SUBMITTED TO:
Port of Everett
1205 Craftsman Way,
Suite 200
Everett, WA 98201

BY:
Shannon & Wilson
400 N. 34th Street, Suite 100
Seattle, WA 98103

(206) 632-8020
www.shannonwilson.com

YEAR 1 MONITORING REPORT

Bay Wood Interim Action Cleanup and Shoreline Restoration Project

CITY OF EVERETT, WASHINGTON

SHANNON & WILSON

February 28, 2023

Shannon & Wilson No: 102336-021

Submitted To: Port of Everett
1205 Craftsman Way, Suite 200
Everett, WA 98201
Attn: Mr. Erik Gerking

Subject: YEAR 1 MONITORING REPORT, BAY WOOD INTERIM ACTION CLEANUP AND SHORELINE RESTORATION PROJECT, CITY OF EVERETT, WASHINGTON

Shannon & Wilson participated in this project as a consultant to the Port of Everett.

We appreciate the opportunity to be of service to you on this project. If you have any questions about the contents of this report, please contact Sarah at (206) 695-6674 or sarah.corbin@shanwil.com or Amy at (206) 695-6685 or amy.summe@shanwil.com.

Sincerely,

SHANNON & WILSON

Sarah Corbin, PWS, MSES
Senior Biologist/Permit Specialist

Amy Summe, PWS
Senior Biologist/Permit Specialist

AJS:SCC:KLW/ajs:scc

CONTENTS

Exhibits

CONTENTS

Figures

Appendices

ACRONYMS

AO	Agreed Order
City	City of Everett
Corps	U.S. Army Corps of Engineers
Ecology	Washington State Department of Ecology
LAI	Landau Associates, Inc.
LWD	large woody debris
Port	Port of Everett
Project	Bay Wood Interim Action Cleanup and Shoreline Restoration Project
Property	Bay Wood property
WDFW	Washington Department of Fish and Wildlife

1 INTRODUCTION

Shannon & Wilson prepared this monitoring report on behalf of the Port of Everett (Port) for the Bay Wood Interim Action Cleanup and Shoreline Restoration Project (Project) to document the Year 1 performance of the Project, consistent with the *Bay Wood Shoreline Interim Cleanup and Restoration Plan* (Project Restoration Plan) (Shannon & Wilson, 2019a). This Project was completed as a Model Toxics Control Act Interim Cleanup Action with the Washington State Department of Ecology (Ecology) under an Agreed Order (AO) (AO No. 5490, amended in February 2020) and received a Remedial Action Grant from Ecology. The Project was designed to achieve environmental cleanup, habitat restoration, and buffer enhancements along most of the upland shoreline.

The Project was completed in conjunction with and to support upland site redevelopment of the Bay Wood property (Property). The shoreline cleanup and restoration has significantly improved ecological function of the shoreline as part of an interim cleanup action with Ecology. These benefits also fulfilled the requirements of a critical area buffer reduction granted by the City of Everett (City) to support the upland development of the Property. The interim action and associated monitoring were conducted in consultation with Ecology staff and in accordance with the AO and subsequent planning documents, including the *Restoration Design Criteria Memorandum* (Shannon & Wilson, 2019b), *Final Compliance Monitoring Plan* (Landau Associates, Inc. [LAI], 2020a), *Interim Action Work Plan* (LAI, 2020c), the Engineering Design Report (LAI, 2020b), and associated authorizing permits. See the *As-Built Restoration Monitoring Report* (Shannon & Wilson, 2022) for additional regulatory background.

This Year 1 monitoring report documents the progress of the Project towards achievement of the performance standards.

2 LOCATION

The Property is located at 200 West Marine View Drive, Everett, Washington (Section 07, Township 29N, Range 05E) (Figure 1). Adjacent land uses include tidal mudflats and vacant land owned by Kimberly-Clark Worldwide, Inc. to the north; West Marine View Drive, BNSF railroad tracks, and Maulsby Swamp to the east; W&W Everett Industries property to the south; and the Snohomish River and Port Gardner Bay to the west. The Project area includes the shoreline associated with the Property and 50 feet upland of the ordinary high water mark (Figure 2). The inland portion of the Property is a recently completed commercial building complex.

3 RESTORATION PLAN SUMMARY

The Project temporarily impacted wetlands, streams, and their buffers as a result of debris removal, shoreline grading, and removal of invasive species to prepare the site for shoreline and buffer restoration. The final Construction Plans are included in Appendix A; the original Project Restoration Plan and the more detailed descriptions of the restoration plan elements and implementation can be found in the *As-Built Restoration Monitoring Report* (Shannon & Wilson, 2022).

3.1 Restoration Plan Implementation Timeline

- November 2020 – February 2021: Grading and large woody debris (LWD) installations.
- March 2021: Initial plant installation.
- June 2022: Re-installed plantings that were removed related to upland site development activity.
- August 2022: *As-Built Restoration Monitoring Report* finalized and then submitted by the Port to the Corps, Ecology, WDFW, and the City on January 4, 2023.
- December 2022: Supplemental erosion protection installation on the west shore following coordination with Ecology, WDFW, and the Tulalip Tribe.

3.2 Post-Implementation Action

Following implementation of the Project Restoration Plan, a specific adaptive management action was necessitated. In two areas of the west shore, portions of the placed sand and gravel mix substrate, including installed emergent vegetation in the Lower and Mid Shore planting zones and some installed willow stakes in the Upper Shore planting zone, were subsequently eroded by wave action, initially following late winter/early spring 2021 storm events that coincided with high tides and continuing with fall 2021/spring 2022 events (Exhibit 3-1).

Exhibit 3-1: Southern Erosion Area on the West Shore (Photo Taken August 31, 2022)

As described in the *As-Built Restoration Monitoring Report* (Shannon & Wilson, 2022), the Port requested additional analysis and developed a plan for placement of new material to resist further erosion and restore the slope profile in the two impacted areas after additional coordination with Ecology, WDFW, and the Tulalip Tribe. With agency approval, the Port placed approximately 130 cubic yards of smooth, rounded rock in those areas totaling 3,190 square feet (Exhibit 3-2). The rock is sized to resist erosion forces along the shoreline. More information can be found in Appendix F of the *As-Built Restoration Monitoring Report* (Shannon & Wilson, 2022). Appendix B of this report contains the most recent iteration of the rock placement plans that were provided to the Contractor.

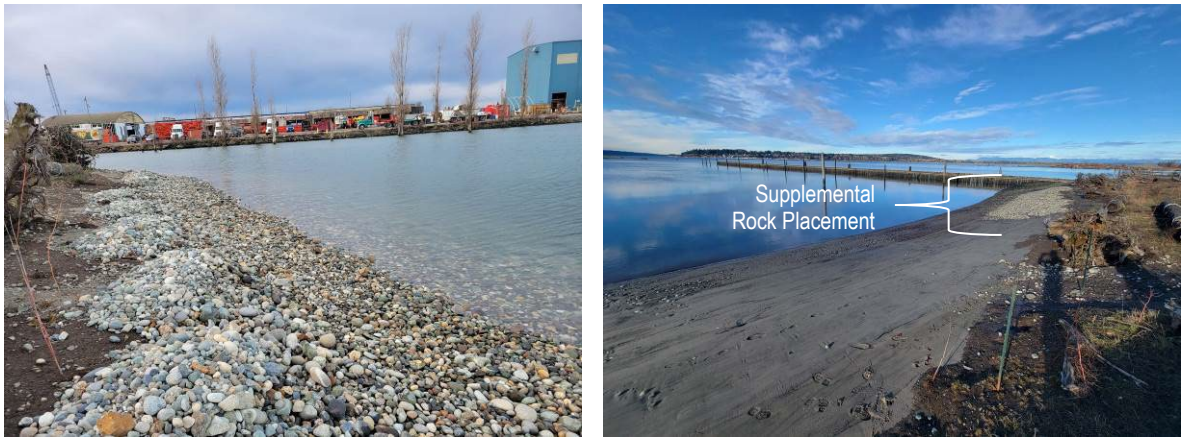


Exhibit 3-2: Photos of the Southern (Left) and Northern (Right) Supplemental Rock Placement Areas on the West Shore (Photos Taken by Port on January 5 and 11, 2023)

4 GOALS AND OBJECTIVES

The following goals and objectives were established in the Project Restoration Plan and are based on the City's Shoreline Master Program (City, 2019a[1]); the recovery actions for the Snohomish Estuary found in the *Snohomish River Basin Salmon Conservation Plan* (Snohomish Basin Salmon Recovery Forum, 2005); and the *Snohomish Estuary Wetland Integration Plan* (City, 1997). Following each of the stated goals and objectives is an assessment of whether the goal/objectives have been met or are still in progress/being evaluated.

4.1 Goal 1 – Shoreline Cleanup

Goal 1: Clean up the shoreline by removing anthropogenic debris to restore the shoreline to a more natural state.

[1] At the time of Project Restoration Plan development, the 2016 version was the most recent adopted edition. The goals and objectives are still consistent with the most recent 2019 version.

- Objective 1.1: Remove bulkheads and replace with soft shore stabilization measures.
- Objective 1.2: Remove debris, including dimensional lumber and wood chips, log skids, riprap rock (quarry spalls), asphalt, concrete, and trash, to the extent feasible.

  ☑ Objectives 1.1 and 1.2 have been met.

☑ Goal 1: ACHIEVED. This goal and the related objectives have been met as of construction.

4.2 Goal 2 – Shoreline Restoration

Goal 2: Restore the degraded shoreline habitat to improve habitat for fish and wildlife species, specifically aquatic habitat to support juvenile salmonids using the Snohomish River estuary.

- Objective 2.1: Restore shoreline grades to a gradual slope that can support native intertidal and riparian vegetation on the west- and south-facing shorelines. The north-facing shoreline will not be graded due to restrictions imposed by the Corps training wall and associated easement.

  ☑ Objective 2.1 has been met, although the west shore is not suited to intertidal emergent vegetation establishment at this time based on wind and wave exposure.
- Objective 2.2: Install LWD to stabilize the slope and provide habitat.

  ☑ Objective 2.2 has been met.
- Objective 2.3: Restore and expand estuarine wetlands along the shoreline to create saltmarsh habitat.

  ☐ To date, installed emergent vegetation on the south shore is establishing and spreading in areas. Achievement of Objective 2.3 will continue to be monitored during future site visits. A determination of completion will be made once the newly establishing emergent communities appear to be stable.

☐ Goal 2: Objectives 2.1 and 2.2 have been met as of construction, with long-term monitoring underway for Objective 2.3.

4.3 Goal 3 – Buffer Enhancement

Goal 3: Establish native riparian vegetation community along the shoreline that includes long-term sources of LWD to support productive shoreline habitat.

- Objective 3.1: Reestablish native riparian plant communities along the shoreline.

☐ To date, the native riparian plantings are doing well, with relatively high survival (see Section 7.2). Achievement of Objective 3.1 will continue to be monitored during future site visits.

- Objective 3.2: Reintroduce LWD through plantings and wood placement.

  ☑ Objective 3.2 has been met.

☐ Goal 3: Objective 3.2 was met as of construction, with long-term monitoring underway for Objective 3.1.

4.4 Goal 4 – Public Access

Goal 4: Create public access/use opportunities consistent with the City's Shoreline Public Access Plan (City, 2019b[2]).

- Objective 4.1: Integrate trails and amenities for public access into shoreline restoration actions, as appropriate considering development requirements, safety considerations, availability of space, restoration goals, existing easements, etc.

  ☑ Objective 4.1 has been met.

☑ Goal 4: ACHIEVED. The trail was formally opened to the public in July 2022 and a number of trail users were observed during the Year 1 monitoring visit.

5 PERFORMANCE STANDARDS

Success of the mitigation (restoration and enhancement) will be determined based on meeting standards for minimum plant survival; minimum cover of native vegetation; and maximum allowed cover of invasive, nonnative plant species over ten growing seasons (Exhibit 5-1). Invasive, nonnative plant species include those on the Snohomish County Noxious Weed List, including any revisions to the list during the ten-year monitoring period for the Project. Removal of invasive species not on the Snohomish County weed list is encouraged; however, presence of these species will not contribute to the 10% invasive cover performance standard.

[2] At the time of Project Restoration Plan development, the 2016 version was the most recent adopted edition. The goals and objectives are still consistent with the most recent 2019 version.

Exhibit 5-1: Vegetation Performance Standards

	Standard	Year 1	Year 2	Year 3	Year 5	Year 7	Year 10
1	Woody Plant Survival Rate (%)[2]	100	>80	--	--	--	--
2	Native Emergent Vegetation Cover (%)[1,2]	>20	>30	>40	>60	>70	>90
3	Native Woody Vegetation Cover (%)[2]	--	--	>30	>60	>80	>90
4	Invasive, Nonnative Plant Cover (%)	≤10	≤10	≤10	≤10	≤10	≤10

NOTES:

1 As noted in the As-built Report, native emergent vegetation cover performance standards were adjusted from the Project Restoration Plan to reflect a natural establishment process that develops gradually over time; the overall goal of 90% cover in wetland areas was not changed. The emergent vegetation cover performance standards do not apply to those stretches of shoreline where exposure and erosive wave energy prevent establishment of emergent species.

2 Natural recruitment of both native woody and emergent species is expected. These recruits will be included in the survival rates and vegetation cover performance standards identified above.

Exhibit 5-2 below summarizes the number of trees, shrubs, and woody groundcover in each planting zone shown in the final construction plans compared to the final, net number installed. Variations between the net quantity installed and those on the construction plans are due to the Port's voluntary excess plantings, plant removal from upland site development, and partial replacement of the removed plants (see the Project *As-Built Restoration Monitoring Report* for details). The woody vegetation percent survival performance standards in Exhibit 5-1 will be assessed using the numbers on the final construction plans.

Exhibit 5-2: Summary of Woody Plant Quantity by Planting Zone on Final Construction Plans Compared to Net Quantity Installed

Woody Vegetation Type	Quantity in Final Construction Plans	Net Quantity Planted	Delta
Riparian Planting Zone			
Trees	140	140	0
Shrubs	2,760	2,618	-22
Woody Groundcover	0	93	+93
Upper Shore Planting Zone			
Shrubs	1,140	1,170	+30
Woody Groundcover	620	650	+30
Total Trees	***140***	***140***	***0***
Total Shrubs	***3,900***	***3,908***	***+8***
Total Woody Groundcover	***620***	***743***	***+123***
TOTAL WOODY VEGETATION	***4,660***	***4,791***	***+131***

6 YEAR 1 METHODS

Shannon & Wilson biologists completed the Year 1 monitoring site visit on August 31, 2022, as described below.

- **Percent Survival:** An effort was made to count all dead woody material in the planting areas and identify to species. In some instances, the species could not be identified based on the condition of the remaining material or the absence of material in a location with a clear mulch ring which presumably had contained an installed woody plant.
- **Emergent Plots:** Percent cover of native emergent species, by species, was visually estimated in each of the seven 1-meter-square plots established during the baseline visit in the mid-shore and lower shore planting zones. The emergent plot locations were measured in reference to the closest transect t-post using a tape measure and compass. Their presence in tidal, high wave energy areas prevented installation of t-posts or other physical markings at the emergent plots.
- **Emergent Community Development:** Considering the dynamic nature of non-armored marine shorelines and the anticipated patchy and shifting evolution of the emergent plant community, the seven emergent plots will also be supported by geographic information system mapping of the general bounds of the developing emergent community.
- **Invasive Plant Cover:** An assessment of weedy species cover was made through qualitative visual assessment through the planting areas.
- **Photo Points:** Photos were taken at each of the 14 photo points (P1 through P14) established during the baseline visit (Figure 2; Appendix C).
- **Transects:** The line-intercept method for measuring cover will be used on each of the 10 transects starting in Year 3 to determine progress in achieving the performance standard for native woody cover.

7 YEAR 1 RESULTS AND OBSERVATIONS

7.1 Woody Plant Survival

As noted in Section 6, percent survival of the woody materials (trees, shrubs, and kinnikinnick) was evaluated by counting dead and missing plants in the different shore areas (Exhibit 7-1). The latter could easily be identified as missing due to presence of clear mulch rings that no longer contained installed plant material. As described in Section 3.2 above, a portion of the Upper Shore planting zone (the area primarily planted with willow stakes) on the West Shore, was eroded and then was supplemented with smooth, rounded rock.

Exhibit 7-1: Dead and Missing Woody Plants in the Upper Shore and Riparian Planting Zones

Scientific Name	Common Name	Dead or Missing			
		South Shore	West Shore	North Shore	Total
Trees					
Acer macrophyllum	Big-leaf maple	2			2
Alnus rubra	Red alder	2			2
Malus fusca	Pacific crabapple	5			5
Pinus contorta	Shore pine	1			1
Tsuga heterophylla	Western hemlock	2			2
	Total Trees	***12***	***0***	***0***	***12***
Shrub					
Amelanchier alnifolia	Serviceberry	7	1	8	16
Gaultheria shallon	Salal	2	5		7
Holodiscus discolor	Oceanspray		3	3	6
Lonicera involucrata	Black twinberry	6	1	28	35
Mahonia aquifolium	Tall Oregon grape	18	3	10	31
Philadelphus lewisii	Mock orange	25		6	31
Ribes divaricatum	Black gooseberry	27	5	11	43
Rosa nutkana	Nootka rose		3	1	4
Rubus parviflorus	Thimbleberry	14	6	17	37
Salix spp.	Scouler's/ Hooker's willow	Riparian: 49 Upper Shore: 8[1]	Riparian: 5 Upper Shore: 74[1]	Riparian: 1	137
Sambucus racemosa	Red elderberry	14	9	28	51
Symphoricarpos albus	Snowberry			2	2
Missing/Not Identified		44			44
	Total Shrubs	***214***	***115***	***115***	***444***
Groundcover					
Arctostaphylos uva-ursi	Kinnikinnick			6	6
	Total Groundcover	***0***	***0***	***6***	***6***
TOTAL DEAD OR MISSING PLANTS		***226***	***115***	***121***	***462***

NOTE:

1 Willow stakes in the Upper Shore planting zone were lost to erosion.

The Year 1 performance standard is 100% survival of required installed woody material. Factoring in the installation of excess shrubs and kinnikinnick (131), the loss of 462 woody plants results in a percent survival of 92.9%. The percent survival of each woody stratum and the composite woody plants is presented in Exhibit 7-2. Section 8.2 provides a recommended planting schedule to replace dead plants.

Exhibit 7-2: Percent Survival of Woody Vegetation

Woody Vegetation Type	Quantity in Final Construction Plans	Alive in Year 1[1]	% Survival[2]
Trees	140	128	91.4
Shrubs	3,900	3,464	88.8
Groundcover	620	737	118.9
Total	**4,660**	**4,329**	**92.9**

NOTES:

1 The quantity alive in Year 1 was calculated by subtracting the counted dead plants from the total net number of installed plants per Exhibit 5-2.

2 The % survival was calculated by subtracting the number of dead plants (Exhibit 7-1) from the total number installed, and then dividing by the quantity required by the final construction plans.

Overall, the woody species demonstrated strong growth since the as-built visit in 2021; this can be seen in the side-by-side photos from 2021 and 2022 in Appendix C. The continued erosion in areas along the west shore impacted a large number of willow stakes, resulting in their loss. Generally, the plants appeared healthy, although some showed moderate signs of stress following a second exceptionally hot and dry summer. The general success is likely attributable to continued hand-watering combined with proper installation of quality plant material.

7.2 Native Emergent Cover

The Year 1 performance standard provided in Section 5 requires that cover of the establishing emergent community exceed 20%. Each of the seven plots established during the as-built effort was evaluated (Exhibit 7-3). Because of the significant erosion of installed substrate and high wave energy on the west shore, only one area of installed emergent remained on the west shore at the time of the as-built site visit. For that reason, only one plot was proposed at that time on the west shore off the south end of Transect 8. As noted below, continued erosion since the as-built effort eliminated the emergent vegetation in that plot as well. Despite the lack of vegetation in Transect 8, Plot 1, the aggregated data for the seven plots indicate that planted emergent areas are meeting and exceeding the Year 1 performance standard of 20%. Continued monitoring of Transect 8, Plot 1 for information purposes is proposed to document the dynamic condition of the west shore and to help inform the Port's ongoing adaptive management.

Exhibit 7-3: Emergent Cover in Sample Plots

Plot Location	Percent Cover	Notes
Transect 2, Plot 1 (17 feet from south end of T2, 260°)	22	The plot included Baltic rush (*Juncus balticus*) (17%) and Pacific silverweed (*Argentina pacifica*) (5%).
Transect 2, Plot 2 (25 feet from north end of T2, 210°)	33	The plot included Baltic rush (17%), hardstem bulrush (*Schoenoplectus acutus*), sea plantain (*Plantago marina*) (2%), and pickleweed (*Salicornia virginica*) (1%).
Transect 4, Plot 1 (20 feet 6 inches from east end of T4, 230°)	41	The plot included Baltic rush (40%) and Pacific silverweed (1%).
Transect 4, Plot 2 (26 feet from west end of T4, 175°)	70	The plot included hardstem bulrush (60%) and saltgrass (*Distichlis spicata*) (10%).
Transect 5, Plot 1 (31 feet from north end of T5, 250°)	18	The plot included hardstem bulrush (10%), Pacific silverweed (5%), and saltgrass (3%).
Transect 5, Plot 2 (37 feet from south end of T5, 268°)	10	The plot included Baltic rush (10%).
Average of emergent plots with vegetation	***32***	
Transect 8, Plot 1 (17 feet from south end of T2, 260°)	0	Since establishment of this plot during the as-built monitoring visit, this area has developed into a sand beach with no vegetation. This plot and the surrounding area will continue to be monitored to document its condition, including whether it remains a sand beach and/or recruits emergent vegetation in future years if shore conditions allow. As described in the Project *As-Built Restoration Monitoring Report*, observations to date indicate energy on the west shore is not conducive to emergent establishment; therefore, this plot will be monitored for informational purposes only and will not be included in the emergent vegetation cover performance standard.
Average of all emergent plots (for informational purposes only)	***27***	

Section 8.2.2 of the *As-Built Restoration Monitoring Report* (Shannon & Wilson, 2022) includes an extensive discussion of the challenges faced by the installed emergent plantings as of fall 2021. Since that time, it appears that the emergent plantings on the west shore continued to be adversely impacted by wind and wave energy, and the associated loss of substrate. However, the plantings along the south shore appear largely intact compared to 2021, although gaps are still present and there was some evidence of goose grazing (see photos in Exhibit 7-4). All the emergent and herbaceous species in the low and mid-shore planting zones plant schedule were observed, and the dominants included hardstem bulrush, saltgrass, common spikerush, tufted hairgrass, coast gumweed, Pacific silverweed, and Douglas aster.

Exhibit 7-4: Example Planted Emergent Areas on the South Shore (Photos Taken August 31, 2022)

To support the plot data, the general boundaries of areas with emergent vegetation were captured in the field with hand-held global positioning system equipment and are shown in Figure 3. Continued monitoring of the emergent communities is necessary to determine if the areas are expanding or increasing in density and cover.

The pre-existing estuarine wetlands dominated by hardstem bulrush, Lyngbye's sedge, alkali bulrush (*Bolboschoenus maritimus*), and spear saltbush (*Atriplex patula*) are still thriving (Exhibit 7-5). These existing estuarine wetland species are expected to naturally expand into the low and mid-shore planting areas.

Exhibit 7-5: View of Northernmost Segment of Pre-Existing Wetland A, Including Areas of Installed Emergent Plants, Facing Southeast (Photo Taken August 31, 2022)

7.3 Noxious and Nuisance Weed Cover

Throughout the Project's monitoring period, invasive, nonnative plant cover of plant species included on the Snohomish County Noxious Weed List cannot exceed 10%. The Project Restoration Plan defines invasive, nonnative plant species as those on the Snohomish County Noxious Weed List (Snohomish County, 2022). The predominant weeds observed in the planting areas during the as-built site visit were white sweet clover (*Melilotus alba*), birds-foot trefoil (*Lotus corniculatus*), and poison hemlock (*Conium maculatum*). Poison hemlock was the only species on the County's weed list that requires removal. Site maintenance actions since the as-built visit removed much of the white sweet clover, birds-foot trefoil, and all of the poison hemlock. Additionally, some button tansy (*Tanacetum vulgare*), crimson clover (*Trifolium incarnatum*), Scotch broom (*Cytisus coparius*), flat pea (*Lathyrus sylvestris*), and bull thistle (*Cirsium vulgare*) were also observed, although in small quantities.

White sweet clover and birds-foot trefoil are not on the Snohomish County list but are non-native and invasive. White sweet clover is on many other states' noxious weed lists and birds-foot trefoil is a weed of concern on King County's noxious weed list. Scotch broom and button tansy are also non-regulated Class B weeds in King County and bull thistle is a

non-regulated Class C weed in King County. While removal of these species is not required and their cover will not contribute to the invasive cover performance standard, control is recommended to improve coverage and survival of native species.

Percent cover of invasive plants on Snohomish County's Noxious Weed List is 0%. The Project is meeting the Year 1 performance standard for invasive cover.

7.4 Large Woody Debris

Similar to observations made in 2021, the LWD installations and associated anchors remain in place along the shoreline. No excessive scouring or other erosion issues associated with the LWD were observed. It appears that some of the LWD shifts slightly in places during high tide and during storm activity, as evidenced by depressions and marks in the sand underneath the installations. Additional marine-sourced LWD pieces of varying sizes have been recruited to the west shore, some of which might become permanent (Exhibit 7-6).

Exhibit 7-6: View of the West Shore Facing South. Note: Recruited Wood of Varying Sizes and Sandy Beach (Photo Taken August 31, 2022, Before Placement of New Substrate in Eroded Areas).

7.5 Shoreline Condition

As noted in Section 3.2 above, erosion has been ongoing on the west shore (see Exhibit 3-1 above), with a central area that has developed into a sand beach (Exhibit 7-6 above; see Figure 3). This has impacted the installed emergent plantings as well as a number of willow

stakes. Appendix B of this report contains the most recent iteration of the rock placement plans that were provided to the Contractor and implemented in December 2022. The sand beach was minimally disturbed by the rock placement where the sand beach transitions to eroded area.

The south shore has shown little signs of being adversely impacted by wind or wave energy. The shoreline remains generally a shallow-sloped sandy, silty beach with some variable-sized bands of gravels (for examples, see Exhibits 7-4 and 7-5 above and Exhibits C-3 and C-6 in Appendix C).

8 MAINTENANCE AND CONTINGENCY MEASURES

8.1 Requirements

The Port will provide maintenance of the restoration areas to correct any failures during the ten-year monitoring period. Per the Port's bid documents, the Contractor is providing a three-year planting guarantee to include "inspections, weeding, maintenance, replacement, fertilizing, seeding, mulch replenishment, water and irrigation as required to water and planting areas to ensure acceptable coverage and seed and plant establishment." The Contractor will conduct monthly inspections and conduct appropriate maintenance during the three-year period and as specified in annual performance monitoring reports to address site conditions. Any needed plant replacements will be conducted at the end of Year 1 and Year 3. The Contractor shall consult with the Project Manager assigned by the Port if species substitutions are desired. Any deviation of species, quantities, or replacement location as listed in Exhibit 8-1 must be approved by the Port prior to planting.

The Port will be responsible for managing the establishment of native plants during Years 4 through 10, with the goal of achieving performance standards. Routine maintenance activities will include weed control, supplemental irrigation, mulching, reseeding, and plant replacement. If performance standards for percent coverage of woody plants (shrubs and trees) and nonnative, invasive species have not been satisfied, "adaptive management measures may include, but are not limited to, plant replacement, plant supplementation, plant species substitution, adjustment of the planting layout to reflect specific or changing site conditions, weed control, and installation and adjustment of plant protection devices" (Shannon & Wilson, 2019a).

8.2 Recommendations

The following actions will be taken to support achievement of performance standards:

1. Although not required, continue to remove the other prevalent non-native, invasive species - white sweet clover and birds-foot trefoil.
2. Continue to irrigate the plantings throughout the dry season, generally identified as May through September. Timing of irrigation commencement can be adjusted based on local climate conditions.
3. Based on the results presented in Section 7.1, the Contractor will replace dead plants per their contract warranty. However, the supplemental rock area in the Upper Shore will not be replanted with the lost willow stakes, and the replacement planting numbers will be reduced accordingly as shown in Exhibit 8-1. The 44 dead shrubs that could not be identified to species (see Exhibit 7-1) are proposed to be replaced with species that had very low mortality across the site – snowberry, oceanspray, and Nootka rose.

Exhibit 8-1: Replacement Planting Plan in the Riparian Planting Zone

Scientific Name	Common Name	Installation Location			
		South Shore	West Shore	North Shore	Total
Trees					
Acer macrophyllum	Big-leaf maple	2			2
Alnus rubra	Red alder	2			2
Malus fusca	Pacific crabapple	5			5
Pinus contorta	Shore pine	1			1
Tsuga heterophylla	Western hemlock	2			2
	Total Trees	***12***	***0***	***0***	***12***
Shrub					
Amelanchier alnifolia	Serviceberry	7	1	8	16
Gaultheria shallon	Salal	2	5		7
Holodiscus discolor	Oceanspray	11	3	3	17
Lonicera involucrata	Black twinberry	6	1	28	35
Mahonia aquifolium	Tall Oregon grape	18	3	10	31
Philadelphus lewisii	Mock orange	25		6	31
Ribes divaricatum	Black gooseberry	27	5	11	43
Rosa nutkana	Nootka rose	11	3	1	15
Rubus parviflorus	Thimbleberry	14	6	17	37
Salix spp.	Scouler's/ Hooker's willow	49	5	1	55
Sambucus racemosa	Red elderberry	14	9	28	51
Symphoricarpos albus	Snowberry	22		2	24
	Total Shrubs	***214***	***115***	***115***	***362***
Groundcover					
Arctostaphylos uva-ursi	Kinnikinnick			6	6
	Total Groundcover	***0***	***0***	***6***	***6***
TOTAL DEAD OR MISSING PLANTS		***218***	***41***	***121***	***380***

4. The supplemental substrate areas will be monitored to assess whether the new material has trapped any fines or may have developed conditions suitable for future plantings. Depending on the findings, recommendations for supplemental emergent or other plantings may be made.
5. Areas of emergent vegetation gaps along the southern shoreline, where erosion and deposition are not clear influencers, will also continue to be monitored and assessed for potential emergent plant replacement in future years.

9 FUTURE PERFORMANCE MONITORING

The Project's Restoration Plan requires performance monitoring of the planting sites for 10 years (Years 1, 2, 3, 5, 7, and 10). The monitoring program consists of yearly monitoring events and reports. After each monitoring event, a performance monitoring report must be prepared to document the degree of success or failure in the mitigation area and to identify any adaptive, remedial actions needed to ensure that the goals of the mitigation plan are achieved. This Year 1 Monitoring Report shall be submitted to the Corps, Ecology, WDFW, and the City. Subsequent annual monitoring reports shall be submitted to the Corps, Ecology, WDFW, and the City by December 31 after each monitoring event.

