BLUE COAST
ENGINEERING

MEMORANDUM - DRAFT

Date: March 21, 2025
To: Dave Nakagawara, PE, Port of Port Townsend
From: Kathryn Ketteridge, PhD, PE and Kyle List, PE, Blue Coast Engineering

3/21/2025

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CITY OF PORT TOWNSEND
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Project: Sims Way Stormwater Project
Subject: Hydraulic Evaluation – Floodplain Impacts

PURPOSE

Blue Coast Engineering (Blue Coast) conducted a hydraulic evaluation for the Sims Way Stormwater Project (Project site). This hydraulic evaluation demonstrates that the proposed grading and utility improvements at the Project site will not adversely affect base flood elevations (BFEs) as determined by the Federal Emergency Management Agency (FEMA). The project complies with Port Townsend Municipal Code (PTMC) Section 16.08.200 Encroachments as well as Jefferson County Code (JCC) Chapter 15.15.080 Provisions for Flood Hazard Reduction. This memorandum provides a summary of the evaluation, including background information and conclusions.

BACKGROUND

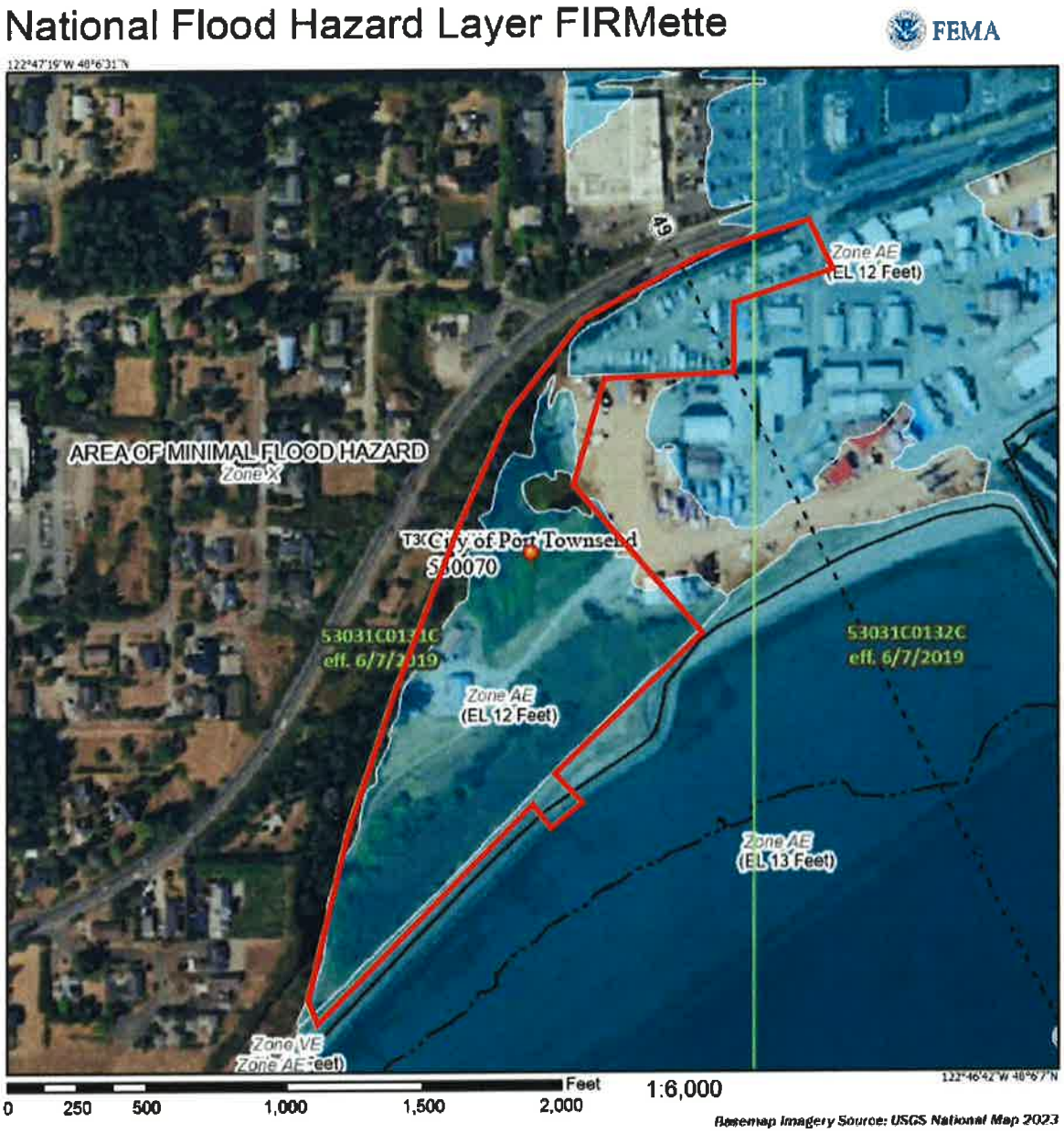
This section provides information about the existing FEMA 100-year floodplain at the Project site and the improvements within the floodplain proposed as part of this Project. This information was used to evaluate potential impacts, if any, to BFEs at and adjacent to the Project site due to proposed improvements.

FEMA 100-year Floodplain

Figure 1 shows an excerpt of the FEMA Flood Insurance Rate Map (FIRM) FIRMette in the vicinity of the Project site (FEMA, 2024); the approximate extents of the proposed boat yard and trail improvements are indicated by the red outline in the figure. The Project site is located on FIRM Panel #53031C0131C, which has an effective date of June 7, 2019 (FEMA 2019a). See Attachment 1 for the full FIRM Panels including the highlighted approximate boundary of the proposed project. This

Project site is adjacent to Port Townsend Bay to the southeast and the BFE is impacted by coastal flooding processes. The BFE is not impacted by non-coastal flooding sources such as streams and rivers.

Coastal transect-based modeling was used by FEMA to determine the BFE at the Project site. The location of FEMA coastal transects in Port Townsend in the vicinity of the Project site is shown in Figure 2, which is taken from the FEMA Flood Insurance Study for Jefferson County Washington and Incorporated Areas (Figure 9, FEMA 2019b). As shown in Figure 2, the BFE established at the Project site is located within the floodplain most closely associated with coastal transect 49 (i.e., Port Townsend Bay transect 49 presented in Table 17: Coastal Transect Parameters in FEMA 2019b).



Note: Red outline shows approximate location of improvements (including fill and stormwater improvement features) proposed within the 100-year coastal floodplain.
Source: FEMA, July 7, 2019

Figure 1: Excerpt from FIRMette Map (Jefferson County and Incorporated Areas)

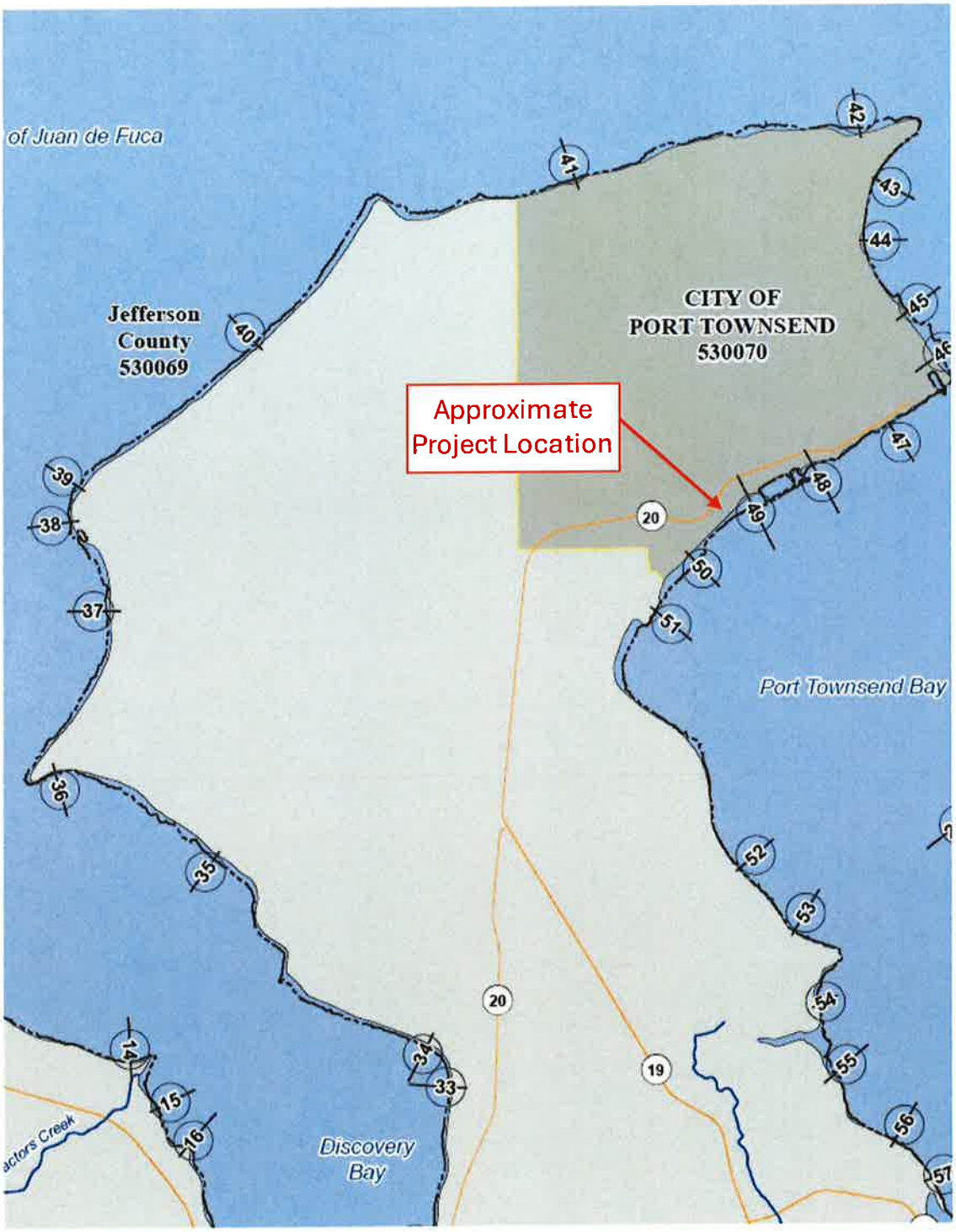


Figure 2: FEMA Coastal Transects, Port Townsend (Taken from Figure 9, FEMA 2019b)

As discussed above, the BFEs for the Project site are coastal BFEs, which are calculated along transects extending from offshore to the limit of coastal flooding upland. The BFE is estimated as the total stillwater elevation (stillwater elevation including tides, surge, and setup) for the 1% annual chance storm plus the additional flood hazard from wave runup and wave overtopping (FEMA 2019b). Figure 3 illustrates the general relationship between the stillwater elevation and wave effects, as well as the definition of the Coastal VE Flood Zone (wave heights greater than 3 feet) and the Coastal AE Flood Zone (wave heights less than 3 feet).

