

Lower Wapato Creek Advance Mitigation Site

Use Plan

for

Port of Tacoma's Off-Dock Container Support Facility

Corps Reference No. NWS-2020-557-WRD

June 16, 2022

1. Project Description

The Port of Tacoma's (Port's) Off-Dock Container Support Facility Project (Project) will develop approximately 24.49 acres (ac) of near-dock property to use as an empty container and chassis storage, a reefer (refrigerated container) pre-trip wash facility, and a wheeled reefer valet drop-off location. Other site features will include truck entry and exit gates on Thorne Road and Maxwell Way with a guard shelter at the Maxwell Way location, an office trailer, perimeter security fencing, site lighting and power, security cameras, a railroad crossing (between Parcel 85 & 87), a roadability area, and stormwater improvements. Work will include clearing and grubbing, earthen fill, isolated excavation, subgrade preparation, base course and pavement systems, stormwater infrastructure, and other utilities. Stormwater treatment will be by overland sheet flow conveyance and at-grade treatment. The Project site is located in Tacoma, WA at 1451 Thorne Road (Port Parcel 85 [7.64 ac]), 1721 Thorne Road (Port Parcel 87 [8.36 ac]), and 1702 Port of Tacoma Road (Port Parcel 72 [8.49 ac]). Refer to Figure 1 for the permit application drawings, including a vicinity map. The Project proposes to permanently impact (clear, grub, and fill) 4.42 ac of Category III (palustrine forested [PFO], depressional) wetland.

2. Existing Conditions of Wetlands and Other Aquatic Resources

A wetland delineation was conducted for the Project and is documented in the *Port of Tacoma Off-Dock Container Yard and Stormwater Project Wetland Analysis Report* (Grette & Associates, September 2021). The Project site includes 4.42 ac of Category III (PFO, depressional) wetlands as summarized in Table 1 and depicted on Figure 2.

Table 1. Existing Conditions of Wetlands and Buffers

Resource identifier	Wetland area (acres)	Buffer area (acres)	Ecology rating	Local jurisdiction rating	Cowardin classification	HGM classification
Wetland A (Parcel 85)	73,258 SF (1.681 ac)	Uninterrupted: ~37,400 SF Developed: ~96,600 SF Total: ~134,000 SF	III	III	PFO	Depressional
Wetland B (Parcel 72)	119,289 SF (2.738 ac)	Uninterrupted: ~58,700 SF Developed: ~63,300 SF Total: ~122,000 SF	III	III	PFO	Depressional
TOTALS	4.419 ac	Uninterrupted: 2.206 ac Developed: 3.671 ac Total: 5.877 ac				

Two wetlands were delineated on the Project site (Grette & Associates, September 2021); Wetland A is located on Parcel 85 and Wetland B is located on Parcel 72. The wetlands have formed in the fill layer above the historic Commencement Bay tideflats. Surrounding land uses are industrial and port maritime uses. The wetlands are palustrine forested wetlands and are hydrogeomorphically classified as depressional wetlands. These features are situated within the undeveloped portions of the subject parcels.

Vegetation

The forest vegetation community predominantly consists of black cottonwood (*Populus balsamifera*) with an understory consisting of native and non-native shrub species. Beneath the sub-canopy, vegetation consists of a near monoculture of slough sedge (*Carex obnupta*).

Hydrology

Hydrology for Wetland A is primarily provided by a high groundwater table and direct precipitation. Additionally, Wetland A likely collects periodic stormwater runoff that sheet flows towards the wetland. No direct stormwater input (e.g., culvert) in Wetland A was identified during Grette Associates site assessments. Hydrology for Wetland B is primarily provided by stormwater runoff (sheet flow), a high groundwater table, and direct precipitation. During the site assessment, surface water, shallow groundwater, and soil saturation were observed in both wetlands.

Grette Associates did not identify any potential area that would suggest these features contain an outlet that discharges surface water offsite. This assessment and determination are also supported by the elevations recorded in the topographic survey. The elevations of the roadside ditches adjacent to the subject parcels are approximately 12 inches higher in elevation and slope towards the wetland features.

Hydric Soils

Soils observed within Wetlands A and B consisted of an upper layer (0-2 inches) of very dark brown (10YR2/2) sand and a lower layer (2-20 inches) of very dark grayish brown (10YR3/2) sand. No redox features, depleted matrix, hydrogen sulfide odor, or any other hydric soil indicators (i.e., A and S indicators) were observed. Given the vegetation and prolonged inundation and/or soil saturation (14 consecutive days within the growing season), these soils meet the definition of a hydric soil. Based on the historical development activities, the soils (i.e., dredge spoils) within these wetland features were evaluated as an atypical situation.

No other aquatic resources are present within the Project area.

3. Avoidance and Minimization of Wetland and Other Aquatic Resource Impacts

The Project is to develop an off-dock container support facility and must be located near marine cargo terminals (near-dock) for the facility to be efficient, functional, and operational. In addition, the near-dock location reduces truck trip distances, traffic congestion, and associated fossil fuel use and emissions. There is no other suitable near-dock location in close proximity to the Port's Washington United, Husky, West Sitcum, and Pierce County container terminals. In addition, the facility must be at least the proposed size for it to operate efficiently and handle the quantity of containers and operations required for the Project. Therefore, there are no practicable methods for reducing wetland impacts in this area while still meeting Project goals.

4. Unavoidable Aquatic Resource Impact Acreage

The acreage of unavoidable wetland impacts associated with the Project are summarized in Table 2 and depicted on Figure 2.

Table 2: Anticipated Unavoidable Impacts to Wetlands

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	HGM Classification	Ecology Rating	Local Jurisdiction Rating
A	1.681	1.681	0	0	PFO	Depressional	III	III
B	2.738	2.738	0	0	PFO	Depressional	III	III
TOTALS	4.419	4.419	0	0				

5. Impacted Wetland and Aquatic Resource Functions

Both Wetlands A and B, along with their associated buffer, will be entirely filled and all associated functions will be lost as summarized below.

- **Water Quality & Hydrologic Functions** – As discussed in Section 2, wetland hydrology is primarily provided by a high groundwater table, direct precipitation, and to a lesser extent, stormwater runoff. No surface water is discharged offsite and therefore water infiltrates onsite. The Project will collect precipitation and direct surface flow to constructed biofiltration systems that will treat stormwater and control flow rates prior to discharging to the City of Tacoma’s municipal stormwater system.
- **Habitat Functions** – The degraded, isolated wetlands are a forest vegetation community predominantly consisting of black cottonwood (*Populus balsamifera*) with an understory consisting of native and non-native shrub species. There is no interspersions of habitats, corridor connectivity, or plant species richness, and there is no fish habitat. The majority of the buffers are interrupted by roads, railroads, and developed buildings, pavement, and compacted gravel areas.

6. Wetland and Other Aquatic Resource Compensation Site Selection Rationale

The Project application identifies two options for wetland compensation which include the Port of Tacoma’s Lower Wapato Creek Advance Mitigation Site (Lower Wapato Creek AMS) or the Upper Clear Creek Mitigation Bank. This document is the proposed Use Plan for the Lower Wapato Creek AMS.

The Project is located within the service area of the Lower Wapato Creek AMS which is the portion of Water Resource Inventory Area (WRIA) 10 – Puyallup-White within the Eastern Puget Riverine Lowlands ecoregion from Commencement Bay eastward to State Route (SR) 512/167, as shown on Figure 3, Geographic Service Area. As of October 27, 2021, no credits have been used from the Lower Wapato Creek AMS; therefore, the appropriate credits are available for the Project.

There are no practicable methods for reducing wetland impacts or performing on-site mitigation on the Project site while still meeting the Project goals. Compensating for the wetlands that are impacted by the Project meets the following goal of the Lower Wapato Creek AMS:

- “Replace aquatic resource (wetland) acreage and functions that are lost or impacted by future Port projects.”

Wetlands A and B at the Project site were specifically listed as potential future impacts/mitigation needs in the Lower Wapato Creek Habitat Project Advance Mitigation Plan, Section 3 (Geographic Service Area), Table 2 – Potential Future Development Sites (Port of Tacoma, March 2021).

