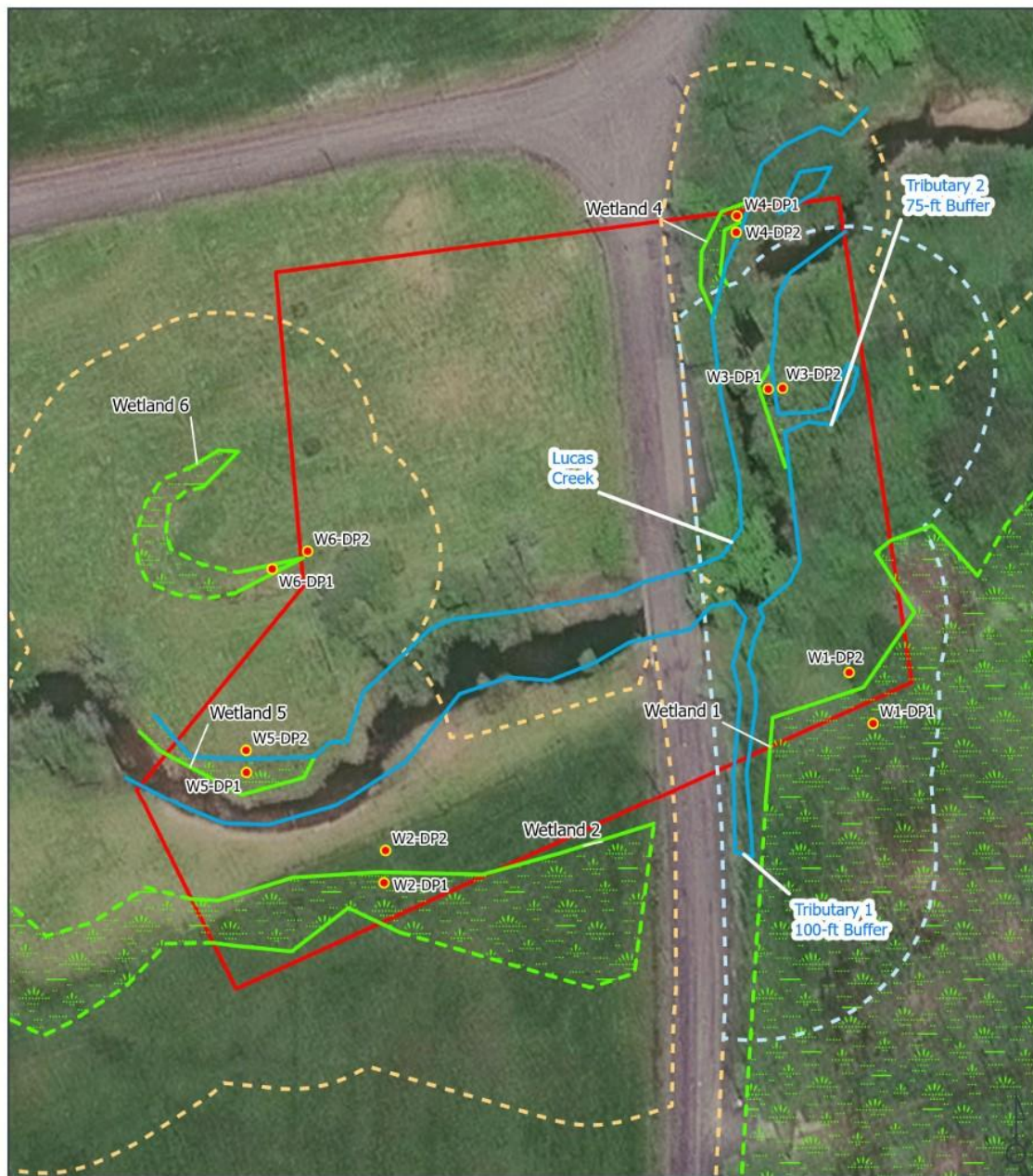


FIGURE 8
DELINEATED WETLANDS, STREAMS, & BUFFERS

SENN ROAD BRIDGE SCOUR REPAIR | 21588A
LEWIS COUNTY, WASHINGTON

Data Sources:
 Date: 9/10/2023
 Disclaimer: This data is not for survey accuracy and is meant for planning purposes only.
 © PROJECT/21500/21588A/04 CAD/IGS/MOD/21588A_SennRd.aprx

LEGEND

- Delineated Wetland Boundary
- - - Estimated Wetland Boundary
- Wetland Area
- Data Point
- Ordinary High Water
- - - Wetland Buffer (75 ft)
- - - Stream Buffer
- Study Area

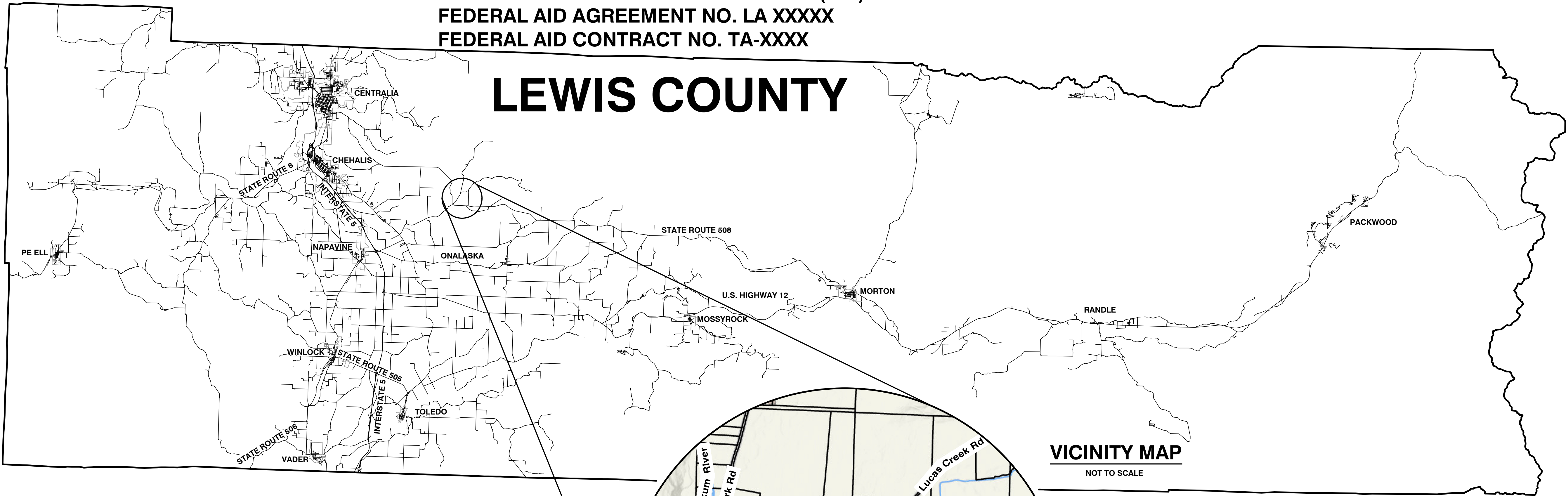
0 75 ft



Appendix B: JARPA Plans

SENN RD MP 0.89 BRIDGE SCOUR REPAIR

COUNTY ROAD PROJECT NO: 2159R
FEDERAL AID PROJECT NO. BHOS-2021(074)
FEDERAL AID AGREEMENT NO. LA XXXXX
FEDERAL AID CONTRACT NO. TA-XXXX



COMMISSIONERS:

SEAN D. SWOPE, DISTRICT 1
LINDSEY R. POLLOCK, DVM, DISTRICT 2
SCOTT J. BRUMMER, DISTRICT 3



ENGINEERING- DESIGN SECTION

SHEET INDEX	
SHEET NAME	SHEET #
VICINITY MAP AND SHEET INDEX	1
TAX PARCEL MAP	2
EXISTING CONDITIONS AND SITE PREPARATION	3
SCOUR COUNTERMEASURE PLAN	4
SCOUR COUNTERMEASURE PROFILE	5
SCOUR COUNTERMEASURE DETAILS	6
SCOUR COUNTERMEASURE DETAILS	7
STREAM RECONSTRUCTION PLAN	8
STREAM RECONSTRUCTION DETAILS	9
TEMPORARY STREAM DIVERSION PLAN	10
TEMPORARY STREAM DIVERSION DETAILS	11
RESTORATION PLAN	12
RESTORATION DETAILS	13
IMPACTS	14

SHEET 1 VICINITY MAP AND SHEET INDEX

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

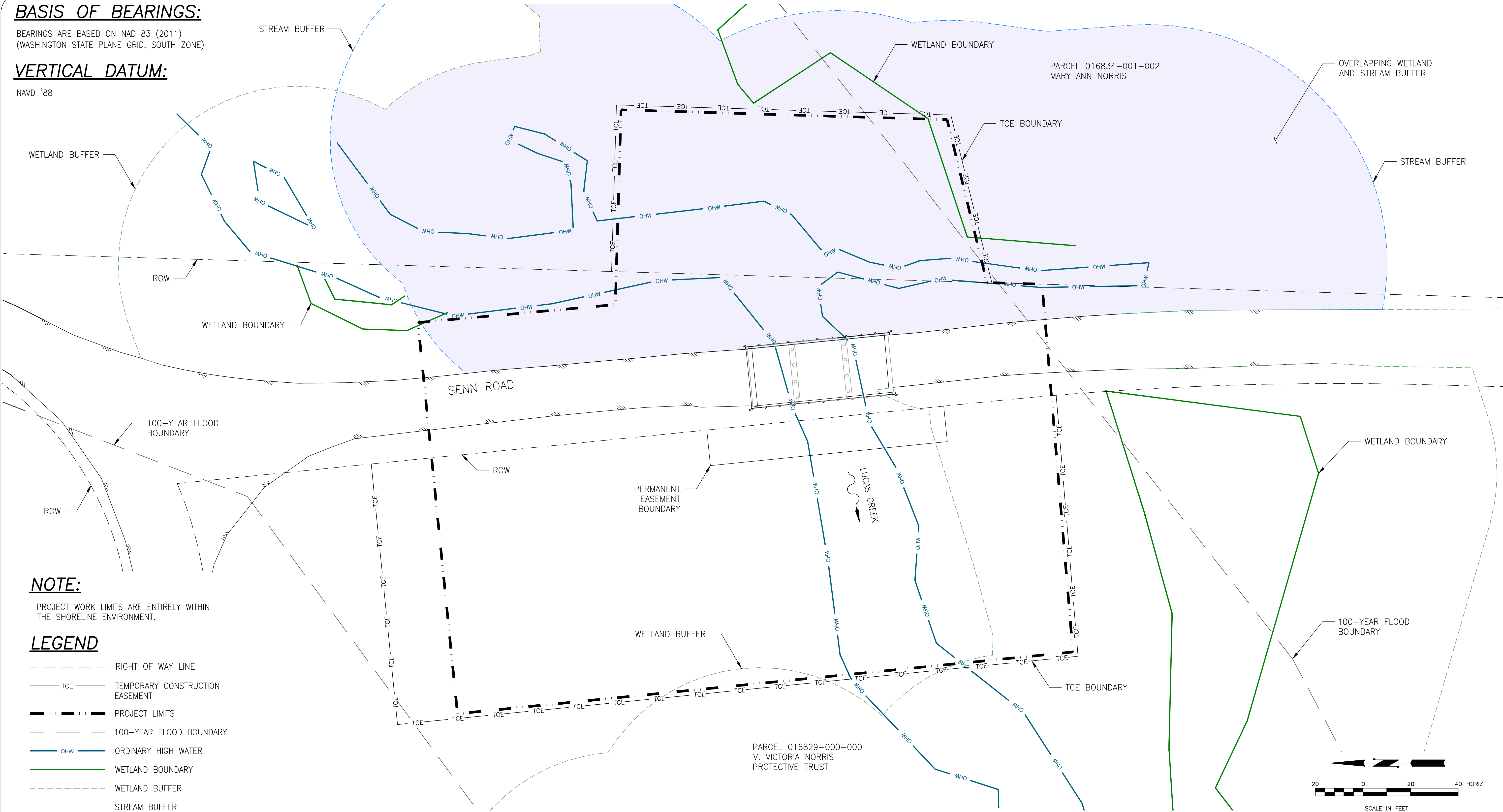
Jul 20, 2026 -- 1:55pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\21588A-TAX PARCEL_JARPA.dwg

BASIS OF BEARINGS:

BEARINGS ARE BASED ON NAD 83 (2011)
(WASHINGTON STATE PLANE GRID, SOUTH ZONE)

VERTICAL DATUM:

NAVD '88

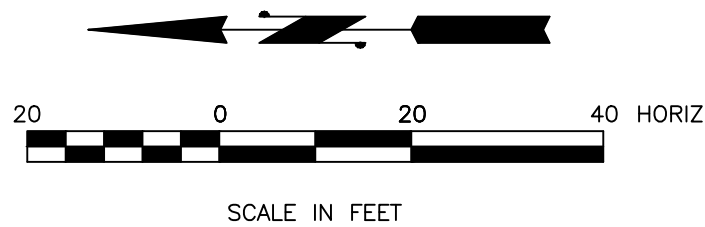


NOTE:

PROJECT WORK LIMITS ARE ENTIRELY WITHIN
THE SHORELINE ENVIRONMENT.

