S885-3914-2025
July 17, 2025

INVITATION TO BID
PUBLIC WORKS
PROJECT NUMBER
NW-C3914

PROJECT MANUAL

FOR

REID HARBOR MOORAGE FACILITY IMPROVEMENTS

AT

STUART ISLAND STATE PARK

IN

SAN JUAN COUNTY

BID OPENING: 1:00 P.M., THURSDAY, SEPTEMBER 11, 2025.
Bidders are required to submit bid prices electronically through the State Parks Public Opportunities-MRSC Bonfire Procurement Portal
https://mrscrosters.bonfirehub.com

****BIDS WILL BE OPENED WITHIN THREE BUSINESS DAYS****

WASHINGTON STATE PARKS & RECREATION COMMISSION
300 DESMOND DRIVE SE
LACEY, WA 98503
POST OFFICE BOX 42650
OLYMPIA, WASHINGTON 98504-2650

PROJECT MANUAL

FOR

REID HARBOR MOORAGE FACILITY IMPROVEMENTS

AT

STUART ISLAND STATE PARK

IN

SAN JUAN COUNTY



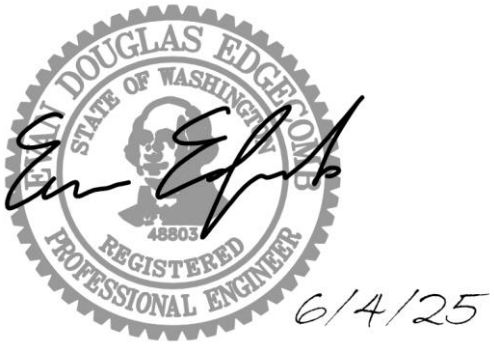
PROJECT ENGINEER

Approved for Construction _____
Heather Saunders, Director of Parks Development

WASHINGTON STATE PARKS AND RECREATION COMMISSION
1111 ISRAEL ROAD SW
TUMWATER, WASHINGTON 98501-6512
P.O. BOX 42650
OLYMPIA, WASHINGTON 98504-2650

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

The following sections of the Technical Specifications contained, herein, have been prepared by or under the supervision of the licensee described under "Prepared by" in the following table:

Section No.	Section Name	Prepared by
021400	DEMOLITION	 Evan Edgecomb, Mott MacDonald
030000	CONCRETE	
050500	GALVANIZING	
051400	STRUCTURAL ALUMINUM FRAMING	
055000	MISCELLANEOUS METALS	
310000	EARTHWORK	
316216	STEEL PILE	
355100	FLOATING STRUCTURES	

Diana Dupuis,
Director

STATE OF WASHINGTON

WASHINGTON STATE PARKS AND RECREATION COMMISSION

300 Desmond Drive SE • Lacey, WA 98503 • PO Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500
Internet Address: http://www.parks.wa.gov

ADVERTISEMENT FOR BID

Sealed bids will be received for the following project:

PROJECT NUMBER:	NW-C3914
PROJECT TITLE:	Stuart Island State Park – Reid Harbor Moorage Facility Improvements
PROJECT DESCRIPTION:	This project includes the following actions: 1. Remove existing solid timber pier, gangway, and floats and replace them with new materials. 2. Remove one existing offshore island floating dock and timber piles. 3. Replace existing timber framed and creosote dolphin supported offshore island floating dock with steel piles and steel framed floats with grated decking. 4. Remove existing creosote dolphins supporting the boat sewage pump-out barge and replace with steel piles.
PROJECT LOCATION:	The project is located at Stuart Island Marine State Park: 48.678603767715444, -123.20225065111693 in San Juan County
ESTIMATED BID RANGE:	$ 2,450,000.00 - $ 2,750,000.00
PROJECT REPRESENTATIVE:	Jonathan Gibson
PROCUREMENT COORDINATOR	Brett Taylor
PREBID WALKTHROUGH:	**3:00 PM on Wednesday, August 20th, 2025. A virtual pre-bid meeting for this project will be held via Microsoft Teams** Join the Microsoft Teams meeting on your computer, mobile app or room device: **Join the meeting now** Meeting ID: 247 711 622 882 5 Passcode: 5Zo9cD3z **Dial in by phone** +1 360-726-3322,,366366324# United States, Vancouver

	Find a local number Phone conference ID: 366 366 324# For organizers: Meeting options | Reset dial-in PIN
SUBMITTAL DUE DATE/TIME:	**1:00 PM on Thursday, September 11th, 2025**
ELECTRONIC BIDDING:	Bidders are required to register as vendors on the MRSC Bonfire Procurement Portal https://mrscrosters.bonfirehub.com to be eligible to submit bids. All bid submissions must be completed electronically through the State Parks Public Opportunities section of the portal. Bidders must use the official Bid Proposal Form, provided as part of the electronic bid documents, ensuring that all required fields are properly filled out and submitted before the deadline. (See Bonfire support details further down.)

PLANS, SPECIFICATIONS, ADDENDA, AND PLAN HOLDERS LIST: Contractors can access plans and specifications through the State Parks Public Opportunities-MRSC Bonfire Procurement Portal at https://mrscrosters.bonfirehub.com/portal.

Important: Bidders are encouraged to “Register as a Prime/GC Interest” on the project details page of the MRSC Rosters Bonfire Procurement Portal to be placed on the Bidders List. This service is free for Prime Bidders, Subcontractors, and Vendors interested in bidding on this project.

Additionally, plans and specifications are available through Builders Exchange Washington, Inc. at http://www.bxwa.com. Posted Projects”; “Public Works”, “Washington State Parks and Recreation. Bidders have the option to access Bid Documents, including Specifications and Drawings, at www.parks.wa.gov/contracts by clicking on the Construction Projects link for reference purposes. However, the official channel for bid notifications and addenda is the State Parks Public Opportunities-MRSC Rosters Bonfire Portal, and bidders should rely on it for the most up-to-date information.

PLANS MAY ALSO BE VIEWED THROUGH: Associated Builders And Contractors, Spokane WA; Tri City Construction Council, Kennewick WA; Daily Journal of Commerce, Seattle WA; Weekly Construction Reporter, Bellingham WA; Daily Journal Of Commerce Plan Center, Portland OR; Lower Columbia Contractor Plan Center, Longview WA; Abadan Spokane Plan Center, Spokane WA; ARC Document Solutions, Seattle, WA; Associated General Contractors, Boise, ID; Dodge Construction, Bedford, MA; Hermiston Plan Center, Hermiston, OR; Contractor Plan Center, Clackamas, OR; Wenatchee Plan Center, Wenatchee, WA; Spokane Regional Plan Center, Spokane, WA; Associated General Contractors, Spokane, WA; Walla Walla Valley Plan Center, Walla Wall, WA; Yakima Plan Center, Yakima, WA.

TECHNICAL QUESTIONS regarding this project shall be directed to: Jonathan Gibson, Project Representative at telephone: (360) 755-5262, email: jonathan.gibson@parks.wa.gov.

BID RESULTS will be published on the State Parks Public Opportunities-MRSC Rosters Bonfire Portal https://mrscrosters.bonfirehub.com/portal following the bid deadline and in the Construction Projects section at www.parks.wa.gov/contracts after the bid submittal. This practice ensures that those involved and interested can readily view bid outcomes, enhancing transparency and efficiency in the bidding process.

THE STATE OF WASHINGTON PREVAILING WAGE RATES are applicable for this public works project. Bidders are responsible to verify and use the most recent prevailing wage rates. The "Effective Date" for this project is the bid submittal time and date above.

BIDDER RESPONSIBILITY will be evaluated for this project. In determining bidder responsibility, the Agency shall consider an overall accounting of the criteria set forth in Division 00 – Supplemental Responsibility Criteria. Please direct questions regarding this subject to the Project Representative.

MANDATORY 15% APPRENTICE LABOR HOURS of the total labor hours are a requirement of this construction contract. Voluntary workforce diversity goals for this apprentice participation are identified in the Instructions to Bidders. Bidders may contact the Department of Labor & Industries, Apprenticeship Section, to obtain information on available apprenticeship programs.

SUBCONTRACTOR LISTINGS: Per RCW 39.30.060, when the bid proposal combined with any alternates totals one million dollars or more, the Bidder must list the Subcontractors they intend to use for structural steel, rebar installation, heating, ventilation, and air conditioning (HVAC), plumbing, and electrical work on the Subcontractor Utilization List form for this project.

ACCESS EQUITY: The successful Bidder is required to complete their vendor registration in Access Equity, a secure B2GNow online vendor management system. Prime Contractors already registered with B2GNow for any public entity must ensure their information is up to date. The system can be accessed either directly at https://omwbe.diversitycompliance.com/ or via the Office of Minority and Women's Business Enterprises (OMWBE) website at https://omwbe.wa.gov/.

FOR THIS PROJECT, VOLUNTARY DIVERSITY GOALS HAVE BEEN SET: 10% for Minority Business Enterprises (MBE), 6% for Women's Business Enterprises (WBE), 5% for Washington Small Businesses, and 5% for Veteran-owned businesses. While meeting these goals is not mandatory, it is strongly encouraged to promote diversity in business participation.

Bidders may contact the Office of Minority and Women's Business Enterprise (OMWBE) at: http://omwbe.wa.gov/ to obtain information on certified firms. Bidders may also utilize Washington Small Businesses registered in WEBS at https://pr-webs-vendor.des.wa.gov/ and Veteran-owned Businesses at https://www.dva.wa.gov/veterans-their-families/veteran-ownedbusinesses/vob-search.

Washington State Parks reserves the right to accept or reject any or all proposals and to waive informalities.

STATE OF WASHINGTON
PARKS AND RECREATION COMMISSION
CONTRACTS AND GRANTS

For assistance with the Bonfire Vendor Registration Process, please visit the following link: Vendor Registration Support

For guidance on the Bonfire Bid Submission Process, refer to this link: Bid Submission Support

Additional Bonfire Vendor Support resources, including support articles and instructional videos, are available at: Bonfire Vendor Support

If vendors experience any technical issues, they can contact Bonfire Support via email at Support@GoBonfire.com.

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

"ADVERTISEMENT FOR BID" LETTER

INVITATION TO BID ..... i-iv

INSTRUCTIONS TO BIDDERS ..... 18 pages

BID PROPOSAL FORM ..... 7 pages

SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA ..... 10 pages

SUMMARY OF PAY ITEMS AND QUANTITIES ..... 5 pages

GENERAL CONDITIONS ..... 43 pages

PREVAILING WAGE STATEMENT ..... 1 page

DIVISION 1 – GENERAL REQUIREMENTS

- 010000 – General Requirements ..... 6 pages
- 010099 – Construction Surveying ..... 10 pages
- 012300 – Alternates ..... 2 pages
- 013300 – Submittal Procedures ..... 4 pages
- 013501 – Inadvertent Discoveries of Cultural Resources & Human Skeletal Remains ..... 1 page
- 014000 – Quality Requirements ..... 8 pages
- 014100 – Regulatory Requirements ..... 4 pages
- 014200 – References ..... 3 pages
- 015000 – Temporary Facilities and Controls ..... 7 pages
- 015639 – Temporary Tree and Plant Protection ..... 7 pages
- 015719 – Environmental Controls ..... 9 pages
- 016000 – Product Requirements ..... 3 pages
- 017419 – Construction Waste Management and Disposal ..... 1 page
- 017700 – Closeout Procedures ..... 4 pages

DIVISION 2 – SITE WORK

- 024100 – Demolition ..... 7 pages

DIVISION 3 – CONCRETE

- 030000 – Concrete ..... 16 pages

DIVISION 5 – METALS

- 050500 – Galvanizing ..... 4 pages
- 051400 – Structural Aluminum Framing ..... 9 pages
- 055000 – Miscellaneous Metals ..... 12 pages

DIVISION 31 – Earthwork

- 310000 – Earthwork ..... 4 pages

316216 – Steel Pile ..... 14 pages

DIVISION 35 – Waterway and Marine Construction
355100 – Floating Structures ..... 11 pages

APPENDIX A – ENVIRONMENTAL PERMIT DOCUMENTS

BASE BID
Attachment 1 – State Environmental Policy Act (SEPA) Determination of Non-Significance (DNS) ..... 42 pages

Attachment 2 – San Juan County Shoreline Substantial Development Permit LANDUSE-22-0007 ..... 22 pages

Attachment 3 – Marine Mammal Monitoring Plan ..... 8 pages

Attachment 4 – Marbled Murrelet Monitoring Plan ..... 19 pages

Attachment 5 – Washington Department of Fish and Wildlife (WDFW) Hydraulic Project Approval (HPA) 2022-4-84+01 (Application ID: 27259) ..... 7 pages

Attachment 6 – Washington Department of Natural Resources (DNR) Aquatic Lands Right of Entry (ROE) No. 23-106289 ..... 22 pages

Attachment 7 – Department of the Army, U.S. Army Corps of Engineers (USACE) Letter of Permission (LOP) NWS-2022-56 ..... 5 pages
Attachment 7a – Project Notification Summary Sheet ..... 6 pages
Attachment 7b – General Construction Measures and Essential Fish Habitat Conservation Measures ..... 15 pages
Attachment 7c – Project Design Criteria #5 ..... 5 pages
Attachment 7d – Project Design Criteria #6 ..... 3 pages
Attachment 7e – Letter of Permission General Conditions ..... 6 pages
Attachment 7f – Certificate of Completion ..... 2 pages
Attachment 7g – Biological Evaluation and Essential Fish Habitat Assessment ..... 75 pages
Attachment 7h – Eelgrass and Macroalgae Verification Survey ..... 3 pages

Attachment 8 – Inadvertent Discovery Plan ..... 11 pages

ALTERNATIVE BID ITEM A1
Attachment 9 – SEPA Determination of Non-Significance ..... 26 pages

Attachment 10 – San Juan County Shoreline Substantial Development Permit LANDUSE-22-0019 ..... 18 pages

Attachment 11 – Marine Mammal Monitoring Plan ..... 7 pages

Attachment 12 – Marbled Murrelet Monitoring Plan ..... 19 pages

Attachment 13 – WDFW HPA 2022-4-101+01 (Application ID: 27280) ..... 6 pages

Attachment 14 – DNR Aquatic Lands Lease No. 20-105889.....47 pages

Attachment 15 – USACE Letter of Permission NWS-2022-61.....5 pages
Attachment 15a – Project Notification Summary Sheet.....6 pages
Attachment 15b – General Construction Measures and Essential Fish Habitat Conservation Measures.....15 pages
Attachment 15c – Project Design Criteria #5.....5 pages
Attachment 15d – Habitat Improvement Plan.....7 pages
Attachment 15e – Letter of Permission General Conditions.....6 pages
Attachment 15f – Certificate of Completion.....2 pages
Attachment 15g – Biological Evaluation and Essential Fish Habitat Assessment.....61 pages
Attachment 15h – Eelgrass and Macroalgae Verification Survey.....4 pages

APPENDIX B – GEOTECHNICAL REPORTS

Attachment 16 – Geotechnical Engineering Services Report, Stuart Island State Park Improvements (Base Bid).....70 pages

Attachment 17 – Geotechnical Engineering Services Report, Sucia Island State Park Improvements (Alternate Bid Item A1).....32 pages

END OF SECTION

INVITATION TO BID

1.1 SPECIAL NOTICE(S)

A. The environmental permits allow work below the Ordinary High Water Line between September 1, 2025 and March 1, 2026. The Contractor shall not mobilize material or equipment to the Project Site prior to September 15, 2025.

B. In accordance with Governor's Executive Order 21-02, the Contractor shall follow the Inadvertent Discovery Plan provided in the Environmental Permits Section during all project activities.

C. The Contractor is responsible for recruiting, hiring, paying, lodging, transporting, and coordinating with biologists qualified to execute the Marine Mammal Monitoring Plan and the Marbled Murrelet Monitoring Plan provided in the Environmental Permits Section.

D. Pile installation is to occur during daylight hours.

E. If visible turbidity exceeds the 150-foot allowable temporary mixing zone during rock socket drilling, the Contractor shall install a silt curtain, which must stay in place until suspended solids have settled out of the water column.

F. The Contractor is required to capture any debris associated with project activities to avoid release into waters. Use tarps or other methods to prevent treated wood, sawdust, trimmings, drill shavings and other debris from contacting the bed or waters of the state. When removing creosote piling, containment booms and absorbent booms (or other oil absorbent fabric) must be placed around the perimeter of the work area to prevent wood debris, oil, and other materials from being released into marine waters by the Contractor's activities. Debris must be collected and disposed of at an approved upland disposal site.

G. General Construction Measures, Project Design Criteria, Essential Fish Habitat Conservation Measures, and monitoring and/or reporting requirements are identified in the Notification Summary Sheet dated September 16, 2022 (NMFS Reference Number WCRO-2019-04086-4639; USFWS Reference Number 2022-0041637).

DESCRIPTION OF WORK

A. This project includes the following actions:

1. Remove existing solid timber pier, gangway, and floats and replace them with new materials.
2. Remove one existing offshore island floating dock and timber piles.
3. Replace existing timber framed and creosote dolphin supported offshore island floating dock with steel piles and steel framed floats with grated decking.
4. Remove existing creosote dolphins supporting the boat sewage pump-out barge and replace with steel piles.

1.2 LOCATION OF PROJECT

A. The project is located at Reid Harbor in Stuart Island State Park.

1.3 TECHNICAL QUESTIONS

A. Direct project questions to:

Jonathan Gibson, Project Representative at Jonathan.Gibson@parks.wa.gov

1.4 PRE-BID PROJECT SITE TOUR

A. The project site is open to the public. Prospective bidders are encouraged to visit it at their convenience to become familiar with the project's existing conditions and the proposed Work.

B. An optional pre-bid meeting will be held virtually over Microsoft Teams:

DATE:	**Wednesday, August 20th, 2025.**
TIME:	**3:00 PM.**
LOCATION:	Join the Microsoft Teams meeting on your computer, mobile app or room device: **Join the meeting now** Meeting ID: 247 711 622 882 5 Passcode: 5Zo9cD3z **Dial in by phone** +1 360-726-3322,,366366324# United States, Vancouver Find a local number Phone conference ID: 366 366 324# For organizers: Meeting options | Reset dial-in PIN.

1.5 BID OPENING

A. Bidders must be registered as vendors through the MRSC Bonfire Procurement Portal https://mrscrosters.bonfirehub.com/portal, which is free to sign up for, before submitting their bids electronically through the State Parks Public Opportunities section of the same portal. All bids must be submitted using the Bid Proposal Form, provided as part of the electronic bid documents. Submissions must fully comply with the requirements outlined in Sections 3.1 and 4.1 of the Instructions to Bidders. Bids are due at 1:00 p.m., Thursday, September 11th, 2025. Late submissions will not be accepted.

B. The Agency does not guarantee a specific timeframe for the public release of bid results; however, they are typically available within three business days of the bid opening, often

on the same day. Bid results can be accessed through the MRSC Bonfire Procurement Portal https://mrscrosters.bonfirehub.com/portal and public notices. Additionally, they may be available on the Washington State Parks website at www.parks.wa.gov/contracts under "Construction Projects – Public Works Bid Results." Bid results may also be shared through Plan Centers, but Bidders should note that the State Parks Public Opportunities - MRSC Rosters Bonfire Procurement Portal serves as the official release point for the Bid Tabulation or Bid Record for this solicitation.

C. The Agency reserves the right to accept or reject all bids and to waive informalities. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

1.6 COVID 19

A. COVID-19 Refer to the Department of Labor & Industries website for requirements regarding any safety plans needed. Novel Coronavirus Outbreak (COVID-19) Resources (wa.gov)

1.7 FOR INFORMATION ON:

A. Bidder Responsibility: Bidder responsibility will be evaluated for this project. In determining bidder responsibility, the Agency will consider an overall assessment of the criteria outlined in Division 00 – Instructions to Bidders.

For any questions regarding this topic, please contact the Project Representative or submit a vendor discussion through the State Parks Public Opportunities - MRSC Bonfire Procurement Portal https://mrscrosters.bonfirehub.com/portal. To ensure consideration, all inquiries must be received at least seven (7) working days before the bid opening date.

B. Reciprocal Preference: See Instructions to Bidders 11.1 Reciprocal Preference for Resident Contractors.

C. Apprenticeship Requirements: For projects estimated at or over $1,000,000, Apprenticeship Participation, Mandatory 15 percent apprentice labor, see Instructions to Bidders 5.1B Apprenticeship Participation.

D. Subcontractor Listings: When the base bid combined with any alternates totals $1,000,000 or more, the Bidder must list the Subcontractors they intend to use for structural steel, rebar installation, heating, ventilation, and air conditioning (HVAC), plumbing, and electrical work on the Subcontractor Utilization List form for this project, see Instructions to Bidders 5.1A Subcontractor Listing.

E. MWBE goals: See Instructions To Bidders 12.1 Minority And Women's Business Enterprise (MWBE) Utilization. For Veteran-Owned and Small Business utilization, see Instruction to Bidders 12.2.

F. Modification of Bid: See Instructions to Bidders 6.3 Modification of Bid.

G. Withdrawal of Bid: See Instructions to Bidders 6.4 Withdrawal of Bid.

H. Bid Guarantee: See Instructions to Bidders 4.1 Bid Bond. No particular bid bond form is required.

I. Bid Tabulation and Bid Record: See Instructions to Bidders 7.1B for Bid Tabulation, Bid Record, and Announcement of Apparent Low Bid.

J. Records Request: All submitted bids are subject to public records request once the lowest bidder has been determined and officially announced. See Instructions to Bidders 7.1D Records Request.

1.8 ACCESSIBILITY

A. Sites may not be fully accessible to people with disabilities. Please contact the Project Representative at least five (5) days prior to scheduled pre-bid tour if special accommodation is required for your attendance.

END OF SECTION

1.1 BIDDER DEFINED

A. A "*Bidder*" is an entity or person who submits a bid proposal for the work described in the contract documents.

B. The Bidder must be registered with the Washington State Department of Labor and Industries in accordance with RCW 18.27.020. The contractor registration number, expiration date, Uniform Business Identifier (UBI) number, and federal tax identification number must be entered in the applicable spaces on the Bidder Compliance Form within the Bid Proposal Form.

2.1 EXAMINATION OF THE WORK SITE AND BIDDING DOCUMENTS

A. Bidder acknowledges that it has taken steps necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and road; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during the work.

The bidder also acknowledges that it has satisfied itself as to character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including exploratory work done by the Agency, as well as from the drawings and specifications made a part of this contract. Any failure of the Bidder to take the actions described and acknowledged in this paragraph will not relieve the Bidder from responsibility for estimating properly the difficulty and cost of successfully performing the work.

B. No statement by any officer, agent, or employee of the Agency pertaining to the physical conditions of the site of the work will be binding on the Agency other than those statements issued in the contract documents.

C. Bidders shall promptly notify the Agency of ambiguities, inconsistencies, or errors, if any, which they may discover upon examination of the Bidding Documents or of the site and local conditions.

D. Interpretations and Clarifications

1) Prospective Bidders seeking clarification or interpretation of the solicitation, drawings, or specifications must submit a written request to the Project Representative listed in the Invitation to Bid or through the **State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal** https://mrscrosters.bonfirehub.com/portal by submitting a vendor discussion. Requests must be received at least seven (7) working days prior to the bid opening date to be considered.

2) Any Agency responses that do not modify the Scope of Work outlined in the contract documents may be posted on the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal prior to the bid submission deadline. Such clarifications will not be considered part of the contract documents and do not need to be acknowledged by Bidders in their Bid Proposal Form. The Agency retains sole discretion to determine whether a clarification or interpretation affects the Scope of Work and requires inclusion in the Contract Documents.

3) Changes to the Scope of Work or schedule described in the contract documents will only be issued as written ADDENDA.

4) Oral interpretations or clarifications are not legally binding.

E. Substitutions

1) The product, equipment, materials, or methods described or noted within the Bidding Documents, whether currently available or not, are to establish a standard of quality, function, appearance and dimension. A proposed substitution shall have equal attributes in all respects.

2) No substitution will be considered unless a written request for approval is submitted by the Contractor, after Award, in accordance with the applicable provisions of Section 012500 of the specifications. If no Section 012500 is available, then see section 016000 Product Requirements, sub-section 1.5. Each such request shall describe the proposed substitution in its entirety including name of the material or equipment, drawings, catalog cuts, performance or test data and all other information required for an evaluation. The submittal shall also include a statement noting all changes required in adjoining, dependent or other interrelated work necessitated by the incorporation of the proposed substitute. The Bidder shall bear the burden of proof of merit of the proposed substitution. The Project Representative's decision of approval or disapproval of a proposed substitution shall be final.

3.1 BID PROPOSAL

A. Bidders must be registered as vendors through the **MRSC Rosters Bonfire Procurement Portal** https://mrscrosters.bonfirehub.com/portal. All bid submissions must be made through the State Parks Public Opportunities section on the same portal. The individual who signs and submits the bid through the Bonfire Portal must be an authorized designee responsible for the bid submission.

B. All bidders for Small Works Projects must be currently registered on the MRSC Small Works Roster (vendor list) found http://mrscrosters.org/.

C. Bidders are required to submit bid prices electronically through the **State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal**. Submissions must be completed using the Bid Proposal Form, provided as part of the electronic bid proposal documents. The Bid Proposal Form is a spreadsheet consisting of four tabs:

1. Bidder Compliance Form
2. Bid Form
3. MWBE
4. Subcontractor Utilization (if applicable)

All fields in the Bid Proposal Form tabs must be properly and completely filled out to ensure compliance. Failure to fill in all required fields may result in the bid being deemed non-responsive.

The Bidder Compliance Form must include the Bidder's full and complete address and information, typed in the spaces provided. The Bid Form must be electronically signed in the firm's name, and a typewritten name is acceptable as an electronic signature, provided it complies with electronic submission requirements.

Once the Bid Proposal Form is completed, it must be uploaded in its original form to the appropriate section of the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal https://mrscrosters.bonfirehub.com/portal. Bidders are reminded to thoroughly review their submission before uploading to ensure compliance with all instructions and requirements. Incomplete submissions will be deemed non-responsive.

D. Except as otherwise provided in these instructions, bid proposals that are incomplete, or that are conditioned in any way, or that contain alterations, or items not called for in the contract documents, or that do not conform to the call for bids, may be rejected as non-responsive at the discretion of the Agency unless the law requires that the omission be deemed non-responsive, in which case the bid will be rejected as non-responsive. Only the amounts and information asked for on the Bid Proposal Form and the plans and specifications furnished will be considered as the bid. Bid amounts include all taxes imposed by law, **except** for Washington Sales Tax unless noted otherwise.

E. Each Bidder must submit their bid exactly as specified and as provided in the Bid Proposal Form. Bidders are required to include bids for all alternates if alternates are indicated on the Bid Form. For alternates that have no charge, the Bidder must type "**$0.00**" in the column for the unit price on the Bid Form.

F. Bidders shall acknowledge receipt of any ADDENDA to the solicitation for bids on the Bid form. Failure to do so may result in the bid being declared non-responsive.

G. Substitute bid forms will not be considered unless this solicitation authorizes their submission.

H. The bid prices listed in the Bid Form must include all labor, materials, equipment, overhead, and compensation necessary to complete the work for each item, while the costs for the building permit and public utility hookup fees will either be reimbursed directly to the Contractor or paid by the Agency to the permitting agency and therefore should not be included in the bid amount.

I. The low Bidder, for purposes of award, shall be the responsive and responsible Bidder offering the low aggregate amount for the base bid item, plus additive or deductive bid alternates selected by the Agency, and within funds available for the project. The Bidder agrees to hold all bid alternate prices for sixty (60) days from date of bid opening.

4.1 BID GUARANTEE: BID BOND

A. A bid bond is not required when the total bid amount, including the base bid and all additive alternates, is $35,000 or less. In such cases, instead of providing a bid bond, Bidders must complete and upload the **Bid Bond Requirement Statement** as part of their bid submission. This ensures compliance with the bidding requirements for projects below the $35,000 threshold.

B. When the sum of the base bid plus all additive alternates is greater than $35,000.00, a bid guarantee in the amount of 5% of the base bid amount is required. Failure of the Bidder to provide bid guarantee when required shall render the bid non-responsive.

C. Acceptable forms of bid guarantee are: A bid bond. A scanned copy (e.g., PDF) of the bid bond must be uploaded to the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal (https://mrscrosters.bonfirehub.com/portal) along with your bid response to the Agency. See also, Section 6.1 SUBMISSION OF BID.

D. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

E. Should the successful Bidder fail to enter into a contract and furnish a satisfactory performance bond within 15 days after receiving properly prepared contract forms from the Agency, the bid bond may be forfeited as liquidated damages for advertisements and administration of bid procedures. Additionally, the Agency reserves the right to terminate the contract award.

F. Bid bonds must be held for the three low bids for 30 days or until a contract is executed with the successful Bidder. All other bid bonds will be released or returned to the Bidders within 15 days of the bid opening.

5.1 REQUIREMENTS FOR PROJECTS ESTIMATED AT $1,000,000 OR MORE

A. SUBCONTRACTOR LISTING

Pursuant to RCW 39.30.060, if the base bid combined with the sum of the alternates exceeds one million dollars ($1,000,000.00) or more for the construction, alteration, or repair of any public building or public work of the state shall require each Bidder to submit as part of the bid the names of subcontractors with whom the Bidder, if awarded the contract, will subcontract for performance of the work of heating, ventilation and air conditioning, plumbing, and electrical, structural steel installation, rebar installation or to name itself for the work. The Bidder shall not list more than one subcontractor for each category of work identified, unless subcontractors vary with bid alternates, in which case the Bidder must indicate which subcontractor will be used for which alternate.

Subcontractor listing is not required for Small Works Projects under $350,000.

Failure of the Bidder to submit as part of the bid, the names of such subcontractors, or to name itself to perform such work, or the naming of two or more subcontractors to perform the same work, or failure to sign the form shall render the bid as non-responsive and therefore void.

B. APPRENTICESHIP PARTICIPATION

In projects estimated to cost one million dollars ($1,000,000.00) or more, be aware that the following requirements will be part of the resulting contract.

Apprenticeship requirements do not apply to Small Works Projects estimated below $350,000.

In accordance with RCW 39.04.320 (Apprenticeship Training Programs), for all public works estimated by the Agency Project Engineer to cost **one million dollars or more,** the state of Washington requires no less than **15% of the labor hours be performed by apprentices.** A contractor or subcontractor may not be required to exceed the 15% requirement. The bid advertisement and Bid Proposal Form shall establish a minimum required percentage of apprentice labor hours compared to the total labor hours. The project's apprenticeship utilization rate is calculated using the approved affidavits from the L&I portal.

1. **Incentives** - The Contractor who meets or exceeds this utilization requirement on eligible contracts, will be awarded a monetary incentive described in the Apprentice Utilization Requirements section of the Bid Proposal Form.

2. **Penalties** - The Contractor who fails to meet the utilization requirement and fails to demonstrate a Good Faith Effort, as outlined below, is subject to penalties described in the Apprentice Utilization Requirements section of the contract Bid Proposal Form. Contractor will receive an invoice payable to the Agency within 30 days. The contractor will have 30 days to pay the penalty invoice at the time of receipt before the penalty is considered outstanding. Contractors with outstanding apprenticeship penalties may be considered non-responsive.

3. **Cost Value** - The expected cost value associated with meeting the goal is included in the Base Bid as described on the Bid Proposal Form.

4. **Utilization Plan** - The Contractor shall provide an Apprentice Utilization Plan (Plan) demonstrating how and when they intend to achieve the Apprenticeship Utilization Requirement. The Plan shall have enough information to track the Contractor's progress in meeting the utilization requirement. The Contractor shall submit the Plan on the Apprentice Utilization Plan template within 10 business days of Notice to Proceed of the contract and prior to submitting the first invoice. The Contractor shall provide an updated Plan during the course of construction when there are significant changes to the Plan which may affect their ability to meet the requirement.

    a) The Plan shall be uploaded to the Department of Labor & Industries' (L&I): ***Prevailing Wage Intents and Affidavit (PWIA) system on L&I's website.***

    b) The Plan is not submitted for approval.

    c) It is expected that the Contractor will actively seek out opportunities to meet the Apprentice Utilization Requirement during construction even if the Plan indicates a shortfall in meeting the requirement.

    d) If the Plan indicates that the Contractor will not attain the Apprentice Utilization Requirement, then Contractor must submit "Good Faith Effort" (GFE) documentation with their Plan to L&I's PWIA system.

C. APPRENTICESHIP - GOOD FAITH EFFORT (GFE)

1. **Good Faith Effort (GFE)** documentation shall describe in detail why the Contractor is not or was not able to attain the Apprentice Utilization Requirement.

    a) Contractors may submit Good Faith Effort (GFE) documentation at any time during the construction.

    b) All GFE documentation must be submitted no later than 30 days before substantial completion.

    c) Only the awarding Agency can approve GFEs. The Department of Labor & Industries (L&I) may provide assistance but does not have approval authority

    d) The Awarding Agency must document its GFE decision in writing, including any monetary penalty if denied.

e) Good Faith Effort (GFE) documentation must be in signed letter format uploaded to the PWIA system and include:

1. The contract number, title and the apprentice utilization requirements,

2. The amount of apprentice labor hours the contract can or did attain along with the percentage of labor hours,

3. Contractors may receive a GFE credit for graduated Apprentice hours through the end of the calendar year for all projects worked on as long as the Apprentice remains continuously employed with the same Contractor they were working for when they graduated. If an Apprentice graduates during employment on a project of significant duration, they may be counted towards a GFE credit for up to one year after their graduation or until the end of the project (whichever comes first). Determination of whether or not Contract requirements were met in good faith will be made by subtracting the hours from the journeyman total reported hours for the project and adding them to the apprentice hour total. If the new utilization percentage meets the Contract requirement, the Contractor will be reported as meeting the requirement in good faith,

4. Anticipated or actual shortfall (in apprentice labor hours and percentage) and the reason(s) for not attaining the required apprentice labor hours,

5. Information from one or more of the following areas:

   (a) Names of any State-Approved Apprentice Training Programs contacted with the name(s) of person(s) contacted and dates of contacts, and a copy of each response from the Training Program(s),

   (b) Reference Contract Specifications or documents that affected the Contractor's ability to attain apprentice utilization,

   (c) Discuss efforts the Contractor has taken to require Subcontractors to solicit and employ apprentices,

6. Backup documentation to the letter consisting of the following:

   (a) Letters, emails, phone logs including names dates and outcomes, posters, photos, payrolls, timecards, schedules, copies or references to other contract specifications or documents.

Additional Resource Information

(a) For questions regarding how to complete the Apprentice Utilization Plan template or Good Faith Effort documentation, please contact the Project Manager listed in the Bid Advertisement.

(b) Step-by-step instructions on how to access and navigate the L&I's PWIA system, including uploading required documents can be found on the L&I website.

(c) Additional information about apprentice utilization on Public Works Project can be found on the L&I website.

6.1 SUBMISSION OF BID

A. Bids must be submitted on or before the time as specified in the Invitation to Bid.

B. Bid responses will only be accepted electronically through the State Parks Public Opportunities section using the MRSC Rosters Bonfire Procurement Portal as specified in the Invitation to Bid. https://mrscrosters.bonfirehub.com/portal.

C. People with disabilities who wish to request special accommodation, (e.g., sign language interpreters, braille, etc.) need to contact the Agency ten (10) working days prior to the scheduled bid opening.

D. In the event the MRSC Rosters Bonfire Procurement Portal is unavailable to all users at the bid submittal deadline, the Agency will contact the Bidders within 24 hours and the Agency will extend the bid submittal time.

E. Neither Agency nor MRSC Rosters Bonfire Procurement Portal can guarantee the availability of Internet connectivity or related telecommunication and hosting services and will not be liable or responsible if the Bidder and its representative(s) or designee(s) cannot connect to the MRSC Rosters Bonfire Procurement Portal.

F. The Bidder must comply with the MRSC Rosters Bonfire Portal's Terms of Service (https://gobonfire.com/termsservice/) when submitting the Bid through the MRSC Rosters Bonfire Procurement Portal.

6.2 BID CLOCK:

A. After the 1 P.M. bid deadline, which serves as the official bid clock to determine timely submission, Agency staff will review the bids. The MRSC Rosters Bonfire Procurement Portal does not permit submissions after the deadline, so bidders must ensure their bids are submitted on time. Late submissions will not be accepted under any circumstances.

B. CAUTION: To avoid issues, submit your bid response electronically well in advance of the deadline to account for potential technological delays, slow-downs, or malfunctions. Bids received after the deadline, regardless of the reason or responsibility, will be rejected.

6.3 MODIFICATION OF BID

A. Bidders may update their bid electronically via the MRSC Rosters Bonfire Procurement Portal before the bid due date.

Modifying: Modifying refers to altering information already contained in a submitted bid. If your submission has been finalized but needs modifications, you may update it electronically before the bid due date by navigating to the Submissions page and un-submitting your submission.

NOTE: Un-submitting removes your original bid, so ensure you resubmit before the deadline. Only upload updated files; unchanged files remain in place. A new confirmation email will be sent upon resubmission.

6.4 WITHDRAWAL OF BID

A. Withdrawal refers to a bid that has already been submitted to the Agency. A bid response may be withdrawn electronically by the Bidder's authorized representative before the Bid Opening (due date deadline) for the bid. The FAILURE TO WITHDRAW a bid prior to the bid due date deadline exposes the Bidder to the possibility that the Agency will make a demand against the Bidders bid bond.

B. Procedure for Withdrawing a Bid After Bid Opening Due to Error: If a Bidder discovers an error in its bid following the bid opening, the Bidder must submit written notification of the withdrawal to contracts@parks.wa.gov within 24 hours following the bid opening. Follow the example subject line. Example email subject line: SW-C9999 Withdraw Bid ACME Construction Inc.

- The Bidder must provide written documentation of the claimed error to the satisfaction of the Agency within 72 hours following the bid opening.

- The Agency will approve or disapprove the request for withdrawal of the bid in writing. If the Bidder's request for withdrawal of its bid is approved, the Bidder will be released from further obligation to the Agency without penalty. If it is disapproved, the Agency may retain the Bidder's bid bond.

6.5 REJECTION OF BID

A. The Agency reserves the right to reject any or all bids and to waive informalities in connection with the bids.

7.1 BID EVALUATION AND AWARD OF CONTRACT

A. Award of contract will be made by the Agency based upon any combination of the base bid and alternates that, in the Agency's sole discretion, is in the Agency's best interest considering price, schedule, and other factors. The numbering of the alternates in the bid proposal bears no relationship to the order in which the alternates may be selected by the Agency. Additionally, the Agency reserves the right to negotiate base bid prices (including changes to the contract plans and specifications) with the low responsive, responsible Bidder to bring the final contract amount within the funds available per RCW 39.04.015.

B. BID TABULATION, BID RECORD AND ANNOUNCEMENT OF APPARENT LOW BID:

The Agency does not guarantee when the Bid results will be released to the public. The bid results are usually released within three business days of the bid opening and often the same day. Bid results can be obtained from MRSC Rosters Bonfire Procurement Portal (https://mrscrosters.bonfirehub.com/portal) and viewing public notices. Bid Results may also be obtained by accessing the Washington State Parks webpage at www.parks.wa.gov/contracts (see "Construction Projects- Public works bid results"). The Bid results may also be released through the Plan Centers. But, Bidders are cautioned that the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal is the official release point for the Bid Tabulation or Bid Record for this solicitation.

The bid tabulation will identify all bids received by the Agency. Bids that were not rejected and not withdrawn prior to the bid opening will be ranked by base bid price. The first three lowest base bids will reflect detailed pricing information. The remaining Bidders will reflect only the base bid pricing. Bids that were rejected for any reason will reflect **Non-Responsive** in the bid tabulation but may include its total pricing.

The bid record will list all bids received, ordered alphabetically. Rejected bids will not show detailed pricing. The bid record is used for projects with Alternates. The Agency may consider Alternate Bid Items in any combination. The low Bidder for award purposes is the responsive Bidder offering the lowest aggregate amount for the base bid plus selected alternates, within available project funds.

Release of the Bid Tabulation or Announcement of the Apparent Low bid information that a Firm was identified as the apparent low base bid simply means that at this point in time the Agency believes the subject bid was the lowest cost responsive bid, but designation as the apparent low responsive bid is not a guarantee of a contract with the Agency. The Agency reserves the right to reevaluate the bid and determine whether the bid was responsive and responsible and successful as first thought. The Bidder identified as the apparent low responsive bid is cautioned not to commit funds, resources, and effort prior to receiving an actual executed contract. The Bidder identified as the apparent low responsive bid that commits funds, resources, and effort prior to a contract do so at its own risk and peril.

Within two (2) business days following the day of the release of the Bid Tabulation/Bid Record or the Announcement of the Apparent Low bid, the Bidder may file a Protest (Protest procedures are outlined in Section 9.1).

C. REJECTION LETTER & PROTEST: No matter the phase of the evaluation, if the Agency determines that the bid is not responsive or the Bidder is not responsible, the Agency will reject the bid/bidder, and send the bidder a Rejection Letter explaining why the bid/bidder was rejected. Within two (2) business days following the day of the release of the Rejection Letter, the Bidder may file a Protest, provided it meets one of the three (3) protest grounds (Protest procedures are outlined in Section 9.1 E.). The Rejection Letter will be sent by email/email attachment to the email address provided by the Bidder in the Bidder's bid response.

D. RECORDS REQUEST: All submitted bids are subject to public records request once the lowest bidder has been determined and officially announced.

After the announcement of the lowest bidder, any member of the public may request access to the bid documents. No official format is required for making a records request; however, the Agency recommends that requests be made through the Public Records Request Center on our website:https://parks.wa.gov/about/contact-us/public-records-requests.

E. The intent of the Agency is to award a contract to the low responsive, responsible bidder.

8.1 RESPONSIVE AND RESPONSIBLE BIDDER

A. The Agency will evaluate bids responsiveness and responsibility in the MRSC Rosters Bonfire Procurement Portal https://mrscrosters.bonfirehub.com/portal.

B. RESPONSIVE - A bid will be considered responsive if its electronic response meets the following requirements:

1. It is received at the proper submittal time, date and location online through the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal.

2. It meets the required requested information of the Bid Proposal Form through the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal.

3. It meets the requirements as stated in section 3.1. of the Instructions To Bidders.

4. It is submitted by a licensed/registered contractor within the state of Washington at the time of bid opening and is not banned from bidding by the Department of Labor and Industries.

5. It is accompanied by a bid guarantee, if required.

If inconsistencies or errors are noted in the bid proposal prices, the **unit and lump sum prices have precedence over their total amounts**; and the **total amounts have precedence over the total base bid**.

The apparent low Bidder, for purpose of award, is the responsive and responsible Bidder offering the low aggregate amount for the base bid plus selected additive or deductive bid alternates and meeting all other bid submittal requirements.

C. RESPONSIBLE – Before award of a public works contract, a Bidder must meet the following **mandatory responsibility criteria** under RCW 39.04.350 (1) & (2) to be considered a responsible Bidder and qualified to be awarded a public works project. The individual who has signed/submitted the Bid through the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal shall be the authorized designee responsible for bid submissions. The Bidder must:

1. At the time of bid submittal, have a certificate of registration in compliance with RCW 18.27, a plumbing contractor license in compliance with RCW 18.106, an elevator contractor license in compliance with RCW 70.87, or an electrical contractor license in compliance with RCW 19.28 as required under the provisions of those chapters;

2. Have a current state Unified Business Identifier (UBI) number;

3. If applicable, have industrial insurance coverage for the Bidder's employees working in Washington as required in RCW 51; an employment security department number as required in RCW 50; and a state excise tax registration number as required in RCW 82;

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3);

5. If bidding on a public works project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington State Apprenticeship and Training Council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under Chapter 49.04 RCW for the one-year period immediately preceding the date of the bid solicitation; and

6. Public Works and Prevailing Wage Training/Exemption. Bidders shall have received training on the requirements related to public works and prevailing wage under this chapter and chapter 39.12 RCW. The bidder must designate a person or persons to be trained on these requirements. The training must be provided by the department of labor and industries or by a training provider whose curriculum is approved by the department. The department, in consultation with the prevailing wage advisory committee, must determine the length of the training. Bidders that have completed three or more public works projects and have had a valid business license in Washington for three or more years are exempt from this subsection. The department of labor and industries must keep records of entities that have satisfied the training requirement or are exempt and make the records available on its website. Responsible parties may rely on the records made available by the department regarding satisfaction of the training requirement or exemption.

https://lni.wa.gov/licensing-permits/public-works-projects/contractors-employers/contractor-training

7. Within the three-year period immediately preceding the bid solicitation, not have been determined by a final a binding citation and notice of assessment issued by the department of labor and industries or through a civil judgment entered by a court of limited or general jurisdiction to have willfully violated, as defined in RCW 49.48.082, any provision of Chapters 49.46, 49.48, or 49.52 RCW. By signing the Bid Proposal Form, the bidder verifies under penalty of perjury, pursuant to RCW 9A.72.085. that the bidder is in compliance with this subsection

8. **Supplemental Responsibility Criteria**: In addition to the mandatory Bidder responsibility, the Agency may adopt relevant supplemental criteria for determining Bidder responsibility applicable to a particular project which the Bidder must meet (RCW 39.04.350 (3)).

   a. If applicable, the Agency shall consider an overall accounting of the attached supplemental criteria for determining Bidder responsibility "DIVISION 00 SUPPLEMENTAL RESPONSIBILITY CRITERIA".

   b. At least seven (7) days prior to the bid submittal deadline, a potential Bidder may request that the Agency modify the supplemental responsibility criteria. The Agency will evaluate the information submitted by the potential Bidder and respond before the bid submittal deadline. If the evaluation results in a change of the criteria, the Agency will issue an ADDENDA to the bidding documents identifying the new criteria. The Addendum will be posted as a public notice in the State Parks Public Opportunities-MRSC Rosters Bonfire Procurement Portal.

   c. Upon the Agency's request, the apparent low Bidder must supply the requested responsibility information within two (2) business days of request by the Agency. Withholding information or failure to submit all the information requested within the time provided may render the bid non-responsive and the bid/Bidder may be rejected by Rejection Letter. The rejection is specific to this project and will have no effect on other or future projects.

   d. The Agency will not execute a contract with any other Bidder until two (2) business days after the Bidder determined to be not responsible has received the rejection letter.

9.1 PROTEST PROCEDURES

A. GENERAL:

This protest process is a courtesy provided by the Agency and it is not governed by Washington's Administrative Procedures Act (APA), RCW 34.05, nor does it confer any additional rights above and beyond what the Bidder already enjoys as a taxpayer. The purpose of this process is to allow the Agency to correct evaluation process errors and problems before a contract is executed.

Only a Bidder may file a protest regarding this solicitation.

The Bidder must strictly adhere to the protest process as set forth herein, the failure of which may result in a summary determination that the protest is without merit without an opportunity to cure.

B. FORM AND CONTENT:

All protests must:

- Be in writing.
- The protest must state and clearly articulate the grounds for the protest with specific facts and complete statements of the action(s) being protested.
- A description of the relief or corrective action being requested should also be included.
- All protests shall be addressed to the Procurement Coordinator.

C. CONTENT LIMITATIONS:

The Agency does not currently mandate any page limitation. However, the protest must be clearly articulated, succinct, organized, logical, and professional.

The Agency will reject protests that:

- fail to state and clearly articulate at least one of the three GROUNDS;
- contain rants, attacks, and/or disparaging or abusive remarks;
- include multiple attachments or references (document dumping, document overload); or,
- appear to require the reader piece together voluminous amounts of material to decipher the argument being made.

D. SUBMISSION OF PROTEST:

- All protests must be submitted within two (2) business days following the day of the release of the Bid Tabulation/Announcement of the Apparent Low bid or after the formal Rejection Letter is sent. For purposes of timing the day of the release of the Bid Tabulation or the day of the Rejection Letter is sent to the Bidder shall not count.
- Bidders must send all protests to: contracts@parks.wa.gov. See also Subject Line.
- SUBJECT LINE: Must include the bid's identification number, and "PROTEST" in the subject line. Failure by the Bidder to include this information in the subject line may result in Bidder's protest not being timely recognized.

E. GROUNDS WHICH MAY BE PROTESTED:

- Conflict of Interest on the part of Agency staff.
- Errors in computing the score.
- Non-compliance with procedures described in the procurement document.

Protests will be rejected as without merit if they do not clearly and convincingly meet one of the GROUNDS above and/or seems to address issues such as:

- An evaluator's professional judgment on the quality of a response, or
- The Agency's assessment of its own and/or other agencies' needs or requirements, or,
- Issues, concerns, objections, or requests for changes that were or could have been addressed prior to the bids due date deadline.

Protests that do not clearly and convincingly meet the requirements and standards described herein are without merit and may be rejected.

F. MANAGER ASSIGNMENT AND REVIEW:

Upon receipt of a protest that meets the requirements described herein, a protest review will be held by the Agency. The Agency will assign a Manager. The Manager is responsible for reviewing and investigating the Bidder's written protest and may meet with agency staff or the agency program that was involved in the solicitation. The Manager may consider the record and all reasonably available facts and will issue a protest determination in writing within fifteen (15) business days from receipt of the protest. If additional time is needed, the Manager will notify the protesting party of the need for additional time within 15 business days from receipt of the protest.

In the event a protest may affect the interest of another Bidder that submitted a response, the Agency may reach out to that Bidder, may provide an unedited copy of the protest to that Bidder, and may invite that Bidder to submit its views and any relevant information on the protest to the Manager.

G. PROTEST DETERMINATION AND FINDINGS AND DISSEMINATION:

The Manager's protest determination may:

- Find the protest lacking in merit and reject the protest;
- Find only technical or harmless errors in the Agency's acquisition process and determine the Agency to be in substantial compliance and reject the protest; OR
- Find merit in the protest and provide THE AGENCY options which may include:
    - Correcting the errors and re-evaluating all responses;
    - Canceling the solicitation and possibly for a new solicitation to take place; OR
    - Making other findings and determining other courses of action as appropriate.

If the Agency rejects the protest, the Agency will enter into a contract with the Apparent Successful Bidder no sooner than two (2) business days after issuance of the protest determination by email to the protesting party at the email address indicated on the party's bid documents. For the purposes of timing, the date the protest determination is sent to the protesting party shall not count.

Dissemination: The Agency will disseminate the decision to all interested Bidders vie email/email attachment to the email address provided by the Bidder in the Bidder's bid response.

H. AGENCY DECISION IS FINAL:

The Manager's protest determination constitutes the agency's final decision regarding the protest. If the protesting party disagrees with the protest determination, the Bidder may seek judicial relief in the Washington Superior Court for Thurston County within two (2) business days of the issuance of the protest determination.

I. STRICT COMPLIANCE

Strict compliance with these protest procedures is essential in furtherance of the public interest. Any aggrieved party that fails to comply strictly with these protest procedures is deemed, by such failure, to have waived and relinquished forever any right or claim with respect to alleged irregularities in connection with the solicitation or award of the Contract. No person or party may pursue any judicial or administrative proceedings challenging the solicitation or award of this Contract, without first exhausting the administrative procedures specified herein.

J. REPRESENTATION

An aggrieved party may participate personally or, if a corporation or other artificial person, by a duly authorized representative. Whether or not participating in person, an aggrieved party may be represented, at the party's own expense, by counsel.

K. COMPUTATION OF TIME

In computing any period of time prescribed by this procedure, the day of the act or event from which the designated period of time begins to run is not included. The last day of the period is included. The term "business day" does not include Sunday, Saturday, or Washington State recognized holiday.

L. ACKNOWLEDGEMENT

By submitting a bid in response to this solicitation, the Bidder acknowledges that it has reviewed and acquainted itself with the bid protest procedures herein and agrees to be bound by such procedures as a condition of submitting a bid.

10.1 EXECUTION OF CONTRACT

A. The successful bidder will be required to execute the contract and furnish performance bond and insurance certificate satisfactory to the Agency within 15 days after receiving properly prepared contract documents from the Agency.

11.1 RECIPROCAL PREFERENCE FOR RESIDENT CONTRACTORS

A. In accordance with RCW 39.04.380 the State of Washington is enforcing a Reciprocal Preference for Resident Contractors. Any public works bid received from a nonresident contractor from a state that provides an in-state percentage bidding preference, a comparable percentage disadvantage must be applied to the bid of that nonresident contractor.

A nonresident contractor from a state that provides a percentage bid preference means a contractor that:

a) is from a state that provides a percentage bid preference to its resident contractors bidding on public works contracts.

b) at the time of bidding on a public works project, does not have a physical office located in Washington.

The state of residence for a nonresident contractor is the state in which the contractor was incorporated or, if not a corporation, the state where the contractor's business entity was formed, and for an individual, the individual's state of residence.

All nonresident contractors will be evaluated for out of state bidder preference. If the state of the nonresident contractor provides an in-state contractor preference, a comparable percentage disadvantage will be applied to their bid prior to contract award.

This section does not apply to public works procured pursuant to RCW 39.04.155, 39.04.280, or any other procurement exempt from competitive bidding.

B. A Comparable Percentage Disadvantage (CPD) will be applied to the bid of that nonresident contractor. The CPD is the in-state contractor percent advantage provided by the contractor's home state. For the purpose of determining the successful bidder, multiply the Nonresident Contractor bid amount by the CPD. The "bid amount" is be the total of the base bid and all accepted alternate bid items. The CPD is added to the Nonresident Contractor bid amount which equates to the Nonresident Disadvantage Total. The Nonresident Disadvantage Total is compared to the Washington contractor bid amounts. The bidder with the lowest total is the successful bidder. See example below.

Alaska Nonresident Contractor Bid Amount	$100,000
Multiplied by the Alaska CPD	x 0.05
Alaska CPD Total	$ 5,000
Alaska Nonresident Contractor Bid Amount	$100,000
Alaska CPD Total	$ 5,000
Nonresident Disadvantage Total	$105,000*

* Note – If the Nonresident Disadvantage Total is lower than all other Washington contractor bid amounts, the Alaska Nonresident Contractor is the successful bidder and will be awarded a contract for the bid amount of $100,000.

If the Nonresident Disadvantage Total is higher than a Washington contractor bid amount, the successful Washington bidder will be awarded a contract for the bid amount.

12.1 MINORITY AND WOMEN'S BUSINESS ENTERPRISE (MWBE) UTILIZATION

In accordance with the legislative findings and policies set forth in Chapter 39.19 RCW, the State of Washington encourages participation in contracts by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this solicitation/invitation or as a subcontractor to a Bidder. However, unless required by federal statutes, regulations, grants, or contract terms referenced in the contract documents, no preference will be included in the evaluation of bids, no minimum level of MWBE participation is required as a condition for receiving an award, and bids will not be rejected or considered non-responsive on that basis. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the contract documents will apply.

WASHINGTON STATE PARK AND RECREATION COMMISSION
PUBLIC WORKS PROJECT

A. VOLUNTARY MWBE GOALS

1. The following voluntary numerical MWBE participation goals have been established for this solicitation:

   MBE 10% WBE 6%

2. These goals are voluntary, but achievement of the goals is encouraged. Bidders may contact OMWBE at http://omwbe.wa.gov/ to obtain information on certified firms.

B. REPORTING REQUIREMENTS

1. If any part of the contract, (including the supply of materials and equipment) is subcontracted using certified MWBE firms during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents the Bidder shall submit a statement of participation indicating that MWBEs were used and the dollar value of their subcontracts.

2. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.

C. RECORD KEEPING

1. The Bidder shall maintain, for at least three years after completion of this contract, relevant records and information necessary to document the level of utilization of MWBEs and other businesses as subcontractors and suppliers in this contract as well as any efforts the Bidder makes to increase the participation of MWBEs. The Bidder shall also maintain, for at least three years after completion of this contract, a record of all quotes, bids, estimates, or proposals submitted to the Bidder by all businesses seeking to participate as subcontractors or suppliers in this contract. The State shall have the right to inspect and copy such records. If this contract involves federal funds, Bidder shall comply with all record keeping requirements set forth in any federal rules, regulations, or statutes included or referenced in the contract documents

D. SUGGESTED EFFORTS TO INCREASE PARTICIPATION BY MWBEs

1. Bidders are encouraged to advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisement (e.g., newspapers, journals, etc.) or by soliciting bids directly from MWBEs.

2. Additional Voluntary Efforts. Bidders are encouraged to:

   (a) Break down total requirements into smaller tasks or quantities, where economically feasible, in order to permit maximum participation by MWBEs and other small businesses.

   (b) Provide interested MWBEs with adequate and timely information about plans, specifications, and requirements of the Contract.

(c) Establish delivery schedules, where the requirements of this contract permit, that encourage participation by MWBEs and other small businesses.

(d) Reduce bonding requirements where practicable.

(e) Utilize the services of available minority community organizations, minority contractor groups, local minority assistance offices, and organizations that provide assistance in the recruitment and placement of MWBEs and other small businesses.

3. The actions described in this section should supplement efforts to provide information to all qualified firms, and nothing in this section is intended to prevent or discourage the Bidders from inviting proposals for participation from non-MWBE firms as well as MWBE firms.

E. NON-DISCRIMINATION

1. Bidders shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services. In considering offers from and doing business with subcontractors and suppliers, the Bidder shall not discriminate on the basis of race, color, creed, religion, sex, age, nationality, marital status, or the presence of any mental or physical disability in an otherwise qualified disabled person.

F. SANCTIONS

1. Any violation of the mandatory requirements of this part of the contract shall be a material breach of contract for which the Bidder may be subject to a requirement of specific performance, or damages and sanctions provided by contract, by RCW 39.19.090, or by other applicable laws.

12.2 VETERAN-OWNED BUSINESS AND SMALL, MINI, AND MICRO BUISNESS UTILIZATION

The State of Washington encourages participation in all of its contracts by Veteran-owned businesses (defined in RCW 43.60A.010) and located at:

http://www.dva.wa.gov/program/certified-veteran-and-servicemember-owned-businesses and Small, Mini and Micro businesses (defined in RCW 39.26.010) which have registered in WEBS at https://pr-webs-vendor.des.wa.gov/.

1. The following voluntary numerical WDVA and Small Business participation goals have been established for this solicitation:

   WDVA 5% Small Business 5%

2. These goals are voluntary, but achievement of the goals is encouraged. Bidders may search Washington Small Businesses registered in WEBS at:

   https://pr-webs-vendor.des.wa.gov/ and WA Veteran-owned Businesses at https://www.dva.wa.gov/veterans-their-families/veteran-ownedbusinesses/vob-search to obtain information on registered firms.

12.3 SUBCONTRACTOR PARTICIPATION MONITORING AND REPORTING

A. Once a contract is awarded through the solicitation or proposal process, the awarded Prime Contractor is obligated to complete the vendor registration in Access Equity. Access Equity is a secure online vendor management system (B2GNow). Confidential information (Tax ID, etc.) will not be published. Prime Contractors that have previously registered with B2Gnow for any public entity, must verify the system has updated information. Contractors can access the system at:

https://omwbe.diversitycompliance.com/ or through a direct link on the Office of Minority and Women's Business Enterprises (OMWBE) website at: https://omwbe.wa.gov/.

B. Each month during the contract, the Prime Contractor will report payments to ALL Subcontractors through the Access Equity system. This monthly reporting information includes total payment in dollars made to the Subcontractor, payment dates, and any additional information required to verify payment to Subcontractors. The Prime Contractor will enter this payment information into the Access Equity system, and the Subcontractors will verify this payment information in the system. Online training is available through the Access Equity/B2Gnow system. This requirement applies to both Prime Contractors and Subcontractors.

END OF INSTRUCTIONS TO BIDDERS

/ / / / /

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The Bidder will submit the Bid to State Parks Public Opportunities
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Bidder Compliance Form

Contractor Information

Person Signing Bid		**Firm Name**	
Title Person Signing		**Physical Address**	
Contractor Registration #		**City, State, ZIP**	
Taxpayer Identification #		**Phone #**	
Washington UBI #		**Cellular Phone #**	
WA ESD #		**Email Address**	

The Bidder Compliance Form verifies compliance with State of Washington Public Works Bid Laws and associated Project Documents. It highlights key project components and ensures acknowledgment. Failure to acknowledge this form within the Bid Form, as directed, will render the bid non-responsive. Acknowledging the form does not alter the bidder's obligation to comply with all contract documents if awarded the project.

Bidder's Declaration

The Bidder declares that they have carefully examined the site of the proposed work, the Drawings, Specifications and all of the conditions affecting the work. Therefore, the Bidder proposes to provide all labor, equipment, materials, and permits and to perform all work as required by, and in strict accordance with the Contract Documents as shown on the bid proposal form.

Bid Acceptance and Agency Discretion

The Agency reserves the right to accept or reject all bids and to waive informalities. The Bidder will allow 60 days from bid opening date for acceptance of its bid by the Agency.

Registration and Required Licenses

The Bidder is a registered contractor in compliance with Chapter 18.27 RCW. If applicable, as the prime contractor, the Bidder self-performing plumbing work holds the required licensure under Chapter 18.106 RCW. Similarly, if self-performing elevator work, the Bidder holds the necessary license in accordance with Chapter 70.87 RCW. Additionally, if the Bidder is self-performing electrical work, they are properly licensed under Chapter 19.28 RCW.

Time for Completion

Bidder agrees to complete project (including accepted alternates) in accordance with drawings and specifications within **215** calendar days from the date provided on the Notice to Proceed letter.

Liquidaded Damages

It is agreed that liquidated damages, in the amount of **$1,500.00**, shall be levied for each and every calendar day by which the completion of the work is delayed beyond the time fixed for completion or extension of the contract.

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Bid Form

Unit prices and estimated quantities shall be used to determine the Base Bid

These prices shall also be used to adjust the Contract in the event there is an increase or decrease in the estimated quantities. All costs shall be "in place" costs and complete, **excluding State Sales Tax**. In the event of an irregularity, the unit price prevails. The Agency reserves the right to make mathematical corrections of multiplication or addition errors on the bid form.

Trench Excavation Safety Provisions

If the contract contains any work which requires trenching exceeding a depth of four (4) feet, all costs for adequate trench safety systems shall be identified as a separate bid item in compliance with Chapter 39.04 RCW. The purpose of this provision is to ensure that the bidder agrees to comply with all relevant trench safety requirements of Chapter 49.17 RCW. This bid amount shall be considered part of the total base bid. **Include a lump sum dollar amount (even if the value is $0.00) to be considered responsive to the bid solicitation.**

Wage Certification

The bidder certifies under penalty of perjury under the laws of the State of Washington that the foregoing is true and correct: within the three-year period immediately preceding the bid solicitation date, the bidder has not been a "willful" violator, as defined in RCW 49.48.082, of any provision of chapters 49.46, 49.48, or 49.52 RCW, as determined by a final and binding citation and notice of assessment issued by the Department of Labor and Industries or through a civil judgment entered by a court of limited or general jurisdiction.

Base Bid Items (Be sure to include unit prices)

Item No.	Description	Est Qty	Unit Type	Unit Price	Total Amount
1	Trench Excavation Safety Provisions	1	LS.		$0.00
2	[All] Mobilize & Demobilize	1	LS		$0.00
3	[All] Marine Mammal and Marbled Murrelet Monitoring	1	LS		$0.00
4	[All] Demolish – Existing Structures	1	LS		$0.00
5	[All] Construction Surveying	1	LS		$0.00
6	[All] Procure – Piles	20	EA		$0.00
7	[All] Install – Piles	20	EA		$0.00
8	[Moorage Facility] Procure & Install – Abutment	1	EA		$0.00
9	[Moorage Facility] Procure & Install – Platform Frames	2	EA		$0.00
10	[Moorage Facility] Procure & Install – Platforms	2	EA		$0.00
11	[Moorage Facility] Procure & Install – Walkways	2	EA		$0.00
12	[Moorage Facility] Procure & Install – Gangway	1	EA		$0.00

Item No.	Description	Est Qty	Unit Type	Unit Price	Total Amount
13	[Moorage Facility] Procure & Install – Headframe Hoist Beam	1	EA		$0.00
14	[Moorage Facility] Procure & Install – Moorage Floats	1920	SF		$0.00
15	[Moorage Facility] Procure & Install – Dinghy Floats	432	SF		$0.00
16	[Island Floats] Procure & Install – Moorage Floats	1344	SF		$0.00
17	[All] Reimbursement for Protected Species Monitoring Suspension	20	HRS		$0.00
				Total Base Bid	**$0.00**

Alternate Bid Items

Item No.	Description	Est Qty	Unit Type	Unit Price	Total Amount
A1	[Sucia Island Marine State Park Pumpout Station] Furnish Piles & Install with Rock Socketing	1	LS		$0.00
				Total Alternates	**$0.00**

Apprentice Utilization Requirements

The apprentice labor hours required for this project are 15% of the total labor hours. The undersigned agrees to utilize this level of apprentice participation. A monetary incentive of $1,000.00 will be paid to the contractor meeting the apprentice utilization requirement. A monetary penalty will be applied to the contractor failing to meet the utilization requirement and failing to demonstrate a Good Faith Effort. The penalty will be $100.00 per percentage point not utilized.

Expected Apprenticeship Utilization cost value to be included in the bid associated with meeting the goals: $

Receipt of Addenda

List all addenda received, separated by commas (e.g., "1, 2, 3, 4"). Do not list only the final number (e.g., "4"). If no addenda, type "N/A." Failure to follow this may render your bid non-responsive.

Bid Acknowledgment and Compliance Certification

By signing and returning this form, you acknowledge compliance with the bid requirements. Failure to sign and submit this form will result in the bid being considered non-responsive.

/s/ Signature of Authorized Official
Typing your name can count as a signature.

Date

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The Bidder will submit the Bid to State Parks Public Opportunities - MRSC Bonfire Procurement Portal

MWBE, WA Small Business, Veteran-Owned Business Utilization Certification

The bidder certifies good faith efforts to provide opportunities to MWBEs, Small Businesses, and Veteran-Owned Businesses. If awarded, the bidder commits to utilizing these firms or approved substitutes on the project. If no such firms will be used, enter **"N.A." on the first line**.

	Firm Name, Address	Federal I.D. #	Type of Work	Certificate Number	MBE%	WBE%	Small Business%	Veteran Business%
1								
2								
3								
4								
				Totals	0.00%	0.00%	0.00%	0.00%

The bidder may add rows for additional MWBE/WA Small and Veteran-Owned Business Utilization Certifications.

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Subcontractor Utilization List

Subcontractor Utilization List (If Applicable)

In compliance with the contract documents, the following subcontractor list is submitted:

SUBCONTRACTOR LISTING - RCW 39.30.060

If the base bid and the sum of the additive alternates is **ONE MILLION DOLLARS OR MORE**, the Bidder shall provide names of the subcontractors with whom the Bidder will directly subcontract for performance of the following work. If the Bidder intends to perform the work, the Bidder must enter its name for that category of work.

A. Submission Deadline: **The completed and signed Subcontractors List must be submitted with bid.**

B. List Subcontractors: The Bidder shall indicate on the Subcontractors List the names of the subcontractors with whom the Bidder, if awarded the contract, will directly subcontract for performance of the work of heating, ventilation, and air conditioning, plumbing as described in Chapter 18.106 RCW, electrical as described in Chapter 19.28 RCW, structural steel installation, and rebar installation.

C. List Bidder if Bidder Performing Work: If the Bidder will self-perform the work in any of the five areas required, the Bidder shall name itself for the work on the Subcontractors List.

D. Name Only One Firm for Each Category of Work: The Bidder shall not list more than one firm (subcontractor or Bidder) for each category of work identified, unless subcontractors vary with bid Alternatives or Additives, in which case the Bidder must indicate which firm will be used for which Alternate or Additive.

E. Substitution of Subcontractors: Substitution of any listed subcontractor may only be according to the procedure and parameters set forth in RCW 39.30.060.

F. Factors Relating to Non-Responsiveness: **Failure of the Bidder to submit the names of such subcontractors or to name itself to perform such work or the naming of two or more firms (subcontractors or Bidder) to perform the same work, or failure to sign the form shall render the Bidder's bid non-responsive and, therefore, VOID**.

G. The Subcontractor Utilization List is intended to discourage bid shopping, not to verify subcontractor qualifications. The Agency does not use the Subcontractor Utilization List as a tool to disqualify or qualify bidders.

H. Applicable to Direct Subcontractors: The requirement of this section to name the Bidders' proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors applies only to proposed heating, ventilation and air conditioning, plumbing, electrical, structural steel installation, and rebar installation subcontractors who will contract directly with the Bidder.

1 HVAC. Electrical, Plumbing: The requirement of this section to name the bidder's proposed heating, ventilation and air conditioning, plumbing and electrical subcontractors applies only to proposed heating, ventilation, and air conditioning, plumbing and electrical subcontractors who will contract directly with the

Category of Work	Bidder MUST check one box for each Category of Work. If subcontracting the work, bidder must name the subcontractor
HVAC (Heating, Ventilation & Air Conditioning)	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.
Electrical	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.
Plumbing	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.

Bidder may attach a separate sheet for additional alternate bid subcontractors

2 Structural Steel Installation and Rebar Installation: The requirement of this section to name the bidder's proposed names of the subcontractors with whom the bidder, if awarded, will subcontract for performance of the work of structural steel installation and rebar installation.

Category of Work	Bidder MUST check one box for each Category of Work. If subcontracting the work, bidder must name the subcontractor
Structural Steel Installation	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.
Rebar Installation	☐ Name of Subcontractor: _____ ☐ Bidder will self-perform this work, or the project does not include this work.

Bidder may attach a separate sheet for additional alternate bid subcontractors

/s/ Signature of Authorized Official
Typing your name can count as a signature.

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The Bidder will submit the Bid Bond (if Applicable) to State Parks Public Opportunities MRSC Bonfire Procurement Portal

Bid Bond Requirements

Bid Guarantee: See Instructions to Bidders 11.1 Bid Bond. No particular bid bond form is required. Failure of the Bidder to provide bid guarantee when required shall render the bid non-responsive.

Bid Bond Threshold

1. A bid bond is not required if the total bid amount, including all additive alternates, is $35,000 or less.
2. For bids exceeding $35,000, a bid bond of 5% of the total bid amount is mandatory.

Acceptable Forms

1. Acceptable forms of bid guarantee: A bid bond, and must be submitted as part of the bid response.
2. Scanned copies of the bid bond (e.g., PDF) are acceptable and should be included with the electronic bid submission

Submission Process

1. Include the bid bond in a single PDF file.
2. At the time of bid, the bidder must upload an electronic copy of the acceptable bid guarantee to the State Parks Oportunities via MRSC Portal Bonfire https://mrscrosters.bonfirehub.com/portal

Retention and Forfeiture

1. Bid bonds for the three lowest bidders will be retained for 30 days or until a contract is executed with the successful bidder.
2. All other bid bonds will be released within 15 days of the bid opening.
3. If the successful bidder fails to execute the contract or provide a performance bond within 15 days of receiving the contract forms, the bid bond may be forfeited as liquidated damages.

Bid Validity Period

1. Bidders must allow for a 60-day acceptance period from the bid opening date.

Important Reminder

1. Review all bid documents thoroughly to ensure compliance with submission requirements, including proper completion and inclusion of the bid bond when applicable.

For further details or clarification, refer to Section 11.1 of the "Instructions to Bidders" in the project manual. If you have questions, contact contracts@parks.wa.gov

☐ **Check the box to the left if the total bid, including all additive alternates, is $35,000 or less**, and include this statement with your bid response. No bid bond is required for bids at or below this amount. For bids exceeding $35,000, a bid bond must be submitted instead. Failure to provide a required bid bond will render the bid non-responsive.

SUPPLEMENTAL BIDDER RESPONSIBILITY CRITERIA WITH INCLUSION PLAN AND APPRENTICESHIP REQUIREMENTS

Low Responsible Bidder
It is the intent of the Agency to award a contract to the lowest responsive and responsible Bidder. In determining the Bidder's responsibility, the Agency shall consider an overall accounting of the items listed below. Potential Bidders may request the Agency modify the Bidder responsibility criteria. The request must be in writing and submitted at least 7 days prior to the bid opening.

The apparent low bidder shall submit the required information within **two (2)** business days of receiving request from the Agency. This request may be made in the form of a telephone call or email message. The required information shall be provided on the referenced forms bound herein. Electronic copies may be made available upon request. Failure to submit such information to the satisfaction of the Agency within the time provided may render the Bidder as not responsible.

1.1 REQUIRED INFORMATION/CRITERIA

A. For the purposes of the Supplemental Bidder Responsibility evaluation process, the scope of this project generally involves:

- Demolition of an existing marine facility
- Constructing a new marine moorage facility

B. Experience Of Contractor On Projects Of Similar Size And Complexity: Contractor is required to have successfully completed at least **three (3)** projects of similar type, size and complexity to this project, each with a contract amount of at least **$500,000**, within the last **seven (7)** years.

C. List of Completed Projects (Use Form 1, Contractor Experience Detail): Provide a list of all the construction contracts **$500,000** and above your firm has completed within the past **three (3)** years, giving the name of the project; name, address, and phone numbers of Owner and architect representatives; final contract amount; date of completion; and percentage of the cost of the work performed with your firm's own forces. This information will be used for reference reviews.

2.1 EXPERIENCE OF KEY PERSONNEL

A. Experience of Project Manager (Use Form 2, Résumé of Key Personnel for Proposed Contract): Submit resume and references for the proposed Project Manager. This person shall have managed, as lead project manager, a minimum of **three (3)** projects of similar type, size and complexity to this project, and successfully completed those projects within the last **ten (10)** years.

B. Experience of Superintendent (Use Form 2, Résumé of Key Personnel for Proposed Contract): Submit resume and references for the proposed project Superintendent. This person shall have performed as the lead Superintendent for a minimum of **three (3)** projects of similar type, size and complexity to this project, and successfully completed those projects within the last **ten (10)** years.

3.1 DIVERSE BUSINESS INCLUSION PLAN (USE FORM 3)

A. Washington state goals are: Minority Business Enterprise (MBE) 10%, Women's Business Enterprise (WBE) 6%, WA Small Business 5% and WA Veterans 5%. The apparent low bidder is required to submit a Diverse Businesses Inclusion Plan for all projects with a Maximum Allowable Construction Cost (MACC) over $1M.

The Diverse Business Inclusion plan shall include the apparent low bidder's anticipated participation goals, the subcontractors anticipated to be used on this project, a list of diverse businesses near the project, the project's diverse expert, and past performance using diverse businesses.

4.1 APPRENTICESHIP (USE FORMS 1 & 4)

A. For each public works project with an apprenticeship utilization goal that was completed by the Bidder within three (3) years of the bid submittal date for this project, the Bidder shall submit the following:

- A list of such projects;
- The owner and contact information for the owner's representative;
- The apprenticeship utilization percentage goal for the project:
- The actual utilization percentage by the Bidder; and
- An explanation of any extenuating circumstances that contributed to the Bidder not meeting the goals.

(Use Form 4 for projects not listed on Form 1)

The Agency may contact previous owners to validate the information provided by the Bidder and shall consider whether the goals were mandatory or voluntary, and the validity of any explanation of extenuating circumstances.

5.1 REFERENCES FROM OWNERS AND ARCHITECTS FOR PREVIOUS PROJECTS (AGENCY USES FORM 5, REFERENCE EVALUATION QUESTIONNAIRE)

A. The Agency may check references by contacting owners and architects of the bidder's previous projects regarding the bidder's performance and that of key staff. A reference score sheet will be utilized and the rating shall be satisfactory or better on a five-category scale with "satisfactory" at mid-scale.

6.1 OVERALL SCORING (FORM 6, RESPONSIBILITY CRITERIA EVALUATION SCORE SHEET)

A. The Agency will use this form to complete and document the overall evaluation process.

END OF SECTION

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

Supplemental Bidder Responsibility
Form 1 - Contractor Experience Detail

Contractor Information:			
Contractor Legal Name:			Contact Person and their Position/Title:
Project Superintendent:			Project Manager:
Physical Address (Physical and Mailing Addresses are the Same ☐) :			Mailing Address:
Telephone:	Cell Phone:	Email Address:	

Project Information: Is this project relevant to the proposed project? Yes ☐ No ☐		
Project:		Location:
Project Description:		As Prime: ☐ As Sub: ☐
Original Contract Amount: $ Final Contract Amount: $		Original Contract Days: Final Contract Days:

Owner Information:		
Owner's Business Name:		Contact Person and their Position/Title:
Mailing Address :		Telephone: Email Address:

Architect/Engineering Information:		
Owner's Business Name:		Contact Person and their Position/Title:
Mailing Address :		Telephone: Email Address:

STUART ISLAND STATE PARK

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Supplemental Bidder Responsibility

Form 2 - Resume of Key Personnel

Name:	Role in this Contract:	Years Experience	
		Total	With Current Firm
Firm Name and Location (City and State):			
Training/Education/Specialization:			
Years of Experience in the Proposed Role:			

RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm Name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

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RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm Name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm Name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

RELEVANT PROJECTS			
Project Title:			Year Completed
Project Owner:			
Brief Description (Brief scope, size, cost, etc.) and specific role:			Check if project performed with current firm. ☐ If performed with different firm list the firm Name
Reference Name & Contact Information:			
Project Owner:		Project Architect:	
Name:		Name:	
Phone:		Phone:	
E-mail		E-mail:	

STUART ISLAND STATE PARK
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Supplemental Bidder Responsibility
Form 3 - Prime Contractor Diverse Business Inclusion Plan

Prime Contractor Name: _____

For the purposes of this form, Washington State-certified diverse businesses are defined as follows:

- *Minority Business Enterprise (MBE), Women's Business Enterprise (WBE)*, or combination of the two. Certified by the Office of Minority and Women's Business Enterprises (OMWBE): http://omwbe.wa.gov/
- *Veteran-owned Business*. Certified by the Department of Veteran's Affairs (DVA): http://dva.wa.gov/
- *Small Business* (includes Mini and Micro businesses). Certified through the Washington Electronic Business Solution (WEBS): https://fortress.wa.gov/ga/webs/home.html

Anticipated Certified Diverse Business Participation Goals

Subcontracting means direct performance of commercially useful work through subcontracting as part of the proposed project team. Of the total contract work, what are the diverse business participation goals proposed for subcontracting on your team? Please only include the above-listed Washington State certification types in your "Contractor-defined Anticipated Percent of Contract Amount (Goals)" estimate. Zero percent (0%) is not a goal.

Anticipated Certified Diverse Business Participation Goals	Washington State Goals	Contractor-defined Anticipated Percent of Contract Amount (Goals)
Minority-owned business (MBE)	**10%**	**%**
Women-owned business (WBE)	**6%**	**%**
Veteran-owned business (DVA)	**5%**	**%**
Small business	**5%**	**%**

Subcontracting Team

List the names of the diverse businesses you anticipate using on this project. Generally describe the work you expect the diverse business to perform and identify the percent of total contract value intended for each diverse business. Please include the above-listed Washington State certification types. *If necessary, add more rows below.*

Name of Diverse Business	Specify Diverse Business Certification (circle one or more)	Describe Trade or Task	Anticipated Percent of Contract Amount
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%
	MBE, WBE, DVA, Small		%

Attach a list of diverse businesses near the project location to this form:

1. Go to https://omwbe.wa.gov/directory-certified-firms
2. Click on "OMWBE DIRECTORY"
3. Click on "Search Certified Firm Directory"
4. Select MBE, MWBE, SBE, and WBE certifications.
5. Enter a City, Zip Code, or County near the project site address and then press "Search" at the bottom of the page. If you do not have many results, please expand your search to include nearby locations.
6. Print and attach the results to this form with your submittal

Diverse Expert:

Diverse Expert responsibilities would typically include, but are not limited to:

- Outreach to qualified diverse businesses.
- Submit and discuss updates on a regular basis to the state project manager regarding Diverse Business utilization and progress.
- Ongoing outreach to diverse businesses for required contract work, including any changes in scope.
- Assist diverse businesses with successful contract performance.

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

A qualified Diverse Expert brings knowledge of the identity, capabilities and capacities of diverse business subcontractors and suppliers; experience recruiting and working with diverse businesses for construction; and assisting diverse businesses to develop working relationships with contractors.

Identify the person within your team to manage your diverse inclusion responsibility.

Diverse Expert Name:
_____

Diverse Expert Contact Information:
_____

Diverse Expert Firm (if another firm is managing participation):
_____

Past Performance
Please select **five (5) of your projects** with Washington State-certified diverse business participation (MBE, WBE, DVA, and/or Small/Mini/Micro) and list them below **for the last five (5) years**. If you do not have any projects that tracked or reported diverse business participation, you may leave this section blank. In that case, please attach an additional sheet with explanation.

You may have projects with diverse business participation for an organization or entity that required *different* diverse business categories (including self-certification). If so, please attach a sheet with the same column data and information, but include percentages for the categories that were tracked during the project.

Contract Name	Contracting Agency or Entity	Contract Amount	Year	Percent of Contract Amount	
				Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	**Contracting Agency or Entity**	**Contract Amount**	**Year**	**Percent of Contract Amount**	
		$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	**Contracting Agency or Entity**	**Contract Amount**	**Year**	**Percent of Contract Amount**	
		$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	**Contracting Agency or Entity**	**Contract Amount**	**Year**	**Percent of Contract Amount**	
		$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%
Contract Name	**Contracting Agency or Entity**	**Contract Amount**	**Year**	**Percent of Contract Amount**	
		$		Minority-owned business:	%
				Women-owned business:	%
				Veteran-owned business:	%
				Small/mini/micro business:	%

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

Supplemental Bidder Responsibility
Form 4 – Apprenticeship Utilization

Contractor Information:			
Contractor Legal Name:			Contact Person and their Position/Title:
Project Superintendent:			Project Manager:
Physical Address (Physical and Mailing Addresses are the Same ☐) :			Mailing Address:
Telephone:	Cell Phone:	Email Address:	

Project Information: Is this project relevant to the proposed project? Yes ☐ No ☐		
Project:		Location:
Project Description:		As Prime: ☐ As Sub: ☐
Original Contract Amount: $ Final Contract Amount: $		Original Contract Days: Final Contract Days:

Owner Information:		
Owner's Business Name:		Contact Person and their Position/Title:
Mailing Address :		Telephone: Email Address:

Architect/Engineering Information:		
Owner's Business Name:		Contact Person and their Position/Title:
Mailing Address :		Telephone: Email Address:

1. Did this project require Apprenticeship Participation? Yes ☐ No ☐ (If NO, stop here)
2. If yes, what was the Apprenticeship percentage? _____ %
3. What was the actual percentage achieved? _____ %
4. Was the apprenticeship requirement met? Yes ☐ No ☐
5. If NO to question 4, explain Why.

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

Supplemental Bidder Responsibility
Form 5 - Reference Evaluation Questionnaire

Evaluated Firm :
Project Manager:
Superintendent:
Evaluated Project Name:

☐ Prime
☐ Subcontractor

Approx. Start Date	Approx. End Date	Approx. Final Project Cost

PERFORMANCE EVALUATION

Rating Criteria - Rate on a scale of 1 to 5

- **5** = **Superior** based on performance (would hire this firm/individual again)
- **4** = **More than Satisfactory**
- **3** = **Satisfactory** based on performance (would hire this firm/individual again)
- **2** = **Less than Satisfactory**
- **1**= **Totally Unsatisfactory** based on performance (would never hire the firm/individual again)

	Criteria	Rating		
		Company	PM	Super
1	Ability to meet client's expectations			
2	Quality of workmanship			
3	Ability to manage project costs and minimize change orders			
4	Ability to maintain project schedule			
5	Ability to manage subcontractors			
6	Professionalism, leadership and communication in issues management (RFI, shop drawing submittal, timely resolution of issues/questions)			
7	Ability to follow the owner's rules, regulations, and requirements (housekeeping, safety, etc.)			
8	Ability to manage closeout process (Prompt submittal of punch list, warranty, as-builts, operation manuals, tax clearances, etc.)			
9	Comfort level in hiring firm or individual again based on performance			
	Total Score			
	Average Score			

Evaluator Information

Name of Evaluator: Title:

Firm/Company Name:

Firm Address:

Phone: Email:

Form 6 – Supplemental Responsibility Criteria Evaluation Score Sheet

Project Location _____
Project Name _____
Contract Number _____
Project Representative _____

1. Experience of Contractor - On projects of similar size & complexity (Form 1)	Pass or Fail

2. Experience of Key Personnel (Form 2)	
Superintendent	Pass or Fail
Project Manager	Pass or Fail
Other(s) if specified in Division 00	Pass or Fail

3. Diverse Business Inclusion Plan (Form 3) *(Applies only to projects with Diverse Business Plan Inclusion requirements; i.e. MACC over $1M)*	Pass, Fail, or N/A

4. Contractor Compliance with Apprenticeship Requirements - Requirements were met or if not, a good faith effort was demonstrated (Forms 1 & 4) *Applies only to projects with apprenticeship participation requirements; i.e. MACC over $1M*	Not Scored

5. References from Previous Projects (Form 5) Evaluate contractor's references information and using the rating numbers: 1 = NOT Satisfactory (requires a written comment below) 2 = Less THAN Satisfactory 3 = Satisfactory 4 = More THAN Satisfactory 5 = Superior	Rating **Score 1-5** (3 is Satisfactory)
Company	
Project Manager	
Superintendent	
Total Score:	
Average score (divide total score by number of ratings)	

In determining the bidder responsibility, an overall accounting of the ratings shall be made. A score of "Pass" is required for categories 1 - 4 and an average score of 3.0 or higher is required to meet the minimum Supplemental Bidder Responsibility requirements.

Comments _____

Determination ☐ Responsible
☐ Not Responsible (Preliminary Determination)

Evaluated by _____ Date _____
State Parks Project Representative

_____
Signature

STUART ISLAND STATE PARK
REID HARBOR MOORAGE FACILITY IMPROVEMENTS

The following list of major items of construction has been included for Bidder's convenience in preparing a bid proposal. Exclusion of items from this summary does not indicate exclusion from project. For lump sum items, the bidder is cautioned that the drawings are the only source for measurement of project quantities, and drawings have been detailed for this purpose. In preparing a bid proposal, Bidder should note apparent discrepancies between the list below and the drawings and consult with Engineer for verification.

BASE BID ITEMS

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
1.	**[All] Trench Excavation Safety Provisions**	**LS**	**PER LUMP SUM**

See instructions on Bid Proposal Form.

2.	**[All] Mobilize & Demobilize**	**LS**	**PER LUMP SUM**

Includes all materials, labor, and equipment associated with setup, teardown, and upkeep of the project site during construction. Major items of work include:

1. Move and organize equipment and personnel onto the project site
2. Secure job site
3. Provide and maintain necessary support facilities
4. Obtain all necessary permits and licenses (except those provided by Owner)
5. Prepare site for construction operations (including BMPs)
6. Prepare staging and laydown area
7. Maintain site and surrounding areas during construction (including BMPs)
8. Cleaning of project site during construction
9. Site removal of all personnel and equipment after Contract Completion (including BMPs)
10. Site clean-up prior to final acceptance

3.	**[All] Marine Mammal and Marbled Murrelet Monitoring**	**LS**	**PER LUMP SUM**

Includes all mobilization, lodging, transport, materials, labor, coordination, and equipment associated with the monitoring of marine mammals and marbled murrelets per regulatory permits around the project site during construction. Major items of work include:

1. Observe surrounding area of project site for marine mammals and marbled murrelets by qualified biologists in dedicated vessels.
2. Document locations of marine mammal and marbled murrelet sightings.
3. Final documentation to be sent to the agencies per the requirements.

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
4.	**[All] Demolish – Existing Structures**	**LS**	**PER LUMP SUM**

Includes all materials, labor, and equipment associated with the removal, and disposal or relocation of the existing structures from the project site. Major items of work include:

1. Fixed pier – (includes restoring and stabilize exposed ground on the shoreline)
2. Moorage and dinghy floats
3. Guide piles
4. Headframe piles
5. Island floats (to be salvaged)

5.	**[All] Construction Surveying**	**LS**	**PER LUMP SUM**

Includes all materials, labor, and equipment necessary to perform construction staking and layout, establish temporary benchmarks from primary control, pre-construction surveying, intermediate/progress surveying for quality control, surveying for development of progress payments, and post-construction surveying for project record drawings. Major items of work include surveying the following elements:

1. Abutment
2. Excavation and fill
3. Floats
4. Walkways and platforms
5. Piles
6. Site restoration

6.	**[All] Procure – Piles**	**20**	**EA**

Includes all materials, labor, and equipment necessary to procure the galvanized steel piles for this project as described in Plans and Specifications. Major items to procure include:

1. Platform piles
2. Headframe piles
3. Float guide piles

7.	**[All] Install – Piles**	**20**	**EA**

Includes all materials, labor, and equipment necessary to install the galvanized steel piles for this project as described in the Plans and Specifications. Major items of work include:

1. Installation of piles for the platforms, headframe, and floats by using a combination of a vibratory hammer, impact hammer, and down-the-hole hammer as stated in the Plans and Specifications.

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
8.	**[Moorage Facility] Procure & Install – Abutment**	**1**	**EA**

Includes all materials, labor, and equipment necessary to procure and install the new cast-in-place reinforced concrete abutment for this project as described in the Plans and Specifications. Major items of work include:

1. Concrete, anchors and reinforcement bar procurement
2. Earthwork (excavation, disposal, import materials and fill)
3. Formwork installation and removal
4. Reinforcement bar and walkway shoremount placement
5. Installation of rock anchors
6. Concrete mixing and pouring
7. Concrete curing and finishing

9.	**[Moorage Facility] Procure & Install – Platform Frames**	**2**	**EA**

Includes all materials, labor, and equipment associated with procuring and installing the galvanized steel platform frames for Platforms A & B as indicated in the Plans and Specifications. Major items of work include:

1. Procurement of prefabricated platform frames
2. Installation of platform frames to platform piles

10.	**[Moorage Facility] Procure & Install – Platforms**	**2**	**EA**

Includes all materials, labor, and equipment associated with procuring and installing the aluminum platforms for Platforms A & B as indicated in the Plans and Specifications. Major items of work include:

1. Final design of platforms
2. Procurement of prefabricated platforms and ladder
3. Installation of platforms to platform frames
4. Installation of platform ladder

11.	**[Moorage Facility] Procure & Install – Walkways**	**2**	**EA**

Includes all materials, labor, and equipment associated with procuring and installing the aluminum Walkways A & B as indicated in the Plans and Specifications. Major items of work include:

1. Final design of walkways, connections and shoremount
2. Procurement of prefabricated walkways, connection hardware and shoremount
3. Installation of walkways to platforms and abutment

12.	**[Moorage Facility] Procure & Install – Gangway**	**1**	**EA**

Includes all materials, labor, and equipment associated with procuring and installing the aluminum gangway as indicated in the Plans and Specifications. Major items of work include:

1. Final design of gangway and connections to platform frame
2. Procurement of prefabricated gangway and connection hardware
3. Installation of gangway to platform frame and moorage float

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
13.	**[Moorage Facility] Procure & Install – Headframe Hoist Beam**	**1**	**EA**

Includes all materials, labor, and equipment associated with procuring and installing the galvanized steel headframe hoist as indicated in the Plans and Specifications. Major items of work include:

1. Procurement of prefabricated headframe hoist beam and headframe pile caps
2. Installation of headframe hoist beam to headframe piles

14.	**[Moorage Facility] Procure & Install – Moorage Floats**	**1920**	**SF**

Includes all materials, labor, and equipment associated with procuring and installing the moorage facility galvanized steel moorage floats as indicated in the Plans and Specifications. Major items of work include:

1. Final Design verification of the moorage floats
2. Procurement of prefabricated moorage floats
3. Installation of moorage floats to the guide piles

15.	**[Moorage Facility] Procure & Install – Dinghy Floats**	**432**	**SF**

Includes all materials, labor, and equipment associated with procuring and installing the moorage facility galvanized steel dinghy floats as indicated in the Plans and Specifications. Major items of work include:

1. Final design of dinghy floats
2. Procurement of prefabricated dinghy floats
3. Installation of dinghy floats to the guide piles

16.	**[Island Floats] Procure & Install – Moorage Floats**	**1344**	**SF**

Includes all materials, labor, and equipment associated with procuring and installing the island float galvanized steel moorage floats as indicated in the Plans and Specifications. Major items of work include:

1. Final Design verification of the moorage floats
2. Procurement of prefabricated moorage floats
3. Installation of moorage floats to the guide piles

17.	**[All] Reimbursement for Protected Species Monitoring Suspension**	**20**	**HRS**

If during the course of Work any protected species should be identified inside the permit-specified zones, the Marine Mammal Monitor or the Marbled Murrelet Monitor may direct the Contractor to put in-water Work operations on standby. The Contractor's in-water operations shall remain on standby until the zone is determined to be cleared and the Monitor provides the Contractor approval to resume the in-water Work. The Contractor shall not conduct any work that could potentially harm the protected species in the area during a standby. Reimbursement for Protected Species Monitoring Suspension is defined as an event lasting more than 15 minutes which causes the in-water work to be halted and equipment placed on standby due to the presence of protected species.

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT

This hourly rate includes all labor and equipment delay costs directly associated with in-water operation standby periods due to the presence of protected species. If the total duration of Protected Species Monitoring Suspension experienced on the project differs from the listed quantity, this hourly rate will be used in the change order process to adjust the contract.

ALTERNATE BID ITEMS

ALTERNATE

BID ITEM	DESCRIPTION	ESTIMATED QUANTITY	PAYMENT
1.	**[Sucia Island Marine State Park Pumpout Station] Furnish Piles & Install with Rock Socketing**	**LS**	**PER LUMP SUM**

Includes all materials, labor, and equipment necessary to procure and install the galvanized steel piles for this project as described in the Plans and Specifications. Major items of work include:

1. Surveying to set and maintain location and elevation of piles
2. Procurement, drilling, and rock-socket installation of piles for the floating pumpout station in compliance with the environmental permit conditions
3. All mobilization, lodging, transport, materials, labor, coordination, and equipment associated with the monitoring of marine mammals and marbled murrelets per regulatory permits around the project site during construction
4. Installation of the floating pumpout barge

This bid item EXCLUDES fabrication of the floating pumpout barge.

END OF SECTION

GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

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GENERAL CONDITIONS FOR CONSTRUCTION AT WASHINGTON STATE PARKS

PART 1 - GENERAL PROVISIONS

1.01 DEFINITIONS

A. "Application for Payment" means a written request submitted by Contractor to A/E for payment of Work completed in accordance with the Contract Documents and approved Schedule of Values, supported by such substantiating data as Owner or A/E may require.

B. “Architect,” “Engineer,” or “A/E" shall mean that person designated by the State Parks and Recreation Commission to be in charge of the work covered by this contract.

C. "Change Order" means a written instrument signed by Owner and Contractor stating their agreement upon all of the following: (1) a change in the Work; (2) the amount of the adjustment in the Contract Sum, if any, and (3) the extent of the adjustment in the Contract Time, if any.

D. "Claim" means Contractor's exclusive remedy for resolving disputes with Owner regarding the terms of a Change Order or a request for equitable adjustment, as more fully set forth in part 8.

E. “Contract Award Amount” is the sum of the Base Bid and any accepted Alternates.

F. "Contract Documents" means the Advertisement for Bids, Instructions for Bidders, completed Form of Proposal, General Conditions, Modifications to the General Conditions, Supplemental Conditions, Public Works Contract, other Special Forms, Drawings and Specifications, and all addenda and modifications thereof.

G. "Contract Sum" is the total amount payable by Owner to Contractor for performance of the Work in accordance with the Contract Documents, including all taxes imposed by law and properly chargeable to the Work, except Washington State sales tax.

H. "Contract Time" is the number of calendar days allotted in the Contract Documents for achieving Substantial Completion of the Work.

I. "Contractor" means the person or entity who has agreed with Owner to perform the Work in accordance with the Contract Documents.

J. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location, and dimensions of the Work, and may include plans, elevations, sections, details, schedules, and diagrams.

K. "Final Acceptance" means the written acceptance issued to Contractor by Owner after Contractor has completed the requirements of the Contract Documents, as more fully set forth in Section 6.09 B.

L. "Final Completion" means that the Work is fully and finally completed in accordance with the Contract Documents, as more fully set forth in Section 6.09 A.

M. "Force Majeure" means those acts entitling Contractor to request an equitable adjustment in the Contract Time, as more fully set forth in paragraph 3.05 A.

N. "Notice" means a written notice which has been delivered in person to the individual or a member of the firm or entity or to an officer of the corporation for which it was intended or, if delivered or sent by registered or certified mail, to the last business address known to the party giving notice.

O. "Notice to Proceed" means a notice from Owner to Contractor that defines the date on which the Contract Time begins to run.

P. "Owner" shall mean the Washington State Parks and Recreation Commission and its authorized representative with the authority to enter into, administer and/or terminate contracts and make related determinations and findings.

Q. "Person" means a corporation, partnership, business association of any kind, trust, company, or individual.

R. "Prior Occupancy" means Owner's use of all or parts of the Project before Substantial Completion, as more fully set forth in Section 6.08 A.

S. "Progress Schedule" means a schedule of the Work, in a form satisfactory to Owner, as further set forth in section 3.02.

T. "Project" means the total construction of which the Work performed in accordance with the Contract Documents may be the whole or a part and which may include construction by Owner or by separate contractors.

U. "Project Manual" means the volume usually assembled for the Work which may include the bidding requirements, sample forms, and other Contract Documents.

V. "Project Record" means the separate set of Drawings and Specifications as further set forth in paragraph 4.02A.

W. "Schedule of Values" means a written breakdown allocating the total Contract Sum to each principle category of Work, in such detail as requested by Owner.

X. "Specifications" are that portion of the Contract Documents consisting of the written requirements for materials, equipment, construction systems, standards, and workmanship for the Work, and performance of related services.

Y. "Subcontract" means a contract entered into by Subcontractor for the purpose of obtaining supplies, materials, equipment, or services of any kind for or in connection with the Work.

Z. "Subcontractor" means any person, other than Contractor, who agrees to furnish or furnishes any supplies, materials, equipment, or services of any kind in connection with the Work.

AA. "Substantial Completion" means that stage in the progress of the Work where Owner has full and unrestricted use and benefit of the facilities for the purposes intended, as more fully set forth in section 6.07.

AB. "Work" means the construction and services required by the Contract Documents, and includes, but is not limited to, labor, materials, supplies, equipment, services, permits, and the manufacture and fabrication of components, performed, furnished, or provided in accordance with the Contract Documents.

1.02 ORDER OF PRECEDENCE

Any conflict or inconsistency in the Contract Documents shall be resolved by giving the documents precedence in the following order.

1. Signed Public Works Contract, including any Change Orders, and any Special Forms.
2. Supplemental Conditions.
3. General Conditions.
4. Addenda
5. Specifications--provisions in Division 1 shall take precedence over provisions of any other Division.
6. Drawings--in case of conflict within the Drawings, large scale drawings shall take precedence over small scale drawings.
7. Signed and Completed Form of Proposal.
8. Instructions to Bidders.
9. Advertisement for Bids.

1.03 EXECUTION AND INTENT

Contractor makes the following representations to Owner:

1. The Contract Sum is reasonable compensation for the Work and the Contract Time is adequate for the performance of the Work, as represented by the Contract Documents;

2. Contractor has carefully reviewed the Contract Documents, visited and examined the Project site, become familiar with the local conditions in which the Work is to be performed, and satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished and all other requirements of the Contract Documents, as well as the surface and subsurface conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof;

3. Contractor is financially solvent, able to pay its debts as they mature, and possesses sufficient working capital to complete the Work and perform Contractor's obligations required by the Contract Documents; and

4. Contractor is able to furnish the plant, tools, materials, supplies, equipment and labor required to complete the Work and perform the obligations required by the Contract Documents and has sufficient experience and competence to do so.

PART 2 - INSURANCE AND BONDS

2.01 CONTRACTOR'S LIABILITY INSURANCE

Prior to commencement of the Work, Contractor shall obtain all the insurance required by the Contract Documents and provide evidence satisfactory to Owner that such insurance has been procured. Review of the Contractor's insurance by Owner shall not relieve or decrease the liability of Contractor. Companies writing the insurance to be obtained by this part shall be licensed to do business under Chapter 48 RCW or comply with the Surplus Lines Law of the State of Washington. Contractor shall include in its bid the cost of all insurance and bond costs required to complete the base bid work and accepted alternates. Insurance carriers providing insurance in accordance with the Contract Documents shall be acceptable to Owner, and its A. M. Best rating shall be indicated on the insurance certificates.

A. Contractor shall maintain the following insurance coverage during the Work and for one year after Final Acceptance. Contractor shall also maintain the following insurance coverage during the performance of any corrective Work required by section 5.16.

    1. Commercial General Liability (CGL) on an Occurrence Form:

        a. Completed operations/products liability;

        b. Explosion, collapse, and underground; and

        c. Employer's liability coverage.

    2. Automobile liability

B. Contractor shall comply with the Washington State Industrial Insurance Act and, if applicable, the Federal Longshoremen's and Harbor Workers' Act and the Jones Act.

C. All insurance coverages shall protect against claims for damages for personal and bodily injury or death, as well as claims for property damage, which may arise from operations in connection with the Work whether such operations are by Contractor or any Subcontractor.

D. All insurance coverages shall be endorsed to include Owner as an additional named insured for Work performed in accordance with the Contract Documents, and all insurance certificates shall evidence the Owner as an additional insured.

2.02 COVERAGE LIMITS INSURANCE COVERAGE CERTIFICATES

A. Insurance Coverage Certificates
The Contractor shall furnish acceptable proof of insurance coverage on the State of Washington Certificate of Insurance form SF500A dated 07/02/92 or an acceptable ACORD form.

B. Required Coverages
1. For a contract less than $100,000.00, the coverage required is:
   a. Public Liability Insurance – The Contractor shall at all times during the term of this contract, at its cost and expense, carry and maintain general public liability insurance, including contractual liability, against claims for bodily injury, personal injury, death or property damage occurring or arising out of services provided under this contract. This insurance shall cover claims caused by any act, omission, or negligence of the Contractor or its officers, agents, representatives, assigns or servants. The limits of liability insurance, which may be increased as deemed necessary by the contracting parties, shall be:

Each Occurrence	$1,000,000.00
General Aggregate Limits (other than products – commercial operations)	$1,000,000.00
Products – Commercial Operations Limit	$1,000,000.00
Personal and Advertising Injury Limit	$1,000,000.00
Fire Damage Limit (any one fire)	$50,000.00
Medical Expense Limit (any one person)	$5,000.00

   b. If the contract is for underground utility work, then the Contractor shall provide proof of insurance for that above in the form of Explosion, Collapse and Underground (XCU) coverage.

   c. Employers Liability on an occurrence basis in an amount not less than $1,000,000.00 per occurrence.

2. For contracts over $100,000.00 but less than $5,000,000.00 the contractor shall obtain the coverage limits as listed for contracts below $100,000.00 and General Aggregate and Products – Commercial Operations Limit of not less than $2,000,000.00.

3. Coverage for Comprehensive General Bodily Injury Liability Insurance for a contract over $5,000,000.00 is:

Each Occurrence	$2,500,000.00
General Aggregate Limits (other than products – commercial operations)	$5,000,000.00
Products – Commercial Operations limit	$5,000,000.00
Personal and Advertising Injury Limit	$2,500,000.00
Fire Damage Limit (any one fire)	$50,000.00
Medical Expense Limit (any one Person)	$5,000.00

4. For all Contracts – Automobile Liability: in the event that services delivered pursuant to this contract involve the use of vehicles or the transportation of clients, automobile liability insurance shall be required. If Contractor-owned personal vehicles are used, a Business Automobile Policy covering at a minimum Code 2 “owned autos only” must be secured. If Contractor employee’s vehicles are used, the Contractor must also include under the Business Automobile Policy Code 9, coverage for non-owned autos. The minimum limits for automobile liability is: $1,000,000.00 per occurrence, using a combined single limit for bodily injury and property damage.

5. For Contracts for Hazardous Substance Removal (Asbestos Abatement, PCB Abatement, etc.)
   a. In addition to providing insurance coverage for the project as outlined above, the Contractor shall provide Environmental Impairment Liability insurance for the hazardous substance removal as follows:

EACH OCCURRENCE	AGGREGATE
$500,000.00	$1,000,000.00

   or $1,000,000.00 each occurrence/aggregate bodily injury and property damage combined single limit.

1) Insurance certificate must state that the insurer is covering hazardous substance removal.
2) Should this insurance be secured on a “claims made” basis, the coverage must be continuously maintained for one year following the project’s “final completion” through official completion of the project, plus one year following.

For Contracts where hazardous substance removal is a subcomponent of contracted work, the general contractor shall provide to the Owner a certificate of insurance for coverage as defined in 5a. above. The State of Washington must be listed as an additional insured. This certificate of insurance must be provided to the Owner prior to commencing work.

2.03 INSURANCE COVERAGE CERTIFICATES

A. Prior to commencement of the Work, Contractor shall furnish to Owner a completed certificate of insurance coverage.

B. All insurance certificates shall name Owner's Project number and Project title.

C. All insurance certificates shall specifically require 45 (forty-five) days prior notice to Owner of cancellation or any material change, except 30 (thirty) days for surplus line insurance.

2.04 PAYMENT AND PERFORMANCE BONDS

AIA Payment and Performance Bonds, form A312, or equivalent, is required by the Owner for the work of this contract. The forms shall be obtained from the Contractor’s bonding company. The Payment Bond shall cover payment to laborers and mechanics, including payments to Employee Benefit Funds, and payments to subcontractors, material suppliers, and persons who shall supply such person or persons, or subcontractors with materials and supplies.

2.05 ALTERNATIVE SURETY

Contractor shall promptly furnish alternative security required to protect Owner and persons supplying labor or materials required by the Contract Documents if:

A. Owner has a reasonable objection to the surety; or

B. Any surety fails to furnish reports on its financial condition if requested by Owner.

2.06 BUILDER'S RISK

A. Contractor shall purchase and maintain property insurance in the amount of the Contract Sum including all Change Orders for the Work on a replacement cost basis until Substantial Completion. The insurance shall cover the interest of Owner, Contractor, and any Subcontractors, as their interests may appear. For projects not involving New Building Construction, ‘Installation Floater’ is an acceptable substitute for the Builder’s Risk Insurance.

B. Contractor property insurance shall be placed on an "all risk" basis and insure against the perils of fire and extended coverage and physical loss or damage including theft, vandalism, malicious mischief, collapse, false work, temporary buildings, debris removal including demolition occasioned by enforcement of any applicable legal requirements, and shall cover reasonable compensation for A/E's services and expenses required as a result of an insured loss.

C. Owner and Contractor waive all subrogation rights against each other, any Subcontractors, A/E, A/E's subconsultants, separate contractors described in section 5.20, if any, and any of their subcontractors, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this section or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by Owner as fiduciary. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

PART 3 - TIME AND SCHEDULE

3.01 PROGRESS AND COMPLETION

A. Contractor shall diligently prosecute the Work, with adequate forces, achieve Substantial Completion within the Contract Time, and achieve Final Completion within 30 (thirty) calendar days thereafter, unless otherwise noted in Division 1 of the specifications.

B. The Contractor shall notify the Engineer at least two (2) weekdays in advance if work is to be performed on a Saturday, Sunday, or legal holiday. No excavation work will be allowed on Saturdays, Sundays, or legal holidays unless specifically authorized by the Engineer.

3.02 CONSTRUCTION SCHEDULE

A. Unless otherwise provided in Division 1, Contractor shall, within 14 (fourteen) calendar days after issuance of the Notice to Proceed, submit a preliminary Progress Schedule. The Progress Schedule shall show the sequence in which Contractor proposes to perform the Work, and the dates on which Contractor plans to start and finish major portions of the Work, including dates for shop drawings and other submittals, and for acquiring materials and equipment.

B. The Progress Schedule shall be in the form of a Critical Path Method (CPM) logic network or, with the approval of the Owner, a bar chart schedule may be submitted. The scheduling of construction is the responsibility of the Contractor and is included in the contract to assure adequate planning and execution of the work. The schedule will be used to evaluate progress of the work for payment based on the Schedule of Values. The schedule shall show the Contractor's planned order and interdependence of activities, and sequence of work. As a minimum the schedule shall include:

1. Date of Notice to Proceed;
2. Activities (resources, durations, individual responsible for activity, early starts, late starts, early finishes, late finishes, etc.);
3. Utility Shutdowns;
4. Interrelationships and dependence of activities;
5. Planned vs. actual status for each activity;
6. Substantial completion;
7. Punch list;
8. Final inspection;
9. Final completion, and
10. Float time

The Schedule Duration shall be based on the Contract Time of Completion listed on the Bid Proposal form. The Owner shall not be obligated to accept any Early Completion Schedule suggested by the Contractor. The Contract Time for Completion shall establish the Schedule Completion Date.

If the Contractor feels that the work can be completed in less than the Specified Contract Time, then the Surplus Time shall be considered Project Float. This Float time shall be shown on the Project Schedule. It shall be available to accommodate changes in the work and unforeseen conditions.

Neither the Contractor nor the Owner have exclusive right to this Float Time. It belongs to the project.

C. Owner shall return comments on the preliminary Progress Schedule to Contractor within 14 (fourteen) days of receipt. Review by Owner of Contractor's schedule does not constitute an approval or acceptance of Contractor's construction means, methods, or sequencing, or its ability to complete the Work within the Contract Time. Contractor shall revise and resubmit its schedule, as necessary. Owner may withhold a portion of progress payments until a Progress Schedule has been submitted which meets the requirements of this section.

D. Contractor shall utilize and comply with the Progress Schedule. On a monthly basis, or as otherwise directed by Owner, Contractor shall submit an updated Progress Schedule at its own expense to Owner indicating actual progress. If, in the opinion of Owner, Contractor is not in conformance with the Progress Schedule for reasons other than acts of Force Majeure as identified in section 3.05, Contractor shall take

such steps as are necessary to bring the actual completion dates of its work activities into conformance with the Progress Schedule, or revise the Progress Schedule to reconcile with the actual progress of the Work.

E. Contractor shall promptly notify Owner in writing of any actual or anticipated event which is delaying or could delay achievement of any milestone or performance of any critical path activity of the Work. Contractor shall indicate the expected duration of the delay, the anticipated effect of the delay on the Progress Schedule, and the action being or to be taken to correct the problem. Provision of such notice does not relieve Contractor of its obligation to complete the Work within the Contract Time.

3.03 OWNER'S RIGHT TO SUSPEND THE WORK FOR CONVENIENCE

A. Owner may, at its sole discretion, order Contractor, in writing, to suspend all or any part of the Work for up to 90 (ninety) days, or for such longer period as mutually agreed.

B. Upon receipt of a written notice suspending the Work, Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of cost of performance directly attributable to such suspension. Within a period up to 90 (ninety) days after the notice is delivered to Contractor, or within any extension of that period to which the parties shall have agreed, Owner shall either:

1. Cancel the written notice suspending the Work; or

2. Terminate the Work covered by the notice as provided in the termination provisions as more fully set forth in Part 9.

C. If a written notice suspending the Work is cancelled or the period of the notice or any extension thereof expires, Contractor shall resume Work.

D. Contractor shall be entitled to an equitable adjustment in the Contract Time, or Contract Sum, or both, for increases in the time or cost of performance directly attributable to such suspension, provided Contractor complies with all requirements set forth in Part 7.

3.04 OWNER'S RIGHT TO STOP THE WORK FOR CAUSE

A. If Contractor fails or refuses to perform its obligations in accordance with the Contract Documents, Owner may order Contractor, in writing, to stop the Work, or any portion thereof, until satisfactory corrective action has been taken.

B. Contractor shall not be entitled to an equitable adjustment in the Contract Time or Contract Sum for any increased cost or time of performance attributable to Contractor's failure or refusal to perform or from any reasonable remedial action taken by Owner based upon such failure.

3.05 DELAY

A. Any delay in or failure of performance by Owner or Contractor, other than the payment of money, shall not constitute a default hereunder if and to the extent the cause for such delay or failure of performance was unforeseeable and beyond the control of the party ("Force Majeure"). Acts of Force Majeure include, but are not limited to:

1. Acts of God or the public enemy;

2. Acts or omissions of any government entity;

3. Fire or other casualty for which Contractor is not responsible;

4. Quarantine or epidemic;

5. Strike or defensive lockout;

6. Unusually severe weather, in excess of weather conditions which could not have been reasonably anticipated; and

7. Unusual delay in receipt of supplies or products which were ordered and expedited and for which no substitute reasonably acceptable to Owner was available.

B. Contractor shall be entitled to an equitable adjustment in the Contract Time for changes in the time of performance directly attributable to an act of Force Majeure, provided it makes a request for equitable adjustment according to section 7.03. Contractor shall not be entitled to an adjustment in the Contract Sum resulting from an act of Force Majeure.

C. Contractor shall be entitled to an equitable adjustment in Contract Time, and may be entitled to an equitable adjustment in Contract Sum, if the cost or time of Contractor's performance is changed due to the fault or negligence of Owner, provided the Contractor makes a request according to sections 7.02 and 7.03.

D. Contractor shall not be entitled to an adjustment in Contract Time or in the Contract Sum for any delay or failure of performance to the extent such delay or failure was caused by Contractor or anyone for whose acts Contractor is responsible.

E. To the extent any delay or failure of performance was concurrently caused by the Owner and Contractor, Contractor shall be entitled to an adjustment in the Contract Time for that portion of the delay or failure of performance that was concurrently caused, provided it makes a request for equitable adjustment according to section 7.03, but shall not be entitled to an adjustment in Contract Sum.

F. Contractor shall make all reasonable efforts to prevent and mitigate the effects of any delay, whether occasioned by an act of Force Majeure or otherwise.

G. The Owner has acquired ownership and/or easement of lands for the construction, as indicated on the drawings, without cost to the Contractor. The Contractor understands and agrees that, should it appear at any time that the Owner has not acquired title to all of the right-of-ways and lands necessary for the performance of the work under the provisions of this contract, and that if any delay in the performance of said work occasioned by the failure of the Owner, its officers, or employees to acquire a title of any of said lands or right-of-way, such failure shall extend the contract completion date the number of days equal to the period of such delay. The Contractor waives any and all claims for damages against the Owner which the Contractor may sustain by reason of this delay in the work.

3.06 NOTICE TO OWNER OF LABOR DISPUTES

A. If Contractor has knowledge that any actual or potential labor dispute is delaying or threatens to delay timely performance in accordance with the Contract Documents, Contractor shall immediately give notice, including all relevant information, to Owner.

B. Contractor agrees to insert a provision in its Subcontracts and to require insertion in all sub-subcontracts, that in the event timely performance of any such contract is delayed or threatened by delay by any actual or potential labor dispute, the Subcontractor or Sub-subcontractor shall immediately notify the next higher tier Subcontractor or Contractor, as the case may be, of all relevant information concerning the dispute.

3.07 DAMAGES FOR FAILURE TO ACHIEVE TIMELY COMPLETION

A. Liquidated Damages

1. Timely performance and completion of the Work is essential to Owner and time limits stated in the Contract Documents are of the essence. Owner will incur serious and substantial damages if Substantial Completion of the Work does not occur within the Contract Time. However, it would be difficult if not impossible to determine the exact amount of such damages. Consequently, provisions for liquidated damages are included in the Contract Documents.

2. The liquidated damage amounts set forth in the Contract Documents will be assessed not as a penalty, but as liquidated damages for breach of the Contract Documents. This amount is fixed and agreed upon by and between the Contractor and Owner because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain. This amount shall be construed as the actual amount of damages sustained by the Owner, and may be retained by the Owner and deducted from periodic payments to the Contractor.