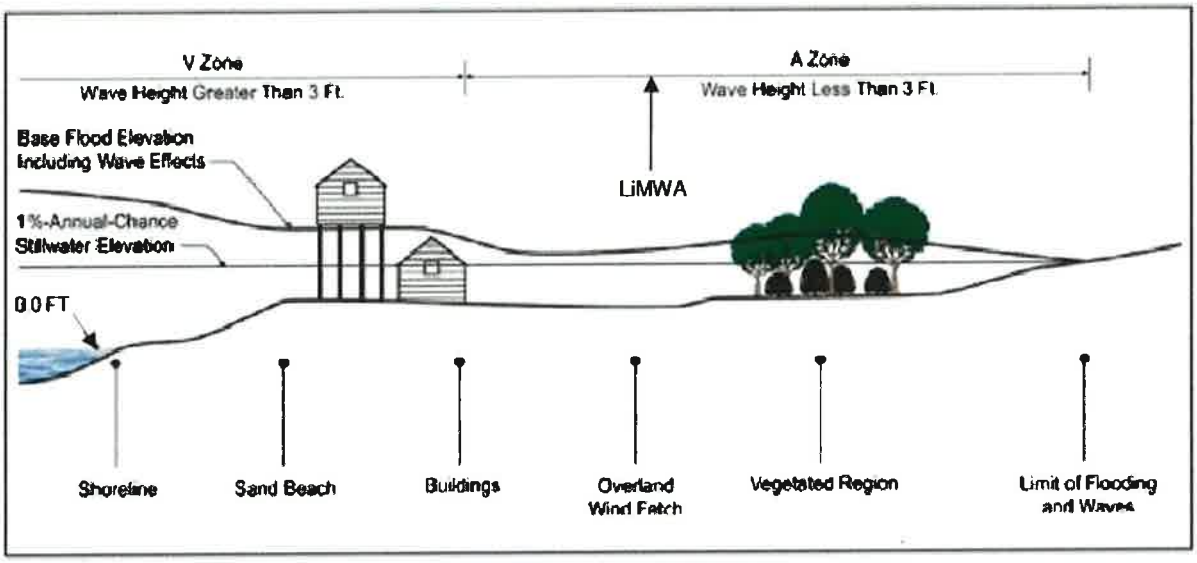


Figure 3: Coastal Transect Schematic (taken from FEMA 2019b)

The established BFE's near Port Townsend, including the Project site, were calculated using numerical modeling of wave generation, runup, and overtopping using the U.S. Army Corps of Engineers ADCIRC model in November 2012 (see Table 17 in FEMA 2019b).

Project Work Within the 100-Year Floodplain

The Project site is partially located within a coastal AE flood zone. No part of the Project site is located within a coastal V flood zone or a regulatory floodway. The coastal BFE at the Project site is equal to 12 feet NAVD88. As stated previously, a coastal BFE is defined as the sum of the 1% stillwater elevation (from tides and storm surge) plus impacts from waves (wave runup and overtopping). The 1% stillwater elevation estimated by FEMA for coastal transect 49 (the closest transect to the Project site) is 11.5 feet NAVD88 and because the BFE, when rounded to the nearest whole number, is 12 ft NAVD88, the effect of offshore wave conditions must be less than or equal to 0.9 ft at the Project site (see Table

17, FEMA 2019b) such that total flood stage rounds to 12 ft NAVD88[1]. There were no directly reported significant wave height values in the effective Table 17 (all wave heights were reported as 0.0 feet)[2].

Project improvements proposed within the FEMA 100-year floodplain include fill to create a new wide wet swale and access roads, and replacement of an existing stormwater pipe that outlets to Port Townsend Bay. .The thickness of the proposed fill is up to approximately 8 feet in the footprint for the access roads . The proposed fill for the access roads (see Attachment 2) will range in elevation from approximately 5 to just under 15 feet NAVD88. with the top elevation of the proposed access roads constructed higher than the coastal BFE. The access roads are therefore expected to remain dry during the 100-yr coastal base flood event (see Attachment 2). However, this will not result in the diversion of coastal floodwaters to other areas due to the unlimited storage that occurs during coastal flooding (see the following section for full explanation). The preliminary details of the proposed access road fill are shown in Attachment 2.

The proposed stormwater drainage pipe replacement will replace the existing deteriorated 15" stormwater drainpipe with a new 24" drainpipe along its current alignment. The existing drainpipe daylights on the beach in front of the existing rip rap slope. The new drainpipe will daylight at the rip rap slope, thus pulling the outlet of the drainpipe off the beach (see Attachment 2). This change will not result in any change to the coastal BFF within the project area or adjacent areas as discussed in the following section.

EVALUATION AND CONCLUSIONS

Clause 15.15.080 of the JCC provides standards for construction in flood-prone areas, including all "A" flood zones. Item 3 of this code states that:

> *"no new construction, substantial improvements, or other development (including fill) shall be permitted within zone AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community."*

The Port Townsend Municipal Code (PTMC) Section 16.08.200 is consistent with the JCC language for projects within the floodplain with established base flood levels.

[1] Total water level heights could range between 11.5 and 12.4 ft NAVD88 (rounds to the BFE of 12.0 ft NAVD88).
[2] In discussions with FEMA on February 28 via email exchange, approximate wave heights for transect 49 is approximately the difference between BFE and stillwater level.

> *"The cumulative effect of any proposed development, where combined with all other existing and anticipated development, shall not increase the water surface elevation of the base flood more than one foot at any point. (Ord. 3224 § 1 (Exh. A), 2019; Ord. 3173 § 1 (Exh. A), 2017; Ord. 2161 § 5.5, 1989)."*

The following discussion demonstrates that these floodplain requirements will be satisfied by the proposed project.

As discussed in the description of the project, the BFE defined within the AE flood zone at the Project site is due to coastal processes only, which includes tides, storm surge and wave runup contributions. The 1% still water flood elevation in coastal flood zones is estimated by the combined influence of tides and storm surge. Then an additional height is added to the still water flood elevation to account for wave run-up (which is the vertical height waves run up a shoreline area after they break). To cause a change in a coastal BFE, the proposed project must increase or decrease either the offshore wave conditions in the adjacent marine water body or the wave runup over land between the shoreline and the project location.

The proposed Project site grading (i.e., fill) improvements will be constructed inland from the Larry Scott Trail berm and will therefore have no impact on offshore wave conditions in Port Townsend Bay. Therefore, the only concern is related to potential changes to the wave runup over land between the shoreline to the south and the project site due to the proposed fill in the AE flood zone (see Attachment 2). If the proposed fill increases wave runup at or near the project site by more than 1 foot, this would be an unacceptable increase to the BFE at the Project site per JCC and PTMC.

The wave runup contributions to the coastal BFE are predicted by FEMA using the methods described in FEMA 2019b. In general, wave runup is estimated along each coastal transect using offshore wave heights (in Port Townsend Bay for the Project site) predicted by the ADCIRC and SWAN models for the area (FEMA 2018b) and the average slope of the nearshore beach and bluff areas along a defined coastal transect below the 1% stillwater flood elevation. The proposed project will not be impacting offshore wave heights. The proposed fill in the coastal floodplain results in only a negligible increase the upland slope over the proposed boatyard (approximately 0.8% increase in slope) which will reduce the extents of wave runup in those filled areas. Changes in local wave runup height would be negligible (approximately 2.4 inches maximum based on CEDAS-ACES calculations of wave runup, assuming a 0.9-foot maximum wave height and a 1% fill grade).

The existing stormwater drainpipe outlet currently located on the beach waterward of the Larry Scott Trail berm will be pulled back and will now outlet through the rip rap slope along the trail berm. This change will also have no impact to the coastal BFF at the outlet location or adjacent areas since it will not alter wave conditions or wave run-up within the project area or adjacent areas.

As discussed in the previous section about the process of coastal flooding, if wave heights or wave runup values are not substantially affected by the proposed project, there will be no impact to the existing FEMA 100-year coastal BFE. Therefore, the proposed fill and project elements would not have any impact on the coastal BFE calculated by FEMA (FEMA, 2019b).

Coastal BFEs are not impacted by changes in floodplain storage due to fill in the floodplain because: 1) coastal BFEs are not calculated using the same methods as non-coastal BFEs where storage is a factor (i.e., flooding from rainfall, streams, or rivers); and 2) there is infinite storage available for floodwaters in a marine body of water. Because the proposed fill will be very mildly sloping compared to existing grade, the coastal floodwaters will not be directed into other areas of the floodplain due to the project nor is the project anticipated to reduce coastal flooding in the Project site or areas further inland. Areas of the proposed grading (i.e., the top of the access roads) above 12 ft NAVD88 may remain dry during the 100-year base flood event due to coastal flooding and no new areas of the Project site will experience excess coastal flooding.

Based on this evaluation[3], the proposed project will not result in any rise in the coastal BFE or increase in coastal flooding at the project location or surrounding properties.

[3] This evaluation assumes that the project will be designed to appropriately accommodate stormwater impacts from the proposed project (i.e., the proposed stormwater swales).

REFERENCES

Email Correspondence, 2024. Email exchange with Josha Crowley. RSC Lead | STARR II - Region 10 Service Center. February 28, 2024.

FEMA, 2018. *Guidance for Flood Risk Analysis and Mapping, Coastal Wave Runup and Overtopping*. Guidance Document 89, February 2018.

FEMA, 2019a. *Flood Insurance Rate Map for Jefferson County and Incorporated Areas*. Map Number #53031C0131C and #53031C0132C, Effective Date: July 7, 2019.

FEMA, 2019b. *Flood Insurance Study for Jefferson County and Incorporated Areas*. Flood Insurance Study Number 53031CV000A, July 7, 2019.