LEGEND

- RIGHT OF WAY LINE
- - - TCE - - - TEMPORARY CONSTRUCTION EASEMENT
- PROJECT LIMITS
- 100-YEAR FLOOD BOUNDARY
- OHW --- ORDINARY HIGH WATER
- WETLAND BOUNDARY
- WETLAND BUFFER
- STREAM BUFFER



SHEET 2 TAX PARCEL MAP

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

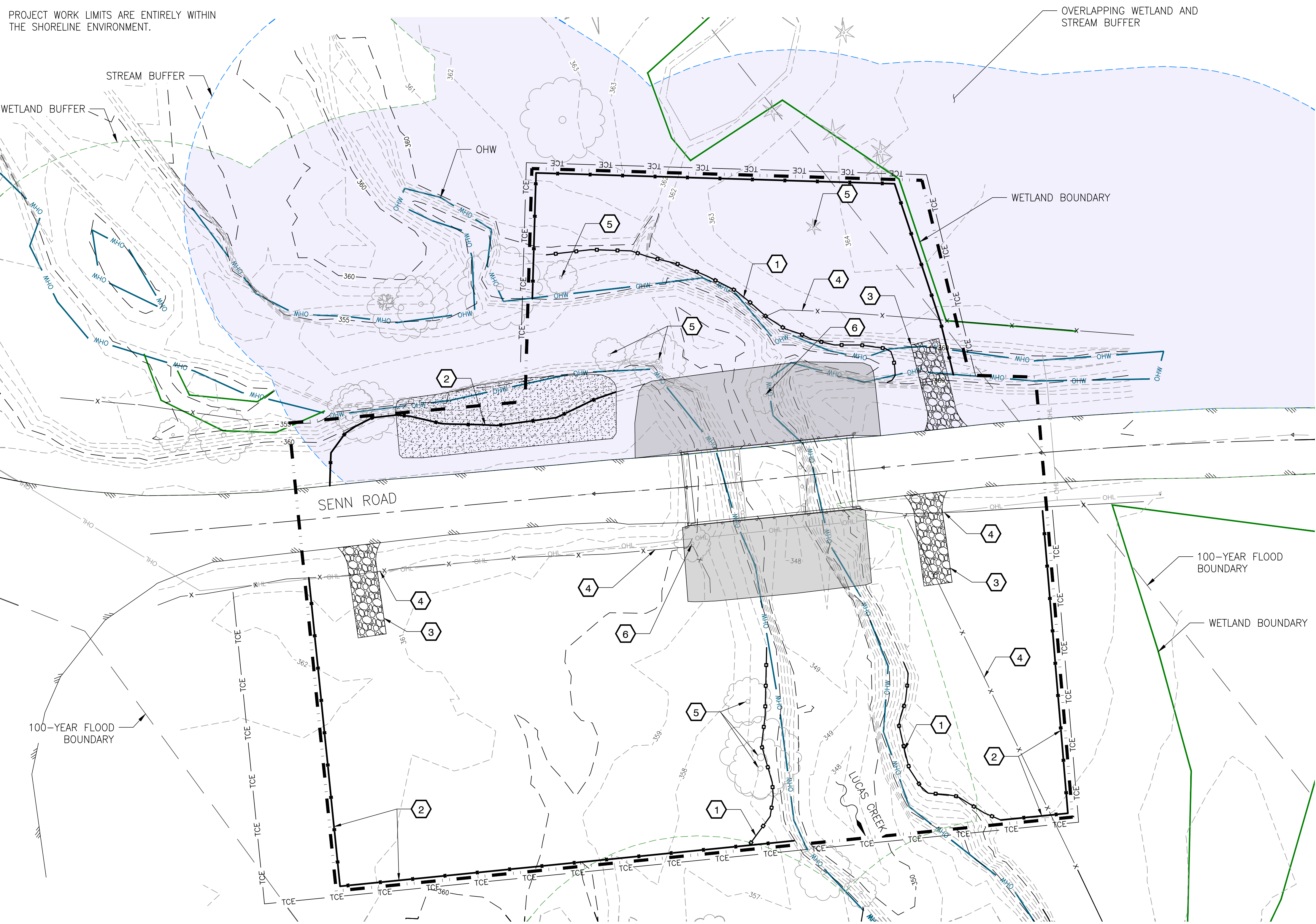
COUNTY: LEWIS

STATE: WA

Jul 20, 2026 — 1:55pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\Dwg\Exhibits\JARPA\DWG\21588A-EXISTING CONDITIONS AND SITE PREP_JARPA.dwg

NOTE:

PROJECT WORK LIMITS ARE ENTIRELY WITHIN THE SHORELINE ENVIRONMENT.



EROSION CONTROL NOTES:

1. THE IMPLEMENTATION OF THIS TESC PLAN AND CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE CONSTRUCTION SWPPP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL WORK IS COMPLETED AND APPROVED.
2. THE BMP'S SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE BMP'S SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.
3. THE BMP'S SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION. THE CONSTRUCTION SWPPP FACILITIES ON INACTIVE SITE SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 48 HOURS FOLLOWING A MAJOR STORM EVENT.
4. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT LADEN WATER INTO THE DOWNSTREAM SYSTEM PER WASHINGTON STATE DEPARTMENT OF ECOLOGY'S STORMWATER MANAGEMENT MANUAL FOR WESTERN WASHINGTON B-2 VOLUME II - CONSTRUCTION STORMWATER POLLUTION PREVENTION JULY 2019.
5. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

CONSTRUCTION NOTES:

- 1 HIGH VISIBILITY SILT FENCE PER WSDOT STANDARD PLAN 1-30.17
- 2 HIGH VISIBILITY FENCE PER WSDOT STANDARD PLAN 1-10.10
- 3 STABILIZED CONSTRUCTION ENTRANCE PER WSDOT STANDARD PLAN 1-80.10
- 4 REMOVE AND REPLACE PORTION OF FENCE
- 5 PROTECT TREE
- 6 REMOVE TREE
- 7 REMOVE AND REPLACE A PORTION OF THE GUARDRAIL

LEGEND

- STABILIZED CONSTRUCTION ENTRANCE
 - EXISTING SLOPE PROTECTION / RIPRAP
 - AREA OF PREVIOUS BANK STABILIZATION WORK - NOT TO BE DISTURBED
 - HIGH VISIBILITY SILT FENCE
 - HIGH VISIBILITY FENCE
 - TEMPORARY CONSTRUCTION EASEMENT
 - PROJECT LIMITS
 - 100-YEAR FLOOD BOUNDARY
 - ORDINARY HIGH WATER
 - WETLAND BOUNDARY
 - WETLAND BUFFER
 - STREAM BUFFER
- 20 0 20 40 HORIZ
SCALE IN FEET

SHEET 3 EXISTING CONDITIONS AND SITE PREPARATION

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

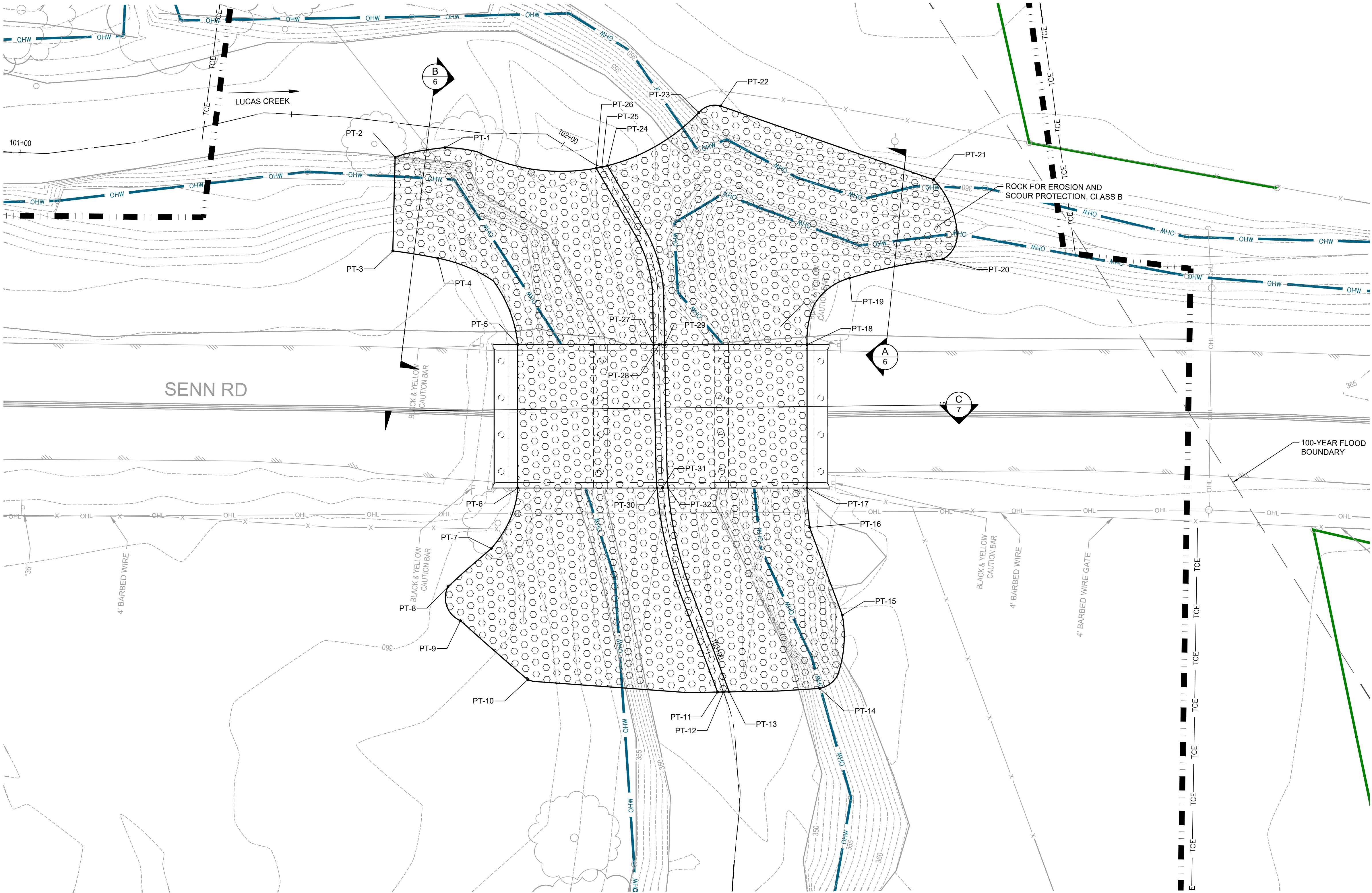
WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

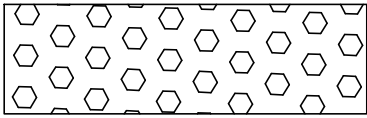
Jul 20, 2026 -- 1:55pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\Draw\Exhibits\JARPA\DWG\P_20-230005_SCOUR PLAN.dwg



SCOUR COUNTERMEASURE NOTES:

1. SEE SCOUR COUNTERMEASURE LAYOUT TABLE ON THIS SHEET FOR LAYOUT POINTS AND TOP OF COUNTERMEASURE ELEVATIONS.
2. SEE SHEET 5 FOR SCOUR COUNTERMEASURE PROFILE.
3. SEE SHEETS 6 AND 7 FOR SCOUR COUNTERMEASURE SECTIONS.
4. MINIMIZE DISTURBANCE OF THE STREAMBED OUTSIDE OF THE SCOUR COUNTERMEASURE FOOTPRINT TO THE MAXIMUM EXTENT PRACTICABLE. STREAMBED OUTSIDE THE SCOUR COUNTERMEASURE LIMITS THAT IS DISTURBED SHALL BE RETURNED TO PRE-CONSTRUCTION CONDITIONS.
5. SEE THIS SHEET FOR ALIGNMENT LAYOUT TABLE.
6. FILL VOIDS IN ROCK FOR EROSION AND SCOUR PROTECTION CLASS B WITH BLENDED STREAMBED AGGREGATE (APPROXIMATELY 383 TONS)

LEGEND

-  ROCK FOR EROSION AND SCOUR PROTECTION CLASS B
1,485 TON

SHEET 4 SCOUR COUNTERMEASURE PLAN

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

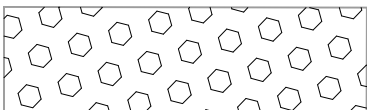
COUNTY: LEWIS

STATE: WA

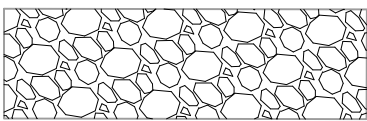
Jul 20, 2026 -- 1:55pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\P_20-230005_SCOUR_PROF.dwg

TABLE 1 STREAMBED MATERIAL MIX		
STREAMBED AGGREGATE	PERCENT BY VOLUME	WSDOT STANDARD SPECIFICATION
STREAMBED SEDIMENT	40%	9-03.11(1)
STREAMBED COBBLES 8-IN.	60%	9-03.11(4)

LEGEND



ROCK FOR EROSION AND SCOUR PROTECTION CLASS B



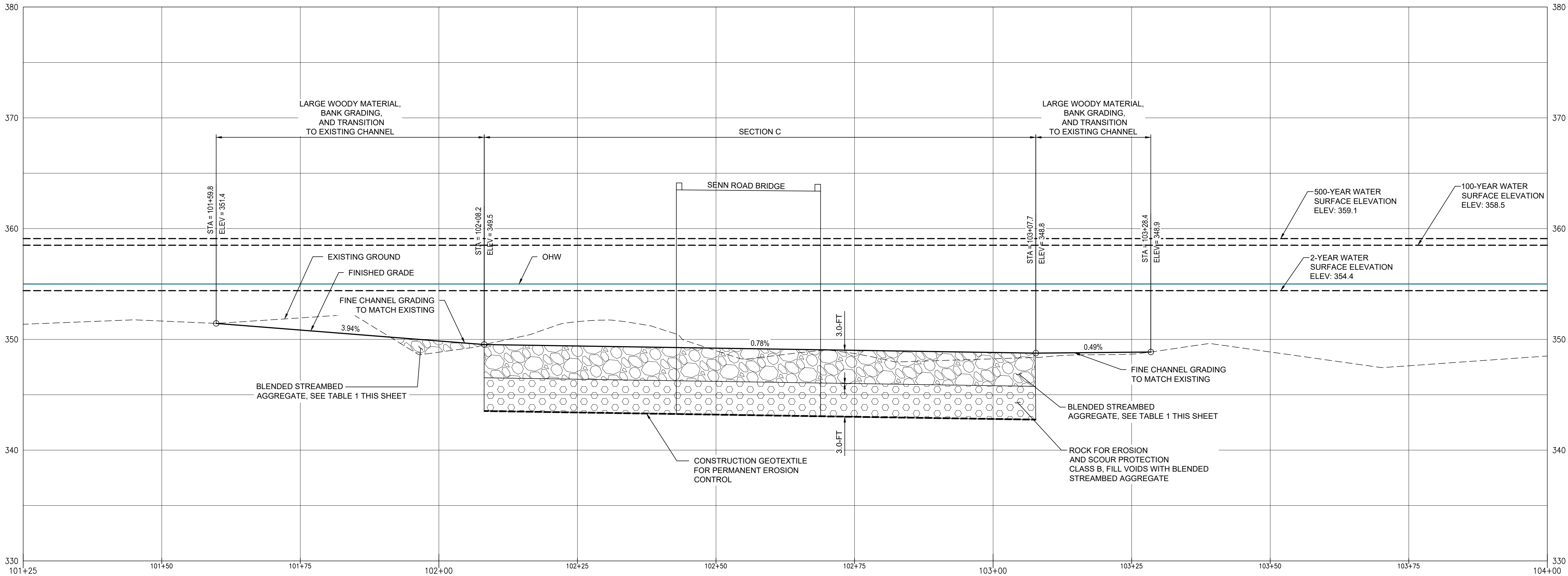
BLENDED STREAMBED AGGREGATE 290 TONS



CONSTRUCTION GEOTEXTILE FOR PERMANENT EROSION CONTROL 861 SY

GENERAL NOTES:

- ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" 2026 EDITION AND SPECIAL PROVISIONS.
- SEE SHEETS 6 AND 7 FOR TYPICAL SCOUR COUNTERMEASURE AND STREAM RECONSTRUCTION SECTION.
- SEE SHEET 9 FOR LARGE WOODY MATERIAL DETAILS.