7. Wetland and Other Aquatic Resource Functions Compensated at the Advance Mitigation Site

The impacted Project wetlands (Wetlands A & B) are isolated, depressional, degraded, Category III forested wetlands that provide minimal water quality, hydrologic, and habitat functions, and have highly interrupted buffers. The Lower Wapato Creek AMS is a diverse mosaic of interconnected estuary, emergent and forested wetlands, and riparian habitat. The mitigation site also removes a fish passage barrier, reduces streamflow velocities, and improves flood conveyance, water quality, fish and riparian habitat, and natural stream processes.

The Lower Wapato Creek AMS will offset and be an improvement to the water quality, hydrologic, and habitat functions that will be lost at Wetlands A and B. Specifically, the restoration objectives of the Lower Wapato Creek AMS include the following:

- Objective 1: Restore Wapato Creek from a straight ditch to a meandering, tidally-influenced channel with a functioning floodplain and in-stream habitat features;
- Objective 2: Re-establish intertidal mudflats and hydrologically connected estuarine emergent and palustrine forested wetlands;
- Objective 3: Establish and preserve a dense forested riparian upland; and
- Objective 4: Improve fish passage at the 12th Street East crossing.

Water Quality Functions

Water Quality will be improved at the Lower Wapato Creek AMS over the impacted Project wetlands by the reestablishment of approximately 10 ac of mudflat, freshwater and/or estuarine emergent, and forested wetlands, and approximately 8.5 ac of associated forested upland riparian buffer habitat.

In general, the diverse assemblage of emergent vegetation, woody-stemmed shrubs and trees, large woody material (LWM) and other surface roughening features at the Lower Wapato Creek AMS act to remove pollutants. The installation of these features roughen the wetland and buffer surfaces to slow flow, increasing the Lower Wapato Creek AMS wetlands and buffer's abilities to remove sediments, nutrients and toxins from surface flows prior to entering Wapato Creek. The Project-impacted wetlands provide some water quality function; however, the size and isolation of those wetlands means the Lower Wapato Creek AMS provides more water quality function to the region as a whole.

Hydrology Functions

The Lower Wapato Creek AMS rerouted the creek channel from its previously ditched alignment, and re-establishes approximately 10 ac of intertidal mudflat, freshwater/estuarine emergent and forested wetland habitats adjacent to the channel, and reconnects Wapato Creek to a functional floodplain. The reconfigured creek channel, re-established floodplain, installed LWM structures, and native shrub and forested habitats increases the mitigation site's ability to regulate flood flows, provides additional flood storage capacity and helps increase overall hydrologic functions.

Similar to the Project-impacted wetlands (Wetlands A & B), hydrology at the Lower Wapato Creek AMS is influenced by a high groundwater table and precipitation; however, the hydrologic function at the Lower Wapato Creek AMS is much higher than the Project site. The Project-impacted wetlands are the result of being

the lowest area (topographically) within the Project's immediate surrounding area. The Lower Wapato Creek AMS improves area hydrologic function by reestablishing approximately 10 ac of wetlands influenced by groundwater, precipitation, stream flow, and tidal interactions. The Lower Wapato Creek AMS creates a substantial increase in the flood storage capacity within the Wapato Creek Base Flood Elevation (BFE) and the Puyallup River Overtopping BFE; an increase of 28.61 acre-feet and 79.78 acre-feet, respectively (GeoEngineers 2020, Port of Tacoma 2021).

Habitat Functions

Habitat functions at the Project-impacted wetlands (Wetlands A & B) are extremely limited. The size and isolation of the wetlands provides little habitat capable of sustaining viable populations of wildlife, and there is no connectivity to a fish-bearing stream or watercourse. In addition, vegetation consists of near monocultures in each vegetation stratum (i.e., black cottonwood in tree canopy, Himalayan blackberry in sub-canopy, and slough sedge at ground level).

Habitat functions at the Lower Wapato Creek AMS will be an improvement over the Project-impacted wetlands because the restoration actions remove invasive plants (including root stock and seed bank), increase the diversity and areal extent of aquatic habitats, install a diverse assemblage of native trees, shrubs, grasses, and emergent species, provide approximately 230 pieces of LWM structures, re-meander the creek channel and reconnect the floodplain, add off-channel habitat, and provide habitat interspersed and connectivity between the different habitat types. The existing mature deciduous trees at the Lower Wapato Creek AMS were retained to the greatest extent practicable and provide key benefits (e.g., shade, forage opportunity, etc.) while the rest of the site establishes and matures. Approximately 230 pieces of LWM (habitat structures) are installed throughout the wetland complex, providing many opportunities for fish and wildlife to forage and find refuge. The Lower Wapato Creek AMS increases the overall biodiversity of the area and adds significant habitat availability to the Wapato Creek wildlife corridor. The Lower Wapato Creek AMS habitat functions will increase substantially for aquatic, amphibian, terrestrial, and avian species as compared to the current habitat functions provided by the Project site.

8. Wetland and Other Aquatic Resource Functions Not Compensated at the Advance Mitigation Site

Not applicable. All wetland functions will be compensated for at the Lower Wapato Creek AMS. In addition, the advance mitigation site provides added ecological benefit by offering fish, estuarine, and riparian habitat, and floodplain improvements. Refer to the Lower Wapato Creek Habitat Project, Advance Mitigation Plan (Port of Tacoma, March 2021) for further details.

9. Credit Use Ratios

The Lower Wapato Creek AMS wetland credits (calculated in acre-credits) were generated using the mitigation ratio method (Ecology and USACE 2013). The acre-credits were generated based on the increase in functions, values, and areal extent of aquatic systems resulting from the re-establishment of estuarine habitat, palustrine forested habitat, and enhancement of associated uplands on the Lower Wapato Creek AMS. Two types of wetland credits were generated: estuarine emergent (EEM) wetland credits and palustrine forested (PFO) wetland credits. Because of numerous and variable environmental factors, the number of each type of credits will be determined during the monitoring period based on actual on-site conditions. The Advance Mitigation Plan estimates the site will generate approximately 6.27 EEM acre-credits and 3.08 to 3.75 PFO acre-credits for a total of 9.35 to 10.02 acre-credits.

Tables 3 and 4 have been reproduced from the Advance Mitigation Plan (Port of Tacoma, March 2021). Table 3 specifies credit use ratios for estuarine and palustrine wetland impacts. Table 4 specifies credit use ratios for palustrine wetland impacts only.

Table 3: Credit Use Ratios for EEM Wetland Credits from Advance Mitigation Plan

Age of the Site (Years)	Category I Estuarine and Palustrine ¹	Category II Estuarine and Palustrine	Category III	Category IV	Stormwater Ditches
0 & 1	Case-by-case	3:1	2:1	1.5:1	1:1
2	Case-by-case	2.5:1	1.8:1	1.4:1	0.9:1
3	Case-by-case	1.8:1	1.6:1	1.3:1	0.8:1
4 & 5	Case-by-case	1.6:1	1.3:1	1.2:1	0.6:1
6 & 7	Case-by-case	1.4:1	1.2:1	1:1	0.6:1
8 & 9	Case-by-case	1.25:1	1:1	0.85:1	0.5:1
10 & Beyond	Case-by-case	1:1	0.9:1	0.75:1	0.5:1

¹ Ratios for Category I wetland impacts will be higher than the ratios listed for Category II.

Table 4: Credit Use Ratios for PFO Wetland Credits from Advance Mitigation Plan

Age of the Site (Years)	Category I Palustrine ^{1,2}	Category II Palustrine ²	Category III	Category IV	Stormwater Ditches
0 & 1	Case-by-case	3:1	2:1	1.5:1	1:1
2	Case-by-case	2.75:1	1.85:1	1.4:1	0.9:1
3	Case-by-case	2.5:1	1.7:1	1.3:1	0.8:1
4 & 5	Case-by-case	2.1:1	1.5:1	1.2:1	0.7:1
6 & 7	Case-by-case	1.6:1	1.2:1	1:1	0.6:1
8 & 9	Case-by-case	1.5:1	1.1:1	0.9:1	0.5:1
10 & Beyond	Case-by-case	1.2:1	1:1	0.85:1	0.5:1

¹ Ratios for Category I wetland impacts will be higher than the ratios listed for Category II.

² Ratios may not apply to Category I and Category II wetlands based on Special Characteristics.