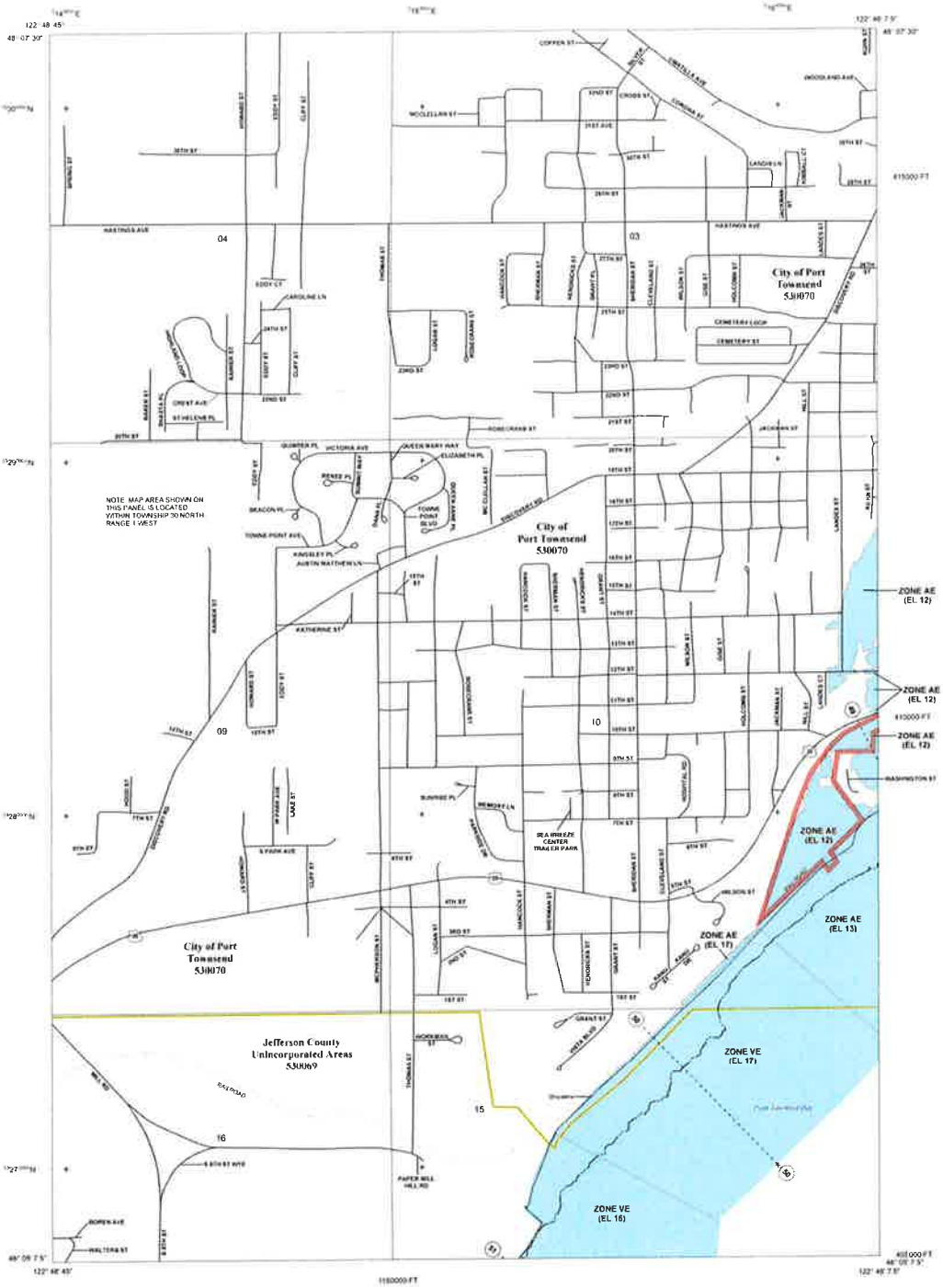
FEMA, 2024. *Flood Insurance Rate Map – FIRMette*. Flood Insurance Study Number 53031CV000A, Generated February 20, 2024.

Jefferson County, 2023. Jefferson County Code Chapter 15.15 Flood Damage Protection. https://www.codepublishing.com/WA/JeffersonCounty/html/JeffersonCounty15/JeffersonCounty1515.html#15.15.080. December 18, 2023.

Port Townsend Municipal Code, 2024. Chapter 16.08.200 Flood Damage Protection – Encroachments. https://www.codepublishing.com/WA/PortTownsend/#!/PortTownsend16/PortTownsend1608.html. January 2, 2024.

ATTACHMENT 1 – FEMA FIRM

ATTACHMENT 2 – JARPA DRAWINGS



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

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

HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) Zone A, V, 4599
	With BFE or Depth Zone AE, AO, AH, VE, AR
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
	Future Conditions 1% Annual Chance Flood Hazard Zone X
	Area with Reduced Flood Risk due to Levee See Notes. Zone X
OTHER AREAS	NO SCREEN Areas Determined to be Outside the 0.2% Annual Chance Floodplain Zone X
	Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Accredited or Provisionally Accredited Levee, Dike, or Floodwall
	Non-accredited Levee, Dike, or Floodwall
	Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
	Coastal Transect
	Coastal Transect Baseline
OTHER FEATURES	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website. Users may determine the current map date for each FIRM panel by visiting the FEMA Map Service Center website or by calling the FEMA Map Information eXchange.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study report for this jurisdiction.

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

Base map information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS), the United States Census Bureau, and the Bureau of Land Management.

SCALE

N

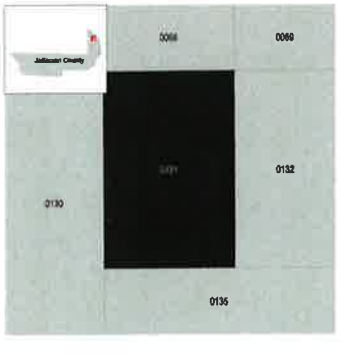
Map Projections
NAD 1983 UTM Zone 10N
Western Hemisphere, Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

JEFFERSON COUNTY, WASHINGTON AND INCORPORATED AREAS

PANEL 131 OF 1670

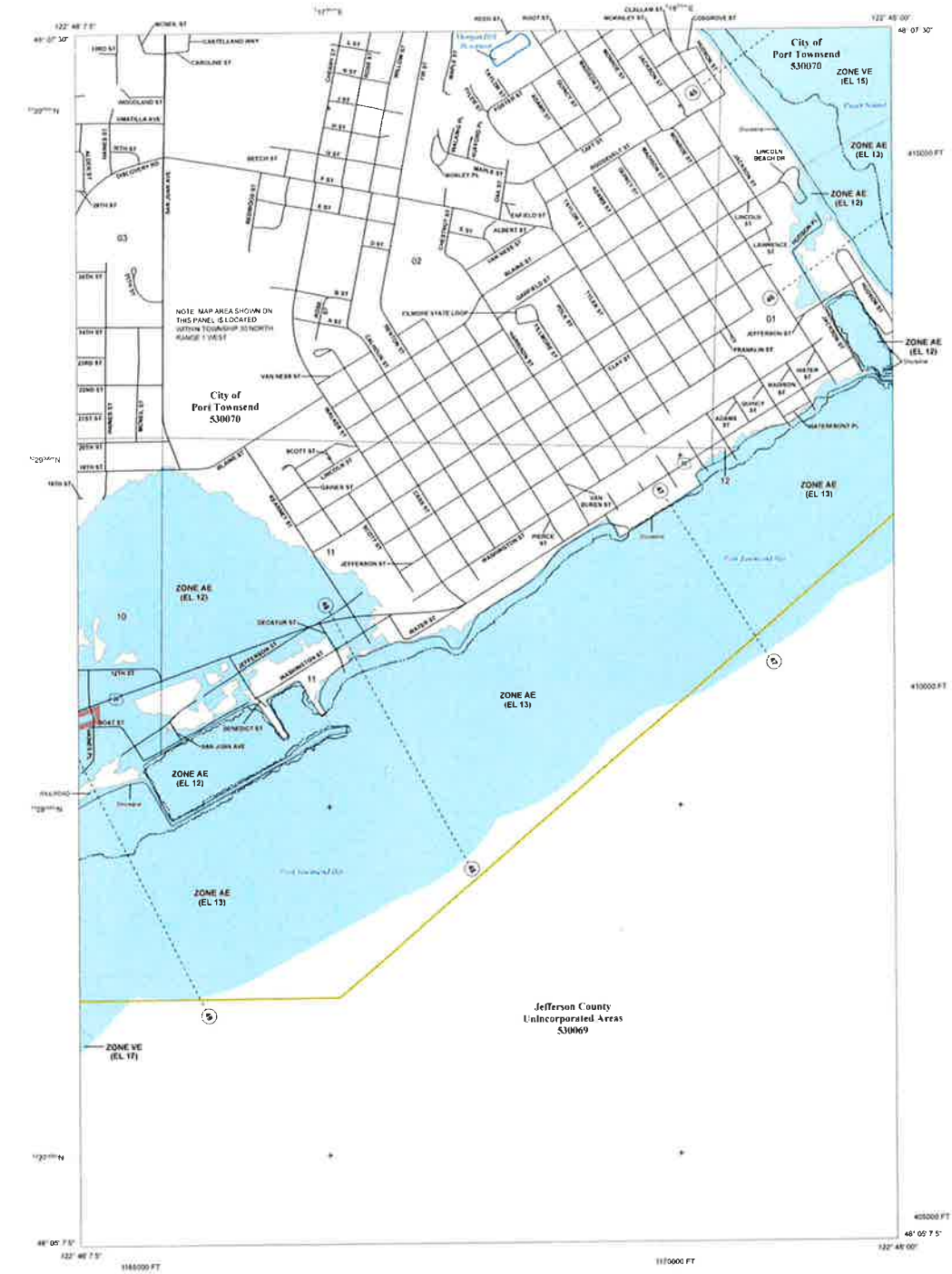
FEMA

COMMUNITY	NUMBER	PANEL	SUFFIX
JEFFERSON COUNTY	530069	0131	C
PORT TOWNSEND, CITY OF	530070	0131	C

VERSION NUMBER
2.3.2.2

MAP NUMBER
53031C0131C

EFFECTIVE DATE



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	With BFE or Depth Zone AE, AO, AH, VE, AR
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GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
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	Non-accredited Levee, Dike, or Floodwall
	18.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
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	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

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SCALE

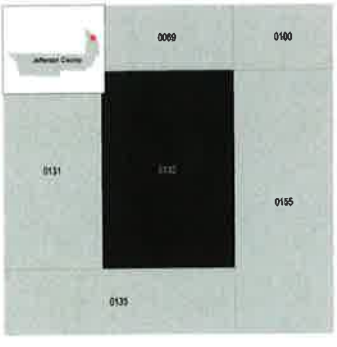
Map Projection:
NAD 1983 UTM Zone 10N
Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 Feet

0 125 250 500 Meters

PANEL LOCATOR



FEMA
National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

JEFFERSON COUNTY, WASHINGTON
AND INCORPORATED AREAS

PANEL 132 OF 1670

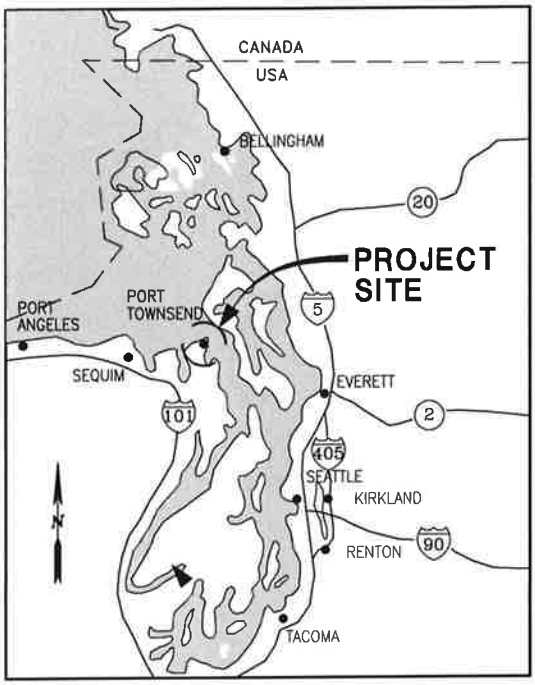
COMMUNITY	NUMBER	PANEL	SUFFIX
JEFFERSON COUNTY	530069	0132	C
PORT TOWNSEND, CITY OF	530070	0132	C