PROFILE VIEW

H: 1"=10', V: 1"=5'

SHEET 5 SCOUR COUNTERMEASURE PROFILE

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

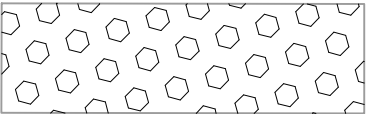
NEAR: ONALASKA

COUNTY: LEWIS

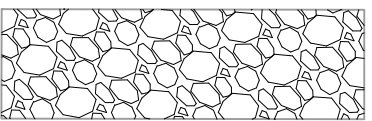
STATE: WA

Jul 20, 2026 -- 1:55pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\Draw\Exhibits\JARPA\DWG\P_20-230005_SCOUR DETAILS.dwg

LEGEND



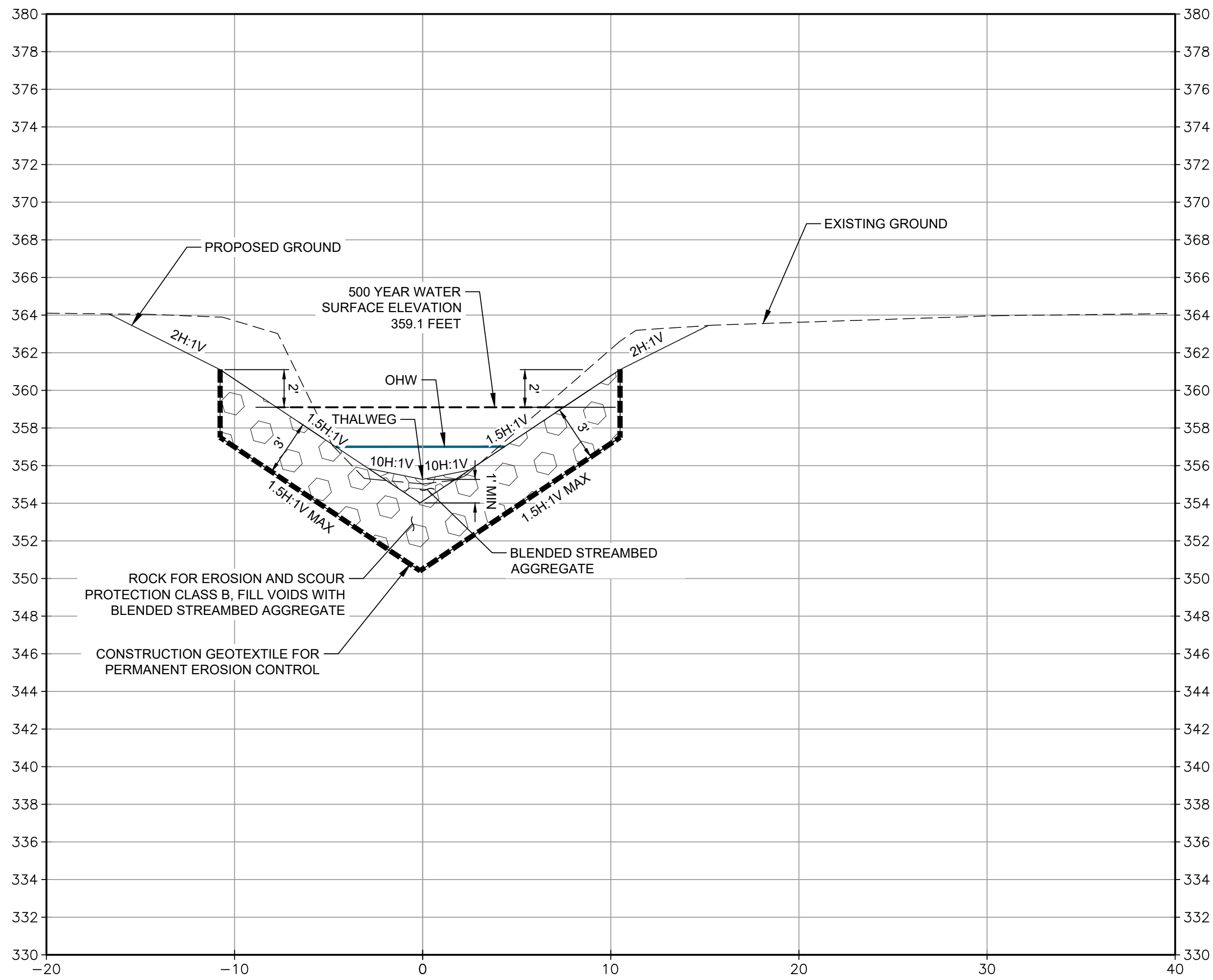
ROCK FOR EROSION AND
SCOUR PROTECTION CLASS B



BLENDED STREAMBED AGGREGATE

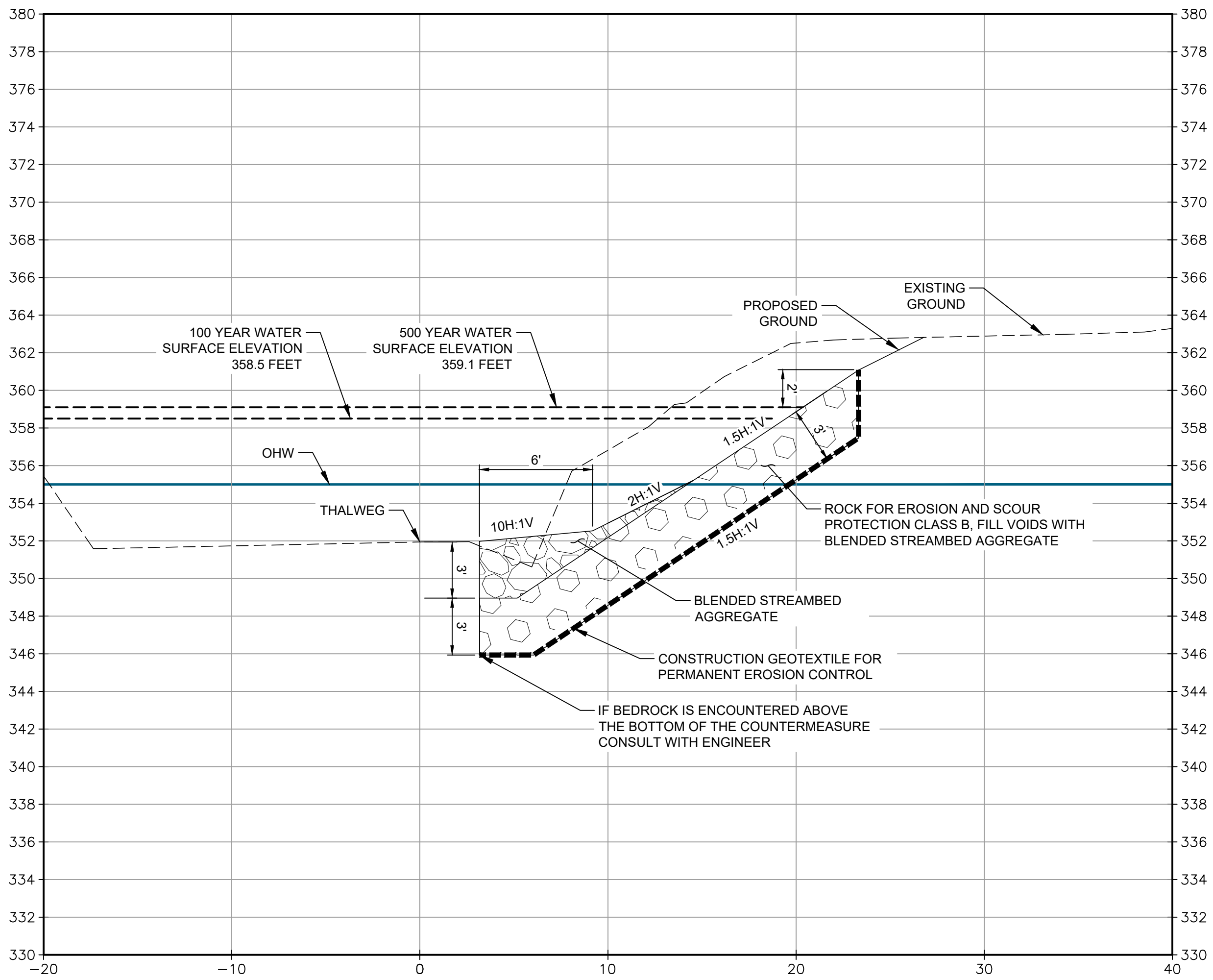


CONSTRUCTION GEOTEXTILE FOR
PERMANENT EROSION CONTROL



SECTION A - SCOUR COUNTERMEASURE TYPICAL SECTION ALONG BRIDGE APPROACH

SCALE: 1" = 5'



SECTION B - SCOUR COUNTERMEASURE TYPICAL TRANSITION SECTION

SCALE: 1" = 5'

SHEET 6 SCOUR COUNTERMEASURE DETAILS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

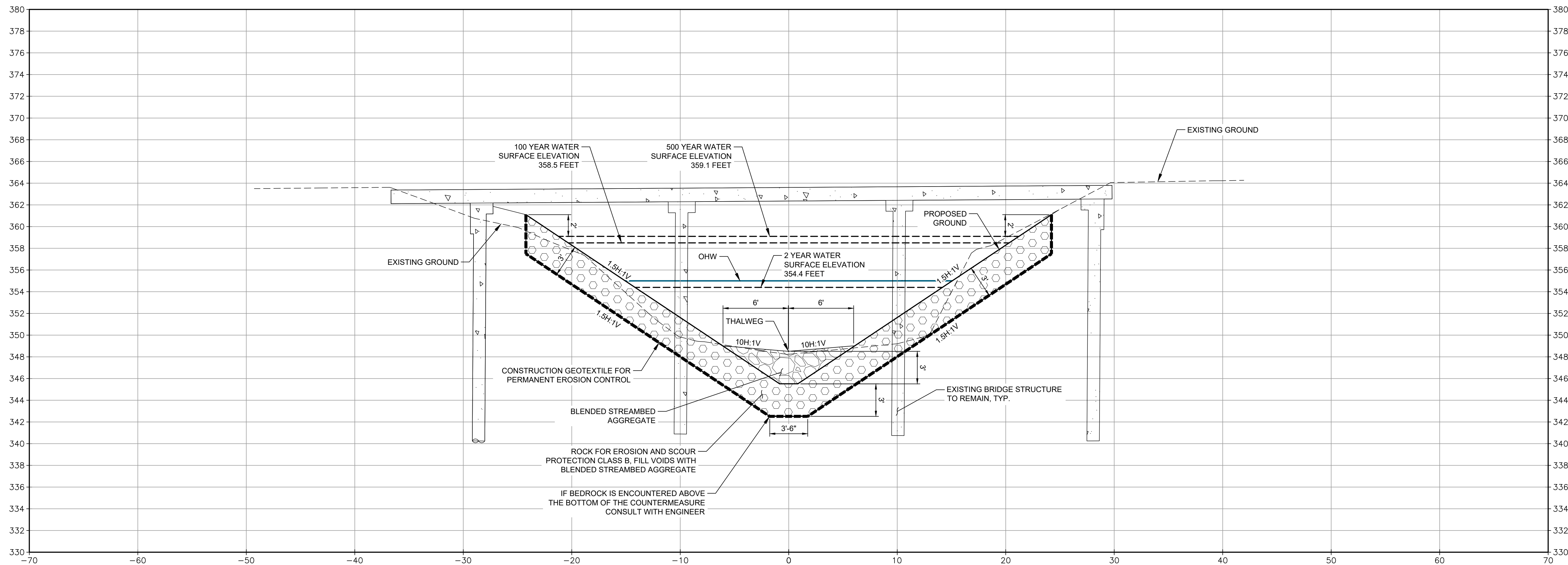
WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

1. BLENDED STREAMBED AGGREGATE IS 40% STREAMBED SEDIMENT AND 60% 8-INCH COBBLES. SEE STANDARD SPECIFICATION 8-30 "STREAMS, RIVERS, AND WATERBODIES."



SECTION C - TYPICAL SCOUR COUNTERMEASURE AND STREAM RECONSTRUCTION SECTION

SCALE: 1" = 5'

SHEET 7 SCOUR COUNTERMEASURE DETAILS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