At Ecology's suggestion, this advance mitigation site Use Plan was drafted based on the Mitigation Bank Interagency Review Team's guidance/template for a Bank Use Plan (August 2021 version). That guidance states to provide rationale if proposed ratios for determining the credits needed differ from those suggested in the MBI (or, in this case, the advance mitigation plan). The guidance states: factors that may affect the actual number of bank (advance mitigation) credits needed to compensate for an adverse impact to wetlands and other aquatic resources include:

- whether the impact is permanent or temporary,
- the extent to which the functions are affected due to indirect impacts,
- whether some of the functions affected by a project are compensated elsewhere,
- the extent to which the functions provided at the bank (advance mitigation site) differ from the impacted functions,
- out-of-service area requests based on the distance from the impact location and type of impact,
- and other factors.

The Port is proposing slightly different credit use ratios because the functions provided at the Lower Wapato Creek AMS are significantly higher than the limited functions of the impacted wetlands being compensated and for the other factors as described below.

- The construction timing of the advance mitigation site is not traditional, in that the creek is reconnected, and the site is graded and seeded, to allow the site to begin to improve water quality, hydrology, and habitat functions prior to planting shrubs and trees. This alters the official “Age of the Site (Years)” in Table 3 and 4 above. The Lower Wapato Creek AMS construction started in July 2021. All wetland/habitat area construction, habitat features, emergent and grass seeding, and mature tree preservation will be completed by December 2021. The plant installation will occur in the Fall 2022/Spring 2023 planting season after the site has had a year to establish hydrologic connectivity and to help determine the extent of the saltwater wedge. With this construction schedule, “Year 0” doesn’t occur until 2023 with the As-Built report. However, most water quality and hydrology functions and some habitat functions will be present and will begin to establish/function immediately upon reconnection of the creek channel and earthwork completion in 2021. Hydrologic monitoring will begin in 2021 and all construction activities except the installation of plants will be documented in an As-Built Report in early 2022. An additional As-built Report or addendum will be prepared after the installation of all plants in fall 2022/spring 2023.
- Construction of the Lower Wapato Creek AMS is underway and at least two years in advance of the impact Project (Project construction is currently anticipated to start in 2nd or 3rd Quarter of 2023). Wetland, estuary, and stream water quality and hydrology functions at Lower Wapato Creek AMS will begin upon completion of construction as discussed herein. With the retention of mature trees, creek channel reconnection, grading, and seeding with native species, the Lower Wapato Creek AMS will function ecologically at the same level or higher than the Project-impacted wetlands upon the completion of 2021 construction.
- The Project-impacted wetlands will be mitigated with a higher value (higher category) wetland. The Project-impacted wetlands are degraded, depressional and isolated, Category III PFO wetlands. In comparison, the Lower Wapato Creek AMS has been designed and constructed as a Category I estuarine and freshwater wetland complex consisting of intertidal mudflat, estuarine, freshwater emergent and palustrine forested wetlands surrounded by a forested upland buffer.
- The Project-impacted wetlands do not have any fish habitat and are not a riparian area. The Lower Wapato Creek AMS provides fish habitat for non-Endangered Species Act (ESA) listed species and riparian areas as complementary and additional ecological benefits that will function above and beyond wetland functions alone.
- Water quality functions of the Project-impacted wetlands are limited to infiltrating precipitation and some stormwater runoff. The development Project will incorporate stormwater flow control and biofiltration treatment. As described in Section 7, the Lower Wapato Creek AMS will greatly improve water quality functions over that of the wetlands to be impacted by re-establishing approximately 10 ac of wetland mosaic and 8.5 ac of upland riparian buffer which will remove sediments, nutrients, and toxins. These functions will begin immediately upon construction as the seeding and wetland hydrology are established, allowing water to filter through the soils and as the existing trees and planted emergent vegetation and native grasses grow and mature.
- Hydrology functions of the Project-impacted wetlands are limited to high groundwater, precipitation, and some stormwater flow. The Project-impacted wetlands are not connected to a floodplain or estuary. The Lower Wapato Creek AMS greatly improves hydrologic function through influences by groundwater,

precipitation, stream flow, and tidal interactions. It reconnects approximately 10 ac of the Wapato Creek floodplain and provides a substantial increase in flood storage capacity as described in Section 7.

- Habitat functions of the Project-impacted wetlands are limited to an island of a near monoculture of black cottonwood trees with some native shrubs and non-native, invasive, and noxious weeds surrounded by impervious surfaces and industrial development. The Project-impacted wetlands have limited biodiversity and are not connected to a wildlife corridor. Conversely, the Lower Wapato Creek AMS provides a diverse assemblage of native emergent vegetation, grasses, shrubs, and trees to complement the existing stand of large mature trees. The Lower Wapato Creek AMS increases the overall biodiversity of the area and adds significant habitat availability to aquatic, amphibian, terrestrial, and avian wildlife by providing over 18.5 ac of high-quality habitat within the Wapato Creek wildlife corridor.
- The buffer of the wetlands to be impacted have already been significantly impacted and interrupted by development with only 37 percent of the 75-foot buffer surrounding the wetlands remaining intact, albeit, with degraded habitat consisting of near monoculture of black cottonwoods and invasive and noxious weeds in the understory. As shown in Table 1, only ~2.21 ac of the total regulated 75-foot buffer area (5.88 ac) remains uninterrupted.

10. Proposed Mitigation Credits

Based on the above factors and an anticipated earliest start of the impact Project construction of 2nd or 3rd Quarter of 2023, for the Category III wetland impact, the Port proposes the credit use ratio in Table 3 (use ratios for EEM credits) corresponding to “Age of the Site (Years)” 2 and 0 & 1 for Table 4 (use ratios for PFO credits). Therefore, the EEM wetland credit use ratio (credit:impact acre) will be 1.8:1 (Table 3, Year 2) and the PFO wetland credit use ratio will be 2:1 (Table 4, Year 0 & 1).

As the final number of EEM and PFO wetland acre-credits generated by the Lower Wapato Creek AMS are not known at this time, the Port proposes to use all generated PFO wetland credits to mitigate this Project first, and use the EEM wetland credits to fulfill any remaining credit need. The Lower Wapato Creek AMS is anticipated to generate approximately 6.27 EEM acre-credits and 3.08 to 3.75 PFO acre-credits for a total of 9.35 to 10.02 acre-credits. The below table provides an example of potential types of mitigation credits and the associated credit use ratios that are needed to compensate for the Project impacts.

Table 5: Lower Wapato Creek AMS Credits Proposed for Use by Impact Project

Wetland	Total Wetland Area (acres)	Permanently Filled/Mitigated Wetland Area (acres)	Ecology Rating	PFO Credit Needed per Impact Acre ¹	PFO Credit Proposed for Use	EEM Credit Needed per Impact Acre ²	EEM Credit Proposed for Use
A	1.681	1.681	III	2	3.36		
B	2.738	2.738	III	2	0.39	1.8	4.58
TOTAL	4.419	4.419			3.75		4.58

11. Credit/Debit Accounting

Upon issuance of the City of Tacoma, Ecology, and U.S. Army Corps of Engineers Project permits the Port will debit the necessary credits from the Lower Wapato Creek AMS and submit an updated ledger to the regulatory agencies documenting the credit use as described in Section 11.3 (Credit/Debit Accounting) of the Lower Wapato Creek Habitat Project Advance Mitigation Plan. The impact Project permits are anticipated to be issued in early 2023. If the final number and type of wetland credits generated at the Lower Wapato Creek AMS is not known by the date the credits will be used the credit use letter and ledger will include notes that the distribution of types of credits used may need to be adjusted in the future pending the final number and type of wetland acre-credits generated. Note, the total wetland acre-credits needed to mitigate for this impact Project are less than the low end of the range of wetland acre-credits anticipated to be generated at the Lower Wapato Creek AMS; therefore, some wetland acre-credits are anticipated to still be available for future Port development projects that may impact aquatic resources.