The schedule for performance monitoring events is as follows:

- Year 1 – summer/early fall 2022 (complete)
- Year 2 – summer/early fall 2023
- Year 3 – summer/early fall 2024
- Year 5 – summer/early fall 2026
- Year 7 – summer/early fall 2028
- Year 10 – summer/early fall 2031

10 CLOSURE

The findings and conclusions documented in this report have been prepared for specific application to this Project. They have been developed in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. The conclusions and recommendations presented in this report are professional opinions based on interpretation of information currently available to us and made within the operational scope, budget, and schedule constraints of this Project. No warranty, express or implied, is made.

Shannon & Wilson has prepared, "Important Information About Your Wetland Delineation/ Mitigation and/or Stream Classification Report," to assist you and others in understanding the use and limitations of our reports.

11 REFERENCES

City of Everett (City) Department of Planning and Community Development, 1997, Snohomish estuary wetlands integration plan (SEWIP): Everett, Wash., April.

City of Everett (City), 2019a, Shoreline Master Program. October. Available: https://everettwa.gov/DocumentCenter/View/20571/Shoreline-Public-Access-Plan-2019

City of Everett (City), 2019b, Shoreline Public Access Plan. Available: https://everettwa.gov/DocumentCenter/View/20571/Shoreline-Public-Access-Plan-2019

City of Everett (City), 2020, Letter to Port of Everett (Laura Gurley, Planner) from the City of Everett (Sabrina Fandler, Permit Services Manager). July 31, 2020.

Landau Associates, Inc. (LAI), 2020a, Final compliance monitoring plan, Bay Wood Products Cleanup Site, Everett, Washington: Report prepared by Landau Associates, Inc., Seattle, Wash., July 27.

Landau Associates, Inc. (LAI), 2020b, Final engineering design report, Bay Wood Products Cleanup Site, Everett, Washington: Report prepared by Landau Associates, Inc., Seattle, Wash., November 10.

Landau Associates, Inc. (LAI), 2020c, Final Interim Action Work Plan, Bay Wood Products Cleanup Site, Everett, Washington: Report prepared by Landau Associates, Inc., Seattle, Wash., July 29.

Landau Associates, Inc. (LAI), 2021, Draft interim action construction completion report, Bay Wood Products Site, Everett, Washington: Technical memorandum prepared by Landau Associates, Inc., Seattle, Wash., 0147053.010.018, for Washington State Department of Ecology, October 6.

Shannon & Wilson, 2019a, Restoration Plan, Bay Wood Shoreline Interim Cleanup and Restoration: Report prepared by Shannon & Wilson, 102336-014, for Port of Everett, Everett, Wash., November 21.

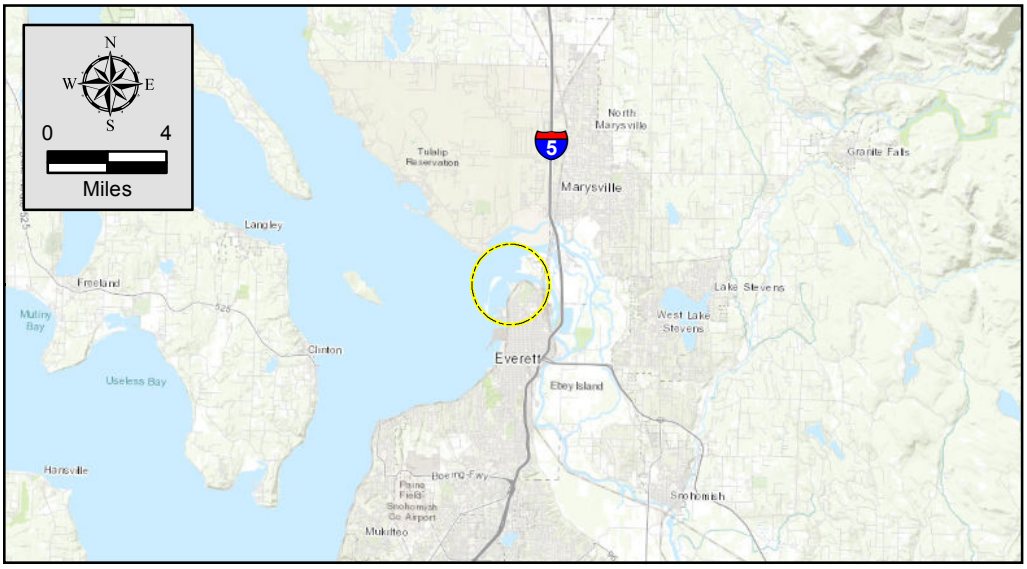
Shannon & Wilson, 2019b, Restoration Design Criteria memorandum, Bay Wood Shoreline Interim Cleanup and Restoration: Memo prepared by Shannon & Wilson, 102336-006, for Port of Everett, Everett, Wash., June 20.

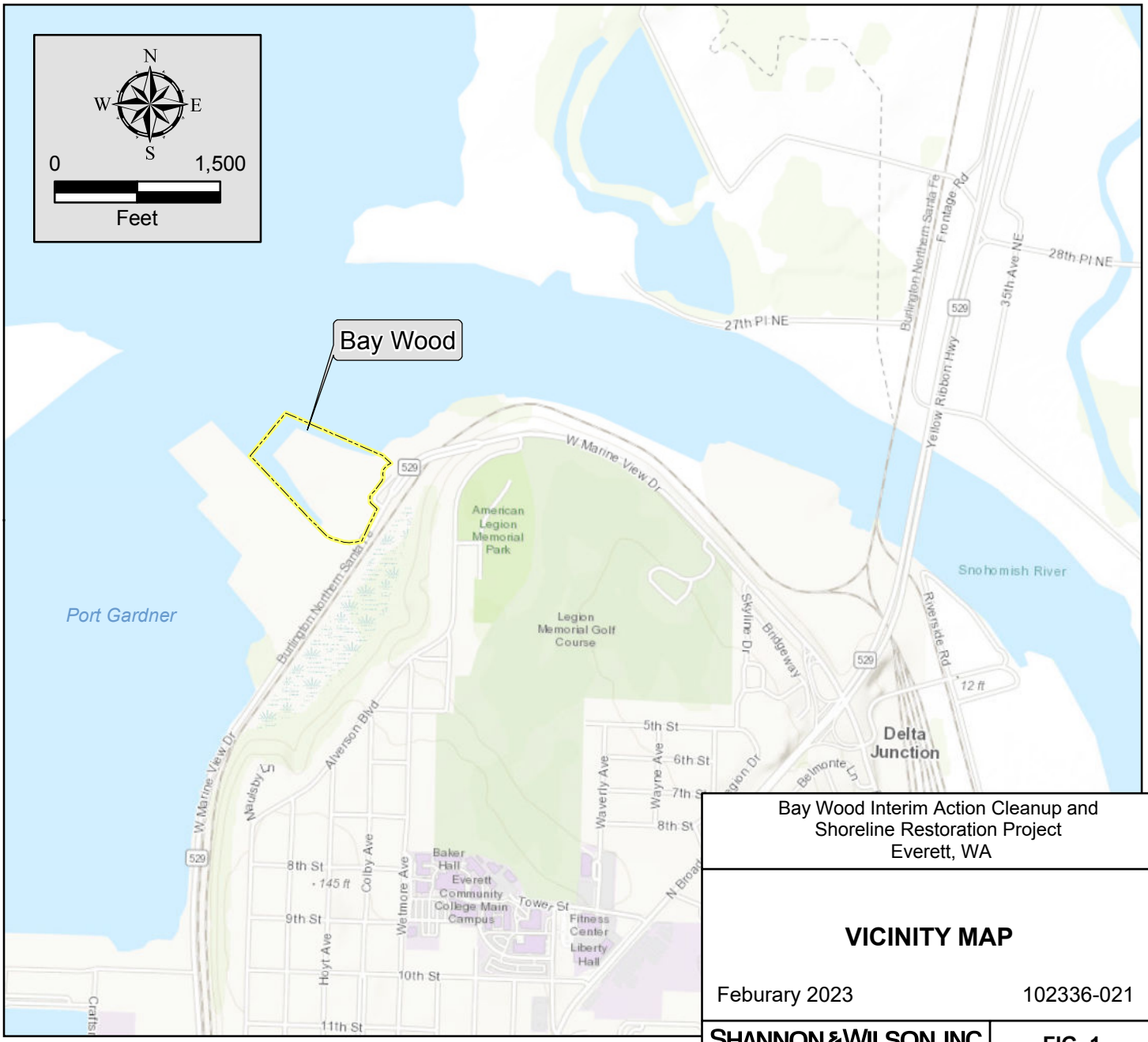
Shannon & Wilson, 2022, As-Built Restoration Monitoring Report, Bay Wood Shoreline Interim Cleanup and Restoration: Report prepared by Shannon & Wilson, 102336-020, for Port of Everett, Everett, Wash., August 23.

Snohomish Basin Salmon Recovery Forum, 2005, Snohomish River Basin salmon conservation plan: Everett, Wash., Snohomish County Department of Public Works, Surface Water Management Division, June, available: https://www.govlink.org/watersheds/7/pdf/WRIA%207_Plan/Final_Compiled_Plan.pdf

Snohomish County, Wash., 2022, Noxious Weed List. Available: https://snohomishcountywa.gov/750/Noxious-Weeds-List, accessed December.

Document Path: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\GIS\MXD\Final\DCM_Fig1_Vicinity.mxd





Bay Wood Interim Action Cleanup and Shoreline Restoration Project
Everett, WA

VICINITY MAP

Feburary 2023

102336-021

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 1

West Shoreline
North Shoreline
South Shoreline
P12
P13
T9
T7
T8P1
T8
P10
P11
P14
T10
T6
T5P2
P9
T5
P8
P7
T5P1
P6
T3
T4P2
T4
P4
P5
T4P1
T2P2
T2
T2P1
T1
P2
P3
P1

LEGEND
- Photo Point (P1)
- Woody Vegetation Monitoring Transects (T1)
- Emergent Vegetation Monitoring Plot (T2P1)
- Parcels
- Upper Slope Planting Zone
- Mid and Lower Slope Planting Zones
- Riparian Planting Zones
- U.S. Army Corps of Engineers Training Wall

Path: P:\GIS\SEA\102000s\102336 Port of Everett\Baywood\GIS\MXD\Year1 Monitoring.mxd Author: BRL User: SCC Date: 12/29/2022

N

Notes:
1. Plot locations and dimensions are approximated.
2. Transect ends marked with orange-flagged t-posts.
3. Transects and photo point locations collected with an ESRI Collector utilizing an EOS Arrow 100 GPS device.

200 100 0 200 Feet

February 2023

Monitoring Plan

Figure 2

Path: \\shanwil.net\ER\GIS\3EA\102000s\102336 Port of Everett\Baywood\GIS\MXD\YearlVegetationCommunities.mxd Author: BRL User: SCC Date: 1/3/2023

February 2023

Emergent Vegetation Communities

Figure 3

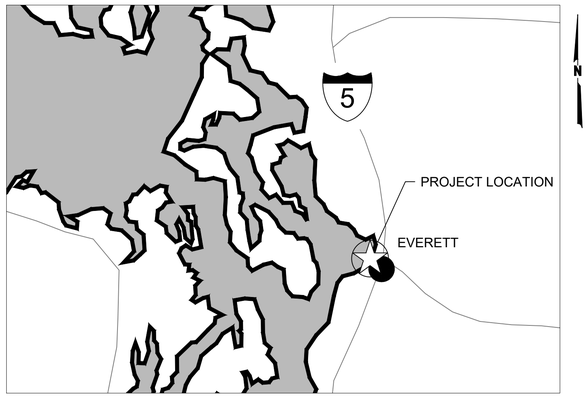
APPENDIX A: FINAL CONSTRUCTION PLANS

Appendix A

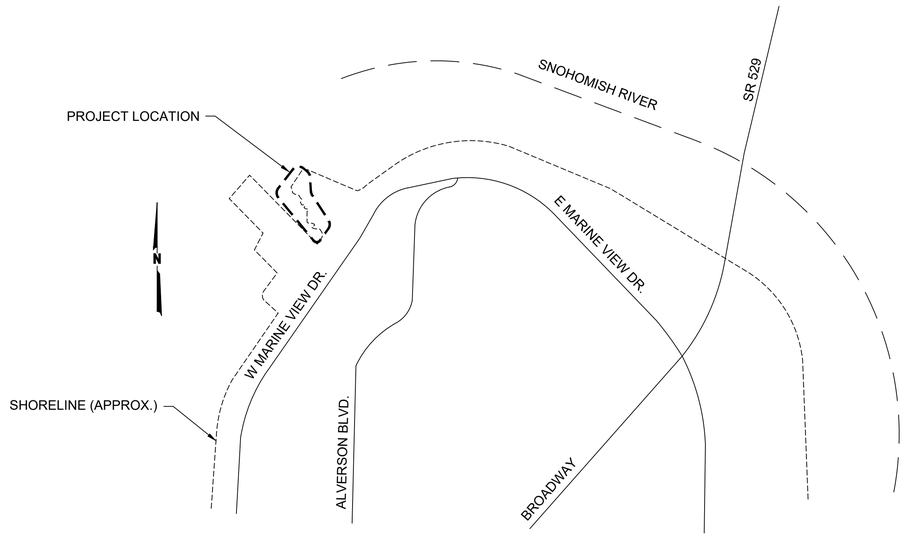
Final Construction Plans (August 2020)

PORT OF EVERETT

EVERETT, WASHINGTON
BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP



LOCATION MAP
NTS



VICINITY MAP
NTS

SHEET LIST TABLE		
SHEET NO.	REV. NO.	SHEET TITLE
01	0	COVER SHEET
02	0	GENERAL NOTES & ABBREVIATIONS
03	0	LEGEND
04	0	EXISTING CONDITIONS
05	0	TESC PLAN
06	0	DEMOLITION PLAN (1)
07	0	DEMOLITION PLAN (2)
08	0	GRADING PLAN
09	0	DEMOLITION & GRADING PLAN (1)
10	0	DEMOLITION & GRADING PLAN (2)
11	0	DEMOLITION & GRADING PLAN (3)
12	0	TYPICAL SECTIONS
13	0	SOIL MANAGEMENT PLAN - TYPICAL SECTION
14	0	SECTIONS A - D
15	0	SECTIONS E - H
16	0	SECTIONS I - L
17	0	SECTIONS M
18	0	LWD DETAIL
19	0	PLANTING PLAN
20	0	PLANTING DETAILS (1)
21	0	PLANTING DETAILS (2)
22	0	PLANTING SCHEDULE
23	0	SPLIT RAIL FENCE & TRAIL DETAILS
24	0	LOW AREA CLEANUP PLAN
25	0	LOW AREA CLEANUP SECTIONS

PORT OF EVERETT
COMMISSIONERS
- GLEN BACHMAN
- TOM STIGER
- DAVID SIMPSON

PORT STAFF
- CHIEF EXECUTIVE OFFICER: LISA LEFEBER
- CHIEF OF BUSINESS DEVELOPMENT : TERRIE BATTUELLO
- CHIEF OF ENGINEERING: JOHN KLEKOTKA, P.E.
- DIRECTOR OF ENVIRONMENTAL PROGRAMS: ERIK GERKING,L.G.
- PORT PLANNER: LAURA GURLEY

CONSULTING ENGINEERS
- SHANNON & WILSON: DAVID CLINE, P.E.
- LANDAU ASSOCIATES

IN PARTNERSHIP WITH THE DEPARTMENT OF ECOLOGY

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 23326 — REGISTERED PROFESSIONAL ENGINEER
8/10/2020

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

COVER SHEET

DWG. NO. **01**
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 01 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_01_COVERSHEET Date: 08-10-2020 Login: AWP

GENERAL NOTES

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, SPECIFICATIONS AND LOCAL, STATE, AND FEDERAL STANDARDS AND REGULATIONS.

2. ALL WORK SHALL BE IN ACCORDANCE WITH, AND THE CONTRACTOR SHALL ADHERE TO, ALL TERMS AND CONDITIONS OF PROJECT PERMITS. THE CONTRACTOR IS RESPONSIBLE TO SECURE APPLICABLE PERMITS THAT HAVE NOT BEEN PROVIDED BY THE OWNER.

3. THE CONTRACTOR SHALL COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS RELATED TO SAFETY OF PERSONNEL, OWNER'S REPRESENTATIVES AND THE PUBLIC. THE CONTRACTOR SHALL ADHERE TO ALL ENVIRONMENTAL LAWS, REGULATIONS, AND PERMIT CONDITIONS RELEVANT TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR THE HEALTH AND SAFETY OF PERSONNEL ONSITE.

4. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THEIR OWN ELECTRICITY, COMMUNICATIONS, WATER AND SANITARY FACILITIES.

5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS, OR AS SHOWN ON PLANS.

6. SEE TESC PLANS AND NOTES FOR EROSION AND SEDIMENTATION CONTROL REQUIREMENTS.

7. CONTAMINATED OR TURBID DEWATERING EFFLUENT FROM CONSTRUCTION EQUIPMENT OPERATION, TRUCK WASH WATER, OPEN TRENCHES OR SPECIAL HANDLING WASTE WATER SHALL BE HANDLED SEPARATELY FROM STORMWATER, TREATED AND DISPOSED PER THE SPECIFICATIONS AND LOCAL, STATE, AND FEDERAL REGULATIONS.

8. ALL STATIONING REFERS TO THE CENTERLINE OF CONSTRUCTION AND IS THE MEASURED HORIZONTAL DISTANCE.

9. ALL TRASH, RUBBLE, ASPHALT, CONCRETE, DEBRIS AND BURIED DEBRIS, WITHIN THE PROJECT WORK LIMITS, SHALL BE REMOVED AND DISPOSED OF OFFSITE BY THE CONTRACTOR AND IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

10. ANY MATERIALS EXCAVATED WATERWARD OF SPECIAL MATERIAL HANDLING BOUNDARY SHALL BE DISPOSED OF IN SUBTITLE D LANDFILL, AS APPROVED BY THE PORT.

11. THE CONTRACTOR SHALL PERFORM EXCAVATION IN A SAFE CONDITION AND IN A MANNER TO AVOID ADVERSE IMPACTS TO WATER QUALITY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR SHORING, SHEETING, BRACING, BENCHING, DEWATERING AND ALL NECESSARY PROTECTIVE MEASURES TO PREVENT DAMAGE TO ADJACENT PROPERTIES, STRUCTURES OR UTILITIES.

12. IF UNANTICIPATED CONDITIONS ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY BRING THE CONDITION TO THE ATTENTION OF THE ENGINEER/OWNER.

13. DETAILS ARE INTENDED TO SHOW FINAL CONDITIONS OF THE DESIGN. MODIFICATIONS MAY BE REQUIRED TO SUIT THE JOB SITE DIMENSIONS OR CONDITIONS, AND SUCH MODIFICATIONS SHALL BE INCLUDED IN THE WORK.

14. THE CONTRACTOR SHALL MAKE ALL NECESSARY PROVISIONS TO PROTECT AND REPAIR IMPACTS TO EXISTING STRUCTURES INCLUDING ROADWAYS, DRAINAGES, AND VEGETATION UNLESS SUCH ITEMS ARE TO BE DISTURBED OR REMOVED AS INDICATED IN THE CONSTRUCTION PLANS AND DOCUMENTS.

15. CONTRACTOR SHALL, IF PRESENT, COORDINATE CONSTRUCTION ACTIVITIES WITH ADJACENT UPLAND DEVELOPMENT CONSTRUCTION.

16. EXCAVATION AND GRADING LINES AND LIMITS ARE SHOWN ON THE PLANS. ANY EXCAVATION BEYOND THE LINES AND LIMITS SHOWN IN THE PLANS IS NOT ALLOWED.

17. OPPORTUNISTIC DEBRIS REMOVAL INCLUDES SMALL MARINE WOOD DEBRIS, QUARRY SPALLS, CONCRETE, AND METAL PIECES TO BE REMOVED BY PLUCKING AND PICKING DEBRIS FROM THE LOWER SHORELINE PER DIRECTION OF THE ENGINEER. CONTRACTOR SHALL PERFORM OPERATIONS IN FULL COORDINATION WITH THE PORT AND ENGINEER.

18. MASS EXCAVATION AND DREDGING OF SEDIMENTS AND SOILS SURROUNDING THE OPPORTUNISTIC DEBRIS PIECES IS NOT ALLOWED AND CONSIDERED OVER-EXCAVATION. PAYMENT FOR OVER-EXCAVATION IS NOT ALLOWED.

SURVEY NOTES

1. SURVEY DATUM IS WASHINGTON STATE PLANE NORTH NAD(83)/NGVD(29). CONVERSION TO MLLW AND NAVD88 ON SHEET 03.
2. UNLESS NOTED OTHERWISE ON THE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SURVEY MONUMENTS AND OTHER SURVEY MARKERS DURING CONSTRUCTION. ANY DAMAGE TO SURVEY MARKERS AND MONUMENTS IS THE RESPONSIBILITY OF CONTRACTOR TO REPAIR.

UTILITY NOTES

1. THE LOCATIONS AND EXTENTS OF EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE NOT NECESSARILY COMPLETE. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE EXISTING UTILITIES BASED UPON AVAILABLE RECORDS & SURVEYS. THE CONTRACTOR SHALL DETERMINE THE TYPE, LOCATION, SIZE, AND/OR DEPTH OF THE EXISTING UTILITIES WITHIN THE WORK AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL CONTACT THE UTILITIES UNDERGROUND LOCATION CENTER AT (800) 424-5555 OR 811 AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION. THE CONTRACTOR SHALL ASSUME COMPLETE RESPONSIBILITY FOR DAMAGED UTILITIES. THE CONTRACTOR SHALL HIRE A PRIVATE LOCATOR PRIOR TO COMMENCING WORK.

2. AT NO TIME SHALL THE CONTRACTOR INTERRUPT THE OPERATION OF ANY UTILITIES WITHOUT PRIOR APPROVAL FROM THE UTILITY OWNERS. APPROVAL SHALL BE REQUESTED AT LEAST 48 HOURS IN ADVANCE OF THE TIME THAT THE INTERRUPTION OF THE SYSTEM IS REQUIRED.

3. ALL LOCATIONS OF EXISTING UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN OR NOT SHOWN ON THE PLANS. EXISTING UTILITIES SHALL BE AVOIDED, PROTECTED, SUPPORTED AND MAINTAINED DURING CONSTRUCTION AND ARE THE RESPONSIBILITY OF THE CONTRACTOR. ALL UTILITIES WITHIN CONSTRUCTION, STAGING AND ACCESS AREAS WILL BE FIELD-LOCATED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

SOIL QUANTITIES

DESCRIPTION	UNITS	CUT	FILL
EXCAVATION, HAUL & STOCKPILE - RUESABLE FILL	CY	7,032	
EXCAVATION, HAUL & DISPOSAL TO MUNICIPAL LANDFILL OR RECYCLING	TONS	4,000	
OPPORTUNISTIC DEBRIS REMOVAL, HAUL & DISPOSAL	TONS	500	
EXCAVATION, HAUL & DISPOSAL - SPECIAL WASTE HANDLING (SUBTITLE D LANDFILL)	TONS	270	
EXCAVATION, HAUL & DISPOSAL FOR WOOD WASTE (SUBTITLE D LANDFILL)	TONS	2,000	
TOPSOIL IMPORT	TONS		4,995
SAND/GRAVEL IMPORT	TONS		2,565

MISC. QUANTITIES

DESCRIPTION	UNIT	QUANTITY
CLEAR AND GRUB	AC	5.23
MARINE STRUCTURE DEMOLITION	TONS	1,580
SILT FENCE	LF	2,650
LARGE WOODY DEBRIS, ANCHORS, FASTENERS, INSTALLATIONS	EA	50

ABBREVIATIONS

AC	-	ACRE
APPROX.	-	APPROXIMATE
BM	-	BENCH MARK
BTM	-	BOTTOM
BW	-	BOTTOM WIDTH
CB	-	CATCH BASIN
CL	-	CENTERLINE
CLL	-	CLEARING LIMITS
CLR.	-	CLEARANCE
CONC	-	CONCRETE
CSBC	-	CRUSHED SURFACING BASE COURSE
CSTC	-	CRUSHED SURFACING TOP COURSE
CY	-	CUBIC YARD
DBH	-	DIAMETER AT BREAST HEIGHT
E	-	EAST
EA.	-	EACH
ELEV	-	ELEVATION
EX	-	EXISTING
EG	-	EXISTING GRADE
FACW	-	FACULTATIVE WETLAND
FACU	-	FACULTATIVE UPLAND
FAC	-	FACULTATIVE
FG	-	FINISH GRADE
HDPE	-	HIGH DENSITY POLYETHYLENE
HT	-	HEIGHT
HTL	-	HIGH TIDE LEVEL
ID	-	INSIDE DIAMETER
IE	-	INVERT ELEVATION
INV	-	INVERT
KIP	-	THOUSAND POUNDS-FORCE
LF	-	LINEAR FEET
LWD	-	LARGE WOODY DEBRIS
MFG.	-	MANUFACTURER'S
MIN.	-	MINIMUM
MISC.	-	MISCELLANEOUS
MW	-	MONITORING WELL
N	-	NORTH
NE	-	NORTHEAST
NIC	-	NOT IN CONTRACT
NL	-	NOT LISTED
NO.	-	NUMBER
NTS	-	NO TO SCALE
NW	-	NORTHWEST
OC	-	ON CENTER
OHW	-	ORDINARY HIGH WATER
SPEC'S.	-	PROJECT SPECIFICATIONS
R	-	RADIUS
RD.	-	ROAD
REQ'D	-	REQUIRED
REV.	-	REVISION
R/W	-	RIGHT OF WAY
SD	-	STORM DRAIN
SE	-	SOUTHEAST
SEC.	-	SECTION
SHT.	-	SHEET
S	-	SOUTH
S.F.	-	SQUARE FEET
STA	-	STATION
TESC	-	TEMPORARY EROSION AND SEDIMENT CONTROL
TBD	-	TO BE DETERMINED
TOB	-	TOP OF BANK
TYP	-	TYPICAL
WDFW	-	WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
W.S.	-	WATER SURFACE
W	-	WEST
WL	-	WETLAND

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

STATE OF WASHINGTON DAVID R. CLINE 39326 REGISTERED PROFESSIONAL ENGINEER
8/10/2020

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

GENERAL NOTES & ABBREVIATIONS

DWG. NO. **02**
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 02 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PS\ECAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_02_GENERAL NOTES & ABBREVIATIONS Date: 08-10-2020 Login: AWP

LEGEND

*NOTE: LEGEND PROVIDED ON SHEETS SUPERCEDES THIS LEGEND

EXISTING

- MAJOR CONTOUR (5')
- MINOR CONTOUR (1')
- RIPARIAN BUFFER LIMIT
- ORDINARY HIGH WATER (OHW)
- EXTREME TIDE (8.6')
- HTL (6.8')
- MHHW (5.4')
- TOP OF BANK
- PROPERTY LINE
- EXISTING MATERIAL
- WETLANDS
- WETLAND BUFFER
- RIVER SETBACK (100')
- SHORELINE MANAGEMENT ZONE (200')
- EXISTING SUBGRADE
- TP-1-19 TEST PIT, APPROXIMATE LOCATION
- TP-1 GRAB SAMPLE, APPROXIMATE LOCATION
- SURVEY CONTROL POINT
- QUARRY SPALL/WOOD WASTE
- MARINE STRUCTURES
- FENCE
- OVERHEAD POWER UTILITY
- EDGE OF PAVEMENT

PROPOSED

- MINOR DESIGN CONTOUR (1')
- MAJOR DESIGN CONTOUR (5')
- GRADING LIMITS
- SILT FENCE
- CONSTRUCTION LINE LIMIT
- MATERIAL REMOVAL OUTLINE
- OPPORTUNISTIC DEBRIS REMOVAL
- SPECIAL WASTE HANDLING BOUNDARY
- RIPARIAN BUFFER LIMIT
- SPLIT RAIL FENCE
- LARGE WOODY DEBRIS (LWD)
- RUSHES
- SEDGES
- GRASSES
- HERBS
- DUNE GRASSES
- SHRUBS
- TREE(S)

- OPPORTUNISTIC DEBRIS REMOVAL
- MARINE STRUCTURE DEMOLITION
- REUSABLE FILL STOCKPILE AREA
- SAND/GRAVEL LAYER
- TOPSOIL LAYER
- OPPORTUNISTIC DEBRIS REMOVAL **WITH NO** SPECIAL HANDLING WASTE AS DIRECTED BY PORT
- OPPORTUNISTIC DEBRIS REMOVAL **WITHIN** SPECIAL HANDLING WASTE AREA AS DIRECTED BY PORT
- 1' EXCAVATION AREA
- PEDESTRIAN TRAIL
- LOW AREA CLEANUP

DATUM

NGVD29

SURVEY DATUM:
NAD83 WASHINGTON STATE PLANE, NORTH ZONE, US FOOT

VERTICAL DATUM CONVERSIONS:
NGVD29 + 5.59' = MLLW
NGVD29 + 3.68' = NAVD88

SOURCE:
PUGET SOUND LiDAR CONSORTIUM
CEDAR RIVER WATERSHED, 2014
DEA SURVEY

1 A

NOTE REFERENCE

REFERENCE DESIGNATION TO NOTE APPEARING ON SAME SHEET

1-800-424-5555

SHEET SYMBOLS

A / 1 — DETAIL DESIGNATION / SHEET LOCATED ON

DETAIL

A / 1 — SECTION DESIGNATION / SHEET LOCATED ON

SECTION

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

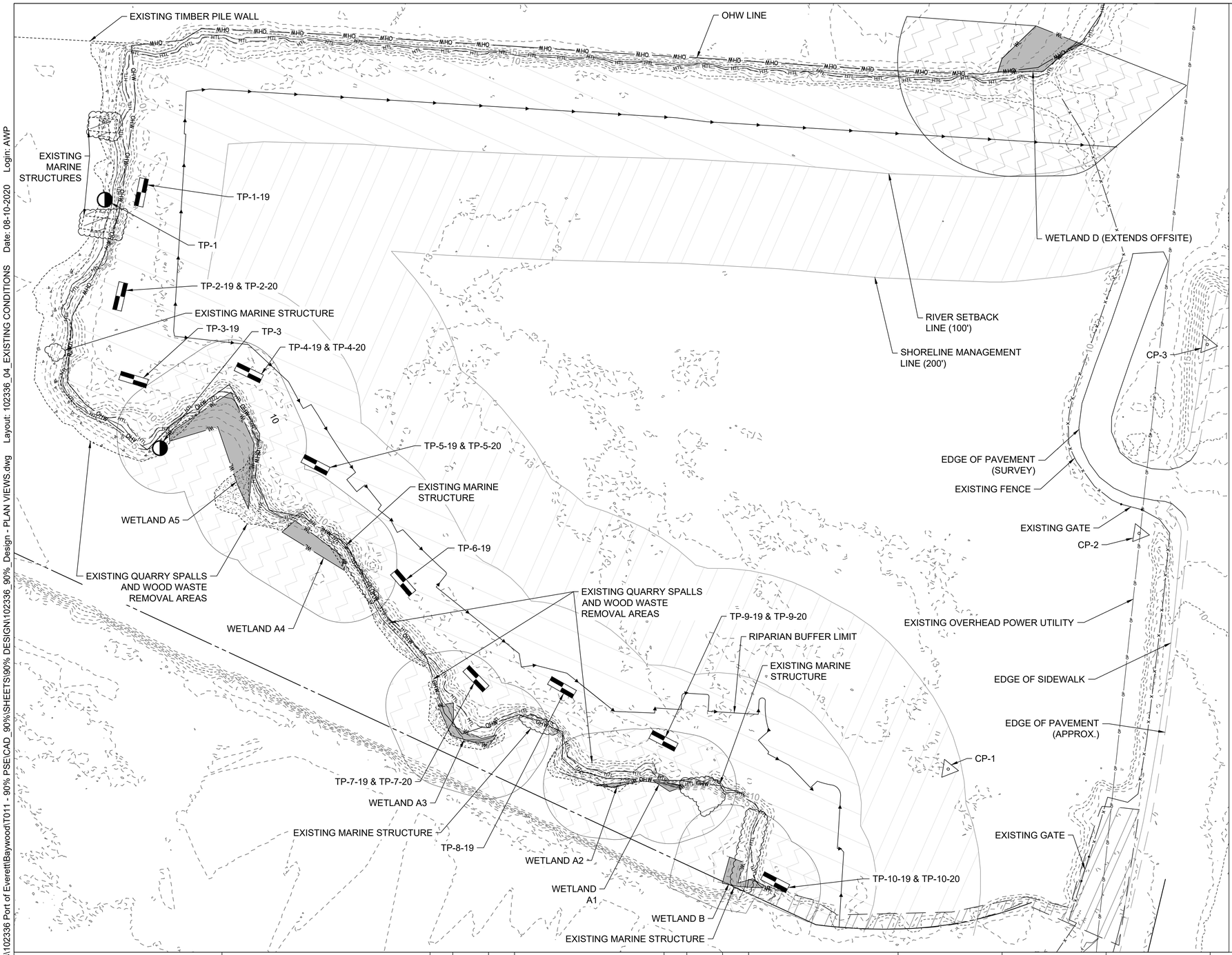
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

LEGEND

DWG. NO. **03**
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 03 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_03_LEGEND Date: 08-10-2020 Login: AWP



NOTES

1. VERTICAL PROJECT DATUM: NGVD29.
2. HORIZONTAL PROJECT DATUM: NAD83 WASHINGTON STATE PLANES, NORTH ZONE, US FOOT.
3. PUGET SOUND LiDAR CONSORTIUM (PSLC) CEDAR RIVER WATERSHED & FLOODPLAIN LiDAR, 2014.
4. LiDAR CONVERTED FROM NAVD88 TO NGVD29.
5. TEST PIT AND GRAB SAMPLE DATA CAN BE FOUND IN THE PROJECT SPECIFICATION.