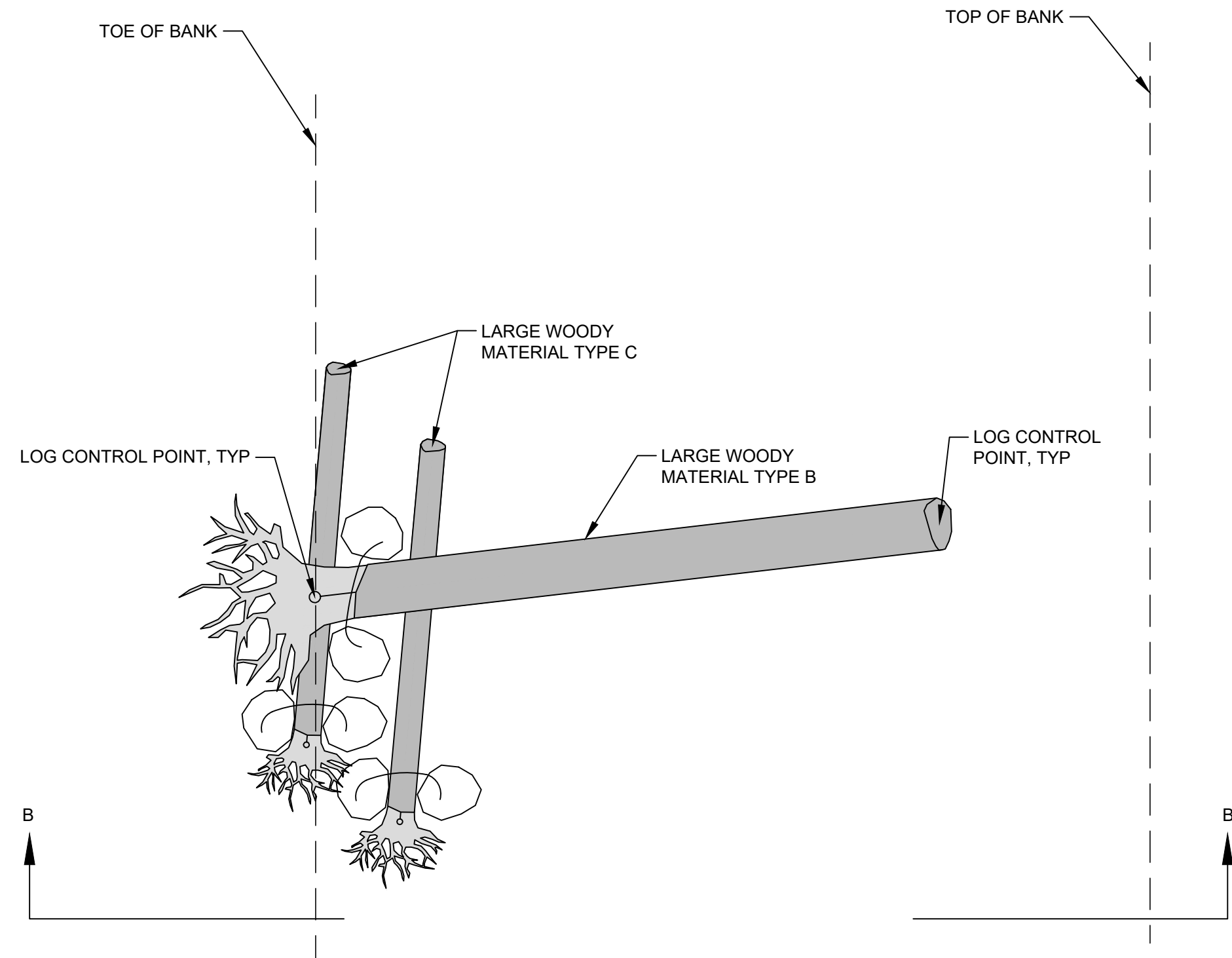
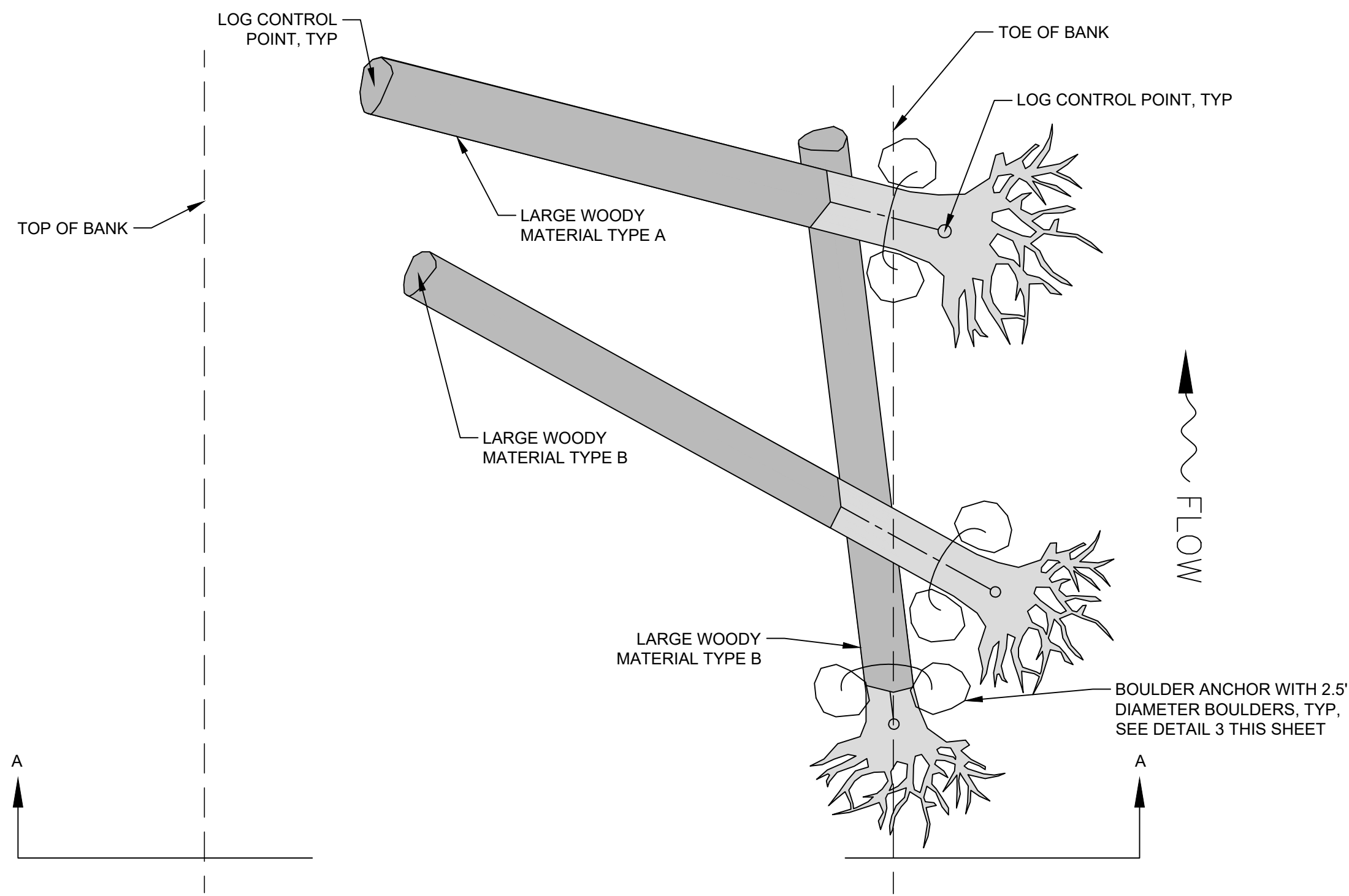
WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

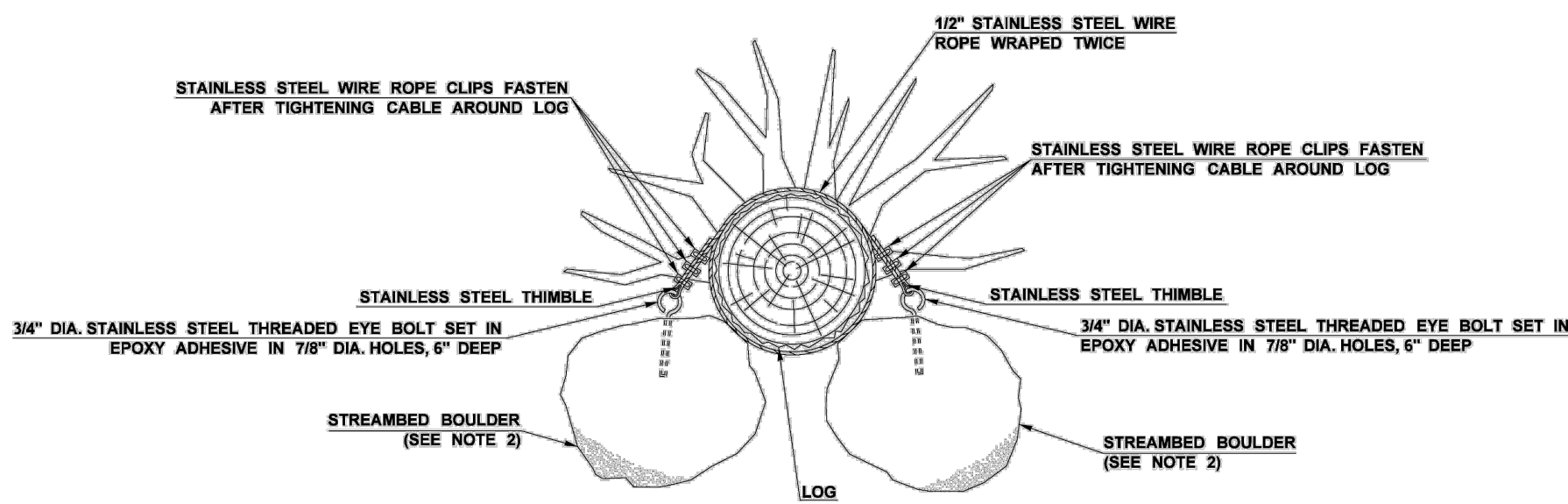
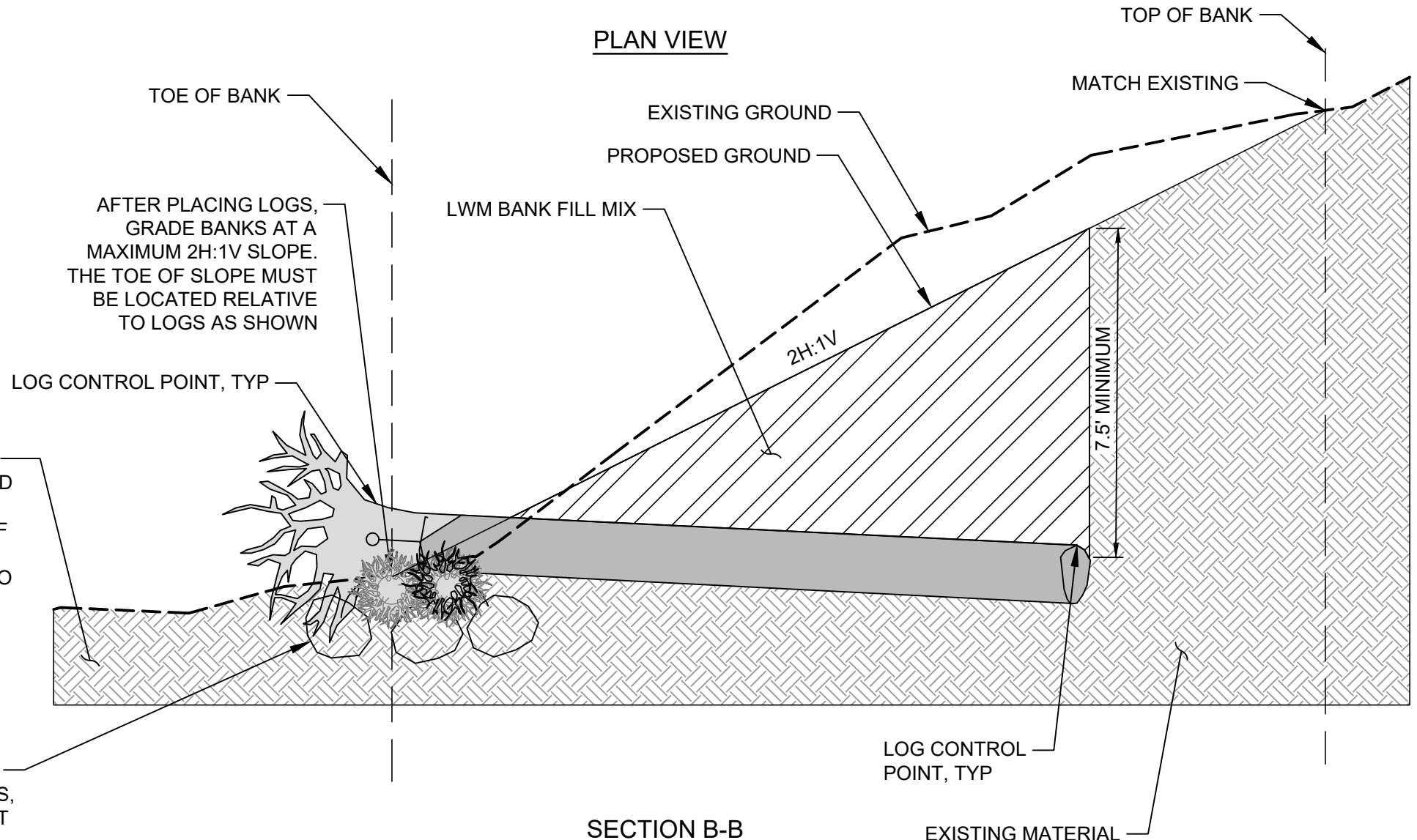
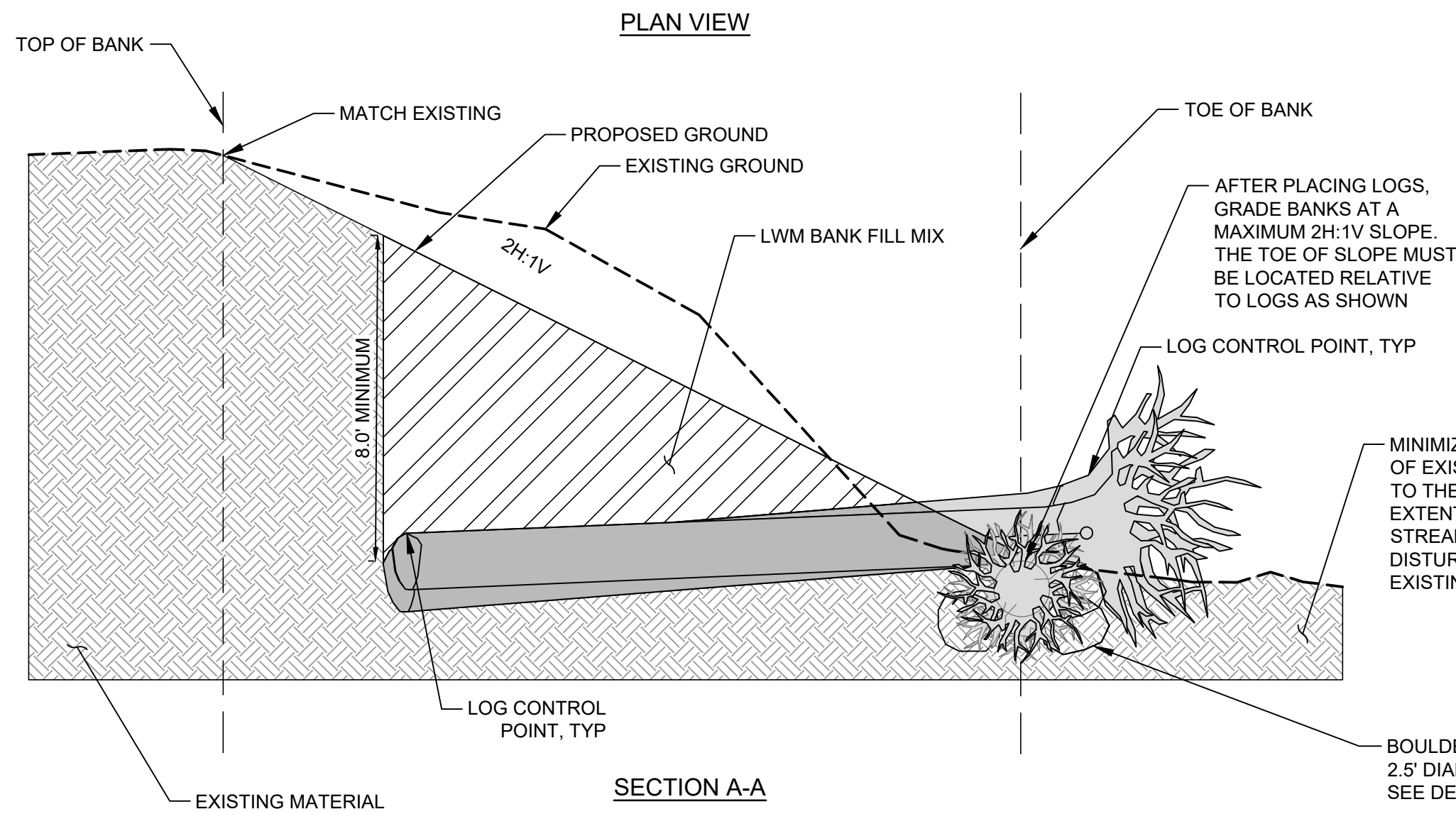
Jul 20, 2026 — 1:56pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\P_20-230005_STREAM RECONSTRUCT DETAILS.dwg



STREAM RECONSTRUCTION NOTES:

1. DETAILS SHOWN ON THIS SHEET MAY BE ROTATED OR MIRRORED. SEE SHEET 8 FOR LARGE WOODY MATERIAL (LWM) ORIENTATIONS.
2. SEE LWM LAYOUT TABLE AND LWM SCHEDULE ON SHEET 8 FOR LOG CONTROL POINTS, TOP OF LOG ELEVATIONS, AND LOG DIMENSIONS.
3. SEE SPECIAL PROVISIONS 8-33 "LOG STRUCTURES" FOR LWM.
4. LOCATIONS AND ORIENTATIONS OF STREAMBED FEATURES ARE APPROXIMATE AND SHALL BE STAKED PER PLAN BY THE CONTRACTOR AND APPROVED BY THE FIELD STREAM DESIGN ENGINEER. FINAL LOCATION AND ORIENTATION OF THESE STREAMBED FEATURES SHALL BE APPROVED BY THE FIELD STREAM DESIGN ENGINEER.
5. BLENDED STREAMBED AGGREGATE IS 60% 8-INCH COBBLES AND 40% STREAMBED SEDIMENT. SEE STANDARD SPECIFICATIONS 8-30 "STREAM, RIVERS, AND WATERBODIES."
6. ALL LWM DETAIL SECTIONS ON THIS SHEET ARE LOOKING DOWNSTREAM.
7. LWM BANK FILL MIX IS 50% BLENDED STREAMBED AGGREGATE AND 50% ROCK FOR EROSION CONTROL AND SCOUR PROTECTION CLASS B.