12. References

- GeoEngineers. 2020. Lower Wapato Creek Habitat Project Floodplain Memo. Memorandum to Port of Tacoma. May 1, 2020.
- Grette & Associates. 2021. Port of Tacoma Off-Dock Container Yard and Stormwater Project Wetland Analysis Report. September 2021.
- Mitigation Bank Interagency Review Team (IRT) for Washington State. 2021. Bank Use Plan Template Version: [August 2021]. Retrieved from: <https://ecology.wa.gov/Water-Shorelines/Wetlands/Mitigation/Wetland-mitigation-banking/Templates-guidance-documents>.
- Port of Tacoma. 2021. Lower Wapato Creek Habitat Project, Advance Mitigation Plan. March 2021.
- Washington State Department of Ecology and U.S. Army Corps of Engineers. 2013. Credit Guide for Wetland Mitigation Banks. Published by Washington State Department of Ecology Shorelands and Environmental Assistance Program and U.S. Army Corps of Engineers, Seattle District, Regulatory Branch. Ecology Publication No. 12-06-014. February 2013. Retrieved from: <https://apps.ecology.wa.gov/publications/documents/1206014.pdf>

Attachments:

- Figure 1. Permit Application Drawings
- Figure 2. Wetland Delineation Map
- Figure 3. Geographic Service Area

¹ From PFO credit use ratio table of the Lower Wapato Creek Habitat Site Advance Mitigation Plan (Table 17).

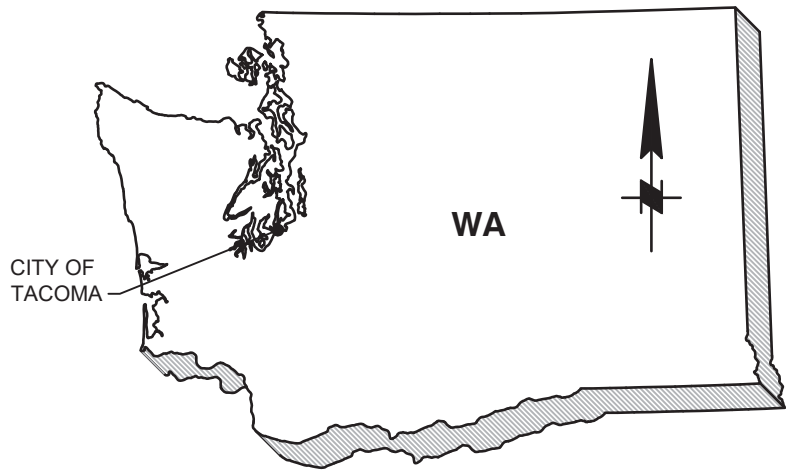
² From EEM credit use ratio table of the Lower Wapato Creek Habitat Site Advance Mitigation Plan (Table 16).

HORIZONTAL DATUM:
WASHINGTON STATE PLANE COORDINATE
SYSTEM, SOUTH ZONE, NAD 83/2011 (PER PORT
OF TACOMA SURVEY CONTROL MAP - 2016)

VERTICAL DATUM:
MLLW (PER PORT OF TACOMA 2016 SURVEY
CONTROL MAP)
TIDE 22 1935 BENCHMARK: LOCATED AT NE
CORNER OF 11TH STREET BRIDGE AT THE
INTERSECTION OF 11TH STREET AND
MILWAUKEE WAY
ELEVATION = +19.18
(BASED ON 1983-2001 TIDAL EPOCH)

SITE TEMPORARY BENCHMARK:
PORT OF TACOMA MONUMENT #104 AT
INTERSECTION OF PORT OF TACOMA ROAD
AND MAXWELL WAY
ELEVATION = +17.59

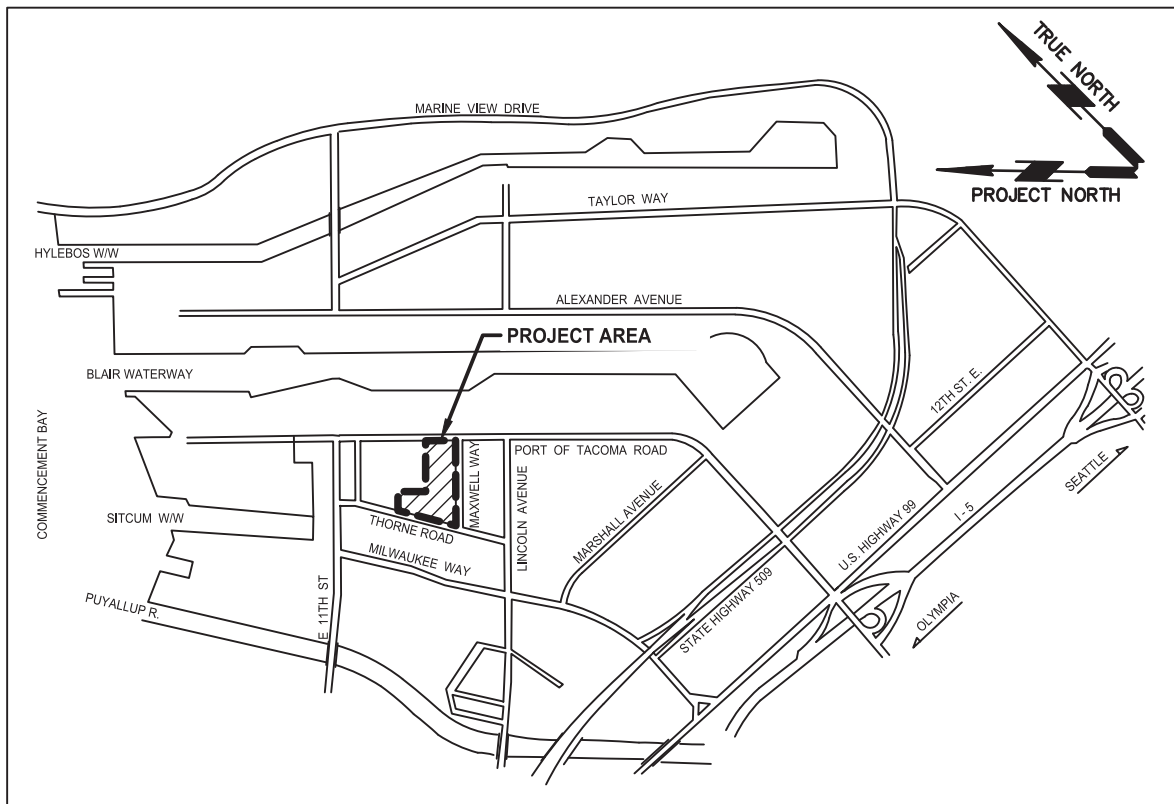
0.00 FT MLLW + 2.67 FT = 0.00 NAVD88



DIRECTIONS TO SITE FROM SEATTLE:

- | | <u>MILES</u> |
|------------------------------------|--------------|
| 1. I-5 S TO EXIT #136 | ~30 |
| 2. TURN RIGHT ON PORT OF TACOMA RD | ~0.5 |
| 3. ARRIVE AT PROJECT SITE | ~1.8 |