VERSION NUMBER
2.3.2.2

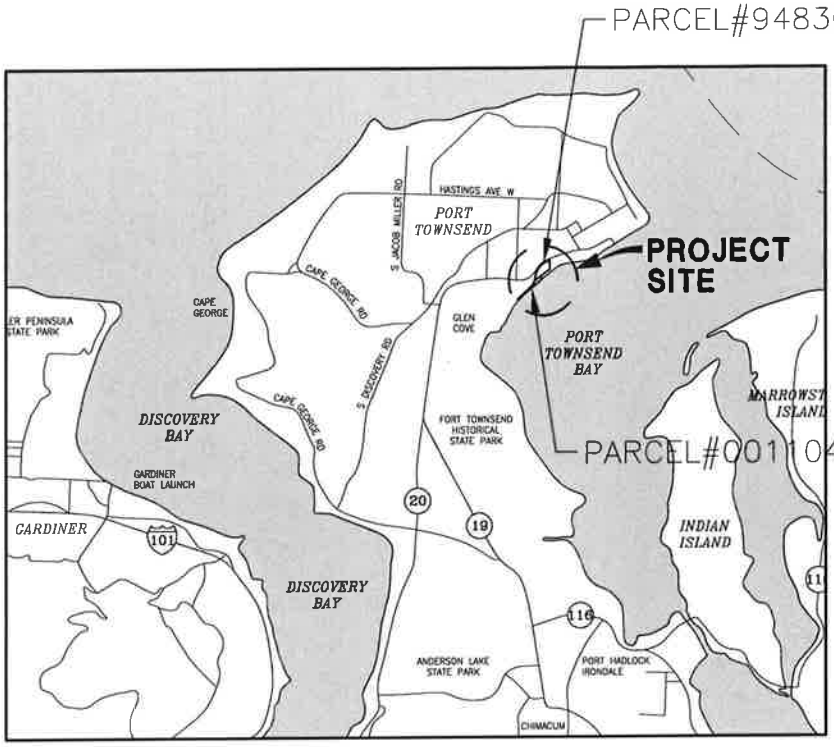
MAP NUMBER
53031C0132C

EFFECTIVE DATE

SW ¼, SECTION 1, TOWNSHIP 30N, RANGE 1W



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

SHEET INDEX	
SHEET NO.	SHEET DESCRIPTION
1	LOCATION MAP, VICINITY MAP, AND SHEET INDEX
2	OVERALL EXISTING CONDITIONS
3	EXISTING CONDITIONS NORTH
4	EXISTING CONDITIONS SOUTH
5	OVERALL SITE PLAN
6	SITE PLAN NORTH
7	SITE PLAN SOUTH
8	SITE PLAN ACCESS ROAD
9	SITE GRADING SECTION A
10	SITE GRADING SECTION B
11	WETLAND A STORM CROSSING
12	SITE GRADING SECTION C
13	DRAINAGE STRUCTURE DETAILS
14	DRAINAGE PIPE DETAILS

VERTICAL DATUM ALL SHEETS: NAVD88

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

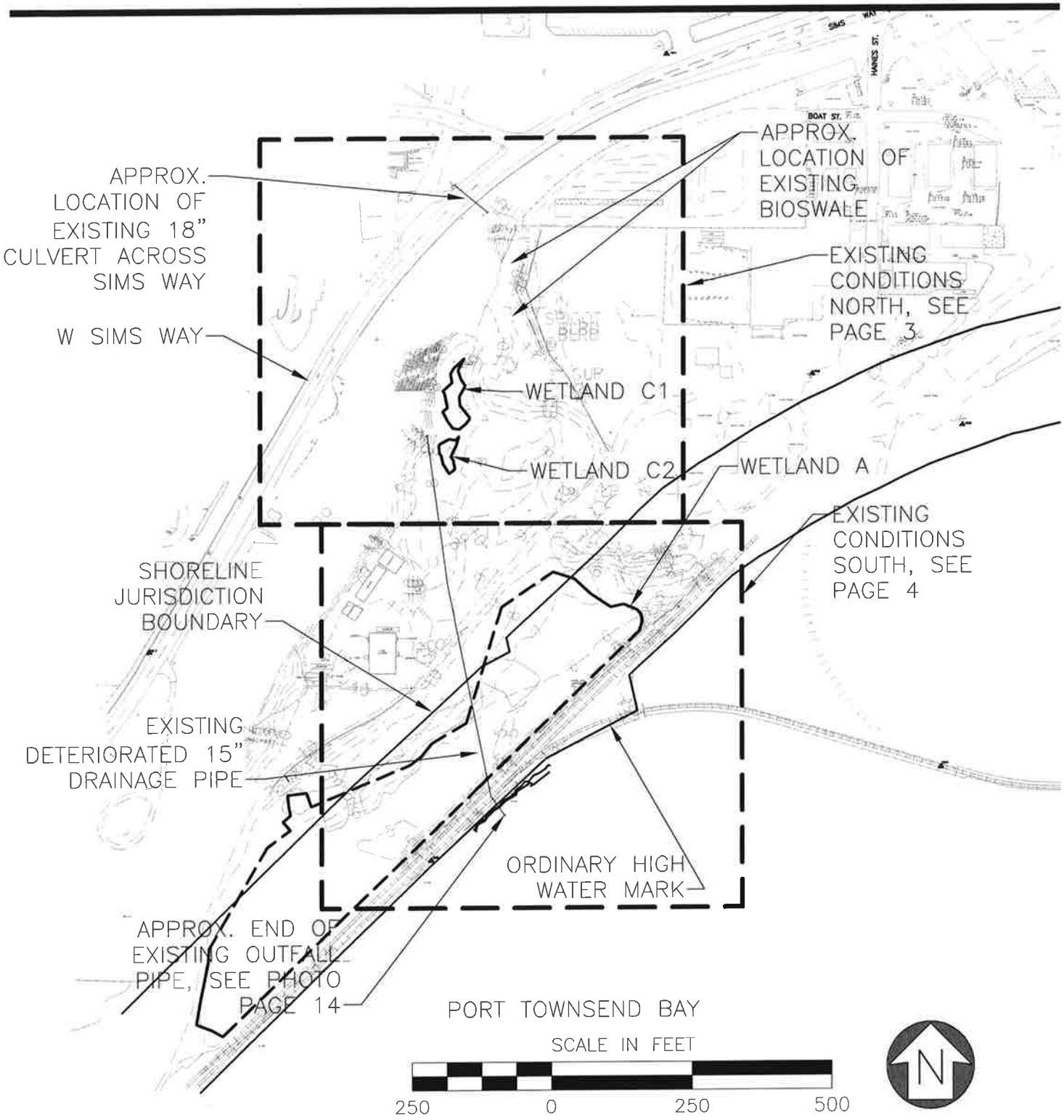
IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
LOCATION MAP AND SHEET INDEX

Sheet 1 of 14
MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND

ReidMiddleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800



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PORT TOWNSEND WA, 98368, PARCEL #001104017
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ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
EXISTING CONDITIONS OVERALL

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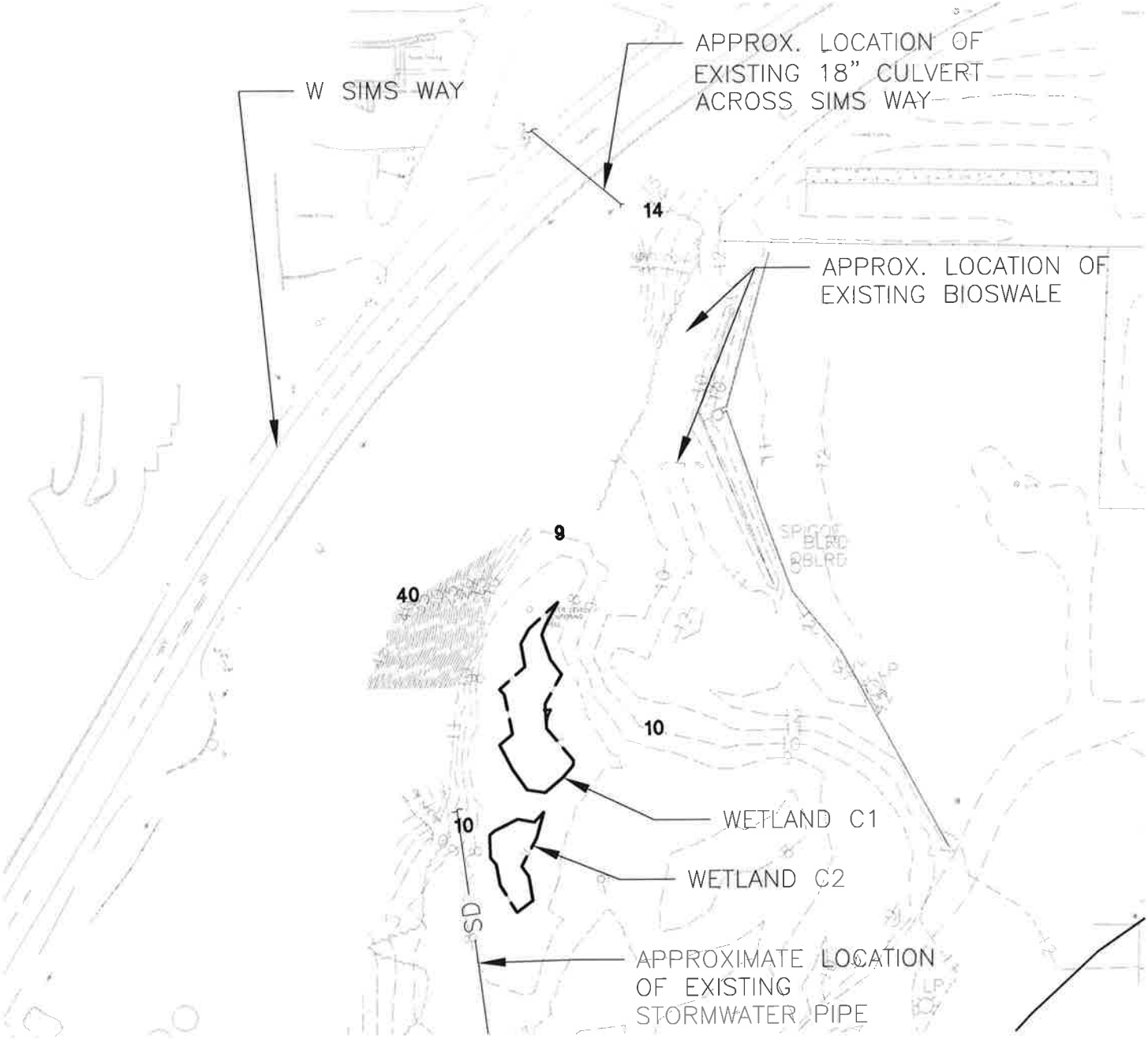
MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



