Biological Evaluation and Essential Fish Habitat Evaluation Model Toxics Control Act Interim Action and Marine Industrial Expansion Everett, Washington

January 12, 2021

Prepared for

Port of Everett

LANDAU ASSOCIATES

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Model Toxics Control Act Interim Action and
Marine Industrial Expansion
Everett, Washington

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EXECUTIVE SUMMARY

Project Name:	Model Toxics Control Act (MTCA) Interim Action and Marine Industrial Expansion (MIE)
Location:	2600 Federal Avenue, Everett, Snohomish County, Washington Sections 19 of Township 29 North, Range 5 East, 17110019 HUC
Proposed Timing or Schedule:	2021 to 2023
Project Proponent:	Port of Everett
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This Biological Evaluation (BE) and Essential Fish Habitat (EFH) Evaluation report was prepared to determine the potential biological impacts of the Port of Everett's proposed Model Toxics Control Act (MTCA) Interim Action and Marine Industrial Expansion (MIE) (Project). A Clean Water Act/ River and Harbors Act permit is being requested for the project from the US Army Corps of Engineers (Reference No. NWS-2020-979) and federal funds are being provided from the US Maritime Administration, establishing a federal nexus to the Project.

The Project combines cleanup and redevelopment actions, which will accommodate a marine cargo terminal. Specifically, the Port of Everett (Port) is proposing the MIE action at the former Kimberly-Clark Worldwide (K-C) site (Site) integrated with the MTCA 3rd interim action for the Site. The intent of the 3rd interim action is to achieve the following goals:

- Expedite cleanup of the MTCA Site
- Reduce surface water infiltration through residual soil contamination that could be mobilized into groundwater by surface water infiltration
- Prevent wildlife exposure to residual soil contamination
- Integrate Site infrastructure improvements and cleanup elements to ensure consistency with future Site use and for long-term protection of human health and the environment.

The Project will include upland site grading/paving; longshoreman facility; utilities, including modification of two existing stormwater outfalls in the East Waterway; lighting; security improvements; cargo gateway; and landscaping.

This BE has been prepared to facilitate review of the proposed action as required by Section 7(d) of the Endangered Species Act (ESA) of 1973, as amended (16 US Code 1531), and implementing regulations at Title 50 Code of Federal Regulations (CFR), Part 402. This BE has been prepared to

facilitate coordination between the federal action agency (the US Maritime Administration), the National Marine Fisheries Service (NMFS), and the US Fish & Wildlife Service (USFWS).

Section 7 of the ESA requires, through consultation with the USFWS and National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries), that federal actions do not jeopardize the continued existence of any threatened, endangered, or proposed species or result in the destruction or adverse modification of critical habitat.

In addition, this BE addresses the proposed action in compliance with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), as amended by the Sustainable Fisheries Action of 1996 (Public Law 104-267). The Magnuson-Stevens Act requires federal agencies to consult with NMFS to determine whether the proposed action "may adversely affect" designated EFH for relevant federally managed commercial fish species within the proposed action area. For the purpose of the EFH evaluation, the proposed action incorporates the same Project elements for the EFH and the BE. The EFH evaluation is provided as Section 8 of this document.

This BE addresses the proposed Project impacts on listed species, including direct effects and indirect effects that may occur at a later time. The assessment is based on a review of the literature, agency consultation, review of species lists provided by USFWS and NOAA Fisheries, review of priority habitats and species (PHS) data from the Washington Department of Fish & Wildlife (WDFW), and field reconnaissance conducted by Landau Associates, Inc. (LAI) biologists.

Species lists were obtained from the USFWS and NOAA Fisheries websites, and WDFW PHS maps were reviewed. These maps were sources of additional information about listed endangered or threatened species under the ESA in the proposed Project vicinity. Based on LAI's experience in the region and the data available from the agencies listed above, listed species that might occur in the Project's vicinity include:

- Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*)
- Puget Sound steelhead trout (*O. mykiss*)
- Coastal-Puget Sound bull trout (*Salvelinus confluentus*)
- Yelloweye rockfish (*Sebastes ruberrimus*)
- Bocaccio rockfish (*S. paucispinis*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Humpback whale (*Megaptera novaeangliae*)
- Southern Resident killer whale (*Orcinus orca*).

This BE includes a discussion of these species, given their potential presence in the Project's action area. This BE also includes a discussion of applicable designated and proposed critical habitat for these species.

Of these species, the proposed Project "may affect, but is not likely to adversely affect" (NLAA) Coastal-Puget Sound bull trout, Puget Sound Chinook salmon, and Puget Sound steelhead trout. The proposed Project will have "no effect" (NE) on marbled murrelet, Southern Resident killer whale, humpback whale, yelloweye rockfish, and bocaccio rockfish. This BE identifies NLAA determinations on critical habitat for Coastal-Puget Sound bull trout, Puget Sound Chinook salmon, and Southern Resident killer whale, and NE determinations on critical habitats for marbled murrelet, yelloweye rockfish, bocaccio rockfish, and Puget Sound steelhead trout. The Project will have no permanent adverse effects on Pacific salmon, groundfish, or coastal pelagic EFH.

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/L ..... micrograms per liter
BE ..... biological evaluation
BFE ..... base flood elevation
BMP ..... best management practice
CESF ..... chitosan-enhanced sand filtration
CFR ..... Code of Federal Regulations
City ..... City of Everett
CM ..... crushed debris
DPS ..... distinct population segment
Ecology ..... Washington State Department of Ecology
EFH ..... essential fish habitat
ESA ..... Endangered Species Act
ESU ..... evolutionarily significant unit
ft ..... foot/feet
GULD ..... General Use Level Designation
HDPE ..... high-density polyethylene
HTL ..... high tide line
ISGP ..... Industrial Stormwater General Permit
K-C ..... Kimberly-Clark Worldwide
LAI ..... Landau Associates, Inc.
Magnuson-Stevens Act ..... Magnuson-Stevens Fishery Conservation and Management Act
MHHW ..... mean higher high water
MIE ..... Marine Industrial Expansion
MLLW ..... mean lower low water
MTCA ..... Model Toxics Control Act
NAVD88 ..... North American Vertical Datum of 1988
NE ..... no effect (determination)
NLAA ..... not likely to adversely affect (determination)
NMFS ..... National Marine Fisheries Service
NOAA ..... National Oceanic and Atmospheric Administration
NPDES ..... National Pollutant Discharge Elimination System
NSE ..... Naval Station Everett
OHWM ..... ordinary high water mark
PCE ..... primary constituent element
PFMC ..... Pacific Fisheries Management Council
PHS ..... Priority Habitats and Species
Port ..... Port of Everett
PUD ..... Snohomish County Public Utility District

LIST OF ABBREVIATIONS AND ACRONYMS (CONTINUED)

T18 ..... Port of Seattle's Terminal 18
USFWS ..... US Fish & Wildlife Service
WDFW ..... Washington Department of Fish & Wildlife
WSDOT ..... Washington State Department of Transportation

1.0 INTRODUCTION

The Port of Everett (Port) is proposing the Marine Industrial Expansion (MIE) action at the former Kimberly-Clark Worldwide (K-C) site (Site) integrated with an interim action to meet the Model Toxics Control Act (MTCA) cleanup requirements for the Site. The Project combines cleanup and redevelopment actions, which will accommodate a marine cargo terminal. The Port's goal is to put the brownfield site back into economic use as quickly as possible after K-C's 2nd interim cleanup action. This Site is located adjacent to and just north of the Port's main Marine Terminal facilities in the City of Everett (City), and its redevelopment will increase the Port's existing cargo handling and storage capabilities. The Project includes integration of the 3rd interim action and development of the Norton Terminal into a secure marine cargo terminal on approximately 34 acres of the Site.

This Biological Evaluation (BE) and Essential Fish Habitat (EFH) evaluation report was prepared to determine the potential impacts of the Port's MTCA Interim Action and MIE Expansion at Norton Terminal Project. A permit will be required from the US Army Corps of Engineers, and federal grant funding from the US Maritime Administration, which establishes a federal nexus to the Project. This BE and EFH evaluation describe the proposed Project and document the effect determinations to threatened or endangered species, their critical habitat, and EFH.

In November 2020, species and habitats known to occur or potentially occur in the Project vicinity were obtained from the US Fish & Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) Fisheries websites. The Washington Department of Fish & Wildlife (WDFW) Priority Habitat and Species (PHS) database maps (WDFW 2020) served as an additional source of information regarding endangered or threatened species listed under the federal Endangered Species Act (ESA) and found in the vicinity of the proposed Project.

Based on LAI's experience in the region, previous BEs, and the data received from the agencies noted herein, listed species that may be found within the Project site vicinity include:

- Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*)
- Puget Sound steelhead trout (*O. mykiss*)
- Coastal-Puget Sound bull trout (*Salvelinus confluentus*)
- Yelloweye rockfish (*Sebastes ruberrimus*)
- Bocaccio rockfish (*S. paucispinis*)
- Marbled murrelet (*Brachyramphus marmoratus*)
- Humpback whale (*Megaptera novaeangliae*)
- Southern Resident killer whale (*Orcinus orca*).

Marine mammals including the humpback whale and the Southern Resident killer whale may be present in the Project vicinity and may use waters within the action area. This BE includes an

evaluation of potential Project impacts to these species, given their potential presence in the Project's action area. This BE also includes an evaluation of potential Project impacts to designated critical habitat in the action area for Puget Sound Chinook salmon, Puget Sound steelhead trout, Coastal-Puget Sound bull trout, and Southern Resident killer whale.

2.0 PROJECT LOCATION AND DESCRIPTION

A review of relevant information regarding the proposed action is included in the following subsections. Design plans were reviewed by Landau Associates, Inc. (LAI) to provide information on Project elements. The Project engineer and Port were consulted to provide additional detail as required that went into the development of this BE.

2.1 Project Location

The Project is located at Port-owned parcels at 2600 Federal Avenue, Everett, Snohomish County, Washington; Section 19 of Township 29 North, Range 5 East (Figure 1). The Project is located in/ adjacent to the East Waterway/Port Gardner Bay, a segment of Puget Sound in Hydrologic Unit Code 17110019 and Water Resource Inventory Area 7 (Snohomish).

2.1.1 Site History

The Site is the location of the former K-C paper mill, and was first developed in the late 1800s/early 1900s. From 1931 to 2012, it was used primarily for pulp and paper manufacturing; other uses included bulk petroleum storage operations and sawmilling. All manufacturing operations at the facility ceased in April 2012 and the mill and former structures have since been demolished with the exception of the former distribution warehouse.

In December 2012, the Washington State Department of Ecology (Ecology) and K-C entered into an Agreed Order for Site cleanup of the uplands area. Since closure and subsequent demolition of the mill in 2012, the Site has been vacant and unused. The Project area is most of the upland portion of the K-C MTCA site (MTCA Site; Facility Site ID #9). Throughout most of calendar year 2020, the Site was undergoing cleanup as the 2nd interim action under an agreed order (Agreed Order No. DE 9476) between Ecology and K-C. Additional crushed demolition debris was removed ("CM Removal") and replaced with clean fill concurrently with the 2nd interim action. These recent cleanup activities were complete as of December 31, 2020.

2.2 Project Description

The Project includes upland Site grading/paving; longshoreman facility; utilities, including modification of two existing stormwater outfalls in the East Waterway; lighting; security improvements; cargo gateway; and landscaping, which are described in more detail below. Upland Site improvements and in-water work associated with the stormwater outfalls are shown in Appendix A.

1) *Site Grading and Paving*—Suitable clean fill material will be imported, placed, and compacted to build up the Site elevations for the designed subgrade in line with the contour elevations that result from the K-C CM Removal. The resulting K-C cleanup elevations vary from about +17 feet (ft) mean lower low water (MLLW) along the west side of the Site to +21-ft MLLW along the east side of the Site. Once design subgrade elevations are met, significant portions of the Site will be covered with a pavement section designed for the anticipated heavy

industrial cargo that will also prevent surface water infiltration as part of the 3rd interim action. Generally, the Site finished grade will be raised several feet higher than the existing grade and is anticipated to range between approximately +17 ft to +23-ft MLLW.

Because low-permeability surfaces required under the 3rd interim action must be compatible with future Site uses, the pavement will be designed to support the large wheel loads produced by the Port's container handling reach stackers and storage of heavy cargo similar to the Port's current marine terminals. However, it is anticipated that not all areas of the Site will be paved initially and some areas may remain as gravel until the entire Project area can be paved and the final MTCA cleanup action is selected by Ecology. Certain areas of the Site where heavy equipment will not operate may be built up to near final grade elevations with thinner pavement sections or other low-permeability system, as needed, to meet the requirements of the 3rd interim action or the final cleanup action selected for the MTCA Site by Ecology.

Longshoreman Facility—The Project is anticipated to include two portable trailers to serve as a longshoreman restroom, shower, lunchroom, and office facility. The total approximate square footage of these trailers will be 800 square feet.

Washpad—An approximately 60-ft-wide by 120-ft-long concrete pad will be constructed for the purpose of washing cargo items and Port equipment. The washpad will not be covered by a roof to accommodate varying heights of cargo. The washpad will be constructed to include a stormwater diversion system. During periods when the washpad is not in use, stormwater runoff will be routed by gravity to the Site's water quality treatment system. During periods when the washpad is in use, a valve to the storm drain system will be closed and washwater will be routed to the City sanitary sewer system.

Cargo Container Containment Area—An approximately 41-ft-wide by 141-ft-long concrete pad will be constructed for cargo container containment. The containment area will be surrounded on three sides by a curb with a topographic grade break along one side to allow reach stacker ingress and egress. A security fence will surround the facility. Stormwater runoff will be routed to the Site's water quality treatment system. In the event of a leak from a container, a valve in the storm drain system will be closed and the leak will be contained on the pad. The leaked material will be cleaned up by a vactor truck or other appropriate method and disposed of at an appropriate facility.

Utilities—Because this is a brownfield site with extensive subgrade foundations remaining-in-place, to mitigate the impact of encountering subsurface obstacles, utilities, pipelines, and electrical duct banks will be designed and constructed to be as shallow as possible. Site design may include utility corridors to consolidate locations of several types of utilities. Individual utility systems anticipated are discussed in more detail below.

a. Stormwater—Stormwater will be handled by a series of collection infrastructure features (longitudinal concrete gutters and trench drains that will be connected to a high flow bypass vault, as well as catch basins and buried piping). Stormwater treatment for the entire Site will be handled in two drainage basins, Basin A and Basin M, which will discharge to the East Waterway via corresponding outfalls (i.e., Outfalls A and M). The drainage area associated with the Outfall M basin will include the proposed cargo laydown area, and the drainage area associated with Outfall A basin will be associated with the south gate area and existing warehouse.

   Near the northwest side of the Site, the Port will install an aboveground stormwater treatment system that will handle most runoff from the Site (i.e., Outfall M basin) and

provide treatment to meet anticipated Industrial Stormwater General Permit (ISGP) requirements. Details on the treatment system are provided below and in Appendix B. Stormwater will be pumped from the high-flow bypass vault into the treatment system and then discharged into existing stormwater infrastructure for ultimate discharge at Outfall M. The existing outfall requires replacement due to its condition; the outfall will be replaced in its existing location.

A small portion of the south end of the Site (i.e., Outfall A basin) will be redeveloped to create a secure point of ingress and egress to the Site. Redevelopment will include stormwater improvements to collect runoff and provide water quality treatment prior to discharge at Outfall A. Treatment is proposed to be provided by a filter cartridge system to meet anticipated ISGP requirements. Outfall A also requires replacement due to its condition and will be replaced in close proximity to its existing location.

Six existing outfalls are currently in-place on the Site that range in diameter from 10 inches to 54 inches. Four of the outfalls have been decommissioned as part of the 2nd interim action. By reducing the Site's total number of outfalls from six to two, the replacement outfalls will require an increase in size. Outfall A, a 10-inch outfall at the Site's south end, will be replaced with an 18-inch outfall, and Outfall M, a 21-inch wood stave storm drain that transitions to a 12-inch PVC outfall, will be replaced with a 36-inch outfall. The outfalls will be high-density polyethylene (HDPE) casing pipe around aluminum corrugated metal pipe at the shoreline. The casing pipe will protect the outfall pipe from direct riprap and rockery point loads. Riprap energy dissipation pads will be installed at the end of each outfall. Installation of Outfall A will occur over 120 square feet of shoreline below the high tide line (HTL) and installation of Outfall M will occur over 420 square feet of the shoreline below the HTL.

The total runoff volume discharged to the East Waterway is not anticipated to change as compared to the former K-C Site developed conditions, which is based on nearly 100 percent impervious surface conditions. Stormwater management is an integral part of the Project including areas requiring a low permeable cap to contain contaminated soil as part of the 3rd interim action. Effective stormwater management will minimize the potential for contaminant transport to adjacent surface water, reduce surface water infiltration through areas of the MTCA Site that have residual soil contamination, and improve groundwater quality prior to its discharge to surface water.

b. Water Quality Treatment—The water quality treatment of stormwater runoff for approximately 39 acres (Outfall M basin) of the Site will be provided by an aboveground chitosan-enhanced sand filtration (CESF) system, and water quality treatment for approximately 0.4 acres (Outfall A basin near the south gate) will be provided by a Contech© Stormfilter cartridge system.

    i. CESF system is an active treatment system that actively monitors the effluent, sending it back through the system if it does not meet discharge requirements. The CESF system allows for other additives to be used to remove targeted pollutants, such as heavy metals, and to adjust pH levels for discharge to sensitive receiving waters. CESF systems consist of storage tanks, pumps, and filtration vessels. The CESF system process consists of runoff collection; water quality monitoring for pH, turbidity, and conductivity; stormwater dosing with a chitosan acetate solution to induce stormwater

solids settling in tanks before sand filtration; and discharge of treated stormwater.

The CESF system is an established stormwater treatment technology that has been successfully implemented to meet ISGP requirements at the Port of Seattle's Terminal 18 (T18). T18 is a high-use marine container terminal that experiences 3,000 to 5,000 truck movements on average per day. This terminal's high use generates extreme pollutant loadings that the CESF system has been able to successfully treat in conformance with Ecology benchmarks. Norton Terminal is anticipated to experience about 10 truck trips per day and generate far less pollutant loading than T18. The success with CESF at T18 is why this type of system has been selected for the Site. CESF systems have received General Use Level Designation (GULD) for Construction in Ecology's Technology Assessment Protocol program. This classification demonstrates that CESF systems can effectively meet pollutant reduction goals associated with construction, including turbidity removal. CESF systems can remove a wide range of heavy metal influent concentrations as well as total suspended solids. The CESF system can be modified or added to, to treat future pollutants. Dosing rates, chemical selection, additional storage tanks or filter pods, as well as add-on systems can be incorporated to help meet modifications to existing benchmarks/levels or future pollutant removal requirements.

ii. The Contech Stormfilter system uses rechargeable, media-filled cartridges to absorb and retain pollutants from stormwater runoff. Filter cartridges are placed in underground structures such as specially designed catch basins, manholes, or vaults. The Stormfilter system is proposed to provide treatment for about 0.4 acres of redevelopment at the south gate area. Due to topography constraints and the need to keep utilities shallow to avoid underground foundations and obstructions, this area cannot drain by gravity to the CESF system, so a stand-alone system is proposed. Stormfilter systems have received GULD from Ecology for 'Basic' Water Quality treatment and Conditional Use Level Designation for enhanced heavy metal treatment requirements. A level of 'Basic' treatment is anticipated for the south gate area of the Site.

c. Flow Control—Stormwater flow control is not required for the Project because the Site's runoff will discharge directly to the East Waterway following the required treatment.

Water—Water distribution and fire protection will include a new looped water system to support both fire protection and domestic water service. The system will be connected to the existing City water line at the south end of the Site at Federal Avenue and run north to near the future Snohomish County Public Utility District (PUD) substation site, then east to connect to the existing City water line on Norton Avenue. Appropriately sized water meters and service lines will be provided to serve individual tenants. These service lines will provide water to temporary or permanent structures that may be placed on the Site (such as washpad, longshoreman restrooms, or breakrooms), other maintenance or operations requirements, and provide irrigation to landscaped areas.

An existing 6-inch water main in Federal Avenue will be replaced with a 12-inch main that will extend to the Site. Existing fire hydrants and water services along Federal Avenue will be

reconnected to the new main. Fire hydrants constructed to City standards will be provided on the Site for fire protection. These hydrants will be located adjacent to the high mast area lighting foundations and protected from damage from industrial activities with bollards.

Sanitary Sewer—Sanitary sewer service will be supported by two to three sanitary sewer lift stations (typically constructed with low-horsepower sewer grinder pumps), at various locations at the Site. Sanitary sewer force main pipes will connect to existing City manholes to the south at Federal Avenue (or potentially to the north at Norton Avenue).

Electrical and Communications—Electrical service will be provided by the PUD via existing overhead lines at the northeast corner of the Site. New 15-kilovolt service equipment will be installed at the north end of the Site near the entrance gate off Norton Avenue. Power distribution will be via an underground conduit duct bank system with numerous precast vault structures that will serve Site lighting and other electrical infrastructure and will generally run south on the Site and terminate near Federal Avenue.

Step-down transformer substations and distribution panels will be installed on the Site to provide three-phase 480-volt and 120-volt single-phase power for area lighting, entrance gate lighting, security cameras, water service hot boxes, and lift stations for both stormwater and sanitary sewers. Spare power conduits in the main duct banks and side lateral power conduits from the electrical vaults will be provided to allow future expansion of the electrical system. Electrical power will be needed to support operation and maintenance of the stormwater treatment system(s), which are considered an integral part of the 3rd interim action.

Communication conduits and vaults will be provided as part of the main electrical duct bank network. Communication conduits will be installed from the communications vaults to the various site security camera locations, gate locations, and other structures. Fiber optic cable will be installed to serve the Site security cameras and other communication needs, connecting to the Port's current security network near Federal Avenue. Communication systems may be needed to support future cleanup action elements, which are considered an integral part of the 3rd interim action

Lighting—Lighting will be provided by LED floodlight clusters mounted on high mast poles set on concrete protective foundations. The main terminal lighting system will generally be arranged in three rows of poles running north to south with one or two strategically located lighting transformers to feed the lighting system. Most light poles are anticipated to be 75 ft tall and spaced approximately 300 ft apart. It is anticipated that the north and south gate areas will be illuminated by shorter 30-ft-tall light poles. Lighting will be directionally controlled and shielded to avoid spillover to neighboring properties.

Security—The Norton Terminal will be a federally secure restricted area and access will be controlled with security fencing and gates that meet US Department of Homeland Security standards. Approximately 5,100 linear ft of 8-ft-high chain-link fencing with a top guard of three strands of barbed wire will be erected along the Site boundaries to maintain terminal security. Appropriate signage will be installed at regular intervals along the fencing stating that the area is restricted, and only authorized personnel may enter the Site.

The Site will be under constant surveillance by closed-circuit television cameras. The cameras will be mounted on some of the high mast area light poles and at the north and south entrance gates.

As discussed below, security fencing is considered an integral element of the 3rd interim action for vector control and to prevent direct human contact with residual MTCA Site contamination.

Cargo Gateway—Cargo movements between the existing terminal to the south and the proposed Norton Terminal to the north will occur on Federal Avenue through an agreement with the City that allows the Port control of the Federal Avenue right-of-way. This cargo gateway will be surrounded by a combination of gates and fences that can be opened and closed to provide a federally secure, continuous access lane between the terminals, as well as provide non-secure access to the Port's existing tenants.

Landscaping—It is anticipated that landscaping will be provided in accordance with City code, including possible waivers of certain requirements, if granted by the City. Certain landscaping elements may be subject to future cleanup actions under the MTCA Final Cleanup Plan, which has yet to be defined. Any areas of landscaping will meet soil cleanup standards identified in the final cleanup action for the MTCA Site.

2.3 Project Purpose and Background

The intent of the 3rd interim action is to achieve the following goals:

- Expedite cleanup of the MTCA Site
- Reduce surface water infiltration through residual soil contamination that could be mobilized into groundwater by surface water infiltration
- Prevent wildlife exposure to residual soil contamination
- Integrate Site infrastructure improvements and cleanup elements to ensure consistency with future Site use and for long-term protection of human health and the environment.

The 3rd interim action will include, but is not limited to, the following general scope of cleanup construction elements:

- Fill importation, grading and compaction to: 1) increase the elevation of the Site to be protective of anticipated sea-level rise, 2) provide stormwater drainage, 3) reduce surface water infiltration, and 4) support construction of the low-permeability cap
- Construction of a low-permeability cap consisting primarily of low-permeability pavement materials to further reduce surface water infiltration and to prevent exposure of terrestrial ecological receptors
- Installation of subgrade utilities to support stormwater treatment and conveyance, minimize future disturbance of the cap, and other potential cleanup action elements where a cap is required to contain contaminated soils
- Reconstruction of existing Outfalls A and M for discharge from the new stormwater system
- Management of contaminated soil and groundwater during construction of subgrade utilities
- Demolition of the existing Site fencing and installation of new security fencing to maintain vector control and to prevent human contact with residual Site contamination.

The Project will implement the next phase of the MTCA remediation of the Site and supplement the Port's existing cargo handling and storage capabilities. Cargoes will enter and leave the Site via its existing seaport facilities to the south. The 3rd interim action is necessary to ensure that contamination from historical mill operations at the Site is cleaned up pursuant to MTCA standards and made safe for future uses. With regard to the MIE action, the Site is identified as a component of the Port's continuing operations as included in the Port Strategic Plan, Comprehensive Scheme of Harbor Improvements, and Marine Terminals Master Plan. As part of the Marine Terminals Master Plan, the Port's Mills to Maritime initiative is an effort to restore polluted former waterfront mill sites into sustainable, job-producing hubs that support the next generation of maritime trade and industry. Transitioning the new Norton Terminal back into productive use under the MIE strategic initiative is the cornerstone of this effort. The Norton Terminal is strategically located in the heart of the Port's urban deep-water maritime complex and working waterfront. It is located within a federally secure waterway adjacent to a federal navigation channel. Due to its lack of land for staging and processing prior to the Norton Terminal's acquisition, the Port had missed business opportunities to handle cargoes, including but not limited to large-format breakbulk cargoes for the energy, forest products, automotive, and defense industries.

Developing the Norton Terminal to accommodate cargo storage, staging, and shipping to support the maritime industrial economy accomplishes the Port's strategic goals as set forth in the 2020 Strategic Plan. These goals include maintaining sustainable operations, expanding cargo shipping capacity, modernizing the seaport, and generating revenue at the working waterfront to support its destination waterfront, boating, and recreation on Port properties north of Naval Station Everett (NSE).

NSE has long been concerned about the potential development of incompatible uses along its southern and western borders. Compatible uses are necessary to support NSE's ability to safely and efficiently function and adapt to mission changes. The planned uses for the Norton Terminal support the sustainability of NSE operations and mission-readiness and protect the naval station's contribution to the local economy and national defense.

In addition, the US Maritime Administration is currently considering the Port for a strategic seaport designation. This designation would demonstrate the Port's ability to support major force and material deployments in times of war and national emergency. Adding Norton Terminal provides the land necessary to meet the designation's upland capacity requirements.

3.0 CONSTRUCTION ACTIVITIES

Project construction will occur in uplands and in-water, as described below.

3.1 Upland Work

Suitable documented clean fill material will be imported, placed, and compacted to build up Site elevations for the designed subgrade in line with the contour elevations that result from the K-C CM Removal (see Appendix A). The imported soil will be tested in accordance with Ecology Toxics Cleanup Program requirements. Once design subgrade elevations are met, significant portions of the Site will be covered with a pavement section of base course and asphalt designed for the anticipated heavy industrial cargo use and to reduce surface water infiltration as part of the 3rd interim action. Because this is a brownfield site with extensive subgrade foundations remaining-in-place, to mitigate the impact of encountering subsurface obstacles, utilities, pipelines, and electrical duct banks will be designed and constructed to be as shallow as possible. Soil materials removed from the Site will be tested in accordance with an Ecology-approved soil and groundwater management plan, and hauled to an appropriate licensed disposal facility, as appropriate.

3.2 In-Water Work

In-water (i.e., below ordinary high water and HTL) construction associated with the replacement of Outfalls A and M will occur in the dry during low tide cycles. Work that cannot be completed in a single tide cycle shall be temporarily covered and stabilized with gravel, geotextile, or other approved methods prior to tidal submersion. Sediment excavated to facilitate outfall replacements will be characterized, managed, and disposed of appropriately in coordination with Ecology, due to the potential for contamination (the East Waterway is an independent MTCA site from the K-C MTCA Site).

Outfall A is an existing 10-inch pipe that extends into the East Waterway. The pipe was video-inspected, but the point of daylight was not found due to blockages and rust deposition that partially blocked the pipe near the shoreline. Based on conversations with former K-C personnel, the outfall "daylights" under a dilapidated dock and is visible only during extreme low tide conditions. The outfall pipe is buried and not visible at the shoreline. To minimize disturbance of tideflat sediments, the outfall will be potholed at the uplands near the shoreline where it will be exposed, cut, plugged and abandoned in place below ground. The outfall will be replaced and re-oriented perpendicular to the shoreline with a new 18-inch pipe. The pipe will daylight at elevation +6 ft (MLLW=0.0 ft datum). Outfall M is an existing 21-inch wood stave storm drain that transitions to a 12-inch PVC outfall. The outfall will be removed, and the new Outfall M will be 36-inch aluminum corrugated metal pipe following the same alignment as the existing outfall, but discharging at a higher elevation of +8.59 ft (MLLW=0.0 ft datum).

The outfalls will be HDPE casing pipe around aluminum corrugated metal pipe at the shoreline. The casing pipe will protect the outfall pipe from direct riprap and rockery point loads. The casing pipe will create an approximately 6-inch-wide annular space around the aluminum outfall pipe that will be filled with non-shrink grout. The grout fill will provide protection from rock point loads if the casing pipe is damaged and will also prevent the flood and ebb of tidal waters from scouring fine-grained soils at the landward end. A temporary, watertight plug will be installed at both ends of the casing pipe during grout injection. A relief vent will be tapped into the top of the casing and an injection port will be tapped near the casing bottom at its landward end. Grout will be injected through the port until it starts to overflow from the relief vent at which time the grout injection will be stopped. Grout overflow will be captured and disposed of properly and not allowed to enter the water. Riprap energy dissipater underlain with quarry spalls and filter fabric will be constructed at each outfall and will be excavated to match existing grades.

3.3 Floodplain Avoidance

Federal Emergency Management Agency flood insurance mapping identifies the area along the shoreline of the Site as occurring in the 100-year floodplain, with corresponding base flood elevation (BFE) of 13 ft (NAVD88[1]). Proposed upland development on the Site generally occurs at elevation 13 ft (NAVD88) and higher, which is outside of the BFE. Stormwater outfall rehabilitation occurs below the BFE and is not anticipated to result in loss of flood storage capacity.

3.4 Project Schedule

Project construction is expected to begin in 2021 with substantial completion by 2023. The installation of the stormwater outfalls will be conducted at low tide during the approved in-water work window for fish protection. Site mobilization, preparation, and specific construction activities landward of the HTL that do not require in-water work may be conducted outside of the approved in-water work window.

3.5 Conservation Measures

A variety of conservation measures and best management practices (BMPs) will be used to reduce impacts to the environment during construction. The following conservation measures will be implemented so that potential impacts are mitigated throughout the duration of the Project:

- Work below the HTL/ordinary high water mark (OHWM) will occur in the dry during low tides. Work that cannot be completed in a single tide cycle shall be temporarily covered and stabilized with gravel, geotextile, or other approved methods prior to tidal submersion.
- Excavation in the shoreline environment associated with Outfalls A and M will include removal and disposal of existing informal riprap and potentially contaminated soil and sediments.
- Work below the HTL/OHWM will result in a balance of cut and fill volumes.

[1] North American Vertical Datum of 1988.

- Energy dissipation to be implemented as part of Outfalls A and M will include removal of contaminated sediment in the East Waterway/Port Gardner that will be replaced with clean riprap/quarry spalls.
- Construction activities will be controlled to avoid and minimize potential impacts to surface water in Port Gardner and will be required to follow stringent BMPs and discharge controls for this Project. Implementation of BMPs used to control and manage stormwater runoff during Project construction activities will be in general accordance with Ecology's Washington State Stormwater Management Manual for Western Washington, and will also be consistent with the City's stormwater, grading, and drainage code requirements.

  Furthermore, the Project will be in compliance with National Pollutant Discharge Elimination System (NPDES) permit requirements and water quality certification, in accordance with Section 402 (NPDES permit program) and Section 401 (water quality certification requirement as part of Section 404 permit) of the federal Clean Water Act. Implementation of the BMPs; a spill prevention, control, and countermeasures plan; a Construction Stormwater General Permit, and other additional requirements included as part of the Project's stormwater permit would promote mitigation of potential adverse impacts to stormwater runoff quality and control.
- Although large volumes of contaminated upland soil have been removed as part of the 1st and 2nd interim actions, low-level soil and groundwater contamination will remain at the Site, and will be contained by this Project (i.e., the 3rd interim action), and the final cleanup action selected by Ecology. Residual contamination will consist primarily of heavy metals and petroleum hydrocarbons. Potential contact with, and management of, contaminated soil and groundwater remaining at the MTCA Site will be addressed through the implementation of an Ecology-approved soil and groundwater management plan. The plan will specify the methods and procedures for identifying and managing hazardous substances encountered during Project implementation.
- Excavated shoreline material will be characterized and managed in coordination with Ecology guidelines. Prior to commencement of the Project, details regarding soil management associated with the Project will be presented in a materials management plan, which will be provided to Ecology for review; this plan will guide characterization and management of excavated material generated during outfall replacement.
- Stormwater runoff will occur associated with proposed Site paving, and the Port will install a new stormwater treatment system to meet anticipated ISGP requirements. Stormwater will be handled by a series of collection infrastructure features (longitudinal concrete gutters and trench drains) that will be connected to a high-flow bypass vault. Surface water (precipitation) currently infiltrates through the soil, causing potential movement of residual contamination. Reducing stormwater infiltration through the soil will improve groundwater quality prior to discharge to surface water (the East Waterway). Stormwater management is an integral part of the 3rd interim action to reduce surface water infiltration through the soil and improve groundwater quality prior to its discharge to surface water.

3.6 Interrelated and Interdependent Actions

An interrelated action is an activity that is part of a larger action and depends on the larger action for its justification. Interdependent actions are actions that have no independent utility apart from the

proposed action. No interrelated or interdependent actions are associated with the proposed Project. The Project will provide capacity for future development in the area; however, future developments are not dependent upon completion of the proposed Project.

4.0 ACTION AREA

The action area includes all terrestrial and aquatic habitats that could be directly or indirectly affected by the proposed Project. As a result, the terrestrial component would include the extent of the proposed work (including the equipment staging areas) and the attenuation limit of construction noise. The aquatic component would include the extent of potential noise and water quality impacts associated with the proposed Project. For this Project, Chapter 7 of the Washington State Department of Transportation (WSDOT) Biological Assessment Preparation Manual (WSDOT 2020) was used to prepare the noise analysis. Although this manual focuses on roadway projects, it represents the best available science for project-related noise calculations relevant to the proposed Project.

4.1 Terrestrial Component

For terrestrial impacts, the action area is defined by Project-related construction and associated noise. Construction noise, which would be short-term and limited to daytime and weekday hours, is estimated to be as loud as 98 A-weighted decibels, measured 50 ft from the construction equipment that will be used to implement the Project. The Project vicinity is estimated to have an environmental noise baseline of 60 dBA (WSDOT 2020). The upland action area was determined by estimating the point at which Project-related construction noise attenuates to this baseline environmental background noise. Based on the standard attenuation rates for noise associated with construction, the terrestrial action area includes the areas within an approximate 0.75-mile radius of the Site (Figure 2).

4.2 Aquatic Component

When considering the aquatic component of the action area, factors include in-water construction (including construction in the dry, intertidal areas during low tide) and the extent of turbidity caused by in-water work. The outfall construction will require some grading of the shoreline, which will be completed in the dry during low tide. As a result, the aquatic portion of the action area is limited to the in-water construction area associated with the outfalls and allowed mixing zones associated with BMPs for in-water work.

Mixing zones, based on specific waterway characteristics, are provided in Washington Administrative Code 173-201A-400. For this Project, mixing zones will extend 200 ft from the limits of construction activities, which include intertidal and nearshore areas of the East Waterway (Figure 2).

5.0 STATUS/PRESENCE OF LISTED SPECIES AND DESIGNATED CRITICAL HABITAT IN THE ACTION AREA

Lists of threatened and endangered species and designated critical habitats in the action area were obtained from the USFWS and NOAA Fisheries websites and are discussed below and presented in Appendix C. Site-specific species and habitat information was obtained from the WDFW PHS database (WDFW 2020).

Table 1: Species and Critical Habitat Listings

Species	Species Listing Status	Critical Habitat	Consulting Agency
Gray wolf (*Canis lupus*)	Endangered	Not Designated or Proposed	USFWS
Marbled murrelet (*Brachyramphus marmoratus*)	Threatened	Designated	USFWS
Yellow-billed cuckoo (*Coccyzus americanus*)	Threatened	Proposed	USFWS
Streaked horned lark (*Eremophila alpestris strigata*)	Threatened	Designated	USFWS
Coastal-Puget Sound DPS bull trout (*Salvelinus confluentus*)	Threatened	Designated	USFWS
Oregon spotted frog (*Rana pretiosa*)	Threatened	Designated	USFWS
Humpback whale (*Megaptera novaeangliae*)	Endangered	Not Designated	NOAA Fisheries
Southern Resident DPS killer whale (*Orcinus orca*)	Endangered	Designated	NOAA Fisheries
Puget Sound-Georgia Basin DPS bocaccio rockfish (*Sebastes paucispinis*)	Endangered	Designated	NOAA Fisheries
Puget Sound-Georgia Basin Yelloweye rockfish (*S. ruberrimus*)	Threatened	Designated	NOAA Fisheries
Puget Sound ESU Chinook salmon (*Oncorhynchus tshawytscha*)	Threatened	Designated	NOAA Fisheries
Puget Sound steelhead trout (*O. mykiss*)	Threatened	Designated	NOAA Fisheries

Notes: DPS = distinct population segment
ESU = evolutionarily significant unit

Discussion of these species is included in this BE, given their potential presence in the action area. Gray wolf was delisted from the ESA in rule published on November 3, 2020, and took effect on January 4, 2021, and this species is not considered further in this evaluation. The biology of listed species potentially present in the action area is provided in Appendix D.

This BE also includes a discussion of designated critical habitat for Puget Sound Chinook salmon, Puget Sound steelhead trout, Coastal-Puget Sound bull trout, marbled murrelet, Oregon spotted frog, streaked horned lark, and Southern Resident killer whale, and proposed critical habitat for yellow-billed cuckoo.

5.1 Coastal-Puget Sound Bull Trout Distinct Population Segment

The Coastal-Puget Sound DPS of bull trout encompasses all Pacific Coast drainages within the State of Washington, including Puget Sound. The Columbia River Basin separates it from other bull trout populations to the south and by the crest of the Cascade Mountain Range to the east. This population segment is significant to the species as a whole, since the Coastal-Puget Sound bull trout DPS supports all life history forms of the species, including the only known anadromous forms of bull trout in the coterminous United States (USFWS 2010b).

Sub-adult Coastal-Puget Sound bull trout have a documented history of using marine areas within Puget Sound. WDFW identifies a single bull trout stock in the Snohomish River watershed, with primary spawning identified in the North Fork Skykomish River and tributaries. Anadromous, fluvial, and resident life history forms are all found in the Skykomish River watershed. Due to this species' ecology and related specific use of river and stream systems, it is likely that adult bull trout found within the action area would migrate to streams to spawn and would not linger in nearshore areas, and subadults may be present rearing in the estuary prior to outmigration to marine waters. Bull trout estuarine residence time is generally between March and May, with timing of adult returns in April prior to entering freshwater to spawn (Haring 2002). Therefore, adult bull trout presence, if any, would most likely be brief within the action area and rearing subadults may be present between March and May.

5.1.1 Critical Habitat

Critical habitat has been designated for Coastal-Puget Sound bull trout and includes marine nearshore areas below the mean higher high water (MHHW) line, including tidally influenced freshwater heads of wetlands (USFWS 2010a). The outer extent of critical habitat for marine nearshore areas is based on the extent of the photic zone, which is the layer of water in which organisms are exposed to light. Critical habitat extends offshore to a depth of 33 ft (10 meters) relative to MLLW. The area between MHHW and –10 ft MLLW is considered the habitat most consistently used by bull trout in marine waters.

The East Waterway is designated critical habitat for Coastal-Puget Sound bull trout. Primary constituent elements (PCEs) for bull trout in marine waters include:

- Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including, but not limited to, permanent, partial, intermittent, or seasonal barriers.

- An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.
- Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.
- Water temperatures ranging from 2 to 15 degrees Celsius (36 to 59 degrees Fahrenheit), with adequate thermal refugia available for temperatures that exceed the upper end of this range. Specific temperatures within this range will depend on bull trout life-history stage and form; geography; elevation; diurnal and seasonal variation; shading, such as that provided by riparian habitat; streamflow; and local groundwater influence.
- Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.

5.2 Marbled Murrelet

Marbled murrelet spend most of their life on and in the marine environment, foraging on small schooling marine fish and invertebrates, but typically nest high in the canopy of old-growth forests (USFWS 2018a).

Marbled murrelet forage in nearshore areas and exhibit crepuscular patterns of foraging and marine activity (i.e., during the low light of dusk and/or dawn); thus, the potential exists for marbled murrelet to use the marine waters in the action area for foraging activities. WDFW PHS maps do not show occurrence of marbled murrelet in the action area of the proposed Project (WDFW 2020). The aquatic component of the action area extends to the farthest extent of allowed mixing zones (200 ft), as discussed above. The terrestrial component of the action area overlaps marine areas to existing developed harbor areas (i.e., industrial/commercial uses). It is unlikely that marbled murrelet will be present in the action area during Project construction.

5.2.1 Critical Habitat

Critical habitat has been designated for marbled murrelet, but no designated critical habitat is found within the action area of the proposed Project (USFWS 1996).

5.3 Oregon Spotted Frog

Oregon spotted frog habitat consists of ephemeral or permanent bodies of freshwater that may include natural or man-made ponds; slow-moving streams; or pools within, or oxbows adjacent to, streams (USFWS 2016).

To be considered suitable habitat for the Oregon spotted frog, the area must have breeding habitat, summer habitat, and overwintering habitat, with connectivity between the three habitat types. Breeding habitat consists of low-gradient shallows in palustrine wetlands and seasonally flooded

hayfields and pastures with low canopy closure. Summer habitat consists of partially shaded perennial lentic pools close to breeding habitat. Overwintering habitat consists of ponded, pooled areas deeper than 6 inches dominated by wetland vegetation and unconsolidated bottom and not scoured by winter storm-related flows. As no suitable habitat and no designated critical habitat exists within the action area, this species is not considered further in this document.

5.4 Yellow-Billed Cuckoo Western Distinct Population Segment

Yellow-billed cuckoos require large tracts of willow-cottonwood or mesquite forest or woodland for nesting habitat. Foraging and stopover sites have similar characteristics but may be as small as 10 acres in size. Foraging habitat contains a dense tree canopy with high foliage volume (USFWS 2014). The WDFW PHS map does not show nesting habitat or occurrence of yellow-billed cuckoos in the action area (WDFW 2020).

The action area does not provide suitable habitat for yellow-billed cuckoo. Yellow-billed cuckoos are considered extirpated in Washington (Seattle Audubon Society 2018). Therefore, it is unlikely that yellow-billed cuckoos would be present in the action area, and this species is not considered further in this assessment.

5.4.1 Critical Habitat

Critical habitat has been proposed for yellow-billed cuckoos, but does not occur within Washington State (USFWS 2014).

5.5 Streaked Horned Lark

The streaked horned lark is endemic to the Pacific Northwest and is a subspecies of the wide-ranging horned lark. The streaked horned lark nests on the ground in sparsely vegetated sites dominated by grasses and forbs in a broad range of habitats including native prairies, coastal dunes, fallow and active agricultural fields, wetland mudflats, sparsely vegetated edges of grass fields, recently planted Christmas tree farms with extensive bare ground, moderately to heavily grazed pastures, gravel roads or gravel shoulders of lightly traveled roads, airports, and dredge deposition sites in the lower Columbia River (USFWS 2018d).

The action area includes shoreline area but does not include sparsely vegetated areas of grasses and forbs. Therefore, it is unlikely that streaked horned lark will be found in the action area due to the absence of suitable habitat, and this species is not considered further in this assessment.

5.5.1 Critical Habitat

Critical habitat has been designated for streaked horned lark, but is not located within the action area (USFWS 2013).

5.6 Humpback Whale

Humpback whales may occur in Washington State waters; however, their presence is rare and sporadic. Sightings are uncommon along the coast of Washington State. This species has been documented in the vicinity of Victoria Island, the Strait of Juan de Fuca, and other state waters throughout the year, excluding the months of February through April. Humpback whales may use Washington State waters as a migratory corridor. Rare sightings have occurred in the San Juan Islands, Puget Sound, and the Strait of Juan de Fuca (Orca Network Archives 2020).

The aquatic component of the action area extends into the nearshore habitat of the East Waterway. This species is not expected to occur within the action area of the proposed Project considering the its use of Washington State waters and the limited extent of the aquatic component of the action area from the shoreline into marine waters.

5.7 Southern Resident Killer Whale

The Southern Resident killer whale is a DPS of killer whales residing within the waters off Vancouver Island, the Strait of Juan de Fuca, the southern Strait of Georgia, and throughout Puget Sound. The Southern Resident killer whale shows distinct morphological and genetic characteristics compared with other transient and offshore stock (NOAA 2005b).

Southern Resident killer whales spend the summer/breeding season in the Salish Sea in waters off Vancouver Island and farther south into Puget Sound (NOAA 2005b). Winter distribution includes the Northern Strait of Georgia and predominantly in coastal waters from British Columbia to central California (Hanson 2015).This species is not expected to occur within the area of the proposed Project area given the limited extent of the aquatic component of the action area from the shoreline into marine waters.

5.7.1 Critical Habitat

Southern Resident killer whale critical habitat includes approximately 2,560 square miles of Puget Sound, excluding areas with water less than 20 ft deep relative to extreme high water.

The geographical extent of critical habitat designated for Southern Resident killer whale includes the following three specific areas (NOAA Fisheries 2005b):

2) Area 1 – Core Summer Area: Bordered to the north and west by the United States/Canada border, this area includes the waters surrounding the San Juan Islands, the US portion of the Southern Strait of Georgia, and areas directly offshore of Skagit and Whatcom counties.
3) Area 2 – Puget Sound: This area includes Puget Sound south from Deception Pass bridge to the entrance of Admiralty Inlet and the Hood Canal Bridge.
4) Area 3 – Strait of Juan de Fuca: Area 3 includes waters to the northeast of the Deception Pass bridge, and San Juan and Skagit county lines up to the United States/Canada border, to the southeast of the entrance to Admiralty Inlet, and west to the Bonilla Point/Tatoosh line.

PCEs for Southern Resident killer whales include water quality to support growth and development; prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development as well as overall population growth; and passage conditions to allow for migration, resting, and foraging (NOAA 2005b). The action area, specifically the portion of the East Waterway, is within Area 2 – Puget Sound critical habitat for Southern Resident killer whales.

5.8 Rockfish

In April 2009, NOAA Fisheries completed a determination of the status of five species of rockfish (*Sebastes* spp.) in Puget Sound, and two of the five may occur in the action area, as described below.

5.8.1 Bocaccio

Bocaccio are found along the west coast of North America from the Gulf of Alaska off Krozoff and Kodiak islands, south to Punta Blanca, Baja California (Love, et al. 2002; NOAA 2010). They are primarily found between Oregon and northern Baja California. Most bocaccio in Puget Sound are found south of the Tacoma Narrows (NOAA 2010). Sub-adults and adults typically occupy waters at depths greater than 120 ft, and juveniles occupy shallow nearshore water in rocky or cobble substrate, often associated with macroalgae, at 3 to 6 months of age and move to deeper waters as they mature (Love, et al 2002).

Bocaccio rockfish are relatively rare in Puget Sound and are especially rare north of the Tacoma Narrows (Love, et al. 2002; NOAA 2010). In addition, they are not typically found in shallow areas lacking aquatic vegetation. The aquatic component of the action area in the East Waterway is dominated by bare seabed, and it is unlikely bocaccio would be found in the action area.

5.8.2 Yelloweye Rockfish

Yelloweye rockfish are found from northern Baja California north to Umnak and Unalaska islands in the Aleutian Islands, Alaska. Although they are abundant along the coast of Washington, they are extremely rare in Puget Sound. Yelloweye rockfish are less frequently observed in south Puget Sound than north Puget Sound, likely due to the larger amount of rocky habitat in north Puget Sound (Miller and Borton 1980). Yelloweye rockfish are distributed throughout the Strait of Georgia in the northern Georgia Basin, including areas around the Canadian Gulf Islands and the numerous inlets along the British Columbia coast (Yamanaka, et al. 2006). Sub-adults and adults are generally solitary and live over areas of high relief with crevices, caves, and other areas of refuge. They have been reported at water depths between 48 ft and 1,800 ft, but adults are most common from about 300 ft to 600 ft (WDFW 2020a). Juveniles occupy shallow nearshore water in rocky or cobble substrate, often associated with macroalgae.

Yelloweye rockfish are relatively rare in Puget Sound and are not typically found in shallow areas lacking aquatic vegetation. The aquatic component of the action area in the East Waterway is dominated by bare seabed, and it is unlikely yelloweye rockfish would be found in the action area.

5.8.3 Critical Habitat

Critical habitat was designated for the Puget Sound/Georgia Basin DPS of yelloweye and bocaccio rockfish in November 2014 (NMFS 2014); however, designated critical habitat does not occur in the aquatic component of the action area.

5.9 Puget Sound Chinook Salmon

The Puget Sound ESU for Chinook salmon includes all naturally spawned populations of Chinook salmon from rivers and streams flowing into Puget Sound. These include the Strait of Juan de Fuca from the Elwha River eastward; rivers and streams flowing into Hood Canal, South Sound, North Sound; and the Strait of Georgia in Washington, as well as 26 artificial propagation programs (NOAA 2005a).

In the Project vicinity, the Puget Sound Chinook salmon ESU includes those Chinook salmon in Puget Sound. Chinook salmon have been documented in the Snohomish River, located approximately 2 miles north of the Site.

Chinook salmon have a brief freshwater residence, as juveniles reside in estuaries before entering coastal waters or areas of higher salinity, and have estuarine residence time in the watershed between April and July (Haring 2002), with timing of adult returns in June prior to entering freshwater to spawn. Chinook salmon fry prefer protected estuarine habitats with lower salinity whereas the larger juvenile fingerlings immediately take up residence in deeper estuarine habitats for several months. Juvenile Chinook salmon migrating to Puget Sound from natal streams are expected to use the action area for migration and rearing. Juvenile Chinook salmon will inhabit both intertidal and shallow subtidal shorelines but are predominantly found in shoreline areas. After feeding in nearshore areas, juvenile Chinook salmon disperse rapidly and migrate to deeper coastal waters along the continental shelf (Wydoski and Whitney 2003).