3. Assessment of liquidated damages shall not release Contractor from any further obligations or liabilities pursuant to the Contract Documents.

B. Actual Damages

Actual damages will be assessed for failure to achieve Final Completion within the time provided. Actual damages will be calculated on the basis of direct architectural, administrative, and other related costs attributable to the Project from the date when Final Completion should have been achieved, based on the date Substantial Completion is actually achieved, to the date Final Completion is actually achieved. Owner may offset these costs against any payment due Contractor.

PART 4 - SPECIFICATIONS, DRAWINGS, AND OTHER DOCUMENTS

4.01 DISCREPANCIES AND CONTRACT DOCUMENT REVIEW

A. The intent of the Specifications and Drawings is to describe a complete Project to be constructed in accordance with the Contract Documents. Contractor shall furnish all labor, materials, equipment, tools, transportation, permits, and supplies, and perform the Work required in accordance with the Drawings, Specifications, and other provisions of the Contract Documents.

B. The Contract Documents are complementary. What is required by one part of the Contract Documents shall be binding as if required by all. Anything mentioned in the Specifications and not shown on the Drawings, or shown on the Drawings and not mentioned in the Specifications, shall be of like effect as if shown or mentioned in both.

C. Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by Owner. If, during the performance of the Work, Contractor finds a conflict, error, inconsistency, or omission in the Contract Documents, it shall promptly and before proceeding with the Work affected thereby, report such conflict, error, inconsistency, or omission to A/E in writing.

D. Contractor shall do no Work without applicable Drawings, Specifications, or written modifications, or Shop Drawings where required, unless instructed to do so in writing by Owner. If Contractor performs any construction activity, and it knows or reasonably should have known that any of the Contract Documents contain a conflict, error, inconsistency, or omission, Contractor shall be responsible for the performance and shall bear the cost for its correction.

E. Contractor shall provide any work or materials the provision of which is clearly implied and is within the scope of the Contract Documents even if the Contract Documents do not mention them specifically.

F. Questions regarding interpretation of the requirements of the Contract Documents shall be referred to the A/E.

4.02 PROJECT RECORD

A. Contractor shall legibly mark in ink on a separate set of the Drawings and Specifications all actual construction, including depths of foundations, horizontal and vertical locations of internal and underground utilities and appurtenances referenced to permanent visible and accessible surface improvements, field changes of dimensions and details, actual suppliers, manufacturers and trade names, models of installed equipment, and Change Order Proposals (COP). This separate set of Drawings and Specifications shall be the "Project Record."

B. The Project Record shall be maintained on the project site throughout the construction and shall be clearly labeled "PROJECT RECORD". The Project Record shall be updated at least weekly noting all changes and shall be available to Owner at all times.

C. Contractor shall submit the completed and finalized Project Record to A/E prior to Final Acceptance.

4.03 SUBMITTALS

A. "Submittals" means documents and other information required to be submitted to A/E by Contractor pursuant to the Contract Documents, showing in detail: the proposed fabrication and assembly of structural

elements; and the installation (i.e. form, fit, and attachment details) of materials and equipment. Submittals include, but are not limited to, drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, samples, and similar materials furnished by Contractor to explain in detail specific portions of the Work required by the Contract Documents. For materials and equipment to be incorporated into the Work, Contractor submittal shall include the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the item. When directed, Contractor shall submit all samples at its own expense. Owner may duplicate, use, and disclose Submittals provided in accordance with the Contract Documents.

B. Contractor shall coordinate all Shop Drawings, and review them for accuracy, completeness, and compliance with the Contract Documents and shall indicate its approval thereon as evidence of such coordination and review. Where required by law, Shop Drawings shall be stamped by an appropriate professional licensed by the state of Washington. Shop Drawings submitted to A/E without evidence of Contractor's approval shall be returned for resubmission. Contractor shall review, approve, and submit Shop Drawings with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of Owner or separate contractors. Contractor's submittal schedule shall allow a reasonable time for A/E review. A/E will review, approve, or take other appropriate action on the Shop Drawings. Contractor shall perform no portion of the Work requiring submittal and review of Shop Drawings until the respective submittal has been reviewed and the A/E has approved or taken other appropriate action. Owner and A/E shall respond to Shop Drawing submittals with reasonable promptness. Any Work by Contractor shall be in accordance with reviewed Shop Drawings. Submittals made by Contractor which are not required by the Contract Documents may be returned without action.

C. Approval, or other appropriate action with regard to Submittals, by Owner or A/E shall not relieve Contractor of responsibility for any errors or omissions in such Submittals, nor from responsibility for compliance with the requirements of the Contract Documents. Unless specified in the Contract Documents, review by Owner or A/E shall not constitute an approval of the safety precautions employed by Contractor during construction, or constitute an approval of Contractor's means or methods of construction. If Contractor fails to obtain approval before installation and the item or work is subsequently rejected, Contractor shall be responsible for all costs of correction.

D. If Shop Drawings show variations from the requirements of the Contract Documents, Contractor shall describe such variations in writing, separate from the Shop Drawings, at the time it submits the Shop Drawings containing such variations. If A/E approves any such variation, an appropriate Change Order will be issued. If the variation is minor and does not involve an adjustment in the Contract Sum or Contract Time, a Change Order need not be issued; however, the modification shall be recorded upon the Project Record.

E. Unless otherwise provided in Division I, Contractor shall submit to A/E for approval 5 (five) copies of all Submittals. Unless otherwise indicated, 3 (three) sets of all Submittals shall be retained by A/E and 2 (two) sets shall be returned to Contractor.

4.04 ORGANIZATION OF SPECIFICATIONS

Specifications are prepared in sections which conform generally with trade practices. These sections are for Owner and Contractor convenience and shall not control Contractor in dividing the Work among the Subcontractors or in establishing the extent of the Work to be performed by any trade.

4.05 OWNERSHIP AND USE OF DRAWINGS, SPECIFICATIONS, AND OTHER DOCUMENTS

A. The Drawings, Specifications, and other documents prepared by A/E are instruments of A/E's service through which the Work to be executed by Contractor is described. Neither Contractor nor any Subcontractor shall own or claim a copyright in the Drawings, Specifications, and other documents prepared by A/E, and A/E shall be deemed the author of them and will, along with any rights of Owner, retain all common law, statutory, and other reserved rights, in addition to the copyright. All copies of these documents, except Contractor's set, shall be returned or suitably accounted for to A/E, on request, upon completion of the Work.

B. The Drawings, Specifications, and other documents prepared by the A/E, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any

Subcontractor on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner and A/E. Contractor and Subcontractors are granted a limited license to use and reproduce applicable portions of the Drawings, Specifications, and other documents prepared by A/E appropriate to and for use in the execution of their Work.

C. Contractor and all Subcontractors grant a non-exclusive license to Owner, without additional cost or royalty, to use for its own purposes (including reproduction) all Shop Drawings, together with the information and diagrams contained therein, prepared by Contractor or any Subcontractor. In providing Shop Drawings, Contractor and all Subcontractors warrant that they have authority to grant to Owner a license to use the Shop Drawings, and that such license is not in violation of any copyright or other intellectual property right. Contractor agrees to defend and indemnify Owner pursuant to the indemnity provisions in section 5.03 and 5.23 from any violations of copyright or other intellectual property rights arising out of Owner's use of the Shop Drawings hereunder, or to secure for Owner, at Contractor's own cost, licenses in conformity with this section.

D. The Shop Drawings and other submittals prepared by Contractor, Subcontractors of any tier, or its or their equipment or material suppliers, and copies thereof furnished to Contractor, are for use solely with respect to this Project. They are not to be used by Contractor or any Subcontractor of any tier, or material or equipment supplier, on other projects or for additions to this Project outside the scope of the Work without the specific written consent of Owner. The Contractor, Subcontractors of any tier, and material or equipment suppliers are granted a limited license to use and reproduce applicable portions of the Shop Drawings and other submittals appropriate to and for use in the execution of their Work under the Contract Documents.

PART 5 - PERFORMANCE

5.01 CONTRACTOR CONTROL AND SUPERVISION

A. Contractor shall supervise and direct the Work, using its best skill and attention, and shall perform the Work in a skillful manner. Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work, unless the Contract Documents give other specific instructions concerning these matters. Contractor shall disclose its means and methods of construction when requested by Owner.

B. Performance of the Work shall be directly supervised by a competent superintendent who is satisfactory to Owner and has authority to act for Contractor. The superintendent shall not be changed without the prior written consent of Owner. Owner may require Contractor to remove the superintendent from the Work or Project site, if Owner reasonably deems the superintendent incompetent, careless, or otherwise objectionable, provided Owner has first notified Contractor in writing and allowed a reasonable period for transition. The superintendent shall be on-site at all times while the Work is being performed, unless approved in writing by owner, in advance.

C. Contractor shall be responsible to Owner for acts and omissions of Contractor, Subcontractors, and their employees and agents.

D. Contractor shall enforce strict discipline and good order among Contractor's employees and other persons performing the Work. Contractor shall not permit employment of persons not skilled in tasks assigned to them. Contractor's employees shall at all times conduct business in a manner which assures fair, equal, and nondiscriminatory treatment of all persons. Owner may, by written notice, request Contractor to remove from the Work or Project site any employee Owner reasonably deems incompetent, careless, or otherwise objectionable.

E. Contractor shall, at all times, keep on the Project site a copy of the Drawings, Specifications, addenda, reviewed Shop Drawings, permits, and permit drawings.

F. Contractor shall ensure that its owner(s) and employees, and those of its Subcontractors, comply with the Ethics in Public Service Act RCW 42.52, which, among other things, prohibits state employees from having an economic interest in any public works contract that was made by, or supervised by, that employee. Contractor shall remove, at its sole cost and expense, any of its, or its Subcontractors', employees, if they are in violation of this act.

5.02 PERMITS, FEES, AND NOTICES

A. The Owner has obtained a Shorelines Substantial Development Permit and/or other environmental permits as required for this project. The permits with provisions which affect the construction methods or schedule have been incorporated into these specifications. The Contractor shall abide by all restrictions noted in these permits as the construction is in progress.

B. All other permits or fees required by local, state or federal governmental agencies necessary for the construction of this project shall be obtained and paid by the Contractor. Only the cost for the building permit will be reimbursed by the Owner.

C. The Contractor shall conform to all local, State and National Codes in all phases of this project. Where conflicts arise between plans, specifications and code requirements, the code shall prevail unless the plans or specifications are more stringent.

5.03 PATENTS AND ROYALTIES

Contractor is responsible for, and shall pay, all royalties and license fees. Contractor shall defend, indemnify, and hold Owner harmless from any costs, expenses, and liabilities arising out of the infringement by Contractor of any patent, copyright, or other intellectual property right used in the Work; however, provided that Contractor gives prompt notice, Contractor shall not be responsible for such defense or indemnity when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents. If Contractor has reason to believe that use of the required design, process, or product constitutes an infringement of a patent or copyright, it shall promptly notify Owner of such potential infringement.

5.04 PREVAILING WAGES

A. Contractor and all subcontractors shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.

B. Before payment is made by the Owner to the Contractor for any work performed by the Contractor and subcontractors whose work is included in the application for payment, the Contractor shall submit, or shall have previously submitted to the Owner for the Project, a Statement of Intent to Pay Prevailing Wages, approved by the Department of Labor and Industries, certifying the rate of hourly wage paid and to be paid each classification of laborers, workers, or mechanics employed upon the Work by Contractor and Subcontractors. Such rates of hourly wage shall not be less than the prevailing wage rate.

C. Prior to release of retainage, the Contractor shall submit to the Owner an Affidavit of Wages Paid, approved by the Department of Labor and Industries, for the Contractor and every subcontractor, of any tier, that performed work on the Project.

D. Disputes regarding prevailing wage rates shall be referred for arbitration to the Director of the Department of Labor and Industries. The arbitration decision shall be final and conclusive and binding on all parties involved in the dispute as provided for by RCW 39.12.060.

E. Each Application for Payment submitted by Contractor shall state that prevailing wages have been paid in accordance with the prefiled statement(s) of intent, as approved. Copies of the approved intent statement(s) shall be posted on the job site with the address and telephone number of the Industrial Statistician of the Department of Labor and Industries where a complaint or inquiry concerning prevailing wages may be made.

F. In compliance with chapter 296-127 WAC, Contractor shall pay to the Department of Labor and Industries the currently established fee(s) for each statement of intent and/or affidavit of wages paid submitted to the Department of Labor and Industries for certification.

G. Copies of approved Intents to Pay Prevailing Wages for the Contractor and all subcontractors shall be submitted with the Contractor's first application for payment. As additional subcontractors perform work on

the project, their approved Intent forms shall be submitted with the Contractor's next application for payment.

H. The Contractor or subcontractor directly contracting for "Off-Site, Prefabricated, Non-Standard, Project Specific Items" shall identify and report information required on the affidavit of wages paid form filed with the Department of Labor and Industries. The Contractor shall include language in its subcontracts requiring subcontractors and lower-tier subcontractors to comply with the reporting requirements for "Off-Site, Prefabricated, Non-Standard, Project Specific Item(s)" on the affidavit of wages paid.

The reporting requirement for Items shall apply for all public works contracts estimated to cost over $1 million entered into by the Owner and Contractor between September 1, 2010 and December 31, 2013.

"Off-site, prefabricated, nonstandard, project specific item(s)" means products or items that are:

1. Made primarily of architectural or structural precast concrete, fabricated steel, pipe and pipe systems, or sheet metal and sheet metal duct work;
2. Produced specifically for the public work and not considered to be regularly available shelf items;
3. Produced or manufactured by labor expended to assemble or modify standard items; and
4. Produced at an off-site location outside Washington.

The Contractor or subcontractor shall comply with the reporting requirements and instructions on the affidavit of wages paid form, and shall report the following information on the affidavit of wages paid form submitted to the Department of Labor and Industries in order to comply with the reporting requirements for use of "Off-Site, Prefabricated, Non-Standard, Project Specific item(s)":

1. The estimated cost of the public works project;
2. The name of the awarding agency and the project title;
3. The contract value of the off-site, prefabricated, nonstandard, project specific item(s) produced outside of Washington State, including labor and materials; and
4. The name, address, and federal employer identification number of the contractor that produced the off-site, prefabricated, nonstandard, project specific item(s).

The owner may direct the contractor, at no additional cost to the owner, to remove and substitute any subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Item(s)" reporting requirements more than one time as determined by the Department of Labor and Industries.

I. The Contractor and all subcontractors shall promptly submit to the Owner certified payroll copies if requested.

5.05 HOURS OF LABOR

A. Contractor shall comply with all applicable provisions of RCW 49.28 and they are incorporated herein by reference. Pursuant to that statute, no laborer, worker, or mechanic employed by Contractor, any Subcontractor, or any other person performing or contracting to do the whole or any part of the Work, shall be permitted or required to work more than eight (8) hours in any one calendar day, provided, that in cases of extraordinary emergency, such as danger to life or property, the hours of work may be extended, but in such cases the rate of pay for time employed in excess of eight (8) hours of each calendar day shall be not less than one and one-half times (x1.5) the rate allowed for this same amount of time during eight (8) hours service.

B. Notwithstanding the preceding paragraph, RCW 49.28 permits a contractor or subcontractor in any public works contract subject to those provisions, to enter into an agreement with its employees in which the employees work up to ten (10) hours in a calendar day. No such agreement may provide that the employees work ten-hour days for more than four (4) calendar days a week. Any such agreement is subject to approval by the employees. The overtime provisions of RCW 49.28 shall not apply to the hours, up to forty (40) hours per week, worked pursuant to any such agreement.

5.06 NONDISCRIMINATION

A. Discrimination in all phases of employment is prohibited by, among other laws and regulations, Title VII of the Civil Rights Act of 1964, the Vietnam Era Veterans Readjustment Act of 1974, sections 503 and 504 of the Vocational Rehabilitation Act of 1973, the Equal Employment Act of 1972, the Age Discrimination Act of

1967, the Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, Presidential Executive Order 11246, Executive Order 11375, the Washington State Law Against Discrimination, RCW 49.60, and Gubernatorial Executive Order 85-09. These laws and regulations establish minimum requirements for affirmative action and fair employment practices which Contractor must meet.

B. During performance of the Work:

1. Contractor shall not discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, age, marital status, or the presence of any physical, sensory, or mental disability, Vietnam era veteran status, or disabled veteran status, nor commit any other unfair practices as defined in RCW 49.60.

2. Contractor shall, in all solicitations or advertisements for employees placed by or for it, state that the contractor is an “equal opportunity employer”.

3. Contractor shall send to each labor union, employment agency, or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice advising the labor union, employment agency, or workers' representative of Contractor's obligations according to the Contract Documents and RCW 49.60.

4. Contractor shall permit access to its books, records, and accounts, and to its premises by Owner, and by the Washington State Human Rights Commission, for the purpose of investigation to ascertain compliance with this section of the Contract Documents.

5. Contractor shall include the provisions of this section in every Subcontract.

C. Nondiscrimination Requirement. During the term of this Contract, Contractor, including any subcontractor, shall not discriminate on the bases enumerated at RCW 49.60.530(3). In addition, Contractor, including any subcontractor, shall give written notice of this nondiscrimination requirement to any labor organizations with which Contractor, or subcontractor, has a collective bargaining or other agreement.

D. Obligation to Cooperate. Contractor, including any subcontractor, shall cooperate and comply with any Washington state agency investigation regarding any allegation that Contractor, including any subcontractor, has engaged in discrimination prohibited by this Contract pursuant to RCW 49.60.530(3).

E. Default. Notwithstanding any provision to the contrary, Owner may suspend Contractor, including any subcontractor, upon notice of a failure to participate and cooperate with any state agency investigation into alleged discrimination prohibited by this Contract, pursuant to RCW 49.60.530(3). Any such suspension will remain in place until Owner receives notification that Contractor, including any subcontractor, is cooperating with the investigating state agency. In the event Contractor, or subcontractor, is determined to have engaged in discrimination identified at RCW 49.60.530(3), Owner may terminate this Contract in whole or in part, and Contractor, subcontractor, or both, may be referred for debarment as provided in RCW 39.26.200. Contractor or subcontractor may be given a reasonable time in which to cure this noncompliance, including implementing conditions consistent with any court-ordered injunctive relief or settlement agreement.

F. Remedies for Breach. Notwithstanding any provision to the contrary, in the event of Contract termination or suspension for engaging in discrimination, Contractor, subcontractor, or both, shall be liable for contract damages as authorized by law including, but not limited to, any cost difference between the original contract and the replacement or cover contract and all administrative costs directly related to the replacement contract, which damages are distinct from any penalties imposed under Chapter 49.60, RCW. Owner shall have the right to deduct from any monies due to Contractor or subcontractor, or that thereafter become due, an amount for damages Contractor or subcontractor will owe Owner for default under this provision.

5.07 SAFETY PRECAUTIONS

A. In performing this contract, the Contractor shall provide for protecting the lives and health of employees and other persons; preventing damage to property, materials, supplies, and equipment; and avoid work interruptions. For these purposes, the Contractor shall:

1. Follow Washington Industrial Safety and Health Act (WISHA) regional directives and provide a site-specific safety program that will require an accident prevention and hazard analysis plan for the contractor and each subcontractor on the work site. The Contractor shall submit a site-specific safety plan to the Owner's representative prior to the initial scheduled construction meeting.

2. Provide adequate safety devices and measures including, but not limited to, the appropriate safety literature, notice, training, permits, placement and use of barricades, signs, signal lights, ladders, scaffolding, staging, runways, hoist, construction elevators, shoring, temporary lighting, grounded outlets, wiring, hazardous materials, vehicles, construction processes, and equipment required by Chapter 19.27 RCW, State Building Code (International Building, Electrical, Mechanical, Fire, and Uniform Plumbing Codes); Chapter 212-12 WAC, Fire Marshal Standards, Chapter 49.17 RCW, WISHA; Chapter 296-155 WAC, Safety Standards for Construction Work; Chapter 296-65 WAC; WISHA Asbestos Standard; WAC 296-62-071, Respirator Standard; WAC 296-62, General Occupation Health Standards, WAC 296-24, General Safety and Health Standards, WAC 296-24, General Safety and Health Standards, Chapter 49.70 RCW, and Right to Know Act.

3. Comply with the State Environmental Policy Act (SEPA), Clean Air Act, Shoreline Management Act, and other applicable federal, state, and local statutes and regulations dealing with the prevention of environmental pollution and the preservation of public natural resources.

4. Post all permits, notices, and/or approvals in a conspicuous location at the construction site.

5. Provide any additional measures that the Owner determines to be reasonable and necessary for ensuring a safe environment in areas open to the public. Nothing in this part shall be construed as imposing a duty upon the Owner or A/E to prescribe safety conditions relating to employees, public, or agents of the Contractors.

6. The Contractor shall make available a list of hazardous products being used on the project, and their respective Material Safety Data Sheets (MSDS) to the Engineer. This information will be required at the pre-construction conference.

B. In carrying out its responsibilities according to the Contract Documents, Contractor shall protect the lives and health of employees performing the Work and other persons who may be affected by the Work; prevent damage to materials, supplies, and equipment whether on site or stored off-site; and prevent damage to other property at the site or adjacent thereto. Contractor shall comply with all applicable laws, ordinances, rules, regulations, and orders of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury, or loss; shall erect and maintain all necessary safeguards for such safety and protection; and shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.

C. Contractor shall maintain an accurate record of exposure data on all incidents relating to the Work resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment. Contractor shall immediately report any such incident to Owner. Owner shall, at all times, have a right of access to all records of exposure.

D. Contractor shall provide all persons working on the Project site with information and training on hazardous chemicals in their work at the time of their initial assignment, and whenever a new hazard is introduced into their work area.

1. Information. At a minimum, Contractor shall inform persons working on the Project site of:

   a. The requirements of chapter 296-62 WAC, General Occupational Health Standards;
   b. Any operations in their work area where hazardous chemicals are present; and
   c. The location and availability of written hazard communication programs, including the required list(s) of hazardous chemicals and material safety data sheets required by chapter 296-62 WAC.

2. Training. At a minimum, Contractor shall provide training for persons working on the Project site which includes:

a. Methods and observations that may be used to detect the presence or release of a hazardous chemical in the work area (such as monitoring conducted by the employer, continuous monitoring devices, visual appearance or odor of hazardous chemicals when being released, etc.);
b. The physical and health hazards of the chemicals in the work area;
c. The measures such persons can take to protect themselves from these hazards, including specific procedures Contractor, or its Subcontractors, or others have implemented to protect those on the Project site from exposure to hazardous chemicals, such as appropriate work practices, emergency procedures, and personal protective equipment to be used; and
d. The details of the hazard communications program developed by Contractor, or its Subcontractors, including an explanation of the labeling system and the material safety data sheet, and how employees can obtain and use the appropriate hazard information.

E. Contractor's responsibility for hazardous, toxic, or harmful substances shall include the following duties:

1. Contractor shall not keep, use, dispose, transport, generate, or sell on or about the Project site, any substances now or hereafter designated as, or which are subject to regulation as, hazardous, toxic, dangerous, or harmful by any federal, state or local law, regulation, statute or ordinance (hereinafter collectively referred to as "hazardous substances", in violation of any such law, regulation, statute, or ordinance, but in no case shall any such hazardous substance be stored more than 90 days on the Project site.

2. Contractor shall promptly notify Owner of all spills or releases of any hazardous substances which are otherwise required to be reported to any regulatory agency and pay the cost of cleanup. Contractor shall promptly notify Owner of all failures to comply with any federal, state, or local law, regulation, or ordinance; all inspections of the Project site by any regulatory entity concerning the same; all regulatory orders or fines; and all responses or interim cleanup actions taken by or proposed to be taken by any government entity or private party on the Project site.

F. All Work shall be performed with due regard for the safety of the public. Contractor shall perform the Work so as to cause a minimum of interruption of vehicular traffic or inconvenience to pedestrians. All arrangements to care for such traffic shall be Contractor's responsibilities. All expenses involved in the maintenance of traffic by way of detours shall be borne by Contractor.

G. In an emergency affecting the safety of life or the Work or of adjoining property, Contractor is permitted to act, at its discretion, to prevent such threatened loss or injury, and Contractor shall so act if so authorized or instructed.

H. Nothing provided in this section shall be construed as imposing any duty upon Owner or A/E with regard to, or as constituting any express or implied assumption of control or responsibility over, Project site safety, or over any other safety conditions relating to employees or agents of Contractor or any of its Subcontractors, or the public.

5.08 OPERATIONS, MATERIAL HANDLING, AND STORAGE AREAS

A. Contractor shall confine all operations, including storage of materials, to Owner-approved areas.

B. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be provided by Contractor only with the consent of Owner and without expense to Owner. The temporary buildings and utilities shall remain the property of Contractor and shall be removed by Contractor at its expense upon completion of the Work.

C. Contractor shall use only established roadways or temporary roadways authorized by Owner. When materials are transported in prosecuting the Work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by federal, state, or local law or regulation.

D. Ownership and control of all materials or facility components to be demolished or removed from the Project site by Contractor shall immediately vest in Contractor upon severance of the component from the facility or severance of the material from the Project site. Contractor shall be responsible for compliance with all

laws governing the storage and ultimate disposal. Contractor shall provide Owner with a copy of all manifests and receipts evidencing proper disposal when required by Owner or applicable law.

E. Contractor shall be responsible for the proper care and protection of its materials and equipment delivered to the Project site. Materials and equipment may be stored on the premises subject to approval of Owner. When Contractor uses any portion of the Project site as a shop, Contractor shall be responsible for any repairs, patching, or cleaning arising from such use.

F. Contractor shall protect and be responsible for any damage or loss to the Work, or to the materials or equipment until the date of Substantial Completion, and shall repair or replace without cost to Owner any damage or loss that may occur, except damages or loss caused by the acts or omissions of Owner. Contractor shall also protect and be responsible for any damage or loss to the Work, or to the materials or equipment, after the date of Substantial Completion, and shall repair or replace without cost to Owner any such damage or loss that might occur, to the extent such damages or loss are caused by the acts or omissions of Contractor, or any Subcontractor.

G. Any removed item shall be salvaged without undue damage and stockpiled in a neat and orderly fashion in an area designated by the Engineer. All removed items shall remain the property of the Owner, unless, due to their condition, they are rejected by the Engineer. All materials of whatever nature that are rejected shall be properly disposed by the Contractor in compliance with all laws and regulations.

H. If designated campsites or emergency overflow areas are approved for use, the Contractor shall comply with all campground rules and regulations of the Washington State Parks and Recreation Commission and the park manager.

5.09 PRIOR NOTICE OF EXCAVATION

A. "Excavation" means an operation in which earth, rock, or other material on or below the ground is moved or otherwise displaced by any means, except the tilling of soil less than 12 (twelve) inches in depth for agricultural purposes, or road ditch maintenance that does not change the original road grade or ditch flow line. Before commencing any excavation, Contractor shall provide notice of the scheduled commencement of excavation to all owners of underground facilities or utilities, through locator services.

5.10 UNFORESEEN PHYSICAL CONDITIONS

A. If Contractor encounters conditions at the site which are subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents, or unknown physical conditions of an unusual nature which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then Contractor shall give written notice to Owner promptly and in no event later than 7 (seven) days after the first observance of the conditions. Conditions shall not be disturbed prior to such notice.

B. If such conditions differ materially and cause a change in Contractor's cost of, or time required for, performance of any part of the Work, the Contractor may be entitled to an equitable adjustment in the Contract Time or Contract Sum, or both, provided it makes a request therefore as provided in part 7.

5.11 PROTECTION OF EXISTING STRUCTURES, EQUIPMENT, VEGETATION, UTILITIES, AND IMPROVEMENTS

A. Contractor shall protect from damage all existing structures, equipment, improvements, utilities, and vegetation: at or near the Project site; and on adjacent property of a third party, the locations of which are made known to or should be known by Contractor. Contractor shall repair any damage, including that to the property of a third party, resulting from failure to comply with the requirements of the Contract Documents or failure to exercise reasonable care in performing the Work. If Contractor fails or refuses to repair the damage promptly, Owner may have the necessary work performed and charge the cost to Contractor.

B. Contractor shall only remove trees when specifically authorized to do so, and shall protect vegetation that will remain in place.

C. In general, the locations of existing major utilities and equipment, whether above ground or underground, are indicated on the drawings. This information has been obtained from utility maps and verbal

descriptions. The Engineer does not guarantee the accuracy or completeness of this information. Other above ground or underground facilities not shown on the drawings may be encountered during the course of the work for which the Contractor is fully responsible to properly locate and identify within the construction area.

D. Existing above ground and underground facilities and appurtenant structures, which includes but is not limited to, power transmission and distribution, telephone, alarm systems, sanitary sewers, gas services, water service and house or yard drains and fences, shall be located, protected, maintained, relocated, rerouted, removed and restored as may be necessary by the Contractor for completion of the work, but in a manner satisfactory to their respective owners and operators of the services and to the Engineer with the least possible interruption to existing services.

E. The Contractor shall be responsible for location and maintenance of existing utilities and improvements. Under no circumstances will errors or omissions in location of utilities or improvements, whether they be visible from the surface, buried, or otherwise obscured, be considered as a basis for a claim for additional compensation by the Contractor.

F. All utilities shall be protected and maintained in continuous operation except where special arrangements have been made with the appropriate utility owner. All damaged utilities shall be restored to original condition, subject to the approval of its owner and at the Contractor's own expense.

G. If requested, the Contractor shall provide record information about locations, depths, and dimensions of lines, appurtenances, and structures, and any other relevant information about electrical power, water, sewer, and other utilities.

H. The Contractor shall provide the Engineer with the data required to make a detailed set of record plans. This data will be obtained and recorded by the Contractor during construction on plans supplied by the Engineer. The Contractor shall ensure that the data is obtained. Typical information to be gathered includes the locations of:

1. Buried utilities
2. Junctions of sewer wyes
3. Junctions of electrical taps
4. Clean-outs
5. Deflection points of utilities
6. Valves

I. Procedure for obtaining this information will be developed by the Engineer working with the Contractor.

J. Contractor shall protect all existing facilities using whatever methods are necessary, subject to the Engineer's approval. Trees, shrubs, vegetation, or lawn shall not be damaged, scarred, or destroyed unless deemed necessary for work on this contract. All trees damaged during construction shall be immediately repaired using SEAL AND HEAL or other materials as directed by the Engineer. Any damage to the above-mentioned items shall be repaired at the Contractor's expense and to the Engineer's satisfaction.

K. In the event that archaeological resources are found or unearthed on public land during the performance of this contract, the Contractor shall be required to comply with RCW 27.44 and RCW 27.53 and the rules and regulations of the office of Archaeology and Historic Preservation, including compliance with all archaeological excavation permit requirements.

5.12 LAYOUT OF WORK

A. Contractor shall plan and lay out the Work in advance of operations so as to coordinate all work without delay or revision.

B. Contractor shall lay out the Work from Owner-established baselines and bench marks indicated on the Drawings, and shall be responsible for all field measurements in connection with the layout. Contractor shall furnish, at its own expense, all stakes, templates, platforms, equipment, tools, materials, and labor required to lay out any part of the Work. Contractor shall be responsible for executing the Work to the lines

and grades that may be established. Contractor shall be responsible for maintaining or restoring all stakes and other marks established.

C. The indicated limits of work shall be the controlling factor in the Contractor's scope of operation and no payment shall be due for work done out of the limits. Damage to areas not in the Contractor's work area shall be repaired at the Contractor's expense. Questions of what constitutes the work area shall be determined by the Engineer. Only the best methods of construction will be allowed.

D. The Engineer may adjust or relocate any portion of the system to meet site requirements or to improve the system without additional compensation to the Contractor, provided such adjustments do not represent appreciable costs for additional labor and materials.

5.13 MATERIAL AND EQUIPMENT

A. All equipment, material, and articles incorporated into the Work shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in the Contract Documents. References in the Specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard quality and shall not be construed as limiting competition. Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of A/E, is equal to that named in the specifications, unless otherwise specifically provided in the Contract Documents.

B. Contractor shall do all cutting, fitting, or patching that may be required to make its several parts fit together properly, or receive or be received by work of others set forth in, or reasonably implied by, the Contract Documents. Contractor shall not endanger any work by cutting, excavating, or otherwise altering the Work and shall not cut or alter the work of any other contractor unless approved in advance by Owner.

C. Should any of the Work be found defective, or in any way not in accordance with the Contract Documents, this work, in whatever stage of completion, may be rejected by Owner.

D. The Contractor shall furnish proof of equality in all respects to the specified items when proposing alternate brands or materials. Any significant deviations from specifications, drawings, or equality must be noted by the Contractor when submitting alternate products or materials for approval. The Engineer shall be the sole judge of the equality and suitability of any products, materials, or components proposed by the Contractor as alternates to specified items. The Contractor shall bear all costs and make all secondary changes required to incorporate an approved substitute or alternate into the work. No offers for substitution will be acknowledged from suppliers, distributors, manufacturers, or subcontractors.

5.14 AVAILABILITY AND USE OF UTILITY SERVICES

A. Owner shall make all reasonable utilities available to Contractor from existing outlets and supplies, as specified in the Contract Documents. Unless otherwise provided in the Contract Documents, the utility service consumed shall be charged to or paid for by Contractor at prevailing rates charged to Owner or, where the utility is produced by Owner, at reasonable rates determined by Owner. Contractor will carefully conserve any utilities furnished.

B. Contractor shall, at its expense and in a skillful manner satisfactory to Owner, install and maintain all necessary temporary connections and distribution lines, together with appropriate protective devices, and all meters required to measure the amount of each utility used for the purpose of determining charges. Prior to the date of Final Acceptance, Contractor shall remove all temporary connections, distribution lines, meters, and associated equipment and materials.

5.15 TESTS AND INSPECTION

A. Contractor shall maintain an adequate testing and inspection program and perform such tests and inspections as are necessary or required to ensure that the Work conforms to the requirements of the Contract Documents. Contractor shall be responsible for inspection and quality surveillance of all its Work and all Work performed by any Subcontractor. Unless otherwise provided, Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. Contractor shall give Owner timely notice of when and where tests and

inspections are to be made. Contractor shall maintain complete inspection records and make them available to Owner.

B. Owner may, at any reasonable time, conduct such inspections and tests as it deems necessary to ensure that the Work is in accordance with the Contract Documents. Owner shall promptly notify Contractor if an inspection or test reveals that the Work is not in accordance with the Contract Documents. Unless the subject items are expressly accepted by Owner, such Owner inspection and tests are for the sole benefit of Owner and do not:

1. Constitute or imply acceptance;
2. Relieve Contractor of responsibility for providing adequate quality control measures;
3. Relieve Contractor of responsibility for risk of loss or damage to the Work, materials, or equipment;
4. Relieve Contractor of its responsibility to comply with the requirements of the Contract Documents; or
5. Impair Owner's right to reject defective or nonconforming items, or to avail itself of any other remedy to which it may be entitled.

C. Neither observations by an inspector retained by Owner, the presence or absence of such inspector on the site, nor inspections, tests, or approvals by others, shall relieve Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.

D. Contractor shall promptly furnish, without additional charge, all facilities, labor, material and equipment reasonably needed for performing such safe and convenient inspections and tests as may be required by Owner. Owner may charge Contractor any additional cost of inspection or testing when Work is not ready at the time specified by Contractor for inspection or testing, or when prior rejection makes re-inspection or retest necessary. Owner shall perform its inspections and tests in a manner that will cause no undue delay in the Work.

E. The Owner shall have the right to appoint an Inspector who will have the authority to reject materials or workmanship which does not fulfill the requirements of these specifications. In case of dispute, the Contractor may appeal to the Engineer whose decision shall be final. The acceptance of any material by the Inspector shall not hinder its subsequent rejection if found defective. Rejected materials and workmanship shall be replaced promptly or be made good by the Contractor without additional cost to the Owner.

F. Contractor shall deliver one (1) key for each type of lock installed on the project to the Engineer to enable the Engineer to enter all facilities under construction for the purpose of inspection. This includes temporary as well as State Parks' key-coded locks. All keys for key-coded locks shall be delivered to the Engineer as they are made available to the Contractor. These coded keys shall then be signed out to the Contractor on an accountable basis for security purposes.

5.16 CORRECTION OF NONCONFORMING WORK

A. If a portion of the Work is covered contrary to the requirements in the Contract Documents, it must, if required in writing by Owner, be uncovered for Owner's observation and be replaced at the Contractor's expense and without change in the Contract Time.

B. If, at any time prior to Final Completion, Owner desires to examine the Work, or any portion of it, which has been covered, Owner may request to see such Work and it shall be uncovered by Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an adjustment in the Contract Sum for the costs of uncovering and replacement, and, if completion of the Work is thereby delayed, an adjustment in the Contract Time, provided it makes a request therefore as provided in part 7. If such Work is not in accordance with the Contract Documents, the Contractor shall pay the costs of examination and reconstruction.

C. Contractor shall promptly correct Work found by Owner not to conform to the requirements of the Contract Documents, whether observed before or after Substantial Completion and whether or not fabricated, installed, or completed. Contractor shall bear all costs of correcting such nonconforming Work, including additional testing and inspections.

D. If, within one year after the date of Substantial Completion of the Work or designated portion thereof, or within one year after the date for commencement of any system warranties established under section 6.08, or within the terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, Contractor shall correct it promptly after receipt of written notice from Owner to do so. Owner shall give such notice promptly after discovery of the condition. This period of one year shall be extended, with respect to portions of Work first performed after Substantial Completion, by the period of time between Substantial Completion and the actual performance of the Work. Contractor's duty to correct with respect to Work repaired or replaced shall run for one year from the date of repair or replacement. Obligations under this paragraph shall survive Final Acceptance.

E. Contractor shall remove from the Project site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by Contractor nor accepted by Owner.

F. If Contractor fails to correct nonconforming Work within a reasonable time after written notice to do so, Owner may replace, correct, or remove the nonconforming Work and charge the cost thereof to the Contractor.

G. Contractor shall bear the cost of correcting destroyed or damaged Work, whether completed or partially completed, caused by Contractor's correction or removal of Work which is not in accordance with the requirements of the Contract Documents.

H. Nothing contained in this section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have according to the Contract Documents. Establishment of the time period of one (1) year as described in paragraph 5.16D relates only to the specific obligation of Contractor to correct the Work, and has no relationship to the time within which the Contractor's obligation to comply with the Contract Documents may be sought to be enforced, including the time within which such proceedings may be commenced.

I. If Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, Owner may do so instead of requiring its removal and correction, in which case the Contract Sum may be reduced as appropriate and equitable.

5.17 CLEAN UP

Contractor shall at all times keep the Project site, including hauling routes, infrastructures, utilities, and storage areas, free from accumulations of waste materials. Before completing the Work, Contractor shall remove from the premises its rubbish, tools, scaffolding, equipment, and materials. Upon completing the Work, Contractor shall leave the Project site in a clean, neat, and orderly condition satisfactory to Owner. If Contractor fails to clean up as provided herein, and after reasonable notice from Owner, Owner may do so and the cost thereof shall be charged to Contractor.

5.18 ACCESS TO WORK

Contractor shall provide Owner and A/E access to the Work in progress wherever located.

5.19 OTHER CONTRACTS

Owner may undertake or award other contracts for additional work at or near the Project site. Contractor shall reasonably cooperate with the other contractors and with Owner's employees and shall carefully adapt scheduling and perform the Work in accordance with these Contract Documents to reasonably accommodate the other work.

5.20 SUBCONTRACTORS AND SUPPLIERS

A. The Contractor shall include the language of this paragraph in each of its first tier subcontracts, and shall require each of its subcontractors to include the same language of this section in each of their subcontracts, adjusting only as necessary the terms used for the contracting parties. Upon request of the Owner, the Contractor shall promptly provide documentation to the Owner demonstrating that the subcontractor meets the subcontractor responsibility criteria below. The requirements of this paragraph apply to all subcontractors regardless of tier. At the time of subcontract execution, the Contractor shall verify that each of its first tier subcontractors meets the following bidder responsibility criteria:

1. Have a current certificate of registration as a contractor in compliance with chapter 18.27 RCW, which must have been in effect at the time of subcontract bid submittal;
2. Have a current Washington Unified Business Identifier (UBI) number;
3. If applicable, have:

    a. Industrial Insurance (workers' compensation) coverage for the subcontractor's employees working in Washington, as required in Title 51 RCW;
    b. A Washington Employment Security Department number, as required in Title 50 RCW;
    c. A Washington Department of Revenue state excise tax registration number, as required in Title 82 RCW;
    d. An electrical contractor license, if required by Chapter 19.28 RCW;
    e. An elevator contractor license, if required by Chapter 70.87 RCW.

4. Not be disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065 (3).
5. On a project subject to the apprenticeship utilization requirements in RCW 39.04.320, not have been found out of compliance by the Washington state apprenticeship and training council for working apprentices out of ratio, without appropriate supervision, or outside their approved work processes as outlined in their standards of apprenticeship under chapter 49.04 RCW for the one-year period immediately preceding the date of the Owner's first advertisement of the project.

B. Prior to submitting the first Application for Payment, Contractor shall furnish in writing to Owner, on Owner provided form(s), the names, addresses, telephone numbers, and Tax Identification Numbers (TIN) of all subcontractors, as well as suppliers providing materials in excess of $2,500.00 which Contractor believes to be MBE or WBE owned businesses, or have identified themselves to the Contractor as MBE or WBE, or are Washington State OMWBE certified. The Contractor shall indicate the anticipated dollar value of each MWBE subcontract. Contractor shall utilize subcontractors and suppliers, which are experienced and qualified, and meet the requirements of the Contract Documents, if any. Contractor shall not utilize any subcontractor or supplier to whom the Owner has a reasonable objection, and shall obtain Owner's written consent before making any substitutions or additions. The Owner may direct the Contractor, at no additional cost to the Owner, to remove and substitute any subcontractor(s) found to be out of compliance with the "Off-Site Prefabricated Non-Standard Project Specific Items" reporting requirements more than one time as determined by the Department of Labor and Industries and as defined in EHB 2805 that amends RCW 39.04.

C. All Subcontracts must be in writing. By appropriate written agreement, Contractor shall require each Subcontractor, so far as applicable to the Work to be performed by the Subcontractor, to be bound to Contractor by terms of the Contract Documents, and to assume toward Contractor all the obligations and responsibilities which Contractor assumes toward Owner in accordance with the Contract Documents. Each Subcontract shall preserve and protect the rights of Owner in accordance with the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. However, nothing in this paragraph shall be construed to alter the contractual relations between Contractor and its Subcontractors with respect to insurance or bonds.

D. Contractor shall schedule, supervise, and coordinate the operations of all Subcontractors. No Subcontracting of any of the Work shall relieve Contractor from its responsibility for the performance of the Work in accordance with the Contract Documents or any other obligations of the Contract Documents.

E. Each subcontract agreement for a portion of the Work is hereby assigned by Contractor to Owner provided that:

1. The assignment is effective only after termination by Owner for cause pursuant to section 9.01 and only for those Subcontracts which Owner accepts by notifying the Subcontractor in writing; and

2. After the assignment is effective, Owner will assume all future duties and obligations toward the Subcontractor which Contractor assumed in the Subcontract.

3. The assignment is subject to the prior rights of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

5.21 WARRANTY OF CONSTRUCTION

A. In addition to any special warranties provided elsewhere in the Contract Documents, Contractor warrants that all Work conforms to the requirements of the Contract Documents and is free of any defect in equipment, material, or design furnished, or workmanship performed, by Contractor.

B. With respect to all warranties, express or implied, for Work performed or materials furnished according to the Contract Documents, Contractor shall:

1. Obtain all warranties that would be given in normal commercial practice;
2. Require all warranties to be executed, in writing, for the benefit of Owner;
3. Enforce all warranties for the benefit of Owner, if directed by Owner; and
4. Be responsible to enforce any subcontractor's, manufacturer's, or supplier's warranty should they extend beyond the period specified in the Contract Documents.

C. The obligations under this section shall survive Final Acceptance.

5.22 INDEMNIFICATION

A. Contractor shall defend, indemnify, and hold Owner and A/E harmless from and against all claims, demands, losses, damages, or costs, including but not limited to damages arising out of bodily injury or death to persons and damage to property, caused by or resulting from:

1. The sole negligence of Contractor or any of its Subcontractors;
2. The concurrent negligence of Contractor, or any Subcontractor, but only to the extent of the negligence of Contractor or such Subcontractor; and
3. The use of any design, process, or equipment which constitutes an infringement of any United States patent presently issued, or violates any other proprietary interest, including copyright, trademark, and trade secret.

B. In any action against Owner and any other entity indemnified in accordance with this section, by any employee of Contractor, its Subcontractors, Sub-subcontractors, agents, or anyone directly or indirectly employed by any of them, the indemnification obligation of this section shall not be limited by a limit on the amount or type of damages, compensation, or benefits payable by or for Contractor or any Subcontractor under RCW Title 51, the Industrial Insurance Act, or any other employee benefit acts. In addition, Contractor waives immunity as to Owner and A/E only, in accordance with RCW Title 51.

5.23 AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE

A. General Requirements
The Contractor and subcontractor shall ensure that all work performed under this Contract complies with the Americans with Disabilities Act (ADA), as codified in 28 C.F.R. § 35.151, and the 2010 ADA Standards for Accessible Design. The Contractor and subcontractor shall construct and maintain all accessible features in operable condition and correct any identified deficiencies in a timely manner.

B. Accessibility in New Construction and Alterations
1. All new facilities and alterations to existing facilities shall be designed and constructed in a manner that ensures accessibility and usability for individuals with disabilities, consistent with ADA accessibility standards.
2. Alterations shall, to the maximum extent feasible, ensure the altered area and the associated path of travel comply with accessibility requirements.
3. If technical infeasibility prevents full compliance, the Contractor and subcontractor shall notify the Owner’s Representative and submit a written request for determination of technical infeasibility.

4. The Contractor and subcontractor shall coordinate with the Owner to ensure that all public notices related to temporary accessibility interruptions are posted on the project site and on designated agency communication channels.

C. Maintenance and Inspection of Accessible Features
1. The Contractor and subcontractor shall be responsible for maintaining accessible routes, parking, restrooms, and other accessible features in operable condition throughout the duration of the Work.
2. Any temporary disruptions affecting accessibility shall be scheduled in a manner that minimizes impact and includes reasonable alternative accommodations where feasible.
3. The Contractor and subcontractor shall notify the Owner immediately if any accessibility feature is found to be non-compliant or requires repair.

D. Historic Structures
If the Work involves historic structures or landscapes that are listed or eligible for listing in the National Register of Historic Places, modifications shall be made in compliance with ADA requirements to the maximum extent feasible. The State Historic Preservation Officer (SHPO) must approve any exemptions for alterations that may impact the historic significance of a structure or landscape.

E. Compliance and Documentation
1. The Contractor and subcontractor shall comply with all applicable local, state, and federal accessibility requirements.
2. Any non-compliant work shall be corrected at the Contractor's expense prior to final acceptance.

F. Submission of Progress Reports – Americans with Disabilities Act (ADA) Compliance
The Contractor shall submit regular progress reports to the Owner, which shall include the following:

1. Status of Accessible Features – Updates on the construction, installation, and maintenance of all accessibility-related features in accordance with ADA standards.
2. Compliance Issues – Identification of any non-compliance issues encountered, including deviations from ADA accessibility standards, technical infeasibility determinations, or unforeseen site conditions affecting accessibility.
3. Corrective Actions – Description of corrective actions taken or proposed to address any identified accessibility deficiencies, including timelines for remediation and any required approvals from the Owner.
4. Temporary Disruptions – Notification of any planned or unplanned interruptions to accessibility features, including measures taken to minimize impacts and alternative accommodations provided.
5. Final Verification – Prior to Substantial Completion, the Contractor shall provide documentation verifying that all constructed and altered elements comply with applicable ADA requirements, subject to inspection and approval by the Owner.

Failure to comply with the provisions of this section may result in suspension of the Work, withholding of payment or other remedies as deemed necessary by the Owner.

PART 6 - PAYMENTS AND COMPLETION

6.01 CONTRACT SUM

Owner shall pay Contractor the Contract Sum for performance of the Work, in accordance with the Contract Documents. The Contract Sum shall include all taxes imposed by law and properly chargeable to the Project, including sales tax.

6.02 SCHEDULE OF VALUES

Before submitting its first Application for Payment, Contractor shall submit to Owner for approval a breakdown allocating the total Contract Sum to each principle category of work, in such detail as requested by Owner ("Schedule of Values"). The approved Schedule of Values shall include appropriate amounts for demobilization, record drawings, O&M manuals, and any other requirements for Project closeout, and shall be used by Owner as the basis for progress payments. Payment for Work shall be made only for and in accordance with those items included in the Schedule of Values.

6.03 APPLICATION FOR PAYMENT

A. At monthly intervals, unless determined otherwise by Owner, Contractor shall submit to Owner an itemized Application for Payment for Work completed in accordance with the Contract Documents and the approved Schedule of Values. Each application shall be supported by such substantiating data as Owner may require.

B. By submitting an Application for Payment, Contractor is certifying that all Subcontractors have been paid, less earned retainage in accordance with RCW 60.28.010, as their interests appeared in the last preceding certificate of payment. By submitting an Application for Payment, Contractor is recertifying that the representations set forth in section 1.03 are true and correct, to the best of Contractor's knowledge, as of the date of the Application for Payment.

C. At the time it submits an Application for Payment, Contractor shall analyze and reconcile, to the satisfaction of Owner, the actual progress of the Work with the Progress Schedule.

D. If authorized by Owner, the Application for Payment may include request for payment for material delivered to the Project site and suitably stored, or for completed preparatory work. Payment may similarly be requested for material stored off the Project site, provided Contractor complies with or furnishes satisfactory evidence of the following:

1. The material will be placed in a warehouse that is structurally sound, dry, lighted, and suitable for the materials to be stored;

2. The warehouse is located within a 10-mile radius of the Project. Other locations may be utilized, if approved in writing, by Owner;

3. Only materials for the Project are stored within the warehouse (or a secure portion of a warehouse set aside for the Project);

4. Contractor furnishes Owner a certificate of insurance extending Contractor's insurance coverage for damage, fire, and theft to cover the full value of all materials stored, or in transit;

5. The warehouse (or secure portion thereof) is continuously under lock and key, and only Contractor's authorized personnel shall have access;

6. Owner shall at all times have the right of access in company of Contractor;

7. Contractor and its surety assume total responsibility for the stored materials; and

8. Contractor furnishes to Owner certified lists of materials stored, bills of lading, invoices, and other information as may be required, and shall also furnish notice to Owner when materials are moved from storage to the Project site.

6.04 PROGRESS PAYMENTS

A. Owner shall make progress payments, in such amounts as Owner determines are properly due, within 30 days after receipt of a properly executed Application for Payment. Owner shall notify Contractor in accordance with RCW 39.76 if the Application for Payment does not comply with the requirements of the Contract Documents.

B. Owner shall retain 5% (five percent) of the amount of each progress payment until forty-five (45) days after Final Acceptance and receipt of all documents required by law or the Contract Documents, including, at Owner's request, consent of surety to release of the retainage. In accordance with RCW 60.28, Contractor may request that monies reserved be retained in a fund by Owner, deposited by Owner in a bank or savings and loan, or placed in escrow with a bank or trust company to be converted into bonds and securities to be held in escrow with interest to be paid to Contractor. Owner may permit Contractor to provide an appropriate bond in lieu of the retained funds.

C. Title to all Work and materials covered by a progress payment shall pass to Owner at the time of such payment free and clear of all liens, claims, security interests, and encumbrances. Passage of title shall not,

however, relieve Contractor from any of its duties and responsibilities for the Work or materials, or waive any rights of Owner to insist on full compliance by Contractor with the Contract Documents.

D. Payments due and unpaid in accordance with the Contract Documents shall bear interest as specified in RCW 39.76.

6.05 PAYMENTS WITHHELD

A. Owner may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any payment to such extent as may be necessary to protect Owner from loss or damage for reasons including but not limited to:

1. Work not in accordance with the Contract Documents;
2. Reasonable evidence that the Work required by the Contract Documents cannot be completed for the unpaid balance of the Contract Sum;
3. Work by Owner to correct defective Work or complete the Work in accordance with section 5.17;
4. Failure to perform in accordance with the Contract Documents; or
5. Cost or liability that may occur to Owner as the result of Contractor's fault or negligent acts or omissions.

B. In any case where part or all of a payment is going to be withheld for unsatisfactory performance, Owner shall notify Contractor in accordance with RCW 39.76.

6.06 RETAINAGE AND BOND CLAIM RIGHTS

A. Prior to release of the contract retainage, an "Affidavit of Wages Paid", approved by the Washington State Department of Labor and Industries, must be on file in the Owner's office. Contracts over $20,000, including tax, necessitate a clearance from the Washington State Department of Revenue and the Washington State Department of Employment Security. The Owner shall initiate action for the releases from the Departments of Revenue and Employment Security.

B. RCW chapters 39.08 and 60.28, concerning the rights and responsibilities of Contractor and Owner with regard to the performance and payment bonds and retainage, are made a part of the Contract Documents by reference as though fully set forth herein.

C. In accordance with RCW 60.28, the lien period for filing liens against the contract retainage shall be forty-five (45) days. Persons performing labor or furnishing supplies toward the completion of the contract who intend to file a lien against the contract retainage must do so within forty-five (45) days from the date of Final Acceptance of the contract by the Owner and in the manner as described in RCW 39.08.030.

6.07 SUBSTANTIAL COMPLETION

Substantial Completion is the stage in the progress of the Work (or portion thereof designated and approved by Owner) when the construction is sufficiently complete, in accordance with the Contract Documents, so Owner can fully occupy the Work (or the designated portion thereof) for the use for which it is intended. All Work other than incidental corrective or punch list work shall be completed. Substantial Completion shall not have been achieved if all systems and parts are not functional, if utilities are not connected and operating normally, if all required occupancy permits have not been issued, or if the Work is not accessible by normal vehicular and pedestrian traffic routes. The date Substantial Completion is achieved shall be established in writing by Owner. Contractor may request an early date of Substantial Completion which must be approved by Change Order. Owner's occupancy of the Work or designated portion thereof does not necessarily indicate that Substantial Completion has been achieved.

6.08 PRIOR OCCUPANCY

A. Owner may, upon written notice thereof to Contractor, take possession of or use any completed or partially completed portion of the Work ("Prior Occupancy") at any time prior to Substantial Completion. Unless otherwise agreed in writing, Prior Occupancy shall not: be deemed an acceptance of any portion of the

Work; accelerate the time for any payment to Contractor; prejudice any rights of Owner provided by any insurance, bond, guaranty, or the Contract Documents; relieve Contractor of the risk of loss or any of the obligations established by the Contract Documents; establish a date for termination or partial termination of the assessment of liquidated damages; or constitute a waiver of claims.

B. Notwithstanding anything in the preceding paragraph, Owner shall be responsible for loss of or damage to the Work resulting from Prior Occupancy. Contractor's one (1) year duty to repair and any system warranties shall begin on building systems activated and used by Owner as agreed in writing by Owner and Contractor.

6.09 FINAL COMPLETION, ACCEPTANCE, AND PAYMENT

A. Final Completion shall be achieved when the Work is fully and finally complete in accordance with the Contract Documents. The date Final Completion is achieved shall be established by Owner in writing.

B. Final Acceptance is the formal action of Owner acknowledging Final Completion. Prior to Final Acceptance, Contractor shall, in addition to all other requirements in the Contract Documents, submit to Owner a written notice of any outstanding disputes or claims between Contractor and any of its Subcontractors, including the amounts and other details thereof. Neither Final Acceptance, nor final payment, shall release Contractor or its sureties from any obligations of these Contract Documents or the Public Works Bond, or constitute a waiver of any claims by Owner arising from Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Acceptance of final payment by Contractor, or any Subcontractor, shall constitute a waiver and release to Owner of all claims by Contractor, or any such Subcontractor, for an increase in the Contract Sum or the Contract Time, and for every act or omission of Owner relating to or arising out of the Work, except for those Claims made in accordance with the procedures, including the time limits, set forth in part 8.

PART 7 - CHANGES

7.01 CHANGES IN THE WORK

A. Owner may, at any time and without notice to Contractor's surety, order additions, deletions, revisions, or other changes in the Work. These changes in the Work shall be incorporated into the Contract Documents through the execution of Change Orders. If any change in the Work ordered by Owner causes an increase or decrease in the Contract Sum or the Contract Time, an equitable adjustment shall be made as provided in section 7.02 or 7.03, respectively, and such adjustment(s) shall be incorporated into a Change Order.

B. If Owner desires to order a change in the Work, it may request a written Change Order Proposal (COP) from Contractor. Contractor shall submit a Change Order Proposal within 14 (fourteen) days of the request from Owner, or within such other period as mutually agreed. Contractor's Change Order Proposal shall be full compensation for implementing the proposed change in the Work, including any adjustment in the Contract Sum or Contract Time, and including compensation for all delays in connection with such change in the Work and for any expense or inconvenience, disruption of schedule, or loss of efficiency or productivity occasioned by the change in the Work.

C. Upon receipt of the Change Order proposal, or a request for equitable adjustment in the Contract Sum or Contract Time, or both, as provided in sections 7.02 and 7.03, Owner may accept or reject the proposal, request further documentation, or negotiate acceptable terms with Contractor. Pending agreement on the terms of the Change Order, Owner may direct Contractor to proceed immediately with the Change Order Work. Contractor shall not proceed with any change in the Work until it has obtained Owner's approval. All Work done pursuant to any Owner-directed change in the Work shall be executed in accordance with the Contract Documents.

D. If Owner and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment.

E. If Owner and Contractor are unable to reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, Contractor may at any time in writing, request a final offer from Owner. Owner shall provide Contractor with its written response within 30 (thirty) days of Contractor's request. Owner may also provide Contractor with a final offer at any time. If Contractor rejects Owner's final offer, or the parties are otherwise unable to reach agreement, Contractor's only remedy shall be to file a Claim as provided in part 8.

F. Field Authorization

1. The Field Authorization (FA) is executed as a directive to proceed with work when the processing time for an approved change order would impact the project.

2. A scope of work must be defined, a maximum not to exceed cost agreed upon, and any estimated modification to the contract completion time determined. The method of final cost verification must be noted and supporting cost data must be submitted in accordance with the requirements of Part 7 of the General Conditions. Upon satisfactory submittal and approval of supporting cost data, the completed FA will be processed into a change order. No payment will be made to the Contractor for FA work until that FA is converted to a Change Order.

7.02 CHANGES IN THE CONTRACT SUM

A. General Application

1. The Contract Sum shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Sum in its Change Order Proposal.

2. If the cost of Contractor's performance is changed due to the fault or negligence of Owner, or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Sum in accordance with the following procedure. No change in the Contract Sum shall be allowed to the extent: Contractor's changed cost of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible; the change is concurrently caused by Contractor and Owner; or the change is caused by an act of Force Majeure as defined in Section 3.05.

   a. A request for an equitable adjustment in the Contract Sum shall be based on written notice delivered to Owner within 7 (seven) days of the occurrence of the event giving rise to the request. For purposes of this part, "occurrence" means when Contractor knew, or in its diligent prosecution of the Work should have known, of the event giving rise to the request. If Contractor believes it is entitled to an adjustment in the Contract Sum, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such records and, if requested shall promptly furnish copies of such records to Owner.

   b. Contractor shall not be entitled to any adjustment in the Contract Sum for any occurrence of events or costs that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Sum; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Sum requested. Failure to properly give such written notice shall, to the extent Owner’s interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

   c. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph a. above with additional supporting data. Such additional data shall include, at a minimum: the amount of compensation requested, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the damages claimed, but that the damages claimed were actually a result of the act, event, or condition complained of and that the Contract Documents provide entitlement to an equitable adjustment to Contractor for

such act, event, or condition; and documentation sufficiently detailed to permit an informed analysis of the request by Owner. When the request for compensation relates to a delay, or other change in Contract Time, Contractor shall demonstrate the impact on the critical path, in accordance with section 7.03C. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

d. Pending final resolution of any request made in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

e. Any requests by Contractor for an equitable adjustment in the Contract Sum and in the Contract Time that arise out of the same event(s) shall be submitted together.

3. The value of any Work covered by a Change Order, or of any request for an equitable adjustment in the Contract Sum, shall be determined by one of the following methods:

   a. On the basis of a fixed price as determined in paragraph 7.02B.
   b. By application of unit prices to the quantities of the items involved as determined in paragraph 7.02C.
   c. On the basis of time and material as determined in paragraph 7.02D.

4. When Owner has requested Contractor to submit a Change Order proposal, Owner may direct Contractor as to which method in subparagraph 3 above to use when submitting its proposal. Otherwise, Contractor shall determine the value of the Work, or a request for an equitable adjustment, on the basis of the fixed price method.

B. Change Order Pricing -- Fixed Price

When the fixed price method is used to determine the value of any Work covered by a Change Order or a request for an equitable adjustment in the Contract Sum, the following procedures shall apply:

1. Contractor's Change Order Proposal, or request for adjustment in the Contract Sum, shall be accompanied by a complete itemization of the costs, including labor, material, subcontractor costs, and overhead and profit. The costs shall be itemized in the manner set forth below, and shall be submitted on breakdown sheets in a form approved by Owner.

2. All costs shall be calculated based upon appropriate industry standard methods of calculating labor, material quantities, and equipment costs.

3. If any of Contractor's pricing assumptions are contingent upon anticipated actions of Owner, Contractor shall clearly state them in the proposal or request for an equitable adjustment.

4. The cost of any additive or deductive changes in the Work shall be calculated as set forth below, except that overhead and profit shall not be included on deductive changes in the Work. Where a change in the Work involves additive and deductive work by the same Contractor or Subcontractor, small tools, overhead, profit, bond, and insurance markups will apply to the net difference.

5. If the total cost of the change in the Work or request for equitable adjustment does not exceed $1,000, Contractor shall not be required to submit a breakdown if the description of the change in the Work or request for equitable adjustment is sufficiently definitive for Owner to determine fair value.

6. If the total cost of the change in the Work or request for equitable adjustment is between $1,000 and $2,500, Contractor may submit a breakdown in the following level of detail if the description of the change in the Work or if the request for equitable adjustment is sufficiently definitive to permit the Owner to determine fair value:

   a. lump sum labor;
   b. lump sum material;
   c. lump sum equipment usage;
   d. overhead and profit as set forth below; and
   e. insurance and bond costs as set forth below.

7. Any request for adjustment of Contract Sum based upon the fixed price method shall include only the following items:

   a. Craft labor costs: These are the labor costs determined by multiplying the estimated or actual additional number of craft hours needed to perform the change in the Work by the hourly labor costs. Craft hours should cover direct labor, as well as indirect labor due to trade inefficiencies. The hourly costs shall be based on the following:

      1) Basic wages and benefits: Hourly rates and benefits as stated on the Department of Labor and Industries approved "statement of intent to pay prevailing wages." Direct supervision shall be a reasonable percentage not to exceed 15% (fifteen percent) of the cost of direct labor. No supervision markup shall be allowed for a working supervisor's hours.

      2) Worker's insurance: Direct contributions to the state of Washington for industrial insurance; medical aid; and supplemental pension, by the class and rates established by the Department of Labor and Industries.

      3) Federal insurance: Direct contributions required by the Federal Insurance Compensation Act; Federal Unemployment Tax Act; and the State Unemployment Compensation Act.

      4) Travel allowance: Travel allowance and/or subsistence, if applicable, not exceeding those allowances established by regional labor union agreements, which are itemized and identified separately.

      5) Safety: Cost incurred due to the Washington Industrial Safety and Health Act, which shall be a reasonable percentage not to exceed 2% (two percent) of the sum of the amounts calculated in (1), (2), and (3) above.

   b. Material costs: This is an itemization of the quantity and cost of materials needed to perform the change in the Work. Material costs shall be developed first from actual known costs, second from supplier quotations or if these are not available, from standard industry pricing guides. Material costs shall consider all available discounts. Freight costs, express charges, or special delivery charges, shall be itemized.

   c. Equipment costs: This is an itemization of the type of equipment and the estimated or actual length of time the construction equipment appropriate for the Work is or will be used on the change in the Work. Costs will be allowed for construction equipment only if used solely for the changed Work, or for additional rental costs actually incurred by the Contractor. Equipment charges shall be computed on the basis of actual invoice costs or if owned, from the current edition of one of the following sources:

      1) Associated General Contractors - Washington State Department of Transportation (AGC-WSDOT) Equipment Rental Agreement; current edition, on the Contract execution date.

      2) The state of Washington Utilities and Transportation Commission for trucks used on highways.

      3) The National Electrical Contractors Association for equipment used on electrical work.

      4) The Mechanical Contractors Association of America for equipment used on mechanical work.

      The Data Quest Rental Rate (Blue Book) shall be used as a basis for establishing rental rates of equipment not listed in the above sources. The maximum rate for standby equipment shall not exceed that shown in the AGC WSDOT Equipment Rental Agreement, current edition, on the Contract execution date.

   d. Allowance for small tools, expendables, and consumable supplies: Small tools consist of tools which cost $250 or less and are normally furnished by the performing contractor. The maximum rate for small tools shall not exceed the following:

1) For Contractor, 3% (three percent) of direct labor costs.

2) For Subcontractors, 5% (five percent) of direct labor costs.

Expendables and consumable supplies directly associated with the change in Work must be itemized.

e. Subcontractor costs: This is defined as payments Contractor makes to Subcontractors for changed Work performed by Subcontractors of any tier. The Subcontractors' cost of Work shall be calculated and itemized in the same manner as prescribed herein for Contractor.

f. Allowance for overhead: This is defined as costs of any kind attributable to direct and indirect delay, acceleration, or impact, added to the total cost to Owner of any change in the Contract Sum but not to the cost of any change in the Contract Time for which contractor has been compensated pursuant to the conditions set forth in Section 7.03. This allowance shall compensate Contractor for all non-craft labor, temporary construction facilities, field engineering, schedule updating, record drawings, home office cost, B&O taxes, office engineering, estimating costs, additional overhead because of extended time, and any other cost incidental to the change in the Work. It shall be strictly limited in all cases to a reasonable amount, mutually acceptable, or if none can be agreed upon to an amount not to exceed the rates below:

1) For projects where the Contract Award Amount is under $3 million, the following shall apply:

a) For Contractor, for any Work actually performed by Contractor's own forces, 16% (sixteen percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 16% (sixteen percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

c) For Contractor, for any work performed by its Subcontractor(s), 6% (six percent) of the first $50,000 of the amount due each Subcontractor, and 4% (four percent) of the remaining amount if any.

d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first $50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.

e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.-e. above.

2) For projects where the Contract Award Amount is equal to or exceeds $3 million, the following shall apply:

a) For Contractor, for any Work actually performed by Contractor's own forces, 12% (twelve percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

b) For each Subcontractor (including lower tier subcontractors), for any Work actually performed by its own forces, 12% (twelve percent) of the first $50,000 of the cost, and 4% (four percent) of the remaining cost, if any.

c) For Contractor, for any Work performed by its Subcontractor(s), 4% (four percent) of the first $50,000 of the amount due each Subcontractor, and 2% (two percent) of the remaining amount if any.

d) For each Subcontractor, for any Work performed by its Subcontractor(s) of any lower tier, 4% (four percent) of the first $50,000 of the amount due the sub-Subcontractor, and 2% (two percent) of the remaining amount if any.

e) The cost to which overhead is to be applied shall be determined in accordance with subparagraphs a.- e. above.

g. Allowance for profit: This is an amount to be added to the cost of any change in contract sum, but not to the cost of change in Contract Time for which contractor has been compensated pursuant to the conditions set forth in section 7.03. It shall be limited to a reasonable amount, mutually acceptable, or if none can be agreed upon, to an amount not to exceed the rates below:

1) For Contractor or Subcontractor of any tier for work performed by their forces, 6% (six percent) of the cost developed in accordance with Section 7.02 b. 7a.- e.

2) For Contractor or Subcontractor of any tier for work performed by a subcontractor of a lower tier, 4% (four percent) of the Subcontractor cost developed in accordance with Section 7.02 b. 7a. - h.

h. Cost of change in insurance or bond premium: This is defined as:

1) Contractor's liability insurance: The cost of any changes in Contractor's liability insurance arising directly from execution of the Change Order; and

2) Public works bond: The cost of the additional premium for Contractor's bond arising directly from the changed Work.

The costs of any change in insurance or bond premium shall be added after overhead and allowance for profit are calculated in accordance with subparagraph f. and g. above.

C. Change Order Pricing -- Unit Prices

1. Whenever Owner authorizes Contractor to perform Work on a unit-price basis, Owner's authorization shall clearly state:

a. Scope of work to be performed;
b. Type of reimbursement including pre-agreed rates for material quantities; and
c. Cost limit of reimbursement.

2. Contractor shall:

a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, Contractor shall identify workers assigned to the Change Order Work and areas in which they are working;
b. Leave access as appropriate for quantity measurement; and
c. Not exceed any cost limit(s) without Owner's prior written approval.

3. Contractor shall submit costs in accordance with paragraph 7.02B. and satisfy the following requirements:

a. Unit prices shall include reimbursement for all direct and indirect costs of the Work, including overhead and profit, and bond and insurance costs; and
b. Quantities must be supported by field measurement statements signed by Owner.

D. Change Order Pricing -- Time-and-Material Prices

1. Whenever Owner authorizes Contractor to perform Work on a time-and-material basis, Owner's authorization shall clearly state:

a. Scope of Work to be performed;
b. Type of reimbursement including pre-agreed rates, if any, for material quantities or labor; and
c. Cost limit of reimbursement.

2. Contractor shall:

a. Cooperate with Owner and assist in monitoring the Work being performed. As requested by Owner, identify workers assigned to the Change Order Work and areas in which they are working;
b. Identify on daily time sheets all labor performed in accordance with this authorization. Submit copies of daily time sheets within 2 working days for Owner's review;
c. Leave access as appropriate for quantity measurement;
d. Perform all Work in accordance with this section as efficiently as possible; and
e. Not exceed any cost limit(s) without Owner's prior written approval.

3. Contractor shall submit costs in accordance with paragraph 7.02B and additional verification supported by:

   a. Labor detailed on daily time sheets; and
   b. Invoices for material.

7.03 CHANGES IN THE CONTRACT TIME

A. The Contract Time shall only be changed by a Change Order. Contractor shall include any request for a change in the Contract Time in its Change Order Proposal.

B. If the time of Contractor's performance is changed due to an act of Force Majeure, or due to the fault or negligence of Owner or anyone for whose acts Owner is responsible, Contractor shall be entitled to make a request for an equitable adjustment in the Contract Time in accordance with the following procedure. No adjustment in the Contract Time shall be allowed to the extent Contractor's changed time of performance is due to the fault or negligence of Contractor, or anyone for whose acts Contractor is responsible.

1. A request for an equitable adjustment in the Contract Time shall be based on written notice delivered within 7 (seven) days of the occurrence of the event giving rise to the request. If Contractor believes it is entitled to adjustment of Contract Time, Contractor shall immediately notify Owner and begin to keep and maintain complete, accurate, and specific daily records. Contractor shall give Owner access to any such record and if requested, shall promptly furnish copies of such record to Owner.

2. Contractor shall not be entitled to an adjustment in the Contract Time for any events that occurred more than 7 (seven) days before Contractor's written notice to Owner. The written notice shall set forth, at a minimum, a description of: the event giving rise to the request for an equitable adjustment in the Contract Time; the nature of the impacts to Contractor and its Subcontractors of any tier, if any; and to the extent possible the amount of the adjustment in Contract Time requested. Failure to properly give such written notice shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

3. Within 30 (thirty) days of the occurrence of the event giving rise to the request, unless Owner agrees in writing to allow an additional period of time to ascertain more accurate data, Contractor shall supplement the written notice provided in accordance with subparagraph 7.03B.2 with additional supporting data. Such additional data shall include, at a minimum: the amount of delay claimed, itemized in accordance with the procedure set forth herein; specific facts, circumstances, and analysis that confirms not only that Contractor suffered the delay claimed, but that the delay claimed was actually a result of the act, event, or condition complained of, and that the Contract Documents provide entitlement to an equitable adjustment in Contract Time for such act, event, or condition; and supporting documentation sufficiently detailed to permit an informed analysis of the request by Owner. Failure to provide such additional information and documentation within the time allowed or within the format required shall, to the extent Owner's interests are prejudiced, constitute a waiver of Contractor's right to an equitable adjustment.

4. Pending final resolution of any request in accordance with this paragraph, unless otherwise agreed in writing, Contractor shall proceed diligently with performance of the Work.

C. Any change in the Contract Time covered by a Change Order, or based on a request for an equitable adjustment in the Contract Time, shall be limited to the change in the critical path of Contractor's schedule attributable to the change of Work or event(s) giving rise to the request for equitable adjustment. Any Change Order proposal or request for an adjustment in the Contract Time shall demonstrate the impact on the critical path of the schedule. Contractor shall be responsible for showing clearly on the Progress

Schedule that the change or event: had a specific impact on the critical path, and except in case of concurrent delay, was the sole cause of such impact; and could not have been avoided by resequencing of the Work or other reasonable alternatives.

D. Contractor may request compensation for the cost of a change in Contract Time in accordance with this paragraph, 7.03D, subject to the following conditions:

1. The change in Contract Time shall solely be caused by the fault or negligence of Owner or A/E;

2. Compensation under this paragraph is limited to changes in Contract Time for which Contractor is not entitled to be compensated under section 7.02;

3. Contractor shall follow the procedure set forth in paragraph 7.03B;

4. Contractor shall establish the extent of the change in Contract Time in accordance with paragraph 7.03C; and

5. The daily cost of any change in Contract Time shall be limited to the items below, less funds that may have been paid pursuant to a change in the Contract Sum that contributed to this change in Contract Time:

   a. cost of nonproductive field supervision or labor extended because of the delay;
   b. cost of weekly meetings or similar indirect activities extended because of the delay;
   c. cost of temporary facilities or equipment rental extended because of the delay;
   d. cost of insurance extended because of the delay;
   e. general and administrative overhead in an amount to be agreed upon, but not to exceed 3% (three percent) of Contract Sum divided by the Contract Time for each day of the delay.

PART 8 - CLAIMS AND DISPUTE RESOLUTION

8.01 CLAIMS PROCEDURE

A. If the parties fail to reach agreement on the terms of any Change Order for Owner-directed Work as provided in section 7.01, or on the resolution of any request for an equitable adjustment in the Contract Sum as provided in section 7.02 or the Contract Time as provided in section 7.03, Contractor's only remedy shall be to file a Claim with Owner as provided in this section.

B. Contractor shall file its Claim within the earlier of: 120 (one hundred twenty) days from Owner's final offer in accordance with either paragraph 7.01E or the date of Final Acceptance.

C. The Claim shall be deemed to cover all changes in cost and time (including direct, indirect, impact, and consequential) to which Contractor may be entitled. It shall be fully substantiated and documented. At a minimum, the Claim shall contain the following information:

1. A detailed factual statement of the Claim for additional compensation and time, if any, providing all necessary dates, locations, and items of Work affected by the Claim;

2. The date on which facts arose which gave rise to the Claim

3. The name of each employee of Owner or A/E knowledgeable about the Claim;

4. The specific provisions of the Contract Documents which support the Claim;

5. The identification of any documents and the substance of any oral communications that support the Claim;

6. Copies of any identified documents, other than the Contract Documents, that support the Claim;

7. If an adjustment in the Contract Time is sought: the specific days and dates for which it is sought; the specific reasons Contractor believes an extension in the Contract Time should be granted; and Contractor's analysis of its Progress Schedule to demonstrate the reason for the extension in Contract Time;

8. If an adjustment in the Contract Sum is sought, the exact amount sought and a breakdown of that amount into the categories set forth in, and in the detail required by, section 7.02; and

9. A statement certifying, under penalty of perjury, that the Claim is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the Claim is fully supported by the accompanying data, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes Owner is liable.

D. After Contractor has submitted a fully documented Claim that complies with all applicable provisions of parts 7 and 8, Owner shall respond, in writing, to Contractor as follows:

1. If the Claim amount is less than $50,000, with a decision within 60 (sixty) days from the date the Claim is received; or

2. If the Claim amount is $50,000 or more, with a decision within 60 (sixty) days from the date the Claim is received, or with notice to Contractor of the date by which it will render its decision. Owner will then respond with a written decision in such additional time.

E. To assist in the review of Contractor's Claim, Owner may visit the Project site, or request additional information, in order to fully evaluate the issues raised by the Claim. Contractor shall proceed with performance of the Work pending final resolution of any Claim. Owner's written decision as set forth above shall be final and conclusive as to all matters set forth in the Claim, unless Contractor follows the procedure set forth in section 8.02.

F. Any Claim of the Contractor against the Owner for damages, additional compensation, or additional time, shall be conclusively deemed to have been waived by the Contractor unless timely made in accordance with the requirements of this section.

8.02 ARBITRATION

A. If Contractor disagrees with Owner's decision rendered in accordance with paragraph 8.01D, Contractor shall provide Owner with a written demand for arbitration. No demand for arbitration of any such Claim shall be made later than 30 (thirty) days after the date of Owner's decision on such Claim; failure to demand arbitration within said 30-day period shall result in Owner's decision being final and binding upon Contractor and its Subcontractors.

B. Notice of the demand for arbitration shall be filed with the American Arbitration Association (AAA), with a copy provided to Owner. The parties shall negotiate or mediate under the Voluntary Construction Mediation Rules of the AAA, or mutually acceptable service, before seeking arbitration in accordance with the Construction Industry Arbitration Rules of AAA as follows:

1. Disputes involving $30,000 or less shall be conducted in accordance with the Northwest Region Expedited Commercial Arbitration Rules; or

2. Disputes over $30,000 shall be conducted in accordance with the Construction Industry Arbitration Rules of the AAA, unless the parties agree to use the expedited rules.

C. All Claims arising out of the Work shall be resolved by arbitration. The judgment upon the arbitration award may be entered, or review of the award may occur, in the superior court having jurisdiction thereof. No independent legal action relating to or arising from the Work shall be maintained.

D. Claims between Owner and Contractor, Contractor and its Subcontractors, Contractor and A/E, and Owner and A/E shall, upon demand by Owner, be submitted in the same arbitration or mediation.

E. If the parties resolve the Claim prior to arbitration judgment, the terms of the resolution shall be incorporated in a Change Order. The Change Order shall constitute full payment and final settlement of the Claim, including all claims for time and for direct, indirect, or consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity.

8.03 CLAIMS AUDITS

A. All Claims filed against Owner shall be subject to audit at any time following the filing of the Claim. Failure of Contractor, or Subcontractors of any tier, to maintain and retain sufficient records to allow Owner to verify all or a portion of the Claim or to permit Owner access to the books and records of Contractor, or Subcontractors of any tier, shall constitute a waiver of the Claim and shall bar any recovery.

B. In support of Owner audit of any Claim, Contractor shall, upon request, promptly make available to Owner the following documents:

1. Daily time sheets and supervisor's daily reports;
2. Collective bargaining agreements;
3. Insurance, welfare, and benefits records;
4. Payroll registers;
5. Earnings records;
6. Payroll tax forms;
7. Material invoices, requisitions, and delivery confirmations;
8. Material cost distribution worksheet;
9. Equipment records (list of company equipment, rates, etc.);
10. Vendors', rental agencies', Subcontractors', and agents' invoices;
11. Contracts between Contractor and each of its Subcontractors, and all lower-tier Subcontractor contracts and supplier contracts;
12. Subcontractors' and agents' payment certificates;
13. Cancelled checks (payroll and vendors);
14. Job cost report, including monthly totals;
15. Job payroll ledger;
16. Planned resource loading schedules and summaries;
17. General ledger;
18. Cash disbursements journal;
19. Financial statements for all years reflecting the operations on the Work. In addition, the Owner may require, if it deems it appropriate, additional financial statements for 3 (three) years preceding execution of the Work;
20. Depreciation records on all company equipment whether these records are maintained by the company involved, its accountant, or others;
21. If a source other than depreciation records is used to develop costs for Contractor's internal purposes in establishing the actual cost of owning and operating equipment, all such other source documents;
22. All non-privileged documents which relate to each and every Claim together with all documents which support the amount of any adjustment in Contract Sum or Contract Time sought by each Claim;
23. Work sheets or software used to prepare the Claim establishing the cost components for items of the Claim including but not limited to labor, benefits and insurance, materials, equipment, Subcontractors,

all documents which establish the time periods, individuals involved, the hours for the individuals, and the rates for the individuals; and

24. Work sheets, software, and all other documents used by Contractor to prepare its bid.

C. The audit may be performed by employees of Owner or a representative of Owner. Contractor, and its Subcontractors, shall provide adequate facilities acceptable to Owner, for the audit during normal business hours. Contractor, and all Subcontractors, shall make a good faith effort to cooperate with Owner's auditors.

PART 9 - TERMINATION OF THE WORK

9.01 TERMINATION BY OWNER FOR CAUSE

A. Owner may, upon 7 (seven) days written notice to Contractor and to its surety, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for cause upon the occurrence of any one or more of the following events:

1. Contractor fails to prosecute the Work or any portion thereof with sufficient diligence to ensure Substantial Completion of the Work within the Contract Time;
2. Contractor is adjudged bankrupt, makes a general assignment for the benefit of its creditors or a receiver is appointed on account of its insolvency;
3. Contractor fails in a material way to replace or correct Work not in conformance with the Contract Documents;
4. Contractor repeatedly fails to supply skilled workers or proper materials or equipment;
5. Contractor repeatedly fails to make prompt payment due to Subcontractors or for labor;
6. Contractor materially disregards or fails to comply with laws, ordinances, rules, regulations, or orders of any public authority having jurisdiction; or
7. Contractor is otherwise in material breach of any provision of the Contract Documents.

B. Upon termination, Owner may at its option:

1. Take possession of the Project site and take possession of or use all materials, equipment, tools, and construction equipment and machinery thereon owned by Contractor to maintain the orderly progress of, and to finish, the Work;
2. Accept assignment of subcontracts pursuant to section 5.20; and
3. Finish the Work by whatever other reasonable method it deems expedient.

C. Owner's rights and duties upon termination are subject to the prior rights and duties of the surety, if any, obligated under any bond provided in accordance with the Contract Documents.

D. When Owner terminates the Work in accordance with this section, Contractor shall take the actions set forth in paragraph 9.02B, and shall not be entitled to receive further payment until the Work is accepted.

E. If the unpaid balance of the Contract Sum exceeds the cost of finishing the Work, including compensation for A/E's services and expenses made necessary thereby and any other extra costs or damages incurred by Owner in completing the Work, or as a result of Contractor's actions, such excess shall be paid to Contractor. If such costs exceed the unpaid balance, Contractor shall pay the difference to Owner. These obligations for payment shall survive termination.

F. Termination of the Work in accordance with this section shall not relieve Contractor or its surety of any responsibilities for Work performed.

G. If Owner terminates Contractor for cause, and it is later determined that none of the circumstances set forth in paragraph 9.01A exist, then such termination shall be deemed a termination for convenience pursuant to section 9.02.

9.02 TERMINATION BY OWNER FOR CONVENIENCE

A. Owner may, upon written notice, terminate (without prejudice to any right or remedy of Owner) the Work, or any part of it, for the convenience of Owner.

B. Unless Owner directs otherwise, after receipt of a written notice of termination for either cause or convenience, Contractor shall promptly:

1. Stop performing Work on the date and as specified in the notice of termination;

2. Place no further orders or subcontracts for materials, equipment, services or facilities, except as may be necessary for completion of such portion of the Work as is not terminated;

3. Cancel all orders and subcontracts, upon terms acceptable to Owner, to the extent that they relate to the performance of Work terminated;

4. Assign to Owner all of the right, title, and interest of Contractor in all orders and subcontracts;

5. Take such action as may be necessary or as directed by Owner to preserve and protect the Work, Project site, and any other property related to this Project in the possession of Contractor in which Owner has an interest; and

6. Continue performance only to the extent not terminated.

C. If Owner terminates the Work or any portion thereof for convenience, Contractor shall be entitled to make a request for an equitable adjustment for its reasonable direct costs incurred prior to the effective date of the termination, plus a reasonable allowance for overhead and profit on Work performed prior to termination, plus the reasonable administrative costs of the termination, but shall not be entitled to any other costs or damages, whatsoever, provided however, the total sum payable upon termination shall not exceed the Contract Sum reduced by prior payments. Contractor shall be required to make its request in accordance with the provisions of part 7.

D. If Owner terminates the Work or any portion thereof for convenience, the Contract Time shall be adjusted as determined by Owner.

PART 10 - MISCELLANEOUS PROVISIONS

10.01 GOVERNING LAW

The Contract Documents and the rights of the parties herein shall be governed by the laws of the state of Washington. Venue shall be in the county in which Owner's principal place of business is located, unless otherwise specified.

10.02 SUCCESSORS AND ASSIGNS

Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to the other party hereto and to partners, successors, assigns, and legal representatives of such other party in respect to covenants, agreements, and obligations contained in the Contract Documents. Neither party shall assign the Work without written consent of the other, except that Contractor may assign the Work for security purposes, to a bank or lending institution authorized to do business in the state of Washington. If either party attempts to make such an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations set forth in the Contract Documents.

10.03 MEANING OF WORDS

Unless otherwise stated in the Contract Documents, words which have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Reference to standard specifications, manuals, or codes of any technical society, organization, or association, or

to the code of any governmental authority, whether such reference be specific or by implication, shall be to the latest standard specification, manual, or code in effect on the date for submission of bids, except as may be otherwise specifically stated. Wherever in these Drawings and Specifications an article, device, or piece of equipment is referred to in the singular manner, such reference shall apply to as many such articles as are shown on the drawings, or required to complete the installation.

10.04 RIGHTS AND REMEDIES

No action or failure to act by Owner or A/E shall constitute a waiver of a right or duty afforded them under the Contract Documents, nor shall such action or failure to act constitute approval of an acquiescence in a breach therein, except as may be specifically agreed in writing.

10.05 CONTRACTOR REGISTRATION

Pursuant to RCW 39.06, Contractor shall be registered or licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27.

10.06 TIME COMPUTATIONS

When computing any period of time, the day of the event from which the period of time begins shall not be counted. The last day is counted unless it falls on a weekend or legal holiday, in which event the period runs until the end of the next day that is not a weekend or holiday. When the period of time allowed is less than 7 (seven) days, intermediate Saturdays, Sundays, and legal holidays are excluded from the computation.

10.07 RECORDS RETENTION

The wage, payroll, and cost records of Contractor, and its Subcontractors, and all records subject to audit in accordance with section 8.03, shall be retained for a period of not less than 6 (six) years after the date of Final Acceptance.

10.08 THIRD-PARTY AGREEMENTS

The Contract Documents shall not be construed to create a contractual relationship of any kind between: A/E and Contractor; Owner and any Subcontractor; or any persons other than Owner and Contractor.

10.09 ANTITRUST ASSIGNMENT

Owner and Contractor recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, Contractor hereby assigns to Owner any and all claims for such overcharges as to goods, materials, and equipment purchased in connection with the Work performed in accordance with the Contract Documents, except as to overcharges which result from antitrust violations commencing after the Contract Sum is established and which are not passed on to Owner under a Change Order. Contractor shall put a similar clause in its Subcontracts, and require a similar clause in its sub-Subcontracts, such that all claims for such overcharges on the Work are passed to Owner by Contractor.

10.10 MINORITY AND WOMEN'S BUSINESS ENTERPRISES (MWBE) PARTICIPATION

In Accordance with the legislative findings and policies set forth in Chapter 39.19 RCW the State of Washington encourages participation in all of its contracts by MWBE firms certified by the Office of Minority and Women's Business Enterprises (OMWBE). Participation may be either on a direct basis in response to this solicitation or as a subcontractor to a Bidder. Any affirmative action requirements set forth in federal regulations or statutes included or referenced in the contract documents will apply. Bidders may contact OMWBE to obtain information on certified firms for potential subcontractors/suppliers.

A. When referred to in this Contract, the terms Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) will be as defined by OMWBE, WAC 326-02-030.

B. The OMWBE has compiled a directory of certified firms. Copies of this directory may be obtained through the OMWBE. For information regarding the certification process or the certification status of a particular firm, contact:

OMWBE, 406 South Water Street, PO Box 41160, Olympia, WA 98504-1160, telephone (360) 753-9693.

C. Eligible MWBEs or M/W firms

MWBE firms utilized for this project for voluntary MWBE goals may be certified by Washington State OMWBE or self identified as minority or women owned (M/W firm).

D. MWBE Voluntary Goals

The Owner has established voluntary goals for MWBE participation for this project. The voluntary goals are set forth in the Advertisement for Bids.

E. If any part of the contract, including the supply of materials and equipment, is anticipated to be subcontracted, then prior to receipt of the first payment, Contractor shall submit, pursuant to Section 5.20 A, a list of all subcontractors/suppliers it intends to use, designate whether any of the subcontractors/suppliers are MWBE firms, indicate the anticipated dollar value of each MWBE subcontract, and provide Tax Identification Number (TIN).

F. If any part of the contract, including the supply of materials and equipment is actually subcontracted during completion of the work, then prior to final acceptance or completion of the contract or as otherwise indicated in the contract documents, the Contractor shall submit a statement of participation indicating what MWBEs were used and the dollar value of their subcontracts.

G. The provisions of this section are not intended to replace or otherwise change the requirements of RCW 39.30.060. If said statute is applicable to this contract then the failure to comply with RCW 39.30.060 will still render a bid non-responsive.

H. The Contractor shall maintain, for at least three years after completion of this contract, relevant records and information necessary to document the level of utilization of MWBEs and other businesses as subcontractors and suppliers in this contract, as well as any efforts the Contractor makes to increase the participation of MWBEs as listed in section I below. The Contractor shall also maintain, for at least three years after completion of this contract, a record of all quotes, bids, estimates, or proposals submitted to the Contractor by all businesses seeking to participate as subcontractors or suppliers in this contract. The state shall have the right to inspect and copy such records. If this contract involves federal funds, Contractor shall comply with all record keeping requirements set forth in any federal rules, regulations, or statutes included or referenced in the contract documents.

I. Bidders should advertise opportunities for subcontractors or suppliers in a manner reasonably designed to provide MWBEs capable of performing the work with timely notice of such opportunities, and all advertisements shall include a provision encouraging participation by MWBE firms. Advertising may be done through general advertisements (e.g. newspapers, journals, etc.) or by soliciting bids directly from MWBEs. Bidders shall provide MWBEs that express interest with adequate and timely information about plans, specifications, and requirements of the contract.

J. Contractors shall not create barriers to open and fair opportunities for all businesses including MWBEs to participate in all State contracts and to obtain or compete for contracts and subcontracts as sources of supplies, equipment, construction and services.

K. Any violation of the mandatory requirements of this part of the contract shall be a material breach of contract for which the Contractor may be subject to a requirement of specific performance, or damages and sanctions provided by contract, by RCW 39.19.090, or by other applicable laws.

10.11 MINIMUM LEVELS OF APPRENTICESHIP PARTICIPATION

In accordance with Executive Order 00-01 the State of Washington may require apprenticeship participation for projects of a certain cost. The bid advertisement and Bid Proposal form shall establish the minimum percentage of apprentice labor hours as compared to the total labor hours.

A. Voluntary workforce diversity goals have been established for the apprentice hours. These goals are that one-fifth (1/5) of the apprentice hours be performed by minorities, and one-sixth (1/6) of the apprentice hours be performed by women.

B. Apprentice participation, under this contract, may be counted towards the required percentage (%) only if the apprentices are from an apprenticeship program registered and approved by the Washington State Apprenticeship and Training Council (RCW 49.04 and WAC 296-04).

C. Bidders may contact the Department of Labor and Industries, Specialty Compliance Services Division, Apprenticeship Section, P.O. Box 44530, Olympia, WA 98504-4530 by phone at (360) 902-5320, and e-mail at Apprentice@Lni.wa.gov, to obtain information on available apprenticeship programs.

D. For each project that has apprentice requirements, the contractor shall submit a "Statement of Apprentice/Journeyman Participation" on forms provided by the Department of General Administration, with every request for progress payment. The Contractor shall submit consolidated and cumulative data collected by the Contractor and collected from all subcontractors by the Contractor. The data to be collected and submitted includes the following:

1. Contractor name and address
2. Contract number
3. Project name
4. Contract value
5. Reporting period "Notice to Proceed" through "Invoicing Date"
6. Craft/trade/occupation of all (contractor and subcontractor trades working on the project) apprentices and journeymen
7. Total number of apprentices and total number of hours worked by apprentices, both categorized by gender and ethnicity
8. Total number of journeymen and total number of hours worked by journeymen, both categorized by gender and ethnicity
9. Cumulative combined total of apprentice and journeymen labor hours.
10. Total percentage of apprentice hours worked
11. No changes to the required percentage (%) of apprentice participation shall be allowed without written approval of the Owner. In any request for the change the Contractor shall clearly demonstrate a good faith effort to comply with the requirements for apprentice participation.
12. Any substantive violation of the mandatory requirements of this part of the contract may be a material breach of the contract by the Contractor. The Owner may withhold payment pursuant to Part 6.05, stop the work for cause pursuant to Part 3.04, and terminate the contract for cause pursuant to Part 9.01.

10.12 HEADINGS AND CAPTIONS

Headings for convenience only: All headings and captions used in these General Conditions are only for convenience of reference and shall not be used in any way in connection with the meaning, effect, interpretation, construction, or enforcement of the General Conditions, and do not define the limit or describe the scope or intent of any provision of these General Conditions.

10.13 SUBCONTRACTOR PAYMENTS REPORTING REQUIREMENTS

This Contract is subject to compliance tracking using the State's business diversity management system, Access Equity (B2Gnow). Access Equity is web-based and can be accessed at the Office of Minority and Women's Business Enterprises at https://omwbe.diversitycompliance.com/. The Contractor and all Subcontractors shall report and confirm receipt of payments made to the Contractor and each Subcontractor through Access Equity.

The Contractor may contact the Owner at contracts@parks.wa.gov for technical assistance in using the Access Equity system. User guides and documentation related to Contractor and Subcontractor access to and use of Access Equity are available online at https://omwbe.wa.gov/access-equity-help-center. The Owner reserves the

right to withhold payments from the Contractor for non-compliance with this section. For purposes of this section, Subcontractor means any subcontractor working on the Contract, at any tier and regardless of status as certified WMBE or Non-WMBE.
The Contractor shall:

a. Register and enter all required Subcontractor information into Access Equity no later than 15 days after the Owner creates the Contract Record.

b. Complete the required user training (two (2) one-hour online sessions) no later than 20 days after the Owner creates the Contract Record.

c. Report the amount and date of all payments (i) received from the Owner, and (ii) paid to Subcontractors, no later than 30 days, issuance of each payment made by the Owner to the Contractor, unless otherwise specified in writing by the Owner, except that the Contractor shall mark as "Final" and report the final Subcontractor payments) into Access Equity no later than thirty (30) days after the final payment is due the Subcontractor(s) under the Contract, with all payment information entered no later than sixty (60) days after end of fiscal year.

d. Monitor contract payments and respond promptly to any requests or instructions from the Owner or system-generated messages to check or provide information in Access Equity.

e. Coordinate with Subcontractors, or Owner when necessary, to resolve promptly any discrepancies between reported and received payments.

f. Require each Subcontractor to: (i) register in Access Equity and complete the required user training; (ii) verify the amount and date of receipt of each payment from the Contractor or a higher tier Subcontractor, if applicable, through Access Equity; (iii) report payments made to any lower tier Subcontractors, if any, in the same manner as specified herein; (iv) respond promptly to any requests or instructions from the Contractor or system-generated messages to check or provide information in Access Equity; and (v) coordinate with Contractor, or Owner when necessary, to resolve promptly any discrepancies between reported and received payments.

END OF CONDITIONS

/ / / / /

Approved as to Form:
William Van Hook /s/
Asst. Attorney General
02/2007
08/2010 GA Updates – jrc
09/2010 to AAG Schwartz

PREVAILING WAGES

Instruction for Prevailing Wage Rates

The State of Washington prevailing wage rates for this public works project, which is located in San Juan County, may be found at the following website address of the Department of Labor and Industries:

https://secure.lni.wa.gov/wagelookup/rates/journey-level-rates

The prevailing wages for this project are those that are in effect on the date that the bids are due.

Contractor to Pay Prevailing Wages

The Contractor shall pay the prevailing rate of wages to all workers, laborers, or mechanics employed in the performance of any part of the Work in accordance with RCW 39.12 and the rules and regulations of the Department of Labor and Industries. The schedule of prevailing wage rates for the locality or localities of the Work is determined by the Industrial Statistician of the Department of Labor and Industries. It is the Contractor's responsibility to verify the applicable prevailing wage rate.

A copy of the applicable wage rates is available upon request. Please request a copy by email at: contracts@parks.wa.gov.

SECTION 010000 – GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SPECIAL NOTICE

A. The environmental permits allow work below the Ordinary High Water Line between September 1, 2025 and March 1, 2026. No in-water work is allowed outside of this timeframe.

B. The Contractor shall not mobilize material or equipment to the Project Site prior to September 15, 2025.

1.2 DESCRIPTION OF WORK

A. The work for this project includes the replacement of existing float systems, fixed pier, and gangway at Reid Harbor in Stuart Island State Park. Major items included (but not limited to) in the Work are as follows:
   1. Removal of the timber floats, gangway, timber pier and timber piles;
   2. Fabrication and installation of steel float systems, steel pipe piles, aluminum gangway, aluminum walkways, and concrete abutment;
   3. Salvaging the existing island floats; and
   4. Temporarily move the existing pumpout float and replacing the existing timber support dolphins with steel pipe piles.

B. All labor and materials associated with the project are to be included in bid unless otherwise specified in the Plans or Specifications by the Commission.

C. Work shall comply with the special notices described in Invitation to Bid, the Drawings, these Specifications, and the applicable permit documents & regulatory requirements.

1.3 TIME FOR COMPLETION OF PROJECT

A. Substantially complete project in accordance with the drawings and specifications within 215 calendar days from date on Notice to Proceed letter. Final completion in accordance with Contract Documents within 30 calendar days from substantial completion date.

1.4 HOURS OF WORK

A. Unless otherwise approved by the Owner work hours are between sunrise and sunset. Monday through Friday, excluding national holidays. Park quiet hours are 10 p.m. - 6 a.m.; any construction activities proposed to occur during Quiet hours require prior approval of the Owner.

B. Hours of work, construction lighting, and all other construction activities must comply with Appendix A – Environmental Permit Documents.

1.5 LIQUIDATED DAMAGES

A. If Contractor fails to complete Contract within stipulated time, an assessment of $1,500.00 per day will be made against Contractor for each additional day required to complete contract, unless an extension of time was granted through Change Order. This assessment is to cover the Commission's liquidated damages and is not to be construed as a penalty.

B. B. Contract authorizes the Washington State Parks and Recreation Commission to deduct liquidated damages from money due at completion of contract.

1.6 PRE-CONSTRUCTION CONFERENCE

C. Following notification of award to Contractor, the date for an on-site pre-construction conference will be set. Do not commence Work prior to conference or until written clearance has been obtained from Project Representative.

D. Furnish Project Representative with following:

1. Complete list of sub-contractors, including business address, telephone numbers, items of Work, and registration numbers. List is to be updated during contract life.
2. Name and contact information of Contractor's staff who is in charge and responsible for site safety and will be on site at all times.
3. A Site-Specific Safety Plan that is in compliance with the Department of Labor and Industries and General Conditions specifically for this project.
4. A progress schedule in accordance with General Conditions.
5. A detailed cost breakdown for lump sum bid items. Furnish a fair evaluation of actual cost of each items of Work listed. This will be used in processing Contractor's requests for partial payment. Submittal of breakdown does not affect the Contract terms.
6. Written document detailing plans to comply with 15 percent Apprenticeship Participation requirement stated in Instruction to Bidders 5.1B.

E. Project Representative will supply a list of hazardous products that could be encountered on Project. Appropriate Safety Data Sheet (SDS) will be on file at the park.

1.7 PROGRESS CLEANING

A. Remove rubbish and debris from park property daily unless otherwise directed do not allow accumulation. Store materials that cannot be removed daily only in areas specified by the Project Representative.

B. Maintain worksites in a neat and orderly condition.

C. Cleanup operations are incidental to the Contract and no extra compensation will be made.

1.8 FINAL CLEAN-UP

A. Clean up the entire construction site and all grounds occupied by the Contractor in connection with the work. Upon completion of the work and prior to final inspection and acceptance,

B. Fine graded, rake clean and smooth all worksites and disturbed areas. Remove from the park all rubbish, surplus and discarded materials, falsework, temporary structures, equipment and debris.

C. Leave all phases of the Project clean and ready for public use prior to final acceptance.

D. Inspect all materials and surfaces for damage, scratches, marring, untreated ends of sawcuts, etc. and repair to original or intended condition.

E. See General Conditions for additional requirements

1.9 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT)

A. WSDOT General Requirements apply where noted.

1.10 AS-BUILT DRAWINGS

A. Keep a clean set of full-sized drawings at job site to use to identify changes.

1.11 PROJECT CONDITIONS

A. Hazardous Materials: It is unknown whether hazardous materials will be encountered in the Work.

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Project Representative and Owner. Owner will remove hazardous materials under a separate contract.

1.12 PROJECT SIGN

A. Provide following temporary sign. Sign location is shown on drawings or determined by Project Representative. Upon Project completion, remove sign and restore area to original condition.

1.13 PROJECT SIGN LETTERING

TITLE OF PROJECT:	REID HARBOR MOORAGE FACILITY IMPROVEMENTS
NAME OF FACILITY:	STUART ISLAND STATE PARK
NAME OF CONTRACTOR:	(Place Contractor's Name here)
ADDRESS OF CONTRACTOR:	(Place Contractor's Address here)
FUNDING TITLE NUMBER 1:	STATE BUILDING CONSTRUCTION ACCOUNT
FUNDING TITLE NUMBER 2:	(LEAVE BLANK FOR THIS PROJECT)

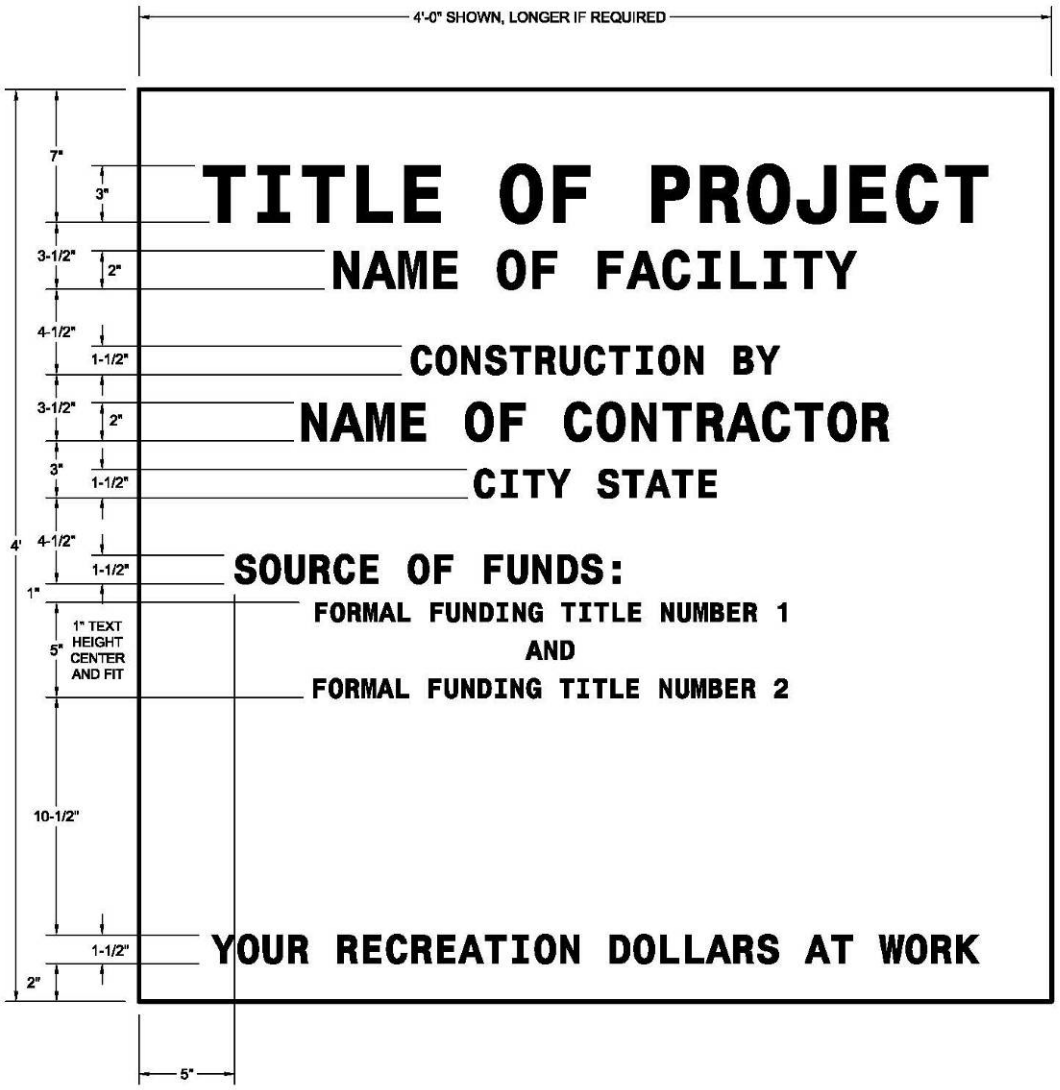
1.14 PARTNERSHIP IN THE CONTRACT

A. As partners in this contract, both Contractor and Commission recognize the value of a successful Project. Both parties recognize, besides the tangible benefits to Contractor and the Commission, the citizens of Washington State and visitors to Washington State Parks will benefit immensely from the successful completion of a quality Project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

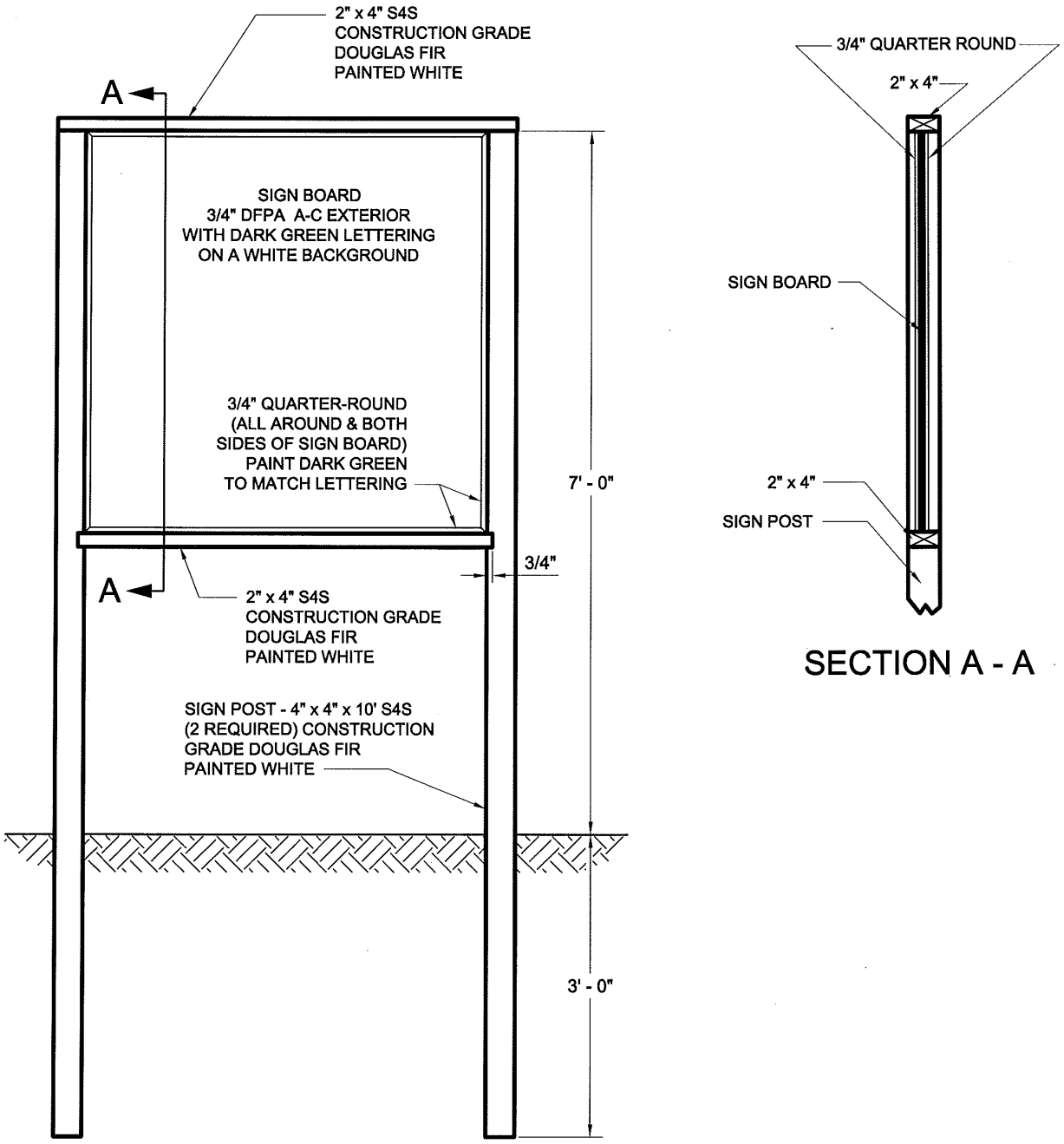
PROJECT SIGN DETAIL



LAY OUT SIGN TO FIT ON A PORTION OF ONE (1) SHEET OF PLYWOOD. IF PLYWOOD IS THE FINAL SURFACE, PAINT IT WITH TWO (2) OR MORE COATS OF WHITE PAINT TO FORM A SMOOTH, NONABSORBENT SURFACE. PROVIDE DARK GREEN WELL FORMED LETTERS, EVENLY SPACED, NEAT IN APPEARANCE, AND ALIGNED AS SHOWN ABOVE.

WASHINGTON STATE PARKS
PROJECT SIGN DETAIL

PROJECT SIGN DETAIL



PLAN

END OF SECTION

SECTION 010099 – CONSTRUCTION SURVEYING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section outlines construction surveying work required to construct the components of the project in accordance with the Contract Drawings and Technical Specifications subject to the terms and conditions of the Contract.

B. The Contractor's work includes furnishing all materials, labor, and equipment necessary to perform construction staking and layout, establish temporary benchmarks from primary control, pre-construction surveying, intermediate/progress surveying for quality control, surveying for development of progress payments, and post-construction surveying for project record drawings.

C. Work covered by this Section includes, but is not limited, to the following elements of construction surveying work:

1. Abutment
2. Excavation and Fill
3. Floats
4. Walkways and Platforms
5. Steel Piles
6. Site Restoration

1.2 APPLICABLE PUBLICATIONS

A. USACE EM-1110-1-1005 – Topographic Surveying

B. USACE EM-1110-2-1003 – Hydrographic Surveying

1.3 DEFINITIONS

A. Terrestrial Surveys: Survey work conducted for any project work elements located above High Tide Line (HTL) and/or located below HTL where existing depths and environmental conditions (waves, currents, etc.) allow for the safe use of standard topographic survey equipment equipped as specified herein.

B. Hybrid Surveys: Any non-standard topographic and/or hydrographic survey work utilizing Unmanned Surface Vessels (USVs), Unmanned Aerial Vehicles (UAVs), or other hybrid/alternative equipment. The use of hybrid or alternative survey equipment by the Contractor or Contractor's survey team must be approved in writing by the Engineer prior to use. Accuracy of hybrid or alternative surveys shall meet or exceed the accuracy requirements listed herein for terrestrial and/or hydrographic surveys.

C. DGPS: Differential Global Positioning Systems (DGPS).

D. RTK-GPS: Real Time Kinematic Global Positioning Systems (RTK-GPS).

E. Work Area: Area of work associated with each element of construction.

1.4 GENERAL CONSTRUCTION SURVEYING

A. Survey responsibility and sequence of survey work: The Contractor is responsible for all surveys necessary for controlling the work, including setting temporary benchmarks, staking and layout, intermediate/progress surveys, pre/post construction surveys. Construction survey assignments and activities are listed below. Survey tasks must be performed by an independent licensed surveyor, working as a sub-contractor for the Contractor, where indicated. The survey tasks include:

1. Establish primary survey control (Must be performed by a Contractor-hired Independent Licensed Surveyor)
2. Establish water level gauge(s) (Contractor or Contractor-hired Independent Licensed Surveyor)
3. Pre-construction survey (Must be performed by a Contractor-hired Independent Licensed Surveyor)
4. Intermediate/progress surveys for quality control. (Contractor or Contractor-hired Independent Licensed Surveyor)
5. Final Intermediate progress surveys after excavation and after placement of all imported material types to confirm that design elevations as shown on the Contract Drawings have been achieved at all locations. (Must be performed by a Contractor-hired Independent Licensed Surveyor)
6. Final Intermediate/progress survey after placement of native material for beneficial reuse. (Must be performed by a Contractor-hired Independent Licensed Surveyor)
7. Post-construction survey for project record drawings (Must be performed by a Contractor-hired Independent Licensed Surveyor)

B. Construction surveying requirements

1. The surveys performed during construction including pre-construction survey, intermediate/progress surveys, construction staking, electronic template development and post-construction surveys shall be done at no additional expense to the Owner.
2. The Contractor shall layout, install, and maintain construction stakes and marks needed to establish the lines, grades, slopes, and cross-sections as necessary for completion of the work. Construction staking using wood lathing in above water areas and plastic pipe, or other similar durable material shall be used in inundated areas to ensure waves and currents do not dislodge the staking during the construction period. The Contractor shall establish quality control for all work performed and all products supplied to assure compliance with the Contract Documents.
3. The Contractor shall use electronic work templates in combination with installed on-board construction electronics equipment. Electronic templates shall utilize TIN or equivalent 3-dimensional surface models developed from the Contract Drawings and updated with pre-construction, progress/intermediate, and post-construction survey data throughout the duration of construction.

4. All surveys conducted within the limits of construction shall use equipment equipped with electronic DGPS/RTK positioning capabilities and shall achieve the survey accuracies stated herein.
5. The Contractor shall perform all survey work to layout and set any construction stakes and marks which are needed to establish the lines, grade, slopes, and cross-sections. A baseline offset from the work area shall be established, utilizing benchmarks and monuments provided on the Contract Drawings, at a location that shall not be disturbed by construction activities and located close to the work so that it provides alignment and location reference. In addition, the Contractor shall perform intermediate/progress surveys during construction to ensure that the abutments, walkways, gangway, floats, and excavation areas are being constructed to the lines and grades shown on the Contract Drawings within the tolerance specified. The Engineer shall approve the field staking and electronic templates for all work areas prior to the start of excavation and/or excavation and fill activities.
6. The electronic surveying method must be approved, in writing, by the Engineer, prior to beginning placement of products on the Project.
7. Establish intermediate elevation benchmarks as needed to check work throughout the project.
8. The Owner's Representative or Engineer may spot-check the Contractor's surveying. These spot-checks will not change the requirements for normal checking by the Contractor.
9. Surveys shall be of sufficient frequency and accuracy during construction so that the Owner's Representative or Engineer can determine that the construction is within the tolerances of the Contract Documents and Contract Drawings.
10. The Contractor shall be responsible for processing all survey data and providing the Owner with electronic files containing topographic and/or bathymetry data (ASCII x-y-z format) for each survey.
11. The Contractor shall make consideration for providing sufficient notification time of any intermediate/progress survey work for the Owner's Representative and/or Engineer to review, observe and check all intermediate/progress survey results throughout the duration of the work. The Owner's Representative and/or Engineer shall be allowed the time and access to check and approve the work prior to Contractor backfilling or covering the survey work area.
12. The Contractor shall be responsible for setting, maintaining, and resetting all alignment stakes, slope stakes, offsets to structures, and grades as necessary for the construction of all work shown in the Contract Drawings. Calculations, surveying, and measuring required for setting and maintaining the necessary lines and grades shall be the Contractor's responsibility.
13. The location of each cross-section surveyed shall be referenced to the stationing shown on the Contract Drawings. The Contractor shall plot the cross-sections and profiles on a scale agreeable to the Engineer and submit to the Engineer for approval.
14. The Contractor shall install, monitor, and maintain temporary water level gauges within the limits of construction. Water levels shall be monitored relative to NOAA Gage 9444880 located near Friday Harbor, WA.
15. The Contractor shall be responsible to provide elevation certificates to San Juan County for floodplain management.