LEGEND:



NOTES:

1. SEE SPECIAL PROVISIONS "WOODY MATERIAL" FOR DESCRIPTION OF MATERIALS AND CONSTRUCTION REQUIREMENTS.
2. SEE STANDARD SPECIFICATIONS 8-30 "WATER CROSSINGS" FOR BOULDER DESCRIPTION.

1
11 LARGE WOODY MATERIAL (LWM) LOG JAM - DETAIL 1
NOT TO SCALE

2
11 LARGE WOODY MATERIAL (LWM) LOG JAM - DETAIL 2
NOT TO SCALE

3
11 BOULDER ANCHOR - DETAIL 3
NOT TO SCALE

SHEET 9 STREAM RECONSTRUCTION DETAILS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

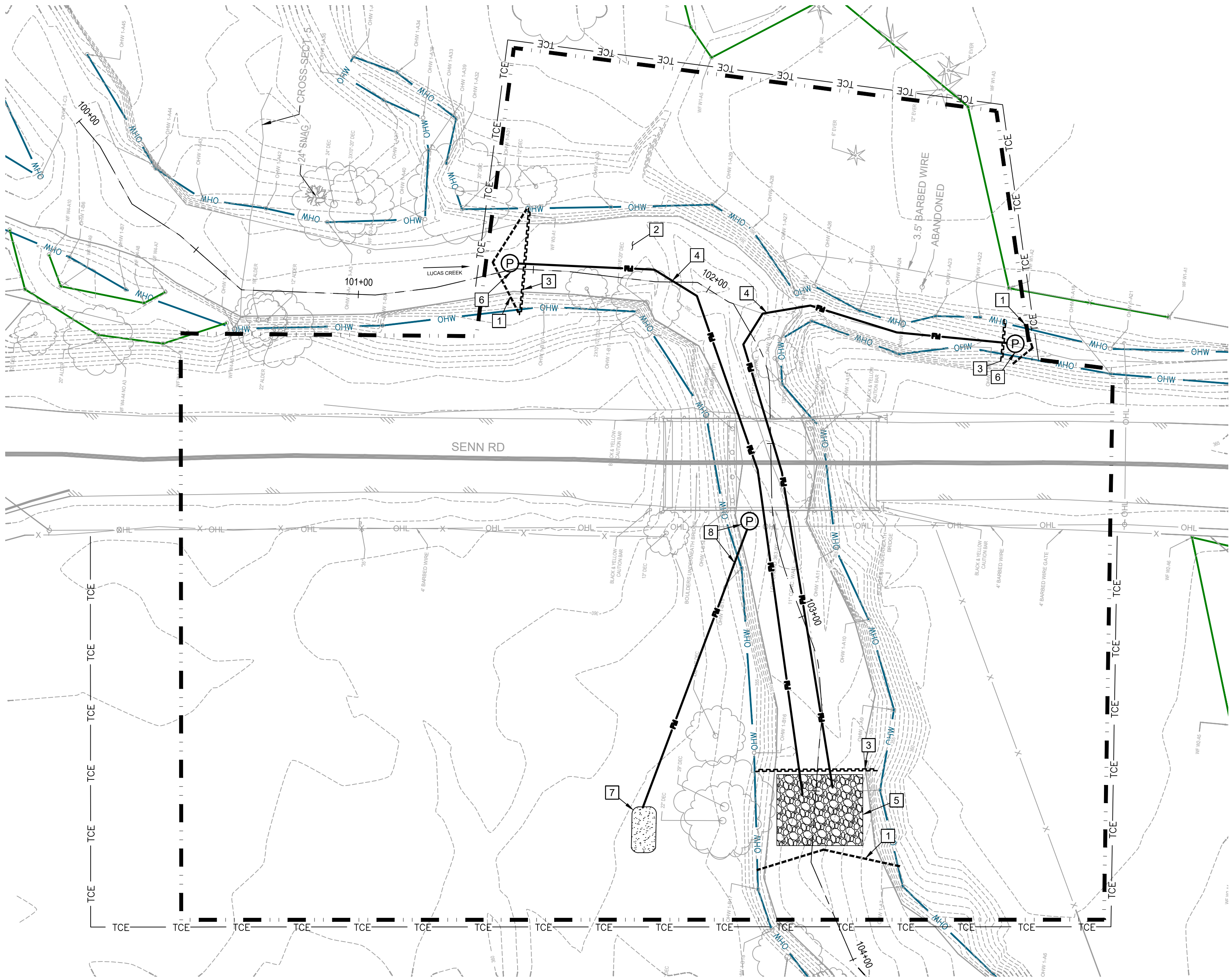
WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

Jul 20, 2026 -- 1:56pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\Dwg\Exhibits\JARPA\DWG\P_20-230005_TEMP STREAM PLAN.dwg



GENERAL NOTE:

1. ALL MATERIAL AND WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION, "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" 2026 EDITION AND SPECIAL PROVISIONS.

TEMPORARY STREAM DIVERSION NOTES:

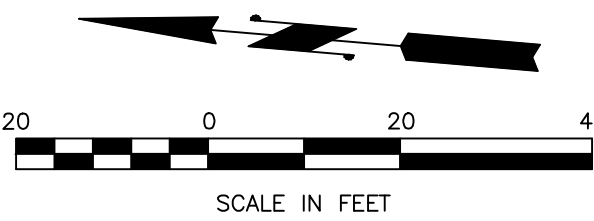
1. THE TEMPORARY STREAM DIVERSION SHOWN IS CONCEPTUAL. SEE SPECIAL PROVISIONS. THE TEMPORARY STREAM DIVERSION MAY BE PHASED IN ORDER TO UTILIZE THE EXISTING STREAM CHANNEL TO THE EXTENT FEASIBLE DURING CONSTRUCTION.
2. CONTRACTOR SHALL SUBMIT THE TEMPORARY STREAM DIVERSION PLAN TO THE ENGINEER FOR REVIEW AND APPROVAL WITHIN 7 DAYS OF NOTICE TO PROCEED.
3. THE TEMPORARY STREAM DIVERSION SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED TO ENSURE CONTINUED PROPER FUNCTIONING.
4. THE STREAM DIVERSION SYSTEM SHALL BE CAPABLE OF CONVEYING THE FLOW SPECIFIED IN THE CONTRACT DOCUMENTS.
5. FISH EXCLUSION AND FISH REMOVAL SHALL BE PERFORMED BY THE CONTRACTOR, BEFORE IN-WATER WORK IN ACCORDANCE WITH THE WASHINGTON DEPARTMENT OF FISH AND WILDLIFE HPA.

TEMPORARY STREAM DIVERSION KEY NOTES:

1. INSTALL FISH SCREEN.
2. CAPTURE AND REMOVE ALL FISH BETWEEN THE FISH SCREENS IN ACCORDANCE WITH THE HPA. FISH CAPTURE SHALL BE PERFORMED UNDER THE SUPERVISION OF AN EXPERIENCED FISHERY BIOLOGIST.
3. INSTALL COFFERDAM. SEE DETAIL 1 ON SHEET 11. INSTALL COFFERDAMS AT STA 101+47.1 AND STA 103+44.1.
4. INSTALL TEMPORARY STREAM DIVERSION PIPE. ADJUST LOCATION OF DIVERSION PIPE AS NEEDED TO PERFORM WORK.
5. INSTALL OUTLET PROTECTION TO PREVENT EROSION AT TEMPORARY STREAM DIVERSION OUTFALL. OUTLET PROTECTION SHALL BE REMOVED WHEN CONSTRUCTION IS COMPLETE. SEE DETAIL 1 ON SHEET 11.
6. INSTALL STREAM BYPASS PUMP(S) AND PIPES AS NEEDED DURING CONSTRUCTION. ADJUST LOCATION OF BYPASS PUMPS AND PIPES AS NEEDED TO PERFORM WORK.
7. INSTALL FILTER BAG FOR SEDIMENT REMOVAL FROM ANY DEWATERING ACTIVITIES THAT MAY BE NECESSARY DURING CONSTRUCTION. SEE DETAIL 2 ON SHEET 11.
8. INSTALL DEWATERING PUMP AND PIPES AS NEEDED DURING CONSTRUCTION. ADJUST LOCATION OF DEWATERING PUMPS AND PIPES AS NEEDED TO PERFORM WORK.

LEGEND

- | | |
|--|-------------------------|
| | COFFER DAM |
| | FISH SCREEN |
| | FORCE MAIN |
| | PUMP |
| | TEMPORARY QUARRY SPALLS |
| | FILTER BAG |



SHEET 10 TEMPORARY STREAM DIVERSION PLAN

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD, CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

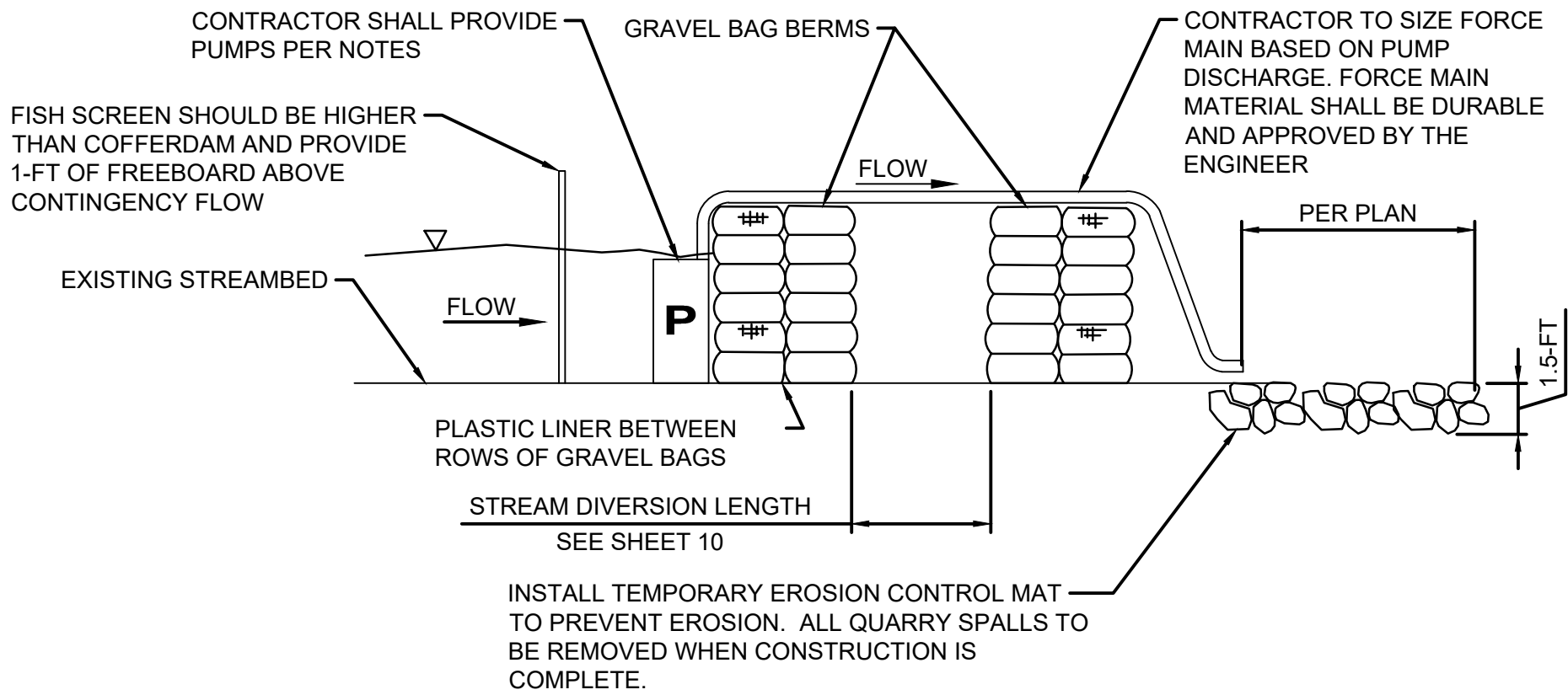
WATER BODY: LUCAS CREEK

NEAR: ONALASKA

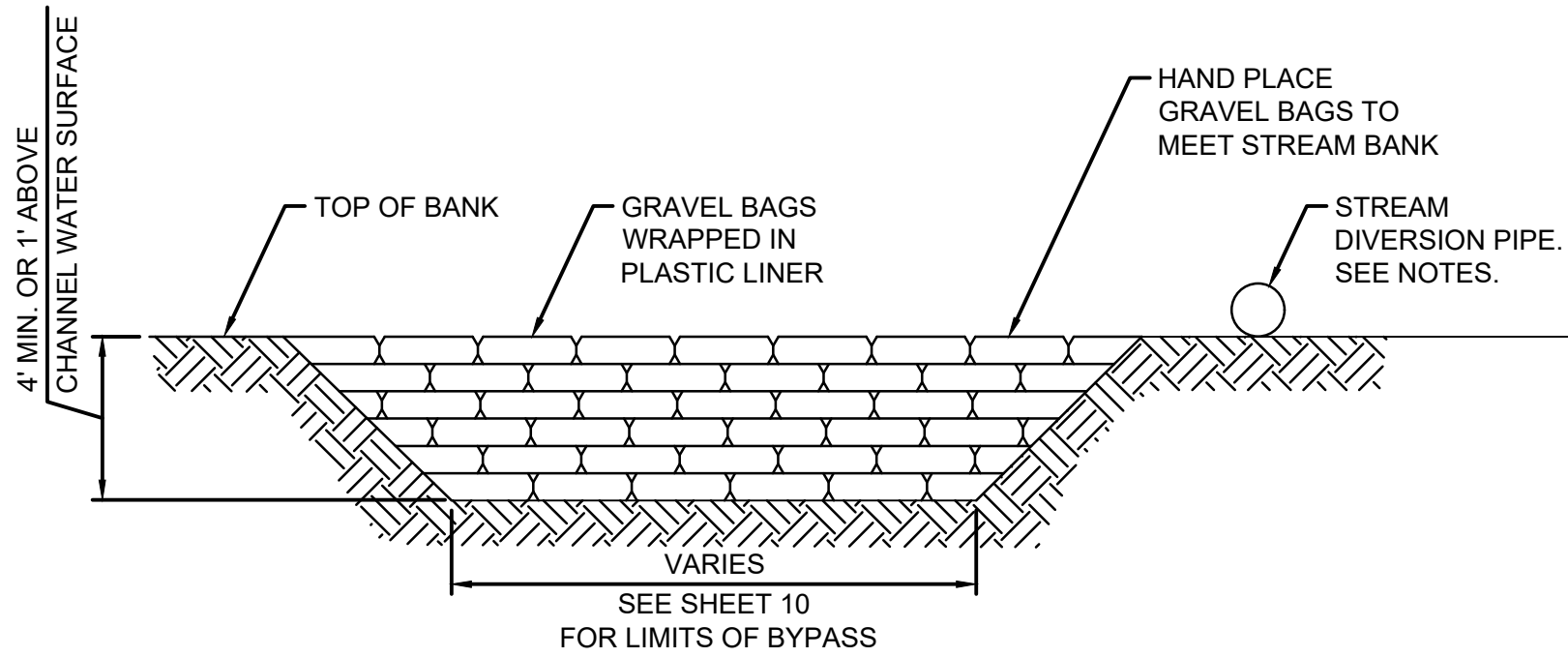
COUNTY: LEWIS

STATE: WA

Jul 20, 2026 -- 1:56pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\P_20-230005_TEMP STREAM DETAILS.dwg