SCALE IN FEET

100 0 100 200

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LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
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ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
EXISTING CONDITIONS NORTH

Reid Middleton
728 134th Street SW Suite 200
Everett, Washington 98204
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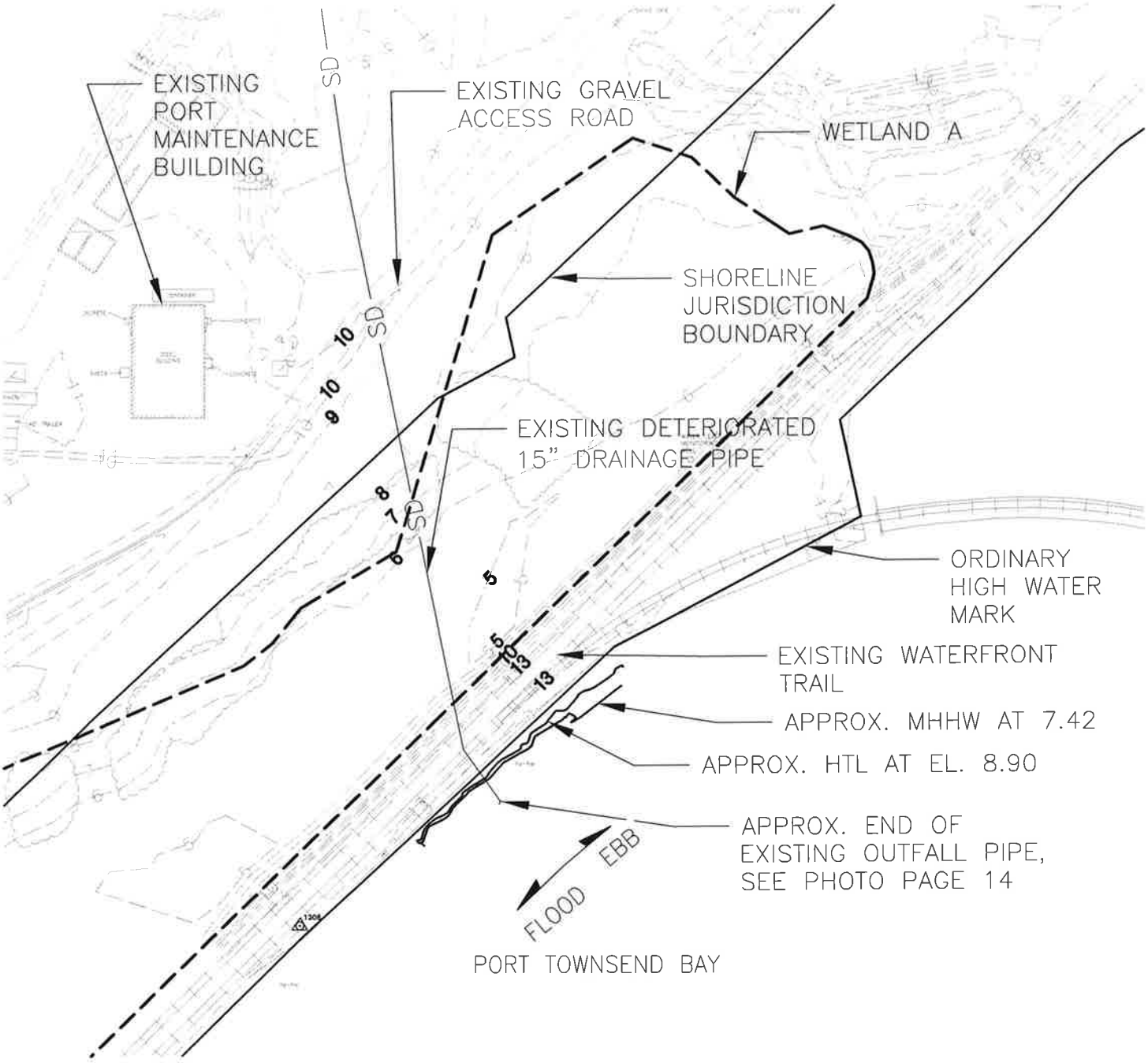
Sheet 3 of 14
MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



SCALE IN FEET

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PORT TOWNSEND WA, 98368, PARCEL #001104017
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LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
EXISTING CONDITIONS SOUTH

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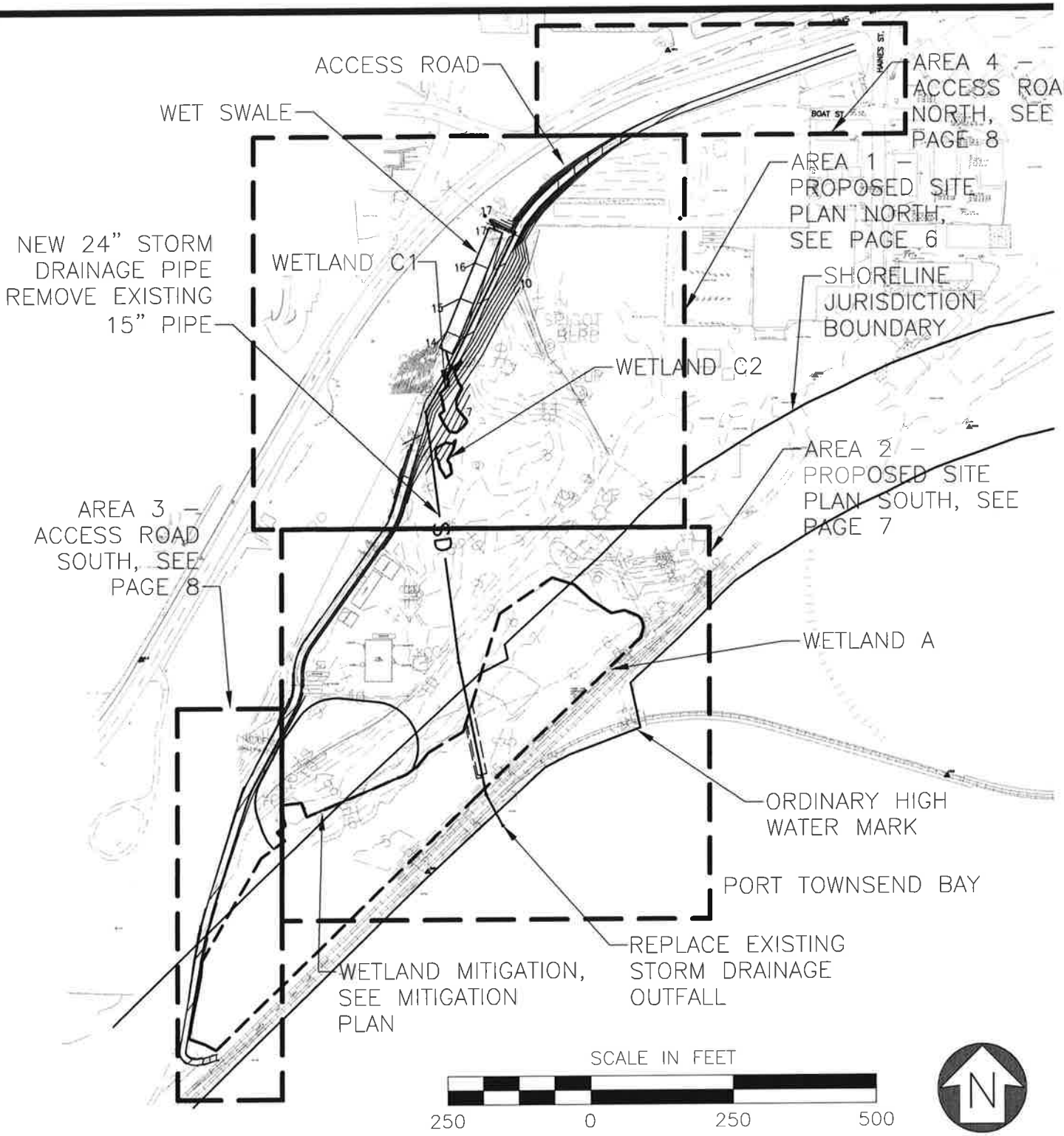
MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



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PORT TOWNSEND WA, 98368, PARCEL #001104017
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LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT

SITE PLAN OVERALL

APPLICANT: PORT OF PORT TOWNSEND

Reid Middleton
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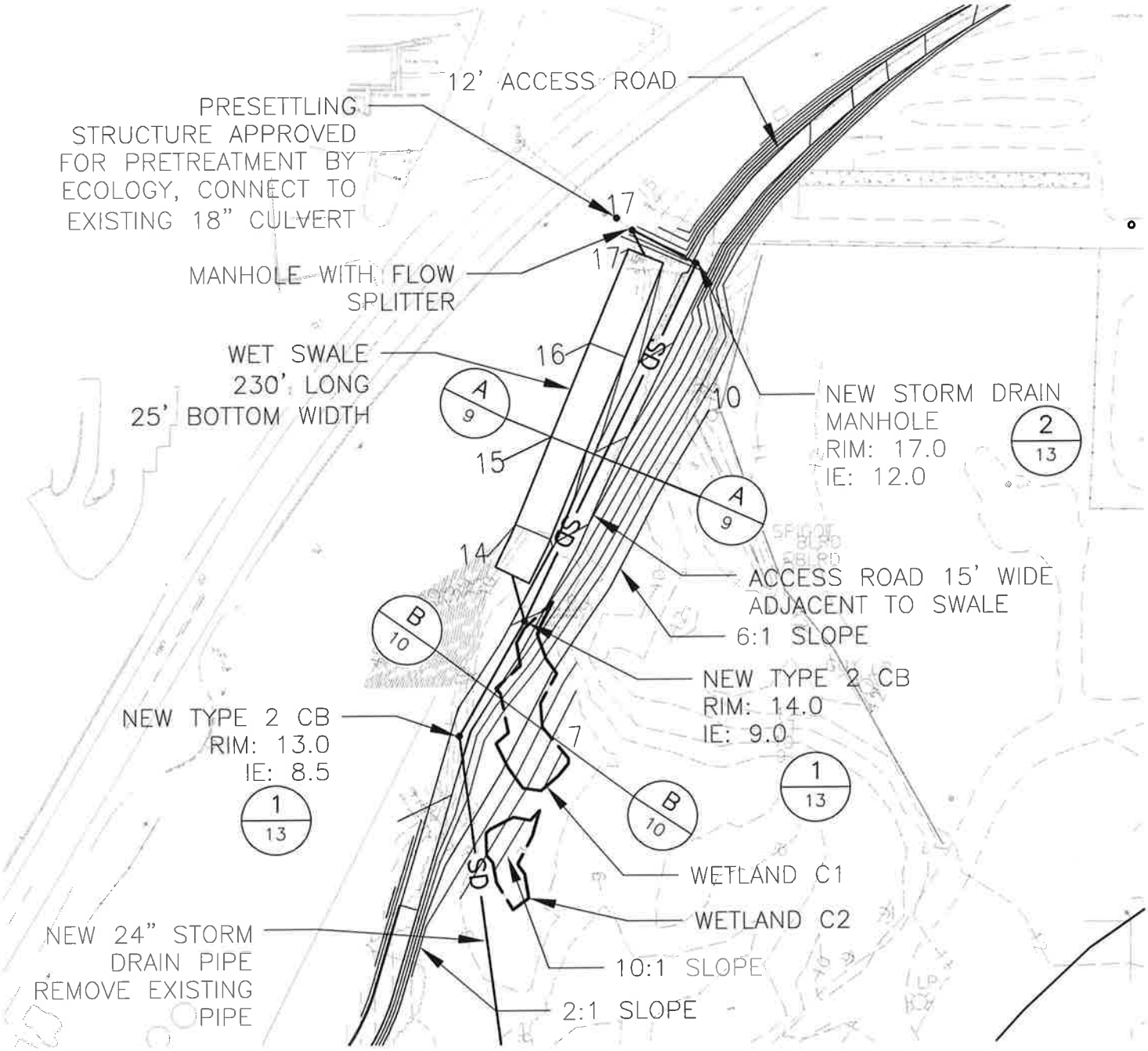