SURVEY CONTROL POINTS			
POINT	NORTHING (NAD83)	EASTING (NAD83)	ELEVATION (FT.) (NGVD29)
CP-1	373563.63	1303765.75	12.94
CP-2	373419.43	1304017.62	12.80
CP-3	373708.59	1304143.77	19.65

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_04_EXISTING CONDITIONS Date: 08-10-2020 Login: AWP

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

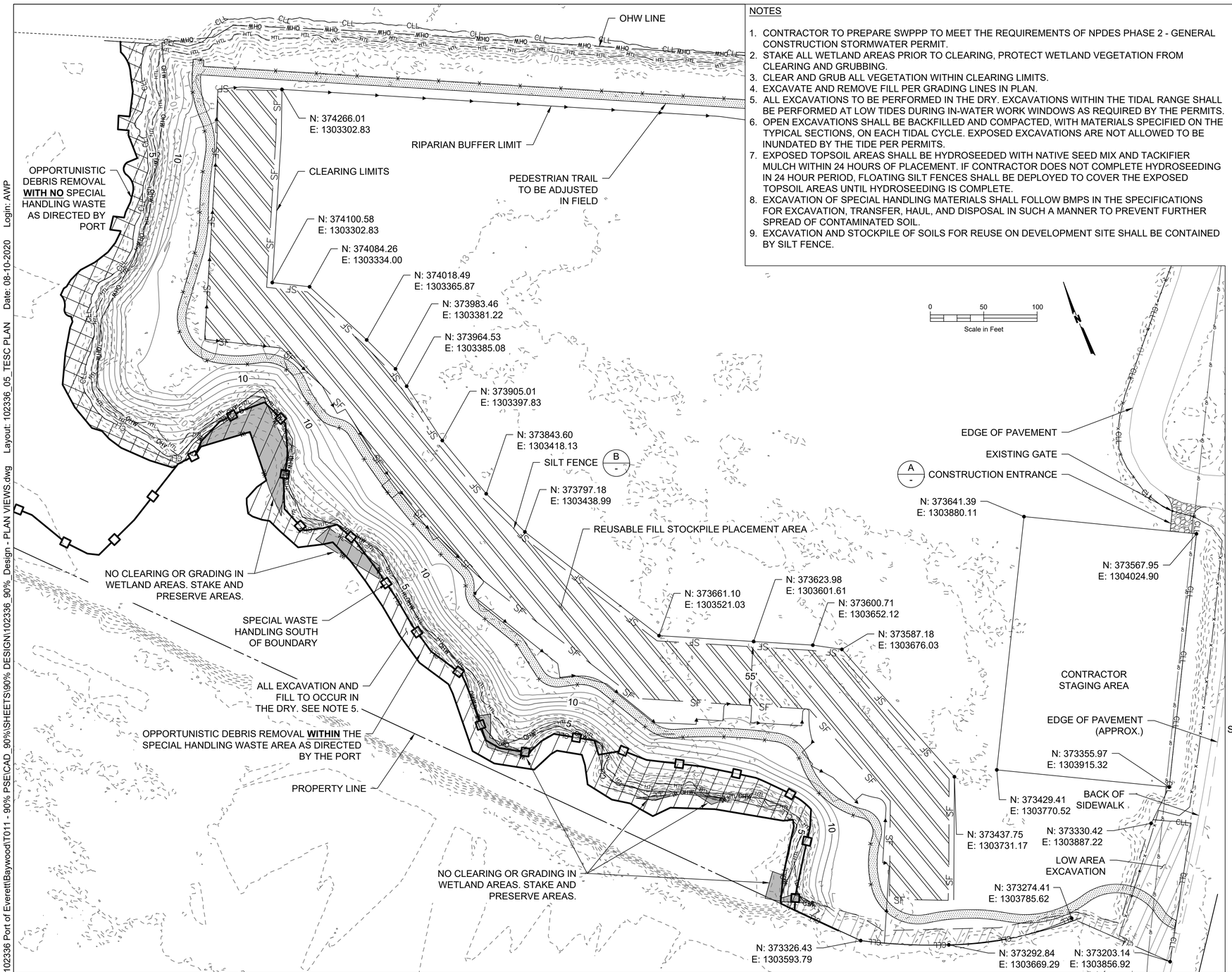
PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

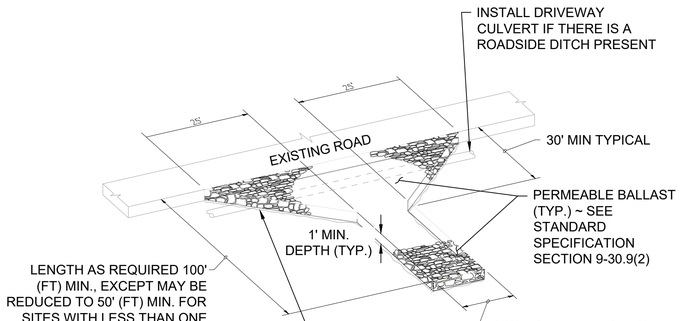
EXISTING CONDITIONS

DWG. NO. 04
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 04 OF 25



NOTES

1. CONTRACTOR TO PREPARE SWPPP TO MEET THE REQUIREMENTS OF NPDES PHASE 2 - GENERAL CONSTRUCTION STORMWATER PERMIT.
2. STAKE ALL WETLAND AREAS PRIOR TO CLEARING, PROTECT WETLAND VEGETATION FROM CLEARING AND GRUBBING.
3. CLEAR AND GRUB ALL VEGETATION WITHIN CLEARING LIMITS.
4. EXCAVATE AND REMOVE FILL PER GRADING LINES IN PLAN.
5. ALL EXCAVATIONS TO BE PERFORMED IN THE DRY. EXCAVATIONS WITHIN THE TIDAL RANGE SHALL BE PERFORMED AT LOW TIDES DURING IN-WATER WORK WINDOWS AS REQUIRED BY THE PERMITS.
6. OPEN EXCAVATIONS SHALL BE BACKFILLED AND COMPACTED, WITH MATERIALS SPECIFIED ON THE TYPICAL SECTIONS, ON EACH TIDAL CYCLE. EXPOSED EXCAVATIONS ARE NOT ALLOWED TO BE INUNDATED BY THE TIDE PER PERMITS.
7. EXPOSED TOPSOIL AREAS SHALL BE HYDROSEEDED WITH NATIVE SEED MIX AND TACKIFIER MULCH WITHIN 24 HOURS OF PLACEMENT. IF CONTRACTOR DOES NOT COMPLETE HYDROSEEDING IN 24 HOUR PERIOD, FLOATING SILT FENCES SHALL BE DEPLOYED TO COVER THE EXPOSED TOPSOIL AREAS UNTIL HYDROSEEDING IS COMPLETE.
8. EXCAVATION OF SPECIAL HANDLING MATERIALS SHALL FOLLOW BMPS IN THE SPECIFICATIONS FOR EXCAVATION, TRANSFER, HAUL, AND DISPOSAL IN SUCH A MANNER TO PREVENT FURTHER SPREAD OF CONTAMINATED SOIL.
9. EXCAVATION AND STOCKPILE OF SOILS FOR REUSE ON DEVELOPMENT SITE SHALL BE CONTAINED BY SILT FENCE.



NOTES:

1. STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS OF WSDOT STANDARD SPECIFICATION SECTION 8-01.3(7)

A DETAIL - CONSTRUCTION ENTRANCE
NTS (CITY OF EVERETT STANDARD DRAWING NO. 201)

NOTES:

1. INSTALL THE ENDS OF THE SILT FENCE TO POINT SLIGHTLY UPSLOPE TO PREVENT SEDIMENT FROM FLOWING AROUND THE ENDS OF THE FENCE.
2. PERFORM MAINTENANCE IN ACCORDANCE WITH THE WSDOT STANDARD SPECIFICATIONS 8-01(9)A AND 8-01.3(15).
3. SPLICES SHALL NEVER BE PLACED IN LOW SPOTS OR SUMP LOCATIONS. IF SPLICES ARE LOCATED IN LOW OR SUMP AREAS, THE FENCE MAY NEED TO BE REINSTALLED UNLESS OTHERWISE APPROVED.
4. INSTALL SILT FENCING PARALLEL TO MAPPED CONTOUR LINES
5. DURING EXCAVATION, MINIMIZE DISTURBING THE GROUND AROUND TRENCH AS MUCH AS IS FEASIBLE, AND SMOOTH SURFACE FOLLOWING EXCAVATION TO AVOID CONCENTRATING FLOWS. COMPACTION MUST BE ADEQUATE TO PREVENT UNDERCUTTING FLOWS

B SILT FENCE DETAIL
NTS (CITY OF EVERETT STANDARD DRAWING NO. 214)

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

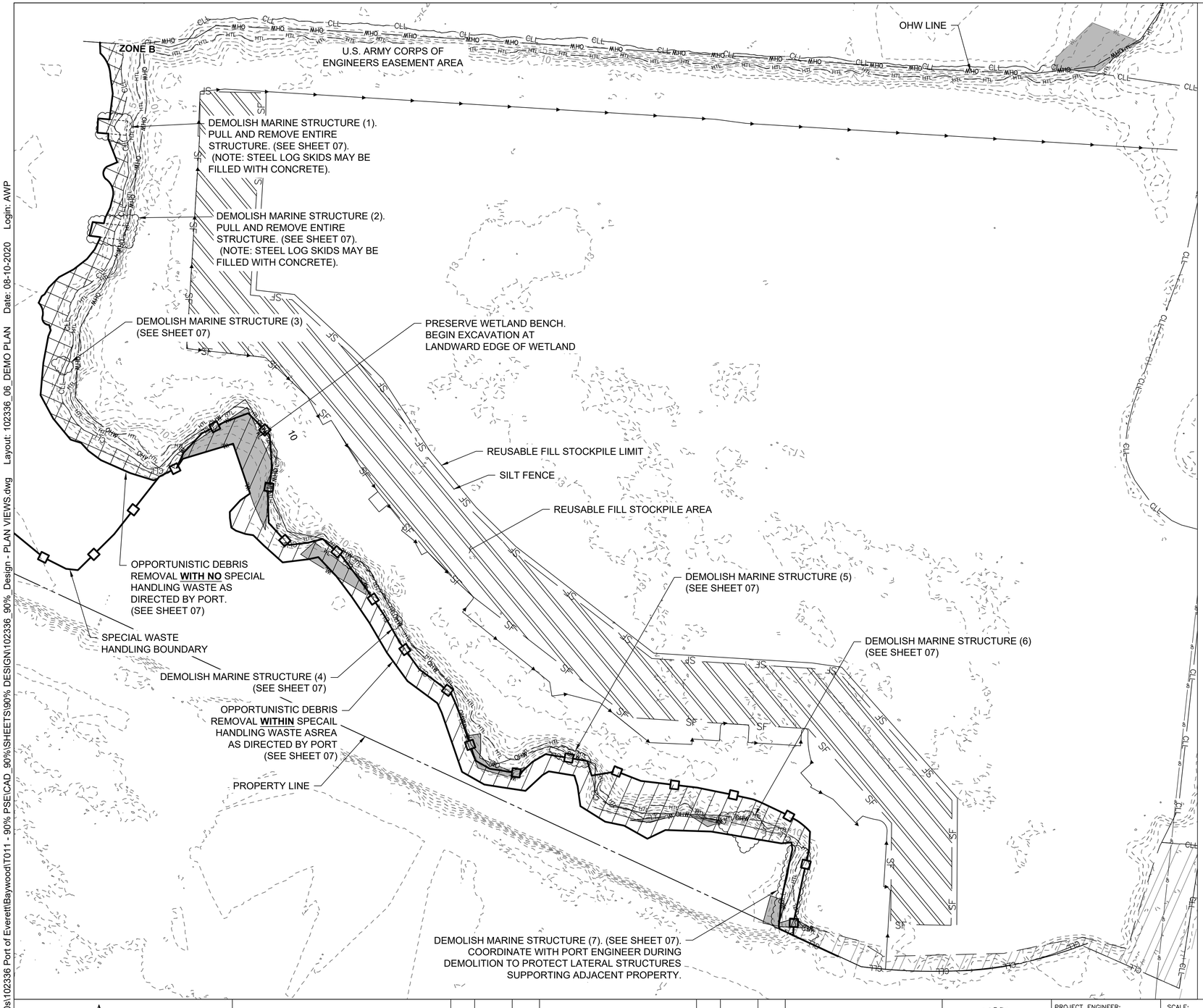
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

TESC PLAN

DWG. NO. 05
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 05 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_05_TESC PLAN Date: 08-10-2020 Login: AWP



NOTES

1. STAKE PROPERTY BOUNDARIES (WHITE), CLEARING LIMITS (YELLOW), WETLAND BOUNDARIES (GREEN), AND SPECIAL WASTE HANDLING BOUNDARIES (PINK) PRIOR TO STARTING CONSTRUCTION.
2. CLEAR AND GRUB ALL GRADING AREAS ABOVE THE OPPORTUNISTIC DEBRIS REMOVAL UPPER LIMIT. DISPOSE OF AT OFF-SITE FACILITY.
3. STRIP 1-FT OF SURFACE MATERIAL. SCREEN ORGANIC MATERIAL AND WOOD WASTE, DISPOSE OF OFF-SITE. REMAINING (CLEAN) SURFACE MATERIAL MAY BE PLACED IN REUSABLE FILL STOCKPILE.
4. EXCAVATE AND REUSE SUBSURFACE MATERIALS FREE OF ORGANICS AND DEBRIS, AND UPLAND OF THE SPECIAL WASTE HANDLING BOUNDARY IN THE REUSABLE FILL STOCKPILE.
5. EXCAVATE AND DISPOSE OF SUBSURFACE MATERIALS WATERWARD OF SPECIAL WASTE HANDLING BOUNDARY AT SUBTITLE D LANDFILL.
6. TRANSFER REUSABLE FILL TO REUSABLE FILL STOCKPILE AREA.
7. PERFORM OPPORTUNISTIC DEBRIS REMOVAL PER DIRECTION OF THE ENGINEER. MATERIALS REMOVED FROM UPLAND OF THE SPECIAL WASTE HANDLING BOUNDARY SHALL BE DISPOSED OF AT MUNICIPAL LANDFILL. MATERIALS REMOVED WATERWARD (BELOW) SPECIAL WASTE HANDLING BOUNDARY ELEVATION SHALL BE HANDLED FOLLOWING THE REQUIREMENTS IN THE SPECIFICATIONS AND DISPOSED OF AT SUBTITLE D LANDFILL OR TRANSFER STATION.
8. BACKFILL AREAS WITH TOPSOIL PRIOR TO TIDAL INUNDATION PER THE TOPSOIL COMPACTION SPECIFICATIONS PRIOR TO INUNDATION FOR EACH TIDAL CYCLE. EXPOSED SUBSURFACE SOILS ARE NOT ALLOWED IN TIDAL INUNDATION AREAS. BACKFILL AREAS IN OPPORTUNISTIC DEBRIS REMOVAL POCKETS WITH SAND/GRAVEL MIX. EXCACVATION AND BACKFILL NOT ALLOWED IN THE WET.

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

DEMOLITION PLAN (1)

DWG. NO. 06
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 06 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90% Design - PLAN VIEWS.dwg Layout: 102336_06_DEMO PLAN Date: 08-10-2020 Login: AWP

MARINE STRUCTURE (1)

MARINE STRUCTURE (2)

MARINE STRUCTURE (3)

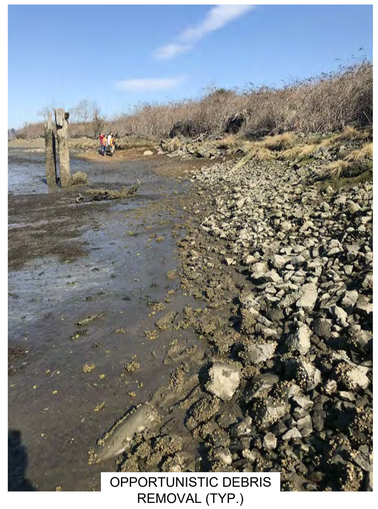
MARINE STRUCTURE (4)

MARINE STRUCTURE (5)

MARINE STRUCTURE (6)
VIEW 1

MARINE STRUCTURE (6)
VIEW 2

MARINE STRUCTURE (7)



OPPORTUNISTIC DEBRIS
REMOVAL (TYP.)

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
2	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE
STATE OF WASHINGTON
39326
REGISTERED
PROFESSIONAL ENGINEER
10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

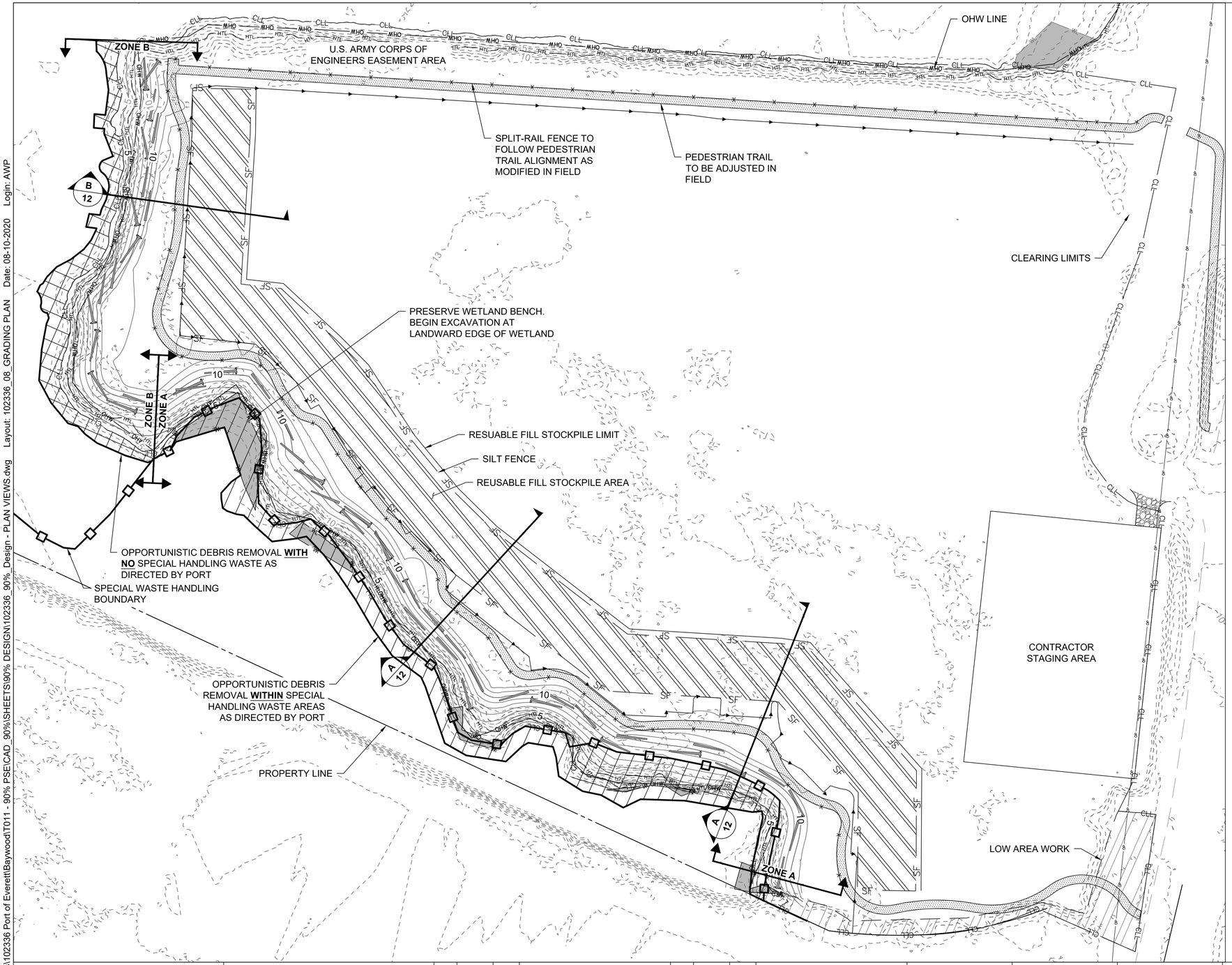
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

DEMOLITION PLAN (2)

DWG. NO. 07
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 07 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_07_DEMO PLAN (2) Date: 08-10-2020 Login: AWP



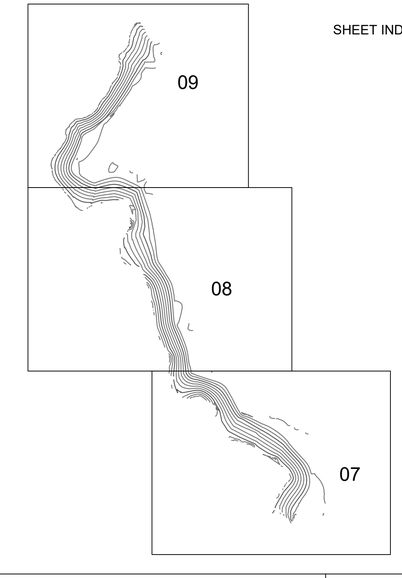
0 50 100
Scale in Feet

N

NOTES

1. STAKE PROPERTY BOUNDARIES (WHITE), CLEARING LIMITS (YELLOW), WETLAND BOUNDARIES (GREEN), AND SPECIAL WASTE HANDLING BOUNDARIES (PINK) PRIOR TO STARTING CONSTRUCTION.
2. CLEAR AND GRUB ALL GRADING AREAS ABOVE THE OPPORTUNISTIC DEBRIS REMOVAL UPPER LIMIT. DISPOSE OF AT OFF-SITE FACILITY.
3. STRIP 1-FT OF SURFACE MATERIAL. DISPOSE OF OFF-SITE.
4. EXCAVATE AND DISPOSE OF MATERIALS ABOVE THE OPPORTUNISTIC REMOVAL UPPER LIMIT.
5. DISPOSE OF WOOD WASTE MATERIALS AT OFF-SITE FACILITY.
6. TRANSFER REUSABLE FILL TO REUSABLE FILL STOCKPILE AREA.
7. PERFORM OPPORTUNISTIC DEBRIS REMOVAL OF WOOD WASTE, QUARRY SPALLS, AND OTHER WOODY MATERIALS PER THE DIRECTION OF THE PORT. MATERIALS FROM ABOVE THE SPECIAL MATERIAL HANDLING BOUNDARY SHALL BE DEWATERED, THEN DISPOSED OF AT AN OFF-SITE FACILITY. MATERIALS FROM BELOW THE SPECIAL MATERIAL HANDLING BOUNDARY, SHALL FOLLOW THE SPECIFICATIONS FOR REMOVAL, HANDLING, AND DISPOSAL OF CONTAMINATED SOILS AT AN AUTHORIZED FACILITY FOR ACCEPTING CONTAMINATED WASTE, AS APPROVED BY THE PORT. OPPORTUNISTIC DEBRIS REMOVAL SHALL AVOID WORK IN, AND IMPACT WETLAND AREAS.
8. BACKFILL AND RECOMPACT AREAS PRIOR TO TIDAL INUNDATION ON EACH TIDAL CYCLE. EXPOSED SOILS ARE NOT ALLOWED TO BE INUNDATED BY TIDES.

SHEET INDEX



Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

STATE OF WASHINGTON · DAVID R. CLINE · 39326 · REGISTERED PROFESSIONAL ENGINEER
8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

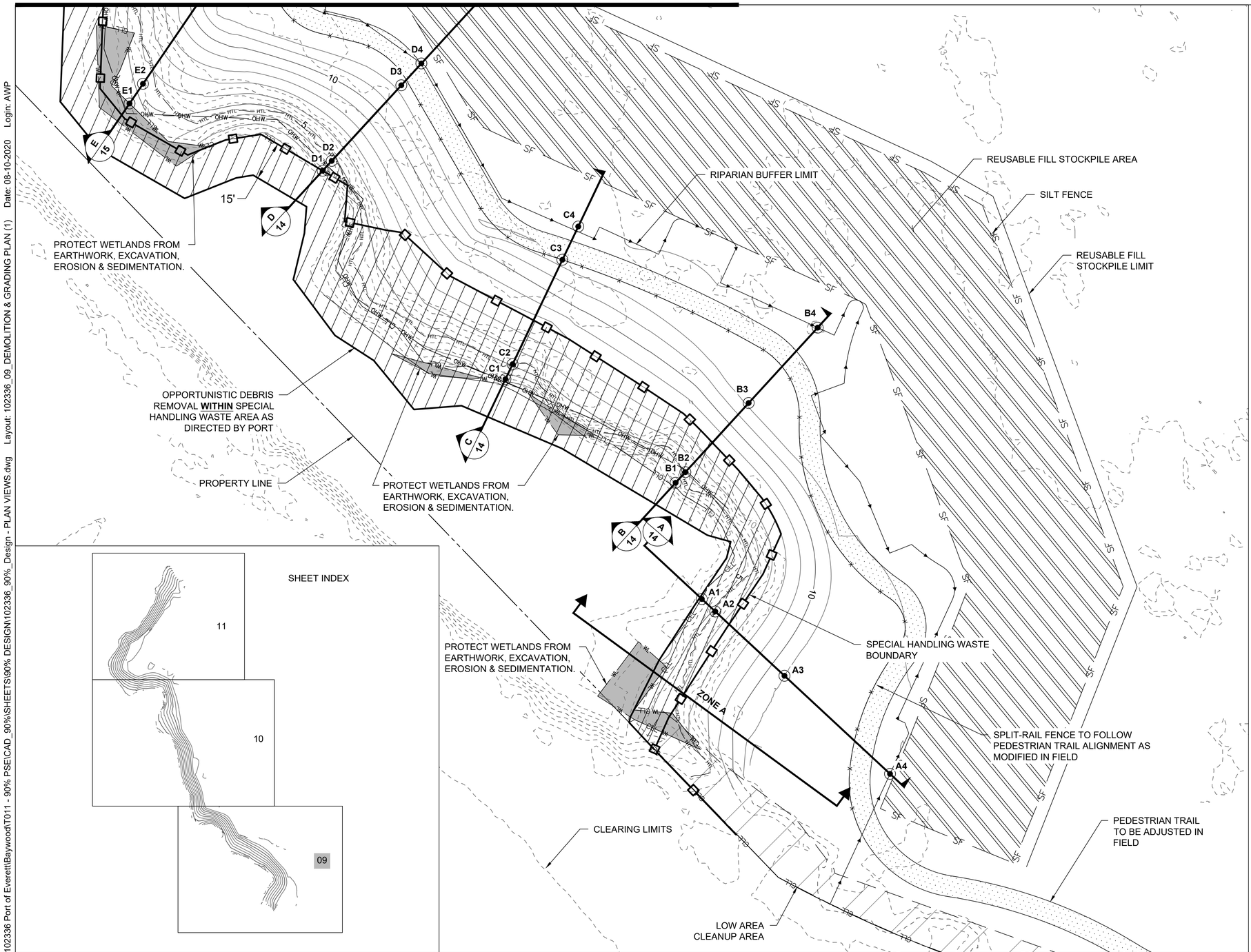
BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

GRADING PLAN

DWG. NO. 08
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 08 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_08_GRADING PLAN Date: 08-10-2020 Login: AWP

MATCHLINE - SEE SHEET 10



SHEET INDEX

N

0 20 40

Scale in Feet

NOTES:

1. CONTRACTOR TO MAINTAIN SLOPE BETWEEN POINTS AND SECTIONS. CONTRACTOR TO SMOOTH TRANSITIONS BETWEEN SLOPES.
2. BACKFILL VOIDS WITH SAND/GRAVEL MIX.
3. ALL EXCAVATION AND BACKFILL TO BE PERFORMED IN THE DRY. FOR AREAS IN THE TIDAL RANGE, EXCAVATION AND BACKFILL TO OCCUR AT LOW TIDE. NO EXCAVATION OR BACKFILL IN THE WET ALLOWED. BACKFILL MUST OCCUR BEFORE INUNDATION FROM EACH TIDAL CYCLE.