Because the action area includes Puget Sound estuarine habitat, it is likely that juvenile and adult Chinook salmon will pass through or use the action area at certain times of the year. Adult Chinook presence would most likely be brief within the action area and rearing subadults may be present between April and July.

5.9.1 Critical Habitat

Critical habitat has been designated for Puget Sound Chinook salmon as of September 2005 (NOAA 2005a). PCEs include:

- Freshwater spawning sites with water quantity and quality conditions and substrate supporting spawning, incubation, and larval development.
- Freshwater rearing sites with water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility, water quality, and forage supporting juvenile development and natural covers such as shade, submerged and

overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

- Freshwater migration corridors free of obstruction and excessive predation with water quantity and quality conditions, and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.
- Estuarine areas free of obstruction and excessive predation.
- Nearshore marine areas free of obstruction and excessive predation.
- Offshore marine areas with water quality conditions and forage, including aquatic invertebrates and fishes, supporting growth and maturation.

Critical habitat has been designated for Puget Sound Chinook salmon in nearshore marine areas, which include those areas contiguous with the shoreline from the line of extreme high water out to a depth no greater than 30 meters relative to MLLW (NOAA 2005a).

In nearshore marine areas, PCEs include areas free of obstruction and excessive predation with water quality and quantity conditions for forage, including aquatic invertebrates and fishes, supporting growth and maturation and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels. In estuarine areas, PCEs include areas free of obstruction and excessive predation with water quality, water quantity, and salinity conditions supporting juvenile and adult physiological transitions between fresh and salt water; natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, and side channels; and juvenile and adult forage, including aquatic invertebrates and fishes, supporting growth and maturation. Puget Sound is listed as a critical habitat for Puget Sound Chinook salmon and PCEs specific to areas free of obstruction, water quality, and forage in estuarine and nearshore marine areas exist within the action area.

5.10 Puget Sound Steelhead Trout

The Puget Sound steelhead trout DPS includes all naturally spawned anadromous *O. mykiss* populations. The populations come from streams in the river basins of the Strait of Juan de Fuca, Puget Sound, and Hood Canal, Washington. They are bounded to the west by the Elwha River (inclusive) and to the north by the Nooksack River and Dakota Creek (inclusive), as well as the Green River natural and Hamma River winter-run steelhead hatchery stocks (NOAA Fisheries 2007).

Because the action area includes Puget Sound estuarine habitat, it is likely that juvenile and adult steelhead will pass through or use the action area at certain times of the year. Any adult steelhead found in the action area would likely migrate to spawning grounds and would not linger in nearshore areas. Therefore, adult steelhead presence, if any, would most likely be brief.

Emigration for steelhead smolts in Washington State typically occurs from April to June, with peak emigration occurring in mid-April (Wydoski and Whitney 2003). Once they have emigrated from

freshwater, juvenile steelhead further mature in estuarine and marine waters. Due to the longer maturation time spent in freshwater (2 to 3 years), steelhead smolts are larger fish up to 10 inches in length (Wydoski and Whitney 2003) and generally use deeper offshore waters in search of prey items. Therefore, the presence of steelhead smolts in the nearshore underwater component of the Project action area is likely.

5.10.1 Critical Habitat

Critical habitat has been designated for Puget Sound steelhead, effective February 2016 (NOAA 2016), but does not occur in the action area.

6.0 ENVIRONMENTAL CONDITIONS

The environmental baseline was taken from observations made during a site visit by an LAI biologist on December 11, 2020, and from publicly available data sources. Habitat features important for juvenile and adult salmonids are described in the Federal Register (50 CFR 226) and include adequate substrate, water quality, water quantity, water temperature, water velocity/circulation, cover/shelter (refuge), food, riparian vegetation, and safe passage conditions. This BE addresses only those features relevant to the Project's location and proposed actions, which are limited to adequate substrate, water quality, cover/shelter (refuge), riparian vegetation, and safe passage. This Project will not affect water quantity, water temperature, water velocity/circulation; as such, these parameters are not discussed further.

6.1 Substrate (Sediment Quality)

Substrate in the aquatic component of the action area includes existing riprap along the shoreline and cobble, sand, and gravel extending from the toe of the riprap.

The East Waterway in the Project vicinity is on the 303d list for sediment bioassay (Ecology 2016). The in-water area of the Project is within the East Waterway and is being addressed under a separate Agreed Order (referred to as the East Waterway MTCA Site). Various environmental investigations at the East Waterway Site conducted from the 1980s to 2013 found marine sediments contaminated with metals (arsenic, mercury, zinc, copper, lead), polycyclic aromatic hydrocarbons, semivolatile organic compounds, total polychlorinated biphenyls, and dioxins/furans.

6.2 Water Quality

Although large volumes of contaminated upland soil have been removed as part of the 1st and 2nd interim actions, low-level soil and groundwater contamination will remain at the Site, and will be contained by this Project (i.e., the 3rd interim action), and the final cleanup action selected by Ecology. Residual contamination will consist primarily of heavy metals and petroleum hydrocarbons. Stormwater currently infiltrates into pervious surfaces at the Site and has potential for discharge through contaminated groundwater to the East Waterway. No treatment of Site stormwater runoff currently exists.

6.3 Cover/Shelter

The action area does not provide areas of natural cover/shelter. The existing shoreline is armored with riprap and bulkheads with limited riparian vegetation dominated by invasive species (see Section 6.5 below). Existing in-water structures in the action area include docks and a wharf associated with previous land uses at the Site.

6.4 Food

Prey species of listed aquatic species are discussed below and include epibenthic invertebrates and forage fish.

6.4.1 Prey-Epibenthic Invertebrates

Juvenile Chinook salmon and steelhead trout primarily feed on epibenthic prey, including zooplankton, such as gammarid amphipods, calanoid copepods, and mysids, as well as larval fish, and aquatic and terrestrial insects. In salt water, a juvenile Chinook salmon's diet consists of mostly epibenthic crustaceans (e.g., mysids) when feeding at night and pelagic crustaceans (e.g., calanoid copepods) when feeding during the day (Meyer, et al. 1981).

Juvenile salmonid epibenthic prey is primarily associated with fine-grained sediment and aquatic vegetation (e.g., eelgrass and algae). Because the Project area consists of gravel substrate and lacks aquatic vegetation, the presence of epibenthic zooplankton is anticipated to be minimal.

6.4.2 Prey Fish

Fish species likely to be present in the action area may include starry flounder (*Platichthys stellatus*), shiner perch (*Cymatogaster aggregata*), striped sea perch (*Embiotoca lateralis*), pile perch (*Rhacochilus vacca*), Pacific staghorn sculpin (*Leptocottus armatus*), rockfish (multiple species, exclusive of yelloweye and bocaccio), and forage fish such as Pacific herring (*Clupea pallasi*), Pacific sand lance (*Ammodytes hexapterus*), and surf smelt (*Hypomesus pretiosus*). Forage fish are typically open-water pelagic species, although they may be found intertidally during their spawning season (September to April); intertidal spawning habitat is not identified for forage fish within the Project area on the WDFW PHS database (WDFW 2020).

6.5 Riparian Vegetation

During the site visit, the existing shoreline was observed to be armored with riprap with limited riparian vegetation. North of the existing wharf (see Appendix A), a narrow strip of scrub-shrub vegetation occurs, with few trees interspersed, that includes butterfly bush (*Buddleja davidii*). Himalayan blackberry (*Rubus armeniacus*), Scotch broom (*Cytisus scoparius*), Douglas spirea (*Spirea douglasii*), Oregon grape (*Mahonia aquifolium*), snowberry (*Symphoricarpos albus*), dogwood (*Cornus* sp.), English ivy (*Hedera helix*), soft rush (*Juncus effuses*), western red cedar (*Thuja plicata*), vine maple (*Acer circinatum*), cottonwood (*Populus trichocarpa*), salal (*Gaultheria shallon*), and rose (*Rosa* sp.). The area appears to be unmaintained landscaping adjacent to a sidewalk associated with previous land use. The native species are interspersed with invasive species, which are generally dominant in the area. Trees in this area with growth beyond the sapling stage is limited to two western red cedar.

South of the existing wharf, a limited extent of opportunistic species have adapted to disturbed areas (i.e., weeds/scrub vegetation). Vegetation was observed growing in disturbed areas, including impervious surfaces (e.g., cracked asphalt in parking areas associated with previous land uses and abandoned wharf), fill soils (i.e., gravel), and the top of the bulkhead. Vegetation observed included, but are not limited to, butterfly bush, cottonwood, alder, big-leaf maple, and grasses. Trees in this area with growth beyond the sapling stage is limited to one big-leaf maple.

Tree species growing on the Site are generally small-diameter saplings, with the exception of a big-leaf maple at the south end of the Site and two western red cedar in the former landscaped area north of the wharf, which are approaching maturity. A limited growing space is available for these trees, which is limited by adjacent impervious surfaces and shoreline revetment, and limited opportunity for overhanging large wood.

See Appendix E for photographs of the existing conditions.

6.6 Safe Passage

Fish have access to, and may seek refuge in, the action area. Based on observations made during the site visit, the Project area does not have any major barriers to fish movement. Existing in-water structures in the action area include docks and wharfs associated with previous land uses at the Site, and similar structures on adjacent properties.

7.0 EFFECTS OF THE ACTION

LAI anticipates no direct or indirect effects on terrestrial species or any of their listed critical habitat, as neither occur within the action area. Potential direct and indirect effects on aquatic species and their listed critical habitat because of the Project are detailed below.

7.1 Direct Effects

The Port is proposing a 3rd interim action, which will, in part improve groundwater quality prior to its discharge to surface water, replace two stormwater outfalls, and add stormwater treatment infrastructure. Direct effects associated with the Project include activities during construction of the outfall and improvements to the habitat in the nearshore zone of Puget Sound, and impacts to water quality from the completed Project.

Construction of Outfalls A and M will include excavation and fill below the OHWM/HTL but will result in a balance of cut/fill area and volume. LAI's evaluation of direct effects to water quality, substrate, and riparian vegetation is provided below.

7.1.1 Water Quality

Temporary water quality impacts associated with turbidity may occur from excavations as tides rise during construction. Erosion will be controlled by implementing the temporary erosion and sediment control plan and work below the HTL/OHWM will occur in the dry during low tides. Work that cannot be completed in a single tide cycle shall be temporarily covered and stabilized with gravel, geotextile, or other approved methods prior to tidal submersion. Turbidity is expected to be minimal with work conducted in the dry and fine-grained soils being stabilized prior to tidal inundation. While turbidity associated with construction activities is not anticipated to be significant, increases in turbidity may have potential effects on listed fish, if present in the action area during construction. Potential effects would occur in the short term and would be brief during construction.

Stormwater management is an integral part of the 3rd interim action to reduce surface water infiltration to groundwater and improve groundwater quality prior to its discharge to surface water. Although large volumes of contaminated upland soil have been removed as part of the 1st and 2nd interim actions (by others), low-level soil and groundwater contamination will remain at the MTCA Site, and will be contained, in part, by the 3rd interim action. Residual contamination will consist primarily of heavy metals and petroleum hydrocarbons. Surface water (precipitation) currently infiltrates through residual soil contamination that could be mobilized into groundwater. Reducing stormwater infiltration to groundwater by paving the terminal will improve groundwater quality prior to discharge to the East Waterway.

Water quality treatment of stormwater runoff from the completed Project will be provided by a CESF system (Outfall M basin) and a media-filled, filter cartridge system (Outfall A basin). These systems will improve the quality of stormwater discharge from the Site, which is currently untreated, and has

the potential to carry upland contamination to the East Waterway. The CESF system is designed to remove a wide range of heavy metal influent concentrations, including zinc and copper, as well as total suspended solids. The current adverse sub-lethal effect threshold in salmonids for dissolved zinc is 5.6 micrograms per liter (µg/L) over background zinc concentrations between 3.0 µg/L and 13 µg/L (Sprague 1968 in WSDOT 2020), and the adverse sub-lethal effect threshold in salmonids for dissolved copper is 2.0 µg/L over background levels of 3.0 µg/L or less (Sandahl, et al. 2007, as cited in WSDOT 2020). While dissolved copper and zinc impacts in the East Waterway have not been fully characterized, metals are suspected to be above cleanup levels in surface water and are considered "suspected" contaminants by Ecology (Ecology 2020).

Concentrations of 6PPD-quinone, a derivative of an antioxidant added to tires, has been determined to be lethal to coho salmon at concentrations of 0.8/–0.16 µg/L, and may have similar effect on other salmonid species (Tian, et al. 2020). In Seattle region roadway runoff, 6PPD-quinone was detected at concentrations between 0.8 and 19 µg/L, and between <0.3 and 3.2 µg/L in urban watersheds; 6PPD-quinone was not detected in pre- and post-storm samples (Tian, et al. 2020). These studies were based on evaluation of inland water bodies (i.e., river, streams, and lakes)and not the marine environment. Discharge of treated stormwater from the proposed Project is directly to marine waters.

The proposed CESF system will treat stormwater runoff from the Site. The terminal will support traffic but will not have the volume of traffic of an urban roadway. In general, the overall developed Site will be paved and used for long-term storage of heavy equipment and cargo for the Port. Norton Terminal anticipates, on average, 10 trucks per day. Based on the proposed operational use of this facility and minimal vehicle activity, expected pollutant loadings are anticipated to be much smaller for this Site than a typical urban watershed. Furthermore, the system will intercept runoff for treatment during storm events prior to discharge to the East Waterway.

As a result, it is anticipated that stormwater runoff discharged to the East Waterway from the Site will be below lethal and sub-lethal concentrations for salmonids.

7.1.2 Substrate

As part of the reconstruction of Outfalls A and M, energy dissipation at the end of the outfalls will extend beyond existing riprap into cobble, sand, and gravel extending from the toe of the riprap. These areas are part of the East Waterway site with known sediment contamination. Excavated material will be characterized and managed in coordination with Ecology MTCA program guidelines. The contaminated substrate will be replaced with clean quarry spall and riprap.

At Outfall A, approximately 120 square feet of existing substrate (i.e., cobble/sand/gravel) will be replaced with an energy dissipator pad (i.e., riprap) associated with the outfall below HTL (115 square feet below the OHWM).

At Outfall M, approximately 160 square feet of existing substrate (i.e., sand/gravel) will be replaced with an energy dissipator pad (i.e., riprap) associated with the outfall below HTL (160 square feet below the OHWM), and approximately 260 square feet (215 square feet below the OHWM) of existing riprap will be replaced as part of outfall construction.

7.1.3 Riparian Vegetation

The Site has minimal native riparian vegetation, and vegetation along the shoreline will be removed as part of the 3rd interim action to assist in placing a cap on MTCA Site contamination. Vegetation is generally limited to invasive/non-native species located behind existing shoreline revetments (i.e., riprap) and bulkheads at the Site.

7.2 Indirect Effects

Indirect effects are those impacts that are caused by or result from the proposed action and occur later in time but are still reasonably certain to occur. Three types of indirect effects are analyzed in this section:

1. Changes to ecological systems resulting in altered predator/prey relationships
2. Changes to ecological systems resulting in long-term habitat alteration
3. Anticipated changes in human activities, including changes in land use.

7.2.1 Predator/Prey Relationships

Forage fish are small, schooling fishes that are key prey items for larger predatory fish, including salmonids, in marine habitats (Penttila 2007). In Puget Sound, forage fish species, including Pacific herring, surf smelt, and Pacific sand lance, occupy every marine and estuarine nearshore habitat. Forage fish use nearshore habitats for spawning and as nursery grounds for rearing juveniles. No documented forage fish spawning areas are identified in the action area (WDFW 2020). The potential temporary Project-related turbidity effects during construction and long-term effects to forage fish populations will be insignificant. As such, listed salmonids will not be adversely affected by Project effects to forage fish populations.

Larval rockfish feed on diatoms, dinoflagellates, tintinnids, and cladocerans, and juveniles consume copepods and euphausiids of all life stages (NOAA 2010). Adult rockfish eat demersal invertebrates and small fishes, including other species of rockfish, associated with kelp beds, rocky reefs, pinnacles, and sharp drop-offs. Long-term impacts to populations of rockfish prey species resulting from the proposed Project are expected to be insignificant since their prey occupy a wide geographic range of habitats within Puget Sound and are generally absent from the action area.

Marbled murrelet prey items include invertebrates, including euphausiids, mysids, and amphipods, and small schooling fishes, such as sand lance, anchovy, herring, osmerids, and seaperch (US Department of Agriculture; USDA 1995). The fish portion of the diet appears to be most important in

the summer and coincides with the nestling and fledgling period. The proposed Project is not expected to result in long-term impacts to murrelet prey populations since their prey items occupy a wide geographic range of habitats throughout Puget Sound.

Humpback whales are known to feed on small crustaceans (i.e., krill), copepods, and small fishes (Animal Diversity Web 2018). Populations of these prey items are not expected to be impacted in the long term as a result of Project activities.

Southern Resident killer whales depend primarily on salmonid prey items, especially Chinook salmon, within the greater Puget Sound area (Ford, et al. 1998). The proposed Project is not expected to have long-term impacts to salmonid populations and, therefore, would not adversely affect Southern Resident killer whale populations within greater Puget Sound.

7.2.2 Long-Term Habitat Alteration

The proposed Project will result in removal of approximately 53 cubic yards of contaminated sediment covering approximately 280 square feet in the East Waterway that will be replaced with riprap/quarry spall associated with the proposed outfalls. While relatively small in area relative to the East Waterway, this alteration may be beneficial for listed species and critical habitat from the removal of contaminated sediment.

7.2.3 Human Activities and Changes in Land Use

The purpose of the Project is redevelopment of an industrial site and will not result in changes in land use or increase the berthing capacity of the Port. Cargoes at the Site will be loaded and unloaded at the Port's existing facilities to the south.

7.3 Conservation Credit/Debit

NOAA Fisheries has developed the Puget Sound Nearshore Habitat Conservation Calculator to determine changes in habitat value in a common currency that represents habitat impacts as debits, and habitat improvements as credits. The calculator evaluates impacts/improvements associated with overwater structures, shoreline armoring, maintenance dredging, boat ramps/jetties, beach nourishment, and the riparian zone.

Within the evaluation criteria of the Puget Sound Nearshore Habitat Conservation Calculator, the proposed Project includes shoreline armoring and riparian zone impacts. Shoreline armoring is limited to replacement of existing riprap, installation of riprap energy dissipation pads associated with Outfalls A and M, and removal of riparian vegetation adjacent to the shoreline.

The Port understands that NOAA Fisheries expects to expand use of the calculator as part of ESA consultation, the calculator may be updated on a quarterly basis, and that conservation calculations submitted by Project proponents to the federal action agency (the US Maritime Administration) for

the purpose of ESA consultations that are older than 30 days (from the date of application submittal) may require an updated calculation at the time of consultation.

Furthermore, the Port understands that NOAA Fisheries is working with Puget Sound ports to optimize application of the calculator for port-specific infrastructure, and that the current calculator version may not be applicable to some port structures. This Project is related to port infrastructure and the current version of the Puget Sound Nearshore Habitat Conservation Calculator does not account for all aspects of this proposed Project including those that are beneficial, such as potential water quality improvements of discharge from the Site to the East Waterway and removal of potentially contaminated sediments associated with Outfalls A and M. Therefore, a summary of debit/credits is not provided.

8.0 EFFECT DETERMINATION

This section summarizes the effect determinations for the federally listed species and/or critical habitat potentially present within the action area. Effect determinations are summarized in Table 2.

Table 2: Effect Determination Summary

Species/Critical Habitat	Effect Determination
Coastal-Puget Sound bull trout	NLAA
Critical habitat	NLAA
Marbled murrelet	NE
Critical habitat	NE
Humpback whale	NE
Southern resident killer whale	NE
Critical habitat	NLAA
Bocaccio	NE
Critical habitat	NE
Yelloweye rockfish	NE
Critical habitat	NE
Puget Sound Chinook salmon	NLAA
Critical habitat	NLAA
Puget Sound steelhead trout	NLAA
Critical habitat	NE

NLAA = Not Likely to Adversely Affect
NE = No Effect

8.1 Coastal-Puget Sound Bull Trout and Critical Habitat

Considering the information in this report, this Project **may affect** Coastal-Puget Sound bull trout because:

- The action area has suitable habitat for Coastal-Puget Sound bull trout.
- The Project includes construction activities in the nearshore zone of Puget Sound with:
  - Potential turbidity effects extending into adjacent nearshore habitat.
  - Replacement of two outfalls in areas of existing riprap-armored shoreline.
- The Project includes the addition of pollution-generating impervious surfaces with runoff that will discharge to Puget Sound.

However, this Project is **not likely to adversely affect** Coastal-Puget Sound bull trout because:

- BMPs will be used during construction to reduce Project impacts associated with turbidity on listed species.
- Potential impacts from turbidity will be localized and brief during construction.
- Project construction activities will be conducted during times (i.e., within the approved in-water work window) and in the dry during low tidal cycles that minimize the potential for overlap with use of nearshore habitat by Coastal-Puget Sound bull trout within the action area.
- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

The Project **may affect** Coastal-Puget Sound bull trout critical habitat because:

- The action area has designated bull trout critical habitat.
- The Project includes construction activities in the nearshore zone of Puget Sound associated with the replacement of two outfalls in an area of existing riprap-armored shoreline.
- The Project includes removal of shoreline vegetation.
- The Project includes the addition of pollution-generating impervious surfaces with stormwater runoff that will discharge to Puget Sound.

Therefore, the Project has the potential to impact PCEs associated with marine areas including complex shoreline environments (i.e., large wood, unembedded substrates) and water quality (the Project does not include elements that impact other marine PCEs, including migration habitats, abundant food base, water temperature, and water quantity). However, this Project is **not likely to adversely affect** Coastal-Puget Sound bull trout critical habitat because:

- Shoreline vegetation to be removed is dominated by scrub-shrub vegetation consisting of invasive and opportunistic species and few native trees (one big-leaf maple and two western red cedars) that do not provide a significant contribution of large wood to the adjacent aquatic environment.
- Existing substrate (i.e., sand/gravel/cobble) at the toe of the existing riprap slope will be converted to a riprap energy dissipation pad at each of the two relocated outfalls but will be confined to relatively small areas (120 square feet associated with Outfall A and 160 square feet associated with Outfall M), include removal of potentially contaminated sediments associated with the East Waterway, and is not anticipated to have significant impacts to substrate embeddedness or habitat structure.
- BMPs will be used during construction to reduce Project impacts on water quality.
- Potential impacts from turbidity and in-water noise will be localized and brief during construction.

- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

8.2 Marbled Murrelet and Critical Habitat

Considering the information referenced in this report, this Project will have **no effect** on marbled murrelet because:

- While the Project includes construction activities in the nearshore zone of Puget Sound, work in this area will occur in the dry during low tides, and marbled murrelet would not be present in the action area during those times.

The Project will have **no effect** on marbled murrelet critical habitat because the action area does not have designated marble murrelet critical habitat.

8.3 Humpback Whale

Considering the information referenced in this report, this Project will have **no effect** on humpback whale because:

- This species is not expected to occur within the action area of the proposed Project.

8.4 Southern Resident Killer Whale and Critical Habitat

Considering the information referenced in this report, this Project will have **no effect** on the Southern Resident killer whale because:

- The Project in-water work would not affect the Southern Resident killer whale's foraging activities.
- This species is not expected to occur within the action area of the proposed Project.

The Project **may affect** Southern Resident killer whale critical habitat because:

- The action area has designated Southern Resident killer whale critical habitat.
- The Project includes construction activities in the nearshore zone of Puget Sound associated with the replacement of two outfalls in an area of existing riprap-armored shoreline.
- The Project includes the addition of pollution-generating impervious surfaces with stormwater runoff that will discharge to Puget Sound.

Therefore, the Project has the potential to impact PCEs associated with marine areas including water quality to support growth and development and prey species of sufficient quantity, quality, and availability to support individual growth. However, this Project is **not likely to adversely affect** Southern Resident killer whale critical habitat because:

- BMPs will be used during construction to reduce Project impacts on water quality.

- Potential impacts from turbidity and in-water noise will be localized and brief during construction.
- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure is anticipated to improve the quality of runoff discharge to the East Waterway from the Site, and will not adversely affect prey species (i.e., Chinook salmon).

8.5 Yelloweye Rockfish, Bocaccio, and Critical Habitat

Considering the information referenced in this report, this Project will have **no effect** on yelloweye rockfish and bocaccio because:

- These species are not expected to occur within the action area of the proposed Project.

The Project will have **no effect** on yelloweye rockfish and bocaccio critical habitat because designated critical habitat does not occur in the action area.

8.6 Puget Sound Chinook Salmon and Critical Habitat

Considering the information referenced in this report, this Project **may affect** Puget Sound Chinook salmon because:

- The action area has suitable habitat for Puget Sound Chinook salmon.
- The Project includes construction activities in the nearshore zone of Puget Sound with:
  - Potential turbidity effects extending into adjacent nearshore habitat.
  - Replacement of two outfalls in areas of existing riprap-armored shoreline.
- The Project includes the addition of pollution-generating impervious surfaces with stormwater runoff that will discharge to Puget Sound.

However, this Project is **not likely to adversely affect** Puget Sound Chinook salmon because:

- BMPs will be used during construction to reduce Project impacts associated with turbidity on listed species.
- Potential impacts from turbidity will be localized and brief during construction.
- Project construction activities will be conducted during times (i.e., within the approved in-water work window) and in the dry during low tidal cycles that minimize the potential for overlap with use of nearshore habitat by Puget Sound Chinook salmon within the action area.
- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

The Project **may affect** Puget Sound Chinook salmon critical habitat because:

- The action area has designated Puget Sound Chinook salmon critical habitat.
- The Project includes construction activities in the nearshore zone of Puget Sound associated with the replacement of two outfalls in an area of existing riprap-armored shoreline.
- The Project includes removal of shoreline vegetation.
- The Project includes the addition of pollution-generating impervious surfaces with stormwater runoff that will discharge to Puget Sound.

Therefore, the Project has the potential to impact PCEs related to nearshore marine areas including water quality and natural cover (the Project does not include elements that impact other marine PCEs, including obstructions and excessive predation).

However, this Project is **not likely to adversely affect** Puget Sound Chinook salmon critical habitat because:

- Shoreline vegetation to be removed is dominated by scrub-shrub vegetation consisting of invasive and opportunistic species and few native trees (one big-leaf maple and two western red cedars) that do not provide a significant contribution of large wood to the adjacent aquatic environment.
- Existing substrate (i.e., sand/gravel/cobble) at the toe of the existing riprap slope will be converted to a riprap energy dissipation pad at each of the two relocated outfalls, but will be confined to relatively small areas (120 square feet associated with Outfall A and 160 square feet associated with Outfall M), include removal of potentially contaminated sediments associated with the East Waterway, and is not anticipated to have significant impacts to habitat structure (i.e., cover).
- BMPs will be used during construction to reduce Project impacts on water quality.
- Potential impacts from turbidity and in-water noise will be localized and brief during construction.
- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

8.7 Puget Sound Steelhead Trout and Critical Habitat

Considering the information referenced in this report, this Project **may affect** Puget Sound steelhead trout because:

- The action area has suitable habitat for Puget Sound steelhead.
- The Project includes construction activities in the nearshore zone of Puget Sound with:
  - Potential turbidity effects extending into adjacent nearshore habitat.
  - Replacement of two outfalls in areas of existing riprap-armored shoreline.

- The Project includes the addition of pollution-generating impervious surfaces with stormwater runoff that will discharge to Puget Sound.

However, this Project is **not likely to adversely affect** Puget Sound steelhead because:

- BMPs will be used during construction to reduce Project impacts associated with turbidity on listed species.
- Potential impacts from turbidity will be localized and brief during construction.
- Project construction activities will be conducted during times (i.e., within the approved in-water work window) and in the dry during low tidal cycles that minimize the potential for overlap with use of nearshore habitat by Puget Sound steelhead trout within the action area.
- The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

The Project will have **no effect** on Puget Sound steelhead critical habitat because the action area does not have designated Puget Sound steelhead critical habitat.

9.0 ESSENTIAL FISH HABITAT EVALUATION

NOAA Fisheries is federally mandated under the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267), to identify EFH for all federally managed marine fish. The Magnuson-Stevens Act also mandates that all federal agencies must consult with NOAA Fisheries regarding activities proposed or authorized, funded, or undertaken by the agency that may result in an adverse effect on EFH. The Pacific Fisheries Management Council (PFMC) has designated EFH for the Pacific salmon fishery, federally managed groundfish, and coastal pelagic fisheries (PFMC 1999). The objective of the EFH assessment is to describe potential adverse effects on designated EFH for federally managed fisheries species within the proposed action area. It also describes conservation measures that could be taken to avoid, minimize, or otherwise offset potential adverse effects to designated EFH resulting from the proposed action.

9.1 Project Description

The Port is proposing the MIE action at the former K-C Site integrated with an interim action to meet the MTCA cleanup requirements for the Site. The Project combines cleanup and redevelopment actions to accommodate a marine cargo terminal. The Port's goal is to put the brownfield site back into economic use as quickly as possible after K-C's 2nd interim cleanup action. The intent of the 3rd interim action is to achieve the following goals:

- Expedite cleanup of the MTCA Site
- Reduce surface water infiltration through residual soil contamination that could be mobilized into groundwater by surface water infiltration
- Prevent wildlife exposure to residual soil contamination
- Integrate Site infrastructure improvements and cleanup elements to ensure consistency with future Site use and for long-term protection of human health and the environment.

The Project will include upland Site grading/paving; longshoreman facility; utilities, including modification of two existing stormwater outfalls in the East Waterway; lighting; security improvements; cargo gateway; and landscaping.

The Pacific salmon fishery management unit includes Chinook salmon, coho salmon (*O. kisutch*), and pink salmon (*O. gorbuscha*). Pacific salmon fishery-designated EFH includes all streams, lakes, ponds, wetlands, and other water bodies currently or historically accessible to salmon in Washington State, except above impassable barriers. Estuarine and marine areas extend from the nearshore and tidal submerged environments within Washington territorial waters to the full extent of the exclusive economic zone (PFMC 1999).

Chinook salmon have been discussed in previous sections of this BE. Coho salmon spawn in smaller tributaries, with juvenile salmon staying in their freshwater habitat up to 18 months before migrating to the ocean. Pink salmon enter estuarine environments soon after emerging from gravel and, thus,

are much younger than coho or Chinook salmon when they reach this marine environment. A detailed life history for these salmon species can be found in Page and Burr (1991). Juvenile salmon en route to ocean waters use the shallow subtidal areas of estuaries as nurseries to acclimate to the marine environment and prepare for their ocean life stage.

Groundfish, which include 83 species in the west coastal management unit, live on or near the bottom of the ocean. This unit includes skates and sharks, rockfish (55 species), flatfish (12 species), and groundfish such as lingcod (*Ophiodon elongatus*), cabezon (*Scorpaenichthys marmoratus*), and brown rockfish (*Sebastes auriculatus*). Coastal pelagics are schooling species not associated with the ocean bottom; they migrate in coastal waters. Pelagics include market squid (*Loligo opalescens*), Pacific sardine (*Sardinops sagax caerulea*), Pacific chub (*Scomber japonicus*), northern anchovy (*Engraulis mordax*), and jack mackerel (*Trachurus symmetricus*).

The EFH for groundfish and coastal pelagics is defined as those waters and substrate necessary to ensure the production needed to support a long-term sustainable fishery. The extent of EFH for these species includes those waters from the nearshore and tidal submerged environment within Washington State territorial waters to the limits of the Exclusive Economic Zone (200 miles off the Pacific Coast; PFMC 1999). Pacific groundfish species are unlikely to be found in significant numbers in the Project area, given the habitat limitations from the altered estuarine nearshore environment and disturbance from sport and commercial in-water activities. However, some groundfish species may occasionally forage or rear in the subtidal areas near the Project area. Groundfish EFH species most likely to be found in the vicinity of the Project area include starry flounder (*Platichthys stellatus*), English sole (*Parophrys vetulus*), and ratfish (*Hydrolagus colliei*), most commonly associated with subtidal sand and sandy gravel substrates.

9.2 Potential Effects of the Proposed Project

Water quality effects during construction will be localized and brief and are subject to mixing zones anticipated to extend 200 ft from construction activities in the nearshore zone. The Port is proposing a 3rd interim action, which will, in part, improve groundwater quality prior to its discharge to surface water, replace two stormwater outfalls, and add stormwater treatment infrastructure. The Site has historically been 100 percent impervious surface until demolition and cleanup of the former K-C mill. The redevelopment will re-establish the impervious surface that existed previously, and the 3rd interim action and proposed stormwater treatment infrastructure are anticipated to improve the quality of runoff discharge to the East Waterway from the Site.

It is anticipated that stormwater runoff discharged to the East Waterway from the Site will be below lethal and sub-lethal concentrations for salmonids (see Section 7.1.1). Furthermore, proposed outfall improvements will include, in part, the removal of potentially contaminated sediments that will be replaced with riprap energy dissipation pads. Therefore, the proposed Project will have no permanent adverse effects on Pacific salmon, groundfish, or coastal pelagic EFH.

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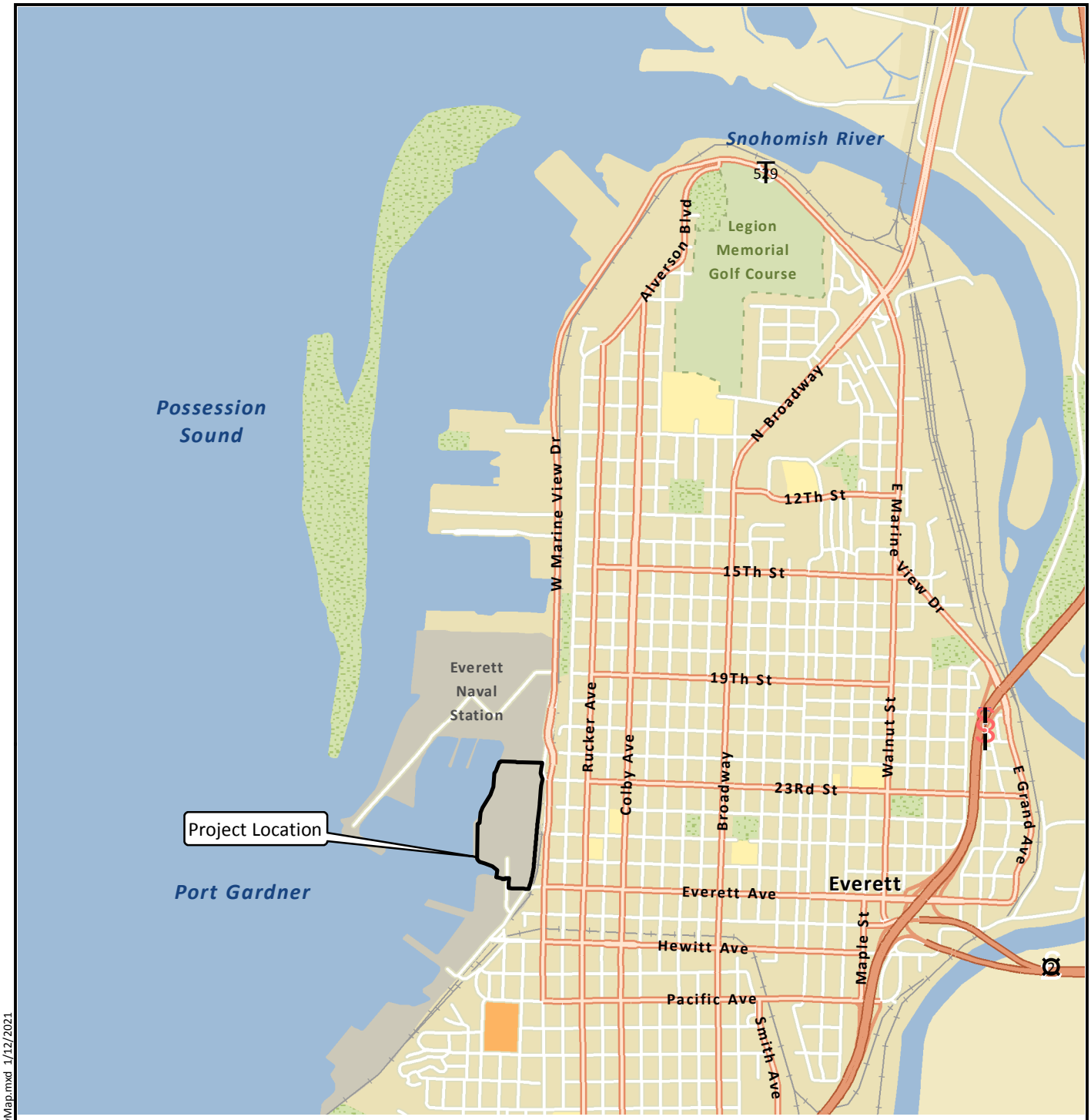

Port of Everett

Data Source: Esri.

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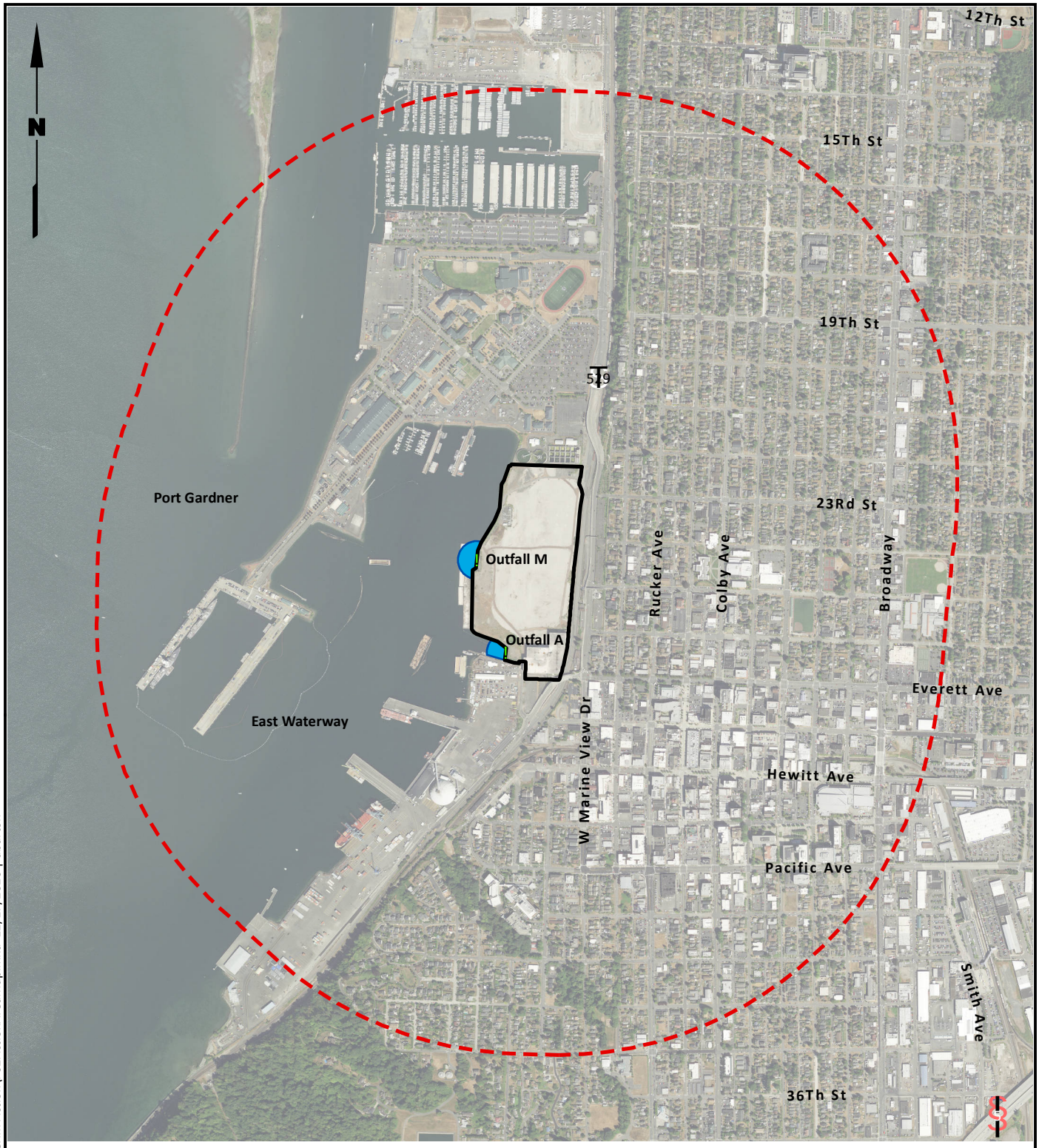
LANDAU ASSOCIATES

MTCA Interim Action and Marine Industrial Expansion Port of Everett Everett, Washington	**Vicinity Map**	Figure 1



Legend

- Outfall
- Project Area
- Aquatic Component of the Action Area
- Terrestrial Component of the Action Area

Data Source: Snohomish County GIS.

Note

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

0 1,500 3,000

Scale in Feet

Port of Everett

Landau Associates

MTCA Interim Action and Marine Industrial Expansion Port of Everett Everett, Washington	**Action Area Map**	Figure 2

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APPENDIX A

Draft Conceptual Project Plans

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL - 60% DESIGN

Port of EVERETT

GRANT INFORMATION:

MARAD FYXXXX
BUILD GRANT
XXXXXXXXXXXXX

COMMISSIONERS:

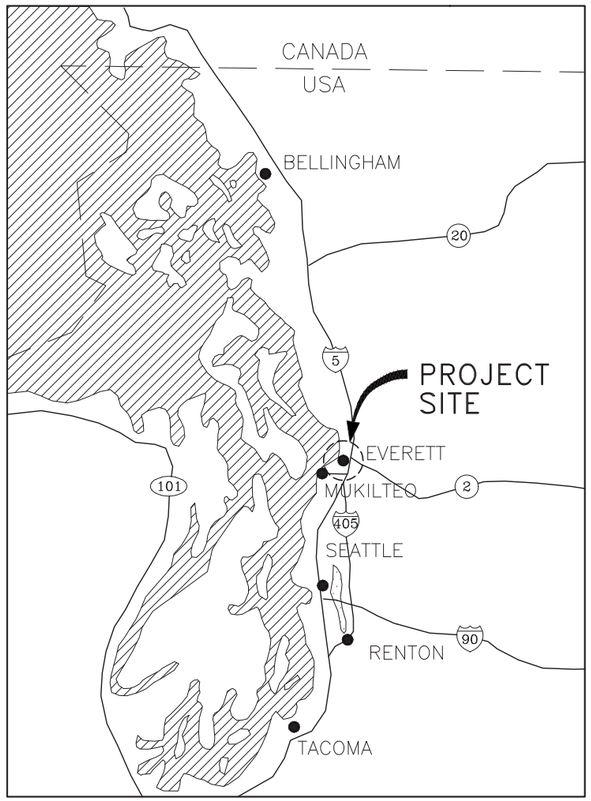
TOM STIGER
GLEN BACHMAN
DAVID SIMPSON

PORT STAFF:

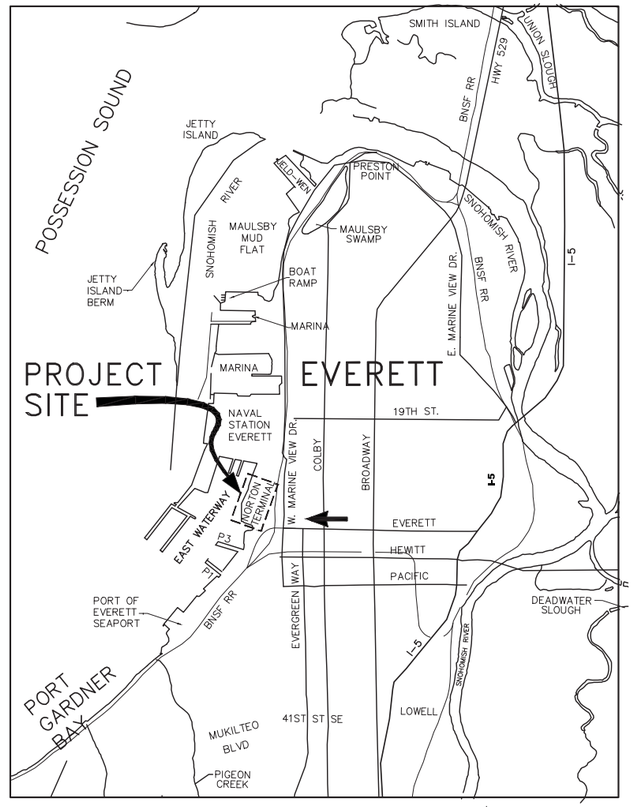
LISA LEFEBER	CEO/EXECUTIVE DIRECTOR
CARL WOLLEBEK	CHIEF OPERATIONS OFFICER
WALTER SEIDL	MARINE TERMINALS DIRECTOR
JOHN KLEKOTKA, PE, SE	CHIEF OF ENGINEERING & PLANNING
STEPHEN HAGER	PROJECT MANAGER

CONSULTING ENGINEERS:

KPFF CONSULTING ENGINEERS	CIVIL/STRUCTURAL
LANDAU ASSOCIATES	ENVIRONMENTAL/GEOTECHNICAL
ELCON ASSOCIATES	ELECTRICAL



LOCATION MAP
SCALE: NTS



VICINITY MAP
SCALE: NTS

60% SUBMITTAL
IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
TITLE SHEET AND LOCATION PLAN

DWG. NO. **G1.0**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX

DRAWING INDEX

SHEET NO.	DWG NO.	REV NO.	DRAWING TITLE
		CIVIL	
X	G1.0		TITLE SHEET AND LOCATION PLAN
X	G1.1		SHEET INDEX AND ABBREVIATIONS
X	G1.2		GENERAL NOTES, LEGEND AND UTILITY STRUCTURE LOADING
X	G1.3		EXISTING CONDITION AND DEMOLITION SITE PLAN
X	G1.4		FORMER BUILDING FOUNDATION PLAN
X	C1.1		TEMPORARY EROSION AND SEDIMENT CONTROL PLAN
X	C2.1		OVERALL SITE PLAN AND HORIZONTAL CONTROL
X	C2.2		NORTH AND SOUTH GATE DETAIL PLANS
X	C2.3		WASH PAD PLAN AND DETAILS
X	C2.4		CONTAINMENT AREA PLAN AND DETAILS
X	C2.5		LOAD RESTRICTION ZONE SITE PLAN
X	C3.1		PAVING OVERALL PLAN
X	C3.2		PAVING DETAILS
X	C3.3		GRADING OVERALL PLAN
X	C3.4		GRADING DETAIL PLAN
X	C3.5		GRADING DETAIL PLAN
X	C3.6		GRADING DETAIL PLAN
X	C3.7		GRADING DETAIL PLAN
X	C3.8		GRADING DETAIL PLAN
X	C3.9		GRADING DETAIL PLAN
X	C3.10		GRADING DETAIL PLAN
X	C3.11		SITE SECTIONS
X	C3.12		SITE SECTIONS
X	C4.1		STORMWATER OVERALL PLAN
X	C4.2		STORMWATER DETAIL PLAN
X	C4.3		STORMWATER DETAIL PLAN
X	C4.4		STORMWATER DETAIL PLAN
X	C4.5		STORMWATER DETAIL PLAN
X	C4.6		STORMWATER DETAIL PLAN
X	C4.7		STORMWATER DETAIL PLAN
X	C4.8		STORMWATER DETAIL PLAN
X	C4.9		ENLARGED PLAN STORMWATER TREATMENT SYSTEM
X	C4.10		STORMWATER PROFILES
X	C4.11		STORMWATER DETAILS
X	C4.12		STORMWATER DETAILS
X	C4.13		STORMWATER DETAILS
X	C4.14		STORMWATER DETAILS
X	C5.1		WATER AND SEWER PLAN
X	C5.2		WATER AND SEWER PLAN
X	C5.3		WATER AND SEWER DETAILS
X	C6.1		FENCE AND GATES OVERALL PLAN
X	C6.2		FENCE AND GATES DETAIL PLAN
X	C6.3		FENCE AND GATES DETAIL PLAN
X	C6.4		FENCE AND GATES DETAILS
X	C6.5		FENCE AND GATES DETAILS
X	C6.6		FENCE AND GATES DETAILS
		STRUCTURAL	
X	S1.1		HIGH MAST LIGHT FOUNDATION DETAILS
X	S1.2		HIGH MAST LIGHT FOUNDATION DETAILS

DRAWING INDEX

SHEET NO.	DWG NO.	REV NO.	DRAWING TITLE
		ELECTRICAL	
X	E0.01		LEGEND AND ABBREVIATIONS
X	E1.1		OVERALL SITE PLAN
X	E1.2		ELECTRICAL SITE PLAN (1 OF 2)
X	E1.3		ELECTRICAL SITE PLAN (2 OF 2)
X	E4.1		ENLARGED ELECTRICAL PLAN – MIDDLE OF YARD
X	E4.2		ENLARGED ELECTRICAL PLAN – MIDDLE OF YARD GROUNDING
X	E4.3		ENLARGED ELECTRICAL PLAN – SOUTH GATE
X	E4.4		ENLARGED ELECTRICAL PLAN – WATERFRONT/BARGE RAMP
X	E5.1		ELECTRICAL DETAILS
X	E5.2		ELECTRICAL DETAILS
X	E6.1		ONE–LINE DIAGRAM

ABBREVIATIONS

A/C, ASPH	ASPHALT CONCRETE
ACP	ASPHALT CONCRETE PAVEMENT
AL	ALUMINUM
ALTA	AMERICAN LAND TITLE ASSOCIATION
APPROX	APPROXIMATE
BGS	BELOW GROUND SURFACE
BLDG	BUILDING
BMP	BEST MANAGEMENT PRACTICE
BOT	BOTTOM
BP	BURIED POWER
B/W	BETWEEN
CAP	CAPACITY
CB	CATCH BASIN
CEM	CEMENT
CESF	CHITOSAN ENHANCED SAND FILTER
CI	CAST IRON
CL	CENTERLINE
CLF	CHAIN LINK FENCE
CLR	CLEARANCE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
CONC	CONCRETE
CONN	CONNECTION
CONT	CONTINUOUS
CONT'D	CONTINUED
COE	CITY OF EVERETT
CP	CONCRETE PIPE
CRB	CRUSHED ROCK BASE
CSBC	CRUSHED SURFACING BASE COURSE
CSO	COMBINED SEWER OVERFLOW
CTR	CENTER
DEA	DAVID EVANS & ASSOCIATES
DEMO	DEMOLITION
DI	DUCTILE IRON
DIA, DIAM	DIAMETER
DS	DOWNSPOUT
DWG	DRAWING
DWO	DEEP WATER OUTFALL
ECD	ELECTRICAL CONDUIT
ED	ELECTRICAL DUCTBANK
EF	EACH FACE
EG	EXISTING GRADE
EHW	EXTREME HIGH WATER
EL, ELEV	ELEVATION
ELW	EXTREME LOW WATER
EM	ELECTRICAL METER
EOP	EDGE OF PAVEMENT
EV	ELECTRICAL VAULT
EX, EXIST	EXISTING
FH	FIRE HYDRANT
FL	FLOW LINE
FO	FIBER OPTIC
FT	FEET
G	GAS
GALV	GALVANIZED
GLO	GOVERNMENT LAND OFFICE
GS	GROUND SURFACE
GV	GATE VALVE
GVL	GRAVEL
HAZMAT	HAZARDOUS MATERIALS
HDPE	HIGH DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
HORIZ	HORIZONTAL
IE	INVERT ELEVATION
K–C	KIMBERLY–CLARK
KLF	KIPS PER LINEAL FOOT
LF	LINEAR FEET
LOC	LOCATION
LS	LANDSIDE
MAT'LS	MATERIALS
MH	MANHOLE
MHHW	MEAN HIGHER HIGH WATER
MHW	MEAN HIGH WATER
MIN	MINIMUM
MLLW	MEAN LOWER LOW WATER
MLW	MEAN LOW WATER
MSRC	MARINE SPILL RESPONSE CORPORATION
NT	NORTON TERMINAL
NTS	NOT TO SCALE
OC	ON CENTER
OHW	ORDINARY HIGH WATER
OPP	OPPOSITE
OWS	OIL/WATER SEPARATOR
P	POWER
PDA	PILE DRIVING ANALYSER
PP	POWER POLE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
REF	REFERENCE DIMENSION
REPL	REPLACE
REQ'D	REQUIRED
REV	REVISION
RD	ROAD
R.O.W.	RIGHT–OF–WAY
RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY
RW	RETAINING WALL
SCH	SCHEDULE
SD	STORM DRAIN
SDFM	STORM DRAIN FORCE MAIN
SDMH	STORM DRAIN MANHOLE
SF	STORM FILTER
SIM	SIMILAR
SNO PUD	SNOHOMISH COUNTY PUBLIC UTILITY DISTRICT
SS	SANITARY SEWER, STAINLESS STEEL
SSFM	SANITARY SEWER FORCE MAIN
SSMH	SANITARY SEWER MANHOLE
SSS	SIDE SANITARY SEWER
ST	STREET
STD	STANDARD
SYMM	SYMMETRIC
T	TELECOMMUNICATION UTILITY
T&B	TOP AND BOTTOM
TB	THRUST BLOCK
TD	TRENCH DRAIN
TYP	TYPICAL
U	UNKNOWN UTILITY
UGP	UNDERGROUND POWER
UNC	UNIFIED NATIONAL COARSE
UNO	UNLESS NOTED OTHERWISE
VERT	VERTICAL
VIF	VERIFY IN FIELD
W	WATER
WHS	WELDED HEADED STUD
W/	WITH
W/O	WITHOUT
WABO	WASHINGTON ASSOCIATION OF BUILDING OFFICIALS
WM	WATER MAIN
WS	WATERSIDE

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SHEET INDEX AND ABBREVIATIONS

DWG. NO. **G1.1**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX

GENERAL NOTES:

1. ALL CONSTRUCTION SHALL CONFORM TO THESE PLANS AND SPECIFICATIONS AND THE CURRENT VERSION OF THE CITY OF EVERETT STANDARDS.