SIDE VIEW

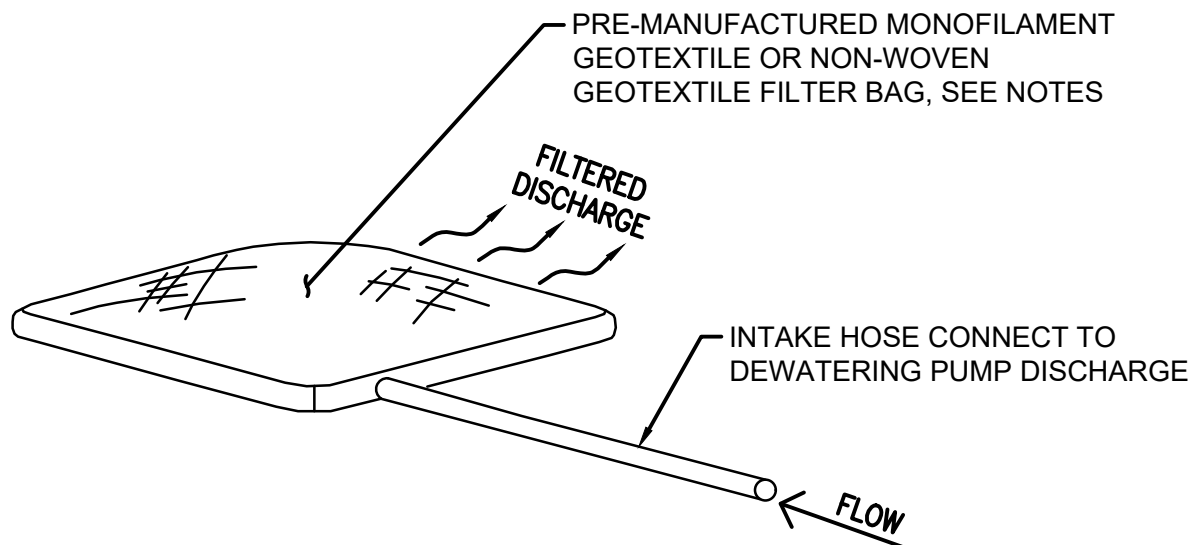


FRONT VIEW

NOTES:

1. COFFERDAM IS CONCEPTUAL. CONTRACTOR MAY USE ALTERNATIVE AS APPROVED BY ENGINEER.
2. COFFERDAM SHALL BE CONSTRUCTED BY THE CONTRACTOR WITH ROUNDED PEA GRAVEL BAGS, OR OTHER MEANS PRE-APPROVED BY THE ENGINEER. GRAVEL BAGS SHALL BE CONSTRUCTED OF WOVEN SYNTHETIC FIBER. NO ANGULAR OR CRUSHED MATERIALS MAY BE USED. GRAVEL BAGS SHALL BE WASTEHAULED AFTER REMOVAL OF TEMPORARY STREAM DIVERSION.
3. THE HEIGHT AND WIDTH OF THE COFFERDAM SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE WATER SURFACE ELEVATION AND CHANNEL SHAPE AT THE TIME OF CONSTRUCTION. THE COFFERDAMS SHALL BE REVIEWED AND APPROVED BY THE ENGINEER. THE AVERAGE MAXIMUM DAILY FLOW IS APPROXIMATELY 14 CFS.
4. REMOVE LOOSE COBBLES AND BOULDERS FROM THE STREAMBED PRIOR TO INSTALLING COFFERDAM.
5. EXTEND BOTH ENDS OF THE COFFERDAM UP THE BANKS OF THE CHANNEL AS NEEDED TO PREVENT THE STREAM FROM END-RUNNING THE COFFERDAM.
6. PUMP INTAKE SCREEN SHALL BE BACKWATERED WITH THE PLACEMENT OF THE GRAVEL BAG BERM TO PREVENT FISH FROM GETTING IMPINGED OR ENTRAINED ON THE INTAKE SCREEN.
7. COFFERDAM SHALL BE MAINTAINED BY THE CONTRACTOR AND IMPROVED AS NECESSARY AND DIRECTED BY THE ENGINEER.
8. CONTRACTOR SHALL HAVE ON SITE, EMERGENCY DIVERSION PIPE, PUMPS, GENERATOR, AND APPURTENANCES IN THE EVENT OF HIGH FLOWS AS WELL AS BACKUP PUMP(S) IN CASE OF PRIMARY PUMP FAILURE. EMERGENCY DIVERSION PUMP INTAKE SHALL BE SCREENED TO PREVENT FISH FROM ENTERING DIVERSION SYSTEM. SEE THE CONTRACT PROVISIONS AND HPA FOR ADDITIONAL INFORMATION ON TEMPORARY STREM DIVERSION.
9. COFFERDAM MATERIALS SHALL BE REMOVED FROM THE SITE AND BECOME PROPERTY OF CONTRACTOR.

1
5 COFFER DAM DETAIL
NOT TO SCALE



NOTES:

1. FILTER BAG SHALL BE MINIMUM 10-FT X 15-FT AND REPLACED AS NEEDED TO ACCOMMODATE ACTUAL SEDIMENT LOAD CONDITIONS (I.E. VOLUME, TYPE OF SEDIMENT, ETC.)
2. DRAIN FILTER BAG TO COUNTY APPROVED RECEIVING AREA. RECEIVING AREA SHALL BE VEGETATED AND UPLAND OF THE OHWM AND TURBIDITY MONITORING STATION.
3. FILTER BAG SYSTEM TO BE INSPECTED DAILY WHEN IN USE TO VERIFY ADEQUATE PERFORMANCE.
4. TURBIDITY MONITORING STATION INSTALLED AND MAINTAINED PER PERMIT REQUIREMENTS (TO BE DETERMINED), SHOULD A TURBIDITY EXCEEDENCE OCCUR, THE FILTER BAG SYSTEM IS TO BE INSPECTED IMMEDIATELY AND REPLACED IF ANOTHER SEDIMENT SOURCE IS NOT IDENTIFIED.

2
5 FILTER BAG DETAIL
NOT TO SCALE

SHEET 11 TEMPORARY STREAM DIVERSION DETAILS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD, CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA

Jul 20, 2026 — 1:57pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\21588A-RESTORATION PLAN_JARPA.dwg

NOTE:

PROJECT WORK LIMITS ARE ENTIRELY WITHIN THE SHORELINE ENVIRONMENT.

CONSTRUCTION NOTES:

- 1 LIVE STAKES
- 2 RIPARIAN SEED MIX AND PLANTING
-PLACE 12 INCHES OF TYPE B TOPSOIL
-PLACE 24 DIAM. MULCH RING AT TREES/SHRUBS
-INSTALL BROWSE PROTECTORS
- 3 UPLAND SEED MIX
-PLACE 4 INCHES OF TYPE B TOPSOIL
- 4 UPLAND SEED MIX AND PLANTING
-PLACE 12 INCHES OF TYPE B TOPSOIL
-PLACE 24 DIAM. MULCH RING AT TREES/SHRUBS
-INSTALL BROWSE PROTECTORS
- 5 PREVIOUSLY RESTORED BANK AREA. NO WORK BEYOND SILT FENCE LINE.

NOTE: ALL PLANTING WORK PAID WITH 'LANDSCAPE RESTORATION' BID ITEM

GENERAL NOTES:

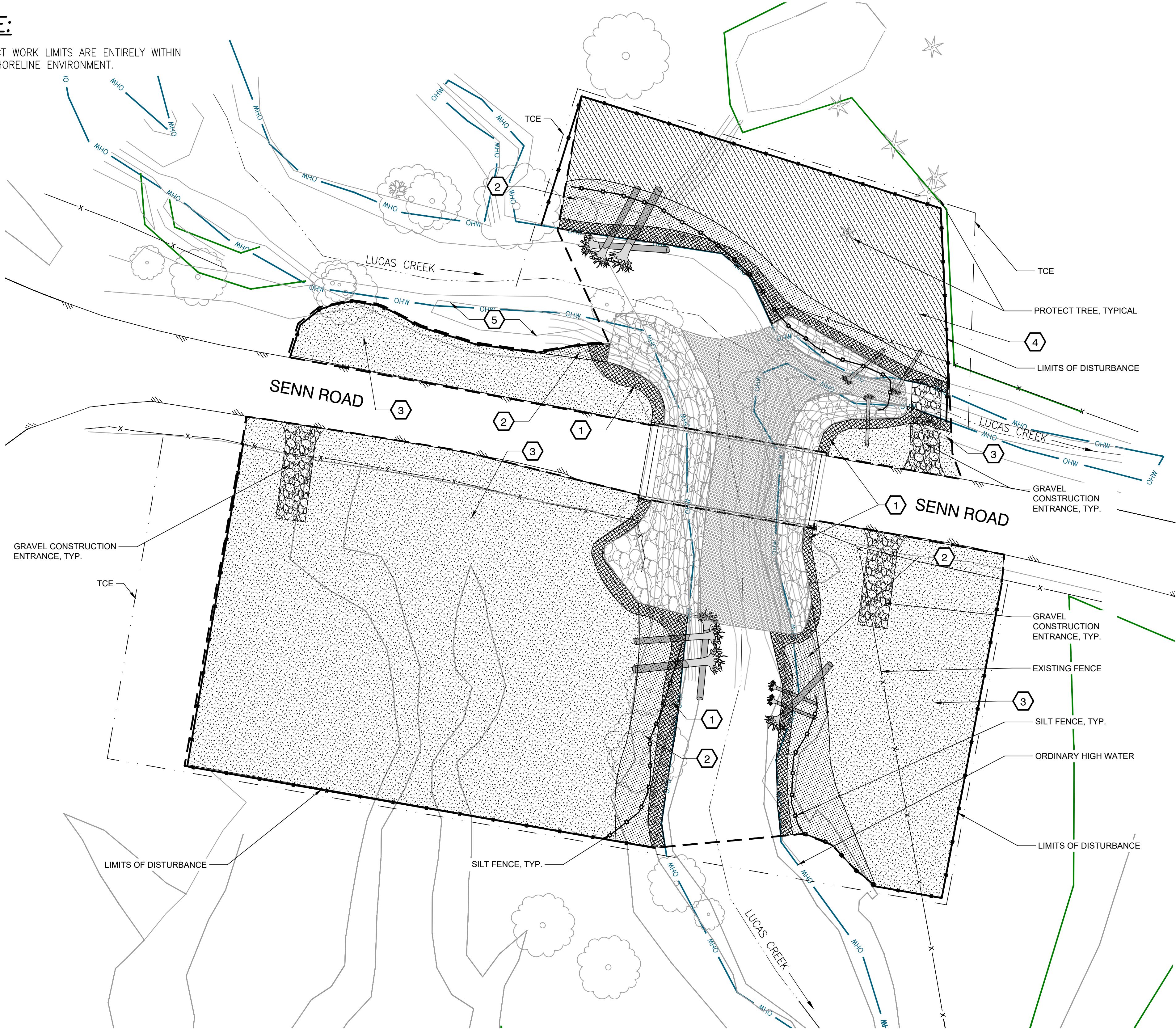
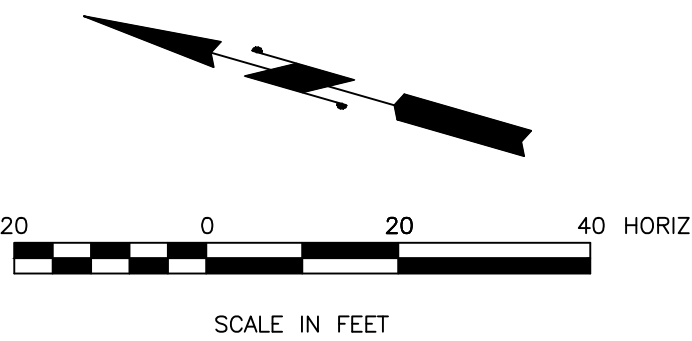
- 1) SEE PLANT SCHEDULE, DETAILS AND NOTES SHEET 13.
- 2) ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESTORED IN ACCORDANCE WITH PROJECT PLANS AND CONSTRUCTION SPECIFICATIONS.
- 3) STAKE THE LIMITS OF PLANTING AREAS FOR APPROVAL BY THE ENGINEER PRIOR TO PLANTING INSTALLATION.
- 4) SEE STREAM SHEETS, REVETMENT PLANS, AND DETAILS.

PLANTING LEGEND:

- PLANTING ZONE 1 - LIVE STAKES
2,024 SF
- PLANTING ZONE 2 - RIPARIAN SEED MIX AND PLANTING
4,318 SF
- PLANTING ZONE 3 - UPLAND SEED MIX
25,519 SF
- PLANTING ZONE 4 - UPLAND SEED MIX AND PLANTING
4,655 SF

STREAM LEGEND:

- EXPOSED RIP RAP
- STREAMBED COBBLES
- LARGE WOOD DEBRIS



SHEET 12 RESTORATION PLAN

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

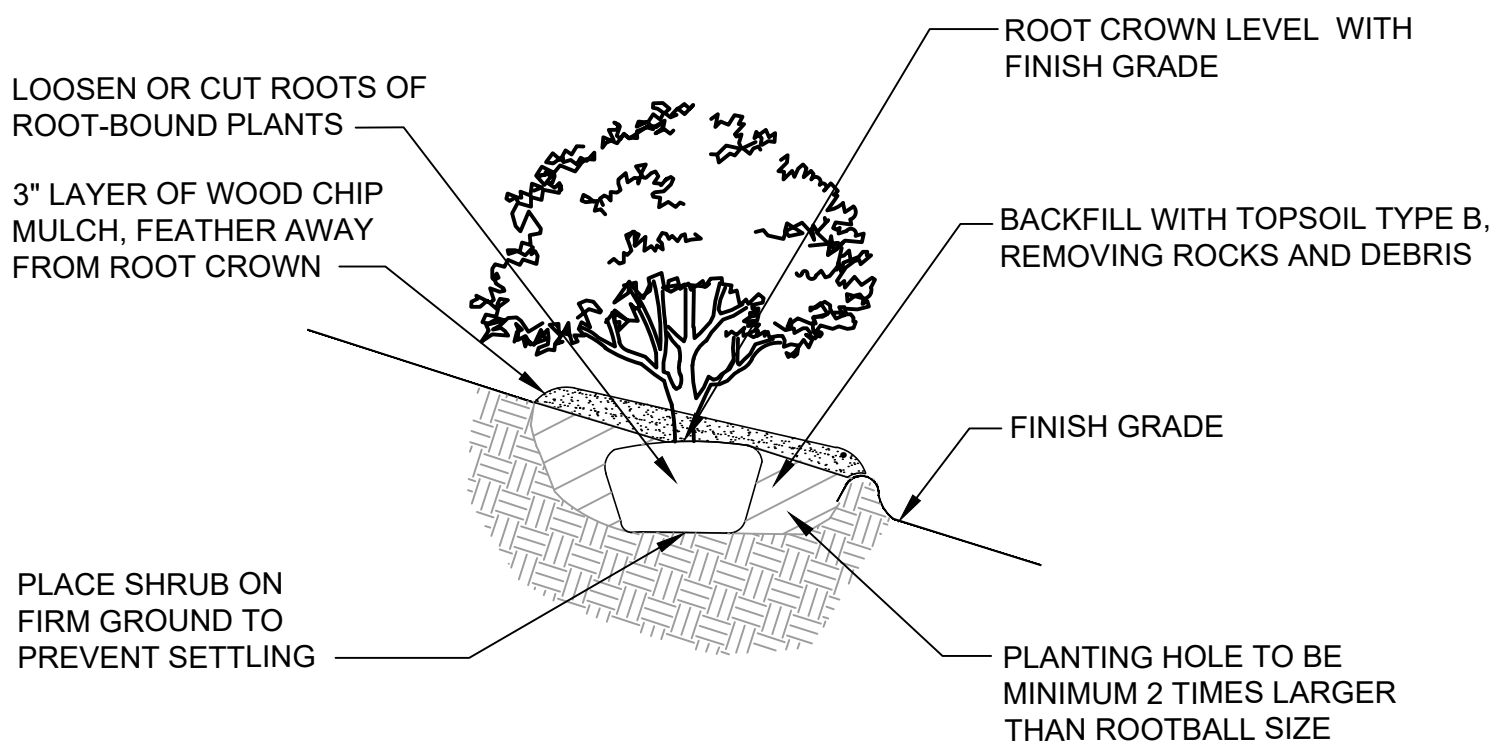
PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