GRADING TABLE

SECTION	POINT NO.	NORTHING (NGVD29)	EASTING (NAD83)	TAGET ELEV. (FT)
A	1	373433.00	1303564.57	4.02
	2	373428.22	1303569.72	4.14
	3	373403.60	1303596.20	11.03
	4	373366.05	1303636.60	11.77
B	1	373477.52	1303554.55	3.97
	2	373481.57	1303558.26	4.03
	3	373508.05	1303582.50	12.26
	4	373536.91	1303608.91	13.04
C	1	373517.20	1303489.40	3.28
	2	373522.91	1303492.13	3.42
	3	373562.88	1303511.19	12.48
	4	373575.62	1303517.26	12.83
D	1	373597.01	1303419.45	3.42
	2	373600.76	1303422.90	3.50
	3	373629.70	1303449.53	12.38
	4	373638.06	1303457.22	12.58
E	1	373622.74	1303345.51	4.69
	2	373630.27	1303350.66	4.87

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39328 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

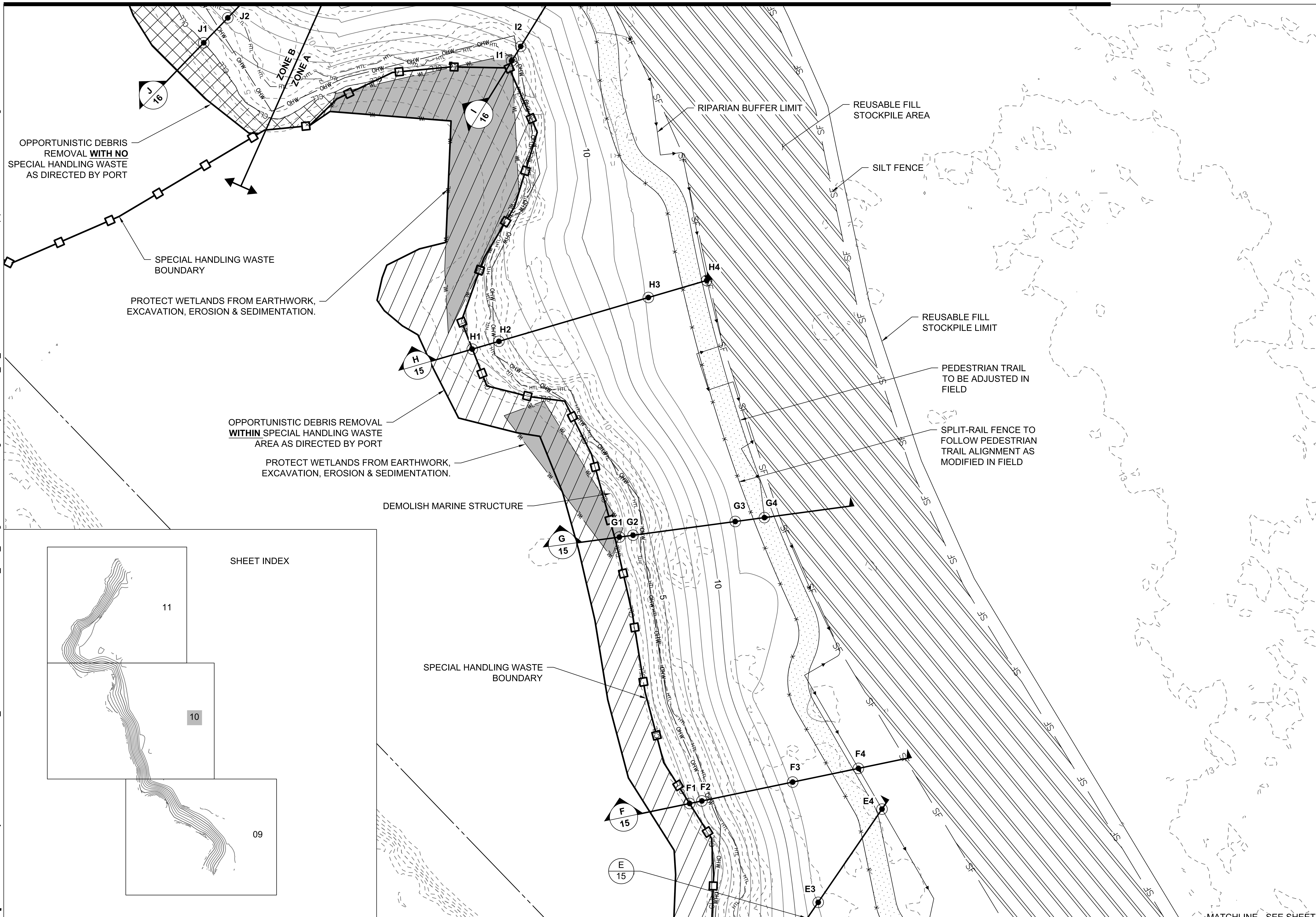
BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

DEMOLITION & GRADING PLAN (1)

DWG. NO. 09
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 09 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_09_DEMOLITION & GRADING PLAN (1) Date: 08-10-2020 Login: AWP

MATCHLINE - SEE SHEET 11



MATCHLINE - SEE SHEET 09

NOTES:

1. CONTRACTOR TO MAINTAIN SLOPE BETWEEN POINTS AND SECTIONS. CONTRACTOR TO SMOOTH TRANSITIONS BETWEEN SLOPES.
2. BACKFILL VOIDS WITH SAND/GRAVEL MIX.
3. ALL EXCAVATION AND BACKFILL TO BE PERFORMED IN THE DRY. FOR AREAS IN THE TIDAL RANGE, EXCAVATION AND BACKFILL TO OCCUR AT LOW TIDE. NO EXCAVATION OR BACKFILL IN THE WET ALLOWED. BACKFILL MUST OCCUR BEFORE INUNDATION FROM EACH TIDAL CYCLE.

GRADING TABLE

SECTION	POINT NO.	NORTHING (NGVD29)	EASTING (NAD83)	TARGET ELEV. (FT)
E	3	373669.46	1303377.45	12.07
	4	373706.24	1303402.60	12.81
F	1	373708.45	1303326.73	2.87
	2	373709.46	1303331.59	2.96
	3	373716.91	1303367.38	12.28
	4	373722.30	1303393.30	12.85
G	1	373813.54	1303299.05	2.52
	2	373814.27	1303304.46	2.69
	3	373819.68	1303344.74	12.20
	4	373821.23	1303356.24	12.44
H	1	373887.68	1303241.06	4.10
	2	373890.75	1303251.55	4.31
	3	373908.03	1303310.48	12.23
	4	373914.78	1303333.48	12.72
I	1	374001.40	1303256.56	6.72
	2	374007.08	1303260.15	6.85
J	1	374008.52	1303135.18	3.99
	2	374018.36	1303144.67	4.27

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
△	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, 8/10/20

PROJECT ENGINEER: D. CLINE
SCALE: AS SHOWN
DESIGNED BY: D. CLINE
DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI
CHECKED BY: J. KLEKOTKA
APPROVED BY:

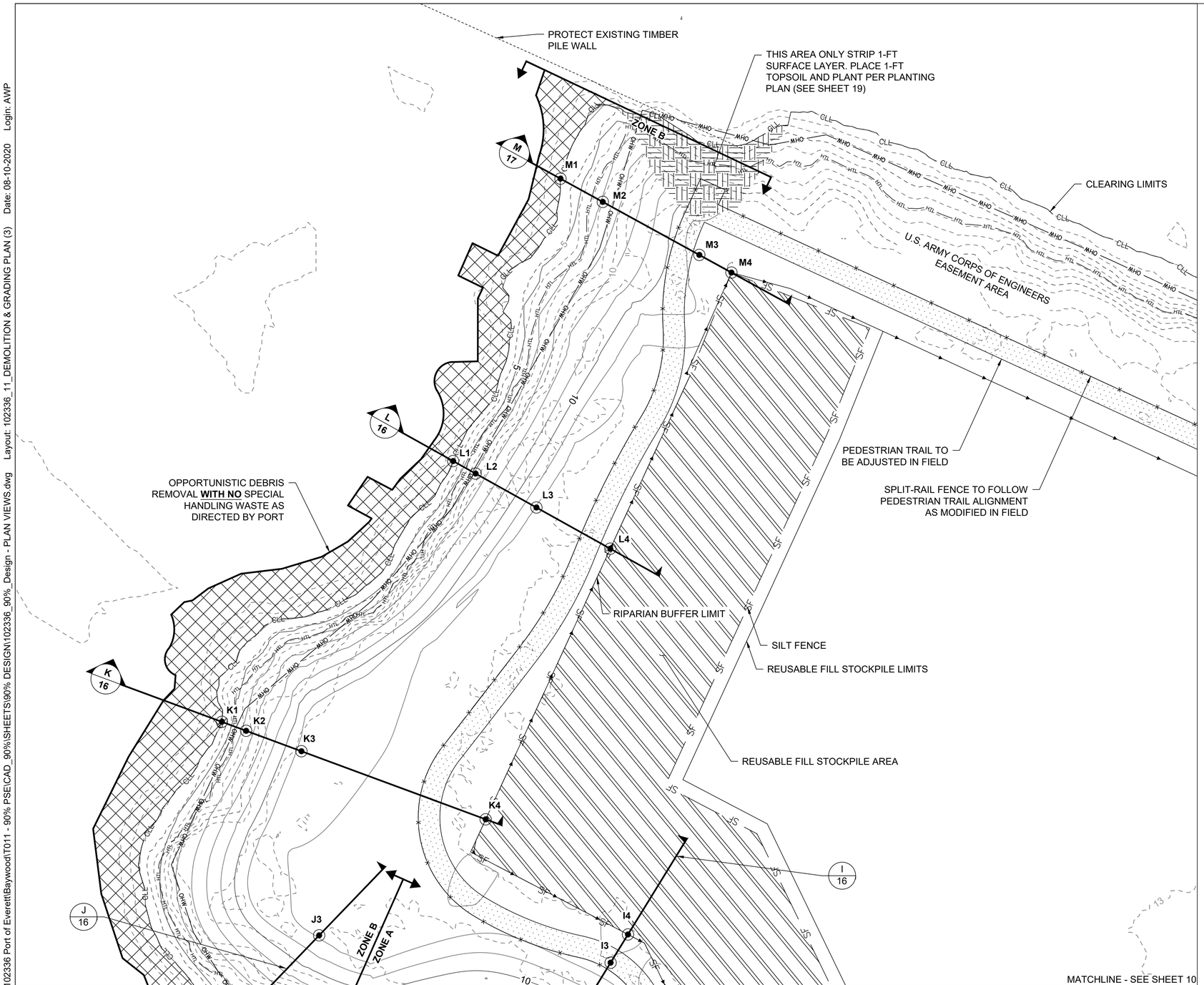
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

DEMOLITION & GRADING PLAN (2)

DWG. NO. 10
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 10 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_10_DEMOLITION & GRADING PLAN (2) Date: 08-10-2020 Login: AWP



N

0 20 40

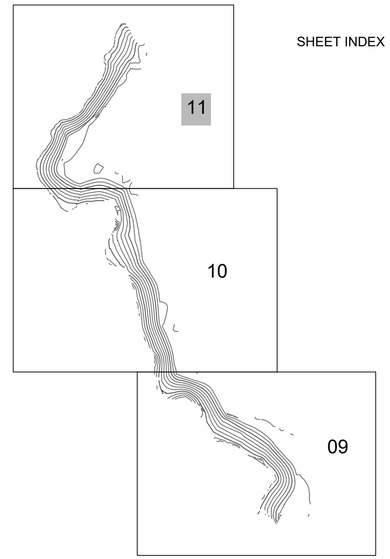
Scale in Feet

NOTES:

1. CONTRACTOR TO MAINTAIN SLOPE BETWEEN POINTS AND SECTIONS. CONTRACTOR TO SMOOTH TRANSITIONS BETWEEN SLOPES.
2. BACKFILL VOIDS WITH SAND/GRAVEL MIX.
3. ALL EXCAVATION AND BACKFILL TO BE PERFORMED IN THE DRY. FOR AREAS IN THE TIDAL RANGE, EXCAVATION AND BACKFILL TO OCCUR AT LOW TIDE. NO EXCAVATION OR BACKFILL IN THE WET ALLOWED. BACKFILL MUST OCCUR BEFORE INUNDATION FROM EACH TIDAL CYCLE.

GRADING TABLE				
SECTION	POINT NO.	NORTHING (NGVD29)	EASTING (NAD83)	TARGET ELEV. (FT)
I	3	374033.04	1303276.15	12.94
	4	374043.46	1303282.56	13.16
J	3	374043.14	1303168.54	12.11
K	1	374121.92	1303132.62	4.00
	2	374118.61	1303141.59	4.20
	3	374111.07	1303162.00	11.37
	4	374085.94	1303230.02	12.82
L	1	374218.14	1303218.03	4.00
	2	374213.52	1303266.30	4.10
	3	374201.01	1303248.76	12.08
	4	374185.81	1303276.03	12.84
M	1	374322.34	1303257.64	4.00
	2	37313.77	1303273.26	4.34
	3	374294.21	1303308.90	11.80
	4	374287.70	1303320.77	12.08

SHEET INDEX



Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER
10/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

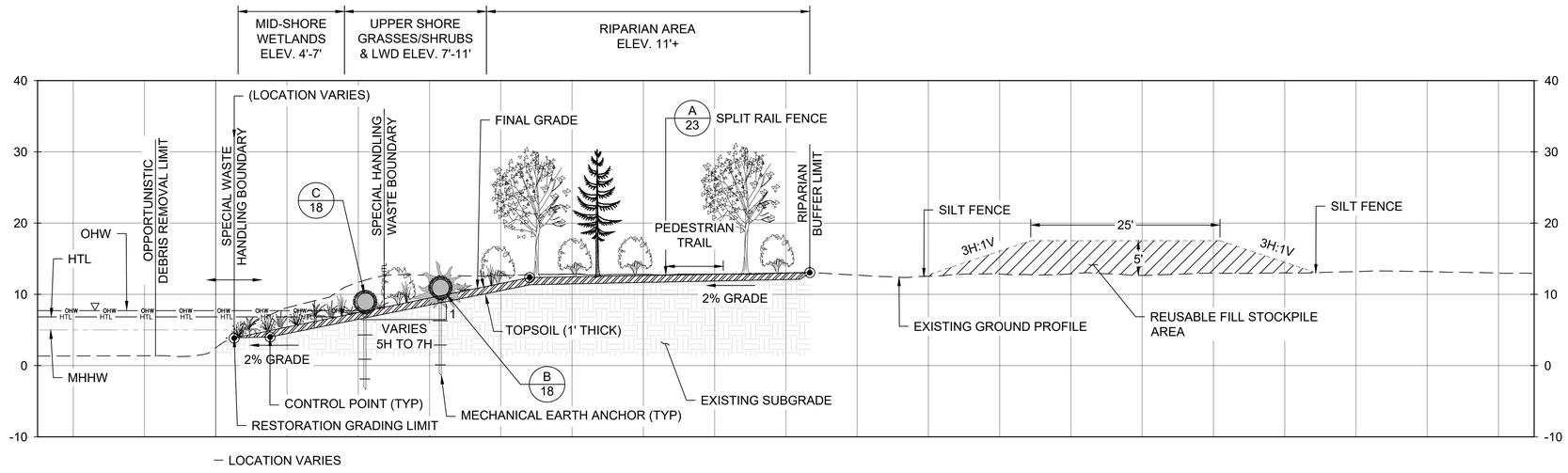
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

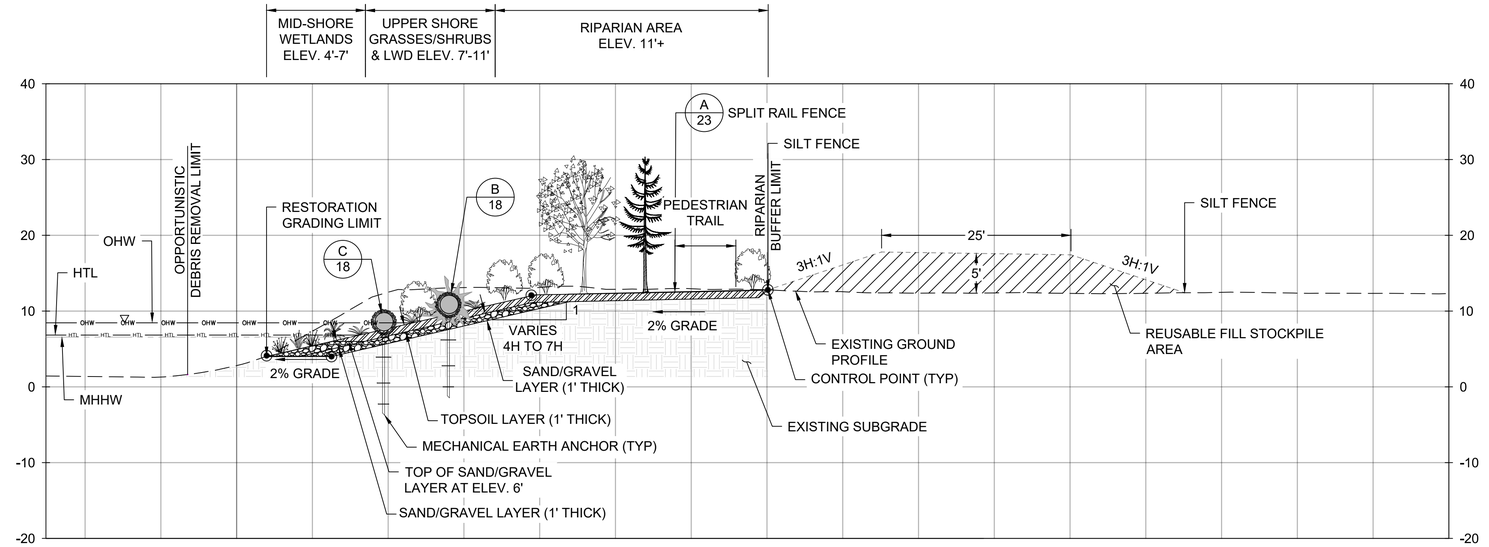
DEMOLITION & GRADING PLAN (3)

DWG. NO. 11
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 11 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLAN VIEWS.dwg Layout: 102336_11_DEMOLITION & GRADING PLAN (3) Date: 08-10-2020 Login: AWP



ZONE A TYPICAL SECTION DETAIL — A / 08



ZONE B TYPICAL SECTION DETAIL — B / 08

NOTES:

1. STAKE CLEARING LIMITS, WETLANDS, AND SPECIAL WASTE HANDLING BOUNDARY 50-FT O.C. WETLANDS AND SPECIAL WASTE HANDLING BOUNDARY SHALL BE STAKED USING NEON COLORS IDENTIFYING THOSE AREAS TO AVOID EXCAVATION OR PERFORM EXCAVATION USING SPECIAL WASTE HANDLING PROCEDURES. WETLANDS SHALL BE STAKED USING NEON GREEN STAKES AND FLAGGING AND SPECIAL WASTE HANDLING BOUNDARY SHALL BE STAKED USING NEON PINK STAKES AND FLAGGING. CONTRACTOR TO PROTECT AND MAINTAIN STAKING DURING CONSTRUCTION AND OBTAIN PORT APPROVAL PRIOR TO STARTING WORK.
2. CLEAR AND GRUB FROM THE CLEARING (GRADING) LIMITS TO THE OUTER EDGE OF THE REUSABLE FILL STOCKPILE AREA.
3. ALL WORK BELOW OHW SHALL BE PERFORMED DURING THE INWATER WORK WINDOW AS SPECIFIED IN THE PERMITS, JULY 16 - FEB. 15, AND IN THE DRY DURING LOW TIDES.
4. ALL EXCAVATIONS, DEBRIS REMOVALS, AND DEMOLITIONS BELOW OHW SHALL BE BACKFILLED AND COMPACTED WITH SAND/GRAVEL MATERIAL PRIOR TO TIDAL INUNDATION ON EACH TIDAL CYCLE.
5. STRIP 1' SURFACE LAYER AS SHOWN ON PLANS. DISPOSE OF AT MUNICIPAL LANDFILL OR RECYCLING FACILITY.
6. EXCAVATE REUSABLE FILL AND WOOD WASTE TO THE DESIGN GRADES. STOCKPILE REUSABLE FILL PER PLAN. DISPOSE OF WOOD WASTE AT MUNICIPAL LANDFILL.
7. PERFORM OPPORTUNISTIC DEBRIS REMOVAL PRIOR TO PLACEMENT OF TOPSOIL AND PLANTINGS. IN SPECIAL WASTE HANDLING AREAS EXCAVATION, HANDLING, AND DISPOSAL SHALL FOLLOW THE REQUIREMENTS IN THE SPECIFICATION "REMOVAL AND DISPOSAL OF CONTAMINATED SOILS".
8. BACKFILL OPPORTUNISTIC DEBRIS REMOVAL AND MARINE STRUCTURE DEMOLITION VOIDS/CUTS WITH SAND/GRAVEL MATERIAL AND COMPACT WITH EXCAVATOR BUCKET.
9. PLACE 2' THICK TOPSOIL (AND SAND/GRAVEL LAYER IN AREAS IDENTIFIED IN PLANS).
10. HYDROSEED AND PLANT TOPSOIL AREAS PER PLANTING PLAN AND SPECIFICATIONS.

0 10 20
Scale in Feet

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

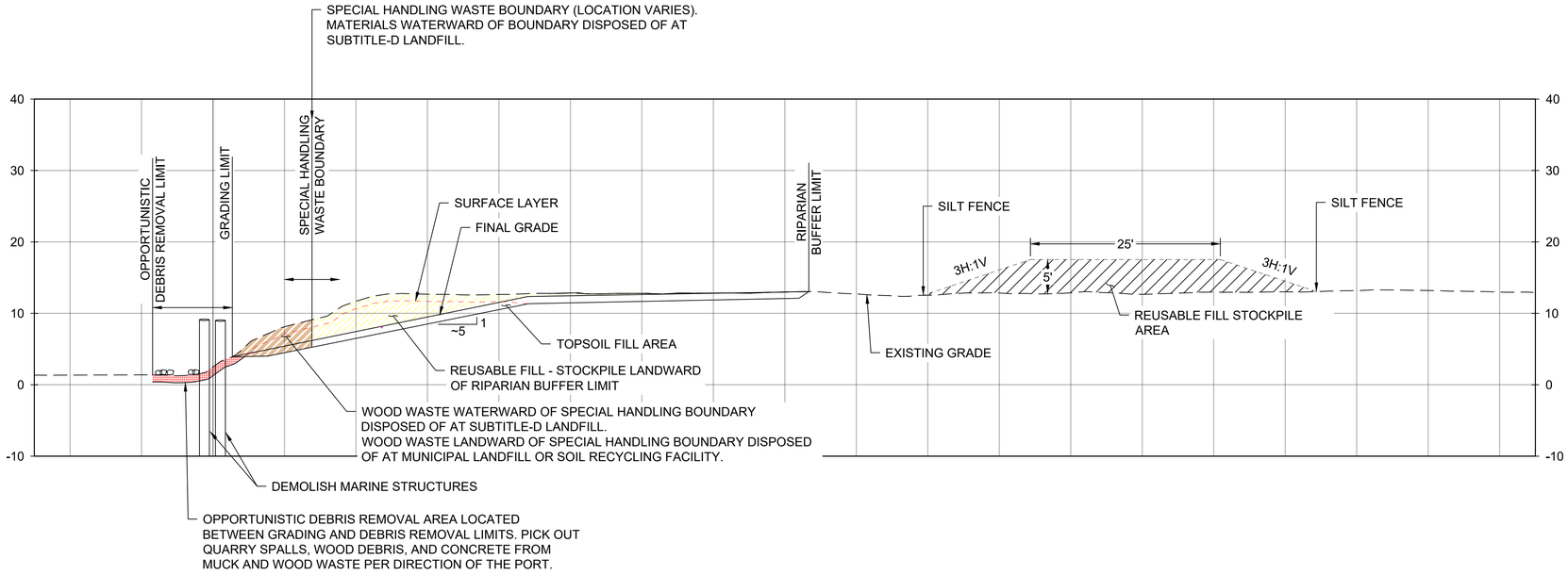
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

TYPICAL SECTIONS

DWG. NO. 12
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 12 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_12_TYPICAL SECTIONS Date: 08-10-2020 Login: AWP



SOIL MANAGEMENT PLAN - TYPICAL SECTION

-
-

LEGEND:

- SURFACE LAYER - MIX OF TOPSOIL, ORGANIC MATERIAL, AGGREGATES, AND WOOD WASTE. WHEN ORGANICS AND WOOD WASTE MATERIAL REMOVED SURFACE LAYER IS REUSABLE FILL
- REUSABLE FILL
- WOOD WASTE (ALL WOOD WASTE TO SUBTITLE D LANDFILL)
- OPPORTUNISTIC DEBRIS REMOVAL BEYOND SPECIAL HANDLING WASTE BOUNDARY (PICK/PLUCK DEBRIS FROM THIS AREA, FULL EXCAVATION IS NOT ALLOWED)

NOTES:

1. CLEAR AND GRUB FROM THE CLEARING (GRADING) LIMITS TO THE OUTER EDGE OF THE REUSABLE FILL STOCKPILE AREA.
2. STRIP 1' SURFACE LAYER. HAUL AND STOCKPILE AS REUSABLE FILL FROM SPECIAL WASTE HANDLING BOUNDARY TO RIPARIAN BUFFER LIMIT.
3. EXCAVATE REUSABLE FILL AND WOOD WASTE TO THE DESIGN GRADES. STOCKPILE REUSABLE FILL PER PLAN. DISPOSE OF WOOD WASTE AT SUBTITLE-D LANDFILL FOR MATERIALS GENERATED FROM SPECIAL HANDLING WASTE AREAS. OVER EXCAVATION BEYOND THE DESIGN LIMIT LINES IS NOT ALLOWED AND WILL NOT BE PAID FOR BY THE PORT
4. PERFORM SELECTIVE OPPORTUNISTIC DEBRIS REMOVAL PER THE DIRECTION OF THE ENGINEER PRIOR TO PLACEMENT OF TOPSOIL AND PLANTINGS. DEBRIS REMOVAL SHALL INCLUDE PICKING OUT MARINE WOOD DEBRIS, QUARRY SPALLS, CONCRETE BLOCKS, AND OTHER WOOD WASTE, AND IS NOT WHOLESALE EXCAVATIONS OF THE AREAS. IN SPECIAL WASTE HANDLING AREAS EXCAVATION, HANDLING, AND DISPOSAL SHALL FOLLOW THE REQUIREMENTS IN THE SPECIFICATION REMOVAL AND DISPOSAL OF CONTAMINATED SOILS.
5. BACKFILL AND COMPACT OPPORTUNISTIC DEBRIS REMOVAL AND MARINE STRUCTURE DEMOLITION VOIDS/CUTS WITH SAND/GRAVEL MATERIAL WITH EXCAVATOR BUCKET.
6. PLACE 2' THICK TOPSOIL (AND SAND/GRAVEL LAYER IN AREAS IDENTIFIED IN PLANS).
7. HYDROSEED AND PLANT TOPSOIL AREAS PER PLANTING PLAN AND SPECIFICATIONS.