2. CONTRACTOR SHALL VERIFY ALL LEVELS, DIMENSIONS, AND EXISTING CONDITIONS IN THE FIELD BEFORE PROCEEDING. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR FIELD CHANGES PRIOR TO INSTALLATION OR FABRICATION. IN CASE OF DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AND THE PLANS, THE CONTRACTOR SHALL OBTAIN DIRECTION FROM THE ENGINEER BEFORE PROCEEDING. DIMENSIONS AND CALLOUTS NOTED AS PLUS OR MINUS (±) OR (REF) INDICATE UNVERIFIED DIMENSIONS AND ARE APPROXIMATE. NOTIFY THE ENGINEER IMMEDIATELY OF CONFLICTS OR EXCESSIVE VARIATIONS FROM AS INDICATED. NOTED DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS – DO NOT SCALE THE PLANS.

3. ALL LOCATIONS OF EXISTING STRUCTURES AND UTILITIES SHOWN HEREIN HAVE BEEN OBTAINED FROM AVAILABLE RECORDS AND SHOULD, THEREFORE, BE CONSIDERED APPROXIMATE ONLY AND NOT NECESSARILY COMPLETE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INDEPENDENTLY VERIFY THE ACCURACY OF ALL UTILITY LOCATIONS SHOWN AND TO FURTHER DISCOVER AND AVOID OTHER UTILITIES NOT SHOWN HEREIN WHICH MAY BE AFFECTED BY THE IMPLEMENTATION OF THIS PLAN. THE CONTRACTOR SHALL POTHOLE OR OTHERWISE CONFIRM EXISTING CONDITIONS, SPECIFICALLY PIPE SIZES PRIOR TO CONSTRUCTION, AND BRING ANY CONFLICTS BETWEEN EXISTING CONDITIONS AND NEW WORK TO THE ENGINEER'S ATTENTION.

4. THE EXISTING SOUTH TERMINAL WHARF STRUCTURE AND SITE UTILITIES HAVE UNDERGONE NUMEROUS REPAIR AND UPGRADE PROJECTS SINCE THE TIME OF THE ORIGINAL CONSTRUCTION. THESE REPAIRS MAY NOT ALL BE REFLECTED IN THESE CONTRACT DOCUMENTS. REFERENCE DRAWINGS FOR THESE CONTRACTS ARE AVAILABLE FROM THE PORT OF EVERETT.

5. A COPY OF THE PLANS SHALL BE ON–SITE WHENEVER CONSTRUCTION IS IN PROGRESS. THROUGHOUT THE PROGRESS OF THE WORK OF THIS CONTRACT, THE CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL CHANGES IN THE CONTRACT DOCUMENTS. UPON THE COMPLETION OF THIS CONTRACT, THE CONTRACTOR SHALL PROVIDE ONE COMPLETE SET OF RECORD DOCUMENTS TO THE PORT OF EVERETT.

6. THE CONTRACTOR SHALL LOCATE ALL UTILITIES WITHIN THE PROJECT SITE PRIOR TO WORK. CONTRACTOR SHALL CONTACT 811 "CALL BEFORE YOU DIG" AND AN INDEPENDENT LOCATING SERVICE TO LOCATE ALL UTILITIES AT LEAST 48 HOURS PRIOR TO WORK.

7. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS OF EXISTING STRUCTURES AND OTHER FEATURES THAT MAY IMPACT THE WORK. CONTRACTOR SHALL BRING ANY CONFLICTS TO THE ENGINEER'S ATTENTION PRIOR TO BEGINNING AFFECTED WORK.

8. ANY DAMAGE TO EXISTING UTILITIES, OTHER FACILITIES OR EQUIPMENT DUE TO THE CONTRACTOR'S NEGLIGENCE, EXCEPT FOR ITEMS DESIGNATED FOR DEMOLITION, SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR AT HIS EXPENSE. THIS INCLUDES ITEMS OUTSIDE THE WORK AREA AND WITHIN THE PORT OF EVERETT PROPERTY THAT ARE DAMAGED BY CONSTRUCTION ACTIVITIES DURING EXECUTION OF THIS CONTRACT.

9. PRIOR TO LAYING PIPE, THE CONTRACTOR SHALL EXPOSE EXISTING WATER, STORM WATER AND SEWER PIPING AT CONNECTION POINTS TO VERIFY THAT FIELD CONDITIONS MATCH INFORMATION SHOWN ON THE PLANS, SPECIFICALLY THE LOCATION, ELEVATION, DIAMETER, AND MATERIAL OF EXISTING PIPE. CONTRACTOR SHALL CONTACT THE ENGINEER IF DISCREPANCIES ARE DISCOVERED.

10. ALL ACTIVATION AND DEACTIVATION OF UTILITIES SHALL BE COORDINATED WITH THE UTILITY AND THE PORT ENGINEER IN ADVANCE. PROVIDE A MINIMUM OF 3 DAYS ADVANCE WRITTEN NOTICE TO THE UTILITY AND PORT ENGINEER.

11. SHORING AND EXCAVATION SHALL BE IN ACCORDANCE WITH STATE AND FEDERAL REQUIREMENTS. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

12. THE CONTRACTOR SHALL KEEP ALL STREETS AND VEHICULAR TRAFFIC AREAS USED FOR THIS WORK CLEAN AT ALL TIMES, SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

13. CONTRACTOR IS RESPONSIBLE FOR ANY TRAFFIC CONTROLS REQUIRED DURING THE DURATION OF THIS PROJECT, PER CONTRACTOR'S OPERATION. ALL TRAFFIC CONTROL SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

14. CONTRACTOR SHALL BE AWARE OF FACILITY OPERATION REQUIREMENTS AND SHALL COORDINATE ACCESS TO THE SITE WITH THE ENGINEER. CONTRACTOR SHALL MAINTAIN TENANT ACCESS AT ALL TIMES AND SHALL NOT RESTRICT TENANT OPERATIONS WITHOUT APPROVAL OF THE ENGINEER.

15. THE CONTRACTOR SHALL PLACE CONSTRUCTION DEBRIS CONTROL DEVICES, BOOMS, TARPAULINS AND OTHER DEVICES AS NECESSARY TO PREVENT DEBRIS FROM ENTERING THE WATER, AND AIR BORNE MATERIALS FROM LEAVING THE IMMEDIATE VICINITY OF THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP OF ANY MATERIALS DEPOSITED OUTSIDE THE WORK AREA.

16. MAINTAIN UTILITY SERVICE TO EXISTING BUILDINGS, UTILITIES AND FIRE HYDRANTS DURING CONSTRUCTION UNLESS NOTED OTHERWISE OR APPROVED BY THE ENGINEER. INSTALL NEW UTILITY LINES TO POINTS OF CONNECTION TO EXISTING UTILITY LINE PRIOR TO DEMOLITION OF THE EXISTING LINES, UNLESS NOTED OTHERWISE. WATER SERVICE SHUTDOWNS WILL BE LIMITED TO 2 HOURS FOR EACH UTILITY CROSSOVER AND SHALL BE COORDINATED WITH THE ENGINEER. POWER AND COMMUNICATION SHUTDOWNS SHALL BE LIMITED AND SHALL BE COORDINATED WITH THE ENGINEER. SEE SPECIFICATIONS FOR FURTHER SHUTDOWN REQUIREMENTS.

17. CONTRACTOR–INITIATED CHANGES SHALL BE SUBMITTED IN WRITING TO THE PORT FOR APPROVAL PRIOR TO FABRICATION OR CONSTRUCTION. CHANGES SHOWN ON SHOP DRAWINGS ONLY WILL NOT SATISFY THIS REQUIREMENT.

18. THE CONTRACTOR SHALL TAKE NECESSARY MEASURES TO PREVENT INTERRUPTION OF OPERATIONS AND PROTECT ALL EXISTING SURFACES/STRUCTURES TO REMAIN AT THE FACILITY DURING CONSTRUCTION. DETAILS SHALL BE PRESENTED IN THE CONTRACTOR'S WORK PLAN.

19. PROJECT NORTH AS INDICATED ON THESE DRAWINGS IS FOR CONVERSATIONAL GENERAL DIRECTIONAL REFERENCE. BEARINGS NOTES ON DRAWINGS ARE RELATIVE TO TRUE NORTH.

20. CONTRACTOR SHALL BE RESPONSIBLE FOR ERECTION STABILITY AND TEMPORARY SUPPORT AS NECESSARY. DETAILED CONSTRUCTION PLANS SHALL BE PREPARED BY THE CONTRACTOR AND APPROVED BY THE PORT PRIOR TO MOBILIZATION.

21. SOUTH TERMINAL WHARF IS A SECURE PORT FACILITY. ALL PERSONNEL ACCESSING THE FACILITY SHALL HAVE CURRENT TWIC CARDS AND/OR ESCORT. SEE SPECIFICATIONS FOR ADDITIONAL SPECIAL ACCESS AND WORK ZONE REQUIREMENTS.

22. SOUTH TERMINAL WHARF IS ON THE WASHINGTON STATE DEPARTMENT OF ECOLOGY LIST OF CONTAMINATED SITES AND IS CURRENTLY IN THE MTCA CLEANUP PROCESS. REFER TO THE SOIL AND GROUNDWATER MANAGEMENT PLAN IN APPENDIX B OF THE SPECIFICATIONS FOR ADDITIONAL INFORMATION.

23. SEE DRAWING G3.1 FOR SURVEY CONTROL AND DATUM INFORMATION.

24. SEE ALSO STRUCTURAL GENERAL NOTES ON SHEETS S1.1–S1.3.

UNDERGROUND UTILITY STRUCTURES DESIGN LOADING CRITERIA

1. ALL UNDERGROUND AND AT GRADE STRUCTURES INCLUDING MANHOLES, CATCH BASINS, HAND HOLES, VAULTS, CLEANOUTS AND OTHER STRUCTURES, INCLUDING ALL RINGS, COVERS, HATCHES, GRATES AND OTHER FEATURES WHICH MAY APPLY, SHALL BE CONTRACTOR DESIGNED. ALL VAULTS EXCEPT FOR VAULTS PUDPV1, PUDPV2 AND PDV1 SHALL BE CONTRACTOR DESIGNED TO WITHSTAND LOADING CRITERIA FOR THE TAYLOR "BIG RED" THDC–976 CONTAINER HANDLER SHOWN ON SHEET S1.3. VAULTS PUDPV1, PUDPV2 AND PDV1 SHALL BE CONTRACTOR DESIGNED TO WITHSTAND LOADING CRITERIA FOR THE AASHTO HS 25 TRUCK SHOWN ON SHEET S1.3.

   LID CASTING AND FRAME SHALL BE 200 KIP PROOF TEST LOAD RATED PER AASHTO M306.

   CONTRACTOR SHALL SUBMIT STAMPED AND SIGNED SHOP DRAWINGS AND CALCULATIONS COMPLETED BY A WASHINGTON STATE REGISTERED STRUCTURAL ENGINEER FOR APPROVAL BY THE ENGINEER PRIOR TO FABRICATION OF ALL UNDERGROUND UTILITY STRUCTURES. SHOP DRAWINGS AND CALCULATIONS PROVIDED BY THE CONTRACTOR SHALL ADDRESS BUOYANCY AND SOIL BEARING PRESSURE.

2. STANDARD PLAN REFERENCES AND MANUFACTURER MODEL NUMBERS FOR UNDERGROUND UTILITY STRUCTURES ARE INTENDED TO PROVIDE INTERIOR GEOMETRY AND INTENT ONLY. THE CONTRACTOR SHALL INCREASE REQUIRED REINFORCING AND WALL THICKNESS, AND CHANGE ACCESS GRATE AND COVER AS REQUIRED TO ACCOMMODATE LOADING CRITERIA REQUIREMENTS.

3. REFER TO THE GEOTECHNICAL ENGINEERING DESIGN STUDY DATED DECEMBER 6, 2017 PREPARED BY HART CROWSER FOR SOIL DESIGN CRITERIA.

4. DEAD LOAD SHALL BE APPLIED TO ALL STRUCTURES, WHICH INCLUDES THE WEIGHT OF THE CONSTRUCTION MATERIALS AND THE SOIL.

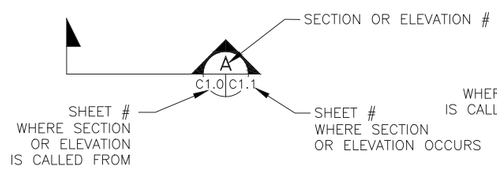
5. LIVE LOADS SHALL BE APPLIED TO ALL STRUCTURES TO ACT SIMULTANEOUSLY AND IN COMBINATION WITH DEAD LOADS, SOIL LOADS AND HYDROSTATIC PRESSURE.

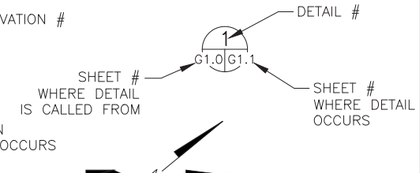
6. MEASURED DEPTH TO GROUNDWATER IN THE UPLAND AREAS OF THE SOUTH TERMINAL WHARF RANGES 6.5 TO 11.5 FEET BELOW GROUND SURFACE (BGS ELEVATION APPROXIMATELY +11' TO +6' MLLW DATUM). DEWATERING MAY BE REQUIRED FOR INSTALLATION OF UTILITY LINES AND STRUCTURES DEPENDING UPON LOCATION, TIME OF YEAR AND TIDE ELEVATION. SEE SPECIFICATIONS AND SOIL AND GROUNDWATER MANAGEMENT PLAN FOR ADDITIONAL GROUNDWATER INFORMATION.

LEGEND:

	BORE HOLE		EXISTING CONTOUR
	MONUMENT WELL	CLF	EXISTING CHAINLINK FENCE
	WATER VALVE	OHW	EXISTING OVERHEAD WIRE LINE
	WATER SPIGOT	SS	EXISTING SANITARY SEWER LINE
	SANITARY SEWER MANHOLE	UGP	EXISTING UNDERGROUND POWER LINE
	STORM DRAIN MANHOLE	W	EXISTING WATER LINE
	TELEPHONE RISER	FO	EXISTING FIBER OPTIC
	GUY ANCHOR	SD	EXISTING STORM DRAIN
EM	ELECTRIC METER	BP	BURIED POWER LINE
	LUMINARE	T	TELEPHONE LINE
	EX PIPE SLOPE	W	WATER LINE
	PROPOSED PIPE SLOPE DIRECTION		PROPERTY LINE
	EX GRADE SLOPE DIRECTION		LEASE LIMIT
	PROPOSED GRADE SLOPE DIRECTION		EASEMENT
	FIRE HYDRANT	W	WATER
	LIGHT POLE	SS	SEWER
		SD	STORMWATER
			TRENCH DRAIN
			FENCE
			PROPOSED CONTOUR

REFERENCE SYMBOL:





X SECTION/DETAIL
X|X SCALE: 1/2" = 1'–0"

NORTH ARROW INDICATES TRUE NORTH

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

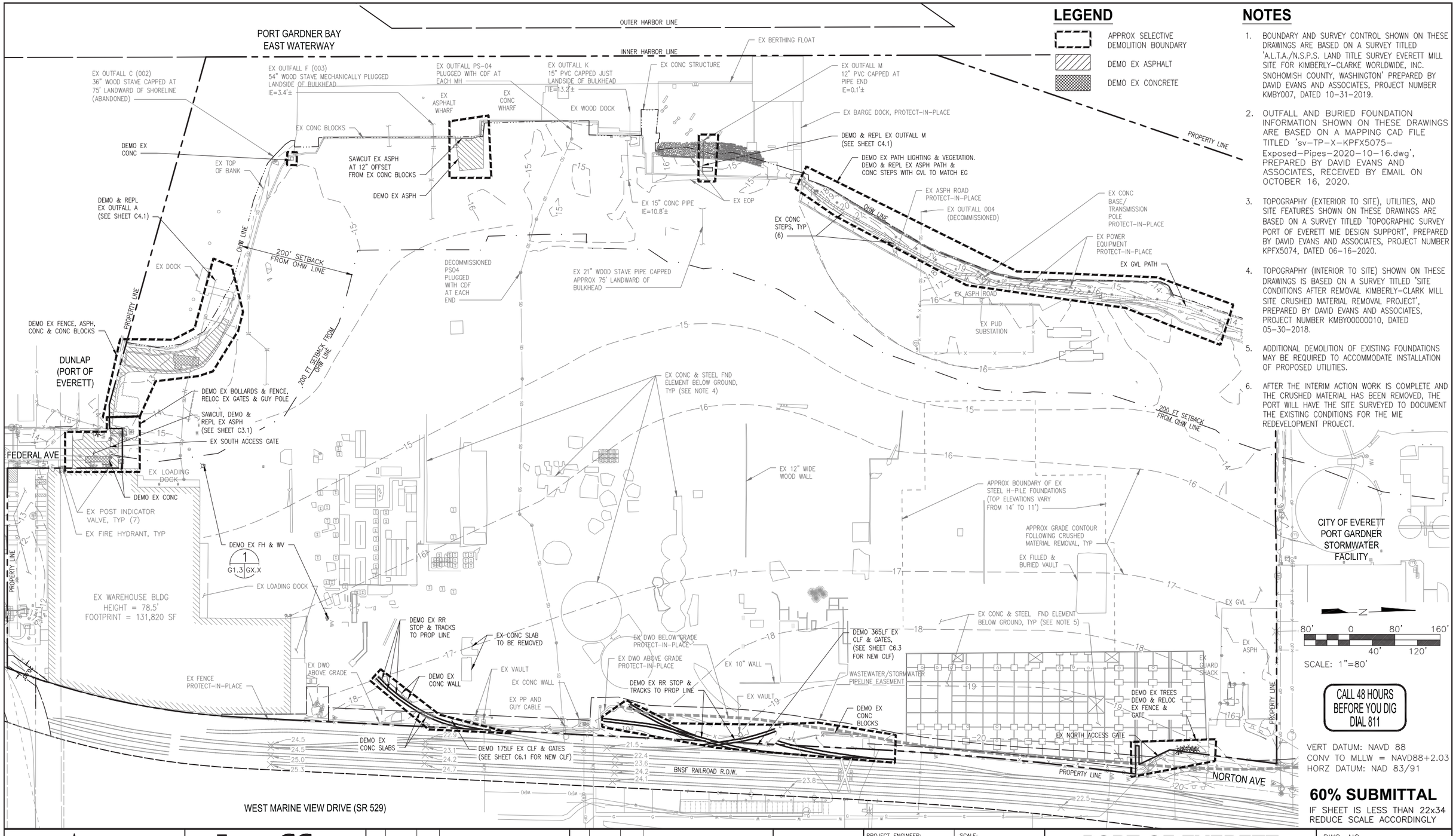
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GENERAL NOTES, LEGEND AND
UTILITY STRUCTURE LOADING

DWG. NO. **G1.2**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX



LEGEND

- APPROX SELECTIVE DEMOLITION BOUNDARY
- DEMO EX ASPHALT
- DEMO EX CONCRETE

NOTES

1. BOUNDARY AND SURVEY CONTROL SHOWN ON THESE DRAWINGS ARE BASED ON A SURVEY TITLED 'A.L.T.A./N.S.P.S. LAND TITLE SURVEY EVERETT MILL SITE FOR KIMBERLY-CLARKE WORLDWIDE, INC. SNOHOMISH COUNTY, WASHINGTON' PREPARED BY DAVID EVANS AND ASSOCIATES, PROJECT NUMBER KMBY007, DATED 10-31-2019.
2. OUTFALL AND BURIED FOUNDATION INFORMATION SHOWN ON THESE DRAWINGS ARE BASED ON A MAPPING CAD FILE TITLED 'sv-TP-X-KPFX5075-Exposed-Pipes-2020-10-16.dwg', PREPARED BY DAVID EVANS AND ASSOCIATES, RECEIVED BY EMAIL ON OCTOBER 16, 2020.
3. TOPOGRAPHY (EXTERIOR TO SITE), UTILITIES, AND SITE FEATURES SHOWN ON THESE DRAWINGS ARE BASED ON A SURVEY TITLED 'TOPOGRAPHIC SURVEY PORT OF EVERETT MIE DESIGN SUPPORT', PREPARED BY DAVID EVANS AND ASSOCIATES, PROJECT NUMBER KPFX5074, DATED 06-16-2020.
4. TOPOGRAPHY (INTERIOR TO SITE) SHOWN ON THESE DRAWINGS IS BASED ON A SURVEY TITLED 'SITE CONDITIONS AFTER REMOVAL KIMBERLY-CLARK MILL SITE CRUSHED MATERIAL REMOVAL PROJECT', PREPARED BY DAVID EVANS AND ASSOCIATES, PROJECT NUMBER KMBY00000010, DATED 05-30-2018.
5. ADDITIONAL DEMOLITION OF EXISTING FOUNDATIONS MAY BE REQUIRED TO ACCOMMODATE INSTALLATION OF PROPOSED UTILITIES.
6. AFTER THE INTERIM ACTION WORK IS COMPLETE AND THE CRUSHED MATERIAL HAS BEEN REMOVED, THE PORT WILL HAVE THE SITE SURVEYED TO DOCUMENT THE EXISTING CONDITIONS FOR THE MIE REDEVELOPMENT PROJECT.

N

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 80'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

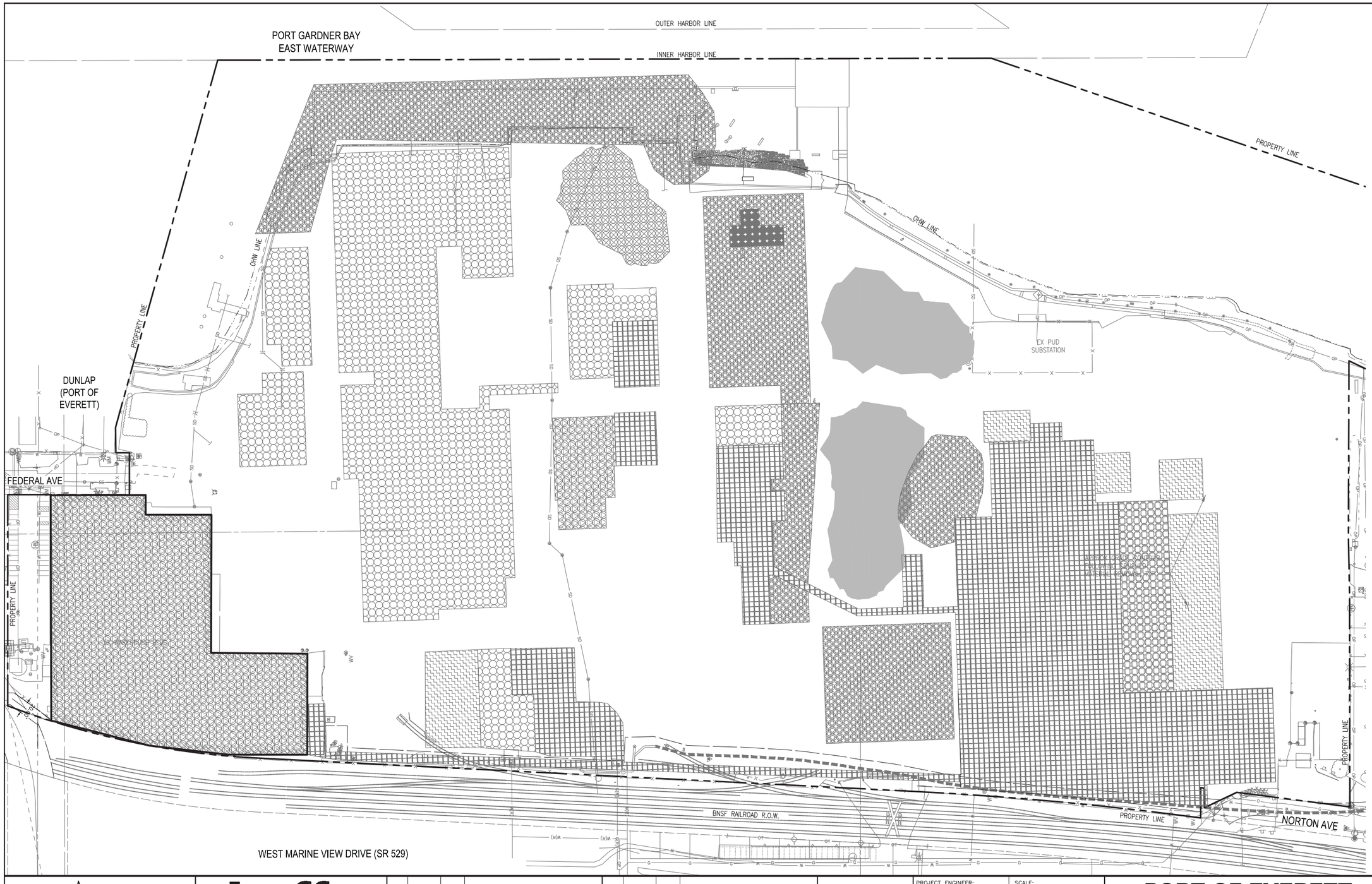
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
EXISTING CONDITION &
DEMOLITION SITE PLAN

DWG. NO. **G1.3**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



LEGEND

- BUILDING FOUNDED ON TIMBER PILES
- BUILDING FOUNDED ON STEEL H-PILES
- BUILDING FOUNDED ON SLAB-ON-GRADE
- BUILDING FOUNDED ON PRE-CAST PILES
- BUILDING FOUNDED ON STEEL PIPE PILES
- BUILDING FOUNDED ON AUGER-CAST PILES
- NON-BUILDING FOUNDED ON STEEL & TIMBER PILES
- HOG FUEL PILES AREA
- LOG POND FILL AREA

SOURCE: Moffatt & Nichol. 2014. Saltchuck Everett Property Due Diligence Process, Foss Maritime Shipyard Master Redevelopment Plan, Third Draft. January 23.

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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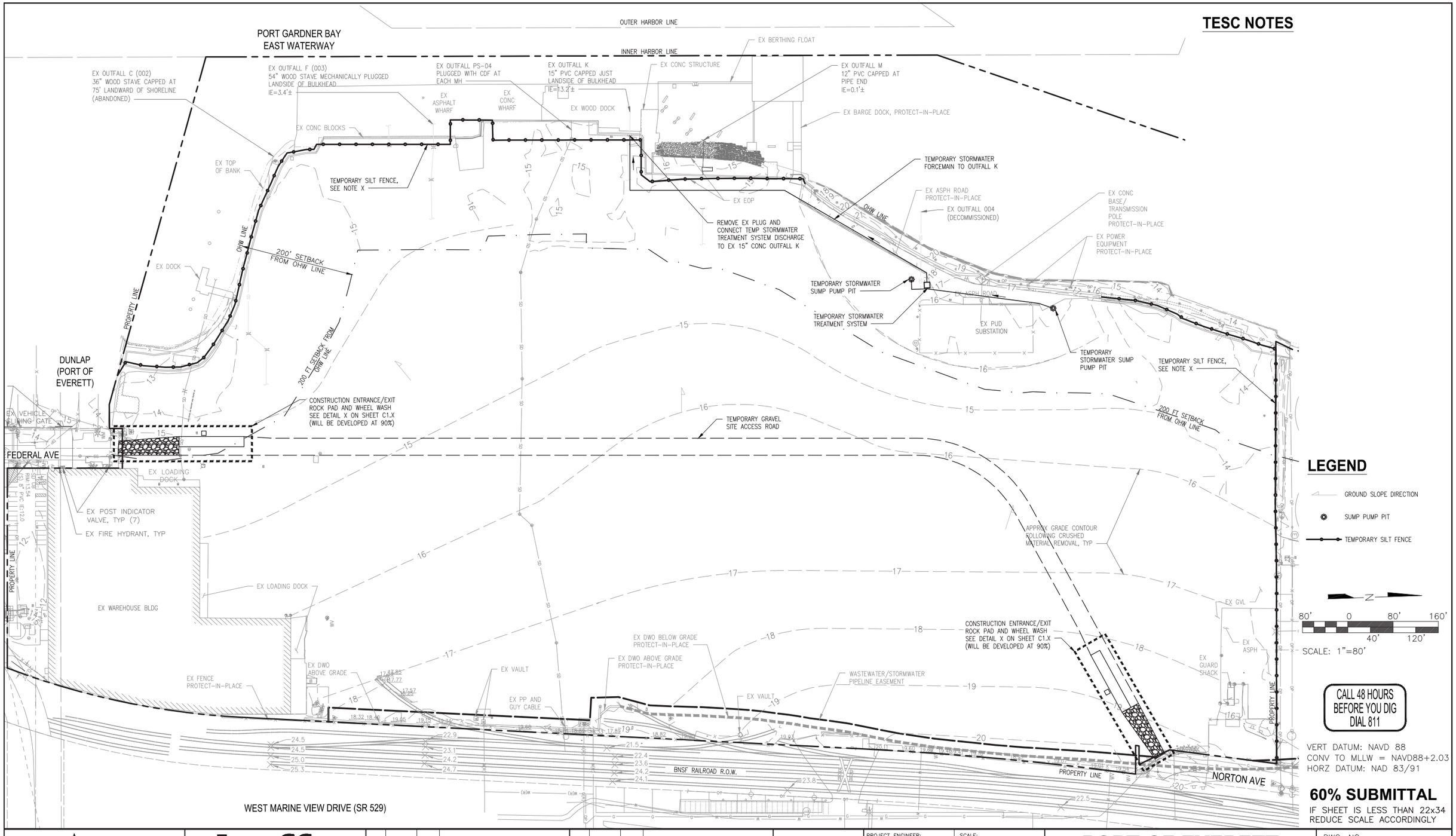
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
FORMER BUILDING
FOUNDATION PLAN

DWG. NO. **G1.4**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX

TESC NOTES



LEGEND

- GROUND SLOPE DIRECTION
- SUMP PUMP PIT
- TEMPORARY SILT FENCE

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

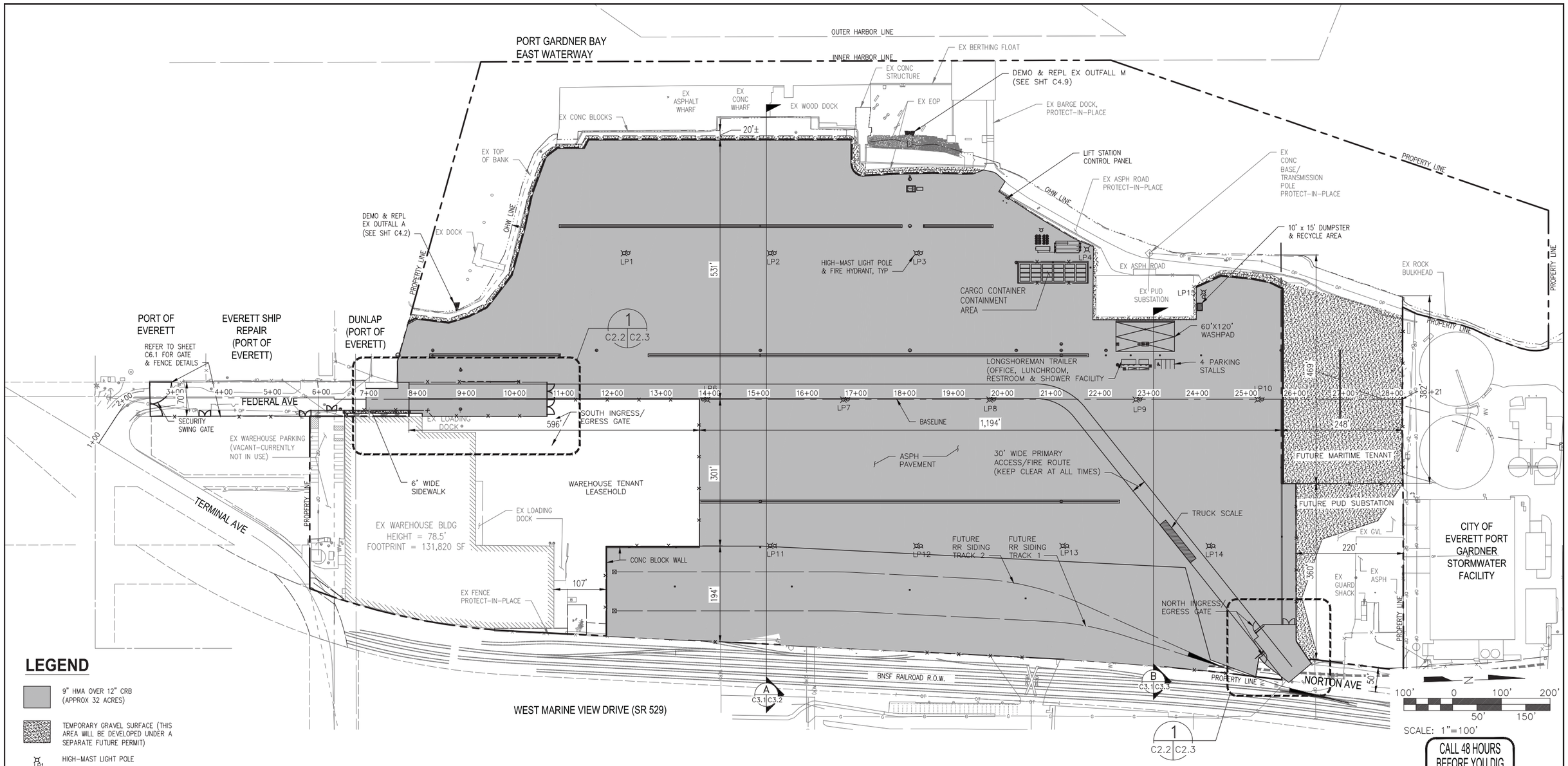
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
TEMPORARY EROSION AND SEDIMENT CONTROL PLAN

DWG. NO. **C1.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



LEGEND

- 9" HMA OVER 12" CRB (APPROX 32 ACRES)
- TEMPORARY GRAVEL SURFACE (THIS AREA WILL BE DEVELOPED UNDER A SEPARATE FUTURE PERMIT)
- LP1 HIGH-MAST LIGHT POLE

NOTES

1. WAREHOUSE TENANT LEASEHOLD BOUNDARIES SHOWN ARE BASED ON A PDF EXHIBIT TITLED 'BAYWOOD EVERETT SITE PLANNING' PREPARED BY NELSON, DATED 05/22/2020.
2. SITE AREA:
   UPLAND = 2,024,757 SF (46.5± AC)
   TIDELANDS = 509,282 SF (11.7± AC)
   TOTAL = 2,534,039 SF (58.2± AC)
3. SITE BUILDING COVERAGE:
   EX WAREHOUSE FOOTPRINT = 131,820 SF
   LONGSHOREMAN TRAILER = 500 SF
   SITE BUILDING COVERAGE = 6.5%
   [(131,820+300)/2,024,757]

NOTE TO REVIEWER:
HORIZONTAL CONTROL TABLE AND STATIONING WILL BE DEVELOPED FOR 90% DESIGN

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

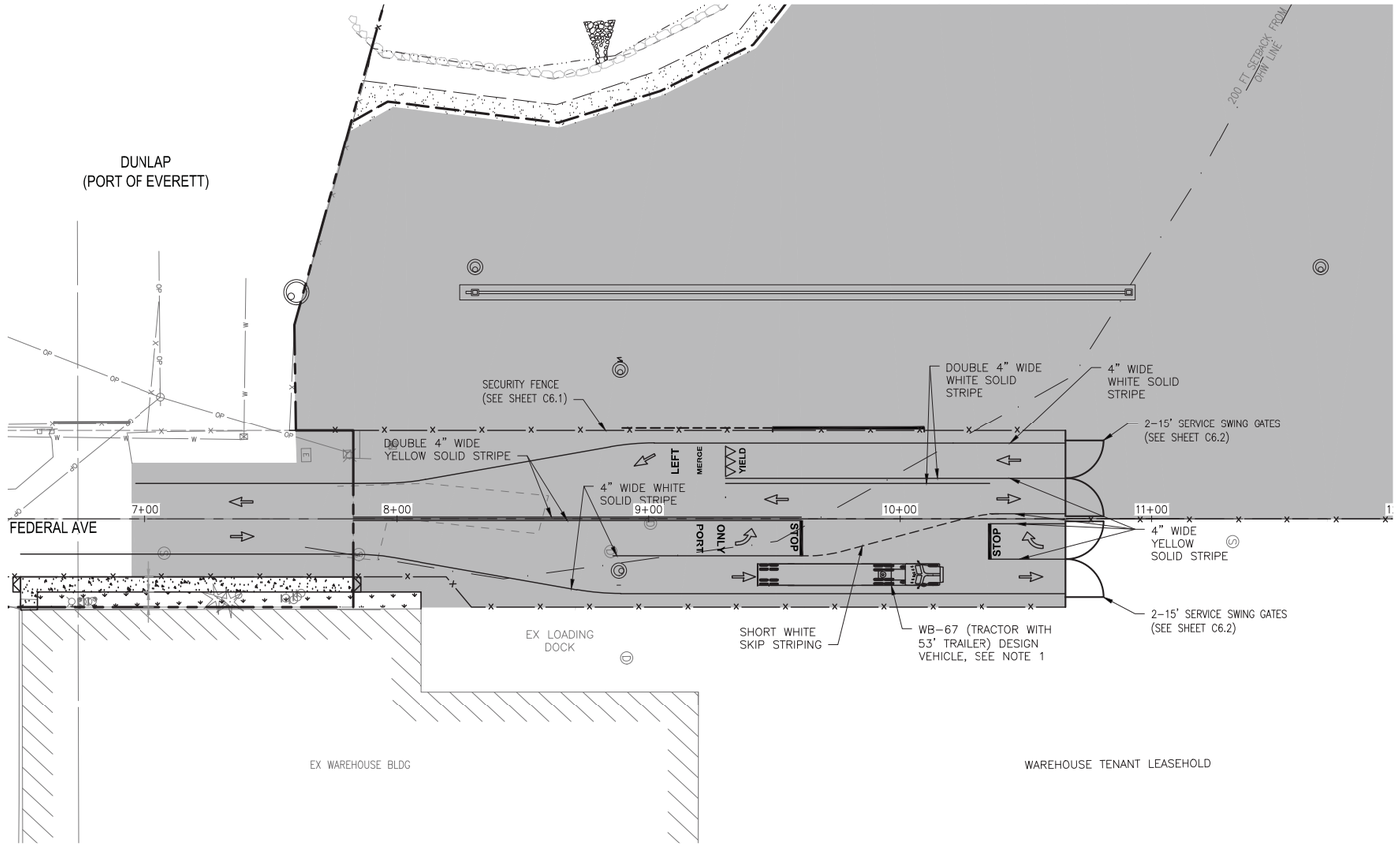
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
OVERALL SITE PLAN & HORIZONTAL CONTROL

DWG. NO. **C2.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

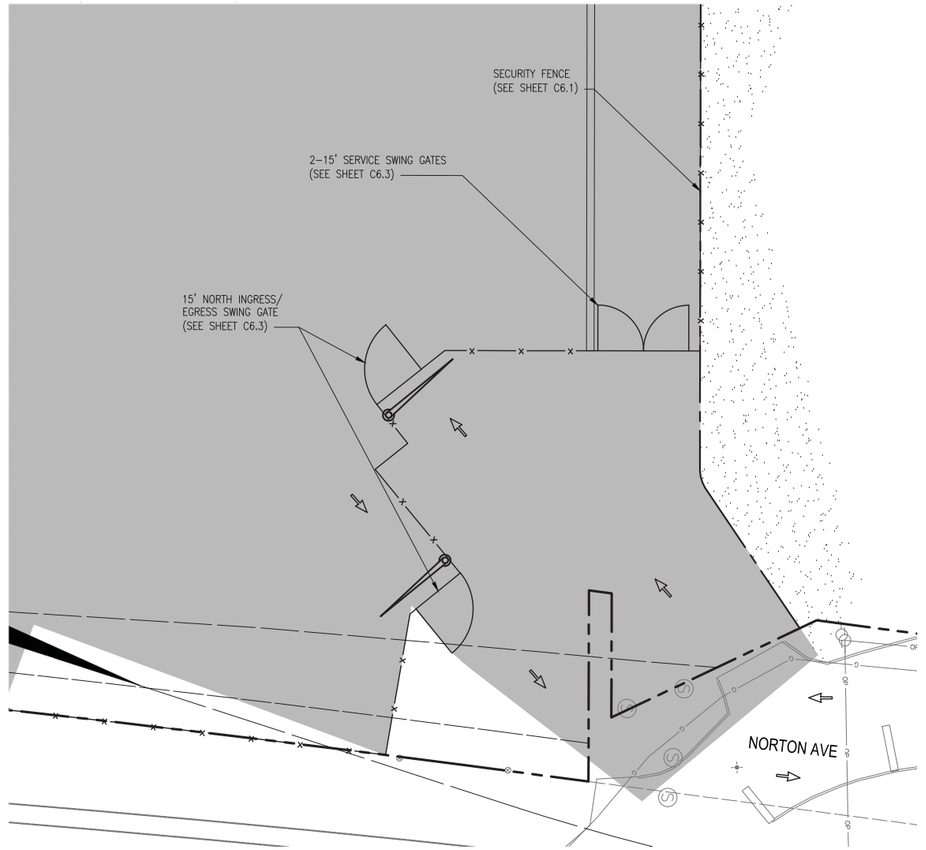
SHEET NO. XX OF XX



1 C2.1 C2.2 SOUTH GATE DETAIL SITE PLAN

30' 0 30' 60'
15' 45'

SCALE: 1"=30'



2 C2.1 C2.2 NORTH GATE DETAIL SITE PLAN

20' 0 20' 40'
10' 30'

SCALE: 1"=20'

N

LEGEND

- PROPOSED HMA SURFACE PAVEMENT (9" HMA OVER 12" CRB)
- PROPOSED GRAVEL SURFACE
- TRAFFIC FLOW ARROW

NOTES

1. LANES AND GATES DESIGNED TO ACCOMMODATE A WB-67 VEHICLE (TRACTOR WITH 53' TRAILER).

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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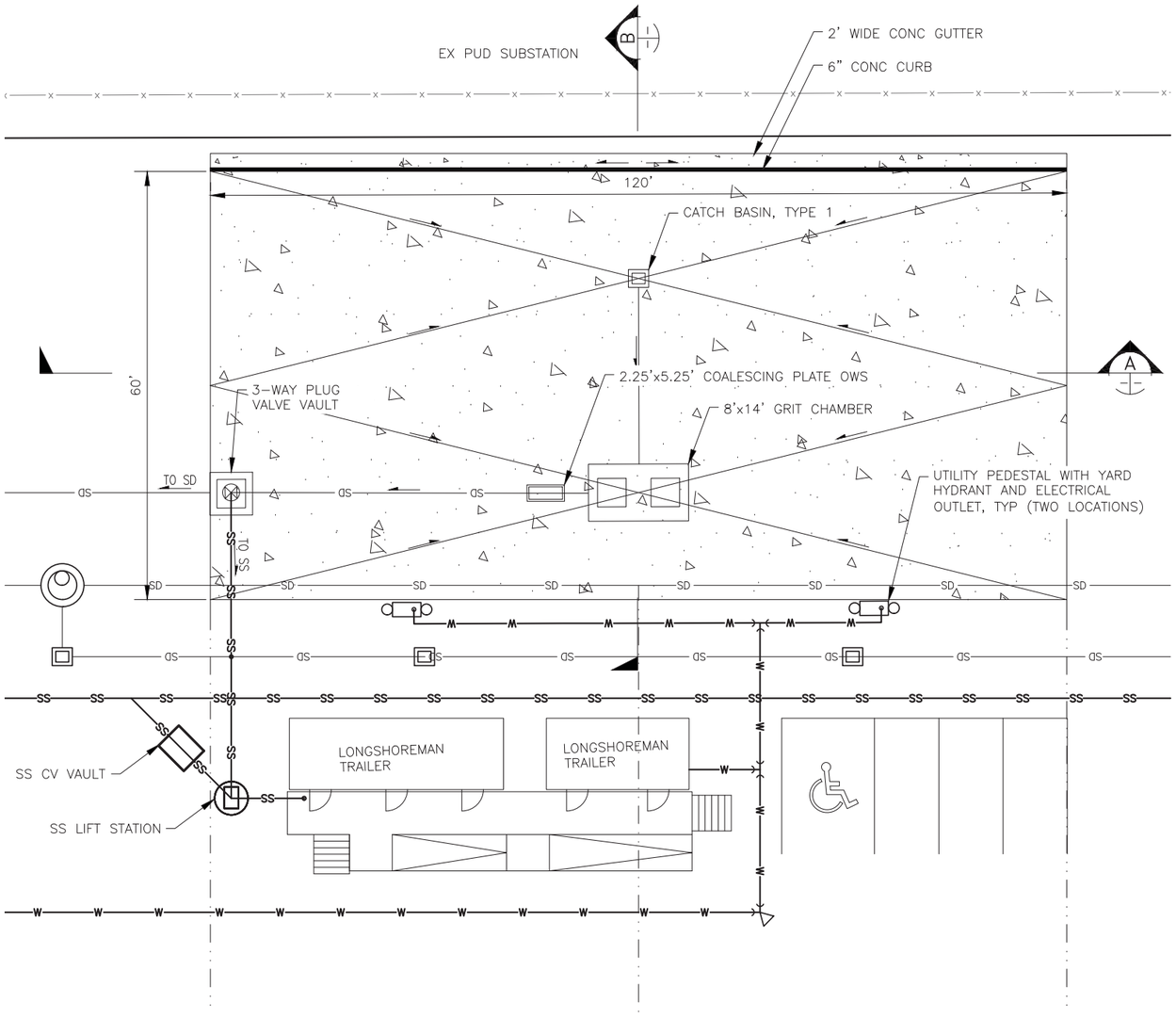
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

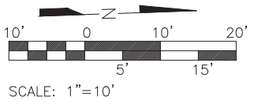
PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
NORTH AND SOUTH GATE
DETAIL SITE PLAN

DWG. NO. **C2.2**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



1 WASH PAD DETAIL
X|X SCALE: 1" = 10'



SCALE: 1"=10'

TO BE DEVELOPED AT 90% SUBMITTAL

A WASH PAD SECTION
X|X SCALE:

TO BE DEVELOPED AT 90% SUBMITTAL

B WASH PAD SECTION
X|X SCALE:

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34
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DESIGNED BY: J. BECKER	DATE: 12/04/2020
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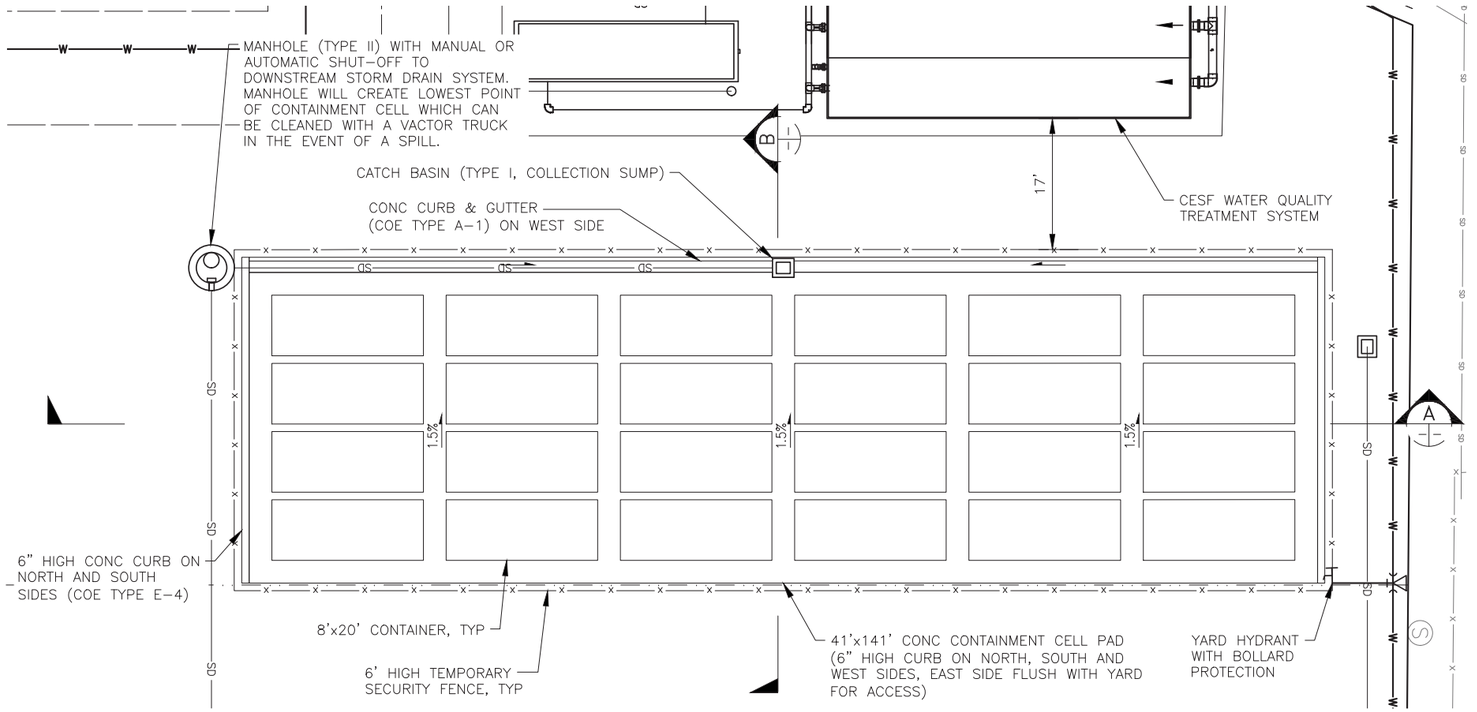
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
WASH PAD
PLAN AND DETAILS