C. Datums and Units: All surveys performed for this work shall be referenced to the following survey datums.

1. Horizontal Datum: Washington State Plane North Zone, North American Datum 1983(91), (NAD83(91)), U.S. Feet.

2. Vertical Datum: Mean Lower Low Water, (MLLW)

D. Surveying tolerances

1. Terrestrial surveys shall be conducted utilizing surveying procedures, equipment, and methodology that meet or exceed accuracy tolerances of ±0.05 feet in vertical and ±0.1 feet in horizontal unless specified otherwise.

E. Survey equipment

1. General: The Contractor shall employ a suitable method to locate and control equipment, structure excavation and/or dredging work, and the placement of fill that may include: DGPS, RTK-GPS, and/or an Engineer approved equivalent. Observation data will be recorded in standard surveying field book format or by other methods as approved by the Engineer. Automated position determinations will be accomplished by standard trilateration procedures whereby lengths to two or more shore-based points are electronically measured by either time delay or phase comparison techniques.
2. Survey Data Point Collection: Elevation and horizontal data points shall be taken at intervals as required herein, with additional points taken as necessary to adequately locate critical site features including edges, intersections, limits, and changes in slope of excavation, general fill, placement of stones, and other project components to be constructed as shown on the Contract Drawings.

1.5 CONSTRUCTION SURVEYING & STAKING

A. Survey for Layout of Work: An accurate method of horizontal control shall be established by the Contractor before construction begins. The Engineer will review and approve the proposed method and maintenance of the horizontal control system. If, at any time, the method fails to provide accurate location for the construction, the Engineer may require the Contractor to suspend its operations until the survey control is reestablished. The Contractor shall lay out its work from the site control benchmarks shown on the Contract Drawings and shall be responsible for all measurements taken from these points. The Contractor shall furnish at its own expense all stakes, electronic templates, platforms, equipment, buoys, range markers, transponder stations and labor as may be required to lay out the work from the work points shown on the Contract Drawings. If staked points are destroyed by the Contractor or disturbed through the Contactor's negligence prior to authorized removal, they shall be resurveyed and/or replaced by the Contractor at their own expense.

B. Contractor is responsible for conducting all construction staking and survey work required for construction.

C. To facilitate the establishment of lines and elevations, the Contractor-hired Independent Licensed Surveyor will provide the Contractor with primary survey control information consisting of descriptions of two primary control points used for the horizontal and vertical control, and descriptions of two control points will be described by reference to the coordinate system and elevation datum utilized by the project.

D. The Contractor is responsible for verifying primary control information furnished by the Independent Licensed Surveyor prior to performing construction marking work. The Contractor shall notify the Owner's Representative promptly in writing of any discrepancies discovered.

E. When staking structure or other alignment and stationing, the Contractor shall perform independent checks from different secondary control to ensure that the points staked are within the specified survey accuracy tolerances.

F. The location of all new structures shall be field staked or marked and reviewed by the Engineer prior to the start of construction.

G. The use of Global Positioning System (GPS) positioning equipment on construction machinery is contingent upon the use of electronic construction templates, which shall be submitted by the Contractor and approved by the Engineer prior to the start of Construction.

H. Use of electronic work templates for on-equipment positioning systems during construction to locate and delineate limits of construction and elevations are allowable but require detailed description in the survey plan. Provide equipment positioning plan and electronic excavation templates from Hypak, Dredgepack, AutoCAD, or other comparable 3D software if onboard equipment positioning systems are utilized in lieu of field staking. Equipment positioning systems shall be field checked for accuracy utilizing survey grade instruments for horizontal and vertical. Intermediate/progress surveys will also include equipment positioning system electronic bucket marks within the work area prisms as part of the interim survey submittals.

I. Contract work to be performed using contractor-provided stakes shall not begin until the stakes are approved by the Engineer. Such approval shall not relieve the Contractor of responsibility for the accuracy of the stakes.

J. When staking structure or other alignment and stationing, the Contractor shall perform independent checks to ensure that the points staked are within the specified survey accuracy tolerances.

K. In addition to the development of electronic templates, the location of all work elements indicated on the Contract Drawings shall be field staked or marked and approved by the Engineer prior to the start of construction.

L. Establish grading limits, placing slope stakes at centerline increments not more than 25 feet apart. Establish offset reference to all slope stakes.

M. Establish the horizontal and vertical location of all drainage features, placing offset stakes to all drainage structures and to pipes at a horizontal interval not greater than 25 feet, as applicable.

N. For all other types of construction included in this project, provide staking and layout as necessary to adequately locate, construct, and check the specific construction activity.

1.6 PRE-CONSTRUCTION SURVEYING

A. Notification of pre-construction survey: Contractor shall notify the Owner of intent to conduct the pre-construction survey at least 5 calendar days prior to conducting survey.

An Owner's Representative shall be present during the execution of the pre-construction survey data collection effort.

B. A pre-construction survey shall be conducted at least 30 days prior to the start of construction. The Contractor shall provide the pre-construction survey to the Owner's Representative and Engineer at least 21 days prior to the start of construction for review.

C. The pre-construction survey shall include the following:

1. Pre-construction surveys shall meet the requirements outlined in paragraph 1.4 - General Construction Surveying and paragraph 1.5 - Construction Surveying & Staking of this Section.
2. Terrestrial, and/or hybrid/alternative survey data collection within the work areas indicated on the Contract Drawings and Documents. Survey areas include areas within and outside of the limits of construction.
3. Design Template Overlay: The Contractor shall develop drawings with overlays of design cross-section templates (from Contract Drawings) on cross-sections developed using pre-construction survey data.

1.7 INTERMEDIATE/PROGRESS SURVEYS

A. Intermediate/progress surveys shall be conducted in accordance with the requirements outlined in paragraph 1.4 - General Construction Surveying and paragraph 1.5 - Construction Surveying & Staking of this Section.

B. The purpose of intermediate/progress surveys is for quality assurance and quality control to assure products are installed as specified. Engineer may use the results of intermediate/progress surveys to direct the Contractor to adjust its methods to assure compliance with the Contract Drawings and permit requirements, at no additional expense to the Owner.

C. Intermediate/progress surveys of the work may be submitted for partial payment upon prior approval from the Engineer.

D. At a minimum, progress surveys shall be conducted at the following stages of construction of the project to ensure the specified lines and grades are being achieved:

1. After completion of excavation
2. After excavation of abutment subgrade prior to gravel fill placement.
3. After placement of gravel fill prior to installing abutment concrete.
4. After concrete abutment installation.
5. After steel pile installation
6. After walkway, platform, and gangway installation

E. Intermediate/Progress terrestrial surveys (if required) shall, to the practical extent possible, be performed in a similar manner and location (areas of coverage and point density) as the pre-construction survey works. The Engineer will use the survey data to confirm design elevations, monitor construction progress, and confirm partial payments if approved.

F. Intermediate/progress survey cross-sections shall be taken at the same cross-section locations as previously performed surveys for comparison of work element progress.

1.8 POST-CONSTRUCTION SURVEY

A. The purpose of the post-construction survey is to assure compliance with the Contract and to record the as-built condition of the work.

B. The post-construction survey shall include the following:

1. Post-construction surveys shall meet the requirements outlined in paragraph 1.4 - General Construction Surveying and paragraph 1.5 - Construction Surveying & Staking of this Section.
2. Terrestrial, and/or hybrid/alternative survey data collection within the work areas indicated on the Contract Drawings and Specifications. Survey areas include areas within and outside of the limits of construction that were disturbed by the Contractor.
3. Shall include all features and improvements installed by the Contractor under the scope of this Project.
4. Elevation certificate as required by San Juan County.

C. All Post-construction survey data shall be reviewed and verified by the Engineer prior to Demobilization from the site.

1.9 SUBMITTALS

A. Qualifications: Contractor shall submit a description of construction survey personnel qualifications to the Engineer for review prior to start of survey work. Surveys shall be submitted in accordance with Technical Specification Section 013300 – Submittal Procedures. Survey qualifications are as follows:

1. Licensed Surveying: Licensed surveying shall be performed under the direct supervision of an independent licensed Washington State Professional Land Surveyor that is not an employee of the Contractor. All primary control verification and secondary control establishment, pre-construction, intermediate/progress surveys, and post-construction survey work shall be conducted as a licensed survey. Licensed survey may require multiple survey methods and may be performed by different licensed surveyors, provided they meet the following requirements:

a. General: The surveyor shall be a licensed public land surveyor (PLS) in the State of Washington and shall have a minimum five (5) years of documented experience with construction field surveying for similar types of shoreline and nearshore upland improvement projects.

B. Survey Work Plan: Contractor shall submit survey work plan for all work and all phases to the Engineer for review in accordance with Technical Specification Section 013300 – Submittal Procedures. All survey plans must be reviewed and approved by the Engineer prior to the start of surveys and construction activity by the Contractor. The survey work plan shall include a description of the methods, procedures, and proposed survey equipment and model number to be

used for pre-construction, intermediate/progress, and post-construction survey works. The following list includes, but is not limited to, the survey plans that shall be provided by the Contractor:

1. Pre-construction Survey Plan
2. Progress/Intermediate Survey Plan
3. Post-Construction Survey Plan

C. Survey Data and Drawings

1. Primary and Secondary control established by the Contractor

    a. Provide descriptions of primary and secondary control to the Engineer. The description shall include coordinates and elevations of all primary and secondary control points.

2. Intermediate/Progress surveys

    a. The Contractor shall furnish the original field notes and data of the surveys to the Engineer within 24 hours following completion of the survey. Survey data shall be in PC compatible, ASCII format, in delimited files of easting, northing, and elevation (xyz), and description.
    b. Survey data file shall list the project name, surveyor's name, area surveyed, date of survey, and the horizontal and vertical datum.
    c. Topographic and/or bathymetric survey data shall include measured water levels to the nearest 0.1 foot in the project datum for the period of the survey.
    d. Cross-sections and plan views shall be plotted in AutoCAD Civil3D 2021 (or newer format) and submitted in hard copy and electronic format to the Engineer. Electronic submittal shall be in .dwg file format. Cross-sections and plan views shall follow within three (3) business days after completion of the survey, or as approved by the Engineer. Plotted survey submittals shall be drawings of sections on 11x17 inch sheets at a suitable scale.
    e. Data shall be submitted to the Engineer in electronic ASCII and PDF formats.

3. Pre/post construction drawings

    a. The processed data pre-construction (ASCII format), one (1) foot contour map of the work areas, and cross-section drawings (in AutoCAD format) with overlays of design templates shall be submitted to Engineer at least 14 business days prior to the start of onsite construction activities.
    b. The Contractor shall furnish the original field notes of all construction surveys and data of the surveys to the Engineer within 24 hours following completion of the survey. Survey data shall be in PC compatible, ASCII format, in delimited files of easting, northing, and elevation (xyz), and description.
    c. Survey data file shall list the project name, surveyor's name, area surveyed, date of survey, and the horizontal and vertical datum.
    d. Topographic and/or bathymetric survey data shall include measured Keystone Harbor water levels to the nearest 0.1 foot in the project datum for the period of the survey.

e. Cross-sections and plan views shall be plotted in AutoCAD Civil3D 2021 (or newer format) and submitted in hard copy and electronic format. Electronic submittal shall be in .dwg file format. Cross-sections and plan views shall follow within seven (7) business days after completion of survey, or as approved by the Engineer. Plotted survey submittals shall be drawings of sections on 11x17 inch sheets at a suitable scale.

f. Data shall be submitted to the Engineer in electronic ASCII and PDF formats.

4. Project As-Built Drawings

a. Refer to section 3.4 of this Section.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PRE-CONSTRUCTION SURVEY

A. Pre-construction survey areas shall include surveying for all work within and outside of the limits of construction that will be disturbed by the Contractor.

B. All Pre-construction survey data shall be reviewed and verified by the Engineer for approval prior to the start of construction.

3.2 INTERMEDIATE/PROGRESS SURVEYS

A. Intermediate/progress surveys for construction associated with excavation and fill, float system, abutment, and any other works located within the limits of construction shall be performed using terrestrial and hydrographic (if required) survey equipment as specified below:

1. Intermediate/Progress surveys shall be conducted following the same procedures and locations as outlined in the Pre-construction survey section. Results of the intermediate/progress surveys will be transmitted to the Engineer within 24 hours of completion of each survey and may be used to direct the Contractor to adjust its method of fill placement and/or temporary stockpiling to assure compliance with the Contract Drawings and permit requirements, at no additional expense to the Owner.
2. At a minimum, the Contractor shall conduct a survey at the conclusion of excavation and prior to placing any imported materials (geotextile, concrete abutment, foundation gravel, etc.), and following placement of each imported material type or beneficial reuse within applicable work areas.

B. Intermediate/progress surveys shall be conducted at the stages of construction specified in paragraph 1.7 – Intermediate/Progress Surveys of this Section.

C. Intermediate/Progress Survey Submission Requirements. The Contractor shall submit intermediate/progress survey data as specified herein for the Engineer’s review and approval. The

frequency of intermediate/progress surveys will depend on the Contractor's ability to progress the work and maintain quality assurance and quality control in accordance with the Contract Drawings and Specifications. The Engineer shall be present during the execution of the intermediate/progress survey data collection effort, unless explicitly waived by the Engineer.

3.3 POST-CONSTRUCTION SURVEYING

A. Post-construction survey areas shall include surveying for all work within and outside of the limits of construction disturbed by the Contractor.

B. Piles, Concrete Abutment, and Float System Surveys

1. At the time of final completion, a post-construction survey of all components of the piles, concrete abutment, and float system will be performed for final acceptance of the work. The post-construction survey will be performed in a manner to represent the conditions at the time of final completion and not a compilation of intermediate/progress surveys. The post-construction surveys shall be conducted along the exact same transects surveyed during the pre-construction and intermediate/progress surveys.
2. The Engineer or Owner's Representative shall be present during the execution of the post-construction survey data collection effort, unless explicitly waived by the Owner's Representative.

C. All Post-construction survey data shall be reviewed and verified by the Engineer prior to Demobilization from the site.

3.4 PROJECT AS-BUILT DRAWINGS

A. Contractor shall utilize final intermediate/progress and post-construction survey data to assemble project as-built drawings for submission to the Owner at the conclusion of the project.

END OF SECTION

SECTION 012300 – ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of Work only if accepted by the Owner.
2. The cost or credit for each alternate is the net addition to or deduction from Contract Sum to incorporate alternate into Work. No other adjustments are made to Contract Sum.

1.3 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Execute accepted alternates under the same conditions as other work of Contract.

C. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve work described under each alternate.

1.4 REINSTATEMENT OF BID ALTERNATES

A. The Owner reserves the right to reinstate, within sixty (60) calendar days after Notice to Proceed date, any bid alternates not incorporated into the contract, at the stated alternate bid price.

1.5 ORDER OF CONSIDERATION

A. Bid alternates may be selected in any order or combination by the Owner.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. A1 – [Sucia Island Marine State Park Pumpout Station] Furnish Piles & Install with Rock Socketing:

1. Base Bid: No Work at Sucia Island Marine State Park.
2. Alternate: Provide all materials, labor, and equipment necessary to procure, drill and rock socket two galvanized steel piles for the Sucia Island Marine State Park Pumpout Station.

a. This Work is described in:

1) Technical Specifications:

a) Steel Pile – 316216
b) Regulatory Requirements – 014100, Section 1.1.A.2

2) Plans:

a) Sucia Island State Park Floating Sewer Pumpout Station

3) References:

a) Attachment 17 - Geotechnical Engineering Services Report, Sucia Island State Park Improvements from GeoEngineers, dated November 6, 2020

b. This alternate bid item EXCLUDES fabrication of the floating pumpout barge shown in the drawings. The floating pumpout barge has been fabricated under a separate contract and is currently staged at Cornet Bay in Deception Pass State Park. The Owner is responsible for transporting the pumpout barge to Sucia Island State Park.

c. The Contractor is responsible for installation of the Owner-furnished floating pumpout barge. The Contractor is permitted to use the pumpout barge as a pile-driving template to help ensure proper pile spacing and pile-hoop clearances only if the Contractor properly protects the pumpout barge from damage using measures approved by the Owner. Any damage to the pumpout barge arising from the Contractor's actions or negligence shall be repaired to the Owner's satisfaction at no additional cost to the Owner.

END OF SECTION

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 WORK IN THIS SECTION

A. General: The types of submittal requirements specified in this Section include Shop Drawings, product data, Samples and miscellaneous Work-related submittals. Specialized submittal requirements are specified in applicable Sections for each unit of Work. Refer to other Division 01 Sections and other Contract documents for requirements of administrative submittals.

B. Definitions: Work-related submittals of this Section are categorized for convenience as follows:

1. Shop Drawings: Specially-prepared technical data for this Project, including Drawings, diagrams, performance curves, data sheets, schedules, templates, patterns, reports, calculations, instructions, measurements and similar information not in standard printed form for general application to several projects.
2. Product Data: Standard printed information on materials, products and systems; not specially-prepared for this Project, other than the designation of selections from among available choices printed therein.
3. Samples: Fabricated and unfabricated physical examples of materials, products and units of Work; both as completed units and as smaller portions of units of Work; either for limited visual inspection or (where indicated) for more detailed testing and analysis.
4. Miscellaneous: Submittals related directly to the Work (non-administrative) include warranties, informational, maintenance agreements, workmanship bonds, Project photographs, survey data and reports, physical Work records, quality testing and certifying reports, copies of industry standards, record drawings, field measurement data, operating and maintenance materials, overrun stock, and similar information, devices and materials applicable to the Work and not processed as Shop Drawings, product data or Samples. See Specification Sections.

1.2 RELATED REQUIREMENTS

A. General Conditions 4.03

B. Section 014000 - Quality Requirements

C. Section 017700 – Closeout Procedures

1.3 GENERAL SUBMITTAL REQUIREMENTS

A. Coordination and Sequencing: Coordinate preparation and processing of submittals with performance of the Work so that Work will not be delayed by submittals. Coordinate and sequence different categories of submittals for same Work, and for interfacing units of Work, so that one will not be delayed for coordination with another.

B. Preparation of Submittals: Provide permanent marking on, or with, each submittal to identify Project, date, Contractor, sub-contractor, submittal name and similar information to distinguish it from other submittals.

1.4 SPECIFIC SUBMITTAL REQUIREMENTS

A. General:

1. Except as otherwise indicated in individual Work Sections, comply with requirements specified herein for each indicated category of submittal.
2. Provide and process intermediate submittals, where required between initial and final, similar to initial submittals.
3. Include a transmittal with all submittals.

B. Shop Drawings:

1. General: No claims for extras may be initiated, based on Work shown on Shop Drawings.
2. Where Work of more than one sub-contractor is involved, submit composite Drawings, clearly defining the Work of each separate sub-contractor.
3. No extension of time in respect to the final completion date of building will be granted to Contractor because of failure to have any Shop Drawings submitted in ample time to allow for checking.
4. Verify all dimensions by taking field measurements. Do not begin Work until required submittals have been returned by the Engineer with stamp and initials indicating review. If Work has been done which is contrary to the approved Drawings, it will be corrected at no additional cost to the Commission. Maintain one complete set of shop drawings at the site for use by the Engineer.
5. Submit in PDF format.

C. Product Data:

1. General:

a. Collect required data into one submittal for each unit of Work or system; and mark each copy to show which choices and options are applicable to Project. Include manufacturer's standard printed recommendations for application and use, compliance with standards, application of labels and seals, notation of field measurements which have been checked, and modify details as required for application into the Work. Include color selection information where necessary.

b. Do not proceed with installation of materials, products or systems until final copy of applicable product data is in possession of Installer. Maintain one complete set of product data at the site for use by Project Representative.

2. Preparation and Processing: Do not submit product data, or allow its use on the Project, until compliance with requirements of Contract documents has been confirmed by Contractor. Submittal is for information and record, unless otherwise indicated. Initial submittal is final submittal unless returned by Engineer, marked with an "Action" which indicates an observed noncompliance.
3. Submit in PDF format.

D. Samples:

1. General: Provide units identical with final condition of proposed materials or products for the Work. Include "range" Samples (not less than three (3) units) where there are unavoidable variations between units of each set. Provide full set of optional Samples where Engineer's selection is required. Prepare Samples to match Engineer's sample where indicated. Include information with each sample to show generic description, source or product name and manufacturer, limitations, and compliance with standards. Samples are submitted for review and confirmation of color, pattern, texture and "kind" by Engineer. Engineer will not "test" Samples (except as otherwise indicated) for compliance with other requirements, which are, therefore, for exclusive responsibility of the Contractor.
2. Processing: Submit two (2) sets of Samples for Engineer's review and "Action"; one (1) set will be returned. Large Samples, which may be incorporated into the Work, may be submitted singly.
3. Reusable Samples: Returned Samples which are intended or permitted to be incorporated in the Work are so indicated in the individual Work sections, and must be in undamaged condition at time of use.

E. Warranties and Guarantees: In addition to copies desired for Contractor's use, furnish three (3) executed copies, except furnish additional copies where required for maintenance manuals.

F. Survey Data: Refer to other Sections for specific general requirements on property surveys, field measurements, quantitative records of actual Work, damage surveys, photographs and similar data required by individual Work Sections of these specifications. None of specified copies will be returned.

1.5 ACTION ON SUBMITTALS

A. Engineer's Action: Engineer will review each submittal, mark with "Action", and where possible return within two (2) weeks of receipt. Where submittal must be held for coordination, they will be returned to the Contractor within two (2) weeks of receipt for the Contractor to resubmit when it is appropriate.

1. Final Unrestricted Release: Work may proceed, provided it complies with Contract documents, when submittal is returned with marking: "Approved as Submitted".
2. Final-But-Restricted Release: Work may proceed, provided it complies with notations and corrections on submittal and with Contract documents, when submittal is returned with the marking: "Approved as Noted".

3. Returned and Rejected: Do not proceed with Work. Submittal item is not acceptable and may not be used on the Project when noted as "Not Approved".

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 013501 – INADVERTENT DISCOVERIES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

PART 1 – GENERAL

1.1 PROJECT SPECIFIC REQUIREMENTS

A. No cultural resource sites are known to exist within Work area. However, there always exists the potential for unanticipated discoveries during excavation or construction work. The Inadvertent Discovery Plan provided in Attachment 8 in the Environmental Permits Section provides guidance, instructions, and contact information in case cultural resources or human skeletal remains are discovered during project activity. The Inadvertent Discovery Plan shall be kept on site and adhered to for the duration of the project.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 014000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and -control procedures that facilitate compliance with the Contract Document requirements.
2. Requirements for Contractor to provide quality-assurance and -control services required by Project Representative, Owner, or Authorities Having Jurisdiction are not limited by provisions of this Section.

C. Related Requirements:

1. Divisions 02 through 49 Sections for specific test and inspection requirements.

1.2 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Project Representative.

C. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to Authorities Having Jurisdiction, to establish product performance and compliance with specified requirements.

F. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.

G. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

H. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

I. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

J. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five (5) previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

1.3 CONFLICTING REQUIREMENTS

A. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Project Representative for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Project Representative for a decision before proceeding.

1.4 QUANTITY SHEETS/WEIGHT TICKETS

A. For bulk items, supply quantity sheets (load receipts) to account for each load delivered to the jobsite. Deliver quantity sheets to Inspector on job at delivery time. If Inspector is not on job, deliver quantity sheets on a daily basis to place designated by Project Representative.

B. No payment shall be made for materials delivered for which quantity tickets have not been turned into Inspector or delivered to designated place at end of working day. Backdated tickets are not acceptable as a basis for payment, except at Project Representative's discretion.

C. If bid item for material to be delivered to jobsite is stated in TONS, only weight slips from approved scale are acceptable for payment purposes, unless approved in advance by Project Representative.

D. No payment for materials will be made until proper accounting has been made. Final quantity records are approved by Project Representative, with payment at Project Representative's discretion.

1.5 INFORMATIONAL SUBMITTALS

A. Contractor's Statement of Responsibility: When required by Authorities Having Jurisdiction, submit copy of written statement of responsibility sent to Authorities Having Jurisdiction before starting work on the following systems:

1. Seismic-force-resisting system, designated seismic system, or component listed in the designated seismic system quality-assurance plan prepared by Engineer.
2. Main wind-force-resisting system or a wind-resisting component listed in the wind-force-resisting system quality-assurance plan prepared by Engineer.

B. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

1.6 REPORTS AND DOCUMENTS

A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

B. Manufacturer's Field Reports: Prepare written information documenting tests and inspections specified in other Sections. Include the following:

1. Name, address, and telephone number of representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.

3. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
4. Results of operational and other tests and a statement of whether observed performance complies with requirements.
5. Other required items indicated in individual Specification Sections.

C. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.

F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirements of Authorities Having Jurisdiction shall supersede requirements for specialists.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by Authorities Having Jurisdiction, that is acceptable to authorities.

1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Manufacturer's Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:

1. Contractor responsibilities include the following:

    a. Provide test specimens representative of proposed products and construction.
    b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    c. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
    d. When testing is complete, remove test specimens, assemblies, and mockups; do not reuse products on Project.

2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Project Representative with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

J. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Project Representative.
2. Notify Project Representative seven (7) days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Project Representative's approval of mockups before starting work, fabrication, or construction.

    a. Allow seven (7) days for initial review and each re-review of each mockup.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed unless otherwise indicated.

1.8 QUALITY CONTROL

A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Manufacturer's Field Services: Where indicated, engage a manufacturer's representative to observe and inspect the Work. Manufacturer's representative's services include examination of substrates and conditions, verification of materials, inspection of completed portions of the Work, and submittal of written reports.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

D. Testing Agency Responsibilities: Cooperate with Project Representative and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Project Representative and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

E. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

F. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility and are to be conducted by a qualified testing agency or special inspector as required by Authorities Having Jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Project Representative and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Project Representative with copy to Contractor and to Authorities Having Jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Project Representative.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Project Representative's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

SECTION 014100 - REGULATORY REQUIREMENTS

PART 1 - GENERAL

1.1 PERMITS, CODES AND REGULATIONS

A. The following permits have been applied for (or are on file) and incorporated into the contract:

1. Base Bid: Reid Harbor Moorage Facility Improvements

    a. State Environmental Policy Act (SEPA) Determination of Non-Significance (DNS) issued by Washington State Parks and Recreation Commission on December 15, 2021 (*Attachment 1*).
    b. Shoreline Substantial Development Permit (LANDUSE-22-0007) issued by San Juan County on July 29, 2022 (*Attachment 2*).
        1. Requires full compliance with all practices and recommendations included in the Marine Mammal Monitoring Plan (*Attachment 3*) and the Marbled Murrelet Monitoring Plan (*Attachment 4*).
    c. Hydraulic Project Approval (HPA) 2022-4-84+01 (Application ID: 27259) issued by Washington Department of Fish and Wildlife (WDFW) on February 6, 2022 and expiring on March 1, 2026 (*Attachment 5*).
    d. Aquatic Lands Right of Entry (ROE) No. 23-106289 issued by Washington Department of Natural Resources (DNR) on March 28, 2025 (*Attachment 6*).
    e. Letter of Permission (LOP) NWS-2022-56 issued by the Department of the Army, U.S. Army Corps of Engineers (USACE) on June 13, 2023 and expiring on June 12, 2026 (*Attachment 7*), including:
        1. Terms and conditions to implement the reasonable and prudent measures associated with "incidental take" and Essential Fish Habitat Conservation Recommendations as set forth in the Salish Sea Nearshore Programmatic (SSNP) Biological Opinion (BO) (National Fisheries Services (NMFS) Reference Number WCRO-2019-04086) dated June 29, 2022 and U.S. Fish and Wildlife Service (USFWS) Reference Number FWS/R1/2022-0048454 dated July 29, 2022).
        2. General Construction Measures and Essential Fish Habitat Conservation Measures (*Attachment 7b*), Project Design Criteria (*Attachments 7c* and *7d*), and monitoring and/or reporting requirements are identified in the Notification Summary Sheet (*Attachment 7a*) dated September 16, 2022 (NMFS Reference Number WCRO-2019-04086-4639; USFWS Reference Number 2022-0041637).
        3. General Conditions detailed in *Attachment 7e*.
        4. Certificate of Completion (*Attachment 7f*) to be submitted by Owner.
        5. Biological Evaluation and Essential Fish Habitat Assessment prepared by Grette Associates, LLC in December 2021 (*Attachment 7g*)
        6. Eelgrass and Macroalgae Verification Survey conducted by Grette Associates, LLC on June 3, 2021 (*Attachment 7h*)
        7. Activities authorized may be conducted from September 1 through March 1 of any year this permit is valid. Work is not authorized by this permit from March 2 through August 31st in any year.

f. Cultural Resources Review: On February 15, 2023, the Department of Archaeology and Historic Preservation (DAHP) concurred that no historic properties will be affected by the proposed project (WISAARD No.:2022-1107601-COE-S, COE: NWS-2022-56) and that State Parks' Inadvertent Discovery Plan (*Attachment 8*) must be kept on-site during all project activities and implemented in the event of an unanticipated discovery.

g. Historic Resources Review: There are no buildings or structures over 45 years old near the project site.

h. Tribal Nations Review: The Suquamish Tribe requests construction dates and barge travel routes in advance of planned construction. State Parks will provide the Suquamish Nation with advance notification as requested using the project schedule submitted by the Contractor.

2. Alternate Bid Item A1: Sucia Island Marine State Park Pumpout Station - Furnish Piles & Install with Rock Socketing

i. SEPA Determination of Non-Significance issued by Washington State Parks and Recreation Commission on January 5, 2022 (*Attachment 9*).

j. Shoreline Substantial Development Permit (LANDUSE-22-0019) issued by San Juan County on July 29, 2022 (*Attachment 10*).
   1. Requires full compliance with all practices and recommendations included in the Marine Mammal Monitoring Plan (*Attachment 11*) and the Marbled Murrelet Monitoring Plan (*Attachment 12*).

k. Hydraulic Project Approval 2022-4-101+01 (Application ID: 27280) issued by WDFW on February 16, 2022 and expiring on March 15, 2027 (*Attachment 13*).

l. Aquatic Lands Lease No. 20-105889 issued by DNR on April 28, 2025 (*Attachment 14*).

m. Letter of Permission NWS 2022-61 issued by the USACE on August 18, 2023 expiring on August 18, 2026 (*Attachment 15*), including:
   1. General Construction Measures and Essential Fish Habitat Conservation Measures (*Attachment 15b*), Project Design Criteria (*Attachment 15c*), and monitoring and/or reporting requirements are identified in the Notification Summary Sheet (*Attachment 15a*) dated November 1, 2022 (NMFS Reference Number WCRO-2019-04086-5122; USFWS Reference Number 2022-0056332).
   2. Habitat Improvement Plan (*Attachment 15d*)
   3. General Conditions detailed in *Attachment 15e*.
   4. Certificate of Completion (*Attachment 15f*) to be submitted by Owner.
   5. Biological Evaluation and Essential Fish Habitat Assessment prepared by Grette Associates, LLC in December 2021 (*Attachment 15g*)
   6. Eelgrass and Macroalgae Preliminary Survey conducted by Grette Associates, LLC on August 19, 2020 (*Attachment 15h*)
   7. Activities authorized may be conducted from September 1 through March 1 of any year this permit is valid. Work is not authorized by this permit from March 2 through August 31st in any year.

n. Cultural Resources Review: Inadvertent Discovery Plan (*Attachment 8*) must be implemented and on-site during all project activities in the event of an unanticipated discovery.

o. Historic Resources Review: There are no buildings or structures over 45 years old near the project site.

p. Tribal Nations Review: The Suquamish Tribe requests construction dates and barge travel routes in advance of planned construction. State Parks will provide the Suquamish Nation with advance notification as requested using the schedule submitted by the Contractor.

B. Conform with the requirements of listed permits and additional or other applicable permits, codes, and regulations as may govern Work.

C. Obtain and pay fees for licenses, permits, inspections, and approvals required by laws, ordinances, and rules of appropriate governing or approving agencies necessary for proper completion of Work (other than those listed under item 1.1A. above and Special Inspections called for by the International Building Code).

D. Conform with current applicable codes, regulations and standards, which is the minimum standard of quality for material and workmanship. Provide labor, materials, and equipment necessary for compliance with code requirements or interpretations, although not specifically detailed in the Drawings or specifications. Be familiar with applicable codes and standards prior to bidding.

E. Process through Project Representative, requests to extend, modify, revise, or renew any of the permits (listed in 1.1A above). Furnish requests in writing and include a narrative description and adequate Drawings to clearly describe and depict proposed action. Do not contact regulatory agency with requests for permit extensions, modifications, revisions, or renewals without the prior written consent of Project Representative.

1.2 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

A. Nothing in the drawings and specifications permits Work not conforming to codes, permits or regulations. Promptly submit written notice to Project Representative of observed variations or discrepancies between the Contract documents and governing codes and regulations.

B. Appropriate modifications to the Contract documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.

C. Contractor is not relieved from complying with requirements of Contract documents which may exceed, but not conflict with requirements of governing codes.

1.3 COORDINATION WITH REGULATORY AGENCIES

A. Coordinate Work with appropriate governing or regulating authorities and agencies.

B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, to allow proper scheduling of inspection visits at proper stages of Work completion.

C. Regulation coordination is in addition to inspections conducted by Project Representative. Notify Project Representative of scheduled inspections involving outside regulating officials, to allow Project Representative to be present for inspections.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 014200 – REFERENCES

PART 1 - GENERAL

1.1 DEFINITIONS

A. General: Basic Contract definitions are included in the General Conditions of the Contract.

B. "Approved": When used to convey Project Representative's action on Contractor's submittals, applications, and requests, "approved" is limited to Project Representative's duties and responsibilities as stated in the General Conditions of the Contract.

C. "Directed": A command or instruction by Project Representative. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."

D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."

E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": Furnish and install, complete and ready for the intended use.

I. “Project Engineer”, “Project Architect”, “Engineer”, and “Architect” are interchangeable terms.

J. Project Representative and Owners Representative are interchangeable terms.

K. “As-built Drawings”: Drawings done by the Contractor in the field showing changes to the Work.

L. “Record Drawings”: Drawings prepared based on the information on the As-built Drawings.

1.2 GENERAL

A. Applicable standards of the construction industry have the same force and effect (and are made a part of the Contract Documents by reference) as if directly copied or bound herein.

1.3 PUBLICATION DATES

A. Where compliance with an industry standard is required, comply with the standard in effect on Bid Date.

1.4 ABBREVIATIONS AND NAMES

A. The following acronyms or abbreviations, referenced in the Contract documents, are defined to mean the associated name. Applicable standards include, but are not limited to the following:

1.	AASHTO	American Association of State Highway & Transportation Officials
2.	ACI	American Concrete Institute
3.	AGA	American Gas Association
4.	AI	Asphalt Institute
5.	AIA	American Institute of Architects (The)
6.	AISC	American Institute of Steel Construction, Inc.
7.	AISI	American Iron and Steel Institute
8.	AITC	American Institute of Timber Construction
9.	ANSI	American National Standards Institute
10.	APA	Engineered Wood Association (The)
11.	APWA	American Public Works Association
12.	ASME	American Society of Mechanical Engineers
13.	ASTM	American Society for Testing and Materials International
14.	AWPA	American Wood Protection Association
15.	AWS	American Welding Society
16.	AWWA	American Water Works Association
17.	CRSI	Concrete Reinforcing Steel Institute
18.	EPA	Environmental Protection Agency
19.	HPVA	Hardwood Plywood and Veneer Association
20.	IBC	International Building Code
21.	IEEE	Institute of Electrical & Electronics Engineers, Inc. (The)
22.	IES	Illuminating Engineering Society of North America
23.	LPI	Lighting Protection Institute
24.	MCAA	Mechanical Contractors Association of America, Inc.
25.	NIST	National Institute of Standards and Technology
26.	NCMA	National Concrete Masonry Association
27.	NEC	National Electrical Code
28.	NECA	National Electrical Contractors Association, Inc.
29.	NFPA	National Fire Protection Association
30.	NHLA	National Hardwood Lumber Association
31.	NSF	National Sanitation Foundation International
32.	OSHA	Occupational Safety & Health Administration
33.	PCA	Portland Cement Association, (The)
34.	SEPA	State Environmental Policy Act
35.	UL	Underwriters Laboratories, Inc.
36.	UPC	Uniform Plumbing Code
37.	WCLIB	West Coast Lumber Inspection Bureau (Grading Rules)
38.	WRI	Wire Reinforcement Institute
39.	WSDOE or ECY	Washington State Department of Ecology
40.	WSDOH or DOH	Washington State Department of Health

41. WSDOT Washington State Department of Transportation
42. WSPRC Washington State Parks and Recreation Commission
43. WWPA Western Wood Products Association (Grading Rules)

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 PROTECTION OF PROPERTY AND EXISTING FACILITIES

A. Provide protections necessary to prevent damage to park property and facilities.

B. Only rubber-tired equipment are permitted to operate on paved park roads.

C. Protect existing trees and other vegetation indicated to remain in place against cutting, breaking or skinning of roots, skinning and bruising of bark, or smothering of trees by stockpiling materials within dripline. Provide necessary temporary guards to protect trees and vegetation to remain in place.

D. Make every effort to minimize damage and cutting major tree roots during excavation operations. Provide protection for larger tree roots exposed or cut during excavation operations.

1.2 ADMINISTRATIVE REQUIREMENTS

A. Any damages, fines, levies, or judgments incurred as a result of Contractor, Subcontractor, or supplier negligence in complying with the requirements of this Technical Specification will be charged to the Contractor.

B. The Contractor shall be solely responsible for any schedule impacts from damages, fines, levies, judgments, or stop work orders incurred as a result of Contractor, subcontractor, or Supplier negligence in complying with the requirements of this Technical Specification. The project schedule will not be changed to accommodate the time lost.

1.3 ENVIRONMENTAL PROTECTIONS

A. Scope:

1. Provide labor, materials, equipment and perform Work required for protection of environment during and as a result of construction operations under contract.

B. Applicable Regulations:

1. Comply with applicable federal, state and local laws and regulations concerning environmental pollution control and abatement, and specific requirements elsewhere in specifications and drawings to prevent and provide for control of environmental pollution.

C. Protection of Land Resources:

1. Give special attention to the effect of Contractor's operations upon surroundings. Take special care to maintain natural surroundings undamaged and conduct Work in compliance with following requirements:

    a. When Work is completed, remove storage and other Contractor buildings and facilities, and sites restored to a neat and presentable condition appropriate to surrounding landscape, unless otherwise specified. Remove debris resulting from Contractor's operation.
    b. Store petroleum products, industrial chemicals and similar toxic or volatile materials in durable containers approved by the Authority Having Jurisdiction and located in areas where accidental spillage will not enter water. Store substantial quantities of materials in an area surrounded by containment dikes of sufficient capacity to contain an aggregate capacity of tanks.

D. Protection and Restoration of Property:

1. Preserve public and private property, monuments, power and telephone lines, other utilities, prevention of damage to natural environment, etc., insofar as they may be endangered by Work.
2. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in execution of Work, or in consequence of non-execution of Contractor, restore, or have restored at Contractor's expense, such property to a condition similar and equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring same, or make good damage or injury in some other manner acceptable to Project Representative.

E. Protection of Water Resources:

1. Perform Work not to create conditions injurious to fish or to their habitat, or which would make water unsuitable for private, municipal, or industrial use.
2. Take special measures to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides, insecticides, lime, wet concrete, cement, silt or organic or other deleterious material from entering waterways.
3. Dispose of offsite, in a lawful manner conforming to applicable local, state and federal laws wastes, effluents, trash, garbage, oil, grease, chemicals, cement, bitumen, etc., petroleum, and chemical products or wastes containing such products. Furnish Owner with documentation showing compliance with this requirement.
4. Conform to applicable local, state and federal laws for disposal of effluents. Dispose of waters used to wash down equipment in a manner to prevent their entry into a waterway. If waste material is dumped in unauthorized areas, remove material and restore area to condition of adjacent, undisturbed area. If necessary, excavate contaminated ground and disposed of as directed by Project Representative and replace with suitable compacted fill material with surface restored to original condition.

F. Dust Control:

1. Dust control is required on roads used by Contractor. Maintain excavations, embankments, stockpiles, roads, plant sites, waste areas, borrow areas and other Work areas within or without the Project boundaries free from dust which would cause a hazard or nuisance to others. Provide approved, temporary methods of stabilization consisting of

sprinkling, chemical treatment, light bituminous treatment or equal methods to control dust. If sprinkling is used, sprinkling must be repeated at intervals to keep disturbed areas at least damp.

G. Temporary Water Pollution/Erosion Controls:

1. Provide for prevention, control and abatement of soil erosion and water pollution within the limits of Project, to prevent and/or minimize damage to adjacent bodies of water and Work itself.
2. Coordinate temporary soil erosion/water pollution control measures with permanent drainage and erosion control Work to ensure effective and continuous controls are maintained throughout Project life.
3. Develop a written spill prevention and response plan for construction activities adjacent to/and over any surface waters and/or wetlands. "Adjacent" means within 150' as measured on a horizontal plane. Plan addresses:

    a. Narrative description of the proposed construction methods, materials, and equipment to be used for Work
    b. Assessment and listing of hazardous materials and/or potential contaminants that could be released during execution of Work
    c. SDS sheets with cleanup instructions for potential contaminants
    d. Spill response/cleanup materials and instructions for use
    e. Procedures and precautions to prevent spills
    f. Spill response training for on-site personnel, including the location of the containment and cleanup materials at site
    g. Emergency notification in case of a spill or release. Park Manager and Project Representative must be included on the list of notified.

4. Comply with applicable codes and ordinances for spill prevention and response plan and submit a copy to Project Representative before commencing Work adjacent to or over any waters and/or wetlands.

H. Emergency Spill Response Notification

1. Under state law, Ecology must be notified when any amount of regulated waste or hazardous material that poses an imminent threat to life, health, or the environment is released to the air, land, or water, or whenever oil is spilled on land or to waters of the state. The spiller is always responsible for reporting a spill. Failure to report a spill in a timely manner may result in enforcement actions. If you are not responsible for a spill, making the initial notification does not make you liable. However, please consult with Ecology's response team before attempting any type of response or cleanup. Also notify Park Manager and Project Representative.
2. If oil or hazardous materials are spilled to state waters, the spiller must notify both federal and state spill response agencies. The federal agency is the National Response Center at 1-800-424-8802. For state notification, call the Washington Emergency Management Division (EMD) at 1-800-258-5990 or 1-800-OILS-911 AND the appropriate Ecology regional office for your county (see numbers below). An Ecology spill responder will normally call reporting party back to gather more information. The agency will then determine its response actions. Also notify Park Manager and Project Representative.
3. Ecology Regional Spill Reporting Numbers:
    a. Northwest Regional Office: (425) 649-7000 (Island, King, Kitsap, San Juan,

Skagit, Snohomish, and Whatcom counties)
TDD: Washington Relay Service 711 or (800) 833-6388.

1.4 PARK TRAFFIC/PEDESTRIAN CONTROLS

A. Properly warn the public of construction equipment and activities, open trenches, and/or other unsafe conditions by providing all necessary warning equipment. Equipment includes warning signs, barricades, fencing, flashing lights and traffic control personnel (flaggers).

B. Throughout construction, the contractor shall take measures to protect the public during from any risks and hazards associated with construction. At minimum, these will include the following:

1. Establish appropriate site boundaries, using temporary fencing as described in this specification to exclude unauthorized personnel from site.
2. Pedestrian areas and walkways shall be clear of any slip, trip, or falling hazards.
3. During construction, the contractor shall monitor any overhead work with equipment so that objects cannot fall out of the established site boundary.
4. Proper procedures shall be followed to project the public from equipment entering/exiting the site.
5. Materials shall be stored/stacked within the site boundary.
6. Best management practices shall be employed to prevent any debris or contamination from entering the public areas. This includes both upland and in-water work.

C. Conduct operations with the least possible obstruction and inconvenience to the public in accordance with appropriate Section(s) of the WSDOT "Standard Specifications".

1.5 PROTECTION OF WORK

A. Protect Work, materials, and equipment against damage, weather conditions, or other hazards. Equipment, Work or materials found damaged or in other than new condition will be rejected by Project Representative.

1.6 CONTRACTOR PLANT AND EQUIPMENT

A. Unless otherwise specifically cited elsewhere in these specifications, the Contractor shall provide cranes, rigging, lifts, operators, and other necessary means to unload, load, and move equipment or materials as required to perform the work.

B. Complete Plant and Equipment List to be used onsite shall be provided to the Owner. The Contractor shall update and submit this list monthly with each progress payment request. The list shall include rented equipment as well as lease-purchase or sale-leaseback equipment. The list shall indicate dates equipment is assigned to or removed from the project, dates scheduled for repairs and returned for use, and adequate identification or description of each item of equipment including manufacturer's name (abbreviated), model number, manufacturer's serial number, year of manufacture, and Contractor's assigned serial or record number.

C. The Contractor’s equipment shall be conspicuously marked for identification.

D. Any barge used as a base for any equipment or materials shall not be allowed to ground. Any positioning shall be accomplished using anchors or spuds.

E. Notice to Mariners (NTM). If a floating plant or equipment is used for any construction activities, the Contractor shall request a NTM from the U.S. Coast Guard at least fourteen (14) calendar days prior to the start of any dredging, in writing via email (D13-SMB-D13-LNM@uscg.mil):

Commander, 13th Coast Guard District (dpw)
915 Second Avenue, 35th Floor, Room 3510
Seattle, Washington 98174

1. A copy must be submitted to the Owner at least fourteen (14) calendar days prior to start of in water plant operations.
2. The NTM shall be updated and submitted to the USCG every two weeks within each work window, with a copy submitted to the Engineer.

1.7 REMOVAL AND REPLACEMENT OF STATE-OWNED ITEMS

A. Should any state-owned items, such as signs, bumper blocks, or related items, interfere with the proper construction process, remove and reinstall such items to the satisfaction of Project Representative.

1.8 USE OF PARK SPACE

A. Only in areas of park that Contract covers and only during active inclusive dates of Contract.

B. Contractor vehicle and equipment parking only as designated by Project Representative.

C. Contractor will be issued temporary parking passes for construction crew, vehicles and equipment, valid for the duration of the contract only.

1.9 USE OF PROJECT SITE

A. Use of sites: Limit use of project sites to the limits of construction indicated on the Contract Drawings. Do not disturb portions of the site beyond areas in which the work is indicated. Do not stockpile construction materials waterward of the HTL.

B. Park Operations. State Park operations will continue during construction. Contractor is responsible for conducting activities within the Limits of Construction shown on the Contract Drawings and to not interfere with Park Operations. Schedule shall conform to requirements of 010000 General Requirements, these Specifications, and Permit Documents.

C. General
1. No work shall impact adjacent properties unless directed by the Owner. Coordinate with the Owner when work will impact access to adjacent properties.
2. Do not clear outside of the project limits.
3. Do not close or obstruct facilities used by occupants of adjacent properties without written permission from authorities having jurisdiction.

D. The Contractor will not have exclusive or unrestricted use of the project site for storage and its operations. Contractor shall recognize and take into account during their planning and execution of the work that the Owner or their Representative may require access to and use of certain areas or spaces during certain periods.

E. The Contractor shall perform all work within the project area limits defined in the Contract Documents. If other areas are required for construction, the Contractor shall secure any necessary agreement or construction easement documentation with the private landowners at no additional expense to the Owner. The actual selected location shall be coordinated with and approved by the Owner.

F. The Owner assumes no responsibility for the condition or maintenance of any structure thereon that may be used by the Contractor in performing the work under the Contract Documents or in traveling to and from the site of the work. The Contractor is responsible for constructing, maintaining, and removing any additional access that they deem necessary to the site of the work. No payment will be made to the Contractor by the Owner for any work done in improving, repairing, or maintaining any structure thereon for use in the performance of the work under the Contract Documents.

G. The Contractor shall be responsible for restoring the Contractor use areas, access site, project area, and other impacted areas to their original condition.

1.10 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. The Contractor shall comply with applicable laws, ordinances, rules, regulations and orders pertaining to personnel, construction machinery and equipment, hoists, cranes, staging, materials handling facilities, tools, appliances and other construction aids. The Contractor shall provide first aid facilities where required.

B. Protection of existing facilities: Protect existing vegetation and other improvements at project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

C. Environmental protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects. See Technical Specification Section 015719 – Environmental Controls.

D. Temporary fencing and gates: Contractor shall install temporary construction fencing (construction and chain link) and gates where necessary, prior to beginning construction, to provide pedestrian control. Fencing shall prevent people and animals from entering the construction zone. Construction fencing material shall be U.S. Netting Safety Fence Sentry Secura or approved equal (1.800.331.2973). Locations shall include along public rights-of-way, easements, and adjacent property boundaries. Contractor shall provide construction safety signage on the fencing and/or gates. Contractor shall facilitate access to adjacent properties as shown on the Contract Drawings.

1.11 CONTRACTOR OBTAINED PERMITS

A. The Contractor shall be responsible for obtaining all permits necessary for haul and transport of construction materials, equipment and waste material to and from the project site, and any other permits necessary to accomplish the work that have not already been secured by the Owner. The cost of any necessary permits not already acquired by the Owner shall be incidental to the Contract.

1.12 ACCESS TO PROJECT SITE AND WORK

A. The Contractor is responsible for coordinating and obtaining all necessary agreements and easements for access to the project site, lay down areas, and vessel moorage at no additional expense to the Owner. Access for construction equipment into the project work areas are the responsibility of the Contractor.

B. The Contractor shall coordinate with the Owner any upland work areas needing to be closed to public use during construction. In-water areas outside the limits of construction will remain open and available for public use throughout the duration of construction.

1.13 SANITARY FACILITIES

A. Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of Authorities Having Jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

1.14 SUBMITTALS

A. The following items shall be submitted to the Engineer for review and approval in accordance with Section 013300 – Submittal Procedures:
   1. Complete Plant and Equipment List
   2. Notice to Mariners (NTM).
   3. Temporary facilities site plan – provide a site plan, developed on a full-size drawing sheet, showing all temporary facilities and controls described within this section and with the Contract Documents.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 015639 - TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the administrative and procedural requirements for the protection of trees, shrubs, and plant material not designated for removal. Trees, shrubs, and plant material not designated for removal shall be left in place and protected from damage or injury during construction using full and adequate methods of protection in order to preserve these natural resources, ecological function, and aesthetic character of the park.

1.2 REFERENCES

A. Definitions

1. Arborist Qualifications: An Arborist approved of by the Project Representative or certified by the International Society of Arboriculture (ISA) or Association of Consulting Arborists (ASCA) and licensed in the jurisdiction where project is located.
2. Critical Root Zone (CRZ): The portion of the root system nearest the stem that is critical for the stability and vitality of the tree. The minimum CRZ is a circular area having a radius of one foot for each one inch of trunk diameter defined by measuring the trunk diameter at 4.5 feet above ground level. For example, a tree that has a diameter of 20 inches would have a CRZ with a radius of 20 feet from the base of the tree. This is a MINIMUM CRZ radius for healthy trees; the CRZ often extends beyond the dripline of the tree. A critical root zone defined by 2.5 feet radius for each 1-inch diameter is desirable for old growth, historic, and character trees as designated by the Project Representative.
3. Vegetation Protection Zone (VPZ): A defined area of any size within the project area where existing vegetation (trees, shrubs, or other plant material) is to be protected from construction impacts. The zone may be accomplished by physical barriers or other means (e.g., soil protection layers or treatments).
4. Soil Protection Zone (SPZ): A defined area of any size within the project area where sensitive native soils are to be protected from construction impacts. The zone may be accomplished by physical barriers or other means (e.g., soil protection layers, durable matting, or other treatments as specified by the Project Representative.
5. High Risk Tree: Any tree with a structural defect and/or disease that makes the tree highly prone to failure, and which has a target and may result in personal injury or property damage. A high risk tree is the same as an “Emergency Tree” as defined in WAC 352-28-005 (https://apps.leg.wa.gov/wac/default.aspx?cite=352-28-005)

B. Reference Standards

1. ANSI A300. Specifications for Tree, Shrub, and Other Woody Plant Management including Section 5: Management of Trees and Shrubs During Site Planning, Site Development, and Construction.
2. ANSI Z133-2012. Safety Requirements for Arboricultural Operations.

3. Council of Tree and Landscape Appraisers. (2020). *Guide for Plant Appraisal*, 10th ed. International Society of Arboriculture, Champaign, Illinois.

1.3 SUBMITTALS

A. Tree Removal and Pruning Schedule: Written schedule from project Arborist detailing scope and extent of tree removals and pruning of trees to remain that interfere with or are affected by construction.

B. Certification: From project Arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.

C. Maintenance Recommendations: From project Arborist, for care and protection of trees affected by construction during and after completing the Work.

1.4 QUALITY ASSURANCE

A. Tree Pruning Standard: Comply with ANSI A300 (Part 1), "Tree, Shrub, and Other Woody Plant Maintenance--Standard Practices (Pruning)."

B. Construction Management Standard: Comply with ANSI A300 (Part 5): Management of Trees and Shrubs During Site Planning, Site Development, and Construction

C. Tree Planting: Comply with ANSI A300 (Part 6) Planting and Transplanting

D. Tree Root Protection and Management: Comply with ANSI A300 (Part 8) - 2013 Root Management Standard

PART 2 - PRODUCTS

2.1 TREE PROTECTION MATERIALS

A. Temporary Fencing

1. Chain link fencing panels 6 feet tall by any length up to 14 feet. Panels must be braced and must be secured to stands and weighted per manufacturers specifications.
2. Continuous molded safety mesh 36 inches wide with clear openings no more than 1-1/2 inches x 2 inches. Orange, 40 grams per square foot, high density polyethylene with U-V inhibitor suitable for above-grade use installed around the circumference of the CRZ.
3. Posts five-foot steel heavy-duty “T” posts, 1-3/8 inches x 1-3/8 inches x 7/64 inches with steel anchor placed at 8’ intervals at or beyond the CRZ.
4. Nylon zip straps having a minimum breaking strength of 150 lbs.

2.2 SOIL AND ROOT PROTECTION

A. Mulch: Ground, shredded bark, or wood and bark chips, or "hog fuel" free from deleterious materials. Or new straw mulch, free from weeds, weed seeds, and foreign materials.

B. Landscape fabric: American Excelsior Stabilenka 140, Celanese Mirafi 140, Propex 45-45, or approved equivalent geotextile.

C. Filter Fabric: Manufacturer's standard, nonwoven, pervious, geotextile fabric of polypropylene, nylon, or polyester fibers.

D. Ground staples: 9 inches x 9 inches wire staples sufficient for holding landscape fabric or filter fabric in place for required time period.

E. Ground protection mats: Construction mats or timber mats, as a temporary road surface of sufficient weight rating for the equipment being operated in the work area.

2.3 TREE TRUNK PROTECTION

A. Where work has been approved to take place within the CRZ, tree trunk protection shall be installed vertically around tree trunk on all sides exposed to construction activity.

B. Common wood 2 inches x 4 inches lumber, 8 feet long, without nails, other hardware, concrete residue, or other material that may be detrimental to plant health.

C. Strapping sufficient to hold 2 x 4's

PART 3 - EXECUTION

3.1 PLANNING AND NOTIFICATION

A. Where existing trees and other vegetation are in the area of work, or where existing trees outside the area of work have a CRZ extending into the area of work, employ methods to minimize adverse impact to the existing trees (including limbs, stems, and roots), understory vegetation and their root systems, and soils. Where VPZ are designated by the Project Representative and/or in project plans, observe protection measures set forth herein. Notify the Project Representative of any construction work within the CRZ of trees at least two (2) working days before the scheduled activity.

3.2 PREPARATION

A. Prior to Construction: Erect tree and plant protection prior to beginning any site work. Protect trees to remain against cutting, breaking, skinning, or compaction of roots; skinning or bruising of bark; breaking of branches and foliage. Review locations, fencing, and other markings of any VPZ and CRZ for trees within the construction area with the Project Representative.

B. Tree Removal: Trees that are scheduled for removal as part of the project should be removed before construction to prevent hazards during construction.

C. Material Storage: Do not store construction materials, debris, or excavated material inside critical root zones or vegetation protection zones.

D. Vehicle and Foot Traffic: Designate access routes within construction area and limitations on equipment and vehicles. Designate parking on existing pavement or away from critical root zones of trees. Tree protection fencing will serve as an exclusion zone within the CRZ except for where plans stipulate work will take place within the CRZ.

3.3 CRITICAL ROOT ZONE AND VEGETATION PROTECTION ZONE DESIGNATION

A. Temporary Fencing: Install temporary fencing around CRZ, VPZ, or SPZ of either chain link or plastic mesh as indicated by Project Representative. Maintain temporary fence during construction and remove only when construction is complete.

1. For plastic mesh, line posts space at eight feet maximum. Set posts vertically to minimum 18 inches depth. Posts may be driven provided method of driving does not damage posts. Ensure that posts do not damage tree roots.
2. Where plastic fence is used, secure plastic fencing to posts with nylon zip-straps, minimum three per post. Draw fence material tight and vertical. Where chain link panels are used join panels with manufacturers clamps that require tool removal.
3. With Project Representative's approval, sections of tree protection fencing may be removed temporarily to allow approved short-term construction activities. Reinstall fencing immediately when construction operations permit.

B. Tree Trunk Protection: Where required tree trunks shall be protected by placing 2 x 4 lumber around the trunk, spaced so that strapping will not come in contact with the tree bark and lumber does not damage branches. Use strapping to hold lumber in place. Secure straps without nailing into or otherwise damaging tree bark.

3.4 SOIL COMPACTION, LOSS, AND DAMAGE WITHIN THE CRITICAL ROOT ZONE

A. Protection against soil compaction within the CRZ may include but will not be limited to the following methods:

1. Application of a minimum 6-inch thick layer of mulch (or wood chips salvaged from clearing and grubbing operations) within the CRZ. Replenish mulch as necessary to maintain a 6-inch depth. Do not place mulch within 6 inches of tree trunks. Where mulch is to be removed following project completion it should be underlayed with a porous geotextile.
2. Ground protection mats, such as: timber or steel planking, construction mats, 1/2 inches thick CDX grade (or better) plywood, or brush for protection of surface roots and vegetation from equipment.
3. Where equipment operating within the CRZ exceeds 12,000 lbs use a 6-inch layer of mulch overlayed with ground protection mats described above.

B. Protection of soils against erosion and loss within the critical root zone of trees may require application of mulch, wood chips, ground protection mats, or landscape fabric at the request of the Project Representative.

C. Noxious Materials: Protect soils from damage caused by runoff or spillage of noxious materials while operating, mixing, placing, or storing construction materials and equipment; this includes washout of concrete mixing vessels, dewatering operations, equipment cleanup, maintenance, and service; ponding, erosion, or excessive wetting may incur a Stop-Work order at the discretion of the Project Representative.

3.5 TRENCHING, DIGGING, TUNNELING, AND GRADING WITHIN THE CRITICAL ROOT ZONE:

A. Disturbance to soils and impacts to roots within the CRZ may require any of, and will not be limited to, the following methods, practices, and restrictions:

1. Maintain existing grade within CRZ of trees unless otherwise directed.

    a. Lowering grades (cutting): Where existing grade is above new finish grade shown around trees, carefully excavate within CRZ to new grade. Document roots exposed in this process with photographs to be shared with project Representative.
    b. Raising grades (filling): Where existing grade is raised within the CRZ to greater than 4 inches above existing grade these roots shall be considered damaged by smothering. Methods to increase air exchange of tree roots within these areas may be required. Examples of such methods may include and will not be limited to:

        1) Application of a 6 inch or thicker layer of large clean aggregate (2 inches by 4 inches or larger) covered with landscape fabric below fill material to maintain large pore space.
        2) Selection of a fill material with high porosity and minimal compressibility, which may include mulch. Compaction will not be required except as required by structural load requirements, to limit soil compaction.

2. Alternative excavation methods that minimize root damage may be required. These may include but are not limited to: hand digging, horizontal boring, use of an air excavation tool, or other methods as otherwise deemed necessary by the Project Representative.

B. Only limited intrusions into tree CRZ zones will be allowed as shown on the plans and with the approval of the Project Representative. Where trenching for utilities or irrigation is required within CRZ's of trees the following may be required:

1. No cutting of roots greater than two inches diameter. Tunnel under or around roots by drilling, auger boring, air excavation, or digging by hand.
2. Where necessary for installation, cut roots with sharp pruning instruments flush with the edge of the trench or tunnel; do not break or chop.
3. Avoid hitting roots with heavy equipment. Roots that are ripped by equipment should be excavated by hand, photographed, kept moist with mulch or burlap layers, and inspected by the Project Representative.
4. Pile excavated soil outside of the CRZ of residual trees and return area to original grade upon completion of work.
5. Cover exposed roots with soil as soon as possible or at the end of each day; the soil compacted to the original firmness only; and, watered when conditions are dry.
6. Tree root pruning or other tree root treatments may be required as directed by the Project Representative.

7. Root painting is not permitted.

3.6 STEM AND BRANCH PRUNING:

A. Any unnecessary cutting, breaking, skinning, or bruising of bark; breaking of branches and foliage; damage or clearing of vegetation in the work area will not be permitted. Where permitted, stem and branch pruning must follow ANSI A300 Standards (including Part 1 and Part 5).

B. Temporarily tie-up of low limbs is permitted where designated by the project representative.

C. All final pruning cuts shall be made in branch tissue close to the trunk or parent limb, without cutting into the branch bark ridge or branch collar and without leaving a stub. Flush cuts to the tree trunk that remove the branch collar are unacceptable. Flush cuts result in a larger wound and expose trunk tissues to the possibility of decay.

D. All significant tree pruning must have prior approval of Project Representative. An approved Arborist may be required, at the Contractors expense, for extensive or technically challenging pruning activities. Such requirements will be made explicit to the Contractor prior to the start of work.

E. Only proper branch pruning techniques will be accepted. Improperly pruned trees could be irreparably damaged and are subject to section 3.7 DAMAGE TO TREES AND TREE REPLACEMENT.

3.7 DAMAGE TO TREES AND TREE REPLACEMENT:

A. Should any tree or vegetation designated to remain be damaged in the course of construction activities immediately notify the Project Representative for inspection and direction for remedy.

B. Remedies for damage will, at the Owner's discretion, require removal and disposal of the damaged tree(s) and be one of the following, at the discretion of the Project Representative.

1. Compensate the Owner in cash or as a credit to the contract for up to the full value of the damaged tree, as appraised by an ISA certified Arborist according to the latest edition of the "Guide for Plant Appraisal".
2. Replace each damaged tree under 6 inches diameter at breast height measurement with one replacement tree of 1-3/4 inches caliper measure. Replace each damaged tree over 6 inches diameter at breast height measurement with one replacement tree of 1-3/4 inches caliper measure for each 6 inches of diameter at breast height measure of the damaged tree. The new trees may or may not be the same species, at the discretion of the Project Representative. Select nursery stock, plant, and maintain as specified in Section 1.4 QUALITY ASSURANCE.

3. For identified old-growth trees specified to remain, the Project Representative may be provided alternative remediation requirements from Parks Stewardship staff above and beyond requirements of 3.7.B.1 and 3.7.B.2.

C. Notify Project Representative in any case where construction called for in the contract documents cannot be completed without damage to trees identified to remain. Approval of the Project Representative is required prior to beginning construction described in the contract documents that might damage a tree designated to remain. Any tree designated to remain which is damaged without Project Representative's written approval, even if damage is necessary to complete the work, will subject the Contractor to remedies described in section 3.7 B above.

END OF SECTION

SECTION 015719 – ENVIRONMENTAL CONTROLS

PART 1 - GENERAL

1.1 COMPLIANCE WITH ENVIRONMENTAL STATUTES, ORDINANCES AND REGULATIONS

A. The Contractor shall be knowledgeable of, and comply with, all applicable federal, state, and local environmental regulatory requirements dealing with the prevention of environmental pollution and the preservation of public natural resources that affect or may affect this Project.

1.2 COMPLIANCE WITH PROJECT-SPECIFIC REGULATORY REQUIREMENTS

A. In addition to the requirements of Section 1.1, the Contractor shall be knowledgeable of, and comply with, the list of identified and obtained federal, state, and local permits and approvals in Technical Specification 014100 – Regulatory Requirements along with any other identified permits and approvals that the Contractor may also need to obtain to complete the proposed work. All currently held permits are attached (see Appendix A). Conditions of all permits and approvals must be adhered to during completion of the Project.

B. The Contractor shall also be responsible for complying with and/or maintaining these permits, approvals, licenses, certificates, and other environmental regulatory requirement correspondence on-site, or as specified within the permit.

C. Establish the staging area (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants like petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

D. This work item shall include the planning, installing, inspecting, maintaining, and removing Best Management Practices (BMPs) to prevent pollution of air and water, and control, respond to, and dispose of existing structures during the contract.

E. The Contractor shall perform the following:
   1. Install, maintain, and remove all BMPs during the life of the contract.
   2. Perform other work shown on the Contract Drawings or as directed by Owner Representative.
   3. Educate all Contractor and all Subcontractor staff in environmental compliance issues at weekly meetings.

1.3 BEST MANAGEMENT PRACTICES (BMPs)

A. The project shall comply with all state water quality standards and use standard Best Management Practices (BMPs) throughout construction. These BMPs will include the maintenance of vessels and equipment to avoid leaks and spills into surface waters and to prevent construction debris

from entering U.S. waters when conducting repair work on work floats or barges, refer to the permits and authorizations listed in Technical Specification 014100 – Regulatory Requirements.

1.4 AIR POLLUTION CONTROL

A. The Contractor shall not discharge smoke, dust, and other contaminants into the atmosphere that violate the regulations of any legally constituted authority. Internal combustion engines shall not be allowed to idle for prolonged periods of time. The Contractor shall maintain construction vehicles and equipment in good repair. Exhaust emissions that are determined to be excessive by the Owner's Representative shall be repaired or replaced.

1.7 WATER QUALITY CONTROL REQUIREMENTS

A. All work shall be performed in a manner that does not adversely impact water quality or cause damage to critical habitat located outside the Project Site areas. The Contractor shall have absorbent boom on site and ready for placement to contain sheens in the event a spill occurs. The Owner must be immediately notified if a material spill occurs, or oil sheen is observed during any part of construction.

1.8 WATER QUALITY MONITORING AND CONTROL PLAN

A. The Contractor shall prepare and submit a Water Quality Monitoring and Control Plan prior to the start of construction for all work located below ordinary high water (OHW). The Water Quality Control Plan shall include methods and procedures of demolition, excavation placement, and pile driving that will be protective of marine water quality, and a description of contingency measures that will be implemented in the event water quality compliance criteria is exceeded during the performance of such activities.

1.9 WATER QUALITY MONITORING AND REPORTING CONDITIONS

A. During and immediately after project construction, the Contractor shall visually monitor for turbidity discharges at the point of compliance established in WAC 173-201A-200(l)(e)(i). The Contractor shall meet water quality criteria as defined in applicable local, state, and federal standards. The Contractor shall have in place BMPs to prevent water quality exceedances and contingency measures to implement should water quality violations occur.

B. Should any work occur in-water that may result in elevated turbidity (pile driving), visual monitoring will be conducted by the Contractor to identify any turbidity plumes that extend beyond the immediate work location. If turbidity plumes occur, the Contractor shall conduct water quality monitoring at a radius of 150 feet from the activity (point of compliance). Water quality monitoring shall monitor for exceedances of 5 nephelometric turbidity units (NTUs) over background when the background is 50 NTUs. When the background turbidity is more than 50 NTUs, water quality monitoring shall monitor for a 10 percent increase in turbidity over background levels. Background levels of turbidity shall be taken at 300 feet from the activity.

C. If water quality exceedances are observed outside of the point of compliance, work shall cease immediately and the Contractor shall assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further water quality turbidity

exceedances. The Contractor shall notify Owner and ECY West Regional Office Federal Permit Coordinator at 1-425-649-7000 of the exceedances.

D. If the results of the monitoring show that the water quality standards or project performance standards are not being met, additional monitoring and mitigation may be required.

E. Any changes to the monitoring requirements must be approved in writing by Ecology.

F. Turbidity monitoring work shall be conducted by a technician that is either an employee of Contractor or an independent company experienced in conducting water quality compliance monitoring work. The proposed technician shall have a minimum 5 years of documented experience with water quality and turbidity monitoring work and holding a CESCL certification. Technician shall have demonstrated proficiency in using the water quality monitoring equipment.

G. Water quality monitoring results shall be submitted in report format to the Owner with each daily report and within 24 hours of collecting the data.

H. Owner may perform independent water quality monitoring to ensure that the Contractor is complying with the requirements within this Specification and related documents.

1.10 OIL SPILL PREVENTION AND CONTROL

A. The Contractor shall be responsible for prevention, containment, and cleanup of spilling of oil, fuel and other petroleum products used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor and shall be conducted in accordance with WSDOT Standard Specification Section 1-07.15(1) - Spill Prevention, Control and Countermeasures Plan (SPCC Plan).

B. The Contractor is advised that discharge of oil from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.

C. The Contractor shall, at a minimum, take the following measures regarding oil spill prevention, containment and cleanup:

1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums, and other equipment and facilities shall be inspected regularly for drips, leaks, or signs of damage, and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.

2. All land-based oil and products storage tanks shall be diked or located to prevent spills from escaping to the water. Diking and subsoils shall be lined with impervious material to prevent oil from seeping through the ground and dikes.

3. The Contractor shall not store oil or fuel on the shoreline, or equipment that is not required for the daily construction activities. The Contractor shall specify where oil and fuels will be stored in the SPCC Plan. A metal pan or other impervious material with sides a minimum of four (4) inches high shall be placed under the equipment on the beach or adjacent area during refueling. The pan shall have a capacity equal to the capacity of the fuel cans used and catch any spills or leaks during the refueling activity.

Fuel caught in the pan shall be contained and either transported off-site or used in the equipment. Under no condition shall the material be discharged on the Project Site. If the Contractor's fuel cells exceed the thresholds set forth in 40 CFR 112, the Contractor shall provide a spill plan and containment equipment accordingly.

4. Special measures shall be taken to prevent bilge pumpage or effluent, chemicals, fuels, oils, greases, bituminous materials, waste washing, herbicides and insecticides, and concrete drainage from entering the water.

5. All visible floating oils shall be immediately contained with booms, dikes, or other appropriate means and removed from the water prior to discharge into state waters. All visible oils on land shall be immediately contained using dikes, straw bales, or other appropriate means and removed using sand, ground clay, sawdust, or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leakproof containers after cleanup and during transport to disposal. Waste materials shall be disposed off property at an approved site.

6. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the Owner's Representative and the following agencies at their listed 24-hour response numbers:

   a. WA STATE PARKS: (360) 755-9231

   b. ECY, West Regional Office: (206) -594-0000

   1) U.S. Environmental Protection Agency National Response Center EPA/NRC: (800) 424-8802

D. Maintain on the job at each site the following materials (as a minimum):

1. Oil-absorbent booms: 8 each, 20 feet long.

2. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area.

3. Plastic sheeting

4. Oil dry all, gloves and plastic bags.

1.13 ADMINISTRATIVE REQUIREMENTS

A. Failure to install, maintain, and/or remove BMPs shown on the Contract Drawings and specified herein, or by order of Owner Representative; or failure to comply, implement and maintain any provisions and requirements of this Technical Specification; or failure to conduct project operations in accordance with these Technical Specifications and Contract Drawings will result in the suspension of the Contractor's operations by Owner Representative in accordance with General Conditions.

B. Any damages, fines, levies, or judgments incurred as a result of Contractor, Subcontractor, or supplier negligence in complying with the requirements of this Technical Specification will be charged to the Contractor.

C. The Contractor shall be solely responsible for any schedule impacts from damages, fines, levies, judgments, or stop work orders incurred as a result of Contractor, subcontractor, or supplier negligence in complying with the requirements of this Technical Specification. The project schedule will not be changed to accommodate the time lost.

1.14 APPLICABLE REGULATIONS

A. Comply with applicable federal, state and local laws and regulations concerning environmental pollution control and abatement, and specific requirements elsewhere in specifications and drawings to prevent and provide for control of environmental pollution.

B. The Contractor is responsible for taking the appropriate preventative water quality protection systems to ensure compliance with the Environmental Permits and in accordance with WSDOT Standard Specification Section 8-01 - Erosion Control and Water Pollution Control. Water pollution control measures shall be utilized throughout the duration of the work in accordance with BMPs described in Washington State Department of Ecology (ECY) Stormwater Management Manual for Western Washington, Volume II Construction Stormwater Pollution Prevention.

1.15 APPLICABLE PUBLICATIONS

A. The following permits, rules, requirements, and regulations specified may apply to this work:
   1. U.S. Army Corps of Engineers Clean Water Act Section 404 Permit
   2. Washington State Department of Ecology Clean Water Act Section 401 Water Quality Certification
   3. WAC 173-201A, Water Quality Standards of the State of Washington

1.16 SUBMITTALS

A. The Contractor shall prepare and submit a Work Plan to the Owner for review and approval. For submission specifics including time frame requirements, see Section 013300 – Submittal Procedures. The following items shall be submitted:
   1. Water Quality Control Plan: The Contractor shall submit to the Owner a detailed Quality Control Plan for approval that is consistent with the project specification requirements presented herein. At a minimum the plan shall include the following information:
      a. Project Schedule: A schedule reflecting the expected timing and duration of the major activities associated with in-water marine construction. These shall include but are not limited to mobilization, commencement of demolition operations, anticipated schedule for performing in-water work, surveys, method and anticipated rate of filling, demobilization, and sequencing with other work including demotion and piling work.

b. Best Management Practices: The Contractor shall also include in the Quality Control Plan a description of Best Management Practices (BMPs) that will be implemented during in-water marine construction activities to satisfy permit requirements and meet the Owner's project goals.
   1) BMP is to include a site-specific Spill Prevention and Countermeasure or Pollution Control Plan that provides a site plan and narrative describing demolition debris and spill containment plan; and measures to reduce/recycle hazardous and non-hazardous wastes.
   2) The spill containment control plan shall include the following information: notification procedures, specific cleanup and disposal instruction for different products, quick response containment and cleanup measures, proposed methods of disposal of spilled materials and employee training on spill containment.
   3) Water quality monitoring for turbidity during pile driving work if required.
   4) Hazardous materials storage plan with narrative describing methods of storage, security, and containment methods.

2. Spill Prevention, Control and Countermeasures Plan: Develop a written description of their SPCC plan and submit to the Owner for review and approval 15 days prior to the start of construction. A copy of the SPCC plan with any updates will be maintained at the work site by the Contractor. The SPCC plan shall outline the roles, responsibilities, notifications, inspection and response protocols. The SPCC plan shall include the following information:
   a. Notification procedures, specific cleanup and disposal instruction for different products, quick response containment and cleanup measures, proposed methods of disposal of spilled materials and employee training on spill containment.

1.17 ENVIRONMENTAL PROTECTIONS

A. Pile Driving Sound Protection Measures
1. Piles shall be driven in accordance with Technical Specification 316216 – Steel Pile.
2. Contractor to utilize vibratory installation to the maximum extent practicable, and to minimize the use of impact proofing.
3. Contractor to ensure that a bubble curtain (preferably enclosed) is installed and operating properly prior to initiating any impact driving. The bubble curtain must distribute air bubbles around 100% of the perimeter of the piling over the full depth of the water column.
4. Use of an impact hammer for piles located below OHW will require the use of sound attenuation in accordance with Environmental Permit requirements.
5. The design of the sound attenuation systems is the sole responsibility of the Contractor. It is the Contractor's responsibility to interpret permit performance or system requirements and ensure that a compliant sound attenuation system appropriate for all potential site conditions is provided.
6. Impact driving of steel piles below the water line shall at a minimum require the use of a bubble curtain installed around the pile during pile driving operations in accordance with Environmental Permit requirements.
7. Other sound attenuation methods may be used if required/allowed by the applicable Environmental Permits and local, state, federal law and with prior approval by the Owner.
8. Regardless of the sound attenuation method used, the selected system shall provide sound attenuation in accordance with Environmental Permit requirements. The Contractor is responsible for monitoring the effectiveness of their sound attenuation system, and if the

noise level is exceeded per the permit requirements, the attenuation measures or pile installation methods and equipment shall be modified to bring the pile driving operation into compliance at the Contractor's expense.

9. The sound attenuation system shall be designed so as not to damage the pile.

B. Protection and Restoration of Property:
   1. Preserve public property, prevention of damage to natural environment, etc., insofar as they may be endangered by Work.
   2. When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect or misconduct in execution of Work, or in consequence of non-execution of Contractor, restore, or have restored at Contractor's expense, such property to a condition similar and equal to that existing before such damage or injury was done, by repairing, rebuilding, or otherwise restoring same, or make good damage or injury in some other manner acceptable to the Owner Representative.

C. Protection of Water Resources:
   1. Perform Work not to create conditions injurious to fish or to their habitat, or which would make water unsuitable for private, municipal, or industrial use.
   2. Take special measures to prevent chemicals, fuels, oils, grease, bituminous materials, waste washings, herbicides, insecticides, lime, wet concrete, cement, silt or organic or other deleterious material from entering waterways.
   3. Dispose of offsite, wastes, effluents, trash, garbage, oil, grease, chemicals, cement, bitumen, etc., petroleum, and chemical products or wastes containing such products, in a lawful manner conforming to applicable local, state and federal laws. Furnish the Owner with documentation showing compliance with this requirement.
   4. Conform to applicable local, state and federal laws for disposal of effluents. Dispose of waters used to wash down equipment in a manner to prevent their entry into a waterway. If waste material is dumped in unauthorized areas, remove material and restore area to condition of adjacent, undisturbed area. If necessary, excavate contaminated ground and disposed of as directed by Owner's Representative and replace with suitable compacted fill material with surface restored to original condition.

D. Temporary Water Pollution Controls:
   1. Provide for prevention, control water pollution within the limits of Project, to prevent and/or minimize damage to adjacent bodies of water and Work itself.
   2. Develop a written spill prevention and response plan for construction activities adjacent to/and over any surface waters and/or wetlands. "Adjacent" means within 150' as measured on a horizontal plane. Plan addresses:

      a. Narrative description of the proposed construction methods, materials, and equipment to be used for Work
      b. Assessment and listing of hazardous materials and/or potential contaminants that could be released during execution of Work
      c. SDS sheets with cleanup instructions for potential contaminants
      d. Spill response/cleanup materials and instructions for use
      e. Procedures and precautions to prevent spills
      f. Spill response training for on-site personnel, including the location of the containment and cleanup materials at site
      g. Emergency notification in case of a spill or release. Park Manager and Owner's Representative must be included on the list of notified.

3. Comply with applicable codes and ordinances for spill prevention and response plan and submit a copy to Owner's Representative before commencing Work adjacent to or over any waters and/or wetlands.

PART 2 - MATERIALS

A. Contractor shall not perform any demolishing activities after Contract Award until all BMP's are installed to the satisfaction of the Owner.

PART 3 - EXECUTION

3.1 WATER QUALITY CONTROL

A. The Contractor is responsible for conducting Water Quality monitoring and for achieving Water Quality criteria throughout all in-water or near water construction activities as defined in the water quality permit, and applicable local, state and federal standards. The Contractor shall have in place a Water Quality Control Plan (see Part 1 of this specification) listing Best Management Practices (BMPs) that will be utilized during in-water marine and shoreline construction to prevent adverse effects to water quality. The Water Quality Control Plan will include contingency measures that may be implemented should they become necessary.

B. Violations of any water quality requirement listed in the Environmental Permits may result in work stoppage by regulators. There shall be no additional compensation or time for shutdown, standby time, or delay associated with non-compliance.

C. The Contractor is responsible for taking the appropriate preventative erosion control measures and water quality protection systems to ensure compliance with the project regulatory permits and approvals and in accordance with WSDOT Standard Specification Section 8-01 - Erosion Control and Water Pollution Control, see Technical Specification Section 015000 – Temporary Facilities and Controls.

D. All work shall be conducted in accordance with the Owner-provided permit conditions. The Contractor is responsible for complying with all permit conditions when performing the work.

E. Materials for containment and cleanup shall be available onsite during all phases of the project.

F. Temporary Erosion and Stormwater Control (TESC) measures shall be utilized throughout the duration of the work in accordance with BMPs described in Washington State Department of Ecology Stormwater Management Manual for Western Washington, Volume II Construction Stormwater Pollution Prevention (latest version). Provide TESC in accordance with Technical Specification Section 015000 – Temporary Facilities and Controls.

G. All construction debris shall be properly disposed of on land so that it cannot enter a waterway or cause water quality degradation to state waters.

H. Washwater containing oils, grease, or other hazardous materials resulting from washdown of equipment or working areas shall be contained for proper disposal and shall not be discharged into state waters.

I. No wood, metal, or concrete preservatives, paints, sealers, glues, epoxies, chemicals, or other substances harmful or toxic to fish shall be applied to the new construction once it has been placed within or over the OHW of the Puget Sound.

J. Clean Fill Criteria: The Contractor shall ensure that fill placed for the proposed project does not contain toxic materials in amounts exceeding the applicable environmental requirements.

K. If at any time, as a result of project activities, fish are observed in distress, a fish kill occurs, or water quality problems develop (including equipment leaks or spills), immediately stop all activities causing harm and immediately notify the Washington Department of Ecology at 1-800-258-5990. Activities related to the fish kill or distress shall not resume until the Washington Department of Fish and Wildlife (WDFW) gives approval. WDFW may require additional measures to mitigate impacts.

3.2 EQUIPMENT

A. Vehicle staging, cleaning, maintenance, refueling, and fuel storage shall be located in accordance with WA Department of Ecology requirements.

B. When heavy equipment is used, the equipment selected shall have the least adverse effects on the ground, e.g., minimally sized, low ground pressure.

C. Equipment used shall be free of external petroleum-based products while working around the water. Accumulation of soils or debris shall be removed from the drive mechanisms (wheels, tires, tracks, etc.) and the undercarriage of equipment prior to its working below the ordinary high water line. Equipment shall be checked daily for leaks and any necessary repairs shall be completed prior to commencing work activities near the water.

D. Equipment used for this project operating with hydraulic fluid shall use only those fluids certified as non-toxic to aquatic organisms.

E. Except for hand tools, barge or boat mounted equipment, or a floating pile driver, equipment used for this project shall not enter or operate below the ordinary high water line. Any exception to this requirement can only be made with specific written consent of the Owner.

F. All stationary power equipment such as generators, cranes, or stationary drilling equipment, operated within 150 feet of any waterbody shall be diapered to prevent leaks unless suitable containment is provided to prevent potential spills for entering the water.

END OF SECTION 015719

SECTION 016000 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 IMPLIED/INCIDENTAL MATERIALS

A. Minor materials required for proper Project completion although not specifically mentioned or shown in Contract documents, are part of materials to be provided by Contractor as a part of Contract and are considered incidental to the total cost of Project. No additional compensation is due to the Contractor for providing such items.

1.2 QUALITY OF MATERIALS

A. Materials are to be new, free from defects, and of quality specified in the drawings and specifications.

B. Select and provide materials to ensure satisfactory operation and rated life in prevailing environmental conditions were installed.

C. Same make and quality throughout the entire job, for each type. Furnish materials of latest standard design products of manufacturers regularly engaged in their production.

1.3 SPECIFIED MATERIALS

A. Drawings and specifications generally reference only one make and model for each item of material or equipment required. This is not intended to be restrictive but indicates the standard of quality, design, and features required.

B. Specified product is the basis of design regarding physical size, strength, and performance. Products named indicate minimum acceptable product and are "or equal" unless noted otherwise.

1.4 SUBSTITUTIONS

A. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.

1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:

a. Requested substitution is consistent with Contract Documents and will produce indicated results.
b. Requested substitution provides sustainable design characteristics that specified product provided.
c. Requested substitution will not adversely affect Contractor's construction schedule.

d. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
e. Requested substitution is compatible with other portions of Work.
f. Requested substitution has been coordinated with other portions of Work.
g. Requested substitution provides specified warranty.
h. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

B. Substitutions for Convenience: Project Representative will consider requests for substitution if received within fourteen (14) days after the Notice of Award.

1. Conditions: Project Representative will consider Contractor's request for substitution when the following conditions are satisfied:
   a. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
   b. Requested substitution does not require extensive revisions to Contract Documents.
   c. Requested substitution is consistent with Contract Documents and will produce indicated results.
   d. Requested substitution provides sustainable design characteristics that specified product provided
   e. Requested substitution will not adversely affect Contractor's construction schedule.
   f. Requested substitution has received necessary approvals of Authorities Having Jurisdiction.
   g. Requested substitution is compatible with other portions of Work.
   h. Requested substitution has been coordinated with other portions of Work.
   i. Requested substitution provides specified warranty.
   j. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

1.5 SUBSTITUTION OF MATERIALS ("OR EQUAL")

A. Proposed equipment to be considered "or equal" will necessitate written approval by the Engineer prior to substitution.

B. On requests for substitution of materials clearly define and describe proposed substitute.

C. Accompany requests by complete specifications, samples, records of performance, certified test reports, and such other information as the Engineer may request to evaluate the substitute product.

D. Contractor is responsible for a substitute item suiting the installation requirements and for additional costs incurred as a result of substitution.

E. Final decisions regarding quality and suitability of proposed substitutions rests solely with Engineer and will be based on information submitted.

1.6 TECHNICAL DATA

A. Technical data and information contained herein relies entirely on tests and ratings provided by manufacturers who are solely responsible for their accuracy. Project Representative, by use of this information in no way implies that Project Representative has tested or otherwise verified the results of published manufacturer's information.

1.7 DELIVERY, STORAGE AND HANDLING

A. Transport products by methods to avoid product damage. Only deliver products to the site that are undamaged and free from defects.

B. Provide proper equipment and personnel to handle and transport materials/products to the Project sites safely and undamaged.

C. Promptly inspect material to assure that products comply with Contract requirements, quantities are correct, and products are undamaged.

D. Store and/or stockpile materials and products only in areas of park designated and approved by Project Representative prior to delivery.

E. Arrange storage to provide easy access for inspections. Original product labels, certifications, stamps, etc. to be intact and readily visible for inspection purposes.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 DISPOSAL OF WASTE

A. Unless otherwise noted, no disposal site has been provided by the Owner for any debris or waste generated by or resulting from the specified Work. Contractor is responsible for identifying a suitable disposal site.

B. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

C. Waste and debris removed from the worksite and not specified for reuse becomes the responsibility of the Contractor and disposed of off park property in areas authorized by the applicable county and/or state agencies and in accordance with current rules and regulations governing the disposal of solid waste. Disposal fees and sundry charges are paid by the Contractor and are incidental to the contract.

D. Burning: Do not burn waste materials.

E. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 OPERATING AND MAINTENANCE (O&M) INSTRUCTION MANUAL

A. Final payment will be held to no more than 95 percent completion percentage until receipt of the O & M Instruction Manuals. Payment for Contract closeout item will be made after receipt and approval of the manuals by the Project Representative. Have O & M Instruction Manuals prepared before final payment. Lack of O & M Instruction Manuals will not be a cause for Contract extensions.

B. Furnish three (3) complete hard copy sets of binders and one (1) Electronic PDF copy on a storage device containing the following data for each mechanical, pumping, electrical equipment, major hardware, and plumbing installation or provided on this Project:

1. Installation instructions
2. Operating instructions (start-up and shut-down)
3. Maintenance instructions, including trouble shooting guide
4. Electrical schematics
5. Illustrated parts breakdown and code (if available)
6. Parts list (complete)
7. Technical manuals
8. Provide a complete list of manufacturer's representatives sales offices, or suppliers of major parts used on this Project, including their business address and telephone number, for the Park Manager's use when maintaining/repairing the system. Major parts are defined as other than miscellaneous plumbing, wire, piping fittings, etc.
9. List of subcontractors contact information, and specific items of work performed by them.
10. Tab binders and clearly mark all information contained.

C. Affix to walls, panels, boxes or at other locations, the following data sealed in heavy plastic:

1. Operating instructions (start-up and shut-down)
2. Electrical schematics

D. Operating instructions refer to designated parts of each particular installation as necessary and tag such parts with permanent markers as directed by Project Representative. This includes operational equipment.

1.2 AS-BUILTS

A. Before final acceptance of Project, furnish Project Representative "As-Builts" which shows as-built locations and dimensions of major items constructed. Include locations and elevations of existing utilities encountered during excavation. Show location of pipes, manholes, buildings, structures, etc. by field measurements consisting of at least two (2) ties to permanent surface objects such as hydrants, buildings, etc.

B. Final payment: No more than 95 percent until As-Built Drawings received. Payment made after receipt and acceptance of drawings by Project Representative. Lack of As-Built Drawings will not be a cause for contract extensions.

1.3 SPECIAL TOOLS

A. Deliver special tools required for maintenance and adjustment of equipment to Project Representative upon completion and before final acceptance of Project.

1.4 SPARE MATERIALS AND PARTS

A. Before final acceptance, deliver spare materials, parts and other similar items to storage locations specified by Project Representative.

1.5 CERTIFICATES AND PERMITS

A. Submit signed original certificates of compliance and final approval from Authorities Having Jurisdiction.

1.6 OUTSTANDING DOCUMENTS

A. Expedite and submit outstanding administrative documents including outstanding cost proposals, Change Orders, etc.

1.7 PRIOR OCCUPANCY

A. Reference General Conditions.

B. Commission has the right to occupy completed portions of Project prior to final acceptance, and such occupation is not an acceptance of Project. Prior to occupancy, Project Representative and Contractor mutually agree to a date for prior occupancy; the area to be occupied; that occupancy is commencing within the requirements of applicable codes and ordinances; that endorsements from insurance companies, as necessary to maintain full insurance of Project regardless of prior occupancy, have been obtained; and that other necessary provisions are completed.

C. The Project Representative will inspect areas designated for prior occupancy and issue a letter of acceptance or provide a list of deficiencies to be corrected to Contractor. Correct deficiencies prior to date of occupancy.

1.8 SUBSTANTIAL COMPLETION

A. Reference General Conditions.

B. Notify Project Representative in writing a minimum of seven (7) days in advance of the scheduled date of completion. Project Representative will conduct a "pre-final" inspection and formulate a final punchlist of Work items to be completed prior to final inspection. Project

Representative will establish the date of substantial completion based on pre-final inspection findings. Following this inspection, Project Representative will either issue notice of substantial completion or advise the Contractor of deficient items which must be corrected prior to issuance of substantial completion.

1.9 DAMAGE TO FACILITIES, ROADS, VEGETATION OR PROPERTY

A. During the course of construction, should any park facility be damaged by the Contractor's actions, operations or neglect, repair any such damages to their original condition, as acceptable to the Project Representative, at no cost to the Commission.

B. Repair, restore or replace any park roads, vegetation or property damaged by the Contractor to the original condition at the time construction began. Repair or replace trees and vegetation indicated to remain, which has been damaged by construction operations, in a manner acceptable to the Project Representative.

1.10 FINAL CLEAN-UP

A. Upon completion of the Work and prior to final inspection and acceptance, clean up the entire construction site and all grounds occupied by the Contractor in connection with the Work.

B. Fine graded, rake clean and smooth all worksites and disturbed areas. Remove from the park rubbish, surplus and discarded materials, falsework, temporary structures, equipment, and debris.

C. Leave all phases of the Project clean and ready for public use prior to final acceptance.

D. Inspect all materials and surfaces for damage, scratches, marring, untreated ends of sawcuts, etc. and repair to original or intended condition.

1.11 FINAL INSPECTION AND ACCEPTANCE

A. Reference General Conditions.

B. Notify Project Representative in writing when Work, including punchlist items, has been completed.

C. Project Representative will schedule and conduct a final inspection to verify that outstanding Work items are complete.

D. Owner will establish the date of final acceptance based on the results of final inspection. Complete/correct any items identified as outstanding during final inspection prior to final acceptance of Project.

1.12 SUBMITTALS

A. Submittals shall be made in accordance with Section 013300 – Submittal Procedures. Contractor shall submit the following:

1. Operating and Maintenance Instruction Manual in accordance with Section **Error! Reference source not found.** of this Section.
2. As-Built Drawings in accordance with Section **Error! Reference source not found.** of this Section.
3. Certificates and Permits in accordance with Section **Error! Reference source not found.** of this Section.
4. Outstanding Documents in accordance with Section **Error! Reference source not found.** of this Section.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

DIVISION 2 – SITE WORK

SECTION 024100 – DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Demolition work includes the requirements for the removal, whole or partial, and satisfactory disposal of all structures, debris, and other obstructions that are designated to be demolished on the Contract Drawings or within these Technical Specifications. Section includes general administrative and procedural requirements governing execution of the work including, but not limited to, the following:

1. Removing and disposing of timber floats at the moorage facility.
2. Removing and disposing of creosote timber piles.
3. Removing and disposing of the timber pier and walkway.
4. Removing and disposing of timber creosote piles at the island floats
5. Removing and disposing of timber creosote piles at the pumpout float.
6. Salvage existing gangway.
7. Salvage existing island floats.
8. Relocating fallen trees.

B. The extent and location of the demolition work is indicated on the Contract Drawings.

C. The work includes demolition, salvage of identified items and materials, and removal of resulting rubbish and debris as indicated in the Contract Drawings. Rubbish and debris shall be removed from Owner property daily, unless otherwise directed, to avoid accumulation on site.

D. Contract Drawings indication of existing conditions are cursory, and for Contractor's general reference only. Contractor shall carefully examine existing conditions and accept existing construction and site improvements on an "as is" basis.

E. The term “General Demolition” as used herein refers to all demolition other than abatement of asbestos, Polychlorinated Biphenyls (PCBs) and other hazardous materials.

F. All work shall be in accordance with Project permits and Contract Documents.

1.2 QUALITY ASSURANCE

A. Regulatory requirements: Comply with governing regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.3 PROJECT CONDITIONS

A. General: It is the Contractor's responsibility to visit the site to become familiar with the details of the demolition work under this Section.

B. Hazardous materials: Creosote treated timber is present on site.

C. If any other materials suspected of containing hazardous materials (besides creosote treated timber) are encountered, do not disturb; immediately notify the Owner. Hazardous materials will be removed by the Owner under a separate contract.

D. Salvageable Items: The Contractor shall coordinate with the Owner on any salvageable items.

E. It is the Contractor's responsibility to visit the site and perform any inspection and testing the Contractor deems appropriate, and to examine the Contract Drawings and Technical Specifications to become familiar with the quantity and character of all materials to be demolished prior to the deadline for submission of bids. The Contractor assumes full responsibility for the proper disposal of all demolition materials.

F. Demolition notations on Contract Drawings are schematic and general in nature and do not show the exact scope or detail of all required demolition.

1.4 REMOVAL AND DISPOSAL

A. Remove and dispose of existing site elements as indicated on the Contract Drawings and as further required to implement the new work of the Contract. Removal and disposal shall include but not be limited to the following:

1. Moorage Facility: timber piles, floats, and pier.
2. Island Floats and Pumpout Float: timber piles

B. Remove and dispose of existing timber floats, piles and, pier in accordance with the Contract Drawings.

1.5 SALVAGE

A. The existing aluminum gangway shall be salvaged and delivered by the Contractor to a location approved by the Owner.

B. The existing island floats shall be salvaged for the Owner to reuse elsewhere. Coordinate delivery location of the island floats with the Owner. The Contractor shall be responsible for transport and delivery of the floats.

1.6 PROTECTION

A. PROTECTION OF PERSONNEL

1. During the demolition work the Contractor shall continuously evaluate the condition of the structure being demolished and take immediate action to protect all personnel working in and around the demolition site.

2. Provide protection of persons and property required by Technical Specification Section 015000 – Temporary Facilities and Controls. Provide protection to the public and passers-by, from damage, injury, or any other nuisance.

B. PROTECTION OF EXISTING PROPERTY

1. The Contractor shall take necessary precautions to avoid damage to existing items to remain in place, to be salvaged, to be reused, or to remain the property of the Owner; any damaged items shall be repaired or replaced to the satisfaction of the Owner's Representative. The Contractor shall coordinate the work of this Section with all other work and shall construct and maintain shoring, bracing, and supports as required. The Contractor shall ensure that structural elements are not overloaded during construction and shall be responsible for increasing structural support or adding new supports as may be required because of cutting, removal, or demolition work performed under this contract.
2. Contractor shall protect all trees per Section 015639 – Temporary Tree and Plant Protection.

1.7 SUBMITTALS

A. Demolition Management Plan (DMP) with documentation that includes and addresses the following:

1. Work sequence, phasing plan, and schedule.
2. List of subcontractors proposed including point of contact and telephone numbers.
3. List of equipment to be used for demolition operations.
4. List of items to be removed and salvaged or relocated and delivered to the Owner Representative prior to start of demolition.
5. Means and methods to protect existing infrastructure and stockpile materials. Include the methods used to provide floats, false work, temporary supports, bracing, and shoring to be used to perform the work.
6. Means and methods to prevent demolition materials, debris, water from construction activities, etc. from falling into the water.
7. Means and methods for pile extraction that complies with the Contract Documents and Regulatory Permit requirements.
8. Laydown areas for materials management.
9. Contractor health and safety plan.
10. Protection of the public or other persons in areas surrounding the work.
11. Environmental protection plan and compliance with permit requirements.
12. Contractor quality control / quality assurance (QA/QC) plan.
13. Construction stormwater pollution prevention plan (SWPPP).
14. Schedule of disposal sites, their names, locations, permit numbers and landfill tickets for all materials that will be disposed at each site.
15. Water quality monitoring and control plan that includes use of a turbidity curtain around the entire work site during repairs.
16. Salish Seed placement plan.

B. If the DMP is revised, resubmit with any proposed changes for review by the Owner's Representative prior to incorporating changes to means, methods, equipment, tools, temporary supports, etc.

C. Pile Extraction Logs: The Contractor shall maintain and submit pile extraction logs. Pile extraction logs shall include the following information:

1. The dates (including start and stop times) for all pile extractions.
2. The type, size, and number of piles extracted per day.
3. The duration of vibratory pile extraction, per pile.
4. The extent (in feet) and duration of visible turbidity plumes and pile extraction locations, and during tugboat operations (if applicable)

D. Creosote Disposal Receipts: After creosote removal and upland disposal, submit the disposal receipts and a picture of the dump truck on the scale to the Services. Disposal receipts need to contain actual weight of the total removed creosote.

E. Seed Receipts: Provide receipt for the seeds mentioned below in 3.7.A.

F. Disposal Documentation: Submit documentation that demolition materials removed from the Site are received by permitted disposal and/or recycling facilities. Include facility permits and proof of receipt of materials. Proof of receipt of materials shall be from the facilities, and include date, time, location, personnel accepting materials, and a description of materials by weight, volume, or other Owner-approved method.

1.8 COORDINATION

A. The Contractor shall notify all demolition work with the Owner.

B. See regulatory permits for in-water work restrictions.

C. Coordinate with the Owner regarding their operation's schedule.

PART 2 - PRODUCTS

2.1 GENERAL

A. Products that are required to accomplish, or to be incorporated into, the work of this Section shall be as selected by the Contractor, subject to the approval of the Owner's Representative.

2.2 SOIL MATERIALS

A. General: Soil materials used to fill the holes left by the demolition in the upland area shall be native material only.

B. After demolition of existing structure in the upland, remove existing vegetation from disturbed soil, smooth disturbed soil to blend with existing grade, and plant Salish Seeds from the San Juan County Conservation Land Bank in disturbed soil areas.

PART 3 - EXECUTION

3.1 GENERAL

A. Demolish indicated elements completely. Use methods required to complete the work within limitations of governing regulations and as follows:

1. Locate demolition equipment and remove debris and materials so as not to impose loads to adjacent structures.
2. All demolition work shall proceed in an orderly and careful manner with due consideration for any existing structures.
3. A floating debris boom shall be deployed around the in-water work during all demolition. A silt curtain shall be installed if turbidity exceeds the 150 ft allowable temporary mixing zone during rock socket drilling.

3.2 PREPARATION

A. Protect nearby existing structures and features noted to be protected in the Contract Drawings from damage during demolition.

3.3 PILE REMOVAL

A. Water Quality Monitoring. See Section 015719 – Environmental Controls.

B. Place the piling on a construction barge or other dry storage site after the piling is removed. The piling must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the piling near waters of the state.

C. If a treated wood piling breaks during extraction, remove the stump from the water column by fully extracting. If the stump cannot be fully extracted, remove the remainder of the stump with a clamshell bucket, chain, or similar means, or cut it off at least two feet below the mudline. Do not fill holes after pile removal.

D. When removing creosote piling, containment booms and absorbent booms (or other oil absorbent fabric) shall be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters as a result of construction activities to remove creosote pilings. All debris on the bed and accumulated in containments structures shall be collected and disposed upland at an approved disposal site.

E. Submit post-project surveys (e.g., underwater video, photos at low-tide) along transects within the project area to the Owner and Washington Department of Fish and Wildlife within two weeks of pile removal to verify debris removal.

3.4 DEMOLITION OF STRUCTURES

A. Completely remove and dispose of designated structures and other obstructions as shown on the Contract Drawings, unless specified to be salvaged. Adjacent materials designated to remain that are damaged by the Contractor as a result of their operations shall be replaced at no additional cost to the Owner.

B. All structures, materials, debris, and rubble obtained from the demolition work shall be removed from the premises promptly and lawfully disposed of at Contractor's expense, unless specified to be salvaged.

C. Particular care shall be taken at boundaries of demolition work to provide for smooth and properly finished merging of new work with existing structures or site features to remain.

D. All damage to existing surfaces or site components to remain, resulting from demolition work, shall be filled, patched, or refinished as required for proper completion and appearance of the finished work.

E. Demolition work shall be scheduled and conducted in such a manner as not to destabilize the work area during the time period between completion of demolition and completion of new work within the demolition areas. Contractor is responsible for protections and maintenance of work area until final completion.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. All materials, except those indicated by the Owner to be salvaged, shall upon their demolition become the property of the Contractor. All such material, including those containing hazardous or potentially hazardous substances, shall be promptly removed and lawfully disposed of at the Owner approved upland facility.

B. No material shall be disposed of in adjoining waterways.

C. Dispose of any ammoniacal copper zinc arsenate (ACZA), chromated copper arsenate (CCA), and creosote treated timber materials as required by state and federal regulations.

D. Debris from demolition and floating debris removed from within debris booms shall be collected and disposed of at a facility complying with federal and state regulations.

E. Remove demolition waste materials in accordance with applicable regulatory and permit requirements.

F. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces.

G. Do not burn demolished materials.

3.6 PLACING SEED

A. After demolition of the existing structures in the upland, remove existing vegetation from disturbed soil, smooth disturbed soil to blend with existing grade, and plant Salish seeds from the San Juan County Conservation Land Bank in disturbed soil areas per the conservations planting guidelines. The Contractor is responsible to procuring the seed, planting, and providing proof of payment.

3.7 STRIPPING DELETERIOUS AND UNSUITABLE MATERIALS

A. Stripping of deleterious and unsuitable materials shall be performed only in areas to permit new construction and at minimum depths sufficient to remove surficial deleterious and unsuitable materials.

3.8 DISPOSAL OF WASTE MATERIALS

A. Remove waste materials, including trash, and debris, and legally dispose of them off the Owner's property.

1. All pressure treated and creosote treated lumber shall be disposed of in a landfill permitted to receive those types of waste materials.
2. Burning is not allowed on the project site.

3.9 CLEANUP

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by demolition operations. Return adjacent areas to the condition existing before demolition operations began.

END OF SECTION

DIVISION 03 – CONCRETE

SECTION 030000 – CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section covers supply, placement, and testing for all cast-in-place concrete, including formwork and reinforcement for construction of abutments and any other miscellaneous concrete work. The work includes the requirements for providing and installing cast-in-place concrete and associated work in conformance with these Specifications and to the extents shown in the Contract Drawings. Work included under this Section is to include all equipment, labor, and materials, including reinforcement, formwork, placement, curing, testing, saw-cutting, and any other associated work required for the installation of cast-in-place concrete. Cast-in-Place concrete construction work covered by this Section includes:

1. New concrete abutment and rock anchor pedestals.

1.2 APPLICABLE PUBLICATIONS

A. Codes and Standards: Comply with the provisions of the following codes, specifications, and standards, except as otherwise shown or specified:

1. ACI

a.	117.1R	Guide for Tolerance Compatibility in Concrete Construction
b.	211.1	Selecting Proportions for Normal Density and High Density Concrete
c.	301	Specifications for Structural Concrete
d.	304	Guide for Measuring, Mixing, Transporting and Placing Concrete
e.	305R	Guide for Hot Weather Concreting
f.	306R	Guide for Cold Weather Concreting
g.	308R	Guide to External Curing of Concrete
h.	315R	Guide to Presenting Reinforcing Steel Design Details
i.	318	Building Code Requirements for Structural Concrete
j.	347	Guide to Formwork for Concrete

2. ASTM

a.	A82	Steel Wire, Plain, for Concrete Reinforcement
b.	A615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
c.	C31	Making and Curing Concrete Test Specimens in the Field
d.	C33	Concrete Aggregates
e.	C39	STM for Compressive Strength of Cylindrical Concrete Specimens
f.	C94	Ready-Mixed Concrete
g.	C143	STM for Slump of Hydraulic-Cement Concrete

h.	C150	Portland Cement
i.	C172	Sampling Freshly Mixed Concrete
j.	C219	Terminology Relating to Hydraulic Cement
k.	C231	STM for Air Content of Freshly Mixed Concrete by the Pressure Method
l.	C260	Air-Entraining Admixtures
m.	C309	Liquid Membrane-Forming Compounds for Curing Concrete
n.	C387	Std Specification for Packaged, Dry, Combined Materials for Concrete…
o.	C494	Chemical Admixtures for Concrete
p.	C618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
q.	C989	Slag Cement for Use in Concrete and Mortars
r.	C1064	STM for Temperature of Freshly Mixed Hydraulic-Cement Concrete
s.	C1240	Silica Fume Used in Cementitious Mixtures
t.	C1602	Mixing Water Used in the Production of Hydraulic Cement Concrete
u.	D1752	Joint Fillers for Concrete Paving and Structural Construction
v.	D4791	STM for Flat Particles, Elongated Particles… in Coarse Aggregate

1.3 QUALITY ASSURANCE

A. General

1. All concrete work shall meet the local building code requirements. All concrete shall be reinforced unless otherwise stated.
2. Workmanship: The workmanship must comply with the requirements and guidelines of ACI.
3. All concrete work which does not conform to the specified requirements, including those for strength, tolerances, and finishes shall be corrected or removed and recast as directed by the Owner at the Contractor's expense with no modification of project schedule requirements. The Contractor shall also be responsible for the cost of corrections to any other work affected by, or resulting from, corrections to the concrete work.

B. Qualifications of Personnel

1. Provide at least one person who shall be present at all times during execution of this work and who shall be certified and experienced with a minimum of 5 years in placing the types of concrete specified and who shall direct all work performed under this Technical Specification.
2. Thoroughly trained and experienced journeyman concrete finishers shall be responsible for finishing of exposed surfaces.

1.4 CONTRACTOR'S RESPONSIBILITY

A. Furnish all labor, equipment, supplies, and materials necessary to perform the abutment construction activities associated with the work shown on the Contract Drawings and described herein.

B. All concrete testing shall be the responsibility of an independent testing firm hired by the Contractor.

C. Contractor shall do a subsurface investigation of the area where the abutment will be installed to determine location of unweathered bedrock for rock anchor pedestal install.

D. Alternative Design. The Contractor may submit an alternative design for the abutment and rock anchor pedestals. The alternative design shall bear the stamp and signature of a State of Washington Registered Professional Engineer with experience reinforced concrete design and rock anchors. The alternative design shall clearly identify deviations from the original design intent and any associated cost savings to the Owner. Substitutions and Change Orders resulting from alternative design will be addressed in accordance with the Specific Requirements and General Conditions, respectively.

1.5 DEFINITIONS

A. Packaged Concrete: pre-measured and packaged combination of all necessary dry materials for concrete that meets or exceeds ASTM C387 standards. Final mixing of dry and wet materials performed at site.

1.6 SUBMITTALS

A. Submit the following items to the Engineer in accordance with Section 013300 – Submittal Procedures.

1. Abutment Construction Work Plan: Submit a work plan for abutment construction. Provide a mix design or product data sheet, batching and mixing procedures, and a list of the equipment performing the on-site mixing.
2. Concrete Mix Design: Submit concrete mixture proportions and supporting data for review by the Owner to prequalify their batch concrete mix design if being proposed. The mix design shall be approved prior to any concrete placement. The proportions of each ingredient used in all mixes, the compressive strengths at 7 and 28 days, and slump, air content, chloride-ion content, Los Angeles (LA) Abrasion test results, and other characteristics of all mixes shall be submitted for approval. Note that all testing for this project is at the point of placement not the point of discharge, and it is the Contractor's responsibility to ensure the mix design will provide the required properties at the point of placement. This submittal shall be accompanied by the test data showing the properties of each ingredient used in the mixes including cement and aggregates. The materials used in the work shall be the same as those in the submittal.
3. Thermal Control Plan: If hot or cold weather concrete placement is anticipated as defined by ACI 301, the Contractor shall adhere to the requirements of this Section and submit a thermal control plan.
4. Reinforcing Steel Shop Drawings: Submit Shop Drawings for all reinforcing steel. Shop Drawings shall conform to ACI and CRSI standards.
5. Concrete Placement Work Plan: Submit all details, equipment and procedures for the placement of the cast-in-place concrete.
6. Rock Anchor Placement Work Plan: Submit all design details, materials, equipment and procedures for the placement of the rock anchors.
7. Mill Certifications: Submit certified mill test reports for reinforcing steel.
8. Product Data: Submit the manufacturer's literature for curing compounds and packaged concrete (if proposed) to be used in the work if applicable in accordance with Section 013300 – Submittal Procedures.
9. Test Results: Test and submit the test results from the concrete tests described in 3.3 in this Section. Contractor to provide strength and air content tests for the batch of concrete to be used for the new abutment prior to shipping to the site.
10. Repair Plan: Prior to commencement of any concrete work, the Contractor is to submit a repair plan for both structural and non-structural repairs addressing materials and methods.

PART 2 - PRODUCTS

2.1 GENERAL

A. Unless otherwise specified, use materials, measure, batch, and mix concrete materials and concrete and deliver concrete in approved equipment, all in conformance with ASTM C94.

B. All cast-in-place concrete shall be normal-weight concrete made with normal-weight aggregate. Lightweight aggregates shall not be used.

2.2 CONCRETE MATERIALS – BATCH CONCRETE OPTION

A. Concrete Mix Design: Concrete mixtures shall be proportioned by the Contractor in accordance with ACI 211.1. Concrete mixtures shall conform to ACI 318, Chapter 4, and shall meet both the strength and durability criteria specified herein. The mixture proportions for concrete shall be developed by the Contractor to produce the design strength and to provide durability, workability, and mixture consistency to facilitate placement, compaction into the forms and around reinforcement without segregation or bleeding. The following durability requirement considerations shall be incorporated in the mixture proportions for concrete subject to marine environment, subjected to water immersion and splash:

1. Maximum water/cement ratio: 0.40 by weight
2. Min. quantity cementitious materials: 675 lb/cy.

B. Consistency of mix shall be obtained with the minimum amount of water required to produce a concrete that will work properly into the corners, angles, and reinforcement without excessive puddling, or the need for spading or excessive vibrating and without permitting the materials to segregate or free water to collect on the surface.

C. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement (fly ash or other pozzolans, slag, or silica) in concrete as follows. The Contractor is to select quantities of pozzolan, fly ash, slag, and/or silica fume not less than the amount that has been determined by service records to improve sulfate resistance and provide decreased permeability.

1. Combined fly ash and pozzolan conforming to ASTM C 618: 25%
2. Ground granulated blast-furnace slag conforming to ASTM C 989 Grade 100 or 120: 50%
3. Combined fly ash or pozzolans and ground granulated blast-furnace slag: 50%
4. Silica fume conforming to ASTM C 1240: 10%
5. Combined fly ash, pozzolans, and silica fume: 35%
6. Combined fly ash or pozzolans, ground granulated blast-furnace slag, and silica fume: 50%

D. Portland Cement: Portland cement shall conform to ASTM C 150, Type II for all cast-in-place elements. Only cement of low alkali (less than 0.60 percent as Na2O) content shall be used with aggregates identified as potentially reactive. All cement used shall be from the same mill and manufacturer and shall have uniform color and shade.

E. Water used in the mixing of concrete shall be potable in accordance with ASTM C1602 and shall be clean and free from oil, acid and injurious amounts of organic material, or alkaline and other salts.

F. Aggregates:

1. Coarse aggregate shall be hard, durable, clean, uncoated particles conforming to the requirements for deleterious substances contained in ASTM C33, Class Designation 4S. Coarse aggregate shall conform to ASTM C33 No. 67 gradation requirements unless otherwise approved by the Owner. The aggregate shall contain no more than 8 percent by weight of flat or elongated pieces (ratio between maximum and minimum dimensions of a circumscribing rectangular prism exceeding 5:1) when tested in accordance with ASTM D4791.
2. Maximum size of aggregate shall be 1-1/2 inch to 2-inch minus for 6-inch thick slabs, 1 inch to 1-3/8 inch minus for 4-inch thick slabs, pea gravel for drilled concrete piers and 1-1/2 inch for all other structural concrete, unless noted otherwise. Aggregate shall not be larger than 1/3 of the depth of slabs or 3/4 of the minimum clear distance between reinforcing bars and forms. The Contractor shall propose an alternate aggregate gradation if required.
3. Fine aggregate shall be clean, hard, durable, uncoated grains of natural medium sand, free from silt, loam and clay, as available from established, approved local sources conforming to ASTM C33, including grading requirements.

2.3 CONCRETE MATERIALS – PACKAGED CONCRETE OPTION

A. Packaged concrete shall be air-entrained, conforming to ASTM C387, and have a minimum 5000 psi compressive strength C39 at 28 days.

2.4 ADMIXTURES

A. Admixtures shall not be used on packaged concrete unless approved by the Owner. If approved by the Owner, Contractor shall create test specimens and demonstrate the proposed packaged concrete with the admixture conforms to all requirements in this Section.