0 10 20
Scale in Feet

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

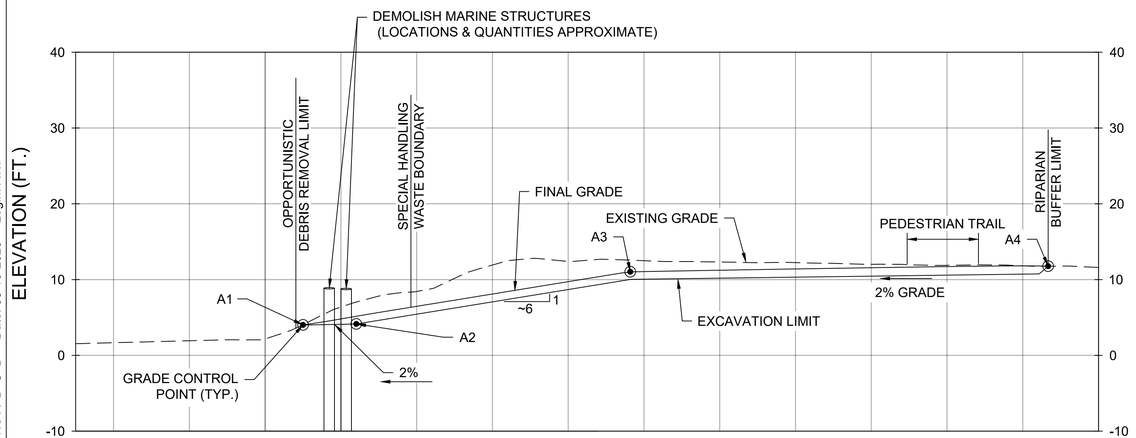
PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP
SOIL MANAGEMENT PLAN - TYPICAL SECTION

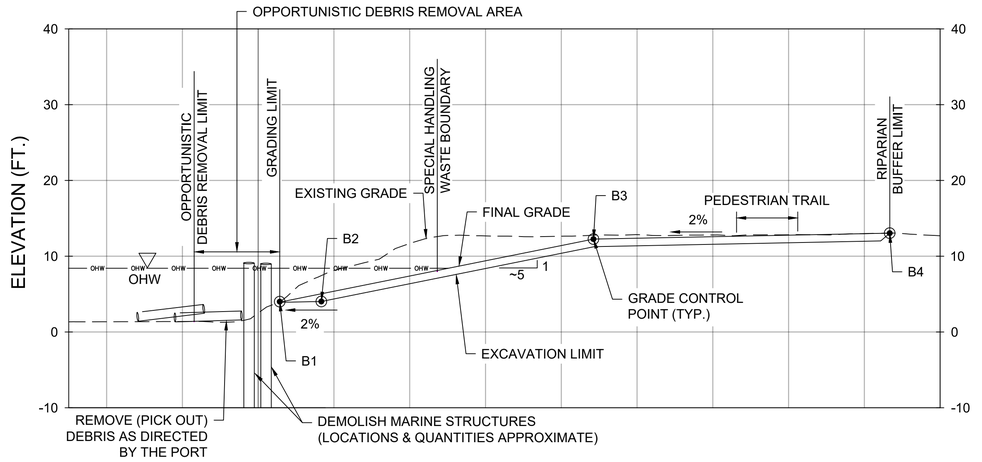
DWG. NO. **13**
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 13 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_13_SOIL MANAGEMENT PLAN Date: 08-10-2020 Login: AWP



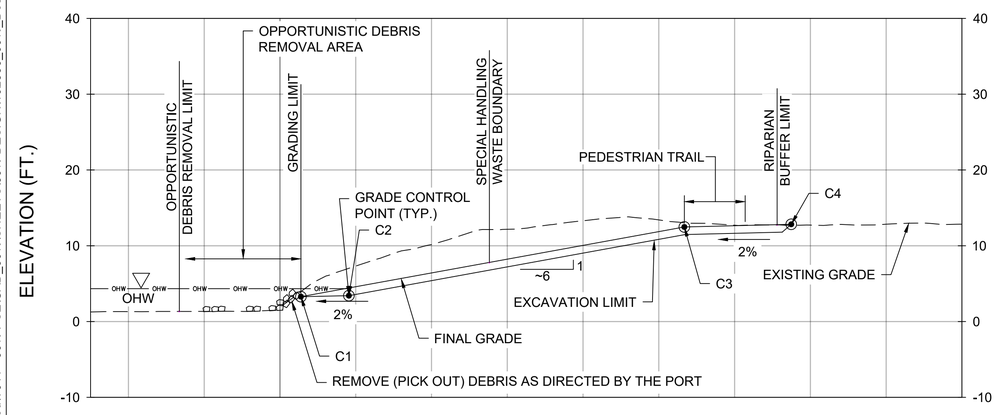
SECTION A — A / 09

TP-10 & TP-10-20 (TYP)



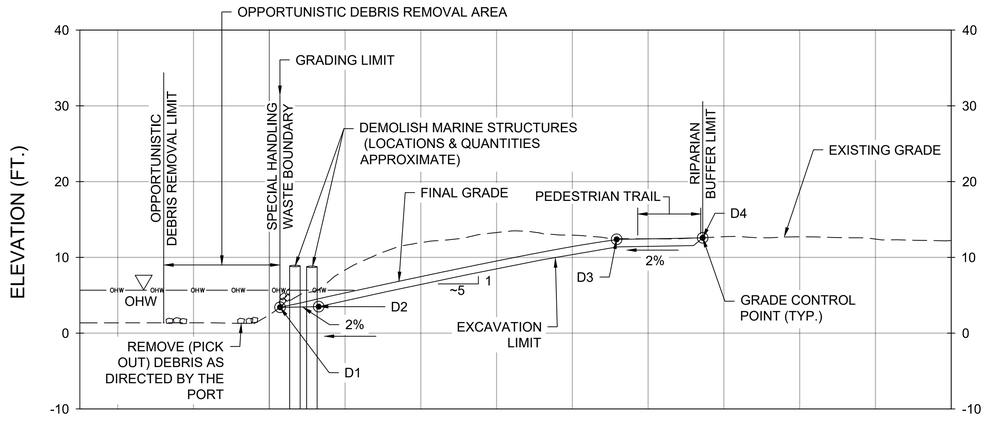
SECTION B — B / 09

TP-9 & TP-9-20 (TYP)



SECTION C — C / 09

TP-9 & TP-9-20 (TYP)



SECTION D — D / 09

TP-8 (TYP)

0 10 20

Scale in Feet

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 33326 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

SECTIONS A - D

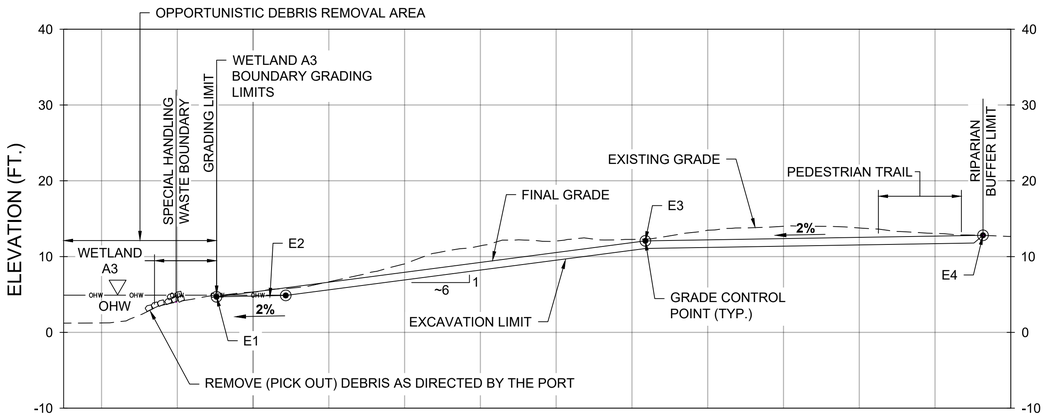
DWG. NO. 14

CIP NO.

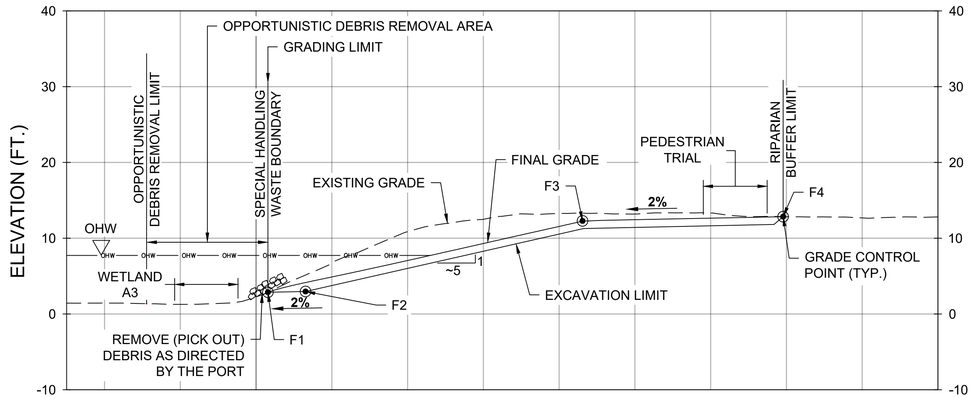
PROJECT NO. PD-BW-2020

SHEET NO. 14 OF 25

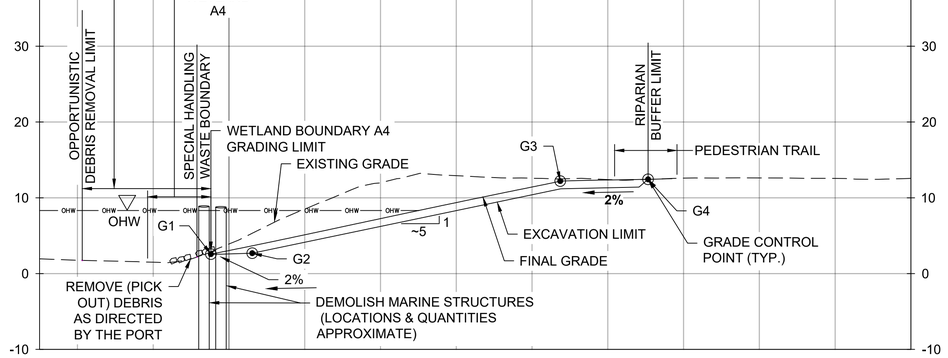
Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_14_SECTIONS A B C D Date: 08-10-2020 Login: AWP



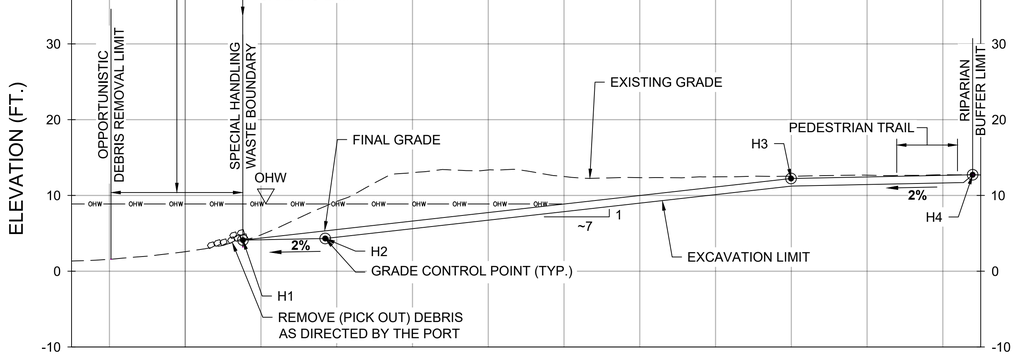
SECTION E — E
TP-7 & TP-7-20 (TYP) — 09,10



SECTION F — F
TP-6 (TYP) — 10



SECTION G — G
TP-6 (TYP) — 10



SECTION H — H
TP-5 & TP-5-20 (TYP) — 10

0 10 20
Scale in Feet

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39329 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

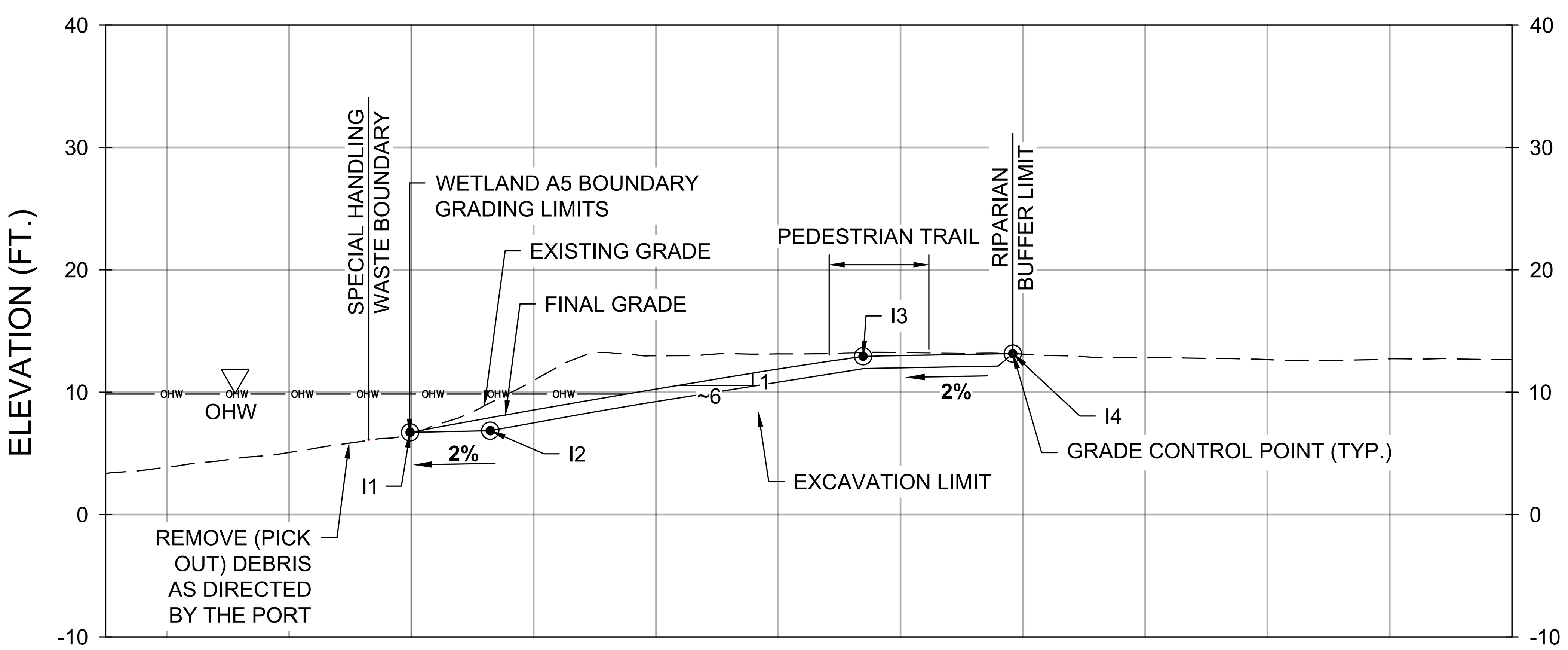
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

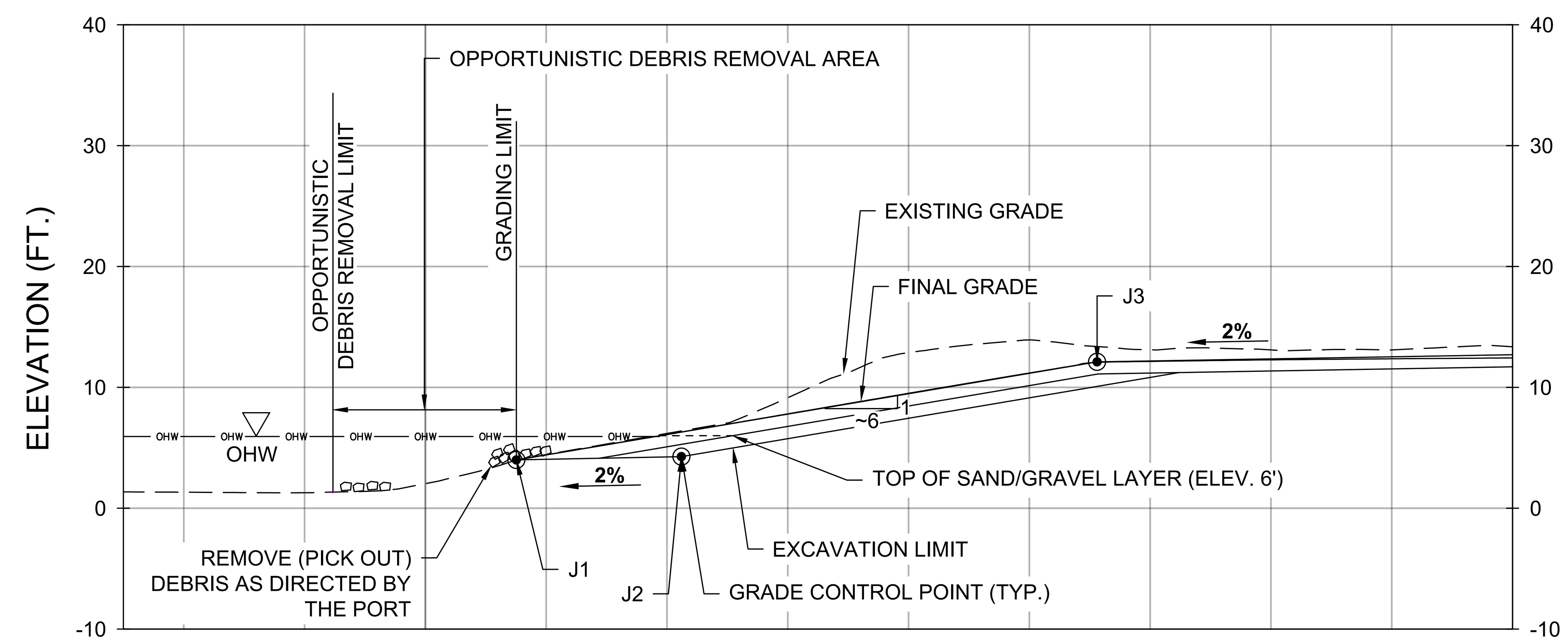
SECTIONS E - H

DWG. NO. 15
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 15 OF 25

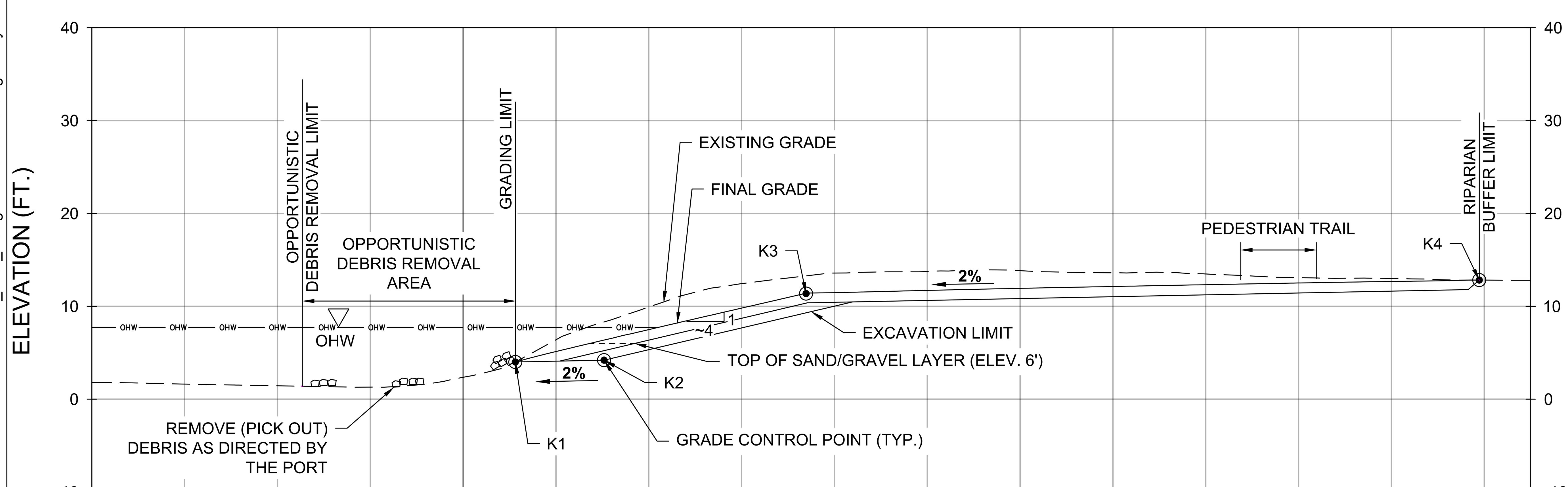
Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_15_SECTIONS E F G H Date: 08-10-2020 Login: AWP



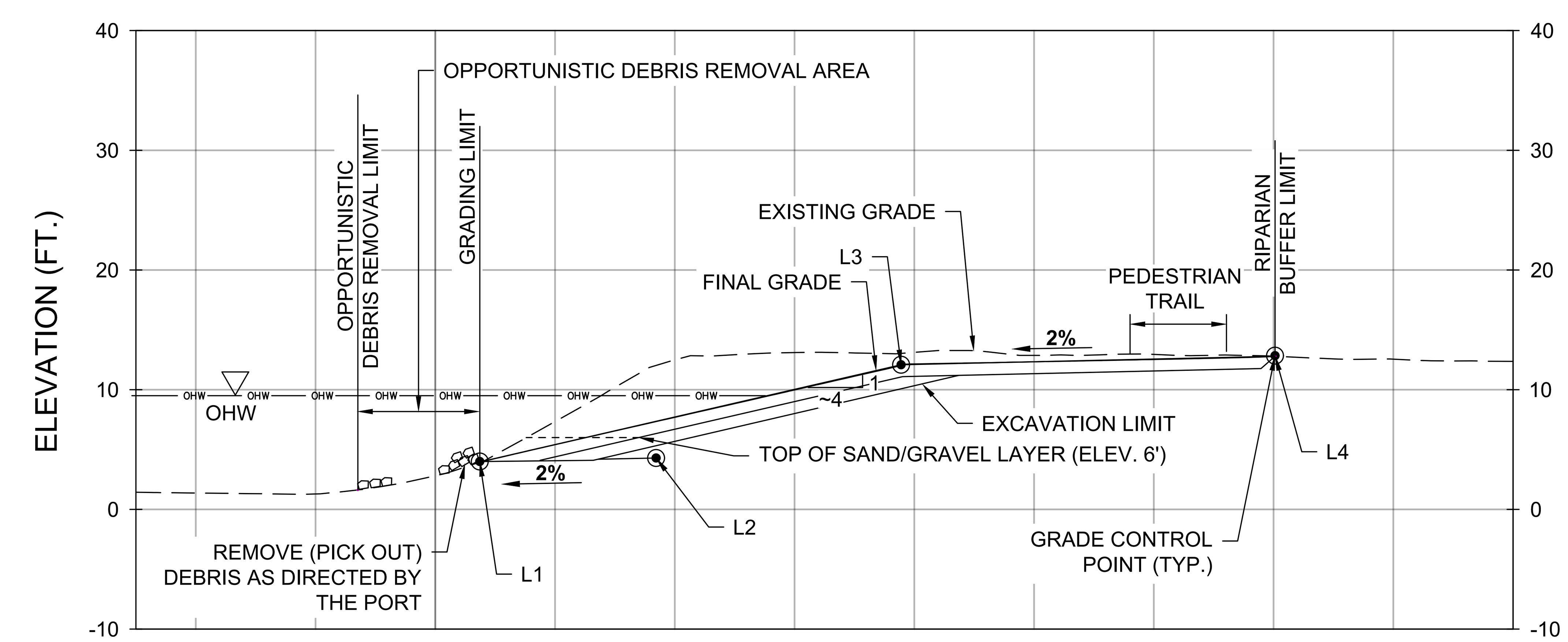
SECTION I
TP-4 & TP-4-20 (TYP)
I
10,11



SECTION J
TP-3 (TYP)
J
10,11



SECTION K
TP-2 & TP-2-20 (TYP)
K
11



SECTION L
TP-1 (TYP)
L
11

0 10 20
Scale in Feet

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

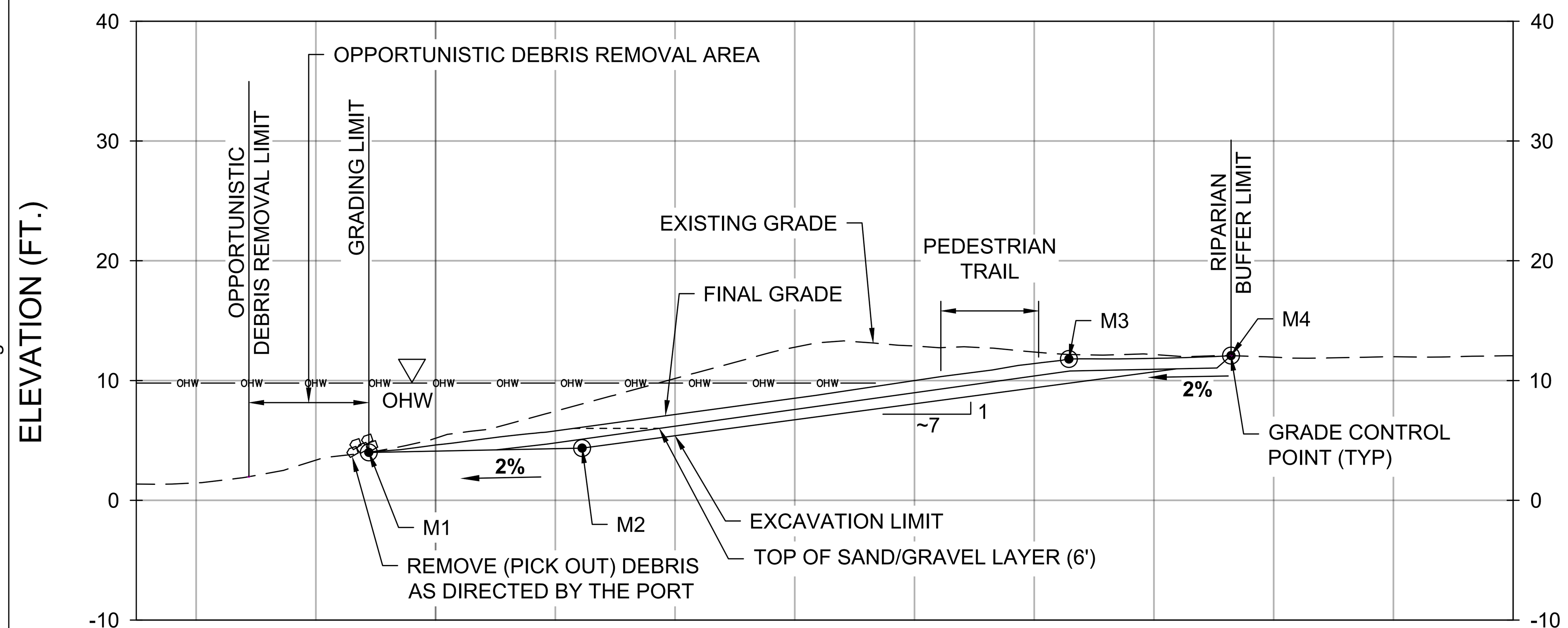
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

SECTIONS I - L

DWG. NO. 16
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 16 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_16_SECTIONS I J K L Date: 08-10-2020 Login: AWP



SECTION M

TP-1 (TYP)

M / 11

Scale in Feet: 0 10 20

Port of Everett
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
△	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

SECTION M

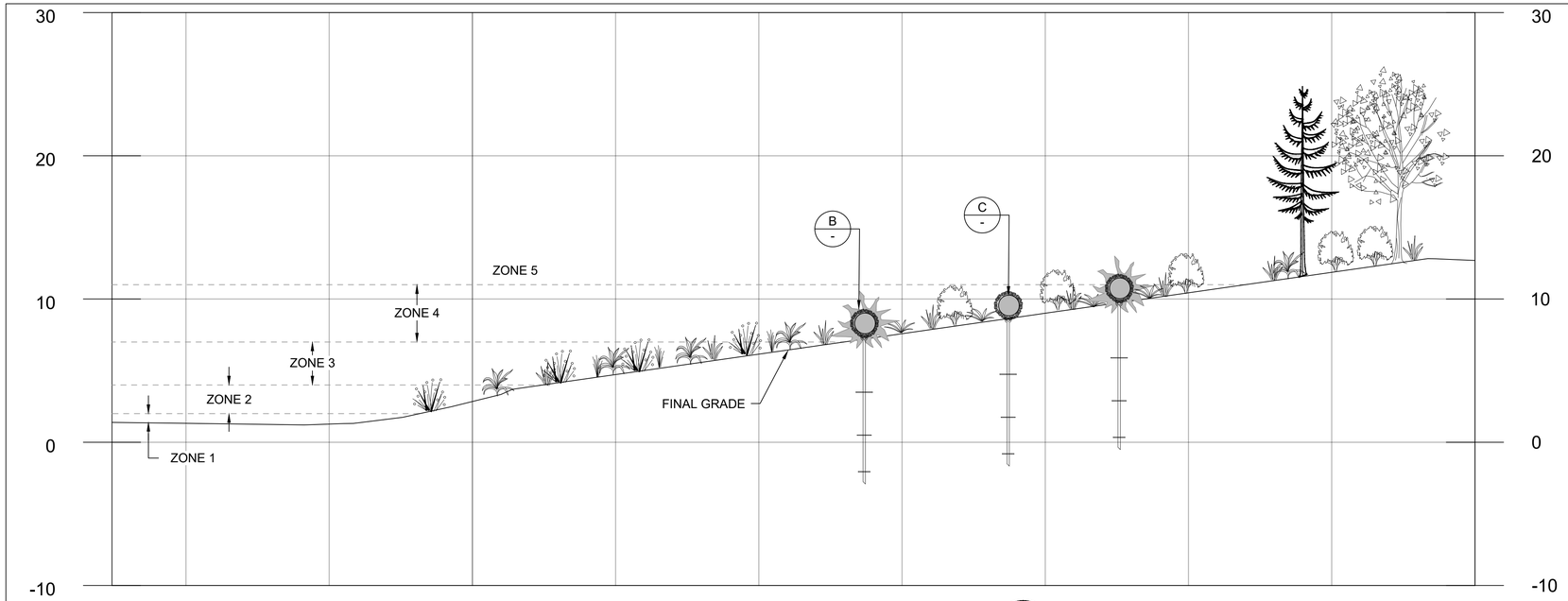
DWG. NO. 17

CIP NO.

PROJECT NO. PD-BW-2020

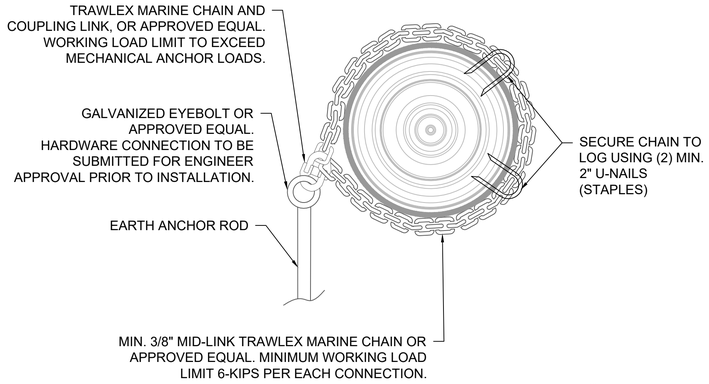
SHEET NO. 17 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - SECTIONS.dwg Layout: 102336_17_SECTION M Date: 08-10-2020 Login: AWP



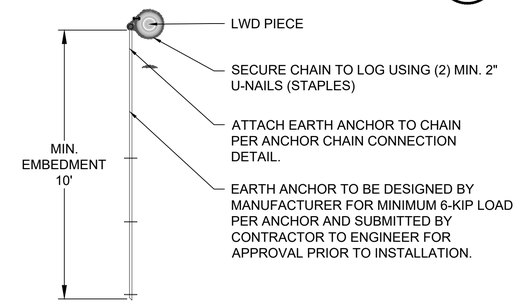
TYPICAL PLANTING SECTION — A -

0 5 10
Scale in Feet



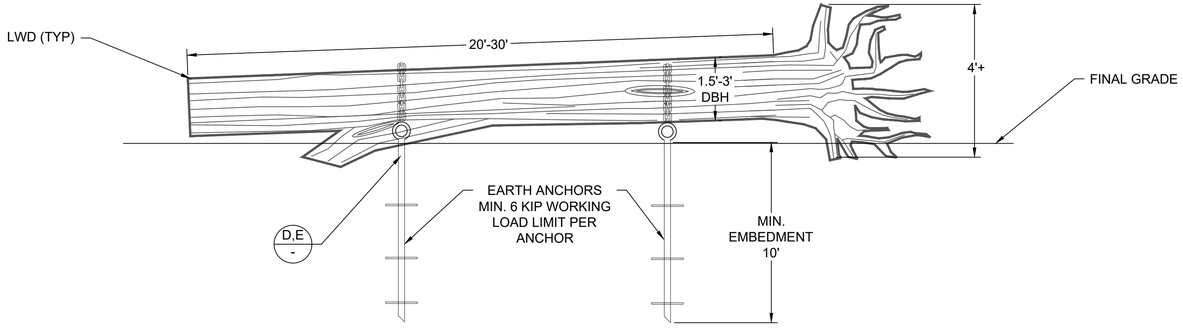
ANCHOR CHAIN CONNECTION DETAIL — D -

SCALE: NTS



ANCHOR/LWD CONNECTION DETAIL — E -

SCALE: NTS



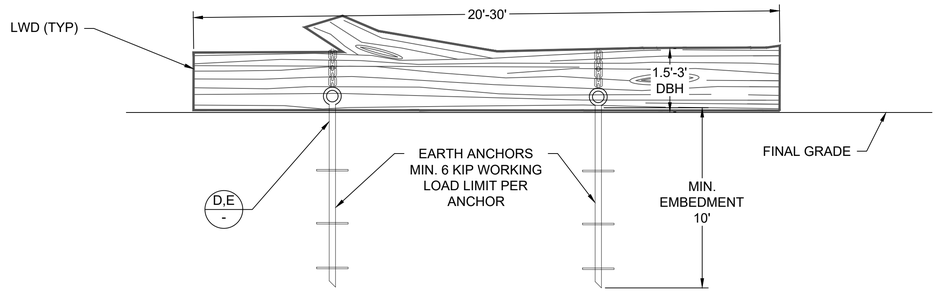
LARGE WOODY DEBRIS (LWD) WITH ROOTWAD — B -

SCALE: NTS

ZONE NO.	ELEVATION (NGVD-29)	PLANTING ZONE	TYPICAL SPEICIES
1	≤ 2'	MUDFLAT	NONE
2	2'-4'	LOW SHORE	RUSHES, SEDGES
3	4'-7'	MID SHORE	RUSHES, SEDGES, GRASSES, HERBS
4	7'-11'	UPPER SHORE & WOOD ZONE	DUNE GRASSES, SHRUBS, HERBS, LWD
5	11'+	RIPARIAN	TREES, SHRUBS, HERBS

NOTES:

1. 50 LWD PIECES TOTAL.
2. HALF OF LWD PIECES WILL HAVE ROOTWADS (25). HALF OF LWD PIECES WILL BE CUT LOGS WITHOUT ROOTWADS (25).