VICINITY MAP
SCALE: NTS



LOCATION MAP
SCALE: NTS

Figure 1. Permit Application Drawings

<p><u>USACE REFERENCE:</u> NWS-2020-557-WRD</p> <p><u>APPLICANT:</u> PORT OF TACOMA</p> <p><u>ADJACENT PROPERTY OWNERS:</u> SEE THE JOINT AQUATIC RESOURCES PERMIT APPLICATION (JARPA)</p>	<p><u>LOCATION:</u> 1451 & 1721 THORNE ROAD AND 1702 PORT OF TACOMA ROAD TACOMA, WA</p> <p><u>LAT/LONG:</u> 47.264 N -122.401 W</p> <p><u>DATUM:</u> MLLW=19.39' TIDE 22 1935 BENCHMARK</p> <p><u>SHEET:</u> 1 OF 7 <u>DATE:</u> OCTOBER 22, 2021</p>	<p><u>PROPOSED PROJECT:</u> OFF-DOCK CONTAINER SUPPORT FACILITY</p> <p><u>IN:</u> NOT LOCATED IN A WATERBODY</p> <p><u>NEAR/AT:</u> CITY OF TACOMA</p> <p><u>COUNTY:</u> PIERCE <u>STATE:</u> WA</p> <p><u>SEC:</u> 34 <u>T:</u> 21 N <u>R:</u> 3 E</p>
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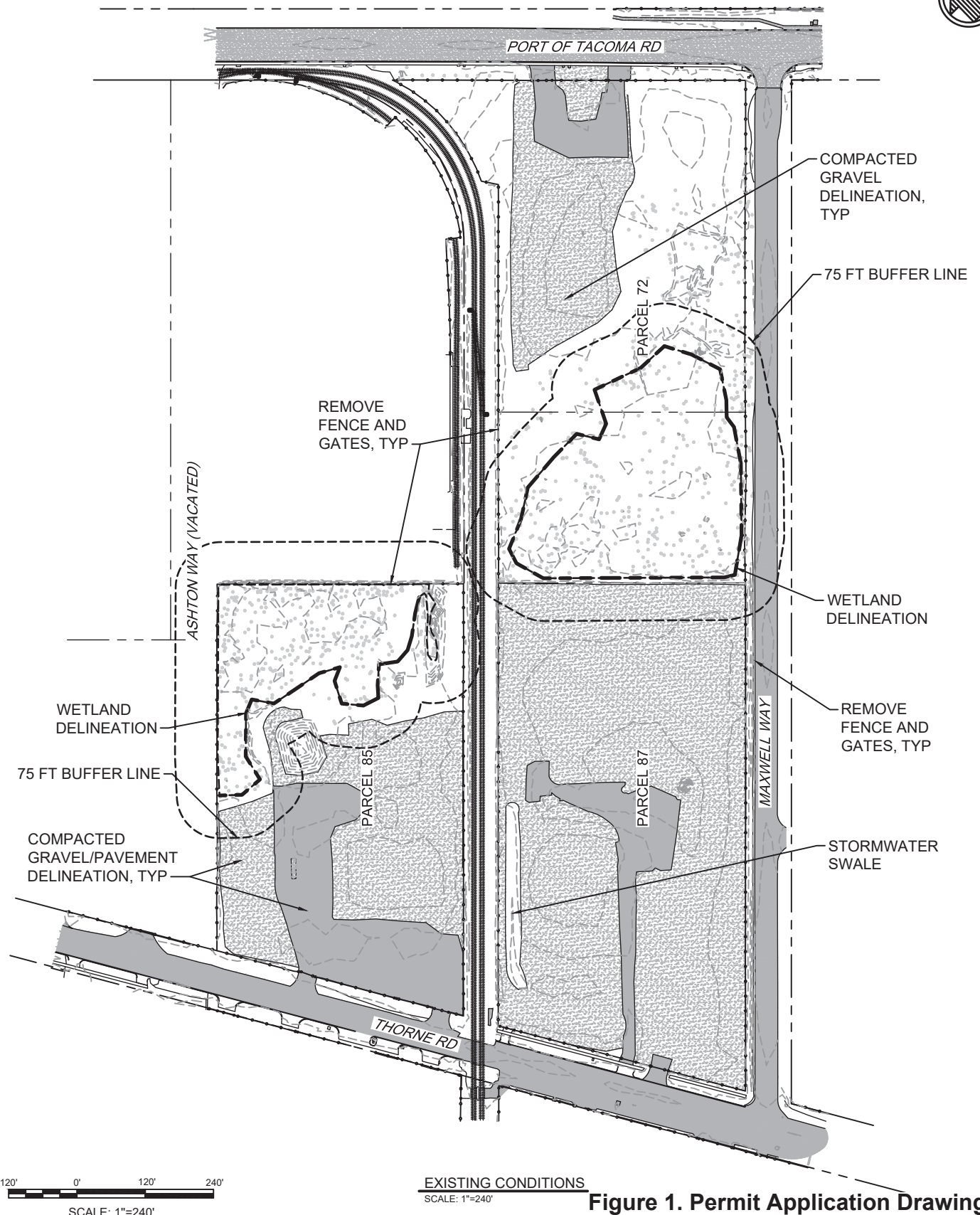


Figure 1. Permit Application Drawings

USACE REFERENCE: NWS-2020-557-WRD

APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:
SEE THE JOINT AQUATIC RESOURCES
PERMIT APPLICATION (JARPA)

LOCATION: 1451 & 1721 THORNE ROAD AND
1702 PORT OF TACOMA ROAD
TACOMA, WA

LAT/LONG: 47.264 N
-122.401 W

DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK
SHEET: 2 OF 7 DATE: OCTOBER 22, 2021

PROPOSED PROJECT: OFF-DOCK CONTAINER
SUPPORT FACILITY

IN: NOT LOCATED IN A WATERBODY
NEAR/AT: CITY OF TACOMA
COUNTY: PIERCE STATE: WA
SEC: 34 T: 21 N R: 3 E

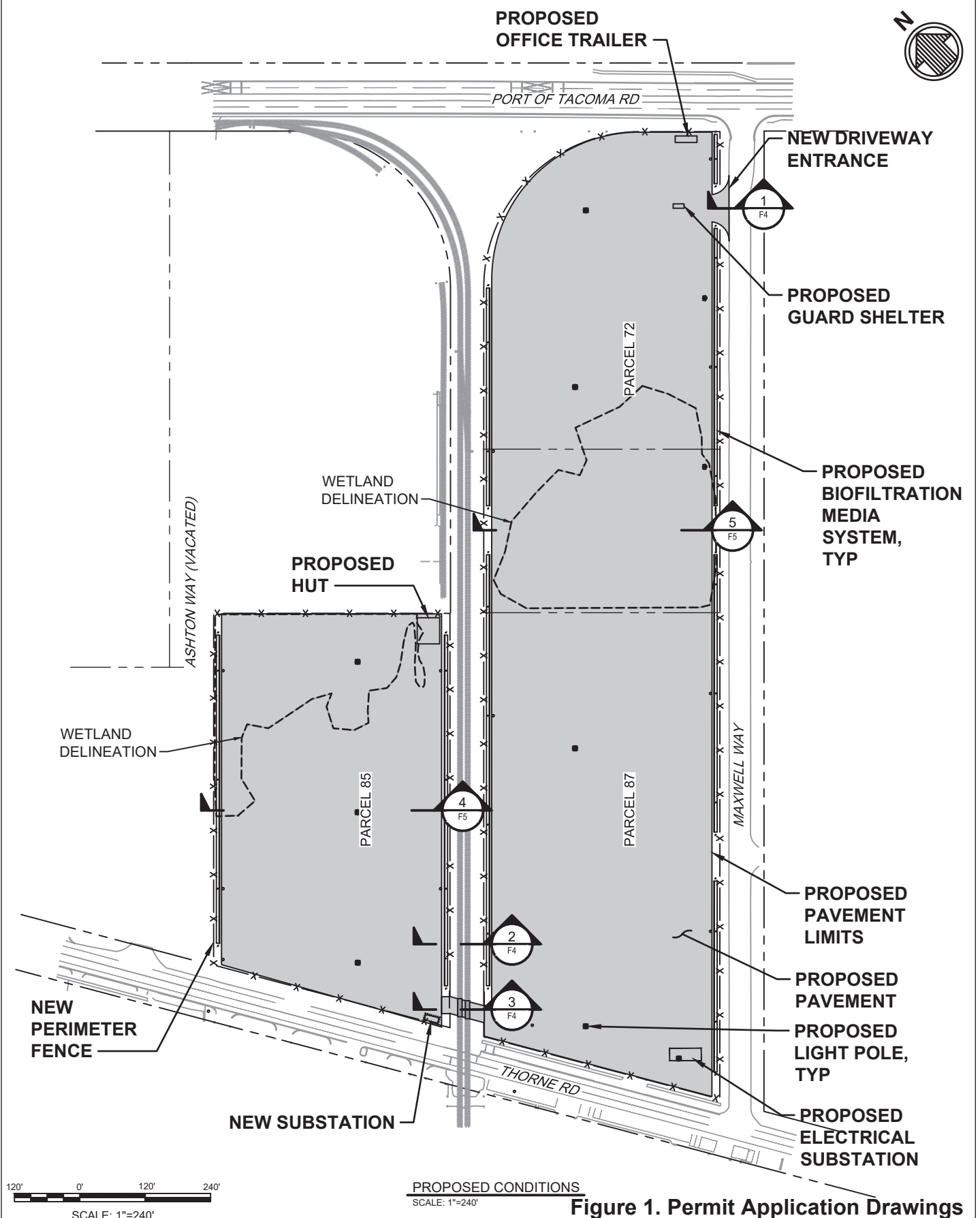


Figure 1. Permit Application Drawings

USACE REFERENCE: NWS-2020-557-WRD

APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:
SEE THE JOINT AQUATIC RESOURCES
PERMIT APPLICATION (JARPA)

LOCATION: 1451 & 1721 THORNE ROAD AND
1702 PORT OF TACOMA ROAD
TACOMA, WA

LAT/LONG: 47.264 N
-122.401 W

DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK
SHEET: 3 OF 7 **DATE:** OCTOBER 22, 2021