B. No admixtures containing calcium chloride shall be used.

C. All admixtures shall be provided by the same supplier and shall be stated by the manufacturer as being compatible.

D. Air-Entraining Admixture: Air-entraining admixture shall be in strict accordance with agent manufacturer's printed instructions and shall conform to ASTM C260.

E. Set-Retarding Admixture: Set-retarding admixture shall conform to ASTM C494, Type A or D. All concrete shall contain Master Builders Pozzolith 100-XR, or approved equal, set retarding admixture, which shall be used at the rate, recommended by the manufacturer if the concrete cannot be placed within 1 hour of batching.

F. Water Reducing Agent(s) (Plasticizers): Sika 'Plastiment' or Master Builders' 'Pozzolith' or approved equal.

G. Concrete Accelerator Admixtures may be used, if approved by the Owner. Calcium chloride shall not be used.

H. Other Admixtures: Anti-freeze liquids, salts, or other similar materials shall not be used in concrete unless specifically authorized in writing by the Owner prior to construction.

I. Superplasticizer can be added to a concrete mix on-site to increase slump prior to placement, provided that the finished mix meets all specified requirements and the manufacturer's mix design parameters. Superplasticizer cannot be added to a partially-emptied concrete batch. Superplasticizer additions can only be made to a load of concrete of known volume. Superplasticizer can only be added by the concrete manufacturer's representative.

J. Water soluble, chloride-ion content in hardened concrete is not to exceed 0.15% by weight of cement. The Contractor shall include test results showing compliance with this requirement with the submittal of their proposed mix design.

2.5 REINFORCING STEEL AND MISCELLANEOUS

A. Reinforcing steel (deformed bars & undeformed rod) shall be in accordance with ASTM A615, Grade 60.

B. Tie wire shall conform to ASTM A82, 16-gauge minimum.

C. Metal accessories: Metal accessories including ties and other devices necessary for proper placement, spacing, supporting and fastening reinforcement in place shall conform to the CRSI Manual of Standard Practice.

2.6 FORMING AND CURING

A. Formwork: Materials for concrete formwork shall be suitable to achieve the finish requirements for formed surfaces specified and meet ACI 347 "Recommended Practice for Concrete Formwork." Unless specified or detailed otherwise, construct all formwork with new plywood or clean steel forms, to provide continuous straight, smooth, exposed surfaces. Vertical surfaces not over 12 inches high may be formed with new dimension lumber or stock steel forms. Provide form material with sufficient strength and rigidity to withstand pressure of newly placed concrete without bow or deflection.

B. Form coatings, sealers and release agents: Form coating, sealers and release agents shall not bond with, stain, not adversely affect concrete surfaces, and shall not impair subsequent treatments (painting, etc.) of concrete surfaces.

C. Curing compounds: Curing compounds can be used at the Contractor's option. These shall be used only where approved by the Owner.

D. Bonding agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

2.7 CONCRETE REPAIR MATERIALS

A. Repair underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent surface elevations.

1. Cement binder: ASTM C150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.

3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer for site conditions and repair thickness.
4. Compressive strength: Not less than 5,500 psi at 28 days when tested according to ASTM C109.

B. Repair Topping: Traffic-bearing, cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch.

1. Cement binder: ASTM C150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer for site conditions and repair thickness.
4. Compressive strength: Not less than 5,500 psi at 28 days when tested according to ASTM C109.

C. All repair materials and methods shall be submitted to the Owner for review and approval. The Contractor shall allow for any and all submittals sufficient time for review and approval taking into consideration that repair materials and/or methods may be rejected and may need to be resubmitted.

D. Materials defined for repair in this Technical Specification are not all inclusive and may not be applicable to the type of repair that is to be performed in the field. It is the Owner's discretion to define the applicability of specific repair materials and whether or not the damaged item is repairable or not. If an item is deemed non-repairable the Contractor shall replace such item(s) at no additional cost to the Owner.

PART 3 - EXECUTION

3.1 GENERAL

A. A dedicated fresh water tank shall be used for creating concrete batches. Add water to the dry concrete mix as directed by the manufacturer or per approved concrete mix design. No additional water shall be added to the concrete batches without approval of the Engineer.

B. Measuring, mixing, transporting and placing concrete shall adhere to the requirements and recommendations of ACI 304 for mix designs or as instructed by the manufacturer for sack concrete. Aggregate shall be handled in such a way as to avoid segregation prior to incorporation.

C. Place concrete on damp (not wet) firm earth, or base course fill where so indicated on the Contract Drawings. Finished surface is to be true to plane within 3/8 inch in 10 feet of design elevation in any direction.

D. The work shall be protected from the elements, rain, flowing water, and defacement of any nature during construction.

E. Ends of reinforcement ties shall be bent inwards, away from the outside edges of the concrete pour.

3.2 ROCK ANCHOR INSTALLATION

A. Install all rock anchors before the concrete pedestals and abutment and in accordance with manufacturer's recommendations. Rock anchors shall not be used to resist tension or fatigue loading without Owner approval.

B. Use anchors as shown on the Contract Drawings, and meeting Manufacturer's recommendations. Provide minimum embedment as shown. Holes shall be drilled with carbide-tipped drill bit. Holes shall be cleaned of dust and debris. Adhesive shall be inserted with a mixing nozzle.

C. Epoxy or grout shall be cured prior to placement of upper concrete abutment.

3.3 CONCRETE PEDESTAL INSTALLATION

A. The concrete pedestal shall be poured and installed after the rock anchor.

B. After the pedestal has cured for 48 hours, the contractor shall place the gravel under the base of abutment as shown in the Contract Drawings to ensure the abutment is bearing on the gravel base.

3.4 INSPECTIONS

A. Notify the Engineer upon completion of installation of concrete reinforcement and formwork. The Engineer will review the work for conformance with the Contract Documents prior to placement of concrete.

B. All concrete testing is the responsibility of an independent testing firm hired by the Contractor.

C. Inspection and testing performed by the Owner shall not affect the Contractor's inspection and testing requirements.

D. Concrete Testing – General

1. All concrete test samples are to be procured at the point of placement prior to consolidation to ensure the in-place product provides the required level of performance.
2. Materials and installed work will require testing by the Contractor's inspection laboratory and services in accordance with ASTM C172.
3. Contractor shall employ a qualified independent commercial testing laboratory to perform concrete quality control sampling and testing at no additional expense to the Owner.
4. The Owner may independently sample concrete and perform slump, temperature and air tests in accordance with ASTM C143. Concrete exceeding the maximum slump may be rejected by the Owner. Concrete rejected for excessive slump shall be immediately removed from the Project Site.

E. Concrete Strength Testing

1. Unless otherwise shown on the Contract Drawings or otherwise approved the 28-day concrete compressive strength shall be a minimum of 5,000 psi.
2. Concrete test specimens shall be collected in accordance with ASTM C172 at the point of placement and prior to shipping to site, created in accordance with ASTM C31, and be tested in accordance with ASTM C39. Samples to be taken from same batch of materials to be poured on-site. Sample acquisition and testing during concrete placement shall

proceed promptly so as not to impede progress of the work. The arithmetic average of the specimens must meet or exceed the manufacturer's specified strength and no specimen shall fall below 10 percent of the manufacturer's specified strength.

a. A minimum of four 6-by-12-inch test specimens shall be taken by the testing laboratory for each sample set, with one set created prior to shipping to site and one just before concrete placement
b. The set prior to shipping to site must have its 28-day breaks reviewed by the Owner prior to shipping.
c. One test specimen of each set shall be tested at seven (7) days or prior to stripping of the forms and three test specimens shall be tested at 28 days. The 28-day compressive strength shall be evaluated in accordance with ASTM C39.

3. Specimens will be collected by a Contractor provided testing laboratory/special inspector. Contractor shall provide labor, and material as required, to assist testing laboratory in preparing specimens for testing, and job storage facilities for making and storage of specimens. The Contractor is responsible for protecting the specimens from damage while they are on the project site. Assist in packing specimens for shipping. Delivery and responsibility of the test specimens will be that of the testing laboratory/special inspector.
4. The Contractor is to keep an identification record of cylinders taken and concrete poured. Mark all cylinders from each set with the same number on one end and enter this number in the concrete testing records and include the date, time and location.
5. If compressive strength test samples fail to meet the minimum strength requirements, the concrete represented by the failed tests shall be considered questionable and shall be subjected to further testing. In this case, the Owner may require test cores of cured concrete to be taken by the testing laboratory in accordance with ASTM C42 and ASTM C39. If core specimen compressive strength test results do not meet the minimum strength requirements, the Contractor is to remove and replace the concrete in question at the Contractor's expense.
6. Compressive strength test results shall be submitted in writing to the Owner, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in work, design compressive strength, concrete mix proportions and materials, compressive breaking strength, and type of break for all tests and shall be correlated to the corresponding on-site test results.

F. Concrete Slump Testing

1. Slump tests shall be in accordance with ASTM C143 and WSDOT Standard Specification Section 6-02.3(4) C – Consistency at the point of placement. Concrete failing the slump test cannot be placed as-is. Perform one test for each batch of each strength of concrete.

G. Concrete Air Entrainment Testing

1. Perform air entrainment tests in accordance with ASTM C173 for each batch of concrete at the point of placement and prior to shipping the concrete to site. Add air-entraining admixture in accordance with the proven, approved mix design as required to achieve required percent air content at the point of placement in accordance with the table below,

unless otherwise noted. The air content shall be within the range shown below – additional tolerances shall not be applied.

Maximum Aggregate Size [in.]	3/8	1/2	3/4	1	1 1/2
Corresponding Air Entrainment [%]	6.0% - 9.0%	5.5% - 8.5%	4.5% - 7.5%	4.5% - 7.5%	4.0% - 7.0%

H. Concrete Temperature Testing

1. Concrete temperature: ASTM C1064; test hourly when the ambient air temperature is 40 degrees F (4.4 degrees C) or below and when the ambient air temperature is 80 degrees F (27 degrees C) or above, and whenever cylinders are taken. Concrete temperatures shall be in conformance with ACI 301.

I. Testing of concrete mix components

1. Limit water soluble, chloride-ion content in cured concrete to 0.15% by weight of cement. The Contractor shall submit test records indicating that their proposed mix design meets this requirement. The Contractor shall ensure that the test records represent samples made with materials from the same material suppliers as will be used for the work.
2. Aggregate shall have an L.A. abrasion loss of no more than 40%, tested in accordance with ASTM C131.
3. Aggregate from sources determined on the basis of petrographic analysis or tests to be susceptible to the alkali-carbonate form of alkali-aggregate reaction shall not be used.

3.5 PACKAGED CONCRETE

A. Contractor shall submit product details and obtain Owner Representative approval prior to utilizing packaged concrete.

B. Placement, finishing and curing of packaged concrete shall conform to the requirements in this Section.

C. Contractor shall utilize proportions and mixing methods as recommended by manufacturer.

D. Contractor shall only utilize packaged concrete on placements that can be completed in one workday and that do not require construction joints.

E. Packaged concrete, if utilized, shall have a minimum advertised average strength of 5000 psi.

3.6 CONCRETE FORMWORK

A. Design, erect, support, brace and maintain formwork according to ACI 301 to support vertical and lateral loads that might be applied until such loads can be supported by the concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position, within tolerance limits of ACI 117.

B. Formwork shall be designed to be readily removable without impact, shock or damage to concrete surfaces and adjacent materials and surfaces.

C. Forms shall follow ACI 347. Construct to sizes, shapes, lines and dimensions as necessary to produce the finished shapes shown in the Contract Drawings. Obtain accurate alignment, location, grades, level and plumb work in the finished structures. Solidly butt joints of forms and provide back-up at joints to prevent leakage of water and/or cement paste. Leakage of concrete from improperly sealed formwork is prohibited from entering the water. The Contractor shall immediately notify the Owner if any wet concrete enters the water. Voids, honeycombing, sand pockets, fins, etc., may be cause for rejection.

D. Forms shall be of wood or steel, straight, of sufficient strength to resist springing during depositing and consolidation concrete. Wood forms shall be of adequate thickness, straight and free from warp, twist, loose knots, splits or other defects. Steel forms shall be channel formed sections with a flat top surface and with welded braces at each end and not less than two intermediate points. Ends of steel forms shall be interlocking and self-aligning.

E. Fabricate forms for easy removal without hammering or prying against the concrete surfaces.

F. Form coatings, sealers and release agents shall be applied immediately before erecting forms where necessary to achieve the specified curing and finishes. Forms shall be protected from dust and dirt.

G. Cleaning and tightening: Before inspection of forms and reinforcing steel, thoroughly clean forms and adjacent surfaces to receive concrete. Remove wood chips, sawdust or other debris just before concrete is placed. Retighten forms after placement of concrete, and as required, eliminating any concrete or water leakage.

3.7 PRIOR TO PLACEMENT

A. Notify the Owner and Special Inspector not less than 1 week before placing concrete.

B. Clean formwork thoroughly, removing all loose dirt, scrap lumber and other debris from forms prior to concrete placement.

C. Do not place concrete until the forms and reinforcement have been completed and all preparations for the pour have been made and have been inspected and approved by the Owner.

D. Refer to Section 310000 – Earthwork for additional requirements for preparation prior to placement of the cast-in-place concrete.

3.8 PLACEMENT

A. Concrete shall be mixed on-site in a mechanical mixer. Mix concrete per manufacturer’s instructions.

B. Discharge and place concrete per manufacturer’s instructions.

C. No additional water above suppler/manufacturer’s recommendations shall be added on-site unless on-site pre-authorized by the Owner.

D. In no case shall concrete be placed on standing water, muddy, soft or spongy areas. Subgrade conditions shall conform in all respects to the requirements of Section 310000 – Earthwork.

E. Pours of concrete, once started, shall be carried on as a continuous operation until the section of approved size and shape is completed. The Contractor shall determine pour sizes based on ability to provide finishes as specified in this Section. Any defects in finishing work shall be repaired, using a method approved by the Owner, at no additional cost to the Owner.

F. Depositing of concrete shall be continuous, or in layers, or bands, of such thickness that no concrete will be deposited on, or against, concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section.

G. Concrete shall be consolidated by use of approved immersion-type mechanical vibrators immediately upon placement. Concrete shall be vibrated sufficiently to remove entrapped air such that the concrete closes snugly against all surfaces to the maximum practicable density but not so much as to cause the coarse aggregate to settle or excessive accumulation of mortar at the surface. Vibrators shall not be held against embedded materials.

H. Concrete shall be deposited in or near its final position; segregation due to rehandling or flowing shall be avoided.

I. Depositing a large quantity at any point or running or working the concrete along the forms will not be permitted.

J. Concrete shall be conveyed from mixer to place of final deposit by methods which will not cause separation or loss of material.

K. Concrete shall be placed in a manner that prevents it from dropping from a height greater than 4 feet.

L. Concrete which has developed initial set shall not be used. Concrete which has developed initial set shall not be re-tempered or remixed.

M. Concrete shall be deposited in layers, not to exceed 18 inches, in a continuous operation until each section or panel is complete. Each layer shall be thoroughly vibrated before placing the succeeding layer. Concrete shall be thoroughly worked around reinforcement and embedded items, and into corners of forms by effective vibration. Vibrators shall penetrate each layer and into the top of the underlying layer. Top surfaces shall be generally level during placement.

N. Placing of concrete shall be regulated so that the pressure caused by the wet concrete shall not exceed that used in the design of the forms.

O. Concrete shall not be cast underwater or used to displace water in the forms without written approval of the Owner.

3.9 FINISHES - GENERAL

A. The Contractor shall ensure that the abutment is sloped and surfaced in a manner will prevent water ponding.

B. Prepare slabs for finishing by tamping concrete with special tools to force the coarse aggregate away from the surface and then screed to the required level.

C. All finishes are to be clearly designated on the Contractor's shop drawings.

D. All finishes shall be in accordance with ACI 301 unless otherwise noted.

E. Formed surfaces

1. Formed surfaces above grade and permanently exposed to view shall have a smooth form finish unless otherwise noted.
2. Formed surfaces which will be below grade and exposed to earth shall be allowed to have a rough form finish instead of a smooth form finish at the Contractor's option.

F. Non-formed surfaces (flatwork)

1. At exterior slabs and walks, not otherwise noted, lightly brush wet troweled surface with soft hair broom, all strokes perpendicular to walks or flow lines, or in direction indicated on the Contract Drawings, to create moderately abrasive, uniform, non-skid surface.
2. Mark off slabs as indicated or directed; round edges to ½ inch radius with 1-1/2 inch wide smooth edging tool. Unless otherwise indicated or detailed, edge all sections of brushed slabs with 1-1/2 inch wide smooth edging along all edges and both sides of all joints.

G. Upland concrete finishes

1. Provide a 3/4" rounded edge along all exposed vertical concrete edges unless otherwise shown or directed by Owner.

H. Exterior Slabs

1. Form exterior slabs to the finish elevations as indicated on the Contract Drawings and as otherwise identified to provide required drainage slopes.

3.10 CURING AND PROTECTION

A. Curing: Concrete is to be wet-cured not less than seven days after placement for Type I and II cement concrete, and three days for Type III cement concrete in accordance with ACI 308. During wet-curing the concrete is to remain wet by covering with burlap or cotton mats or rugs which are to be kept moist with a soaker hose or sprinkler. Plastic sheets or other moisture barrier shall not be an acceptable substitute for a soaker hose or sprinkler unless approved by the Owner. To simplify the wet curing process, concrete curing compounds can be used in accordance with the manufacturer's recommendations and in conformance with ASTM C309.

B. Concrete shall be protected from damage during removal of formwork and from injury resulting from the storage or movement of materials during construction. Careful attention shall be given to the proper curing and protection of all concrete.

C. Curing shall start as soon as concrete has hardened sufficiently to prevent surface damage.

D. Changes in temperature. Curing temperature of all concrete shall be as uniform as possible. Changes shall not exceed 5 degrees F. in any one hour or 50 degrees F. in any 24-hour period.

The Contractor is to monitor the concrete temperature intermittently as required to ensure the change in temperature requirements are met.

E. Formwork shall not be disturbed until the concrete has hardened adequately. All forms shall be loosened and removed as soon as practicable, but in no case shall they be removed earlier than seven days after placement for Type I and II cement concrete and three days for Type III cement concrete unless approved by the Owner. Concrete exposed by form removal prior to seven days after placement shall be moist-cured in accordance with this Technical Specification. Cure for longer periods if directed by the Owner. Forms shall be removed carefully so as to prevent damage to the concrete. Any repairs needed or finish treatment required on surfaces shall be performed at once and shall be followed immediately by the specified curing.

F. If forms are removed prior to end of prescribed curing time, continue curing for the prescribed time as specified herein.

G. If voids and/or rock pockets are present when forms are removed, the Contractor shall modify his placement procedure on future pours. Do not proceed until placement procedure has been corrected.

H. Contractor shall ensure that cement runoff will not leave 10 ft beyond the abutment footprint. These concrete abutment BMPs are not to be removed until concrete is cured. If the curing concrete at any point becomes in contact with water pH monitoring is required in accordance with applicable environmental permits and guidelines, refer to Section 015719 – Environmental Controls and the permit documents.

3.11 CONCRETE REPAIRS

A. Contractor shall not be granted schedule extensions due to time spent performing concrete repairs. All concrete repairs are to be performed at the Contractor’s expense.

B. Curing shall be interrupted for the shortest time and in the smallest area practicable to perform repair.

C. All tie holes shall be patched.

D. Every defect shall be reported to the Owner by a means adequate to convey the size and extent of the defects. The Owner shall reply to the Contractor and direct them to consider the repair as either structural or non-structural. The Contractor can then proceed to make the repair in accordance with their approved repair plan. The Contractor is not permitted to repair a defect that the Owner has not been made aware of.

E. Repair materials and installation not specified herein may be used, subject to Owner's approval.

F. Defective concrete: Repair and patch defective areas when repair designation (structural or non-structural) has been made the Owner. Remove and replace concrete that cannot be repaired and patched as directed by the Owner.

G. Non-structural patching mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

H. Repairing formed surfaces (non-structural): Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension in solid concrete but not less than 1 inch in depth. Make edges of cuts perpendicular to concrete surface. Take all measures required to prevent reinforcement from being cut. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
2. Repair defects on surfaces exposed to view by blending white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by the Owner.

I. Repairing unformed surfaces (non-structural): Test unformed surfaces, such as slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct low areas with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent surface elevations. Prepare, mix, and apply repair topping and primer according to manufacturer’s written instructions to produce a smooth, uniform, plane, and level surface.
4. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mix as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
5. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

J. Structural repairs: Perform structural repairs of concrete, subject to the Owner's approval, using epoxy adhesive and patching mortar in accordance with the manufacturer’s recommendations and the Owner comments on the Contractor’s submitted structural repair procedure.

3.12 CLEAN-UP

A. Areas to be kept clean during progress of work and until completion. Dispose of all surplus, waste materials, and rubbish according to laws, regulations, and ordinances.

B. Provide certification from disposal site operator stating that disposal site complies with governmental regulations.

C. Under no circumstances shall waste concrete or process water be disposed of below the high tide line or come in contact with open water.

3.13 ENVIRONMENTAL REQUIREMENTS

A. Cold weather: Unless otherwise approved in writing by the Owner, concrete shall not be placed when the ambient temperature is below 40°F, or when the concrete is likely to be subject to freezing temperatures before expiration of the curing period. Where cold weather placement is approved, special procedures shall be adopted to heat the material and to protect the concrete from damage by freezing during mixing, placing and curing. All such special procedures shall be subject to prior approval of the Owner. Cold weather concreting procedures contained in ACI 306 shall be utilized.

B. Hot weather: Unless otherwise approved in writing by the Owner, the maximum allowable temperature of the concrete as it is placed, shall be 90°F. When the ambient air temperature approaches or exceeds this maximum, special procedures shall be adopted to control the temperature of the materials and to protect the concrete from damage due to hot weather during mixing, placing and curing. All such special procedures shall be subject to the prior approval of the Owner. Hot weather concreting procedures contained in ACI 305 shall be utilized.

C. Concrete shall not be placed during rain, sleet or snow unless Owner approved protection is provided.

END OF SECTION

DIVISION 05 – METALS

SECTION 050500 – GALVANIZING

PART 1 - GENERAL

1.1 SUMMARY

A. The work includes the requirements to provide a galvanized coating to miscellaneous metals as specified with all handling, pre-finishing, cleaning, pickling, rinsing, dipping, cooling, draining, vibrating, centrifuging, inspection, and other processes or materials required. The work specified in this Technical Specification is incidental work and the cost shall be included in other associated bid items in the contract. All exposed steel shall be hot-dip galvanized. All exposed metal shall have a coating system approved by the Owner. This section is applicable to:

1. All steel fabricated metal items.
2. Miscellaneous steel hardware.

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. Latest editions apply.

1. ASTM International (ASTM)

a. A123 Specification for Zinc (Hot Dip Galvanized) Coatings on … Steel Products
b. A143 Practice for Safeguarding Against … for Detecting Embrittlement
c. A153 Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware
d. A384 Practice for Safeguarding Against Warpage and … of Steel Assemblies
e. A385 Practice for Providing High Quality Zinc Coatings (Hot Dip)
f. A653 Specification for Steel Sheet, Zinc Coated … by the Hot Dip Process
g. A780 Practice for Repair of Damaged and … of Hot Dip Galvanized Coatings
h. B6 Standard Specification for Zinc

2. American Galvanizer's Association (AGA)

a. Inspection of Products Hot Dip Galvanized After Fabrication
b. Quality Assurance Manual

1.3 GENERAL

A. Galvanizing metals material specification requirements shall apply to all galvanized items unless otherwise identified or noted on the Contract Drawings. Direction shall be provided by the Owner to the Contractor in writing prior to commencement of related work. It is the Contractor's responsibility to thoroughly review the design prior to commencement of work to prevent delays.

1.4 SAFETY

A. Safety is the full responsibility of the Contractor. The Contractor is to fully review the Contract Documents prior to the commencement of work and bring any safety concerns to the attention of the Owner. The Contractor shall have a safety program in place and shall submit the program to the Owner for approval. The safety program shall address the specific work to be performed and site conditions.

1.5 QUALIFICATIONS

A. Galvanized coating applicator: Company specializing in hot-dip galvanizing after fabrication and following procedures of the Quality Assurance Manual of the ARA.

1.6 INSPECTION AND TESTING

A. The Contractor shall provide and pay for the following testing of galvanized materials, which is to occur at their galvanizing facility:

B. Inspect and test hot dip galvanized fabricated items in accordance with ASTM A123/A153M and A153/A153M.

C. Visually inspect coating and test for thickness and adhesion of zinc coating for a minimum of three test samples from each lot in accordance with ASTM A123/A123M and A153/A153M.

D. Reject and retest nonconforming articles in accordance with ASTM A123/A123M and A153/A153M.

1.7 PRODUCT HANDLING

A. Handle and store hot-dip galvanized material in a manner that minimizes potential for warping and distortion of the material.

B. Replacements: Repair or replace damaged work, if any, as necessary for acceptance by the Owner and at no additional cost to the Owner.

1.8 SUBMITTALS

A. The following items shall be submitted to the Owner for review in accordance with Technical Specification Section 013300 – Submittal Procedures:

1. Certificate of compliance signed by galvanizer, with description of material to be galvanized and ASTM standard used for coating.
2. Reports from inspection and testing.
3. Product data and manufacturer recommended procedures for galvanization repair.
4. As-builts: track all changes to the work on a legible set of current plans. Submit a legible, complete set of As-built drawings to the Project Representative upon completion of the Project in accordance with the as-built drawing requirements – see other Sections for additional information.

PART 2 - PRODUCTS

2.1 ZINC

A. Zinc for galvanizing shall conform to manufacturers' specifications, directions, and recommendations for best results in the use of each of their products for each condition. If results are at variance with these Technical Specifications, immediately report the discrepancy to the Owner and proceed with the related work only after receiving direction from the Owner in writing.

2.2 REPAIR PRODUCTS

A. Galvanizing repair shall be performed with zinc-based alloy solder rods that conforms with ASTM A780.

PART 3 - EXECUTION

3.1 FABRICATION AND PREPARATION

A. Fabricated steel to be fabricated and galvanized in accordance with ASTM A143, ASTM A384, and ASTM A385. Avoid fabrication techniques that could cause distortion or embrittlement of the steel before, during, or after the galvanizing process.

B. All welds shall be continuous on assemblies to be welded prior to galvanizing. Abutting surfaces shall be at a minimum seal welded. All welds, including seal welds, shall be shown on the shop drawings.

C. All flame-cut surfaces shall be ground smooth and plane to bright metal prior to galvanizing.

D. All edges and corners shall be ground to a 2mm radius prior to galvanizing.

E. Any drain or vent holes not indicated on the Contract Drawings which are required to produce a high-quality galvanized coating with minimal warping and distortion shall be identified by the coating manufacturer, clearly shown on the shop drawings, and shall be subject to acceptance by the Owner. The fabricator shall detail the assembly in accordance with ASTM A384 recommendations. Any discrepancies between the shop drawings and the recommendations of ASTM A384 shall be indicated in the shop drawings to alert the Owner of potential warpage problems during hot-dip galvanizing.

F. The fabricator shall consult with the Owner and hot-dip galvanizer regarding potential concerns, including handling issues, during the galvanizing process that may require design modification before fabrication proceeds.

G. Remove welding slag, splatter, burrs, grease, oil, paint, lacquer, and other deleterious material prior to delivery for galvanizing.

H. Remove by blast cleaning or other methods surface contaminants and coatings not removable by normal chemical cleaning process in the galvanizing operation.

3.2 GALVANIZING

A. Hot-dip galvanizing of steel members, fabrications, and assemblies shall occur after fabrication in accordance with ASTM A123/A123M.

B. Hot-dip galvanizing of bolts, nuts, washers, and hardware components shall be in accordance with ASTM A153 and ASTM A385. Provide oversize holes to allow for zinc alloy thickness. Test-fit nuts and bolts after galvanizing prior to shipment. Nut/bolt pairs are to be shipped in an assembled state.

C. Galvanize components of bolted assemblies separately before assembly.

D. Tapped holes to be cleaned with a wire brush immediately after galvanizing and test-threaded full-depth prior to shipment from the galvanizer. Threads may be cleaned with a tap if fastener cannot be fully finger-inserted for the full depth of the threaded hole.

E. Galvanizing for all steel bolts, washers, and nuts shall be performed in accordance with ASTM A385 and ASTM A153. Coating thickness shall be in accordance with the relevant ASTM requirements.

3.3 REPAIR OF GALVANIZED COATING

A. Repair all galvanized surfaces removed or damaged during welding, shipping, or erection in accordance with ASTM A780. Repair material shall be zinc-based alloy solder (zinc rod). Application shall be in accordance with ASTM A780 and rod manufacturer's recommendations. Minimum applied thickness shall be the minimum original galvanizing thickness required for the component in accordance with ASTM galvanizing requirements, or 4 mils, whichever is greater. After cooling, apply two coats of zinc rich paint. Any galvanizing repair conducted by the Contractor, Subcontractor, or supplier which occurs onsite will be subject to approval by the Owner. The Contractor shall notify the Owner when any repair is being performed with at least 48 hours prior notice and provide access to adequately review the repair area before and after the repair.

END OF SECTION

SECTION 051400 – STRUCTURAL ALUMINUM FRAMING

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work under this item shall consist of all labor, materials, tools, and equipment necessary to finalize the design, fabricate, assemble, and furnish the steel shore mount for the following aluminum gangways, walkways, platforms, transition plates, associated railings, and appurtenant structures:

1. Walkway A
2. Platform A
3. Walkway B
4. Platform B, including access gate and signpost
5. Gangway

B. Size, shape and layout of all structures are indicated in the Contract Drawings

C. The Contractor is responsible for developing final engineering design, layouts and details based on site conditions, design criteria, and Contract Drawings and Technical Specifications.

D. The design, manufacture, and installation of the aluminum structures systems shall be performed by experienced personnel meeting the minimum qualifications as defined in this specification.

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this Technical Specification to the extent referenced. Latest editions apply.

1. AA

    a. AA Aluminum Design Manual

2. AWS

    a. AWS D1.1 – Structural Welding Code, Steel
    b. AWS D1.2 – Structural Welding Code, Aluminum

3. ASTM

    a. ASTM B308 – Aluminum Alloy 6061-T6 Standard Structural Profiles
    b. ASTM B221 – Aluminum and Aluminum Alloy Extruded Bars, Rods, Wire, Profiles and Tubes

4. ASCE

a. ASCE 07 – Minimum Design Loads and Associated Criteria for Buildings and Other Structures

5. AISC

a. Code of Standard Practice for Steel Buildings and Bridges
b. Specification for Structural Steel Buildings

6. IBC

a. IBC – International Building Code

1.3 CONTRACTOR RESPONSIBILITIES

A. The aluminum structures and associated connections shall be designed by the Contractor. The Contract Drawings and Technical Specifications indicate the minimum requirements for the proposed aluminum structures. The Contract Drawings are intended to indicate basic configuration and appearance criteria. Structural design of the aluminum structures is the responsibility of the Contractor.

B. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures used for fabrication of the aluminum structures. The Contractor shall be responsible for overseeing that the finished work complies accurately with the Contract Drawings and Technical Specifications and approved Shop Drawings.

C. The Contractor shall furnish all necessary materials, equipment, labor, testing, and incidentals for the successful completion of all work identified on the Contract Drawings and in these Technical Specifications.

D. A lifting plan shall be provided stamped and signed by a professional engineer registered within the State of Washington and approved by the Owner prior to any gangway lifting operations.

E. A seasonal storage plan shall be provided stamped and signed by a professional engineer registered within the State of Washington and approved by the Owner prior to any gangway installation. The storage should include considerations for the end transition plate at gangway to the float.

F. Where new structures are being provided in place of existing structures, the contractor shall ensure that the new structure can be connected to existing connection points and function as intended.

G. Signpost design, fabrication and all connections for attachment to the signs as identified on the drawings.

H. Ladder access gate design, fabrication and all connections. Coordinate with ladder location on pile.

1.4 SUBMITTALS

A. Shop Drawings: Submit aluminum structures shop drawings at least 30 days prior to those structures being fabricated. The submittal shall include signed and sealed engineering

calculations. The shop drawings shall include layout plans, elevations, cross-sections, fabrication details, dimensions, materials, hardware finishing details and colors of the aluminum structures to be fabricated for the project. Shop drawings shall also include the detail of the shore connections, including weld details of fixed hinges and other assemblies connecting to the supporting concrete abutment and float. The shop drawings shall comply with performance criteria specified in this Contract. Fabrication of the aluminum structures shall not begin until the shop drawings are approved. The Contractor shall comply with the following requirements:

1. The Contractor shall examine the site conditions and drawings and discuss any other requirements with his supplier prior to preparing shop drawings to avoid conflicts and verify dimensions, all physical conditions, and surroundings. The Contractor shall notify the Owner in writing of any unsuitable conditions. Commencement of work without such notification shall be construed as acceptance of all conditions.
2. Submit final engineering design calculations and aluminum structures drawings demonstrating that the aluminum structures including connections to the float, pile cap, concrete landing pad, transition plate and appurtenant structures comply with all design requirements. The aluminum structures drawings shall show all materials, member shapes and sizes, dimensions, quantities, connecting details and accessories.
3. Calculations and drawings shall be affixed with the appropriate stamps and signatures of a registered professional engineer in the state of Washington and who is experienced in the design of aluminum structures.
4. Shop drawings and samples required by the Technical Specifications shall be provided prior to the commencement of any fabrication work. Shop drawings shall include the fiberglass grating panel layout.
5. Submit manufacturers' mill certificates and certificates of compliance for the following materials:

    a. Aluminum.
    b. Steel.
    c. Fasteners.

6. Submit samples of the grating with non-skid surface.

B. Engineer Qualifications:

1. The Engineer of Record for the aluminum structures system structural design shall be a registered professional engineer in the State of Washington and who is experienced in the design of gangway and bridge structures. The Engineer shall have at least five years documented work experience in the design of aluminum structures with at least 15 projects of similar scope.

C. Welders Qualifications:

1. Welders shall be currently certified in accordance with AWS D1.1 for structural steel and AWS D1.2 for aluminum welding, submit qualification test reports, and bearing witness certification of independent laboratory and inspection service approved by the Owner.
2. If the welder has not been engaged in the welding process for three or more months, requalify before permitting them to do structural welding work.

D. Manufacturer Qualifications:

1. Experience: Contractor supplier must be regularly engaged in the design and fabrication of aluminum bridge and gangway structures and shall show proof of having five years of consecutive experience and successfully completed a minimum of ten similar projects within the last three years.
2. Qualification of Workers: Provide sufficient supervisors and skilled workers who shall be thoroughly familiar with the type of fabrication involved and the techniques required for the proper execution of the work.

E. Manufacturer's Instructions: Submit all manufacturers' manuals and maintenance literature to the Owner in accordance with Technical Specification Section 013300 – Submittal Procedures.

PART 2 - PRODUCTS

2.1 ALUMINUM STRUCTURES DESIGN CRITERIA

A. The following criteria shall be considered as minimum requirements. Overall design shall conform to IBC code requirements. Mere conformance to the minimum sizes, strengths and design parameters provided in this section will not automatically ensure approval of the final design. The proposed aluminum structures shall be subject to thorough engineering analysis using all relevant criteria in applicable IBC and local codes. The aluminum structures for this project shall conform to the following criteria:

1. The aluminum structures shall be designed to withstand the loading and motions without damage to allow for a minimum design life of 25 years.
2. The nominal aluminum structures dimensions are shown on the drawings. The aluminum structures shall be open top with no top cross members (3-sided).
3. Vertical Design Load: In addition to the dead weight of the structure (DL), the aluminum structures shall be designed to withstand the following vertical loads:

    a. Uniform Live Load (ULL): 100 pounds per square foot of deck surface area.

        1) Live Point Load (LPL): 400 pounds applied at any point on the deck surface. The point load should be assumed to act on a one (1) square foot area.
        2) Uniform Snow Load (USL): 30 pounds per square foot of deck surface.
        3) Load case (structural survivability): (DL + LL)
        4) Load cases (boarding float design): (DL + LL) and (DL + USL)

4. Horizontal Design Load: In combination of the dead weight of the structure, the aluminum structures shall be designed to withstand the following horizontal loading conditions:

    a. Uniform wind load of 110 mph, exposure "D" category winds.

5. Seasonal Storage Load: The gangway and aluminum structure connections shall be designed to withstand the dead load of the gangway plus the horizontal design wind load and snow load in the seasonal stored position.
6. Deflection: Maximum deflection under uniform live load plus dead load of L/360. Live load only maximum deflection of L/500.

7. Handrails: The handrails shall be designed in accordance with IBC requirements for a minimum of 200 lbs. of concentrated lateral load and 50 lbs./ft. of uniform live load.
8. Kick plate: Provide at base of each guardrail, 4 inches tall.
9. The deck and structural components shall be designed with a minimum safety factor on working stress as specified in AA "Specifications for Aluminum Structures" for bridge type structures. For non-aluminum structural components, similar safety factors shall apply.
10. Design shall consider construction and transportation stresses resulting from aluminum structures handling and installation.
11. The gangway shall be designed to withstand dock motions, including a vertical change in dock elevation due to tidal fluctuation from the elevations shown on the Contract Drawings. The gangway skids shall remain in contact with the tracks on the floating dock at all times.
12. The aluminum structures shall also be designed to withstand horizontal drift due to wind loads without structure interferences or overstress, including fatigue of aluminum structures members and supports.
13. Contractor shall design and provide lugs to weld to the shore mount assembly.
14. Contractor shall design the gangway support rollers to provide a roller assembly size and gangway height above the float that will prevent the gangway frame from contacting the edge of the float at all tidal elevations shown in the Contract Drawings.
15. Contractor shall provide drain holes at lower end of the gangway bottom chord for drainage.

2.2 MATERIALS

A. Materials shall meet the following requirements:

1. Structural Members: All aluminum used in the fabrication shall conform to Alloy 6061-T6 as applicable and welding in accordance with AWS D1.2.
2. Fasteners: Any fasteners between aluminum components shall be Type 316 stainless steel. Fasteners between any steel components and aluminum shall be Type 316 stainless steel. Shackle for shore mount shall be a non-galvanized, forged anchor shackle meeting Federal Specification RR-C-271D, Type 1VA, Grade A, Class 3, with bolt nut and stainless steel cotter pin.
3. Welds: Use a filler metal alloy for welds to produce a weld compatible with base structural metal for corrosion resistance in accordance with AWS D1.2. All connections to be welded shall be of new material, clean and free of any contaminants. All joints shall fit properly and be prepared for the appropriate weld as described in the shop drawings.
4. Polyethylene: Use UHMW PE for any skids, rollers, bushings, edge strips, dielectric isolators, and other non-metallic parts in gangway manufacture. UHMW PE parts shall be black in color and ultraviolet stabilized.
5. Dissimilar Metals: Where dissimilar metals are in contact, such as in steel to aluminum connections the surfaces shall be protected to prevent galvanic action. All bolted connections shall be isolated by using UHMW insulating washers, spacers, and nylon sleeves (ferrules) in the bolt holes to stop the bolts touching the aluminum. A non-conductive uncompressible spacer such as fiberglass shall be sandwiched between the two materials and sealed around the perimeter with a flexible sealant such as silicone.
6. Grating. The walking surface shall be provided with an aggressive high traction grit or non-skid fiberglass grating surface. The deck bearing members shall run perpendicular to the long axis of the aluminum structures.

a. Grating shall be fiberglass with a minimum 60 percent open area and an aggressive high traction grit non-skid walking surface. Provide Ecograte 62 fiberglass grating by Fibergrate Composite Structures Inc. or approved equal. Aqua grit traction surfacing shall be applied to the top of the grating and be barefoot friendly. Decking shall be prefabricated to the maximum extent possible and shall have banding and support on all sides
b. Color of grating shall be gray.
c. Attachment of grating bars to floor supports shall use Type 316 Stainless Steel fasteners in accordance with manufacturer's recommendations. Fasteners shall be recessed below grating surface. Grating edges shall be 100% supported.

7. Guardrail: The aluminum structures shall meet guardrail requirements with openings in the aluminum structures that shall not permit passage of a 4-inch diameter sphere on each side of the walk surface. Aluminum handrails and kick plates shall be provided.
8. Handrails: The aluminum structures shall be fitted with a handrail on each side of the walking surface having the same length as the walking surface with a handrail extending a minimum of one (1) foot beyond the ends of the structures, with required return at the ends. The handrail shall be fabricated of aluminum with a 1-1/2 inch outside diameter and a smooth gripping surface. Handrail shall be designed to not allow for the collection of material including water and bird droppings between the aluminum structures frame and the handrail surface. Aluminum handrail configuration and dimension shall comply with IBC and OSHA requirements.
9. Transition and Toe Plates: The transition and toe plates shall make a smooth, gap-free transition between the aluminum structures deck and the offshore and onshore landings. The transition plate shall be a minimum ¼ inch material and shall be attached to the aluminum structures by means of a continuous pipe hinge. The plate shall be the full width of the aluminum structures and have a maximum slope not in excess of the maximum slope that occurs on the aluminum structures itself. The sliding edge shall be fitted with a continuous UHMW PE wear block a minimum of ½-inch thick, which shall be beveled conforming to code requirements for accessibility and safety. Transition plates shall have arc-sprayed “Thermion” Ceramic Core TH604 anti-skid aluminum garnet traction coating. The maximum slope for the transition plate shall not exceed 1:12 and 1:4 for the toe plate.
10. Rollers and Roller Guide Tracks: The gangway and transfer ramp shall be supplied with two solid UHMW PE rollers or UHMW PE skid shoes. Rollers shall have a solid stainless axle. Rollers, axles, and skid shoes shall be designed to accommodate all loads to ramps and any job specific requirements. Roller/skid shoe tracks shall be provided ready to install to the float surface. These guide tracks shall be long enough to allow for full longitudinal movement through all water elevation changes. The guide tracks shall restrict any lateral movement of the gangway and transfer ramp at the landing.
11. Walkway and Gangway Lugs: The lugs and their connection shall be designed by the Contractor. The lugs shall be designed to prevent binding or impact between the adjacent supporting structures. Dissimilar metals shall be isolated with UHMW bushings and washers.

PART 3 - EXECUTION

3.1 FABRICATION AND WORKMANSHIP

A. The aluminum structures system including all hardware and accessories shall be designed, fabricated, and securely fastened to resist all conditions normally encountered within marinas for similar sized aluminum structures. All work shall conform to the approved shop drawings and Contract Documents. Fabrication details, finishing details and colors shall be consistent throughout. Work shall be accurately set to established lines and elevations, and securely fastened in place. Cutting, drilling and punching shall produce clean true lines and surfaces. Exposed surfaces of work shall have a smooth finish.

B. Design, fabrication, delivery, handling, and installation of the aluminum structures shall conform to the latest revisions of the aluminum construction manual and all applicable standards and data as described by the Aluminum Association. Fabricate aluminum structures in accordance with approved shop drawings. Edges shall be cut true, smooth, and free from burrs. Corner edges shall be ground smooth. Drill or punch all holes required for the attachment of other trades and for bolted connections. Weld splatters, burrs and weld flash shall be removed from all exposed surfaces.

C. Welding shall be done in accordance with AWS D1.2, including procedures for repair of defective welds. All welds shall be visually inspected by an independent testing company hired by the Contractor.

D. Items shall be shop fabricated to the extent practicable for transportation and handling. Splices shall be designed and detailed by the Contractor and submitted to the Owner for review.

E. Parts shall be match-marked to ensure accurate installation.

F. Aluminum items shall be fabricated in accordance with AA’s Design Manual specifications for aluminum structures and AWS 01.2-03, Structural Welding Code Aluminum.

G. Materials delivered and stored at the manufacturing facility shall be properly marked and inventoried on vertical racks located in a lockable heated warehouse.

H. Completed gangways, walkways, transfer ramp, transition plates, etc. shall be stored on dunnage or by other appropriate means to prevent direct contact with the ground and unnecessary damage. Completed aluminum structures shall bear an identification decal showing the date of manufacture, live load capacity, and identifying serial number. Every ramp shall be directly traceable to the manufacturer.

I. The Contractor shall establish lifting and handling methods to avoid damage to aluminum structures during storage, assembly, and transport as directed by the manufacturer.

J. Job files for each aluminum structures shall be kept, including all information including shop drawings, submittals, material purchase orders, as-built shop drawings, material certifications for all components, shipping information and any correspondence. Also included shall be the QC report.

K. All inspection and testing required on the aluminum structures, the cost of welding procedures and welder certifications will be considered as included in the payment for this item, and no additional compensation will be allowed.

3.2 TRANSPORT, DELIVERY, & HANDLING

A. Handle aluminum structures by lifting points and methods as identified by the manufacturer. Use of alternate lifting points shall not be allowed.

B. Use all means necessary to protect the aluminum structures before, during, and after installation and to protect the installed work and materials of all other trades.

C. The Contractor shall assume full responsibility for any damages or losses resulting from the handling or transporting of the aluminum structures during loading, shipping, transport, and delivery to the Project Site, as well as the subsequent handling required on site for installation.

D. Damage that occurs during transport and delivery and/or during other handling operations prior to final inspection shall be repaired or replaced by the Contractor at the discretion of the Owner, and at no additional cost to the Owner.

E. Stamped Lifting Plan shall be provided by a professional engineer registered within the State of Washington and approved by the Owner prior to any aluminum structures lifting operations.

F. All aluminum structures lifting operations shall be performed in accordance with the stamped lifting plan.

3.3 ASSEMBLY AND INSTALLATION

A. Construction methods and products not specifically mentioned in the Contract Documents shall be utilized using reasonable care and the highest quality construction practices. Final inspection and acceptance of all work and products not specifically mentioned in the Contract Documents shall be made by the Owner. Approval shall be based upon conformance to the Contract Documents, quality of workmanship, applicable industry standards, and pertinent manufacturer's recommendations.

B. The complete aluminum structures assembly shall be installed at the locations shown on the Contract Drawings. Alignment shall be straight and true.

C. The gangway shall be installed on the floating dock and the toe end adjusted as to allow the dock system free movement to travel the full range of water levels without binding or stressing the gangway or dock system. The gangway roller guide tracks shall be adjusted to suit the full range of lateral movement of the rollers and shall be adequately secured to the dock surface in accordance with the gangway manufacturer recommendations.

D. The platforms shall be installed on top of the pile caps spanning between the walkways and the gangway.

E. The aluminum structures shall be installed to meet all ADA walking surface requirements including a maximum ½" gap and ¼" lip.

3.4 COORDINATION WITH OTHERS

A. The Contractor shall coordinate the design of the gangways with the design of the floating dock system to ensure proper interaction between installed systems. This includes but is not limited to providing computed dead and live load values (imposed on the landing float) to the float manufacturer and engineer for their use in the design of the landing float flotation checks.

B. The gangway roller design shall consider the full range of motion based on water level criteria.

3.5 WARRANTY

A. The manufacturer shall provide a two-year written warranty that the aluminum structures and associated appurtenances furnished shall be free from defects in materials and workmanship and performance for a period of two (2) years following completion and acceptance by the Owner.

B. The two-year warranty period shall commence upon project completion and acceptance by the Owner.

3.6 SPARE PARTS

A. The Contractor shall provide spare parts required to accomplish supplier recommended maintenance for a full three-year period. For the purpose of providing this spare parts inventory, the Contractor shall assume normal wear and tear on the aluminum structures. Spare parts to be provided at a minimum include the following:

1. Four (4) full sized grating panels and associated fasteners
2. Four (4) full length UHMW roller guides.

END OF SECTION

SECTION 055000 - MISCELLANEOUS METALS

PART 1 - GENERAL

1.1 SUMMARY

A. This Technical Specification covers the design, detailing, supply, fabrication and installation of aluminum and steel metal components including all miscellaneous metal fabrication and connection components required to complete the work as required by the Contract Drawings and Technical Specifications. Work included in this Technical Specification is as follows:
   1. Prefabricated galvanized steel platform frames and headframe hoist beam
   2. Prefabricated ladder for Platform B, including connections
   3. Life ring cabinet pedestals
   4. Chains, Shackles, Bolts, Nuts and Washers
   5. Miscellaneous Fabricated Metal items

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this Technical Specification to the extent referenced. Latest editions apply.
   1. American Welding Society (AWS)
      a. D1.1 Structural Welding Code – Steel
      b. D1.2 Structural Welding Code – Aluminum
   2. American Institute of Steel Construction (AISC)
      a. 303 Code of Standard Practice for Steel Buildings and Bridges
      b. 360 Specification for Structural Steel Buildings
   3. ASTM International (ASTM)
      a. A36 Carbon Structural Steel
      b. A47 Ferritic Malleable Iron Castings
      c. A53 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless
      d. A123 Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
      e. A153 Zinc Coating (Hot-Dip) on Iron and Steel Hardware
      f. A307 Carbon Steel Bolts, Studs, and Threaded Rod
      g. A325 Structural Bolts, Steel, Heat Treated
      h. A384 Standard Practice for Safeguarding Against…During Hot-Dip Galvanizing
      i. A500 Cold-Formed Welded and Seamless Carbon Steel Structural Tubing…
      j. A563 Carbon and Alloy Steel Nuts
      k. A572 High-Strength Low-Alloy Columbium-Vanadium Structural Steel
      l. A780 Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings
      m. A992 Structural Wide-Flange Beams
      n. B308 Aluminum Alloy 6061-T6 Standard Structural Profiles
      o. B209 Aluminum and Aluminum-Alloy Sheet and Plate
      p. B695 Coatings of Zinc Mechanically Deposited on Iron and Steel
      q. F436 Hardened Steel Washers Inch and Metric Dimensions
      r. F593 Stainless Steel Bolts, Hex Cap Screws, and Studs
      s. F594 Stainless Steel Nuts
      t. F959 Compressible-Washer-Type Direct Tension … with Structural Fasteners

u. F1554 Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

4. Aluminum Association (AA)
   a. Aluminum Design Manual
5. Society for Protective Coatings (SSPC)
   a. Good Painting Practices Vol. 1 & 2

1.3 GENERAL

A. Miscellaneous metals material specification requirements shall apply to all metal items unless otherwise identified or noted on the Contract Drawings.

B. Temporary Construction. The Contractor is responsible for temporary bracing and support of all structures during construction and shall protect all exposed partially complete work against damage. The Contractor shall take precautions to assure that the structure is adequately braced to avoid damage from wave or wake action during construction. Any structural component damaged during construction shall be replaced by the Contractor at no cost to the Owner. The Contractor's proposed methods for providing temporary protection shall be included in the work plan submitted to the Owner for approval.

C. Alternative Design. The Contractor may submit an alternative design. The alternative design shall bear the stamp and signature of a State of Washington Registered Professional Engineer. The alternative design shall clearly identify deviations from the original design intent and any associated cost savings. Substitutions and Change Orders resulting from alternative design will be addressed in accordance with the Specific Requirements and General Conditions, respectively.

D. Prefabricated Ladder. To be Fibergrate Dynarail with 24" Walk-Thru or galvanized steel of comparable design.

E. Life ring and Sign Pedestals: The Contractor shall design and fabricate pedestals as shown in the drawings including all connections.

1.4 QUALITY ASSURANCE

A. Fabricate and install steel components in accordance with AISC 303 and AISC 360.

B. Fabricate and install aluminum in accordance with the AA's Aluminum Design Manual.

C. Fabricator qualifications: The Contractor shall engage an experienced fabricator who has completed metal fabrication work similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance. The fabricator shall be an ICBO 'Approved Fabricator" as defined in the latest edition of the International Building Code for an AISC Certified Fabricator.

D. The Contractor responsible for steel installation work shall have at least five years of relevant (and similar type) construction experience.

1.5 MATERIAL TESTING

A. Miscellaneous metals and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical, and section property requirements prior to delivery to the site. Testing of miscellaneous metals for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of miscellaneous metals shall meet the requirement of ASTM A6.

1.6 SUBMITTALS

A. General: All steel and aluminum construction and/or assembly work shall not begin until all required submittals have been reviewed and approved by the Owner.

B. Shop Drawings: Drawings and complete bills of material for metal fabrications, frame connection fabrications, attachments, and any other miscellaneous metal fabrications, and all fabricated assemblies. All connections shall be fully detailed and all welds shall be shown on the Shop drawings. Shop drawings shall be adequate for field-assembly. Drawings must demonstrate the location and type of lift points capable of construction loads due to handling, stacking, transportation, and placement. Any embedded or welded lifting points required shall be designed by the steel manufacturer/fabricator and the capacities of such lifting point shall be identified on the shop drawings. Design calculations for the lift points shall be submitted to the Owner for review and approval. Design submittals shall bear the stamp and signature of a State of Washington Registered Professional Engineer experienced in the design of such lifting and rigging devices for structural steel members.

C. Design drawings and supporting calculations for fabrication items designed by the Contractor's chosen fabricator. Design submittals shall bear the stamp and signature of a State of Washington Registered Professional Engineer. Such design documentation shall be submitted for review and approval by the Owner prior to fabrication.

D. Transporting/lifting/placement plan. Submit descriptions, shop drawings, and fabricator developed supporting calculations for the Contractor proposed method of transportation and lifting and placement methods including sequencing for the steel components.

E. Submit manufacturers' mill certificates and certificates of compliance for the following materials as applicable:
   1. Steel
   2. Fasteners

F. Placement drawings: Show location in the Project of all fabrications, cross-referenced to the shop drawings.

G. Fabrication work plan: Written description of plan for fabrication and installation including proposed schedule and procedures shall be submitted to the Owner.

H. Product data:
   1. Installation instructions and general recommendations including warranties from manufacturers for all products used as part of the work, including the prefabricated ladder, and technical data sheets defining performance properties.

a. Manufacturer's literature and data for products used that demonstrates compliance with the applicable materials specifications.
b. Copy of the Materials Safety Data Sheets (MSDS) and Consumer Information Safety (CIS) sheets to the Owner.

I. Company data: The Contractor shall submit the proposed metal fabricator and galvanizing subcontractors' name, address, contact name, phone number and company information, verifying that the company is in compliance with the Technical Specifications, to the Owner for review.

J. Welder certificates: Provide for proposed welders showing that they have been qualified to AWS D1.1.

K. Welding procedures: Contractor to submit welding procedures for approval of the Owner. Welding variables on submitted welding procedures shall conform to weld filler metal manufacturer's recommendations unless a procedure is qualified by testing, in which case procedure qualification records should be submitted with the corresponding procedure. Preheat and interpass temperature shall be in accordance with AWS D1.1 Annex I.

L. All independent inspection reports required in this Section.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

A. The Contractor shall supply miscellaneous metal connectors, and other metal items required to fabricate the project components. Miscellaneous structural steel materials shall be new, free from defects and imperfections, and shall unless otherwise indicated, conform to the following:
1. Steel W Shapes: ASTM A992 Gr. 50.
2. Steel HP Shapes: ASTM A572 Gr. 50.
3. Steel rectangular, round, and square HSS: ASTM A500 Gr. B (46ksi).
4. Steel plate, flatbar, channels, angles: ASTM A36.
5. Steel pipe: ASTM A53 Grade B, Type S.
6. Abutment Guardrail: Guardrail materials to comply with Section 051400 and design to have one top rail and one intermediate rail and able to withstand the loading requirements for guardrails and handrails per the IBC.
7. All carbon steel to be welded shall have a carbon equivalency (C.E.) less than 0.40 as calculated by the following equation, which is described in more detail in AWS D1.1 Annex I

$$CE = C + (Mn + Si) / 6 + (Cr + Mo + V)/5 + (Ni + Cu) / 15$$

Where:
CE = Carbon Equivalency
C = Carbon
Mn = Magnesium
Si = Silicon
Cr = Chromium
Mo = Molybdenum
V = Vanadium

Ni = Nickel
Cu = Copper

8. Aluminum shapes: Marine Grade 6061-T6 Aluminum extruded shapes.
9. Aluminum flatbar: Marine Grade 6061-T6 Aluminum flatbar
10. Material with laminar discontinuities may be rejected by the Owner if the discontinuities are perceived to decrease the connection quality or strength, at discretion of the Owner. Material with laminar discontinuities shall at a minimum be repaired with a Owner approved repair procedure. The Contractor shall notify the Owner immediately if laminar discontinuities are discovered.
11. Materials for proprietary system or contractor-supplied components shall meet manufacturer's recommendations/specifications, unless otherwise approved by the Owner.
12. Steel plate, bar and shapes shall be true to line and free from warp or twist.
13. Substitution of the metal grades specified shall not be performed without written approval from the Owner.

2.2 REQUIREMENTS FOR FASTENERS, HARDWARE, AND WELDMENTS

A. Bolt, anchor bolt, washer, and nut requirements vary depending on the materials being fastened.

B. Steel to steel:
1. Standard Connection: Regular hot-dip galvanized hexagon head type bolts shall be used in accordance with ASTM A325, with threads excluded from the shear plane unless otherwise noted. Hardened washers conforming to ASTM F436 shall be used under all nuts and bolt heads unless otherwise noted. Nuts shall be heavy hex nuts conforming to ASTM A563 and shall be lubricated. Lock nuts conforming to ASTM A563 shall be used if shown on the Contract Drawings.
2. Slip Critical Connections: Regular hot-dip galvanized hexagon head type bolts shall be used in accordance with ASTM A325, with threads excluded from the shear plane unless otherwise noted. Hardened washers conforming to ASTM F436 shall be used under all nuts and bolt heads unless otherwise noted. Nuts shall be heavy hex nuts conforming to ASTM A563 and shall be lubricated. Standard direct tension indicating washers (DTIs) conforming to ASTM F959 shall be used in accordance with manufacturer's recommendations to facilitate proper bolt tensioning. Direct tension indicating washers shall be mechanically galvanized in accordance with ASTM B695.

C. Aluminum to steel (stainless hardware):
1. Hardware shall be type 316 stainless steel, with chemistry suitable for marine exposure; and nuts shall be type 304 stainless steel, with chemistry suitable for marine exposure. Regular hexagon head type bolts shall be used in accordance with ASTM F593. Washers shall be used under all nuts and bolts heads unless otherwise noted. Heavy hex nuts and lock nuts conforming to ASTM A563 shall be used on all bolts and shall be lubricated.

D. Aluminum to aluminum or steel (galvanized hardware):
1. Regular hot-dip galvanized hexagon head type bolts shall be used in accordance with ASTM A325, with threads excluded from the shear plane unless otherwise noted. Hardened washers conforming to ASTM F436 shall be used under all nuts and bolt heads unless otherwise noted. Nuts shall be heavy hex nuts conforming to ASTM A563 and shall be lubricated. Lock nuts shall be used if shown on the Contract Drawings.

2. Galvanized hardware shall be isolated from the aluminum base material as specified in Part 3.3 of this Section.

E. Threaded rod. Hot-dip galvanized threaded rod shall be supplied in conformance with ASTM F1554, Grade 36 unless otherwise noted. Hardened washers conforming to ASTM F436 shall be used under all nuts bearing on steel and malleable iron washers conforming to ASTM A47 and lock nuts shall be used under all nuts bearing on timber. Lock nuts shall be provided on each end of threaded rod passing through timber. Nuts shall be heavy hex nuts and shall conform to ASTM A563 and shall be lubricated.

F. Screws shall be type 316 stainless steel unless otherwise noted.

G. Beveled washer thickness is measured in the center of the washer.

H. Plate washers shall be 1/4 inch thick plate, with a diameter matching the equivalent malleable iron washer unless otherwise noted.

I. Make exposed fastenings of compatible materials, generally matching in color and finish, to which fastenings are applied.

2.3 METAL FABRICATION

A. Aluminum: Aluminum items shall be fabricated in accordance with AA's specifications for aluminum structures and AWS D1.2, Structural Welding Code Aluminum.

B. Steel: Fabrication of steel parts shall conform to the applicable provisions of the AISC – Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings and AWS D1.1, Structural Welding Code Steel.

C. Items shall be shop fabricated to the extent practicable for transportation and handling. Splice details and locations shall be shown in the shop drawings.

D. Parts shall be match-marked to ensure accurate installation.

E. Tolerances. Items shall be fabricated to the tolerances indicated herein or on the Contract Drawings, or if not specified, to accepted industry standards.

F. Work points on beams, braces, columns, gusset plates, etc. shall be concentric unless otherwise noted.

2.4 COATINGS

A. Coating of steel shall be as follows:
1. All steel shall be hot dipped galvanized after fabrication in accordance with Technical Specification Section 050500 – Galvanizing, unless otherwise noted.

B. Fabricated steel specified to be galvanized steel shall be galvanized in accordance with ASTM A123. Hot dip galvanization process shall be completed after fabrication unless otherwise specifically noted in the approved shop drawings. All intersecting components shall be seal welded at a minimum prior to galvanizing unless otherwise noted.

C. Repair of zinc-coated surfaces. Repair all galvanized surfaces removed or damaged during welding, or shipping in accordance with the Technical Specification Section 050500 – Galvanizing.

D. Repair of painted surfaces. Repair all damaged painted surfaces in accordance with the paint manufacturer's recommendations.

2.5 FABRICATION MARKING

A. Marking the weight. Mark the weight on sub-assemblies and individual members weighing over 200 pounds.

B. Marking piece marks and directional arrows. Provide piece marks and directional arrows on all members and sub-assemblies requiring on-site assembly. Shop drawings shall show all piece marks.

C. Marking bare or painted materials. Make all shop markings plainly visible with a non-corrosive waterproof paint stick that will not compromise marking after coating, if applicable. Marking with Sharpie brand pens is prohibited.

D. Marking materials to be galvanized. Stamp piece marks or match marks in material to be galvanized with metal dies so that the marks are clearly legible after galvanizing.

PART 3 - EXECUTION

3.1 MATERIALS DELIVERY AND STORAGE

A. Materials delivered to the site shall be new and undamaged and shall be accompanied by certified test reports. The manufacturer's mill identification mark shall be provided on components for traceability as required by the referenced specifications. Components shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage. Any such permanent deflection, distortion, or damage shall be repaired by the Contractor at the Contractor's expense to the satisfaction of the Owner. Storage of metal materials and/or fabrications should also facilitate required inspection activities.

3.2 QUALITY ASSURANCE

A. Fabricate and install steel components in accordance with AISC 303 and AISC 360. Fabrication is to occur in accordance with the fabricator's quality program. Upon request, the fabricator may be asked to submit this quality program to the Owner for review.

3.3 FABRICATION

A. The Contractor shall obtain all field measurements required for proper and adequate fabrication and installation of the work. Exact field measurements are the Contractor's responsibility.

B. Metal preparation: All structural steel and miscellaneous metal fabrications shall be fabricated in strict accordance with the approved shop drawings and the referenced standards. Materials shall be straight before being laid out or worked. If straightening is necessary it shall be done by methods that will not damage the metal. Sharp kinks or bends shall be cause for rejection of the material. Material with welds will not be accepted except where welding is specified, indicated, or otherwise approved. Bends shall be made by industry standard method such as dies, press brakes or bending rolls. Where heating is required, precautions shall be taken to avoid overheating the metal and it shall be allowed to cool in a manner that will not damage the metal. Proposed flame cutting of material other than structural steel shall be subject to approval and shall be indicated in the shop drawings. Shearing shall be accurate, and all portions of the work shall be neatly finished.

C. Bolt holes shall be provided where required or specified and at the proper location or position. Holes in metals members shall be shop punched and reamed or drilled. Flame cutting or drilling of holes shall not be allowed. Unless otherwise indicated or specified, all bolt holes through metal members shall be standard size; 1/16 inch larger in diameter than the diameter of the fastener being installed. For steel assemblies to be galvanized after assembly, all holes shall be oversize; 1/8 inch larger in diameter than the diameter of the fastener being installed.

D. Metal may be cut by mechanically guided or hand-guided torches, provided an accurate profile with a surface that is smooth and free from cracks and notches is obtained. Surfaces and edges to be welded shall be prepared in accordance with AWS requirements. Where structural steel is not to be welded, chipping or grinding will not be required except as necessary to remove slag and sharp edges of mechanically guided or hand-guided cuts not exposed to view. Hand-guided cuts that are to be exposed or visible shall be chipped, ground or machined to sound metal.

E. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Do not weld, cut or abrade the surfaces of exterior components which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

F. Shop assembly: Structural unit furnished shall be assembled in the shop to determine the correctness of the fabrication and matching of the component parts unless otherwise specified. Tolerances shall not exceed those shown. Each unit assembled shall be closely checked to ensure that all necessary clearances have been provided. Errors or defects disclosed shall be immediately remedied by the Contractor without cost to the Owner. Before disassembly for shipment each piece of a structural unit shall be match-marked to facilitate erection in the field. The location of match-marks shall be indicated by circling with a ring of white paint after the shop coat of paint has been applied or as otherwise directed.

G. Metal fabrications shall be placed accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.

H. Dissimilar metals. Where dissimilar metals are in contact, such as in steel to aluminum connections the surfaces shall be protected to prevent galvanic action. All bolted connections shall be isolated by using UHMW PE or fiberglass insulating washers a minimum of 1/16 inch thick, spacers and nylon sleeves (ferrules) in the bolt holes to prevent steel bolts from coming in contact with aluminum. Isolating material shall cover the entire contact surface and shall be applied in conformance with the manufacturer's recommendations. Isolating material shall be shown on the shop drawings.

I. For assemblies to be galvanized after welding, the fabricator shall detail the assembly in accordance with ASTM A384 recommendations – see Technical Specification Section 050500 – Galvanizing.

3.4 GENERAL WELDING REQUIREMENTS

A. Welding shall be done in accordance with AWS procedures, including procedures for repair of defective welds.

B. All welds shall be visually inspected by a Contractor provided independent testing company. The components shall be inspected as statically loaded, non-tubular and tubular connections in accordance with AWS requirements.

C. All welds and edges that may be encountered by the public after construction shall be ground to remove all burrs and weld splatter to the satisfaction of the Owner.

D. The Owner, at their discretion, may non-destructively test welds in accordance with AWS criteria. Acceptance criteria shall be for non-cyclic loading. Welds failing shall be repaired at the Contractor's expense, which will also include all costs for retesting to achieve a passing inspection test.

3.5 STEEL WELDING

A. Qualifications. Steel welding shall be performed by welders certified as being qualified in accordance with AWS D1.1, Section 5, Parts C and D or WABO for steel welding. Welders shall be qualified to perform full penetration groove welding in all positions of the relevant type (plate, tube, etc.), using the procedures, materials, and equipment of the type required for the work. All welding shall conform to AWS D1.1. All welds shall be visually inspected by a Contractor provided independent testing company.

B. Weld filler metal. Weld filler metal shall meet Charpy requirements of 20 foot-pounds at -20 degrees Fahrenheit and shall have chemistry similar to the base metal. Filler metals shall only be used in welding positions recommended by the filler metal manufacturer, and any welds not conforming to manufacturer's recommendations shall be removed and replaced by the Contractor at the Contractor's expense. Welding consumables shall be stored in accordance with the manufacturer's recommendations and in accordance with AWS requirements and recommendations. Overmatching weld filler metals shall be avoided.

C. Preheat. Preheat shall be based on material grade and thickness in accordance with AWS requirements.

D. Inspection timeline. Prior to galvanizing, all required weld inspections and required repairs shall be performed.

E. Welding galvanized/metalized components. All welding shall be done prior to galvanizing if possible, unless otherwise required for field-assembly. Galvanizing/metalizing within one inch of the finished weld location shall be removed prior to welding.

F. Fillet weld soundness Test. Fillet weld procedures shall be qualified by a fillet soundness test in accordance with AWS requirements.

3.6 ALUMINUM WELDING

A. Aluminum items shall be fabricated in accordance with AA's specifications for aluminum structures and AWS D1.2, Structural Welding Code Aluminum.

B. Qualifications. Aluminum welding shall be performed by welders certified as being qualified in accordance with AWS D1.2 for full penetration groove welding in all positions, using the procedures, materials, and equipment of the type required for the work. All welding shall conform to AWS D1.2.

C. Weld filler metal. Weld filler metal shall be used in full conformance with the manufacturer's recommendations unless otherwise proven in a procedure qualification test.

D. All welding shall be done in conformance with a qualified welding procedure. All welding procedures shall be qualified in accordance with AWS D1.2 requirements.

E. The Contractor shall not use oxyfuel gas cutting, carbon arc cutting or gouging processes, or oxyfuel flames to preheat.

F. Mechanically remove the plasma arc and laser cut edges from 6xxx series alloys by removing a minimum of 1/8 inch of metal from the cut edge.

G. Prepare and clean the joint prior to assembly and degrease the surfaces with a solvent. Maintain surface cleanliness throughout the assembly and welding process.

H. Shop rags shall not be used to clean joints; instead use clean cloth or paper towels.

I. Joints shall not be cleaned by using compressed air.

J. Wire brushes can only be used for cleaning after a joint is solvent cleaned.

K. Tools and the work area shall be kept clean throughout the duration of the work.

3.7 INSTALLATION

A. General. All parts to be installed shall be thoroughly cleaned. Packing compounds, rust, dirt, grit and other foreign matter shall be removed. Holes and grooves for lubrication shall be cleaned. Enclosed chambers or passages shall be examined to make sure that they are free from damaging materials. Where units or items are shipped as assemblies they will be inspected prior to installation. Disassembly, cleaning and lubrication will not be required except where necessary to place the assembly in a clean and properly lubricated condition. Pipe wrenches, cold chisels or other tools likely to cause damage to the surfaces of rods, nuts or other parts shall not be used for assembling and tightening parts.

B. Alignment and settings. Each structural unit shall be accurately aligned by the use of steel shims or other approved methods so that no binding in any moving parts of distortion of any member

occurs before it is fastened in place. The alignment of all parts with respect to each other shall be true within the respective tolerances required.

C. All bolts shall be installed at the proper location and set straight and square with connecting members. Bolt installation shall conform to the requirements of AISC specification for structural joints using ASTM A325 Bolts for steel and A276 for stainless steel.

D. Bolts, nuts, and screws shall be tight in accordance with industry standards. Carbon steel bolts shall be tightened with the turn-of-the-nut method unless otherwise noted. Bolts, nuts, and screws shall be tightened firmly and uniformly but care shall be taken not to overstress the threads. Care shall be exercised when tightening bolts passing through tubular members so as not to distort the member.

E. When a lock nut is used for a metal-to-metal connection, the lock nut shall be installed first at approximately half-tightness, followed by the full nut installed to full tightness. The lock nut shall be held in place while the full nut is tightened.

F. Driving or drifting bolts will not be permitted

G. Holes for concrete anchors shall be made using a steel plate template by either core drilling or hammer drilling with a tool adequate for the task. Diamond-tipped tools shall not be used. Holes shall be thoroughly cleaned with a wire brush and oil-free compressed air.

H. Concrete anchors shall be installed in accordance with the Manufacturers recommendations. Special inspection is required for all adhesive anchors.

I. Holes for anchors shall be inspected after final cleaning for conformance with the project requirements and manufacturer's installation instruction by an independent testing agency. Reports are to be submitted to the Owner for approval and shall be approved prior to making the anchors inaccessible.

3.8 HANDLING AND LIFTING

A. Means and methods are the full responsibility of the Contractor. Handling and lifting shall be done in a way so as to prevent damage. Care shall be taken to avoid damaging coatings during handling. The Contractor shall develop and use lifting and handling plans if required for safety reasons (such as overhead lifting), or to ensure that components of the work are protected from damage.

B. Care shall be exercised during handling operations to not damage the steel components, any damage incurred due to Contractor mishandling or accident shall be repaired by the Contractor at no additional cost to the Owner, and any steel damage deemed by the Owner as beyond repair shall be removed from the site and replaced by the Contractor at no additional cost to the Owner.

C. All lifting equipment shall comply with industry standards and be appropriately labeled if required.

3.9 INSPECTION

A. Steel and aluminum sections and hardware shall be inspected and approved by the Owner to verify conformance with the Contract Drawings and this Technical Specification for fabrication/manufacture prior to delivery to the project site, and upon installation.

B. Any damage or defects requiring repairs to the Steel and aluminum sections and hardware shall be notified in writing to the Owner and any repair materials and methodology shall be reviewed and approved by the Owner prior to the initiation of any such work.

END OF SECTION 055000

DIVISION 31 – EARTHWORK

SECTION 310000 – EARTHWORK

PART 1 - GENERAL

1.1 SUMMARY

A. Fill work described in this Section includes import of new materials and placement within the construction area associated with the foundation gravel.

B. Work Area Boundary: Boundary area of earthwork shall be as defined on the Contract Drawings.

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only.

1. ASTM International (ASTM)

a. C136 – Sieve Analysis of Fine and Coarse Aggregates
b. C144 – Aggregate for Masonry Mortar
c. D422 – Particle-Size Analysis of Soils

2. Washington State Department of Transportation (WSDOT)

a. 2022 Standard Specifications for Road, Bridge and Municipal Construction
b. 2022 Materials Manual
c. T113 Degradation Value

B. Material Size Classifications

1. Size classifications of gravel, and cobble constituents of fill material are defined according to the U.S. Standard Sieve size. The division between cobble and gravel sizes is the 3-inch sieve opening.

1.3 SUBMITTALS

A. Materials Data:

1. Foundation Gravel

B. Material gradations as presented in Part 2 of this Section for all aggregates. Sampling of the fill materials for testing shall be in accordance with Part 2 of this Section.

C. Material Testing Results

1. Durability and soundness of gravel components of sampled aggregates.
2. Size gradation of sampled aggregates.

D. Materials samples as requested by the Owner.

PART 2 - PRODUCTS

2.1 MATERIAL SOURCES

A. Imported Materials: Unless otherwise specified, material shall be imported from offsite and the Contractor is responsible for obtaining a source for all fill materials in accordance with these Technical Specifications. Contractor shall select materials from an existing commercial source for which all operating permits have been obtained prior to bid opening. Contractor shall assure themselves of availability of an adequate and acceptable material source based on quantity, quality, and gradation standpoints prior to submitting his bid. If the primary source is determined to be unqualified, subsequent sources shall also be evaluated at the Contractor's expense.

B. General: All imported materials shall contain no floatable material and shall conform to quality and testing requirements outlined herein.

C. If a blended material is proposed, the source components shall be mixed at the source location. All fill materials proposed for use on the project shall be sampled at the source location, tested and the results provided in the pre-construction submittals to the Owner for approval.

2.2 TESTING

A. Sand, gravel, and cobble material quality test results will be evaluated with testing results in accordance with WSDOT Standard Specification Section 9-03.20 - Test Methods for Aggregates. The Contractor is responsible for performing pre-construction testing work.

2.3 INSPECTION

A. Material Source: The borrow source shall be inspected by the Contractor to assure that the materials to be delivered to the site will meet the appropriate specifications. The Owner reserves the right to periodically inspect the materials at the borrow source.

2.4 AGGREGATE MATERIAL QUALITY & GRADATION

A. Foundation Gravel

1. The gravel base shall be clean, washed, fractured 5/8" inch gravel (5/8" to #4 aggregate) meeting WSDOT Standard Specification Section 9-03.4(2) - Grading and Quality, to be placed within the abutment area. Gravel materials shall meet the source and quality requirements outlined in WSDOT Standard Specification Section 3-01- Production from Quarry Pit Sites and 9-03.9(3) - Crushed Surfacing. Contractor shall submit material gradations to the Owner for review and approval.

PART 3 - EXECUTION

3.1 DEMOLITION

A. Existing structures and features within the work area shall be removed and disposed of in accordance with Technical Specification Section 024100 – Demolition prior to the start of grading and filling work.

3.2 EXCAVATION

A. The Contractor shall protect all tree root systems and shall notify the Owner for approval before the extraction or removal of any tree roots within the excavation area.

3.3 GROUND PREPARATION

A. Excavate to the grades shown in the Contract Documents for the foundation gravel. The top organics layer shall be removed prior to the placement of any fill.

3.4 FILL

A. Ground surface preparation

1. Remove existing surface debris and shallow vegetation including weeds, grass, sticks and large rocks prior to placement of fills. Contractor shall coordinate with the Owner on disposal location away from abutment construction area.

B. Placement and Compaction

1. Place fill materials evenly to required elevations.
2. Do not bury construction debris. Remove and lawfully dispose offsite.

3.5 INSPECTION

A. Slope lines, grades, and placement of fill will be inspected by the Owner and placed material may be tested for gradation by the Owner. Owner will perform inspection of the material prior to material placement, however, this inspection does not relieve the Contractor from performing the in-place inspection. The Owner will also review the results of the quality control surveys. The Owner may conduct independent surveys for which the Contractor shall provide access and time to complete prior to placement of subsequent material types.

B. Immediately prior to placement of fill, the Owner will inspect the prepared base, and no material shall be placed thereon until that area has been approved.

3.6 MISPLACED MATERIAL

A. Should the Contractor, during the execution of the work, lose, dump, throw overboard, sink or misplace any material, machinery, or appliance, the Contractor shall be solely responsible for its recovery. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Owner and shall mark and buoy such obstructions until they are removed.

B. In the event that fill material is placed outside the limits shown on the Contract Drawings, the Contractor shall be responsible for retrieval of the material or procurement of additional material (of equal volume). The Contractor shall be responsible for costs associated with damage caused by material placement outside of the limits shown on the Contract Drawings, as well as costs associated with the procurement of additional material as necessary.

C. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Owner, and the expense charged to the Contractor, or recovered from the bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without his fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of 3 March 1899 (33 U.S.C. 410 et seq.).

3.7 FINAL INSPECTION

A. The Contractor shall not demobilize any construction equipment from the site until approval has been given by the Owner.

END OF SECTION

SECTION 316216 – STEEL PILE

PART 1 - GENERAL

1.1 SUMMARY

The work of this Section consists of furnishing all plant, equipment, labor and materials and performing all operations in connection with fabricating, coating, transporting, handling, storing, and installing steel pipe piles for the moorage and landing floats and pumpout barges in accordance with the Sections and Contract Drawings using vibratory, impact driving and rock drilling methods. It also includes the splicing and cut-off requirements in accordance with these Specifications, the referenced standards, and the applicable provisions of pertinent codes. Piling construction work includes supply and install galvanized steel pipe piles with black polyethylene bird caps as anchoring elements for new and existing floats and pumpout barges as well as supply and install of galvanized steel pipe piles for support of platforms.

1. The Contractor is responsible to provide qualified on-site marine mammal and marbled murrelet monitoring staff during all pile installation. The monitoring shall meet the requirements of the project permits including the monitoring plan.

1.2 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this Section to the extent referenced. The publications are referred to in the text by the basic designation only.

1. ASTM

   a. A36 Structural Steel
   b. A252 Welded and Seamless Steel Pipe Piles

2. AWS

   a. "Structural Welding Code – Steel," AWS D1.1

3. OSHA

   a. 1926.603 Pile driving equipment
   b. 1926.605 Marine Operations and Equipment

4. WISHA

   a. RCW Chapter 49.17

1.3 RELATED DOCUMENTS

A. Appendix B - Geotechnical Engineering Services Report, Stuart Island State Park Improvements, San Juan County, Washington dated November 25, 2020 as developed by GeoEngineers Inc. (*Attachment 16*)

B. Appendix B - Geotechnical Engineering Services Report, Sucia Island State Park Improvements, San Juan County, Washington dated November 6, 2020 as developed by GeoEngineers Inc. (*Attachment 17*)

1.4 PROJECT SITE CONDITIONS

A. Subsurface Conditions. Refer to attached geotechnical report for full details on anticipated subsurface soil and rock conditions and pile installation recommendations.

1. The Contractor shall be prepared for hard driving conditions and on top of a vibratory and down the hole drill have an impact hammer ready for use.
2. The Contractor shall provide a Licensed Surveyor during all pile install to ensure the piles are installed within tolerance and project requirements.
3. Pile Driving: The Contractor shall first use a vibratory hammer if there is overburden above the rock surface prior to rock drilling. Use of an impact hammer may be necessary to achieve the pile tip elevations if rock is not encountered on some waterward piles. The Contractor shall mobilize all required equipment for pile driving work including a vibratory hammer, impact hammer, down-the hole hammer, and bubble curtain.
4. Pile Drilling: Use of a down-the-hole hammer will be required to achieve the pile tip elevations as defined in the Contract Drawings. The Contractor shall mobilize all required equipment for pile drilling work. Contractor shall provide a rock socketing plan as part of the bid documents.
5. Sequencing: Scheduling of pile installation, float, pumpout barge installation shall be conducted with consideration for hard driving conditions.
6. Marine Mammal & Marbled Murrelet Monitoring Requirements. Environmental Permits require monitoring of pile driving activities (both vibratory and impact hammer). Requirements are outlined in project permits.

1.5 QUALITY ASSURANCE

A. The Contractor shall provide pile installation equipment and survey to ensure that piles are installed in a tight enough tolerance to be compatible with the floats and pumpout barges without any binding through the tidal water elevations. The Contractor shall provide a Licensed Surveyor during all pile install to ensure piles are installed within tolerance and any project requirements.

B. The Contractor shall keep an independent complete record of each pile driven or drilled, noting the rate, type, time, location and driving record with blow counts (impact driving) or inches per minute for every foot or fraction of a foot driven (vibratory driving or drill), and energy rating and fuel setting of the hammer. Facilitation and assistance shall include, but not be limited to providing access to the pile driving site, providing visual access to the driving site, and access to Contractor driving records. Data shall be recorded on a “Pile Driving Record Sheet.”

C. Records: The Contractor shall keep a complete and accurate record of each pile driven in accordance with Part 3 of this Section. Contractor will submit pile driving records to the Owner at the end of each day of pile driving.

D. Provide skilled workers at all times who shall be experienced and familiar with construction of pile supported marine structures. Supervisory personnel shall have a minimum of five (5) years of experience with the work performed in this contract.

E. Drilling Experience: The Contractor shall be experienced in drilling into rock and have successfully constructed at least 3 projects in the last 5 years involving construction of similar, small-diameter drilled and anchored pile systems. The Contractor shall provide proof that the drill rig operators, superintendent, and on-site foreman have drilling and rock socket experience, as part of their bid documents

F. Welding

1. Weld procedure and quality: Welding shall be done in accordance with AWS D1.1, including procedures for repair of defective welds. Welding requirements are described in Section 055000 – Miscellaneous Metals.
2. Weld inspections: All shop and field welds shall be visually inspected by an AWS Certified Welding Inspector through a Contractor provided independent testing company in compliance with Section 055000 – Miscellaneous Metals. Weld inspection reports shall be submitted to the Owner. Non-conforming discontinuities shall be repaired in accordance with AWS D1.1 and retested. The results of both the failed and passing tests shall be submitted to the Owner for all repairs made. The test report will clearly indicate the component with the failing test, and the location of the repair.
3. Qualification of Welders and Welding Operators. Welders and welding operators shall be qualified for shop and field welding in accordance with Section 055000 – Miscellaneous Metals.

1.6 PRODUCT HANDLING

A. Protection:

1. Product handling procedures shall be anticipated and accounted for in the Contractor-submitted work plan.
2. Use all means necessary to protect the materials of this Section before, during and after installation, and to protect the installed work and materials of all other trades.
3. Piles in storage or temporary stockpile shall be supported in such a manner that will not impair the alignment of the piles.
4. Piles shall be handled and transported only with acceptable equipment and by qualified personnel.

B. Replacements: In the event of damage, immediately notify the Owner and make all repairs and replacements necessary to comply with the Contract Documents at no additional cost to the Owner.

C. Dents, gouges, or arc strikes in the piling greater than 1/8-inch shall be removed or repaired as required under AWS. Pile deficiencies greater than 1/8-inch will be rejected, and the pile shall be removed from the site and replaced by the vendor at no additional cost to the Owner.

1.7 SUBMITTALS

A. Mill test reports: Certified copies of mill test reports for structural steel. Piling and appurtenant materials shall be tested and certified by the Manufacturer to meet the specified chemical, mechanical, and section property requirements prior to delivery to the site

B. Material certificates: Submit for each shipment of steel pile certificates identified with specific lots prior to installing piling. Identification data should include piling type, dimensions, chemical composition, mechanical properties, section properties, heat number, and mill identification mark.

C. Weld inspection report(s).

D. Piling cap data: manufacturer or fabricator of piling; name and contact information.

E. Certificates of treatment or quality of materials from pile manufacturer in accordance with the Contract Documents.

F. Shop drawings: Shop drawings for steel piles, pile assemblies, and any associated weldments/hardware.

G. Product data for pile/bird caps and associated adhesive sealant.

H. Weld certificates: Certify welders employed in the work with AWS qualifications in accordance with the requirements in Section 055000 – Miscellaneous Metals.

I. Pile installation experience of the Crane and Drill Rig Operators, Superintendent, on-site Foreman and Licensed Surveyor.

J. Pile Driving Work Plan

1. Means and methods of pile installation
2. Pile installation schedule
3. Equipment layout and working platforms
4. Drilling method and Rock Socket installation plan including:

    a. Containment of spoils
    b. List of equipment to be used including drilling equipment

5. Marine Mammal and Marbled Murrelet Monitoring Plan
6. Survey Pile Location Control Plan including Equipment and Personnel of Licensed Independent Surveyor during pile install.
7. List of equipment intended to be utilized in the driving and drill, noting hammer sizes, drill equipment, lead lengths and crane capacities. Proof demonstrating that each of the hammers are in good working order.

a. Vibratory hammer: The following vibratory hammer information shall be provided:
   1) Manufacturer
   2) Model
   3) Type
   4) Serial no.
   5) Rated energy
   6) Modifications

b. Impact hammer: The following hammer information shall be submitted:
   1) Manufacturer
   2) Model
   3) Type
   4) Serial no.
   5) Rated energy/length of stroke
   6) Modifications

c. Down-the-hole Hammer: The following drill rig information shall be submitted:
   1) Manufacturer
   2) Model
   3) Type
   4) Serial no.
   5) Size
   6) Modifications

d. Capblock (hammer cushion): The following capblock information shall be provided:
   1) Material
   2) Thickness
   3) Area
   4) Modulus of elasticity
   5) Coefficient of restitution

e. Pile cap: The weight of the helmet, bonnet, anvil block, and drive head shall be provided.

f. Pile cushion: The following pile cushion information shall be provided:
   1) Material
   2) Thickness
   3) Area
   4) Modulus of elasticity
   5) Coefficient of restitution

g. Pile: The following pile information shall be provided:
   1) Type
   2) Length (in feet)
   3) Weight/foot
   4) Wall thickness
   5) Cross-sectional area
   6) Tip treatment

K. Marbled murrelet and marine mammal monitoring: Contractor shall submit plan for complying with monitoring requirements and coordinating with Contractor-provided monitoring staff in accordance with Section 014100 – Regulatory Requirements, Section 015719 – Environmental Controls, and Appendix A – Permit Documents.

L. Power plant and leads: a description of the power plant and leads shall be provided.

M. Air compressor: a description of the air compressor to be used for the bubble curtain.

N. Bubble curtain: a description of the bubble curtain system.

O. Wave equation analysis results and driving recommendations: Required for all impact pile driving of vertical bearing piles. Submit in accordance with the requirements of Part 3 of this Section.

P. Pile placement plan: submit pile placement plan for review. The pile placement plan shall include a narrative and illustrations for the proposed installation sequence, driving procedures, methods for controlling the location and alignment of piles, and driving template design and configuration. The plan shall also include a sample pile driving record in accordance with this Section.

Q. Completed pile driving record in accordance with this Section submitted to Owner within 24 hours after driving each pile.

R. Inspection records: records verifying fabrication/erection, welding inspection, and nondestructive test (NDT) conformance.

S. Approvals: Work shall not be started, nor materials ordered until the Owner has given written approval of the work plan to the Contractor.

PART 2 - PRODUCTS

2.1 GENERAL

A. All pipe piling shall be new, round pipe and have a minimum outside diameter and wall thickness as indicated on the Contract Drawings. Steel pipe piles shall be straight seam ERW welded or seamless pipe and shall conform to the requirements of ASTM A252, Grade 3 (F_y = 45 ksi min.), or stronger with chemistry suitable for welding. Spiral weld pile shall not be used.

B. Steel pipe piles shall be galvanized in accordance with requirements of Section 050500 – Galvanizing, in accordance with ASTM A123, and described in the Contract Drawings.

C. Welding consumables shall conform to the requirements of the applicable provisions of AWS D1.1, Structural Welding Code and to the appropriate Building Code.

D. Minimum Cutoff Supply: The length of the pile shall be calculated based on the top and tip elevation, and the cut-off length. The Contractor is to determine the required supply cut-off length, which shall be a minimum of three feet.

2.2 FIBERGLASS PILING CAPS (BIRD CAPS)

A. Piling caps shall be a heavy duty black conical cap with a cylindrical sleeve to fit over the top of all installed piles.

B. The pile cap shall be fiberglass, black in color, as manufactured by Cheyanne Manufacturing, Inc. (1-800-424-7575) or approved equivalent. The final outer surface shall be smooth and without apparent waves, wrinkles, or other surface defects.

C. Adhesive: The piling caps shall be bonded to the pile (as applicable) with an approved marine grade adhesive/sealant compatible with the fiberglass piling cap that is suitable for use in wet environments such as 3M Marine 5200. All adhesive products shall be approved by the Owner.

D. Fasteners: All piling caps are to be secured to the pile with a minimum of four self-tapping galvanized steel screws per cap. Self-tapping screws shall have an unslotted drive hex head and shall be 1/4 inches in diameter.

PART 3 - EXECUTION

3.1 GENERAL

A. All pile quantities, locations and geometry shall be in accordance with the details and pile schedule in the Contract Drawings. Final pile locations and geometry shall be coordinated with the float manufacturer to ensure the piles are installed in the correct location as required for adequate float motion allowance, in accordance with the requirements of this document.

B. All pile fabrication installation operations shall be in conformance with OSHA regulations including 1926.603 Pile Driving Equipment and 1926.605 Marine Operations and Equipment.

C. Preparation: Visually inspect piles when delivered and when in the leads immediately before driving for defects or damage. Repair damages or defects in pile or pile coatings as specified.

D. Handling: Handle piles to protect the piles, pile coatings, and pile markings. Lift steel piling using appropriate rigging as required to prohibit permanent deformations.

E. Temporary construction: The Contractor is responsible for temporary bracing and support of the floats and pumpout barges during pile installation and shall protect all exposed partially complete work against damage. The Contractor shall take precautions to assure that the floats and pumpout barges are adequately braced to avoid damage from wave action during construction. Any structural component damaged during construction shall be replaced by the Contractor at no cost to the Owner.

F. Protection of existing structures: When the Contract Drawings require steel pile driving/construction operations near existing structures or newly constructed structures, take all reasonable precautions to prevent damage to such structures. The requirements described herein apply to all types of structures that may be adversely affected by construction operations due to vibrations, ground loss, or ground heave. Do not commence work at points where the construction operations are adjacent to utility facilities or other property, until making arrangements with the

utility facilities to protect against damage that might result in expense, loss, disruption of service, or other undue inconvenience to the public or to the Owner. The Contractor is solely and directly responsible to the Owner and operators of such properties for all damages, injuries, expenses, losses, inconveniences, or delays caused by the Contractor's operations. Notify the Owner of any movements detected and immediately take any remedial measures required to prevent damage to the existing structures.

G. Field coating repair: Repair all galvanized surfaces removed or damaged during welding, shipping, or erection in accordance with Section 050500 – Galvanizing.

H. Pile damage: The Contractor shall remove and replace, at no additional cost to the Owner, any pile that is damaged as determined by the Owner.

3.2 FABRICATION

A. Pile fabrication and markings: Fabricate pile in accordance with ASTM A252. Mark piling with lines of high visibility paint or ink on one-foot intervals from bottom to top. The length from tip shall be marked with the length in five-foot increments and one-foot increments marked with a line. All markings shall be clearly visible from all sides and legible to the naked eye at a distance of 75 feet. At all times during driving, the marked portion of the pile shall remain visible to the Owner and Owner's representative. Paint markings on galvanized pile sections shall be of material approved by the galvanizing manufacturer that is not detrimental to the pile or the pile coating.

B. Pile fabrication dimensional tolerances shall be as follows: Overall length ± 3 inches; deviation from a straight line shall not exceed length/1,000 along the entire length of pile.

C. Splices

1. All splices are to be shown on the shop drawings and designated as being either shop splices or field splices.
2. Shop splices: piles that have a total length of 40 feet or less shall be supplied full length with no splices. Piles that are longer than 40 feet and less than 80 feet shall have a maximum of one splice and shall be installed with the longer section on top. Splices shall be shop welded full penetration groove welds with a backing ring in conformance with AWS D1.1 unless otherwise approved by the Owner. Shop splices shall be inspected in accordance with the requirements of this Section. In no case shall a spliced portion of a pile be less than 10 feet in length.
3. Field splices: the Contractor shall not mobilize with the intent of performing field splices without explicit written permission of the Owner. The Contractor shall be prepared to field splice piles at the Stuart Island Moorage Facility site. The Contractor shall obtain approval from the Owner prior to procuring materials and equipment for field splicing.

3.3 CONTRACTOR RESPONSIBILITIES

A. The Contractor shall ensure that the new floats and piles are fully compatible with each other and that each individual item can operate in accordance with the intent shown on the Contract

Drawings. Failure to coordinate work between floats and field conditions that may affect the installation, or the design shall not constitute grounds for additional compensation.

B. The Contractor is responsible for all mobilization, lodging, transport, materials, labor, coordination, and equipment associated with the monitoring of marine mammals and marbled murrelets around the project site during construction in accordance with Section 014100 – Regulatory Requirements, Section 015719 – Environmental Controls, and Appendix A – Permit Documents. Major items of work include:

1. Observation of project surroundings for marine mammals and marbled murrelets by qualified biologists in dedicated vessels.
2. Documenting locations of marine mammal and marbled murrelet sightings.
3. Final documentation meeting regulatory agency requirements.

3.4 PILE DRIVING

A. Permit requirements: Pile installation shall also be conducted in accordance with the Owner provided permits including requirements for sound attenuation.

B. Piling shall be installed in accordance with WSDOT Standard Specification Section 6-05.3(11) – Driving Piles and the requirements of this Section and the Contract Drawings.

C. All piles installation shall be conducted with an Owner's Representative present unless otherwise communicated. The Contractor shall assist the Owner's Representative in monitoring the pile driving.

D. Records: The Contractor shall keep a complete and accurate record of each pile driven. Indicate the following

1. Pile diameter and original length
2. Pile location, plumbness and direction of lean
3. Mudline elevation, tip elevation, cutoff elevation,
4. Pile penetration in blows per foot for entire impact-hammer driven length,
5. Pile penetration in inches per minute for entire vibratory-hammer driven length
6. Pile embedment and penetration for the pile,
7. Total driving time in minutes and seconds for each pile,
8. Hammer data including rate of operation, model, and size
9. Unusual pile behavior, or circumstances experienced during driving such as re-driving, heaving, weaving, obstructions and unanticipated interruption.

Submit copy of "pile driving record tests" including Project Record Drawings to the Owner. Submit complete pile driving records of all the installed piles to the Owner within 24-hours of each installed pile. The pile records shall be current, and the as-built locations shall be noted on the Project Record Drawings.

E. Installation templates: Steel piles shall be installed using location templates as needed to achieve the specified location tolerances.

F. Pile driving shall occur only during daylight hours.

G. Jetting methods are not allowed for pile installation.

H. Pile driving equipment: Sufficiently sized vibratory, impact, and down-the-hole hammers shall be used to install steel piles. Use a pile hammer having a delivered force or energy suitable for the total weight of the pile and the character of subsurface material to be encountered. Operate hammer at the rate(s) recommended by the manufacturer throughout the entire period. All pile installation shall be attempted first with a vibratory hammer.

I. Premature refusal: If refusal to vibratory and/or impact driving is encountered before specified tip elevation, Contractor shall immediately submit pile driving records to Owner. If the piles meet refusal as determined by the Owner prior to reaching their specified tip elevation while using a vibratory hammer, the Contractor shall first use an impact hammer to advance the pile. A down-the-hole hammer shall be used if refusal is met using the impact hammer and the pile shall be installed an additional 10 feet from impact hammer refusal or to specified tip depth shown in the Pile Schedule in the Drawings, whichever comes first. Sufficiently sized vibratory hammer shall be used to install steel piles. Selection of the impact or down-the-hole hammer necessary to install the piles to the required tip elevation is the responsibility of the Contractor. Recommended impact hammer sizes can be found in the Appendix B – Geotechnical Report. The selected hammer shall be such that it does not damage the piles as determined by a wave equation analysis. The Contractor shall repair damage to piling caused by use of pile hammer with excess delivered force or energy at no additional cost to the Owner.

J. Wave equation analysis results and driving recommendations: Submit the pile and complete driving equipment data form to the Owner and a wave equation report of the wave equation results sealed by a Licensed Professional Engineer (State of Washington) for specific equipment to be used for this work a minimum of eight weeks before the Contractor mobilizes. This report shall include all input parameters assumed in the analysis and complete results of the analysis including items required in this and other sections of this Section. The wave equation analysis shall be used to assess the ability of the proposed driving system to install the pile to the required capacity and desired penetration depth within the allowable driving stresses. The wave equation analysis shall be performed for all tip elevations. The limiting penetration rates and ultimate pile capacities shall be submitted in both tabular and graphical formats and shall be in a manner that can be readily used by field personnel. The results of the bearing graph analysis shall be used to determine limiting penetration rates (blows/inch) such that axial stresses in the piles do not exceed 90 percent of the pile yield stress. The bearing graph analysis shall provide ultimate pile capacities versus blow counts for each hammer being used.

K. Driving tolerances: The Contractor shall provide a Licensed Surveyor at all times during pile installation to ensure the piles is installed with the project tolerances. Falsework and bracing must be of such a nature as to offer complete assurance of plumbness and alignment. Crooked alignment to avoid interference from obstructions will not be permitted; and such obstructions, when encountered, must be removed before proceeding with driving operations.

1. Drive piles within the following maximum tolerances. Piles that fail to meet minimum pile tolerance requirement shall be rejected and shall be removed and re-installed by the Contractor at no additional cost to the Owner. If reinstallation is attempted and failed, the Contractor shall contact the Owner for guidance. The Contractor shall not be compensated for any delays associated with piles being driven out-of-tolerance. Additional work required due to improper location or installation is the Contractor's responsibility. Lateral pulling of pile heads to proper location will not be allowed under any circumstances.

a. Location: Pile location shall be a maximum 1" from center of pile hoop or pile pocket and shall also be compatible with the fabricated floats and pumpout barges and functional for all water elevations. For all other piles the maximum tolerance shall be 2" horizontally at any pile height.
b. Plumbness: Plumbness shall be within 0.5 percent (1/4 inch in 4 feet) of true vertical. However, in no case shall an un-plumb pile result in a pile location that is not compatible with the fabricated floats from those shown in the Contract Drawings. For all operable water levels ensure the floats will not bind on piles.

2. The Owner reserves the option, based on the results of pile driving, to modify the tip penetration requirements.
3. The Owner reserves the option, based on the results of pile driving, to perform lateral load tests to evaluate performance. Contractor to mobilize appropriate equipment for this test.
4. Achieving minimum tip elevation: Once pile driving has started, each pile shall be driven continuously until the required tip elevation is achieved with exception for equipment break down and change of pile hammer.
5. Interruptions to driving. When driving must be interrupted, the continued driving after such intermission shall be performed for at least one minute before the average penetration per blow is measured for determining whether the required resistance has been reached.
6. Additional pile driving requirements are as follows:

    a. Steel Piling Installation – Float Piles
        a. Float piles shall be positioned within the pile hoops in such a manner as to allow the full float movement through the full range of design water level variation without binding.

7. Obstructions: If obstructions are encountered that result in sudden, unexpected change in penetration resistance and deviation from specified tolerances, the Contractor may be required to perform one or all of the following. If damage occurs to a pile due to the Contractor attempting to drive through obstacles, the damaged pile will be replaced at no additional cost to the Owner. The Contractor shall receive Owner approval prior to proceeding with any of the following activities:

    a. Removal of obstruction.
    b. Extraction, repositioning, and redriving of piles.
    c. Clearing of an obstruction by driving HP piles.
    d. Drill through control pile to remove soil plugging the tip.

8. Cut-off: The top of driven piles shall be cut-off to a flat surface at the elevation shown in the Contract Drawings. Cutoff shall include all portions of the pile top damaged during driving. Use tools that will not damage area below cut surface. The Contractor shall be responsible for removal and off-site disposal of all cut-off pile pieces. No additional payment shall be made for removal and disposal of the pile cut-off. With permission of The Owner, piles may be driven past tip elevations to avoid excessive cut-off lengths at no additional cost and at the Contractor's risk. The pile cut-off location shall be prepared for the welding to the steel pile cap by removing any sharp edges, burrs, or other imperfections that may prevent a good weld.

9. Minimum pile tolerance for embedment: Minimum embedment of pile into bedrock is measured at the top the of bedrock layer after the removal of overburden loose rock or after pile is driven (with vibratory or impact hammer) through the overburden.

L. Rock Socket

1. The site may require pile drilling and rock socketing work for pile installation. Mobilize appropriate equipment and personnel in the event this work needs to be performed.
2. The Contractor shall select the appropriate drilling and installation method, including the necessary equipment, to be used for the installation of the pile into the drilled rock socket. The soil conditions, including type of bedrock and the rock strength, are variable at each site as indicated in the geotechnical report in the Appendix.
3. Boulders are expected to be encountered at the project sites. The Contractor shall ensure that boulders and other obstructions on site do not interfere with the pile driving and installation. The Contractor shall move any such obstructions to ensure that the piles are installed in the correct location and achieve the minimum embedment into rock as shown in the Contract Drawings.
4. Contractor shall inspect the conditions underwater, using either divers or underwater cameras, prior to commencing pile driving work.
5. Location: Rock socketed pile location shall be compatible with the fabricated floats and pumpout barges and pile hoops for installation.
6. Plumbness: Plumbness shall be within 0.5 percent (1/4 inch in 4 feet) of true vertical. However, in no case shall an un-plumb pile result in a pile location that is not compatible with the fabricated floats and pumpout barges as shown in the Contract Drawings. For all operable water levels ensure the floats and pumpout barges will not bind on piles.
7. Embedment: The pile shall be inserted into the drill hole, 10 feet deep. If the pile meets refusal before meeting the required embedment, the Contractor shall re-drill the hole to ensure the pile meets the required embedment and pile tip elevations per the Contract Drawings. Embedment shall be measured from the top of the bedrock layer below the mudline and any overlying obstructions.
8. The diameter of the drilled rock socket hole shall be such that the tolerances on pile location and plumbness are maintained after the pile is installed in its final position. Prior to mobilization, the Contractor shall obtain approval, from Owner and the Engineer, on the equipment used to drill the rock socket holes. The Contractor shall submit the necessary documents for review by the Owner and the Engineer at least 15 business days prior to mobilization.
9. The Contractor shall control, collect, and properly dispose of drill flush, construction-related waste, and any water displaced during the pile installation process, in accordance with all applicable regulatory and code requirements. Construction debris, displaced water, and drill flush shall be collected and contained so they are not introduced into the water.

3.5 FINISHES

A. Piling bird caps. The piling cap shall be installed with a contractor-selected adhesive. The adhesive/sealant shall be applied around the full circumference of the inside of the cap and the outside of the pile. Install the cap in a manner assuring a uniform bonding surface around the interface between the pile and cap. Piling cap shall be additionally secured to the pile with four self-tapping stainless screws. Mask the outside surface of the pile cap and pile before application

of the adhesive/sealant and remove after application in a manner that avoids deposition of excess material on the exposed surfaces. Do not allow any materials to enter the water.

3.6 SOUND ATTENUATION

A. Use of an impact hammer for piles located below OHW will require the use of sound attenuation in accordance with Section 013543 – Environmental Controls and Appendix A – Permit Documents.

B. The design of the sound attenuation system is the sole responsibility of the Contractor. It is the Contractor's responsibility to interpret permit performance or system requirements and ensure that a compliant sound attenuation system appropriate for all potential site conditions is provided.

C. The Contractor is to design, furnish, install, and operate a bubble curtain system to attenuate underwater sounds and pressures caused by impact pile driving of steel piles driven in water.

D. Impact driving of steel piles below the water line shall at a minimum require the use of a bubble curtain around the pile during pile driving operations.

E. Other sound attenuation methods may be used if allowed by the applicable Environmental Permits and local, state, and federal law and with prior approval by the Owner.

F. Regardless of the sound attenuation method used, the selected system shall provide sound attenuation such that the maximum measured sound level within the water column measured outside of the system limits shall be below the limits stipulated in the Environmental Permits. The Contractor is responsible for monitoring the effectiveness of their sound attenuation system, and if this noise level is exceeded, the attenuation measures or pile installation methods and equipment shall be modified to bring the pile driving operation into compliance at the Contractor's expense.

G. Currents at the site are expected to vary in velocity and direction. Also, water elevations will vary. The sound attenuation system shall be designed considering the possible environmental variables that are present at the project site. The system shall be designed to provide the specified sound attenuation for the full exposed underwater height of the pile. The system shall be adequately weighted and supported to be both vertically and horizontally stable once installed.

H. The sound attenuation system shall be designed so as not to damage the pile coating.

3.7 PILE ACCEPTANCE CRITERIA

A. The Contractor shall submit the as-built pile geometries stamped by the Contractor's licensed surveyor immediately after driving. The as-built pile geometries shall include horizontal coordinates at a stated elevation, and plumbness (direction of lean, extent of lean defined in inches over 4 feet).

B. The Contractor shall submit float/pumpout barge and pile interaction verification in the form of AutoCAD drawings in .dwg format for the piles immediately after driving to confirm that floats can operate freely without binding on the piles for all anticipated water levels:

1. Plan view showing as-surveyed pile locations indicating direction and extent of lean.
2. Plan view showing outline of floats, location and interior dimensions of pile hoop, and pile locations at low tide.
3. Plan view showing outline of floats, location and interior dimensions of pile hoop, and pile locations at high tide.
4. Notes about any corrections to pile hoop geometry to accommodate pile locations.

C. The Contractor shall not demobilize pile driving equipment prior to Owner and Engineer acceptance of as-built pile geometries and float-pile interaction drawings. Communication between the Contractor, the Engineer and the Owner may be required to confirm feasibility of any corrections to pile hoop geometries required to accommodate pile locations.

D. Piles may be rejected (not accepted) by the Owner if any one of the following conditions exist:

1. Piles have not been installed to the minimum tip elevation and minimum penetration resistance as determined by the Owner.
2. Piles are not installed within the specified tolerances for location, plumbness, or cut-off elevation.
3. Piles will not result in floats and pumpout barges that operate freely without binding for all anticipated water levels.

E. The Contractor shall be responsible for any costs associated with pile rejection including but not limited to pile re-installation, float modification, platform and walkway modification and any associated engineering with those modifications.

END OF SECTION

SECTION 355100 – FLOATING STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. Scope. The Work described in this Section shall consist of all labor, materials, tools, and equipment necessary to fabricate, pre-assemble, ship, deliver, and install the floating structures described in this Section and indicated in the Contract Drawings. The floating structures shall include, but not limited to, steel framing, pile hoops and rub blocks, steel cover plates, connection hardware, hinges, rub boards, and foam filled high density polyethylene flotation tubs.

B. Floating structure design and details are provided in the Contract Drawings. Contractor shall provide independent verification of specific floating structure design requirements stated in this Section prior to fabrication. Notify the Owner's Representative of any non-compliant designs and propose compliant alternatives. Contractor shall procure and fabricate the floating structures in accordance with the Contract Drawings.

1.2 APPLICABLE PUBLICATIONS

A. United States Department of Justice

1. 2010 ADA Standards for Accessible Design Guidelines (ADAAG)

B. American Society of Civil Engineers (ASCE)

1. ASCE 7 (Latest Edition)

C. International Code Council (ICC)

1. International Building Code (Latest Edition)

1.3 CONTRACTOR RESPONSIBILITIES

A. Design. Contractor shall be responsible for performing final design checks of all floating structures on this project.

1. The Contractor designed flotation shall demonstrate that the floating structures meet the freeboard criteria and provide a stable, level walking surface. The Contractor's flotation design may include counterweights to offset the weight of the pile hoops.
2. Verify pile locations are compatible with the floating structure designs and will be the pile installation and performance requirements outlined in this Section.

B. Calculation Package. Contractor shall be responsible for providing independent flotation and connection and pile hoop clearance calculations for all individual floating sections. The independent float and connection calculations shall be signed and sealed by a professional engineer registered in Washington State. The flotation shall be designed to meet the design

requirements described in this Section including as-built gangway loads. The Contractor shall coordinate and confirm all details of the individual floating sections with project specific conditions. If any floating sections are out of tolerance or need to be modified, the Contractor shall be responsible for design and implementation of modifications to the floats including replacing flotation tubs with larger or smaller tubs or install ballast weight to meet the project tolerances and at no additional cost to the Owner.

C. Fabrication. Steel items shall be fabricated in accordance with AISC Steel Construction Manual and AWS D1.1, Structural Welding Code Steel. Fabricate steel members in accordance with the approved Shop Drawings.

D. Delivery and Handling. The Contractor shall be responsible for all delivery and handling of the floating structures and all installation hardware and accessories to the project site. The Contractor shall coordinate with Owner on time of delivery.

E. Installation. The Contractor shall ensure that the floating structure installations can be properly carried out and that each individual floating section can operate in accordance with the intent shown in the Contract Drawings.

1.4 QUALIFICATIONS

A. Contractor Qualifications. Contractor shall have experience in the construction of recreational floating structures with a minimum of 10 applicable projects in the past five years. Contractor qualifications shall be submitted as part of the bid for this Project. Provide a list of applicable projects containing the following information:

1. Project location
2. Client
3. Brief description of what was fabricated, including materials, fabrication methods, general dimensions and quantities of the floating structures.
4. Year of fabrication

B. Engineer Qualifications. The Engineer for the flotation and pile hoop clearance design checks shall be a registered professional engineer in the State of Washington who is experienced in the design of floating structures. The Engineer shall have at least five years documented work experience in the design of floating structures with at least 10 projects of similar scope.

C. Fabricator Qualifications. Fabricator shall have experience in the fabrication and delivery of recreational floating structures with a minimum of 10 applicable projects in the past five years. Fabricator qualifications shall be submitted as part of the bid for this Project. Provide a list of applicable projects containing the following information:

1. Project location
2. Client
3. Brief description of what was fabricated, including materials, fabrication methods, general dimensions and quantities of the floating structures.
4. Year of fabrication

D. Welder Qualifications. Welders shall be currently certified in accordance with AWS D1.1 for steel welding, submit qualification test reports, and bearing witness certification of independent laboratory and inspection service approved by the Engineer.

1. If any welder has not been engaged in the welding process for three or more months, they must requalify before performing any structural welding work.

E. Inspector Qualifications. Inspection of the steel welding procedure and completed welds shall be conducted by an AWS Certified Weld Inspector (CWI) that shall have a minimum of 5 years of documented weld inspection experience.

F. Qualification of Workers. Provide sufficient supervisors and skilled workers who shall be thoroughly familiar with the type of fabrication involved and the techniques required for the proper execution of the work.

1.5 QUALITY ASSURANCE

A. General. The Contractor must have an ongoing quality assurance program approved by a qualified, independent source. The fabricator shall provide proof of this qualification and shall not begin fabrication until receiving Owner approval of this document.

B. Tests and Inspections. An Independent Inspector shall perform tests and inspections of work under this Specification. Costs associated with tests shall be included in Contractor's project costs. Contractor shall cooperate in all respects to allow and assist in testing.

C. Welding. Fabricate and install steel in accordance with AISC Steel Construction Manual and additional requirements herein.

D. Materials. Miscellaneous metals and appurtenant materials shall be tested and certified by the manufacturer to meet the specified chemical, mechanical, and section property requirements prior to delivery to the site. Testing of miscellaneous metals for mechanical properties shall be performed after the completion of all rolling and forming operations. Testing of miscellaneous metals shall meet the requirement of ASTM A6.

1.6 SUBMITTAL REQUIREMENTS

A. Calculation Package. Provide independent flotation and pile hoop clearance calculations to demonstrate that the proposed design will meet all serviceability and freeboard requirements stated in the Contract Documents and relevant codes, references, and other publications. Calculation Package shall be affixed with the appropriate stamps and signatures of a registered professional engineer in the State of Washington and who is experienced in the design of floating structures. Calculation shall include pile hoop dimension calculations to ensure pile hoop will not bind from high water to low water based on as-built pile locations.

B. Contractor shall be responsible for assembling the information required to conduct the coordination and checks for the adequate fabrication/manufacture of the floats and the submittal of all necessary data to the Owner and Engineer for review as required by this and other related

Sections. Fabrication of floats shall not occur until all preconstruction submittals are approved by the Owner and Engineer.

C. Contractor shall examine the site prior to preparing Shop Drawings to verify affected utility locations (if any) and dimensions and all physical conditions and surroundings. The Contractor shall notify the Owner in writing of any unsuitable conditions. Commencement of work without such notification shall be construed as acceptance of all conditions. The Contractor shall submit documentation confirming that they have verified site conditions.

D. The Contractor shall bolt up the fabrication to a completed float and give the Owner and Engineer up to 2 weeks to review and comment on the completed fabrication prior to shipment to the site. Owner and Engineer's review of the Contractor fabrication will be for general conformance only and it shall remain the responsibility of the Contractor to conform to all requirements of the Contract.

1.7 SUBMITTALS

A. Fabrication Work Plan. Include the following items:

1. Proposed Schedule.
2. QA/QC Plan and Procedures. The Contractor shall have a quality control plan in place that dictates the means and methods that the Contractor's quality assurance staff is to use to ensure product consistency and quality. This should include the Independent Inspector inspections.
3. Welder Qualification and Weld Procedures: Contractor to submit welding procedure specifications (WPS) and weld procedure qualification records (PQR) for each type of welding required in the manufacture of the floating structures to the Owner and Engineer for approval. PQRs shall be approved prior to commencement of fabrication.
4. Fabrication bolt up plan prior to shipment.
5. Installation Plan. Submit floating structures erection drawings and assembly manual descriptions including parts list.

B. Material Certificates. Submit manufacturers' mill certificates and certificates of compliance for the following materials. Submittal shall include a document that links components to their corresponding mill certificates and/or certificates of compliance.

1. Steel
2. Fasteners

C. Product Data Sheets. Submit manufacturer's catalog sheets showing compliance with these Specifications for all standard manufacturers' items.

1. Grating
2. FRP Plastic Lumber
3. Dock Hardware Items
4. Cleats
5. Ladders
6. Life rings and cabinets
7. Rubstrips and rub blocks

D. Shop Drawings. Submit minimum sheet size 11-inch x 17-inch showing the Contractor's recommended details and materials for the work and the following:

1. Details of float construction and erection.
2. Details of walers, rubstrips, rub blocks, hardware and miscellaneous metal fabrications.
3. Hinge connections.
4. Float dimensions.
5. Flotation tub dimensions, locations and connections
6. Flotation fabrication data.

E. Weld Inspection Reports. Visual inspection report for all weld inspections conducted by independent testing lab for all welded components in their final state, as well as in-process verification of compliance with the relevant submittals, codes, and Specifications.

F. Project Record Drawings. Submit a complete and accurate record of all floats manufactured for this project. The record shall include float identification, date completed, and all quality assurance tests and inspection items performed on the float.

G. Operation and Maintenance Manual. Contractor shall submit an Operation and Maintenance (O&M) Manual to the Owner which describes the floating structure capacities, operational parameters, and maintenance requirements.