DWG. NO. **C2.3**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



1 CARGO CONTAINER CONTAINMENT AREA DETAIL
SCALE: 1" = 10'

10' 0 10' 20'
5' 15'
SCALE: 1"=10'

TO BE DEVELOPED AT 90% SUBMITTAL

B CONTAINMENT AREA SECTION
SCALE:

TO BE DEVELOPED AT 90% SUBMITTAL

A CONTAINMENT AREA SECTION
SCALE:

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL
IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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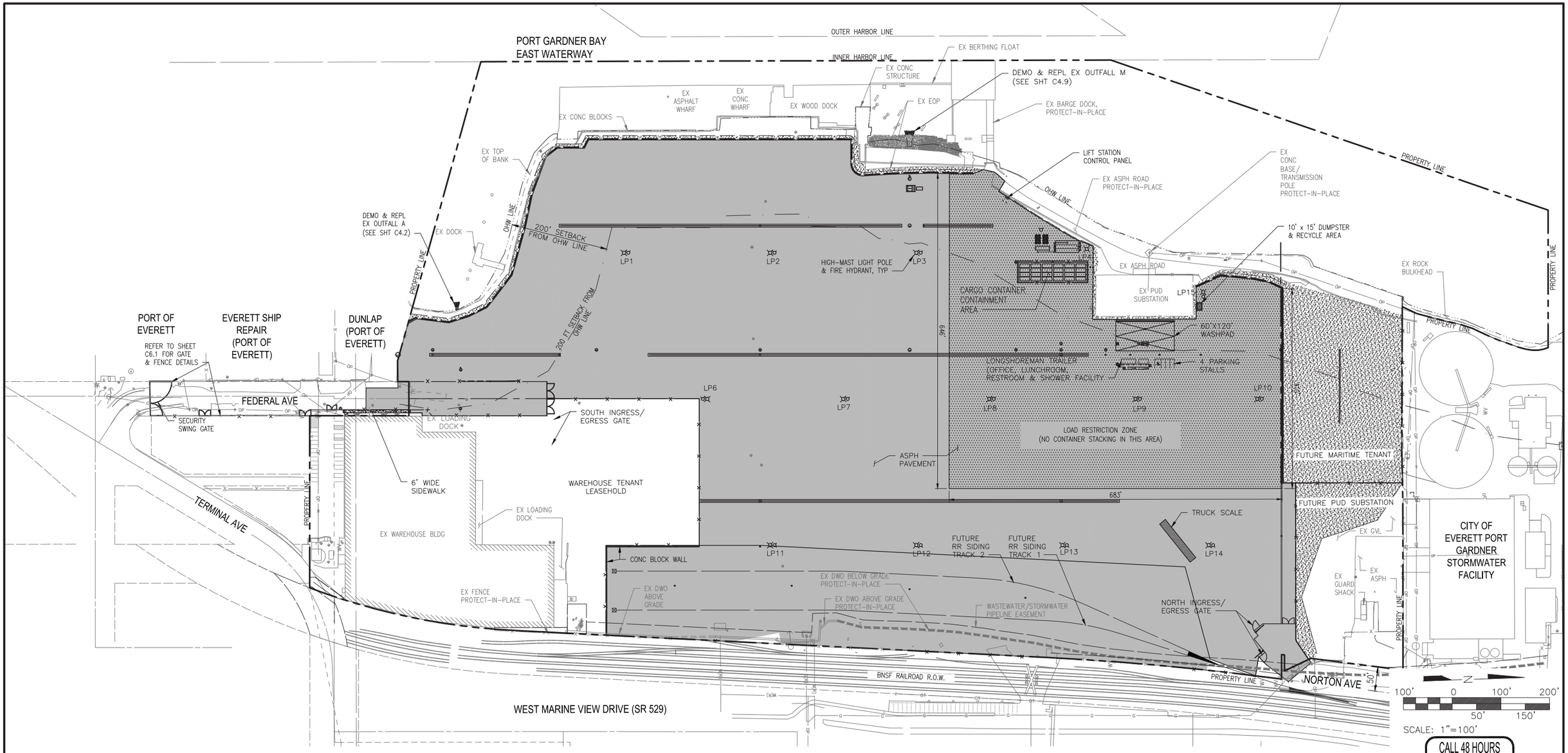
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
CONTAINMENT AREA
PLAN AND DETAILS

DWG. NO. **C2.4**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



LEGEND

- 9" HMA OVER 12" CRB (APPROX 32 ACRES)
- LOAD RESTRICTION ZONE (NO CONTAINER STACKING IN THIS AREA)
- LP1 HIGH-MAST LIGHT POLE

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
LOAD RESTRICTION ZONE
SITE PLAN

DWG. NO. **C2.5**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX

PORT GARDNER BAY
EAST WATERWAY

OUTER HARBOR LINE

INNER HARBOR LINE

EX BERTHING FLOAT

EX CONC STRUCTURE

EX ASPHALT WHARF

EX CONC WHARF

EX WOOD DOCK

EX BARGE DOCK, PROTECT-IN-PLACE

PROPERTY LINE

EX CONC BLOCKS

EX TOP OF BANK

LIFT STATION CONTROL PANEL

EX ASPH ROAD PROTECT-IN-PLACE

EX CONC BASE/ TRANSMISSION POLE PROTECT-IN-PLACE

EX POWER EQUIPMENT PROTECT-IN-PLACE

10' x 15' DUMPSTER & RECYCLE AREA

REPL EX OUTFALL A
(SEE SHEET C4.1)

EX EOP

OHW LINE

EX DOCK

200' SETBACK FROM OHW LINE

LP1

LP2

LP3

LP4

LP15

EX ASPH ROAD

EX PUD SUBSTATION

200 FT SETBACK FROM OHW LINE

DUNLAP
(PORT OF EVERETT)

EX VEHICLE SLIDING GATE

6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 28+21

BASELINE

LP7

LP8

LP9

LP10

FEDERAL AVE

EX LOADING DOCK

EX POST INDICATOR VALVE, TYP (7)

EX FIRE HYDRANT, TYP

WAREHOUSE TENANT LEASEHOLD

EX WAREHOUSE BLDG

EX LOADING DOCK

CONC BLOCK WALL

LP11

LP12

LP13

LP14

FUTURE RR SIDING TRACK 2

FUTURE RR SIDING TRACK 1

EX DWO ABOVE GRADE

EX VAULT

EX FENCE PROTECT-IN-PLACE

EX PP AND GUY CABLE

WASTEWATER/STORMWATER PIPELINE EASEMENT

EX VAULT

FUTURE MARITIME TENANT

FUTURE PUD SUBSTATION

TRUCK SCALE

EX GVL

EX ASPH

EX GUARD SHACK

CITY OF EVERETT
PORT GARDNER
STORMWATER
FACILITY

24.5 24.5 25.0 25.3

22.9 23.1 24.2 24.7

21.5 22.4 23.6 24.2 24.1 23.8

22.5

BNSF RAILROAD R.O.W.

WEST MARINE VIEW DRIVE (SR 529)

NORTON AVE

A C3.1 C3.2

B C3.1 C3.3

LEGEND

- HMA PAVEMENT, 9" HMA OVER 12" CRB (APPROX 37 ACRES)
- TEMPORARY GRAVEL SURFACE (THIS AREA WILL BE DEVELOPED UNDER A SEPARATE FUTURE PERMIT)
  FUTURE MARITIME SITE = 2.0 ACRES
  FUTURE PUD SITE = 0.60 ACRES
  FILL SLOPES = 0.64 ACRES
  TOTAL GRAVEL AREA = 3.24 ACRES
- TEMPORARY (ROLLING) PRELOAD AREA
- HMA PAVEMENT (SINGLE LAYER GEOGRID)
- HMA PAVEMENT (MULTI-LAYER GEOGRID)

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 80'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

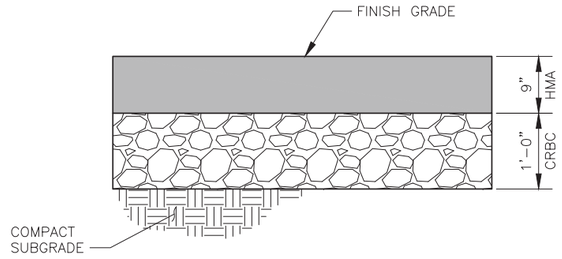
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
PAVING OVERALL PLAN

DWG. NO. **C3.1**

CIP NO. 1-8-900-05

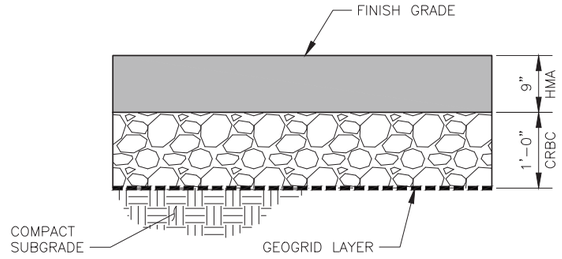
PROJECT NO. TBD

SHEET NO. XX OF XX



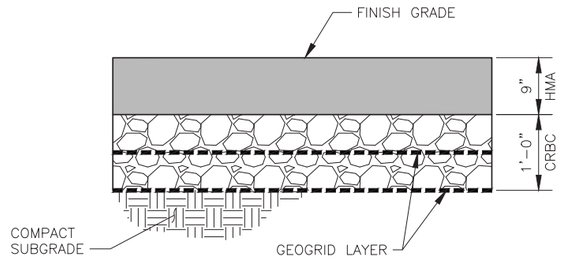
A TYPICAL ASPHALT PAVEMENT SECTION

SCALE: NTS



B ASPHALT PAVEMENT SECTION WITH SINGLE LAYER GEOGRID

SCALE: NTS



C ASPHALT PAVEMENT SECTION WITH MULTI-LAYER GEOGRID

SCALE: NTS

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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REDUCE SCALE ACCORDINGLY

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PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

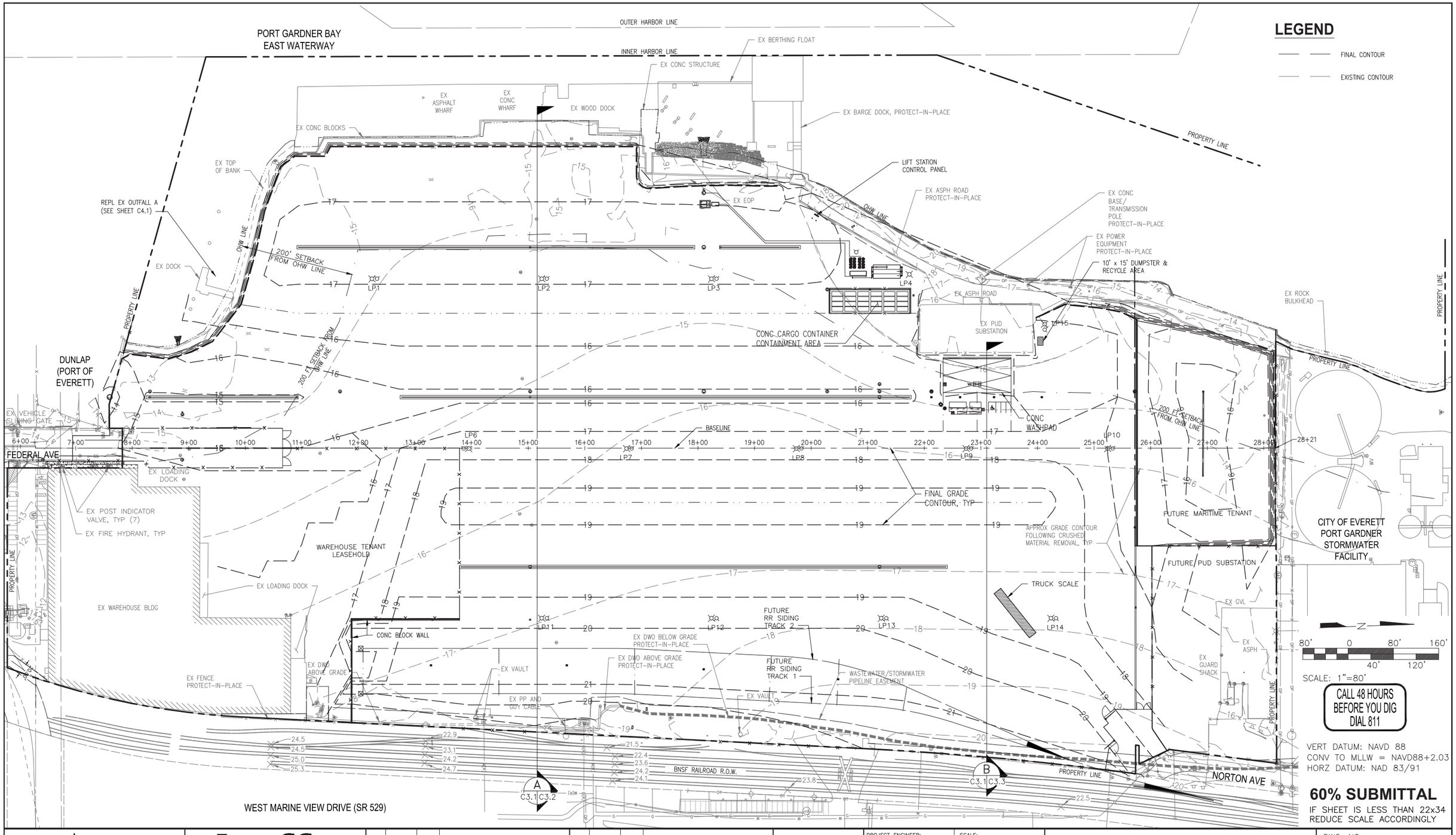
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
PAVEMENT SECTIONS

DWG. NO. **C3.2**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



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PROJECT ENGINEER:	SCALE:
N. WATSON	1" = 80'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING OVERALL PLAN

DWG. NO. **C3.3**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX

PORT OF EVERETT

EVERETT SHIP REPAIR
(PORT OF EVERETT)

DUNLAP
(PORT OF EVERETT)

EX FENCE

EX CB's TO BE RELOCATED BY OTHERS FOR FUTURE CITY MODULAR WETLAND

EX COMM UTILITY BOX WITH BOLLARD

EX SECURITY FENCE

EX PERSONNEL GATE

EX VEHICLE SLIDING GATE

EX VEHICLE SLIDING GATE

EX LIGHT POLE

EX GVL
EX PVMT

EX GVL
EX PVMT

EX PVMT
EX GVL

FEDERAL AVE

EX LOADING DOCK

EX PP

EX PP

EX POST INDICATOR VALVE, TYP (7)

EX FIRE HYDRANT, TYP

EX CURB & GUTTER, AND SIDEWALK

TERMINAL AVE

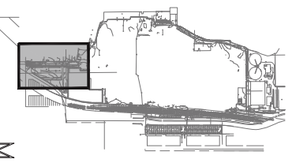
PROPERTY LINE

PROPERTY LINE

1+00 2+00 3+00 4+00 5+00 6+00 7+00 8+00 9+00

MATCHLINE – SEE C3.5

MATCHLINE – SEE C3.8



30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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REDUCE SCALE ACCORDINGLY

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 30'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

DWG. NO. **C3.4**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX

EX CONC BLOCKS

EX TOP OF BANK

OHW LINE

200' SETBACK FROM OHW LINE

EX DOCK

200 FT SETBACK FROM OHW LINE

LP1

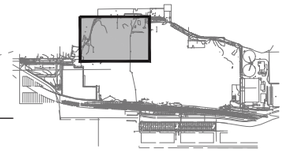
LP2

LP6

MATCHLINE – SEE C3.4

MATCHLINE – SEE C3.6

MATCHLINE – SEE C3.8



N

30' 0 30' 60'

15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

DWG. NO. **C3.5**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX

LIFT STATION CONTROL PANEL

EX ASPH ROAD PROTECT-IN-PLACE

EX EOP

OHW LINE

EX CONC BASE/ TRANSMISSION POLE PROTECT-IN-PLACE

EX POWER EQUIPMENT PROTECT-IN-PLACE

LP3

LP4

EX ASPH ROAD

EX PUD SUBSTATION

LP15

10' x 15' DUMPSTER & RECYCLE AREA

MATCHLINE – SEE C3.5

MATCHLINE – SEE C3.7

16

LONGSHOREMAN TRAILER (OFFICE, LUNCHROOM, RESTROOM & SHOWER FACILITY

4 PARKING STALLS

LP8

LP9

LP10

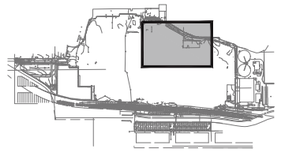
17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00

BASELINE

17

18

MATCHLINE – SEE C3.9



30' 0 30' 60'

15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

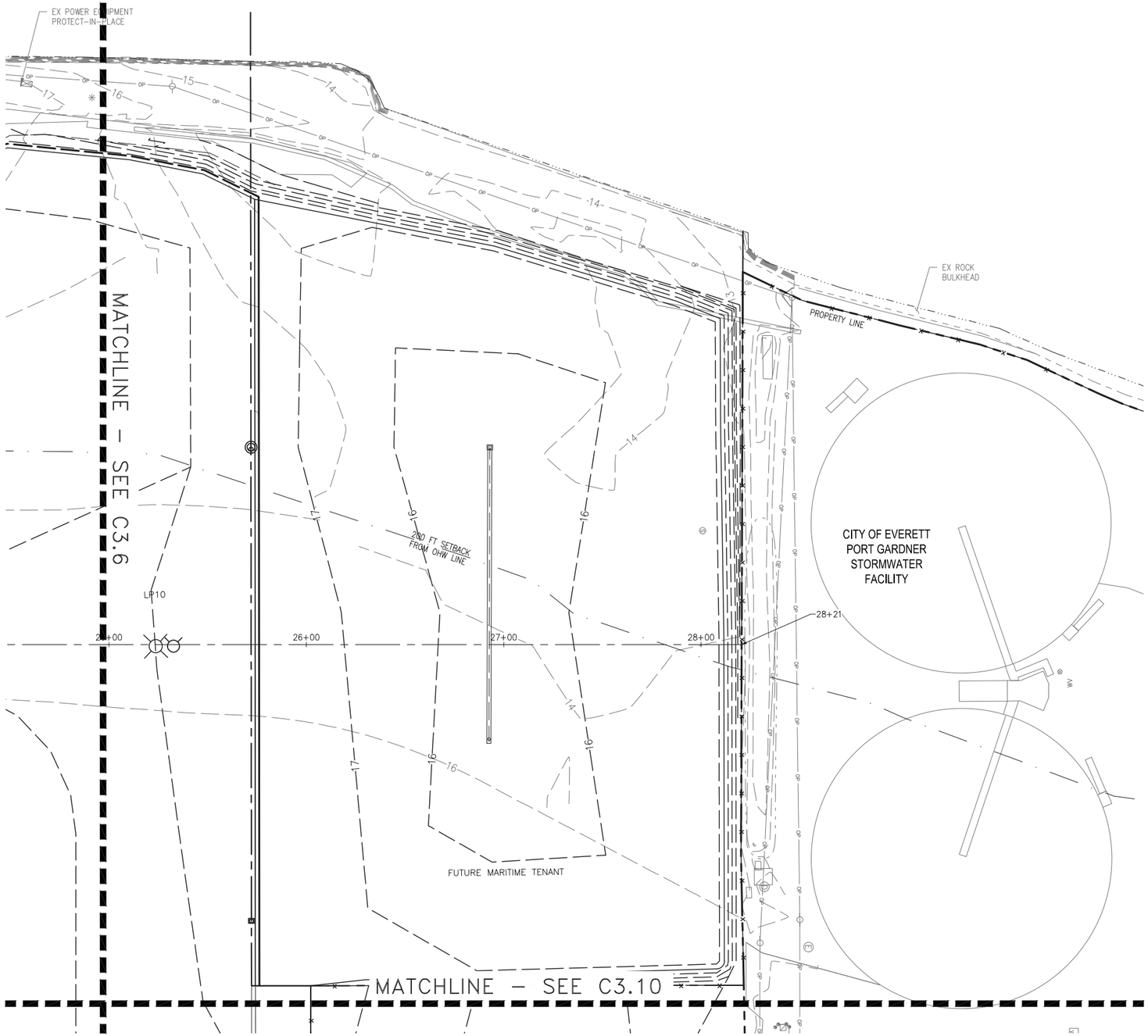
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

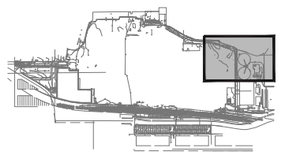
DWG. NO. **C3.6**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX





30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS
BEFORE YOU DIG
DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

DWG. NO. **C3.7**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX

MATCHLINE – SEE C3.5

SOUTH INGRESS/
EGRESS GATE

LP7

WAREHOUSE TENANT LEASEHOLD

MATCHLINE – SEE C3.4

MATCHLINE – SEE C3.9

CONC BLOCK WALL

LP11

EX LOADING DOCK

EX FENCE
PROTECT-IN-PLACE

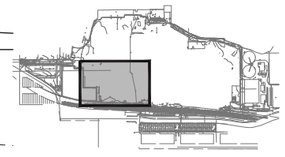
EX AWSS ABOVE GRADE

EX DWO ABOVE GRADE PROTECT-IN-PLACE

EX VAULT

EX PP AND
GUY CABLE

16 17 18 19 20 21 22.9 24.5



30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS
BEFORE YOU DIG
DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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REDUCE SCALE ACCORDINGLY

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

DWG. NO. **C3.8**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX

MATCHLINE – SEE C3.6

MATCHLINE – SEE C3.8

MATCHLINE – SEE C3.10

TRUCK SCALE

LP12

LP13

LP14

FUTURE RR SIDING TRACK 2

FUTURE RR SIDING TRACK 1

EX DWO BELOW GRADE PROTECT-IN-PLACE

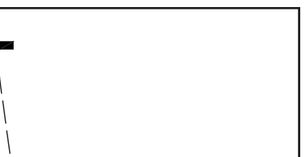
WASTEWATER/STORMWATER PIPELINE EASEMENT

EX VAULT

BNSF RAILROAD R.O.W.

NORTH INGRESS/ EGRESS GATE

PROPERTY LINE



30' 0 30' 60'

15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

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CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

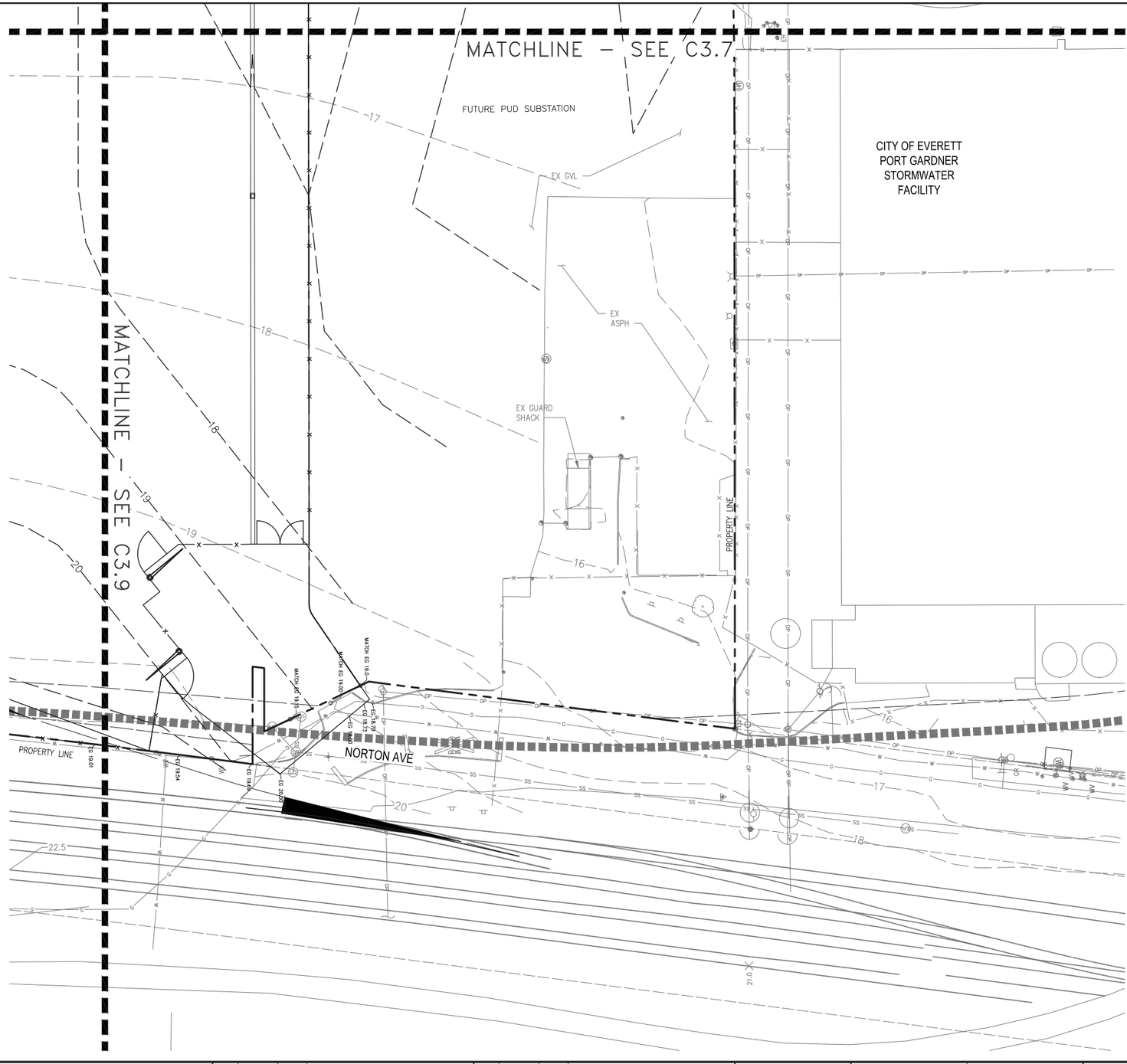
MARITIME INDUSTRIAL EXPANSION NORTON TERMINAL – 60% DESIGN GRADING DETAIL PLAN

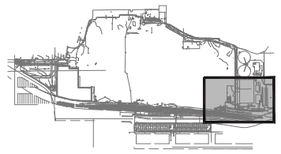
DWG. NO. **C3.9**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX





N

30' 0 30' 60'

15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

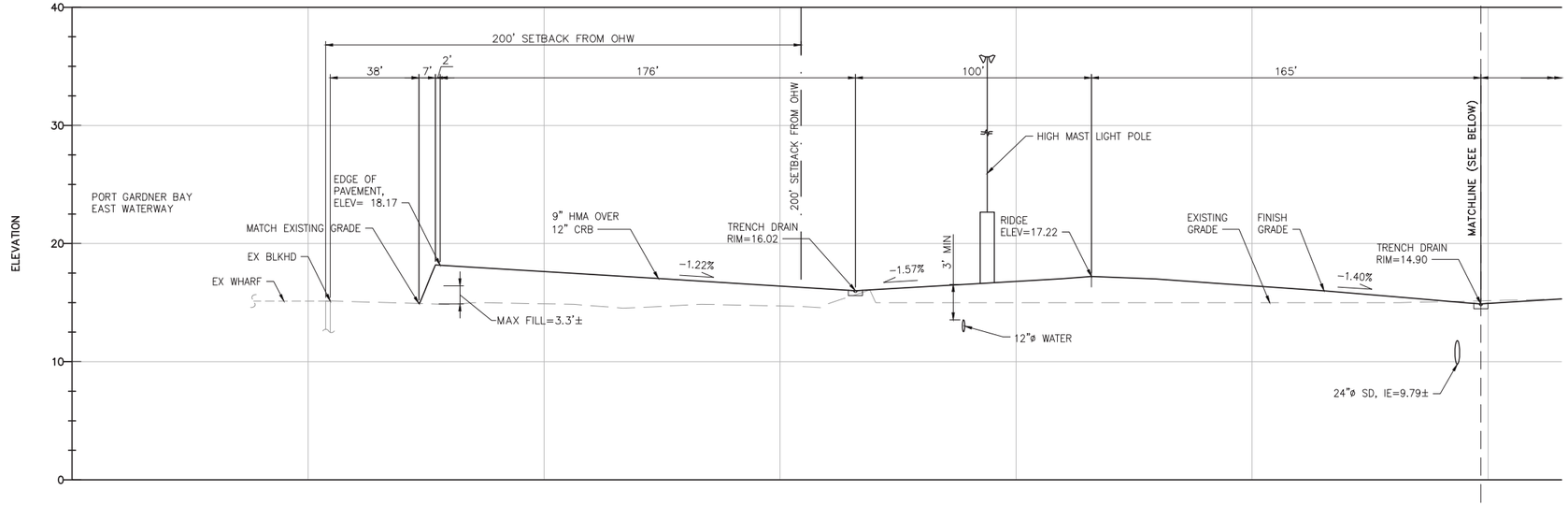
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
GRADING DETAIL PLAN

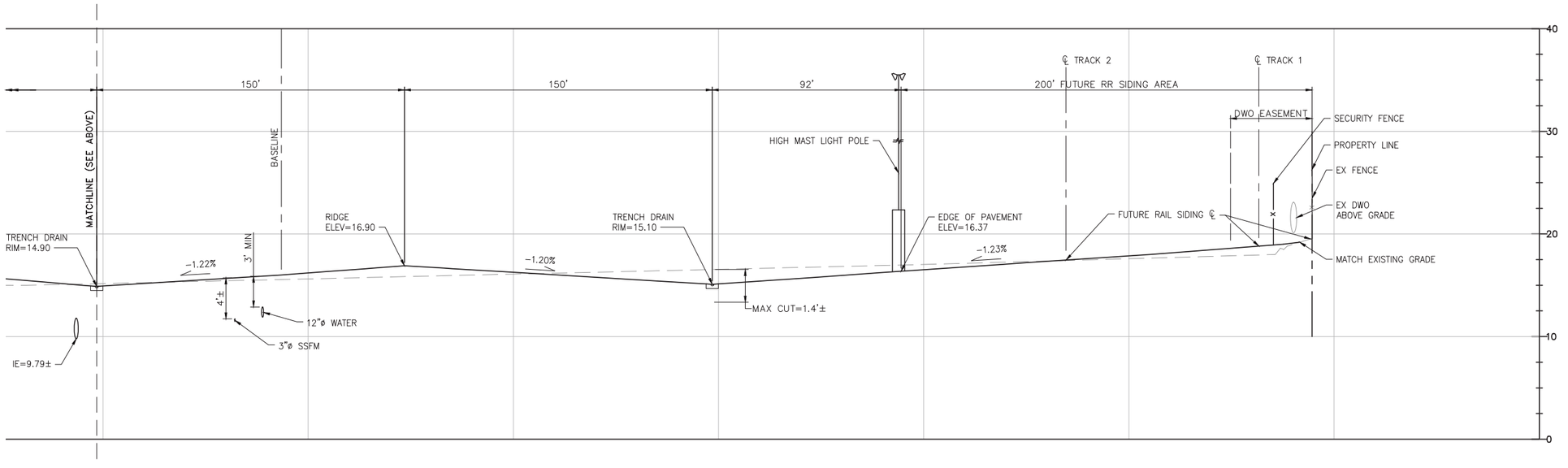
DWG. NO. **C3.10**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX





A SECTION
C3.2 | C2.1, C3.1

30' 0 30' 60'
15' 45'
SCALE: 1"=30' HORIZ, 1"=6' VERT

CALL 48 HOURS
BEFORE YOU DIG
DIAL 811

VERT DATUM: NAVD 88
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HORZ DATUM: NAD 83/91

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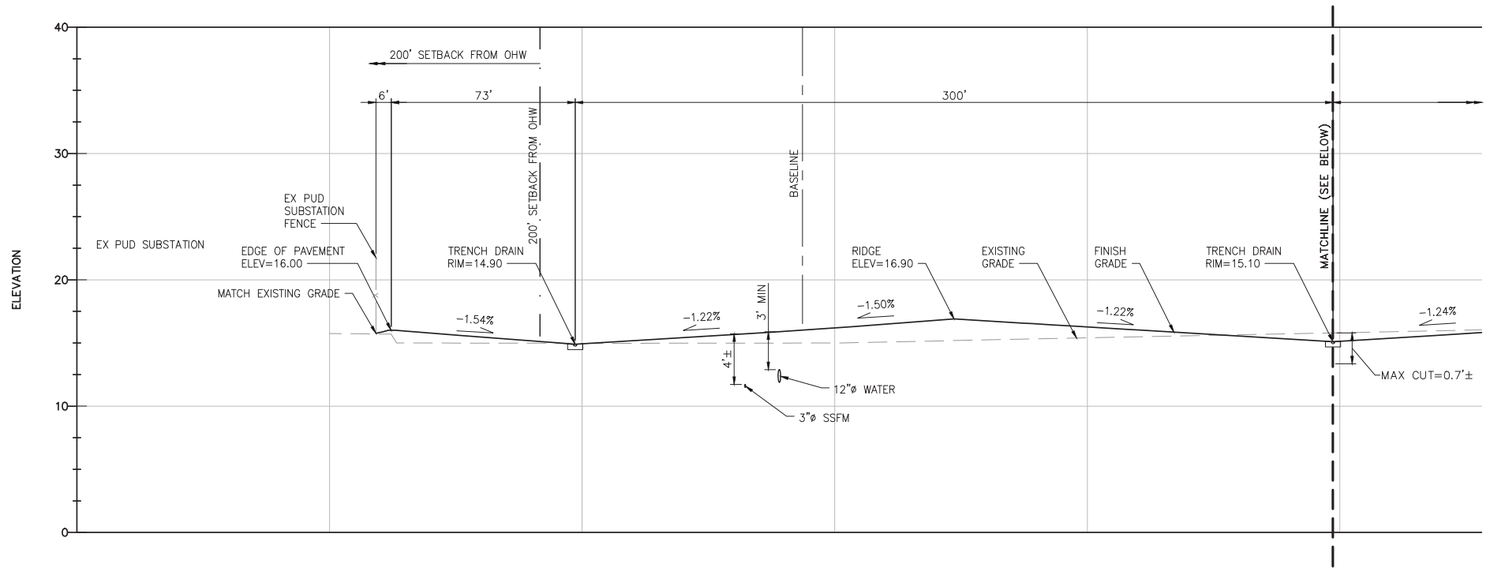
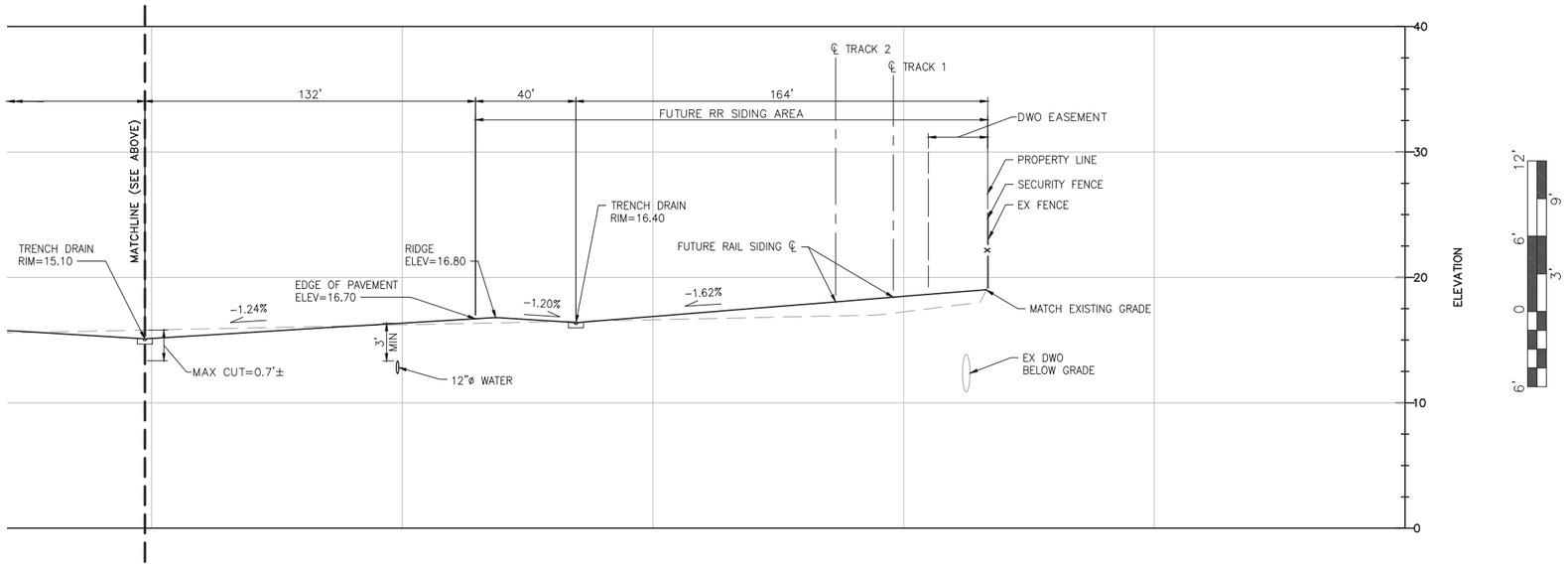
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SITE SECTIONS

DWG. NO. **C3.11**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX





B SECTION
C3.3 | C2.1, C3.1

30' 0 30' 60'
15' 45'
SCALE: 1"=30' HORIZ, 1"=6' VERT

CALL 48 HOURS BEFORE YOU DIG DIAL 811

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HORZ DATUM: NAD 83/91

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PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SITE SECTIONS

DWG. NO. **C3.12**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX

PORT GARDNER BAY
EAST WATERWAY

OUTER HARBOR LINE

INNER HARBOR LINE

EX BERTHING FLOAT

EX OUTFALL C (002)
36" WOOD STAVE CAPPED AT
75' LANDWARD OF SHORELINE
(ABANDONED)

EX OUTFALL F (003)
54" WOOD STAVE MECHANICALLY PLUGGED
LANDSIDE OF BULKHEAD
IE=3.4'±

EX OUTFALL PS-04
PLUGGED WITH CDF AT
EACH MH

EX OUTFALL K
15" PVC CAPPED JUST
LANDSIDE OF BULKHEAD
IE=13.2'±

EX CONC STRUCTURE

1
C4.1 C4.9

EX ASPHALT WHARF

EX CONC WHARF

EX WOOD DOCK

EX BARGE DOCK, PROTECT-IN-PLACE

EX CONC BLOCKS

REPL EX 12" PVC/21"
WOOD STAVE OUTFALL
WITH NEW 36" OUTFALL

LIFT STATION
CONTROL PANEL

PROPERTY LINE

EX TOP
OF BANK

REPL EX 12" CONC
OUTFALL A WITH NEW
18" OUTFALL

EX 15" CONC PIPE
IE=10.8'±

EX EOP

OHW LINE

EX ASPH ROAD
PROTECT-IN-PLACE

EX OUTFALL 004
(DECOMMISSIONED)

EX CONC
BASE/
TRANSMISSION
POLE
PROTECT-IN-PLACE

EX POWER
EQUIPMENT
PROTECT-IN-PLACE

200' SETBACK
FROM OHW LINE

EX DOCK

DECOMMISSIONED
PS04
PLUGGED
WITH PCF
AT EACH
END

EX 21" WOOD STAVE PIPE CAPPED
APPROX 75' LANDWARD OF
BULKHEAD

LP1 LP2 LP3 LP4

EX ASPH ROAD

EX ROCK
BULKHEAD

CARGO
CONTAINER
CONTAINMENT
AREA

EX PUD
SUBSTATION

LP15

60'X120'
WASHPAD

DUNLAP
(PORT OF
EVERETT)

200' SETBACK FROM
OHW LINE

200' SETBACK
FROM OHW LINE

EX VEHICLE
SWING GATE, TYP

BASELINE

LP6 LP10

6+00 7+00 8+00 9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00 26+00 27+00 28+00 28+21

FEDERAL AVE

LP7 LP8 LP9

LR LOADING
DOCK

EX POST INDICATOR
VALVE, TYP (7)

EX FIRE HYDRANT, TYP

FUTURE MARITIME TENANT

WAREHOUSE TENANT
LEASEHOLD

APPROX GRADE CONTOUR
FOLLOWING CRUSHED
MATERIAL REMOVAL, TYP

CITY OF EVERETT
PORT GARDNER
STORMWATER
FACILITY

FUTURE PUD SUBSTATION

EX LOADING DOCK

EX GVL

EX WAREHOUSE BLDG

CONC BLOCK WALL

LP11 LP12 LP13 LP14

FUTURE
RR SIDING
TRACK 2

EX DWO BELOW GRADE
PROTECT-IN-PLACE

EX DWO
ABOVE GRADE

EX DWO ABOVE GRADE
PROTECT-IN-PLACE

EX ASPH

EX
GUARD
SHACK

EX VAULT

FUTURE
RR SIDING
TRACK

WASTEWATER/STORMWATER
PIPELINE EASEMENT

EX FENCE
PROTECT-IN-PLACE

EX PP AND
GUY CABLE

EX VAULT

PROPERTY LINE

BNSF RAILROAD R.O.W.

NORTON AVE

WEST MARINE VIEW DRIVE (SR 529)

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS
BEFORE YOU DIG
DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

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

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION

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PROJECT ENGINEER:	SCALE:
N. WATSON	1" = 80'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

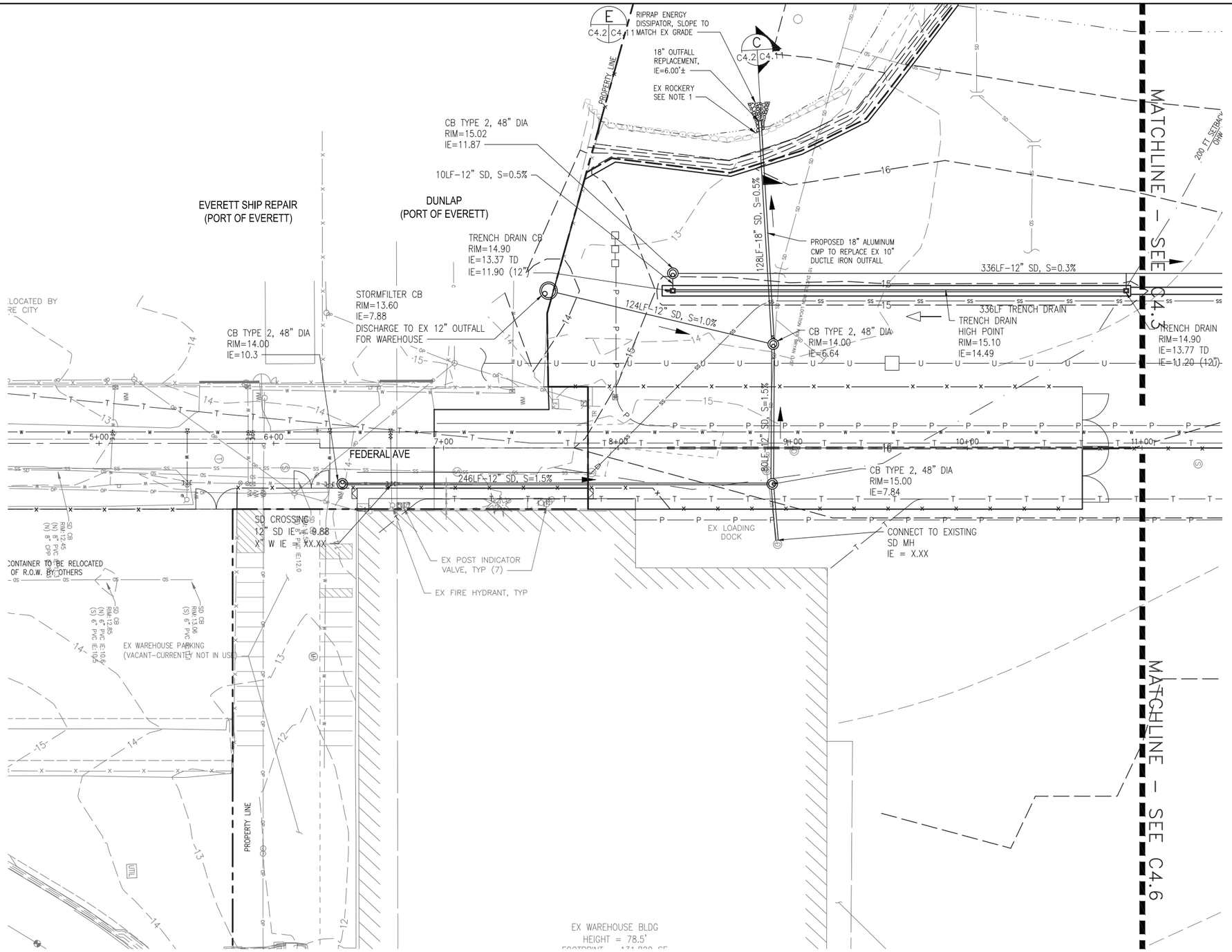
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER OVERALL PLAN

DWG. NO. **C4.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



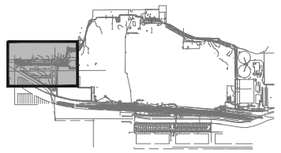
GENERAL NOTES

1. ALL WORK BELOW HIGH TIDE LINE (HTL) SHALL OCCUR IN THE 'DRY'.
2. EXCAVATION AND PLACEMENT OF ROCK BELOW HTL SHALL OCCUR WITHIN A SINGLE TIDE CYCLE. IF WORK IS NOT COMPLETED WITHIN A SINGLE TIDE CYCLE, TEMPORARILY COVER AND STABILIZE EXPOSED SOILS WITH GRAVEL, GEOTEXTILE OR OTHER APPROVED METHODS PRIOR TO TIDAL SUBMERSION.