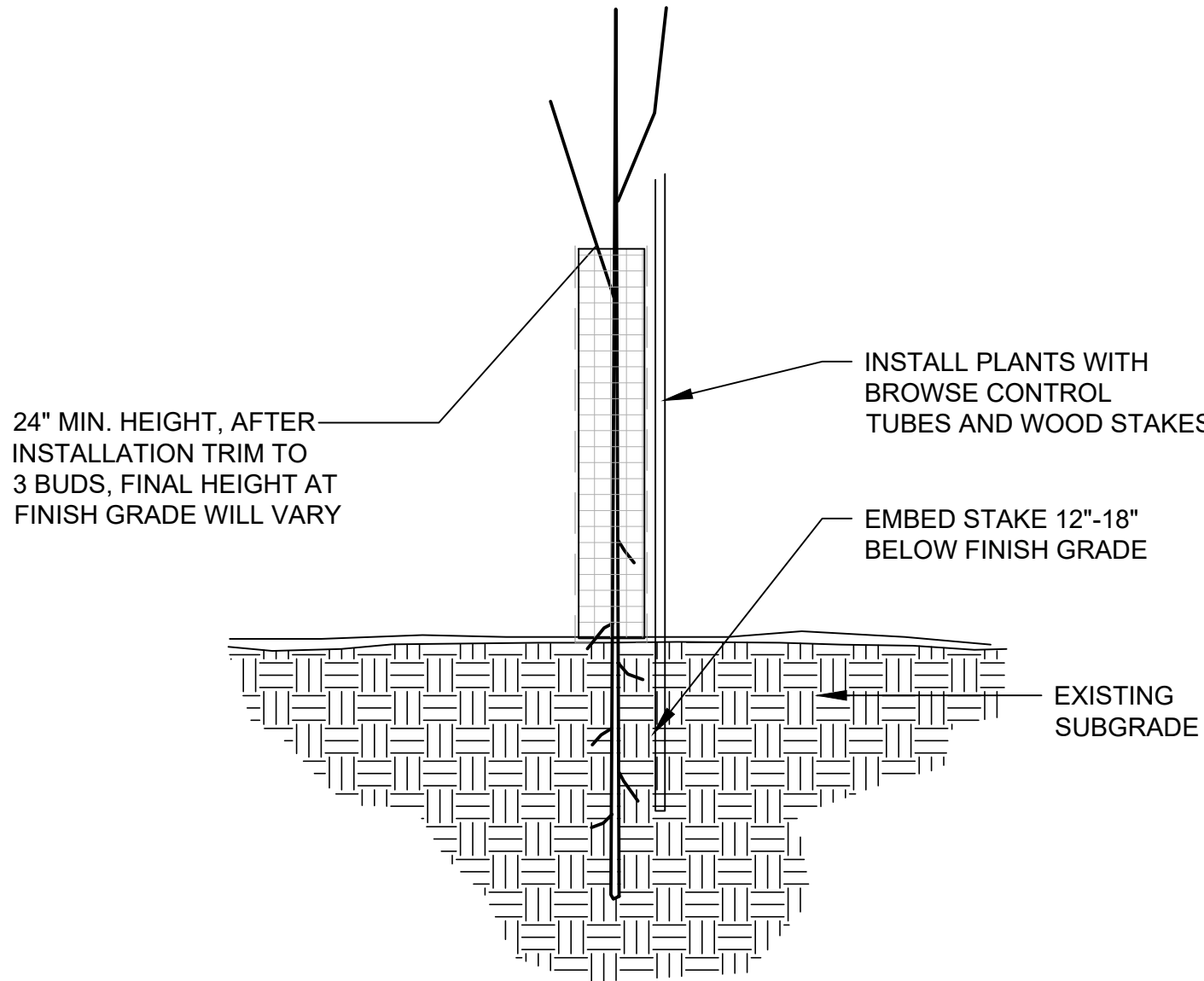
NEAR: ONALASKA

COUNTY: LEWIS **STATE:** WA

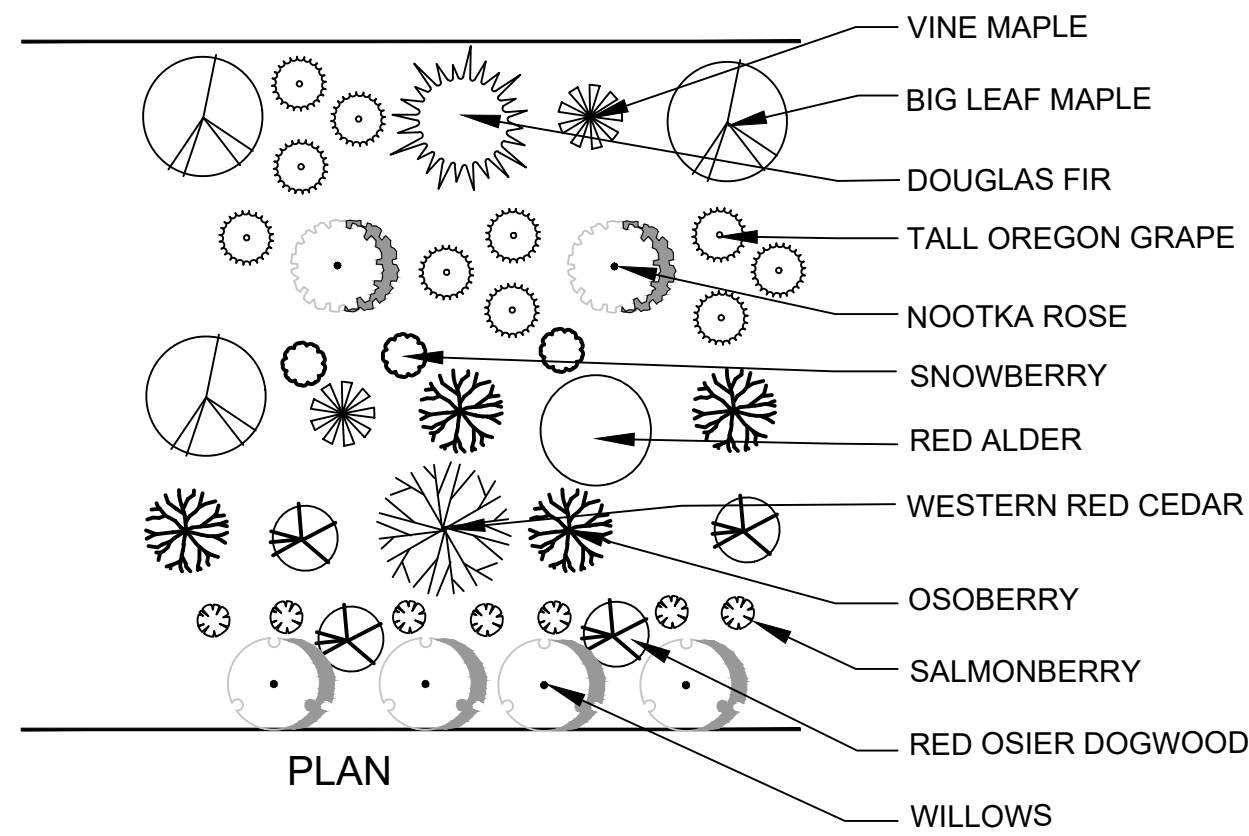
Jul 20, 2026 — 1:57pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\Dwg\Exhibits\JARPA\DWG\21588A-RESTORATION PLAN_JARPA.dwg



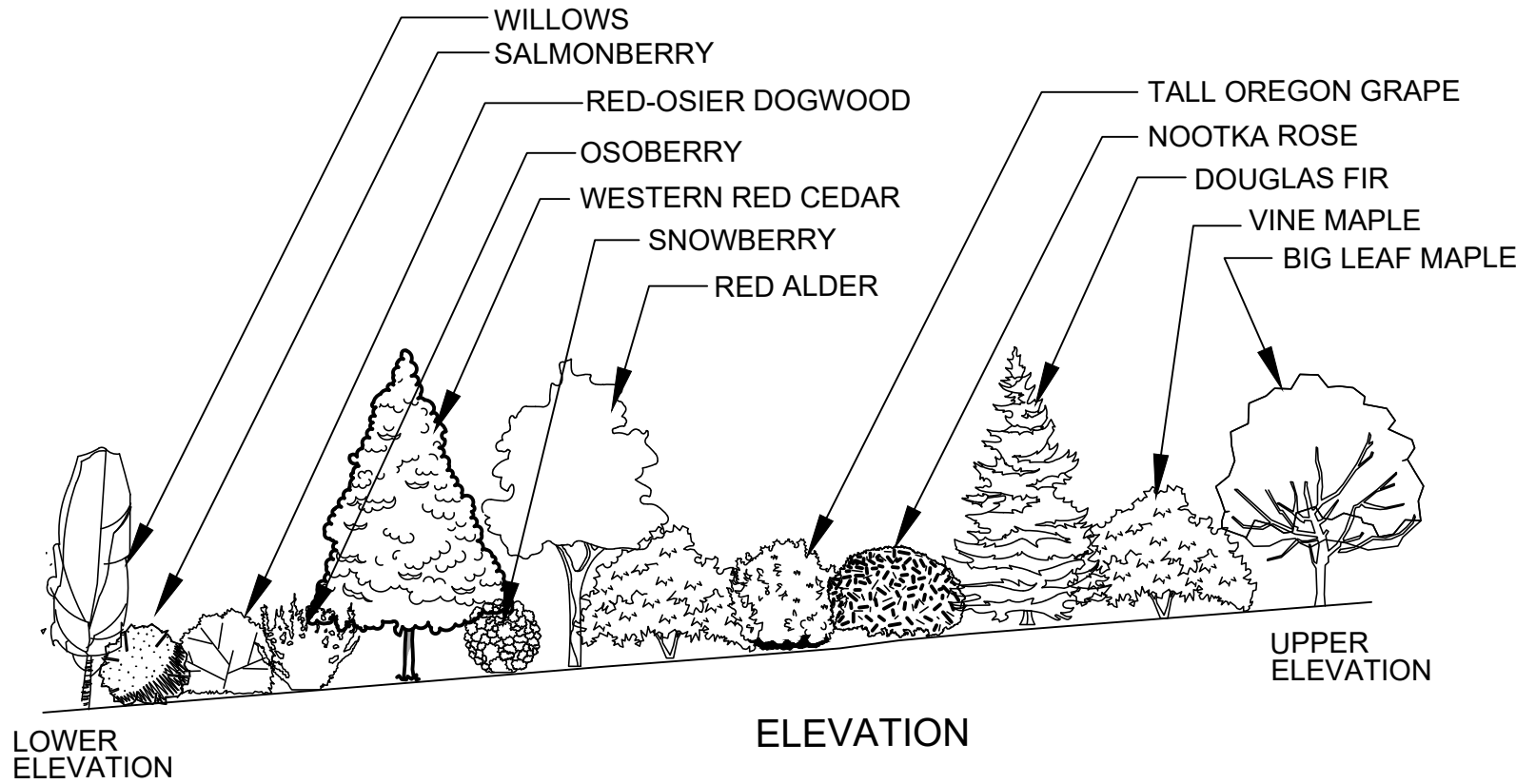
RESTORATION SHRUB/TREE PLANTING ON SLOPE
Scale: N.T.S.



BROWSE GUARD
Scale: N.T.S.



TYPICAL UPLAND AND RIPARIAN PLANTING
Scale: N.T.S.



PLANT MATERIAL:

1. PLANT MATERIAL MUST BE SOURCED FROM NATURALLY OCCURRING POPULATIONS BELOW 1,000 FEET ELEVATION IN AN AREA BOUNDED BY THE COAST RANGE TO THE WEST, THE CASCADE RANGE TO THE EAST, CENTRALIA, WA TO THE NORTH, AND COTTAGE GROVE, OR TO THE SOUTH. CONTRACTOR SHALL PROVIDE PROOF OF SOURCE TO OWNER PRIOR TO DELIVERING THE PLANT MATERIAL TO THE SITE.
2. PLANT TREES IN GROUPS OF 3-5 AND SHRUBS IN GROUPS OF 5, IN ACCORDANCE WITH DETAILS AND NOTES.
3. UNIFORMLY DISTRIBUTE PLANT SPECIES IN EACH CONTIGUOUS AREA AND AS DIRECTED BY THE ENGINEER.
4. PLANT MATERIAL INSTALLATION MEANS AND METHODS TO BE IN ACCORDANCE WITH WSDOT STANDARD PLAN.