PART 2 - PRODUCTS

2.1 STRUCTURAL MATERIALS

A. Steel Framing. Steel shapes, bars, and plates shall be ASTM A36. Structural pipes shall be ASTM A53 Gr. B.

B. Welding filler wire: Filler wire for steel welding shall be E70XX.

C. Fasteners: All fasteners shall be suitable for marine environments. All bolts and shall be hot-dip galvanized ASTM A325 in accordance with ASTM A123 or A153 as applicable or type 316 stainless steel, as called out in the Contract Drawings. All dissimilar metals (including base materials and fasteners) shall be isolated with appropriate galvanic protection measures. These measures shall be indicated in the Shop Drawings.

1. Isolating material: Isolating material shall be used between contacting different steel components (if applicable). Isolating material shall be pressure sensitive, adhesive, neoprene tape, minimum 1/16 inch thick, or approved equal. Isolating material shall cover the entire contact surface and shall be applied in conformance with the manufacturer's recommendations. Isolating material shall be shown on the Shop Drawings.
2. Threadlocker: All threaded connections shall be secured with Loctite® 243 in accordance with the manufacturer's recommendations. Surfaces shall be clean and dry prior to the application of Loctite® products.
3. Lock Washers: All bolted connections with shall use spring lock washers with an additional plate washer.

D. Grating. Provide Fibergrate Ecograte 62 with aqua grit traction surface in dark gray or approved equal. Grating shall be held down to the framing using close fit 'G' type clips. 'G' type clips and fasteners shall be stainless steel, type 316.

2.2 FLOTATION

A. Polyethylene Flotation Tubs: Float shells/tubs shall be "Eagle" manufactured by Hendren Plastics or approved equal.

1. Shell: Foam flotation shells shall be roto-molded from polyethylene conforming to ASTM D 4976 and ASTM D 1998-04 containing UV ray inhibitors to protect against ultraviolet deterioration and have a nominal wall thickness of 0.150 inch and minimum wall thickness of 0.125 inch.
2. Color: Float tubs shall be black in color, unless otherwise specified. Each float tub shall be completely filled with polystyrene foam.
3. Fastening: Float tubs shall be attached by bolting to structural members to minimize flexing and deformation of the foam. The use of shims or spacers between the float framing and the float tubs to achieve required flotation will not be permitted. Flotation drums shall be fully attached, at all bolting locations, to the underside of the float frames with minimum 1/2 inch diameter fasteners with oversized washers and locked nuts. Self-tapping screws shall not be used to fasten the flotation tubs to the float frame.

B. Material quality: All float modules including polyethylene pontoons shall be supplied free of defects with no signs of damage. Float modules delivered to job site shall be stored out of the way of traffic and shored up off the ground surface. The floats shall be stored on site as required to prevent damage such as overstressing, warping or twisting. Any damaged materials shall be rejected and removed from the job site and replaced at the Contractor's expense.

C. Polystyrene foam/EPS core: Float core blocks shall be a rigid block of closed-cell virgin expanded polystyrene in accordance with ASTM D-1621 or Federal Specification C-578-85. Foam shall be Type 1 foam core. All foam billets shall be fully encapsulated with a minimum of 60 mils of spray polyurethane. EPS material shall meet the following minimum requirements:

1. Density – between 0.95 and 1.20 pounds per cubic foot.
2. Contain not greater than 5% regrind material.
3. Compressive strength – 10 psi at 10% deformation.
4. Flexural strength – 25 psi.
5. 3% maximum water absorption by volume as tested by ASTM C-272.
6. Billets shall have a dimensional tolerance of plus or minus 1/8 inch.

2.3 ACCESSORIES

A. Rubstrips: Rubstrips shall be installed on all exposed edges and ends of floats as shown and shall be fabricated of fiberglass reinforced plastic lumber. All plastic lumber used for framing, rubstrips, and associated items shall be Tangent Materials Fiberforce or approved equal. Plastic lumber shall be gray in color unless otherwise approved by the Owner. All plastic lumber shall be UV stabilized. Rubstrips shall be milled to meet project specific dimensions and be aligned

with minimum number of holes necessary to secure the rubstrips to the floats. Top and bottom edges of rubstrips shall be chamfered or rounded.

B. Pile Hoop Rub Blocks: UV stabilized (partially or fully cross linked) UHMW PE with chamfered or rounded edges. Rub block support shall be fastened integral with pile hoop.

C. Cleats: Cleats shall be galvanized heavy duty 12-inch cast steel with tops recessed for 5/8-inch hex head bolts or approved equal. Cleats shall be through-bolted through the float framing and mounted on 1.5-inch thick UHMW bearing blocks recessed into the decking and chamfered 0.5 in on top to transition flush to the adjacent grating.

D. Ladders: Scandia Up-N-Out Dock Safety Stainless Steel Ladder (Model SW1448) and Landfall Plastimo Quick Launch Safety Ladder (Model 29009). Ladders to be installed in the locations shown in the Contract Drawings. All connecting hardware shall be marine grade stainless steel 316. The quick launch safety ladder shall be connected to the float with 3/8 inch stainless steel 316 cable to the float framing. The ladders shall be positioned to not interfere with vessel moorage.

2.4 WARRANTY

A. Except for the polyethylene flotation tubs, each component of the floating structures shall carry an unconditional warranty for two (2) years from the date of final acceptance. The polyethylene flotation tubs used shall carry an unconditional warranty for ten (10) years from the date of final inspection.

B. Contractor shall provide written warranty, guarantee, instruction sheets and parts lists which are furnished with certain articles or materials incorporated into the work to be delivered to the Owner in a three-ring binder format before final completion.

C. Contractor shall provide written warranty, guarantee after 1-year from final inspection, freeboard under all dead loads shall not be more than ½ inch lower or 1 inch higher than that recorded by the Owner at the time of final inspection.

PART 3 - EXECUTION

3.1 FLOATING STRUCTURE DESIGN

A. General. The following criteria shall be considered as minimum requirements which shall apply to the floats unless otherwise noted. Mere conformance to the design parameters provided in this Section does not guarantee approval of the final design. The Contractor shall subject the proposed floating structures to thorough engineering analysis using all relevant criteria in applicable state and local codes as well as the requirements of this Section and the Contract Drawings.

1. Framing and Connections. The Contractor shall be responsible for confirming float framing dimensions and all connections.

a. Sufficient frame depth shall be provided to support the dead load including framing and connecting hardware, and all other permanently attached utilities (if any), equipment or structures, at the specified freeboard and within required tolerances to achieve optimum float stability.
b. All connections shall be evaluated by the Contractor to ensure the floats will not bind under typical use and accounting for construction tolerances.

2. Flotation. The Contractor shall be responsible for confirming float flotation tubs sizes and number and make necessary adjustments to the flotation design as needed.

a. There should be sufficient flotation to meet the specified freeboard and to prevent the float from having a slope that exceed 1% in either direction from all dead loads including the gangway dead load. The freeboard shall be within 1" all around the perimeter of the installed float including the landing float.
b. The Contractor shall make allowance in buoyancy calculations for float manufacturing tolerances. The Contractor shall be responsible for coordination of the final location of the installed gangway and the landing float and adjusting all flotation to ensure the floats freeboard matches the adjacent connected floats.

B. General Design. The Contract Documents provide detail design drawings that provide geometric, structural, and service features of the floats based on the operational requirements expected at the sites where the floating structures are to be installed.

C. Holes. Float frames shall not contain any cavities that could cause water to accumulate.

1. Weep Holes. The Contractor shall design the float framing to be free draining. Drainage shall be provided with minimum 3/8-inch diameter weep holes. Weep hole shall be provided at each end of the underside of all members to provide drainage at all anticipated service orientations.
2. Unused Holes. All unfilled holes on the top side of members shall be tapped and filled with a threadlocked sealing machine screw.

D. Cover Plates. Cover plates shall have the walking surfaces applied with an arc sprayed nonskid coating such as SafTrax TH335 (Grade #4G Coarse Texture) by Thermion or approved equal prior to galvanizing.

E. Pile Hoops. Pile hoop assemblies shall be installed so that the required rub block spacing and alignment with respect to hoop piles are obtained. The required clearance tolerances between lateral rub blocks and piles shall allow unrestricted motion as listed below within the design water elevation range (maximum water level to minimum water level). The longitudinal rub blocks shall be spaced such to allow free movement of the float with no binding over the full range of anticipated water levels.

1. Connections: Grating at external pile hoops shall be shipped loose to facilitate field installation.

F. Connections. All exposed connectors (bolted, screwed, etc.) shall be countersunk on all sides and ends to prevent vessels from being scratched.

G. Dissimilar Metals. Isolators (HDPE, UHMW, or other durable plastic material) shall be provided at all locations where dissimilar metals or materials (concrete or other absorptive materials) will or might come into contact.

H. Accessibility. Walking surface gaps between float modules, differences in height with respect to adjacent float modules, float cover plate, and connection hardware shall be in accordance with ADA requirements.

I. Regulatory. Net open area of floats shall not be modified or reduced from what is shown.

3.2 FABRICATION

A. Where structural joints are welded, the detail of the joints, welding technique, weld quality and appearance, and methods for correcting defective welds shall conform to the AWS D1.1. The floats shall be fabricated only by AWS certified welders. All fabrication shall proceed in a skillful and workmanship like manner.

B. Fabrication Facility: The fabrication facility shall be adequate to perform the work. The facility shall provide adequate workspace, equipment, trained personnel, qualified oversight, and protection from the elements as required.

C. Schedule: The Contractor shall keep the Owner aware of the status of fabrication by providing a fabrication schedule consisting of the starting and completion dates of the various states of work.

D. The Contractor shall maintain in a safe place within the fabrication facility a single copy of all up-to-date Contract Drawings, Specifications, technical memorandums, RFIs, approved submittals, change orders, and Shop Drawings. These records shall be made immediately available to the Owner upon request.

E. Project Record Drawings: A red-lined set of as-built drawings shall be submitted to the Owner. These documents shall accurately record variations in the work from the original Project requirements.

F. Continuity of Work: The fabricator shall carry on the work and adhere to their submitted schedule during all disputes or disagreements with the Owner. No work shall be delayed or postponed pending the resolution of any disputes or disagreements unless otherwise approved by the Owner in writing.

G. Repair of Nonconforming Work: At the Owner’s discretion, the fabricator shall replace or repair any work found by the Contractor, Contractor’s inspector, or Owner to not be in conformance with the relevant codes, Specifications, and Contract Drawings at the Contractor’s expense. All such direction shall be provided in writing.

H. Materials Delivery and Storage: Materials delivered to the site shall be new and undamaged and shall be accompanied by certified test reports. Steel fabrications shall be stored and handled in the manner recommended by the manufacturer to prevent permanent deflection, distortion or damage. Storage of metal materials and/or fabrications should also facilitate required inspection activities.

I. Finished Surfaces: Floats shall be assembled so that a smooth and aligned mooring face is provided.

J. Markings: All floats shall be clearly identified on one side and one end between the bottom of the waler and the waterline with the date of manufacture, specific float type, and job number.

K. Steel Welding. Perform in accordance with Section 055000 – Miscellaneous Metals.

3.3 INSPECTION

A. All welding activities shall be monitored by the Contractor's in-house quality control in accordance with AWS D.1 requirements, as applicable, including but not exclusively fabrication tolerances, material preparation, joint fit-up, consumable control, preheat temperatures, interpass temperatures, and overall conformance with the Shop Drawings.

B. All finished work shall be inspected prior to shipment by an independent, third-party AWS Certified Welding Inspector hired by the Contractor. In addition, each welder needs to be observed by the third-party inspector during preparation and welding at least twice during the duration of the work – preferably at the start and middle of the production work.

C. Welding shall be inspected in accordance with Section 055000 – Miscellaneous Metals.

3.4 DELIVERY

A. The Contractor shall notify the Owner at least 3 days in advance of the delivery, the time and date of the delivery and expected completion of installation.

B. Contractor responsible for storage all transport, storage, and protection of the floats prior to installation.

C. The Contractor shall be responsible for any damage to the floats from shipment, any damage resulting from boarding, storing/staging, and installation shall be repaired (or float unit replaced) at the Contractor's expense.

3.5 INSTALLATION

A. The Contractor shall be responsible for all floating structure installations to meet the float manufacturers installation requirements. The Contractor shall verify the following during installation:

1. All bolts and other connections shall be tightened as required after complete installation of each float in the water and before final inspection.
2. Floats shall be leveled by the Contractor in the field to meet cross slope and freeboard requirements.
3. Rubstrips shall have countersunk bolted connections. Mounting shall accommodate thermal expansion.

4. The floating structures, including all hardware and accessories, shall be fabricated and securely fastened to resist all conditions encountered. All work shall conform to the approved Shop Drawings and Contract Documents.
5. Construction details, finishing details and colors shall be consistent throughout. Work shall be accurately set to established lines and elevations, and securely fastened in place. Cutting, drilling and punching shall produce clean true lines and surfaces. Exposed surfaces of work shall have a smooth finish.

B. The Contractor is responsible to install the piles so that there is no binding in the pile hoops through all the water elevations. The Contractor is responsible to adjust the pile hoops necessary to ensure no binding occurs through all the water elevations.

3.6 SPARE PARTS

A. Spare Parts: The Contractor is to furnish the following spare parts to the Owner with the delivery of the floats. The spare parts shall be shipped loose and clearly labeled.

1. Grating panels: Provide an additional eight (8) 4’x12’ grating panels, of the same product used to fabricate the floating structures.
2. Rubstrips: Provide an additional sixteen (16) six-foot sections of rubstrip, chamfered or rounded on the corners as specified in this Section.
3. Flotation tubs: Provide two additional flotation tubs of each of the sizes used in construction of the floating structures.
4. Hinges: Provide two (2) additional cover plate assemblies, made fully ready for install.

END OF SECTION

Attachment 1

State Environmental Policy Act (SEPA)

Determination of Non-Significance (DNS)

Don Hoch
Acting Director

STATE OF WASHINGTON
WASHINGTON STATE PARKS AND RECREATION COMMISSION
1111 Israel Road S.W. • P.O. Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500
TDD Telecommunications Device for the Deaf: 800-833-6388
www.parks.state.wa.us

STATE ENVIRONMENTAL POLICY ACT DETERMINATION OF NON-SIGNIFICANCE

Date of Issuance: December 15, 2021

Project Name: Stuart Island, Reid Harbor Moorage Facility Replacement

Proponent: Washington State Parks and Recreation Commission

Lead Agency: Washington State Parks and Recreation Commission

Agency Contact: Kira Swanson, Environmental Planner
kira.swanson@parks.wa.gov

Description of Proposal: Washington State Parks and Recreation Commission (State Parks) proposes to replace the moorage facility in Reid Harbor at Stuart Island Marine State Park. Reid Harbor provides moorage for recreational boaters and access to the Park. The proposed project consists of conducting work below and above the Ordinary High Water (OHW) line and the High Tide Line (HTL) for the purpose of replacing the existing timber moorage facility that has reached the end of its useful life. The replacement structures will be realigned to make the facilities more accessible for visitors while minimizing environmental impacts. The proposed project includes the following actions:

1. Remove and replace existing solid timber pier, gangway and floats with new materials,
2. Remove one existing offshore island floating dock, incorporating 'lost' moorage in the replacement facility (1. above),
3. Replace existing timber framed and creosote dolphin supported offshore island floating dock with steel piles and steel framed floats with grated decking, and
4. Remove and replace creosote dolphins supporting the boat sewage pump-out with steel piles.

The total square footage of moorage facility that will be demolished is 4,626 square feet and the replacement facility is 5,568 square feet. The increased square footage is to make the facility and shore access more accessible. However, new grated decking will be incorporated in the new facility throughout resulting in a net reduction in overwater coverage by 243 square feet and increased light penetration to the aquatic habitat beneath.

Location of Proposal: Reid Harbor, Stuart Island at Stuart Island State Park. The project is located within Section 28, Township 37 North, Range 04 East, Willamette Meridian, San Juan County parcel number 472813001000.

Threshold Determination: The lead agency (Washington State Parks and Recreation Commission) has determined that this proposal will not have a probable significant adverse impact on the environment, nor does it need mitigation to avoid significant adverse environmental impacts. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available at: http://bit.ly/ParksSEPA

This determination is based on the following findings and conclusions:

1. The total square footage of moorage facility that will be demolished is 4,626 square feet and the replacement facility is 5,568 square feet. However, the existing facility is primarily surfaced with solid timber decking. Grated decking will be incorporated in the new facility throughout resulting in a net reduction in overwater coverage by 243 square feet and increased light penetration to the aquatic habitat beneath. Furthermore, overwater coverage will be removed from the lower shore zone and replaced in the deep zone, availing unshaded lower shore zone habitat.
2. Creosote will be removed from the aquatic environment.
3. Fiber-reinforced polymer grating with 60% open area will be used for the decking that will comply with ADA requirements. The project will result in a safer and more ADA-accessible facility for recreational users.
4. Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
5. Construction operations will be conducted to adhere to San Juan County's Stormwater Management for Development Guidelines.
6. Turbidity and other water quality parameters will be monitored to ensure construction activities are in conformance with Washington State Surface Water Quality Standards, or other conditions as specified in the WDOE Section 401 Water Quality Certification (WQC). There will be no work within wetlands or streams.
7. Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during structural excavation, re-handling, dewatering, and material processing, including use of debris booms, turbidity curtains, filter berms, silt fences/curtains down gradient from any earth/dirt work as applicable.
8. All in-water and over-water work will be conducted using equipment staged from a floating work barge platform or existing facilities. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
9. Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.
10. The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
11. Work barge(s) will not ground out during any construction activities.
12. No eelgrass was observed in the project area or within the 25 feet of the project area (both the floating docks or the float and pier) (Jen Jay 2018, Grette Associates 2020, Grette Associates 2021). Occasional, sparse macroalgae (*Laminaria saccharina*, both attached and drift) was observed within both survey areas, though no discrete patches were found
13. In-water work will take place during the in-water work window (July 16 – September 23).
14. If impact pile driving is required, a bubble curtain or other approved attenuation device will be used for noise attenuation.
15. Any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work

until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

16. Monitoring will be conducted during pile driving (both vibratory and impact) or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.
17. Pile driving would occur during daylight hours only to allow for required visual cetacean monitoring.

☒ This DNS is issued under 197-11-340 (2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted to the Responsible Official below by **January 5, 2022** or they may not be considered.

Responsible Official: Kira Swanson
Position/Title: Environmental Planner
Phone: (360) 522-2287
Address: 220 N. Walnut St
Burlington, WA 98233-1138
Email: kira.swanson@PARKS.WA.GOV

Date: December 15, 2021 **Signature:** _____

"All Washington State Parks are developed and maintained for the enjoyment of all persons regardless of age, sex, creed, ethnic origin, or physical limitations."

There is no agency SEPA appeal; however all comments are welcome and will be thoroughly considered.

SEPA ENVIRONMENTAL CHECKLIST

A. Background [HELP]

1. Name of proposed project, if applicable:

Stuart Island Moorage Improvements Project – Reid Harbor Moorage Facility Replacement

2. Name of applicant:

Washington State Parks and Recreation Commission (State Parks)

3. Address and phone number of applicant and contact person:

Applicant and: Joelene Boyd
Contact Washington State Parks and Recreation Commission
Northwest Region
220 N. Walnut St.
Burlington, WA 98233-1138
joelene.boyd@parks.wa.gov
(360) 855-5533

4. Date checklist prepared:

September 9, 2021

5. Agency requesting checklist:

Washington State Parks and Recreation Commission

6. Proposed timing or schedule (including phasing, if applicable):

September 2022 through March 2025

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No future additions, expansion, or further activity connected to this project are being contemplated at this time. State Parks has plans for replacement of moorage facilities at Prevost Harbor, also within Stuart Island State Park. However, the Prevost Harbor project is separate from the Reid Harbor project and will proceed along a different timeframe. There is a maintenance project that is underway to replace one of the island floats with improved grated decking in the interim (the other has been replaced in June 2021). The project is not related to and is independent from this proposed effort.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Joint Aquatic Resources Permit Application form
Biological Evaluation – Stuart Island State Park Renovation Project: Reid Harbor; Grette Associates, August 2021
Eelgrass and Macroalgae Habitat Survey Verification; Grette Associates, August 2021
High Tide Line Determination Memo; Grette Associates, April 2021
Geotechnical Engineering Services Report, GeoEngineers, November 2020

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

We are not aware of any pending applications directly affecting the property covered by this proposal.

10. List any government approvals or permits that will be needed for your proposal, if known.

Federal:
- Department of the Army Section 10 Authorization – U.S. Army Corps of Engineers
- Department of the Army Section 404 Authorization – U.S. Army Corps of Engineers
- Coastal Zone Management Act Consistency Determination

State of Washington:
- Hydraulic Project Approval – Washington Department of Fish and Wildlife
- Section 401 Water Quality Certification – Washington State Department of Ecology
- Aquatic Lands Lease – Washington State Department of Natural Resources
- SEPA Review and Determination

San Juan County:
- Shoreline Substantial Development Permit
- Building Permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

The proposed work at Reid Harbor consists of work below and above OHW/HTL (elevation for both OHW and HTL = +9.25 feet MLLW; Appendix B), and MHHW (+7.86 feet MLLW) for the purpose of replacing the existing timber moorage facility that has long since reached the end of its useful life at Reid Harbor in the Stuart Island Marine State Park (Project Site) in Washington State. The replacement structures will be realigned in order to make the facilities more accessible for visitors while minimizing environmental impacts.

There are four components to the project: 1) replacement of the existing moorage facility (pile, floats, pier, components), 2) removal of one offshore island floating dock, 3) replacement of one offshore island floating dock, and 4) replacement of creosote dolphins with stainless steel pile at the pumpout. The project includes the following work elements:

<u>Demolition</u>:

- Eighteen (18) creosote-treated timber pile at the moorage facility
- Twelve (12) creosote-treated timber pile at the offshore island floating docks
- Six (6) creosote-treated timber pile at the pumpout
- Four (4) timber floats at the moorage facility
- Two (2) timber offshore island floating docks (one [1] to be replaced, one [1] to be removed altogether)
- One (1) timber fixed pier walkway at the moorage facility
- One (1) aluminum gangway at the moorage facility
- One (1) timber staircase at the moorage facility

Installation:

- Fifteen (15) 16” diameter galvanized steel pipe pile and associated substructures for the moorage facility,
- Three (3) 16” diameter galvanized steel pipe pile for the new island float,
- Two (2) 16” diameter galvanized steel pipe pile for the existing pumpout
- Five (5) 12’ x 32’ galvanized steel framed moorage floats
- Three (3) 6’ x 24’ steel framed dinghy floats
- Two (2) 12’ x 32’ and two (2) 12’ x 24’-1 1/2" galvanized steel framed floating docks to make one (1) offshore island of floating docks
- Two (2) 6’ x 88’ aluminum walkways
- Two (2) 12’ x 12’ aluminum platforms
- One (1) 6’ x 80’ aluminum gangway
- One (1) 8’ x 8’ concrete abutment

Demolition and Structure Excavation

Demolition of the existing structures will occur above and below OHW and the HTL and primarily be conducted by crane barge. The timber pier will likely be cut into segments and lifted by crane and placed on the deck of the barge. Some upland demolition may be conducted by hand tools or a small backhoe. Best management practices (BMPs) to protect water quality may include but are not limited to: sediment/erosion control measures such as use of debris booms, turbidity curtains, filter berms, silt fences/curtains, straw wattles, and working in the dry whenever possible; high visibility construction fencing to delineate construction limits; adherence to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC); and adherence to San Juan County’s Stormwater Management for Development Guidelines (JARPA Attachment B) during all operations. All items listed above will be placed on a material barge, transported offsite, and disposed of at an approved upland facility minus the gangways, which are to be stored by the Owner for potential use at other facilities in the future.

Pile Extraction

Existing creosote-treated timber pile at the Reid Harbor moorage facility will be extracted along with the associated pile for the offshore island floating docks following the DNR 2017 BMPs for pile removal and disposal. Pile will be removed by pulling with a crane or potentially a vibratory extractor. Due to water levels at the project site, a floating barge will be used to extract the pile to provide access for the pile removal equipment at the seaward edge of the float system. A debris boom will be installed around the wetted perimeter of the work area in order to contain any floating debris produced during the demolition and new construction work. A silt curtain will be utilized, if necessary, to meet water quality requirements based on the results of water quality monitoring work conducted throughout the duration of construction.

Full-length extraction of existing creosote timber pile will be attempted during demolition. If during extraction a pile breaks and can no longer be extracted by crane, the pile stub still embedded in the soil will be cut off approximately one to two feet below the mudline. Demolished creosote treated timber pile will be disposed of at an approved offsite facility. Washington Department of Natural Resources BMPs for Pile Removal and Disposal (2017) will be followed during pile extraction.

Floats

Existing timber floats at the moorage dock facility and offshore island floating docks shall be removed. The moorage floats at the dock facility will be demolished offsite and taken to an approved upland facility. The offshore island floating docks that are timber framed, have grated decking over 100% of the surface, and enclosed foam floatation will be taken to a State Parks facility for storage or used at another site.

Excavation

Minor structural excavation, and possibly grading work, would be performed prior to placing foundation materials for the new abutment. All structural excavation and grading work for the new abutment will take place above OHW and the HTL on a bluff comprised of conglomerate bedrock with a shallow layer of soil above. All structural excavation work will be conducted utilizing hand tools and possibly a small backhoe. The excavator will place the material into a temporary stockpile in the uplands prior to loading onto the barge for offsite disposal or possibly placed in approved upland location. Silt fencing and straw wattles will be used as appropriate for erosion and sediment control, as will high visibility construction fencing to delineate construction limits. While excavating, the contractor will be responsible to submit and follow an accepted Temporary Erosion and Sediment Control (TESC) plan based on best management practices (BMPs). BMPs and water quality protection measures that may be implemented for conformance with the permit requirements and conservation measures are outlined below:

- Operations will be conducted in such a manner so as to limit disturbance to the minimum required to complete the work.
- Turbidity and other water quality parameters will be monitored to ensure construction activities are in conformance with Washington State Surface Water Quality Standards, or other conditions as specified in the WDOE Section 401 Water Quality Certification (WQC). The contractor will observe turbidity during structural excavation operations in order to ensure compliance with WQC requirements.
- Construction operations will be conducted in such a way as to adhere to San Juan County's Stormwater Management for Development Guidelines (JARPA Attachment B).
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during structural excavation, re-handling, and material processing, including use of debris booms, turbidity curtains, filter berms, silt fences/curtains down gradient from any earth/dirt work as applicable.
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.
- Fuel/lubricant hoses will be checked daily to ensure no leaks exist.

Replacement Moorage Facility

Installation of the new moorage facility will commence following the demolition of the existing facility. The new facility is larger than the existing as the existing walkways are much steeper than what is recommended for ADA accessibility. The new walkway will significantly improve slopes and accessibility. The goal is to provide a facility with comparable moorage accommodations to one of the offshore floating docks and the existing moorage at the dock, as one of the offshore islands will be removed.

Abutment

The abutment that will support the aluminum walkway will be cast-in-place reinforced concrete, with all work occurring above OHW and the HTL. The abutment will likely be anchored with rock anchors due to shallow and exposed bedrock at the site. BMPs for excavation and casting concrete will be implemented to protect water quality and the aquatic environment. Uncured concrete will be isolated from the aquatic environment by conducting the work above OHW/HTL, and a debris boom will be installed around the wetted perimeter of the work area in order to contain any floating debris produced during the demolition and new construction work.

Pile Replacements

Twenty (20) new 16" diameter galvanized steel pipe pile will be installed at Reid Harbor to provide lateral and axial support for the walkways, platforms, moorage floats, and the existing pumpout. Pile installation will be

performed by vibratory hammer or rock sockets depending on soil conditions. In cases where pile encounter premature refusal when using a vibratory hammer, an impact hammer or rock drill will be used to reach the design elevations. All float pile will have fiberglass bird caps installed.

Driving of the pile will require the use of a vibratory hammer. The estimated time to install each pile with a vibratory hammer will be typically 15-30 minutes based on the medium-dense sand observed by the geotechnical engineer. Depending on soil conditions, up to 45 minutes of driving may be required through very dense material. The pile for the floats will only need to be proof loaded with an impact hammer with the use of a bubble curtain if soil conditions prevent the pile from being driven to the minimum required embedment depth for lateral capacity. Proof loading will be required for pile supporting the walkways. It is assumed that the impact hammer may have to proof load at 250 blows/pile for the last 5 ft of embedment. If some of the pile encounters premature refusal during vibratory hammer driving due to either soil conditions or pile driving obstructions, the use of an impact hammer or drill will be required to reach the design pile tip elevations.

In cases where the impact hammer is necessary to install the pile, a bubble curtain would be used as a means of sound attenuation and implemented during impact hammer driving. It is assumed that impact hammer use may be required for the last 10-20 feet of embedment, consisting up to 800 blows per pile.

In the cases where bedrock is encountered, and the pile reaches refusal with the vibratory and impact hammer, a rock drill will be required to create rock sockets for the pile that will go roughly 15 feet into the bedrock. Active drilling may be up to two hours per pile. All spoils from the drill will be recovered and disposed of offsite. A silt curtain will be used during rock drill operations if water quality becomes affected.

Walkways and Gangway Replacements

Two (2) aluminum walkways and one (1) aluminum gangway with aluminum guardrails will be installed on the top of the galvanized steel substructures. The walkways and gangways will improve ADA accessibility. The entire deck surface of all gangways and walkways will be covered with an ADA-compliant fiber-reinforced polymer grating with a minimum 60% open area. Approximately 50% of the entire deck will be functional grating.

Float Replacements

A total of five (5) galvanized steel moorage floats, three (3) dinghy floats, and four (4) offshore island moorage floats will be installed. Thick-walled EPS foam-filled HDPE flotation tubs will be installed on the floats. The entire deck surface of all floats will be covered with an ADA-compliant, minimum 60% open area fiber-reinforced polymer grating with approximately 50% of the entire deck be functional grating. Grating will be oriented parallel to the float width to maximize light penetration. Highest mudline elevation around the floats is approximately -11 ft MLLW. The draft of the floats will be roughly 1 foot.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

The project location is only reachable by boat. Reid Harbor is on the southern/eastern side of Stuart Island.

Section 28, Township 37N, Range 04W

Latitude, Longitude: N 48.40’32”, W-123.11’56”

See Sheet 1 of Exhibit A for a vicinity map.

B. Environmental Elements [HELP]

1. Earth [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, (steep slopes) mountainous, other Aquatic

b. What is the steepest slope on the site (approximate percent slope)?

Approximately 68% slope

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Soils in the location of the proposed abutment are expected to consist of topsoil and bedrock. Based on the recent eelgrass and macroalgae surveys at the site (2018, 2020, and 2021), sediment located beneath the proposed moorage facility improvements consist primarily of silt and shell hash. The soil in the project area is identified as Cady-Rock Outcrop complex with 5 to 30 percent slopes by the Natural Resources Conservation Service (NRCS) Web Soil Survey (Accessed September 22, 2021).

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

Per the Coastal Atlas mapper, no "Unstable," "Unstable (old slide)," or "Unstable (recent slide)" slope stability classes are noted.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

Minor structural excavation, and possibly grading work, would be performed prior to placing foundation materials for the new 64 square foot (5 cubic yard) abutment. All structural excavation and grading work for the new abutment will take place above OHW and the HTL on a bluff comprised of conglomerate bedrock with a shallow layer of soil above. All structural excavation work will be conducted utilizing hand tools and possibly a small backhoe. The excavator will place the material into a temporary stockpile in the uplands prior to loading onto the barge for offsite disposal or possibly placed in approved upland location.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

No major erosion is likely to occur during this project. Temporary and minor erosion may occur during excavation work, but BMPs (as outlined in B.1.h below) will be implemented to minimize erosion.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

The only impervious surface being added to the site is the 8'x8' abutment (64 square feet). The site is 433 acres, so the percent of the site covered with impervious surfaces will be negligible.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

Silt fencing and straw wattles will be used as appropriate for erosion and sediment control, as will high visibility construction fencing to delineate construction limits. While excavating, the contractor will be responsible to submit and follow an accepted Temporary Erosion and Sediment Control (TESC) plan based on best management practices (BMPs). BMPs and water quality protection measures that may be implemented for conformance with the permit requirements and general erosion control are outlined below:

- Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
- Construction operations will be conducted to adhere to San Juan County's Stormwater Management for Development Guidelines (JARPA Attachment B).
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during structural excavation, re-handling, dewatering, and material processing, including use of debris booms, turbidity curtains, filter berms, silt fences/curtains down gradient from any earth/dirt work as applicable.

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Equipment required on-site for construction will include: barges, excavators (including a long-reach hydraulic excavator), cranes, crane-mounted vibratory and/or impact hammers, a concrete mixer, a tugboat and skiff, saws, and other similar equipment. Use of this construction equipment will result in exhaust emissions. Elevated emissions from construction equipment would occur for a short duration and be temporary.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No; the only off-site sources of emissions are from recreational boaters in the area. These off-site sources of emissions or odor would not affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

There are no emission-reduction measures proposed because this project will not result in an increase in emissions aside from a temporary increase from use of construction equipment.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The proposed project is in Reid Harbor, an approximately 1.7 mile-long embayment on the southeastern end of Stuart Island in the northwestern San Juan Islands.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

The proposed work at Reid Harbor consists of work below and above OHW/HTL (elevation for both OHW and HTL = +9.25 feet MLLW; Appendix B), and MHHW (+7.86 feet MLLW) for the purpose of replacing the existing timber moorage facility that has long since reached the end of its useful life at Reid Harbor in the Stuart Island Marine State Park (Project Site) in Washington State. The replacement structures will be realigned to make the facilities more accessible for visitors while minimizing environmental impacts. A summary of work elements and quantities is presented below:

Task	Qty.	Work Item	Above OHW/HTL		Below OHW/HTL		Total
			Volume (CY)	Area (SF)	Volume (CY)	Area (SF)	Area (SF)
Demolition	**18**	12”-16” Dia. Creosote Timber Pile (Moorage Facility)	-	-	-	16	**16**
	12	12”-16” Dia. Creosote Timber Dolphin Pile (Offshore Island Floating Docks)	-	-	-	11	**11**
	6	12”-16” Dia. Creosote Timber Dolphin Pile (Pumpout)	-	-	-	6	**6**
	3	12’ x 110’ (total length) Timber Floats (Moorage Facility)	-	-	-	1,320	**1,320**
	1	6’ x 40’ Dinghy Float (Moorage Facility)	-	-	-	240	**240**
	2	12’ x 113’ and 12’ x 64’ Timber Floats (Offshore Island Floating Docks)	-	-	-	2,124	**2,124**
	1	Timber Fixed Pier	-	235	-	590	**825**
	1	Aluminum Gangway	-	-	-	84	**84**
	Total Demolition		-	**235**	-	**4,391**	**4,626**
Replacement	**1**	8’ x 8’ Concrete Abutment	5	64	-	-	**64**
	15	16” Dia. Galv. Steel Pile (Moorage Facility)	-	-	-	21	**21**
	3	16” Dia. Galv. Steel Pile (Offshore Island Floating Docks)	-	-	-	5	**5**
	2	16” Dia. Galv. Steel Pile (Pumpout)	-	-	-	3	**3**
	5	12’ x 32’ Galv. Steel Moorage Float	-	-	-	1,920	**1,920**
	3	6’ x 24’ Galv. Steel Dinghy Floats	-	-	-	432	**432**
	2	12’ x 32’ Galv. Steel Offshore Island Floating Docks	-	-	-	768	**768**
	2	12’ x 24’-1 1/2" Galv. Steel Offshore Island Floating Docks	-	-	-	579	**579**
	2	6’ x 88’ Aluminum Walkways	-	258	-	798	**1,056**
	2	12’ x 12’ Aluminum Platforms	-	-	-	288	**288**
	1	6’ x 80’ Aluminum Gangway	-	-	-	432	**432**
	Total Replacement		**5**	**322**	**-**	**5,246**	**5,568**

The total square footage of moorage facility that will be demolished is 4,626 square feet and the replacement facility is 5,568 square feet. The increased square footage is to make the facility and shore access more accessible. However, new grated decking will be incorporated in the new facility throughout resulting in a net reduction in overwater coverage by 243 square feet and increased light penetration to the aquatic habitat beneath.

Please see attached plan and figures for a detailed project description.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill is proposed for this project.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No, the proposed project will not require any surface water withdrawals or diversions.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

Yes, the project is waterward of the HTL line in Reid Harbor. San Juan County's Polaris mapper (accessed September 10, 2021) indicates that the project site is within 2018 Flood Insurance Map Layers in zones A/AE and VE.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposal does not involve any discharge of waste materials to surface waters.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn and no water will be discharged to groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged.

c. Water runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

The upland area of the proposed project is largely undisturbed native forests. The area immediately adjacent to the project area has dirt hiking trails and a dirt and grass picnic area, but no impervious surfaces. The only new source of runoff is an 8'x8' abutment. This will not be a significant source of runoff and thus will not require stormwater collection.

2) Could waste materials enter ground or surface waters? If so, generally describe.

BMPs to protect water quality may include but are not limited to: sediment/erosion control measures such as use of debris booms, turbidity curtains, filter berms, silt fences/curtains, straw wattles, and working in the dry whenever possible; high visibility construction fencing to delineate construction limits; adherence to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC); and adherence to San Juan County's Stormwater Management for Development Guidelines (Attachment B) during all operations. All items listed above will be placed on a material barge, transported offsite, and disposed of at an approved upland facility minus the gangways, which are to be stored by State Parks for potential use at other facilities in the future.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The project does not alter drainage patterns at the site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

No impacts are anticipated to surface, ground, or runoff water or drainage patterns.

4. Plants [help]

a. Check the types of vegetation found on the site:

__X__deciduous tree: **alder**, maple, aspen, **other**
__X__evergreen tree: **fir**, **cedar**, pine, other
__X_shrubs
__X__grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__X__water plants: water lily, eelgrass, milfoil, **other/macroalgae**
____other types of vegetation

Upland: Upland vegetation and habitat conditions at Stuart Island Marine State Park are largely undisturbed native trees and shrubs, including western red cedar, Douglas fir, madrone, ocean spray, and bracken fern, with some hiking trails and primitive campsites for public use.

Marine: Eelgrass and macroalgae surveys were conducted by Jen-Jay, Inc. on September 10 and 13, 2018 at Reid Harbor, which were verified on August 18, 2020 and June 3, 2021 by Grette Associates, LLC. The results of the Grette surveys indicated the eelgrass boundaries and macroalgae presence in Reid Harbor are consistent with those delineated by Jen-Jay, Inc. in September 2018. No eelgrass was observed within the survey areas around both floating docks or the float and pier. Occasional, sparse macroalgae (*Laminaria saccharina*, both attached and drift) was observed within both survey areas, though no discrete patches were found. Substrate conditions observed were consistent with that noted by Jen-Jay, consisting of unconsolidated silt and shell hash.

b. What kind and amount of vegetation will be removed or altered?

Three 10-inch madronas and other existing fallen trees will be removed within the shoreline.

c. List threatened and endangered species known to be on or near the site.

There are no threatened or endangered plant species on or near the site. Review of Washington Department of Natural Resources Natural Heritage Program data (February 2021) accessed on December 10, 2021 indicate that there are no element occurrences within Reid Harbor or Stuart Island.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The project is primarily in the intertidal and subtidal zones, so upland landscaping is not planned.

e. List all noxious weeds and invasive species known to be on or near the site.

There are no noxious weeds or invasive plant species known to occur on or near the site.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, **heron**, **eagle**, songbirds, other:
mammals: deer, bear, elk, beaver, other: **seals**
fish: bass, **salmon**, trout, herring, shellfish, other: **surf smelt**

b. List any threatened and endangered species known to be on or near the site.

Federally listed endangered species that could occur on or near the site include:

Listed Species	Federal Status	Designated CH in Action Area	Species Effects Determinations	CH Effects Determinations
Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)	threatened	yes	NLAA[1]	NLAA[1]
Hood Canal Summer-run Chum Salmon (*Oncorhynchus keta*)	threatened	no	NLAA[1]	N/A
Puget Sound Steelhead Trout (*Oncorhynchus mykiss*)	threatened	no	NLAA[1]	N/A
Bull Trout (*Salvelinus confluentus*)	threatened	no	NLAA[1]	N/A
Bocaccio rockfish (*Sebastes paucispinis*)	endangered	yes	NLAA[1]	NLAA[1]
Yelloweye rockfish (*Sebastes ruberrimus*)	threatened	yes	NLAA[1]	NLAA[1]
Southern Resident Killer Whale (*Orcinus orca*)	endangered	yes	NLAA[1]	NLAA[1]
Humpback Whale (*Megaptera novaeangliae*)	endangered	no	NLAA[1]	N/A
Leatherback Sea Turtle (*Dermochelys coriacea*)	endangered	no	No effect	N/A
Marbled Murrelet (*Brachyramphus marmoratus*)	threatened	no	NLAA[1]	N/A

[1] May Affect, Not Likely to Adversely Affect

State-listed species that may be found in or near the project area include:

- Pinto abalone (*Haliotis kamtschatkana*),
- Hard shell clams,
- Dungeness crab (*Cancer magister*),
- Big brown bat (*Eptesicus fuscus*; breeding area), and
- Yuma myotis bat (*Myotis yumanensis*; breeding area).

No impacts to either the federally- or state-listed species are anticipated as a result of the project.

c. Is the site part of a migration route? If so, explain.

The site is part of the Pacific Flyway for bird migration and is part of the salmon migration corridor.

d. Proposed measures to preserve or enhance wildlife, if any:

This work will be conducted within the approved in-water work window. The USACE and Washington Department of Fish and Wildlife (WDFW) both designate work windows for Puget Sound. For this Project Area (San Juan Islands), the USACE work window for salmon is July 16 through March 1 and for bull trout is July 16 through February 15. There is no documented forage fish spawning at Reid Harbor. The WDFW designated work window is more restrictive: September 1 through March 1 for work in the San Juan Islands. Because it is more conservative, the WDFW work window of September 1 through February 15 will be applied to this project.

Also, any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

Monitoring will be conducted during pile driving (both vibratory and impact) or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

Finally, this project will preserve and enhance wildlife through habitat improvements. Creosote will be removed from the aquatic environment and overwater coverage will be removed from the lower shore zone and replaced in the deep zone, availing unshaded lower shore zone habitat.

e. List any invasive animal species known to be on or near the site.

There are no known invasive animal species on or near the site.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The completed project will not have any energy needs.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, the project will not affect potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

There are no energy conservation features included in the plans of this proposal, as the project does not have energy needs.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

There are no environmental health hazards or risks of fire, explosion, or spills that will result from this project. The only environmental health hazards would be from construction equipment onsite, but BMPs will be used to minimize the potential of these hazards and they would be temporary. BMPs to protect water quality may include but are not limited to:

- Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
- Work barge(s) will not ground out during any construction activities.
- Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.

- The contractor will be required to capture any debris associated with Project activities.
- All in-water and over-water work will be conducted using equipment staged from a floating work barge platform or existing facilities. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.
- The contractor will adhere to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC) and San Juan County's Stormwater Management for Development Guidelines during all operations.

1) Describe any known or possible contamination at the site from present or past uses.

There is no known contamination at the site.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

The existing pile are creosote-treated timber. These will be replaced with stainless steel pile. All demolished materials will be removed from the site and disposed of at an approved upland facility.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During construction, petroleum-based fuel (gasoline and/or diesel) will be stored and used by construction equipment. Additionally, there is an existing sewage pumpout float at the site that stores black and gray water. The only modifications occurring to the pumpout float will be replacement of creosote-treated timber pile with stainless steel pile.

4) Describe special emergency services that might be required.

No special emergency services will be required. Spill containment kits will be onsite as part of standard operating procedures, and the risk of injury to workers is no greater than during regular marine construction operations.

5) Proposed measures to reduce or control environmental health hazards, if any:

There are no anticipated environmental health hazards associated with doing this project. Best management practices (BMPs) will be followed to minimize the potential for construction-related contamination and environmental health hazards. BMPs to protect water quality may include but are not limited to: sediment/erosion control measures such as use of debris booms, turbidity curtains, filter berms, silt fences/curtains, straw wattles, and working in the dry whenever possible; high visibility construction fencing to delineate construction limits; adherence to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC); and adherence to San Juan County's Stormwater Management for Development Guidelines during all operations.

Existing creosote-treated timber pile will be extracted following DNR's 2017 BMPs for Pile Removal and Disposal. BMPs for excavation and casting concrete will be implemented to protect water quality and the aquatic environment. Uncured concrete will be isolated from the aquatic environment by conducting the work above OHW/HTL, and a debris boom will be installed around the wetted perimeter of the work area in order to contain any floating debris produced during the demolition and new construction work. Potential risks would be localized, minimal, and temporary.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

No sources of noise are expected to affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short-term noise associated with the project includes that of construction equipment (excavators, cranes, barges), and construction operations, including excavation and pile driving. Pile will be installed using a vibratory hammer whenever possible; however, impact pile driving may be required to reach full embedment depth. If impact driving is required, an estimated 8 pile per day may be driven with an estimated 800 strikes per pile (approximately 6,400 total strikes per day). This project would require installation of 20 pile, so pile driving would occur over fewer than three full days. Pile driving would occur during daylight hours only to allow for required visual cetacean monitoring.

Once construction is completed, no additional sources of noise are anticipated.

3) Proposed measures to reduce or control noise impacts, if any:

If impact pile driving is required, a bubble curtain or other approved attenuation device will be used for noise attenuation. Also, to control noise impacts, any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging. Otherwise, noise will not be at levels that require noise control measures.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Counting waterways and anchorage areas, Stuart Island Marine State Park is a 433-acre marine camping park with 33,030 feet of shoreline. The Park is part of the Cascadia Marine Trail and offers camping and recreational moorage at Reid and Prevost harbors. Some campsites are for the exclusive use of those arriving by human- or wind-powered watercraft. The adjacent properties primarily consist of State Park. There are a few private properties on the south side of the harbor.

The proposed project will not affect current land uses on nearby or adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No, the project site has not been used as working farmlands or working forest lands.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No, the project will not affect or be affected by working farm or forest land.

c. Describe any structures on the site.

The project site has moorage facilities and primitive campsites. The existing structures include a pier/float facility comprised of structural timber framing supported by creosote treated timber pile, as well as two timber-framed offshore island floating docks and a boat sewage pumpout station (Sheet 2).

Existing Moorage Facility: The existing moorage facility consists of a 33-ft timber walkway leading to a fixed creosote-treated timber pier extending perpendicular to shore (Sheet 3). The 89-ft timber pier is supported by 14 creosote-treated timber piles. A small 5-ft-wide aluminum gangway attached to the fixed pier leads down to a 110-ft by 12-ft timber float extending parallel to shore and supported by 4 creosote-treated timber piles. A small timber dingy float (40 ft by 6 ft) is attached to the main float near the gangway.

Existing Offshore Island Floating Docks: The project site currently has two offshore island floating docks located within the center-west portion of Reid Harbor (Sheet 2). The floating docks are timber frame construction and are each supported by 6 creosote-treated timber piles. The easterly float is approximately 113 feet by 12 feet, and the westerly float is approximately 64 feet by 12 feet.

Existing Boat Sewage Pumpout: There is a recreation boat sewage pumpout station where boaters can empty black sewage. The existing pumpout is supported by two creosote dolphins (six piling) and the float is approximately 12 feet by 32 feet.

d. Will any structures be demolished? If so, what?

The existing dilapidated timber dock and pier and the offshore moorage and pumpout facility support pile will be demolished and removed. Demolition will include 36 creosote-treated timber pile from the moorage facility, offshore island floating docks, and pumpout, four timber floats at the moorage facility, two timber offshore island floating docks, one timber fixed pier walkway, one aluminum gangway, and one timber staircase. All items listed above will be placed on a material barge, transported offsite, and disposed of at an approved upland facility minus the gangways, which are to be stored by State Parks for potential use at other facilities in the future.

e. What is the current zoning classification of the site?

The current zoning classification is Parks.

f. What is the current comprehensive plan designation of the site?

The comprehensive plan Land Use Designation of the site is Conservancy.

g. If applicable, what is the current shoreline master program designation of the site?

The current San Juan County Shoreline Master Program designation for the project area is Port, Marine, Marine Transportation (PMT), with adjacent areas designated as Conservancy. The San Juan County identified the Land Use Designation as Conservancy in the Land Use Pre-Application Meeting Memorandum dated June 29, 2021.

h. Has any part of the site been classified as a critical area by the city or county? If so, specify.

The upland portion of the project is classified as a Critical Aquifer Recharge Area and the aquatic portion of the project area is classified as FEMA Flood Zone Types A/AE and VE.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Nobody will be displaced by the project.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed project will allow continued use of the State Park by replacing existing dilapidated infrastructure.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The project will not have impacts on agricultural or forest lands.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None. This is not applicable to this project.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of structures are the steel pile associated with the float system and floating docks and the aluminum walkway from the float system to the Island. The top of the pile will be at approximately +20 ft MLLW and the highest point of the walkway will be at +44 ft MLLW, which is the same elevation as the land where it connects to the water.

b. What views in the immediate vicinity would be altered or obstructed?

No views will be altered or obstructed.

i. Proposed measures to reduce or control aesthetic impacts, if any:

Materials have been selected to provide maximum durability and longevity while also considering habitat quality. No aesthetic impacts are anticipated.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No long-term light or glare will be produced by the proposal. If operations occur at night, lighting of construction site will be necessary.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

There will be no light or glare resulting from the finished project.

c. What existing off-site sources of light or glare may affect your proposal?

No off-site sources of light will affect the proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

There are no anticipated impacts of light or glare, so there are no proposed measures to reduce or control light and glare.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

Counting waterways and anchorage areas, Stuart Island Marine State Park is a 433-acre marine camping park with 33,030 feet of shoreline. The Park is part of the Cascadia Marine Trail and offers camping and recreational moorage at Reid and Prevost harbors. Some campsites are for the exclusive use of those arriving by human- or wind-powered watercraft. The float system and island floating docks are used by both recreational boaters and State Parks staff.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No, the project will improve and restore the site for recreational users. Recreation at the site will be closed short-term during construction activities.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The project will improve and restore the site for recreational users. Recreation at the site will be closed short-term during construction activities, but once complete, the project will result in a safer and more ADA-accessible facility for recreational users. Construction will occur during the "off-season" for the Park so as to minimize those temporary impacts on recreation.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The project is located in Reid Harbor. There are no buildings or structures over 45 years old near the project site.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

While archaeological sites are known within the vicinity of the project, no archaeological or historic sites are known in the project area.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

This project is subject to Section 106 of the Historic Preservation Act. The U.S. Army Corps of Engineers, as the lead agency, will be responsible for assessment of potential impacts to cultural and historic resources on or near the project site.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The project is subject to Section 106 of the Historic Preservation Act. Therefore, as the lead agency, the U.S. Army Corps of Engineers is responsible for decisions about measures to avoid, minimize, or compensate for loss, changes to, and disturbances of resources.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The project site is located in Reid Harbor and is only accessible by boat.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

No parking will be added or eliminated as a result of the project.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project will use water transportation (e.g., tug and barge) to import construction materials to the site, but the vessels transporting materials will be contracted vessels, not ferries or other public transportation vessels. The completed project will not require use of water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

No vehicular trips will be generated by the completed project.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No, the proposal will not interfere with or otherwise affect or be affected by the movement of agricultural and forest products.

h. Proposed measures to reduce or control transportation impacts, if any:

This is not applicable for this project.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No, the project will not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

This is not applicable to the proposed project.

16. Utilities [help]

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

No utilities are located at the site.

j. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

No utilities are proposed for the project.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

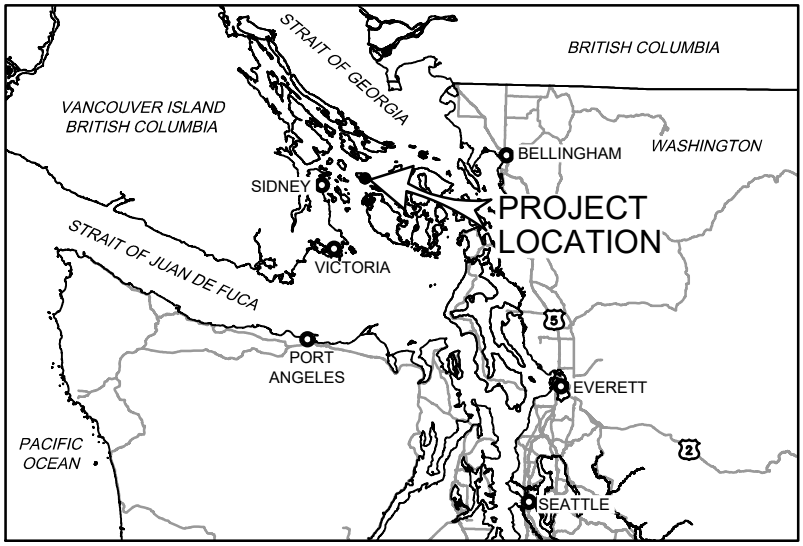
Signature: _____

Name of signee _Joelene Boyd_____

Position and Agency/Organization _Environmental Planner, WA State Parks___

Date Submitted: 12/09/2021

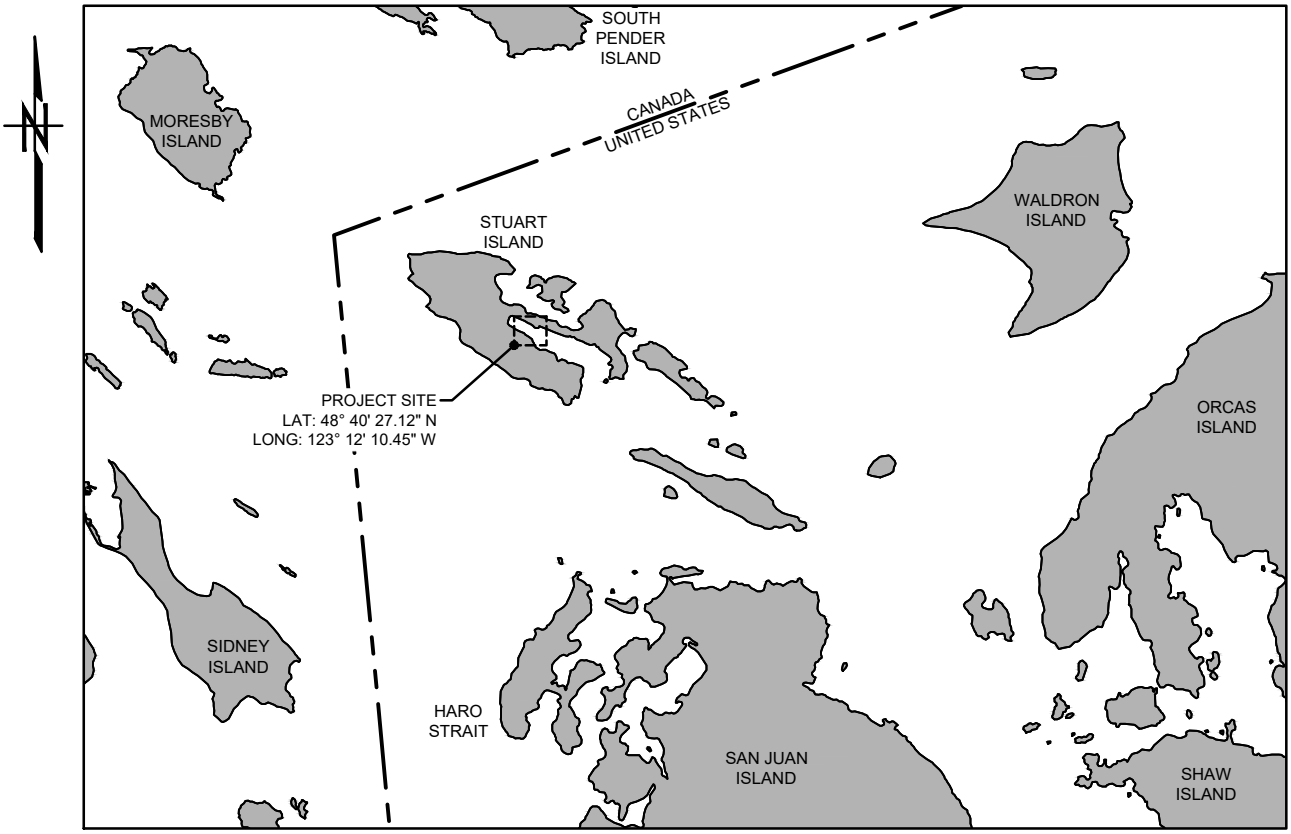
S28 T36N R4W



VICINITY MAP

DRAWING INDEX

SHEET NO.	SHEET TITLE
1	VICINITY MAP
2	OVERALL EXISTING SITE PLAN
3	EXISTING MOORAGE FACILITY PLAN
4	EXISTING ISLAND FLOAT PLAN
5	PROPOSED MOORAGE FACILITY PLAN
6	PROPOSED PROFILE - FLOAT AND PIER
7	PROPOSED UPLAND PLAN
8	PROPOSED UPLAND SECTION
9	PROPOSED ISLAND FLOAT PLAN
10	PROPOSED FLOAT DETAILS
11	PROPOSED PIER DETAILS
12	PROPOSED GANGWAY DETAILS



LOCATION MAP

7,500'

0 15,000'

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT
HIGH TIDE LINE / ORDINARY HIGH WATER	9.25 FT

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

VICINITY MAP

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

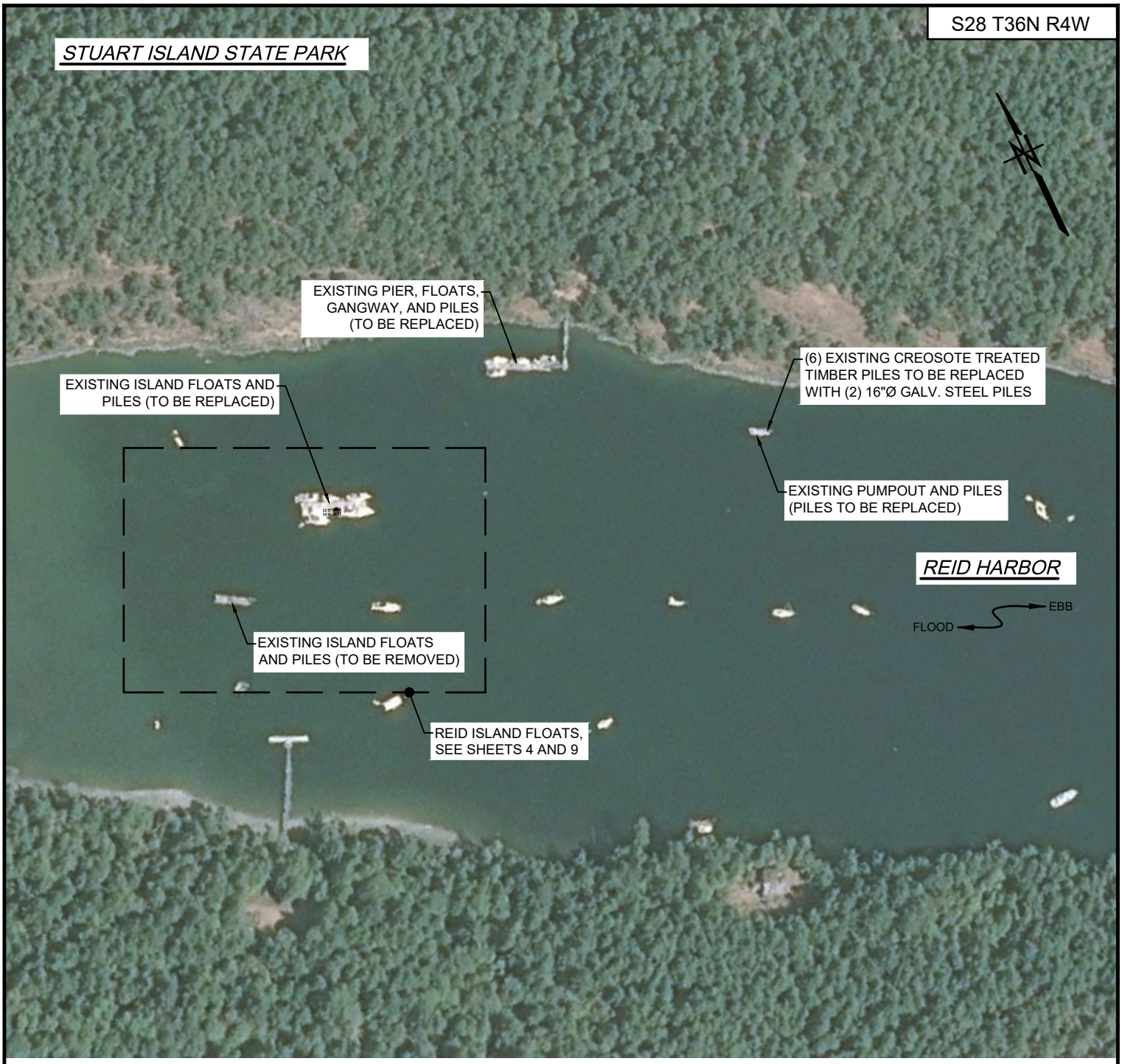
COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 1 OF 12 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Stuart Island Reid Harbor Permit - Cover.dwg DATE: 4/28/2021 USER: Tyler Morrison

S28 T36N R4W



NOTES

1. MOORAGE AREA PROVIDED BY THE ISLAND FLOATS TO BE REMOVED WILL BE TRANSFERRED TO THE NEW MOORAGE FACILITY.

SITE PLAN

OVERALL EXISTING

125'

0 250'

LEGEND

OHW — HIGH TIDE LINE (HTL) ORDINARY HIGH WATER (OHW)

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

OVERALL EXISTING SITE PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

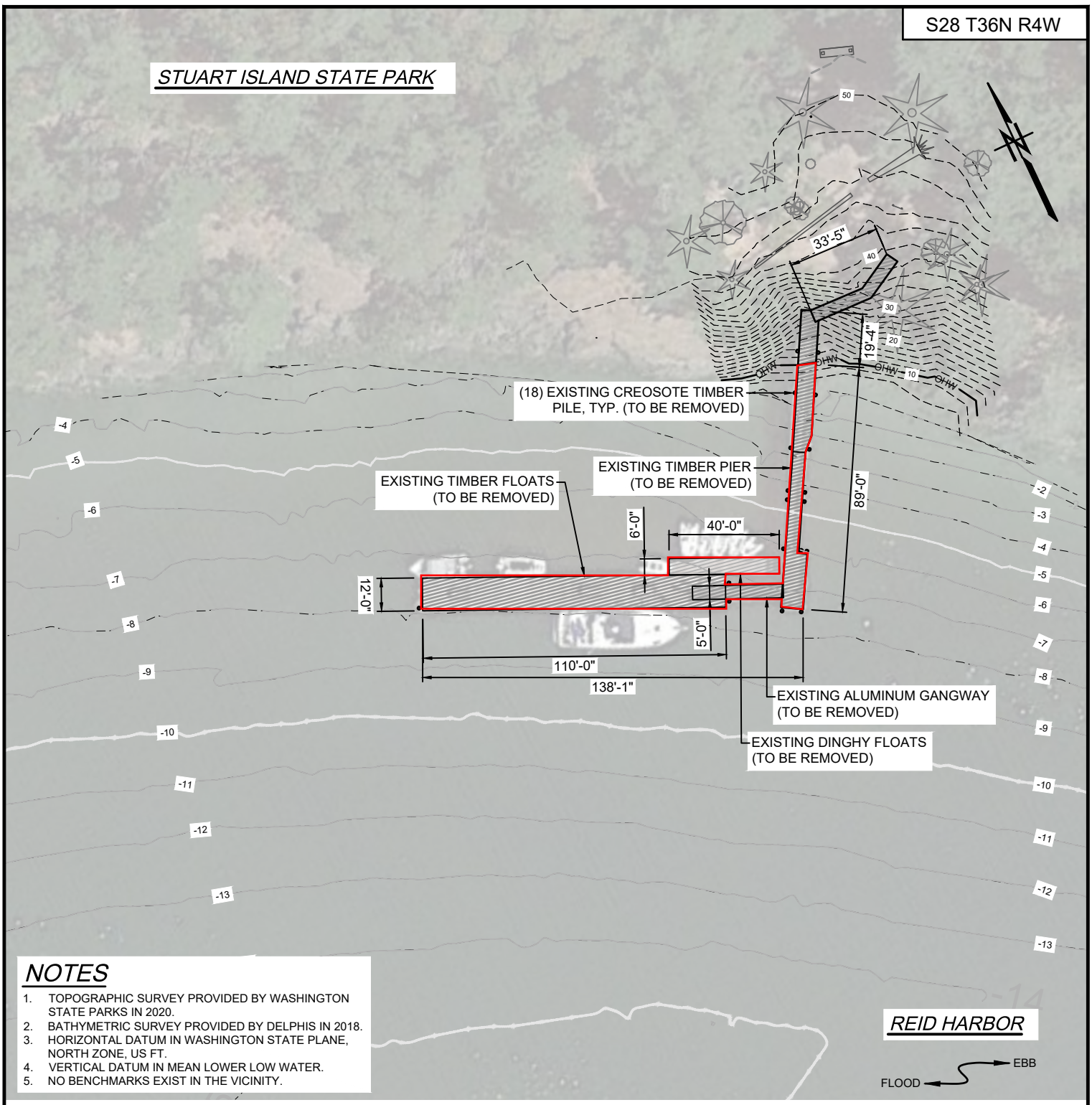
COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 2 OF 12 DATE: 4/28/21

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S28 T36N R4W



NOTES

1. TOPOGRAPHIC SURVEY PROVIDED BY WASHINGTON STATE PARKS IN 2020.
2. BATHYMETRIC SURVEY PROVIDED BY DELPHIS IN 2018.
3. HORIZONTAL DATUM IN WASHINGTON STATE PLANE, NORTH ZONE, US FT.
4. VERTICAL DATUM IN MEAN LOWER LOW WATER.
5. NO BENCHMARKS EXIST IN THE VICINITY.

LEGEND

- EXISTING TIMBER PILE (TO BE REMOVED)
- EXISTING DOCK/FLOATS (TO BE REPLACED)
- -10 EXISTING CONTOUR
- OHW HIGH TIDE LINE (HTL) ORDINARY HIGH WATER (OHW)

SITE PLAN

EXISTING

25'

0 50'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

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ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

EXISTING MOORAGE FACILITY PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 3 OF 12 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Stuart Island Reid Harbor Permit - Site Plans and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

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ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR
EXISTING ISLAND FLOAT PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

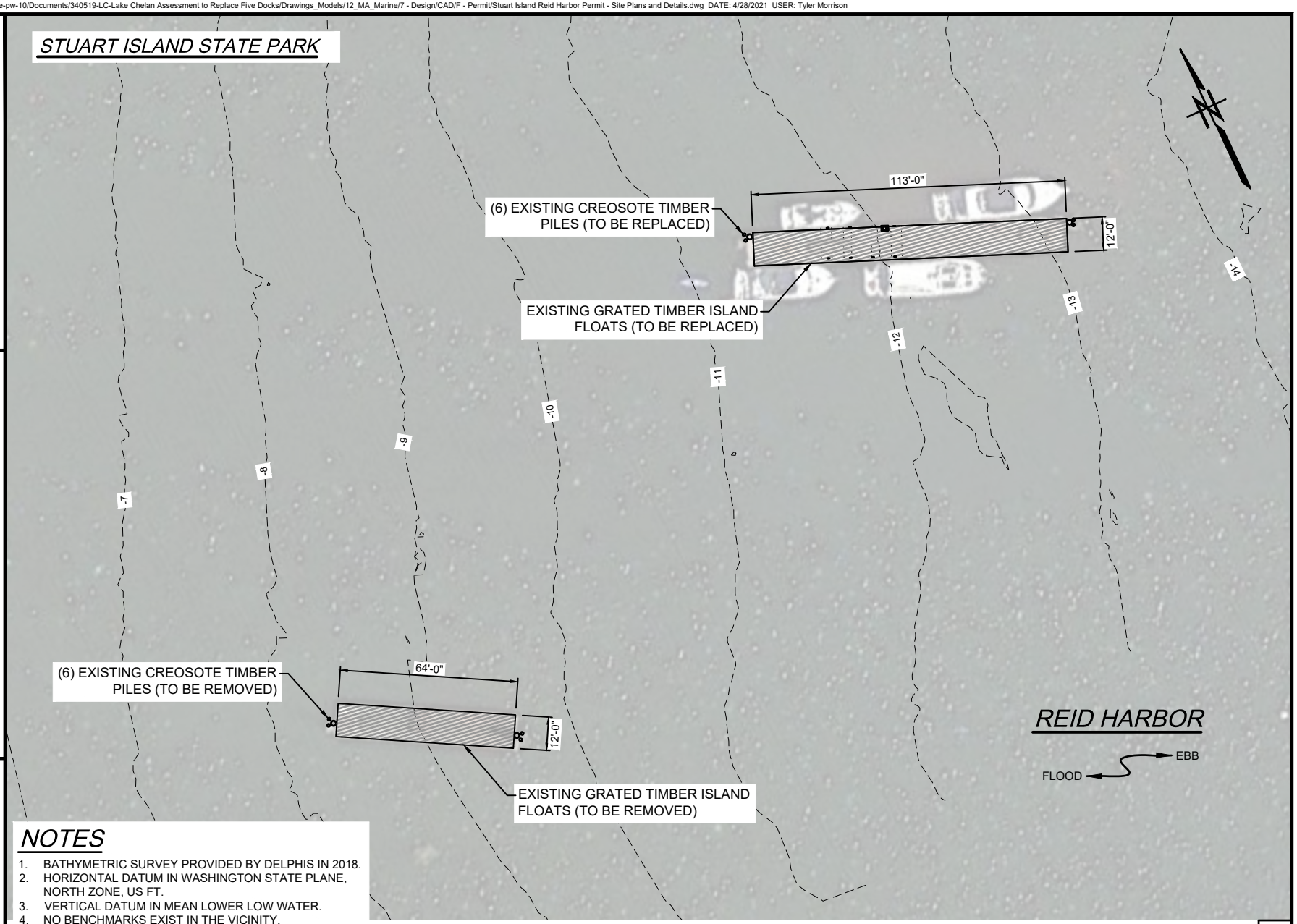
AT: STUART ISLAND

COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 4 OF 12

DATE: 4/28/21



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LEGEND

- EXISTING TIMBER PILE (TO BE REMOVED)
- EXISTING DOCK/FLOATS (TO BE REPLACED)
- -10 EXISTING CONTOUR
- OHW HIGH TIDE LINE (HTL) ORDINARY HIGH WATER (OHW)

SITE PLAN

EXISTING

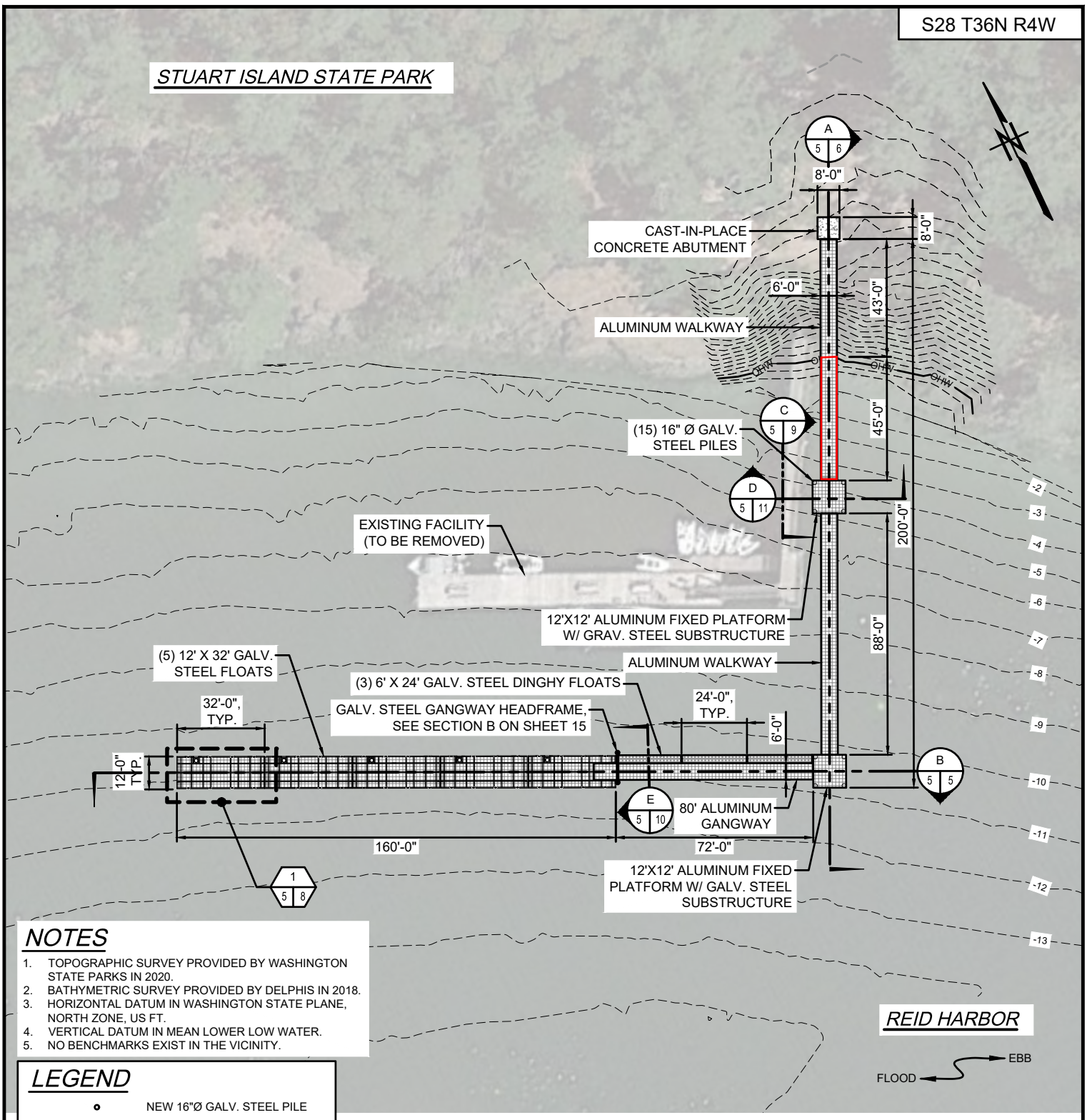
25'

0 50'

S28 T36N R4W

DRAFT
PERMIT SET

S28 T36N R4W



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LEGEND

- NEW 16"Ø GALV. STEEL PILE
- NEW DOCK / FLOATS
- NEW ABUTMENT
- NEW PIER
- -10 — EXISTING CONTOUR
- OHW — HIGH TIDE LINE (HTL) ORDINARY HIGH WATER (OHW)

SITE PLAN

PROPOSED

25'

0 50'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

PROPOSED MOORAGE FACILITY PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

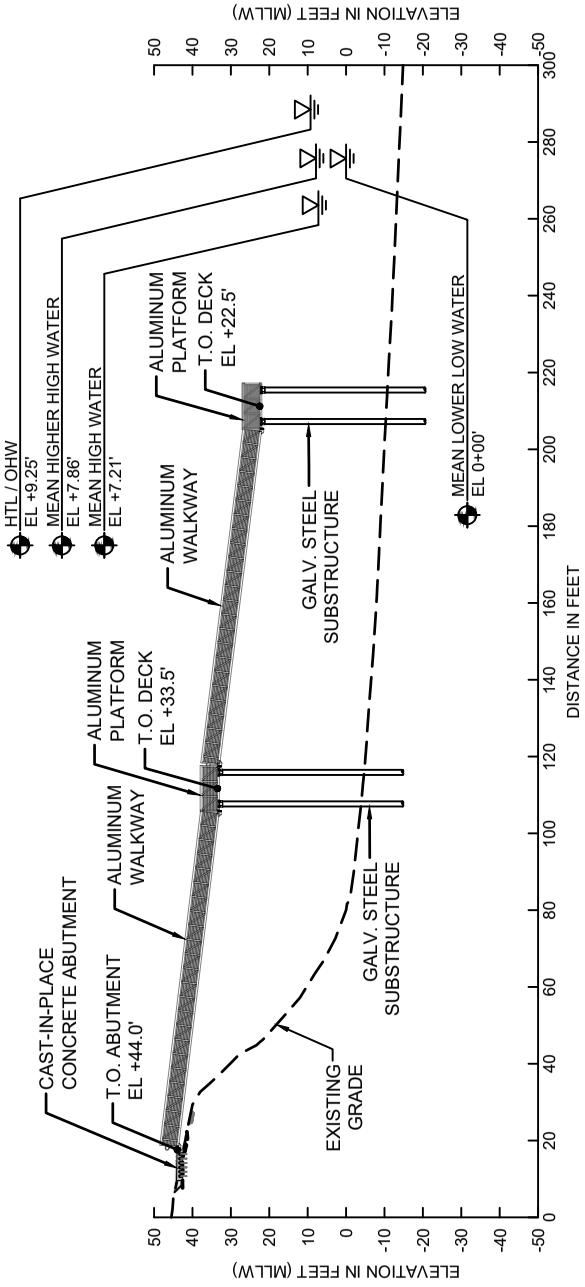
COUNTY: SAN JUAN

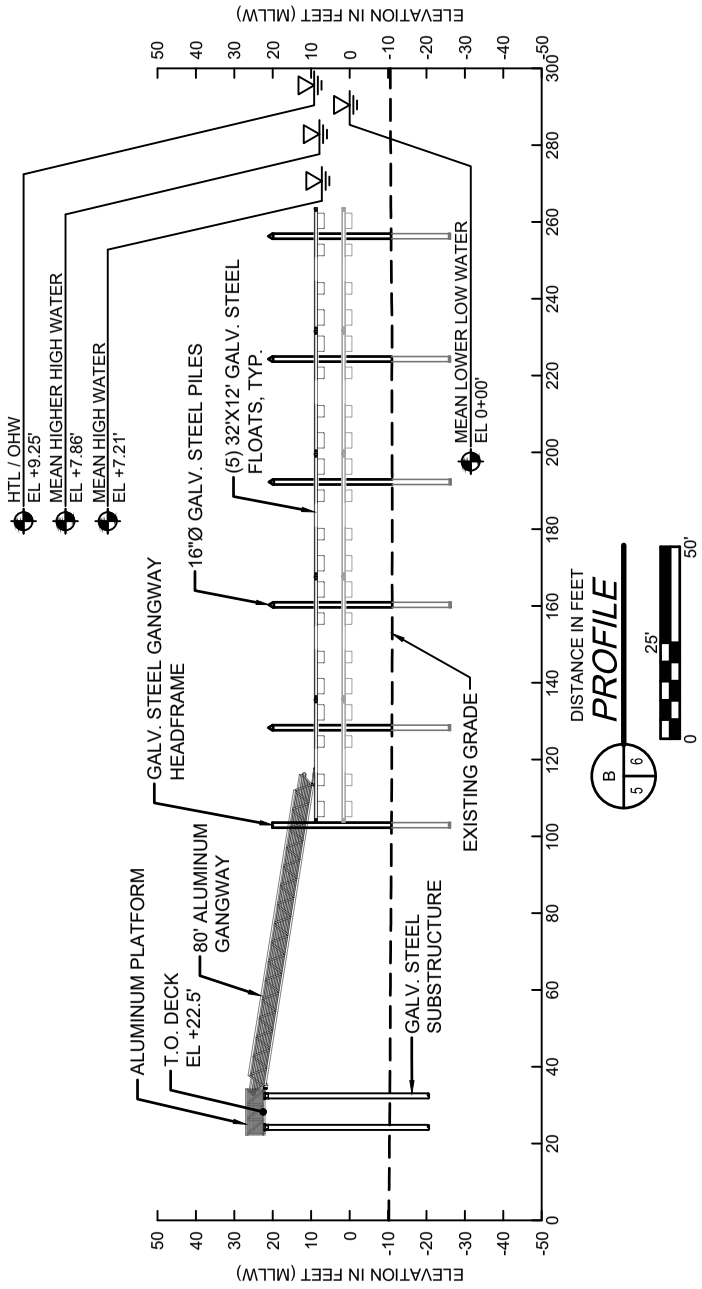
PARCEL: 472813001000

SHEET 5 OF 12 DATE: 4/28/21

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S28 T36N R4W





DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

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1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

PROPOSED PROFILE - FLOAT AND PIER

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

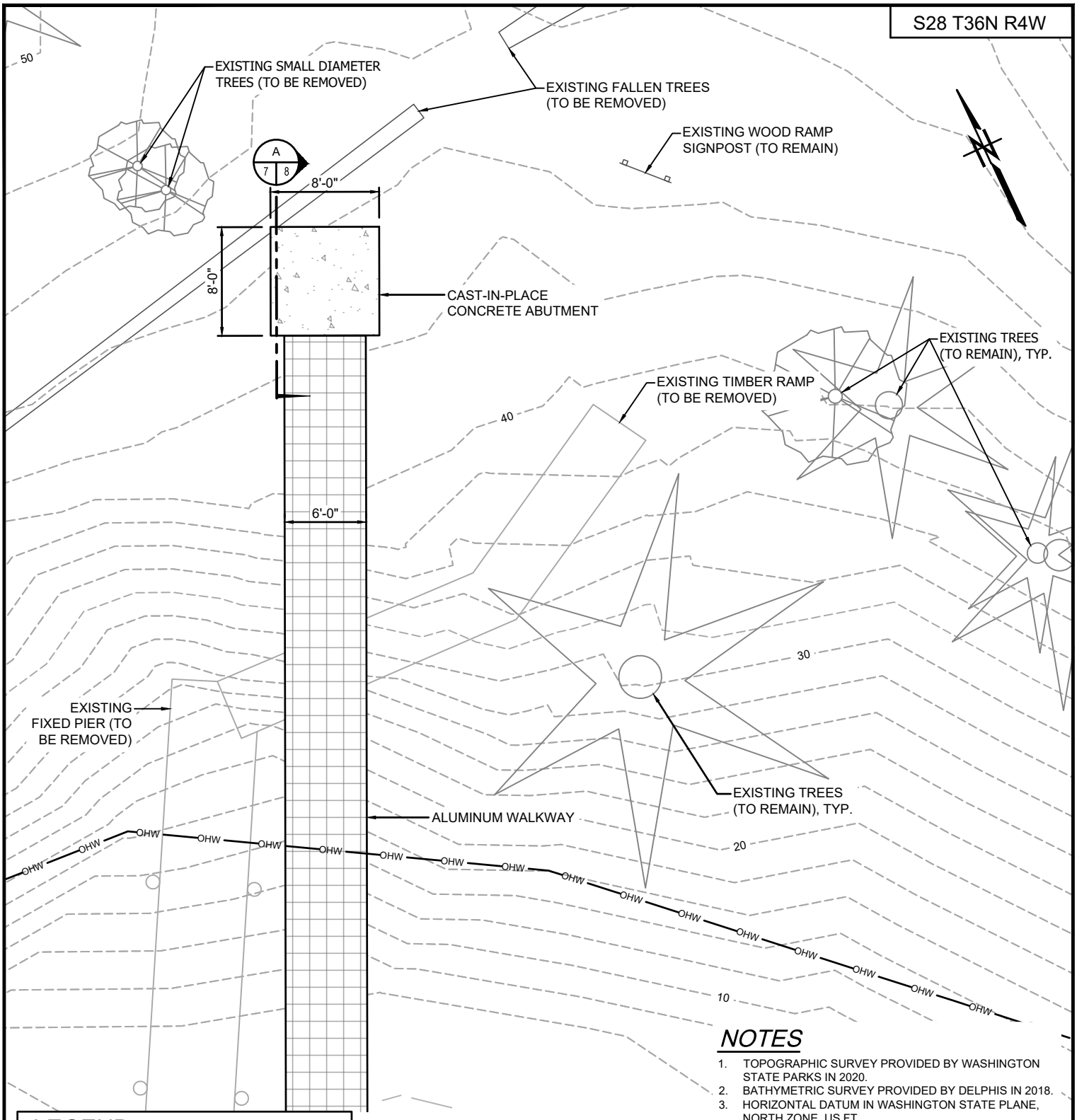
PARCEL: 472813001000

SHEET 6 OF 12

DATE: 4/28/21

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S28 T36N R4W



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LEGEND

- NEW ABUTMENT
- NEW PIER
- -10 — EXISTING CONTOUR
- OHW — OHW — HIGH TIDE LINE (HTL) ORDINARY HIGH WATER (OHW)

SITE PLAN

UPLAND

0 5' 10'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

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APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

PROPOSED UPLAND PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

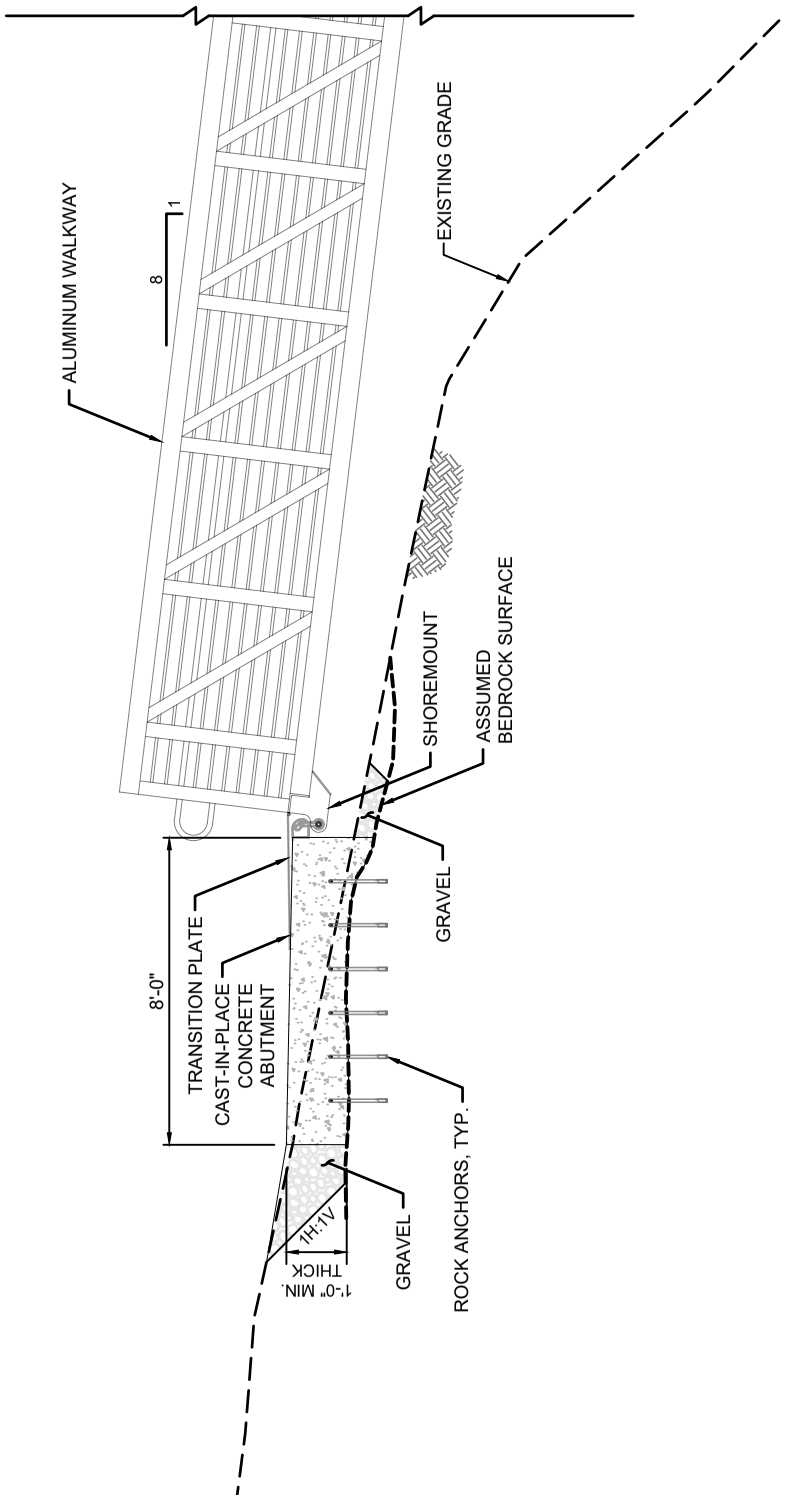
COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 7 OF 12 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Stuart Island Reid Harbor Permit - Site Plans and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

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A 7 / 8 SECTION - PROPOSED UPLAND SECTION

0 2.5' 5'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

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ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

PROPOSED UPLAND SECTION

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 8 OF 12 DATE: 4/28/21

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APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK REID HARBOR

PROPOSED ISLAND FLOAT PLAN

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

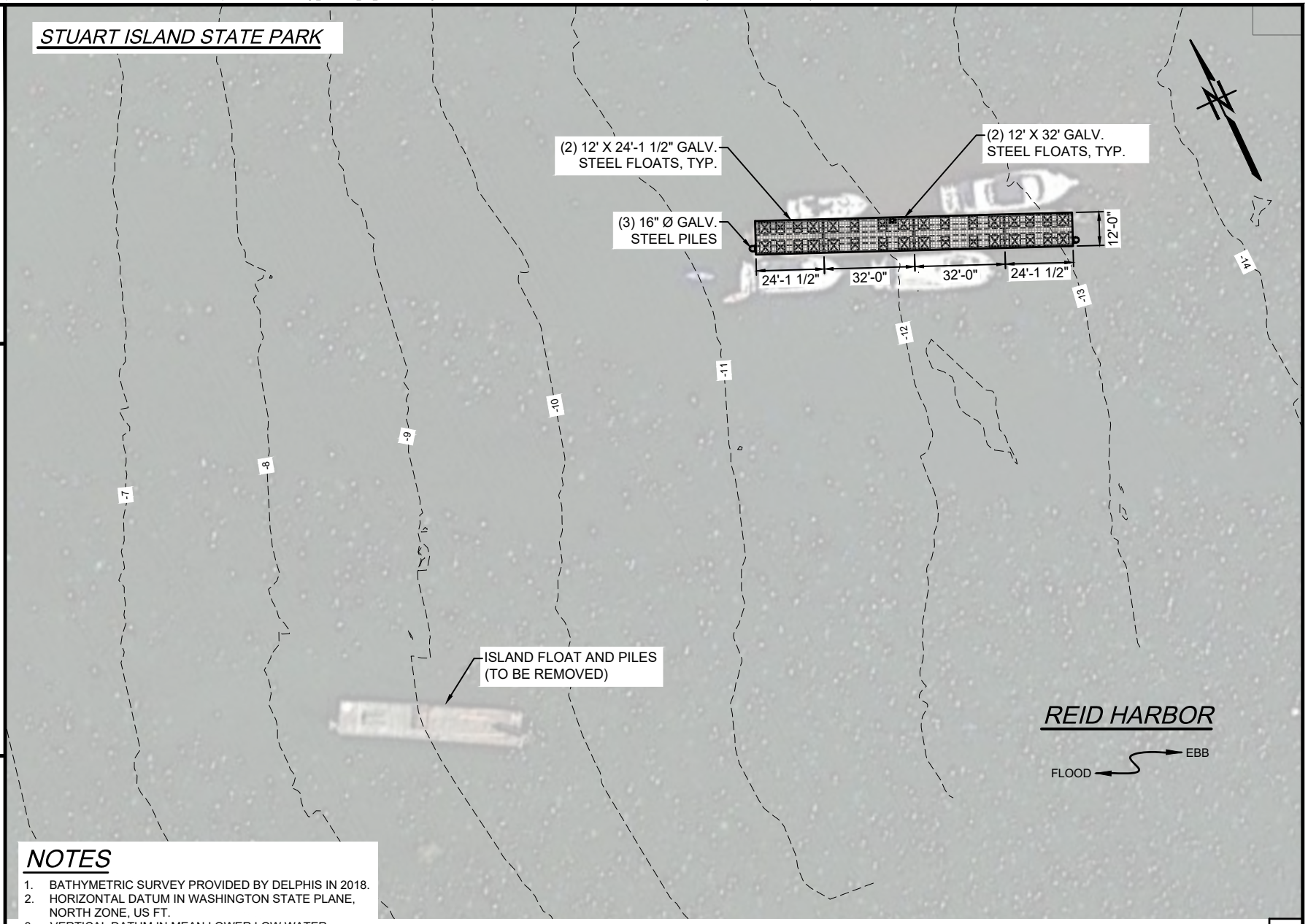
AT: STUART ISLAND

COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 9 OF 12

DATE: 4/28/21



NOTES

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4. NO BENCHMARKS EXIST IN THE VICINITY.

LEGEND

- NEW 16"Ø GALV. STEEL PILE
- NEW DOCK / FLOATS
- -10 — EXISTING CONTOUR

SITE PLAN

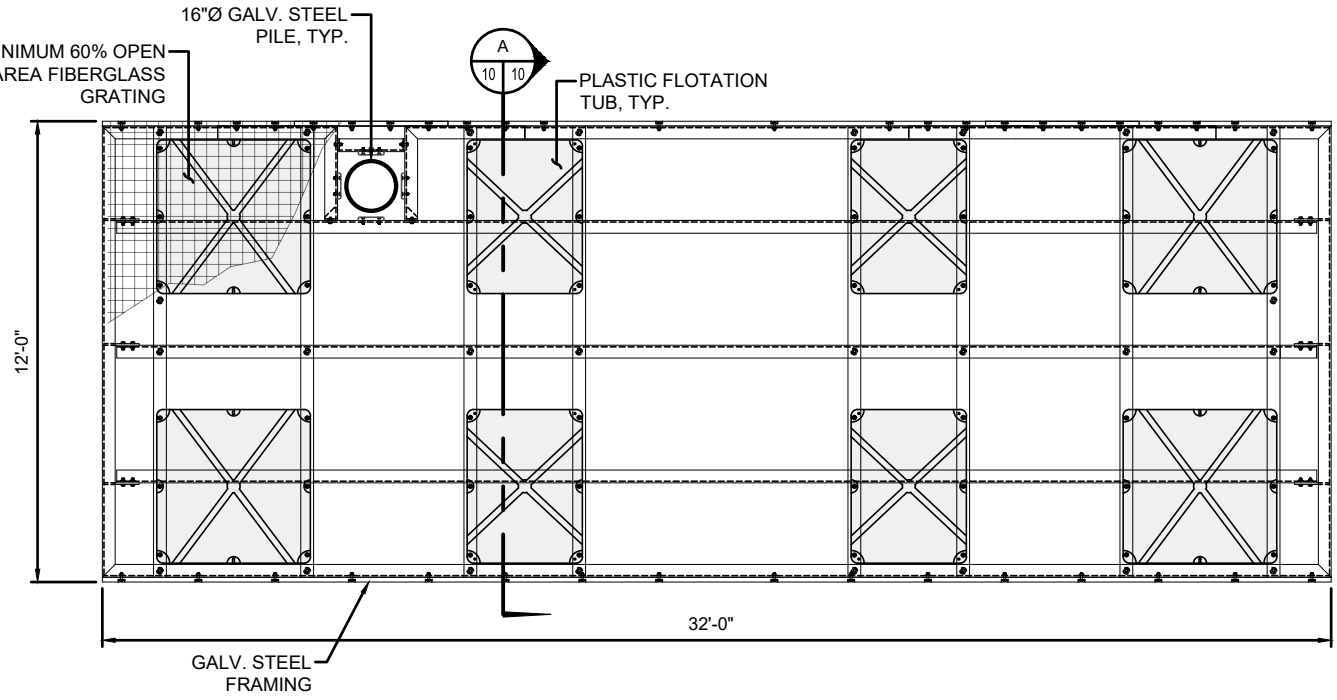
EXISTING

25'

0 50'

S28 T36N R4W

DRAFT
PERMIT SET

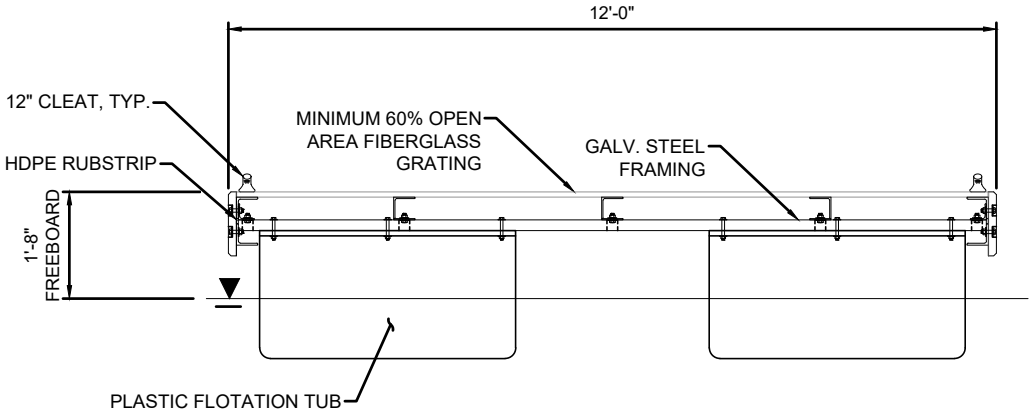


1 / 5 10 DETAIL - TYPICAL 32' FLOAT

PLAN VIEW

2.5'

0 5'



A / 10 10 SECTION - TYPICAL FLOAT

1.5'

0 3'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

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STUART ISLAND STATE PARK
REID HARBOR

PROPOSED FLOAT DETAILS

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT

IN: WASHINGTON

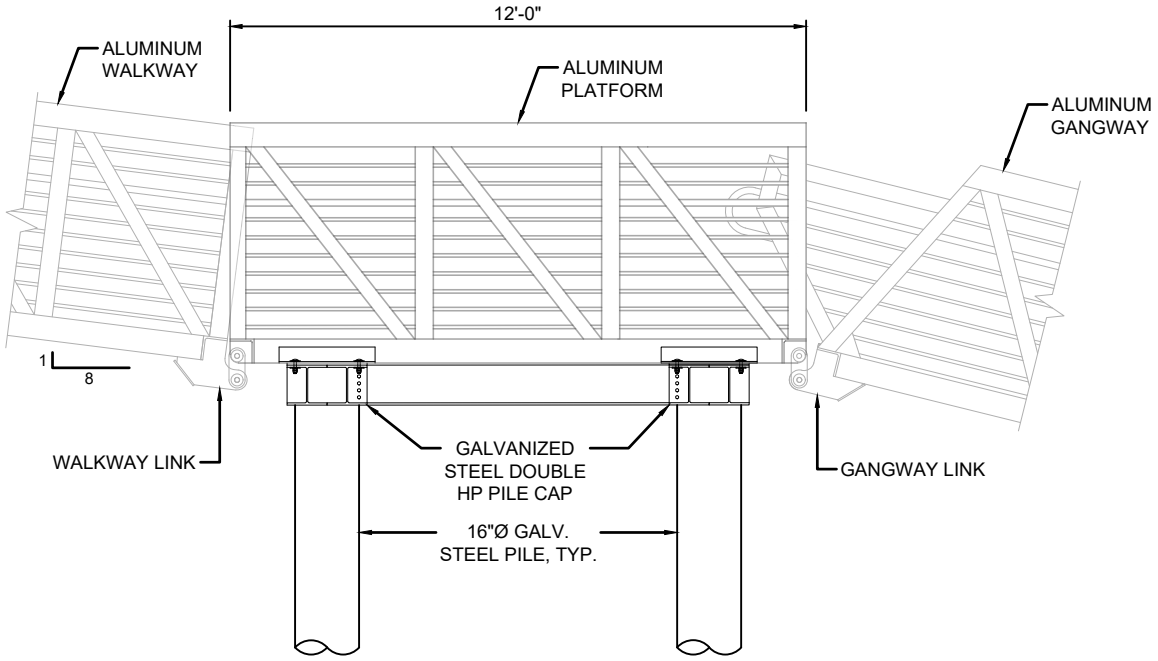
AT: STUART ISLAND

COUNTY: SAN JUAN

PARCEL: 472813001000

SHEET 10 OF 12 DATE: 4/28/21

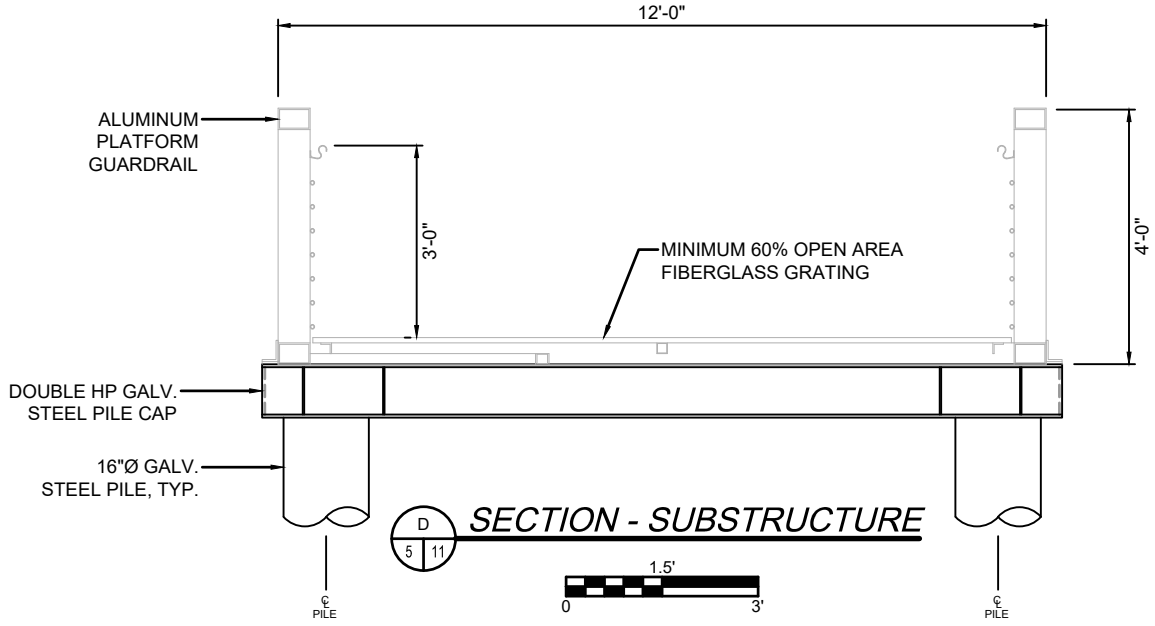
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C / 5 11 *ELEVATON - SUBSTRUCTURE*

FIXED PIER CONNECTION

2'
0 4'



D / 5 11 *SECTION - SUBSTRUCTURE*

1.5'
0 3'

DRAFT
PERMIT SET

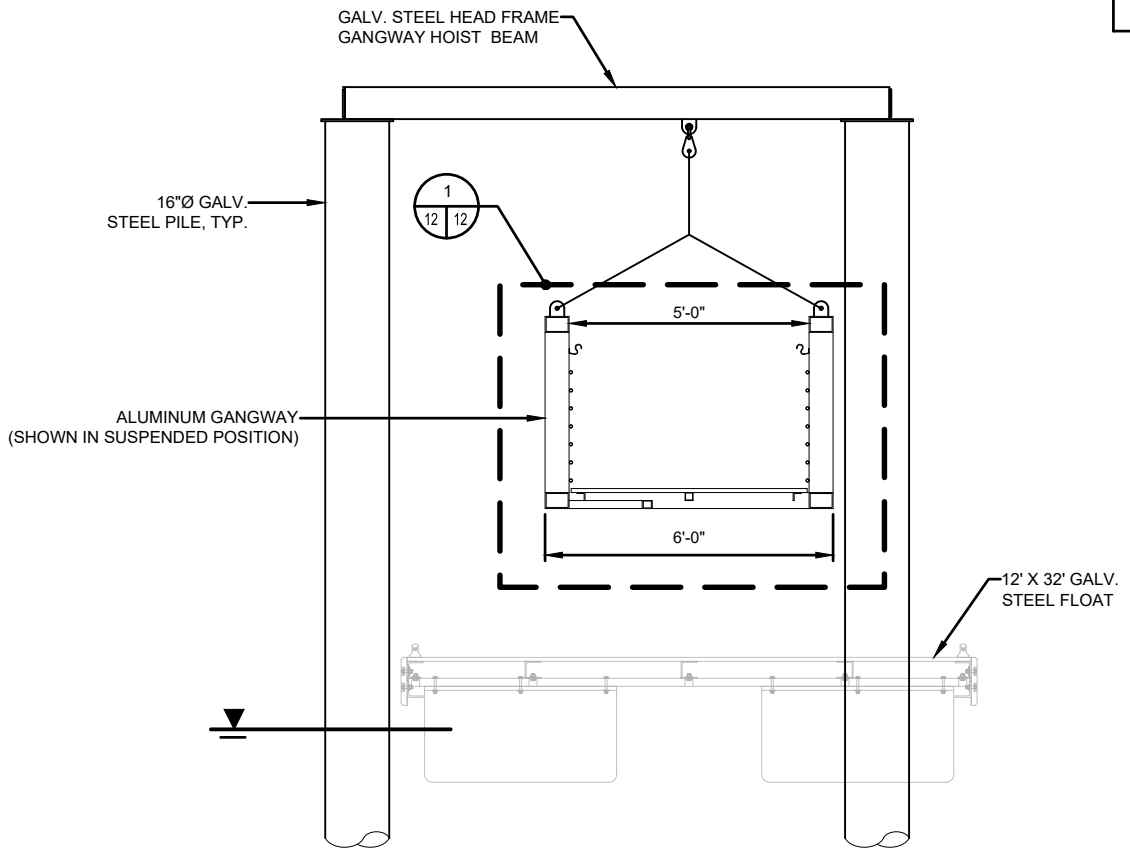
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STUART ISLAND STATE PARK
REID HARBOR

PROPOSED PIER DETAILS

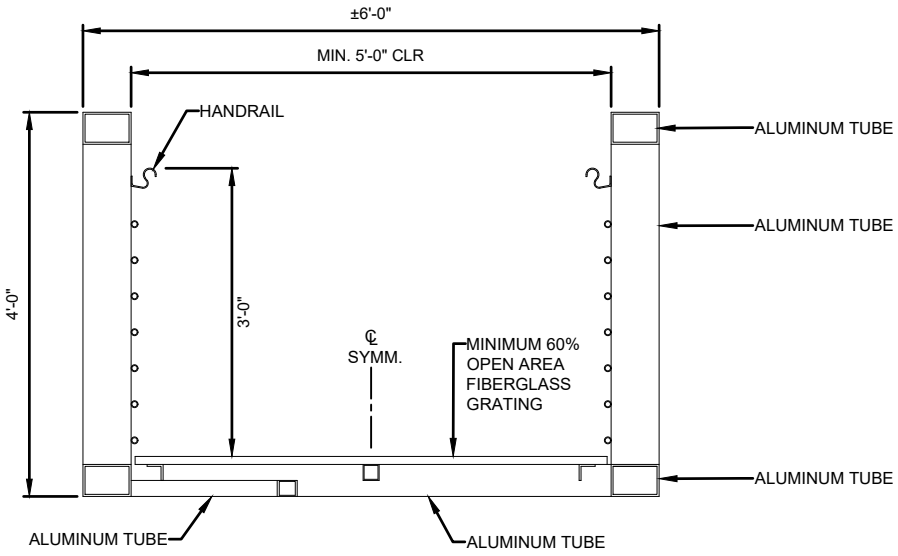
PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT
IN: WASHINGTON
AT: STUART ISLAND
COUNTY: SAN JUAN
PARCEL: 472813001000
SHEET 11 OF 12 DATE: 4/28/21

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E
5 12 *SECTION - HEAD FRAME*

2'
0 4'



1
12 12 *DETAIL - GANGWAY*

1'
0 2'

DRAFT
PERMIT SET

PURPOSE: PROVIDE NEW UPLAND ACCESS AND MOORAGE FOR VISITING RECREATIONAL VESSELS
HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT
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ADJACENT PROPERTY OWNERS:
1. DEPARTMENT OF NATURAL RESOURCES (DNR)
APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

STUART ISLAND STATE PARK
REID HARBOR

PROPOSED GANGWAY DETAILS

PROPOSED: MOORAGE FACILITY AND ISLAND FLOAT REPLACEMENT
IN: WASHINGTON
AT: STUART ISLAND
COUNTY: SAN JUAN
PARCEL: 472813001000
SHEET 12 OF 12 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Stuart Island Reid Harbor Permit - Site Plans and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

SAN JUAN COUNTY
STORMWATER MANAGEMENT FOR DEVELOPMENT

REFERENCE: SAN JUAN COUNTY CODE SECTION 18.60.070 STORM DRAINAGE STANDARDS

ALL NEW DEVELOPMENT AND REDEVELOPMENT

For stormwater management for new and redevelopment, San Juan County references the Washington State Department of Ecology Stormwater Management Manual, for Western Washington 2005 edition. This provides guidance on the measures necessary to control the quantity and quality of stormwater produced by new development and redevelopment so they comply with water quality standards and contributes to the protection of beneficial uses of the receiving waters. The manual establishes minimum requirements for projects of all sizes, and provides guidance concerning how to prepare and implement stormwater site plans. The Minimum Requirements are satisfied by the application of Best Management Practices (BMPs).

The applicability of Minimum Requirements varies depending on the amount of new or redeveloped impervious area and land disturbance. The Minimum Requirements are:

#1 Preparation of Stormwater Site Plan
#2 Construction Stormwater Pollution Prevention
#3 Source Control of Pollution
#4 Preservation of Natural Drainage Systems and Outfalls
#5 On-site Stormwater Management
#6 Runoff Treatment
#7 Flow Control
#8 Wetlands Protection
#9 Basin/Watershed Planning
#10 Operation and Maintenance

1. **New Impervious Areas on Site:**
    a. Shall ***not*** be required to include all impervious areas in existence since September 1, 1991.
    b. Shall include all impervious areas in existence for less than 2 years; unless final site stabilization has been verified.
    c. Shall include all impervious areas associated with an active project and shall be considered as part of, and as a revision to, that active project.
2. **Existing Impervious Areas on a Site:**
    a. Shall include all existing impervious areas regardless of date of existence.
    b. Shall ***not*** include impervious areas that are part of an active project and which are considered New Impervious Areas.
    c. Shall ***not*** include impervious areas in existence for less than 2 years and which are considered New Impervious Areas; unless final site stabilization has been verified.
3. **Land Disturbance associated with Project:**
    a. All new areas cleared for construction and access.
    b. All new Landscaping.

Please refer to the following link to San Juan County Community Development and Planning website for additional information and sample plans.

http://www.sanjuanco.com/cdp/SW_management.aspx 7/23/09

MINIMUM REQUIREMENT FOR ALL PROJECTS

Projects consisting of **less than** 2,000 square feet of new impervious area **AND less than** 7,000 square feet of land-disturbing activities need only comply with Minimum Requirement #2. The applicant should prepare a written discussion of the 12 elements of the requirement.

Minimum Requirement #2 Construction Stormwater Pollution Prevention

Best Management Practices (BMPs) must be employed in order to control erosion and prevent sediment and other pollutants from leaving the project site during the construction phase.

Each proposed project or development must consider twelve "Elements" (or sets) of BMPs that can be applied for stormwater construction pollution prevention, and must employ BMPs for all Elements that are relevant to the project site. (For many projects, only some of the Elements will be relevant.) The 12 Elements are:

Mark Clearing Limits	Protect Drain Inlets
Establish Construction Access	Stabilize Channels and Outlets
Control Flow Rates	Control Pollutants
Install Sediment Controls	Control De-watering
Stabilize Soils	Maintain BMPs
Protect Slopes	Manage the Project

MINIMUM REQUIREMENTS FOR SMALL PROJECTS

Small projects are those consisting of **more than** 2,000 square feet (but less than 5,000 square feet) of new impervious area **OR more than** 7,000 square feet of land-disturbing activities. Small projects shall comply with Minimum Requirements #1 through #5. The five Minimum Requirements are:

#1 Preparation of Stormwater Site Plans
#2 Construction Stormwater Pollution Prevention
#3 Source Control of Pollution
#4 Preservation of Natural Drainage Systems and Outfalls
#5 On-site Stormwater Management

Minimum Requirement #1 Preparation of Stormwater Site Plans

All small projects shall prepare a Stormwater Site Plan in accordance with the Stormwater Management Manual to be reviewed by the County. The level of detail needed for each step depends upon the project size.

a. Collect and analyze information on existing conditions
b. Prepare preliminary development layout
c. Perform off-site analysis (at local government's option)
d. Determine applicable minimum requirements

e. Prepare a permanent stormwater control plan
f. Prepare a construction stormwater pollution prevention plan
g. Complete the stormwater site plan
h. Check compliance with all applicable minimum requirements

Minimum Requirement #2 Construction Stormwater Pollution Prevention

This Minimum Requirement is described under "All Projects", above.

Minimum Requirement #3 Source Control of Pollution

All known, available and reasonable source control BMPs shall be applied to all projects in accordance with the Stormwater Management Manual. Prevention is still the best strategy. (This requirement applies primarily to commercial and industrial projects.)

Minimum Requirement #4 Preservation of Natural Drainage Systems and Outfalls

Maintain natural drainage patterns, and protect downstream receiving waters and down-gradient properties from adverse impact. Discharges from the project site shall occur at the natural location, and all outfalls require energy dissipation.

Minimum Requirement #5 On-site Stormwater Management

Use inexpensive BMPs (stormwater dispersion, infiltration, and retention) on-site to reduce the amount of hydrologic change. (This requirement applies primarily to residential projects.)

MINIMUM REQUIREMENTS FOR LARGE PROJECTS

Large projects are those consisting of **more than** 5,000 square feet of new impervious area **OR** a project that converts **more than** ¾ acres of native vegetation to lawn or landscaped areas, **OR** a project that converts more than 2.5 acres of native vegetation to pasture. A large project shall comply with Minimum Requirements #1 through #10. The ten Minimum Requirements are:

#1 Preparation of Stormwater Site Plans
#2 Construction Stormwater Pollution Prevention
#3 Source Control of Pollution
#4 Preservation of Natural Drainage Systems and Outfalls
#5 On-site Stormwater Management
#6 Runoff Treatment
#7 Flow Control
#8 Wetlands Protection
#9 Basin/Watershed Planning
#10 Operation and Maintenance

Minimum Requirement #6 Runoff Treatment

Projects whose runoff from pollution-generating surfaces exceeds the thresholds below must, in addition to Minimum Requirement #5, apply water quality treatment BMPs in order to reduce pollutant loads and concentrations in the stormwater runoff and meet state and federal water

quality laws. Several “menus” or sets of BMPs may be relevant: Basic Treatment, Enhanced Treatment, Phosphorus Treatment, and Oil Control.

The thresholds are runoff from:

5,000 square feet of pollution-generating impervious surfaces, **OR**
greater than ¾ acre of pollution-generating pervious surfaces.

Minimum Requirement #7 Flow Control

Projects whose runoff volume exceeds the thresholds below must provide flow control of stormwater runoff in order to reduce the adverse impacts of increased peak volumes and durations of stormwater runoff (from new impervious surfaces and vegetation removal) on stream channel erosion rates and on fish habitat and production.
The thresholds for flow control requirements are:

Greater than 3/4 acres conversion to lawn/landscape, **OR**
Greater than 2.5 acres conversion to pasture, **OR**
Greater than 10,000 square feet of effective impervious area, **OR**
Greater than 0.1 cubic feet per second increase in the 100-year flood frequency.