CONSTRUCTION KEY NOTES

(1) TEMPORARILY RELOCATE EXISTING RIPRAP AND RESTORE TO ORIGINAL ELEVATION, DEPTH, AND LIMITS FOLLOWING OUTFALL REPLACEMENT

(2) CUT EX 10" OUTFALL & PLUG EACH END WITH CONCRETE CAP



KEYMAP

30' 0 30' 60'
15' 45'

SCALE: 1"=30'

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
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APPROVED BY:	

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STORMWATER DETAIL PLAN

DWG. NO. **C4.2**
CIP NO. 1–8–900–05
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EX CONC BLOCKS

EX TOP OF BANK

EX 15" CONC PIP IE=10.8"

TRENCH DRAIN HIGH POINT RIM=16.02 IE=15.41

OHW LINE

INV. 10" DUCTILE DIGITIZED PER BRYAN LUST. OUTFALL ALWAYS UNDERWATER EVEN IN EXTREME LOW TIDE

REPL EX 12" CONC OUTFALL A WITH NEW 18" OUTFALL

200' SETBACK FROM OHW LINE

410LF TRENCH DRAIN

290LF TRENCH DRAIN

RIM=16.02
IE=14.49 TD
IE=13.02 (12")

DECOMMISSIONED PSO4 PLUGGED WITH CDF AT EACH END

LP1

LP2

EX DOCK

MATCHLINE – SEE C4.2

MATCHLINE – SEE C4.4

200 FT SETBACK FROM OHW LINE

CB TYPE 2, 48" DIA
RIM=15.02
IE=11.69 (12" W)
IE=10.75 (12" E)
IE=9.85 (12" S)
IE=9.85 (24" N)

265LF-12" SD, S=0.5%

10LF-12" SD, S=0.5%

TRENCH DRAIN CB
RIM=15.80
IE=13.37 TD
IE=10.80 (12")

128LF-18" SD, S=0.5%

PROPOSED 18" ALUMINUM CMP TO REPLACE EX 10" DUCTILE IRON OUTFALL

CB TYPE 2, 48" DIA
RIM=15.02
IE=10.86 (12")

336LF-12" SD, S=0.3%

336LF-24" SD, S=0.3%

336LF TRENCH DRAIN

TRENCH DRAIN HIGH POINT
RIM=15.10
IE=14.49

CB TYPE 2, 48" DIA
RIM=14.00
IE=6.64

TRENCH DRAIN CB
RIM=14.90
IE=13.77 TD
IE=10.20 (12")

180LF CONCRETE GUTTER

226LF TRENCH DRAIN

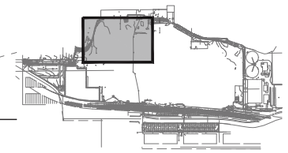
336LF TRENCH DRAIN

HIGH-M

LP6

MATCHLINE – SEE C4.6

9+00 10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00



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DWG. NO. **C4.3**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX

LIFT STATION CONTROL PANEL

EX ASPH ROAD PROTECT-IN-PLACE

EX OUTFALL 004 (DECOMMISSIONED)

CESF TREATMENT SYSTEM, SEE SHEET C4.11

EX CONC BASE/ TRANSMISSION POLE PROTECT-IN-PLACE

EX POWER EQUIPMENT PROTECT-IN-PLACE

EX EOP

X 15" CMC PIPE =10.8'

HIGH-FLOW STORMWATER BYPASS AND LIFT STATION SYSTEM, SEE SHEETS C4.14, C4.15, C4.16

CB TYPE 2 60" DIA
RIM=15.02
IE=12.73 (36" N)
IE=7.07 (36" W)

29LF-12" SD, S=1.0%

135 TRENCH DRAIN

TRENCH DRAIN CB
RIM=16.02
IE=14.49 TD
IE=13.02 (12")

TRENCH DRAIN HIGH POINT
RIM=16.02
IE=15.41

EX 24" WOOD STAVE PIPE CAPPED AFTER THE RAILROAD BULKHEAD

CARGO CONTAINER CONTAINMENT AREA

8'x20' CONTAINER

LP3

LP4

LP15

EX ASPH ROAD

EX PUD SUBSTATION

OHW LINE

MATCHLINE - SEE C4.3

MATCHLINE - SEE C4.5

MATCHLINE - SEE C4.7

255LF-36" SD, S=0.3%

157LF-12" SD, S=1.20%

CB TYPE 2, 48" DIA
RIM=15.02
IE=10.30 (24" E)
IE=9.85 (12" N)
IE=9.85 (24" S)

CB TYPE 2, 60" DIA
RIM=15.02
IE=11.69 (12" W)
IE=12.02 (12" E)
IE=8.84 (24" S)
IE=7.84 (36" N)

336LF-24" SD, S=0.3%

10LF-18" SD, S=0.4%

86LF-12" SD, S=0.3%

CB TYPE 2, 48" DIA
RIM=16.60
IE=10.13 (12" N)
IE=11.63 (12" E)

60'X120' WASHPAD

CB TYPE 1
RIM=16.00
IE=12.28

356LF-12" SD, S=0.3%

336LF TRENCH DRAIN

55LF TRENCH DRAIN

CB TYPE 1
RIM=16.00
IE=11.73

TRENCH DRAIN
CB TYPE 2, 48" DIA
RIM=15.80
IE=13.37 TD
IE=10.40 (18")

TRENCH DRAIN HIGH POINT
RIM=15.80
IE=15.19

LONGSHOREMAN TRAILER (OFFICE, LUNCHROOM, RESTROOM & SHOWER FACILITY)

CB TYPE 1
RIM=16.00
IE=11.98

CB TYPE 1
RIM=15.70
IE=12.70

4 PARKING STALLS

HIGH-MAST LIGHT POLE & FIRE HYDRANT, TYP

TRENCH DRAIN HIGH POINT
RIM=15.80
IE=14.49

BASELINE

LP8

LP9

LP10

17+00 18+00 19+00 20+00 21+00 22+00 23+00 24+00 25+00

KEYMAP

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15' 45'

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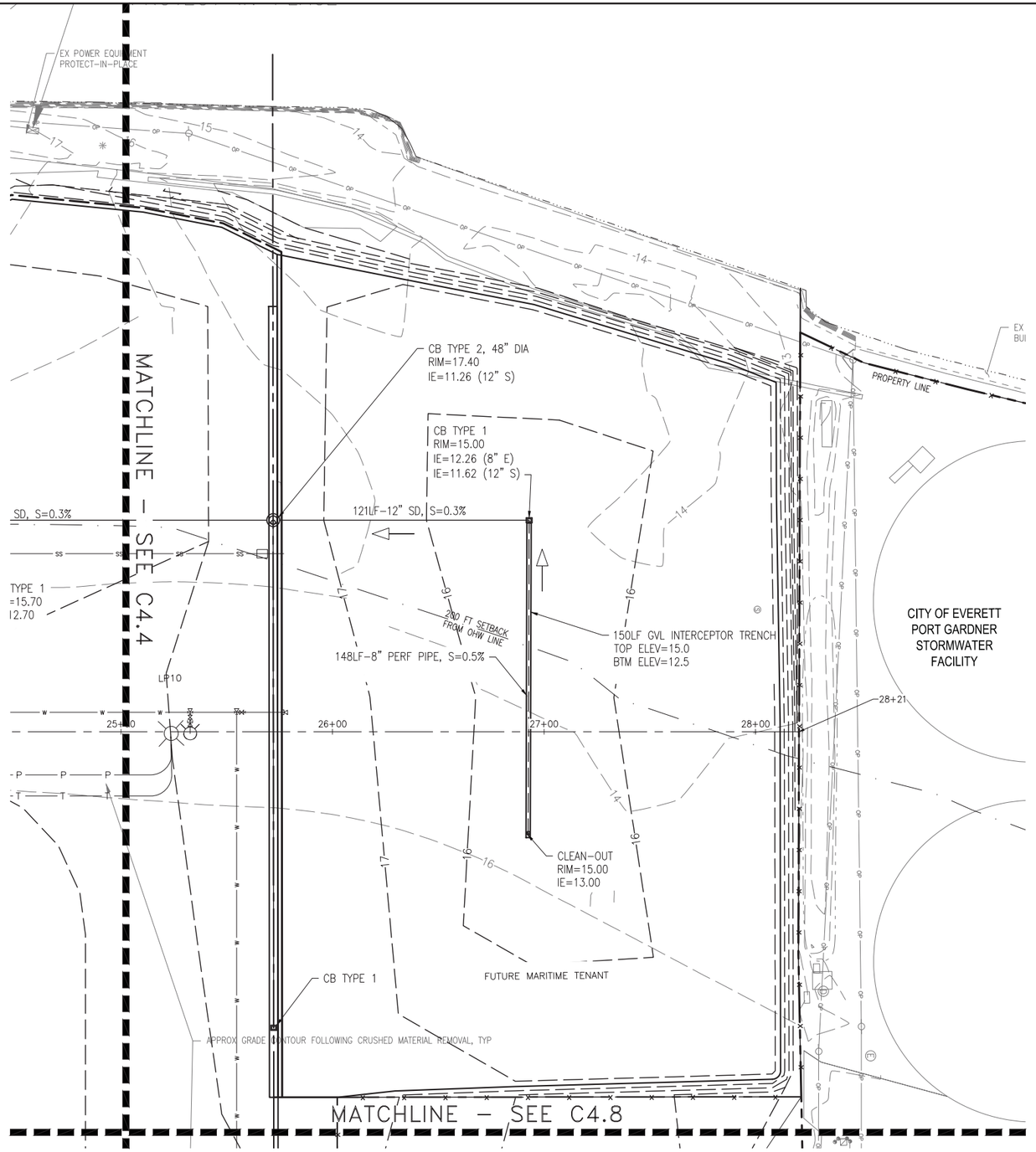
STORMWATER DETAIL PLAN

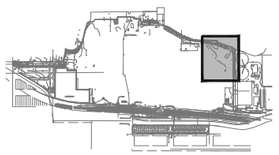
DWG. NO. **C4.4**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX





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15' 45'

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MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER DETAIL PLAN

DWG. NO. **C4.5**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX

MATCHLINE – SEE C4.3

MATCHLINE – SEE C4.2

MATCHLINE – SEE C4.7

CB TYPE 2, 48" DIA
RIM=15.00
IE=7.84

SOUTH INGRESS/
EGRESS GATE

CONNECT TO EXISTING
SD MH
IE = X.XX

WAREHOUSE TENANT LEASEHOLD

TRENCH DRAIN CB
TYPE 2, 48" DIA
RIM=18.03
IE=16.83 TD
IE=12.10 (12")

122LF–TRENCH DRAIN

336LF TRENCH DRAIN

300LF–12" SD, S=0.5%

94LF–12" SD, S=0.32%

173LF–12" SD, S=0.3%

CB TYPE 1
RIM=16.32
IE=13.32

CONC BLOCK WALL

94LF–12" SD, S=0.41%

CB TYPE 1
RIM=15.92
IE=12.92

CB TYPE 1
RIM=XX.XX
IE=12.40

LP7

LP11

604LF CONC GUTTER

CB TYPE 1
RIM=20.30
IE=17.30

CB TYPE 1
RIM=20.30
IE=16.58

EX LOADING DOCK

EX FENCE
PROTECT–IN–PLACE

EX DWO ABOVE GRADE

EX DWO ABOVE GRADE PROTECT–IN–PLACE

EX VAULT

EX PP AND
GUY CABLE

KEYMAP

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15' 45'

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DWG. NO. **C4.6**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX

MATCHLINE – SEE C4.4

MATCHLINE – SEE C4.6

MATCHLINE – SEE C4.8

488LF–12" SD, S=7.78%

300LF–18" SD, S=0.4%

ASPH PAVEMENT

TRENCH DRAIN
HIGH POINT
RIM=18.03
IE=17.42

TRENCH DRAIN CB
TYPE 2, 48" DIA
RIM=18.03
IE=16.83 TD N
IE=16.02 TD S
IE=11.60 (18") W

336LF TRENCH DRAIN

118LF TRENCH DRAIN

214LF CONC GUTTER

TRENCH DRAIN
HIGH POINT
RIM=18.03
IE=17.42

TRUCK SCALE

LP12

LP13

LR14

361LF COND GUTTER

FUTURE
RR SIDING
TRACK 2

CB TYPE 1
RIM=20.30
IE=16.58 12" N
IE=15.85 12" S
IE=15.85 12" W

EX DWO BELOW GRADE
PROTECT-IN-PLACE

CB TYPE 1
RIM=20.30
IE=17.30

FUTURE
RR SIDING
TRACK 1

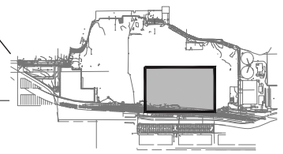
WASTEWATER/STORMWATER
PIPELINE EASEMENT

NORTH INGRESS/
EGRESS GATE

EX VAULT

BNSF RAILROAD R.O.W.

PROPERTY LINE



KEYMAP

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STORMWATER DETAIL PLAN

DWG. NO. **C4.7**

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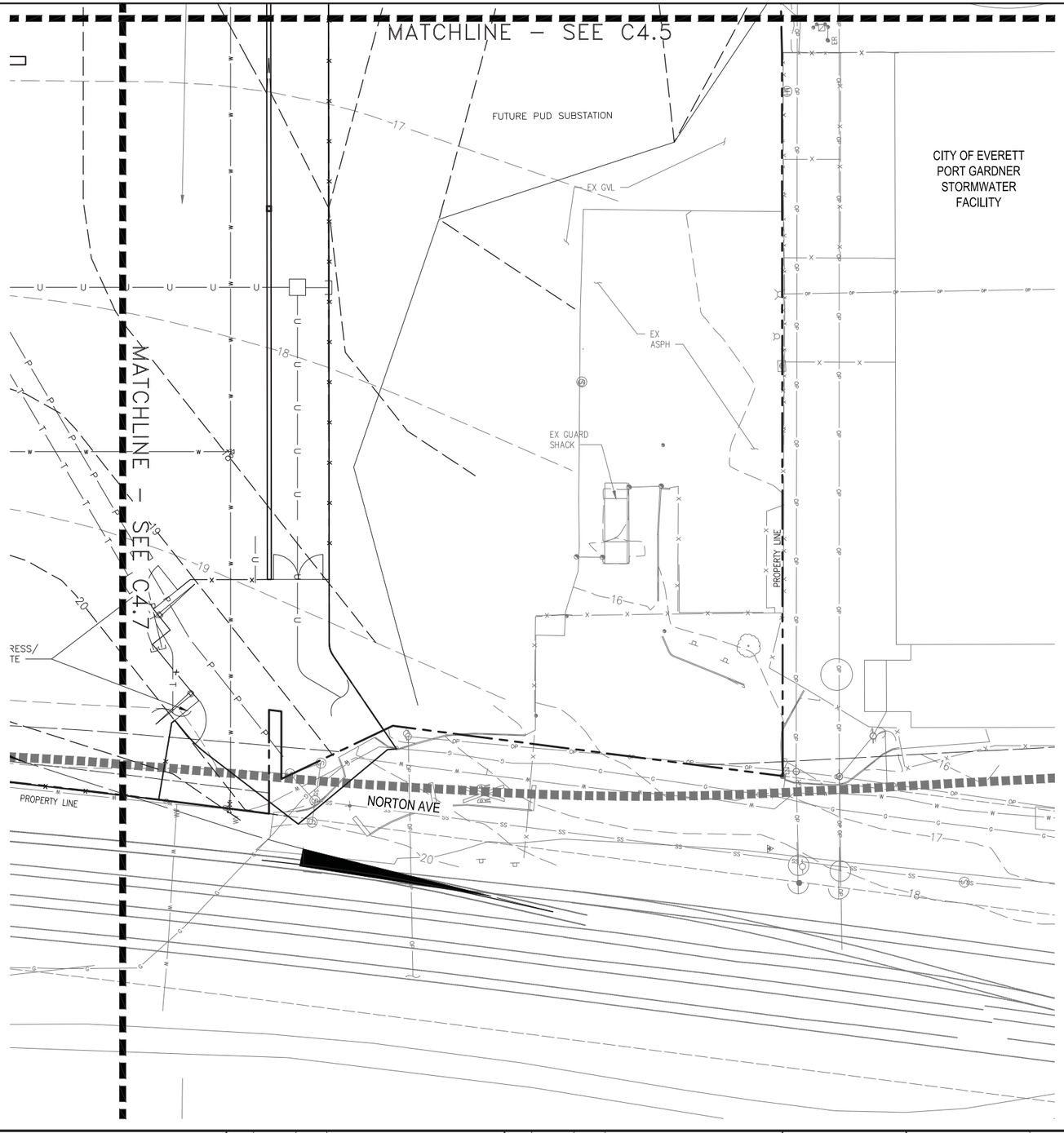
SHEET NO. XX OF XX



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STORMWATER DETAIL PLAN

DWG. NO. **C4.8**

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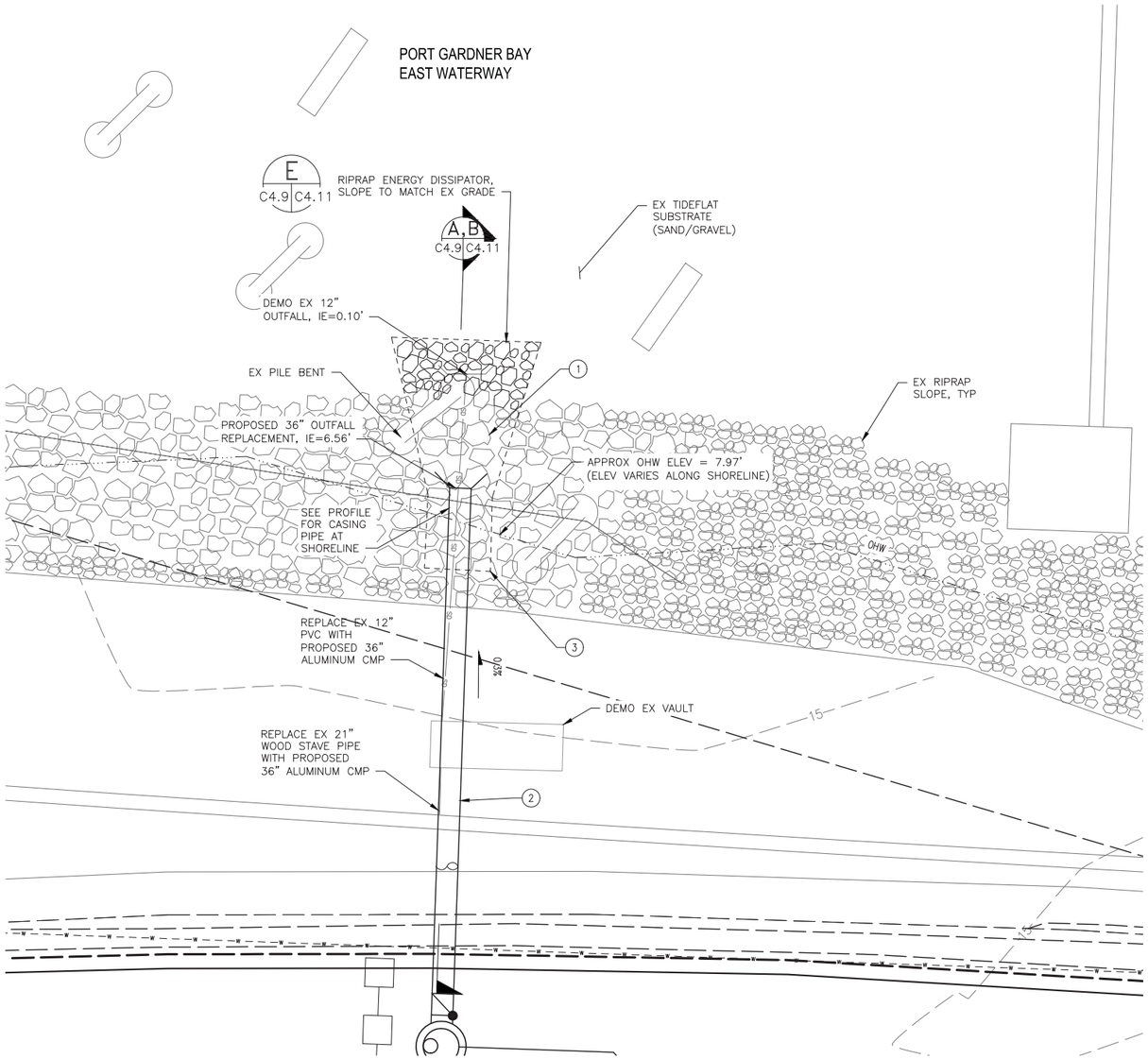
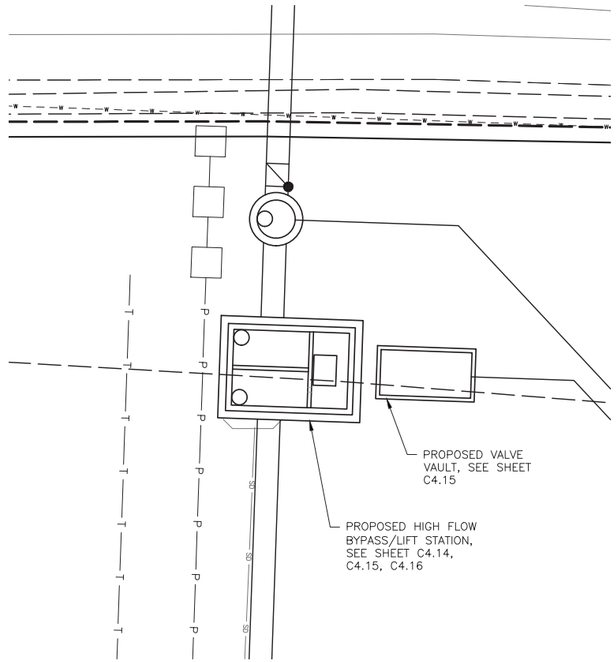


1 OUTFALL M DETAIL PLAN
C4.1 C4.9

10' 0 10' 20'
5' 15'
SCALE: 1"=10'



1 HIGH-FLOW BYPASS & LIFT STATION DETAIL PLAN
C4.1 C4.9

GENERAL NOTES

1. ALL WORK BELOW HIGH TIDE LINE (HTL) SHALL OCCUR IN THE 'DRY'.
2. EXCAVATION AND PLACEMENT OF ROCK BELOW HTL SHALL OCCUR WITHIN A SINGLE TIDE CYCLE. IF WORK IS NOT COMPLETED WITHIN A SINGLE TIDE CYCLE, TEMPORARILY COVER AND STABILIZE EXPOSED SOILS WITH GRAVEL, GEOTEXTILE OR OTHER APPROVED METHODS PRIOR TO TIDAL SUBMERSION.

CONSTRUCTION KEY NOTES

(1) TEMPORARILY RELOCATE EXISTING RIPRAP AND RESTORE TO ORIGINAL ELEVATION, DEPTH, AND LIMITS FOLLOWING OUTFALL REPLACEMENT.

(2) KEY RESTORED RIPRAP INTO EXISTING RIPRAP FOLLOWING OUTFALL REPLACEMENT WORK.

N

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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(425) 259-3164

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(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

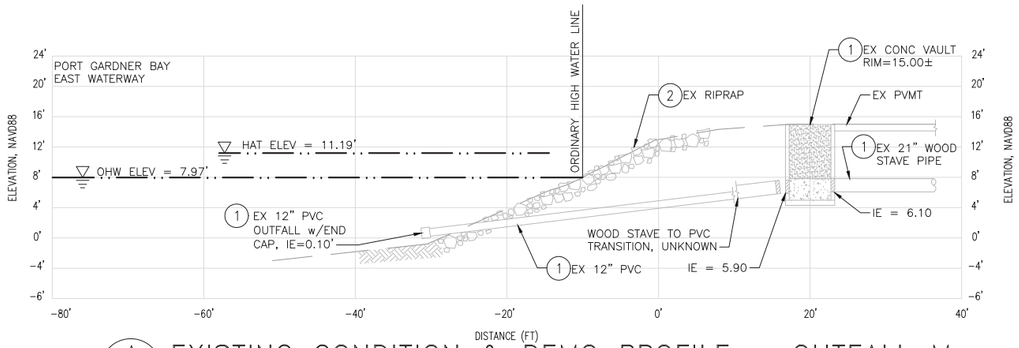
NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 10'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

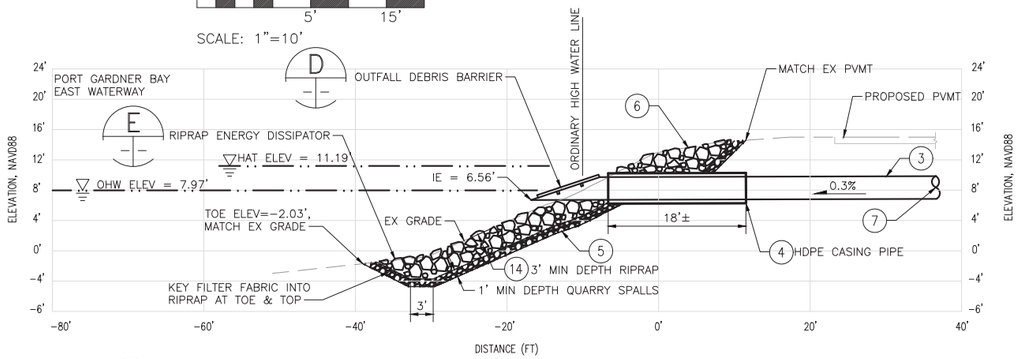
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER DETAIL PLAN
OUTFALL M

DWG. NO. **C4.9**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



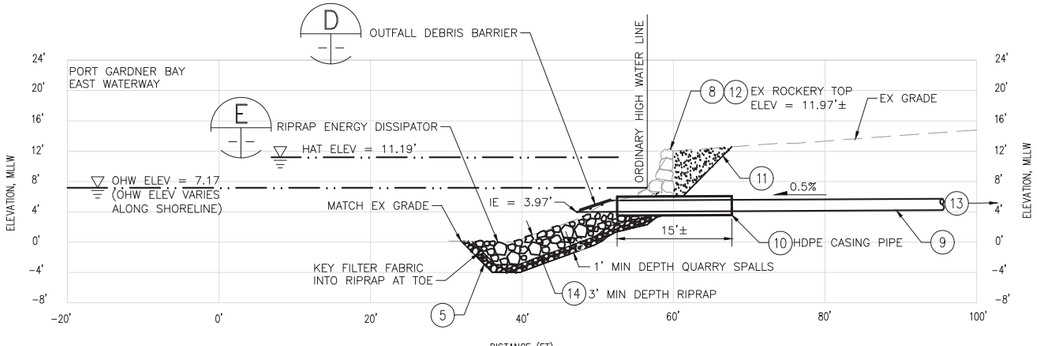
A EXISTING CONDITION & DEMO PROFILE – OUTFALL M

SCALE: 1"=10'



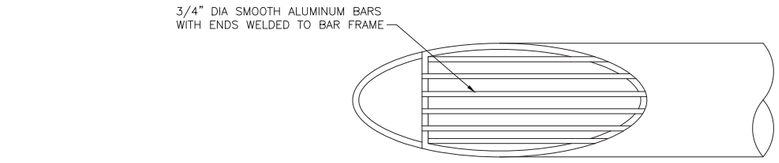
B DEVELOPED CONDITION & DEMO PROFILE – OUTFALL M

SCALE: 1"=10'

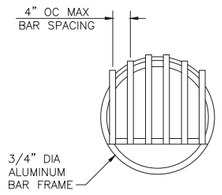


C DEVELOPED CONDITION & DEMO PROFILE – OUTFALL A

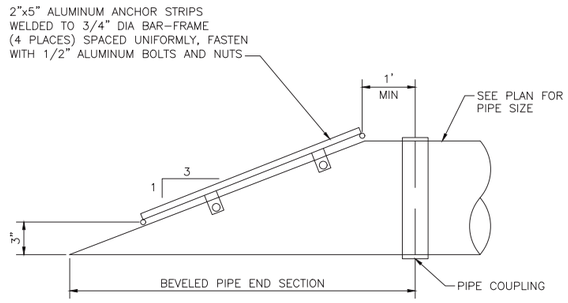
SCALE: 1"=10'



PLAN VIEW



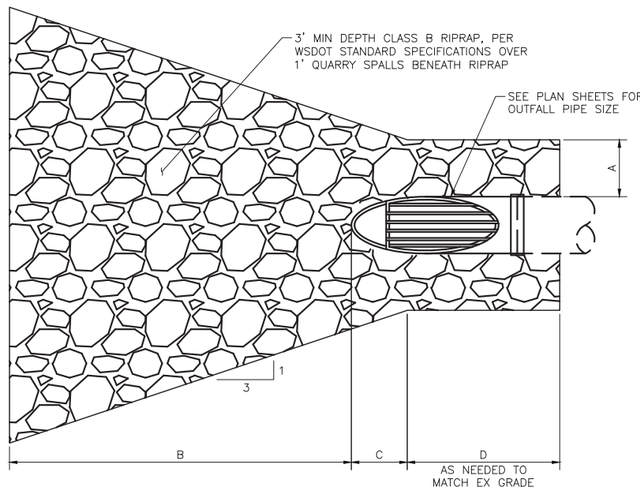
END VIEW



SIDE VIEW

D DETAIL – OUTFALL DEBRIS BARRIER

SCALE : NTS



E DETAIL – RIPRAP ENERGY DISSIPATOR

SCALE: NTS

GENERAL NOTES

1. ALL WORK BELOW HIGH TIDE LINE (HTL) SHALL OCCUR IN THE 'DRY'.
2. EXCAVATION AND PLACEMENT OF ROCK BELOW HTL WILL OCCUR IN THE 'DRY' WITHIN A SINGLE TIDE CYCLE. WORK THAT CANNOT BE COMPLETED IN A SINGLE TIDE CYCLE SHALL TEMPORARILY COVER AND STABILIZE EXPOSED SOILS WITH GRAVEL, GEOTEXTILE OR OTHER APPROVED METHODS PRIOR TO TIDAL SUBMERSION.

CONSTRUCTION KEY NOTES

1. DEMOLISH AND REMOVE.
2. TEMPORARILY RELOCATE EXISTING RIPRAP TO ACCOMMODATE OUTFALL REPLACEMENT WORK.
3. REPLACE EXISTING 12" PVC OUTFALL WITH NEW 36" ALUMINUM CMP.
4. INSTALL 48" HDPE PIPE TO ENCASE 36" ALUMINUM CMP OUTFALL PIPE. FILL ANNULAR SPACE WITH NON-SHRINK GROUT.
5. COVER EXCAVATED, EXPOSED SUBGRADE SOILS WITH FILTER FABRIC PRIOR TO QUARRY SPALL PLACEMENT.
6. RESTORE EXISTING RIPRAP TO ORIGINAL ELEVATION, DEPTH, AND LIMITS FOLLOWING OUTFALL REPLACEMENT.
7. PIPE TO UPLAND STORM DRAIN SYSTEM.
8. TEMPORARILY RELOCATE EXISTING ROCKERY TO ACCOMMODATE OUTFALL INSTALLATION.
9. PLUG & ABANDON EXISTING 10" DI OUTFALL AND REPLACE WITH 18" ALUMINUM CMP OUTFALL.
10. INSTALL 30" HDPE PIPE TO ENCASE 18" ALUMINUM CMP OUTFALL PIPE. FILL ANNULAR SPACE WITH NON-SHRINK GROUT.
11. COVER EXCAVATED, EXPOSED SUBGRADE SOILS WITH FILTER FABRIC PRIOR TO GRAVEL BACKFILL PLACEMENT FOR ROCKERY.
12. RESTORE EXISTING ROCKERY TO ORIGINAL ELEVATION AND LIMITS FOLLOWING OUTFALL INSTALLATION.
13. PIPE TO UPLAND STORM DRAIN SYSTEM. UPLAND STORM WATER RUNOFF IS TREATED BY FILTER CARTRIDGE(S) FOR WATER QUALITY TREATMENT BEFORE DISCHARGE TO OUTFALL A.
14. RIPRAP SHALL CONFORM TO WSDOT SPEC 9-13.4 CLASS B ROCK FOR EROSION AND SCOUR PROTECTION

ENERGY DISSIPATOR SCHEDULE

OUTFALL SIZE	A	B	C	D
18"	1.5'	10.5'	1.5'	8'±
36"	3'	18'	3'	10'±

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DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

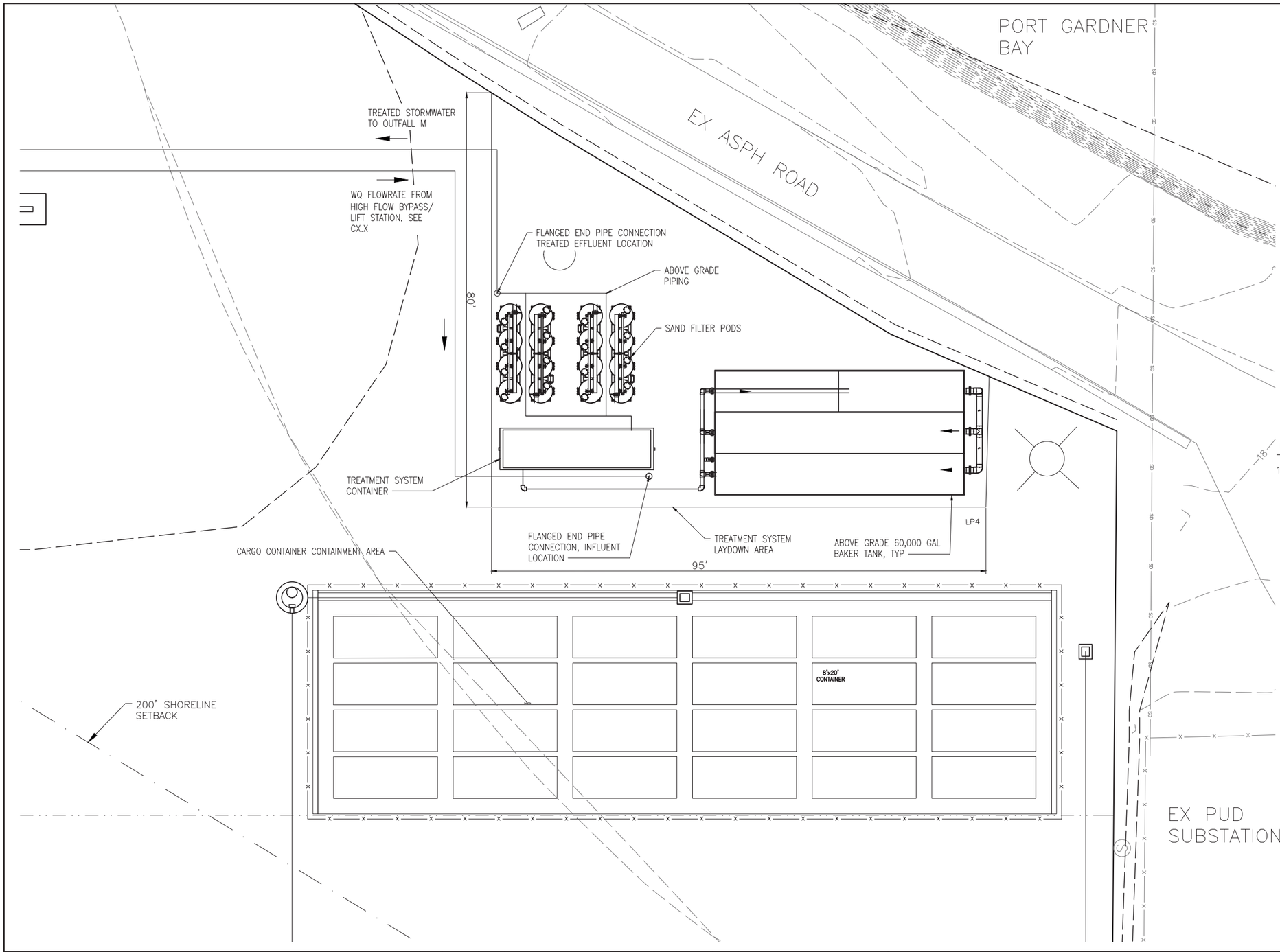
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER PROFILES

DWG. NO. **C4.10**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



LEGEND

- PROPERTY LINE
- LEASE LIMIT
- EASEMENT
- WATER
- SEWER
- STORMWATER
- TRENCH DRAIN
- FENCE
- EXISTING WATER
- EXISTING SEWER
- EXISTING STORMWATER
- EXISTING FENCE
- FIRE HYDRANT
- LIGHT POLE
- PROPOSED CONTOUR
- EXISTING CONTOUR

GENERAL NOTES:

1. THE CHITOSAN ENHANCED SAND FILTRATION TREATMENT SYSTEM SHOWN IS A PRELIMINARY DESIGN LAYOUT AND IS NOT THE FINAL TREATMENT SYSTEM CONFIGURATION. THE CONTRACTOR SHALL COORDINATE WITH THE TREATMENT SYSTEM VENDOR TO OPTIMIZE THE TREATMENT SYSTEM LAYOUT PER THEIR RECOMMENDATIONS. THE CHITOSAN ENHANCED SAND FILTRATION SYSTEM GENERALLY CONSISTS OF THREE MAIN COMPONENTS: TREATMENT SYSTEM CONTAINER, SAND FILTER PODS, AND ABOVE GROUND SETTLEMENT TANKS.

10' 0 10' 20'
5' 15'

SCALE: 1"=10'

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PORT OF EVERETT

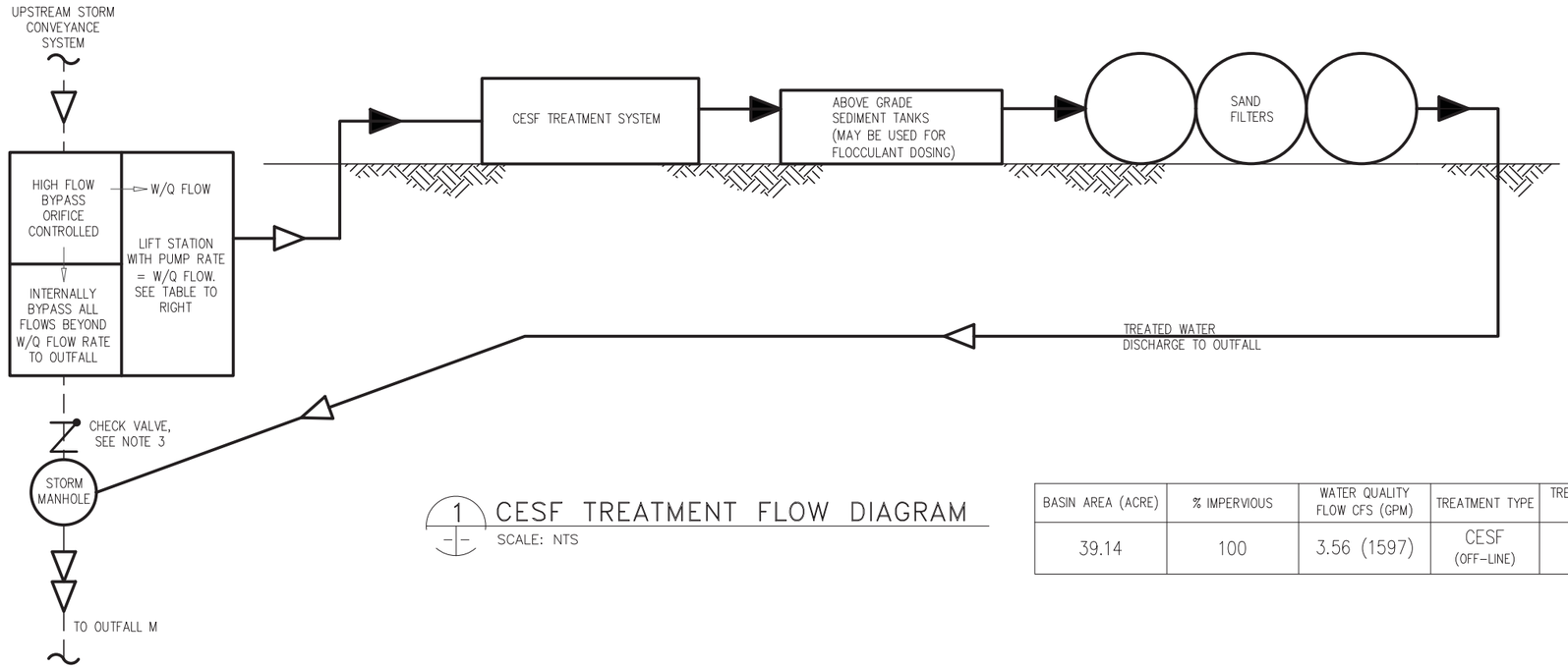
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED PLAN
STORMWATER TREATMENT SYSTEM

DWG. NO. **C4.11**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. XX OF XX



1 CESF TREATMENT FLOW DIAGRAM

SCALE: NTS

BASIN AREA (ACRE)	% IMPERVIOUS	WATER QUALITY FLOW CFS (GPM)	TREATMENT TYPE	TREATMENT CAPACITY CFS (GPM)
39.14	100	3.56 (1597)	CESF (OFF-LINE)	XXX

GENERAL NOTES:

1. HIGH FLOW BYPASS AND LIFT STATION ARE COMBINED INTO A SINGLE STRUCTURE.
2. SEE SHEET C4.11 FOR HIGH FLOW BYPASS/LIFT STATION DIMENSIONS, ORIFICE SIZE, AND CONFIGURATION.
3. STORMWATER CONVEYANCE SYSTEM IS TIDALLY INFLUENCED. CHECK VALVES PREVENT SEA WATER FROM ENTERING THE STORMWATER TREATMENT SYSTEM VIA THE HIGH FLOW BYPASS/LIFT STATION.

LEGEND:

- BELOW GROUND FLOW DIRECTION
- ABOVE GROUND FLOW DIRECTION
- EXISTING ABOVE GROUND FLOW DIRECTION

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PORT OF EVERETT

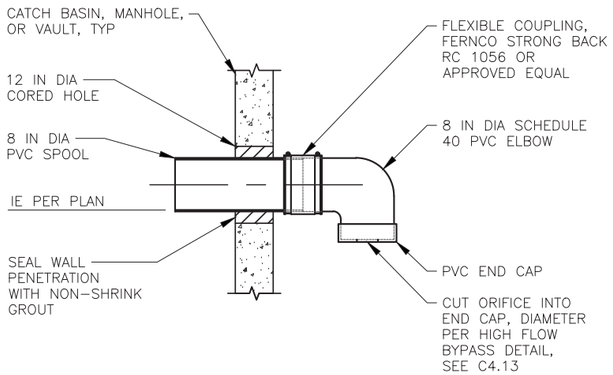
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER DETAILS
CESF TREATMENT FLOW DIAGRAM

DWG. NO. **C4.12**

CIP NO. 1-8-900-05

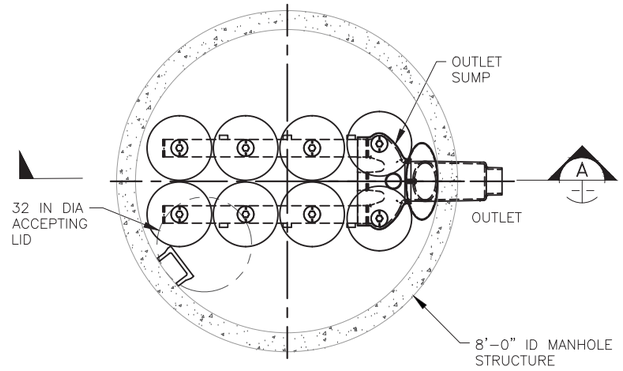
PROJECT NO. TBD

SHEET NO. XX OF XX



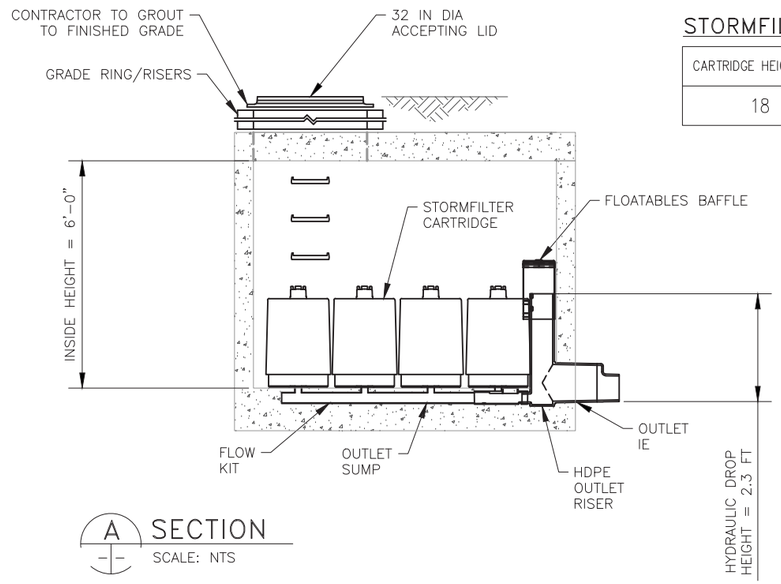
1 DOWN-TURNED ELBOW CONNECTION

SCALE: NTS



2 OUTFALL A STORMFILTER DETAIL

SCALE: NTS



A SECTION

SCALE: NTS

OUTFALL A TREATMENT SUMMARY

BASIN AREA (ACRE)	% IMPERVIOUS	WATER QUALITY FLOW CFS (GPM)	TREATMENT TYPE
1.30	100	0.12 (53.9)	STORMFILTER

STORMFILTER DESIGN

CARTRIDGE HEIGHT (IN)	CARTRIDGE FLOWRATE (GPM/CARTRIDGE)	NO. OF CARTRIDGES NEEDED	MAX NO. CARTRIDGES	HYDRAULIC DROP (FT)
18	7.5	8	14	2.3

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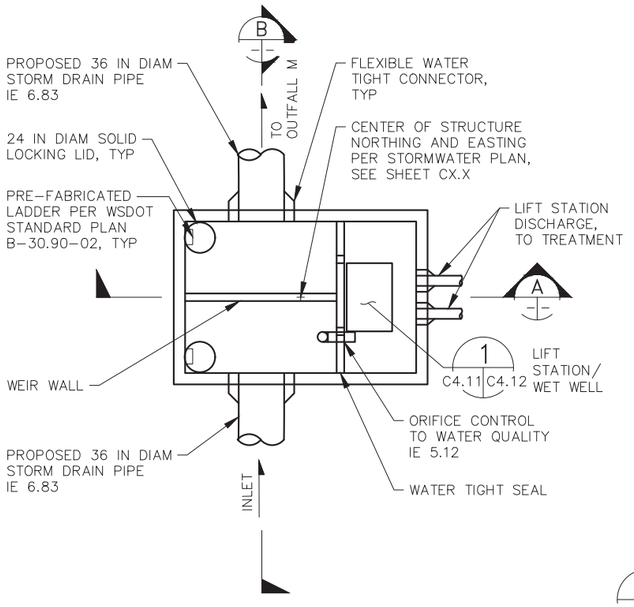
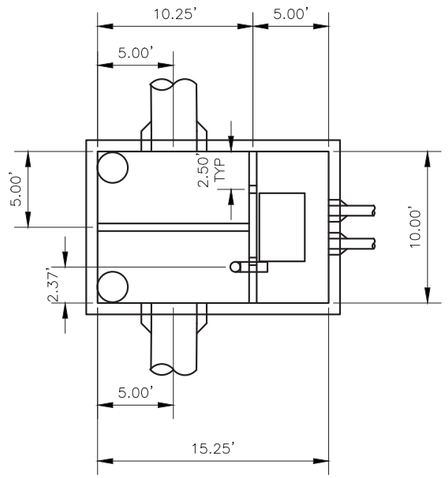
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER DETAILS

DWG. NO. **C4.13**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX

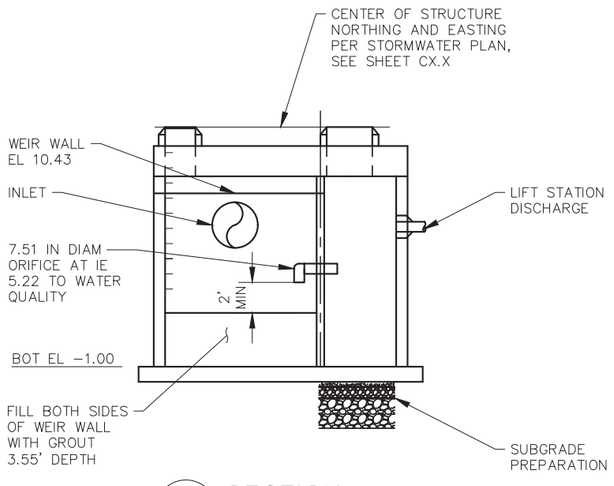


1 DETAIL
C4.9 C4.14 SCALE: 1" = 5'-0"

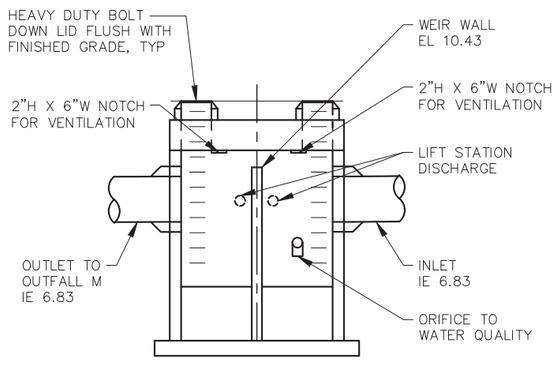


GENERAL NOTES:

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS AND CALCULATIONS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.



A SECTION
SCALE: 1" = 5'-0"



B SECTION
SCALE: 1" = 5'-0"

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HORZ DATUM: NAD 83/91

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NORTON TERMINAL – 60% DESIGN
STORMWATER DETAILS

DWG. NO. **C4.14**

CIP NO. 1-8-900-05

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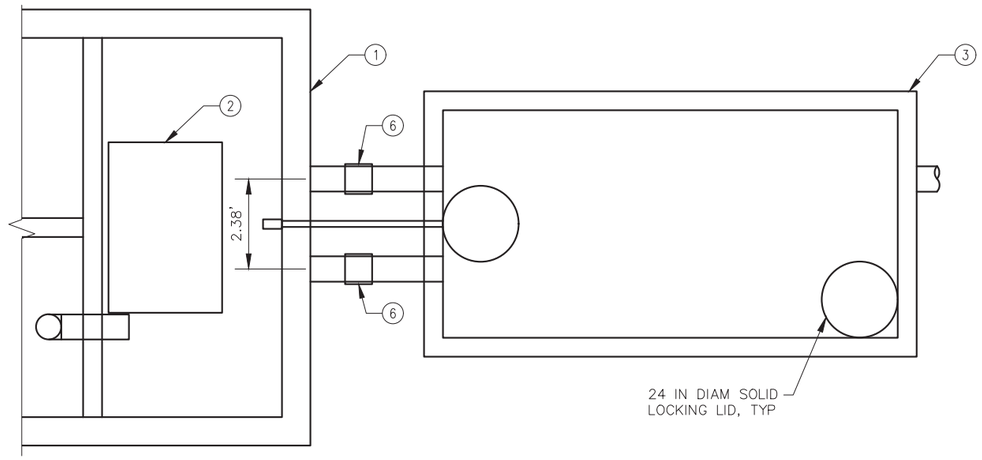

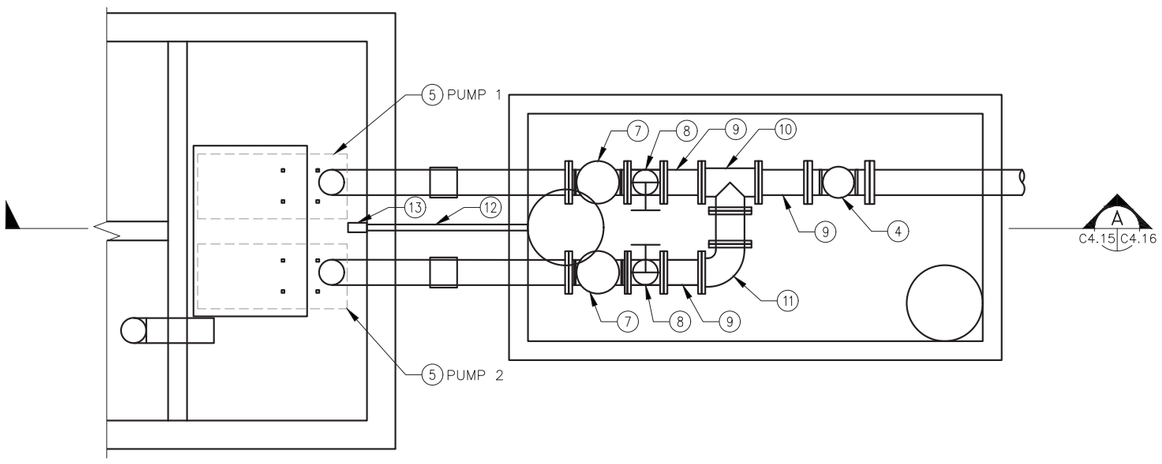

1 LIFT STATION DETAIL
C4.15 C4.16 SCALE: 1" = 2'-0"

NOTES

1. CONSTRUCT LIFT STATION AND PROVIDE STORM DRAINAGE, PRESSURE MAIN AND ELECTRICAL CONNECTIONS TO THE WET WELL. WET WELL SECTION IS SHOWN SCHEMATICALLY. LOCATE AND INSTALL THE MODULAR BASE, MOTOR MOUNT, DISCHARGE PIPE, RAILS AND OTHER APPURTENANCES PER MANUFACTURERS RECOMMENDATIONS.
2. MOUNT THE CONTROL PANEL AND ROUTE CONDUIT TO THE LIFT STATION PER THE ELECTRICAL PLANS.
3. PROVIDE A SPARE 3/4" CONDUIT FROM THE WET WELL TO THE ELECTRICAL EQUIPMENT. MOUNT AND CAP EXPOSED END.
4. INSTALL TOP PICK LOAD RATED HATCH FLUSH WITH GRADE. FALL PROTECTION APPURTENANCES SHALL BE INSTALLED AT HATCH.
5. ALL COMPONENTS INSTALLED IN THE LIFT STATION SHALL BE SUITABLE FOR NEC CLASS 1, DIVISION 1 LOCATIONS.