UTILITY NOTES:

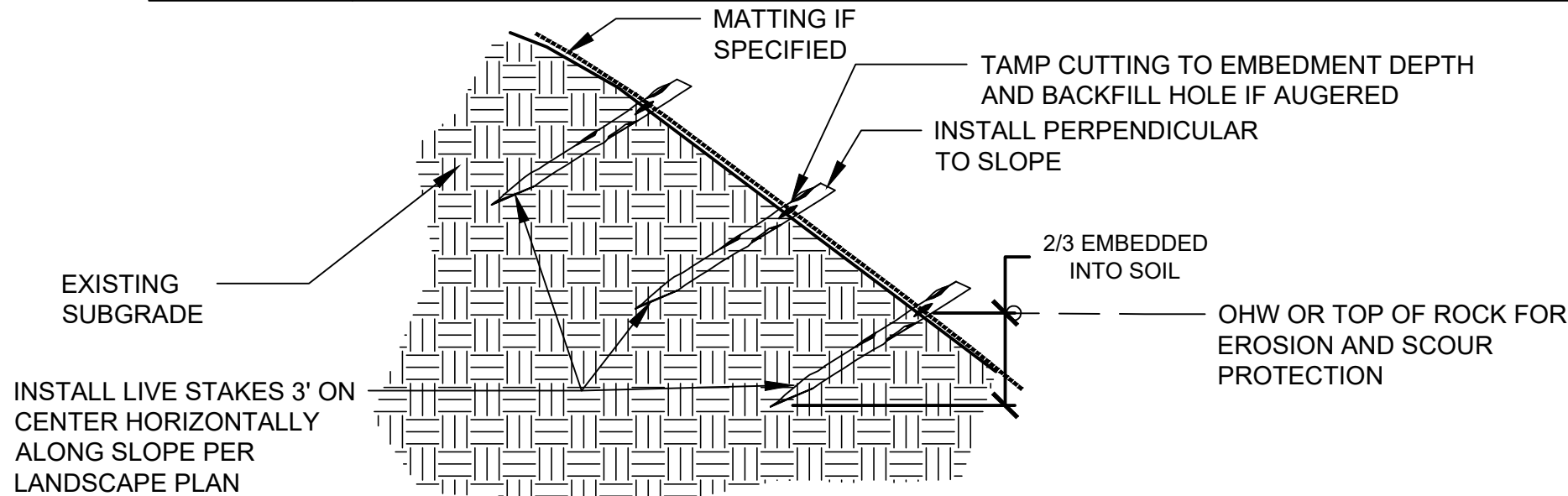
1. CONTRACTOR IS CAUTIONED THAT EXISTING UNDERGROUND FACILITIES OCCUR THROUGHOUT THE WORK AREAS INCLUDING BUT NOT LIMITED TO POWER, GAS, TELEPHONE, WATER SUPPLY, AND IRRIGATION. CONTRACTOR SHALL MARK THE FACILITIES BEFORE WORK, POTHOLE WHERE NECESSARY, AND PROTECT DURING CONSTRUCTION. IMMEDIATELY NOTIFY OWNER'S REPRESENTATIVE IF ANY CONFLICTS ARE FOUND.

LANDSCAPE NOTES:

1. THE LANDSCAPE CONTRACTOR IS TO THOROUGHLY REVIEW THE SITE. IF THERE ARE ANY DISCREPANCIES BETWEEN THE PLAN AND THE EXISTING CONDITIONS NOTIFY THE ENGINEER IMMEDIATELY.
2. PROVIDE QUANTITY OF PLANT MATERIAL INDICATED IN PLANT LIST OR THE QUANTITY REQUIRED TO COVER AREAS INDICATED AT SPECIFIED SPACING, WHICHEVER IS GREATER.
3. LEAVE PLANT NAME IDENTIFICATION TAGS ON TEN PERCENT OF ALL TREES AND SHRUBS INSTALLED TO AID INSPECTORS IN VERIFYING THAT SPECIFIED PLANTS HAVE BEEN INSTALLED.
4. INVASIVE SPECIES/WEED CONTROL: REMOVE ALL WEEDS AND INVASIVE SPECIES INCLUDING BUT NOT LIMITED TO BLACKBERRY, TEASEL, ST. JOHN'S WART, REED CANARY GRASS, BIRDSFOOT TREFOIL, PRICKLY LETTUCE, SOWTHISTLE, AND TANSY RAGWORT WITHIN PROJECT LIMITS UNLESS OTHERWISE DIRECTED. MEANS AND METHODS TO BE IN ACCORDANCE WITH LEWIS COUNTY STANDARDS.
5. LANDSCAPE RESTORATION, INCLUDING PLANTING AREA PREPARATION, PLANT SELECTION AND INSTALLATION, AND PLANT ESTABLISHMENT, SHALL CONFORM WITH THE REQUIREMENTS LISTED IN THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, CHAPTER 8-02 ROADSIDE RESTORATION, AND THE SPECIAL PROVISIONS FOR THIS PROJECT.

PLANT SCHEDULE:

SYMBOL	COMMON NAME	BOTANICAL NAME	TYPE	SPACING/SEEDING RATE	QTY./LBS
	PLANTING ZONE 1-LIVE STAKES		AREA (SF/AC) =2,024/0.04		225
	<i>Salix lasiandra</i>	Pacific Willow	3'L Cutting, 3/4" MIN DIA	3 FT O.C. Clusters of same species	65
	<i>Salix scouleriana</i>	Scouler Willow	3'L Cutting, 3/4" MIN DIA	3 FT O.C. Clusters of same species	90
	<i>Salix sitchensis</i>	Sitka Willow	3'L Cutting, 3/4" MIN DIA	3 FT O.C. Clusters of same species	70
	PLANTING ZONE 2 - RIPARIAN SEED MIX AND PLANTING		AREA (SF/AC) =4,318/0.09		
	SEED MIX				4.31 LBS
	<i>Bromus carinatus</i>	California brome	Seed	See Specifications	
	<i>Elymus glaucus</i>	Blue wildrye	Seed	See Specifications	
	<i>Hordeum brachyantherum</i>	Meadow Barley	Seed	See Specifications	
	SHRUBS				147
	<i>Rubus spectabilis</i>	Salmonberry	1 Gallon	6-FT OC	19
	<i>Cornus sericea</i>	Red-Osier Dogwood	1 Gallon	6-FT OC	25
	<i>Mahonia aquifolium</i>	Tall Oregon Grape	1 Gallon	6-FT OC	28
	<i>Oemleria cerasiformis</i>	Osoberry	1 Gallon	6-FT OC	25
	<i>Symphoricarpos albus</i>	Snowberry	1 Gallon	6-FT OC	25
	<i>Rosa nutkana</i>	Nootka Rose	1 Gallon	6-FT OC	25
	PLANTING ZONE 3 - UPLAND SEED MIX		AREA (SF/AC) =25,519/0.58		
	SEED MIX				25.51 LBS
	<i>Agrostis exerata</i>	Spike bentgrass	Seed	See Specifications	
	<i>Bromus carinatus</i>	California brome	Seed	See Specifications	
	<i>Elymus glaucus</i>	Blue wildrye	Seed	See Specifications	
	<i>Deschampsia cespitosa</i>	Tufted Hair Grass	Seed	See Specifications	
	<i>Hordeum brachyantherum</i>	Meadow Barley	Seed	See Specifications	
		PLANTING ZONE 4 - UPLAND SEED MIX AND PLANTING		AREA (SF/AC) = 4,655/0.10	
SEED MIX				4.65 LBS	
<i>Agrostis exerata</i>		Spike bentgrass	Seed	See Specifications	
<i>Bromus carinatus</i>		California brome	Seed	See Specifications	
<i>Elymus glaucus</i>		Blue wildrye	Seed	See Specifications	
<i>Deschampsia cespitosa</i>		Tufted Hair Grass	Seed	See Specifications	
<i>Hordeum brachyantherum</i>		Meadow Barley	Seed	See Specifications	
TREES				24	
<i>Tree quantities include tree mitigation for the (#) tree removals</i>					
<i>Acer circinatum</i>		Vine Maple	2 Gallon	15-FT O.C.	5
<i>Acer macrophyllum</i>	Big Leaf Maple	2 Gallon	15-FT O.C.	4	
<i>Alnus rubra</i>	Red Alder	2 Gallon	15-FT O.C.	5	
<i>Thuja plicata</i>	Western Red Cedar	2 Gallon	15-FT O.C.	5	
<i>Pseudotsuga menziesii</i>	Douglas Fir	2 Gallon	15-FT O.C.	5	
SHRUBS				127	
<i>Cornus sericea</i>	Red-Osier Dogwood	1 Gallon	6-FT OC	25	
<i>Oemleria cerasiformis</i>	Osoberry	1 Gallon	6-FT OC	25	
<i>Symphoricarpos albus</i>	Snowberry	1 Gallon	6-FT OC	15	
<i>Sambucus racemosa</i>	Red Elderberry	1 Gallon	6-FT OC	27	
<i>Rosa nutkana</i>	Nootka Rose	1 Gallon	6-FT OC	25	
<i>Rubus spectabilis</i>	Salmonberry	1 Gallon	6-FT OC	10	



LIVE STAKE PLANTING ALONG OHW
Scale: N.T.S.

SHEET 13 RESTORATION DETAILS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD,
CHEHALIS, WA, 98532

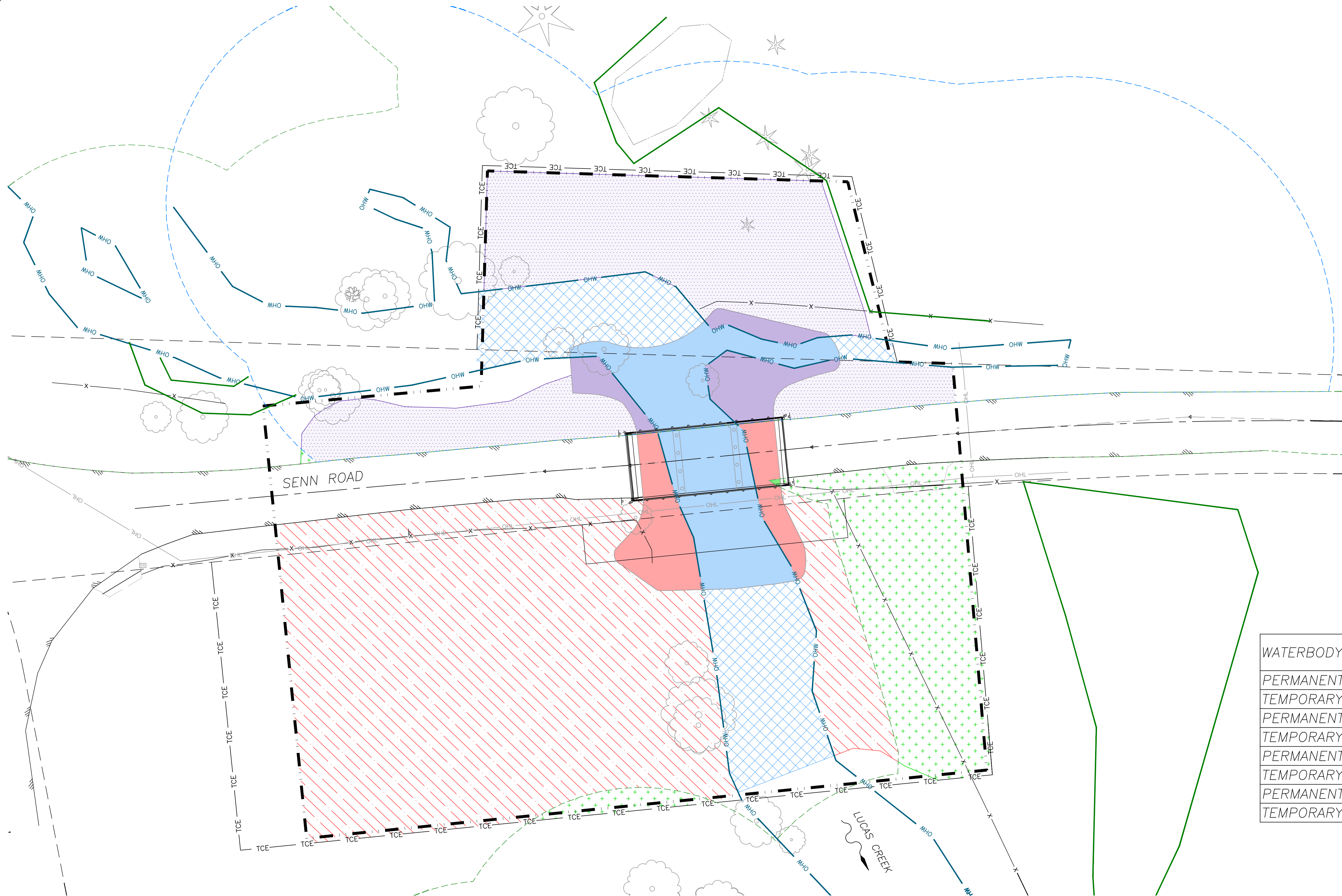
PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS **STATE:** WA

Jul 20, 2026 — 1:57pm
O:\PROJECT\21500\21588A\04 CAD\ACAD\DWG\Exhibits\JARPA\DWG\21588A-IMPACTS-JARPA.dwg

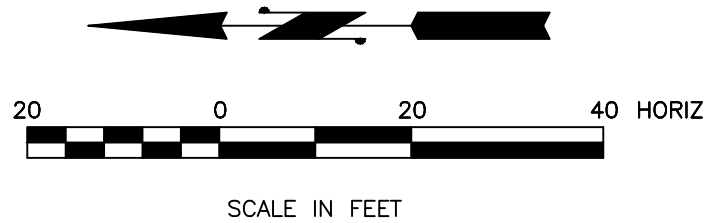


NOTE:
PROJECT WORK LIMITS ARE ENTIRELY WITHIN THE SHORELINE ENVIRONMENT.

LEGEND

[Solid Blue]	PERMANENT STREAM IMPACTS
[Blue Cross-Hatch]	TEMPORARY STREAM IMPACTS
[Solid Red]	PERMANENT SHORELINE VEGETATION IMPACTS
[Red Diagonal Lines]	TEMPORARY SHORELINE VEGETATION IMPACTS
[Solid Green]	PERMANENT WETLAND BUFFER IMPACTS
[Green Cross-Hatch]	TEMPORARY WETLAND BUFFER IMPACTS
[Solid Purple]	PERMANENT OVERLAPPING STREAM AND WETLAND BUFFER IMPACTS
[Purple Cross-Hatch]	TEMPORARY OVERLAPPING STREAM AND WETLAND BUFFER IMPACTS
[Dashed Line]	TEMPORARY CONSTRUCTION EASEMENT
[Thick Black Line]	PROJECT LIMITS
[Blue Line]	ORDINARY HIGH WATER
[Green Line]	WETLAND BOUNDARY
[Dashed Green Line]	WETLAND BUFFERS
[Dashed Blue Line]	STREAM BUFFERS

WATERBODY IMPACT	AREA (SF)
PERMANENT STREAM IMPACTS	3,578
TEMPORARY STREAM IMPACTS	5,102
PERMANENT SHORELINE VEGETATION IMPACTS	1,620
TEMPORARY SHORELINE VEGETATION IMPACTS	20,050
PERMANENT WETLAND BUFFER IMPACTS	7
TEMPORARY WETLAND BUFFER IMPACTS	5,870
PERMANENT OVERLAPPING BUFFER IMPACTS	1,343
TEMPORARY OVERLAPPING BUFFER IMPACTS	9,793



SHEET 14 IMPACTS

DATE: JULY 2026

APPLICANT: LEWIS COUNTY PUBLIC WORKS

REFERENCE #:

ADJACENT PROPERTY OWNERS: SEE JARPA FORM

PURPOSE: BRIDGE SCOUR REPAIR

LAT/LONG: 46.63899N. LAT. / -122.77172W. LONG.

SITE LOCATION ADDRESS: 264 SENN RD, CHEHALIS, WA, 98532

PROPOSED PROJECT: SENN ROAD MP 0.89 BRIDGE SCOUR REPAIR PROJECT

WATER BODY: LUCAS CREEK

NEAR: ONALASKA

COUNTY: LEWIS

STATE: WA