The Western Washington Design Storm and Hydrologic Runoff Model shall be used to estimate runoff. For determining the pre-development runoff rates, the pre-developed condition to be matched shall be a forested land cover. The preferred approach to stormwater management is, first, on-site full dispersion of the runoff, and second, infiltration, where the site can meet suitability requirements per the San Juan County Code and the Stormwater Management Plan.

Minimum Requirement #8 Wetlands Protection

Wetlands are extremely important natural resources, but they can be severely degraded by stormwater discharges due to pollutants in the runoff and disruption of natural hydrologic functions (i.e., changes in water levels and the frequency and duration of inundation). Projects that discharge runoff into a wetland, either directly or indirectly, and whose runoff exceeds the thresholds of Minimum Requirements #6 or #7, must apply additional BMPs. Discharges to wetlands must be controlled to maintain the hydrologic conditions, vegetation, and substrate characteristics necessary to support existing and designated uses. A wetland can be considered for stormwater treatment and/or hydrologic modification, but only in accordance with guidance in the Stormwater Management Manual.

Minimum Requirement #9 Basin/Watershed Planning

Watershed-based planning may be used as a means to develop and implement comprehensive water quality protection measures. A project may be required to apply additional BMPs, or required to meet more stringent minimum requirements in order to address overall pollution impacts. In addition, a project may be required to provide additional basin or watershed protection on the basis of conditions and responses that are identified at the watershed level in a Basin or Watershed Plan.

Minimum Requirement #10 Operation and Maintenance

Stormwater control facilities must be properly operated and adequately maintained for the life of the development. A responsible party must be identified, and a copy of the manual shall be retained at or near the site.

Ecology Construction Stormwater General Permit Coverage Determination

If applicants are disturbing more than 1 Acre during platting or construction, consultation should take place with Ecology to determine whether or not coverage should be obtained under the Construction Stormwater General Permit. Contact Andrew Craig in Ecology's Bellingham office for more information. Telephone number is 360.738.6250

Washington Department of Fish & Wildlife Hydraulics Projects Approval (HPA) Permits

Any projects proposing to tight line stormwater run-off to the shoreline need to contact WDFW to apply for an HPA permit. Telephone number is 425.775.1311

San Juan County Public Works recommends that applicants seek assistance from a stormwater design professional for Large Projects.

State law requires that engineering work be performed by or under the direction of a professional engineer licensed to practice in Washington State. This requirement applies to plans involving construction of treatment facilities or flow control facilities (detention ponds or infiltration basins), structural source control BMPs, or drainage conveyance systems.

Attachment 2

San Juan County

Shoreline Substantial Development Permit

(Landuse-22-0007)

Before Hearing Examiner
Gary N. McLean

BEFORE THE HEARING EXAMINER
FOR SAN JUAN COUNTY

In the Matter of the Shoreline Substantial Development Application filed by **WASHINGTON STATE PARKS AND RECREATION,** Applicant, *[Project: Replacement and expansion of public moorage facilities in Reid Harbor, at Stuart Island, tax parcel number 472813001000; includes removal of 36 creosote treated pilings and replacement with 20 galvanized steel pilings.]*	**File No. LANDUSE-22-0007** **FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION APPROVING SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT**

S.J.C. DEPARTMENT OF
JUL 29 2022
COMMUNITY DEVELOPMENT

I. SUMMARY OF DECISION.

The requested Shoreline Substantial Development Permit submitted on behalf of Washington State Parks and Recreation is approved, subject to conditions.

The proposed project is subject to compliance with all applicable development, design, building code, engineering, and other regulations, including without limitation those requiring verification of performance, inspections, monitoring, and maintenance associated with conditions or mitigation measures that might be imposed consistent with this Decision or any subsequent approval, or authorization issued by any state agency or county department with jurisdiction over a particular aspect of the Project as on-site work unfolds.

II. RELEVANT CODE PROVISIONS.

Shoreline Regulations: The County's Shoreline Master Plan/Program (SMP) is comprised of Chapter 18.50 of the San Juan County Unified Development Code (UDC), together with Element 3 of the County's Comprehensive Plan, the official maps and common descriptions of shoreline designation boundaries that do not follow property lines (Ordinance

1-2016, Exhibit D), Section 2(B) Figures 130-6, 130-7 of the Eastsound Subarea Plan, SJCC 18.30.480, the Eastsound Waterfront Access Plan, and SJCC 18.80.110. *See SJCC 18.50.020(A).*

Circumstances that trigger requirement to obtain a Shoreline Substantial Development Permit: "Substantial Development" is defined in RCW 90.58.030(3)(e) and SJCC 18.20.190, and means any development proposed in the shoreline areas of San Juan County of which the total cost, or fair market value, exceeds the dollar threshold established by the Washington State Office of Financial Management (RCW 90.58.030(3)(e)) or any development which materially interferes with the normal public use of the water or shorelines of the state, except for the exemptions specified in WAC 173-27-040 or Chapter 18.50 SJCC. The SJCC 18.50.060(A) and the Table at SJCC 18.50.600 mandates that the shoreline modification project proposed by the applicant, which includes demolition, removal and reconstruction of a dock, moorage float and pilings in the Ports, Marina, and Transport and Aquatic shoreline designations, requires a Shoreline Substantial Development Permit. There is no dispute that this project requires a substantial development permit.

Approval Criteria for Shoreline Substantial Development Permits: The procedures for review of shoreline permit applications are contained in Chapter 18.80.110 of the county's code, with the Criteria for Approval of Shoreline Substantial Development Permits found in SJCC 18.80.110.8, which reads as follows:

> A. A shoreline substantial development permit will be granted by the County if the applicant demonstrates the proposal is:
>
> 1. Consistent with the policies of the SMA, Chapter 90.58 RCW and Chapters 173-26 and 173-27 WAC, as amended;
> 2. Consistent with the policies and regulations of this SMP;
> 3. Consistent with other applicable sections of this code; and
> 4. Consistent with the goals and policies of the Comprehensive Plan.
>
> B. The conditions specified by the decision-maker to make the proposal consistent with the SMP and to mitigate or avoid adverse impacts to shoreline ecological functions will be attached to the permit.

Jurisdiction: Under SJCC 18.80.020, at Table 8.1, the Hearing Examiner is given the authority to hold open-record pre-decision public hearings and issue decisions regarding shoreline permits, including shoreline substantial development permits, shoreline conditional use permits, and shoreline variances. Under SJCC 18.80.110.5(B)(1), the Hearing Examiner is given the authority to hear and approve, approve with conditions, or deny shoreline substantial development permits following receipt of the recommendations of the director, based upon the criteria found in SJCC 18.80.110.8, as set forth above.

Burden of Proof: Under SJCC 18.80.010(A), "Shoreline Permits" are specifically listed as "Project Permits" covered by the provisions of SJCC Chapter 18.80 re: application, notice, review and appeal requirements for the County's Unified Development Code, which is found in Title 18 of the SJCC and includes Chapter 18.50, the County's Shoreline Master Program. SJCC 18.80.040(B) reads as follows:

> *"[t]he burden of proof is on the project permit applicant. The project permit application must be supported by evidence that it is consistent with the applicable state law, County development regulations, the Comprehensive Plan, and the applicant meets his burden of proving that any significant adverse environmental impacts have been adequately analyzed and addressed."*

Standard of Review: SJCC 2.22.210(H) explains that: "for an application to be approved, a preponderance of the evidence presented at the hearing must support the conclusion that the application meets the legal decision criteria that apply."

Filing with the Department of Ecology; no construction allowed until appeal periods (and any appeals) have concluded: Finally, if the Examiner approves or denies the requested Shoreline Substantial Development Permit, such decision must be forwarded to the Department of Ecology, for state review and any appeals of the Shoreline Permits, in accord with SMC 18.80.110(G)(4) and Washington Shoreline Management regulations found in WAC 173-27-130. If approved, WAC 173-27-190 mandates that all shoreline permits for a substantial development, conditional use or variance, issued by local government shall contain a provision that construction pursuant to the permit shall not begin and is not authorized until twenty-one days from the date of filing as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).

III. RECORD AND EXHIBITS.

Copies of all materials in the record and a digital audio recording of the open-record hearing conducted for this application are maintained by the County and may be requested or reviewed by contacting the Community Development Department during regular business hours. Given the ongoing Covid-19 public health considerations, the hearing occurred on May 25, 2022, using an online hearing platform coordinated by county staff. All people who appeared during the course of the hearing and were recognized to offer comments regarding this application provided their testimony under oath, as administered by the hearing examiner.

Colin Maycock, the designated County Planner assigned to review the pending application, appeared at the hearing and summarized the Staff Report and its recommendation of approval, subject to conditions of approval. The applicant, Washington State Parks and Recreation, was represented by Jonathan Gibson, who explained that the Staff Report and recommended conditions align with Parks' needs, and that the applicant accepts the analysis and recommended conditions without objection or requested changes. Mr. Gibson described how the current facility has outlived its life, due to heavy use; and that more environmentally-friendly materials will be used in the replacement project that will be less harmful to the habitat and more accessible for visitors. Kira Swanson also appeared for the applicant, but had no additional information to provide, given that there were no public comments. No one appeared during the public hearing or offered written comments opposing the requested permit. There is no evidence in this record that would serve as a basis to deny the requested shoreline permit.

The Staff Report, prepared by Mr. Maycock, with 23 pages, dated May 9, 2022, with 11 separate documents as numbered and identified on page 23 of the Staff Report, are all included as part of the Record for this matter. During the review period to draft this Decision, the Examiner noted that certain documentation regarding marine mammal monitoring during construction appeared to be missing from the materials, so Staff reviewed the project file and transmitted copies of two additional items earlier in July that are now included in the record: Ex. 12, a Marine Mammal Monitoring Plan for this project, dated March 2022, prepared for Washington Parks by Grette Associates, Environmental Consultants, which includes specific monitoring and protective measures to be following during construction related work at the site; and Ex. 13, a Marbled Murrelet Monitoring Plan prepared by the same team of consultants for this project. With the addition of these two items, the record is now closed and this Decision is in order.

Upon consideration of all the evidence, testimony, expert consultant studies and reports, codes, policies, regulations, and other information contained in the record, the undersigned Examiner issues the following findings, conclusions and Decision.

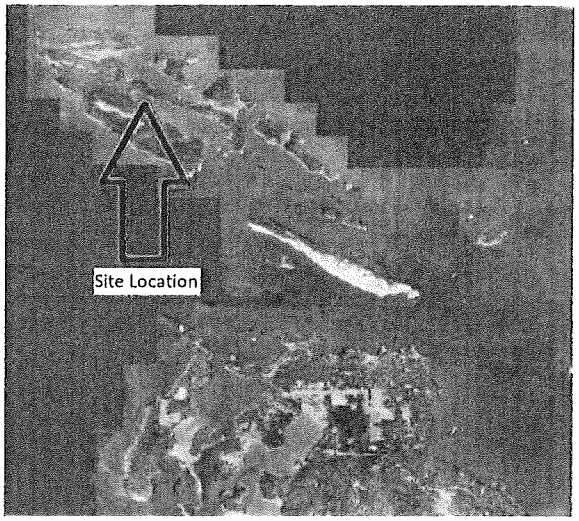
IV. FINDINGS OF FACT.

Based on the record, the Examiner issues the following findings of fact:

1. Any statements contained in a previous or following sections of this Decision that are deemed to be Findings of Fact are hereby adopted as such and incorporated by reference.

2. Washington State Parks and Recreation (Washington Parks) is the applicant in this matter. The applicant currently owns, operates, and maintains public moorage facilities in Reid Harbor, at Stuart Island, in the far north portion of San Juan County.

3. This application is for a Shoreline Substantial Development Permit to replace and expand public moorage facilities in Reid Harbor. The project site is located well-within the generally protected waters of Reid Harbor at Stuart Island, north of San Juan Island, as shown below:



4. The purpose of the project is to improve Washington State Park services to the public by improving the public's water access to Stuart Island Marine State park. *(Staff Report; Testimony of applicant representative, Mr. Gibson).*



5. As shown above, the Stuart Island Marine State Park covers the peninsula and there are similar public moorage facilities on the north side in Prevost Harbor.

6. The proposed development is to replace the timber moorage facilities in Reid Harbor that have reached the end of their useful life. The structures will be realigned and resized to make the facilities more accessible to the public. The following chart, from page 3 of the Staff Report, summarizes the demolition/removal and replacement work involved in this proposal:

[Chart appears in-full on following page]

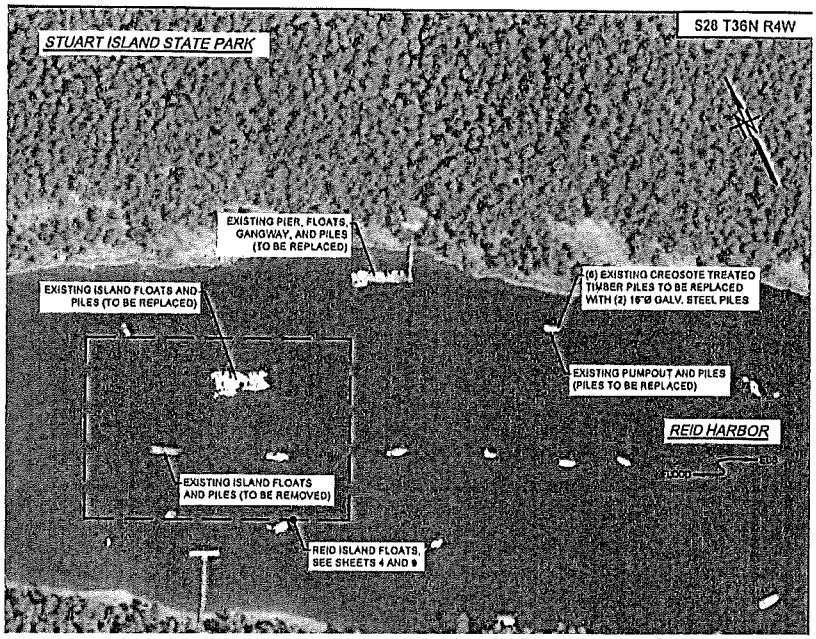
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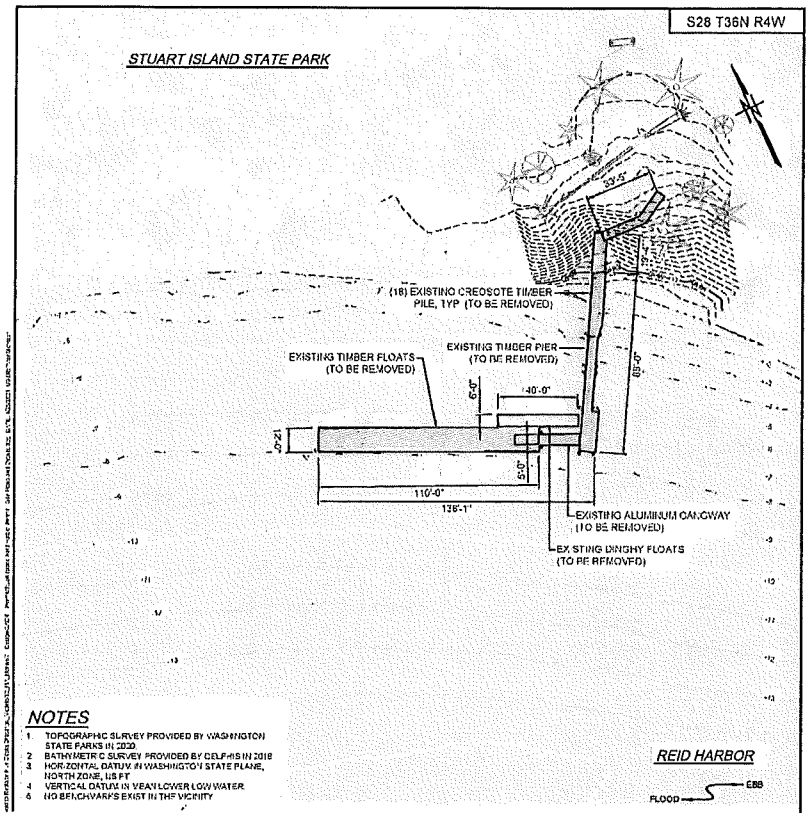
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Task	Qty.	Work Item	Above OHW/HTL		Below OHW/HTL		Total Area (SF)
			Volume (CY)	Area (SF)	Volume (CY)	Area (SF)	
Demolition	18	12"-16" Dia. Creosote Timber Pile (Moorage Facility)	-	-	-	16	**16**
	12	12"-16" Dia. Creosote Timber Dolphin Pile (Offshore Island Floating Docks)	-	-	-	11	**11**
	6	12"-16" Dia. Creosote Timber Dolphin Pile (Pumpout)	-	-	-	6	**6**
	3	12' x 110' (total length) Timber Floats (Moorage Facility)	-	-	-	1,320	**1,320**
	1	6' x 40' Dinghy Float (Moorage Facility)	-	-	-	240	**240**
	2	12' x 113' and 12' x 64' Timber Floats (Offshore Island Floating Docks)	-	-	-	2,124	**2,124**
	1	Timber Fixed Pier	-	235	-	590	**825**
	1	Aluminum Gangway	-	-	-	84	**84**
	Total Demolition		-	**235**	-	**4,391**	**4,626**
Replacement	1	8' x 8' Concrete Abutment	5	64	-	-	**64**
	15	16" Dia. Galv. Steel Pile (Moorage Facility)	-	-	-	21	**21**
	3	16" Dia. Galv. Steel Pile (Offshore Island Floating Docks)	-	-	-	5	**5**
	2	16" Dia. Galv. Steel Pile (Pumpout)	-	-	-	3	**3**
	5	12' x 32' Galv. Steel Moorage Float	-	-	-	1,920	**1,920**
	3	6' x 24' Galv. Steel Dinghy Floats	-	-	-	432	**432**
	2	12' x 32' Galv. Steel Offshore Island Floating Docks	-	-	-	768	**768**
	2	12' x 24'-1 1/2" Galv. Steel Offshore Island Floating Docks	-	-	-	579	**579**
	2	6' x 88' Aluminum Walkways	-	258	-	798	**1,056**
	2	12' x 12' Aluminum Platforms	-	-	-	288	**288**
	1	6' x 80' Aluminum Gangway	-	-	-	432	**432**
	Total Replacement		**5**	**322**	-	**5,246**	**5,568**

7. The proposed development includes the demolition and replacement of the pier, ramp and dock, the removal and replacement of existing off-shore moorage floats, as well as the removal of 36 creosote treated pilings and their replacement with 20 galvanized steel pilings.



8. The illustrations from the Staff Report republished in this Decision show the pier, ramp, and floats that will be replaced as part of this project.

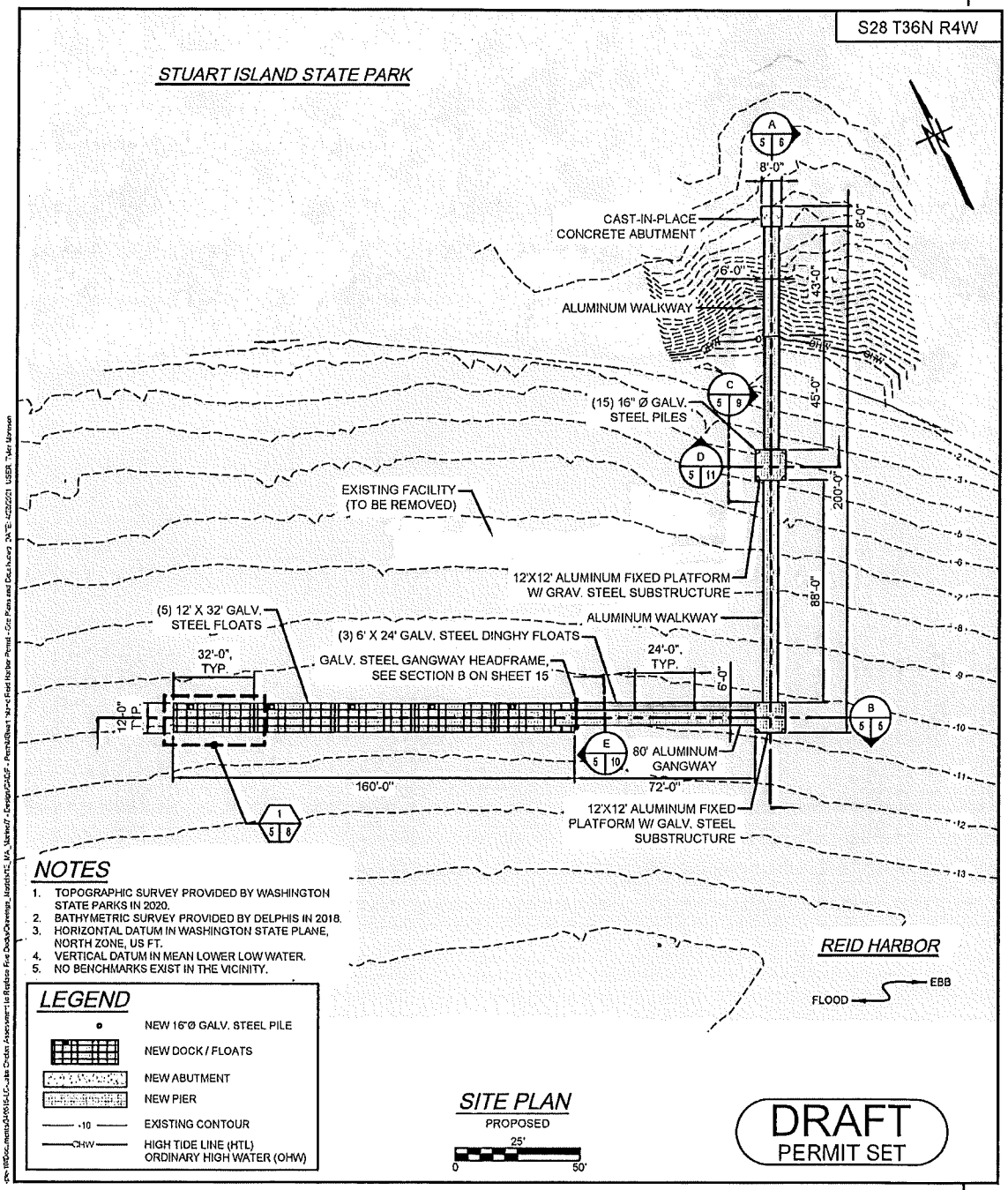


9. The following illustration depicts the proposed new, expanded, pier, ramp and float facility.

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S28 T36N R4W
STUART ISLAND STATE PARK
A
5 6
8'-0"
CAST-IN-PLACE
CONCRETE ABUTMENT
8'-0"
16'-0"
43'-0"
ALUMINUM WALKWAY
MHW
OHW
C
5 6
(15) 16" Ø GALV.
STEEL PILES
45'-0"
D
5 11
EXISTING FACILITY
(TO BE REMOVED)
200'-0"
12'X12' ALUMINUM FIXED PLATFORM
W/ GRAV. STEEL SUBSTRUCTURE
88'-0"
(5) 12' X 32' GALV.
STEEL FLOATS
ALUMINUM WALKWAY
(3) 6' X 24' GALV. STEEL DINGHY FLOATS
32'-0",
TYP.
GALV. STEEL GANGWAY HEADFRAME,
SEE SECTION B ON SHEET 15
24'-0",
TYP.
6'-0"
12'-0"
TYP.
B
5 6
E
5 10
80' ALUMINUM
GANGWAY
160'-0"
72'-0"
1
5 8
12'X12' ALUMINUM FIXED
PLATFORM W/ GALV. STEEL
SUBSTRUCTURE
NOTES
1. TOPOGRAPHIC SURVEY PROVIDED BY WASHINGTON STATE PARKS IN 2020.
2. BATHYMETRIC SURVEY PROVIDED BY DELPHIS IN 2018.
3. HORIZONTAL DATUM IN WASHINGTON STATE PLANE, NORTH ZONE, US FT.
4. VERTICAL DATUM IN MEAN LOWER LOW WATER.
5. NO BENCHMARKS EXIST IN THE VICINITY.
LEGEND
NEW 16"Ø GALV. STEEL PILE
NEW DOCK / FLOATS
NEW ABUTMENT
NEW PIER
-10
EXISTING CONTOUR
OHW
HIGH TIDE LINE (HTL)
ORDINARY HIGH WATER (OHW)
REID HARBOR
EBB
FLOOD
SITE PLAN
PROPOSED
25'
0
50'
DRAFT
PERMIT SET

10. The replacement dock will require the construction of a new concrete abutment landward of the OHWM to anchor the aluminum ramp.

11. A vibratory hammer will be used to remove the 36 creosote pilings and to install the 20 new galvanized steel pilings. Given state and County regulations and policies implemented to protect marine mammals and other wildlife from potential adverse impacts associated with pile replacement / installation work, qualified wildlife consultants generated monitoring plans with specific recommendations that are included as Conditions of Approval for this permit. *(See Exs. 12 and 13, and additional Conditions of Approval added by the Examiner).*

12. The Staff Report, on page 6, summarizes the project history associated with this application, including the preapplication meeting, initial review comments by Staff, submittal of application materials, with additional information submitted following requests from Staff, resulting in a determination that the application materials were complete for purposes of review and vesting in February of this year. The Staff Report confirms that all public notice requirements were satisfied for this application. *(Ex. 6, confirmation of notice materials).*

Description of the Surrounding Area

13. Stuart Island is an isolated, non-ferry served island, to the north of San Juan Island. The island has both private residential development and a significant public park that covers much of the island. The area to the north of the project site is designated as marine shoreline, Provost Harbor; the area to the east is residential; the area to the south is designated as marine shoreline, Reid Harbor; and the area to the west is residential.

SEPA

14. The applicant is a large State agency and elected to serve as lead agency for purposes of satisfying all SEPA review and notice requirements, in accord with applicable law. On December 15, 2021, based on the environmental checklist, application materials, and reports, Washington State Parks, the entity serving as the SEPA lead agency, issued a Determination of Non-Significance for the pending proposal, a copy of which is included in the record as *Ex. 5.*

15. Throughout the public hearing process, no one submitted any written comments or offered any testimony that would question the SEPA DNS issued for this project, and no one provided any environmental information that would warrant further SEPA review for the applicant's proposal.

16. Throughout the public notice and public hearing process for this Shoreline Permit application, no one submitted written comments or testimony to rebut or challenge any of the findings, analysis, and recommended conditions of approval that are provided in the Staff Report.

17. The unrebutted Staff Report and exhibits included in the record for this matter constitute credible, substantial, and unchallenged evidence demonstrating how this proposal is consistent with all State and County Shoreline codes and policies, and satisfies all applicable approval criteria for the requested permit.

18. The substantial evidence in this record supporting issuance of this requested permit includes, but is not limited to, the detailed "Consistency Analysis" on pages 7-19 of the Staff Report, which addresses the following policies and regulations set forth in various provisions of the San Juan County Code:

Applicable Policies and Regulations:

SJCC 18.35.110-140	Fish and Wildlife Habitat Conservation Areas
SJCC 18.50.060	Shoreline Modification regulations
SJCC 18.50.120	General environmental protection
SJCC 18.50.130	Critical areas
SJCC 18.50.240	Over the water structures including boating facilities, docks, piers, mooring buoys and mooring and recreational floats
SJCC 18.50.250	Boating facilities – general
SJCC 18.50.330	Boating facilities, docks, piers, floats, and ramps – submittal requirements
SJCC 18.80.020	Application Requirements
SJCC 18.80.030	Public Notice of Applications and Comment
SJCC 18.80.050	SEPA Implementation Rules
SJCC 18.80.110	Shoreline Permit and Exemption Procedures

19. As noted in the Staff Report, the County received no comments from members of the general public regarding this project. No neighboring property owners, surrounding residents, current marina customers/users, or local environmental groups, submitted any comments questioning or opposing this project.

20. During the public hearing, the Examiner received sworn testimony from Mr. Maycock, the County's planner responsible for reviewing the application materials and generating the Staff Report recommending approval of this application, subject to conditions, the applicant's hearing representative, Jonathan Gibson, spoke to the merits of the project, and accepted the Staff Report and recommended conditions without objection. All witnesses

were credible and answered questions from the Examiner with reference to relevant facts or exhibits included in the record.

21. The Staff Report, the application materials, the SEPA checklist and SEPA threshold determination issued for this proposal, and supporting expert consultant reports, all comprise far more than a preponderance of unrebutted evidence showing how this application meets all applicable approval criteria for the requested shoreline permit. There is no evidence in this record that would serve as a basis to deny the pending request for a shoreline permit.

No net loss; Instead, the proposal should result in benefits to the affected area.

22. There is far more than a preponderance of credible and unrebutted evidence in the record and application materials to demonstrate that no net loss of shoreline ecological functions will occur as a result of this project. In fact, based on a preponderance of environmental documentation in this project file, the Examiner finds and concludes that this project will actually benefit, rather than harm, the shoreline ecological functions by removing harmful creosote pilings and replacing them with more appropriate materials.

23. The project will remove 36 creosote pilings from the shoreline which will be replaced by 20 galvanized steel pilings. Studies have shown that creosote contains 300 distinct chemicals, the toxicity of some is increased by exposure to sunshine, exposure to sunlight also increases the likelihood that these chemicals will leach from the wood into the environment. Polycyclic Aromatic Hydrocarbons (PAH) are the most concerning. PAHs can increase disease and alter reproductive function in fish species. The presence of creosote treated wood can impact juvenile salmon that migrate through contaminated areas by reducing their growth and altering immune function. The removal of the 36 pilings and creosote treated decks will positively impact the shoreline functions in this area. *Staff Report, page 11.*

24. Although the primary moorage structure will increase in size, the proposed development will result in a net reduction of overwater coverage, through the removal of solid decking, the replacement of 36 pilings with 20. The proposal will demolish 4,391 square feet of overwater structures and replace it with 3,915 square feet. Despite the replacement dock's larger footprint, due to the increased grating the effective overwater coverage will decrease by 243 square feet. *(Staff Report, page 11; See Exhibit 11, Section F, page 7).*

25. Substantial evidence in the record, including without limitation Exhibit 7, Section 8.3, page 47, and Section 9, pages 48-51, establish that this project will result in no net loss of shoreline ecological functions. There are no eelgrass beds or macroalgae beds found in the area. And, the removal of the creosote treated timber, in effect, makes the development self-mitigating. Thus, the project is consistent with all applicable shoreline and critical area code

requirements and policies. *(Staff Report, page 11).*

The Record includes a preponderance of evidence that the application meets requirements to approve the requested Shoreline Permit.

26. Based on this record, and as conditioned below, there is no evidence and an absence of legal authority to support denial of the proposed shoreline substantial development permit. No one offered testimony or written comments that would refute the analysis and findings regarding the project's compliance and consistency with relevant Shoreline Codes, plans and policies, Comprehensive Plan Polices, or County development regulations, as set forth in the Staff Report issued for this project. An unrebutted preponderance of evidence in the record fully supports the analysis, findings, and recommended conditions contained in the Staff Report. Additional conditions have been added by the Examiner, all of which are supported by evidence in the record.

27. A preponderance of credible evidence in the record, including without limitation the analysis provided in the Staff Report, and the unchallenged DNS issued for the project, establishes that the applicant has met its burden to prove that the pending application satisfies all criteria for approval of a Substantial Development Permit, found at SJCC 18.80.110(H). Specifically, the applicant has met its burden to establish that: a) The proposal is consistent with the policies of the Shoreline Management Act and its implementing regulations, Chapter 90.58 RCW and Chapter 173-27 WAC, as amended; b) The proposal is consistent with the policies and regulations of the Shoreline Master Program in Chapter 18.50 SJCC; c) The proposal is consistent with applicable provisions of SJCC chapter 18.80 and other applicable sections of the SJCC; and d) The proposal is consistent with the goals and policies of the Comprehensive Plan. *(See Staff Report, analysis of applicable shoreline code provisions on pages 7-25).*

28. All findings, statements of fact, and analysis provided in the Staff Report are incorporated herein as findings of fact by the undersigned hearing examiner, except as modified herein.

29. Consistent with SJCC 18.80.110(H)(2), the Examiner has conditioned approval of the project to make the proposal consistent with the shoreline master program and to mitigate or avoid adverse impacts.

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V. CONCLUSIONS OF LAW.

1. The record includes a preponderance of evidence establishing that the pending Shoreline Substantial Development Permit application satisfies all applicable approval criteria.

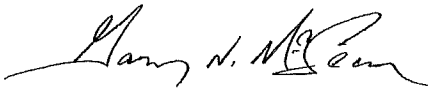
2. As conditioned, professional design recommendations and environmental reports show that the requested shoreline permit will not result in any net loss of shoreline ecological functions. The requested permit is fully supported by evidence in the record and meets all applicable approval criteria. Following notice of the application and DNS issued for the project, there were no opposing comments or challenges made to the SEPA threshold determination issued for this proposal. Therefore, the requested shoreline permit should be approved.

3. Any finding or other statement contained in a previous section of this Decision that is deemed to be a Conclusion of Law is hereby adopted as such and incorporated by reference.

VI. DECISION, CONDITIONS OF APPROVAL.

Based on the record, and for the reasons set forth above, the Shoreline Substantial Development Permit for the Washington State Parks and Recreation Reid Harbor Moorage Facility Replacement and Expansion project is approved, subject to the following Conditions of Approval, which are attached hereto and incorporated herein by reference.

ISSUED this 29th Day of July, 2022



Gary N. McLean
Hearing Examiner

CONDITIONS OF APPROVAL

Reid Harbor Moorage Facility Replacement and Expansion Project

Shoreline Substantial Development Permit
File No. LANDUSE-22-0007
Location:
Reid Harbor, at Stuart Island
Parcel No. 472813001000

Based on the Record, and under authority of applicable county code provisions, the Examiner imposes the following Conditions of Approval on the above-referenced permit. The terms Applicant, Applicants, Permittee, or Permittees should be read to have the same meaning.

This permit authorizes the following Project work on the above-identified property, substantially as described in the Staff Report and application materials, except as the same may be modified by the following conditions:

Project: Removal and replacement of the identified existing moorage facilities providing access to Stuart Island Marine State Park, as summarized on the "Demolition/Replacement" chart provided above in Finding No. 6 and on page 3 of the Staff Report, and as depicted on the site plans included as part of Ex. 8, which includes the following summary of elements provided on page 20 of the Staff Report:

1. Removal and replacement of existing solid timber pier, gangway and floats with new materials, including the construction of an 8'X 8' concrete abutment to anchor the aluminum gangway landward of the OHWM,

2. Removal of one existing offshore island floating dock, incorporating 'lost' moorage in the replacement facility,

3. Replacement of the existing timber framed and creosote dolphin supported offshore island floating dock with steel piles and steel framed floats with grated decking, and

4. Removal and replacement of the creosote dolphins supporting the boat sewage pump-out with steel piles.

A. All development shall be consistent with the approved site plan, included in the record as part of Exhibit 8.

B. The contractor shall comply with permit conditions, all applicable local, state and federal regulations.

C. The existing structures generally have solid timber decking (no light penetration). The entire deck surface of the replacement float will be covered with a minimum 60% open area grating with approximately 50% functional grating.

D. Using a pre-fabricated float minimizes the amount and duration of aquatic construction.

E. The contractor shall comply with all water quality restrictions imposed by Ecology and implement corrective measures if temporary water quality standards are exceeded.

F. Operations will be stopped temporarily if listed species are observed as injured, sick, or dead in the project area, to evaluate whether additional listed species are present and to assess whether operations may continue without further impact. NOAA Fisheries law enforcement will be notified, and fish will be handled with care to ensure effective treatment or analysis of cause of death or injury.

G. The contractor shall have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

H. Work barge(s) shall not ground out during any construction activities.

I. Excess or waste materials shall not be disposed of waterward of MHHW or allowed to enter waters of the state.

J. The contractor shall be required to capture any debris associated with Project activities.

K. All in-water and over-water work shall be conducted using equipment staged from a floating work barge platform or, if possible, from the existing structure. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).

L. The Contractor shall be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.

M. Pile shall be removed using vibratory extraction to greatest extent possible. Pile which cannot be extracted shall be broken off at least 2 feet below the mudline.

N. Pile shall be removed slowly so as to minimize sediment disturbance and turbidity in the water column.

O. Prior to extraction the operator shall "wake up" pile to break bond with sediment to break the friction between the pile and substrate to minimize sediment disturbance.

P. Where possible, extraction equipment shall be kept out of the water to avoid "pinching" pile below the water line in order to minimize creosote release during extraction.

Q. Pile shall not be broken off intentionally by twisting, bending or other deformation in order to minimize creosote release during extraction.

R. The work surface on the barge deck shall include a containment basin for pile and any sediment removed during pulling. Any sediment collected in the containment basin shall be disposed of at an appropriate upland facility, as will all components of the basin (e.g., straw bales, geotextile fabric) and all pile removed.

S. Upon removal from substrate the pile shall be moved expeditiously from the water into the containment basin. The pile shall not be shaken, hosed-off, stripped or scraped off, left hanging to drip or any other action intended to clean or remove adhering material from the pile.

T. All pile removed shall be disposed of at an appropriate upland facility.

U. Pile installation shall be conducted during daylight hours.

V. If visible turbidity exceeds the 150-foot allowable temporary mixing zone during rock socket drilling, the contractor shall install a silt curtain. The silt curtain shall not be removed until suspended solids have settled out of the water column.

W. Marine mammal monitoring shall be conducted during vibratory pile driving activities or rock socket drilling work to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

X. At least one safety ladder shall be placed on the long side of all new or enlarged main floats at 60-lineal-foot intervals.

Y. Pilings employed in piers or any other structure shall have a minimum vertical clearance of one foot above the extreme high water of marine shorelines.

Z. Dock lighting shall shine downward, be of a low wattage, and not exceed a height of three feet above the dock surface. All lighting must be consistent with SJCC 18.50.200.

AA. Timing restrictions specifying that construction must occur when juvenile salmonids are absent or present in very low numbers in the adjacent waterbody shall be strictly observed. All timing restrictions be established by WDFW, the USACE, NOAA Fisheries, or USFWS shall be strictly observed (USACE permit and HPA).

BB. Water quality standards and procedures that limit the impact of turbidity to a defined mixing zone shall be observed (WAC 173-201A).

CC. Project construction shall be completed in compliance with WAC 173-201A.

DD. Any discharge of oil, fuel or chemicals into state waters is prohibited (WAC 173-201A).

EE. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall also be maintained to prevent vandalism (WAC 173-201A).

FF. Spills and/or conditions resulting in distressed or dying fish shall be reported immediately to DOE's Northwest Regional Spill Response Office at (425) 649-7000 (a 24-hour phone number) (WAC 173-201A). Spills of oil or hazardous materials also shall be reported immediately to the National Response Center at 1 (800) 424-8802 and the Washington Emergency Management Division at 1 (800) OILS-911.

GG. Corrective actions shall be taken in the event of any discharge of oil, fuel, or chemicals into the water (WAC 173-201A), including:

- In the event of a spill, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup includes proper disposal of any spilled material and used cleanup material.

- The cause of the spill shall be assessed and appropriate action shall be taken to prevent further incidents or environmental damage.

(Conditions added by the Examiner)

HH. To ensure consistency with and enhance public awareness of Marine Mammal and other wildlife monitoring that must be undertaken in connection with this project – as required for similar private shoreline projects in other parts of the County – these conditions of approval mandate full compliance with all practices and recommendations included the Marine Mammal Monitoring Plan prepared for this project (included in the record as Ex. 12), as well as those included in the Marbled Murrelet Monitoring Plan prepared for this project (included in the Record as Ex. 13).

II. All construction activities shall be consistent with the approved site plan and compliant with San Juan County codes, state regulations, and federal law applicable to any aspect of the project.

JJ. The Permittee shall obtain any associated permit, lease, license, or approval required by any state, federal, tribal, or other regulatory body with jurisdiction over any aspect of the project. Any conditions of regulatory agency permits, leases, licenses, or approvals issued for any aspect of this project shall be considered conditions of approval for this permit and are incorporated herein by this reference.

KK. The Permittee shall comply with all professional report conclusions and recommendations submitted in connection with this Shoreline Permit and associated approvals issued by the San Juan County for this project, as approved, referenced, relied-upon, and/or modified by the County.

LL. Consistent with SJCC 18.80.110.G.5, construction or substantial progress toward construction of this Project must be undertaken within two years after the Washington Department of Ecology's date of filing. Substantial progress toward construction includes letting bids, making contracts, purchase of materials, utility installation and site preparation, but does not include use or development inconsistent with the SMP or the terms of permit approval. However, the two-year period does not include time when development could not proceed due to related administrative appeals or litigation, nor include time necessary to obtain other required permits for the project from state and federal agencies.

MM. Consistent with SJCC 18.80.110.G.6, all development authorized by this shoreline permit shall be completed within five years of the WDOE date of filing or the permit shall become null and void. A permittee may request a time extension before the permit expires by making a written request to the Director, stating the reasons. The hearing examiner will review the permit, and upon a finding of good cause:

a. Extend the permit for a period not to exceed one year; or
b. Terminate the permit.

NN. Consistent with WAC 173-27-190, it is expressly understood that construction pursuant to this permit shall not begin and is not authorized until twenty-one days from the date of filing with the Department of Ecology as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).

OO. Failure to comply with these Conditions of Approval shall be grounds for rescission of the Shoreline Permit. As provided in SJCC 18.80.110.12, "[a]ny shoreline permit may be rescinded by the issuing authority pursuant to RCW 90.58.140(8) upon finding that the permittee has failed to comply with the permit terms and conditions. In the event that the permittee is denied a required sewage disposal, building, or other permit necessary for the project in question, the shoreline permit may be rescinded by the decision-maker. If a shoreline permit is rescinded, the permittee shall be notified by certified mail. Copies of the final action will be filed with the WDOE."

Effective Date, Appeals

Hearing Examiner decisions become effective when mailed or such later date in accordance with the laws and ordinance requirements governing the matter under consideration. SJCC 2.22.170. Before becoming effective, shoreline permits may be subject to review and approval by the Washington Department of Ecology, pursuant to RCW 90.58.140, WAC 173-27-130 and/or SJCC 18.80.110.

Decisions of the Hearing Examiner are final and not subject to administrative appeal to the San Juan County Council, unless the County council has adopted, by ordinance, written procedures for the discretionary review of such decisions. See Section 4.50 of the San Juan County Home Rule Charter and SJCC 2.22.100.

Depending on the subject matter, this decision may be appealable to the San Juan County Superior Court or to the Washington State Shorelines Hearings Board. State law provides short deadlines and strict procedures for appeals and failure to timely comply with filing and service requirements may result in dismissal of any appeal. See RCW 36.70C and RCW 90.58. Persons seeking to file an appeal are encouraged to promptly review appeal deadlines and procedural requirements and confer with advisors of their choosing, possibly including a private attorney.

Attachment 3

Marine Mammal Monitoring Plan

March 2022

WASHINGTON STATE PARKS
STUART ISLAND – REID HARBOR MOORAGE FACILITY REPLACEMENT

MARINE MAMMAL MONITORING PLAN

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

MARCH 2022

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

This Marine Mammal Monitoring Plan (MMMP) was developed to detect the presence of Endangered Species Act (ESA)- and Marine Mammal Protection Act (MMPA)-listed marine mammals (ESA: Southern Resident killer whales [SRKW] and humpback whales; MMPA: all other cetaceans, pinnipeds, and sea otters; "listed marine mammals" hereafter) before and during pile removal and installation in Reid Harbor, Stuart Island, Washington. This MMMP will be implemented in connection with the Reid Harbor Moorage Facility Replacement Project (Project) on behalf of the Washington State Parks and Recreation Commission.

Vibratory pile driving and removal, impact driving, and/or rock drilling for the Project will occur at four locations (Figure 1, Figure 2, and Figure 3):

Removal

- Eighteen (18) creosote-treated timber pile at the moorage facility,
- Twelve (12) creosote-treated timber pile at two offshore island floating dock locations (6 at each),
- Six (6) creosote-treated timber pile at the existing pumpout.

Installation

- Fifteen (15) 16" diameter galvanized steel pipe pile for the moorage facility,
- Three (3) 16" diameter galvanized steel pipe pile for the replacement island float,
- Two (2) 16" diameter galvanized steel pipe pile for the existing pumpout.

2. VISUAL SURVEY METHODS

Visual observations will be used to detect the presence of listed marine mammals. Due to the surface behavior of these marine mammals, it is possible to locate, identify, and follow marine mammal species using binoculars and other optical equipment. The largest monitoring zone extends approximately 15.1 km (9.4 miles) to the southeast of construction activity (see Figures 1 and 2). Monitoring of the area of potential impacts will be conducted using binoculars (10 x 42 or similar) and the naked eye.

We propose the following measures to prevent disturbance to listed marine mammals within the observation area:

1) Qualified observers will be present at all times during pile driving and removal activities. In order to be considered "qualified," the observers will meet the list of qualifications for marine mammal observers described below in Section 3.

    a. Impact pile driving and vibratory pile removal: One observer will be stationed on the shoreline adjacent to the work area, at an elevated location with a good vantage point of Reid Harbor. The largest monitoring zone for impact pile driving is 410 m (1,345 ft; Figure 1) and for vibratory pile removal is 232 m (761 ft; Figure 2).

    b. Vibratory pile driving: The area of ensonification will be monitored by three qualified observers. One observer will be stationed on the shoreline adjacent to the work area, at an elevated location with a good vantage point of the Reid Harbor portion of the area of ensonification. A second observer will be stationed on the

south/east end of Stuart Island at the mouth of Reid Harbor or on a vessel to monitor the central third of the monitoring zone (an approximately 300 m-wide by 2.5 km strip running from the mouth of Reid Harbor to the Cactus Islands). A third observer will be stationed midway along the north side of Spieden Island, on the south shore of the Cactus Islands, or on a vessel in order to monitor the southern/eastern third of the monitoring zone (an approximately 300 m-wide by 3 km strip between Spieden and the Cactus Islands running to the easternmost point of Spieden Island). The largest monitoring zone for vibratory pile driving is 8,600 m (5.34 mi; Figure 2).

c. Rock drilling: The area of ensonification will be monitored by four qualified observers. Three observers will be positioned as described for vibratory pile installation. A fourth observer will be stationed on the south/east end of Spieden Island, the south side of Flattop Island, the northwest shore of Jones Island Marine State Park, or on a vessel in order to monitor the southern/eastern quarter of the monitoring zone (an approximately 300 m-wide by 4.5 km strip between Spieden and Jones Island). The largest monitoring zone for rock drilling is 15,200 m (9.44 mi; Figure 3); however, because noise does not travel through or around land, the monitoring zone ends when the noise reaches Jones Island (approximately 12.75 km; 7.9 mi).

2) Observer(s) will contact the Orca Network by phone (1-866-672-2638) or by checking their Facebook page (per their recommendation) before vibratory or impact pile driving and removal or rock drilling work begins for the day to get an update on the latest SRKW sightings data.

3) The observer will scan the visible waters within the potential impact area using binoculars (10 x 42 or similar) and the naked eye.

4) The waters will be scanned for 20 minutes prior to and during all pile driving/removal or rock drilling activities. If listed marine mammals enter or are observed within the designated radius during the 20 minute clear, the observer(s) will notify the designated point of contact (inspector or contractor) and work will be delayed until the zone is clear. The monitoring zone will be considered clear when animals have not been sighted within the designated radius for 20 minutes, or when they are observed outside the radius.

5) The entirety of the largest monitoring zone must be visible to clear for operations. If visibility does not allow for clearing of the entire zone, start of operations must be delayed until the zone is visible. If vessels are being used, it is acceptable to traverse the monitoring zone until the entire monitoring zone has been observed. Once operations have commenced, if visibility of the injury zone is lost, operations must cease until visibility is restored. If visibility of the behavioral disturbance zone is lost due to weather, operations may continue as long as there is not a break in operations longer than one hour. If no noise has been introduced to the water from operations for longer than one hour, the zone must be cleared again prior to commencing work. If impact driving, a soft start will be used. Operations will not occur after dusk, except when approved by the agencies.

3. MINIMUM QUALIFICATIONS FOR MARINE MAMMAL OBSERVERS

Marine mammal monitors employed to implement the proposed MMMP shall meet the following minimum qualifications:

1) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. Use of binoculars may be necessary to correctly identify the target.
2) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).
3) Experience or training in the field identification of listed marine mammals.
4) Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.
5) Writing skills sufficient to prepare a report of observations that would include such information as the number and type of listed marine mammals observed; the behavior of listed marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in water construction activities were conducted; dates and times when listed marine mammals were present at or within the defined disturbance zone; dates and times when in water construction activities were suspended to avoid incidental harassment by disturbance from construction noise; etc.
6) Ability to communicate orally, by radio or in person, with project personnel to provide real time information on listed marine mammals observed in the area as necessary.

4. MONITORING ZONES

Figure 1. Project area and proposed observer location (yellow star) for impact pile driving operations. Monitoring zones for all marine mammals are shown at an example pile location at the moorage facility site. Pile may be impact driven at three structures (west to east): offshore island floating dock (3 pile to be installed), moorage facility (15 pile to be installed), and pumpout float (2 pile to be installed). See BE and JARPA figures for a detailed project description.

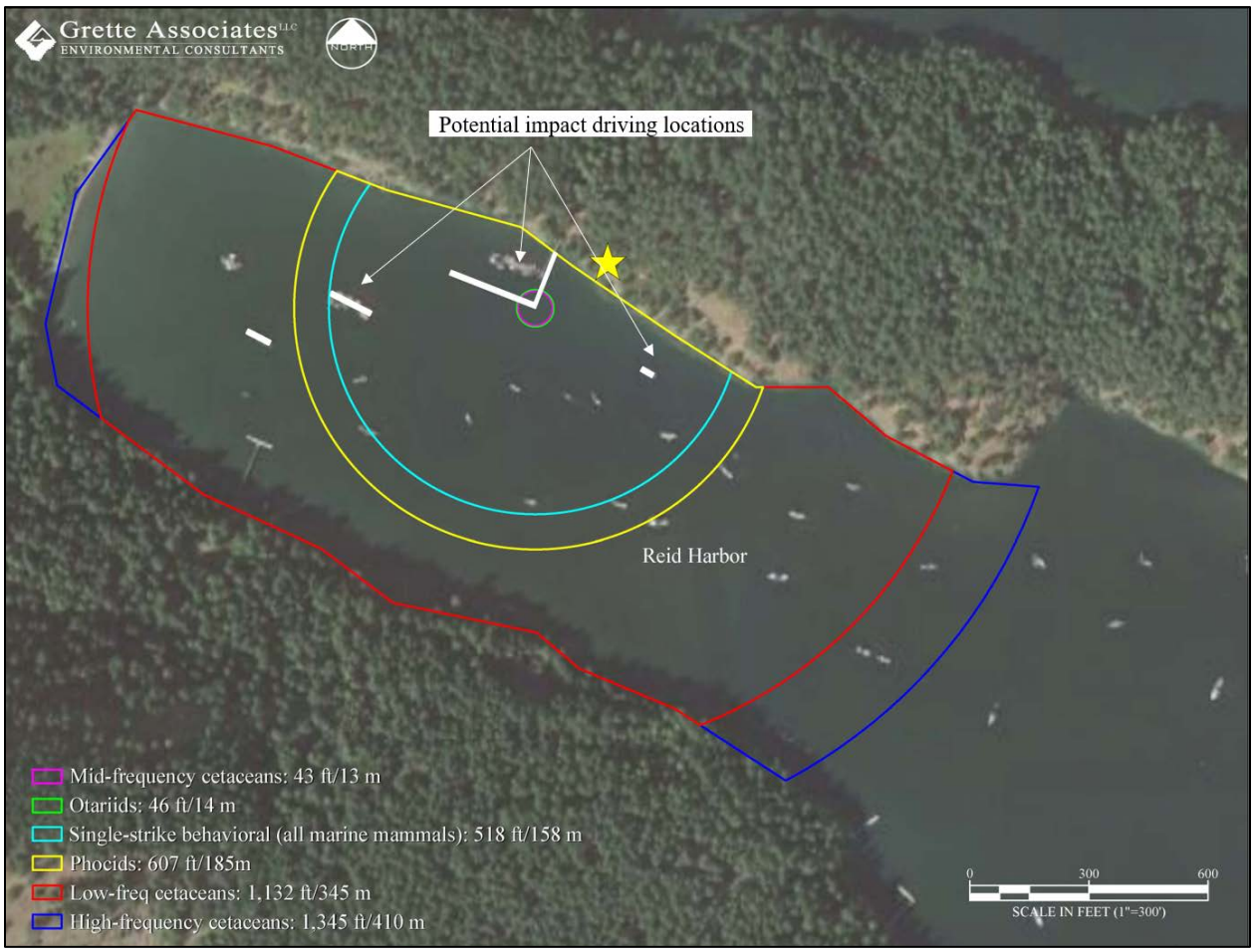


Figure 2. Project area and proposed observer locations (yellow stars) for vibratory pile driving and removal operations. Monitoring zones for all marine mammals are shown at an example pile location at the moorage facility site. Pile will be removed at four structures and installed at three (west to east): offshore island floating dock (6 pile to be removed, none installed), second offshore island floating dock (6 to be removed, 3 to be installed), moorage facility (18 to be removed, 15 to be installed), and pumpout float (6 to be removed, 2 to be installed). See BE and JARPA figures for a detailed project description. For vibratory pile removal, only the observer stationed at the project site in Reid Harbor will be required.

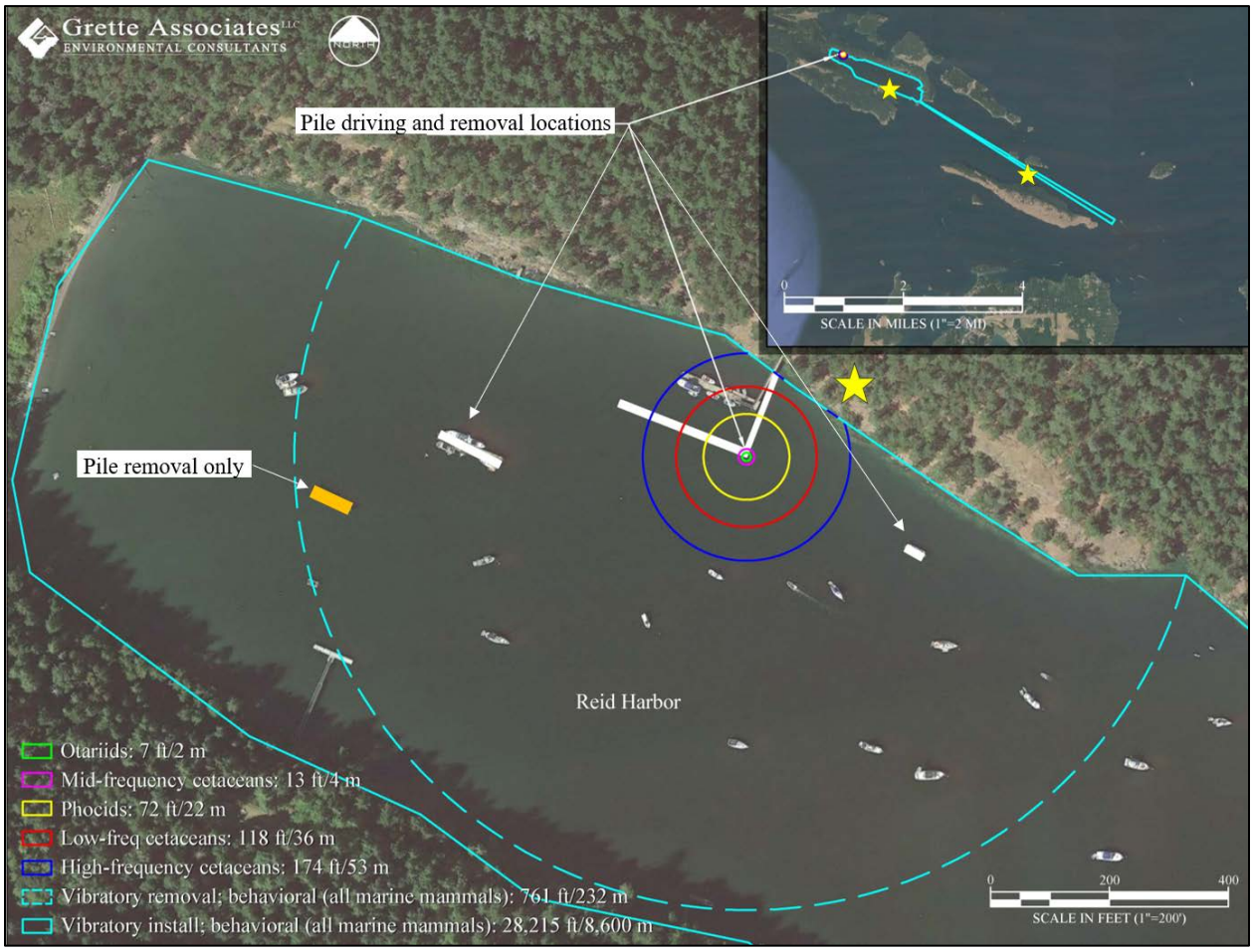
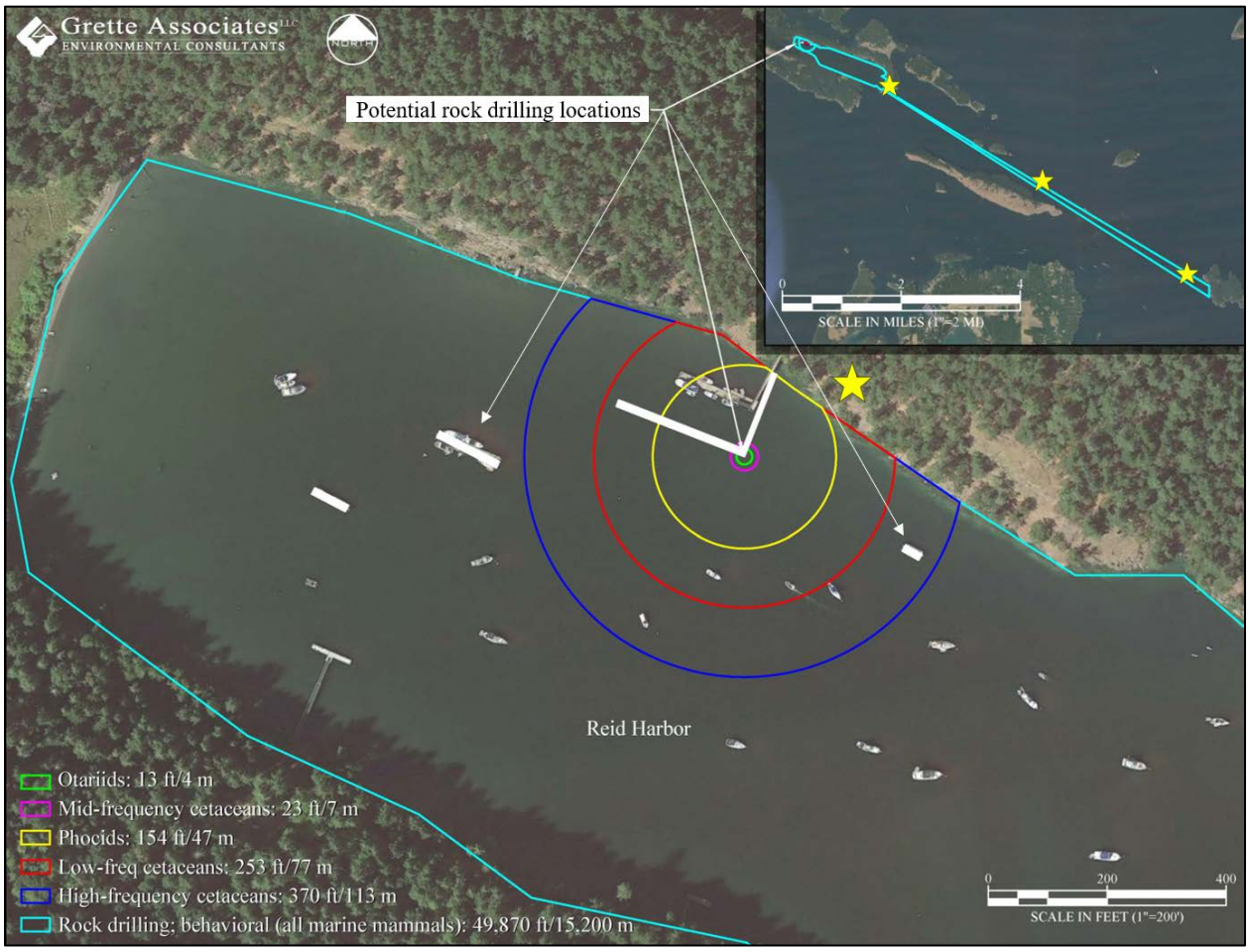


Figure 3. Project area and proposed observer locations (yellow stars) for rock drilling operations. Monitoring zones for all marine mammals are shown at an example pile location at the moorage facility site. Pile may require rock drilling at three structures (west to east): offshore island floating dock (3 pile to be installed), moorage facility (15 pile to be installed), and pumpout float (2 pile to be installed). See BE and JARPA figures for a detailed project description.



Attachment 4

Marbled Murrelet Monitoring Plan

March 2022

WASHINGTON STATE PARKS
STUART ISLAND – REID HARBOR MOORAGE FACILITY REPLACEMENT

MARBLED MURRELET MONITORING PLAN

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

MARCH 2022

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

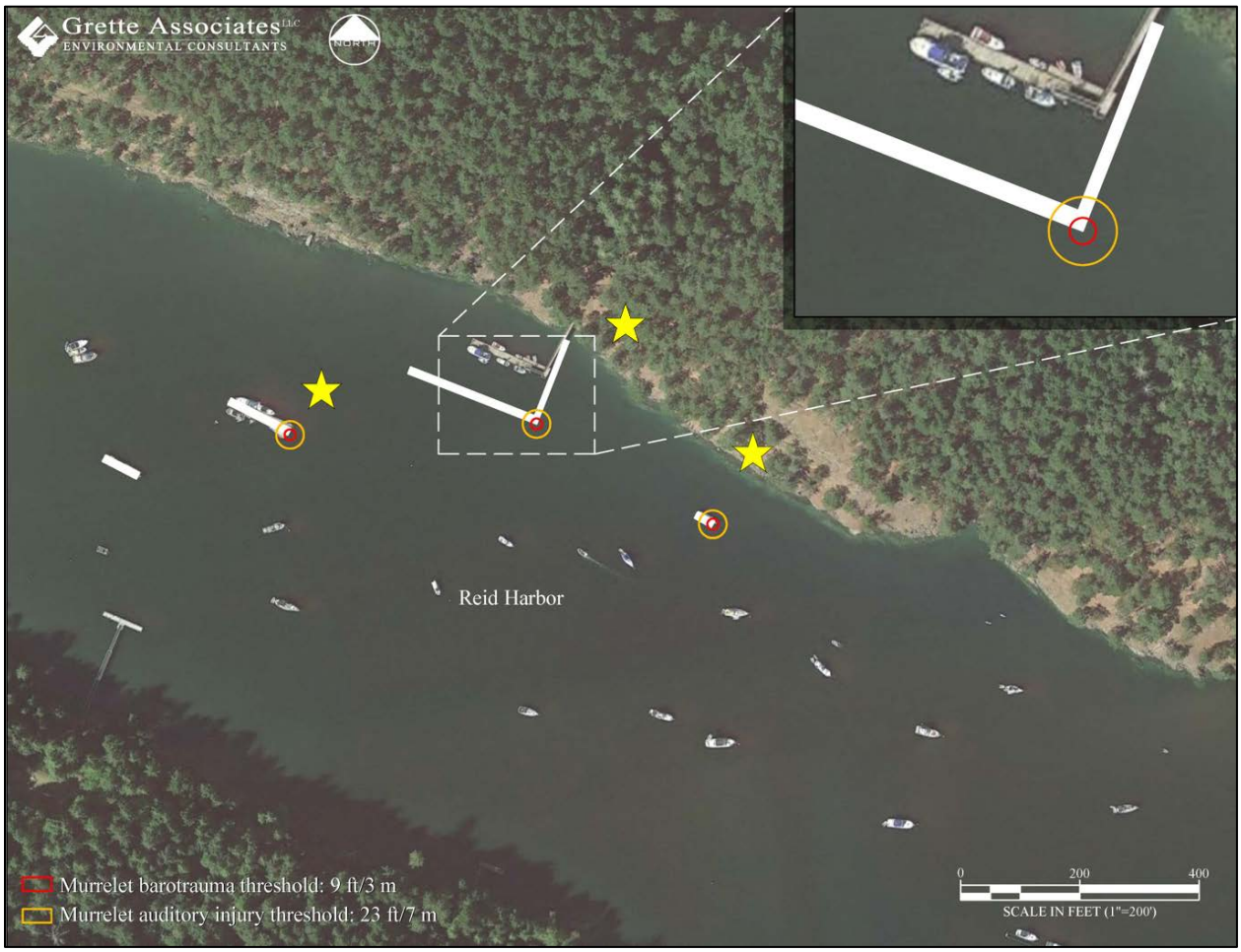
This Marbled Murrelet Monitoring Plan (Plan) was developed to facilitate detection of ESA-listed marbled murrelets before and during impact pile installation in Reid Harbor, Stuart Island, Washington, if necessary. Monitoring would be conducted in connection with the Reid Harbor Moorage Facility Replacement Project, to be conducted on behalf of the Washington State Parks and Recreation Commission. This Plan defines the barotrauma and auditory injury monitoring zones for marbled murrelets and proposes monitoring stations for marbled murrelet monitors. Attachment A: U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office Protocol for Marbled Murrelet Monitoring During Pile Driving Observation (USFWS Protocols) outlines the observation protocols, data collection methods, and reporting requirements that would be followed.

2. MONITORING ZONES

The monitoring zone for barotrauma is 3 m (9 ft) and for auditory injury is 7 m (23 ft). The zone is so small that monitoring may not be necessary. Marbled murrelets are not likely to be present within 7 m of a pile being impact driven.

Per the USFWS Protocols, one monitor may only be responsible for a 50 m zone. Because of this, no vessel transects are required for effective monitoring for marbled murrelets. For pile driving occurring on the new moorage facility (fifteen [15] galvanized steel pile) and on the eastern float (existing pumpout; two [2] galvanized steel pile), the shore is 30 m from the work areas. For these locations, an observer will be stationed along the shore with a good vantage point of the 3 and 7 m radii around the work area (Figure 1). For pile driving on the western offshore island floating dock (three [3] galvanized steel pile), a monitor will be stationed on a vessel with a good vantage point of the 3 m and 7 m monitoring zones.

Figure 1. Aerial photo of project area and proposed observer locations (yellow stars) for impact pile driving operations at three locations. Marbled murrelet barotrauma and auditory injury zones are shown at example pile locations at the three structures that will require pile driving (west to east): offshore island floating dock (3 pile to be installed), moorage facility (15 pile to be installed), and pumpout float (2 pile to be installed). See BE and JARPA figures for a detailed project description.



3. ATTACHMENT A

U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office Protocol for Marbled Murrelet Monitoring During Pile Driving Observation

U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office
Protocol for Marbled Murrelet Monitoring During Pile Driving (Revised 6/20/2012)

1.0 Objective

The intent of the monitoring protocol is to:

1. Comply with the requirements of the Endangered Species Act Section 7 consultation.
2. Detect all marbled murrelets (*Brachyramphus marmoratus*) (murrelets) within the monitoring area.
3. To minimize take of murrelets from both exposure to potentially injurious underwater sound pressure levels, and from the masking effects of in-air sound by communicating immediately with the pile driver operator.
4. Track incidental take exempted through the Incidental Take Statement found in the final Biological Opinion for the project so that the Lead Federal Action Agency will know when take occurs and/or when take exemptions might be exceeded.

2.0 Adaptive Approach

The individuals that implement this protocol will assess its effectiveness during implementation. They will use their best professional judgment throughout implementation and will seek improvements to these methods when deemed appropriate. Any modifications to this protocol will be coordinated between the Lead Federal Action Agency and the Washington Fish and Wildlife Office.

3.0 Monitoring

3.1 Activities to be Monitored

Application of this protocol is required as specified through the Endangered Species Act consultation process for individual projects. It may apply projects that involve either in-water impact pile driving when injurious sound pressure levels are expected and to projects that involve either vibratory or impact pile driving when in-air sounds are expected to cause masking effects.

3.2 Equipment

- Binoculars - quality 8 or 10 power;
- Spotting scopes
- Two-way radios with earpieces;

- range finder;
- Log books; and,
- Seabird identification guide.
- Life vest or other personal flotation device for observers in boats.
- Cellular phone to contact Lead Federal Action Agency, the Construction Contractor, or WFWO.

3.3 Locations

Proposed monitoring locations will be indicated on the Seabird Monitoring Site/Transect Identification Form. Due to limitations that could result from construction activity and/or other site specific variables, the monitoring locations may be refined in the field. In that case, final monitoring locations will be noted on an aerial photo or plan sheet, and documented in the final monitoring report.

3.4 Monitoring Techniques

One qualified biologist shall be identified as the Lead Biologist. The Lead Biologist has the authority to stop pile driving when murrelets are detected in the monitoring area or when visibility impairs monitoring. The Lead Biologist is responsible for:

- Ensuring consistency with the criteria in the consultation;
- Communicating with monitoring crew(s), the pile driver operator, and the WFWO; and
- Determining monitoring start and end times.

An appropriate number of qualified observers will be positioned on shore and in boats to provide adequate coverage of the monitoring area to ensure no murrelets are in the monitoring area. Monitoring will begin at least 30 minutes prior to commencement of pile driving. Each qualified observer will cover an on shore station or boat transect that is no more than 50 meters wide. All observers are responsible for:

- Understanding the requirements in the consultation and monitoring plan;
- Knowing the lines and method of communicating with the Lead Biologist and boat operator (if an observer on the boat);
- Evaluating the sea conditions and visibility;
- Calibrating their ability to determine a 50-meter distance at the beginning of each day. Calibration should be done using a range finder on a stationary object on the water; and
- Determining when conditions for monitoring are not met.

Monitoring will only occur when the sea state is at a Beaufort scale of 2 or less. The Beaufort scale is presented in Table 1 below. Observers should scan without a scope or binoculars; scopes and binoculars should only be used to verify species.

Observers will be positioned at on-shore vantage points to scan for murrelets within the monitoring zone. The on-shore vantage points will be on either side of the project to allow for an unobstructed view of the monitoring zone at all times. Observers in boats will conduct at least 2 full sweeps of the monitoring zone prior to pile driving to ensure

that no murrelets are in the monitoring zone. Each observer is responsible for scanning from 0° (straight ahead of bow) to 90° left or right, depending upon which side of the boat they occupy. Observers should occasionally scan past 90°, looking for murrelets that may have surfaced behind the boat. Boat speed should be no less than 5 knots and no greater than 10 knots. Observer coverage should not be compromised; therefore, observer's ability to scan dictates the speed of the boat. Boat operators will not function as murrelet monitors while operating the boat.

If no murrelets are within the monitoring zone, the observers will notify the Lead Biologist who will communicate to the pile driver operator that pile driving may commence. During pile driving the observers on shore will continue scanning the area for murrelets. The observers in the boats will patrol and scan the monitoring area. All observers will have two-way radios with earpieces to allow for effective communication during pile driving. If murrelets are seen within the monitoring zone during pile driving, the observers will immediately notify the Lead Biologist who will communicate to the pile driver operator that he/she is to cease pile driving. Pile driving will not resume until the murrelets have left the monitoring area and at least 2 full sweeps of the monitoring area have confirmed murrelets are not present.

When a murrelet is detected within the monitoring area, it will be continuously observed until it leaves the monitoring area. If observers lose sight of the murrelet, searches for the murrelet will continue for at least 5 minutes. If the murrelet is still not found, then at least 2 full sweeps of the monitoring area to confirm no murrelets are present will be conducted prior to resumption of pile driving.

It is the observer's responsibility to determine if he/she is not able to see murrelets and inform the Lead Biologist that the monitoring needs to be terminated until conditions allow for accurate monitoring.

Murrelets are especially vulnerable to disturbance when they are molting and flightless. Molting occurs after nesting in late summer, typically July through October in Puget Sound populations. Extra precaution should be exercised during this period.

Table 1 – Beaufort Wind Scale develop in 1805 by Sir Francis Beaufort of England (0=calm to 12=hurricane)

Force	Wind (knots)	Classification	Appearance of wind effects on the water	Appearance of wind effects on land	Notes specific to on-water seabird observations
0	<1	Calm	Sea surface smooth and mirror like	Calm, smoke rises vertically	Excellent conditions, no wind, small or very smooth swell. You have the impression you could see anything.
1	1-3	Light air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes	Very good conditions, surface could be glassy (Beaufort 0), but with some lumpy swell or reflection from forests, glare, etc.
2	4-6	Light breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move	Good conditions, no whitecaps, texture/lighting contrast of water make murrelets hard to see. Surface could also be glassy or have small ripples, but with a short, lumpy swell, thick fog, etc.
3	7-10	Gentle breeze	Large wavelets, crests beginning to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended	Surveys cease, scattered whitecaps present, detection of murrelets definitely compromised, a hit-or-miss chance of seeing them owing to water choppiness and high contrast. This could also occur at lesser wind with a very short wavelength, choppy swell.
4	11-16	Moderate breeze	Small waves 0.3 to 1.1m becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move	Poor conditions, end surveys, whitecaps abundant, sea chop bouncing the boat around, etc.
5	17-21	Fresh breeze	Moderate waves 1.1 to 2.0 m taking longer form, many whitecaps, some spray	Small trees begin to sway	

3.5 Limitations

No monitoring will be conducted during inclement weather that creates potentially hazardous conditions as determined by the Lead Biologist. Observers must have visibility to at least 50 meters. No monitoring will be conducted when visibility is significantly limited such as during heavy rain, fog, glare or in a Beaufort sea state greater than 2.

Glare can significantly limit an observer's ability to detect birds. Boat orientation may be adjusted to reduce glare (e.g. change direction or reduce width of transects to 50 meters with observers on only one side of boat). However, if visibility cannot be adjusted, monitoring and pile driving must cease until effective monitoring can be conducted.

Monitoring will not start until after sunrise and will cease prior to sunset. Specific timing restrictions may be in place per the consultation documents.

3.6 Documentation

The observers will document the number and general location of all murrelets in the monitoring area. Additional information on other seabirds and behaviors will be collected during documentation to improve general data knowledge on seabird presence and distribution as well as project impacts on various seabirds. Each observer will record information using the *Seabird Monitoring Data Collection Form* and reference completed *Seabird Monitoring Site/Transects Identification* and *Seabird Land-Based Monitoring Site Forms*. Forms are included in the Appendix.

Office Pre-Monitoring Set-up
Determine the number of monitoring stations or sites that will be needed to appropriately cover the monitoring area. Each observer is limited to 50 meters. Using the *Seabird Monitoring Site/Transects Identification Form*, insert an aerial photo of the project site and outline (box) each boat transect or land-based monitoring site. This demonstrates limitations of the site and areas where observers overlap. Identify on the aerial where each of the two types of monitoring (boat transects and land-based sites) will occur (See Example Dolphin Repair).

For each land-based monitoring site, draw the shoreline on the *Seabird Land-Based Monitoring Site Form*. Include in your drawing helpful information on the site such as visual limitations, structures that could be used by seabirds, or fishing piers, which may draw in feeding birds (i.e. gulls). The gridwork will allow the observer to quickly fill in location identifiers during monitoring.

Data Collection
All murrelets within transects or monitoring sites will be continuously documented during impacting activities. On the *Seabird Monitoring Data Collection Form*, document the time, number of birds, location, and observed behavior (See Example Dolphin Repair). Update the documentation when a murrelet changes behavior, changes location, or leaves the area. To the extent possible, the observers will also record each murrelet "take" incident observed, as defined in the final Biological Opinion. This may include obvious disturbance responses from pile driving or other construction activities, and injury or mortality that can be attributed to project-related activities.

Observers will also note all seabirds within the area that appear to be acting abnormally during any project activities. For example, if a seabird is listing, paddling in circles,

shaking head, or suddenly flushing at the onset of activity, note the information on the *Seabird Monitoring Data Collection Form.* For all birds except murrelets, providing a genus level (grebe, loon, cormorant, scoter, gull, etc) of identification is sufficient.

General information on other seabird behavior and distribution within the monitoring area will be collected. Every two hours at minimum during pile driving activities, the observer will document other seabird presence, behavior, and distribution in the monitoring area. This information can be collected more frequently. Many seabirds may linger in an area for several hours. If this is the case, note the time, species, and in the comments section identify that this is the same group from earlier and document any notable changes in behavior.

Under location, the data form indicates two separate options for documenting location. Land-based observers can fill out the land-based only or both land-based and boat sections. The land-based location will be based on the grid drawn out on the *Seabird Land-Based Monitoring Site Form* (See Example Dolphin Repair). For the boat transect locations, identify the distance in meters from the boat to the seabird and whether it is landward (toward activity) or seaward (away from activity).

Example Dolphin Repair

Seabird Monitoring Site/Transect Identification Form

Project Name

Dolphin repair

Monitoring Dates

November 8, 9, 10, 2012

Number of Monitoring Sites/Transects

4

Insert aerial photo of entire monitoring project area. Identify each monitoring site/station reflecting 50 meter zones for each observer. For example, if there are two observers on a boat transect, the box will be 100 meters wide. Some monitoring stations will overlap and should be indicated here.



Seabird Land-Based Monitoring Site Form

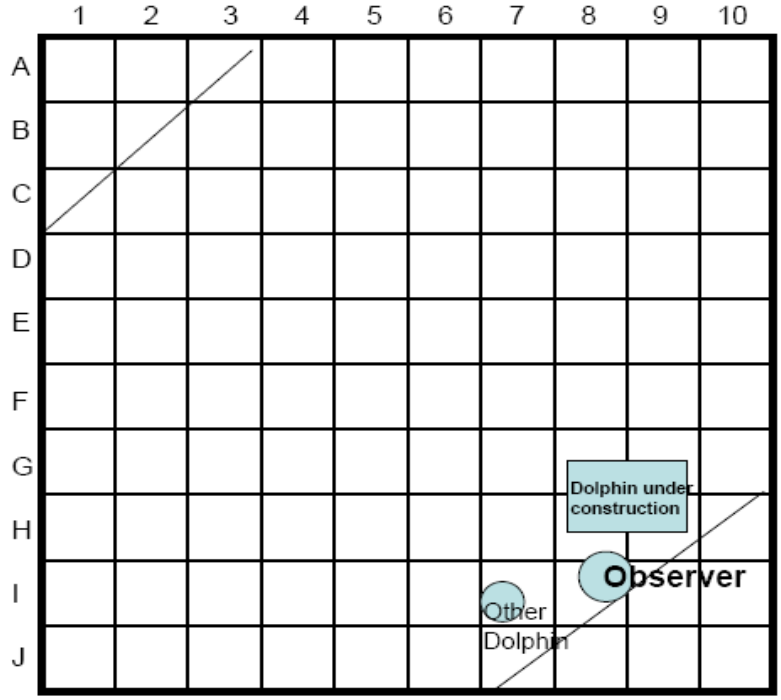
Project Name Dolphin Repair **Date** 11/10/12

Land Based Monitoring Site ID Station #4

For each monitoring station referenced in the main map grid, sketch the coastline using the 5 meter squares. Indicate the direction to where impacting activities are occurring.

Use space below to describe additional monitoring site details that may be pertinent such as other structures seabirds may use.

Observer located at end of terminal pier adjacent to construction activities. There is another dolphin to the west currently used by cormorants.



Seabird Monitoring Data Collection Form

Date

Project Name Dolphin Repair **Monitoring Site/Transect ID** Land Based Station #4

Observers Harry Downy

Activity Pile Driving **Time and Duration** 10:30 am to 4:00 pm

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
10 am	scoters	10	2	C6			R	
10 am	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin
11:15 am	marbled murrelet	1	1	B4			F	Pile driving ceased, MM left observation area at 11:20
12:00 pm	grebe	2	2	G6			P	
12:00 pm	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin
2:00	gulls	15	1	H10			F	Group attracted by fisherman dumping guts
2:00	cormorants	20	1	I8			R, P	Hanging out on adjacent dolphin
4:00	gulls	5	2	H10			F	Residuals from earlier
4:00	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

Seabird Monitoring Data Collection Form Date 11/10/12

Project Name Dolphin Repair Monitoring Site/Transect ID Land Based Station #4

Observers Jimmy Jones

Activity Pile Driving Time and Duration 10:30 am to 4:00 pm

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
10 am	grebe	1	2		25	sea	T	
11:25	marbled murrelet	1	1		45	land	F	Pile driving ceased at 11:15, left monitoring area at 11:45
12:00	scoters, loon	8	1		15	land	R, P	Startled by pile driving re-start, flushed out of area
12:00	common murre	2	1		25	sea	T	Startled by pile driving re-start, flushed out of area
2:00	gulls	1	2		75	sea	T	
4:00	gulls	5	2		50	sea	T	

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

3.7 Timing and Duration

Monitoring will commence at least 30 minutes before the initiation of pile driving (but not before daylight) and will continue until pile driving is completed each day (but not after nightfall).

3.8 Contingency

In the unlikely event that a murrelet is perceived to be injured by pile driving, all pile driving will cease and WFWO will be contacted as soon as possible.

The Lead Federal Action Agency will work with WFWO to make necessary changes to the monitoring plan as described in section 2.0 above. Pile driving cannot resume until the plan has been amended, unless the WFWO cannot be reached, then the Lead Biologist determines the course of action and continues to ensure consistency with the consultation.

4.0 Beach Surveys

Searches for diving seabird carcasses along nearby beaches will be conducted following pile driving activities. The biologist will walk accessible beaches within 0.5 mile of the pile driving location. Beach surveys will be conducted during low or receding tides, if

possible, to maximize the chances of finding beached carcasses. Beach surveys will be conducted each day following in-water impact pile driving (as is practical based on the timing of tide events and pile driving activities.) Beach surveys are of secondary priority and will not be conducted if such activities would interfere with the implementation of murrelet monitoring or if the timing of low/receding tides imposes unreasonable schedule demands on the biologist.

Any dead murrelets or other diving seabirds found during the beach surveys (or during monitoring activities) will be collected by monitoring staff and delivered, as soon as possible, to the WFWO in Lacey, Washington for examination. Collected carcasses will be put in plastic bags, and kept cool (but not frozen) until delivery to the WFWO. Surveyors will follow the chain-of-custody process included in the consultation documents.

5.0 FWS Communication

Prior to the initiation of monitoring the Lead Federal Action Agency and a representative from the WFWO will meet to review the proposed monitoring locations and any logistical concerns that may have developed during monitoring preparation. The Lead Federal Action Agency will keep the WFWO informed of the progress and effectiveness of the monitoring activities and of the number and disposition of murrelet take that is documented throughout the duration of the project.

The Lead Federal Action Agency will notify the WFWO of any problems and/or necessary modification to the monitoring plan. The Lead Federal Action Agency will coordinate with the WFWO in the development of a modified approach and will obtain WFWO approval for such modifications.

Primary points of contact at the WFWO are:

1. Consulting Biologist – phone:
2. Emily Teachout – phone: (360) 753-9583
3. Deanna Lynch – phone: (360) 753-9545

6.0 Personnel Qualifications and Training

All observers must be certified under the Marbled Murrelet Marine Protocol. Observers will have appropriate qualifications, including education or work experience in biology, ornithology, or a closely related field; at least one season (2-3 months) of work with bird identification being the primary objective (i.e. not incidental to other work). Observers must have experience identifying marine birds in the Pacific Northwest, as well as understanding and documenting bird behavior.

All observers will attend the marbled murrelet marine monitoring protocol training and pass the written and photo examination with 90% proficiency. Upon successful completion, observers will be certified. Certification is valid for one year.

Recertification is required annually, unless the observer can document that he/she implemented the monitoring protocol for at least 25 monitoring days in the previous year. Recertification can then be delayed for one year; however, recertification can only be delayed for one year.

Certifications will be considered expired after one year, unless the WFWO is notified by the biologist that greater than 25 days of survey were done within one year of their certificate date. If an observer does conduct greater than 25 days of survey the certificate will be valid for an additional year from the certificate date. To extend a certification the biologist sends an email to the attention of Emily Teachout (emily_teachout@fws.gov) with the dates of the surveys they conducted and the date of their original certificate. The WFWO will maintain a list a certified observers and it will be available on our website.

The Lead Federal Agency is expected to provide all observers with a copy of the consultation documents for the project. Observers must read and understand the contents of the consultation documents related to identifying, minimizing, and reporting "incidental take" of murrelets.

7.0 Reporting

At the completion of each in-water work window for which there has been impact pile driving, the Lead Federal Action Agency will forward a monitoring report to the WFWO within 30 days. Reports shall be sent to the attention of (WFWO Branch Manager). The report shall include:

- Observation dates, times, and conditions
- Description of the any "take" (as described in the final Biological Opinion) identified by the biologist
- Copies of field data sheets or logs

Note: Questions and comments regarding this protocol should be directed to Emily Teachout at the USFWS, Washington Fish and Wildlife Office (360-753-9583); emily_teachout@fws.gov

APPENDIX

Print Form

Seabird Monitoring Site/Transect Identification Form

Project Name

Monitoring Dates

Number of Monitoring Sites/Transects

Insert aerial photo of entire monitoring project area. Identify each monitoring site/transect. Each monitoring station will reflect the 50 meter zone for each observer. For example, if there are two observers on a boat transect, the box will be 100 meters wide. Some monitoring stations will overlap and should be indicated here.

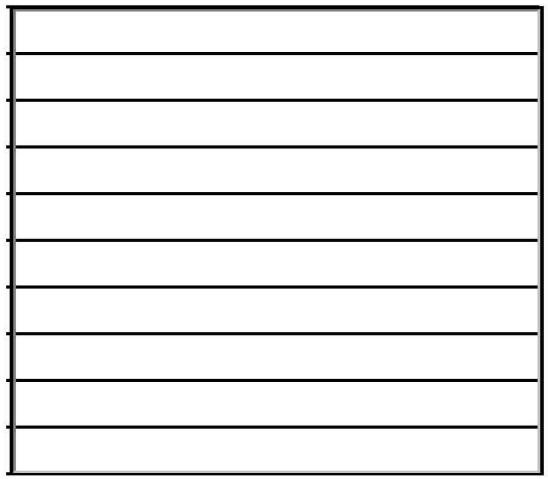
Seabird Land-Based Monitoring Site Form

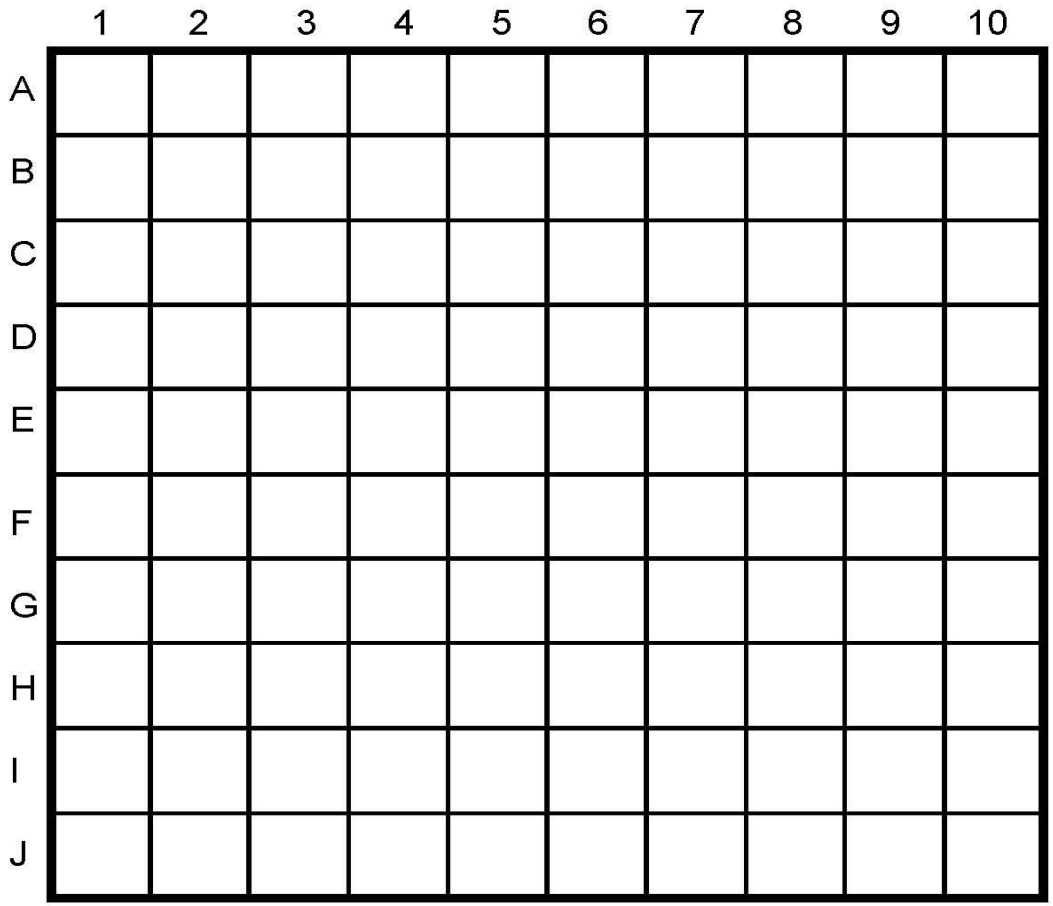
Project Name _____ **Date** _____

Land Based Monitoring Site ID _____

For each monitoring station referenced in the main map grid, sketch the coastline using the 5 meter squares. Indicate the direction to where impacting activities are occurring.

Use space below to describe additional monitoring site details that may be pertinent such as other structures seabirds may use.





Seabird Monitoring Data Collection Form

Date_____

Project Name _____ **Monitoring Site/Transect ID** _____

Observers_____

Activity _____ **Time and Duration**_____

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

Attachment 5

Washington Department of Fish and Wildlife

Hydraulic Project Approval (HPA)

HPA 2022-4-84+01

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: February 06, 2022
Project End Date: March 01, 2026

Permit Number: 2022-4-84+01
FPA/Public Notice Number: N/A
Application ID: 27259

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Washington State Parks and Recreation Commission ATTENTION: Joelene Boyd 220 North Walnut Street Burlington, WA 98233	

Project Name: Stuart Island - Reid Harbor Moorage Facility Replacement

Project Description: Washington State Parks and Recreation Commission (State Parks) proposes to replace the existing timber moorage facility, including an aluminum gangway, a timber walkway, four (4) timber floats, two (2) timber offshore island floating docks and thirty-six (36) creosote-treated timber pile with aluminum and steel structures.

PROVISIONS

1. TIMING LIMITATION: To protect fish and shellfish habitats at the job site, work below the ordinary high water line must occur from September 1 and March 1 of any year.

2. APPROVED PLANS: Work must be accomplished per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled "STUART ISLAND - REID HARBOR MOORAGE FACILITY REPLACEMENT," dated January 3, 2022, except as modified by this Hydraulic Project Approval (HPA). You must have a copy of these plans and this HPA available on site during all phases of the project construction.

NOTIFICATION

3. PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

4. PHOTOGRAPHS: You, your agent, or contractor must take photographs of the job site before the work begins and after the work is completed. You must upload the photographs to the post-permit requirement page in the Aquatic Protection Permitting System (APPS) or mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234 within 30-days after the work is completed.

5. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS AND EQUIPMENT

6. Establish the staging area (used for activities such as equipment storage, vehicle storage, fueling, servicing, and

hazardous material storage) in a location and manner that will prevent contaminants like petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

7. Check equipment daily for leaks and complete any required repairs before using the equipment in or near the water.

8. Lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols are recommended for use in equipment operated in or near water.

9. Operate vessels with minimal propulsion power to avoid prop scour damage to the bed and marine vegetation habitats.

10. Operate vessels during tidal elevations that are adequate to prevent grounding of the barge.

11. Do not deploy anchors or spuds in seagrass or kelp.

12. Do not operate motorized equipment on the beach below the ordinary high water line.

13. Do not stockpile construction material waterward of the ordinary high water line (unless it is on a barge).

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

14. Prevent contaminants from the project, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

15. Use tarps or other methods to prevent treated wood, sawdust, trimmings, drill shavings and other debris from contacting the bed or waters of the state.

CONSTRUCTION MATERIALS

16. To prevent leaching, construct forms to contain any wet concrete. Place impervious material over any exposed wet concrete that will come in contact with waters of the state. Forms and impervious materials must remain in place until the concrete is cured.

MOORAGE FACILITY REPLACEMENT

17. Remove the existing structure(s) and associated materials from waters of the state. Do not relocate the structure within waters of the state without written authorization from Washington Department of Fish and Wildlife.

18. Prior to construction, re-establish the pier, ramp, and float centerline using the same methodology used to establish the centerline during the seagrass/macroalgae habitat survey.

19. The structure must include functional grating. The grating material's open area must be at least sixty percent.
a. Grating installed parallel to the length of the pier must extend the length of the pier and cover at least thirty percent of the deck area.
b. The ramp must have one hundred percent of the entire deck surface covered in functional grating.
c. The float must have at least fifty percent of the entire deck surface covered in functional grating. Orient grating so the lengthwise opening maximizes the amount of light penetration. Any objects that are not part of the structure on, above, or below the grating should not block light penetration.

20. The bottom of the float must be at least one foot above the substrate so that the structure will not rest on the bottom.

PILE REMOVAL, DRIVING

21. Remove the (36) existing creosote piling and dispose of them in an upland area above extreme high tide waters.

22. As specified in the approved plans, the (20) replacement pilings must be 16 – inch diameter steel pilings.

23. Fit all pilings with devices to prevent perching by fish-eating birds.

24. The use of both a vibratory and/or an impact hammer is authorized for piling installation under this Hydraulic Project

HYDRAULIC PROJECT APPROVAL

Issued Date: February 06, 2022
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Permit Number: 2022-4-84+01
FPA/Public Notice Number: N/A
Application ID: 27259

Approval, however a vibratory driver is preferred.

25. Sound attenuation methods are required for the driving or proofing of steel piles with an impact hammer below the ordinary high water line. For impact driving of steel piles that exceed the following criteria, a bubble curtain or other Washington Department of Fish and Wildlife approved sound attenuation device must be used. The specific criteria include sound pressure levels of:
a) Greater than or equal to 206 dB (one micropascal squared per second) peak,
b) Greater than or equal to 187 dB (one micropascal squared per second) accumulated sound exposure level (SEL) for fish greater than or equal to 2 grams, and
c) Greater than or equal to 183 dB (one micropascal squared per second) (SEL) for fish less than 2 grams.
d) Install a bubble curtain around the pile during all driving operations to ensure proper sound attenuation. The bubble curtain must distribute air bubbles around 100 percent of the perimeter of the piling over the full length of the pile in the water column.

26. To avoid attracting fish to artificial light at night, limit impact pile driving to daylight hours whenever feasible.

27. Piling removal:
a. Vibratory or direct pull extraction is the preferred method of pile removal.
b. Place the piling on a construction barge or other dry storage site after the piling is removed. The piling must not be shaken, hosed off, left hanging to dry or any other action intended to clean or remove adhering material from the piling near waters of the state.
c. If a treated wood piling breaks during extraction, remove the stump from the water column by fully extracting. If the stump cannot be fully extracted, remove the remainder of the stump with a clamshell bucket, chain, or similar means, or cut it off three feet below the mudline. Cap all buried cut stumps and fill holes left by piling extraction with clean sediment that matches the native material.
d. When removing creosote piling, containment booms and absorbent booms (or other oil absorbent fabric) must be placed around the perimeter of the work area to capture wood debris, oil, and other materials released into marine waters as a result of construction activities to remove creosote pilings. All debris on the bed and accumulated in containments structures must be collected and disposed upland at an approved disposal site.
e. Submit post-project surveys (e.g., underwater video, photos at low-tide) along transects within the project area to Washington Department of Fish and Wildlife within two weeks of pile removal to verify debris removal.

DEMOBILIZATION/CLEANUP

28. Remove all debris or deleterious material resulting from construction from the beach area or bed and prevent from entering waters of the state.

29. Do not burn wood, trash, waste, or other deleterious materials waterward of the ordinary high water line.

LOCATION #1:	Site Name: Reid Harbor Moorage Facility , Stuart Island, WA					
WORK START:	February 6, 2022			WORK END:	March 1, 2026	
WRIA		Waterbody:			Tributary to:	
02 - San Juan		Wria 02 Marine			Puget Sound	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
	28	37 N	04 W	48.67526	-123.20077	San Juan
Location #1 Driving Directions						

HYDRAULIC PROJECT APPROVAL

Issued Date: February 06, 2022
Project End Date: March 01, 2026

Permit Number: 2022-4-84+01
FPA/Public Notice Number: N/A
Application ID: 27259

The project site is located in Reid Harbor and is only accessible by boat. Please see Sheet 1 of the attached project plans for a vicinity map. If a site visit needs to be arranged please contact the applicant.

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

HYDRAULIC PROJECT APPROVAL

Issued Date: February 06, 2022
Project End Date: March 01, 2026
Permit Number: 2022-4-84+01
FPA/Public Notice Number: N/A
Application ID: 27259

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: February 06, 2022
Project End Date: March 01, 2026

Permit Number: 2022-4-84+01
FPA/Public Notice Number: N/A
Application ID: 27259

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	Marcus.Reaves@dfw.wa.gov		for Director
Marcus Reaves	360-466-4345, Ext:251		WDFW

Attachment 6

Washington Department of Natural Resources

Aquatic Lands Right of Entry No. 23-106289

Docusign Envelope ID: 1354A9B3-8297-4C64-823C-636EB0023E35

DAVE UPTHEGROVE
COMMISSIONER OF PUBLIC LANDS

AQUATIC LANDS RIGHT OF ENTRY

Right of Entry No. 23-106289

THIS RIGHT OF ENTRY is made by and between the STATE OF WASHINGTON, acting through the Department of Natural Resources ("State"), and the STATE OF WASHINGTON acting through the State Parks and Recreation Commission, a government agency ("Licensee").

THE Parties agree as follows:

SECTION 1 GRANT OF PERMISSION

1.1 Permission. Subject to the terms and conditions set forth below, State grants Licensee a revocable, nonexclusive license to enter upon the real property described in Exhibit A (the "Property"). In this agreement, the term "Right of Entry" means this agreement and the rights granted. By issuance of this Right of Entry, State is conferring the privilege of use of the Property, and State expressly retains exclusive possession of the Property.

1.2 Other Interests and Rights. This Right of Entry is subject to all valid interests of third parties noted in the records of San Juan County, or on file in the Office of the Commissioner of Public Lands, Olympia, Washington. Licensee is responsible for obtaining approvals from other persons, if any, who have an interest in the Property. This Right of Entry is subject to the rights of the public under the Public Trust Doctrine or federal navigation servitude, and treaty rights of Indian Tribes.

1.3 Condition of Property. Licensee has inspected the Property and accepts it in its present condition. State has no obligation to make any repairs, additions, or improvements to the Property. State makes no representation regarding the condition of the Property or the suitability of the Property for Licensee's intended use. State expressly disclaims any warranty that the Property is suitable for Licensee's intended use.

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SECTION 2 USE

2.1 Authorized Activities. Licensee shall enter the Property only for the purpose of conducting the activities described in Exhibit B (the "Activities") and for no other purpose. Exhibit B also includes details about the Property. Licensee shall not conduct any other activities on the Property without the prior written permission of State.

2.2 Restrictions on Activities. The following limitations and requirements apply to the Property and adjacent state-owned aquatic lands. Licensee's compliance with the following does not limit Licensee's liability under any other provision of this Right of Entry.

(a) Licensee shall not cause or permit:
  (1) Damage to land or natural resources;
  (2) Waste; or
  (3) Deposit of material, unless approved by State in writing. This prohibition includes deposit of fill, rock, earth, ballast, wood waste, refuse, garbage, waste matter, pollutants of any type, or other matter.

(b) Nothing in this License shall be interpreted as an authorization to dredge the Property.

(c) Licensee shall immediately notify State if Licensee breaches any of the requirements of Paragraph 2.2 or Exhibit B.

(d) Licensee shall, at Licensee's sole expense, be responsible for promptly remedying any damages caused by Licensee, the Activities, or Licensee's failure to comply with the requirements of Paragraph 2.2 or Exhibit B. Licensee shall remedy any damages in accordance with a plan approved by State. Nothing in this paragraph shall prevent State from taking steps to remedy any damages caused by Licensee, the Activities, or Licensee's failure to comply with the requirements of Paragraph 2.2 or Exhibit B. If State takes such remedial actions, upon demand by State, Licensee shall pay all remedial costs, restoration costs, and natural resources damages.

2.3 Conformance with Laws. Licensee shall, at all times, keep current and comply with all conditions and terms of any permits, licenses, certificates, regulations, ordinances, statutes, and other government rules and regulations regarding its Activities on the Property.

2.4 Interference with Other Uses.

(a) Licensee shall conduct the Activities authorized in this Right of Entry in a manner that minimizes or avoids interference with the rights of State, the public, or others with valid right to use or occupy the Property or surrounding lands and water.

(b) Licensee and its agents, contractors, and subcontractors shall provide State with at least two (2) weeks' notice before commencing any Activities. Licensee shall promptly notify State of any modifications in the schedule.

2.5 Licensee's Contractors. Acts or omissions of Licensee's contractors operating under this Right of Entry shall be deemed an act of the Licensee. Restrictions and/or requirements placed on the Licensee herein shall apply equally to Licensee's contractors.

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SECTION 3 TERM

3.1 Term Defined. This Right of Entry commences on the 1st day of August 1, 2025 ("Commencement Date"), and terminates on the 31st day of July, 2026 ("Termination Date"), unless terminated sooner under the terms of this Right of Entry.

3.2 End of Term. Upon termination of this Right of Entry and except as otherwise provided in Exhibit B, Licensee shall restore the Property to a condition substantially like its natural state before Licensee's Activities. Licensee's restoration shall be in accordance with a plan approved by State.

3.3 Disposition of Personal Property.

(a) "Personal Property" means items that can be removed from the Property without (1) injury to the Property, adjacent state-owned aquatic lands, or Improvements, or (2) diminishing the value or utility of the Property, adjacent state-owned aquatic lands, or Improvements.

(b) Licensee retains ownership of Personal Property unless Licensee and State agree otherwise in writing.

(c) Licensee shall remove Personal Property from the Property by the termination of this Right of Entry. Licensee is liable for damage to the Property and Improvements resulting from removal of Personal Property.

(d) State may sell or dispose of all Personal Property left on the Property after the termination of this Right of Entry.

(1) If State conducts a sale of Personal Property, State shall first apply proceeds to State's costs of removing the Personal Property, State's costs in conducting the sale, and any other payment due from Licensee to State. State shall pay the remainder, if any, to the Licensee. Licensee shall be liable for any costs of removing the Personal Property and any costs of conducting the sale that exceed the proceeds received by State.

(2) If State disposes of Personal Property, Licensee shall pay for the cost of removal and disposal.

SECTION 4 FEE

Licensee shall pay to State a fee in the amount of One Thousand Dollars ($1,000), which is due and payable on or before the Commencement Date.

SECTION 5 ENVIRONMENTAL LIABILITY

5.1 Definitions.

(a) "Hazardous Substance" means any substance that now or in the future becomes regulated or defined under any federal, state, or local statute, ordinance, rule, regulation, or other law relating to human health, environmental protection, contamination, pollution, or cleanup, including oil and petroleum products.

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(b) "Release or threatened release of Hazardous Substance" means a release or threatened release as defined under any law described in Paragraph 5.1(a).

(c) "Utmost care" means such a degree of care as would be exercised by a very careful, prudent, and competent person under the same or similar circumstances; the standard of care applicable under the Washington State Model Toxics Control Act ("MTCA"), Chapter 70A.305 RCW.

(d) "Licensee and affiliates" when used in this Section 5 means Licensee or Licensee's contractors, agents, employees, guests, invitees, licensees, affiliates, or any person on the Property with the Licensee's permission.

(e) "Liabilities" as used in this Section 5 means any claims, demands, proceedings, lawsuits, damages, costs, expenses, fees (including attorneys' fees and disbursements), penalties, or judgments.

5.2 General Conditions.

(a) Licensee's obligations under this Section 5 extend to the area in, on, under, or above:

(1) The Property; and

(2) Adjacent state-owned aquatic lands if affected by a release of Hazardous Substances that occurs as a result of the Permitted Use.

(b) Standard of Care.

(1) Licensee shall exercise the utmost care with respect to Hazardous Substances.

(2) Licensee shall exercise utmost care for the foreseeable acts or omissions of third parties with respect to Hazardous Substances, and the foreseeable consequences of those acts or omissions, to the extent required to establish a viable, third-party defense under the law.

5.3 Current Conditions and Duty to Investigate. State makes no representation about the condition of the Property or adjacent state-owned aquatic lands. Hazardous Substances may exist in, on, under, or above the Property**.**

5.4 Use of Hazardous Substances.

(a) Licensee and its affiliates shall not use, store, generate, process, transport, handle, release, or dispose of Hazardous Substances, except in accordance with all applicable laws.

(b) Licensee shall not undertake, or allow others to undertake by Licensee's permission, acquiescence, or failure to act, activities that:

(1) Result in a release or threatened release of Hazardous Substances; or

(2) Cause, contribute to, or exacerbate any contamination exceeding regulatory cleanup standards whether the regulatory authority requires cleanup before, during, or after Licensee's activities on the Property.

5.5 Management of Contamination, if any.

(a) Licensee and affiliates shall not undertake activities that:

(1) Damage or interfere with the operation of remedial or restoration activities, if any;

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(2) Result in human or environmental exposure to contaminated sediments, if any;
(3) Result in the mechanical or chemical disturbance of on-site habitat mitigation, if any.

5.6 In the Event of a Release or Threatened Release.

(a) Licensee shall immediately notify State if the Licensee becomes aware of any release or threatened release of Hazardous Substance; any new discovery of or new information about a problem or liability related to, or derived from, the presence of Hazardous Substances; or any actual or alleged violation of any federal, state, or local statute, ordinance, rule, regulation, or other law pertaining to Hazardous Substances. Licensee's duty to report under this Paragraph extends to lands described in Paragraph 5.2(a) and to any other property used by Licensee in conjunction with the Property if a release of Hazardous Substances on the other property could affect the Property.

(b) If a Licensee's act or omission results in a release of Hazardous Substances, Licensee, at its sole expense, shall promptly take all actions necessary or advisable to clean up, contain, and remove the Hazardous Substances in accordance with applicable laws.

(c) If Licensee submits any documents concerning environmental impacts or proposals relative to the Property to any federal, state, or local authorities, Licensee shall submit a copy of such documents to State. Documents subject to this requirement include, but are not limited to, applications, reports, studies, or audits for National Pollutant Discharge Elimination System permits; U.S. Army Corps of Engineers permits; State Hydraulic Project Approvals (HPA); State Water Quality Certifications; Shoreline Substantial Development permits; and any reporting necessary for the existence, location, and storage of Hazardous Substances on the Property.

5.7 Indemnification.

(a) Licensee shall indemnify, defend, and hold harmless State from and against Liabilities that arise out of, or relate to:
(1) The use, storage, generation, processing, transportation, handling, or disposal of any Hazardous Substance by Licensee and affiliates occurring during the term of this Right of Entry or whenever Licensee uses or has used the Property;
(2) The release or threatened release of any Hazardous Substance resulting from any act or omission of Licensee and affiliates occurring during the term of this Right of Entry or whenever Licensee uses or has used the Property.

(b) Licensee shall fully indemnify, defend, and hold harmless State for Liabilities that arise out of or relate to Licensee's breach of obligations under Paragraph 5.4.

(c) If Licensee fails to exercise care as described in Paragraph 5.2, to the extent permitted by law, Licensee shall fully indemnify, defend, and hold harmless State from and against Liabilities arising from the acts or omissions of third parties in relation to the release or threatened release of Hazardous Substances.

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5.8 Reservation of Rights.

(a) For Liabilities not covered by the indemnification provisions of Paragraph 5.7, the Parties expressly reserve and do not waive any rights, claims, immunities, causes of action, or defenses relating to Hazardous Substances that either Party may have against the other under law.

(b) The Parties expressly reserve all rights, claims, immunities, and defenses that either Party may have against third parties. Nothing in this Section 5 benefits or creates rights for third parties.

(c) The allocations of risks, Liabilities, and responsibilities set forth in this Section 5 do not release either Party from or affect the liability of either Party for Hazardous Substances claims or actions by regulatory agencies.

SECTION 6 NO ASSIGNMENT

Licensee shall not transfer or assign this Right of Entry.

SECTION 7 INDEMNITY AND INSURANCE

7.1 Liability.

(a) To the extent permitted by law, Licensee shall be liable for any Claims arising from the acts or omissions of itself and those of its employees, contractors, and subcontractors, agents, invitees, guests, affiliates, licensees, or permittees while operating under this Right of Entry or at the Property. "Claims" as used in this Paragraph 7.1 means any financial loss, claim, suit, action, damage, expenses, costs, fees (including attorneys' fees), fines, penalties, or judgments attributable to bodily injury, sickness, disease, or death, or injury or damages to tangible property. "Damages to tangible property" includes, but is not limited to, physical injury to the Property, diminution in value, and/or damages resulting from loss of use of the Property. Licensee shall not be liable for the acts or omissions of State.

(b) Environmental Liability. Section 5, Environmental Liability, exclusively shall govern Licensee's liability to State for Hazardous Substances and its obligation to indemnify, defend, and hold harmless State for Hazardous Substances.

(d) Insurance Premiums. Licensee shall be liable for any increase in State's annual insurance premium attributable to the acts or omissions of Licensee, its officers, employees, contractors, or subcontractors, agents, invitees, guests, affiliates, licensees, or permittees while operating under this Right of Entry or at the Property.

7.2 Insurance Terms.

(a) Insurance Required.

(1) Licensee certifies that on the Commencement Date of this Right of Entry it is self-insured for all the liability exposures, its self-insurance plan satisfies all State requirements, and its self-insurance plan provides coverage equal to that required in this Paragraph 7.2 and by Paragraph 7.3,

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Insurance Types and Limits. Licensee shall provide to State evidence of its status as a self-insured entity. Upon request by State, Licensee shall provide a written description of its financial condition and/or the self-insured funding mechanism. Licensee shall provide State with at least thirty (30) days' written notice prior to any material changes to Licensee's self-insured funding mechanism. If during the term of this Right of Entry Licensee's self-insurance plan fails to provide coverage equal to that required in Paragraph 7.2 and Paragraph 7.3 of this Right of Entry, Licensee shall procure additional commercial insurance coverage to meet the requirements of this Right of Entry. The requirements in Section 7.2(a)(3) only apply where the Licensee procures additional commercial insurance to meet the requirements of this Right of Entry.

(2) Unless State agrees to an exception, Licensee shall provide insurance issued by an insurance company or companies admitted to do business in the State of Washington and have a rating of A- or better by the most recently published edition of A.M. Best's Insurance Reports. Licensee may submit a request to the risk manager for the Department of Natural Resources to approve an exception, in writing, to this requirement. If an insurer is not admitted, the insurance policies and procedures for issuing the insurance policies shall comply with Chapter 48.15 RCW and 284-15 WAC.

(3) All general liability, excess, and umbrella liability insurance policies must name the State of Washington, the Department of Natural Resources, its elected and appointed officials, officers, agents, and employees as an additional insured by way of endorsement.

(4) All insurance provided in compliance with this Right of Entry must be primary as to any other insurance or self-insurance programs afforded to or maintained by State.

(b) Waiver.

(1) Licensee waives all rights against State for recovery of damages to the extent insurance maintained pursuant to this Right of Entry covers these damages.

(2) Except as prohibited by law, Licensee waives all rights of subrogation against State for recovery of damages to the extent that they are covered by insurance maintained pursuant to this Right of Entry.

(c) Proof of Insurance.

(1) Licensee shall provide State with a certificate(s) and endorsement(s) of insurance executed by a duly authorized representative of each insurer, showing compliance with insurance requirements specified in this Right of Entry; and, if requested, copies of policies to State.

(2) The certificate(s) of insurance must reference additional insureds and the Right of Entry number.

(3) Receipt of such certificates, endorsements, or policies by State does not constitute approval by State of the terms of such policies.

(d) State must receive written notice before cancellation or non-renewal of any insurance required by this Right of Entry, as follows:

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(1) Insurers subject to RCW 48.18 (admitted and regulated by the Insurance Commissioner): If cancellation is due to non-payment of premium, provide State ten (10) days' advance notice of cancellation; otherwise, provide State forty-five (45) days' advance notice of cancellation or non-renewal.

(2) Insurers subject to RCW 48.15 (surplus lines): If cancellation is due to non-payment of premium, provide State ten (10) days' advance notice of cancellation; otherwise, provide State twenty (20) days' advance notice of cancellation or non-renewal.

(e) Adjustments in Insurance Coverage.

(1) State may impose changes in the limits of liability for all types of insurance as State deems necessary.

(2) Licensee shall secure new or modified insurance coverage within thirty (30) days after State requires changes in the limits of liability.

(f) General Terms.

(1) State does not represent that coverage and limits required under this Right of Entry are adequate to protect Licensee.

(2) Coverage and limits do not limit Licensee's liability for indemnification and reimbursements granted to State under this Right of Entry.

(3) The Parties shall use any insurance proceeds payable by reason of damage or destruction to property first to restore the real property covered by this Right of Entry, then to pay the cost of the reconstruction, then to pay State any sums in arrears, and then to Licensee.

7.3 Insurance Types and Limits.

(a) General Liability Insurance.

(1) Licensee shall maintain commercial general liability insurance (CGL) or marine general liability (MGL) covering claims for bodily injury, personal injury, or property damage arising on the Property and/or arising out of Licensee's use, occupation, or control of the Property and, if necessary, commercial umbrella insurance with a limit of not less than One Million Dollars ($1,000,000) per each occurrence. If such CGL or MGL insurance contains aggregate limits, the general aggregate limit must be at least twice the "each occurrence" limit. CGL or MGL insurance must have products-completed operations aggregate limit of at least two times the "each occurrence" limit.

(2) CGL insurance must be written on Insurance Services Office (ISO) Occurrence Form CG 00 01 (or a substitute form providing equivalent coverage). All insurance must cover liability arising out of premises, operations, independent contractors, products completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another party assumed in a business contract) and contain separation of insured (cross-liability) condition.

(3) MGL insurance must have no exclusions for non-owned watercraft.

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(b) Workers' Compensation.

(1) State of Washington Workers' Compensation.

(i) Licensee shall comply with all State of Washington workers' compensation statutes and regulations. Licensee shall provide workers' compensation coverage for all employees of Licensee. Coverage must include bodily injury (including death) by accident or disease, which arises out of or in connection with Licensee's use, occupation, and control of the Property.

(ii) If Licensee fails to comply with all State of Washington workers' compensation statutes and regulations, and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Licensee shall indemnify State. Indemnity shall include all fines; payment of benefits to Licensee, employees, or their heirs or legal representatives; and the cost of effecting coverage on behalf of such employees.

(2) Longshore and Harbor Worker's Act. The Longshore and Harbor Worker's Compensation Act (33 U.S.C. Section 901 *et seq.*) may require Licensee to provide insurance coverage for longshore and harbor workers other than seaman. Licensee shall ascertain if such insurance is required and, if required, shall maintain insurance in compliance with this Act. Licensee is responsible for all civil and criminal liability arising from failure to maintain such coverage.