PROPOSED PROJECT: OFF-DOCK CONTAINER
SUPPORT FACILITY

IN: NOT LOCATED IN A WATERBODY

NEAR/AT: CITY OF TACOMA

COUNTY: PIERCE

SEC: 34 **T:** 21 N **R:** 3 E

STATE: WA

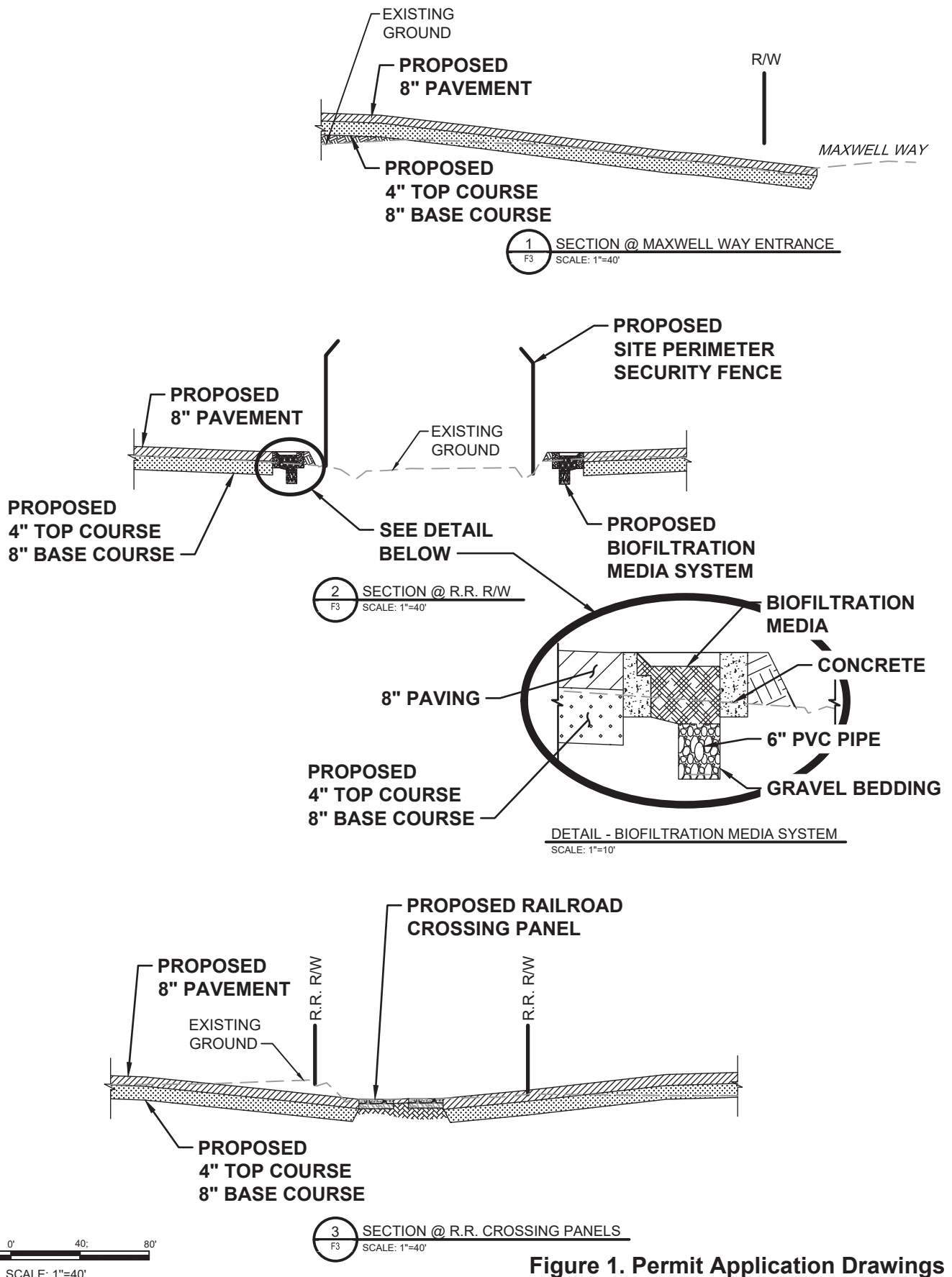


Figure 1. Permit Application Drawings

<p>USACE REFERENCE: NWS-2020-557-WRD</p> <p>APPLICANT: PORT OF TACOMA</p> <p>ADJACENT PROPERTY OWNERS: SEE THE JOINT AQUATIC RESOURCES PERMIT APPLICATION (JARPA)</p>	<p>LOCATION: 1451 & 1721 THORNE ROAD AND 1702 PORT OF TACOMA ROAD TACOMA, WA</p> <p>LAT/LONG: 47.264 N -122.401 W</p> <p>DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK</p> <p>SHEET: 4 OF 7 DATE: OCTOBER 22, 2021</p>	<p>PROPOSED PROJECT: OFF-DOCK CONTAINER SUPPORT FACILITY</p> <p>IN: NOT LOCATED IN A WATERBODY</p> <p>NEAR/AT: CITY OF TACOMA</p> <p>COUNTY: PIERCE STATE: WA</p> <p>SEC: 34 T: 21 N R: 3 E</p>
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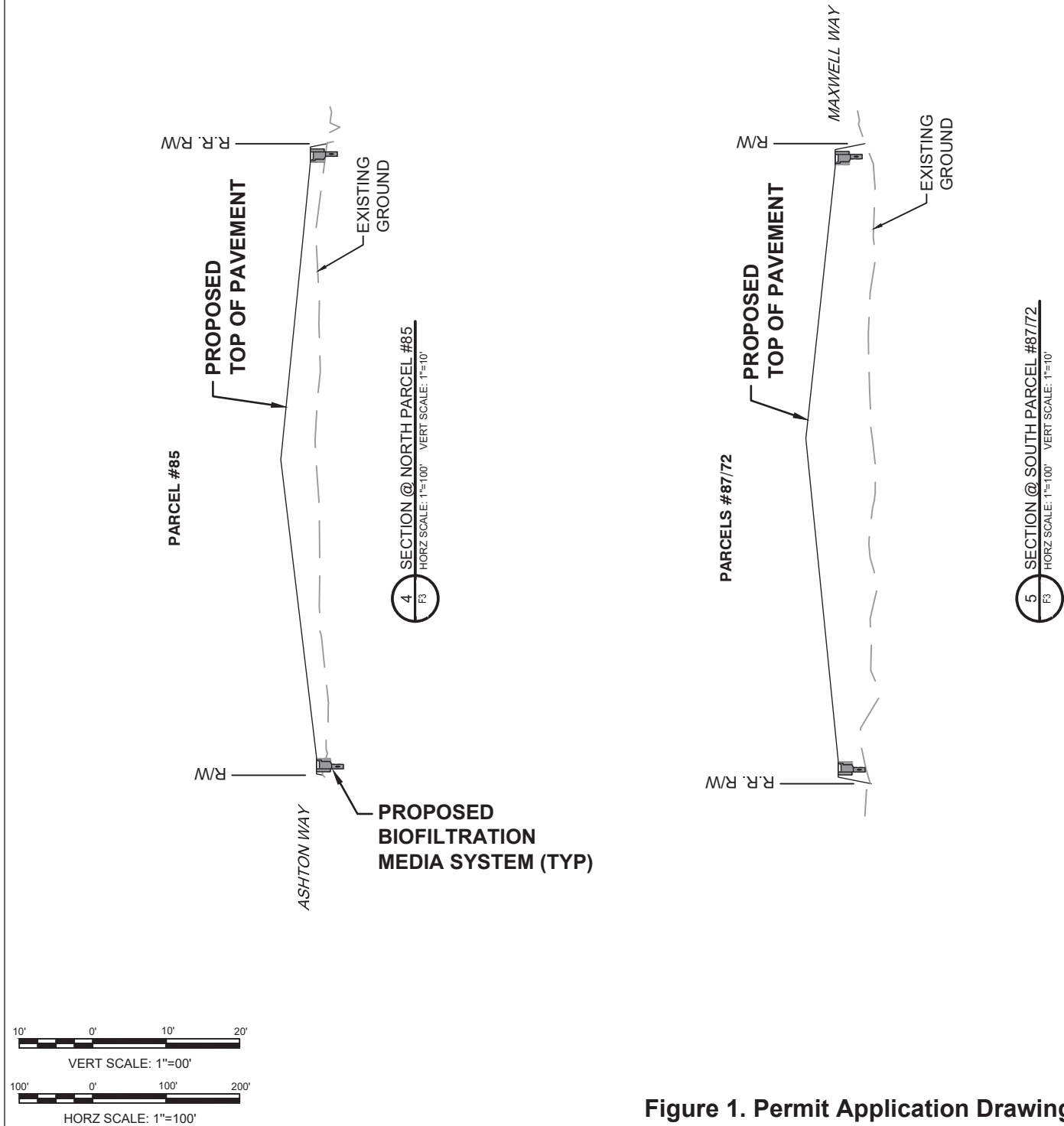