EQUIPMENT LIST

1	10'X15.25' CONCRETE VAULT, FLOW SPLITTER/LIFT STATION	1	SEE SPECS
2	HATCH WITH 4.5' X 3' CLEAR OPENING AND SAFETY GRATE, SEE NOTE 4	1	PER MFR
3	OLDCASTLE PRECAST 6'X12' (I.D.) METER VAULT	1	PER MFR
4	8" MAGNETIC FLOW METER, SEE PUMP OPERATION NOTE 2	1	PER MFR
5	XXXXX PUMP	2	PER MFR
6	8" MJ/MJ RESTRAINED JOINT COUPLING	2	PER AWWA C110
7	8" RESILIENT HINGED CI CHECK VALVE	2	PER AWWA C508
8	8" RESILIENT-SEATED CI ECCENTRIC PLUG VALVE	2	PER AWWA C517-05
9	8" DI CL 53 SPOOL FLG X FLG ASPHALT COATED LENGTH AS REQD	3	PER AWWA C110
10	8"X8"X8" DI TEE FL/FL ASPHALT COATED	1	PER AWWA C110
11	8" DI 90 DEG ELBOW FL/FL ASPHALT COATED	1	PER AWWA C110
12	2" SCH 40 PVC DRAIN LINE	1	PER MFR
13	2" SCH 40 PVC CHECK VALVE	1	PER MFR

PUMP CHARACTERISTICS

	MIN EFF %	PUMP RATING GPM	PUMP RATING PASS ø	TDH FT	MOTOR RATING RPM	MOTOR RATING HP	MOTOR RATING VOLTS
PUMP 1, PUMP 2 & MOTORS	X.XX%	1597	-	LOW-HIGH 33.7-39.1	XXXX	XX	XXX

PUMP OPERATION

1. PUMP 1 AND PUMP 2 DUTY POINTS SHALL BE SET AT A FIXED WATER QUALITY FLOW RATE.
2. INSTALL A ROSEMOUNT MAGMETER, WITH WIRELESS TRANSMITTER ON THE DISCHARGE LINE TO COMMUNICATE FLOW RATES WITH THE CONTROL PANEL AND VARIABLE FREQUENCY DRIVES.
3. PUMP 1 AND PUMP 2 WILL BE CONTROLLED WITH VARIABLE FREQUENCY DRIVES ON EACH PUMP MOTOR TO MAINTAIN WATER QUALITY FLOW RATES.
4. PUMP 1 AND PUMP 2 WILL NOT RUN IN PARALLEL.
5. PUMP 1 AND PUMP 2 SHALL ALTERNATE DUTY AFTER EVERY CYCLE.
6. EMERGENCY OFF SWITCH SHALL REMAIN ACTIVE WHILE THE SYSTEM IS IN MANUAL MODE.
7. SET HIGHWATER ALARM FLOAT JUST BELOW BOTTOM OF LID.

SYSTEM OPERATION

1. XXXX

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NORTON TERMINAL - 60% DESIGN
STORMWATER DETAILS

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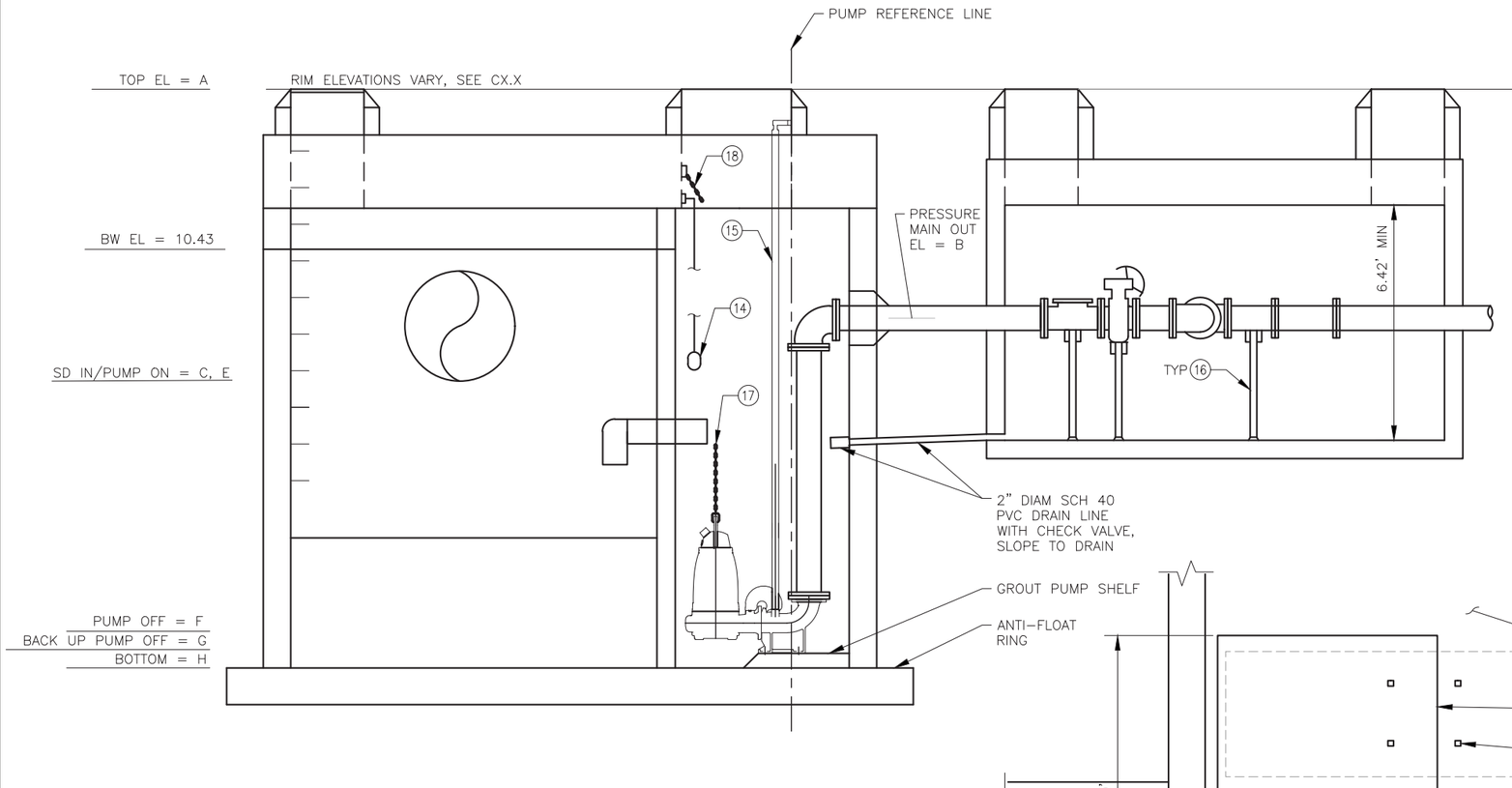
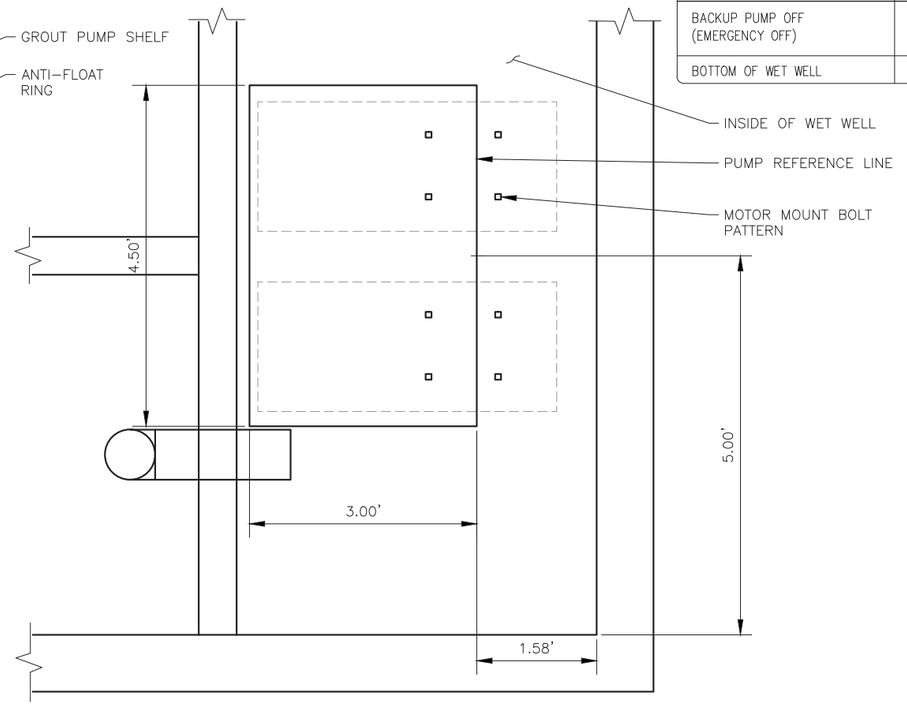


A LIFT STATION SECTION
C4.15 C4.16 SCALE: NTS



1 WET WELL CONFIGURATION
C4.15 C4.16 SCALE: NTS

EQUIPMENT LIST

14	ROTO – FLOAT TYPE S	4	PER MFR
15	316 STAINLESS STEEL GUIDE BARS	4	PER MFR
16	PIPE SUPPORT/VALVE STAND	3	SEE SPECS
17	316 STAINLESS STEEL LIFTING CHAIN ASSEMBLY AND LIFTING DEVICE	2	PER MFR
18	316 STAINLESS STEEL UPPER MOUNTING BRAKCET	2	PER MFR

ELEVATIONS

DESCRIPTION	REF	PUMP STA ELEV. (NAVD88)
TOP OF WET WELL	A	VARIES
PRESSURE MAIN OUT CL	B	8.22
GRAVITY LINE IN	C	5.12
HIGH WATER ALARM SEE PUMP OP. NOTE 7 ON C4.15	D	–
PUMP ON	E	6.83
PUMP OFF	F	0
BACKUP PUMP OFF (EMERGENCY OFF)	G	–0.50
BOTTOM OF WET WELL	H	–1.00

NOTES

1. ELECTRICAL PENETRATIONS SHALL BE MADE WATER TIGHT.
2. PUMP ELEVATIONS SHALL BE FIELD ADJUSTED DURING COMMISSIONING.

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION

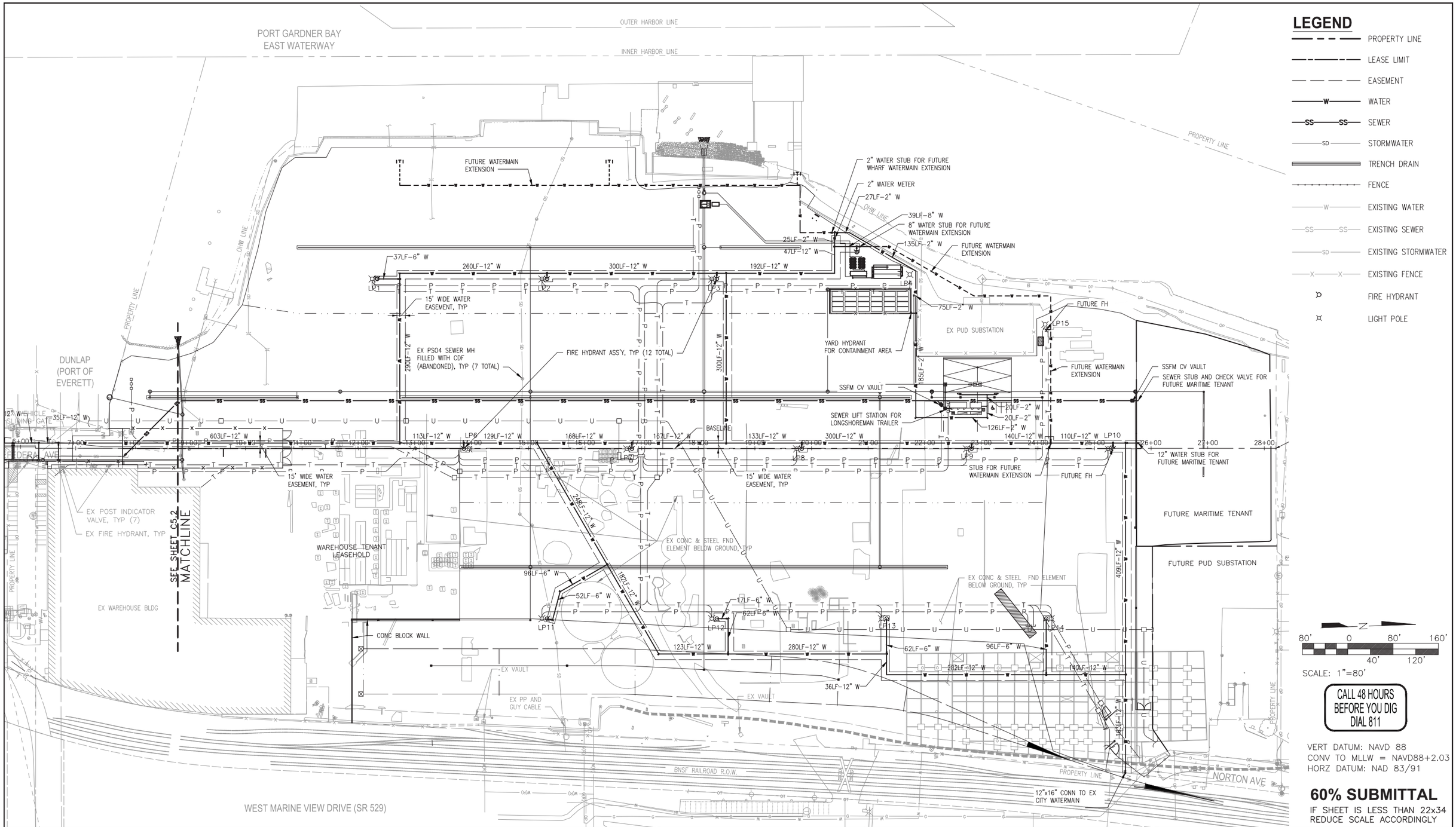
NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
STORMWATER DETAILS

DWG. NO. **C4.16**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX



LEGEND

- PROPERTY LINE
- LEASE LIMIT
- EASEMENT
- W — WATER
- SS — SEWER
- SD — STORMWATER
- TRENCH DRAIN
- FENCE
- W — EXISTING WATER
- SS — EXISTING SEWER
- SD — EXISTING STORMWATER
- X — EXISTING FENCE
- FIRE HYDRANT
- LIGHT POLE

N

80' 0 80' 160'
40' 120'

SCALE: 1"=80'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

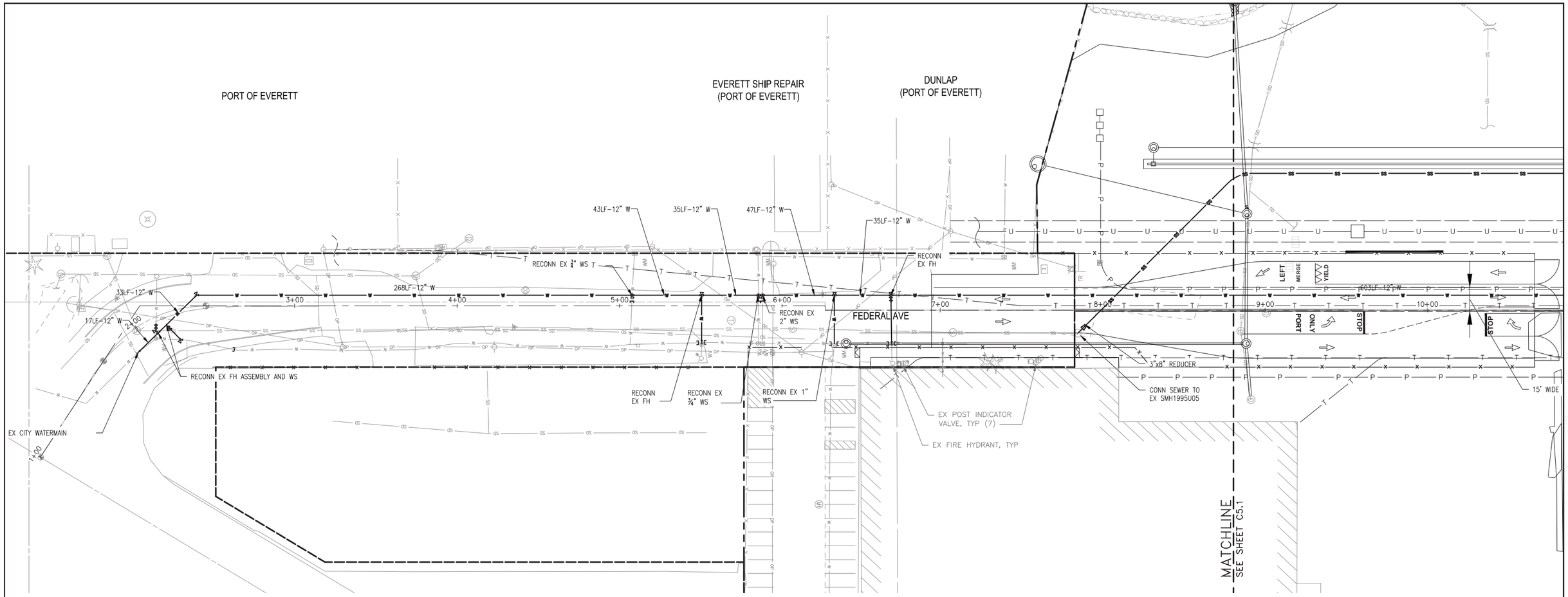
NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 80'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
WATER AND SEWER PLAN

DWG. NO. **C5.1**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX



N

30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

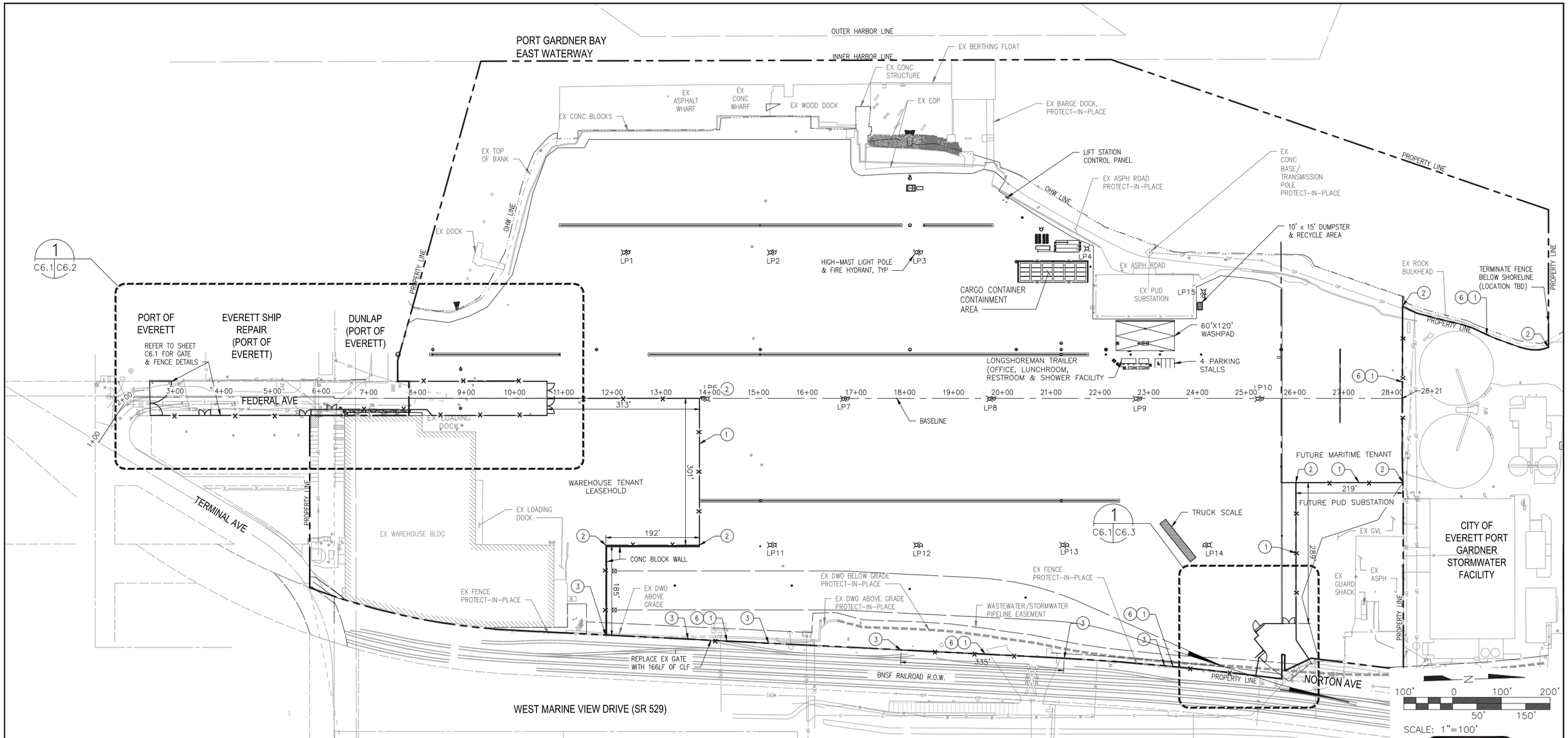
NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 30'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
WATER AND SEWER PLAN

DWG. NO. **C5.2**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. XX OF XX



LEGEND

- 8' SECURITY FENCE W/ ANGLED BARB WIRE EXTENSION
- EX FENCE
- SLIDE GATE
- EX SLIDE GATE
- SWING GATE
- EX SWING GATE

KEY NOTES

1. CONSTRUCT 8' CHAIN LINK FENCE W/ ANGLED BARB WIRE EXTENSION PER DETAIL X ON SHEET C6.4
2. CONSTRUCT CORNER POST AND BRACE
3. CONNECT TO EXISTING FENCE
4. CONSTRUCT 15' SWING GATE PER DETAIL X ON SHEET C6.X
5. CONSTRUCT 12' SWING GATE PER DETAIL X ON SHEET C6.X
6. CONSTRUCT FENCE ON PROPERTY LINE

NOTES

1. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO FENCE CONSTRUCTION.

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

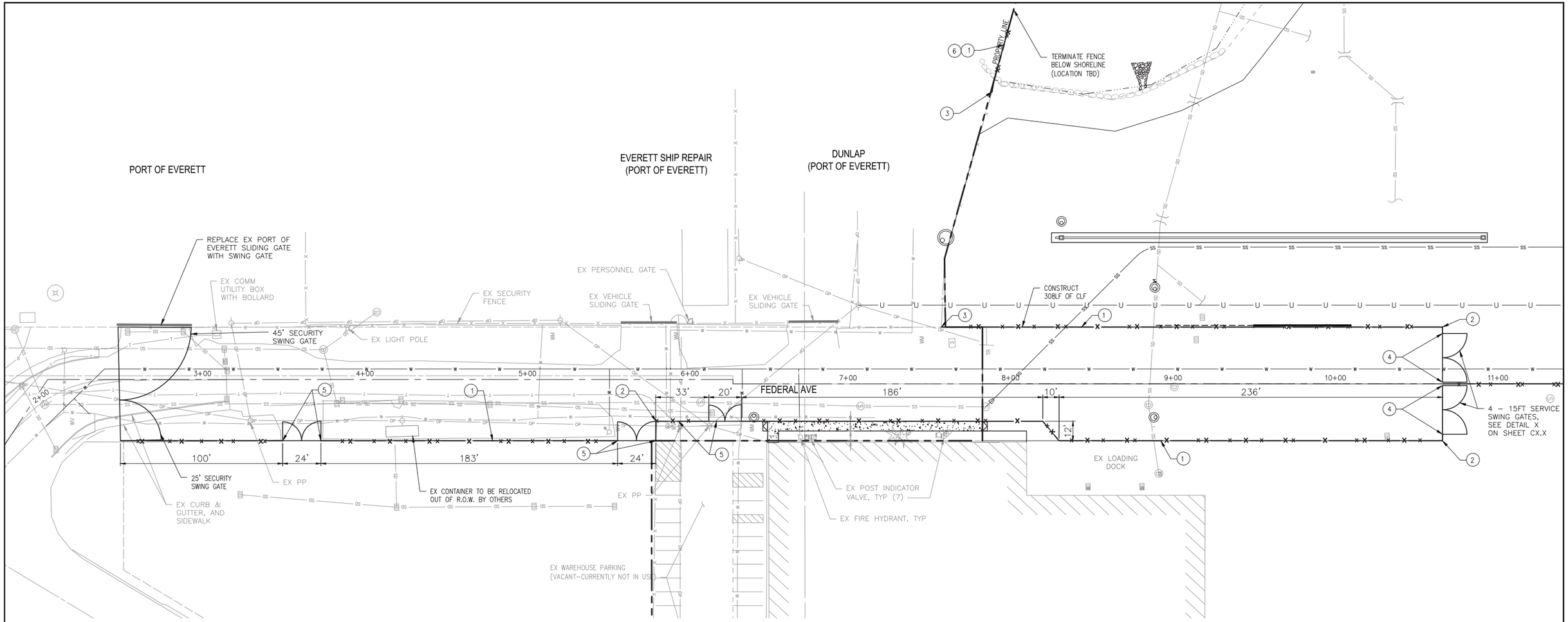
NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SECURITY FENCE
OVERALL SITE PLAN

DWG. NO. **C6.1**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



LEGEND

- 8' SECURITY FENCE W/ ANGLED BARB WIRE EXTENSION
- EX FENCE
- SLIDE GATE
- EX SLIDE GATE
- SWING GATE
- EX SWING GATE

KEY NOTES

1. CONSTRUCT 8' CHAIN LINK FENCE W/ ANGLED BARB WIRE EXTENSION PER DETAIL 1 ON SHEET C6.4
2. CONSTRUCT CORNER POST AND BRACE
3. CONNECT TO EXISTING FENCE
4. CONSTRUCT 15' SWING GATE PER DETAIL X ON SHEET C6.5
5. CONSTRUCT 12' SWING GATE PER DETAIL X ON SHEET C6.5
6. CONSTRUCT FENCE ON PROPERTY LINE

NOTES

1. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO FENCE CONSTRUCTION.

30' 0 30' 60'
15' 45'

SCALE: 1"=30'

CALL 48 HOURS
BEFORE YOU DIG
DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34
REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

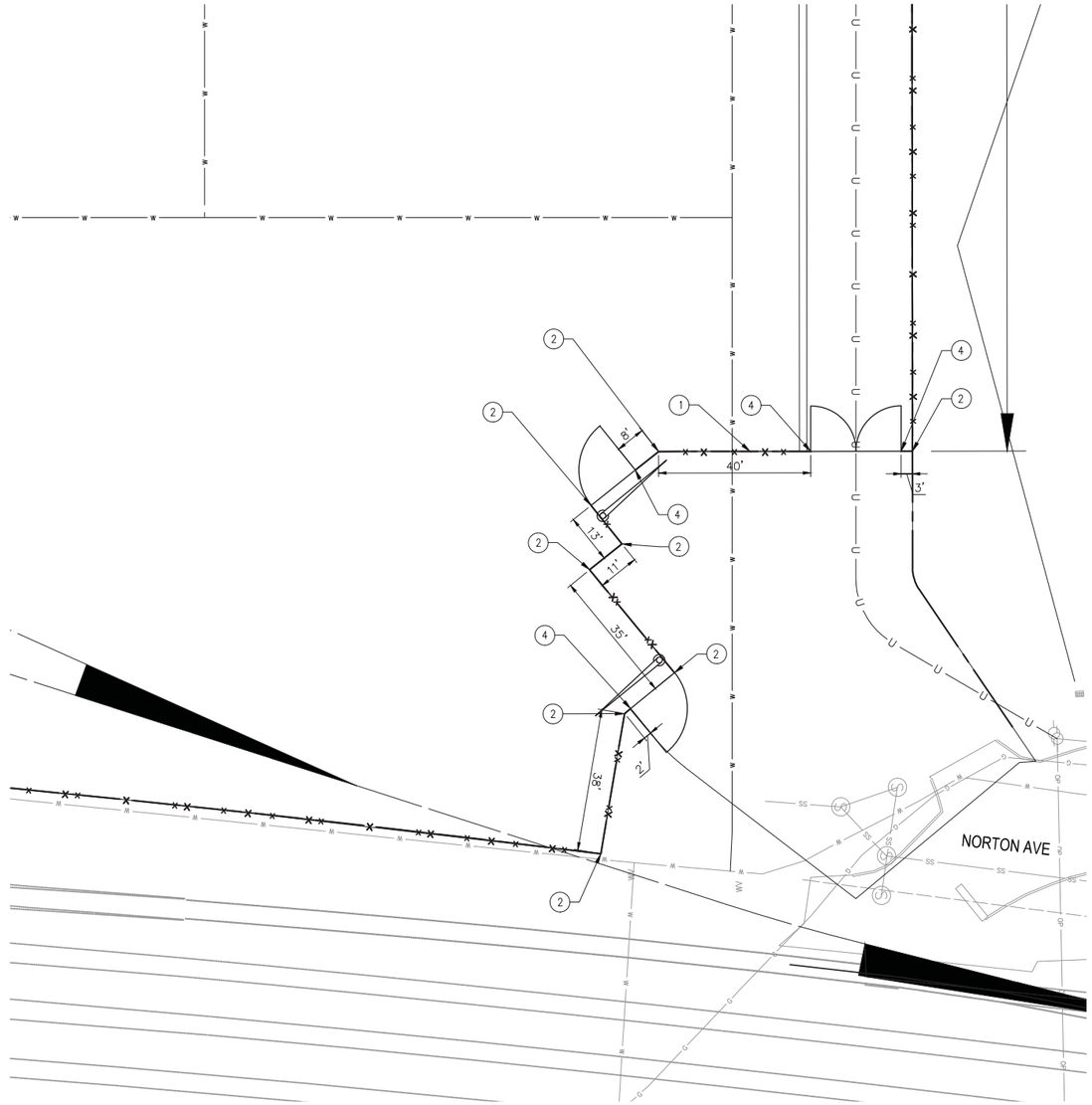
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SECURITY FENCE
DETAIL SITE PLAN

DWG. NO. **C6.2**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. XX OF XX



1 SECURITY FENCE DETAIL SITE PLAN
C6.1 C6.3

20' 0 20' 40'
10' 30'
SCALE: 1"=20'

NOTES

1. CONTRACTOR SHALL LOCATE EXISTING UTILITIES PRIOR TO FENCE CONSTRUCTION.

KEY NOTES

1. CONSTRUCT 8' CHAIN LINK FENCE W/ ANGLED BARB WIRE EXTENSION PER DETAIL 1 ON SHEET C6.4
2. CONSTRUCT CORNER POST AND BRACE
3. CONNECT TO EXISTING FENCE
4. CONSTRUCT 15' SWING GATE PER DETAIL X ON SHEET C6.5
5. CONSTRUCT 12' SWING GATE PER DETAIL X ON SHEET C6.5
6. CONSTRUCT FENCE ON PROPERTY LINE (PROPERTY LINE NOT SHOWN FOR CLARITY)

LEGEND

- 8' SECURITY FENCE W/ ANGLED BARB WIRE EXTENSION
- EX FENCE
- SLIDE GATE
- EX SLIDE GATE
- SWING GATE
- EX SWING GATE

N

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

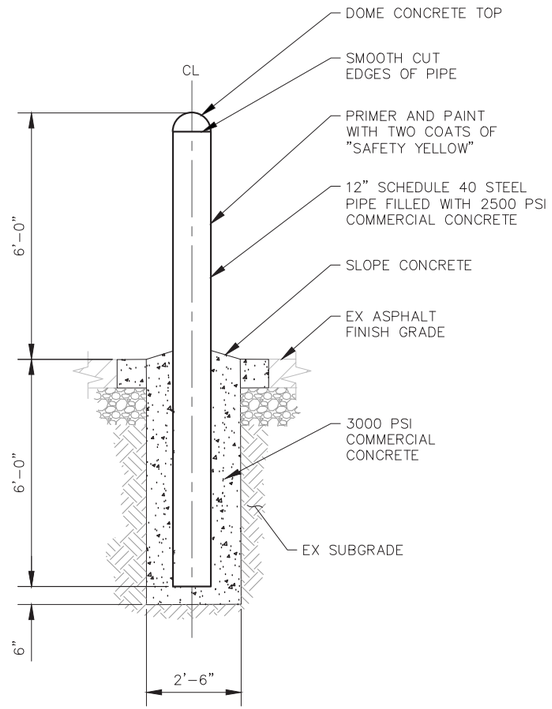
NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SECURITY FENCE
DETAIL SITE PLAN

DWG. NO. **C6.3**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. XX OF XX



1 DETAIL – FIXED UTILITY PROTECTION BOLLARD
C6.0, C6.3 – SCALE: NTS

ADD FIRE HYDRANT DETAIL PLAN AND ELEVATION TO THIS SHEET. CALLOUT BOLLARD ON PLAN VIEW AND REFERENCE THE BOLLARD DETAIL ABOVE.

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

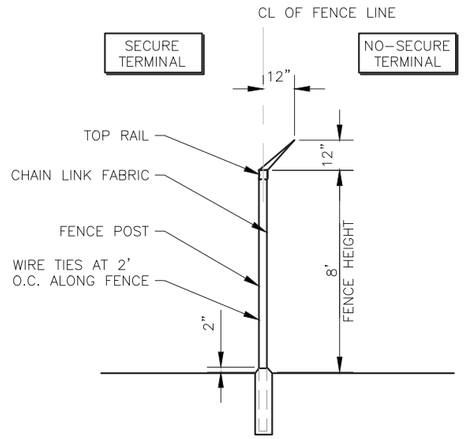
PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
BOLLARD AND FENCING DETAILS

DWG. NO. **C6.10**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. 17 OF XX

FENCING NOTES:

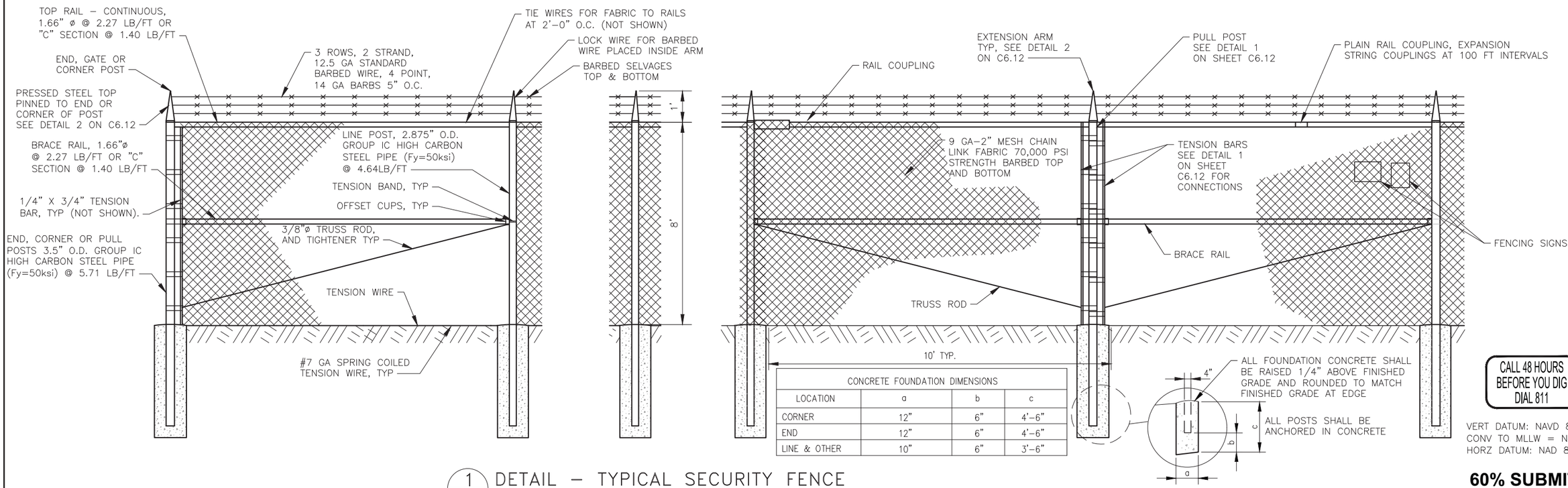
1. UNLESS OTHERWISE NOTED ALL SECURITY FENCE SHALL BE PER DETAIL 1 / C6.12
2. ALL CHAIN LINK FENCE SHALL BE BLACK VINYL COATED, INCLUDING GATES, RAILS, RODS, EXTENSION ARMS, POSTS, CONNECTIONS, BARB WIRE, AND FABRIC.
3. WIRE TIES, RAILS, POSTS AND BRACES SHALL BE CONSTRUCTED ON THE SECURE SIDE OF THE FENCE ALIGNMENT. CHAIN LINK FABRIC SHALL BE PLACED ON THE OPPOSITE SIDE OF THE SECURE BARRIER.
4. EXTENSION ARMS SHALL BE PLACED ON ALL LINE AND CORNER FENCE POSTS. GATE END POSTS SHALL BE INSTALLED WITH POST CAPS.
5. CONTRACTOR SHALL NOT REUSE ANY EXISTING FENCING OR BARBED WIRE WITHOUT APPROVAL OF ENGINEER.
6. WHERE NEW FENCE LINE MATCHES EXISTING FENCE LINE, CONTRACTOR SHALL DEMOLISH EXISTING FENCE AND GATES ONLY WHERE PLAN INDICATES INSTALLATION OF NEW TWIC SECURITY CHAIN LINK FENCE AND GATES.
7. CONTRACTOR SHALL SALVAGE AND REUSE SIGNAGE THAT IS IN GOOD CONDITION. SIGNS THAT ARE FADED OR DAMAGED IN ANY WAY SHALL NOT BE SALVAGED OR REUSED.



NOTES:
1. WHERE FENCING IS LOCATED ON A SLOPE THE CONTRACTOR SHALL INSTALL A BOTTOM RAIL

A SECTION – TYPICAL SECURITY FENCE

SCALE: NTS



CONCRETE FOUNDATION DIMENSIONS			
LOCATION	a	b	c
CORNER	12"	6"	4'-6"
END	12"	6"	4'-6"
LINE & OTHER	10"	6"	3'-6"

1 / C6.4, C6.5 DETAIL – TYPICAL SECURITY FENCE

SCALE: NTS

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

IF SHEET IS LESS THAN 22x34 REDUCE SCALE ACCORDINGLY

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PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

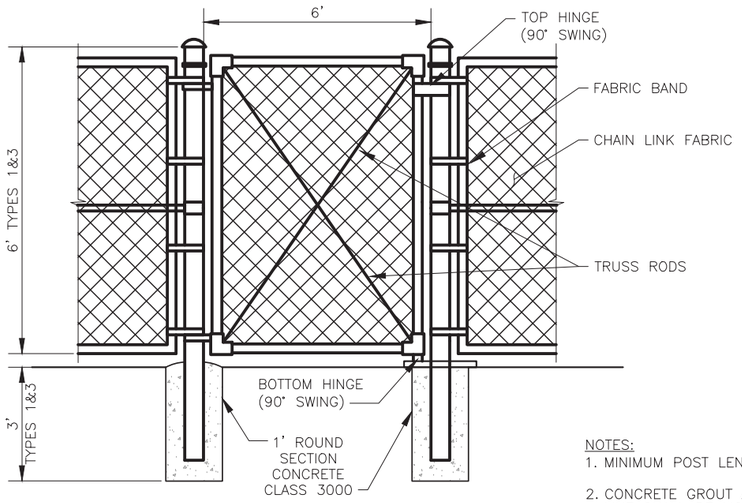
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
FENCE DETAILS

DWG. NO. **C6.11**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. 18 OF XX



NOTES:
1. MINIMUM POST LENGTH TYPES 1x3: 8'–8"
2. CONCRETE GROUT AROUND POST AT GROUND LINE SHALL BE MOUNDED FOR DRAINAGE

2 DETAIL – CHAIN LINK GATE

C6.4 – SCALE: NTS

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: J. BECKER	DATE: 12/04/2020
DRAWN BY: K. EDWARDS, D. YU	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
FENCE DETAILS

DWG. NO. **C6.12**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. 19 OF XX

LIGHT POLE FOUNDATION STRUCTURAL NOTES:

1. CODES AND STANDARDS:
   ALL MATERIALS, WORKMANSHIP, DESIGN AND CONSTRUCTION SHALL CONFORM TO THE DRAWINGS AND THE INTERNATIONAL BUILDING CODE (IBC), 2018 EDITION, WITH CITY OF EVERETT AMENDMENTS, AND THE PROJECT SPECIFICATIONS.

2. DESIGN LOADS:
   A. DESIGN LOAD CRITERIA FOR 30FT AND 80FT LIGHT POLES:
      EARTHQUAKE LOADS PER IBC 2018
      WIND LOADS: 80 MPH EXPOSURE D IMPORTANCE FACTOR OF 1.0

   B. DESIGN SERVICE LOAD ON 80FT LIGHT POLE FOUNDATION:
      OVERTURNING MOMENT M = 420 KIPS-FT
      DOWNLOAD N = 23 KIPS
      SHEAR V = 10 KIPS

   C. DESIGN SERVICE LOAD ON 30FT LIGHT POLE FOUNDATION:
      OVERTURNING MOMENT M = TBD
      DOWNLOAD N = TBD
      SHEAR V = TBD

3. GEOTECHNICAL DESIGN CRITERIA:
   DRILLED SHAFT FOUNDATION DESIGN IS IN ACCORDANCE WITH LANDAU ASSOCIATES REPORT DATED XX, XXXX

4. GENERAL:
   A. THIS DRAWING SHALL BE USED IN CONJUNCTION WITH ELECTRICAL AND CIVIL DRAWINGS FOR BIDDING AND CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS FOR COMPATIBILITY PRIOR TO COMMENCING WORK. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING.

   B. LIGHT POLES, ANCHOR BOLTS, NUTS, BASE PLATES AND THEIR LOCATIONS, SHALL BE DESIGNED AND SUPPLIED BY THE POLE MANUFACTURER. CONTRACTOR SHALL COORDINATE SHOP DRAWINGS TO VERIFY COMPATIBILITY AND BRING ANY DISCREPANCIES TO THE ATTENTION OF THE ENGINEER

   C. CONTRACTOR SHALL REFER TO ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF OPENINGS AND DETAILS NOT SHOWN ON LIGHT POLE FOUNDATION DRAWINGS.

   D. CONTRACTOR SHALL COORDINATE WITH POLE MANUFACTURER FOR ALL REQUIREMENTS OF BASE PLATE AND ANCHOR BOLTS FOR EACH POLE.

   E. CONTRACTOR SHALL BE RESPONSIBLE FOR SAFETY PRECAUTION, ERECTION STABILITY AND TEMPORARY SHORING AS NECESSARY UNTIL PERMANENT SUPPORT AND STIFFENING ARE INSTALLED. CONTRACTOR SHALL PROTECT SURROUNDING BUILDINGS AND EQUIPMENT FROM AUGER DEBRIS DURING SHAFT DRILLING.

   F. ALL EXPOSED CONCRETE SURFACES SHALL BE PAINTED SAFETY YELLOW.

5. DRILLED CAISSON AND SPREAD FOOTING MATERIAL:
   CONCRETE STRENGTH AT 28 DAYS (f'c) SHALL BE 4000 PSI. THE REINFORCING STEEL SHALL BE GRADE 50 (fy=60,000 PSI) CONFORMING TO ASTM A-615. THE MINIMUM CONCRETE COVER IS 3 INCHES UNLESS OTHERWISE INDICATED. REFER TO PROJECT SPECIFICATIONS.

6. NON-SHRINK GROUT:
   GROUT SHALL BE NON-SHRINK NON-METALLIC CEMENTITIOUS GROUT CONTAINING NATURAL AGGREGATES DELIVERED TO JOB SITE IN FACTORY PREPACKAGED CONTAINERS REQUIRING ONLY THE ADDITION OF WATER. MINIMUM 28 DAY COMPRESSIVE STRENGTH SHALL BE 8000 PSI OR PER THE LIGHT POLE MANUFACTURER'S REQUIREMENTS, WHICHEVER IS GREATER. GROUT SHALL BE MIXED, APPLIED AND CURED STRICTLY IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.

7. EXCAVATION, SHORING AND BACKFILL:
   A. INSTALL AND SHORE EXCAVATION AS NECESSARY TO PROTECT WORKERS, UTILITIES, PAVEMENT AND OTHER IMPROVEMENTS AGAINST LOSS OF GROUND, ROCKS, GRAVELS OR CAVING EMBANKMENTS. BACKFILL AND COMPACT WITH NATIVE SOIL TO SUBGRADE ELEVATION NO SOONER THAN 3 DAYS AFTER COMPLETION OF FOUNDATION. LOOSE MATERIAL SHALL BE REMOVED FROM THE BOTTOM OF THE SHAFT PRIOR TO CONCRETE PLACEMENT.

   B. MATERIAL REMOVED DURING DRILLING OF LIGHT POLE SHAFTS MAY BE CONTAMINATED SOIL. SEE SPECIFICATIONS FOR SOIL HANDLING AND DISPOSAL REQUIREMENTS.

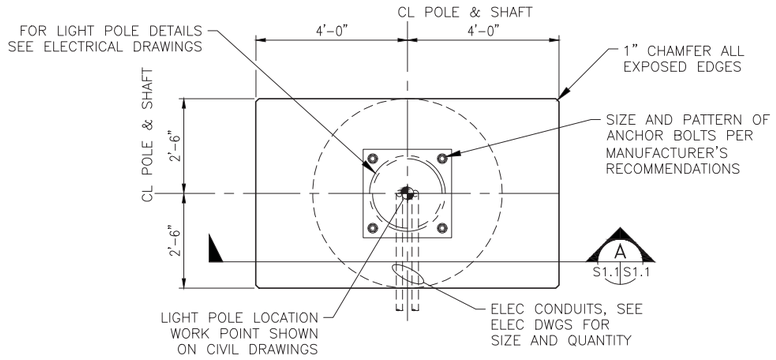
   C. SHAFT INSTALLATION SHALL BE PERFORMED UTILIZING TEMPORARY CASING TO ALLOW TIME FOR FIELD SPLICING OF SHAFT REINFORCEMENT ONCE THE GEOTECHNICAL ENGINEER HAS APPROVED THE SHAFT TIP ELEVATION. PERMANENT CASING MAY ALSO BE USED IF APPROVED BY THE ENGINEER. THE HOLE SHALL BE KEPT DRY AND FREE OF MUD PRIOR TO REINFORCING CAGE INSTALLATION AND DURING CONCRETE PLACEMENT. SEE SPECIFICATIONS FOR SOIL DISPOSAL AND DEWATERING REQUIREMENTS.

8. SPECIAL INSPECTIONS:
   A. A QUALIFIED INSPECTOR SHALL INSPECT THE FOLLOWING TYPES OF WORK:
      1. CONCRETE AND REINFORCING STEEL PLACEMENT
      2. DRILLED SHAFT CONCRETE PIER
      3. ANCHOR BOLTS
   B. ALL INSPECTION SHALL CONFORM TO THE REQUIREMENTS OF THE IBC.

9. DRILLED SHAFT FOUNDATION:
   A. CAGE RING TEMPLATE SHALL BE DESIGNED AND SUPPLIED BY THE POLE MANUFACTURER.

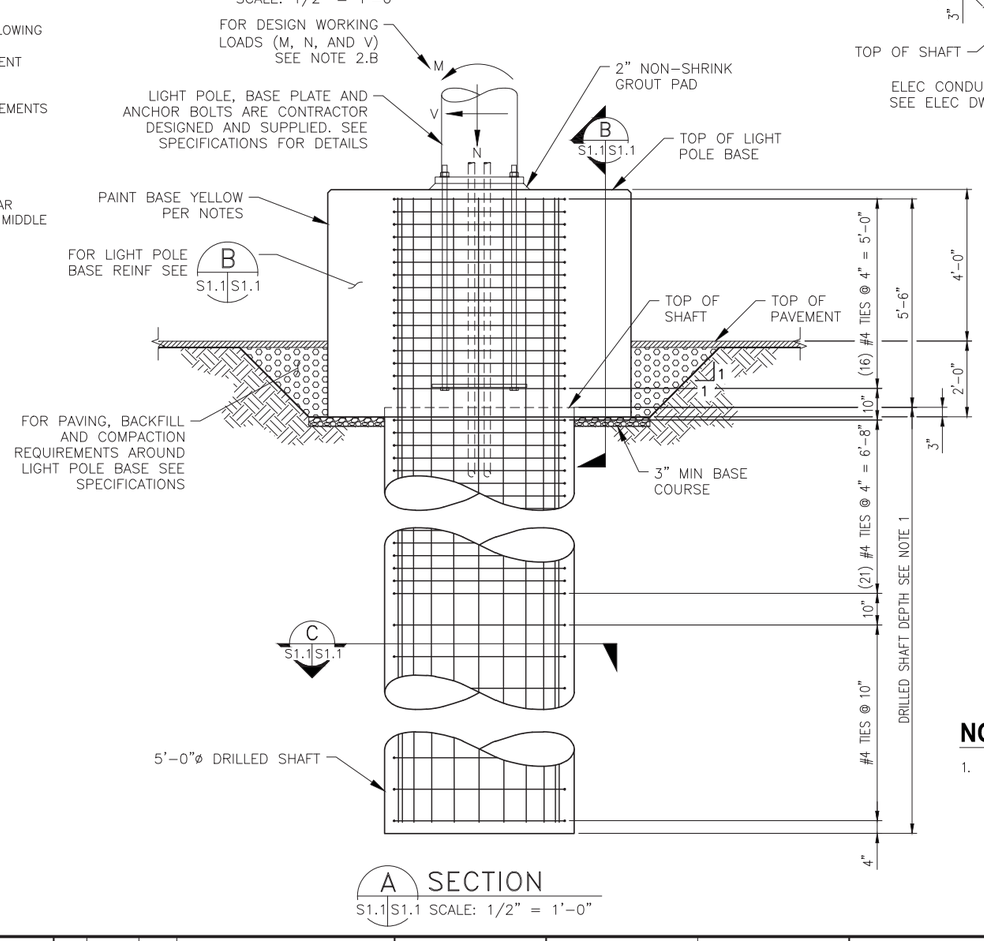
   B. ADJUSTMENTS MAY BE MADE IN SPACING OF SHEAR REINFORCEMENT WHERE THERE IS CONFLICT WITH MIDDLE CAGE RING SPACING.

   C. THE ENDS OF SHEAR REINFORCEMENT SHALL BE ANCHORED ACCORDING TO ACI 318.



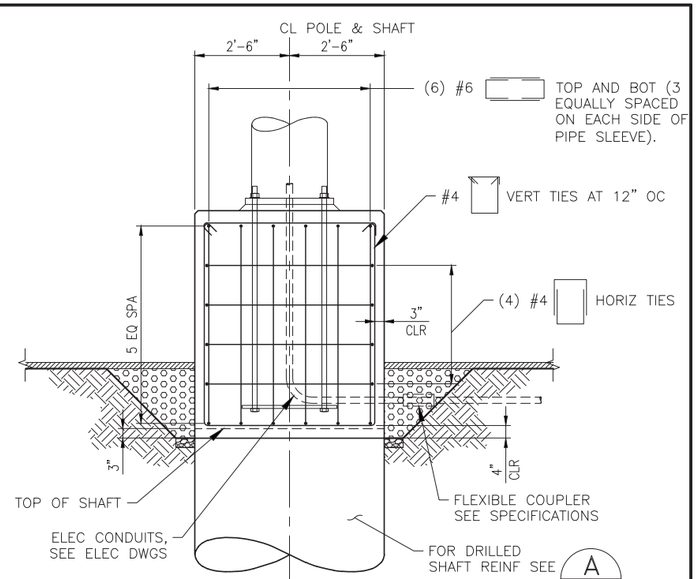
80' LIGHT POLE FOUNDATION PLAN

SCALE: 1/2" = 1'-0"



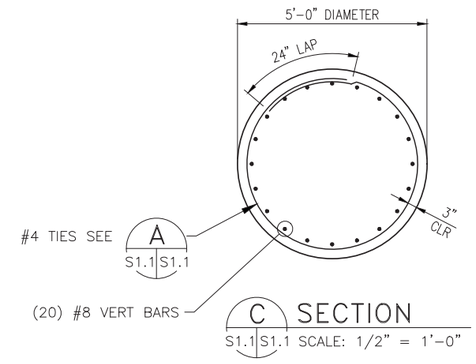
A SECTION

S1.1 S1.1 SCALE: 1/2" = 1'-0"



B SECTION

S1.1 S1.1 SCALE: 1/2" = 1'-0"



C SECTION

S1.1 S1.1 SCALE: 1/2" = 1'-0"

NOTE

1. MINIMUM DEPTH SHALL BE 30'-0", MAXIMUM ANTICIPATED DEPTH IS 60'-0". ACTUAL DEPTH TO BE DETERMINED BY GEOTECHNICAL ENGINEER IN FIELD DURING INSTALLATION. CONTRACTOR SHALL USE TEMPORARY CASING FOR ALL SHAFT INSTALLATIONS. SEE NOTE 7C.