(3) Jones Act. The Jones Act (46 U.S.C. Section 688) may require Licensee to provide insurance coverage for seamen injured during employment resulting from negligence of the owner, master, or fellow crew members. Licensee shall ascertain if such insurance is required and, if required, shall maintain insurance in compliance with this Act. Licensee is responsible for all civil and criminal liability arising from failure to maintain such coverage.

(c) Employer's Liability Insurance. Licensee shall procure employer's liability insurance, and, if necessary, commercial umbrella liability insurance with limits not less than One Million Dollars ($1,000,000) per each accident for bodily injury by accident or One Million Dollars ($1,000,000) per each employee for bodily injury by disease.

(d) Protection and Indemnity Insurance (P&I). For each vessel owned, used, and/or operated on the Property by Licensee or Licensee's contractor(s), Licensee or Licensee's contractor(s) shall procure and maintain P&I insurance with limits of liability not less than One Million Dollars ($1,000,000). The P&I insurance must cover, at a minimum, all claims relating to injuries or damages to persons or property sustained in, on, or about the property; fuel spills; wreck removal; salvage; injuries to passengers and crew of the vessel; and damages to nets and fishing lines. If necessary, Licensee shall procure and maintain commercial umbrella liability insurance covering claims for these risks.

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SECTION 8 TERMINATION

8.1 Termination by Revocation. State may terminate this Right of Entry at any time upon thirty (30) days' notice to the Licensee.

8.2 Termination by Completion of Activities. If Licensee completes Activities and restoration of the Property prior to the Termination Date, this Right of Entry terminates upon Licensee's completion of all Activities and the restoration of the Property under Paragraph 3.2.

8.3 Termination Resulting from Breach. If Licensee breaches any terms of this Right of Entry, State may terminate this Right of Entry immediately upon notice to Licensee.

SECTION 9 NOTICE

Following are the locations for delivery of notice and the Contact Person. Any Party may change the location of notice and/or the Contact Person upon reasonable notice to the other.

State: DEPARTMENT OF NATURAL RESOURCES
Aquatic Resources Division
Orca-Straits District
919 N. Township St
Sedro-Woolley, WA 98284

Licensee: WASHINGTON STATE PARKS AND RECREATION COMMISSION
Attn: Real Estate Program
PO Box 42650
Olympia, WA 98504-2650

SECTION 10 MISCELLANEOUS

10.1 Headings. The headings used in this Right of Entry are for convenience only and in no way define, limit, or extend the scope of this Right of Entry or the intent of any provision.

10.2 Invalidity. The invalidity, voidness, or illegality of any provision of this Right of Entry does not affect, impair, or invalidate any other provision of this Right of Entry.

10.3 Applicable Law and Venue. This Right of Entry is to be interpreted and construed in accordance with the laws of the State of Washington. Venue for any action arising out of or in connection with this Right of Entry is in the Superior Court for Thurston County, Washington.

10.4 Statutory Reference. Any reference to a statute or rule means that statute or rule as presently enacted or hereafter amended or superseded.

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10.5 Modification. No modification of this Right of Entry is effective unless in writing and signed by the Parties. Oral representations or statements do not bind either Party.

10.6 Time is of the Essence. TIME IS OF THE ESSENCE as to each and every provision of this Right of Entry.

10.7 Survival. Any obligations of Licensee not fully performed upon termination of this Right of Entry do not cease, but continue as obligations of the Licensee until fully performed.

10.8 Exhibits and Attachments. All referenced exhibits and attachments are incorporated in this Right of Entry unless expressly identified as unincorporated.

THIS AGREEMENT requires the signature of all Parties and is effective on the date of the last signature below.

WASHINGTON STATE PARKS AND RECREATION COMMISSION

Dated: 3/27/2025, 20__

By: HEATHER SAUNDERS
Title: Director of Parks Development
Address: PO Box 42650
Olympia, WA 98504-2650

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: 3/28/2025, 20__

By: THOMAS GORMAN
Title: Aquatic Resources Division Manager
Address: 1111 Washington St SE
MS 47027
Olympia, WA 98504-7027

Aquatic Lands Right of Entry
Template approved as to form this
14th day of July 2021
Jennifer Clements, Assistant Attorney General

Docusign Envelope ID: 1354A9B3-8297-4C64-823C-636EB0023E35

EXHIBIT A
PROPERTY DESCRIPTION

Agreement Number 23-106289

1. PROPERTY DESCRIPTION:
   A portion of the beds of navigable waters of Reid Harbor, in front of a portion of Gov't Lot 3, Section 28, Township 37 North, Range 4 West, W.M., San Juan County.

2. COORDINATES OF THE RIGHT OF ENTRY:
   - Existing West Pile Dolphin To Be Removed - Latitude 48.67496 North, Longitude -123.20302 West
   - Existing East Pile Dolphin To Be Removed - Latitude 48.67487 North, Longitude -123.20277 West

3. APPROXIMATE SQUARE FOOTAGE OF THE RIGHT OF ENTRY:
   Total square feet: 35,000

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WA State Park Recreation Commission
Application No. 23-106289
Proposed Use: License - Mooring facility removal
Location: Reid Harbor, San Juan County



0 0.2 0.4 0.8
Miles

Coordinate System: Washington State Plane South
Projection: Lambert Conformal Conic
Datum: NAD83 HARN

Aerial Map

Every attempt was made to use the most accurate and current geographic data available. However, due to multiple sources, scales, and the currency of the data used to develop this map Washington Department of Natural Resources cannot accept responsibility for errors and omissions in the data. Furthermore, this data is not survey grade information and cannot be substituted for an official survey. Therefore, there are no warranties that accompany this material

Legal Description:

Section: 28 Township: 37N Range: 04W

License on State-owned aquatic lands for the sole purpose of removal of a moorage facility.

West Pile Dolphin - Lat/Long: 48.67496 N, -123.20302 W
East Pile Dolphin - Lat/Long: 48.67487 N, -123.20277 W

Approximate project location indicated by red star

Docusign Envelope ID: 1354A9B3-8297-4C64-823C-636EB0023E35

EXHIBIT B

1. DESCRIPTION OF ACTIVITIES

A. **Existing Conditions.** Activities will occur on bedlands of Reid Harbor, Stuart Island, in San Juan County, which are state-owned aquatic lands. The Activities will occur in water depths of between approximately -6 feet Mean Lower Low Water (MLLW) and -12 feet MLLW. The substrate at the site consists of mud.

The Activities being authorized in this License are part of a larger project being carried out by Washington State Parks and Recreation Commission, which includes replacing the marine facilities at Stuart Island State Park. The marine facilities being replaced on state-owned aquatic lands are all located within the area around Stuart Island previously withdrawn from leasing and reserved for park purposes, to the benefit of Washington State Parks and Recreation Commission, by Commissioner of Public Lands Order No. 10698, dated October 2, 1975.

B. **Activities.** Project Activities include the removal of the southernmost "Island Floats" in Reid Harbor, which are part of the existing Stuart Island State Park marine facilities. Two (2) existing timber pile dolphins and a 64' x 12' float secured to the piles will be removed and will not be replaced. Each pile dolphin is composed of three (3) creosote treated wood piles for a total of six (6) piles to be removed. Attachment 1 to this Exhibit B shows the piles and floats being removed. The "Island Floats" are Personal Property owned by Washington State Parks and Recreation Commission. Pile removal shall follow best management practices outlined in the *Washington Department of Natural Resources Derelict Creosote Piling Removal Best Management Practices For Pile Removal & Disposal*, which is included as Attachment 2 to this Exhibit B.

Subject to the conditions in this Right of Entry, State grants its consent to these Activities.

C. **Permits.** Licensee has secured the following permits for the Activities:

- Nationwide Permit 27 Letter of Permission number NWS-2022-56. Issued By: United States Army Corps of Engineers. Issued Date: June 13, 2023. Expiration Date: June 12, 2026.
- Hydraulic Project Approval (HPA) number 2022-4-84+01. Issued By: Washington Department of Fish and Wildlife. Issued Date: February 6, 2022. Expiration Date: March 1, 2026.
- Permit for Shoreline Management Substantial Development LANDUSE-22-0007. Issued By: San Juan County Department of Community Development. Issued Date: July 29, 2022. Expiration Date: July 28, 2027.

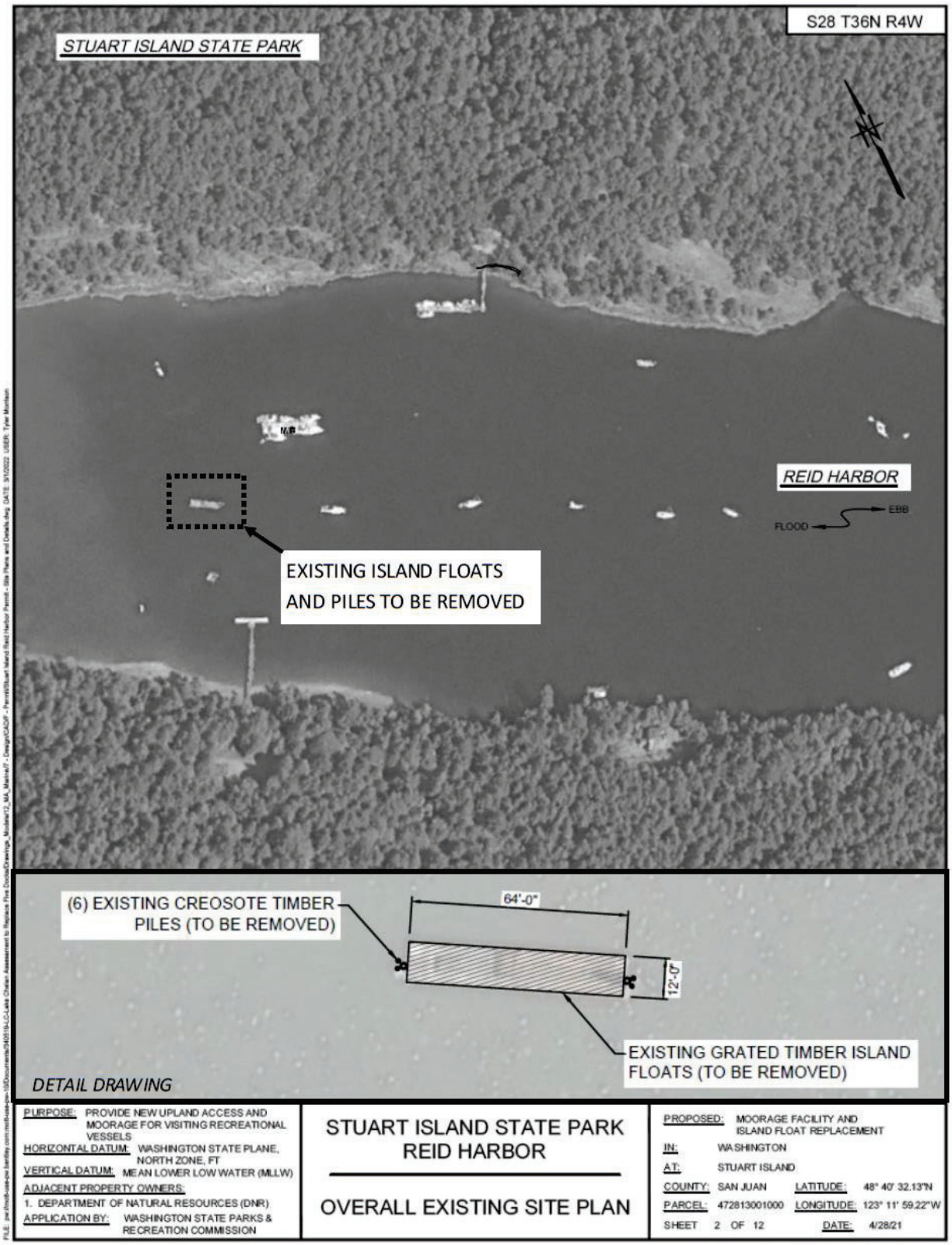
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2. ADDITIONAL OBLIGATIONS AND REQUIREMENTS

None.

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ATTACHMENT 1 TO EXHIBIT B



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ATTACHMENT 2 TO EXHIBIT B

Washington Department of Natural Resources
Derelict Creosote Piling Removal
Best Management Practices
For Pile Removal & Disposal

The following Best Management Practices (BMPs) are adapted from EPA guidance (2005), Washington State Department of Transportation (WSDOT) methods and conservation activities as included in Joint Aquatic Resources Protection Application (JARPA) 2005, and Washington State Department of Resources (WADNR) "Standard Practice for the Use and Removal of Treated Wood and Pilings on and from State-Owned Aquatic Lands" 2005, as well as WADNR's practical experience through managing piling removal projects since 2006.

The purpose of these BMPs is to control turbidity and sediments re-entering the water column during pile removal, and prescribe debris capture and disposal of removed piles and debris.

BMP 1. PILE REMOVAL

Crane operator shall be experienced in pile removal. Piles will be removed slowly. This will minimize turbidity in the water column as well as sediment disturbance. Pulled pile shall be placed in a containment basin to capture any adhering sediment. This should be done immediately after the pile is initially removed from the water.

A. Vibratory extraction

1) This is the preferred method of pile removal. Vibratory extraction shall always be employed first unless the pile is too decayed or short for the vibratory hammer to grip. After consultation with WADNR, the alternative options listed below may be used.

2) The vibratory hammer is a large mechanical device (5-16 tons) that is suspended from a crane by a cable. The hammer is activated to loosen the piling by vibrating as the piling is pulled up. The hammer is shut off when the end of the piling reaches the mudline. Vibratory extraction takes approximately 15 to 30 minutes per piling depending on piling length and sediment condition.

3) Operator will "Wake up" pile to break up bond with sediment.

- Vibrating breaks the skin friction bond between pile and soil.
- Bond breaking avoids pulling out a large block of soil – possibly breaking off the pile in the process.
- Usually there is little or no sediment attached to the skin of the pile during withdrawal. In some cases material may be attached to the pile tip, in line with the pile.

B. Direct Pull

1) This method is optional if the contractor determines it to be appropriate for the substrate type, pile length, and structural integrity of the piling. Vibratory extractor must be attempted first unless there is risk of greater disturbance of sediments.

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2) Pilings are wrapped with a choker cable or chain that is attached at the top to a crane. The crane pulls the piling directly upward, removing the piling from the sediment.

C. Clamshell Removal

1) Broken and damaged pilings that cannot be removed by either the vibratory hammer or direct pull may be removed with either a clamshell bucket or environmental clamshell.

2) A clamshell is a hinged steel apparatus that operates like a set of steel jaws. The bucket is lowered from a crane and the jaws grasp the piling stub as the crane pulls up.

3) The size of the clamshell bucket shall be minimized to reduce turbidity during piling removal.

4) The clamshell bucket shall be emptied of material onto a contained area on the barge before it is lowered into the water.

D. Cutting

1) Is required if the pile breaks at or near the existing substrate and cannot be removed by other methods.

2) If a pile is broken or breaks during extraction, all of the methods listed below should be used to cut the pile.

a. Piles located in intertidal and shallow subtidal areas that are less than -10 feet deep MLLW shall be cut at least 2 feet below the mudline.

b. In subtidal areas that are greater than -10 feet deep MLLW, piles shall be cut at least 1 foot below the mudline.

c. Piles shall be cut off at lowest practical tide condition and at slack water. This is intended to reduce turbidity due to reduced flow and short water column through which pile must be withdrawn.

d. No hydraulic jetting devices shall be used to move sediment away from piles. Excavation of sediment in subtidal areas to expose broken piles shall be accomplished by divers using hand tools.

e. The contractor shall provide the location of all the broken and cut piles using a GPS.

BMP 2. BARGE OPERATIONS, WORK SURFACE, CONTAINMENT

A. Barge grounding will not be permitted.

B. Work surface on barge deck or pier, or upland staging area shall include a containment basin for all treated materials and any sediment removed during pulling. Creosote shall be prevented from re-entering the water. Uncontaminated water run-off can return to the waterway.

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1) Containment basin shall be constructed of durable plastic sheeting with continuous sidewalls supported by hay bales, ecology blocks, other non-contaminated materials, or support structure to contain all sediment and creosote. Containment basin shall be lined with oil absorbent boom.

2) Work surface on barge deck and adjacent pier shall be cleaned by disposing of sediment or other residues along with cut off piling as described in BMP #4.B.

3) Containment basin shall be removed and disposed in accordance with BMP #4.B or in another manner complying with applicable federal and state regulations.

4) Upon removal from substrate the pile shall be moved expeditiously from the water into the containment basin. The pile shall not be shaken, hosed-off, left hanging to drip or any other action intended to clean or remove adhering material from the pile.

BMP 3. DEBRIS CAPTURE IN WATER

A. A floating surface boom shall be installed to capture floating surface debris. The floating boom shall be equipped with absorbent pads to contain any oil sheens. Debris will be collected and disposed of along with cut off piling as described in BMP #4.

B. The boom may be anchored with four or fewer ½ ecology blocks or a similar anchoring device. These anchors must be removed once the project is complete. The anchor system shall be located to avoid damage from vessel props to eelgrass, kelp, and other significant macroalgae species. The line length between the anchor and surface float shall not exceed the water depth as measured at extreme high tide plus a maximum of 20 percent additional line for scope. The buoy system shall include a subsurface float designed to keep the line between the anchor and surface float from contacting the bottom during low tide cycles. The subsurface float shall be located off the bottom a distance equal to 1/3 the line length

C. The boom shall be located at a sufficient distance from all sides of the structure or piles that are being removed to ensure that contaminated materials are captured. The boom shall stay in its original location until any sheen present from removed pilings has been absorbed by the boom. BMP #3B may be used to keep the boom in its original location.

D. Debris contained within boom shall be removed at the end of each work day or immediately if waters are rough and there is a chance that debris may escape the boom.

E. To the extent possible all sawdust shall be prevented from contacting beach, bed, or waters of the state. For example, sawdust on top of decking should be removed immediately after sawing operations.

F. Any sawdust that enters the water shall be collected immediately and placed in the containment basin.

G. Piles removed from the water shall be transferred to the containment basin without leaving the boomed area to prevent creosote from dripping outside of the boom.

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BMP 4. DISPOSAL OF PILING, SEDIMENT AND CONSTRUCTION RESIDUE

A. Piles shall be cut into lengths as required by the disposal company.

B. Cut up piling, sediments, absorbent pads/boom, construction residue and plastic sheeting from containment basin shall be packed into container. For disposal, ship to an approved Subtitle D Landfill.

C. Creosote-treated materials shall not be re-used.

BMP 5. RESUSPENSION/TURBIDITY

A. Crane operator shall be trained to remove pile from sediment slowly.

B. Work shall be done in low water and low current, to the extent possible.

C. Removed piles shall be placed in a containment facility.

D. Sediments spilled on work surfaces shall be contained and disposed of with the pile debris at permitted upland disposal site.

E. Holes remaining after piling removal shall not be filled.

BMP 6. PROJECT OVERSIGHT

A. WADNR will have a project manager or other assigned personnel on site. Oversight responsibilities may include, but are not limited to the following:

1) Water quality monitoring to ensure turbidity levels remain within required parameters

2) Ensure contractor follows BMPs

3) Ensure contractor is in compliance with contract and permit requirements

4) Ensure correct structures are removed

5) Maintain contact with regulatory agencies should issues or emergencies arise

BMP 7. CULTURAL RESOURCES

A. In the event that artifacts (other than the pilings or materials attached to them) that appear to be 50 years old or older are found during the project, the WADNR Aquatics archaeologist must be notified in order to evaluate the find and arrange for any necessary consultation and mitigation required by law.

B. If human remains or suspected human remains are found during the project, work in the vicinity will be halted immediately, and the County Coroner must be notified immediately. If

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the remains are determined to be non-forensic, then the WADNR Aquatics archaeologist will be notified to begin tribal and Washington State Department of Archaeology and Historic Preservation consultations required by law.

C. If sediment exceeding 1 cubic meter is removed, the WADNR Aquatics archaeologist will be notified and given the opportunity to examine the sediment for cultural materials before it is removed from the containment area.

Attachment 7

U.S. Army Corps of Engineers

Letter of Permission

NWS-2022-56

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
4735 EAST MARGINAL WAY SOUTH, BLDG 1202
SEATTLE, WA 98134-2388

Regulatory Branch June 13, 2023

Ms. Joelene Boyd
Washington State Parks and Recreation Commission
220 North Walnut Street
Burlington, Washington 98233-1138

Reference: NWS-2022-56
Washington State Parks and Recreation Commission
(Stuart Island Moorage Improvements)

Dear Ms. Boyd:

We have reviewed your application to replace, reconfigure, and expand an existing moorage facility at Stuart Island Marine State Park in Reid Harbor at Stuart Island, Pierce County, Washington. Based on the information you provided to us, this "Letter of Permission" (LOP) permit authorizes your proposal as depicted on the enclosed drawings dated April 28, 2021, which are made part of this permit. In order for this LOP authorization to be valid, you must ensure that the work is performed in accordance with the enclosed *Letter of Permission General Conditions* and the following special conditions:

a. In order to meet the requirements of the Endangered Species Act (ESA) and the Magnuson Stevens Fishery Conservation and Management Act (MSA), you must implement and abide by the applicable terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" and the applicable Essential Fish Habitat Conservation Recommendations as set forth in the Salish Sea Nearshore Programmatic (SSNP) Biological Opinion (BO) (National Marine Fisheries Service (NMFS) Reference Number WCRO-2019-04086) dated June 29, 2022, and U.S. Fish and Wildlife Service (USFWS) Reference Number FWS/R1/2022-0048454 dated July 29, 2022). The specific General Construction Measures, Project Design Criteria, Essential Fish Habitat Conservation Measures, and monitoring and/or reporting requirements applicable to this permit are identified in the enclosed Notification Summary Sheet dated September 16, 2022 (NMFS Reference Number WCRO-2019-04086-4639; USFWS Reference Number 2022-0041637). The BO is available on the U.S. Army Corps of Engineers (Corps) website

(https://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/Permit-Guidebook/Endangered-Species/). You must provide the Corps and NMFS the information requested in the enclosed Notification Summary Sheet. All information must prominently display the reference number NWS-2022-56. Failure to comply with these requirements constitutes non-compliance with the ESA and your Corps permit. The NMFS and USFWS is the appropriate authority to determine compliance with the terms and conditions of their BO and with the ESA. If you cannot comply with the terms and conditions of this programmatic consultation, you must, prior to commencing construction, contact the Corps, Seattle District, Regulatory Branch for an individual consultation in accordance with the requirements of the ESA and/or the MSA.

b. In order to meet the requirements of the Endangered Species Act you may conduct the authorized activities from September 1 through March 1 in any year this permit is valid. You shall not conduct work authorized by this permit from March 2 through August 31 in any year this permit is valid.

c. To ensure that light transmission is not impacted, grating must not be covered with or blocked by any objects, such as, but not limited to, buildings, planters, storage sheds or boxes, nets, carpets, boards, tables, lawn furniture, or utility conduits or boxes.

d. If human remains, historic resources, or archaeological resources are encountered during construction, all ground disturbing activities shall cease in the immediate area and you shall immediately (within one business day of discovery) notify the U.S. Army Corps of Engineers (Corps), Seattle District, Regulatory Branch. You shall perform any work required by the Corps in accordance with Section 106 of the National Historic Preservation Act and Corps regulations.

We have reviewed your project pursuant to the requirements of the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act in regards to Essential Fish Habitat. The U.S. Army Corps of Engineers has determined that this project will comply with the requirements of the above laws provided you comply with special conditions “a”, “b”, and “c” listed above.

Please be reminded that Special Condition “a” of your permit requires that you implement and abide by the Endangered Species Act (ESA) requirements set forth in the programmatic Biological Opinion (BO) for this project. In particular, note that the BO requires you submit the enclosed *Certificate of Compliance with Department of the Army Permit,* submit the disposal receipts and a picture of the dump truck on the scale

for any creosote piles removed, and submit a summary of marbled murrelet monitoring results to USFWS. All documents must be submitted to the Corps at nws.compliance@usace.army.mil, NMFS at projectreports.wcr@noaa.gov, and USFWS at SSNP_WA@fws.gov. Failure to comply with the commitments above constitutes non-compliance with the ESA and with this authorization.

The Washington State Department of Ecology determined your project does not trigger the need for a Water Quality Certification or a Coastal Zone Management consistency determination.

You have not requested a jurisdictional determination for this proposed project. If you believe the U.S. Army Corps of Engineers does not have jurisdiction over all or portions of your project, you may request a preliminary or approved jurisdictional determination (JD). If one is requested, please be aware that we may require the submittal of additional information to complete the JD and work authorized in this letter may not occur until the JD has been completed.

Any change in the plans for this work will require that you submit revised drawings to this office and receive our written approval of those changes prior to conducting the work. If you object to any terms or conditions of this LOP or the JD, you may request an administrative appeal under our regulations (33 CFR Part 331) as described in the enclosed *Notification of Administrative Appeal Options and Process and Request for Appeal* form.

Your authorization to conduct the proposed work under this permit expires 3 years from the date of this letter. Within 30 days of completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit*. Your signature on this form is our assurance you have conducted the work and any required mitigation in accordance with the terms and conditions of this LOP, including all special conditions. All compliance reports should be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch at nws.compliance@usace.army.mil. Please remember that failure to comply with the terms and conditions of this LOP, including any special conditions, will invalidate your authorization and could result in a violation of Federal law.

Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: www.nws.usace.army.mil (select “Regulatory Branch, Permit Information”).

While this project will not require further authorization from us, please note that it must comply with all local, State, and other Federal requirements that may apply. A copy of this letter and permit drawings will be furnished to Mr. Scott Maharry at scottm@gretteassociates.com. If you have any questions about this letter or our regulatory program, please contact Ms. Jennifer Casper at jennifer.p.casper@usace.army.mil or by phone at (206) 549-2682.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Kristina G. Long

for Alexander "Xander" L. Bullock
Colonel, Corps of Engineers
District Engineer

Enclosures

cc:
USFWS (wfwoctap@fws.gov)
Ecology (ecyrefedpermits@ecy.wa.gov)
DNR (lalena.amiotte@dnr.wa.gov)
Local Government
NMFS (consultationupdates.wcr@noaa.gov)
USFWS (SSNP_WA@fws.gov)

Attachment 7a

U.S. Army Corps of Engineers

Project Notification Summary Sheet

NWS-2022-56

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
Version: August 02, 2022

Notification Summary Sheet

The following information is provided as notification and/or a request for verification for Section 7 Endangered Species Act and/or Magnuson-Stevens Fishery Conservation Management Act coverage under the Salish Sea Nearshore Programmatic (SSNP) consultations with the National Marine Fisheries Service (NMFS), WCRO-2019-04086, and the U.S. Fish and Wildlife Service (USFWS), FWS/R1/2002-0048454.

Date of Notification:	9/16/22	
Project Name:	Washington State Parks and Recreation Commission (Stuart Island Moorage Improvements)	
Corps Reference Number:	NWS-2022-56	
Location (Lat./Long.):	48.67526, -123.20077	
Type of Request	NMFS	USFWS
	☐ Notification Only ▣ Notification and Verification ☐ Minor Alteration Request and Verification	▣ Notification Only ☐ Minor Alteration Notification
Statutory Authority	▣ NMFS: ESA and EFH ☐ NMFS: EFH Only	▣ USFWS: ESA Only
General Information	▣ JARPA enclosed ▣Project Drawings Enclosed	
Project Description including conservation offsets, if applicable.	The proposed action is to replace, reconfigure, and expand an existing moorage facility at Stuart Island Marine State Park. The project includes replacement of the existing moorage facility (pile, floats, pier, components), removal of one offshore island floating dock, replacement of one offshore island floating dock, and replacement of creosote dolphins with stainless steel pile at the pumpout. The total change in overwater cover is 855 square feet, with grated surfaces incorporated in the replacement structure design. The structure is designed to be ADA compliant and improve accessibility at the community structure. A detailed description of the proposed project is located in the enclosed BE starting on page 3. Conservation and/or mitigation measures are located in the enclosed BE starting on page 50.	

Activity Category:

☐	Culvert and bridge repair and replacement resulting in improvements for fish passage	PDC #1
☐	Utilities	PDC #2
☐	Stormwater facilities and outfalls	PDC #3
☐	Shoreline modifications	PDC #4
☑	Expand or install a new in-water or overwater structure	PDC #5
☑	Repair or replace an existing structure	PDC #6
☐	Minor maintenance of an existing structure	PDC #7
☐	Repair, replace, or install a new aid to navigation, scientific measurement device, or tideland marker	PDC #8
☐	Dredging for vessel access	PDC #9
☐	Dredging and debris removal to maintain functionality of culverts, water intakes, or outfalls	PDC #10
☐	Habitat enhancement activities	PDC #11
☐	Set-back or removal of existing tidegates, berms, dikes or levees	PDC #12
☐	Beach nourishment	PDC #13
☐	Sediment remediation	PDC #14

Review the PDC checklist(s) for each applicable activity category.

1. Are all applicable project design criteria met? Yes
    a. If no, describe why and how the work would not result in any adverse effects beyond those considered in the programmatics:

2. If applicable, provide a list of the required monitoring plans/reports enclosed or required post-construction:

   SAV Survey, enclosed, dated April 7, 2021 and July 14, 2021

General Construction Measures (GCM):

☑	Minimize Construction Impacts at Project Site	GCM #1
☑	In-Water Work Timing	GCM #2
☑	Isolation of Concrete Work	GCM #3
☐	Fish Screens	GCM #4
☐	Drilling, Boring, and Tunneling	GCM #5
☑	Pile Installation	GCM #6
☑	Marbled Murrelet Monitoring Plan	GCM #7

☐	Treated Wood Piles	GCM #8
☑	Pile Removal – Intact	GCM #9
☑	Pile Removal – Broken or Intractable	GCM #10
☐	Treated Wood for Uses Other Than Piles	GCM #11
☑	Barge Use	GCM #12
☐	Stormwater Management	GCM #13
☐	Pollution and Erosion Control	GCM #14
☐	Fish Capture and Release	GCM #15
☑	Marine Mammals	Program Administration # 9

Review the applicable GCM List of Requirements specific to the proposed work.

1. Are all applicable GCM's met? Yes
    a. If no, describe why and how the work would not result in any adverse effects beyond those considered in the programmatic:

2. If applicable, provide a list of the required monitoring plans/reports enclosed or required post-construction:

    Marbled Murrelet Monitoring Plan, enclosed, dated March 2022
    Marine Mammal Monitoring Plan, enclosed, dated March 2022

Project Modifications:

☐	Work outside the specified in-water work period when the change would not result in any adverse effects beyond those considered in the programmatic consultation.
☐	Alternate location for equipment, refueling, and staging due to topographical or other site-specific constraints.
☐	Not installing an anti-perch device (on piling).
☐	Marina facility expansion with no more than 1,000 square feet of additional over water coverage or 10 new slips. Whichever is less so long as the other criteria in PDC #5 are met.
☐	Underwater sound attenuation methods demonstrating equivalent sound attenuation to bubble curtains.

If an alteration is requested, include information detailing why the alteration is needed and how the proposal would not result in any adverse effects beyond those considered in the programmatic consultations:

Essential Fish Habitat Conservation Measures:

Applicable	If applicable but will not be implemented, explain.	
☐		1. All projects resulting in a loss of eelgrass habitat, are required to follow eelgrass mitigation monitoring requirements put forth in the Washington Department of Fish and Wildlife "Eelgrass/Macroalgae Habitat Interim Survey Guidelines" unless it conflicts with Seattle District Corps guidelines, in which case the Corps guidelines apply.
☐		2. All new moorings buoys should be anchored in areas where SAV (e.g., eelgrass, kelp) habitat is absent. This will reduce adverse impacts to SAV. Additionally, all new mooring buoys should, to the maximum extent practicable, be in waters deep enough so that the bottom of the vessel remains a minimum of 18 inches off the substrate during extreme low tide events. This will reduce adverse grounding impacts to benthic habitat.
☐		3. When repairing or replacing mooring buoys, located within SAV habitat should be of the type that use midline floats, where appropriate, to prevent chain scour to the substrate. This will reduce adverse impacts to SAV and other benthic habitat.
☐		4. Encircle the pile with a silt curtain that extends from the surface of the water to the substrate, where appropriate and feasible.
☐		5. Drive piles during low tide periods when substrates are exposed in intertidal areas, where appropriate and feasible. This minimizes the direct impacts to fish from sound waves and minimizing the amount of sediments re-suspended in the water column.
☐		6. Any cross or transverse bracing should be placed above the plane of MHHW, where appropriate and feasible, to avoid impacts to water flow and circulation.
☑		7. Minimize, to the maximum extent practicable, the footprint of the overwater structure.
☑		8. Design structures in a north-south orientation, to the maximum extent practicable, to minimize persistent shading over the course of a diurnal cycle.

☐		9. For residential dock and pier structures, the height of the structure above water should be a minimum of 5 feet above MHHW, where appropriate and feasible.
☑		10. The use of floats should be minimized to the extent practicable and should be restricted to terminal platforms placed in deep water where appropriate and feasible and when the Corps determines there will not be a navigation hazard.
☐		11. When breakwaters are required, floating breakwaters are preferred. Encourage seasonal use of breakwaters.
☐		12. Use soft approaches (e.g., beach nourishment, soft or hybrid armoring, vegetative plantings, and placement of LWD) in lieu of “hard” shoreline stabilization and modifications (such as concrete bulkheads and seawalls, concrete or rock revetments), where appropriate and feasible.
☐		13. If planting in the riparian zone, use an adaptive management plan with ecological indicators and performance standards to oversee monitoring and ensure mitigation objectives are met, unless it is contrary to a Corps approved riparian planting plan.

Attachment 7b

U.S. Army Corps of Engineers

General Construction Measures and Essential Fish Habitat Conservation Measures

NWS-2022-56

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
LIST OF REQUIREMENTS
Version: August 02, 2022

General Construction Measures (GCM) and Essential Fish Habitat (EFH) Conservation Recommendations

Programmatic Endangered Species Act (ESA) Consultations [National Marine Fisheries Service (NMFS) reference number WCRO-2019-04086, U.S. Fish and Wildlife Service (USFWS) reference number FWS/R1/2002-0048454] have been completed for the activities listed below. If you can design your project to meet all of the requirements of the Programmatic Biological Opinions (i.e. Project Design Criteria, GCM, and EFH Conservation Recommendations) including those GCM's and EFH Conservation Recommendations listed below, then the review of your ESA consultation and permit application will be streamlined. The submittal of this list is not required. However, to further expedite your review you may include a description of how you meet these requirements in your SSNP application materials.

Notification Requirements The application materials and notification should include the information below, if applicable.
• If concrete would dry quicker than the 7-day curing rate, information must be provided as part of the project submittal as described in GCM #3.
• If in-water impact pile driving more than two piles greater than 12 inches per day, a Marbled Murrelet Monitoring Plan as described in GCM #7 must be submitted. Applicants must confirm, after construction a summary of monitoring reports will be provided to USFWS.
• If impervious surface is installed or replaced as part of the proposed work or resulting from the proposed work, a Post-Construction Stormwater Management Plan (PCSMP) must be submitted as described in GCM #13. • In addition, include the name, email address, and telephone number of the person responsible for designing the stormwater management facilities, so that NMFS may contact that person if additional information is necessary.
• If work area may be isolated, applicant must confirm after construction a Fish Salvage Report will be submitted within 60 days to NMFS and the Corps. The report should include the date, time, and place of fish relocation; number and species of fish captured; number of fish killed; and location of fish release.
• If in-water construction activities cause underwater noise greater than 120dBrms and Southern Resident Killer whales have been documented in the action area more than four times during the proposed work window and/or four or more humpback whale sightings have been documented in the past two years during the proposed work month, a Marine Mammal Monitoring Plan must be submitted. See Program Administration (PA) Section 9 of the Biological Opinions for supporting information. If applicable, NMFS verification required.

General Construction Measures	
	The proposed project must comply with the following General Construction Measures (GCMs) as applicable.
1.	**Minimize Construction Impacts at Project Site**
	To the extent feasible, retain natural vegetation, limit impermeable surfaces, limit duration of in-water work and otherwise minimize the extent and duration of earthwork (e.g., compacting, dredging, drilling, excavation, and filling).
2.	**In-Water Work Timing**
	Complete all work waterward of the line of the Highest Astronomical Tide (HAT) during dates listed in the most recent version of in-water work guidelines, Washington Department of Fish and Wildlife (WDFW) Marine Water Work Windows: https://app.leg.wa.gov/WAC/default.aspx?cite=220-660-330
	Hydraulic and bathymetric measurement, sediment sampling and geotechnical sampling are not constrained by the work timing constraints above and may be completed at any time.
3.	**Isolation of Concrete Work**
	All concrete will be placed in the dry (e.g., isolated from water) or within confined waters (i.e., within a form or cofferdam) not connected to surface waters, and will be allowed to cure a minimum of 7 days before contact with surface water. Should new concrete technology develop which has a quicker curing rate, information must be provided as part of the project submittal and NMFS and USFWS will evaluate whether a shorter cure time will be no more impactful than the cure time evaluated in this Opinion.
4.	**Fish Screens**
	Whenever diverting or pumping surface water or water in an isolated work area, a fish screen that meets the most recent revisions of NMFS' fish screen criteria will be installed prior to and during pumping activities and will be maintained in a condition that prevents fish movement through the barrier. Fish screen criteria can be found in Chapter 11 of NMFS Anadromous Salmonid Fish Facility manual or most recent version (NMFS 2022): https://media.fisheries.noaa.gov/2022-06/anadromous-salmonid-passage-design-manual-2022.pdf. If at any time fish screens have damage, pumping activities and in-water work shall cease until damaged fish screens are repaired.
5.	**Drilling, Boring, and Tunneling**
	If drilling, boring, or tunneling are used, isolate drilling operations in wetted areas using a steel casing or other appropriate isolation method to prevent drilling fluids from contacting water.
	If drilling through decking is necessary, use containment measures to prevent drilling debris from entering the water.
	Sampling and directional drill recovery/recycling pits, and any associated waste or spoils will be completely isolated from surface waters and wetlands.
	All waste or spoils will be covered if precipitation is falling or imminent.
	All drilling fluids and waste will be recovered and recycled or disposed of to prevent entry into the water.

	If a drill boring case breaks and drilling fluid or waste is visible in water or a wetland, make all possible efforts to contain the waste.
	All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, will be contained and then completely recovered and recycled or disposed of as necessary to prevent entry into any waterway. Use a tank to recycle drilling fluids.
	When drilling is completed, remove as much of the remaining drilling fluid as possible from the casing (e.g., by pumping) to reduce turbidity when the casing is removed.
	Drilling, boring, or coring may be used to collect sediment samples/cores. Work at contaminated sites is addressed in PDC #14.
6.	**Pile Installation**
	Piles may be round concrete, steel pipe, untreated wood or some pressure-treated wood with appropriate wrapping (see below). Pressure-treated wood may be installed as described below. Piles must be 36 inches in diameter or smaller or steel H-pile designated as HP 24 inches or smaller.
	Whenever practical, use a vibratory hammer for in-water pile installation.
	Jetting may be used to install pile in areas with coarse, uncontaminated sediments that meet criteria for unconfined in-water disposal.
	When using an impact hammer to drive or proof a steel pile, one of the following sound attenuation methods will be used: (a) complete isolation from water by dewatering the area around the pile; (b) a double-walled pile; or (c) a bubble curtain that will distribute small air bubbles around the pile perimeter for the full depth of the water column during pile installation (see NMFS and USFWS (2006), CALTRANS Technical Report No. CTHWASSNP-RT-306.01.01 (2015), Wursig et al. (2000), and Longmuir and Lively (2001)); or c) if water velocity is greater than 1.6 feet per second, the permittee will use a confined bubble curtain (e.g., surrounded by a fabric or sleeve) that will distribute air bubbles around 100% of the pile perimeter for the full depth of the water column during impact pile installation. New technologies that have demonstrated equivalent sound attenuation can be used if verified by USFWS.
	To assist a permittee in determining biological monitoring needs during pile installation, an optional Pile Installation Calculator is available: https://www.fws.gov/library/collections/washingtonsection-7-consultation-technical-assistance-and-guidance The tool aids in determining the extent of underwater noise impacts and distances. Construction activities will cease if marbled murrelets are observed within or entering a zone where pile driving noise is likely to cause injury.
	No more than 8 piles may be driven on any day using impact pile driving.
	Impact pile driving will not begin earlier than two hours after sunrise and will be complete at least one hour before sunset for the period from April 1 through September 30.
	Complete all work waterward of the line of the Highest Astronomical Tide (HAT) during dates listed in the most recent version of in-water work

	guidelines, Washington Department of Fish and Wildlife (WDFW) Marine Water Work Windows: https://app.leg.wa.gov/WAC/default.aspx?cite=220-660-330
	Hydraulic and bathymetric measurement, sediment sampling and geotechnical sampling are not constrained by the work timing constraints above and may be completed at any time.
7.	**Marbled Murrelet Monitoring Plan**
	The applicant will develop and implement a marbled murrelet monitoring plan for projects that include in-water impact pile driving when injurious sound pressure levels are expected or when in-air sounds are expected to cause masking effects.
	Applicants may request technical assistance from the USFWS while developing a Marbled Murrelet Monitoring Plan to ensure it meets requirements under the USFWS Protocol for Marbled Murrelet Monitoring During Pile Driving (further detail is provided in Appendix B of USFWS's Biological Opinion for this programmatic consultation). A plan must be submitted with the project notification.
	Certified observers will visually monitor the monitoring area (area of potential injury) for marbled murrelets following the protocol. Protocol is provided in Appendix B of USFWS's Biological Opinion for this programmatic consultation.
	An appropriate number of certified marbled murrelet observers will be positioned to provide adequate coverage of the monitoring area without looking farther than 50 meters to ensure no murrelets are in the monitoring area.
	All monitoring will be conducted by observers meeting appropriate qualifications and certified by the USFWS.
	One qualified biologist will be identified as the Lead Biologist. The Lead Biologist has the authority to stop pile driving when murrelets are detected in the monitoring area or when visibility impairs monitoring.
	If murrelets are spotted in the monitoring area, pile driving will not resume until the murrelets have left the monitoring area and at least 2 full sweeps of the monitoring area have confirmed no murrelets are present. If visibility impairs monitoring, pile driving will not resume until effective monitoring can be conducted.
	If weather or sea conditions restrict the observer's ability to observe for marbled murrelets, or become unsafe for the monitoring vessels to operate, cease pile installation until conditions allow for monitoring to resume. Monitoring will only occur when the sea state is at a Beaufort scale of 2 or less.
	The Permittee will provide a summary of marbled murrelet monitoring results, including observation dates, times, and conditions; description of any "take" identified by the biologist, and seabirds found during beach surveys to USFWS.
8.	**Treated Wood Piles**
	Inorganic arsenical pressure-treated wood piles (chromated copper arsenate (CCA) or ammoniacal copper zinc arsenate (ACZA)) that are sealed with a wrapping or a polyurea barrier may be installed under SSNP. Any proposal to use arsenical pressure-treated wood pilings without a wrapping or polyurea barrier systems is not covered by SSNP. Pile wrappings must meet the following criteria:

	A. Wrappings are made from a pre-formed plastic such as polyvinyl chloride (PVC), a fiber glass-reinforced plastic or a high density polyethylene (HDPE) with an epoxy fill or petrolatum saturated tape (PST) inner wrap in the void between the HDPE and the pile.
	B. Wrapping material used for interior pilings must be a minimum of 1/10 of an inch thick, durable enough to maintain integrity for at least 10 years, and have all joints sealed to prevent leakage.
	C. Wrapping material used for exterior pilings that come into direct contact with ocean going vessels or barges must be HDPE pile wrappings with epoxy fill or PST inner wrap.
	D. The tops of all wrapped piles must be capped or sealed to prevent exposure of the treated wood surface to the water column and to prevent preservative from dripping into the water.
	E. Polyurea barrier systems must meet these additional criteria: i. The polyurea barrier must be an impact-resistant, biologically inert coating that lasts or can be maintained for 10 years and in accordance with American Wood Protection Association M 27 standard. ii. The polyurea barrier must be ultraviolet light resistant and a minimum of 250 mm (0.25 inch) thick in the area that is submerged (Morrell 2017). iii. Polyurea barriers must be installed on dry piles that are free of loose wood, splinters, sawdust or mechanical damage. iv. Wrappings or polyurea barriers will extend both above and below the portion of the pile that is in contact with the water. The wrapping or polyurea barrier must extend at least 18 inches below the mudline into the substrate and to the top of the pile. v. All operations to prepare wrappings or polyurea barriers for installation over piles (cutting, drilling, and placement of epoxy fill) will occur in a staging area away from the waterbody. vi. All piles with wrappings or polyurea barriers must be regularly inspected and maintained to identify unobserved failures of the wrapping or polyurea barrier or anytime a wrapping or polyurea barrier breach is observed.
9.	**Pile Removal - Intact**
	The following steps will be used to minimize contaminant release, sediment disturbance, and total suspended solids when removing an intact pile:
	A. Install a floating surface boom to capture floating surface debris.
	B. To the extent possible, keep all equipment (e.g., bucket, steel cable, vibratory hammer) out of the water, grip piles above the waterline, and complete all work during low water and low current conditions.
	C. Dislodge (i.e., wake up) the piling with a vibratory hammer, whenever feasible.
	D. Slowly lift piles from the sediment and through the water column.
	E. Place piles in a containment basin on a barge deck, pier, or shoreline without attempting to clean or remove any adhering sediment. A

	containment basin for the removed piles and any adhering sediment may be constructed of durable plastic sheeting with continuous sidewalls supported by hay bales or other support to contain all sediment and return flow which may otherwise be directed back to the waterway. Containment basin shall be lined with an oil absorbent boom.
	F. Dispose of all removed piles, floating surface debris, any sediment spilled on work surfaces, and all containment supplies at a permitted upland disposal site.
10.	**Pile Removal - Broken or Intractable Pile.**
	If a pile breaks above the surface of uncontaminated sediment, or less than two feet below the surface, make every feasible attempt short of excavation to remove it entirely. If the pile cannot be removed without excavation, drive the pile deeper if possible.
	If a pile in contaminated sediment is intractable or breaks above the surface, of contaminated sediment, cut the pile or stump off at the sediment line. Cutting the pile up to two feet below the sediment line is allowed if required by a state permit or other authorization.
	If a pile breaks below the surface of contaminated sediment, make no further effort to remove it.
11.	**Treated Wood For Uses Other Than Piles.**
	The following criteria pertains to the repair or maintenance of pre-existing bridges, boardwalks, pier, ramp and floats, footbridges, piers, stringers, and structures in or near waterways and wetlands:
	A. Pesticide and preservative-treated wood can only be used for substructures that are not in direct exposure to leaching by precipitation, overtopping waves, or submersion. Treated wood is prohibited for the application of decking and repair or replacement of bulkheads.
	B. Treated wood shipped to the project area will be stored out of contact with standing water and wet soil and will be protected from precipitation.
	C. Each load and piece of treated wood will be visually inspected and rejected for use in or above aquatic environments if visible residue, bleeding of preservative, preservative-saturated sawdust, contaminated soil, or other dispersible materials are present.
	D. Offsite prefabrication will be used whenever possible to minimize cutting, drilling and field preservative treatment over or near water.
	E. When field fabrication is necessary, all drilling, and field preservative treatment of exposed treated wood will be done above the plane of the High Tide Line to minimize discharge of sawdust, drill shavings, excess preservative and other debris. Tarps, plastic tubs, or similar devices will be used to contain the bulk of any fabrication debris, and any excess field preservative will be removed from the treated wood by wiping and proper disposal to prevent run-off to marine waters.
	F. Cutting of treated wood shall occur 50 feet from open water. Cutting of treated wood in nearshore areas shall include means of minimizing sawdust contamination, such as vacuum dust collectors or similar means of collecting dust.

	G. Evaluate all wood construction debris removed during a project to ensure proper disposal of treated wood.
	H. Ensure that no treated wood debris falls into the water or, if debris does fall into the water, remove it immediately.
	I. After removal, place treated wood debris in an appropriate dry storage site protected from precipitation until it can be removed from the project area.
	J. Treated wood debris shall not be left in the water or stacked at or below the High Tide Line.
12.	**Barge Use.**
	Barges will be large enough to remain stable under foreseeable loads and adverse conditions.
	Barges will be inspected before arrival to ensure the vessel and ballast are free of invasive species if the barge has been used in any other waterbody.
	Barges will be secured, stabilized, and maintained as necessary to ensure no loss of balance, stability, anchorage, or other condition that can result in the release of contaminants or construction debris.
	Ensure the barge does not ground out.
13.	**Stormwater Management**
	Stormwater management, as described below, is required for PDC #3 and any other project that will create or prolong stormwater runoff discharging to a stream, river, estuary, or nearshore marine area when that proposed project: (1) Includes construction of new impervious surface that; (2) repairs or replaces existing impervious surface when the stormwater management at the site does not currently meet all the criteria identified below; or (3) prolongs the life of an existing impervious surface and the stormwater management at the site does not currently meet the all of the criteria identified below.
	The following actions do not require any post-construction stormwater management: i. Removing marine debris or marine life from existing outfalls. ii. Replacing outfall flap gates or flow control devices. iii. Minor repairs or non-structural pavement preservation including installation or repair of guard rails, patching, chip seal, grind/inlay, overlay; removal or plugging of scuppers in a way that benefits stormwater treatment. iv. Modifying on-street parking modifications that reduces contributing impervious surfaces. v. Retrofitting, without increasing the amount of pollution generating impervious surface (PGIS), an existing impervious surface (pavement, parking lot, etc.) as necessary and required by law to comply with Americans with Disabilities Act (ADA) standards for accessible design (e.g., curbcuts). This does not include retrofitting of overwater structures. vi. Minor building repairs such as re-roofing, re-siding, painting, replacing or installing fasteners, shingles, flashing, and gutters, or similar building elements.

	For residential application, hardscape areas should utilize pervious materials (e.g., pavers, porous concrete) as feasible; if infeasible, incorporate rain gardens, bioswales, planted wetponds or comparable Low Impact Development (LID) treatments.
	For commercial, industrial, or public application, utilize LID approaches to design stormwater treatment and management facilities. LID uses on-site features to maximize evapotranspiration and infiltration, which improve water quality and reduce adverse effects to receiving waters such as hydromodification. Manufactured (or proprietary) stormwater facilities, or alternative approaches, will only be considered if site constraints preclude the implementation of LID methods or the alternative can demonstrate improvement in ecosystem health and function commensurate with identified LID practices. Examples of LID practices, ordered by preference, include: i. Minimize impervious area. ii. Limit disturbance. iii. Landscape and hardscape areas.
	Provide a Post-Construction Stormwater Management Plan (PCSMP) for any action proposed to be carried out under this GCM to NMFS. This plan will be validated by NMFS during the verification step. A PCSMP must include the following information: i. All relevant plans, drawings, exhibits, and a narrative report addressing PDC #3 below, that describes, explains, and defines the proposed project. Any engineering design sheets must be stamped and signed by a professional engineer licensed to practice in the state of Washington. ii. Site maps indicating the following elements within the project boundaries: a. Property boundaries and project boundaries, especially if the project includes activities extending beyond/outside the property or parcel boundaries. b. Impervious areas, landscape areas, and undeveloped natural areas (e.g., forested areas, wetlands, riparian zones). c. Location and extent of all LID stormwater facilities and BMPs by type and capacity. d. Location and extent of proprietary stormwater treatment technologies by type and capacity, if proposed. e. Location and extent of other structural source control practices by type and capacity (e.g., special practices for known or suspected contaminated sites, methods for targeting specific pollutants of concern). f. All runoff discharge points and conveyance paths to the nearest receiving water.
	Water Quality Treatment Analysis that describes how LID or commensurate practices will treat the water quality design storm and provide adequate

	treatment for runoff that will be discharged from the site, based on design storm flows. The Water Quality Treatment Analysis should include: i. Descriptions of each proposed LID facility's capacity in terms of discharge or volume depending on the type of facility (i.e., flow rate or volume managed facilities). ii. If proposed, describe each proprietary stormwater treatment facility's capacity to treat the water quality design storm and provide adequate treatment for runoff that will be discharged from the site. iii. Describe any other structural source control practices that address LID or proprietary facilities treatment efficiency objectives (i.e., amount or percent of contaminant reduction, treatment, or management).
	Flow Control Analysis that describes how treatment facilities (LID or commensurate practices) will manage and control the quantity of stormwater discharged from the site (i.e., detention, retention). Flow control is required for all projects, unless the outfall of the stormwater facility discharges directly into a major water body or directly to nearshore marine areas. Post-construction stormwater flow control methods shall demonstrate that the post-construction stormwater runoff is equal to, or less than, the pre-development stormwater runoff for all storm events between the 50% of the 2-year, 24-hour and the 10-year storm events. i. Describe each proposed LID facility's capacity in terms of flow or volume retention/detention depending on facility type. ii. Describe each proprietary stormwater facility's capacity in terms of flow or volume retention/detention depending on facility type. iii. Describe any other structural source control practices in terms of flow or volume retention/detention depending on facility type.
	If relevant, a description of how the proposed stormwater treatment prevents adverse hydromodification of receiving waters. This step would not typically be required for discharge directly into nearshore marine areas. This step is necessary if a project will: i. Peak runoff exceeds 0.5 cfs during the 2-year, 24-hour storm event; and, ii. Not meet the flow control requirements, detailed above; and, iii. Discharge into an intermittent or perennial water body with a watershed area less than 100 square miles above the discharge location.
	Flow control treatment and practices must be designed using continuous simulation modeling to ensure facilities are designed to capture the frequency and duration of flows generated by storms within the following criteria: i. Lower discharge endpoint, by U.S. Geological Survey (USGS) flood frequency zone = 50% of 2-year event (i.e., Water Quality Design Storm) ii. Upper discharge endpoint a.Entrenchment ratio <2.2 = 10-year event, 24-hour storm; or, b. Entrenchment ratio >2.2 = bank overtopping event.

	Provide a description of the stormwater conveyance system. When conveyance is necessary to discharge treated stormwater directly into a surface water or a wetland, the following requirements apply: i. Maintain natural drainage patterns such that runoff is not redirected to a different drainage basin (i.e., watershed, subwatershed) from the pre-project conditions. ii. Ensure that treatment for post-construction runoff from the site is completed before it is allowed to commingle with any offsite runoff in the conveyance. iii. Prevent erosion of the flow path from the project to the receiving water(s). If preventing erosion using a natural flow path is not feasible, use manufactured elements (e.g., pipes, ditches, discharge facility protection) to discharge runoff that extends below the OHWM or HTL elevation of the receiving water. Note: The Corps does not consider activities occurring above the OHWM or HTL.
	Provide an Operations and Maintenance Plan that describes the schedule of the proposed inspection as well as maintenance activities for the stormwater facilities. This plan will be validated by NMFS during the verification step. The party that is legally responsible for maintenance and monitoring activities should also be stated. Finally, describe events that would trigger an inspection outside of routine inspection (e.g., a large storm event, localized flooding). Provide a contact phone number and email address for the legally responsible party or parties.
	The name, email address, and telephone number of the person responsible for designing the stormwater management facilities, so that NMFS may contact that person if additional information is necessary.
14.	**Pollution and Erosion Control**
	Use site planning and site erosion control measures commensurate with the scope of the project to minimize damage to natural vegetation and permeable soils and prevent erosion and sediment discharge from the project site.
	Before significant earthwork begins, install appropriate, temporary erosion controls downslope to prevent sediment deposition in the riparian area, wetlands, or water body. In tidal areas, plan work in dry areas as much as possible.
	During construction: i. Complete earthwork in wetlands, riparian areas, and stream channels as quickly as possible. ii. Cease project operations when high flows may inundate the project area, except for efforts to avoid or minimize resource damage. iii. If eroded sediment appears likely to be deposited in the stream during construction, install additional sediment barriers as necessary. iv. Temporary erosion control measures may include fiber wattles, silt fences, jute matting, wood fiber mulch and soil binder, or geotextiles and geosynthetic fabric. v. Soil stabilization using wood fiber mulch and tackifier (hydro-applied) may be used to reduce erosion of bare soil, if the materials are free

	of noxious weeds and non-toxic to aquatic and terrestrial animals, soil microorganisms, and vegetation. vi. Inspect and monitor pollution and erosion control measures throughout the length of the project. vii. Remove sediment from erosion controls if it reaches one-third of the exposed height of the control. viii. Whenever surface water is present, maintain a supply of sediment control materials and an oil-absorbing floating boom at the project site. ix. Stabilize all disturbed soils following any break in work unless construction will resume within four days.
	Remove temporary erosion controls after construction is complete and the site is fully stabilized.
15.	**Fish Capture and Release**
	If practicable, allow listed fish species to migrate out of the work area or remove fish before dewatering; otherwise remove fish from an exclusion area as it is slowly dewatered with methods such as hand or dip-nets, seining, or trapping with minnow traps (or gee-minnow traps).
	Manage isolation areas in a manner to avoid multiple salvage events (e.g. do not let water or fish into the isolated area during non-work times).
	Fish capture will be supervised by a qualified fisheries biologist, with experience in work area isolation and competent to ensure the safe handling of all fish.
	Conduct fish capture activities during periods of the day with the coolest air and water temperatures possible, normally early in the morning to minimize stress and injury of species present.
	Monitor the block nets frequently enough to ensure they stay secured to the banks and free of organic accumulation.
	Electrofishing will be used during the coolest time of day, only after other means of fish capture are determined to be not feasible or ineffective. a. Do not electrofish when the water appears turbid, e.g., when objects are not visible at depth of 12 inches. b. Do not intentionally contact fish with the anode. c. Follow NMFS (2000 or most recent) electrofishing guidelines, including use of only direct current (DC) or pulsed direct current within the following ranges: i. If conductivity is less than 100 microsecond (µs), use 900 to 1100 volts. ii. If conductivity is between 100 and 300 µs, use 500 to 800 volts. iii. If conductivity greater than 300 µs, use less than 400 volts. iv. Begin electrofishing with a minimum pulse width and recommended voltage, then gradually increase to the point where fish are immobilized. v. Immediately discontinue electrofishing if fish are killed or injured, i.e., dark bands visible on the body, spinal

	deformations, significant de-scaling, torpid or inability to maintain upright attitude after sufficient recovery time. Recheck machine settings, water temperature and conductivity, and adjust or postpone procedures as necessary to reduce injuries. vi. If buckets are used to transport fish: 1. Minimize the time fish are in a transport bucket. Check condition of fish in the bucket frequently. 2. Keep buckets in shaded areas or, if no shade is available, covered by a canopy. 3. Limit the number of fish within a bucket; fish will be of relatively comparable size to minimize predation. 4. Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water. 5. Release fish in an area upstream with adequate cover and flow refuge; downstream is acceptable provided the release site is below the influence of construction. 6. Ensure water levels in buckets is low enough to prevent fish from jumping out of the bucket or cover the bucket with a wet towel
	The USFWS is to be notified within three working days upon locating a dead, injured or sick endangered or threatened species specimen. Initial notification must be made to the nearest U.S. Fish and Wildlife Service Law Enforcement Office. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at (425) 883-8122, or the Service's Washington Fish and Wildlife Office at (360) 753-9440.
PA #9	**Marine Mammals**
	In-water construction activities causing underwater noise greater than 120dBrms, such as pile driving, jackhammering, and underwater sawing, will shut down if marine mammals enter the zone of influence. See Program Administration (PA) Section 9 of the Biological Opinions for supporting information. Construction activities will not resume until all marine mammals have been cleared from the zone of harm and are observed to be moving away from the construction site.
	A. If Southern Resident Killer whales have been documented more than four times during the proposed work window in the quadrant the project area is in, a Marine Mammal Monitoring Plan (MMMP) must be prepared and submitted with the project notification. The MMMP will be reviewed by a NMFS biologist. The goal of a MMMP is to stop or not start work if a marine mammal is in the area where it may be affected by pile driving noise.
	If in the previous two years there were four or more humpback whale sightings during the proposed work month, in the action area of the proposed work, a MMMP must be submitted with the project notification.

	NOAA's website identifies these quadrants and contains guidance on the potential for ESA-listed marine mammal occurrences in project areas: http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/evaluating_sound.html
	Check the Orca Network Sightings Maps at: http://www.orcanetwork.org/Archives/index.php?categories_file=Sightings%20Archives%20Home for Humpback whale sightings.
	Guidance for developing an MMMP can be found on NOAA's website: http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/monitoring_plan_guidance.html

	Essential Fish Habitat Conservation Recommendations
	1. All projects resulting in a loss of eelgrass habitat, are required to follow eelgrass mitigation monitoring requirements put forth in the Washington Department of Fish and Wildlife "Eelgrass/Macroalgae Habitat Interim Survey Guidelines" unless it conflicts with Seattle District Corps guidelines, in which case the Corps guidelines apply. .
	Mooring Anchors and Persistently Moored Vessels
	2. All new moorings buoys should be anchored in areas where SAV (e.g., eelgrass, kelp) habitat is absent. This will reduce adverse impacts to SAV. Additionally, all new mooring buoys should, to the maximum extent practicable, be in waters deep enough so that the bottom of the vessel remains a minimum of 18 inches off the substrate during extreme low tide events. This will reduce adverse grounding impacts to benthic habitat.
	3. When repairing or replacing mooring buoys, located within SAV habitat should be of the type that use midline floats, where appropriate, to prevent chain scour to the substrate. This will reduce adverse impacts to SAV and other benthic habitat.
	Pile Removal and Installation
	4. Encircle the pile with a silt curtain that extends from the surface of the water to the substrate, where appropriate and feasible.
	5. Drive piles during low tide periods when substrates are exposed in intertidal areas, where appropriate and feasible. This minimizes the direct impacts to fish from sound waves and minimizing the amount of sediments re-suspended in the water column.
	Over- and in- water Structures
	6. Any cross or transverse bracing should be placed above the plane of MHHW, where appropriate and feasible, to avoid impacts to water flow and circulation.
	7. Minimize, to the maximum extent practicable, the footprint of the overwater structure.
	8. Design structures in a north-south orientation, to the maximum extent practicable, to minimize persistent shading over the course of a diurnal cycle.

	9. For residential dock and pier structures, the height of the structure above water should be a minimum of 5 feet above MHHW, where appropriate and feasible.
	10. The use of floats should be minimized to the extent practicable and should be restricted to terminal platforms placed in deep water where appropriate and feasible and when the Corps determines there will not be a navigation hazard.
	11. When breakwaters are required, floating breakwaters are preferred. Encourage seasonal use of breakwaters.
	Nearshore Structures
	12. Use soft approaches (e.g., beach nourishment, soft or hybrid armoring, vegetative plantings, and placement of LWD) in lieu of “hard” shoreline stabilization and modifications (such as concrete bulkheads and seawalls, concrete or rock revetments), where appropriate and feasible.
	13. If planting in the riparian zone, use an adaptive management plan with ecological indicators and performance standards to oversee monitoring and ensure mitigation objectives are met, unless it is contrary to a Corps approved riparian planting plan.

Attachment 7c

U.S. Army Corps of Engineers

Project Design Criteria #5

NWS-2022-56

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
LIST OF REQUIREMENTS
Version: August 02, 2022

Project Design Criteria (PDC) #5 Expand or install a new in-water or overwater structure

Programmatic Endangered Species Act (ESA) Consultations [National Marine Fisheries Service (NMFS) reference number WCRO-2019-04086, U.S. Fish and Wildlife Service (USFWS) reference number FWS/R1/2002-0048454] have been completed for the activities listed below. If you can design your project to meet all of the requirements of the Programmatic Biological Opinions (i.e. General Construction Measures, and Essential Fish Habitat Conservation Recommendations, and PDC's) including the specific project design criteria listed below, then the review of your ESA consultation and permit application will be streamlined. The submittal of this list is not required. However, to further expedite your review you may include a description of how you meet these requirements in your SSNP application materials.

<table>
<tr><th colspan="2">Activities Covered</th></tr>
<tr><td colspan="2">All actions necessary to complete installation of the following:</td></tr>
<tr><td>• Mooring Buoys</td><td>• Mooring dolphin/piles</td></tr>
<tr><td>• Debris booms</td><td>• Fender pile(s)</td></tr>
<tr><td>• Staircases</td><td>• Marine rails</td></tr>
<tr><td>• Noncovered boat lift(s)</td><td>• Boat ramps</td></tr>
<tr><td>• Residential overwater structures (i.e. fixed pier, elevated walkway, ramp, and float)</td><td>• Community overwater structures (i.e. fixed pier, elevated walkway, ramp, and float)</td></tr>
<tr><th colspan="2">Notification Requirements

NMFS notification and verification is required for this activity category. USFWS notification is required for this activity category. The application materials and notification should include the information below if applicable.</th></tr>
<tr><td colspan="2">• Conservation offsets are needed for activities under this PDC. Submit a proposal for conservation offsets and any applicable report(s) (i.e. conservation calculator, habitat improvement plan, pre-sale agreement etc.). See Program Administration Section 8 of the Biological Opinions for supporting information.</td></tr>
<tr><td colspan="2">• If a new structure is proposed or submerged aquatic vegetation (SAV) is present within 25-feet of the proposed float, submit a SAV survey.</td></tr>
<tr><td colspan="2">• If an embedded anchor cannot be used, provide analysis for concrete anchor in the notification.</td></tr>
<tr><td colspan="2">• Project description should include when applicable: dimensions (square feet) of the proposed work in the upper shore zone, lower shore zone, and/or deep shore zone; percent grating; material, length, and diameter of pilings to be removed or placed.</td></tr>
<tr><td colspan="2">• If a minor alteration from the PDC is requested, provide documentation in the notification. See Program Administration Section 6 of the Biological Opinions for supporting information.</td></tr>
</table>

Project Design Criteria	
	New structures will require submerged aquatic vegetation (SAV) surveys to determine presence or absence and the applicant will describe measures necessary to avoid and minimize impacts to such habitat features.
	The Corps recommends the project meet applicable construction specifications of the most current version of RGP 6 to minimize impacts.
	New mooring buoys and OWSs will not be proposed in areas where water depth is insufficient to prevent the structure from grounding out on substrate during normal low flow or low tide conditions. Floating structures remain at least 12 inches above the substrate at all times.
	If SAV is present within 25-feet of the proposed float, the bottom side of the float must be elevated at least 4 feet above the substrate at low tide to reduce prop scour impacts on SAV.
	A new structure is not proposed in a mitigation site or other habitat enhancement, restoration, preservation or creation site.
	This activity category does not include new covered OWS (e.g., boat house, boat garage, storage shed).
	New in-water residential or community OWS design criteria
	Unless the applicant demonstrates that project modifications are necessary to comply with other laws or regulations, e.g., the accessibility guidelines from the Architectural Barriers Act of 1968 (ABA) or the Americans with Disabilities Act of 1990 (ADA).
	To the maximum extent practicable, the location of the proposed in-water or overwater structures should not be in areas occupied by or determined to be suitable for sensitive habitat (e.g. SAV, salt marsh, intertidal flats).
	Skirting and other continuous protective bumper material that may impede light penetration beneath an overwater structure may not extend below the bottom edge of a float frame or pier.
	Structures will be placed with as much horizontal and vertical distance to SAV as possible to minimize shading impacts, to allow for greater circulation, and to reduce impacts from boat maneuvering, grounding, and propeller damage (prop scarring).
	All synthetic float material must be permanently encapsulated to prevent breakup into small pieces and dispersal in water.
	Up to two watercraft lifts may be installed at a single-use overwater structure and up to four may be installed at a joint-use structure.
	A maximum of 2 additional piles may be used to attach a watercraft lift/grid to the piles used for anchoring the floats.
	Piles
	In addition to float and pier support piles, a maximum of 2 moorage piles to be installed.

	Use the smallest diameter piles and the fewest number necessary for support of the structure to minimize pile shading, substrate impacts, and impacts to water circulation.
	Pier support pilings must be spaced a minimum distance of 20 feet apart unless site specific conditions or engineering needs dictate a shorter distance.
	Pier support pilings in forage fish spawning habitat must be spaced a minimum distance of 40 feet apart unless site specific conditions or engineering needs dictate a shorter distance
	All pilings and mooring buoys must be fitted with devices to prevent perching by piscivorous birds.
	Mooring Buoys
	Anchor lines must not rest or drag on the substrate. A midline float must be installed to prevent this.
	Anchors should be helical screw or another type of embedded anchor. Only if the substrate prohibits use of embedded anchors may an alternative anchor (i.e., concrete block) be used.
	If an embedded anchor cannot be used and a concrete anchor is needed, calculations showing that the anchor will hold without dragging/breaking during storm events is required. This analysis should include the size of the vessel and the dry weight/dimensions of the anchor.
	No other buoys may be anchored within a 117-foot radius of the proposed buoy. Note: This requirement can be waived up to no more than 3 other buoys within a 117-foot radius of the proposed buoy provided water quality impacts to shellfish are minimized. Show all existing buoys within a 117- foot radius of the proposed buoy on the project drawings.
	Floats
	Floats must have a minimum of 50 percent grating and all grating must have a minimum of 60 percent open space (WAC 220-110-300).
	Floats may be held in place with lines anchored with a helical screw or “duckbill” embedded anchor or piles.
	Grating
	Piers, gangway ramps, and stairs must be fully grated.
	Grating openings should be oriented lengthwise in the east-west direction to the maximum extent practicable.
	New Boat Ramps
	Concrete ramps must use pre-cast concrete slabs below High Tide Line, although the slabs may be cast-in-place if completed in the dry.
	Boarding floats for a ramp may be allowed to ground out only on the ramp surface.
	The extent, size, and amount of rock used to prevent scouring, down-cutting, or failure at the boat ramp will be determined by a professional engineer.
	For elevated boat ramps, debris will be removed from under the boat ramp for the life of the project. While man-made debris (e.g., Styrofoam, fishing line, etc.) should be disposed of properly in an upland location, organic material,

	including wood and marine algae, will be moved to the beach down drift of the structure.
	New Marine Rail
	A residential property can have only one structure located within the intertidal area, a marine rail or an overwater structure, but not both.
	A marine rail has to be at least 20 feet long or an overwater structure, but not both.
	Support a marine rail with as few piles as practicable.
	New Staircase
	Stairway landings and steps must be entirely grated with either multi-directional grating with 40% open space or square grating with 60% open space.
	New Tram
	For anchoring of tram cables or footings for stairs: No more than one cubic yard of fill can be used for each footing or anchor. The number and size of footings and anchors must be minimized.

Attachment 7d

U.S. Army Corps of Engineers

Project Design Criteria #6

NWS-2022-56

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
LIST OF REQUIREMENTS
Version: August 02, 2022

Project Design Criteria (PDC) #6 Repair or Replace an existing structure

Programmatic Endangered Species Act (ESA) Consultations [National Marine Fisheries Service (NMFS) reference number WCRO-2019-04086, U.S. Fish and Wildlife Service (USFWS) reference number FWS/R1/2002-0048454] have been completed for the activities listed below. If you can design your project to meet all of the requirements of the Programmatic Biological Opinions (i.e. General Construction Measures, and Essential Fish Habitat Conservation Recommendations, and PDC's) including the specific project design criteria listed below, then the review of your ESA consultation and permit application will be streamlined. The submittal of this list is not required. However, to further expedite your review you may include a description of how you meet these requirements in your SSNP application materials.

<table>
<tr><th colspan="2">Activities Covered</th></tr>
<tr><td>• Aids to navigation</td><td>• House Boats</td></tr>
<tr><td>• Boat houses, covered boat houses, boat garages</td><td>• Boat Ramps (commercial, public or private)</td></tr>
<tr><td>• Breakwaters</td><td>• Buoys and mooring structures</td></tr>
<tr><td>• Commercial, industrial, and residential piers</td><td>• Wharfs, port, industrial, and marina facilities</td></tr>
<tr><td>• Pier, ramp and floats</td><td>• Dolphins</td></tr>
<tr><td>• Float plane hangars</td><td>• Float storage units</td></tr>
<tr><td>• Floating walkways</td><td rowspan="2">• Debris booms</td></tr>
<tr><td>• Groins and jetties</td></tr>
<tr><td colspan="2">• For marine terminals, the proposed action includes, replacing existing pilings, fender piles, group pilings, walers, fender pads, and debris booms; installing new mooring dolphins and structural pilings; and replacing or repairing, commercial or industrial piers or wharfs.</td></tr>
<tr><td colspan="2">• For marinas, the proposed action includes replacing, repairing piles, piers, ramps, and floats, and moving or rearranging piles and floats within the existing overall footprint.</td></tr>
<tr><th colspan="2">Notification Requirements

NMFS notification and verification is required for this activity category. USFWS notification is required for this activity category. The application materials and notification should include the information below if applicable.</th></tr>
<tr><td colspan="2">• Conservation offsets are required for repair or replacement of the structural elements being repaired or replaced. Submit a proposal for conservation offsets and any applicable report(s) (i.e. conservation calculator, habitat improvement plan, pre-sale agreement etc.). See Program Administration Section 8 of the Biological Opinions for supporting information.</td></tr>
<tr><td colspan="2">• Project description should include when applicable: dimensions (square feet) of the proposed work in the upper shore zone, lower shore zone, and/or deep</td></tr>
</table>

	shore zone; percent grating; material, length, and diameter of pilings to be removed or placed.
•	If a minor alteration from the PDC is requested, provide documentation in the notification. See Program Administration Section 6 of the Biological Opinions for supporting information.

Project Design Criteria	
	Boat ramps should be elevated in sediment transport zones, to the maximum extent practicable
	All concrete boat ramps must consist of pre-cast concrete slabs below ordinary high water, although the slabs may be cast-in-place if completed in the dry. The extent, size, and amount of rock used to prevent scouring, down-cutting, or failure at the boat ramp will be determined by a professional engineer.
	All synthetic flotation material must be permanently encapsulated to prevent breakup into small pieces and dispersal in water.
	Refer to General Construction Measure (GCM) #11 for the removal of treated wood other than piles.
	Decking replacement on residential or community pier and ramps over 33% or over 250 square feet must be entirely grated with 60% open area (compliant with WAC 220-660-390).
	Any float on a residential or community OWS must have a minimum of 50 percent grating and all grating must have a minimum of 60 percent open space, unless the applicant demonstrates that modifications are necessary to comply with other laws or regulations, e.g., the accessibility guidelines from the Architectural Barriers Act of 1968 (ABA) or the Americans with Disabilities Act of 1990 (ADA).
	All float pilings and mooring buoys must be fitted with devices to prevent perching by piscivorous birds.
	Any existing structure that is relocated in a marina must remain within the existing overall marina footprint.
	For structures with impervious surfaces, refer to GMC #13 for stormwater treatment requirements
	Marinas
	The character and size of the floats, and the existing overall footprint of the marina does not change.
	Rearrangement of overwater structure elements cannot result in impacts greater than those caused by the existing structure. For example, moving structures to areas with higher SAV cover would not be covered under this category.

Attachment 7e

U.S. Army Corps of Engineers

Letter of Permission General Conditions

NWS-2022-56

US Army Corps of Engineers ®
Seattle District

Letter of Permission
General Conditions
July 29, 2022

1. Reliance on Permittee's Information. In authorizing this work under this Letter of Permission (LOP), the Department of the Army has relied, in part, on the information provided by the permittee. If this information proves to be false, incomplete, or inaccurate, the permittee's authorization may be modified, suspended, or revoked, in whole or in part.

2. Compliance with Terms and Conditions. Projects authorized by this LOP shall comply with all terms and conditions herein and any case-specific conditions added or required by the District Engineer. Failure to abide by these terms and conditions invalidates this authorization and may result in a violation of federal law, which may require that the permittee restore the site or take other remedial action. Activities requiring Department of the Army authorization that are not specifically authorized by this LOP are prohibited unless authorized by another Department of the Army permit.

3. Contractor's Copy of Permit. The permittee shall provide a copy of the LOP (letter, drawings, and general conditions) to each contractor involved in the project and keep a copy of the LOP available for inspection at the project site.

4. Compliance Certification. Within 30 days of completing the authorized work, the permittee shall submit to the issuing office certification that the work, including any required compensatory mitigation, was conducted in accordance with the provisions of this LOP.

5. Access for Inspection. The permittee shall allow the District Engineer or his/her authorized representative to inspect the project whenever deemed necessary to assure that the work is being, or has been, accomplished in accordance with the terms and conditions of this permit.

6. Limits of Authorization. This permit does *not*:

   a. Obviate the requirement to obtain all state, local, or other federal authorizations required by law for the activity authorized herein, including any authorization required from Congress;

   b. Convey any property rights, either in real estate or material, or any exclusive privileges;

   c. Authorize any injury to property, invasion of rights, or any infringement of federal, state, or local laws or regulations; or

   d. Authorize the interference with any existing or proposed federal project.

7. Limits of Federal Liability. This permit is not an approval of the design features of any authorized project or an implication that such work is adequate for the intended purpose; a Department of the Army permit merely expresses the consent of the Federal Government to conduct the proposed work insofar as public rights are concerned. In issuing this LOP, the Federal Government does not assume any liability for the following:

a. Design or construction deficiencies associated with the authorized work;

b. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes, such as flooding;

c. Damages to persons, property, or to other permitted or unauthorized activities or structures caused by the activity authorized by this permit;

d. Damages associated with any future modification, suspension, revocation of this permit; or

e. Damage to the permitted project or uses thereof as a result of current or future activities undertaken by, or on behalf of, the United States in the public interest.

8. Obstruction of Navigation. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration. If the permittee fails to comply with the direction of the Corps of Engineers, the District Engineer may restore the navigable capacity of the waterway, by contract or otherwise, and recover the cost thereof from the permittee.

9. Navigation. The authorized work shall not interfere with the public's right to free navigation on navigable waters of the United States.

10. Tribal Rights. No activity authorized by this permit may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights. Please be aware that certain Tribes assert a right to attach nets to piers, docks, wharves, and other structures that may have been authorized by Department of the Army permits.

11. USACE Coordination. The permittee shall contact the appropriate office of the U.S. Army Corps of Engineers prior to commencing any construction in a federally maintained channel and/or waterway.

12. Stability. The permittees shall design projects to be stable against the forces of flowing water, wave action, and the wake of passing vessels.

13. Maintenance. The permittee must maintain all structures and work authorized by this LOP in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this responsibility if you abandon the authorized activity unless you complete a good faith transfer to a third party in compliance with General Condition 14, below. Should you wish to cease to maintain the authorized activity or abandon it without a good faith transfer, you must obtain a modification of this LOP from this office, which may require restoration of the area.

14. Transfer of Ownership. If you sell the property associated with this permit, the new owner must agree in writing to comply with all terms and conditions of this permit. A copy of that written agreement must be submitted to the issuing office to validate the transfer of this authorization.

15. Marking Structures. Permittees shall install and maintain any lights, signals, or other appropriate markers necessary to clearly designate the location of structures or work that might pose a hazard to public safety. Permittees shall abide by U.S. Coast Guard requirements concerning the marking of structures and work in navigable waters of the United States.

16. Endangered Species. This LOP does not authorize any activity that is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Endangered Species Act (ESA). Prospective permittees must notify the District Engineer if any listed species or designated critical habitat might be affected by, or is in the vicinity of, the project and shall not begin work until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized.

17. Historic Properties. This LOP does not authorize any activity that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places (NRHP) until the provisions of 33 CFR 325, Appendix C, have been satisfied. Historic properties include prehistoric and historic archeological sites, and areas or structures of cultural interest. A prospective permittee must notify the District Engineer if the proposed activity may affect an historic property that is listed, eligible for listing, or may be eligible for listing in the NRHP, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. If a previously unknown historic property is encountered during work authorized by this LOP, the permittee shall cease work immediately, notify the District Engineer of the situation within one day of discovering the impact, and avoid any further impact to the property until the District Engineer verifies that the requirements of 33 CFR Part 325, Appendix C, have been satisfied.

18. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status unless the federal agency (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service) with direct management responsibility for that river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

19. Alternatives. Activities authorized by LOP shall be designed and constructed to avoid and minimize adverse impacts to waters of the United States to the extent practicable through the use of alternatives.

20. Minimization of Environmental Impact. Permittees shall make every reasonable effort to conduct the authorized work in a manner that minimizes the adverse impact of the work on water quality and stream flow, fish and wildlife, and the natural environment, including adverse impacts to migratory waterfowl breeding areas, spawning areas, shellfish beds, and aquatic resource buffer zones. Work should be limited to periods of low flow and/or low tide when practicable.

21. Compensatory Mitigation. Appropriate and practicable compensatory mitigation shall be required to the extent necessary to ensure that the authorized activities would not have more than a minor adverse impact on the aquatic environment.

22. Soil Erosion and Sediment Controls. Permittees shall use and maintain appropriate erosion and sediment controls in effective operating condition and permanently stabilize all exposed soil and other fills, including any work below the ordinary high water mark or high tide line (in Seattle District, the high tide line is located at the "mean higher high water" line), at the earliest

practicable date using native vegetation to the maximum extent practicable. The permittee shall remove all installed controls as soon as they are no longer needed to control erosion or sediment.

23. Water Quality. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

24. Coastal Zone Management. If a conditioned Coastal Zone Management Act consistency determination has been made for your project, you must comply with the conditions specified in the determination as special conditions to this permit. For your convenience, a copy of the determination is attached if it contains such conditions.

25. Equipment. Permittees shall place heavy equipment working in wetlands on mats, and take all other appropriate measures to minimize soil disturbance.

26. Disposal of Construction Debris. Except as specifically authorized by this LOP, all construction debris and excess materials resulting from the authorized work shall be properly disposed of, and in a manner that does not allow it to enter into a waterway or otherwise degrade water quality.

27. Aquatic Life Movements. The work shall not substantially disrupt the necessary life-cycle movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area.

28. Skirting. The attachment of skirting to a pier, dock, float or similar structure is prohibited unless specifically authorized.

29. Water Supply Intakes. Permittees shall ensure that activities authorized by this LOP have no more than a minimal adverse impact on public water supply intakes.

30. Hazardous Materials. Permittees shall take all reasonable precautions to prevent any petroleum product, chemical, or other toxic or deleterious material from entering any waterbody. Should a spill occur, or if an oil sheen or distressed or dying fish are observed in the project vicinity, the permittee shall immediately cease work and contact the appropriate Washington Department of Ecology regional spill response office: (360) 407-6300, Southwest Region; (206) 594-0000, Northwest Region; (509) 575-2490, Central Region; (509) 329-3400, Eastern Region; or (360) 407-6000, Main Receptionist.



31. Re-evaluation of Decision. The Corps may re-evaluate it's decision to authorize the work by a LOP whenever circumstances warrant. Such circumstances may include, but are not limited to, a failure on the part of the permittee to comply with the terms and conditions of the LOP; the permittee having submitting information in support of the permittee's application that proves to be false, incomplete, or inaccurate; or this office receiving pertinent new information that it did not consider during its original public interest review. Subsequent to its re-evaluation, the Corps may suspend, modify, or revoke its authorization pursuant to 33 CFR 325.7 or initiate an enforcement action as provide for in 33 CFR 326.4 and 326.5.

32. Extension of Time. A permittee may request an extension of the time allowed to complete the authorized activity, providing the reasons for the extension. The request must be submitted to this office well in advance of the above expiration date. Unless there are circumstances requiring either a prompt completion of the authorized activity or a re-evaluation of the public interest decision, the Corps normally gives favorable consideration to a request for an extension of this time limit.

Attachment 7f

U.S. Army Corps of Engineers

Certificate of Completion

NWS-2022-56

US Army Corps of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-2022-56

Name of Permittee: Washington State Parks and Recreation Commission

Date of Issuance: June 13, 2023

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following email or mailing address:

NWS.Compliance@usace.army.mil OR

Department of the Army
U.S. Army Corps of Engineers Seattle
District, Regulatory Branch
4735 E. Marginal Way S, Bldg 1202
Seattle, Washington 98134-2388

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☐	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____ ☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☐	If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: _____ ☐N/A ☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

☐	Provide phone number/email for scheduling site visits (must have legal authority to grant property access). Printed Name: _____ Phone Number: _____ Email: _____

Printed Name: _____

Signature: _____

Date: _____

Attachment 7g

Grette Associates, LLC

Reid Harbor Moorage Replacement

Biological Evaluation and Essential Fish Habitat Assessment

USACE Letter of Permission NWS-2022-56

WASHINGTON STATE PARKS AND RECREATION COMMISSION
STUART ISLAND STATE PARK RENOVATION PROJECT: REID HARBOR

BIOLOGICAL EVALUATION AND ESSENTIAL FISH HABITAT ASSESSMENT

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

DECEMBER 2021

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

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1 INTRODUCTION

Washington State Parks and Recreation Commission (State Parks) proposes to conduct maintenance and repair work at its existing public moorage facility in Reid Harbor at Stuart Island State Park. State Parks is proposing the work as a capital improvement project to renovate the existing moorage facility. The maintenance project includes work below High Tide Line (HTL). It will include the replacement of existing timber piers, aluminum gangway, timber walkways, and timber floats with steel and aluminum structures with fiber reinforced polymer grating. Dimensions and configuration will be similar to existing. In addition, the creosote-treated timber piles will be removed and replaced with new steel piles. The property is located in Reid Harbor on Stuart Island in the Strait of Georgia, just north of Orcas Island, San Juan County, Washington (Sheet 1).

State Parks is applying for a U.S. Army Corps of Engineers (USACE) authorization under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for the Stuart Island State Park Renovation Project (Project). The Endangered Species Act (ESA) requires federal agencies to ensure that they do not authorize, fund, or carry out actions that are likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat for such species. ESA is co-administered by the National Oceanographic and Atmospheric Administration Fisheries Service (NOAA Fisheries) and U.S. Fish and Wildlife Service (USFWS).

This Biological Evaluation (BE) addresses the potential effects of the proposed Project on the listed species and designated critical habitats summarized in Table 1, and has been prepared to assist USACE in its review of the permit application. The species list in Table 1 is based on the Project's USFWS Information for Planning and Consultation (IPaC; USFWS 2021) and information received from NOAA Fisheries West Coast Region species list website (http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html, queried May 7, 2021). Streaked horned lark (*Eremophila alpestris strigata*) and yellow-billed cuckoo (*Coccyzus americanus*) are identified on the USFWS Official Species List; however, because the nearshore marine Project area lacks suitable habitat for these species, the Project will have no effect on them. Thus, they are not discussed further within this BE.

In addition, an evaluation of the effects of the proposed Project on Essential Fish Habitat (EFH) has been prepared pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act. The effects of the proposed Project on EFH are addressed in Section 9 of this document.

State Parks is the applicant for aquatic resource permits. The contact at Washington State Parks is Joelene Boyd; she can be reached at (360) 855-5533.

Table 1. Summary of ESA species and critical habitats (CH) with corresponding effect determinations.

Listed Species	Federal Status	Designated CH in Action Area	Species Effects Determinations	CH Effects Determinations
Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)	threatened	yes	NLAA[1]	NLAA[1]
Hood Canal Summer-run Chum Salmon (*Oncorhynchus keta*)	threatened	no	NLAA[1]	N/A
Puget Sound Steelhead Trout (*Oncorhynchus mykiss*)	threatened	no	NLAA[1]	N/A
Bull Trout (*Salvelinus confluentus*)	threatened	no	NLAA[1]	N/A
Bocaccio rockfish (*Sebastes paucispinis*)	endangered	yes	NLAA[1]	NLAA[1]
Yelloweye rockfish (*Sebastes ruberrimus*)	threatened	yes	NLAA[1]	NLAA[1]
Southern Resident Killer Whale (*Orcinus orca*)	endangered	yes	NLAA[1]	NLAA[1]
Humpback Whale (*Megaptera novaeangliae*)	endangered	no	NLAA[1]	N/A
Leatherback Sea Turtle (*Dermochelys coriacea*)	endangered	no	No effect	N/A
Marbled Murrelet (*Brachyramphus marmoratus*)	threatened	no	NLAA[1]	N/A

[1] May Affect, Not Likely to Adversely Affect

2 DESCRIPTION OF PROJECT

2.1 BACKGROUND

Stuart Island Marine State Park is a 433-acre marine camping park with 33,030 feet of shoreline. The Park is part of the Cascadia Marine Trail and offers camping and moorage. Some campsites are for the exclusive use of those arriving by human- or wind-powered watercraft. State Parks proposes to replace the existing dilapidated timber dock and pier, off-shore moorage and pumpout facility support piling at Reid Harbor with aluminum and steel structures in an alignment that will improve accessibility for visitors while minimizing environmental impacts to the greatest extent possible (Appendix A).

2.2 PURPOSE OF PROJECT

State Parks' purpose and need for this Project is to replace/maintain and improve the facilities from an access and environmental standpoint. This involves three facets: replacing and upgrading aging moorage structures that have long since reached the end of design life to ensure continued safe operation; reducing environmental impacts by reconstructing the facilities with modern, environmentally-friendly methods such as grated decking and steel piles, by avoidance of sensitive aquatic habitat features like eelgrass beds, and by relocating the float system from the lower shore zone (-7 ft MLLW) to the deeper shore zone (-11 ft MLLW); and increasing accessibility and usability of the site for visitors by incorporating gangways into the design that are longer and thus result in lower grades.

2.3 PROJECT DESCRIPTION

The proposed work at Reid Harbor consists of work below and above OHW/HTL (elevation for both OHW and HTL = +9.25 feet MLLW; Appendix B), and MHHW (+7.86 feet MLLW) for the purpose of replacing the existing timber moorage facility that has long since reached the end of its useful life at Reid Harbor in the Stuart Island Marine State Park (Project Site) in Washington State. The replacement structures will be realigned in order to make the facilities more accessible for visitors while minimizing environmental impacts. A summary of work elements and quantities can be found in Table 2.

There are four components to the project: 1) replacement of the existing moorage facility (pile, floats, pier, components), 2) removal of one offshore island floating dock, 3) replacement of one offshore island floating dock, and 4) replacement of creosote dolphins with stainless steel pile at the pumpout. The project includes the following work elements:

Demolition:

- Eighteen (18) creosote-treated timber pile at the moorage facility
- Twelve (12) creosote-treated timber pile at the offshore island floating docks
- Six (6) creosote-treated timber pile at the pumpout
- Four (4) timber floats at the moorage facility
- Two (2) timber offshore island floating docks
- One (1) timber fixed pier walkway

- One (1) aluminum gangway
- One (1) timber staircase

Installation:

- Fifteen (15) 16” diameter galvanized steel pipe pile and associated substructures for the moorage facility,
- Three (3) 16” diameter galvanized steel pipe pile for the new island float,
- Two (2) 16” diameter galvanized steel pipe pile for the existing pumpout
- Five (5) 12’ x 32’ galvanized steel framed moorage floats
- Three (3) 6’ x 24’ steel framed dinghy floats
- Two (2) 12’ x 32’ and two (2) 12’ x 24’-1 1/2" galvanized steel framed floating docks to make one (1) offshore island of floating docks
- Two (2) 6’ x 88’ aluminum walkways
- Two (2) 12’ x 12’ aluminum platforms
- One (1) 6’ x 80’ aluminum gangway
- One (1) 8’ x 8’ concrete abutment

2.3.1 Demolition and Structure Excavation

Demolition of the existing structures will occur above and below OHW and the HTL and primarily be conducted by crane barge. The timber pier will likely be cut into segments and lifted by crane and placed on the deck of the barge. Some upland demolition may be conducted by hand tools or a small backhoe. Best management practices (BMPs) to protect water quality may include but are not limited to: sediment/erosion control measures such as use of debris booms, turbidity curtains, filter berms, silt fences/curtains, straw wattles, and working in the dry whenever possible; high visibility construction fencing to delineate construction limits; adherence to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC); and adherence to San Juan County’s Stormwater Management for Development Guidelines (JARPA Attachment B) during all operations. All items listed above will be placed on a material barge, transported offsite, and disposed of at an approved upland facility minus the gangways, which are to be stored by the Owner for potential use at other facilities in the future.

Pile Extraction

Existing creosote-treated timber pile at the Reid Harbor moorage facility will be extracted along with the associated pile for the offshore island floating docks following the DNR 2017 BMPs for pile removal and disposal. Pile will be removed by pulling with a crane or potentially a vibratory extractor. Due to water levels at the project site, a floating barge will be used to extract the pile to provide access for the pile removal equipment at the seaward edge of the float system. A debris boom will be installed around the wetted perimeter of the work area in order to contain any floating debris produced during the demolition and new construction work. A silt curtain will be utilized, if necessary, to meet water quality requirements based on the results of water quality monitoring work conducted throughout the duration of construction.

Full-length extraction of existing creosote-treated timber pile will be attempted during demolition. If during extraction a pile breaks and can no longer be extracted by crane, the pile stub still embedded in the soil will be cut off one foot below the mudline if the pile is located in the deeper subtidal (deeper than -10 feet MLLW) or two feet below the mudline if the pile is located in the shallow subtidal (shallower than -10 feet MLLW). Stub (cut or broken) locations will be mapped with GPS coordinates (in NAD 83) by the contractor. Demolished creosote-treated timber pile will be disposed of at an approved offsite facility. Washington Department of Natural Resources BMPs for Pile Removal and Disposal (2017) will be followed during pile extraction.

Floats

Existing timber floats at the moorage dock facility and offshore island floating docks will be removed. The moorage floats at the dock facility will be demolished offsite and taken to an approved upland facility. The offshore island floating docks that are timber framed, have grated decking over 100% of the surface, and enclosed foam floatation will be taken to a State Parks facility for storage or used at another site.

Excavation

Minor structural excavation, and possibly grading work, would be performed prior to placing foundation materials for the new abutment. All structural excavation and grading work for the new abutment will take place above OHW and the HTL on a bluff comprised of conglomerate bedrock with a shallow layer of soil above. All structural excavation work will be conducted utilizing hand tools and possibly a small backhoe. The excavator will place the material into a temporary stockpile in the uplands prior to loading onto the barge for offsite disposal or possibly placed in approved upland location. Silt fencing and straw wattles will be used as appropriate for erosion and sediment control, as will high visibility construction fencing to delineate construction limits. While excavating, the contractor will be responsible to submit and follow an accepted Temporary Erosion and Sediment Control (TESC) plan based on best management practices (BMPs). BMPs and water quality protection measures that may be implemented for conformance with the permit requirements and conservation measures are outlined below:

- Operations will be conducted in such a manner so as to limit disturbance to the minimum required to complete the work.
- Turbidity and other water quality parameters will be monitored to ensure construction activities are in conformance with Washington State Surface Water Quality Standards, or other conditions as specified in the WDOE Section 401 Water Quality Certification (WQC). The contractor will observe turbidity during structural excavation operations in order to ensure compliance with WQC requirements.
- Construction operations will be conducted in such a way as to adhere to San Juan County's Stormwater Management for Development Guidelines (JARPA Attachment B).
- Appropriate BMPs will be employed to minimize sediment loss and turbidity generation during structural excavation, re-handling, and material processing, including use of debris booms, turbidity curtains, filter berms, silt fences/curtains down gradient from any earth/dirt work as applicable.
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of

any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.

- Fuel/lubricant hoses will be checked daily to ensure no leaks exist.

2.3.2 Replacement Moorage Facility

Installation of the new moorage facility will commence following the demolition of the existing facility. The new facility is larger than the existing as the existing walkways are much steeper than what is recommended for ADA accessibility. The new walkway will significantly improve slopes and accessibility. The goal is to provide a facility with comparable moorage accommodations to one of the offshore floating docks and the existing moorage at the dock, as one of the offshore islands will be removed.

Abutment
The abutment that will support the aluminum walkway will be cast-in-place reinforced concrete, with all work occurring above OHW and the HTL. The abutment will likely be anchored with rock anchors due to shallow and exposed bedrock at the site. BMPs for excavation and casting concrete will be implemented to protect water quality and the aquatic environment. Uncured concrete will be isolated from the aquatic environment by conducting the work above OHW/HTL, and a debris boom will be installed around the wetted perimeter of the work area in order to contain any floating debris produced during the demolition and new construction work.

Pile Replacements
Twenty (20) new 16" diameter galvanized steel pipe pile will be installed at Reid Harbor to provide lateral and axial support for the walkways, platforms, moorage floats, and the existing pumpout. Pile installation will be performed by vibratory hammer or rock sockets depending on soil conditions. In cases where pile encounter premature refusal when using a vibratory hammer, an impact hammer or rock drill will be used to reach the design elevations. All float pile will have fiberglass bird caps installed.

Driving of the pile will require the use of a vibratory hammer. The estimated time to install each pile with a vibratory hammer will be typically 15-30 minutes based on the medium-dense sand observed by the geotechnical engineer. Depending on soil conditions, up to 45 minutes of driving may be required through very dense material. The pile for the floats will only need to be proof loaded with an impact hammer with the use of a bubble curtain if soil conditions prevent the pile from being driven to the minimum required embedment depth for lateral capacity. Proof loading will be required for pile supporting the walkways. It is assumed that the impact hammer may have to proof load at 250 blows/pile for the last 5 ft of embedment. If some of the pile encounters premature refusal during vibratory hammer driving due to either soil conditions or pile driving obstructions, the use of an impact hammer or drill will be required to reach the design pile tip elevations.

In cases where the impact hammer is necessary to install the pile, a bubble curtain or other approved attenuation device would be used as a means of sound attenuation and implemented

during impact hammer driving. It is assumed that impact hammer use may be required for the last 10-20 feet of embedment, consisting up to 800 blows per pile.

In the cases where bedrock is encountered, and the pile reaches refusal with the vibratory and impact hammer, a rock drill will be required to create rock sockets for the pile that will go roughly 15 feet into the bedrock. Active drilling may be up to two hours per pile. All spoils from the drill will be recovered and disposed of offsite. A silt curtain will be used during rock drill operations if water quality becomes affected.

Walkways and Gangway Replacements
Two (2) aluminum walkways and one (1) aluminum gangway with aluminum guardrails will be installed on the top of the galvanized steel substructures. The walkways and gangways will improve ADA accessibility. The entire deck surface of all gangways and walkways will be covered with an ADA-compliant fiber-reinforced polymer grating with a minimum 60% open area. Approximately 50% of the entire deck will be functional grating.

Float Replacements
A total of five (5) galvanized steel moorage floats, three (3) dinghy floats, and four (4) offshore island moorage floats will be installed. Fiber-reinforced polymer grating with 60% open area will be used for the decking that will comply with ADA. Thick-walled EPS foam-filled HDPE flotation tubs will be installed on the floats. The entire deck surface of all floats will be covered with an ADA-compliant, minimum 60% open area fiber-reinforced polymer grating with approximately 50% of the entire deck be functional grating. Grating will be oriented parallel to the float width to maximize light penetration. Highest mudline elevation around the floats is approximately -11 ft MLLW. The draft of the floats will be roughly 1 foot.

2.3.3 Summary Table

Below is a summary table of work tasks, quantities, and square footage above and below OHW. In summary, work below OHW at Reid Harbor would result in a removal of 36 creosote-treated timber piles, a net removal of 16 piles, and an increase in overwater footprint by 855 sq ft. However, new decking would be grated, replacing almost entirely solid decking and resulting in an overall increase in light penetration to the aquatic habitat beneath the structures. After accounting for the conversion to grated decking, the project would result in a net reduction in overwater coverage of 243 square feet. The 80 ft gangway would reduce the maximum slope from 30° (58%)[1] to 18° (32%)[2], and relocate the moorage and dinghy floats to the Deeper Shore Zone (DSZ) from the Lower Shore Zone (LSZ).

[1] Based on +14 ft MLLW platform elevation and -3 ft MLLW low tide, assuming 1 ft' freeboard, for a total vertical drop of 16 ft.
[2] Based on +22.5 ft MLLW proposed platform elevation and -3 ft MLLW low tide, assuming 1 ft' freeboard, for a total vertical drop of 24.5 ft.

Table 2. Summary of work elements and proposed quantities for Reid Harbor.

Task	Qty.	Work Item	Above OHW/HTL		Below OHW/HTL		Total Area (SF)
			Volume (CY)	Area (SF)	Volume (CY)	Area (SF)	
Demolition	**18**	12”-16” Dia. Creosote Timber Pile (Moorage Facility)	-	-	-	16	**16**
	12	12”-16” Dia. Creosote Timber Dolphin Pile (Offshore Island Floating Docks)	-	-	-	11	**11**
	6	12”-16” Dia. Creosote Timber Dolphin Pile (Pumpout)	-	-	-	6	**6**
	3	12’ x 110’ Timber Floats (Moorage Facility)	-	-	-	1,320	**1,320**
	1	6’ x 40’ Dinghy Float (Moorage Facility)	-	-	-	240	**240**
	2	12’ x 113’ and 12’ x 64’ Timber Floats (Offshore Island Floating Docks)	-	-	-	2,124	**2,124**
	1	Timber Fixed Pier	-	235	-	590	**825**
	1	Aluminum Gangway	-	-	-	84	**84**
	Total Demolition		-	**235**	-	**4,391**	**4,626**
Replacement	**1**	8’ x 8’ Concrete Abutment	5	64	-	-	**64**
	15	16” Dia. Galv. Steel Pile (Moorage Facility)	-	-	-	21	**21**
	3	16” Dia. Galv. Steel Pile (Offshore Island Floating Docks)	-	-	-	5	**5**
	2	16” Dia. Galv. Steel Pile (Pumpout)	-	-	-	3	**3**
	5	12’ x 32’ Galv. Steel Moorage Float	-	-	-	1,920	**1,920**
	3	6’ x 24’ Galv. Steel Dinghy Floats	-	-	-	432	**432**
	2	12’ x 32’ Galv. Steel Offshore Island Floating Docks	-	-	-	768	**768**
	2	12’ x 24’-1 1/2" Galv. Steel Offshore Island Floating Docks	-	-	-	579	**579**
	2	6’ x 88’ Aluminum Walkways	-	258	-	798	**1,056**
	2	12’ x 12’ Aluminum Platforms	-	-	-	288	**288**
	1	6’ x 80’ Aluminum Gangway	-	-	-	432	**432**
	Total Replacement		**5**	**322**	**-**	**5,246**	**5,568**

2.4 CONSTRUCTION TIMING

Because this project is grant-funded, State Parks proposes to conduct this work as soon as permits are received, within the approved in-water work windows. The USACE and Washington Department of Fish and Wildlife (WDFW) both designate work windows for Puget Sound. For this Project Area (San Juan Islands), the USACE work window for salmon is July 16 through March 1 and for bull trout is July 16 through February 15. There is no documented forage fish spawning at Reid Harbor (see Section 3.4.2). The WDFW designated work window is more restrictive: September 1 through March 1 for work in the San Juan Islands. Because it is more

conservative, the WDFW work window of September 1 through February 15 will be applied to this project.

Also, any pile driving occurring within the above work window during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

3 DESCRIPTION OF PROJECT AREA AND ACTION AREA

3.1 HABITAT ZONES

For the purposes of this BE, intertidal habitat is defined as aquatic habitat located from HTL (+9.25 ft MLLW) to -4.0 ft MLLW. Shallow subtidal habitat is located between -4.0 ft MLLW to -10.0 ft MLLW. Subtidal habitat includes all habitat deeper than -10.0 ft MLLW.

3.2 PROJECT AREA

The Project Area includes the aquatic areas adjacent to the proposed work. In-water and over-water work will occur at four locations within Reid Harbor—at the existing dock, at an offshore pumpout station, and at two offshore timber islands (see Sheets 2-4). Dock replacement actions at shore will occur between approximately -12 ft and HTL. The timber islands and the pumpout station are located between -9 ft and -14 ft MLLW. The majority of the work would be within subtidal waters.

3.3 ACTION AREA

The Project effects are described within a broader setting to provide context for evaluating potential impacts. This broader area, termed the "Action Area," encompasses the Project area as well as all areas that may be directly or indirectly affected by proposed Project activities. The Action Area for the Project was defined by considering the potential spatial extent of mechanisms that may affect listed species. In this case, the geographic extent of the Action Area is primarily based on the predicted maximum extent of sound associated with vibratory driving 16-inch steel pile (Figure 1).

It is standard practice to use the Practical Spreading Loss model to determine the distance at which sound associated with Project activities attenuates to ambient conditions. For marine mammal consultations, NOAA Fisheries requires either a detailed site-specific assessment of background and ambient underwater sound or that the applicant uses the lowest applicable effect threshold to determine the area of potential sound effects (http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/consultation_tools.html, queried May 6, 2021). Because there is a continuous sound (vibratory driver operation), the potential effect threshold used in lieu of background is 120 decibels ($dB^3)_{RMS}$.

The model was used with the following assumptions:

- The loudest sound is anticipated to be generated by pile driving 16-inch diameter steel pipe piles. To estimate the extent of pile driving noise, the most applicable published sound data were used. Impact proofing of 16-inch piles are estimated to generate noise at 200 dB_{peak}, 187 dB_{RMS}, and 173 dB_{SEL} (Laughlin 2004).

[3] Sound pressure in water is referenced at 1 micropascal (1 µPa). In this document, all Peak (dB_{peak}) and Root Mean Squared (dB_{RMS}) pressures are referenced at 1 µPa (e.g., 195 dB_{RMS} (re. 1 µPa). Sound Exposure Levels (SEL) are referenced at 1 µPa*sec (e.g., 187 dB_{SEL} (re. 1 µPa*sec). For readability purposes, the pressure references are not repeated throughout the text.

- There are no reference sound pressure levels (SPLs) for vibratory driving 16-inch diameter steel pipe pile; therefore, reference SPLs from the next largest, applicable pile size (18-inch) was used, calculating the average SPL level of all available data points, resulting in 164 dB_{RMS} (Laughlin 2010 a, b).

- Use of a confined bubble curtain during impact driving is assumed to result in at least 9 dB of sound attenuation at the source. Bubble curtains often achieve much higher rates of attenuation. However, the assumption of a 9 dB attenuation at 10 meters is a typical conservative estimate.

- With the use of a bubble curtain, attenuated impact proofing sound levels are anticipated to be at 191 dB_{peak}, 178 dB_{RMS}, and 162 dB_{SEL}.

- Sound pressure travels in a linear direction (concentrically) away from the source.

- Sound does not reflect off of or travel through landmasses.

The Practical Spreading Loss model was used to calculate the distance necessary for sound to attenuate from 178 dB_{RMS} to 120 dB_{RMS}. The model returned a distance of 45 miles. Because sound is constrained by land mass, sound will mostly be confined to the harbor, but will travel up to approximately 7 miles before attenuating on islands (Figure 1).

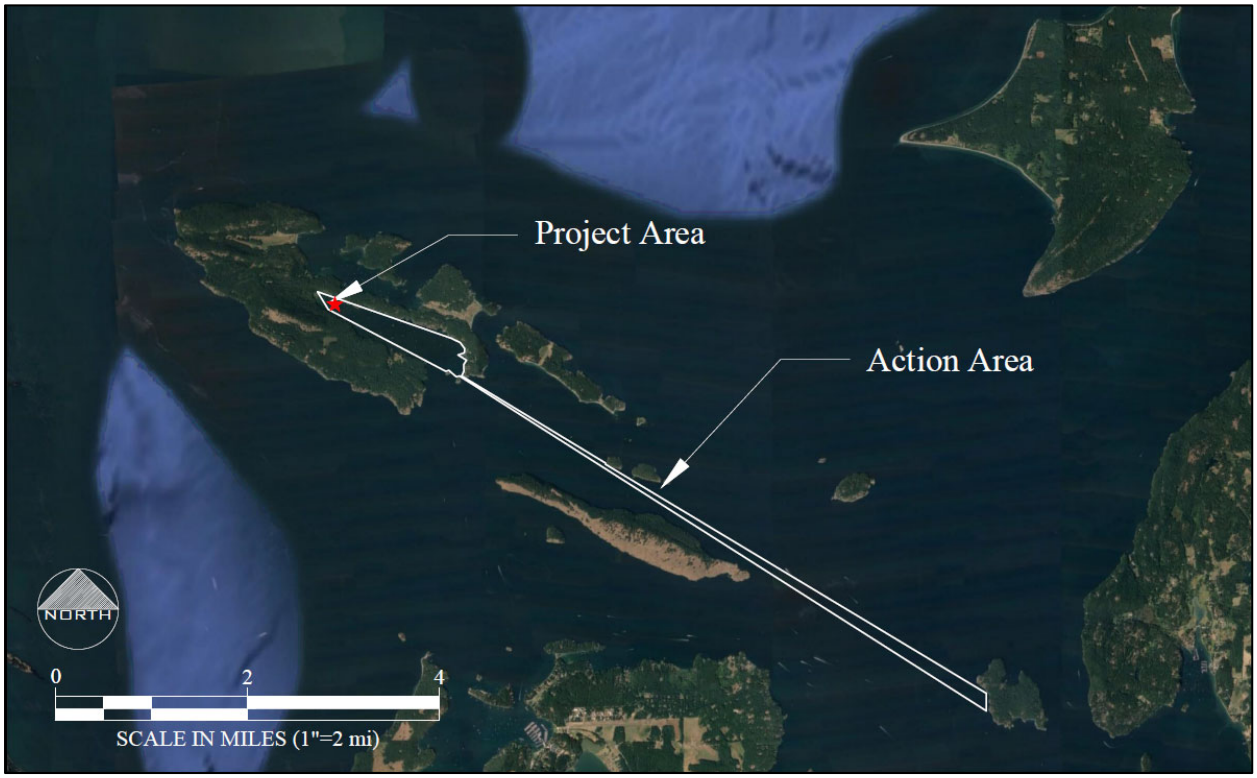


Figure 1. Action Area based on elevated sound during impact proofing and vibratory pile driving (approximately 7 miles maximum).

3.4 BASELINE CONDITIONS

The marine portion of the Reid Harbor Project area consists of a fixed pier, gangway, and timber moorage float structure anchored by creosote-treated timber piles. A number of floats and mooring buoys are present farther out in the harbor.

The marine habitat within the greater Action Area consists of the entirety of Reid Harbor, and a small section of President Channel across to Jones Island. Nearshore areas contain rocky coastline with both patchy and continuous fringing eelgrass and kelp (Ecology 2021). A macroalgae survey was performed by JenJay Inc. in 2018 and confirmed by Grette Associates in 2020 at the project site. A second survey was conducted to assess macroalgae and eelgrass along the fixed pier on June 3, 2021. Sparse macroalgae and no eelgrass was found in the surveyed area at Reid Harbor.

3.4.1 Salmonid Use of Action Area

Juvenile salmonids use nearshore habitats primarily for migration, foraging, and as nursery areas for residence and refuge. The Project area may be used for migration, rearing, and/or foraging. With a few exceptions (coho and chum occurrences; documented kokanee sockeye), salmon, steelhead, and bull trout are not found in the freshwaters of the San Juan Islands (Streamnet 2021, 2015a). Juvenile salmonids in nearshore habitats would be coming from nearby mainland river systems. These could include the following systems, all of which enter saltwater between 8 and 34 miles from Stuart Island (except as noted): Dakota Creek, Lummi River, Nooksack River Basin, Squalicum Creek, Whatcom Creek, Colony Creek, Chuckanut Creek, Samish River Basin, Skagit River Basin, Stillaguamish River Basin (49 miles), and Dungeness Creek (see Sections 4.1.1, 4.1.2, and 4.1.3).

Beamer and Fresh (2012) conducted extensive beach seining throughout the San Juan Islands over a two-year period. They sampled twice monthly, March through October. Juvenile Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), and pink (*O. gorbuscha*) salmon were observed in beach seines throughout the islands, with their timing and relative abundance variable by species.

Larger juveniles as well as sub-adult and adult fish from other salmonid populations could be present in offshore portions of the Action Area, including coho (*O. kisutch*), sockeye (*O. nerka*), steelhead trout (*O. mykiss*), cutthroat trout (*O. clarki*), and bull trout (*Salvelinus confluentus*).

All in-water Project activities will occur between HTL and -14 ft MLLW. This area is likely to be utilized by nearshore-dependent juvenile salmonids during outmigration. Adherence to approved in-water work periods will minimize the likelihood of juvenile salmonids being present during and immediately following in-water work.

3.4.2 Forage Fish Species

The Project area has a solid rock bank in upper intertidal areas, which transitions to gravel/cobble in middle to lower intertidal areas and then sand in subtidal areas (these elevation categories are roughly estimated based on Project and aerial photos). There are no herring spawning areas, herring pre-spawning areas, sandlance spawning areas, or surf smelt spawning areas mapped in the Project Area or Action Area (WDFW 2021).

4 DESCRIPTION OF THE SPECIES AND CRITICAL HABITAT

The ESA-listed species associated with the Action Area are Puget Sound Chinook salmon, bull trout, Puget Sound steelhead trout, bocaccio, yelloweye rockfish, Southern Resident killer whale, humpback whale, leatherback sea turtle, and marbled murrelet. Designated critical habitat associated with the Action Area includes that for Puget Sound Chinook salmon, listed rockfish, and Southern Resident killer whale. The geographic distribution and boundaries of critical habitat areas as well as the extent of the Action Area within these critical habitats is discussed below.

4.1 LISTED SPECIES

4.1.1 Puget Sound Chinook Salmon

The Puget Sound ESU includes all naturally spawned Chinook originating from rivers flowing into Puget Sound from the Elwha River (inclusive) eastward, including rivers in Hood Canal, South Sound, North Sound, and the Strait of Georgia. It also includes fish from twenty-six artificial propagation programs (see NOAA 2014a). This ESU was originally listed on March 24, 1999 (NOAA 1999); the listing was reaffirmed in 2005 (NOAA 2005). The ESA status of this ESU is threatened (NOAA 2014a).

According to WDFW, Puget Sound Chinook salmon do not spawn and are not present within any freshwater watersheds in the San Juan Islands (WDFW 2015a). Chinook presence has been documented in a number of creeks, rivers and river basins in the surrounding area (within approximately 40 miles, straight-line distance, see Table 2). Juvenile Chinook, particularly fall-run fish, migrate and rear in nearshore environments in the San Juan Islands during their outmigration period.

Beamer and Fresh (2012) observed outmigrating Chinook in beach seine samples throughout the San Juans from April through the end of their sampling period in October. Juvenile Chinook in San Juan nearshore areas typically are larger and arrive later than in nearby mainland areas (Beamer and Fresh 2012). Within the San Juans, outmigrating juvenile Chinook are most likely to be present in the Waldron-President Channel region.

Sub-adult and adult Chinook may be present in the Action Area any time of the year, but are not dependent on shallow water areas.

General life history and stock information on Chinook in the vicinity of the Action Area can be found in the following references: Congleton et al. 1982; Healey 1991; NOAA 1998.

Table 3. Freshwater systems in which Chinook presence has been documented in the general vicinity of Stuart Island.

Creek, River, or Basin	Distance from Stuart (miles, straight line)	Run Type
Lummi River	28	fall
Dakota Creek	34	fall
Colony Creek	36	fall
Dungeness Creek	37	spring
Nooksack River Basin	39	spring, fall
Squalicum Creek	39	fall
Whatcom Creek	39	fall
Samish River Basin	40	fall
Skagit River Basin	51	spring, summer, fall
Stillaguamish River Basin	61	summer, fall

4.1.2 Hood Canal Summer-run Chum

The Hood Canal summer-run ESU includes all naturally spawned summer-run chum originating from Hood Canal and its tributaries as well as from Olympic Peninsula rivers between Hood Canal and Dungeness Bay (inclusive). It also includes summer-run chum salmon from four artificial hatchery programs: Hamma Hamma Fish Hatchery Program, Lilliwaup Fish Hatchery Program, Tahuya River Program, and the Jimmycomelately Creek Fish Hatchery Program (NOAA 2014a). This ESU was originally listed on March 25, 1999 (NOAA 1999); the listing was reaffirmed in 2005 (NOAA 2005). The ESA status of this ESU is threatened (NOAA 2014a).