LARGE WOODY DEBRIS (LWD) CUT LOG — C -

SCALE: NTS

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39329 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

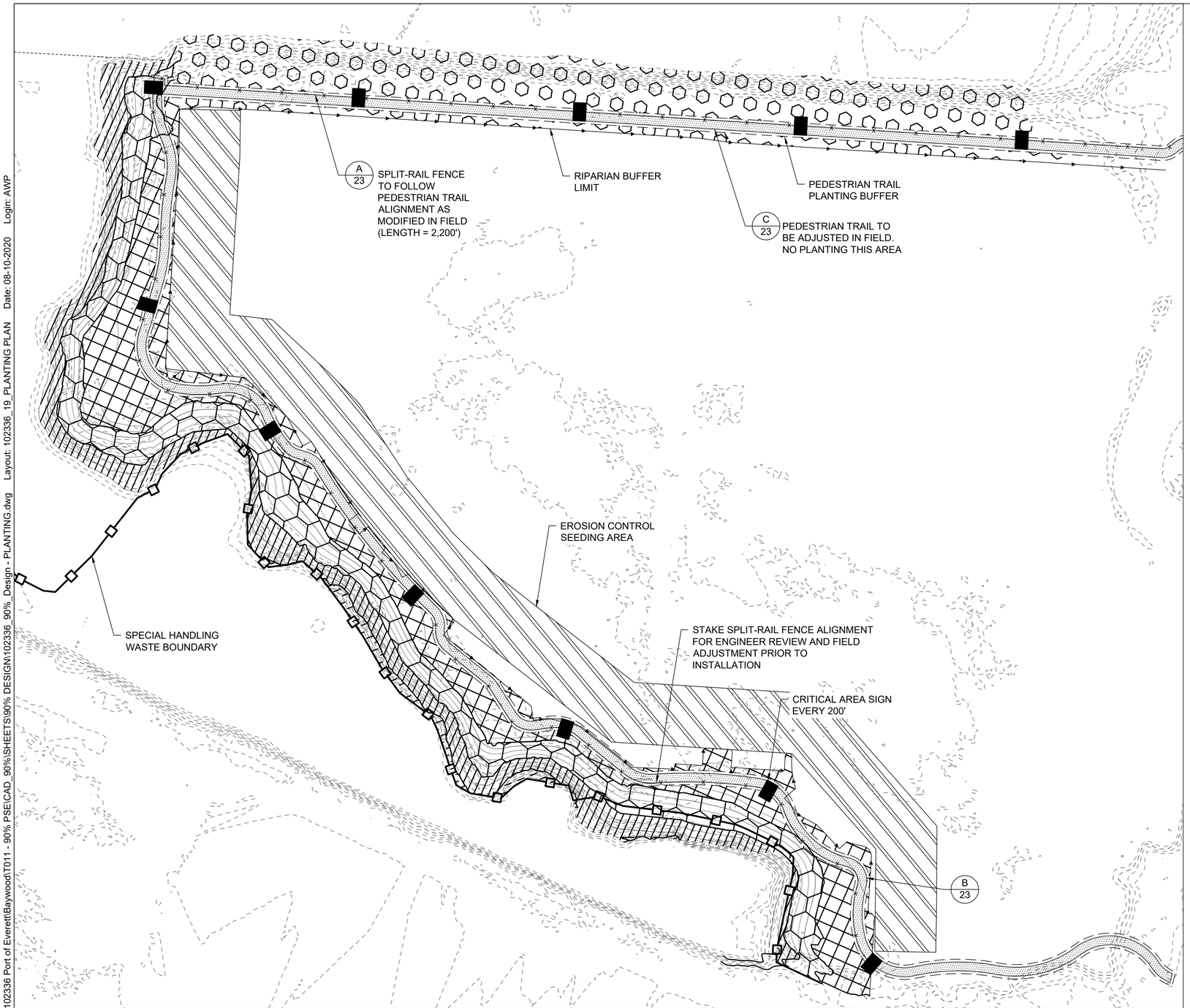
PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

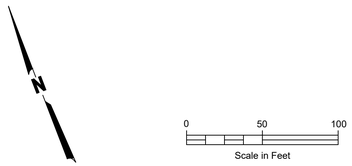
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

LWD DETAIL

DWG. NO. 18
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 18 OF 25





LEGEND

- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- RIPARIAN BUFFER LIMIT
- PEDESTRIAN TRAIL PLANTING BUFFER
- SPLIT-RAIL FENCE
- LOWER SLOPE PLANTING ZONE (WETLANDS) (EL. 2'-4')
- MID SLOPE PLANTING ZONE (WETLAND/RIPARIAN MIX) (EL. 4'-7')
- UPPER SLOPE PLANTING ZONE (RIPARIAN) (EL. 7'-11')
- RIPARIAN PLANTING ZONE (1) (RIPARIAN) (EL. 11'+)
- RIPARIAN PLANTING ZONE (2) (RIPARIAN, NO TREES)
- PEDESTRIAN TRAIL
- EROSION CONTROL SEEDING AREA
- CRITICAL AREA SIGN

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLANTING.dwg Layout: 102336_19_PLANTING PLAN Date: 08-10-2020 Login: AWP

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39320 — REGISTERED PROFESSIONAL ENGINEER
8/10/20

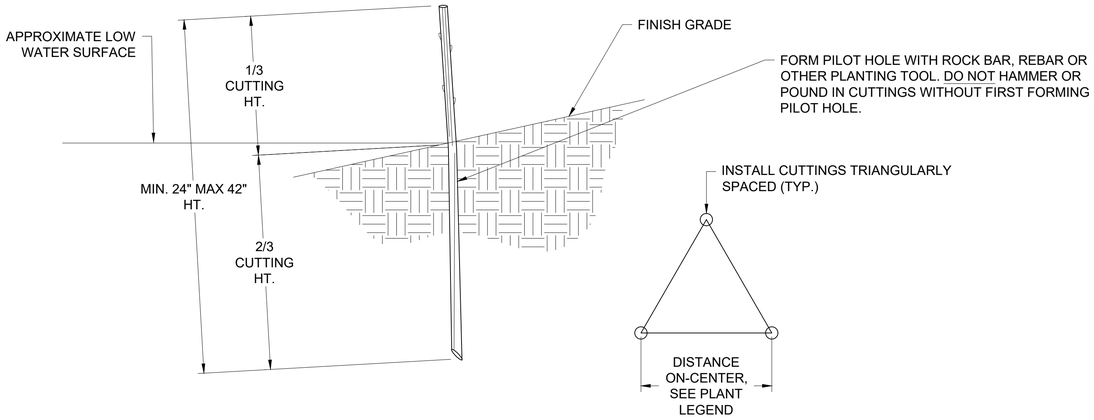
PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

PLANTING PLAN

DWG. NO. 19
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 19 OF 25

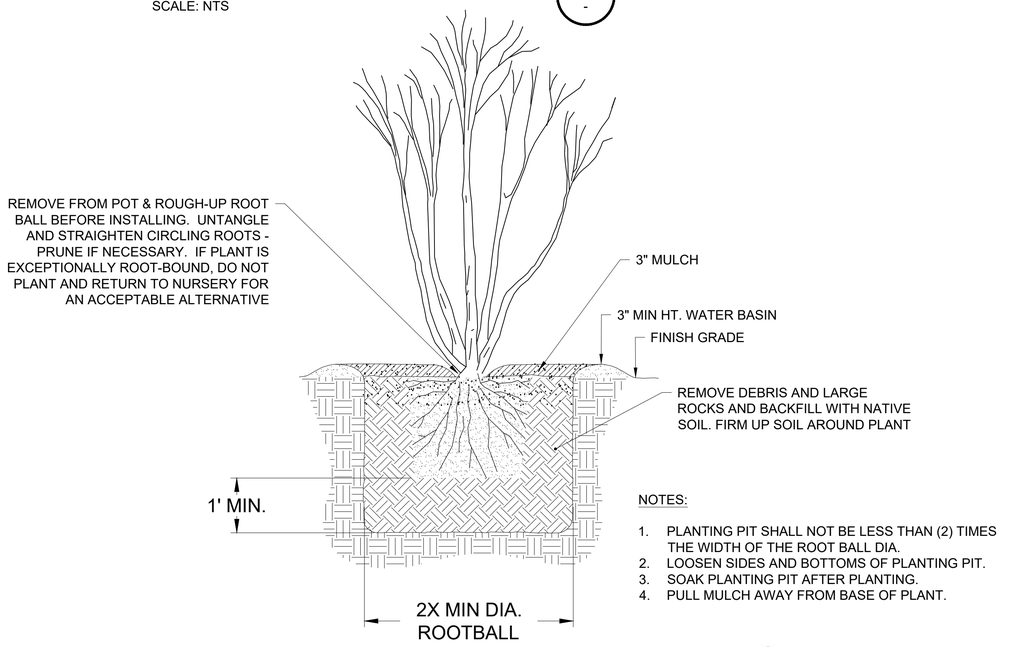


NOTES:

1. BASAL END OF LIVE STAKES SHALL BE 1 TO 2 INCHES IN DIAMETER.
2. KEEP LIVE STAKES COVERED, COOL, & MOIST AT ALL TIMES PRIOR TO PLANTING. AT NO TIME SHOULD PLANT MATERIAL BE EXPOSED & ALLOWED TO DRY OUT. LIVE STAKES CAN BE TEMPORARILY STORED IN WATER PRIOR TO INSTALLATION.
3. PRE-DRIVE HOLE USING REBAR BEFORE INSERTING LIVE STAKE CUTTING & TAMP SOIL TO REMOVE AIR POCKETS. LIGHTLY TAP LIVE STAKE A MINIMUM OF $\frac{2}{3}$ LENGTH BELOW THE GROUND USING A RUBBER MALLET. ENSURE LIVE STAKE CUTTING HAS A MINIMUM OF TWO LIVE BUDS ABOVE GRADE.

LIVE STAKE INSTALLATION — A

SCALE: NTS

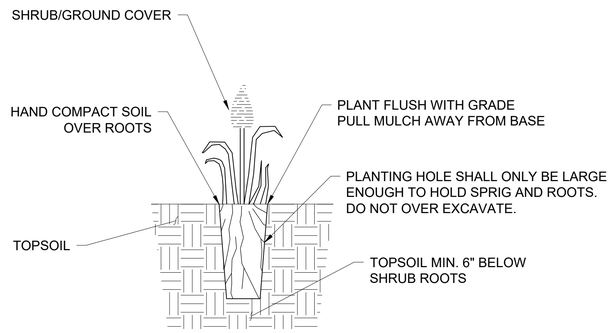


NOTES:

1. PLANTING PIT SHALL NOT BE LESS THAN (2) TIMES THE WIDTH OF THE ROOT BALL DIA.
2. LOOSEN SIDES AND BOTTOMS OF PLANTING PIT.
3. SOAK PLANTING PIT AFTER PLANTING.
4. PULL MULCH AWAY FROM BASE OF PLANT.

1, 2, & 5 GALLON TREE & SHRUB PLANTING — D

SCALE: NTS

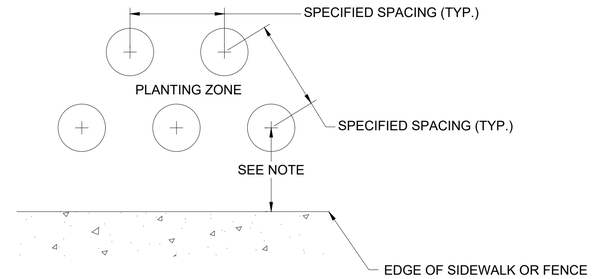


NOTES:

1. SOIL SHALL BE MOIST TO WET AT TIME OF PLANTING.

BARE ROOT EMERGENT PLANTING — B

SCALE: NTS



NOTES:

1. PLANT SHRUBS NO CLOSER THAN 2.5 FT. FROM PEDESTRIAN TRAIL AND FENCE.

PLANTING SPACING — C

SCALE: NTS

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

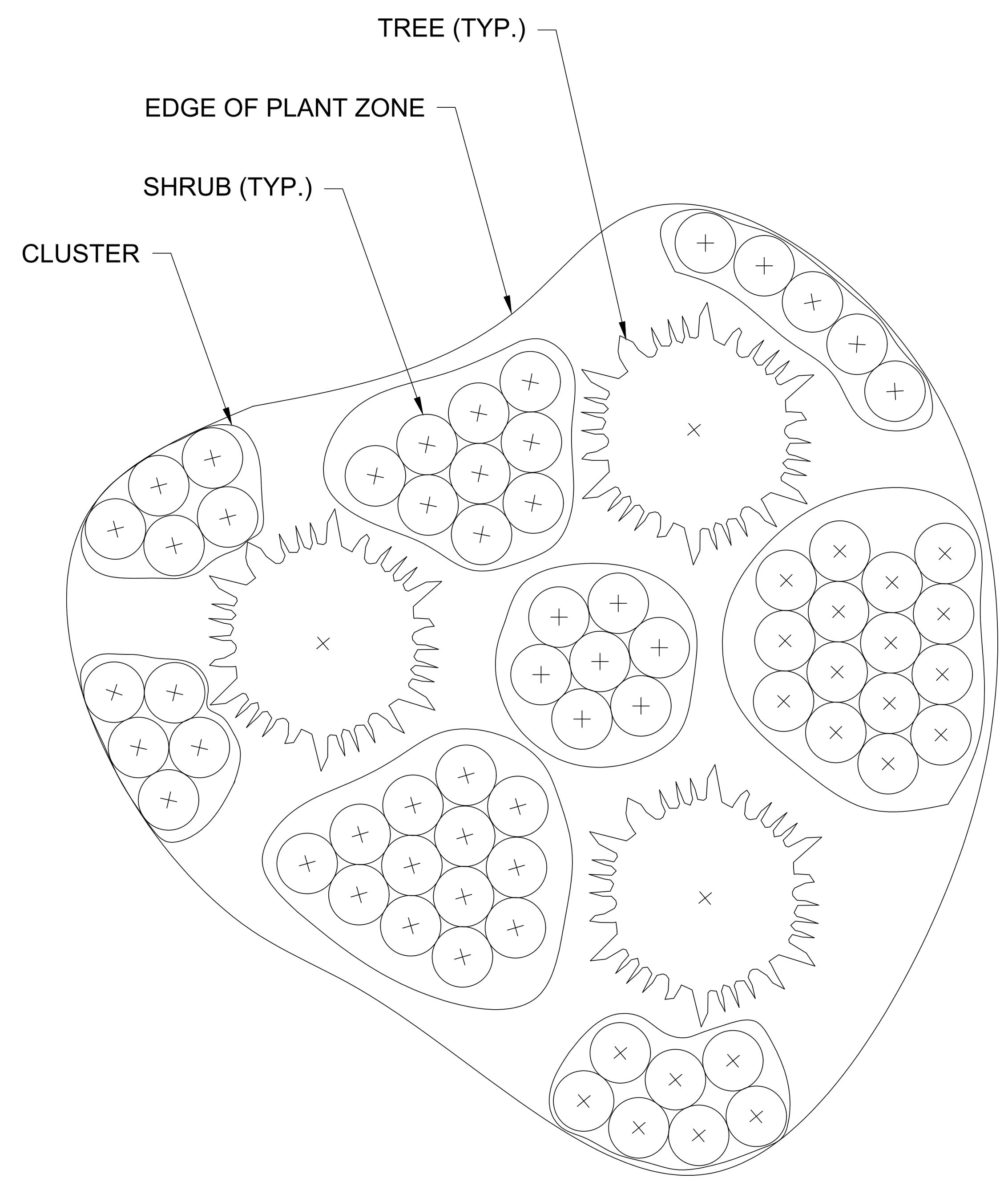
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

PLANTING DETAILS (1)

DWG. NO. 20
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 20 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLANTING.dwg Layout: 102336_20_PLANTING DETAILS (1) Date: 08-10-2020 Login: AWP

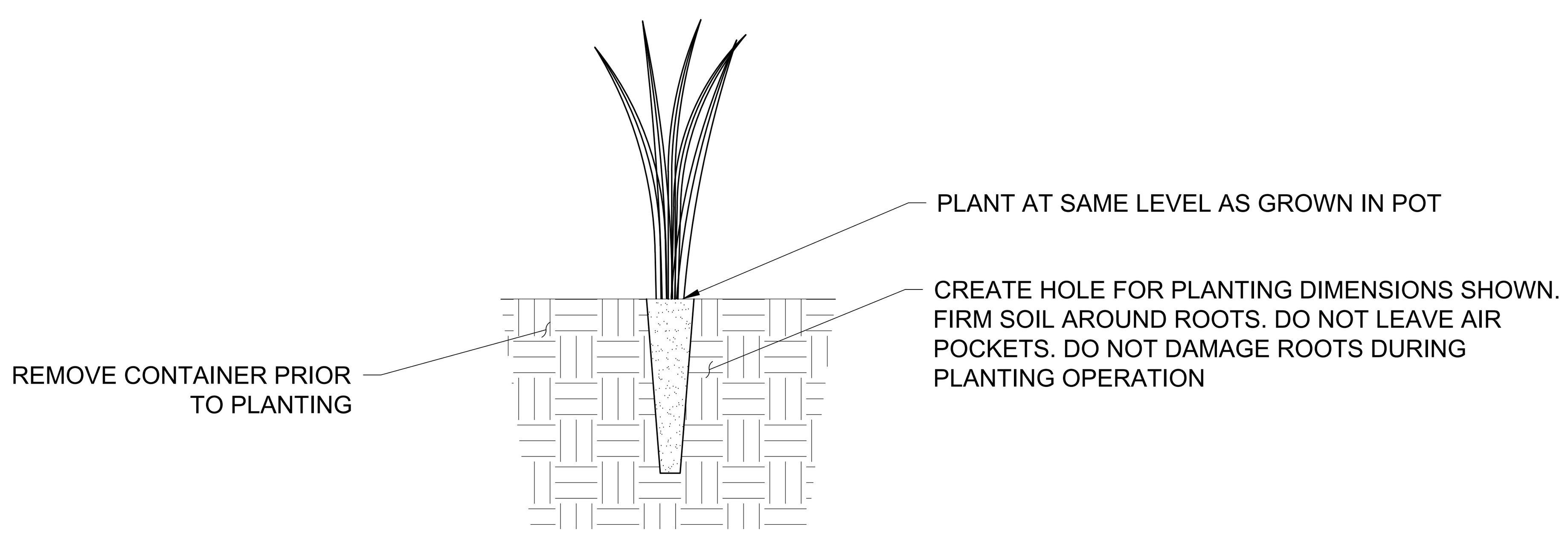


NOTES:

1. PLANT SHRUBS IN CLUSTERS OF UNEVEN NUMBERS (E.G. THREE, FIVE, SEVEN, ETC.).
2. PLANT ONE SPECIES OF SHRUBS IN CLUSTERS OF THREE, FIVE, SEVEN, ETC.
3. EVENLY SPACE CLUSTERS THROUGHOUT PLANTING AREA.
4. INTENT OF SHRUB PLANTING IS TO APPEAR NATURAL AND INFORMAL.

SHRUB SPACING AROUND TREES F -

SCALE: NTS



10 CUBIC-INCH PLUG PLANTING G -

SCALE: NTS

PLANTING NOTES:

1. PRIOR TO CLEARING AND GRADING ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES AS SHOWN IN THE TESC PLAN AND CONTRACTOR PROVIDED SWPPP.
2. CLEAR AND GRUB ALL BLACKBERRIES, SCOTCH BROOM, AND EXISTING VEGETATION FROM PLANTING ZONES. REMOVE MATERIAL FROM THE SITE AND DISPOSE AT AN APPROVED LOCATION.
3. TOPSOIL WILL EITHER BE STOCKPILED ON SITE DURING GRADING ACTIVITIES AND REUSED, OR OBTAINED FROM A CLEAN, OFF-SITE LOCATION. ONLY CLEAN TOPSOIL EXCAVATED ONSITE FROM WETLANDS SHOULD BE PLACED IN LOWER AND MID SLOPE PLANTING AREAS. ANY TOPSOIL STOCKPILED FOR PROJECT USE SHALL BE PROTECTED TO PREVENT EROSION AND WEED GROWTH. AFTER TOPSOIL HAS BEEN SPREAD, ALL LARGE CLODS, HARD LUMPS, LITTER, AND ROCKS 2 INCHES IN DIAMETER AND LARGER SHALL BE RAKED UP, REMOVED, AND DISPOSED OF BY THE CONTRACTOR.
4. WHERE SOILS ARE COMPACTED BY CONSTRUCTION ACTIVITY, DECOMPACT THE SOIL AS SPECIFIED IN SECTIONS 31 20 20 AND 31 20 30.
5. AMEND ALL PLANTING AREAS WITH MINIMUM 3 INCHES OF COMPOST AND MIX INTO DECOMPACTED SOILS TO A DEPTH OF 12 INCHES.
6. IMMEDIATELY AFTER SOIL PREPARATION, HYDROSEED EXPOSED SOILS IN RIPARIAN ZONE WITH APPROPRIATE NATIVE EROSION-CONTROL SEED MIX SPECIFIED MIXED WITH A TACKIFIER AT A RATIO RECOMMENDED BY THE SEED SUPPLIER. USING A TWO-PASS METHOD, APPLY SEED AND TACKIFIER TO SOIL IN FIRST PASS AND APPLY HYDROMULCH AND TACKIFIER IN SECOND PASS.
7. RECOMMENDED TIME FOR TREE, SHRUB, AND GROUNDCOVER INSTALLATION IS LATE FALL OR EARLY SPRING (BETWEEN NOVEMBER 1 AND MARCH 31). RECOMMENDED TIME FOR EMERGENT INSTALLATION IS EARLY SPRING (JANUARY 15 TO MARCH 1). RECOMMENDED TIME FOR SEEDING IS MARCH 15 TO SEPTEMBER 1.
8. PROCURE PLANTS AND STORE PROPERLY. PLANTS SHALL CONFORM WITH THE CODE OF STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN. PLANT MATERIAL WILL BE NATIVE TO THE PACIFIC NORTHWEST AND FROM PLANT STOCK GENOMES FROM WESTERN WASHINGTON. ALL PLANTS SHOULD BE INSTALLED THE SAME DAY THEY ARE DELIVERED TO THE SITE. PLANTS THAT CANNOT BE PLANTED WITHIN ONE DAY AFTER ARRIVAL SHOULD BE "HEELED-IN" TO THE SOIL IN A SHADED LOCATION FOR PROTECTION AGAINST DRYING. PLANTS SHALL BE INSPECTED BY A QUALIFIED ECOLOGIST PRIOR TO INSTALLATION.
9. PLANT LAYOUT WILL BE DIRECTED AND APPROVED BY THE ONSITE ECOLOGIST.
10. INSTALL PLANTS AS SHOWN ON PLANS IN NATURAL, RANDOM CLUSTERS FOLLOWING THE DETAILS FOR CONTAINER-GROWN PLANTS, LIVE STAKES, BARE ROOT, AND PLUG CONDITIONS. TREES, SHRUBS, AND GROUNDCOVERS SHOULD BE INSTALLED PER THE CLUSTERING DETAIL. EMERGENTS SHOULD BE INSTALLED IN GROUPS OF 15 TO 20 INDIVIDUALS OF THE SAME SPECIES. FOR SPECIES IN THE LOWER SLOPE PLANTING ZONE, INSTALL PLANTS ALONG THE HIGHER ELEVATION.
11. WATER PLANTS THOROUGHLY TO AVOID CAPILLARY STRESS (TYPICALLY, PLANTED AREAS SHOULD BE WATERED WITH APPROXIMATELY 1 INCH OF WATER AFTER PLANTING).
12. INSTALL MULCH RINGS AROUND SHRUBS AND TREES. RINGS SHOULD BE THREE INCHES OF GUARANTEED WEED-FREE COARSE WOOD CHIP MULCH. WOOD CHIPS SHALL BE MOVED AWAY FROM PLANT STEMS TO PREVENT STEM ROT.

MAINTENANCE:

1. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTAINING ALL PLANTING AREAS FOR THE FIRST THREE YEARS FOLLOWING CONSTRUCTION. THE PORT WILL BE RESPONSIBLE FOR MAINTAINING THE PLANTING AREAS FOR THE REMAINDER OF THE 10-YEAR MONITORING PERIOD. MAINTENANCE WILL INCLUDE WATERING, WEEDING AROUND THE BASE OF INSTALLED PLANTS, REPLACING OR ADDING PLANTS TO MEET SURVIVAL AND COVER REQUIREMENTS, REMOVING ALL CLASSES OF NOXIOUS WEEDS (SEE WASHINGTON STATE NOXIOUS WEEDS LIST, WAC 16-750-005, -011, AND -015 AND SNOHOMISH COUNTY'S NOXIOUS WEEDS LIST), AND IMPLEMENTING ANY OTHER MEASURES NEEDED TO ENSURE PLANT SURVIVAL. AN ECOLOGIST WILL REVIEW PROPOSED MAINTENANCE.
2. TEMPORARY IRRIGATION OR WATERING SHALL BE PROVIDED TO THE UPPER SLOPE AND RIPARIAN PLANTING ZONES, AS NEEDED, FOR THE FIRST THREE YEARS AFTER PLANT INSTALLATION TO FACILITATE PLANT SURVIVAL AND ESTABLISHMENT. WATER SHOULD BE PROVIDED BY A TEMPORARY, ABOVE GROUND IRRIGATION SYSTEM AND/OR A WATER TRUCK. WATER SHOULD BE APPLIED AT A RATE OF 1 INCH OF WATER, TWO TIMES PER WEEK FROM JUNE 15 THROUGH SEPTEMBER 15, OR AS DIRECTED BY THE PORT. TIDES AND GROUNDWATER ARE ANTICIPATED TO SUPPLY ADEQUATE HYDROLOGY TO THE LOWER AND MID SLOPE PLANTING AREAS FOLLOWING CONSTRUCTION. IF A TEMPORARY IRRIGATION SYSTEM IS INSTALLED, IT SHOULD BE LEFT IN PLACE THROUGH AT LEAST THE SECOND YEAR OF MONITORING SO THAT IT IS AVAILABLE IF NEEDED.

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
△	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE, STATE OF WASHINGTON, 39356, REGISTERED PROFESSIONAL ENGINEER, 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

PLANTING DETAILS (2)

DWG. NO. 21

CIP NO.