CALL 48 HOURS BEFORE YOU DIG DIAL 811

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

60% SUBMITTAL

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kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION

NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: S. STORY	DATE: 12/04/2020
DRAWN BY: T. LEMONS	CHECKED BY: A. BERGMAN
APPROVED BY:	

PORT OF EVERETT

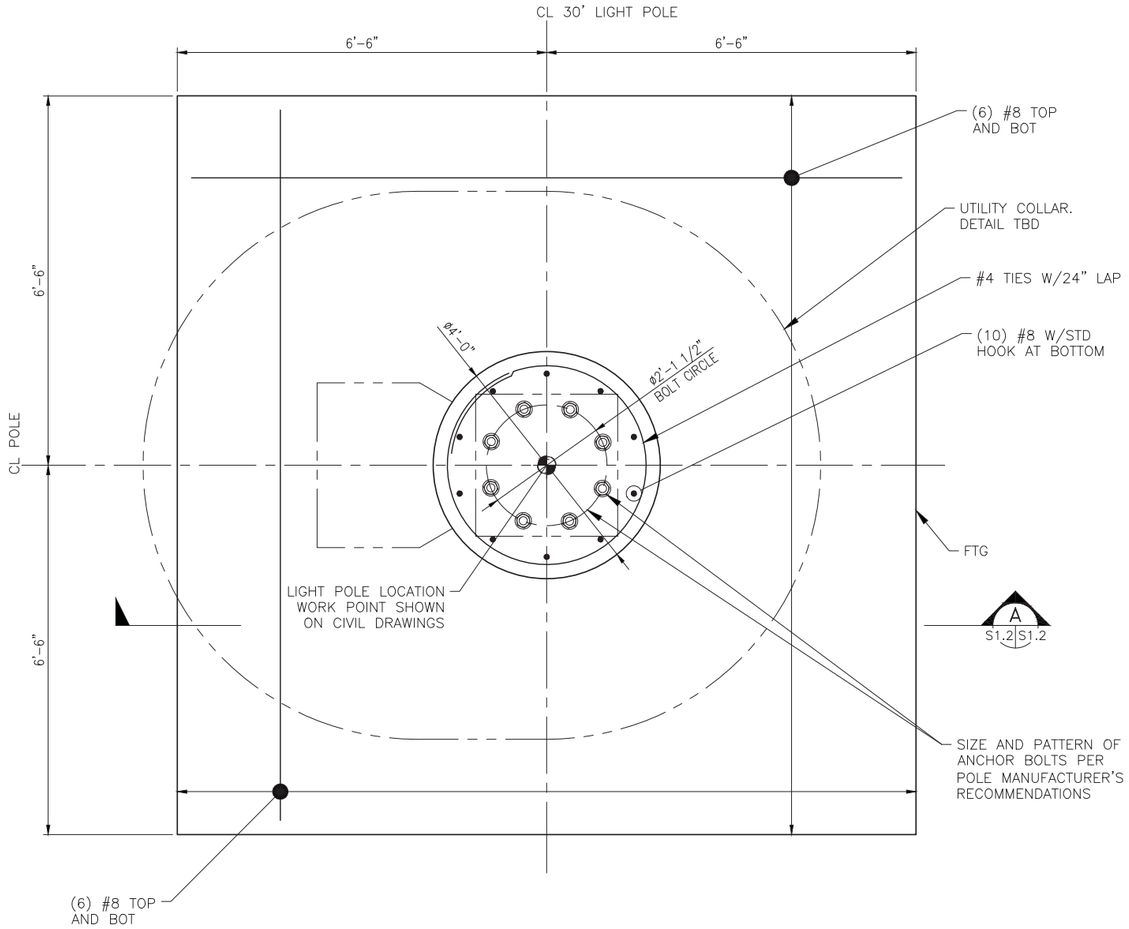
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
HIGH MAST LIGHT FOUNDATION
DETAILS 1 OF 2

DWG. NO. **S1.1**

CIP NO. 1-8-900-05

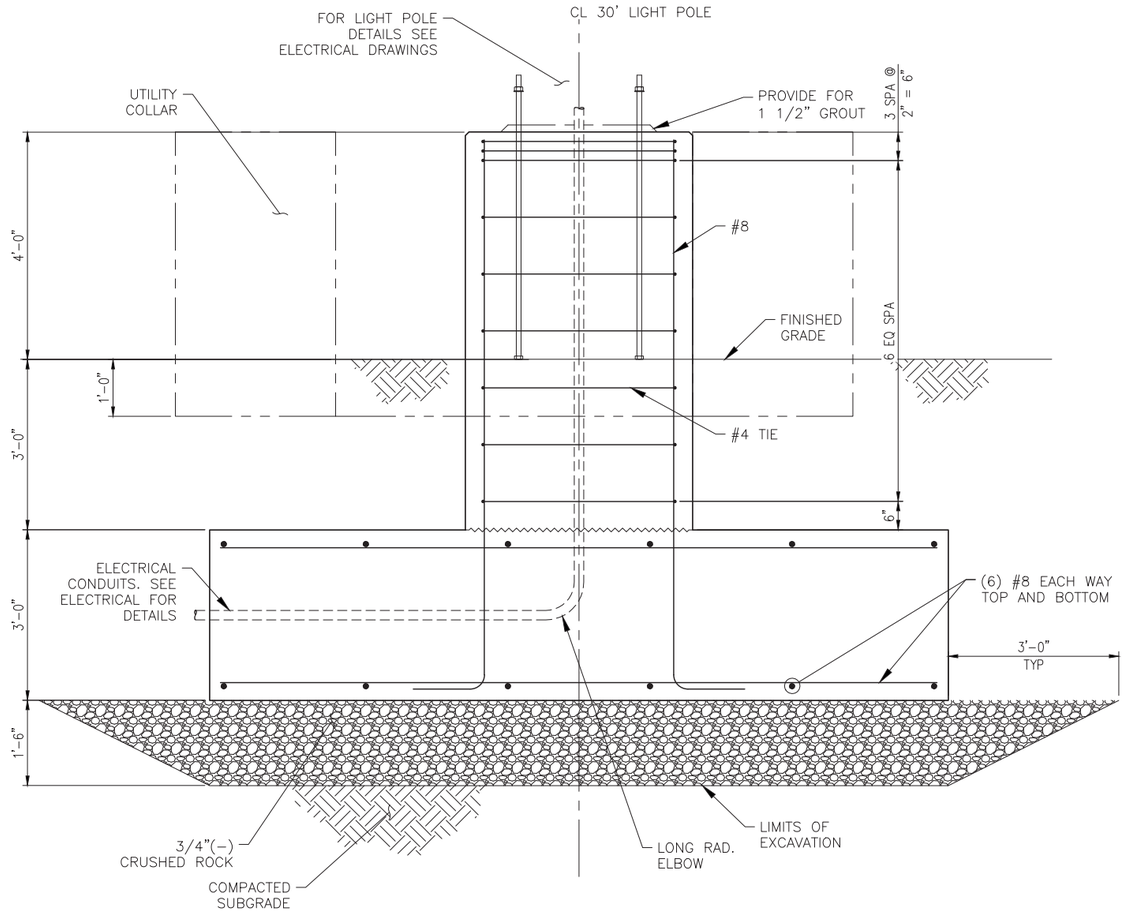
PROJECT NO. TBD

SHEET NO. 34 OF XX



30' LIGHT POLE FOOTING PLAN

SCALE: 3/4" = 1'-0"



A SECTION

S1.2 S1.2 SCALE: 3/4" = 1'-0"

NOTE

1. SEE SHEET S1.1 FOR LIGHT POLE FOUNDATION STRUCTURAL NOTES

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VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: AS SHOWN
DESIGNED BY: S. STORY	DATE: 12/04/2020
DRAWN BY: T. LEMONS	CHECKED BY: A. BERGMAN
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
HIGH MAST LIGHT FOUNDATION
DETAILS 2 OF 2

DWG. NO. **S1.2**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. 35 OF XX

POWER

FOR RECEPTACLES IN THIS SECTION, WP DENOTES WEATHERPROOF WHILE-IN-USE BOX AND GFI RECEPTACLE. FOR ALL OTHER DEVICES, WP DENOTES NEMA 3R ENCLOSURE UNO.

- CONVENIENCE RECEPTACLE – DUPLEX UNO, MOUNTING HEIGHT TO BE 18" AFF UNO (3 = CIRCUIT NUMBER)
- CONVENIENCE RECEPTACLE – FOURPLEX
- SIMPLEX RECEPTACLE WITH BRASS FLOORPLATE AND SCREW CAP
- DUPLEX RECEPTACLE – FLUSH MOUNTED IN FLOOR
- FOURPLEX RECEPTACLE – FLUSH MOUNTED IN FLOOR
- JUNCTION BOX
- SPECIAL PURPOSE RECEPTACLE, DESIGNATION AND AMPERAGE AS INDICATED, OR SHOWN IN SCHEDULE, SEE SPECIFICATIONS
- CONNECTION POINT TO EQUIPMENT SPECIFIED FURNISHED AND INSTALLED BY OTHER TRADES. RACEWAY, CONDUCTOR AND CONNECTION BY ELECTRICAL CONTRACTOR.
- NONFUSED DISCONNECT SWITCH. SIZE 30A UNLESS INDICATED OTHERWISE, 3 POLE UNO
- FUSED DISCONNECT SWITCH. SIZE INDICATED, (60 = SWITCH RATING, 40 = FUSE RATING) 3 POLE UNO
- COMBINATION MOTOR STARTER AND DISCONNECT, SIZE PER MANUFACTURER REQUIREMENTS, NUMBER OF POLES AS REQUIRED
- PANEL
- TRANSFORMER
- HANDHOLE, SIZE AS NOTED
- THERMOSTAT
- GROUND ROD
- GENERATOR

LIGHTING

SEE LUMINAIRE SCHEDULE FOR FURTHER INFORMATION. SMALL LETTER SUBSCRIPT ON SWITCH AND LUMINAIRE INDICATES SWITCHING. MULTIPLE SUBSCRIPTS INDICATE MULTIPLE SWITCHLEGS CONTROLLED BY ONE SWITCH.

- LIGHTING CONTROL RISER DIAGRAM: MORE FIXTURES CONNECTED IN A SIMILAR CONFIGURATION
- LIGHTING PLANS: ENERGY CODE PRIMARY DAYLIGHT ZONE AREA
- LIGHTING PLANS: ENERGY CODE SECONDARY DAYLIGHT ZONE AREA
- FIXTURE IDENTIFICATION TAG: HEX – FIXTURE TYPE; TOP – MOUNTING HEIGHT AFF OR AFG; BOTTOM – COMMENTS
- LUMINAIRES (3 = CIRCUIT NUMBER, a = SWITCH LEG)
- LUMINAIRES ON EMERGENCY CIRCUIT
- EMERGENCY EGRESS LUMINAIRE
- EXIT LIGHT ON UNSWITCHED LEG OF EMERGENCY CIRCUIT WITH FACE(S) SHOWN, SEE SCHEDULE
- POLE MOUNTED LUMINAIRE
- WALL SWITCH, SYMBOL INDICATED WALL SWITCH LOCATION. SEE LIGHTING CONTROL SCHEDULE FOR WALL SWITCH TYPE AND FEATURES.
- REMOTE LED DRIVER
- REMOTE 0–10V LIGHTING CONTROLLER
- PHOTOCELL CONTACTOR RELAY

ONE-LINE DIAGRAM

ALL DEVICES THIS SECTION TO BE 3 POLE UNO, RATINGS AS INDICATED.

- TRANSFORMER, SECONDARY VOLTAGE. PHASE AND RATING INDICATED AS APPLICABLE.
- GROUND
- FUSE
- CIRCUIT BREAKER
- SWITCH
- REVENUE GRADE METER AND ENCLOSURE
- CURRENT TRANSFORMER
- TRANSFER SWITCH
- MOTOR CONNECTION
- FEEDER TAG – SEE FEEDER SCHEDULE FOR FURTHER INFORMATION

CONDUIT AND RACEWAY

ALL CONDUCTORS INCLUDING NEUTRAL AND GROUND SHALL BE SIZED TO MATCH OR EXCEED OVERCURRENT PROTECTION DEVICE PER NEC, 2#12, 1#12G MINIMUM UNO. ALL CONDUITS SHALL BE SIZED TO MATCH OR EXCEED QUANTITIES AND SIZES OF CONDUCTORS PER NEC, 3/4" MINIMUM UNO.

- HOME RUN, DESTINATION SHOWN, CIRCUIT NUMBERS PRECEDED BY PANEL NAME, SEE PANEL SCHEDULE, ARROW DOES NOT ALWAYS POINT TO PANEL.
- CONDUIT WITH MEDIUM VOLTAGE CONDUCTORS
- CONDUIT WITH LINE VOLTAGE CONDUCTORS
- CONDUIT WITH LOW VOLTAGE CONDUCTORS
- CONDUIT DOWN
- CONDUIT UP
- CONDUIT STUBBED AND CAPPED AS SHOWN
- CONDUIT CONTINUED
- EXPOSED FLEX CONDUIT

ABBREVIATIONS

A	AMMETER, AMPERE
AC	ABOVE COUNTER
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ANN	ANNUNCIATOR
ASYM	ASYMMETRICAL
AT	AMPERE TRIP
ATS	AUTOMATIC TRANSFER SWITCH
AUX	AUXILIARY
BLDG	BUILDING
BRKR	BREAKER
C	CONDUIT
CATV	CABLE TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CKT	CIRCUIT
℄	CENTER LINE
CL	CURRENT LIMITING
CLF	CURRENT LIMITING FUSE
CLR	CLEAR
CM	CIRCULAR MILS
COMM	COMMUNICATIONS
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUED
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CT	CURRENT TRANSFORMER
CTRL	CONTROL
CU	COPPER
DDC	DEDICATED DIALER CIRCUIT
DEM	DEMAND
DEMO	DEMOLITION
DIM	DIMENSION
DISC	DISCONNECT
DN	DOWN
DS	DISCONNECT SWITCH
DWG	DRAWING
DZ	DAYLIGHT ZONE
E	EMPTY, EXISTING
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATION, ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
EXIST	EXISTING
F,FU	FUSE
FACP	FIRE ALARM CONTROL PANEL
FBOIC	FURNISHED BY OTHERS INSTALLED BY CONTRACTOR
FLUOR	FLUORESCENT
FSA	FIRE SYSTEM ANNUNCIATOR
FT	FOOT
FVNR	FULL VOLTAGE NON-REVERSING
G,GND	GROUND
GA	GAUGE
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPTER
GRC,GRS	GALVANIZED RIGID STEEL
HH	HANDHOLE
HP	HORSEPOWER
HPS	HIGH PRESSURE SODIUM
HVAC	HEATING, VENTILATION, AIR CONDITIONING
HWH	HOT WATER HEATER
IC	INTERRUPTING CAPACITY
JB,J-BOX	JUNCTION BOX
K	KELVIN
KCM	THOUSAND CIRCULAR MILS
KV	KILOVOLT
KVA	KILOVOLT AMPERE(S)
KW	KILOWATT(S)
LC	LIGHTING CONTACTOR
LED	LIGHT EMITTING DIODE
M	MAGNETIC COIL
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MH	MANHOLE, METAL HALIDE
MIN	MINIMUM
MISC	MISCELLANEOUS
MLO	MAIN LUGS ONLY
MOV	METAL OXIDE VARISTOR
MTD	MOUNTED
MTG	MOUNTING
MTS	MANUAL TRANSFER SWITCH
N	NEUTRAL, NEW
NC	NORMALLY CLOSED
NEUT	NEUTRAL
NO	NORMALLY OPEN, NUMBER
NIC	NOT IN CONTRACT
NP	NAMEPLATE
ø	PHASE, DIAMETER
P	PANEL, POLE
PB	PUSH-BUTTON
PF	POWER FACTOR
PH	PHASE
PIR	PASSIVE INFRARED
PIV	POST INDICATOR VALVE
PNL	PANEL
POMB	POSITION ORIENTED MOGUL BASE (SOCKET)
PS	PRESSURE SWITCH
PSE	PUGET SOUND ENERGY
R	RELAY
REC	RECEPTACLE(S), RECESSED
RM	ROOM
SCH	SCHEDULE
SCL	SEATTLE CITY LIGHT
SEC	SEATTLE ENERGY CODE
SD	SMOKE DETECTOR
SF	SQUARE FEET
SHT	SHEET
SPD	SURGE PROTECTIVE DEVICE
SUPV	SUPERVISOR
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T	THERMOSTAT
TB	TERMINAL BLOCK, TRANSFORMER BANK
TEL	TELEPHONE
TPU	TACOMA PUBLIC UTILITIES
TTB	TELEPHONE TERMINAL BOARD
TYP	TYPICAL
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTMETER, VOLT
VA	VOLT AMPERE(S)
VP	VAPORPROOF
W	WIRE, WATT
W/	WITH
WAC	WASHINGTON ADMINISTRATIVE CODE
WHD	WATTHOUR DEMAND METER
W/O	WITHOUT
WP	WEATHERPROOF
WSEC	WASHINGTON STATE ENERGY CODE
XFMR	TRANSFORMER
3P	3-POLE

DRAWING CONVENTIONS

- A / E1 — TITLE, SCALE: 1/4"=1'-0" — DETAIL/SECTION TITLE UNDERLINE, E1 = SHEET WHERE REFERENCED
- A / E2 — A / E2 — A = DETAIL/SECTION NUMBER, E2 = SHEET WHERE SHOWN
- N — NORTH ARROW
- 3 — NOTE
- 1 — REVISION REFERENCE
- XXX / FTP-1 = FTP 1 — EQUIPMENT ID TAG – SEE EQUIPMENT SCHEDULE FOR FURTHER INFORMATION, COORDINATE EQUIPMENT LOCATION WITH ASSOCIATED MECHANICAL, CIVIL, ETC. PLANS

GENERAL NOTES

1. MEET ALL REQUIREMENTS OF THE NEC AND AHJ FOR INSTALLATION AND CONSTRUCTION.
2. VERIFY LOCATION OF ALL MECHANICAL AND HEATING EQUIPMENT WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. COORDINATE EXACT CIRCUIT BREAKER, FUSE AND WIRE SIZE WITH MECHANICAL PRIOR TO ROUGH-IN.
3. VERIFY LOCATION OF ALL LUMINAIRES AND DEVICES WITH ARCHITECTURAL AND/OR LANDSCAPE PLANS AND ELEVATIONS PRIOR TO ROUGH-IN.
4. ALL EXTERIOR DEVICES TO BE CIRCUITED WITH #10 WIRE MINIMUM UNLESS NOTED OTHERWISE.
5. ALL WIRING SHALL BE COPPER UNLESS NOTED OTHERWISE.
6. VERIFY LOCATIONS OF OTHER UTILITIES PRIOR TO COMMENCING WORK, PROVIDE REQUIRED CLEARANCES FROM OTHER UTILITIES, BUILDINGS, AND FREESTANDING STRUCTURES, DURING INSTALLATION OF CONDUITS, CABLES, ETC.
7. USE ELECTRICAL PLANS FOR DETERMINING LUMINAIRE AND DEVICE COUNTS. QUANTITIES SHOWN WITHIN CALCULATION AND CONTROL SCHEDULES SHALL NOT BE USED FOR BID COUNTS.
8. NOT ALL COMPONENTS OF THE ELECTRICAL SYSTEMS ARE SHOWN (FOR CLARITY). PROVIDE MATERIALS AND LABOR NECESSARY FOR A COMPLETE AND OPERATIONAL SYSTEM.
9. THE AIC OF THE PANELS SHOWN ARE TENTATIVE AND GIVEN FOR BIDDING PURPOSES ONLY. CONTRACTOR SHALL CALCULATE THE PANEL AIC BASED UPON FINAL CONDUIT ROUTING AND TRANSFORMERS AND FUSES SUBMITTED.

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SEATTLE, WASHINGTON 98188
TEL (206) 243-5022
www.elcon.com

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23790 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: NONE
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ELECTRICAL LEGEND
& ABBREVIATIONS

DWG. NO. **E0.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

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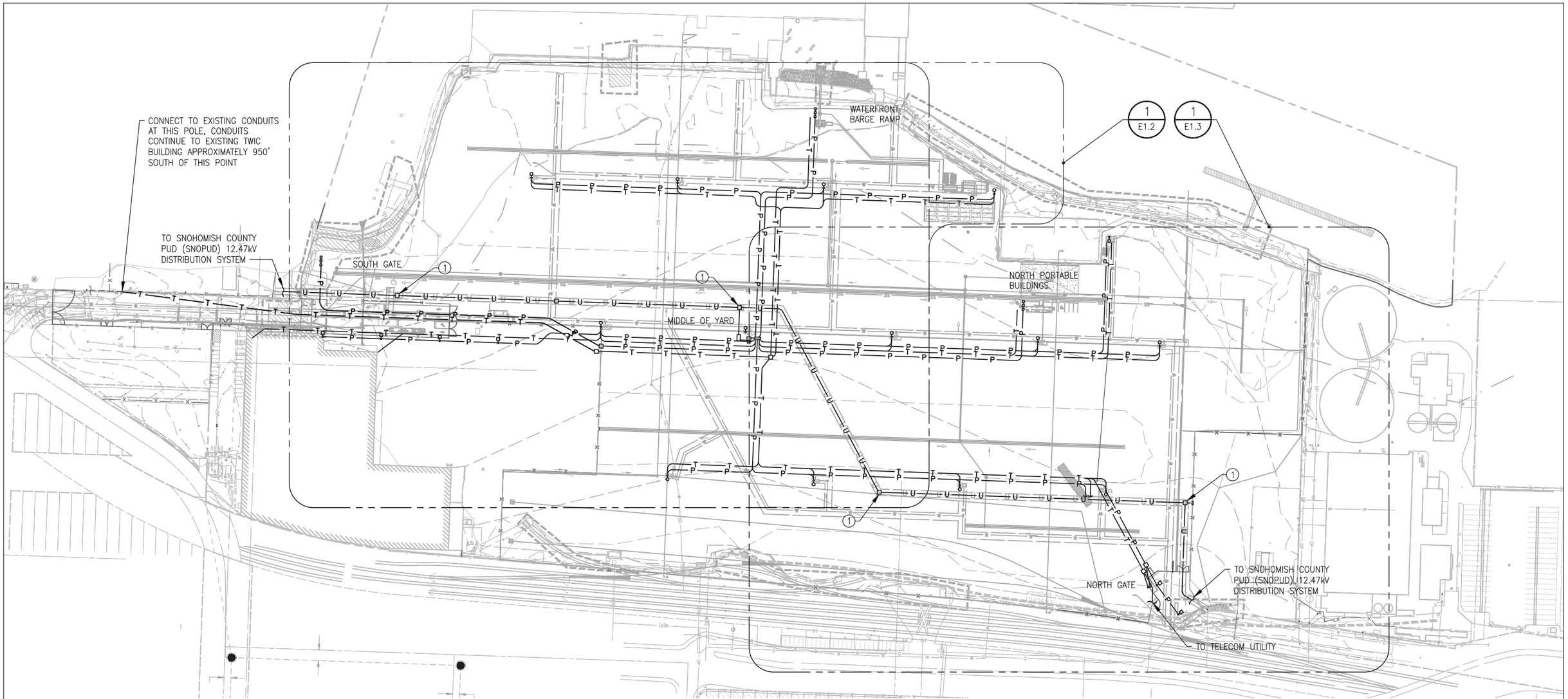

GENERAL NOTES

1.

KEYED NOTES

(1) SNOHOMISH COUNTY PUD CAT ID #766305 VAULT

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23797 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 100'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
OVERALL SITE PLAN

DWG. NO. **E1.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

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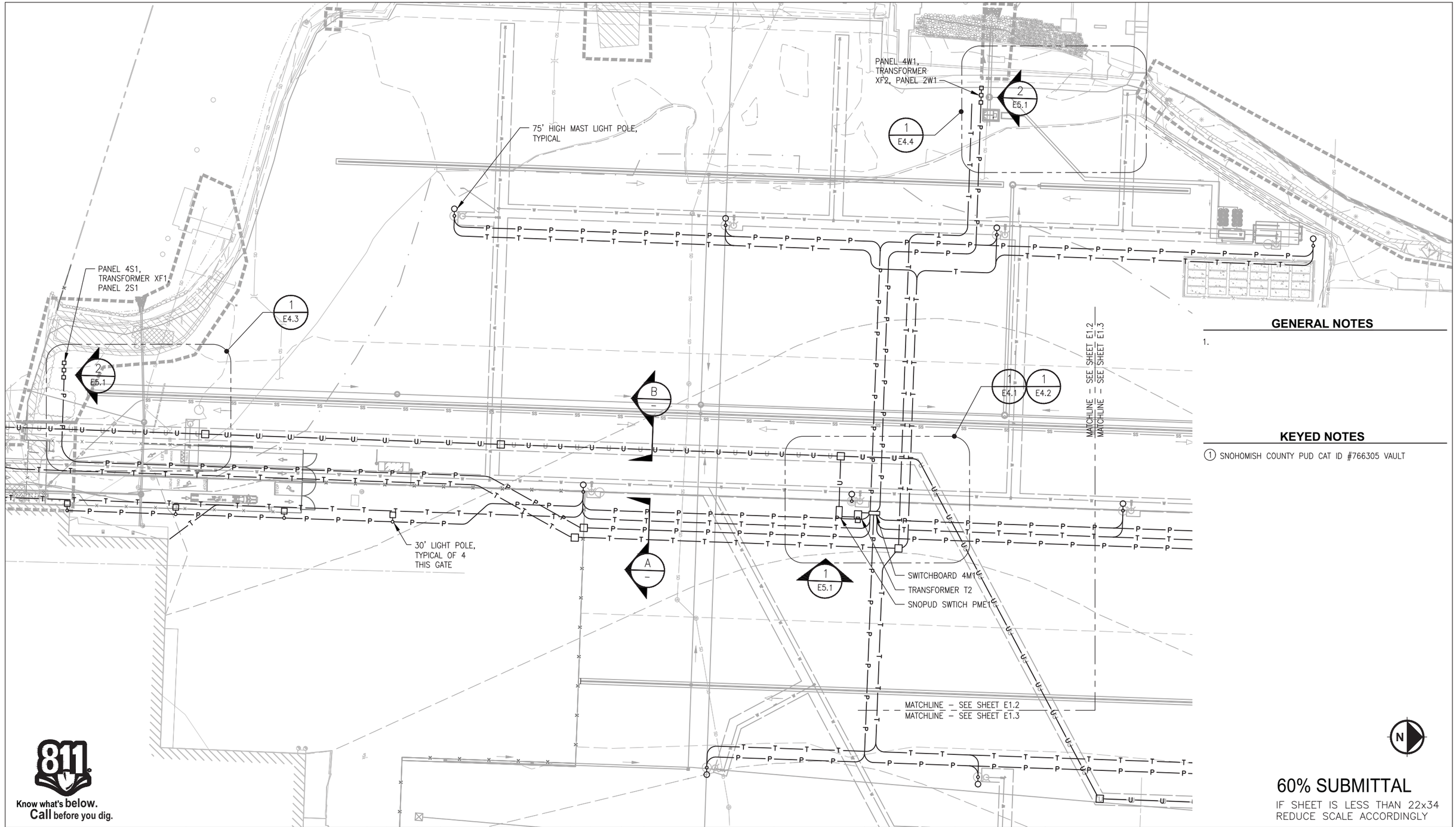

GENERAL NOTES

1.

KEYED NOTES

(1) SNOHOMISH COUNTY PUD CAT ID #766305 VAULT

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITROS K. SIATERLIS — STATE OF WASHINGTON — 13379 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 50'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

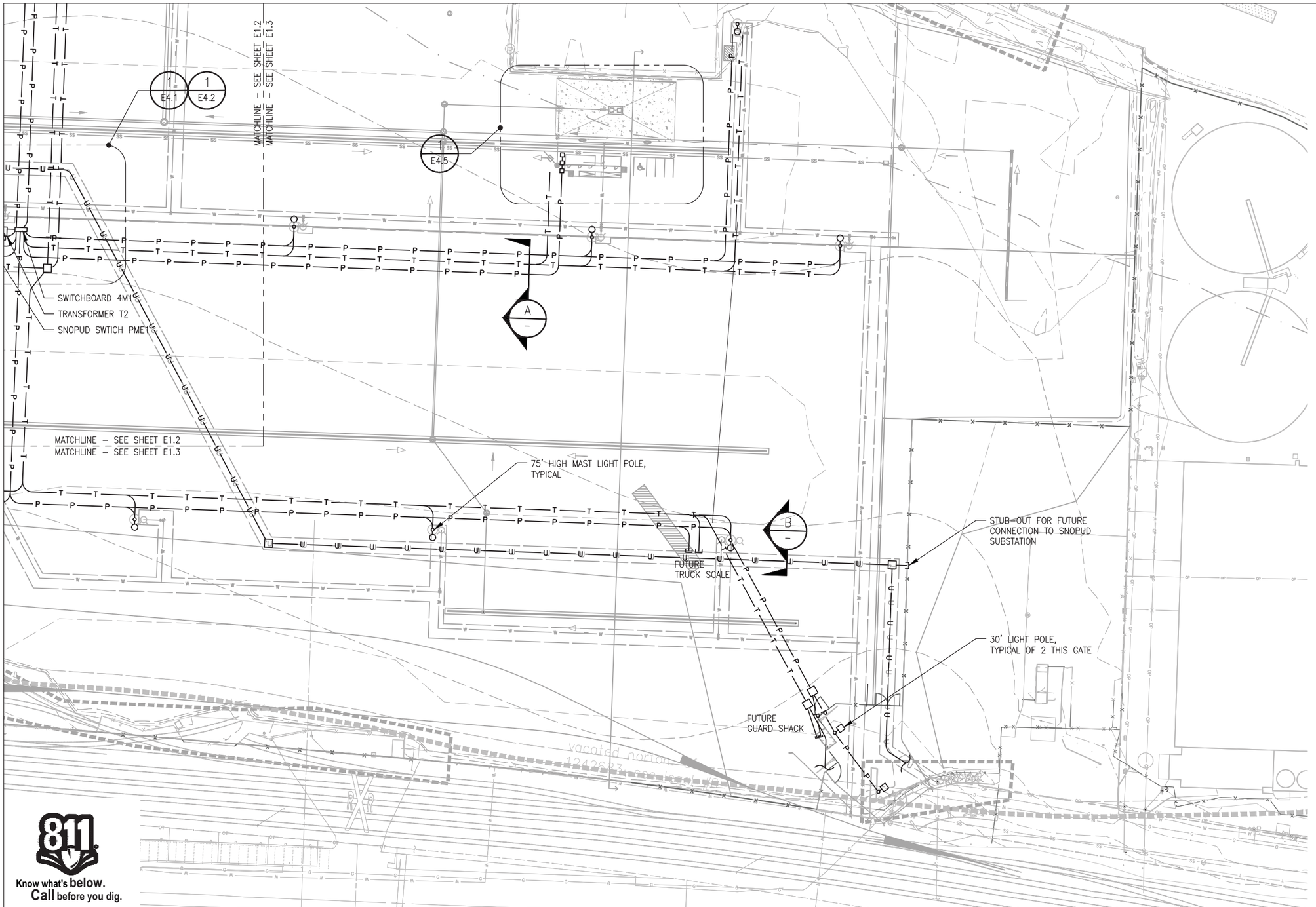
MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SITE PLAN (1 of 2)

DWG. NO. **E1.2**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX



GENERAL NOTES

1.

KEYED NOTES

(1) SNOHOMISH COUNTY PUD CAT ID #766305 VAULT

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 13759 — REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 50'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
SITE PLAN (2 of 2)

DWG. NO. **E1.3**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. OF XX

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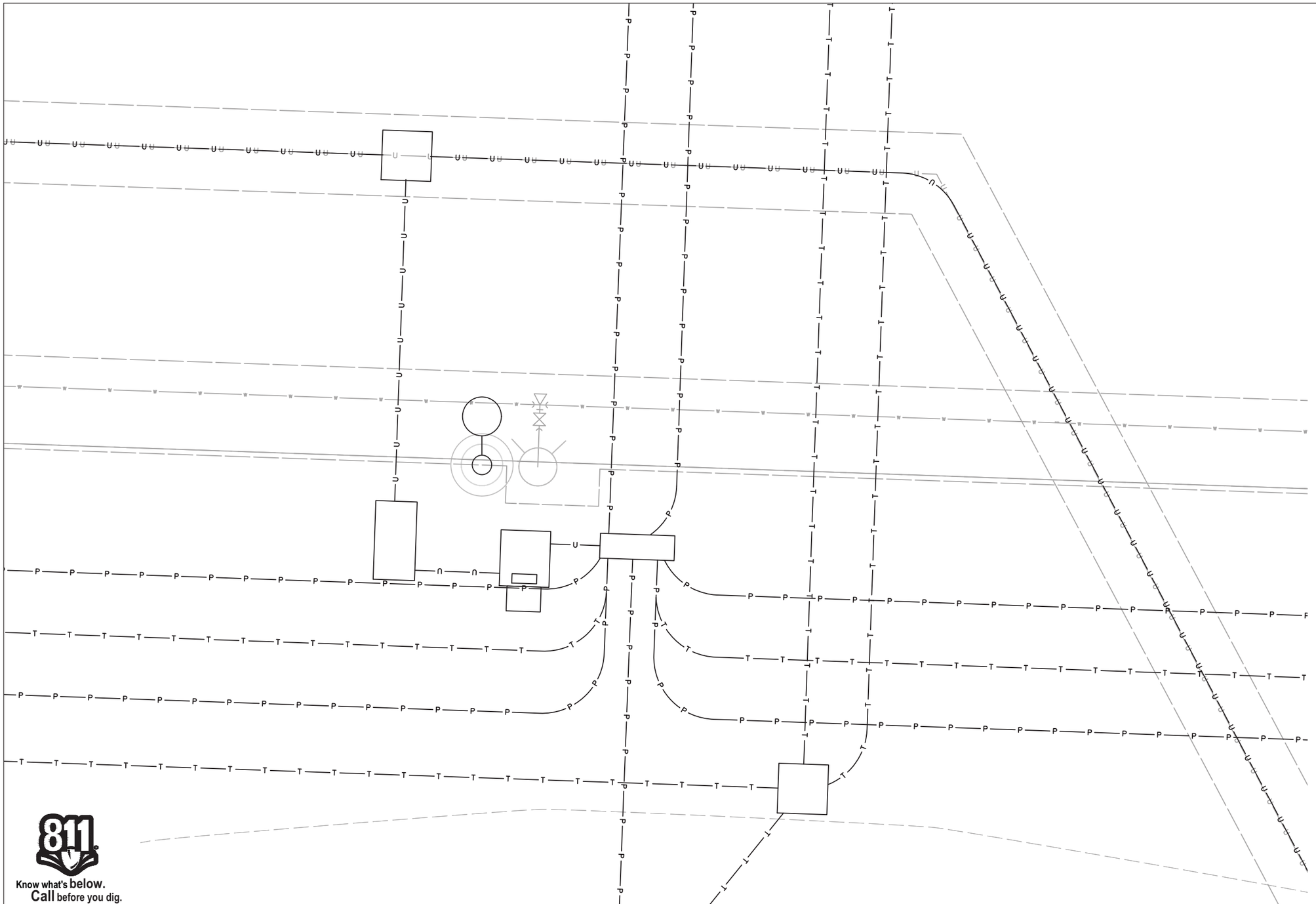
GENERAL NOTES

1.

KEYED NOTES

(1) XXX



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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

D. DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 13791 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 8'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED ELECTRICAL PLAN
MIDDLE OF YARD

DWG. NO. **E4.1**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

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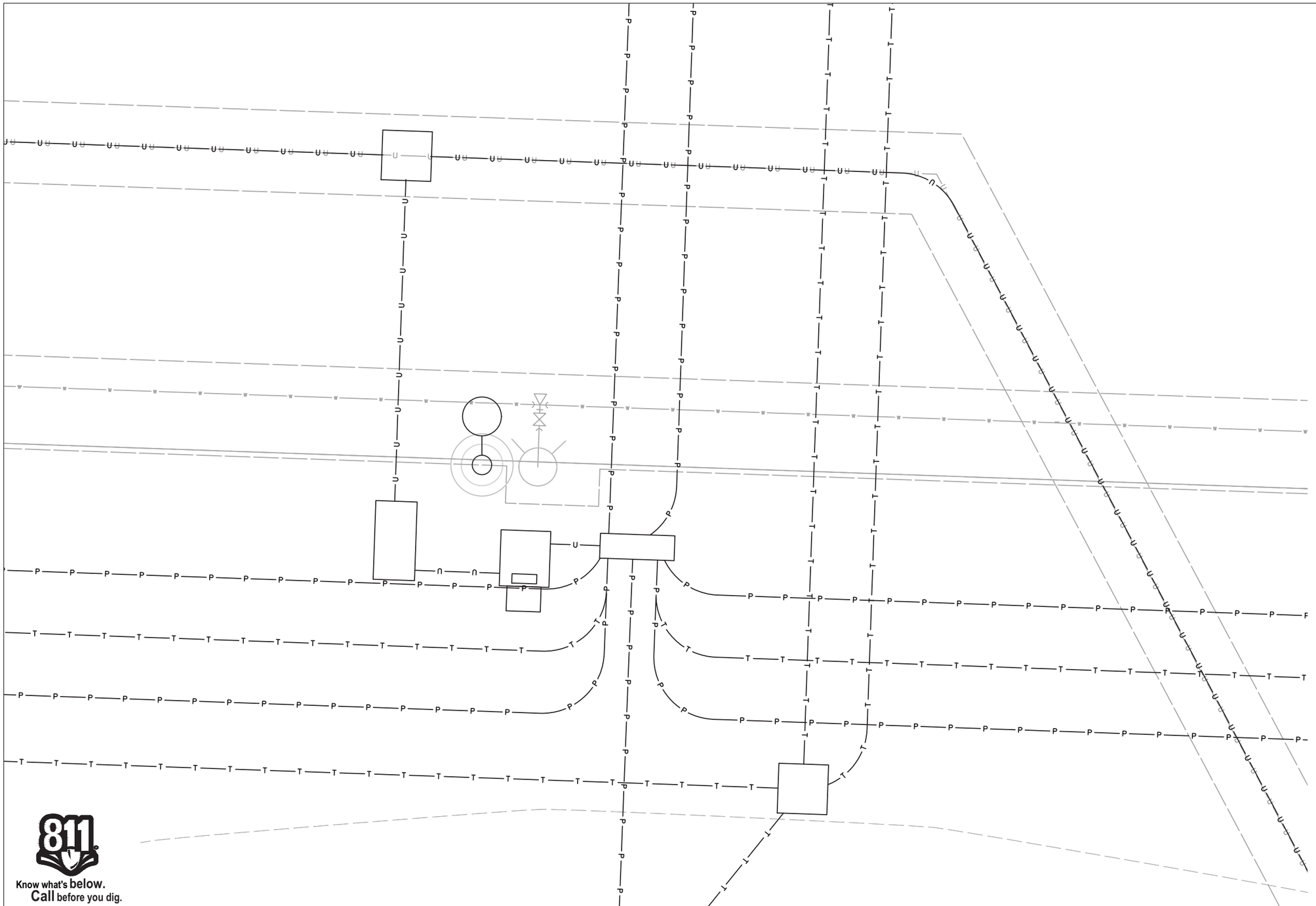
GENERAL NOTES

1.

KEYED NOTES

(1) XXX



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D. DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 8'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED ELECTRICAL PLAN
MIDDLE OF YARD GROUNDING

DWG. NO. **E4.2**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

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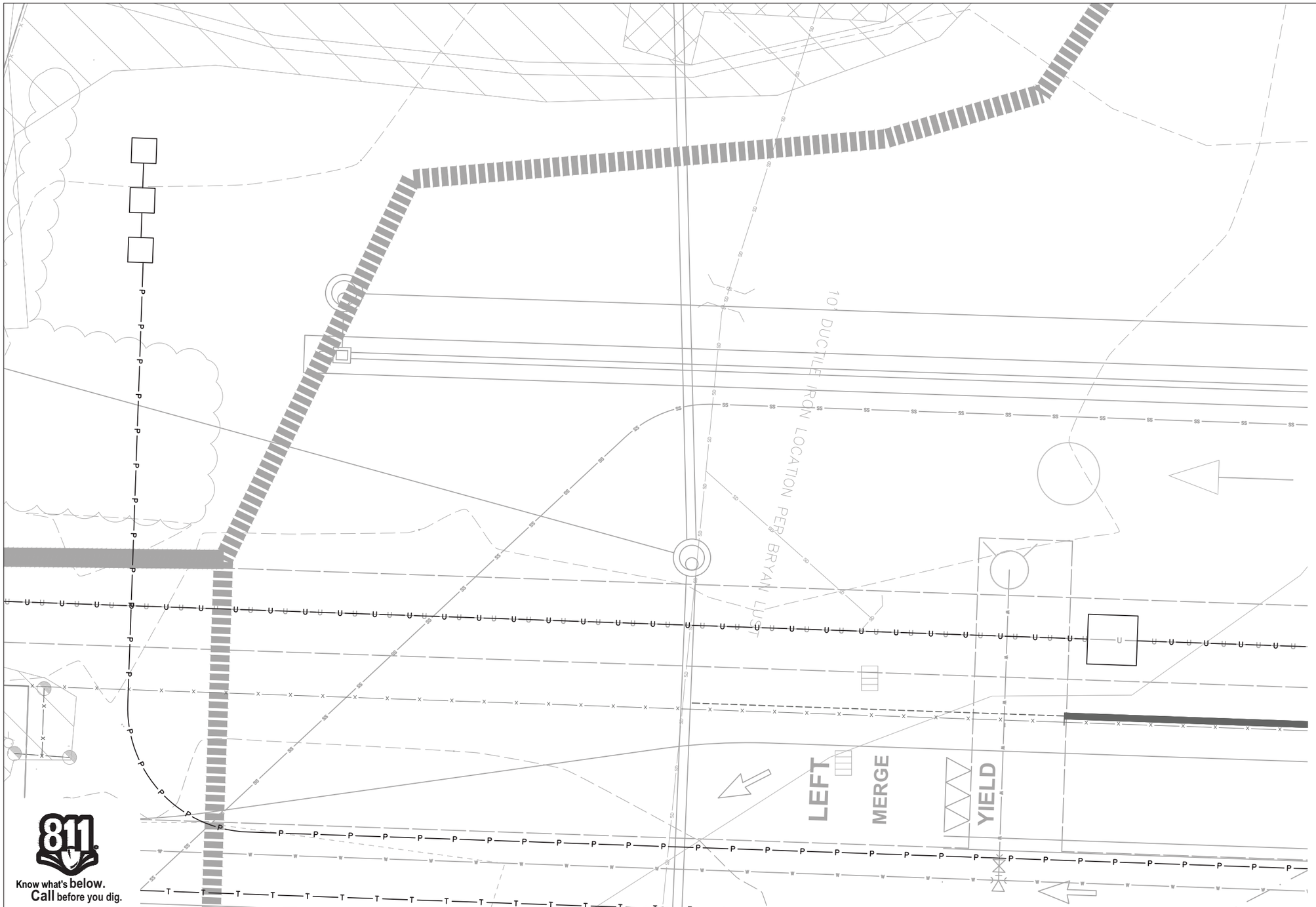
GENERAL NOTES

1.

KEYED NOTES

(1) XXX



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DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 — REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 8'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED ELECTRICAL PLAN
SOUTH GATE

DWG. NO. **E4.3**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

R:\5650-093.00\Dwgs\m8e43 12-04-20 09:00am curtis

GENERAL NOTES

1.

KEYED NOTES

(1) XXX

811
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ENGINEERS - CONSULTANTS
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SEATTLE, WASHINGTON 98188
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DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 REGISTERED PROFESSIONAL ENGINEER

PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 8'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED ELECTRICAL PLAN
WATERFRONT / BARGE RAMP

DWG. NO. **E4.4**

CIP NO. 1-8-900-05

PROJECT NO. TBD

SHEET NO. OF XX

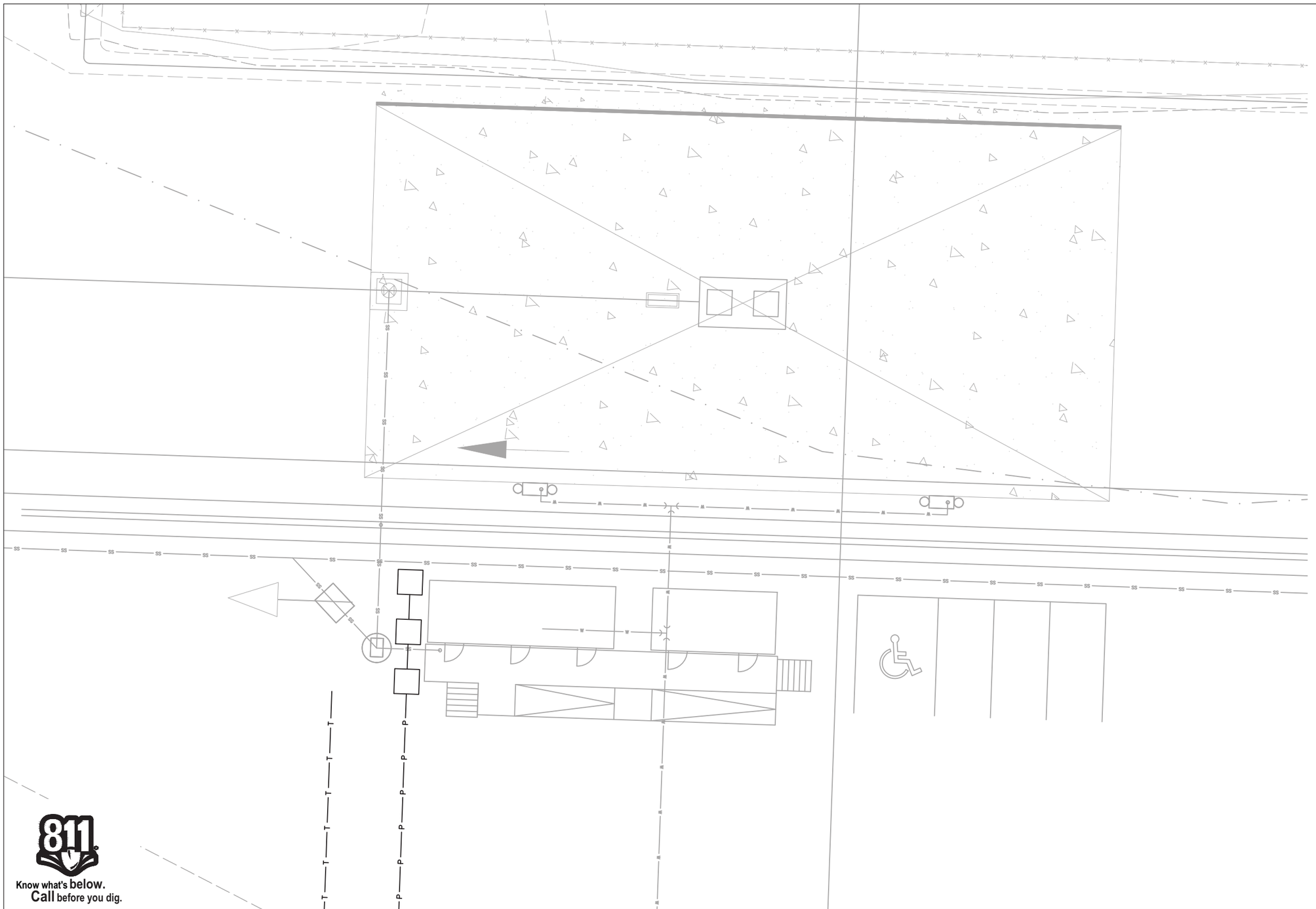
R:\5650-093.00\Dwgs\m8e44 12-04-20 09:00am curtis

GENERAL NOTES

1.