ESTIMATED EXCAVATION QUANTITIES BELOW WETLAND C1 AND C2:
FILL: 450 CY

SCALE IN FEET

100 0 100 200

N

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
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IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT

AREA 1 - SITE PLAN NORTH

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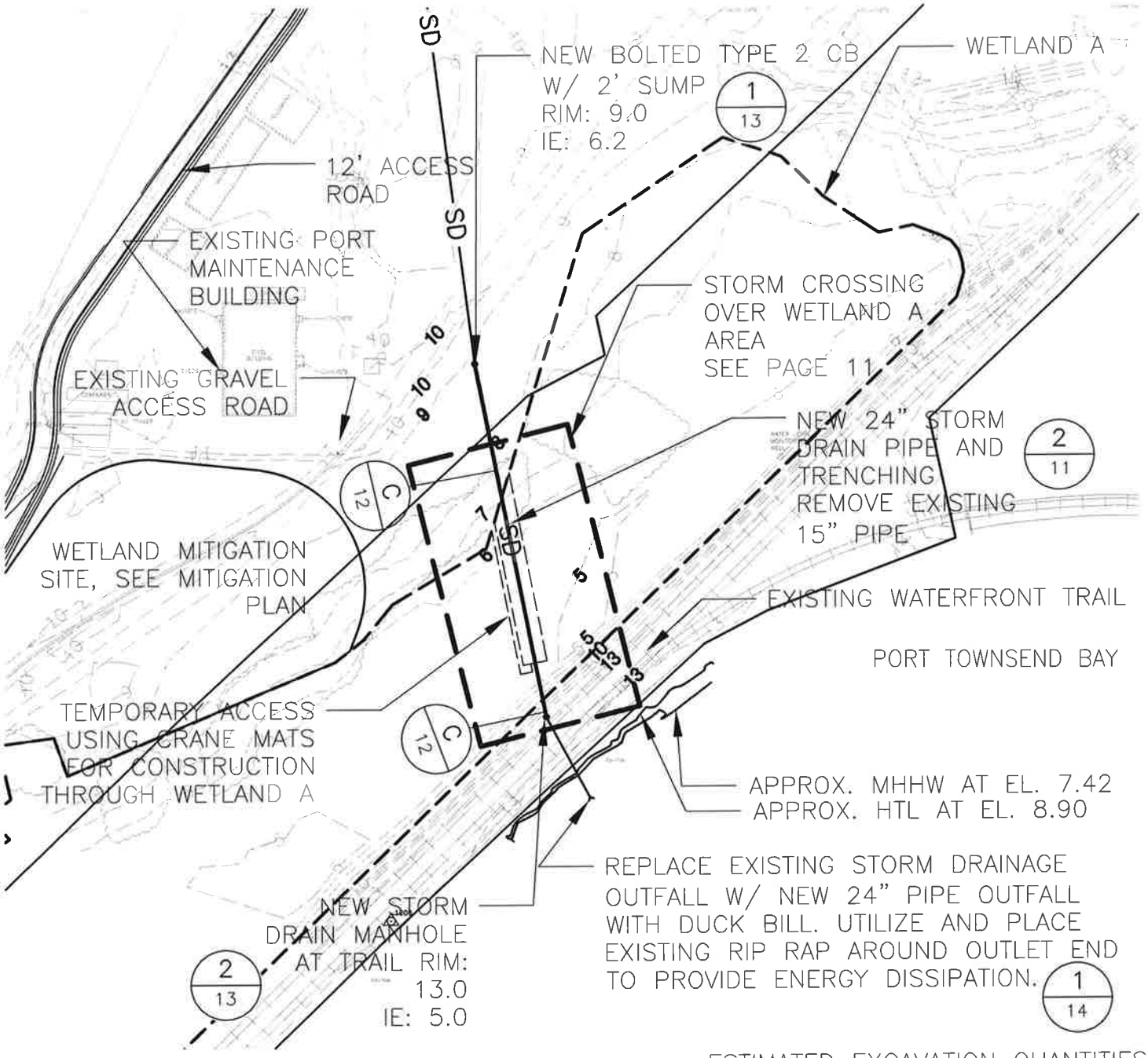
Ph: 425 741-3800

MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



ESTIMATED EXCAVATION QUANTITIES
AT WETLAND A:
CUT: 50 CY
FILL: 50 CY

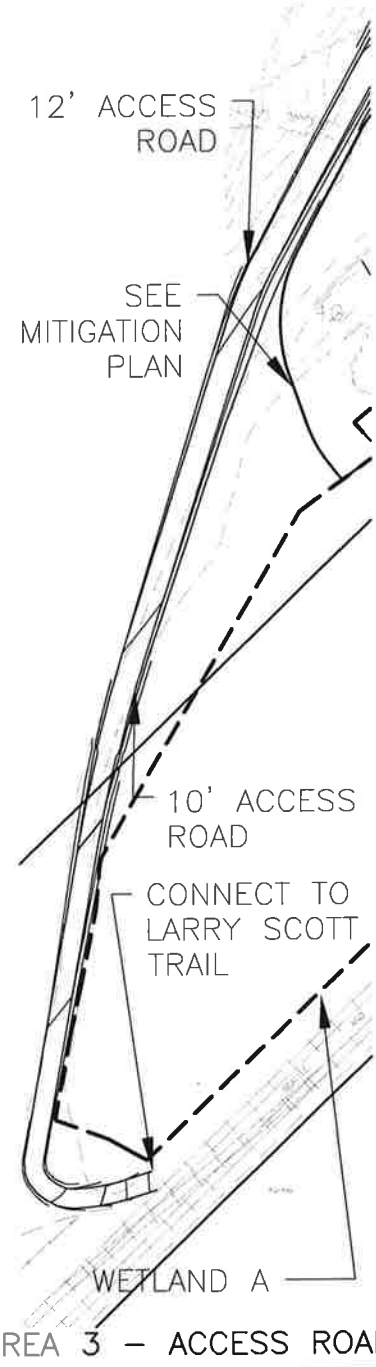
LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
AREA 2 - SITE PLAN SOUTH

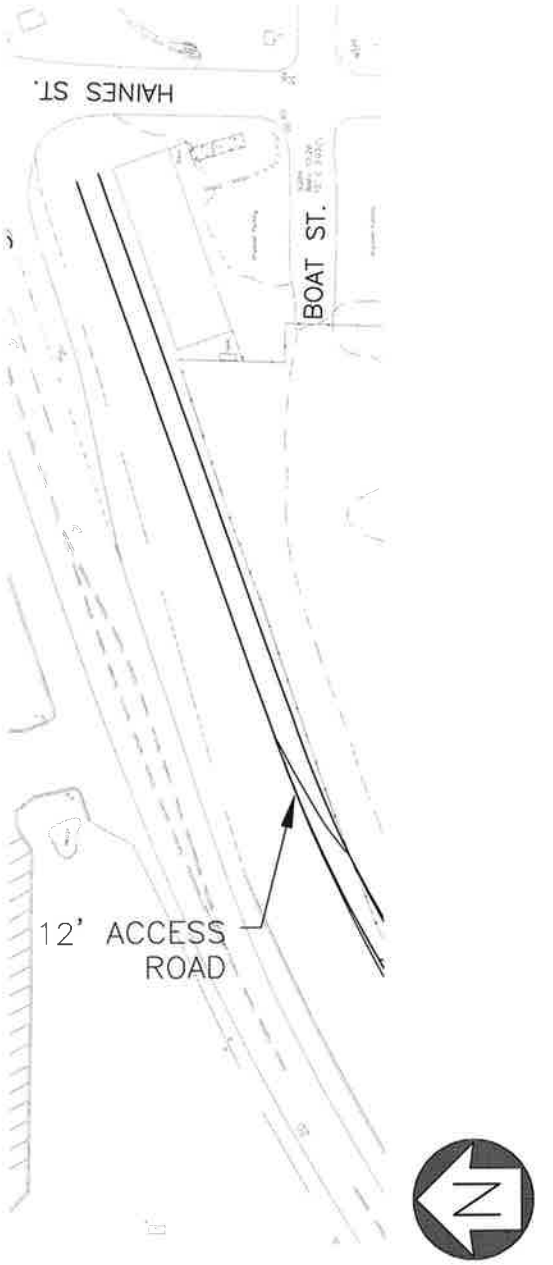
ReidMiddleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800