PROJECT NO. PD-BW-2020

SHEET NO. 21 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLANTING.dwg Layout: 102336_21_PLANTING DETAILS (2) Date: 08-10-2020 Login: AWP

STRATUM	BOTANICAL NAME	COMMON NAME	INDICATOR STATUS	SIZE AND CONDITION	SPACING	TOTAL QUANTITY	PLANTING ZONE				
							RIPARIAN 1	RIPARIAN 2	UPPER SHORE	MID SHORE	LOW SHORE
							11 FT+	11 FT+	7-11FT	4-7 FT	2-4 FT
TREE	ACER MACROPHYLLUM	BIG LEAF MAPLE	FACU	1-GAL CONT.	15' O.C.	20	20	0			
	ALNUS RUBRA	RED ALDER	FAC	1-GAL CONT.	15' O.C.	10	10	0			
	MALUS FUSCA	PACIFIC CRABAPPLE	FACW	1-GAL CONT.	15' O.C.	20	20	0			
	PICEA SITCHENSIS	SITKA SPRUCE	FAC	1-GAL CONT.	15' O.C.	20	20	0			
	PINUS CONTORTA	SHORE PINE	FAC	1-GAL CONT.	15' O.C.	20	20	0			
	POPULUS BALSAMIFERA SPP TRICHOCARPA	BLACK COTTONWOOD	FAC	1-GAL CONT.	15' O.C.	10	10	0			
	PSEUDOTSUGA MENSIEZII	DOUGLAS FIR	FACU	1-GAL CONT.	15' O.C.	20	20	0			
	TSUGA HETEROPHYLLA	WESTERN HEMLOCK	FACU	1-GAL CONT.	15' O.C.	20	20	0			
SHRUB	AMELANCHIER ALNIFOLIA	SERVICEBERRY	FACU	BARE ROOT	5' O.C.	230	95	135			
	GAULTHERIA SHALLON	SALAL	FACU	BARE ROOT	5' O.C.	230	95	135			
	HOLODISCUS DISCOLOR	OCEANSPRAY	FACU	BARE ROOT	5' O.C.	230	95	135			
	LONICERA INVOLUCRATA	BLACK TWINBERRY	FAC	BARE ROOT	5' O.C.	230	95	135			
	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	FACU	BARE ROOT	5' O.C.	230	95	135			
	PHILADELPHUS LEWISII	MOCK ORANGE	NL	BARE ROOT	5' O.C.	230	95	135			
	RIBES DIVARICATUM	BLACK GOOSEBERRY	FAC	BARE ROOT	5' O.C.	230	95	135			
	ROSA NUTKANA	NOOTKA ROSE	FAC	BARE ROOT	5' O.C.	230	95	135			
	RUBUS PARVIFLORUS	THIMBLEBERRY	FACU	BARE ROOT	5' O.C.	230	95	135			
	SALIX HOOKERIANA	HOOKER WILLOW	FACW	LIVE STAKE	5' O.C.	570			570		
	SALIX SCOULERIANA	SCOULER'S WILLOW	FAC	LIVE STAKE	5' O.C.	800	95	135	570		
	SAMBUCUS RACEMOSA	RED ELDERBERRY	FACU	BARE ROOT	5' O.C.	230	95	135			
	SYMPORICARPOS ALBUS	SNOWBERRY	FACU	BARE ROOT	5' O.C.	230	95	135			
GROUNDCOVER	ARCTOSTAPHYLOS UVA-URSI	KINNIKINNICK	FACU	BARE ROOT	2.5' O.C.	620			620		
	FRAGARIA CHILOENSIS	COAST STRAWBERRY	FACU	BARE ROOT	2.5' O.C.	620			620		
	GRINDELIA INTEGRIFOLIA	COAST GUMWEED	FACW	10 INCH PLUG	2.5' O.C.	620			620		
	LEYMUS MOLLIS	AMERICAN DUNE GRASS	FACU	10 INCH PLUG	2.5' O.C.	620			620		
	LUPINUS LITTORALIS	SEASHORE LUPINE	NL	10 INCH PLUG	2.5' O.C.	620			620		
	SYMPHYOTRICHUM SUBSPICATUM	DOUGLAS ASTER	FACW	10 INCH PLUG	2.5' O.C.	620			620		
EMERGENT	AGROSTIS EXARATA	SPIKE BENTGRASS	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	CAREX LYNGBYEI	LYNGBYE'S SEDGE	OBL	10 INCH PLUG	2.5' O.C.	285				225	60
	DESCHAMPSIA CAESPITOSA	TUFTED HAIRGRASS	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	DISTICHLIS SPICATA	SALTGRASS	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	ELEOCHARIS PALUSTRIS	COMMON SPIKERUSH	OBL	10 INCH PLUG	2.5' O.C.	285				225	60
	GRINDELIA INTEGRIFOLIA	COAST GUMWEED	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	JUNCUS ARCTICUS SSP LITTORALIS	BALTIC RUSH	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	PLANTAGO MARITIMA	SEA PLANTAIN	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	POTENTILLA ANSERINA	PACIFIC SILVERWEED	OBL	10 INCH PLUG	2.5' O.C.	285				225	60
	SCHOENOPLECTUS ACUTUS	HARDSTEM BULRUSH	OBL	10 INCH PLUG	2.5' O.C.	285				225	60
	SYMPHYOTRICHUM SUBSPICATUM	DOUGLAS ASTER	FACW	10 INCH PLUG	2.5' O.C.	225				225	
	TRIGLOCHIN MARITIMA	SEASIDE ARROWGRASS	OBL	10 INCH PLUG	2.5' O.C.	285				225	60

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION

DAVID R. CLINE — STATE OF WASHINGTON — 39... — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

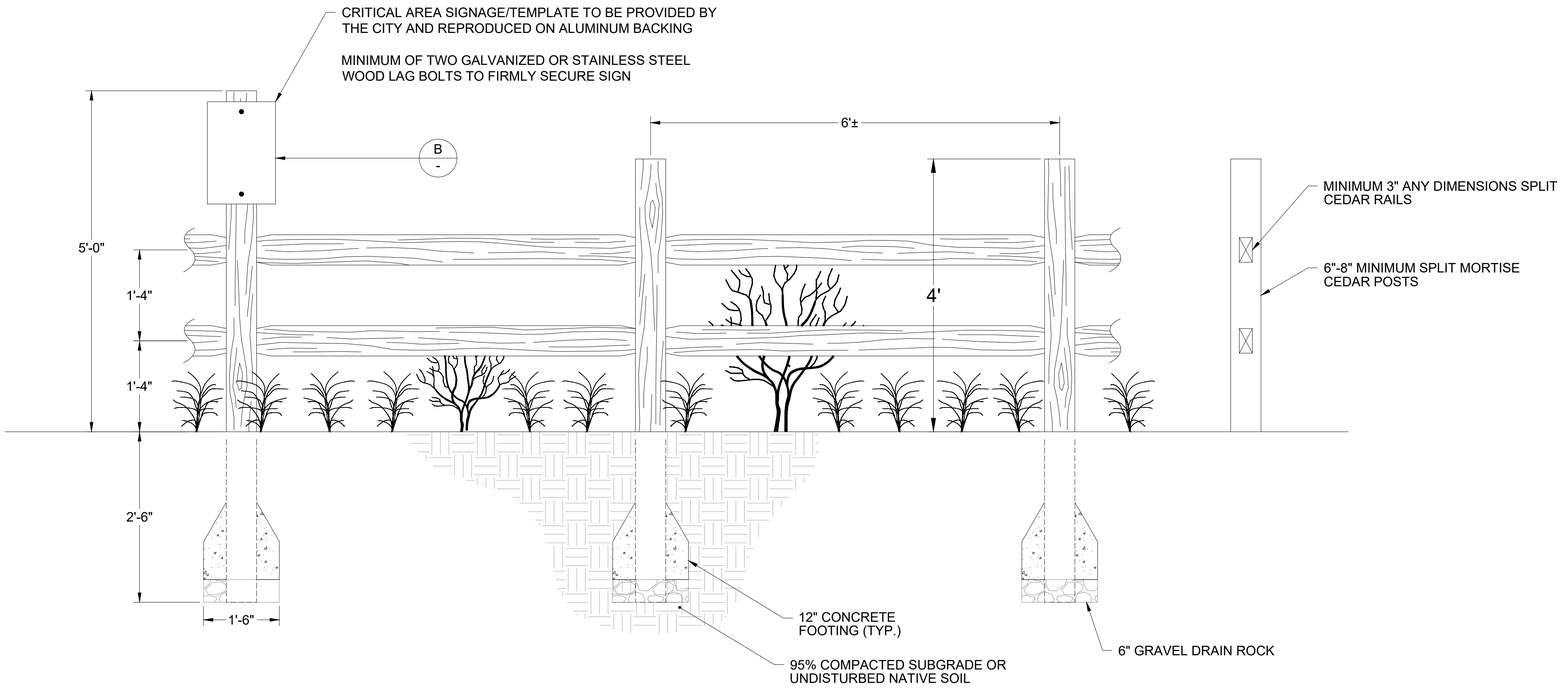
PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

PLANTING SCHEDULE

DWG. NO. 22
CIP NO.
PROJECT NO. PD-BW-2020
SHEET NO. 22 OF 25

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLANTING.dwg Layout: 102336_22_PLANTING SCHEDULE Date: 08-10-2020 Login: AWP



NOTES:

1. SPLIT-RAIL FENCE WILL BE INSTALLED ON THE WATERWARD SIDE OF THE PEDESTRIAN TRAIL.
2. STAKE SPLIT-RAIL FENCE ALIGNMENT FOR ENGINEER REVIEW AND FIELD ADJUSTMENT PRIOR TO INSTALLATION.
3. CRITICAL AREA SIGNS SHALL BE SPACED APPROXIMATELY 200 FEET APART AROUND THE PERIMETER OF THE BUFFER AREA.
4. SIGN PLACEMENT SHALL BE SUBJECT TO THE APPROVAL OF THE CITY OF EVERETT.

SPLIT-RAIL FENCE WITH CRITICAL AREA SIGN

SCALE: NTS

A 19

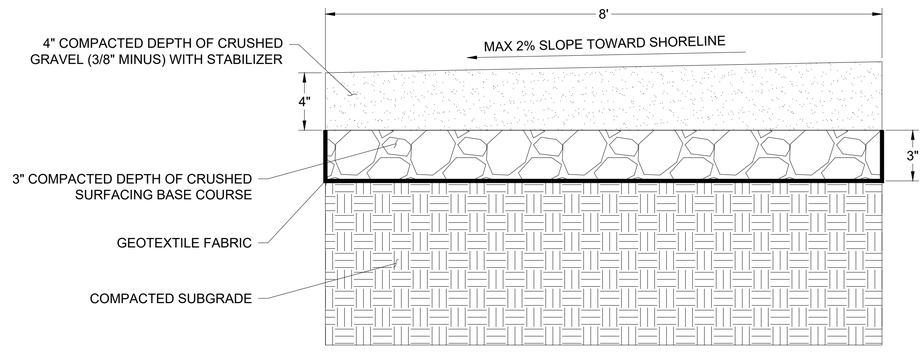
NOTES:

1. PREFABRICATED CRITICAL AREA SIGNS TO BE PURCHASED BY THE CONTRACTOR FROM CITY OF EVERETT

CRITICAL AREA SIGN

SCALE: NTS

B 19



PEDESTRIAN TRAIL DETAIL

SCALE: NTS

C 19

Filename: I:\EF\SEA\102000s\102336 Port of Everett\Baywood\T011 - 90% PSE\CAD_90%\SHEETS\90% DESIGN\102336_90%_Design - PLANTING.dwg Layout: 102336_23_FENCE DETAIL Date: 08-10-2020 Login: AWP

Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS
400 North 34th Street, Suite 100
Seattle, Washington 98103
P.O. Box 300303
(206) 632-8020 FAX: (206) 633-6777

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
1	7/01/20	AWP	ISSUED FOR BID & CONSTRUCTION				

DAVID R. CLINE — STATE OF WASHINGTON — 39326 — REGISTERED PROFESSIONAL ENGINEER — 8/10/20

PROJECT ENGINEER: D. CLINE	SCALE: AS SHOWN
DESIGNED BY: D. CLINE	DATE: AUGUST 10, 2020
DRAWN BY: A. PICCINI	CHECKED BY: J. KLEKOTKA
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

SPLIT RAIL FENCE DETAIL

DWG. NO. **23**

CIP NO.

PROJECT NO. PD-BW-2020

SHEET NO. 23 OF 25

LEGEND

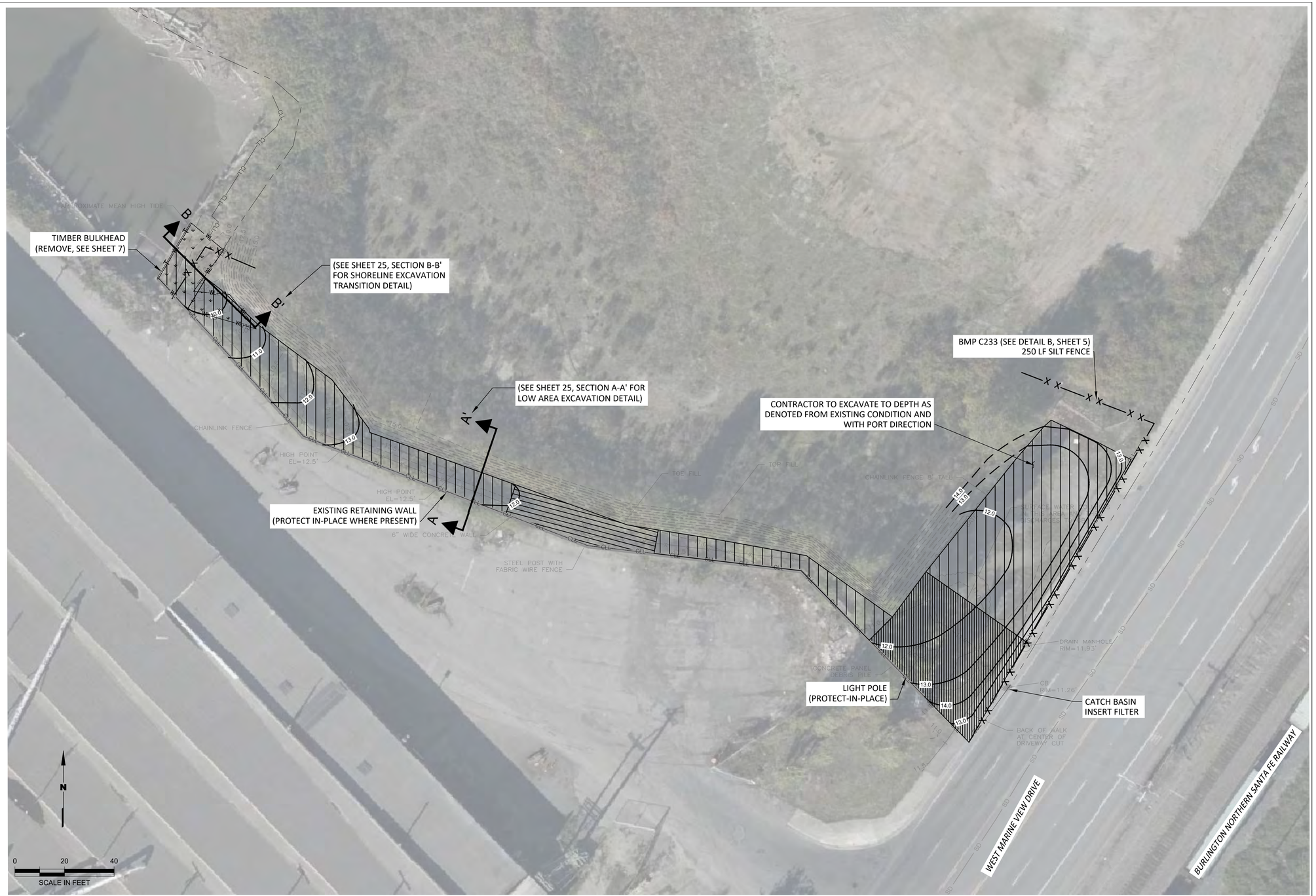
- SITE BOUNDARY
- CONSTRUCTION ZONE BOUNDARY
- RETAINING WALL
- TIMBER BULKHEAD
- WETLAND
- SILT FENCE
- EXISTING GRADE (FT)
- APPROXIMATE FINISH GRADE ELEVATION (FT)
- EXCAVATION DEPTH = 1 FT
- EXCAVATION DEPTH = 2 FT
- EXCAVATION DEPTH = 3 FT

NOTES:

1. CONTRACTOR SHALL CONFIRM EXISTING ELEVATIONS, PRESENCE OF DEBRIS, AND UTILITIES IN THE EXCAVATION BOUNDARY AND IMPLEMENT TESC MEASURES.
2. REMOVE VEGETATION AND DEBRIS THROUGHOUT EXCAVATION BOUNDARY AND DISPOSE OF OFFSITE.
3. EXCAVATE TO THE DEPTHS INDICATED (1, 2, OR 3 FT) TO REMOVE CONTAMINATION, AND DISPOSE OF THE SOILS OFFSITE AT A RCRA SUBTITLE D DISPOSAL FACILITY.
4. AFTER EXCAVATION TO FINAL DEPTHS, PROVIDE ACCESS TO PORT FOR OBSERVATION AND SAMPLE COLLECTION PRIOR TO BACKFILLING.
5. AFTER THE PORT HAS COMPLETED OBSERVATIONS OF THE FINAL EXCAVATION FLOOR AND SIDEWALLS AND APPROVES THE EXCAVATION, INSTALL GEOTEXTILE / STEEL MESH STABILIZATION / ECOLOGICAL BARRIER ON BASE AND SIDEWALLS, OVERLAPPING PANELS BY 12 INCHES.
6. PLACE AND COMPACT A MINIMUM SOIL COVER 2 FT IN THICKNESS THROUGHOUT THE REMOVAL AREA TO ACHIEVE FINISHED GRADE ELEVATIONS USING REUSABLE FILL SOURCED ONSITE.
7. COVER SOIL AT FINISHED GRADE WITH STRAW FOR STORMWATER RUNOFF PROTECTION.

VERTICAL ELEVATION DATUM: NAVD88

BASE SOURCE:
TOPOGRAPHIC SURVEY: METRON AND ASSOCIATES INC., NOVEMBER 2018
AERIAL IMAGE: BING AERIAL IMAGERY, 2020



Port of EVERETT
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

LANDAU ASSOCIATES
130 2nd Avenue South
Edmonds, Washington 98020
(425) 778-0907

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
0	7/30/20	DHF	ISSUED FOR BID AND CONSTRUCTION				

JEREMY MICHAEL DAVIS STATE OF WASHINGTON 43775 REGISTERED PROFESSIONAL ENGINEER

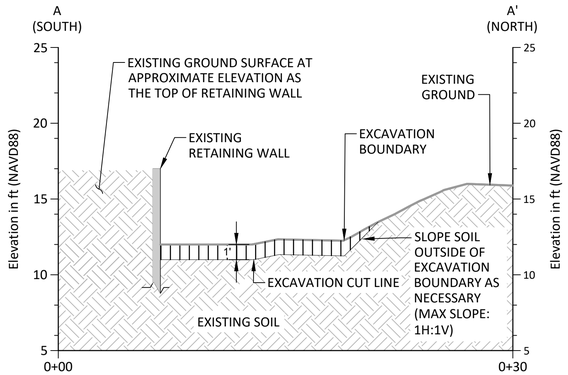
PROJECT ENGINEER: J DAVIS	SCALE: 1" = 20'
DESIGNED BY: J DAVIS	DATE: AUGUST 2020
DRAWN BY: J VALLUZZI	CHECKED BY: D FRAZER
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

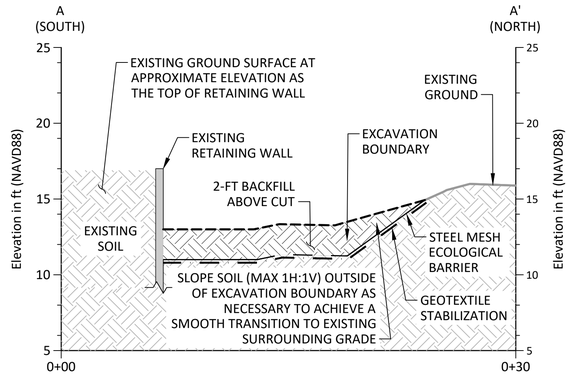
LOW AREA CLEANUP PLAN

DWG. NO. 24
CIP NO. ##-04
PROJECT NO. 0147053.010.017
SHEET NO. 24 OF 25



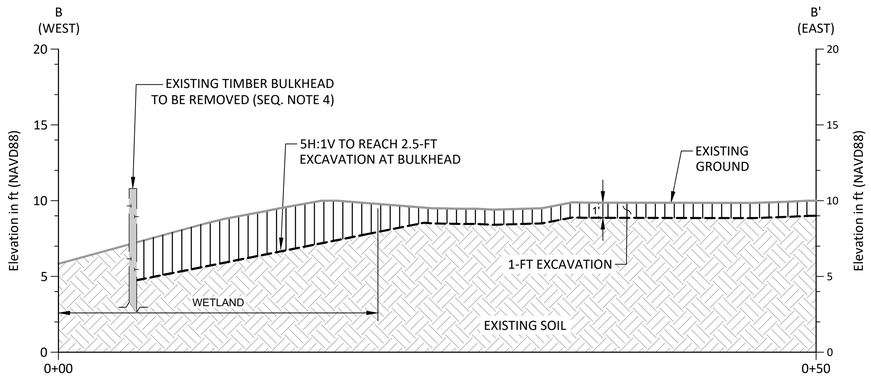
SECTION A-A': EXCAVATION

Horizontal Scale in Feet: 1"=5'
Vertical Scale in Feet: 1"=5'



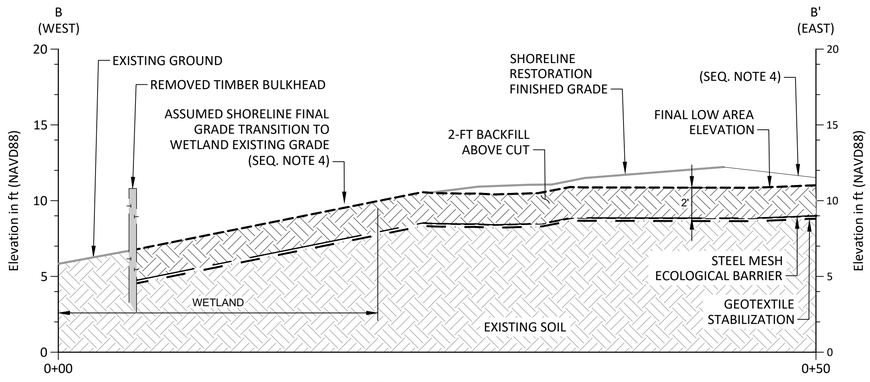
SECTION A-A': BACKFILL

Horizontal Scale in Feet: 1"=5'
Vertical Scale in Feet: 1"=5'



SECTION B-B': EXCAVATION

Horizontal Scale in Feet: 1"=5'
Vertical Scale in Feet: 1"=5'



SECTION B-B': BACKFILL

Horizontal Scale in Feet: 1"=5'
Vertical Scale in Feet: 1"=5'

SEQUENCING NOTES:

1. EXCAVATE LOW AREA TO DEPTH AS NOTED ON SHEET 24
2. INSTALL GEOTEXTILE/STEEL MESH STABILIZATION/ECOLOGICAL BARRIER AT BASE OF EXCAVATION
3. ADD FILL TO 2-FT DEPTH ON TOP OF INSTALLED BARRIER
4. SHORELINE RESTORATION WORK WILL INCLUDE REMOVAL OF THE BULKHEAD AND REGRADING SHORELINE. SHORELINE RESTORATION GRADE SHOWN CONCEPTUALLY FOR REFERENCE. WORK AT THE TRANSITION BETWEEN THE LOW AREA EXCAVATION AND THE SHORELINE RESTORATION MUST BE CONDUCTED UNDER DIRECTION OF PORT REPRESENTATIVES.

Port of Everett
P.O. BOX 538
EVERETT, WA 98206
(425) 259-3164

LANDAU ASSOCIATES
130 2nd Avenue South
Edmonds, Washington 98020
(425) 778-0907

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION
0	7/30/20	DHF	ISSUED FOR BID AND CONSTRUCTION				

JEREMY MICHAEL DAVIS STATE OF WASHINGTON 43775 REGISTERED PROFESSIONAL ENGINEER

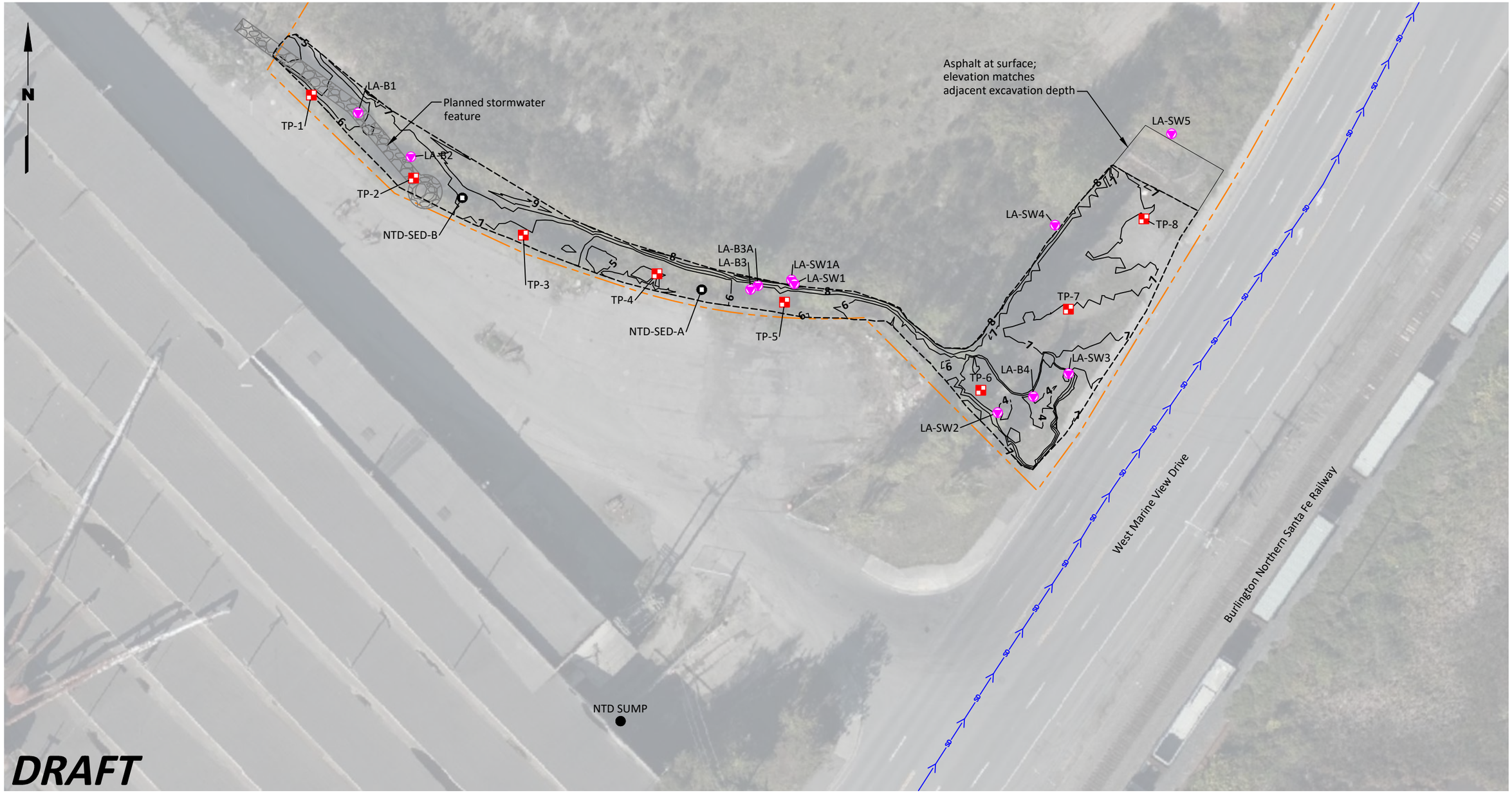
PROJECT ENGINEER: J DAVIS	SCALE:
DESIGNED BY: J DAVIS	DATE: AUGUST 2020
DRAWN BY: J VALLUZZI	CHECKED BY: D FRAZER
APPROVED BY:	

PORT OF EVERETT

BAY WOOD INTERIM ACTION - SHORELINE RESTORATION & CLEANUP

LOW AREA CLEANUP SECTIONS

DWG. NO. 25
CIP NO. ##-04
PROJECT NO. 0147053.010.017
SHEET NO. 25 OF 25



Legend

- Low Area Compliance Monitoring Sampling Location
- Low Area Characterization Test Pit/Sampling Location
- Soil Sample Location (SLR 2018)
- City of Everett Stormdrain
- Site Boundary
- 2021 As-Built Excavation Contour (1ft interval)
- Excavation Limits

0 40 80

Scale in Feet

Note

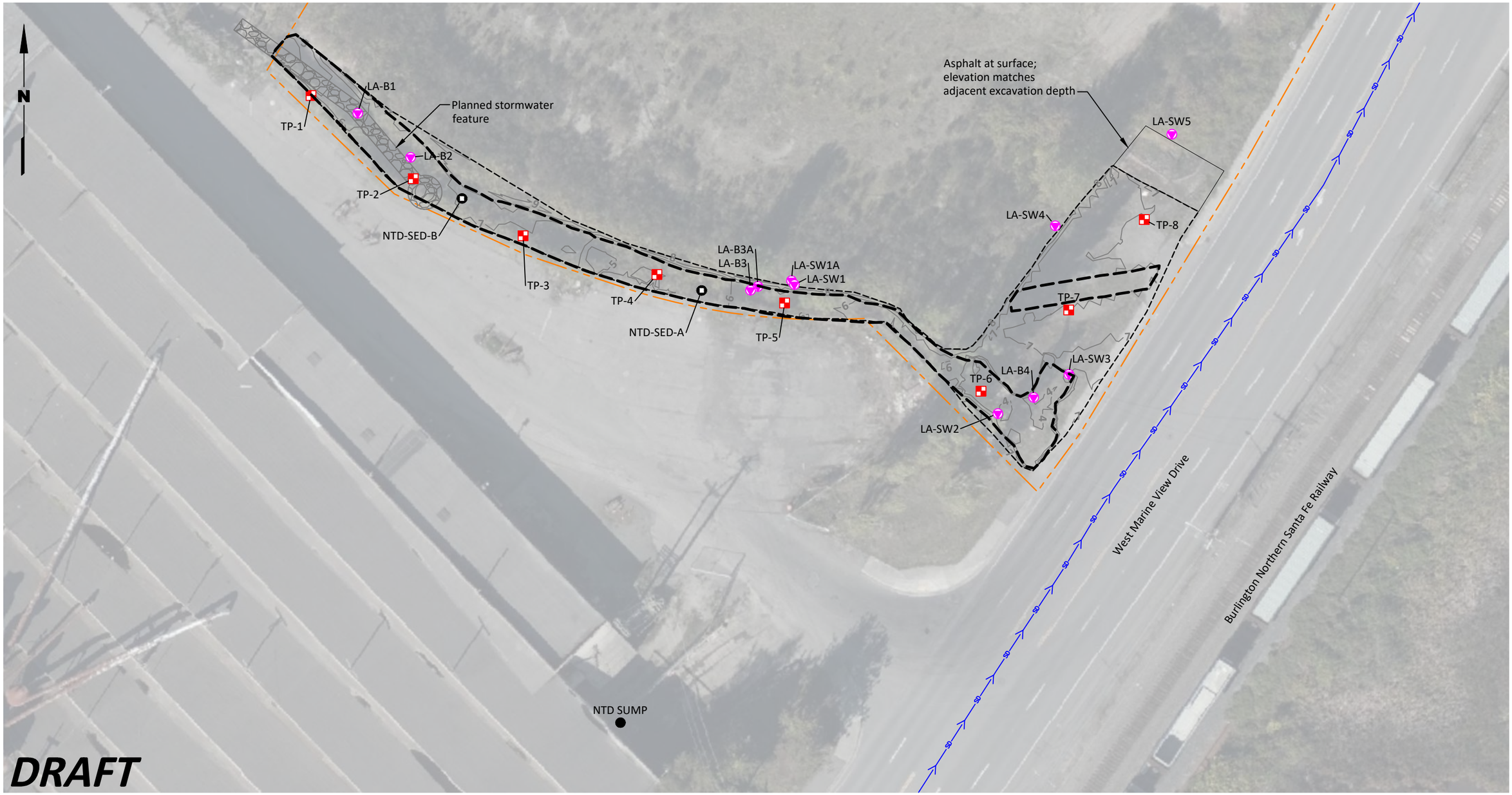
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Strider Construction, 2021; GeoEngineers 2018; Metron 2018; SLR 2018; ©Bing 2019

LANDAU ASSOCIATES

Baywood Products 2nd Interim Action Everett, Washington	**Low Area Excavation and Compliance Monitoring Sampling Locations**	Figure 2

Landau Associates | G:\Projects\147\053\010\019\Low Area As-builts\F02 LowAreaExcavation.dwg | 5/7/2021 10:53 AM | EZICK



Legend

- Low Area Compliance Monitoring Sampling Location
- Low Area Characterization Test Pit/Sampling Location
- Soil Sample Location (SLR 2018)
- City of Everett Stormdrain
- Site Boundary
- 2021 As-Built Excavation Contour (1ft interval)
- Excavation Limits
- Limits of Critterfence/Geotextile Cap