KEYED NOTES

(1) XXX



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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: 1" = 8'
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ENLARGED ELECTRICAL PLAN
NORTH PORTABLE BUILDINGS

DWG. NO. **E4.5**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. OF XX

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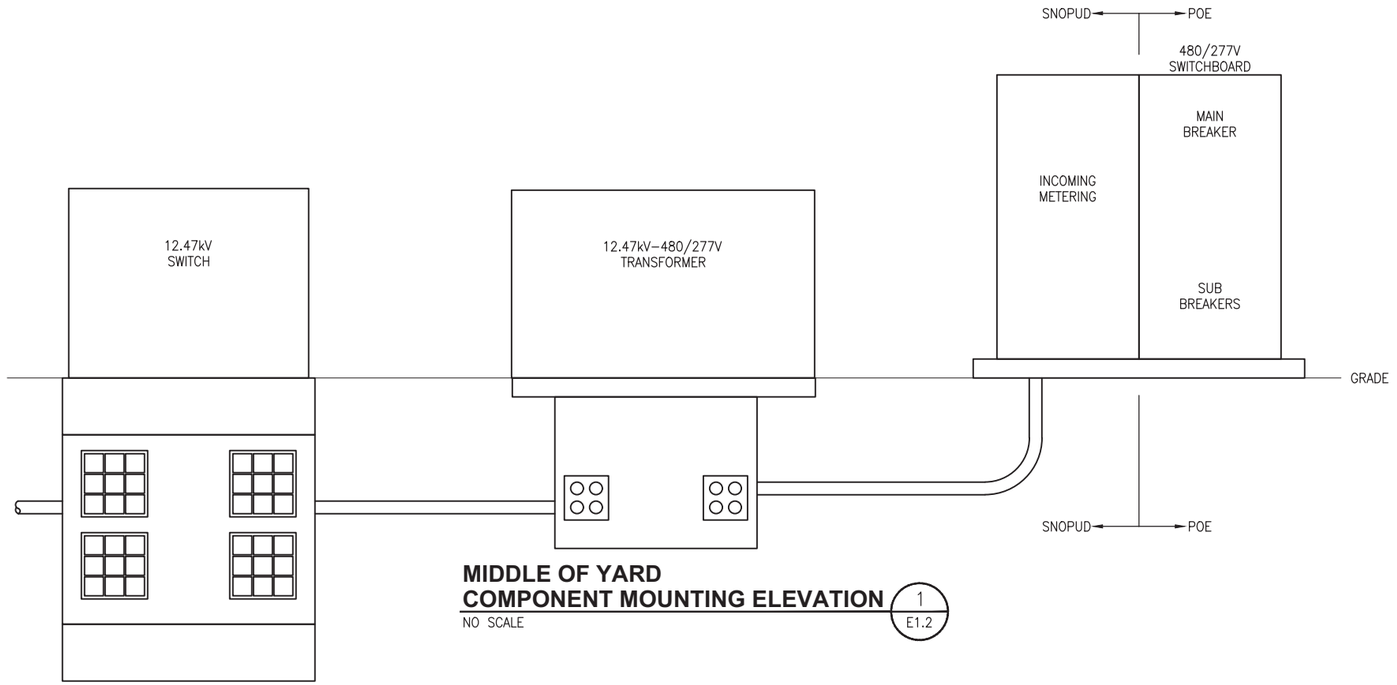
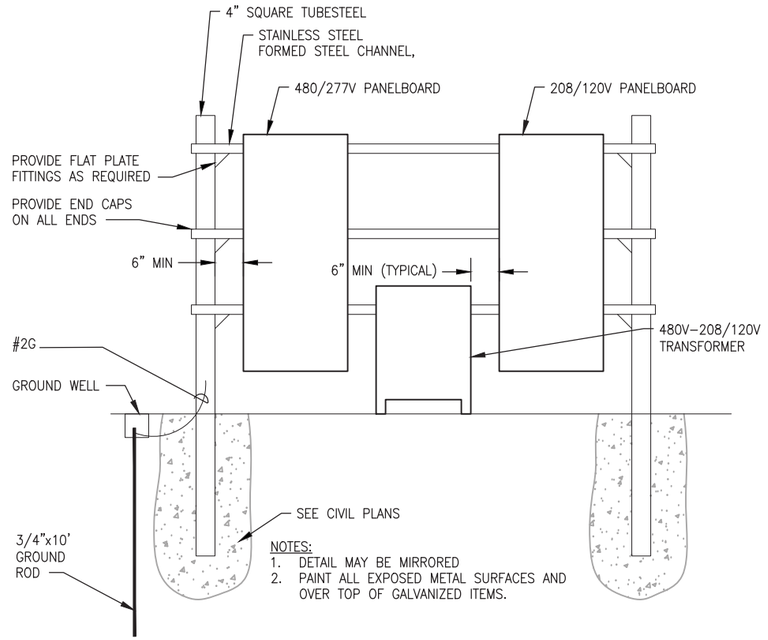


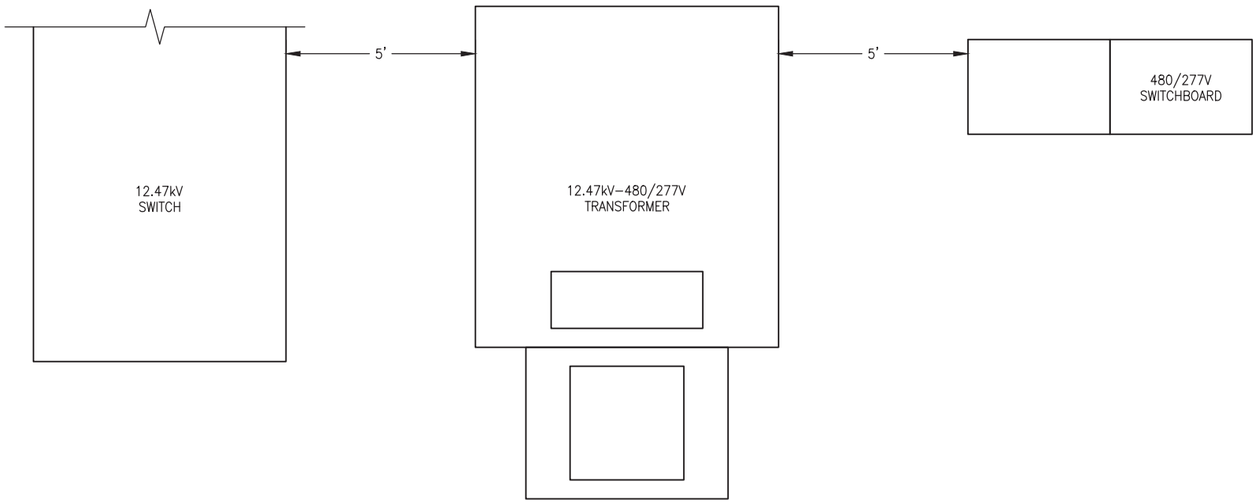
MIDDLE OF YARD
COMPONENT MOUNTING ELEVATION 1 / E1.2

NO SCALE



TYPICAL ELECTRICAL
COMPONENT MOUNTING ELEVATION 2 / E1.2

0 1 2
scale feet



MIDDLE OF YARD
COMPONENT MOUNTING PLAN 3 / –

NO SCALE

GENERAL NOTES

1.

KEYED NOTES

(1) XXX

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DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 — REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

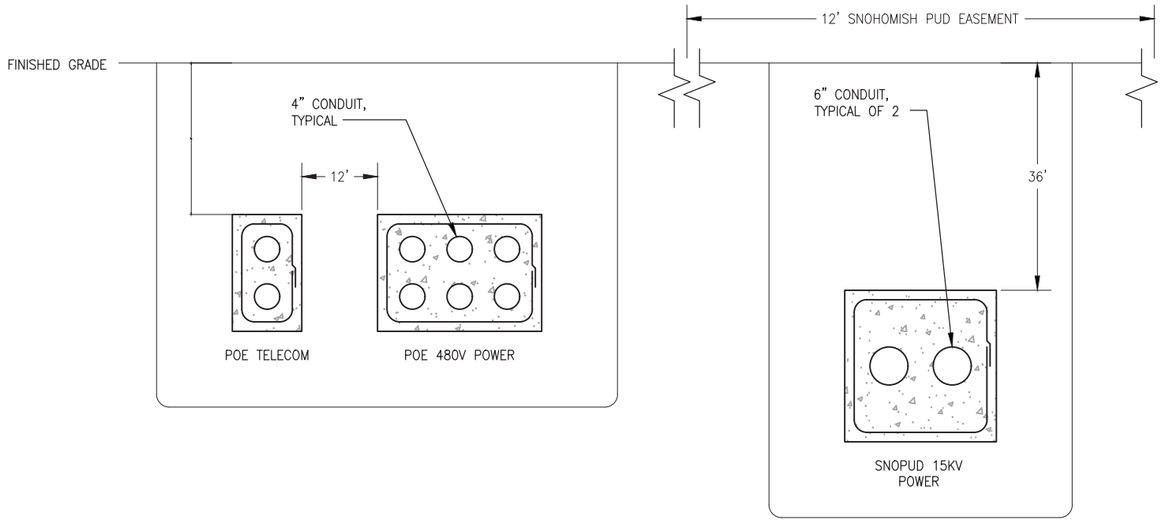
PROJECT ENGINEER: D. SIATERLIS	SCALE: NONE
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ELECTRICAL DETAILS

DWG. NO. **E5.1**
CIP NO. 1–8–900–05
PROJECT NO. TBD
SHEET NO. OF XX

R:\5650-093.00\Dwgs\m8e51 12-04-20 11:43am curtis



POE DUCTBANK SECTION A

0 1 2
scale feet

SNOPUD DUCTBANK SECTION B

0 1 2
scale feet

GENERAL NOTES

1.

KEYED NOTES

(1) XXX

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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 — REGISTERED PROFESSIONAL ENGINEER
PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: NONE
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ELECTRICAL DETAILS

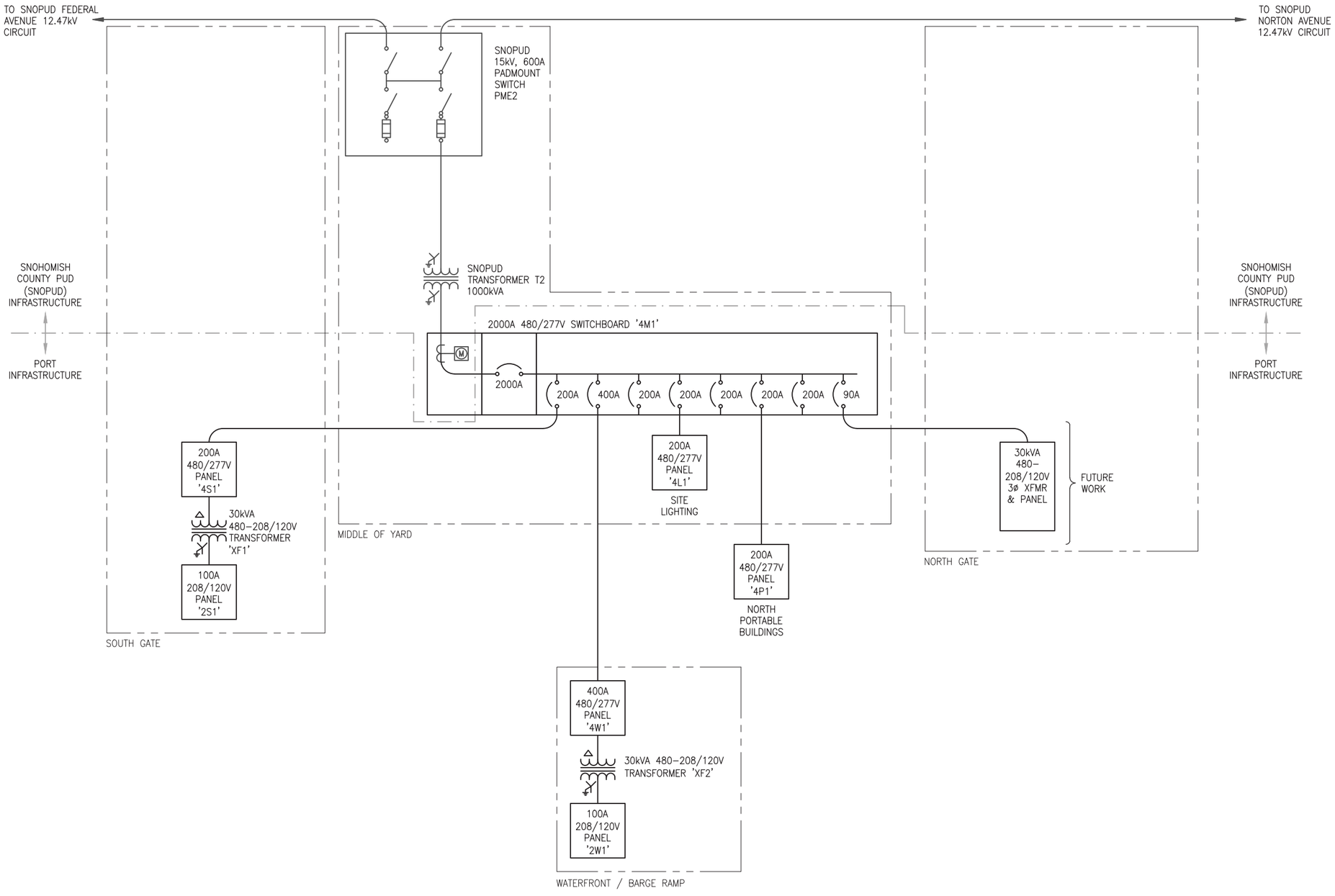
DWG. NO. **E5.2**
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. OF XX

GENERAL NOTES

1.

KEYED NOTES

(1) XXX



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NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

DIMITRIOS K. SIATERLIS — STATE OF WASHINGTON — 23791 — REGISTERED PROFESSIONAL ENGINEER — PRELIMINARY

PROJECT ENGINEER: D. SIATERLIS	SCALE: NONE
DESIGNED BY: D. SIATERLIS	DATE: DEC 2020
DRAWN BY: C. SMITH	CHECKED BY: S. BARTKOSKE
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – 60% DESIGN
ONE–LINE DIAGRAM

DWG. NO. **E6.1**

CIP NO. 1–8–900–05

PROJECT NO. TBD

SHEET NO. OF XX

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APPENDIX B

Preliminary Drainage Report

Preliminary Storm Water Report

Port of Everett
Maritime Industrial Expansion
(Norton Terminal)
Everett, WA

Prepared for:
Port of Everett

January 6, 2021

Prepared by:

KPFF Consulting Engineers
1601 5th Ave, Suite 1300
Seattle, WA 98101

TABLE OF CONTENTS

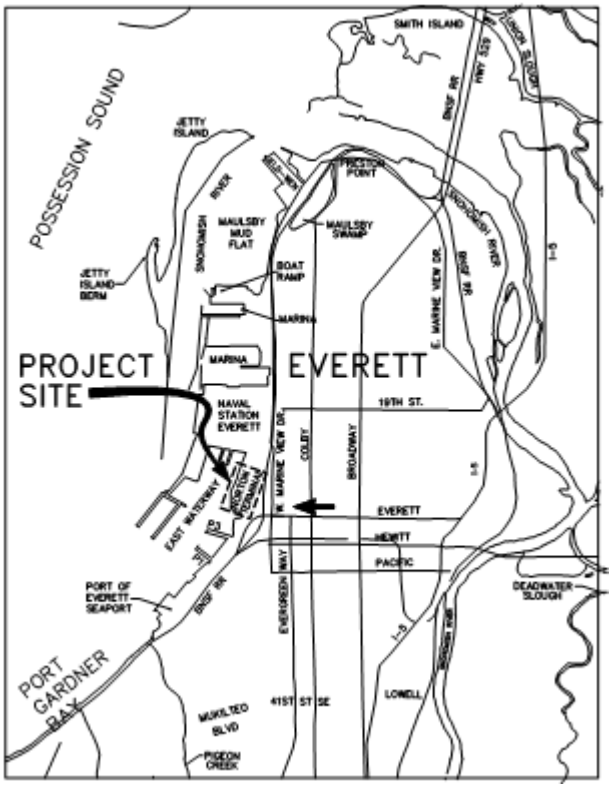
LIST OF TABLES

LIST OF FIGURES

1.0 PROJECT DESCRIPTION

The Port of Everett (Port) plans to develop the former Kimberly-Clark (K-C) site back into economic use following the completion of K-C's second interim cleanup action. The site has an overall size of 58.17 acres that includes 45.37 acres located above the high tide level (HTL) and 12.80 acres located below HTL. The site is located adjacent to and just north of the Port's main Marine Terminal facilities in the City of Everett (City), see Figure 1 – Vicinity Map for the project location. The redevelopment will increase the Port's existing cargo handling capabilities and storage by installing a paved cargo laydown yard, ingress and egress gates, allowance for future railroad sidings, and utilities including water, sewer, power, lighting and communications, storm drainage, and infrastructure for storage of containers and breakbulk cargo. The stormwater improvements include the installation of a collection and conveyance system consisting of concrete gutters, trench drains, stormwater pipes, catch basins, manholes, and water quality treatment systems.

FIGURE 1 - VICINITY MAP



2.0 EXISTING CONDITIONS

The existing site is currently undergoing cleanup under an agreed order (Agreed Order No. DE 9476) between the Washington State Department of Ecology (Ecology) and Kimberly-Clark Worldwide (K-C). The cleanup work was completed in December, 2020.

2.1 EXISTING SITE AND SURFACE DRAINAGE

The existing site area located above HTL is approximately 45.37 acres of relatively flat surface consisting mostly of sand backfill from the cleanup action. The site is bound to the north by the City Port Gardner Stormwater Facility, to the south by Federal Avenue and Port of Everett Terminal, to the East by the BNSF railroad right-of-way and to the west by Port Gardner Bay East Waterway. The site area located above HTL is delineated into three basins identified as Basins M, A, and Future PUD Substation. Basin delineations are illustrated on Figure 2. Table 1 below provides a summary of basin areas including percentages of impervious & pervious surface. Tables 2 & 3 below summarize the site surface characteristics of Basins M & A.

Site surface characteristics consist primarily of sand backfill that was placed during removal of crushed material as part of the interim action cleanup project. The impervious areas are a combination of warehouse roof and remaining asphalt and concrete pavement located along the site's south and west sides. Existing soil conditions consist of granular/sandy fill material which allows stormwater runoff to infiltrate. The site has been graded to slope away from the shoreline to a low point to reduce the risk of runoff flowing to Port Gardner Bay. Stormwater (precipitation) currently infiltrates into the pervious sand backfill. All but two of the existing site outfalls were plugged and abandoned during the cleanup action. The two remaining outfalls, A & M, will be replaced to serve the proposed redevelopment.

The Future PUD Substation Area, located at the northeast corner of the property, will be redeveloped as a separate future project by the PUD. Existing site surface characteristics and drainage patterns will be maintained as part of this project. Stormwater runoff at this location sheet flows to the northwestern portion of the area and drains into an existing ditch adjacent to the City's Port Gardner Stormwater Facility.

TABLE 1: EXISTING SITE AREA CHARACTERISTICS

Basin	Area (ac)	Impervious Area (%)	Pervious Area (%)
Basin M	39.40	10	90
Basin A[1]	4.24	94	6
Future PUD Substation Area	1.86	34	66
Total Basin Area	45.37	19	81

1. Basin A area includes 0.13ac of off-site paved area.

TABLE 2: EXISTING BASIN M SITE CHARACTERISTICS

Area Description	Area (ac)
Pavement	0.86
Gravel	7.50
Sand backfill	30.46
Gravel/vegetation	0.58
Total Basin Area	39.40

TABLE 3: EXISTING BASIN A SITE CHARACTERISTICS

Area Description	Area (ac)
Warehouse roof and south paved parking lot	3.86
Sand backfill	0.25
Off-site Federal Avenue and paved Port Terminal	0.13
Total Basin Area	4.24

3.0 PROPOSED CONDITIONS

The existing site is a brownfield site with extensive subgrade foundations remaining in place. To mitigate the impact of encountering subsurface obstacles, stormwater infrastructure has been designed to be as shallow as possible. As part of this project, Basin M and Basin A will be redeveloped into a paved cargo laydown yard. Stormwater runoff will be collected, conveyed, and treated prior to discharge through replaced outfalls to Port Gardner Bay. The Future PUD Substation area will be developed under a separate, future permit by the PUD. Existing drainage and site characteristics will be maintained as part of this project.

3.1 SITE USE AND ANTICIPATED POLLUTANTS

In general, the overall developed site will be paved and utilized for long term storage of containers and oversized cargo items. The Port anticipates on average, ten (10) truck movements per day, compared to other marine cargo container handling facilities averaging 3,000-5,000 truck movements per day. Based on the proposed operational use of this facility, low number of anticipated daily truck movements, type of storage, and KPFF's experiences on high use marine cargo container handling facilities, expected pollutant loadings are anticipated to be much smaller for this site. Based on KPFF'S observations and work on other port facilities, the proposed site operations are anticipated to generate the following pollutants in stormwater runoff that require treatment prior to discharge.

- Dissolved Zinc
- Dissolved Copper
- Total Suspended Solids (TSS)

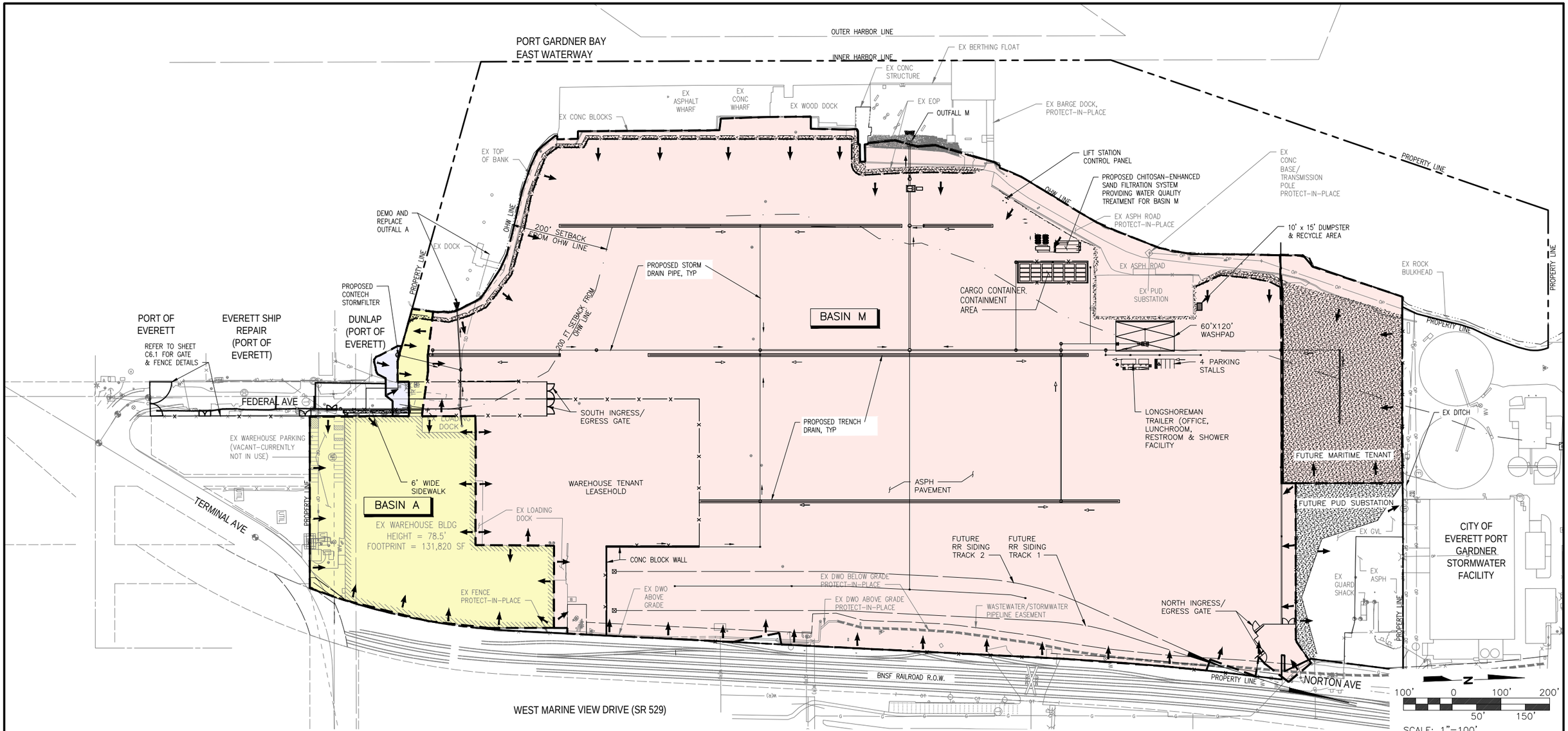
Enhanced treatment requirements for oil/grease is not anticipated due to the low volume of truck movements.

3.2 SITE GRADING AND PAVING

Site redevelopment requires the regrading of approximately 43.5 acres of the site to establish site elevations for the improvements. In general, approximately 39.4 acres of the site will be paved with asphalt and surface slopes will range between 1% and 2%. Surface grading will be such that all stormwater runoff is collected and treated prior to discharge to Port Gardner Bay through the respective basin outfalls (see Figure 2 for basin extents and discharge locations). The pavement section has been designed to support large wheel loads produced by the Port's container handling reach stackers and storage of heavy cargo, like the Port's other marine terminals.

3.3 STORMWATER COLLECTION AND CONVEYANCE

The storm water collection and conveyance system has been designed to capture all stormwater runoff and convey the necessary flow rate to the treatment systems prior to discharging to Port Gardner Bay through upsized outfalls. The site has been delineated into two main contributing basins, Basin M and Basin A, which will be developed as part of this project. See Figure 2 for basin extents and areas.



NOTES

1. SITE AREA:
   ABOVE HTL = 45.37± AC
   BELOW HTL = 12.80± AC
   TOTAL AREA = 58.17± AC

LEGEND

- BASIN A ON- SITE (APPROX AREA = 4.11 ACRE)
- BASIN A OFF-SITE (APPROX AREA = 0.13 ACRE)
- BASIN M (APPROX AREA = 39.40 ACRE)
- TRENCH DRAIN SLOPE DIRECTION
- PIPE SLOPE DIRECTION
- DRAINAGE BASIN BOUNDARY

VERT DATUM: NAVD 88
CONV TO MLLW = NAVD88+2.03
HORZ DATUM: NAD 83/91

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

kpff
1601 5th Avenue, Suite 1300
Seattle, Washington 98101
(206) 382-0600 Fax (206) 382-0500
PROJECT NO. 1600120

NO.	DATE	BY	REVISION	NO.	DATE	BY	REVISION

PROJECT ENGINEER: N. WATSON	SCALE: 1" = 100'
DESIGNED BY: J. BECKER	DATE: 12/31/2020
DRAWN BY: E. NIELSEN	CHECKED BY: N. WATSON
APPROVED BY:	

PORT OF EVERETT

MARITIME INDUSTRIAL EXPANSION
NORTON TERMINAL – EXHIBITS
STORM DRAIN BASIN PLAN

DWG. NO. FIG 2
CIP NO. 1-8-900-05
PROJECT NO. TBD
SHEET NO. OF XX

3.3.1 BASIN M

Basin M is approximately 39.40 acres and includes the areas identified in Table 4 below. The Basin M stormwater collection, conveyance and treatment system has been sized assuming 100% impervious paved surface. Stormwater runoff will be managed by collection and conveyance infrastructure consisting of longitudinal concrete gutters and trench drains that will be connected to a high-flow bypass vault. The high-flow bypass vault will use weirs and orifices to separate the required water quality flow from the high flows. Water quality flows will be routed to a pumping chamber that will pump the water quality flow through a new forcemain to a treatment system. High-flows will bypass the treatment system with direct discharge to the Port Gardner Bay East Waterway in conformance with current stormwater regulations. Following treatment, the water quality flows will also discharge directly to the East Waterway through outfall M in its current alignment but will be upsized due to its existing condition.

TABLE 4: PROPOSED BASIN M SITE AREA

Area Description	Area (ac)
Future Maritime Leasehold	2.44
Main Cargo Laydown	33.35
Warehouse North Yard	3.61
Total Basin Area	39.40

3.3.2 BASIN A

Basin A is approximately 4.24 acres, 4.11 acres of on-site and 0.13 acres of offsite areas identified in Table 5 below. Basin A is a small portion of the south end of the site and will be redeveloped to creature a secure point of ingress and egress to the site. As part of the redevelopment, stormwater runoff will be managed by collection and conveyance infrastructure (catch basins and manholes) that will convey stormwater to Outfall A. The stormwater infrastructure has been sized assuming 100% impervious area. Outfall A requires replacement due to its deteriorated condition, additional area from the south gate area requiring redevelopment and off-site areas that are currently not managed.

The warehouse drainage and downspout configurations will not be modified and will continue to drain through the upsized Outfall A. As part of this project, a stormwater conveyance stub and catch basin will be installed near the south west corner of the warehouse to collect potential future stormwater improvements to the south parking area. Outfall A has been sized to adequately convey the south parking lot if future development of this area requires a stormwater connection.

TABLE 5: PROPOSED BASIN A SITE AREA

Area Description	Area (ac)
Warehouse and South Parking Lot	3.86
Southern Cargo Laydown	0.25
Total On-site Area	4.11
Total Off-site Area	0.13
Total Basin Area	4.24

3.3.3 FUTURE PUD SITE

The future PUD site is approximately 1.86 acres and will not be developed as part of this project except for portions of gravel surface that will be overlain with additional clean gravel to establish final grades for the developed site. The existing site grading and drainage will be maintained. This area will be redeveloped under a separate, future permit by the PUD including stormwater collection, conveyance and treatment.

4.0 STORMWATER TREATMENT SELECTION

As part of this project, two different stormwater treatment systems will be installed to address water quality requirements. The two systems have been sized and selected to meet the basic and enhanced requirements outlined by Washington Department of Ecology (DOE) and under the assumption the contributing areas will be 100% paved (100% impervious). Basin M (approximately 39.40 acres) will be treated by a Chitosan Enhanced Sand Filtration (CESF) system before discharging to Port Gardner Bay through Outfall M. The redeveloped portion of Basin A (approximately 0.38 acres) will include stormwater treatment by a Contech Stormfilter Cartridge (stormfilter) system before discharging to Port Gardner Bay through Outfall A. The remaining areas within Basin A that include the Warehouse roof and south parking lot (3.86 acres) will remain unaltered by this project and will continue to discharge to Outfall A.

These treatment systems were selected based on their ability to meet current pollutant benchmarks/limits established by DOE under the updated 2018 TAPE guidance documents and the Clean Water Act.

4.1 CHITOSAN ENHANCED SAND FILTRATION TREATMENT SYSTEM

The CESF system is an established stormwater treatment technology that has been used successfully to meet required benchmarks at the Port of Seattle's Terminal 18 (T18), a 200-acre marine cargo container terminal located on Harbor Island in Seattle. KPFF worked with CESF vendors to design and implement several CESF treatment systems to treat stormwater runoff from approximately 200 acres of T18 prior to discharge to the Duwamish River. The installed CESF systems at T18 range in size, treating drainage areas ranging from 8 acres to 62 acres. The first system was installed in 2016 and was sized to treat approximately 62 acres. Since the first installation, two additional CESF systems were installed in 2018 and 2020. Two more systems have been finalized and are planned to be constructed in 2021. The three operational CESF systems have been able to meet DOE pollutant benchmarks and limits successfully since installation. The systems have seen a wide range of pollutant influent loadings and have been able to meet benchmarks and limits for all quarterly required sampling. In addition to T18, KPFF is working with CESF vendors to install four similar systems at Terminal 5, another 100+ acre marine cargo container terminal at the Port of Seattle.

As part of the MIE project, the final design of the CESF system may vary depending on vendor and influent stormwater characteristics, but generally the system will consist of the following steps: collection, water quality monitoring for pH, turbidity, and conductivity, dosing stormwater with a chitosan acetate solution for stormwater solids settling in tanks before sand filtration and discharge of treated stormwater. The chitosan acetate solution is a biopolymer that is dosed into the water to coagulate fine particulate and suspended solids, generating floc for settlement in the tanks prior to filtration. The CESF system also monitors influent and treated stormwater for water quality parameters, pH, turbidity, and conductivity. Treatment loops are incorporated to recirculate if water after treatment doesn't meet requirements for discharge.

The CESF system can be modified or added to, to treat future pollutants. Dosing rates, chemical selection, additional storage tanks or filter pods, as well as add on systems can be incorporated to help meet modifications to existing benchmarks/levels or future pollutant removal requirements.

The CESF system has received General Use Level Designation (GULD) for Construction in Ecology's – TAPE program. This classification demonstrates that CESF systems can effectively meet pollutant reduction goals associated with construction, including turbidity removal.

4.2 CONTECH STORMFILTER CARTRIDGES

The Contech Stormfilter system uses rechargeable, media-filled cartridges to absorb and retain pollutants from stormwater runoff. Filter cartridges are placed in below ground structures such as specially designed catch basins, manholes or vaults. The Stormfilter system is proposed to provide treatment for about 0.40 acres of redevelopment at the south gate area. Due to topography constraints and the need to keep utilities shallow to avoid below ground foundations and obstructions, this area cannot drain by gravity to the CESF system so a stand-alone system is proposed.

Contech Stormfilter systems have received General Use Level Designation (GULD) from Ecology for 'Basic' Water Quality treatment and Conditional Use Level Designation (CULD) for enhanced heavy metal treatment requirements. A level of 'Basic' treatment is anticipated for the south gate area of MIE.

APPENDIX C

Threatened and Endangered Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
Phone: (360) 753-9440 Fax: (360) 753-9405
http://www.fws.gov/wafwo/

In Reply Refer To: December 27, 2020
Consultation Code: 01EWFW00-2021-SLI-0380
Event Code: 01EWFW00-2021-E-00767
Project Name: MTCA Interim Action and MIE Project

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, and proposed species, designated and proposed critical habitat, and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. The species list is currently compiled at the county level. Additional information is available from the Washington Department of Fish and Wildlife, Priority Habitats and Species website: http://wdfw.wa.gov/mapping/phs/ or at our office website: http://www.fws.gov/wafwo/species_new.html. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether or not the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:
http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). You may visit our website at http://www.fws.gov/pacific/eagle/for information on disturbance or take of the species and information on how to get a permit and what current guidelines and regulations are. Some projects affecting these species may require development of an eagle conservation plan: (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Also be aware that all marine mammals are protected under the Marine Mammal Protection Act (MMPA). The MMPA prohibits, with certain exceptions, the "take" of marine mammals in U.S. waters and by U.S. citizens on the high seas. The importation of marine mammals and marine mammal products into the U.S. is also prohibited. More information can be found on the MMPA website: http://www.nmfs.noaa.gov/pr/laws/mmpa/.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Related website:
National Marine Fisheries Service: http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Washington Fish And Wildlife Office
510 Desmond Drive Se, Suite 102
Lacey, WA 98503-1263
(360) 753-9440

Project Summary

Consultation Code: 01EWFW00-2021-SLI-0380

Event Code: 01EWFW00-2021-E-00767

Project Name: MTCA Interim Action and MIE Project

Project Type: ** OTHER **

Project Description: 3rd Model Toxics Control Act (MTCA) interim action and redevelopment of the Norton Terminal.The intent of the 3rd interim action is to achieve the following goals:
1. Expedite cleanup of the Site
2. Reduce surface water infiltration through residual soil contamination that could be mobilized into groundwater by surface water infiltration
3. Prevent wildlife exposure to residual soil contamination, and
4. Integrate Site infrastructure improvements and cleanup elements to ensure consistency with future Site use and for long-term protection of human health and the environment.
Development of the Norton Terminal will include upland site grading/ paving; longshoreman facility; utilities, including modification of two existing stormwater outfalls in the East Waterway; lighting; security improvements; cargo gateway ; and landscaping

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/47.98501601648333N122.2170260365521W

Counties: Snohomish, WA

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Gray Wolf *Canis lupus* Population: Western Distinct Population Segment No critical habitat has been designated for this species.	Proposed Endangered

Birds

NAME	STATUS
Marbled Murrelet *Brachyramphus marmoratus* Population: U.S.A. (CA, OR, WA) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4467	Threatened
Streaked Horned Lark *Eremophila alpestris strigata* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7268	Threatened
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Amphibians

NAME	STATUS
Oregon Spotted Frog *Rana pretiosa*	Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/6633

Fishes

NAME	STATUS
Bull Trout *Salvelinus confluentus*	Threatened

Population: U.S.A., conterminous, lower 48 states
There is **final** critical habitat for this species. Your location overlaps the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/8212

Critical habitats

There is 1 critical habitat wholly or partially within your project area under this office's jurisdiction.

NAME	STATUS
Bull Trout *Salvelinus confluentus*	Final

https://ecos.fws.gov/ecp/species/8212#crithab

APPENDIX D

Biology of Listed Species

Puget Sound Chinook Salmon Evolutionarily Significant Unit

In June 2005, the National Oceanic and Atmospheric Administration (NOAA) Fisheries listed the Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*) evolutionarily significant unit (ESU) as a threatened species under the Endangered Species Act (ESA; NOAA 2005a). There is no single factor responsible for the decline of the Puget Sound Chinook salmon, but the primary causes include destruction and modification of habitat, overutilization for recreational purposes, and other natural and man-made factors.

The Puget Sound ESU for Chinook salmon includes all naturally spawned populations of Chinook salmon from rivers and streams flowing into the Puget Sound including the Strait of Juan de Fuca from the Elwha River eastward; rivers and streams flowing into Hood Canal, South Sound, North Sound, and the Strait of Georgia in Washington, as well as 26 artificial propagation programs (NOAA 2005a).

Chinook salmon adults migrate from the ocean to spawn in freshwater lakes and streams, where their offspring hatch and rear before migrating to the ocean to forage until maturity. Chinook salmon, which are the largest of the salmon species, spend between 3 months and 2 years in freshwater as juveniles before migrating to estuarine areas as smolts and then into the ocean to feed and mature. They remain at sea between 1 and 6 years before migrating back to freshwater to spawn (NOAA 2005a). There are several different seasonal "runs" (spring, summer, fall, and winter) in the migration of adult Chinook salmon from the ocean to freshwater, according to when Chinook salmon enter freshwater to begin their spawning migration (NOAA Fisheries 2012). Depending on water temperatures, Chinook salmon eggs will hatch 3 to 5 months after deposition in the redd (NOAA 2005a).

Juvenile Chinook salmon feed primarily on insects, amphipods, and other crustaceans, while adults feed mainly on fish. Chinook salmon exhibit semelparity, meaning that individuals spawn only once in their lifetime then die (NOAA 2005a).

Puget Sound Steelhead Trout Distinct Population Segment

In May 2007, NOAA Fisheries listed the Puget Sound steelhead trout (*O. mykiss*) distinct population segment (DPS) as a threatened species under the ESA (NOAA Fisheries 2007). There is no single factor responsible for the decline of the Puget Sound steelhead, but the primary causes include those contributing to the listing status of the Puget Sound Chinook salmon ESU discussed above.

The Puget Sound steelhead DPS includes all naturally spawned anadromous steelhead trout populations, from streams in the river basins of the Strait of Juan de Fuca, the Puget Sound, and Hood Canal, Washington, bounded to the west by the Elwha River (inclusive) and to the north by the Nooksack River and Dakota Creek (inclusive), as well as the Green River natural and Hamma winter-run steelhead hatchery stocks (NOAA Fisheries 2007).

O. mykiss includes rainbow trout and their anadromous form, steelhead. This divergence in form, within the species, creates one of the most complex life histories found in Pacific salmonids. Steelhead reside in freshwater, feeding and maturing for up to 7 years before smoltification and migration to marine waters. Steelhead from the Puget Sound ESU are typically either summer- or winter-run steelhead. Winter-run steelhead are the predominant run in the Puget Sound, in part because there are fewer basins in the Puget Sound DPS with the geomorphology and hydrology necessary to establish the summer-run life history. Winter-run steelhead enter freshwater between December and April and spawn between March and June (NOAA Fisheries 2007). Steelhead feed on aquatic insects, amphipods, aquatic worms, fish eggs, and occasionally fish (Wydoski and Whitney 2003).

Steelhead spawn in a manner similar to Pacific salmon, requiring fairly deep (mean depth of 0.7 to 1.34 feet [ft]) flowing water (water velocity of 1.8 to 2.3 ft per second) and gravel substrate (ranging between 0.5 and 3.9 inches in diameter) in order to excavate redds. Redds have been observed in tributaries of the Yakima River averaging 7.6 ft long and 3.6 ft wide, and some can be much larger, covering up to 5,688 square feet (sf) of stream bottom.

Steelhead eggs hatch in approximately 50 days, when the water temperature reaches 50 degrees Fahrenheit (°F). Alevin require slow-moving pools to mature enough to navigate through riffles. Steelhead exhibit iteroparity, meaning individuals are able to spawn more than once during their lifetime (Wydoski and Whitney 2003).

Bull Trout (Coastal-Puget Sound Distinct Population Segment)

In November 1999, the US Fish and Wildlife Service (USFWS) listed bull trout (*Salvelinus confluentus*) under the ESA as threatened in the Coastal-Puget Sound area. The Coastal-Puget Sound DPS of bull trout encompasses all Pacific Coast drainages within the State of Washington, including the Puget Sound. It is separated from other populations of bull trout by the Columbia River Basin to the south and the crest of the Cascade Mountain Range to the east. This population segment is highly significant to the species as a whole, since the Coastal-Puget Sound DPS supports all life history forms of the species, including the only known anadromous forms of bull trout in the coterminous United States (USFWS 2010).

The USFWS concluded that the listing of bull trout was warranted because:

- Populations have declined substantially from historical levels.
- Populations are severely fragmented, increasing the probability of local extinction.
- Their habitat has been degraded and continues to be threatened by human activities.
- Populations have been and continue to be impacted by fishing, poaching, and interactions with non-native species, notably brook trout.

- Conservation efforts implemented to date have been insufficient to reverse the decline and bring about recovery.

Because they spend significant portions of their life in freshwater, bull trout are particularly vulnerable to modifications or loss of the following habitat characteristics: (1) channel stability, (2) substrate composition, (3) cover, (4) temperature, (5) prey availability, and (6) migratory corridors. The relatively late age at which bull trout become reproductively mature exposes them to increased risk from fishing, competition from non-native fish, and natural and man-made disturbances ((Rieman and McIntyre 1993).

Bull trout mature at 4 to 7 years, and unlike salmon, spawning adults survive to spawn again every 2 or 3 years. They spawn in the fall after the water temperature drops below 9 degrees Celsius (McPhail and Baxter 1996). The incubation period for bull trout eggs is 4 to 5 months, and they hatch in late winter to early spring. Bull trout like cold, clean, and undisturbed waters. Juvenile bull trout eat aquatic macroinvertebrates and begin feeding on whitefish, sculpin, and other trout as they grow. Bull trout that live in streams rarely grow to more than 4 pounds (lbs), but lake inhabitants can weight more than 20 lbs.

Bull trout are known to exhibit four distinct life history forms:

- Adfluvial bull trout rear from 1 to 4 years in their natal stream and then migrate to lakes, returning only to spawn.
- Fluvial bull trout mature in their natal streams much like their adfluvial counterparts, but move to large streams and rivers after maturation.
- Resident bull trout complete their entire life cycle in the tributary (or nearby) streams in which they spawn and rear.
- Anadromous bull trout rear in natal streams and migrate to marine environments to mature. This form is reported only near the Puget Sound in Washington, where anadromous bull trout grow large in the salt water and then migrate to mountain tributaries to spawn.

Bull trout have adapted to cold water and require water temperatures around 48° to 50°F for rearing and spawning (USFWS 1999); however, incubating eggs require cold water with optimal development at temperatures ranging from 36° to 39°F (McPhail and Murray 1979). Juvenile rearing and spawning typically occur in smaller tributaries and headwater streams, and they prefer cold water temperatures between 39° and 50°F (McPhail and Baxter 1996). Juvenile bull trout can reside in gravel substrate for more than 220 days from egg deposition to emergence, making them especially vulnerable to sediment deposition and bedload movement (USFWS 1999). They are strongly associated with the stream bottom and cover features such as wood, boulders, and interstitial spaces in the substrate (USFWS 2010). They typically mature as 5- to 7-year-olds and spawn in the fall from mid-September to mid-November, although the time of spawning may vary with geographic region and life history strategy (Wydoski and Whitney 2003). Bull trout can live more than 20 years. Because fecundity

increases with size, older, larger fish could be of particular importance to the population (USFWS 2010).

Marbled Murrelet

Marbled murrelets occur in many areas of western Oregon and Washington, where suitable forested habitat occurs within approximately 50 miles of the Puget Sound or the Pacific Ocean (Ralph et al. 1994). In Washington, at-sea counts of murrelets indicate approximately 5,000 birds are present offshore from April through July, with the largest concentrations being found in the Puget Sound area (Speich, Wahl, and Manuwal 1992). Marbled murrelets were listed as threatened by the USFWS in 1992 on the basis of available data, when declines in their population were observed in the southern portion of their range (USFWS 1992). The decline has been attributed primarily to the loss of nesting habitat for the species (Ralph and Miller 1995). Secondary concerns for murrelet survivability include gill net fisheries and oil pollution, and their impacts on feeding and resting murrelets at sea.

The marbled murrelet breeds from Alaska to central California and winters offshore from southern Alaska to central California, with casual wintering to southern California (Speich, Wahl, and Manuwal 1992). Marbled murrelets typically nest high in the canopy of old growth forests, where there are at least some trees greater than 32 inches diameter breast high and/or 200 years of age. Or they nest in stands of large trees infested with mistletoe (*Arceuthobium* spp.), where mistletoe brooms of greater than 1 sf of surface area are also occasionally used by nesting murrelets (Ralph and Miller 1995). Marbled murrelets feed in shallow coastal waters, typically within 1-1/4 miles offshore. Murrelets spend most of their life at sea and, unlike other alcids, come inland to nest and rear their young in coniferous forests, except for a small percentage of the population in Alaska that nest on the ground (Marshall 1988, USFWS 1992).

Yelloweye Rockfish

In April 2009, NOAA Fisheries completed a determination of the status of five species of rockfish (*Sebastes* spp.) in the Puget Sound and subsequently determined that yelloweye rockfish (*Sebastes ruberrimus*) occurring in the Georgia Basin are a DPS. NOAA Fisheries also concluded that the Georgia Basin DPS of yelloweye rockfish are likely to become endangered within the foreseeable future and, therefore, listed this DPS as threatened under the ESA (NOAA 2010).

The Latin name for yelloweye rockfish is *Sebastes ruberrimus*, and *ruberrimus* is Latin for “very red.” Yelloweye rockfish are easily identified by their bright red coloring and large yellow eyes. They are one of the largest and longest lived rockfish species, living up to 118 years and growing up to 35 inches long.

Numerous factors are contributing to the decline of rockfish populations, including overutilization for commercial and recreational purposes; habitat degradation; water quality problems, including low dissolved oxygen and elevated contaminant levels; and inadequacy of existing regulatory mechanisms.

Overutilization for commercial and recreational purposes is the primary cause of decline for rockfish in Puget Sound and the Georgia Basin. Overutilization is particularly detrimental to rockfish because they are a slow-growing, long-lived species, and once a population has been reduced, it can be difficult to restore to original numbers (NOAA 2010). Habitat degradation is another major cause of the decline of rockfish populations in the Puget Sound and the Georgia Basin. More specifically, threats to rockfish include degradation of rocky habitat; loss of aquatic vegetation, such as eelgrass and kelp; introduction of non-native flora and fauna that modify habitat; and decreased water quality.

Little is known about young-of-year yelloweye rockfish habitat preferences, but juveniles have primarily been found in rocky areas of high relief at depths greater than 48 ft, although a few subadults were spotted in water as shallow as 36 ft off southeast Alaska. Subadult and adult yelloweye rockfish also prefer rocky areas of high relief (Love, Yoklavich, and Thorsteinson 2002).

Bocaccio

In April 2009, NOAA Fisheries completed a determination of the status of five species of rockfish (*Sebastes* spp.) in the Puget Sound and subsequently determined that bocaccio (*S. paucispinis*) occurring in the Georgia Basin are a DPS. NOAA Fisheries also concluded that the Georgia Basin DPS of bocaccio are in danger of extinction throughout all or a significant portion of its range and, therefore, listed this DPS as endangered under the ESA (NOAA 2010).

Bocaccio means “big mouth” in Italian, and a large mouth is one of the distinguishing characteristics of this rockfish species. Like yelloweye rockfish, bocaccio can grow quite large, with a maximum size of 36 inches.

Juvenile bocaccio are known to tolerate very shallow water habitats, including one specimen that was located in a northern California tide pool. Adults can also be found in water as shallow as 40 ft, although they are typically found at depths of 165 to 825 ft.

Numerous factors contribute to the decline of rockfish populations, including overutilization for commercial and recreational purposes; habitat degradation; water quality problems, including low dissolved oxygen and elevated contaminant levels; and inadequacy of existing regulatory mechanisms. Overutilization for commercial and recreational purposes is the primary cause of decline for rockfish in the Puget Sound and the Georgia Basin. Overutilization is particularly detrimental to rockfish because they are a slow-growing, long-lived species, and once a population has been reduced, it can be difficult to restore to original numbers (NOAA 2010). Habitat degradation is another major cause of the decline of rockfish populations in the Puget Sound and the Georgia Basin. More specifically, threats to rockfish include degradation of rocky habitat; loss of aquatic vegetation, such as eelgrass and kelp; introduction of non-native flora and fauna that modify habitat; and decreased water quality.

Humpback Whale

The humpback whale consists of multiple populations worldwide, with the Eastern North Pacific stock being found in the coastal waters from Central America, Mexico, the west coast of the United States, and north into southern British Columbia. This population is in the southern portion of its range during the winter/spring and heads north to the United States and southern British Columbia during the breeding season in the summer/fall. Current population estimates conclude that around 1,000 to 1,500 individuals are in California, Oregon, and Washington waters. The humpback whale was listed endangered under the ESA on June 2, 1970. Major population declines are a result of commercial whaling in the 20th century and fishery mortality due to entanglement in fishing nets at sea (Kurlansky 2000; NMFS 2005a).

Southern Resident Killer Whale

Killer whales are found in all oceans and seas of the world, with a preference for colder waters of both hemispheres. Killer whales exhibit three ecotypes, including offshore, transient, and resident populations. Five killer whale stocks are recognized within the Pacific United States. The Southern Resident killer whale is a DPS of killer whales residing within the waters off Vancouver Island, the Strait of Juan de Fuca, the southern Strait of Georgia, and throughout the Puget Sound. This population was listed as endangered under the ESA on February 16, 2006 and utilizes salmonids, particularly Chinook, as its major food source. The Southern Resident killer whale shows distinct morphological and genetic characteristics when compared with other transient and offshore stock. In 2005, the Southern Resident killer whale population was estimated at 89 individuals by NOAA Fisheries. Factors affecting the Southern Resident killer whale include changes in prey availability (particularly salmon), contaminants, noise generated from human activities, diseases and parasites, and catastrophes such as oil spills and harmful algal blooms (NOAA 2005b).

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APPENDIX E

Site Photographs

Legend

- Photograph Location and Direction
- Project Area

Note

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

0 350 700

Scale in Feet

Data Source: Snohomish County GIS.

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LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Photograph Location Key Map

Figure
E-1

1. Site uplands undergoing 2nd interim action.

2. Upland area at south end of Site adjacent to shoreline.

LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-H

3. Upland area facing warehouse on Site.

4. Upland area south of substation.

LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-0

5. Upland area adjacent to wharf.

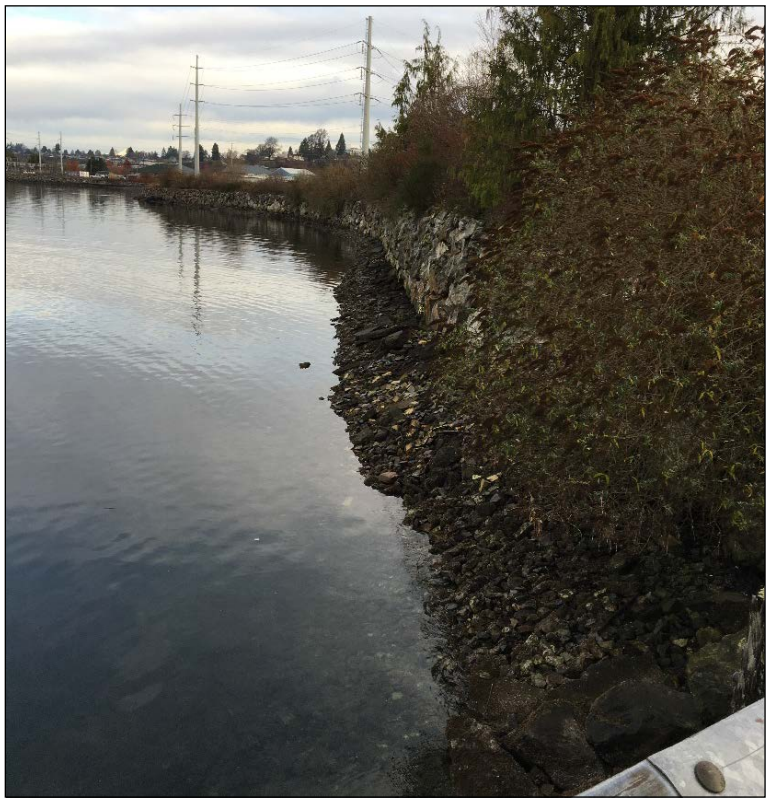
6. Unmaintained area of Site near warehouse.

LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-П



7. Shoreline north of wharf.

8. Vegetation adjacent to shoreline north of wharf.

LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-p

9. Shoreline at Outfall A.

10. Toe of shoreline at Outfall A.

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MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-5

11. Outfall M.

12. Shoreline above Outfall M.

LANDAU ASSOCIATES

MTCA Interim Action and
Marine Industrial Expansion
Port of Everett
Everett, Washington

Site Photographs

Figure
E-6