APPLICANT: PORT OF PORT TOWNSEND



AREA 3 – ACCESS ROAD SOUTH

SEE PAGE 5



AREA 4 – ACCESS ROAD NORTH

SEE PAGE 5

SCALE IN FEET

100 0 100 200

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

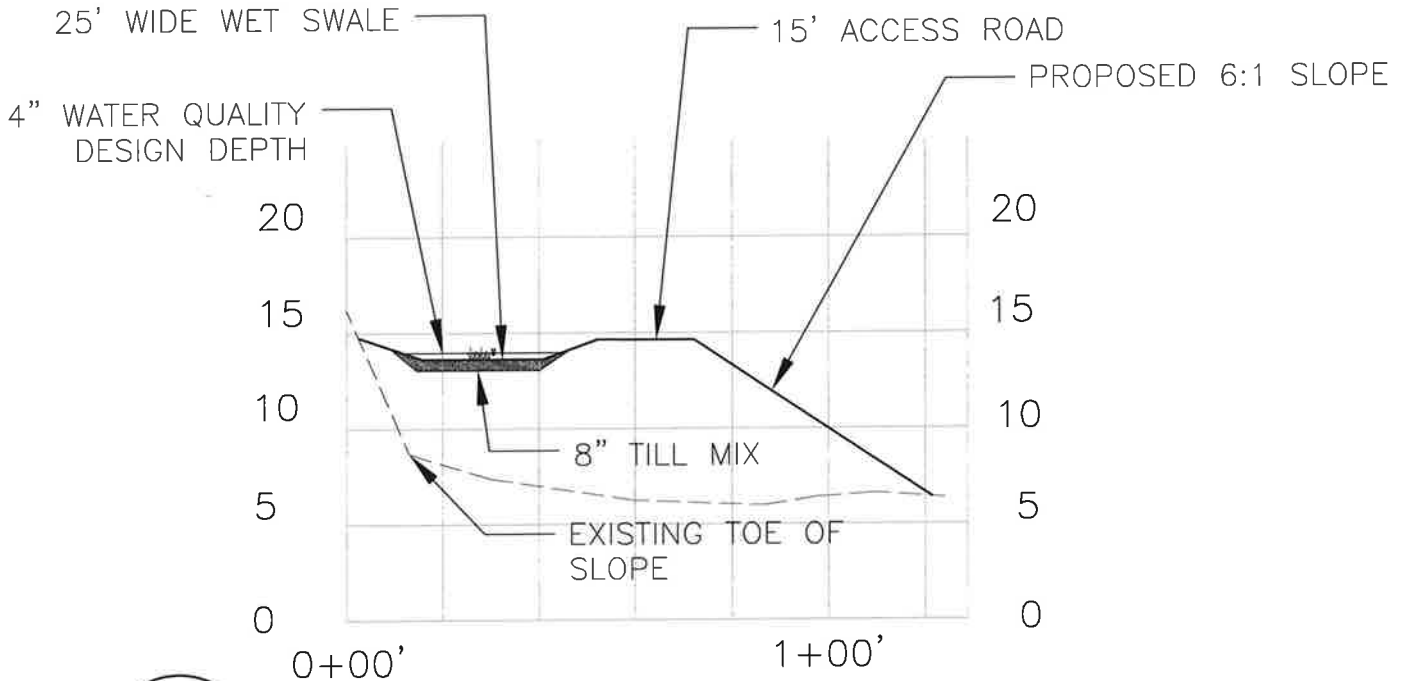
IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
SITE PLAN ACCESS ROAD

ReidMiddleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800

MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



A
6 | 9

GRADING SECTION A NW TO SE

SCALE: 1"=40' HORZ.
1"=10' VERT

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

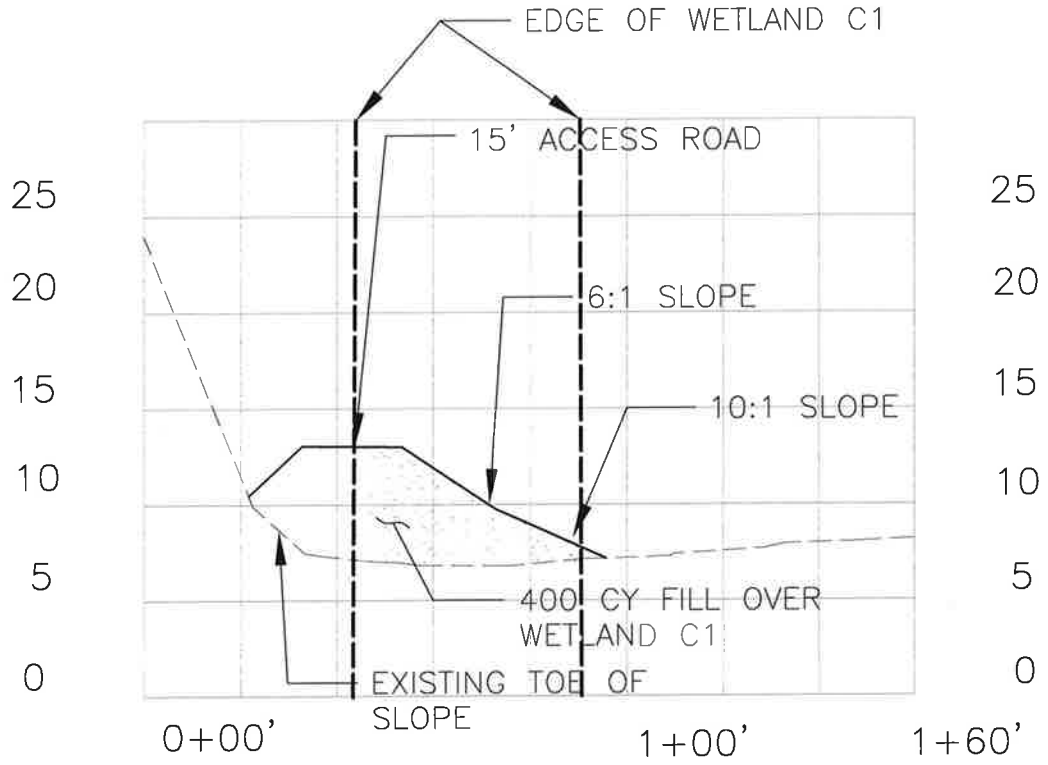
IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT

SWALE SECTION

APPLICANT: PORT OF PORT TOWNSEND

Reid Middleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800



B
6 | 10

GRADING SECTION B NW TO SE

SCALE: 1"=40' HORZ.
1"=10' VERT

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

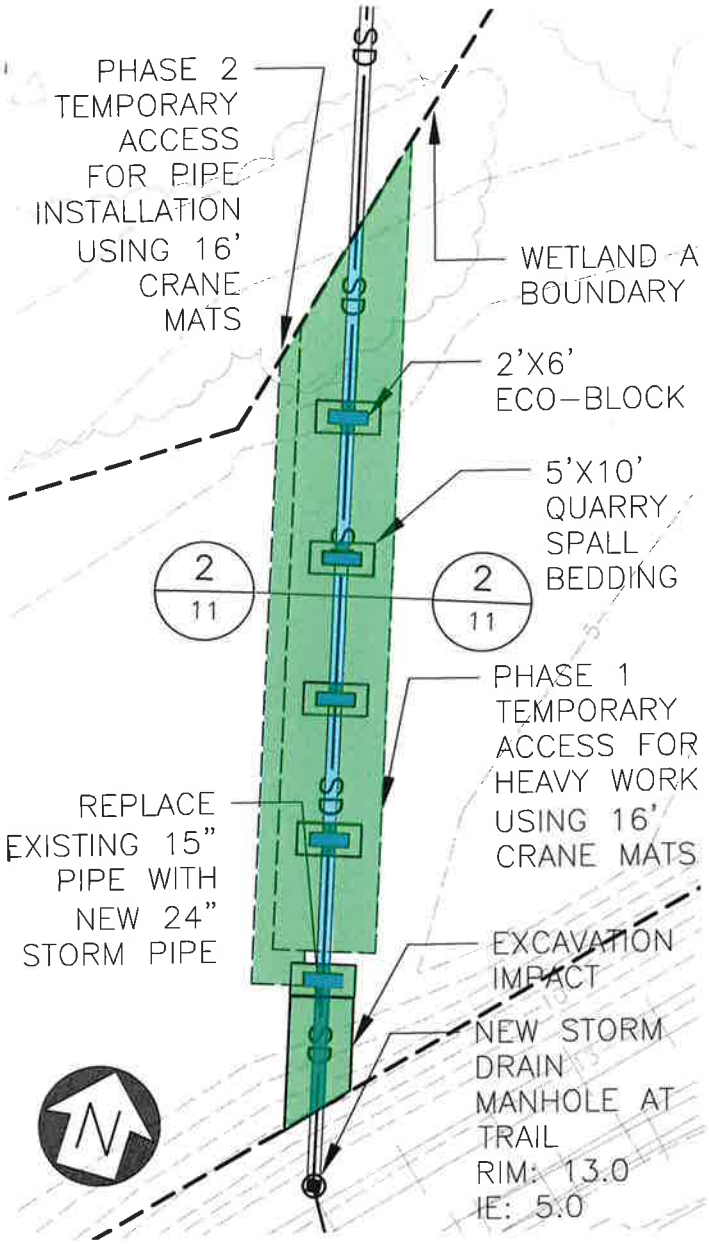
IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
WETLAND C AND ACCESS ROAD SECTION

Reid Middleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800

MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



STORM CROSSING OVER WETLAND A

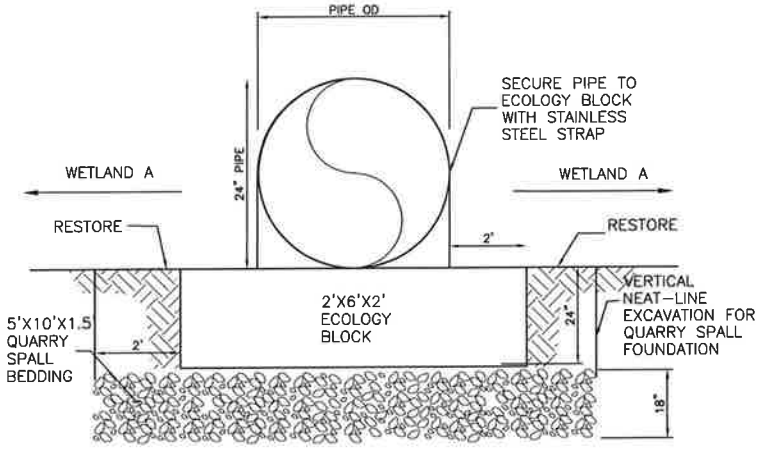
SEE PAGE 7

SCALE IN FEET

30 0 30 60

TEMPORARY AND PERMANENT IMPACT AREAS

FEATURE	TEMPORARY (SF)	PERMANENT (SF)
PHASE 1 CRANE MATS	1320	
PHASE 2 CRANE MATS	330	
PIPE WIDTH		260
ECO-BLOCKS		60
QUARRY SPALLS	160	
EXCAVATION IMPACT	145	
TOTAL	1955	320