0 40 80

Scale in Feet

Note

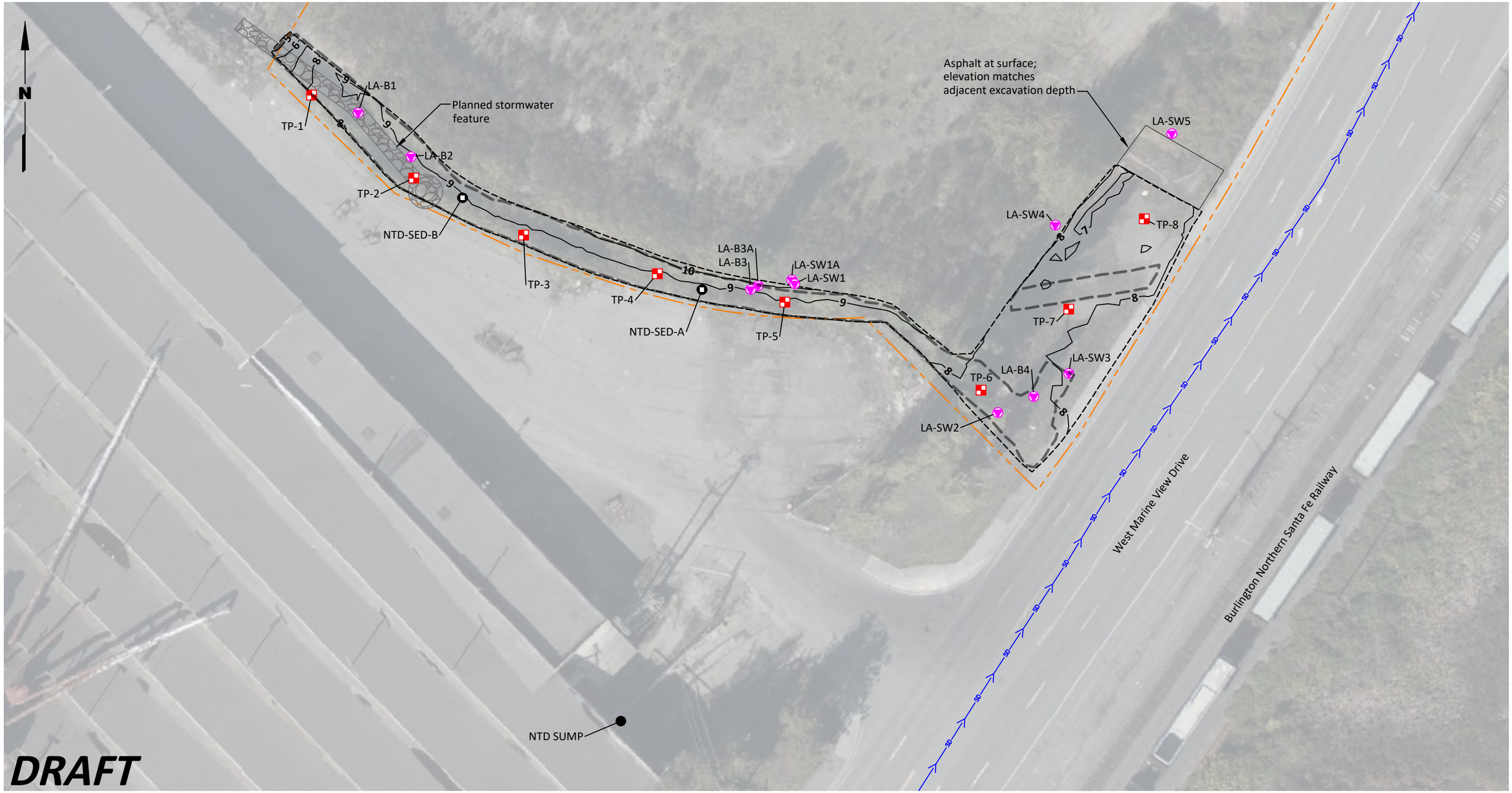
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Strider Construction, 2021; GeoEngineers 2018; Metron 2018; SLR 2018; ©Bing 2019

LANDAU ASSOCIATES

Baywood Products 2nd Interim Action Everett, Washington	**Low Area Cap Extent**	Figure 3

Landau Associates | G:\Projects\147\053\010\019\Low Area As-builts\F03 Low Area Cap Extent.dwg | 5/7/2021 11:19 AM | EZICK



Legend

- Low Area Compliance Monitoring Sampling Location
- Low Area Characterization Test Pit/Sampling Location
- Soil Sample Location (SLR 2018)
- City of Everett Stormdrain
- Site Boundary
- 2021 As-built Finished Grade Contour (1ft interval)
- Extent of Finished Grade
- Limits of Critterfence/Geotextile Cap

0 40 80

Scale in Feet

Note

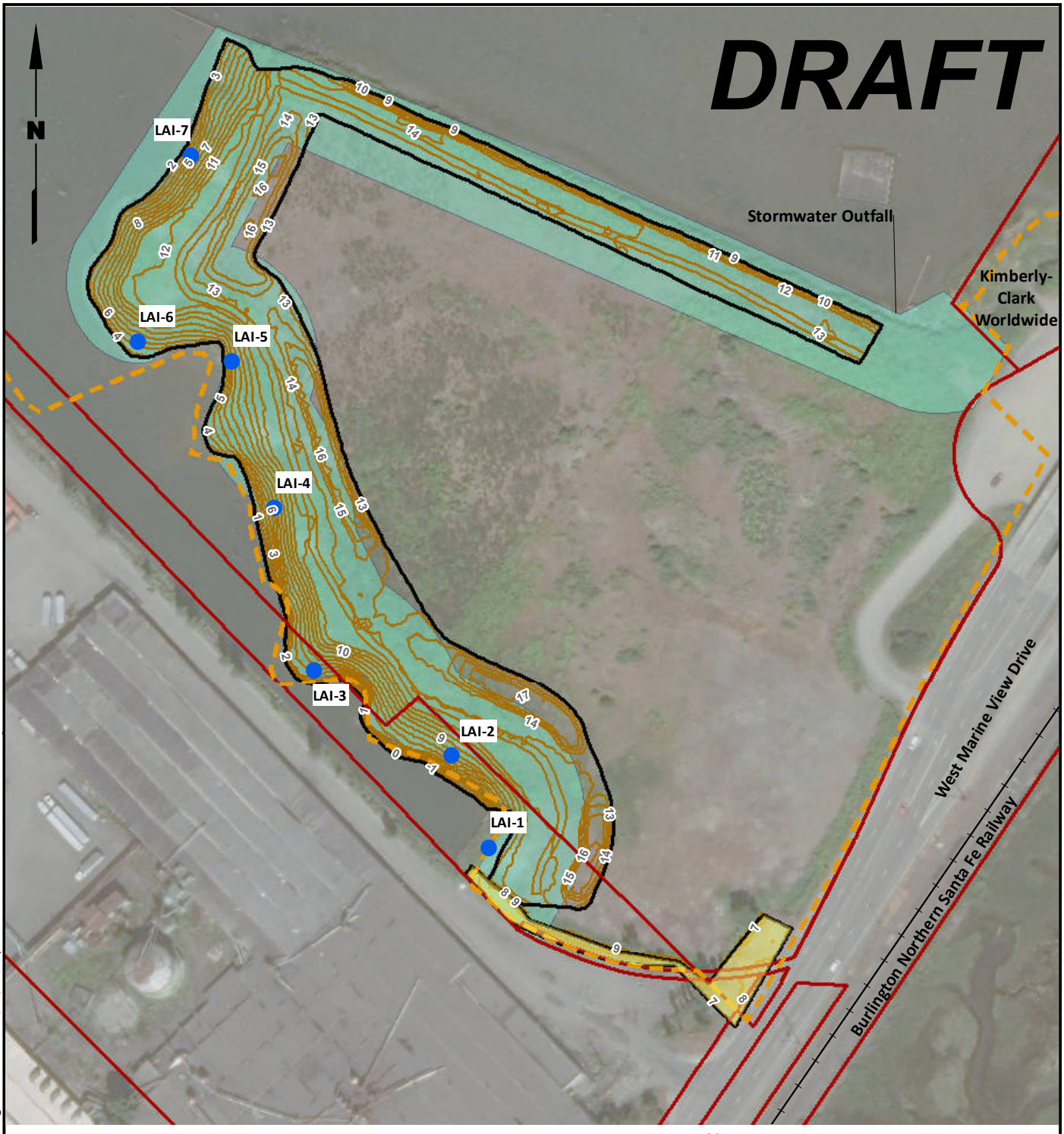
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Source: Strider Construction, 2021; GeoEngineers 2018; Metron 2018; SLR 2018; ©Bing 2019

LANDAU ASSOCIATES

Baywood Products Engineering Design Report Everett, Washington	**Low Area Finished Grade**	Figure 4

Landau Associates | G:\Projects\147\053\010\019\Low Area As-builts\F04 Low Area FG.dwg | 5/7/2021 11:23 AM | EZICK



Legend

- Shoreline Restoration Compliance Sampling Location
- Low Area
- 2021 As-Built Shoreline Restoration Contour (NGVD29 Vertical Datum, 1ft interval)
- Shoreline Restoration Area
- Site Boundary (RI/FS 2018)
- Parcel Boundary
- Interim Action Excavation Limit

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 170 340

Scale in Feet

Data Source: Shannon & Wilson, Inc.; 2019; Geoengineers, 2018
Base Map Source: ESRI World Imagery, 2020

G:\Projects\147\053\010\018\F05 CMSamplingLocations.mxd 7/27/2021 | SBartish

LANDAU ASSOCIATES

Bay Wood Products Interim Action Everett, Washington	**Shoreline Restoration Compliance Monitoring Sampling Locations**	Figure 5

Legend

5 — 2021 As-Built Shoreline Restoration Contour (NGVD29 Vertical Datum, 1ft interval)

As-Built Trail Alignment

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

0 120 240

Scale in Feet

Source: Strider Construction, 2021; GeoEngineers 2018; Metron 2018; SLR 2018; ©Bing 2019

LANDAU ASSOCIATES

Baywood Products Interim Action Everett, Washington	**Shoreline Restoration Finished Grade**	Figure 6

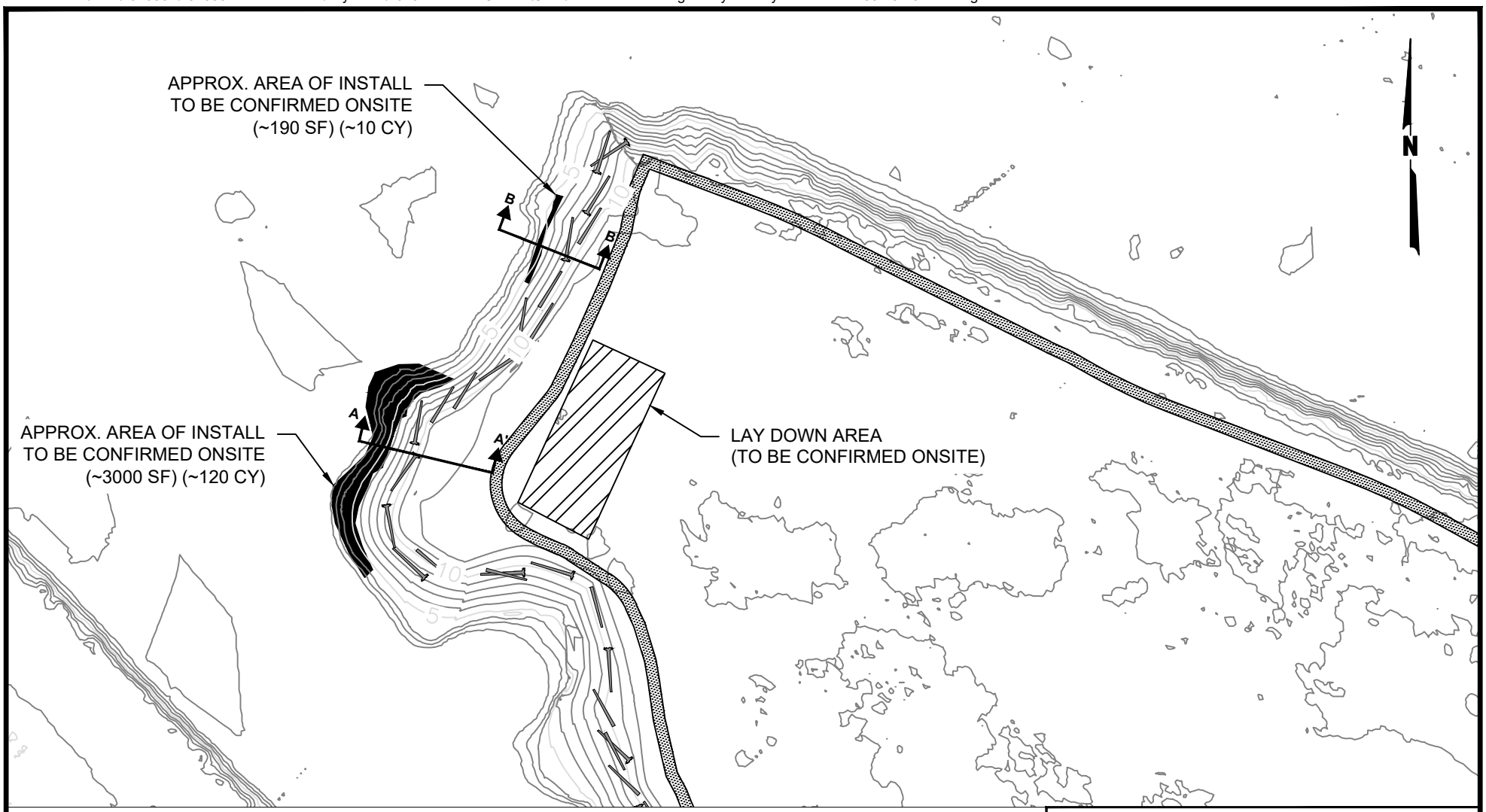
Landau Associates | G:\Projects\147\053\010\018\F06 ShorelineRestorationFG.dwg | 7/27/2021 3:07 PM | JVALLUZZI

APPENDIX B: SUPPLEMENTAL ROCK PLACEMENT PLANS

Appendix B

Supplemental Rock Placement Plans

Filename: P:\SEA\102000s\102336 Port of Everett\Baywood\T023 - Erosion Control\CAD\Erosion Limits.dwg Layout: Layout1 Date: 08-23-2022 Login: AWP



LEGEND

- APPROX. AREA OF INSTALL
- LAY DOWN AREA
- TRAIL
- LARGE WOODY DEBRIS

NOTES:

1. APPROX AREA OF INSTALL PER DIRECTON OF THE PORT. PORT TO CONFIRM INSTALL AREA ONSITE.
2. LAY DOWN AREA NOT TO IMPACT EXISTING PLANTING AREAS. PORT TO CONFIRM ONSITE.

0 100 200

Scale in Feet

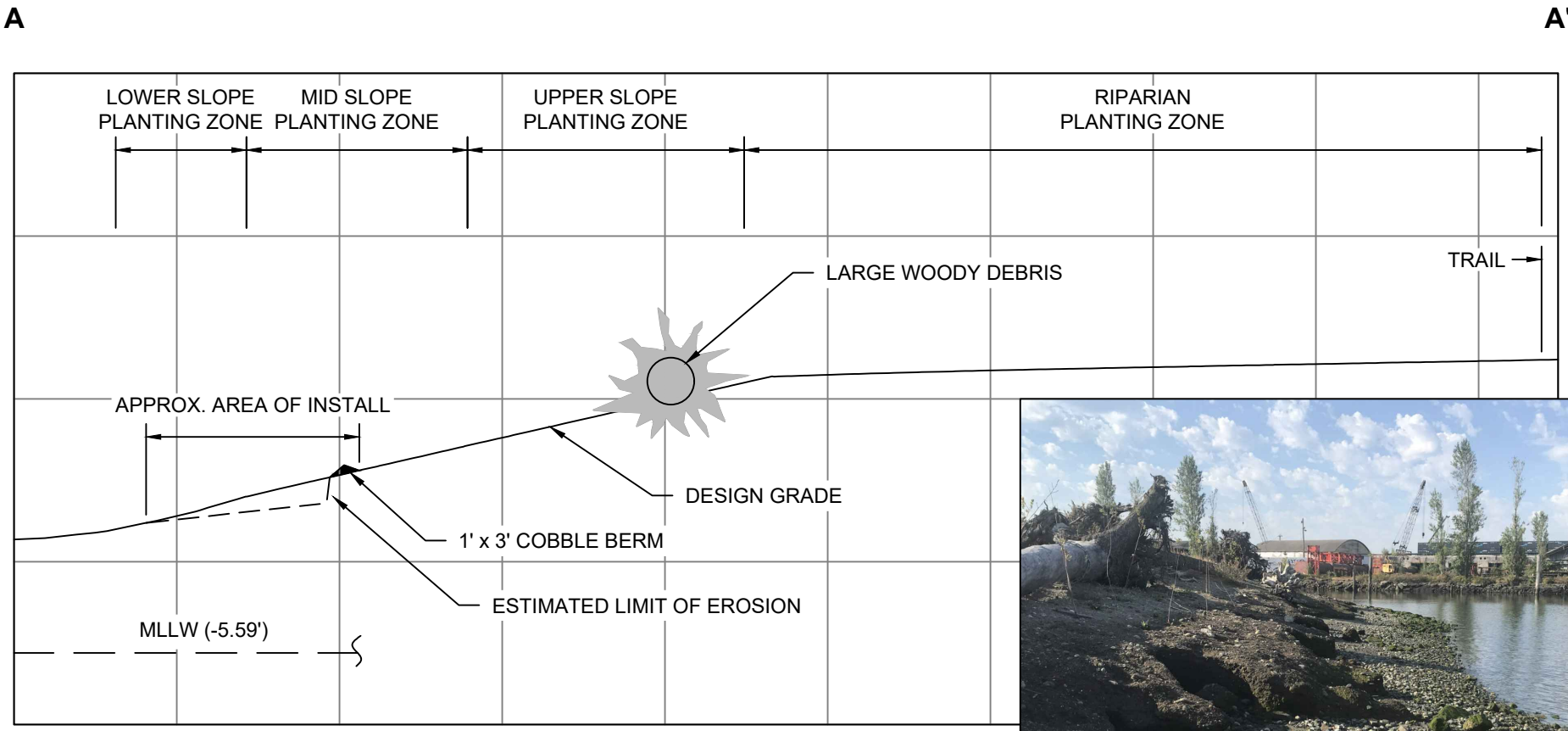
Bay Wood Interim Action Cleanup & Shoreline Restoration Project
Everett, Washington

ROCK PLACEMENT PLAN

September 2022 102336-023

SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 1



APPROX .LOCATION: NORTH OF SECTION A-A' FACING SOUTH.
TIME: 9:25 AM
APPROX. WSE: 9.16 FT MLLW (HIGH TIDE ELEV. @ 8:18 AM)

NOTES:
1. APPROX AREA OF INSTALL PER DIRECTON OF THE PORT. PORT TO CONFIRM INSTALL AREA ONSITE.
2. ESTIMATED LIMIT OF EROSION BASED ON FIELD OBSERVATIONS.
3. VERTICAL DATUM = NGVD29
4. NGVD29 + 5.59 = MLLW

0 10 20
Scale in Feet

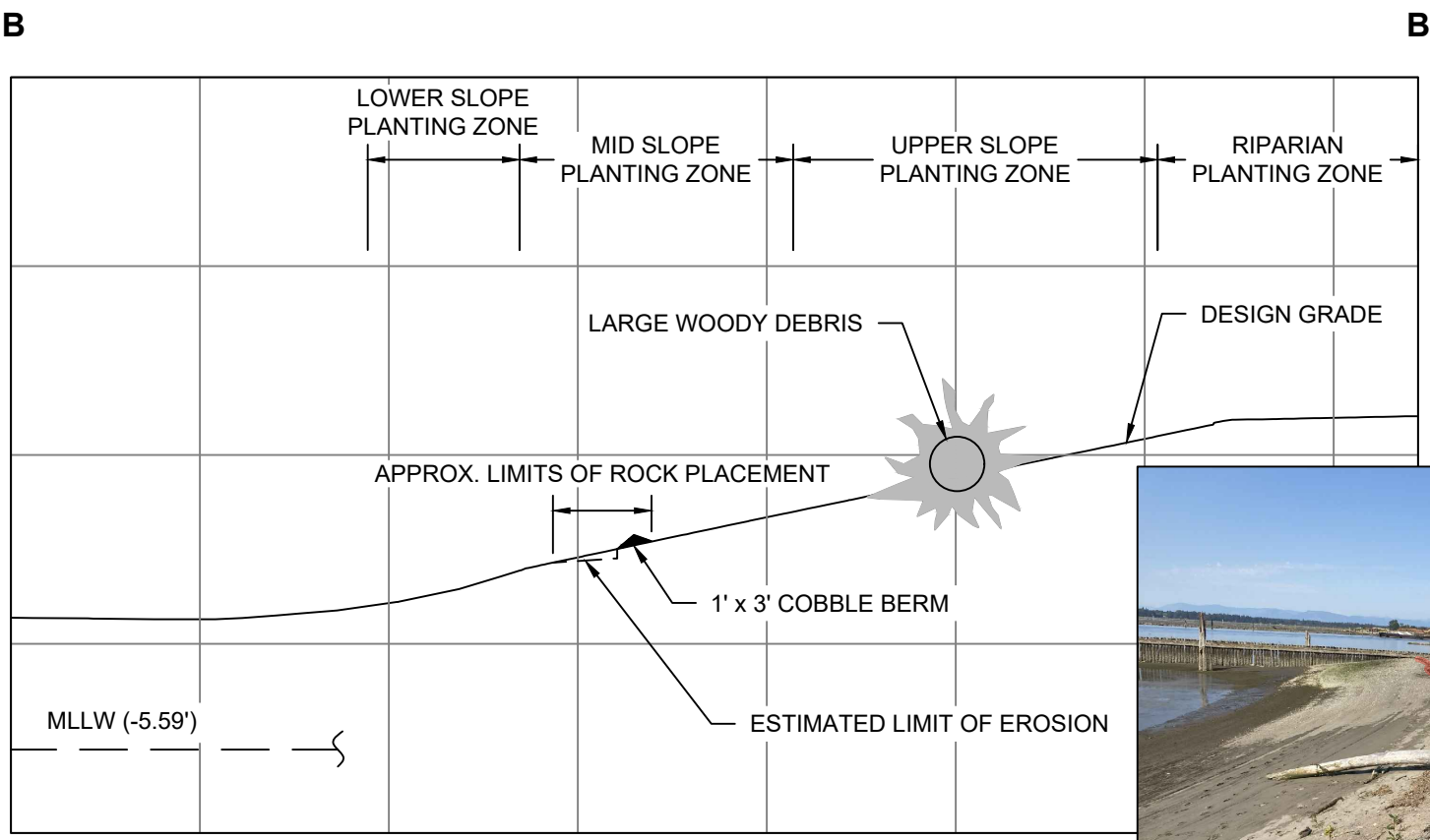
Bay Wood Interim Action Cleanup & Shoreline Restoration Project
Everett, Washington

SECTION A-A'

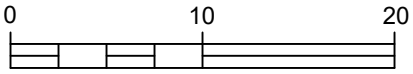
September 2022 102336-023

SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 2



NOTES:
1. APPROX AREA OF INSTALL PER DIRECTON OF THE PORT. PORT TO CONFIRM INSTALL AREA ONSITE.
2. ESTIMATED LIMIT OF EROSION BASED ON FIELD OBSERVATIONS.
3. VERTICAL DATUM = NGVD29
4. NGVD29 + 5.59 = MLLW



Scale in Feet

Bay Wood Interim Action Cleanup & Shoreline Restoration Project
Everett, Washington

SECTION B-B'

September 2022 102336-023

SHANNON & WILSON, INC. GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

FIG. 3

APPENDIX C: SITE PHOTOGRAPHS

Appendix C

Site Photographs

APPENDIX C: SITE PHOTOGRAPHS


Exhibit C-1: Photo Point 1 (P1) Facing North from South End of Transect 1 (Left: September 29, 2021; Right: August 31, 2022)


Exhibit C-2: P2, September 29, 2021, Facing North from South End of Transect 2 (Left: September 29, 2021; Right: August 31, 2022)


Exhibit C-3: P3, September 29, 2021, Facing Northeast from West End of Riprapped Stormwater Channel Inlet (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-4: P4, September 29, 2021, Facing West from East End of Transect 3 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-5: P5, September 29, 2021, Facing West from East End of Transect 4 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-6: P6, September 29, 2021, Facing Southeast (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-7: P7, September 29, 2021, Facing Northwest from Southeast End of Transect 5 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-8: P8, September 29, 2021, Facing Northwest from Southeast End of Transect 6 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-9: P9, September 29, 2021, Facing Southeast (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-10: P10, September 29, 2021, Facing Northeast from Southwest End of Transect 7 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-11: P11, September 29, 2021, Facing Northeast from Southwest End of Transect 8 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-12: P12, September 29, 2021, Facing South from West End of Site at the Corps' Training Wall (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-13: P13, September 29, 2021, Facing Southeast from Northwest End of Transect 9 (Left: September 29, 2021; Right: August 31, 2022)

Exhibit C-14: P14, September 29, 2021, Facing Southeast from Northwest End of Transect 10 (Left: September 29, 2021; Right: August 31, 2022)

IMPORTANT INFORMATION

Important Information

About Your Wetland Delineation/Mitigation and/or Stream Classification Report

IMPORTANT INFORMATION

A WETLAND/STREAM REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

Wetland delineation/mitigation and stream classification reports are based on a unique set of project-specific factors. These typically include the general nature of the project and property involved, its size and configuration, historical use and practice, the location of the project on the site and its orientation, and the level of additional risk the client assumed by virtue of limitations imposed upon the exploratory program. The jurisdiction of any particular wetland/stream is determined by the regulatory authority(ies) issuing the permit(s). As a result, one or more agencies will have jurisdiction over a particular wetland or stream with sometimes confusing regulations. It is necessary to involve a consultant who understands which agency(ies) has jurisdiction over a particular wetland/stream and what the agency(ies) permitting requirements are for that wetland/stream. To help reduce or avoid potential costly problems, have the consultant determine how any factors or regulations (which can change subsequent to the report) may affect the recommendations.

Unless your consultant indicates otherwise, your report should not be used:

- If the size or configuration of the proposed project is altered.
- If the location or orientation of the proposed project is modified.
- If there is a change of ownership.
- For application to an adjacent site.
- For construction at an adjacent site or on site.
- Following floods, earthquakes, or other acts of nature.

Wetland/stream consultants cannot accept responsibility for problems that may develop if they are not consulted after factors considered in their reports have changed. Therefore, it is incumbent upon you to notify your consultant of any factors that may have changed prior to submission of our final report.

Wetland boundaries identified and stream classifications made by Shannon & Wilson are considered preliminary until validated by the U.S. Army Corps of Engineers (Corps) and/or the local jurisdictional agency. Validation by the regulating agency(ies) provides a certification, usually written, that the wetland boundaries verified are the boundaries that will be regulated by the agency(ies) until a specified date, or until the regulations are modified, and that the stream has been properly classified. Only the regulating agency(ies) can provide this certification.

MOST WETLAND/STREAM "FINDINGS" ARE PROFESSIONAL ESTIMATES.

Site exploration identifies wetland/stream conditions at only those points where samples are taken and when they are taken, but the physical means of obtaining data preclude the determination of precise conditions. Consequently, the information obtained is intended to be sufficiently accurate for design but is subject to interpretation. Additionally, data derived through sampling and subsequent laboratory testing are extrapolated by the consultant who then renders an opinion about overall conditions, the likely reaction to proposed construction activity, and/or appropriate design. Even under optimal circumstances, actual conditions may differ from those thought to exist because no consultant, no matter how qualified, and no exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock, and time. Nothing can be done to prevent the unanticipated, but steps can be taken to help reduce their impacts. For this reason, most experienced owners retain

IMPORTANT INFORMATION

their consultants through the construction or wetland mitigation/stream classification stage to identify variances, conduct additional evaluations that may be needed, and recommend solutions to problems encountered on site.

WETLAND/STREAM CONDITIONS CAN CHANGE.

Since natural systems are dynamic systems affected by both natural processes and human activities, changes in wetland boundaries and stream conditions may be expected. Therefore, delineated wetland boundaries and stream classifications cannot remain valid for an indefinite period of time. The Corps typically recognizes the validity of wetland delineations for a period of five years after completion. Some city and county agencies recognize the validity of wetland delineations for a period of two years. If a period of years has passed since the wetland/stream report was completed, the owner is advised to have the consultant reexamine the wetland/stream to determine if the classification is still accurate.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or water fluctuations may also affect conditions and, thus, the continuing adequacy of the wetland/stream report. The consultant should be kept apprised of any such events and consulted to determine if additional evaluation is necessary.

THE WETLAND/STREAM REPORT IS SUBJECT TO MISINTERPRETATION.

Costly problems can occur when plans are developed based on misinterpretation of a wetland/stream report. To help avoid these problems, the consultant should be retained to work with other appropriate professionals to explain relevant wetland, stream, geological, and other findings, and to review the adequacy of plans and specifications relative to these issues.

DATA FORMS SHOULD NOT BE SEPARATED FROM THE REPORT.

Final data forms are developed by the consultant based on interpretation of field sheets (assembled by site personnel) and laboratory evaluation of field samples. Only final data forms are customarily included in a report. These data forms should not, under any circumstances, be drawn for inclusion in other drawings, because drafters may commit errors or omissions in the transfer process. Although photographic reproduction eliminates this problem, it does nothing to reduce the possibility of misinterpreting the forms. When this occurs, delays, disputes, and unanticipated costs are frequently the result.

To reduce the likelihood of data from misinterpretation, contractors, engineers, and planners should be given ready access to the complete report. Those who do not provide such access may proceed under the mistaken impression that simply disclaiming responsibility for the accuracy of information always insulates them from attendant liability. Providing the best available information to contractors, engineers, and planners helps prevent costly problems and the adversarial attitudes that aggravate them to a disproportionate scale.

READ RESPONSIBILITY CLAUSES CLOSELY.

Because a wetland delineation/stream classification is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in written transmittals. These are not exculpatory clauses designed to foist the consultant's liabilities onto someone else; rather, they are definitive clauses that identify where

IMPORTANT INFORMATION

the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

THERE MAY BE OTHER STEPS YOU CAN TAKE TO REDUCE RISK.

Your consultant will be pleased to discuss other techniques or designs that can be employed to mitigate the risk of delays and to provide a variety of alternatives that may be beneficial to your project.

Contact your consultant for further information.