Figure 1. Permit Application Drawings

USACE REFERENCE: NWS-2020-557-WRD

APPLICANT: PORT OF TACOMA

ADJACENT PROPERTY OWNERS:
 SEE THE JOINT AQUATIC RESOURCES
 PERMIT APPLICATION (JARPA)

LOCATION: 1451 & 1721 THORNE ROAD AND
 1702 PORT OF TACOMA ROAD
 TACOMA, WA

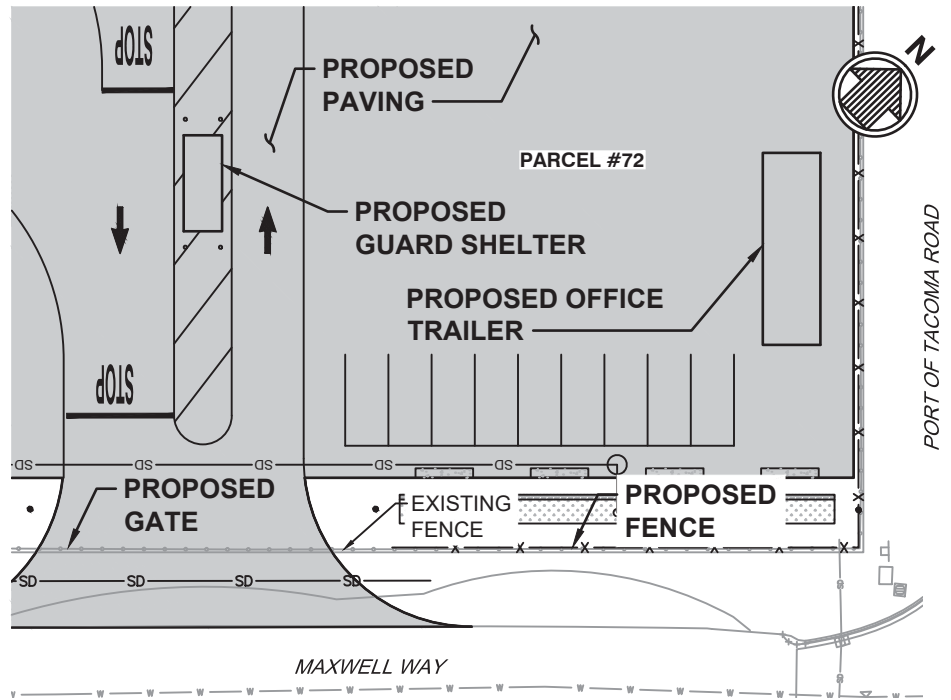
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 -122.401 W

DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK

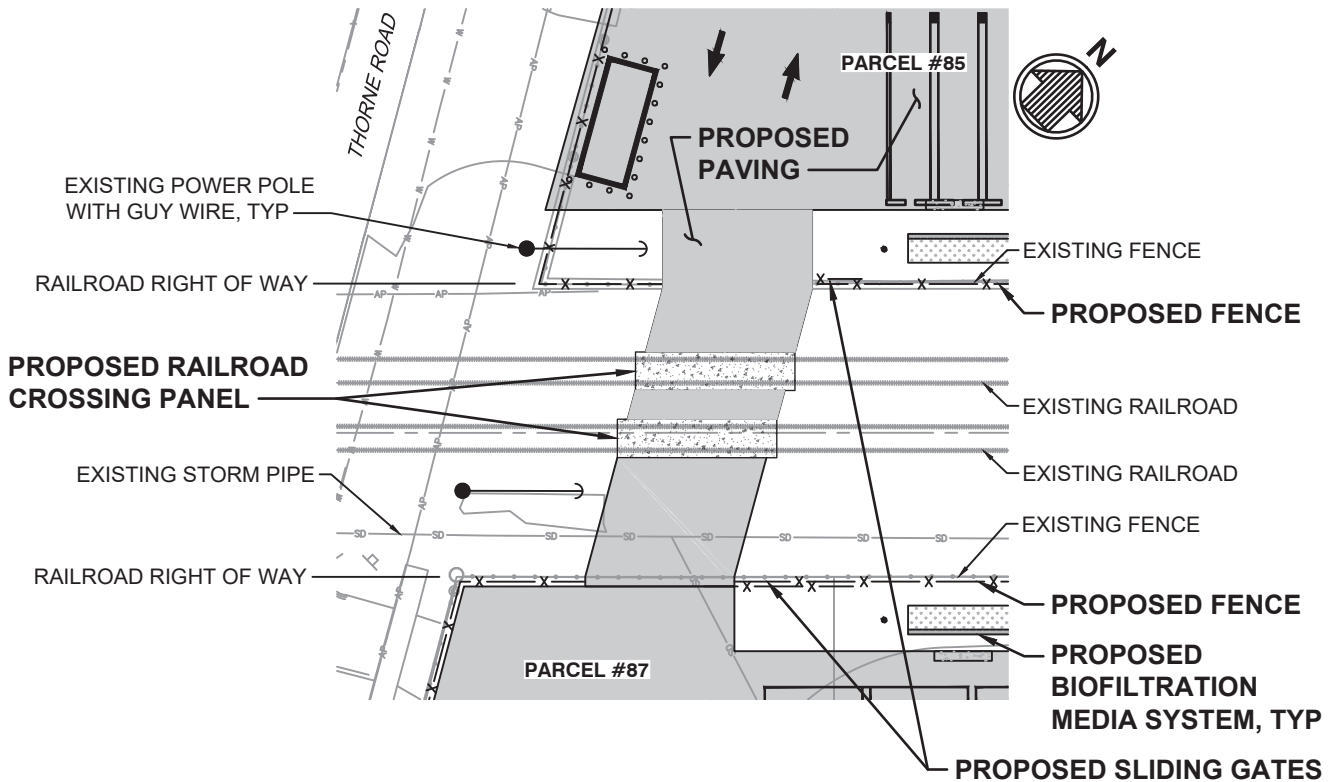
SHEET: 5 OF 7 DATE: OCTOBER 22, 2021

PROPOSED PROJECT: OFF-DOCK CONTAINER
 SUPPORT FACILITY

IN: NOT LOCATED IN A WATERBODY
NEAR/AT: CITY OF TACOMA
COUNTY: PIERCE STATE: WA
SEC: 34 T: 21 N R: 3 E



1 PLAN @ MAXWELL WAY ENTRANCE
F3 SCALE: 1" = 40'-0"

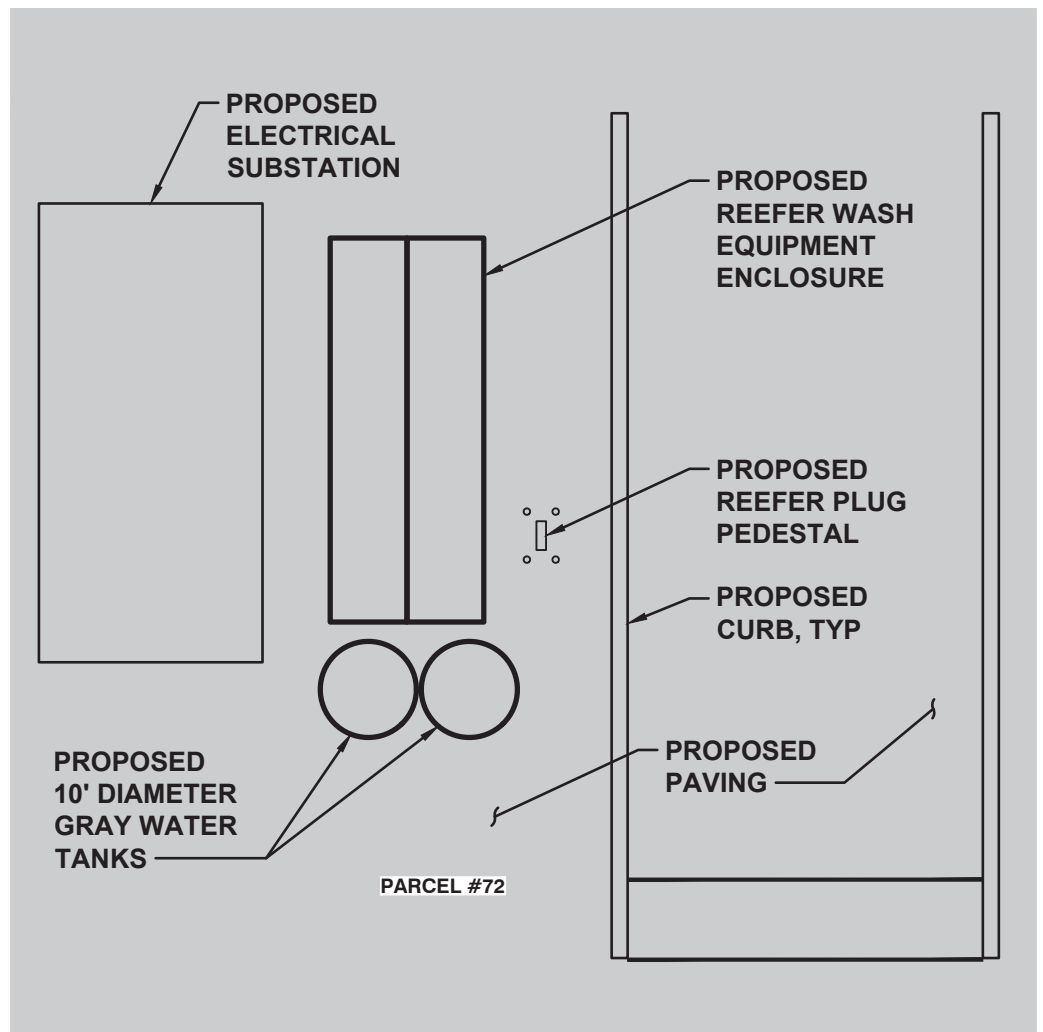


40' 0' 40' 80'
SCALE: 1"=40'

2 PLAN @ RAILROAD CROSSING
F3 SCALE: 1" = 40'-0"

Figure 1. Permit Application Drawings

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1 PLAN AT ELECTRICAL SUBSTATION AREA
F3 SCALE: 1"=20'

20' 0' 20' 40'
SCALE: 1"=20'

Figure 1. Permit Application Drawings

<p>USACE REFERENCE: NWS-2020-557-WRD</p> <p>APPLICANT: PORT OF TACOMA</p> <p>ADJACENT PROPERTY OWNERS: SEE THE JOINT AQUATIC RESOURCES PERMIT APPLICATION (JARPA)</p>	<p>LOCATION: 1451 & 1721 THORNE ROAD AND 1702 PORT OF TACOMA ROAD TACOMA, WA</p> <p>LAT/LONG: 47.264 N -122.401 W</p> <p>DATUM: MLLW=19.39' TIDE 22 1935 BENCHMARK</p> <p>SHEET: 7 OF 7 DATE: OCTOBER 22, 2021</p>	<p>PROPOSED PROJECT: OFF-DOCK CONTAINER SUPPORT FACILITY</p> <p>IN: NOT LOCATED IN A WATERBODY NEAR/AT: CITY OF TACOMA</p> <p>COUNTY: PIERCE STATE: WA</p> <p>SEC: 34 T: 21 N R: 3 E</p>
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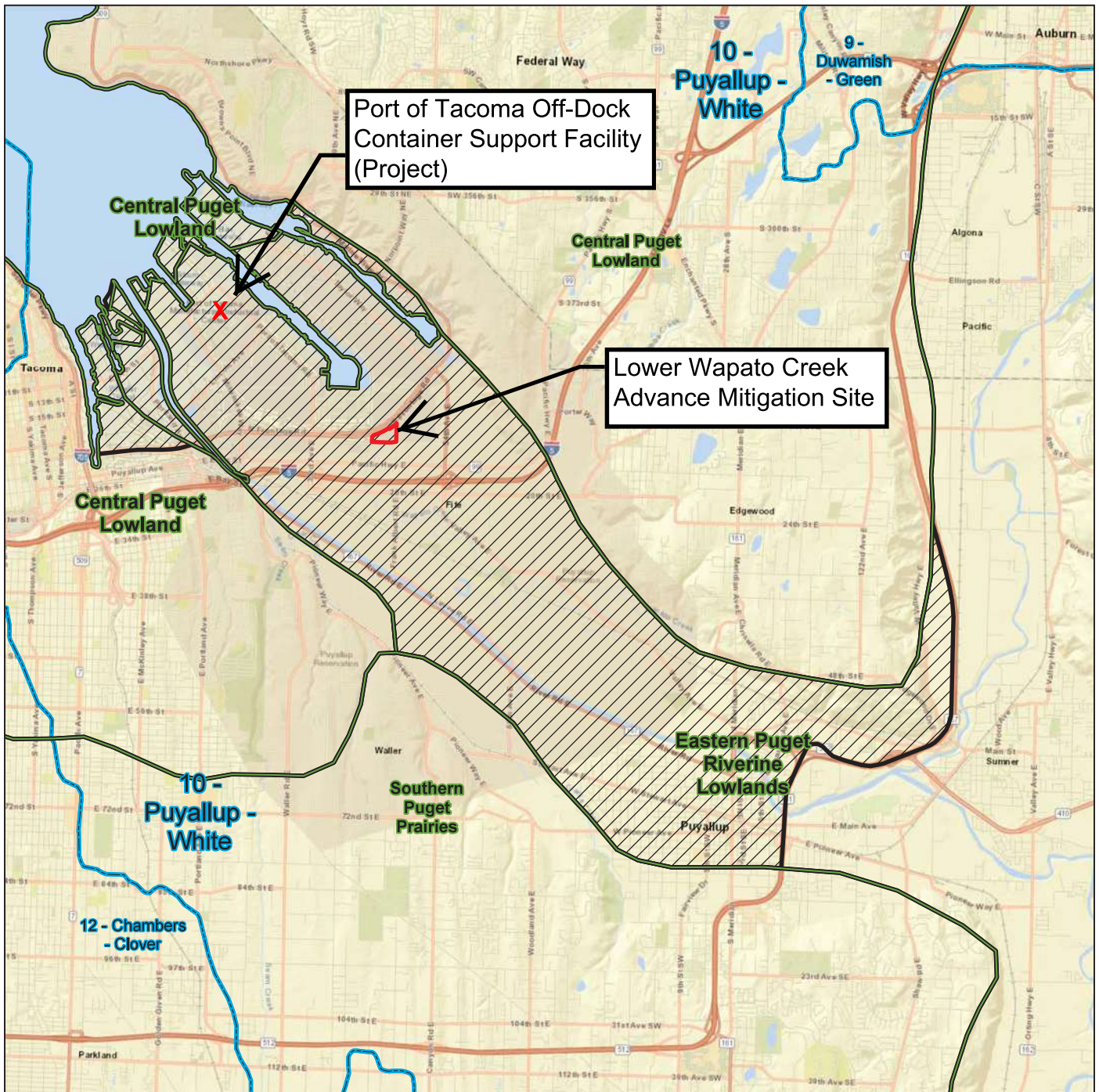


Figure 3. Geographic Service Area

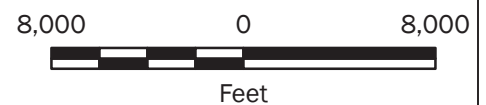
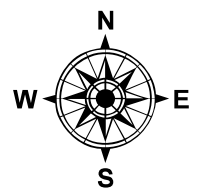
Lower Wapato Creek Habitat Project

Port of Tacoma

DATE: 1/25/2021

Legend

- Project Site
- Geographic Service Area
- Ecoregions**
- Water Resource Inventory Areas**



Notes:

1. The locations of all features shown are approximate.
 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
- Data Source: ESRI, DeLorme, USGS, Intermap
Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