1/11 PIPE SUPPORT SECTION OVER WETLAND A

NOT TO SCALE

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT

WETLAND A CROSSING DETAILS

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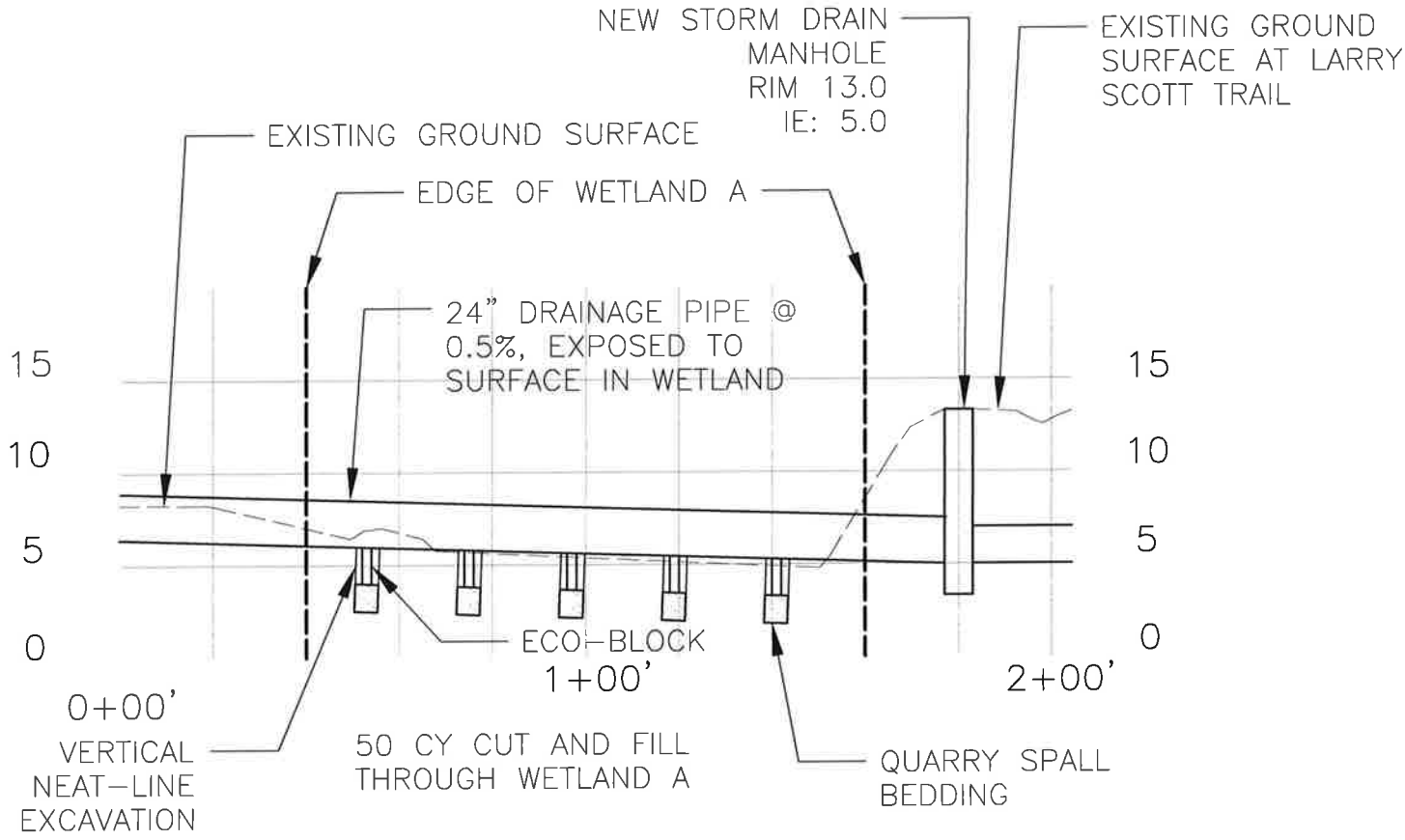
Everett, Washington 98204
Ph: 425 741-3800

MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



C 7|12 GRADING SECTION C NW TO SE

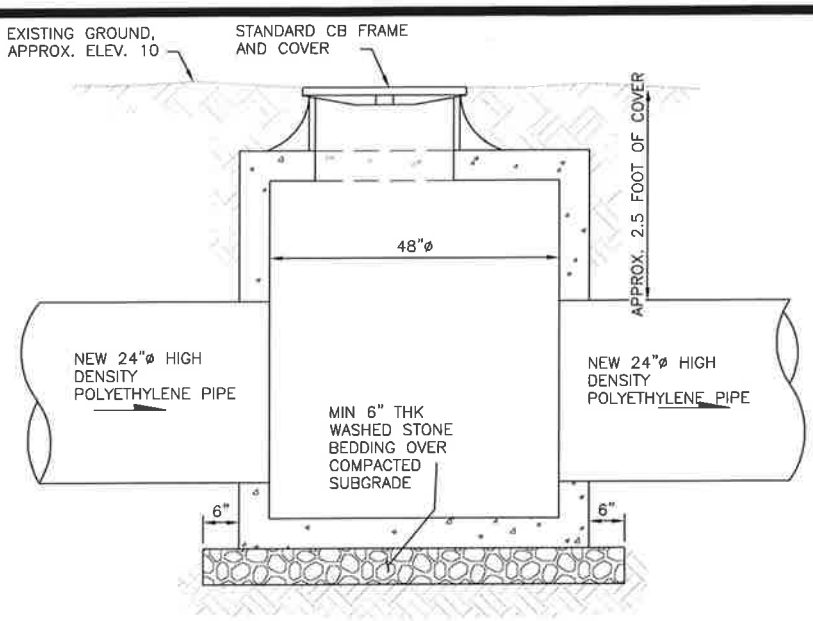
SCALE: 1"=40' HORZ.
1"=10' VERT

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

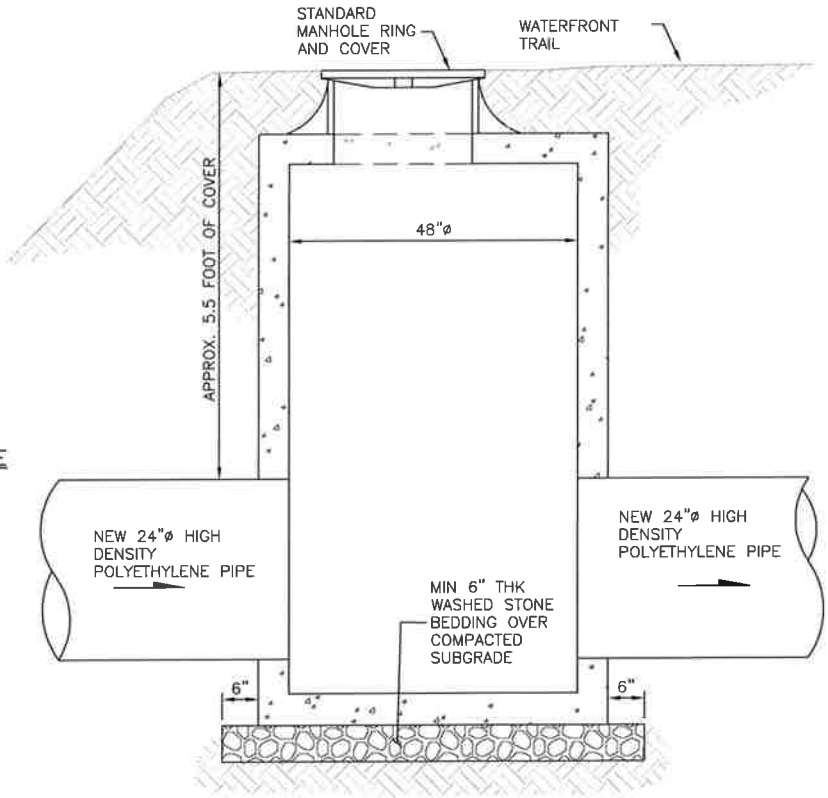
IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

ReidMiddleton
728 134th Street SW Suite 200
Everett, Washington 98204
Ph: 425 741-3800

TYPE 2 CB



STORM DRAIN MANHOLE



SCALE: 3/8"=1'-0"

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
LONGITUDE: 122° 45' 40"
ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
DRAINAGE STRUCTURE DETAILS

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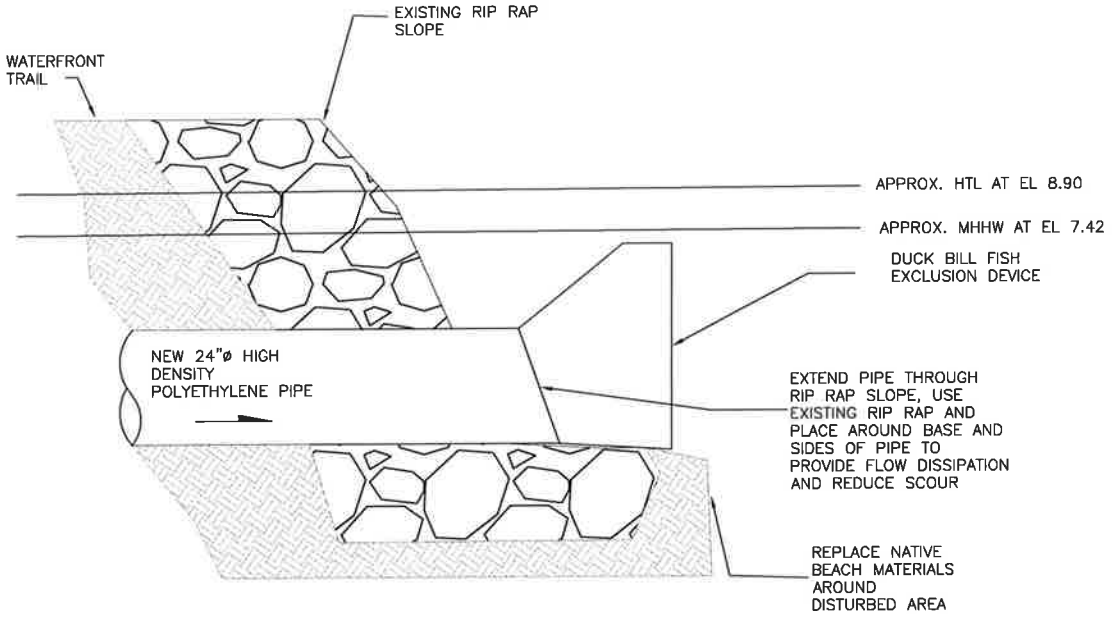
MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND



1/7 SECTION– OUTFALL OUTLET
NOT TO SCALE

PHOTO SHOWING EXISTING DETERIORATED STORMWATER PIPE AND OUTFALL CONDITION

LOCATION: BOAT HAVEN MARINA, 2601 WASHINGTON ST
PORT TOWNSEND WA, 98368, PARCEL #001104017
LATITUDE: 47° 06' 23"
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ADJACENT PROPERTY OWNERS: SEE ATTACHED

IN: PORT TOWNSEND BAY
AT: PORT TOWNSEND
COUNTY: JEFFERSON
STATE: WASHINGTON

PORT OF PORT TOWNSEND STORMWATER REPLACEMENT
DRAINAGE PIPE DETAILS

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Ph: 425 741-3800

MARCH 2025

APPLICANT: PORT OF PORT TOWNSEND