The closest spawning system for Hood Canal summer-run chum is approximately 28 miles from Stuart Island (StreamNet 2021). Similarly to fall run chum, summer-run fish outmigrate shortly after their emergence from stream gravel and begin to migrate downstream to estuary rearing areas (WDFW and Point No Point Treaty Tribes 2000). Although Beamer and Fresh (2012) observed outmigrating chum in beach seine samples throughout the San Juans from March through the August, it unlikely that these would include outmigrating fry from the Hood Canal summer-run ESU. The authors speculate that most chum in their samples originated from Canada, or the nearby rivers with large chum populations, specifically Nooksack and Skagit.

Sub-adult and adult Hood Canal summer-run chum are potentially present in the Action Area any time of the year, but are not dependent on shallow water areas.

General life history and stock information on chum in the vicinity of the Action Area can be found in Salo 1991.

4.1.3 Puget Sound Steelhead Trout

The Puget Sound DPS includes all naturally spawned steelhead originating below natural and manmade impassable barriers from rivers flowing into Puget Sound from the Elwha River (inclusive) eastward, including rivers in Hood Canal, South Sound, North Sound and the Strait of Georgia. It also includes fish from six artificial propagation programs: the Green River Natural Program; White River winter Steelhead Supplementation Program; Hood Canal Steelhead

Supplementation Off-station Projects in the Dewatto, Skokomish, and Duckabush Rivers; and the Lower Elwha Fish Hatchery Wild Steelhead Recovery Program, (NOAA 2014a). This ESU was originally listed on May 11, 2007 (NOAA 2007). The ESA status of this ESU is threatened (NOAA 2014a).

According to WDFW, Puget Sound steelhead trout do not spawn and are not present within any freshwater watersheds in the San Juan Islands (WDFW 2015a). Steelhead presence has been documented in a number of creeks, rivers and river basins in the surrounding area (within approximately 28 miles, straight-line distance, see Table 3).

Juvenile steelhead were not noted or otherwise included in the analysis of juvenile salmon and forage fish presence in the shorelines of the San Juan Islands (Beamer and Fresh 2012). Juvenile steelhead typically outmigrate as older, larger smolts are far less reliant on shallow water than smaller ocean-type salmon smolts. Any juvenile steelhead present in the Action Area would likely overlap temporally with Chinook and other ocean-type salmon. It is unlikely that juvenile rearing occurs in shallow waters of the Action Area; occasional opportunistic foraging in the Action Area is more likely, but still would not comprise regular use by steelhead. Sub-adult and adult steelhead may use the deeper, offshore waters of the Action Area for migration and foraging, but are not expected to be present in significant numbers at any time.

General life history information for Puget Sound steelhead trout has been reviewed in the Final Listing Determination (NOAA 2007) and the Status Review Update for Puget Sound Steelhead (NMFS 2005). Critical habitat listing for Puget Sound steelhead has been designated, but it does not include nearshore marine areas or San Juan County (NOAA 2016).

Table 4. Freshwater systems in which steelhead presence has been documented in the general vicinity of Stuart Island.

Creek, River, or Basin	Distance from Stuart (miles, straight line)	Run Type
Dakota Creek, California Creek	34	winter
Colony Creek	36	winter
Dungeness Creek	37	summer, winter
Chuckanut Creek	37	winter
Nooksack River Basin	39	winter
Squalicum Creek	39	winter
Whatcom Creek	39	winter
Samish River Basin	40	winter
Skagit River Basin	51	summer, winter
Stillaguamish River Basin	61	summer, winter

4.1.4 Bull Trout

The Coterminous United States DPS includes all bull trout in the lower 48 states. This DPS was listed on November 11, 1999 (USFWS 1999). The ESA status of this DPS is threatened (USFWS 2009).

The Coastal Recovery unit includes bull trout from the Puget Sound, Olympic Coast, and Lower Columbia River geographic regions (USFWS 2014, USFWS 2015). Eight core areas within the Puget Sound are currently occupied by bull trout: Chilliwack River, Nooksack River, Upper Skagit River, Lower Skagit River, Stillaguamish River, Snohomish and Skykomish River, Chester Morse Lake, and Puyallup River (USFWS 2015). The Skagit River core area has been identified as a population stronghold within the recovery unit (USFWS 2015). The Puget Sound geographic region also includes associated marine waters supporting the anadromous life history form of bull trout and additional shared Forage Migration and Overwintering (FMO). In Puget Sound, this includes Puget Sound and Hood Canal marine areas, the Samish River, Lake Washington, the lower Green River (Duwamish), and the lower Nisqually River (USFWS 2015).

The Nooksack, Skagit, and Stillaguamish Rivers enter freshwater approximately 28, 47, and 55 miles from Stuart Island. Bull trout presence has also been documented in a number of smaller drainages in the vicinity, but not in any freshwater areas in the San Juan Islands (StreamNet 2021).

Because anadromous bull trout may range in salt water as much as 30 or 40 kilometers (approximately 18 to 25 miles) from the mouth of their natal stream (Kraemer 1994), they may be present in Haro Strait, including the Action Area. Sub-adult and adult bull trout may be in the area year round. Juvenile bull trout would most likely be present at the same time as other juvenile salmonids, although like steelhead these juveniles are larger at outmigration and are less nearshore dependent than juvenile Chinook salmon.

Life history and stock information on bull trout potentially occurring in the Action Area can be found in the following references: Buchanan and Gregory (1997); Lee et al. (1997); Rieman and McIntyre (1993; 1995); USACE (2000); USFWS (1999).

Critical Habitat has been designated for bull trout, but does not include the Action Area (USFWS 2010).

4.1.5 Bocaccio

The Puget Sound/Georgia Basin DPS includes all bocaccio originating from Puget Sound and the Georgia Basin (NOAA 2014a). This DPS was originally listed on April 28, 2010 (NOAA 2010). The ESA status of this DPS is endangered (NOAA 2014a).

Bocaccio rockfish are a large rockfish, often reaching up to three feet in length. Bocaccio rockfish, like other rockfish species, give birth to live larval young that are pelagic for several months. Juvenile bocaccio rockfish then settle into nearshore habitat, often including aquatic vegetation such as macroalgae-covered rocks or sand/eelgrass habitat (Love et al. 2002). Juveniles typically inhabit shallower water than adults, though still are most commonly found in relatively deep waters (100 to 400 feet [COSEWIC 2002]). Bocaccio rockfish and most rockfish species migrate to deeper water as they mature (Love et al. 1991), and adult bocaccio rockfish are usually found at depths of between 165 feet and 825 feet (Love et al. 2002). Adults often congregate around rocky bottom and outcrop habitat, though occasionally wander into mudflats (NMFS 2008). Adults are typically found well off the bottom (Love et al. 2002). Juvenile bocaccio rockfish are planktivorous, feeding on larval krill, diatoms, and dinoflagellates. Adults are piscivorous, primarily feeding on other rockfishes, hake sablefish, anchovies, lanternfish, and also squid

(NMFS 2008). Bocaccio rockfish are prey of Chinook salmon, terns, and harbor seals (NMFS 2008).

Bocaccio have not been documented in Puget Sound since 2001, although it is assumed an extant population exists (NMFS 2008). Historically, bocaccio were more frequently observed as bycatch or in the recreational fisheries in the southern portion of Puget Sound, including the area around Point Defiance and the Tacoma Narrows (NOAA 2009, NMFS 2008, and Palsson et al. 2009). They are not included on the WDFW Priority Habitats and Species List for San Juan County (WDFW 2021).

Bocaccio presence is unlikely in both the Project and larger Action Area. The aquatic habitat in the immediate vicinity of Reid Harbor is shallower than typical adult bocaccio habitat. Eelgrass and macroalgae are present along the shoreline of the Action Area, which may be utilized by juveniles for rearing. However, considering what is known about bocaccio distribution, their presence is generally less likely in the San Juan Islands than in areas farther south in Puget Sound. Based on the available information, it is unlikely that bocaccio would be present in the Action Area.

4.1.6 Yelloweye Rockfish

The Puget Sound/Georgia Basin DPS includes all yelloweye rockfish originating from Puget Sound and the Georgia Basin (NOAA 2014a). This DPS was originally listed on April 28, 2010 (NOAA 2010a). The ESA status of this DPS is threatened (NOAA 2014a).

Yelloweye rockfish, one of the larger rockfish, are generally considered rare in Puget Sound (Love et al. in NMFS 2008). Like other rockfish, yelloweye rockfish give birth to live larval young that are pelagic for several months. Juvenile yelloweye rockfish generally settle in shallow, high relief zones, crevices and sponge gardens (Love et al. in NMFS 2008). Juveniles move from shallow rocky reefs to deeper pinnacles and rocky habitats as they mature (NMFS 2008). Adults generally inhabit water between approximately 40 and 1,560 feet deep, but are most common between 300 and 600 feet (Love et al. 2002). Adult yelloweye rockfish are generally attached to a specific site and do not move much from that site (NMFS 2008). Adult yelloweye rockfish were observed in association with coral reefs at depths between approximately 650 and 820 feet in the Olympic Marine Sanctuary off the Washington Coast during coral surveys (Brancato et al. 2007). Juvenile yelloweye rockfish are planktivorous. Adults, due to their large size, prey on a wider range of prey items than bocaccio, including smaller rockfish, sand lance, gadids, flatfishes, shrimp, crab, and gastropods (Love et al. 2002 and Yamanaka et al. 2006 in NMFS 2008). Yelloweye rockfish are preyed on less frequently than most rockfish due to their size, though they are occasionally preyed upon by killer whales.

As with bocaccio, the area in the immediate vicinity of Reid Harbor is shallower than typical yelloweye rockfish habitat due to the lack of very deep water and/or rocky reefs or outcrops. WDFW includes yelloweye rock fish on its PHS list and shows that they are present within San Juan County (WDFW 2021). The greater Action Area includes deeper, rockier habitat. Based on available information, yelloweye rockfish may be present in the Action Area.

4.1.7 Southern Resident Killer Whale

The Southern Resident DPS of killer whale includes killer whales from the J, K, and L pods, except such whales placed in captivity prior to November 2005 and their captive progeny (NOAA 2014a). This DPS was listed on November 18, 2005 (NOAA 2005a). The ESA status of this DPS is endangered (NOAA 2014a).

The three resident whale pods (J, K, and L pods) have spring through fall ranges in Puget Sound and the Straits of Georgia and Juan de Fuca. A number of factors have been identified by NOAA Fisheries as having resulted in the listing of these whales as endangered. Sound and disturbance from vessel traffic, toxic chemicals which accumulate in top predators, and uncertain prey availability (primarily salmon) all have been identified as concerns for the continued survival of this population.

The Orca Network maintains a whale sighting database. Based on that data, Southern Residents frequently pass through President Strait, east of Stuart Island and through which the Action Area passes (Orca Network 2021). Based on the available information, Southern Resident killer whale sightings in the Action Area are strongly seasonally variable, and likelihood of presence during Project construction will be minimized through adherence to the anticipated work window (September 1 through February 15). Nevertheless, Southern Resident presence in the portions of the Action Area outside Reid Harbor is possible.

Life history information on Southern Resident killer whales potentially found in the Action Area can be found in the following references: Barrett-Lennard and Ellis (2001); Braham and Dahlheim (1982); Dahlheim and Heyning (1999); Ford et al. (2000); NOAA (2006); Reeves and Leatherwood (1994).

4.1.8 Humpback Whale

The humpback whale (entire species) was listed as endangered when the Endangered Species Act was enacted on June 2, 1970.

Humpback whales inhabit coastal waters with high plankton and forage fish productivity, and are typically found within about 50 nautical miles of shore (Evans 1987, Calambokidis and Steiger 1995). They are dependent on abundant food resources because of their size and metabolic needs for reproduction, nursing, and sustenance during times of the year (i.e., winter) when food resources are less abundant (Evans 1987).

Humpback whales typically inhabit coastal areas because of the productivity of these habitats. They enter the inland waters of the Straits of Juan de Fuca and Georgia, or Puget Sound relatively infrequently. Prior to 2003, only three individual whales had been observed in these inland waters, although reported sightings have increased in recent years with 13 different individuals during 2003 and 2004 (Falcone et al. 2005). Based on a review of OrcaNetwork (http://www.orcanetwork.org/Archives/index.php?categories_file=Sightings%20Archives%20Home, queried May 10, 2021), humpback whales have been sighted in the islands generally at least once during most months (except January and February), but have been observed less frequently in the northern portions of the San Juans in the Strait of Georgia than areas to the west and south

of the Islands. Given the infrequency of observations in this area, they are considered unlikely to be present in the Action Area at any time.

Life history information on humpback whales potentially found in the Action Area can be found in the following references: Braham 1991; Calambokidis et al. 1997, 1998, 2001; Calambokidis and Quan 1997; Calambokidis and Steiger 1995; Evans 1987; Scheffer and Slipp 1948.

4.1.9 Marbled Murrelet

The marbled murrelet was listed as threatened on October 1, 1992 (USFWS 1992). Marbled murrelets feed in marine waters but nest in old-growth coniferous forests. While murrelet at-sea foraging behavior is not well understood, murrelets are typically observed foraging in marine waters between 20 and 80 meters (65 and 262 feet) deep, though they have been observed foraging in water as shallow as 1 meter (3 feet) and as deep as 100 meters (328 feet) (Ralph et al. 1995). Marbled murrelets reportedly feed on a wide variety of prey, including sand lance, Pacific herring, and other marine taxa such as crustaceans. Murrelets nest in old growth or mature forests composed of conifers, including Douglas fir, western red cedar, Sitka spruce, and western hemlock. Designated critical habitat for the marbled murrelet applies only to nesting habitat, and does not occur in the Action Area (USFWS 2011). Murrelets may be present and forage within the Action Area.

Life history and population information on marbled murrelets potentially found in the Action Area can be found in the following references: Carter 1984; Parametrix, Inc. 1996; Ralph et al. 1995; USFWS 1995, 1996, 1997.

4.1.10 Leatherback Sea Turtle

The leatherback sea turtle was listed as endangered on June 2, 1970. Leatherback sea turtles are found in the Pacific, Atlantic, and Indian Oceans (Groombridge 1982). In the Pacific Ocean, this species has been recorded along the coast of South America and as far north as Alaska; however, they are uncommon in Washington waters and found off the coast only during the summer and early fall when sea surface temperatures are highest (Mager 1985). They have not been documented in Puget Sound (Jenkerson pers. comm. 2019)

Bowlby et al. (1994) observed 16 leatherback sea turtles off the Oregon and Washington coasts in 1989 and 1990, and three more in 1992. During the study, no other sea turtles were observed. The majority of these turtle sightings occurred off the Washington coast with a mean offshore distance of 33 nautical miles and a range of 4.5 to 80 nautical miles. Critical habitat is associated with breeding areas and does not occur in Washington.

Because the leatherback sea turtle typically occurs in offshore locations and there are no documented sightings within Puget Sound, there is no expectation that this species uses the Action Area.

Life history information on leatherback sea turtles can be found in the following references: Bowlby et al. 1994; CEE 1983; Groombridge 1982; Mager 1985.

4.2 DESIGNATED CRITICAL HABITATS

4.2.1 Puget Sound Chinook Salmon Critical Habitat

On September 2, 2005, NMFS designated critical habitat for 12 Evolutionary Significant Units (ESU) of Pacific salmon and steelhead, including critical habitat for the Puget Sound Chinook ESU (NOAA 2005b). Critical habitat for this ESU includes 15 associated subbasins within Puget Sound and the Nearshore Marine Areas (Unit 16). Nearshore Marine Areas include the entirety of the nearshore zones of Puget Sound (including areas adjacent to islands), Hood Canal, and the Strait of Juan de Fuca (to the mouth of the Elwha River) (NOAA 2005c). The Nearshore Marine Areas are further divided into subunits based on the boundaries separating the 19 Water Resource Inventory Areas (WRIAs) that discharge into Puget Sound. The Action Area include shorelines in Nearshore Marine Areas 2 (San Juans), 1 (Nooksack), and 3 (Lower Samish/Skagit) (NOAA 2005b).

Designated critical habitat within the Nearshore Marine Areas includes elevations from Extreme High Water (EHW; +11.15 ft MLLW based on NOAA Station 9449880, Friday Harbor WA) to -30 m (-98 ft) MLLW. The focus within the Nearshore Marine Areas has been identified as photic zone habitat based on the presence of macrophytes (eelgrass and macroalgae) that are vital to rearing, migrating, and maturing Chinook salmon and their prey (NOAA 2005b). Based on this designation, the entirety of the Project Area as well areas within the appropriate depth range in the Action Area are designated as critical habitat for Chinook salmon.

4.2.2 Puget Sound Rockfish Critical Habitat

NOAA fisheries designated critical habitat for both species of listed rockfish on November 13, 2014 (NOAA 2014b). NOAA designated two separate areas of critical habitat to cover both juvenile and adult life history stages of the listed rockfish species. Deep water critical habitat consists of benthic habitats or sites deeper than 30 meters (98 feet) that possess or are adjacent to areas of complex bathymetry consisting of rock and/or highly rugose habitat. Deep water critical habitat is considered essential for adult rockfish (all species) and juvenile yelloweye rockfish to promote growth, survival, reproduction and feeding opportunities.

Nearshore critical habitat for juvenile bocaccio consists of settlement habitats located in the nearshore with substrates such as sand, rock and/or cobble compositions that also support kelp. Nearshore critical habitat provides forage opportunities and refuge from predators and enables behavioral and physiological changes needed for rockfish juveniles to occupy deeper adult habitats. Deepwater and nearshore critical habitat for Puget Sound rockfish have been designated, and the Action Area contains both nearshore and deepwater critical habitat (Figure 2). Deepwater critical habitat is designated outside of Reid Harbor, approximately 7,000 ft from the Project Area.

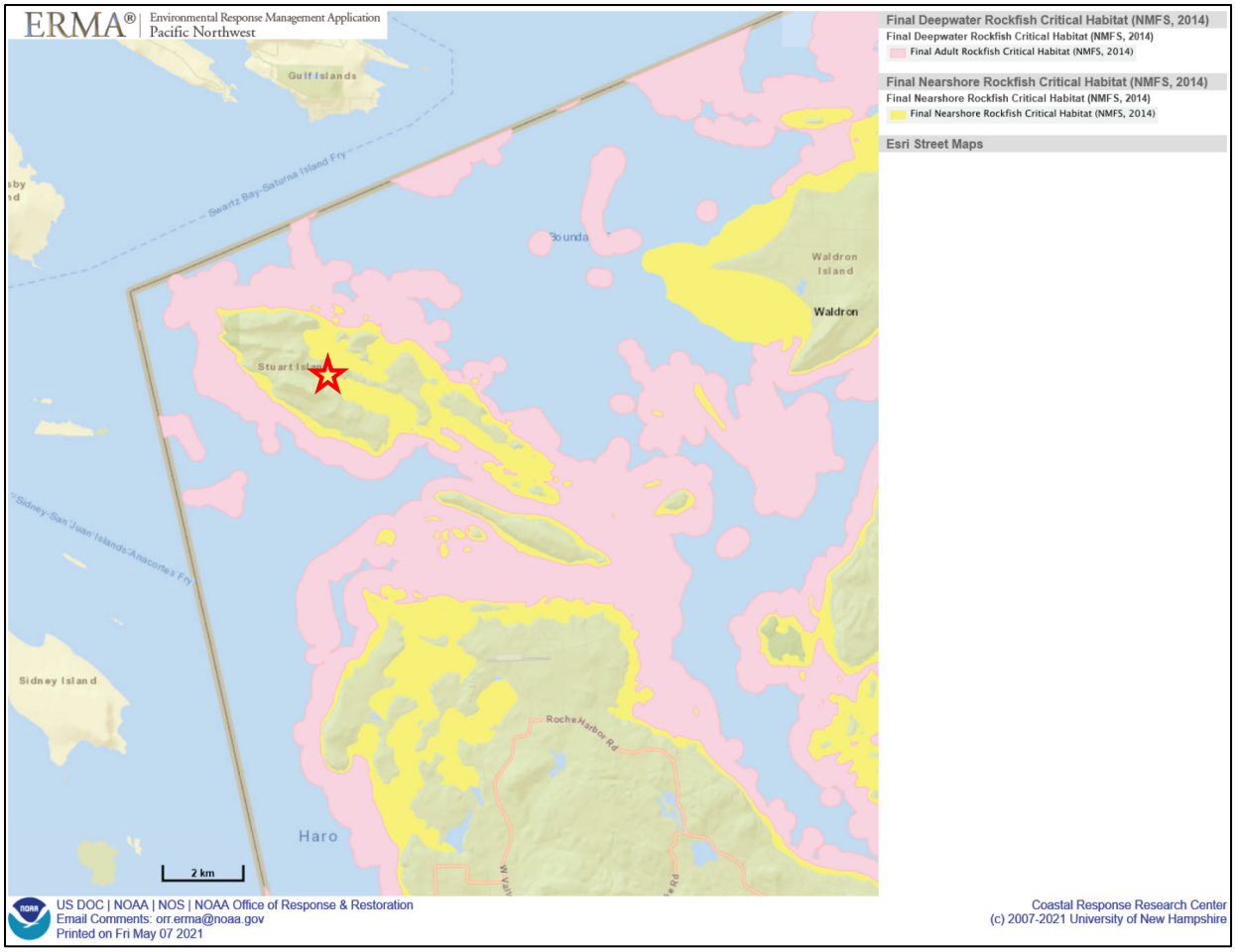


Figure 2. Final designated nearshore (juvenile; yellow) and deepwater (adult; pink) critical habitat for listed rockfish (bocaccio and yelloweye rockfish) (ERMA 2021).

4.2.3 Southern Resident Killer Whale Critical Habitat

NOAA designated critical habitat for Southern Resident killer whale on November 29, 2006, effective December 29, 2006 (NOAA 2006). Three areas have been designated as critical habitat: Area 1: the Core Summer Area in Haro Strait and waters around the San Juan Islands; Area 2: Puget Sound excluding Hood Canal; and Area 3: the Strait of Juan de Fuca. The Action Area is located within Area 1: the Core Summer Area in Haro Strait and waters around the San Juan Islands. Designated critical habitat for Southern Residents includes waters deeper than -20 ft relative to EHW, or -8.85 ft MLLW. Therefore, the portion of the Action Area deeper than -8.85 ft MLLW are designated critical habitat for Southern Resident killer whale.

5 EFFECTS OF THE PROJECT

The effects of an action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. Though previously, effects of an action were to be assessed as direct, indirect, interdependent and interrelated effects, recent guidance has collapsed all of the aforementioned types of effects such that all are evaluated as "effects of the action" without further regard for the type of effect (USFWS and NOAA 2019). Effects are organized according to construction-related effects and long-term effects on ESA-listed species. Effects on listed critical habitat are discussed in Section 6.

Broadly, the potential effects of Project activities for ESA-listed species in the Action Area include the effects of pile driving, construction-related turbidity and water quality effects, changes in overwater coverage, and changes in pile number. The effects of these elements on the species of concern are analyzed below.

5.1 CONSTRUCTION EFFECTS

5.1.1 Underwater Sound from Pile Extraction and Installation

The Project requires extraction of 36 existing 14-inch diameter timber piles, and installation of 20 new 16-inch steel pile. The existing pile will be extracted using a direct-pull or, if necessary, a vibratory driver. It is estimated that each pile could take up to 30 minutes of vibratory extraction.

All piles will be installed using a vibratory hammer to the extent possible. Pile that cannot reach full embedment depth with vibratory driving alone, or piles that are required to bear vertical loads (e.g., piles supporting walkways) will require impact proofing. Alternately, a rock drill may be used to penetrate bedrock.

5.1.1.1 Impact Pile Proofing

During impact proofing, underwater noise and sound pressure levels (SPLs) could affect listed fish, avian, and marine mammal species. At lower levels, pile proofing noise can cause behavioral effects on fish, such as startle or avoidance of an area. At higher levels, injury such as hearing threshold shifts or barotrauma could occur.

To assess the potential for injury from pile proofing, the Practical Spreading Loss model is used in species-specific calculators developed by the Services. These calculators model the distance from the pile within which sound pressure levels (SPL) may exceed thresholds; this distance is referred to as an "isopleth". To calculate this requires an estimate of the anticipated SPL of the particular pile being driven, the number of strikes anticipated per day, and an estimate of SPL reduction achieved by any sound attenuation measures employed. The following assumptions are made:

- Proofing would occur only when necessary to achieve full embedment or vertical load bearing capacity or when substrate prevents sufficient embedment of anchor piles for lateral loads.

- It is assumed that up to 800 blows per pile will be necessary to reach full embedment.
- A bubble curtain would be used during impact pile proofing to reduce SPL; the bubble curtain is assumed to attenuate SPL by approximately 9 dB[4].
- 16-inch steel pile, attenuated with a bubble curtain, would generate sound at 191 dB_{peak}, 178 dB_{RMS}, and 162 dB_{SEL}

Salmonids

An interim agreement signed by several agencies has set threshold levels for potential injury and adverse behavioral effects for salmonids, which are used by the Services (Fisheries Hydroacoustic Working Group 2008). Additionally, USFWS promulgates the same thresholds for bull trout (USFWS 2014a). NOAA Fisheries also supports an injury threshold based on cumulative sound exposure, which accounts for impact pile proofing over an entire work day using the NOAA Fisheries Stationary Fish Model[5]. Current guidance from NOAA Fisheries is that the distance to injury threshold should be calculated for both criteria (single strike based on dB_{peak} and cumulative sound based on dB_{SEL}), and the more conservative value (greater distance) should be applied.

Injury thresholds only apply to juvenile salmonids, not adults. Steelhead and bull trout potentially present in the Action Area would be much larger than Chinook and chum salmon, and thus much less vulnerable to underwater noise. Injury thresholds are presented in Table 5.

Table 5. Fish Injury and Disturbance Thresholds Impact Pile Driving.

Effect type	Salmonid[1]
Injury, single strike	206 dB_{peak}
Injury, cumulative strikes	187 dB_{SEL} (>2g); 183 dB_{SEL} (<2g)
Behavioral disruption	150 dB_{RMS}

[1] Source: Fisheries Hydroacoustic Working Group, 2008

A noise impact calculator has been prepared by NMFS (NMFS 2009), which uses the Practical Spreading Loss Model to assess potential for instantaneous injury and the Stationary Fish Model to assess potential cumulative injury[6]. The Model assumes that cumulative effects "reset" overnight based on assumed fish movement, so only strikes in a single day are counted toward cumulative impacts. Since driving conditions are unknown until the time of construction, the worst-case scenario for impact pile proofing is presented in the model to determine the maximum potential extent of impacts during pile proofing operations.

Instantaneous Injury Impacts

As mentioned above, the potential for injury to salmonids from instantaneous impulses is assumed possible at SPLs above 206 dB_{peak}. Since estimated SPLs generated by impact proofing would be below this level, it is assumed that no potential exists for instantaneous injury or direct mortality to salmonids.

[4] In the absence of site-specific and equipment-specific data, 9 dB is assumed as a modest attenuation level based on data presented in WSDOT 2020.

[5] The NOAA Fisheries Stationary Model is available for download at the WSDOT BA Guidance website http://www.wsdot.wa.gov/Environment/Biology/BA/BAguidance.htm#Noise

[6] FWS has also prepared a calculator, which uses the same functions and thresholds as NMFS'. Thus, results from both calculators are identical, and only NMFS' calculator is used herein.

Cumulative Injury Impacts

In calculating potential cumulative pile proofing impacts, it is necessary to estimate the number of strikes needed to fully embed a pile in addition to knowing the SEL resulting from each individual strike. The model assumes that cumulative effects "reset" overnight based on assumed fish movement, so only strikes in a single day are counted toward cumulative impacts. As discussed above, it is estimated that each pile will take 800 blows to fully proof. If up to eight piles are driven in one day, up to 6,400 blows could occur in a given day.

Additionally, cumulative impacts are assumed to occur at a lower SPL for salmonids less than 2 grams than for salmonids larger than 2 grams. To be conservative, the threshold for salmonids less than 2 grams was used

Based on the assumptions above, the cumulative effects threshold for salmonids would be exceeded within 207 ft (63 m) of the proofing location (Table 6).

The cumulative pile proofing impacts model assumes that an individual fish experiences all impact hammer sound over an entire pile work day, which means that fish would have to be present within the applicable isopleth for the entirety of each day's proofing. Even under this scenario, the extent of noise exceeding cumulative impact thresholds would constitute a very small portion of the Action Area, and would leave ample shoreline unaffected by noise (Figure 1). A more likely scenario would be for individual salmonids to move away from piles upon commencement of driving, thus at most only exposed to a small portion of proofing. This would result in a much smaller radius of potential cumulative injury. Finally, adherence to the in-water work window would ensure that a minimum number of juvenile salmonids would be present.

Thus, there is very low potential for juvenile salmonids to experience cumulative injury from pile proofing noise. Timing restrictions and the low number of piles to be proofed further reduces this potential. Thus, the risk of cumulative injury to salmonids is negligible. The potential for impacts to steelhead or bull trout is even lower, so as to be discountable.

Behavioral Impacts

As mentioned above, behavioral effects on salmonids are assumed possible at SPLs above 150 dB_{RMS}. Using NMFS' calculator, impact pile proofing would exceed the salmonid behavior threshold within 2,414 ft (736 m) (Table 6). Exceedance of the behavioral threshold may cause avoidance behavior. However, there is ample comparable habitat in the vicinity in which juvenile salmonids could forage. Thus, even if this effect were to occur, the risk of adverse effects is negligible.

Table 6. Distance to salmonid effects threshold

Pile size	Anticipated SPL (dB_{RMS}/dB_{SEL})	Distance to threshold	
		Cumulative*	Behavioral
16"	178/162	207 ft / 63 m	2,414 ft / 736 m

*Due to conservative estimates of number of pile strikes, cumulative injury potential is the same for all sizes of salmonids

Overall, due to the low likelihood of juvenile salmonids encountering injurious sound levels, pile driving is determined to have discountable risk of adverse effects to juvenile salmonids, and should effects occur they would likely be negligible.

Cetaceans

Marine mammals in the Action Area can similarly be affected by pile driving. Impact pile proofing can potentially injure marine mammals, mask communication between individuals, or cause behavior effects such as avoidance, the effect of which varies based on the importance of the habitat.

Marine mammals of different taxa are sensitive to sound in different frequencies. Southall (2007) has divided marine mammals into functional hearing groups, including low frequency cetaceans (baleen whales), medium frequency cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales), and high frequency cetaceans (true porpoises, river dolphins), phocid pinnipeds (true seals), and otariid pinnipeds (sea lions). For the purpose of this analysis, only the functional groups that include an ESA-listed species that may be present have been assessed: the low-frequency cetacean (humpback whale) and mid-frequency cetacean (Southern Resident killer whale) groups. NMFS has set underwater noise level thresholds for injury and behavioral disturbance for each hearing group (NMFS 2018); these are presented in Table 7.

Table 7. Marine mammal injury and disturbance thresholds during and impact pile proofing

Effect type	Low Frequency Cetaceans[1]	Mid Frequency Cetaceans[1]
Injury, single strike	219 dB_{peak}	230 dB_{peak}
Injury, cumulative strikes	183 dB_{SEL_cum}	185 dB_{SEL_cum}
Behavioral disruption	160 dB_{RMS}	160 dB_{RMS}

[1] Source: NMFS 2018

NMFS has developed a calculator to assess the potential for injury to marine mammals resulting from impact pile proofing (NMFS 2018). The calculator considers the level at which individual strikes may cause injury, and at which repetitive impulsive sounds would cumulatively cause a permanent threshold shift (PTS). The calculator includes two calculation methods, using dB_{RMS} and dB_{SEL}, respectively, and the more conservative of the two results are to be used. Additionally, NMFS recommends using the Practical Spreading Loss model to calculate the distance within which behavioral effects may occur. Each of these potential effects are analyzed below.

Instantaneous Permanent Threshold Shift

NMFS' calculator was used to assess the potential for PTS to occur. However, the anticipated SPL generated by pile strikes would be below the PTS thresholds (Table 7). For this reason, NMFS' calculator indicates no potential for PTS to occur from single pile strikes.

Cumulative Impacts

To assess the potential for cumulative PTS to occur, both of NMFS' calculator methods were run for 16-inch diameter pile, with the assumptions described above, and the most conservative result was used (the RMS method). Cumulative PTS would be anticipated over a larger area for the low-frequency hearing group than the mid-frequency hearing group cetaceans: within 1,128 ft (344 m) for low-frequency, and within 40 ft (12 m) for mid-frequency hearing groups (Table 8, Figure 3). Both of these areas remain within the shallow water of Reid Harbor.

For PTS to occur, an individual cetacean would have to be present within the given distances for the entirety of a day's pile proofing. Based on the shallow water within these harbors, cetacean presence is unlikely; extended presence within this radius of pile driving for the entirety of the day is so unlikely as to be discountable.

Behavioral Effects

Using the Practical Spreading Loss Model, the distance to potential behavioral effects from each pile size was calculated. Behavioral effects may be expected within 520 ft (158 m) of proofing (Table 8, Figure 3).

As with the cumulative injury thresholds, it is extremely unlikely for a cetacean to come within 520 ft of active pile proofing. Within a shallow, enclosed harbor like Reid Harbor, this is even less likely. Thus, the potential for impact pile proofing to have behavioral effects on cetaceans is discountable.

Table 8. Marine mammal injury and disturbance isopleths for impact pile proofing by hearing group

Pile size	dB_{PEAK}[1]	dB peak SPL Impact Threshold Distance		dB_{RMS}[1]	dB RMS Cumulative Impact Threshold Distance		Behavioral (all)
		Low freq (219 dB_{peak} threshold)	Mid freq (230 dB_{peak} threshold)		Low freq (183 dB_{SEL_CUM} threshold)	Mid freq (185 dB_{SEL_CUM} threshold)	
16"	191	NA	NA	178	1,128 ft / 344 m	40 ft / 12 m	520 ft / 158 m

[1]Attenuated 9 dB from use of a bubble curtain

In summary, based on the unlikelihood of ESA-listed cetaceans entering within the isopleths of potential injury or disturbance, the effects of impact pile proofing on cetaceans are discountable.

Rockfish

In the absence of more specific information, and since rockfish—like salmonids—possess a swim bladder that would increase the potential for barotraumatic injury, potential effect analyses described above for salmonids may also be applied to rockfish.

Larval rockfish are typically present in the water column in the spring (Palsson et al. 2009). Though for this reason they would be less likely to be present during the work period, nevertheless there is potential for their presence year-round. However, though no studies have been conducted directly on larval rockfish, a peak SPL and cumulative barotrauma study conducted on other larval fish bearing swim-bladders found no difference in mortality between control and exposed individuals (Bolle et al. 2014). Based on similar structural composition, Popper et al (2019) indicate that this study may be an appropriate surrogate for rockfish. Thus, it is extremely unlikely that pile driving would affect larval rockfish. Juvenile rockfish could be present in Reid Harbor year-round, utilizing patchy eelgrass.

Based on potential juvenile rockfish presence, there is likely similar potential for effects resulting from pile driving as with juvenile salmonids (see above).

Marbled Murrelet

Marbled murrelets foraging in marine waters can be exposed to potentially injurious or disturbing sound pressure levels. USFWS has set injury thresholds related to behavior, auditory injury, and non-auditory barotraumatic injury for impact pile driving activities.

In addition, impact proofing of larger piles can cause above-water auditory masking for foraging murrelets. Current USFWS guidance indicates that pile proofing that results in a received level of 29 dB will mask communication. However, USFWS indicates that intermittent pile driving (e.g., proofing) is unlikely to cause masking, especially of smaller piles such as are proposed here. Thus, masking is not anticipated to occur, and is not addressed further.

USFWS has created a pile injury calculator for marbled murrelet, which calculates the distance within which cumulative barotrauma and auditory injury could occur, respectively (USFWS 2014a). Based on that calculator, proofing of 16-inch piles would potentially generate behavioral responses within 2,414 ft (736 m) (Table 9; Figure 3). Barotrauma and auditory injury are possible, but only within a very small area. Proofing could generate potential barotrauma within 9 ft (3 m), and auditory injury within 23 ft (7 m) (Table 9).

It is unlikely that a murrelet would approach within such small distances of active work areas. Furthermore, impact pile driving will occur within the allowable window for marbled murrelet foraging until the nesting season ends September 23 (no work until two hours after sunrise and stop work two hours before sunset) per USFWS guidance. Thus, potential injury to murrelets from underwater sound generated by impact pile proofing is discountable. Additionally, there is ample foraging habitat within the vicinity of the project area outside the work area, and avoidance behavior, if it occurred, would have negligible effect on foraging success.

Table 9. Potential effects threshold distances, marbled murrelet

Pile size	Behavioral	Auditory Injury	Barotrauma
16”	2,414 ft / 736 m	23 ft / 7 m	9 ft / 3 m

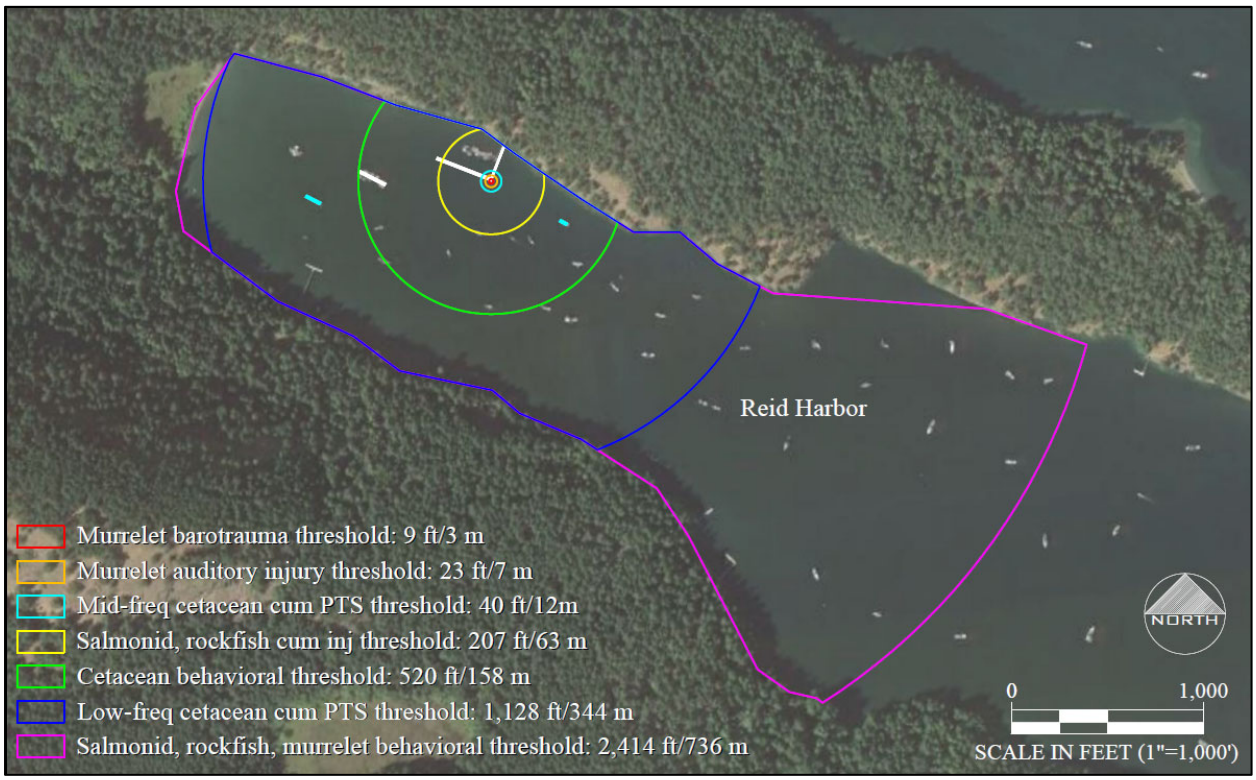


Figure 3. Distance to in-water effects thresholds from impact pile proofing

5.1.1.2 Vibratory Extraction and Installation

Sound from vibratory hammer operation is continuous in nature, as opposed to impact pile proofing which results in a pulsed sound. Impacts to fish have not been observed from a vibratory hammer (WSDOT 2020), and USFWS has not set a threshold for impacts from vibratory pile driving on marbled murrelet (USFWS 2014a). However, NOAA Fisheries is concerned about potential effects of elevated underwater continuous sound on listed marine mammals (for this Project: humpback whale and Southern Resident killer whale).

The 36 existing piles will be removed by vibratory hammer, and the 20 new pile will initially be installed using a vibratory driver. The project engineer estimates that vibratory installation typically takes 15-30 minutes, but if driving in dense substrate, up to 45 minutes may be required. Additionally, rock drilling, if required, would generate similar continuous noise as a vibratory hammer. If rock drilling is required, it is estimated that each pile would require approximately 2 hours of drilling.

Cetaceans

As mentioned above, if bedrock is encountered and thus preventing full embedment, rock socket drilling may be used. The project engineer describes the sound associated with rock socket drilling to be more similar to vibratory than impact driving in nature, with a continuous rather than a pulsed sound signature. This is consistent with NOAA Fisheries characterization of drilling as an example of non-pulse noise, similar to vibratory driving, in its definition of Level B behavioral disruption for non-pulse noise. Therefore, during pile work for this Project, noise and sound pressure levels

(SPLs) could affect listed marine mammal species (Level B behavioral disruption, continuous sound) and potentially listed fish (behavioral effects, non-specific), as summarized in Table 10.

NOAA Fisheries has established dual thresholds—one threshold that assesses the distance within which a permanent threshold shift (PTS) of hearing sensitivity is anticipated, varying by hearing group, and another threshold that predicts behavioral effects. These thresholds are presented in Table 10.

Table 10. Marine mammal vibratory sound thresholds

Effect	Low-frequency cetaceans	Mid-frequency cetaceans
Permanent Threshold Shift (PTS)	199 dB_{SEL_CUM}	198 dB_{SEL_CUM}
Behavioral	120 dB_{RMS}	

NMFS' calculator tool was used to assess the potential for PTS resulting from vibratory pile extraction and installation, as well as rock drilling. Additionally, the Practical Spreading Loss model was used to determine the distance to potential behavioral effects on ESA-listed marine mammals. The following assumptions were used to populate the models:

- Extraction of timber pile is expected to result in SPLs not greater than 134 dB_{RMS} at 27 meters based on sound levels recorded during extraction of 18-inch timber pile at the Port of Seattle (unpublished data).
- As discussed above, vibratory installation of 16-inch piles is anticipated to generate noise levels of approximately 164 dB_{RMS} (Laughlin 2010 a, b).
- The maximum sound anticipated to be generated by rock socket drilling 18-inch diameter steel pipe pile is 182.7 dB_{RMS} at 1 meter (maximum from Dazey et al. 2012 Appendix B); Typical sound anticipated to be generated by rock socket drilling 18-inch diameter steel pipe pile is 158.8 dB_{RMS} at 1 meter (average from Dazey et al. 2012).
- The Practical Spreading Loss model assumes that underwater sound transmission stops at landmasses.
- Up to eight piles would be removed or installed in a given day.
- Up to four piles could be drilled in a given day.
- Vibratory installation or removal would take up to 45 minutes per pile
- Rock drilling would extend up to 15 ft into rock and require up to 2 hours per pile.

Using the Practical Spreading Loss model, with the assumptions listed above, the resulting distances are presented in Table 11.

Cumulative PTS

Based on the values presented in Table 11, vibratory installation would exceed cumulative PTS thresholds within a very small area—up to 117 ft (36 m) from pile driving for low-frequency cetaceans and up to 10 ft for mid-frequency cetaceans. Pile removal would exceed PTS thresholds only within very close distance (7 ft and 1 ft, resp) (Table 11; Figure 4).

Rock drilling under maximum volume conditions would generate PTS within up to 251 ft for low-frequency cetaceans and 22 ft for mid-frequency cetaceans. Under typical conditions, these would be 7 ft and less than 1 ft, respectively.

It is extremely unlikely that a humpback or Southern Resident killer whale would be within these distances of vibratory pile driving or rock drilling at all, let alone for the entirety of a day. Thus, the potential for vibratory pile driving or rock drilling to cause PTS is discountable.

Behavioral Effects

NMFS estimates that behavioral effects on marine mammals from continuous noise sources can be expected at levels above 120 dB_{RMS}. Based on the assumption above, the behavioral effects threshold isopleth would be exceeded by vibratory pile removal within 759 ft, and by vibratory installation within 5.3 miles.

The behavioral threshold could be exceeded by rock drilling under typical noise conditions within 1,266 feet, and under maximum noise conditions within 9.4 miles.

For vibratory installation and maximum noise rock drilling, these actions could generate sound that would extend beyond Reid Harbor.

Assuming up to eight piles could be removed or driven per day, vibratory pile noise would be generated for up to six hours per day on average, over seven days. For efficiency of work, pile work in a given day may include a combination of removal, driving, and rock drilling depending on the contractor's plan. However, each of those estimates represents a full day of each activity (eight piles installed or removed, and four piles drilled). Given the intermittent nature, relatively few days of vibing, relatively small area of effect, and low likelihood of humpback whale and Southern Resident killer whale presence in the Action Area, it is unlikely that these species would enter within the anticipated disturbance isopleths.

To reduce the likelihood that ESA-listed cetaceans are exposed to disturbing sound levels, a marine mammal monitoring program will be prepared for this project. For these reasons, the risk of either harm or disturbance to humpback whale or Southern Resident killer whale from vibratory pile driving noise is discountable.

Table 11. Marine mammal distances to PTS and behavioral effects from vibratory pile removal and driving, and rock drilling.

Pile size	Expected SPL dB_{RMS} (measure distance)	PTS Distance		Behavioral Effects
		Low freq (199 dB_{SEL_CUM} threshold)	Mid freq (198 dB_{SEL_CUM} threshold)	
Pile removal	134 (27 m)	7 ft / 2 m	1 ft / 0 m	759 ft / 232 m
16" install	164 (10 m)	117 ft / 36 m	10 ft / 3 m	5.3 miles
Rock drilling (typ.)	158.8 (1 m)	7 ft /2 m	< 1 ft / 0.2 m	1,266 ft / 386 m
Rock drilling (max)	182.7 (1 m)	251 ft / 76 m	22 ft / 7 m	9.4 miles

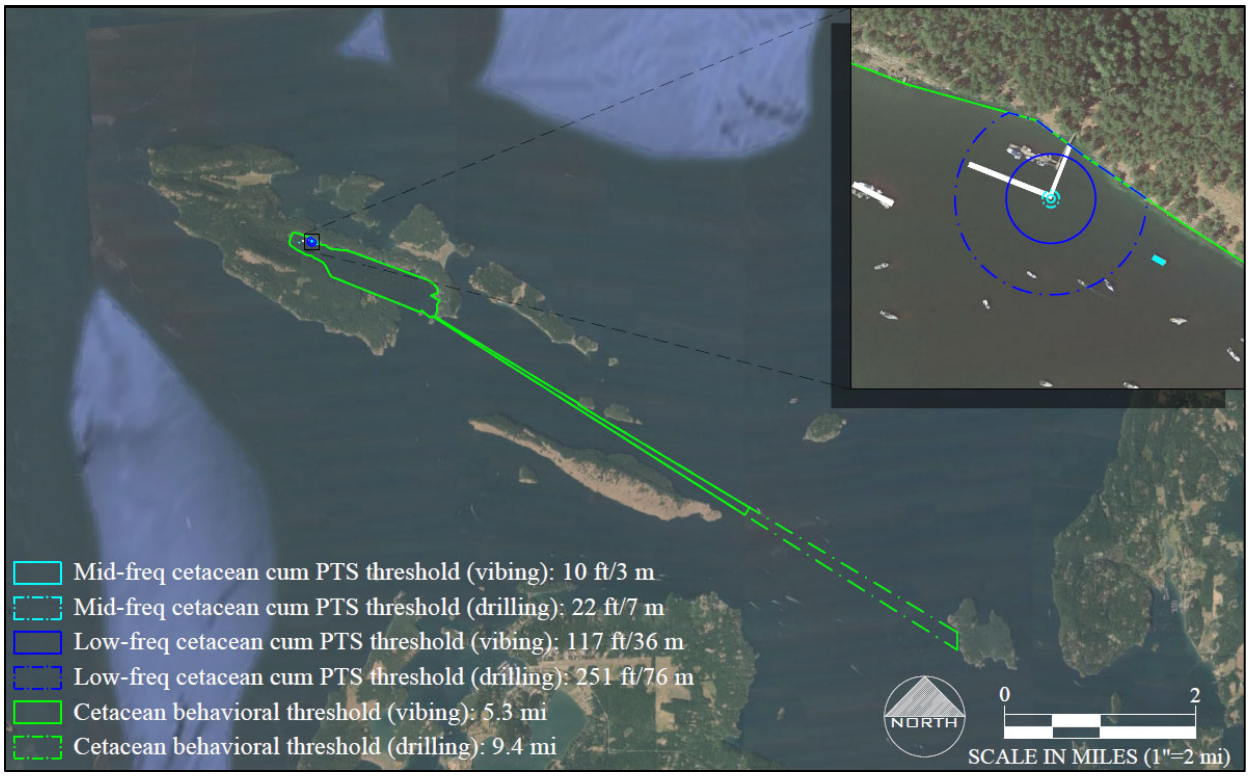


Figure 4. Distance to potential PTS from vibratory pile driving and rock drilling.

Leatherback Sea Turtle

Leatherback sea turtles have not been documented in Puget Sound, and are not expected in the Action Area at any time. There would be no effects of elevated sound on this this species.

5.1.2 Water Quality Effects

5.1.2.1 Turbidity

Pile extraction, vibratory pile driving, rock socket drilling, and clean sand cap placement are activities that disturb the substrate, which temporarily suspends sediment in the water column and

result in localized and minimal increases in turbidity. Temporary turbidity associated with pile extraction and vibratory driving is typically minimal and highly localized. During rock socket drilling, drilling spoils are exhausted up and out of the pile during drilling by compressed air. The material is expected to consist of a small amount of overburden (likely some mud, sand, and gravel) and drilled rock pieces. Based on the expected composition of material, any temporary turbidity would be minimal and localized during rock socket drilling (up to 2 hours per pile), and would settle out quickly following pile work.

Temporary turbidity associated with placing the small quantities of clean material necessary to cover pile voids is typically minimal and highly localized, based on the sandy nature of the substrate.

Project construction will be in compliance with Washington State water quality standards as administered by the Department of Ecology under WAC 173 201A 210(1)(e)(i). Based on the WAC, temporary exceedances for turbidity would be allowed within a 150-foot radius from the sediment disturbing activities. If temporary exceedances were to be observed beyond this area during rock socket drilling, the contractor would deploy a silt curtain around the pile to contain turbidity until suspended solids have settled out of the water column. However, this is not expected to occur based on the material to be drilled.

Salmonids

The potential effects of increased turbidity on salmonids have been investigated by a number of studies (Servizi and Martens 1987 and 1992, Noggle 1978, Simenstad 1988, Redding et al. 1987, Mortensen et al. 1976, Berg and Northcote 1985, LaSalle 1988). The potential mechanisms by which turbidity could affect salmonids include direct mortality, sublethal effects (stress, gill damage, and increased susceptibility to disease), and behavioral responses (disruptions to feeding or migration). Turbidity levels which might result in direct harm are typically associated with activities such as dredging in very fine sediments. There is no expectation that pile extraction and installation, including rock socket drilling, and placing clean material in pile voids would generate turbidity approaching those levels. Turbidity increases would only occur during these activities and are anticipated to be extremely localized, temporary, and minimal. Standard BMPs for pile removal include a number of measures to additionally reduce the potential for temporary turbidity increases, including use of a silt curtain if necessary to maintain compliance within the allowable exceedance area during rock socket drilling (Section 7). However, this is not expected to occur based on the material to be drilled (Section 5.1.2). No harm or direct mortality of listed salmonids would occur. It is also extremely unlikely that a behavioral response such as avoidance of a small-scale and temporary turbidity exceedance would adversely affect any fish present in the Action Area.

Overall, effects of increased turbidity on salmonids are expected to be insignificant and also largely discountable due to work timing.

Non-salmonid Listed Species

As described, temporary turbidity from Project activities would be minimal and highly localized. Project compliance with the Ecology Water Quality Certification would limit increases in turbidity to within 150 feet of active work. Such small-scale, temporary turbidity would be insignificant to any rockfish or murrelets potentially in close proximity to construction. Due to the shallow nature

of the waters in close proximity to the Reid Harbor facilities, there is no expectation that Southern Resident killer whales or humpback whales would experience Project-related turbidity. Overall, effects of temporary, minimal, and highly localized increases turbidity would be insignificant to these species.

Leatherback sea turtles are not expected to be present in the Action Area at any time, and therefore temporary, minimal, and highly localized turbidity would have no effect that species.

5.1.2.2 Potential Spills

Remaining project construction includes replacing the moorage/landing float and reinstalling the existing gangway. These actions would be mobilized from a construction barge or from the structure itself. This is work either above water, or on the surface of the water (float placement), and would not directly disturb the sediment.

During all project construction, there is a risk of minimal, localized, and temporary water quality impacts from the unintentional release of fuel, lubricants, or hydraulic fluid from construction machinery. All prudent and necessary actions would be taken to avoid such a discharge, including regular maintenance and checks for potential contamination sources. In the event of a spill, containment and cleanup would take precedence over continued work, ensuring that effects would be temporary and extremely localized relative to the Action Area as a whole.

There would be potential for construction material or debris to enter the water during construction. This risk will be managed through adherence to standard above-water and in-water construction best management practices (BMPs) (Section 7). Pile removal and driving could affect water quality through turbidity (addressed above) as well as through mechanisms such as creosote releases or pile breakage. Standard BMPs for pile removal will be followed during any such activities.

Adherence to these BMPs would make the likelihood and potential for harm during in-water work and pile removal so low as to be insignificant. Overall, potential chemical contamination is not expected to adversely affect any listed species present within the Action Area.

5.2 LONG-TERM EFFECTS

5.2.1 Overwater Coverage Effects on Primary Productivity

The proposed dock and float replacement results in an overall increase in overwater footprint by 855 sq ft. This constitutes a 16% overall increase (from 4,391 to 5,246 sq ft). Overwater coverage can lead to reduced primary productivity of the aquatic habitat beneath the structure, reducing foraging conditions for juvenile salmonids.

However, much of the existing dock and floats at Reid Harbor includes solid surfaces with no grating, allowing no light penetration[7]. All replacement overwater surfaces (floats, gangways, piers, and walkways) would be constructed with grated surfaces, allowing maximum light

[7] The gangways and some portions of the walkway includes grated decking, though the grating provides lower levels of light penetration than current standard grated decking.

transference possible, given constraints of floats and framing. The installed decking will use grating with a 60% net open area minimum. All floats, walkways, and gangway will have the entire deck surface covered with an ADA-compliant, minimum 60% open area fiber-reinforced polymer grating with approximately 50% of the entire deck be functional grating. All grating will be oriented parallel to the width of the structures the grating is covering to maximize light penetration.

Based on the replacement of solid decking with grated decking, light penetration to the water column would increase. Grated surfaces would increase light penetration at least 30%, which would offset the slight increase in overwater footprint. As a result, no reduction in productivity is anticipated as a result of the project.

5.2.2 Overwater Coverage Effects on Juvenile Salmonids

5.2.2.1 Behavioral Effects

The potential effect of new overwater structures on fish behavior has been raised as an issue specific to juvenile salmonids.

As reviewed in Nightingale and Simenstad (2001), the underwater light environment directly affects the ability of fish to execute behaviors including but not limited to schooling, foraging, predator avoidance, migration, and orientation. While juvenile salmonids can see under very low-light conditions, they may require up to 40 minutes to adapt from light to dark, or from dark to light conditions, during which time they may experience somewhat deteriorated to total lack of vision (as reviewed in Nightingale and Simenstad 2001). There is evidence that under some conditions, juvenile salmonids avoid areas of strong light/dark interfaces, including shading cast by dock or pier edges. Thus, an increase in dock footprint could potentially adversely affect juvenile salmonid behavior under certain circumstances.

Studies indicate that juvenile salmonids pass readily under narrow structures oriented perpendicular to shore. Weitkamp's (1982) observations at the Port of Seattle showed that shoreline-oriented juvenile salmonids crossed the shadow cast by a narrow (15- to 20-foot wide) overwater structure, but were unwilling to cross under a darker shadow cast by a wider structure. In contrast, under some conditions, juvenile salmonids have avoided entering or passing through shaded areas when a strong light/dark contrast exists, particularly at larger/wider structures. This has been observed at a number of ferry terminals (e.g., Shreffler and Moursand 1999, Southard et al. 2006; Ono et al. 2010). These terminals are wide, typically 80- to 160-ft wide.

However, adverse effects on salmonids are not anticipated. First, the proposed moorage facility would constitute a much narrower structure than has been observed not have this effect on juvenile salmonids. Additionally, though the overall footprint of the dock would increase, the width of the structures would be essentially unchanged. This would still constitute a much narrower structure than has been observed to cause behavioral effects. Finally, despite the marginal width increase, the Project would actually increase under-dock light by installing grated decking on the entire overwater surface of the structure. Thus, the Project will not affect juvenile salmonid movement.

5.2.2.2 Predator/Prey Interactions, Piscivorous Fish

Increased dock footprint and the potentially disrupted migration route could consequently put juvenile salmonids at greater risk of predation from piscivorous predators such as flatfish or sculpin (Willette 2001 *in* NMFS 2020).

However, the risk of predation increases when juvenile salmonids are forced into deeper water by a wide, highly-contrasting shadow, as discussed above. The existing and proposed moorage facilities constitute a much narrower structure than has been observed to generate this effect (e.g., Shreffler and Moursand 1999, Southard et al. 2006; Ono et al. 2010). The addition of grated decking would further brighten the under-dock environment, reducing this potential. Thus, there is no risk of additional predation as a result of the increased overwater coverage.

5.2.2.3 Increased Migration Route

Finally, overwater structures can increase the migration route of juvenile salmonids, should they be forced to swim around the structure. However, as was discussed above, the proposed structure would be much narrower than the structures observed to have this effect, and grated decking will increase light penetration relative to baseline conditions under the dock. Thus, there is expected to be no effect on migration route.

In summary, overwater structures can adversely affect juvenile salmonids. However, due to the narrow nature of the proposed docks and the use of grated decking, there is no basis to conclude that the increase of overwater coverage would adversely affect any juvenile salmonids. Thus, it is concluded that the slight increase in overwater coverage would have negligible effect on ESA-listed salmonids.

5.2.3 Creosote Removal

The Project will remove 36 14-inch diameter creosote-treated timber pile within the nearshore aquatic habitat of Reid Harbor. The removal of creosote-treated wood will benefit both water and sediment quality long-term in the immediate Project area by removing a potential source of PAH contamination.

5.2.4 Effects on Prey Species

As was the case for listed fish, elevated SPLs associated with pile extraction and installation or rock socket drilling would be so low that behavioral responses by prey species (specifically fish) are expected to be insignificant and/or discountable (Section 5.1.1). Therefore, effects relative to prey availability and distribution would be insignificant and/or discountable. The conclusion for turbidity effects is the same; any effects of temporary, minimal, and highly localized turbidity increases would be insignificant to prey species.

The material placed in the pile voids (up to 5 cubic yards) may have temporary effects on the benthic assemblage, including salmonid prey species, but in a very highly localized area. This would be insignificant with respect to salmonid foraging, and effects would be further minimized through Project timing after the peak outmigration period.

6 CRITICAL HABITAT EVALUATION

6.1 EFFECTS ON PUGET SOUND CHINOOK SALMON CRITICAL HABITAT

The Action Area includes designated critical habitat for Puget Sound Chinook (NOAA Fisheries 2005b). NOAA has defined six Primary Constituent Elements (PCEs, i.e., physical and biological features) of critical habitat for Puget Sound Chinook salmon (NOAA Fisheries 2005b). Although regulatory guidance has been updated and no longer define critical habitat according to PCEs, the PCE concept is still a helpful tool for evaluating effects on elements of critical habitat that are "physical or biological features essential to the conservation of the species" (ESA Section 3; 16 U.S. Code § 1532). Thus, the originally-designated PCEs are used herein as a guide to an assessment of critical habitat.

NMFS (NOAA 2005b) identified six PCEs essential to the conservation of Chinook salmon. The Project's Action Area is located within a nearshore marine area, therefore only PCE #5 applies to the Project's Action Area (listed and addressed below).

> *5. Nearshore marine areas free of obstruction and excessive predation with water quality and quantity conditions and 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.*

PCE #5 addresses water quality and quantity, forage, natural cover, obstruction/predation. Each of these aspects of PCE #5 is addressed below.

6.1.1 Water Quality and Quantity

Water quality is addressed in Section 5.1.2 of this document. In summary, there is potential for localized and temporary increases in suspended sediment and associated turbidity during pile extraction and installation, as well as placement of clean sand atop the pile holes, but this would occur at levels well below those that could result in injury or behavioral effects for juvenile salmonids. There is also potential for accidental spills during construction. BMPs will be implemented to minimize this risk as outlined in Section 2.3.1. Additionally, adherence to in-water work windows for pile driving will ensure that work will be limited to periods when juvenile Chinook are unlikely to be present in the Action Area.

Over the long term, removal of 36 creosote-treated piles would improve localized water quality within the Action Area.

Water quantity would not be affected by this Project.

Overall, the Project would not adversely affect the water quality component of PCE #5.

6.1.2 Forage

Effects on forage species are addressed in Sections 5.2.1 and 5.2.4. Temporary effects of elevated SPLs and turbidity during Project activities would be insignificant and/or discountable to salmonid prey species, including Chinook prey species.

This would be insignificant with respect to juvenile Chinook foraging opportunity in the Project area.

The replacement structures (piers, floats, walkways and gangways) would be in the same location and configuration as the previous structures, which avoids new impacts to aquatic habitat features (Sheets 2 and 3). Further, the new float incorporates as much grating as is feasible (Section 2.3), which is an improvement over the existing solid-decking. Overall, the installation of the replacement structures would have negligible effects on the existing habitat features with respect to juvenile Chinook forage opportunities, but would be an improvement over the previous design.

Overall, the Project would not adversely affect the forage component of PCE #5.

6.1.3 Natural Cover

The primary element of natural cover in the vicinity of the Project area is aquatic vegetation, which may consist of patchy eelgrass and macroalgae in the general vicinity. Effects on these features are addressed in Sections 5.2.1 and 5.2.4. The eelgrass would be avoided in the installation of the replacement structures. Temporary turbidity associated with Project activities would be minimal, highly localized, and subject to BMPs; potential effects on the eelgrass bed would be negligible.

Installation of the replacement grated float and reinstallation of the access gangway would have negligible effects on the existing habitat features, but would be an improvement over the previous solid float design.

Overall, the Project would not adversely affect the natural cover component of PCE #5.

6.1.4 Obstruction and Predation

Predation was discussed in Section 5.2.2.2. Installation of the replacement float and reinstallation of the access gangway would not alter habitat with respect to obstruction or predation risk based on the narrow nature of the structure and the use of grated decking. If anything, the Project reduces the risk of predation through an increase in light penetration. Further, as described in Section 4.1.1, outmigrating juvenile Chinook in the San Juans are typically larger than those in mainland nearshore areas closer to natal systems, and therefore expected to be less reliant on nearshore areas than outmigrants in mainland areas.

Overall, the Project would not adversely affect the obstruction/predation component of PCE #5.

6.1.5 Summary

Overall, any short-term effects on PCE #5 would be localized, minimal, and temporary, and would not adversely affect Chinook salmon critical habitat. Long-term effects are expected to be neutral with respect to critical habitat, or have localized benefit (e.g., removal of creosote-treated pile, grated versus solid deck moorage float).

6.2 ROCKFISH CRITICAL HABITAT

As depicted in Figure 2, rockfish critical habitat is mapped within the Action Area. Nearshore critical habitat includes all of Reid Harbor, whereas Deepwater critical habitat begins outside the mouth of Reid Harbor, at least 7,000 ft from the Project Area.

NOAA has identified two primary "essential attributes" vital to the conservation of bocaccio juveniles. Settlement habitats are typically located in the nearshore with substrate such as sand, rock, and/or cobble compositions that also support kelp. Juvenile/nearshore critical habitat for bocaccio rockfish is defined by the following essential attributes (NOAA Fisheries 2013):

- *Quantity, quality, and availability of prey species to support individual growth, survival, reproduction, and feeding opportunities*
- *Water quality and sufficient levels of dissolved oxygen to support growth, survival, reproduction, and feeding opportunities*

Additionally, NOAA has identified three primary essential attributes vital to the conservation of adult bocaccio and yelloweye rockfish. These benthic habitats or sites are generally deeper than 30 m and possess or are adjacent to areas of complex bathymetry consisting of rock and/or highly rugose habitat. Adult/deepwater critical habitat for all listed rockfish is defined by the following essential attributes:

- *Quantity, quality, and availability of prey species to support individual growth, survival, reproduction, and feeding opportunities*
- *Water quality and sufficient oxygen to support growth, survival, reproduction, and feeding opportunities*
- *The type and amount of structure and rugosity that supports feeding opportunities and predator avoidance*

The effects of the Project on the three essential attributes are presented in detail below.

6.2.1 Nearshore Critical Habitat

Nearshore critical habitat only applies to bocaccio rockfish.

Quantity, Quality and Availability of Prey Species

As discussed in Section 4.1.5, juvenile bocaccio rockfish are planktivores. There is no indication that pile proofing sound would have any effects on planktonic prey items. Primary productivity would essentially remain the same or increase—though overwater coverage will increase slightly, the Project will replace existing solid decking with grated decking to increase light penetration to the water column.

Overall, the Project would have negligible effects on this essential attribute of rockfish critical habitat.

Water Quality and Dissolved Oxygen

Potential effects of the Project on water quality and resulting effects on rockfish are addressed in Section 5.1.2. As mentioned there, the Project's removal of 36 creosote-treated timber piles would improve water quality. Turbidity resulting from pile removal and clean sand cap placement would be temporary, minor, and localized. Effects to water quality would be limited to the immediate vicinity of the work. Standard BMPs for pile driving/removal (Section 7) will be employed to minimize water quality impacts during pile work. In addition, there is the potential for incidental discharges of fuel, oil, or other materials during construction, but these would be minimized and managed through standard BMPs for work in aquatic areas (Section 7). The Project would have no effect on levels of dissolved oxygen in the Action Area.

The Project would have a minor long-term benefit, and negligible temporary impacts to this essential attribute of rockfish critical habitat.

6.2.2 Deepwater Critical Habitat

Deepwater critical habitat applies to both bocaccio and yelloweye rockfish. The only Project element that would affect deepwater critical habitat would be noise from pile driving. Based on the analysis conducted in Section 5.1.1.1, the behavioral threshold would be exceeded within up to 2,414 ft, attenuating to below behavioral threshold prior to reaching Deepwater critical habitat. Thus, there is no expectation that pile driving noise would have any effects on adult rockfish within deepwater critical habitat. The potential effects of this pile proofing noise on the essential elements of deepwater critical habitat would be on adult prey items, as discussed below.

Quantity, Quality and Availability of Prey Species

As discussed in Sections 4.1.5 and 4.1.6, adult bocaccio rockfish are piscivorous, and adult yelloweye rockfish feed on a wider range of prey. It is possible that pile proofing would cause behavioral effects on rockfish prey species. Should this occur, there is potential that prey species may be less available for adult rockfish during pile proofing. However, there is no evidence to suggest that low levels (i.e., below 150 dB_{RMS}) of pile driving noise adversely affect rockfish prey. Even if effects were to occur, the Action Area extends into Deepwater critical habitat only in very narrow strips, as sound projects between narrow gaps between islands (Figure 1). Thus, the effect area would be extremely small. Potential effects of pile proofing on prey species are negligible and discountable.

Rugose Structure

Since the Project footprint is not within Deepwater critical habitat, it will not affect the physical environment, including any topographic relief areas or rugose structures that may be present in Deepwater critical habitat within the Action Area. The Project would not affect this essential attribute of rockfish critical habitat.

Overall, this Project will have negligible and discountable effects on Puget Sound rockfish critical habitat.

6.3 EFFECTS ON SOUTHERN RESIDENT KILLER WHALE CRITICAL HABITAT

NOAA has identified three primary constituent elements (PCEs; i.e. physical and biological features) essential to the conservation of Southern Resident killer whale critical habitat (NOAA 2006).

1. *Water quality to support growth and development;*

2. *Prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth;*

3. *Passage conditions to allow for migration, resting and foraging;*

Southern Resident killer whale critical habitat begins at -20 feet relative to EHW (approximately -8.85 feet MLLW). Thus, most of the Action Area is within Southern Resident killer whale critical habitat. The effects of the Project on the three PCEs are presented in detail below.

6.3.1 Primary Constituent Element #1: Water Quality

Water quality is addressed in Sections 5.1.2 and 5.2.2 of this document. In summary, there is potential for short term, temporary increases in suspended sediment and associated turbidity during pile extraction and installation, as well as during clean material placement in pile voids, but any such increases would be minimal and highly localized. DNR's 2017 BMPs for Pile Removal and Disposal (JARPA Attachment C) will be followed to minimize turbidity associated with that action.

There is also potential for accidental spills during construction. Construction BMPs as outlined in San Juan County's Stormwater Management for Development Guidelines (JARPA Attachment B) will be implemented to minimize this risk. Project timing and also Project location (shallow water within Reid Harbor) would minimize potential for Southern Resident killer whales to experience temporary effects on water quality.

Over the long term, removal of 36 creosote-treated pile would improve localized water quality within the Project Area.

Overall, the Project would not adversely affect, and slightly benefit, PCE #1.

6.3.2 Primary Constituent Element #2: Prey Quantity, Quality, and Availability

Southern Resident killer whales prey mainly on salmonids, and may prefer Chinook and chum salmon runs within Puget Sound (NOAA 2006). Consumption of a considerable biomass of fish is vital to growth and sexual maturity in Southern Residents and enables population growth of the pods.

Effects of the Project on salmonids were discussed in Section 5.1, and effects of the Project on Chinook salmon critical habitat were discussed in Section 6.1. Overall, the Project would have insignificant and/or discountable effects. Any response to Project activities by salmonids would be so temporary, minimal, and highly localized that they would be insignificant in terms of Southern Resident killer whale foraging opportunity. Removal of creosote-treated timber piles

would contribute to an overall improvement in habitat conditions relative to salmonids. In the long term, the Project would have negligible effect on prey quantity, quality, or availability.

The Project would not adversely affect PCE #2.

6.3.3 Primary Constituent Element #3: Passage Conditions

Elevated underwater sound during pile extraction and installation is the mechanism by which passage conditions could be affected. This is addressed in Sections 5.1.1.1 and 5.1.1.2.

Potentially injurious SPLs during pile extraction and installation would be limited to the immediate vicinity of the pile to be driven. Based on the shallow nature of this area and the level of activity surrounding pile driving, Southern Resident killer whales are unlikely to be present in this area and any effects on passage during extraction would be insignificant and/or discountable.

SPLs exceeding the behavioral threshold during vibratory driving and rock socket drilling could occur over much larger areas. However, this would occur only within a narrow band that project from Reid Harbor (Figure 4). While it is possible that Southern Residents could pass through this area during pile driving, the narrow nature of these areas of exceedance would affect a very small area at a time. Sound would not be continuous over the entire day, as the contractor would have to change driving gear (from vibratory to rock socket drill) as well as move between pile. Further, for rock socket drilling, the extent of potential effects is much smaller when based on typical SPLs (1,260 feet) than on maximum SPLs (9.4 miles), further reducing the likelihood of whales experiencing this sound. Finally, the project engineer has provided conservative estimate durations for driving (per pile, up to 45 minutes vibratory and up to two hour rock socket drill); actual installation may be much shorter. While there is potential for some behavioral effect or response associated with elevated SPLs, in consideration of all of these factors (including low likelihood of presence), any temporary responses over the duration of installation would not constitute barriers to passage, or disallow migration, resting, or foraging. In summary, such limited, short-term noise is unlikely to affect passage conditions.

In the long term, the Project has no effects on passage for Southern Resident killer whales.

The Project would not adversely affect PCE #3.

In summary, the Project's effects on Southern Resident killer whale critical habitat would be negligible.

7 REGULATORY CONSIDERATIONS, BEST MANAGEMENT PRACTICES, AND MINIMIZATION MEASURES

Federal, state, and local permits contain conditions that are intended to reduce the potential for short-term effects from in-water Project activities and long-term effects from habitat impacts. These provisions comprise an extensive list of considerations and measures that are applied to projects in or near estuarine and marine waters.

7.1 REGULATORY CONSIDERATIONS

- Timing restrictions specifying that construction must occur when juvenile salmonids are absent or present in very low numbers in the adjacent waterbody would be strictly observed. All timing restrictions that may be established by WDFW, the USACE, NOAA Fisheries, or USFWS would be strictly observed (USACE permit and HPA).

- Water quality standards and procedures that limit the impact of turbidity to a defined mixing zone would be observed (WAC 173-201A).

- Project construction will be completed in compliance with WAC 173-201A.

- Any discharge of oil, fuel or chemicals into state waters is prohibited (WAC 173-201A).

- Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall also be maintained to prevent vandalism (WAC 173-201A).

- Corrective actions will be taken in the event of any discharge of oil, fuel, or chemicals into the water (WAC 173-201A), including:

    - In the event of a spill, containment and cleanup efforts will begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup will include proper disposal of any spilled material and used cleanup material.

    - The cause of the spill shall be assessed and appropriate action will be taken to prevent further incidents or environmental damage.

- Spills and/or conditions resulting in distressed or dying fish shall be reported immediately to DOE's Northwest Regional Spill Response Office at (425) 649-7000 (a 24-hour phone number) (WAC 173-201A). Spills of oil or hazardous materials also shall be reported immediately to the National Response Center at 1 (800) 424-8802 and the Washington Emergency Management Division at 1 (800) 258-5990 or 1 (800) OILS-911.

7.2 DESIGN CONSIDERATIONS

- The new moorage structures will be in the same location and general configuration as the existing structures, and would generally be replaced in-kind with environmentally improved materials.

- The existing structures generally have solid timber decking (no light penetration). The entire deck surface of the replacement float will be covered with a minimum 60% open area grating with approximately 50% functional grating.

- Using a pre-fabricated float minimizes the amount and duration of aquatic construction.

7.3 General Measures during All Activities

- The contractor will comply with permit conditions.

- The contractor will comply with all water quality restrictions imposed by Ecology and implement corrective measures if temporary water quality standards are exceeded.

- Operations will be stopped temporarily if listed species are observed as injured, sick, or dead in the project area, to evaluate whether additional listed species are present and to assess whether operations may continue without further impact. NOAA Fisheries law enforcement will be notified, and fish will be handled with care to ensure effective treatment or analysis of cause of death or injury.

- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

- Work barge(s) will not ground out during any construction activities.

- Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.

- The contractor will be required to capture any debris associated with Project activities.

- All in-water and over-water work will be conducted using equipment staged from a floating work barge platform or, if possible, from the existing structure. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).

- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.

7.4 Measures during Pile Driving and Removal

- Pile will be removed using vibratory extraction to greatest extent possible. Pile which cannot be extracted will be broken off at least 2 feet below the mudline.

- Pile will be removed slowly so as to minimize sediment disturbance and turbidity in the water column.

- Prior to extraction the operator will "wake up" pile to break bond with sediment to break the friction between the pile and substrate to minimize sediment disturbance.

- Where possible, extraction equipment will be kept out of the water to avoid "pinching" pile below the water line in order to minimize creosote release during extraction.

- Pile will not be broken off intentionally by twisting, bending or other deformation in order to minimize creosote release during extraction.

- The work surface on the barge deck shall include a containment basin for pile and any sediment removed during pulling. Any sediment collected in the containment basin will be disposed of at an appropriate upland facility, as will all components of the basin (e.g., straw bales, geotextile fabric) and all pile removed.

- Upon removal from substrate the pile shall be moved expeditiously from the water into the containment basin. The pile shall not be shaken, hosed-off, stripped or scraped off, left hanging to drip or any other action intended to clean or remove adhering material from the pile.

- All pile removed will be disposed of at an appropriate upland facility.

- Pile installation will be conducted during daylight hours.

- If visible turbidity exceeds the 150-foot allowable temporary mixing zone during rock socket drilling, the contractor will a silt curtain. The silt curtain will not be removed until suspended solids have settled out of the water column.

- Marine mammal monitoring will be conducted during vibratory pile driving or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

8 CONCLUSIONS AND EFFECTS DETERMINATIONS

8.1 LISTED SPECIES

8.1.1 Puget Sound Chinook Salmon, Hood Canal Summer-run Chum Salmon, Bull Trout and Puget Sound Steelhead Trout

Effects of the Project on listed salmonids are addressed in Section 5. Potential construction effects include injury from pile driving noise and behavioral effects from turbidity. However, it was determined that these effects have a discountable potential for occurring and would generate negligible effects, due to the unlikelihood that juvenile salmonid would encounter impact pile driving sound for long enough duration to sustain injury, and the low anticipated levels of turbidity, respectively. Long-term effects include an increase in total overwater structure footprint by 859 sq ft; however this will be offset by the transition from solid to grated decking on the new overwater structures; thus, effective light penetration into the water column would increase by approximately 243 sq ft as a result of the action. Removal of 36 creosote-treated timber piles would also improve habitat conditions. Based on these factors, it is determined that the Project ***may affect, but is not likely to adversely affect*** Puget Sound Chinook salmon, Hood Canal summer-run chum salmon, Puget Sound bull trout, and Puget Sound steelhead trout.

8.1.2 Bocaccio and Yelloweye Rockfish

Effects of the Project on listed rockfish are addressed in Section 5. As was discussed relative to salmonids above, both construction and long-term effects of the project would have negligible effect on listed rockfish, and the potential for a take to occur is discountable. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** bocaccio and yelloweye rockfish.

8.1.3 Southern Resident Killer Whale and Humpback Whale

Effects of the Project on Southern Resident killer whale and humpback whale are addressed in Section 5. Though these species utilize the waters in San Juan County, the portion of the Action Area within the deeper waters they most commonly inhabit is narrow. Pile driving noise may be injurious only within a small area of pile driving, and only to individuals that remain in very close proximity to pile driving for the entirety of a particular day, which is so unlikely as to be discountable. Behavioral effects from vibratory pile driving and rock drilling are possible, though, should individuals pass through the Action Area. Marine mammal monitoring will be conducted during all vibratory pile driving or rock drilling to ensure work stops should listed cetaceans approach the Action Area. Long-term effects of greater light penetration and creosote-pile removal would provide benefits to these species, though marginal on the scale proposed. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** Southern Resident killer whale and humpback whale.

8.1.4 Marbled Murrelet

Effects of the Project on marbled murrelets are addressed in Section 5. Based on that analysis, pile driving effects are unlikely due to the small area in which injury or behavioral thresholds could be exceeded. Long-term effects of greater light penetration and creosote-pile removal would provide

benefits to these species, though marginal on the scale proposed. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** marbled murrelets.

8.1.5 Leatherback Sea Turtle

Effects of the Project on leatherback sea turtles are addressed in Section 5. Leatherback sea turtles are not expected to be in or near the Action Area at any time, and have not been documented in Puget Sound for many years. Based on the analysis in this document, the Project would have ***no effect*** on leatherback sea turtles.

8.2 DESIGNATED CRITICAL HABITATS

8.2.1 Puget Sound Chinook Salmon Critical Habitat

An analysis of the Project's effects on Puget Sound Chinook salmon critical habitat was presented in Section 6.1. It was discussed that the Project generates moderate benefits of increased light penetration and removal of creosote-treated timber piles. Based on this analysis, the Project ***may affect, but would not likely adversely affect*** Chinook salmon critical habitat.

8.2.2 Listed Rockfish Juvenile (Nearshore) and Adult (Deepwater) Critical Habitat

An analysis of the Project's effects on rockfish nearshore and deepwater critical habitat was presented in Section 6.2. It was discussed that the Project generates moderate benefits of increased light penetration and removal of creosote-treated timber piles. Based on that analysis, the Project ***may affect, but would not likely adversely affect*** rockfish critical habitat.

8.2.3 Southern Resident Killer Whale Critical Habitat

An analysis of the Project's effects on Southern Resident killer whale critical habitat was presented in Section 6.3. Based on that analysis, the Project ***may affect, but would not likely adversely affect*** Southern Resident killer whale critical habitat.

8.3 NO NET LOSS ANALYSIS

To comply with SJCC 18.50, the following is an analysis to confirm no net loss of ecological function as a result of this Project.

<u>Avoidance</u>

The purpose of the proposed Project is to replace the existing timber moorage facility that has long since reached the end of its useful life at Reid Harbor. The State Park is only accessible by water and the Reid Harbor dock is one of two access points. The replacement structures will be realigned to improve shoreline accessibility for the general public and will be more consistent with the provisions of the Americans with Disabilities act. Avoiding the impact altogether by not taking a certain action or parts of an action is not feasible for this project.

Minimization

Project design includes removal of creosote pile and solid wooden decking and installation of steel pile and grated decking floats. Additionally, the proposed design would relocate the floats from the lower shore zone (-7 ft MLLW) to the deeper shore zone (-11 ft MLLW), reducing impacts on nearshore habitat by removing overwater coverage in the photic zone. As such, the design of the project minimizes impacts by limiting the degree or magnitude of the action and its implementation by using appropriate technology or by taking affirmative steps to avoid or reduce impacts.

Compensation

To offset the increase in footprint of the float system required to improve ADA accessibility, one island float and associated pile will be removed and not replaced. The island float to be removed is in the lower shore zone (-9 ft MLLW) and the new increased-footprint float system is to be installed in the deeper shore zone (-11 ft MLLW). This compensates for the impact by providing substitute habitat in the lower shore zone for impacts in the deeper shore zone.

As proposed, this development will result in no net loss of ecological function over the existing conditions.

9 ESSENTIAL FISH HABITAT ASSESSMENT

9.1 ESSENTIAL FISH HABITAT DESIGNATIONS

Pursuant to the MSFCMA and the 1996 SFA, an Essential Fish Habitat (EFH) evaluation of impacts is necessary for the actions that are associated with this Project. EFH is defined by the MSFCMA in 50 CFR 600.905-930 as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Estuaries of Washington State, including Puget Sound and the Pacific Ocean off the mouth of these estuaries, are designated as EFH for various groundfish, coastal pelagic and salmonid species (NMFS 1998; PFMC 1998a, 1998b, 1999). EFH and life history stages for groundfish, pelagic and salmonid species commonly found in Puget Sound estuaries are listed in Table 7.

Table 12. Species with essential fish habitat in the Action Area by life history stage.

Guild / Common Name	Species Name	Adults	Eggs	Juveniles	Larvae
Groundfish[1]					
Big skate	*Raja binoculata*	x	x	x	
Black rockfish	*Sebastes melanops*	x		x	
Blue rockfish	*Sebastes mystinus*	x		x	x
Bocaccio	*Sebastes paucispinis*	x		x	x
Brown rockfish	*Sebastes auriculatus*	x		x	
Butter sole	*Isopsetta isolepis*	x	x	x	x
Cabezon	*Scorpaenichthys marmoratus*	x	x	x	x
China rockfish	*Sebastes nebulosus*	x		x	
Copper rockfish	*Sebastes caurinus*	x		x	
Dover sole	*Microstomus pacificus*	x	x	x	x
English sole	*Parophrys vetulus*	x	x	x	
Flathead sole	*Hippoglossoides elassodon*	x		x	
Greenstriped rockfish	*Sebastes elongatus*	x		x	x
Kelp greenling	*Hexagrammos decagrammus*	x	x	x	x
Lingcod	*Ophiodon elongatus*	x	x	x	x
Longnose skate	*Raja rhina*	x	x	x	
Pacific cod	*Gadus macrocephalus*	x			
Pacific hake	*Merluccius productus*	x		x	
Pacific sanddab	*Citharichthys sordidus*	x	x	x	x
Petrale sole	*Eopsetta jordani*	x		x	
Quillback rockfish	*Sebastes maliger*	x		x	x
Redstripe rockfish	*Sebastes proriger*	x		x	x
Rex sole	*Glyptocephalus zachirus*	x		x	
Rock sole	*Lepidopsetta bilineata*	x	x	x	x
Sablefish	*Anoplopoma fimbria*	x	x	x	x
Sand sole	*Psettichthys melanostictus*	x	x	x	x
Silvergray rockfish	*Sebastes brevispinis*	x			
Spiny dogfish	*Squalus acanthias*	x		x	

Guild / Common Name	Species Name	Adults	Eggs	Juveniles	Larvae
Splitnose rockfish	*Sebastes diploproa*	x		x	x
Spotted ratfish	*Hydrolagus colliei*	x	x	x	
Starry flounder	*Platichthys stellatus*	x	x	x	x
Tiger rockfish	*Sebastes nigrocinctus*	x		x	x
Widow rockfish	*Sebastes entomelas*	x		x	x
Yelloweye rockfish	*Sebastes ruberrimus*	x		x	x
Yellowtail rockfish	*Sebastes flavidus*	x		x	
Pacific Salmon[2]					
Chinook	*Oncorhynchus tshawytscha*	x		x	
Coho	*Oncorhynchus kisutch*	x		x	
Puget Sound pink	*Oncorhynchus gorbuscha*	x		x	
Coastal Pelagics[2]					
Northern anchovy	*Engraulis mordax*	x	x	x	x
Pacific sardine	*Sardinops sagax caerulea*	x			
Pacific mackeral	*Scomber japonicus*	x			
Market squid	*Loligo opalescens*	x			

[1] Based on information from EFH database provided by J. Stadler (NFMS) dated January 16, 2007. This list is comprises the entire "inland sea" category, based on the large extent of the Action Area.
[2] Based on previously published Puget Sound EFH lists from NFMS used in EFH Assessments through 2012.

All three of the Pacific salmon management unit species (Chinook, coho and pink salmon) may be present within the Action Area. Spawning and rearing of these species does not occur in the Action Area, although all three species may use the Action Area for adult migration and juvenile out-migration.

Many of the ground fish species that occur in Puget Sound may also occur within the Action Area. West coast pelagic fishes are primarily associated with open ocean and coastal areas (PFMC 1998a), but may occur within the Action Area.

9.2 POTENTIAL EFFECTS OF THE PROJECT

The primary elements of the Project that could potentially impact designated EFH, and Conservation Measures that would avoid and minimize impacts, are summarized in Table 8, below. Details concerning all potential Project impacts on species of concern may be found in Section 5.

9.3 ANALYSIS OF THE EFFECTS ON EFH

The assessment of potential impacts from the proposed Project to the species' EFH is based on information in the referenced documents (NMFS 1998; PFMC 1998a, 1998b, 1999).

The specific elements of the Project that could potentially impact groundfish, pelagic and salmon species EFH, impact mechanisms, and Conservation Measures that avoid and minimize impacts are identified in Table 8.

Table 13. Affected EFH by Project element and proposed Conservation Measures.

Project Element	Affected EFH	Impact Mechanism	Applicable Conservation Measures (see list below)
Pile removal and pile driving	Groundfish, coastal pelagic, and salmon EFH (water)	Pile installation may result in sound pressure levels in excess of the cumulative injury (187 dB_{SEL_CUM}) and behavioral disturbance thresholds (150 dB_{RMS}) for fish. Pile removal and clean sand cap placement could result in temporary, minimal, and highly localized increases turbidity (Section 5.1.2).	**1, 2, 3, 4, 5, 6, 7**
Float replacement/ reconfiguration	Groundfish, coastal pelagic, and salmon EFH (water and substrate)	Moorage pier, gangway, and float structures will be replaced, resulting in an increase in overwater coverage by 859 sq ft. Overwater coverage can reduce primary productivity through light attenuation.	**6, 9, 10**
Construction activities	Groundfish, coastal pelagic, and salmon EFH (water and substrate)	Construction in aquatic areas can result in habitat impacts through mechanisms such as vessel groundings; unintentional release of fuel, lubricants, or hydraulic fluid from equipment; construction debris, etc.	**6, 11, 12, 13, 14**

List of Applicable Conservation Measures (consolidated from Section 7)

1. Pile size and pile number would be minimized to the extent possible to reduce the level of underwater sound generated.
2. Pile driving would occur over relatively short durations on only three to four days.
3. Cumulative injury thresholds would be exceeded only within a very small area (207 ft from pile; Section 5.1.1.1).
4. Behavioral thresholds would be exceeded within 2,414 ft (Section 5.1.1.1).
5. Compliance with the substantive requirements of the Hydraulic Code would minimize effects of the project.
6. Timing restrictions specifying that in-water work must occur when juvenile salmon are absent or present in very low numbers.
7. Compliance with applicable State water quality standards (WAC 173-201A).
8. Removal of 36 14-inch diameter creosote-treated timber pile will provide localized water quality benefit (Section 5.1.2).
9. The replacement moorage float structures will be in the same location and general configuration as the existing structures and will incorporate grating and will avoid additional impacts to aquatic habitat features such as eelgrass.
10. Replacement overwater structures will consist of grated decking that would result in a minimum of 30% functional grating considering grating open area, floats, and framing. This would offset the increase in overwater structure
11. Risk of spills of deleterious materials will be mitigated through standard BMPs (Section 7).
12. Care will be taken to prevent any petroleum products, chemicals, or other toxic or deleterious materials from entering the water. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., will be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into State waters.
13. Short-term impacts to water quality will be limited by careful removal and installation of pile, float, and gangway structures. If necessary, a silt curtain will be used to manage turbidity during rock socket pile drilling.
14. The contractor will be required to capture any debris associated with removal of existing structures and not allow it to enter aquatic areas.

9.4 CONCLUSIONS AND DETERMINATION OF EFFECTS

9.4.1 Salmon EFH

The impacts of the Project on salmon EFH are shown in Table 8.

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function on of EFH for salmon.

In the long term, the Project replaces existing solid overwater structures with grated structures in the same location and general configuration. This will avoid additional impacts to aquatic habitat features. The Project would remove creosote-treated pile, resulting in localized benefit to water quality. Overall, long term effects on EFH would be negligible or slightly beneficial.

Overall, the Project ***will not adversely affect salmon EFH.***

9.4.2 Groundfish EFH

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function on of EFH for groundfish.

In the long term, the Project replaces existing solid overwater structures with grated structures in the same location and configuration. This will avoid additional impacts to aquatic habitat features. The Project would remove creosote-treated pile, resulting in localized benefit to water quality. Overall, long term effects on EFH would be negligible or slightly beneficial.

Overall, the Project ***will not adversely affect groundfish EFH.***

9.4.3 Coastal Pelagic EFH

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function of EFH for coastal pelagics.

The Project would remove creosote-treated pile, resulting in localized benefit to water quality. Long term effects on EFH would be negligible or slightly beneficial.

Overall, the Project ***will not adversely affect coastal pelagic EFH.***

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WASHINGTON STATE PARKS AND RECREATION COMMISSION
STUART ISLAND STATE PARK RENOVATION PROJECT: REID HARBOR

BIOLOGICAL EVALUATION AND ESSENTIAL FISH HABITAT ASSESSMENT

SHEETS

WASHINGTON STATE PARKS AND RECREATION COMMISSION
STUART ISLAND STATE PARK RENOVATION PROJECT: REID HARBOR

BIOLOGICAL EVALUATION AND ESSENTIAL FISH HABITAT ASSESSMENT

APPENDIX A: PHOTO ATTACHMENT



Photograph 1. Reid Harbor dock and floats, facing west.



Photograph 2. Pumpout float proposed for pile replacement, Reid Harbor.



Photograph 3. End of Reid Harbor dock, moorage islands proposed to be replaced or removed, Reid Harbor

WASHINGTON STATE PARKS AND RECREATION COMMISSION
STUART ISLAND STATE PARK RENOVATION PROJECT:
REID HARBOR

BIOLOGICAL EVALUATION AND
ESSENTIAL FISH HABITAT ASSESSMENT

APPENDIX B: HIGH TIDE LINE DETERMINATION

TECHNICAL MEMORANDUM

Prepared for: Mott MacDonald
1601 5th Avenue, Suite 800
Seattle, WA 98101

April 28, 2021

Prepared by: Grette Associates LLC
2102 North 30th Street, St. A
Tacoma, WA 98403

File No.: 306.036/306.041

Re: Stuart Island (Reid and Prevost Harbors) Moorage Facility Replacement and Sucia Island (Fossil Bay) Moorage Facility Replacement and Pump-Out Station Installation Projects: High Tide Line Determinations

1 INTRODUCTION

While under contract to conduct macroalgae surveys, a Grette biologist assisted a survey team with identifying the high tide line (HTL) at Stuart and Sucia Islands. After the fieldwork was complete, Grette staff was asked to prepare a HTL determination memo. Following is the results of that effort. Grette evaluated segments of shoreline along Reid Harbor and Prevost Harbor located at Stuart Island as well as a segment of shoreline along Fossil Bay located at Sucia Island to identify the HTL in support of the Stuart and Sucia Island Moorage Facility Replacement Projects and the Sucia Island Pumpout Station Installation (Figures 1 and 2).

The HTL determination is in response to the U.S. Army Corps of Engineers' (USACE), Seattle District's *Special Notice* (February 21, 2020) which summarizes that Section 404 of the Federal Clean Water Act (CWA) extends jurisdiction in tidal waters to the HTL[1]. Prior to October 30, 2019, the USACE's jurisdiction extended to Mean Higher High Water (MHHW).

2 METHODS

Per 33 CFR 328.3(d), the HTL is defined as "the line of intersection of land with the water's surface at the maximum height reached by a rising tide… and the line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges".

The National Oceanic and Atmospheric Administration's (NOAA) Tides and Currents website was queried on April 12, 2021 to evaluate the highest high tides recorded at the Friday Harbor tide station (Station ID 9449880)[2] for each month from January 2015 to August 2020 (Table 1).

[1] The limits of Section 10 Rivers and Harbors Act jurisdiction of Mean High Water (MHW) is unaffected and remains the same.
[2] The Friday Harbor tide station was used due to available tidal data.

According to the recorded values provided by NOAA, the average monthly highest high tide from January 1, 2015 to August 31, 2020 is 8.72 ft. MLLW. Based on this information, 8.72 ft. MLLW is the elevation where periodic frequency of high tides likely occurs.

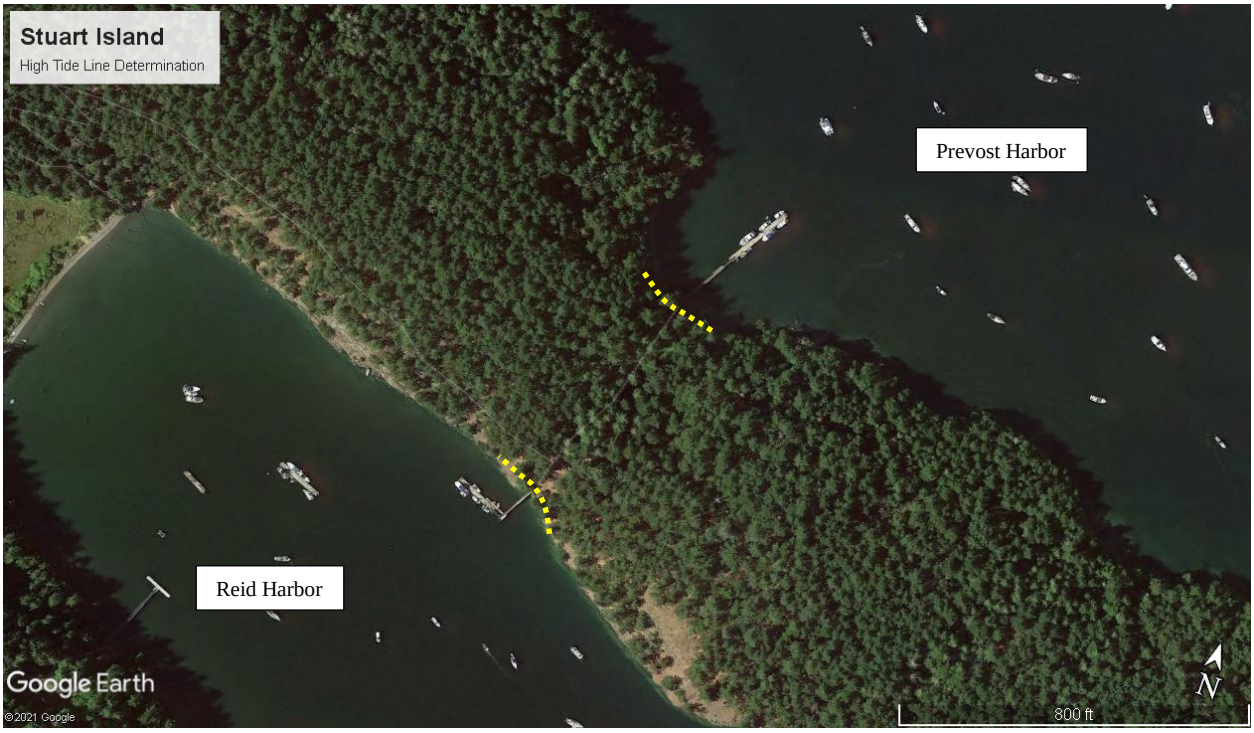
The average high tide from January 1, 2020 to August 31, 2020 was 8.58 ft. MLLW (NOAA 2021); therefore, the periodic frequency of high tides in 2020 appears to be ranging just below the 5-year monthly highest high tide average.

Table 1. Tide Elevation Summary from January 2015 through August 2020

Description	Date Recorded	Tide Elevation (MLLW)
Mean High Water (MHW)	-	7.11 ft.
Mean Higher High Water (MHHW)	-	7.76 ft.
Lowest Monthly High Tide	8/1/2016	7.80 ft.
Highest Monthly High Tide	12/1/2016	10.30 ft.
Highest tide of 2020 to date	1/1/2020	9.78 ft.
Highest Astronomical Tide	12/14/1985	9.72 ft.

The shoreline was evaluated to compare biological and physical conditions with the data from the Friday Harbor tide station. Grette Associates completed the HTL determination on August 18, 2020 (Stuart Island) and August 19, 2020 (Sucia Island). Verification of the HTL included physical markings or characteristics (erosion, corrosion, etc.), vegetation lines, extent of debris and/or deposits, and scum line along the shoreline.

Figure 1. Stuart Island HTL Vicinity Map



HTL assessment area highlighted in yellow.

Figure 2. Sucia Island HTL Vicinity Map



HTL assessment area highlighted in yellow.

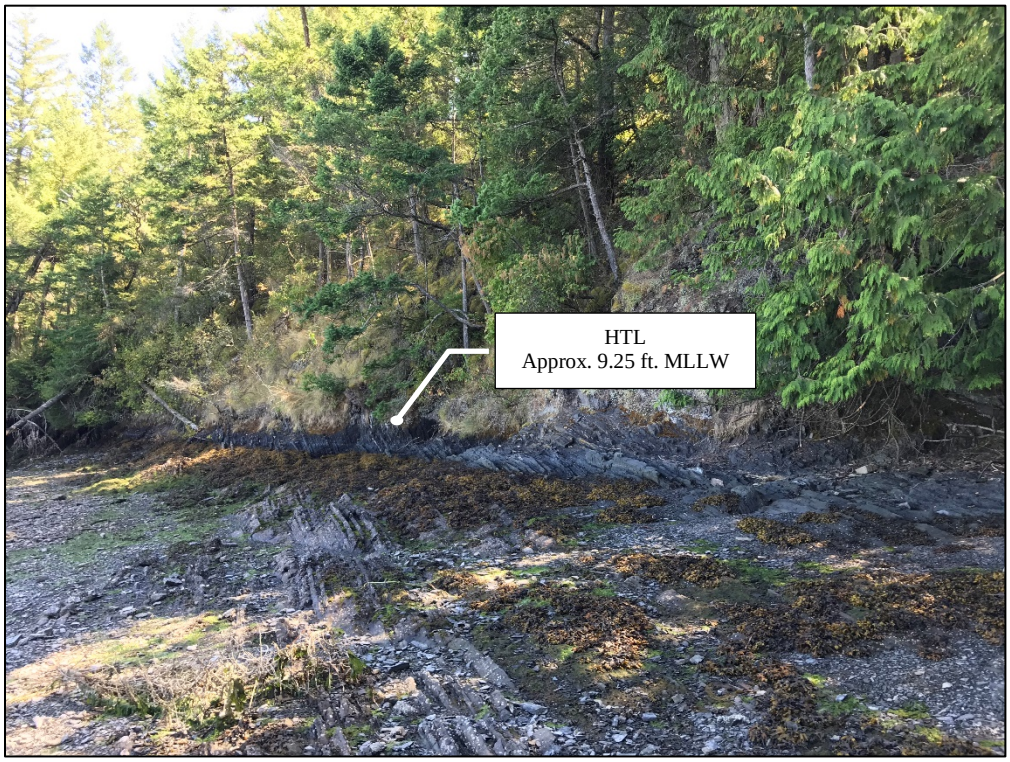
3 RESULTS

Grette Associates staff assessed the shoreline throughout the project areas. The rack line from the previous high tides were evaluated to establish approximate site elevations in support of the HTL determination. In addition, physical markings, shoreline characteristics, and vegetation transitions were evaluated.

The shorelines within the evaluated areas consist of near vertical banks and exposed bedrock (Figure 3). These conditions have produced physical markings that have established a clear line where the HTL is likely situated at the project sites. The HTL was recorded with land survey equipment during August determinations.

According to the survey information (see attached project sheets), the elevation of the HTL at the project sites appears to be approximately six inches higher in elevation compared to the calculated HTL (8.72 ft. MLLW) using the tidal data between 2015 and 2020.

Figure 3. Typical Shoreline Conditions



4 CONCLUSION

In summary, the MHHW for the Friday Harbor tide station is 7.76 ft. MLLW and the HAT for said tide station is 9.72 ft. MLLW. The tidal elevation that occurs with periodic frequency was determined by averaging the highest high tide recorded for each month over the last five years which results in an elevation of 8.72 ft. MLLW.

Based on the recorded elevation during the August field HTL determinations, the HTL elevation for Stuart Island and Sucia Island is approximately 9.25 ft. MLLW. It is Grette Associates' professional opinion that the slight difference in elevation from the field determination and the calculated elevation is likely due to the distance between the tide station and the islands.

In comparison, the MHHW elevation for Waldron Island, which is north of Orcas Island and between Stuart Island and Sucia Island, is 8.42 ft. MLLW[3]. Historical tidal elevations are not available for Waldron Island; however, knowing that MHHW at this station is 8.42 ft. MLLW, the recorded HTL elevation (i.e., 9.25 ft.) for Stuart Island and Sucia Island is likely reflective of the tidal elevation that occurs with periodic frequency because it is above the MHHW elevation for Waldron Island.

[3] The Friday Harbor tide station is the control station for Waldron Island tidal information.

If you have any questions on this memorandum, please contact me at (253) 573-9300, or by email at chadw@gretteassociates.com.

Regards,



Chad Wallin
Biologist

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National Oceanic and Atmospheric Administration (NOAA). 2021. Tides and Currents – Friday Harbor Tide Station No. 9449880. Data Queried: Monthly High Tide – January 2015 to August 2020. Accessed on April 12, 2021. https://tidesandcurrents.noaa.gov/datums.html?id=9449746

Attachment 7h

Grette Associates, LLC

Reid Harbor Moorage Replacement

Eelgrass and Macroalgae Verification Survey

USACE Letter of Permission NWS-2022-56

TECHNICAL MEMORANDUM

Prepared by: Grette Associates[LLC]
2102 North 30th Street, Ste A
Tacoma, WA 98403

July 14, 2021

Prepared for: Mott MacDonald
Evan Edgecomb
1601 5th Avenue, Suite 800
Seattle, WA 98101

File No.: 306.036

Re: Eelgrass and Macroalgae Verification Survey – Reid Harbor: Dock Improvements

1 INTRODUCTION

Grette Associates is under contract to Mott MacDonald to conduct a verification of an eelgrass and macroalgae survey at Reid Harbor on Stuart Island, San Juan County, WA. The intent of the survey was to verify the conditions documented by Jen-Jay, Inc. in their Preliminary Eelgrass and Macro Algae Habitat Survey (September 13, 2018) for Washington State Parks. This technical memorandum presents the results of Grette Associates' eelgrass and macroalgae verification survey that was conducted in the general area where the existing dock is located and where the proposed dock reconfiguration will be situated.

2 METHODS

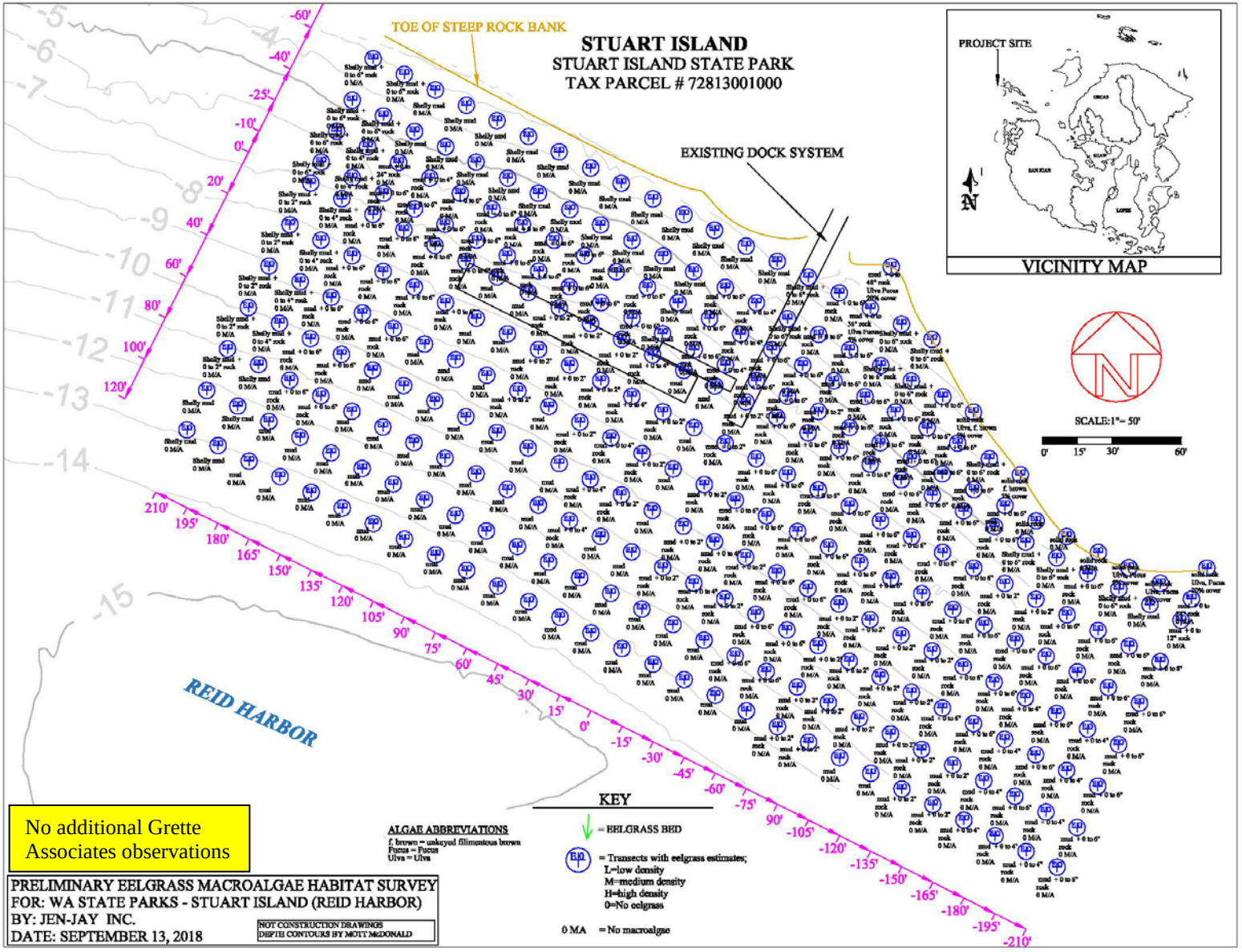
A Grette Associates staff scientist conducted the survey on June 3, 2021 at approximately 12:00 p.m. The predicted tidal elevation at the time of the survey was approximately +4.25 ft MLLW (NOAA Tide Station 9449712). Staff utilized a State Parks 35-foot landing craft/work boat piloted by State Parks staff. The survey employed the use of a NavRoute Technologies Neptune underwater video drop camera connected to a laptop computer. Using the maps provided in the Jen-Jay survey, the vessel made several passes through the survey area, which included three transects parallel to shore that were approximately 500 ft in length to capture conditions where the proposed dock reconfiguration would be positioned. The drop camera was lowered over the side of the vessel, and surveyed the site approximately 1-2 feet off the bottom.

3 RESULTS

Visibility during the survey was low, only approximately 3-4 feet.

The results of the Jen-Jay survey were largely confirmed (Figure 1). No eelgrass was observed within the survey areas in the vicinity of where the proposed dock reconfiguration would be positioned. Occasional, sparse macroalgae (*Laminaria saccharina*, both attached and drift) was observed within survey area, though no discrete patches were found. Substrate conditions observed were consistent with that noted by Jen-Jay, consisting of unconsolidated silt and shell hash.

Figure 1. Grette Associates survey results overlain on Jen-Jay figure.



Attachment 8

Inadverdent Discovery Plan

INADVERTENT DISCOVERIES OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS PLAN

Sucia Island State Park and Stuart Island State Park, San Juan County

Many of Washington's most important heritage sites reside on lands owned or managed by the Washington State Parks and Recreation Commission (WSPRC). Nearly all Washington State Parks contain one or more important historic buildings, structures, or archaeological sites. For this reason, archaeological surveys and historic building inventories are ordinarily commissioned as a part of background analysis and information gathering for park developments and undertakings. Results of these surveys are used during project planning to ensure every effort is made to avoid impacts to cultural resources. Yet, despite these efforts, there **always** remains some potential for unanticipated discoveries while working in Washington State Parks.

All unanticipated discoveries, both cultural resources and human skeletal remains, are subject to all applicable federal and state statues, regulations, and executive orders. For these reasons, the Inadvertent Discovery Plan (IDP) provides useful guidance and instructions for circumstances when cultural resources or human skeletal remains are found. Please carefully read these instructions. If you have any questions, please contact the appropriate WSPRC Area Manager or the WSPRC archaeologist assigned to the undertaking. It is also strongly recommended that anyone conducting ground-disturbing activities watch the training video produced by Washington State Dept of Ecology: Inadvertent Discovery of Cultural Resources or Human Remains: Training for Field Staff. This IDP for cultural resources and human skeletal remains is based on RCW 27.44, RCW 27.53, RCW 68.50.645, RCW 27.44.055, and RCW 68.60.055 and recommended language from the Department of Archaeology and Historic Preservation (DAHP).

INADVERTENT DISCOVERY PLAN FOR CULTURAL RESOURCES

If cultural resources are found during a project, activity in the immediate area of the find should be discontinued (**stop**), the area secured (**protect**), and the WSPRC archaeologists notified to assess the find (**notify**). ***When in doubt, assume the material is a cultural resource and implement the IDP outlined below.***

Recognizing Cultural Resources-*Types of Historic/Precontact Artifacts and/or Activity Areas That May Be Found*

- Artifacts- Both historic and precontact artifacts may be found exposed in backhoe trenches or back dirt piles.
    - Precontact artifacts may range from finished tools such as stone pestles, arrowheads/projectile points, shell beads, or polished bone tools to small pieces or "flakes" or "chips" of exotic stone such as chert, jasper, or obsidian.

Implement the UDP/IDP if you see: Chipped stone artifacts

Examples are:

- Glass-like material.
- Angular material.
- "Unusual" material or shape for the area
- Regularity of flaking.
- Variability of size.



Stone artifacts from Washington.



Biface-knife, scraper, or pre-form found in NE Washington



Stone artifacts from Oregon



Flaked stone artifact from Colorado



Intertidal stone fish trap, BC



Eroding shell midden, BC



Flaked stone core on Lopez Island



Shell midden with fish bone, BC

Implement the UDP/IDP if you see: Stone Artifacts

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.



Above: Fishing Weight - credit CRITFC Treaty Fishing Rights website







Implement the UDP/IDP if you see: Bone or Shell Artifacts

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a "shoehorn".
- Variability of size.
- Beads from shell











Upper Left: Bone Awls from Oregon. Upper Center: Bone Wedge from California. Upper Right: Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain. Above: Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.

- Historic artifacts may include older (more than 50 years) nails, plates/ceramics, bottles, cans, coins, glass insulators, or bricks.

Implement the UDP/IDP if you see: Historic period artifacts (historic archaeology considered older than 50 years)

Historic Period Examples:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.





Top to Bottom: Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45KI1200) excavation.





Collections of historic artifacts discovered during excavations in eastern Washington cities.

Implement the UDP/IDP if you see: Historic period artifacts (historic archaeology considered older than 50 years)

Historic Period Examples:

Railway tokens, coins, and buttons.

- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware



Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.





Coins, token, spectacles and Montgomery Ward pitchfork toy discovered (Seattle 45KI1200).



Implement the UDP/IDP if you see: Historic Artifacts

Historic Period Examples:

- Old munition casings – if you see ammunition of any type – always assume they are live and never touch or move!
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.



British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).



Beer can found in Oregon. ACME was owned by Olympia Brewery



Maker's mark on bottom of old bottle.

- Old abandoned industrial materials from farming, logging, railways, lighthouses, and military installations.

- Activity Area/Cultural Features- While excavating trench lines look for evidence of buried activity areas/cultural features such as old campfire hearths or buried artifacts.
  - An area of charcoal or very dark stained soil with artifacts or burned rocks may be a fire hearth.

Implement the UDP/IDP if you see: Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them.

Examples are:

- "Unusual" accumulations of rock (especially fire-cracked rock).
- "Unusual" shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a "layer cake" appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the "unusual" or out of place (for example, rock piles in areas with otherwise few rocks)..

Shell midden with fire cracked rock.







Underground oven. Courtesy of DAHP.



Shell Midden pocket in modern fill discovered in sewer trench.



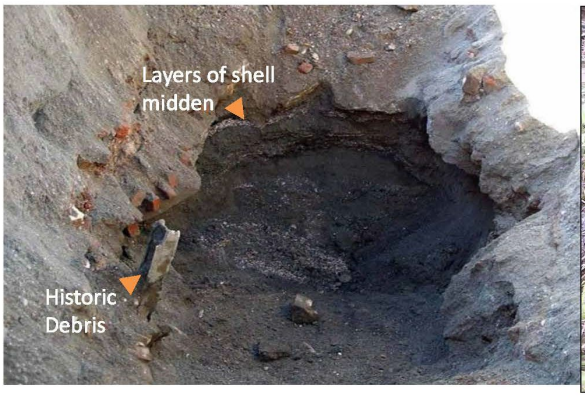
Hearth excavated near Hamilton, WA.

- A concentration of shell with or without artifacts may be shell midden deposits.

Implement the UDP/IDP if you see: Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them.

- Often have a layered or "layer cake" appearance
- Often associated with black or blackish soil
- Often have very crush and compacted shell





- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings or carvings

- Historic building foundation/structural remains- During excavation, buried historic structures (e.g., privies, building foundations) that are more than 50 years old may be found.

Implement the UDP/IDP if you see: You see historic foundations or buried structures.

Examples:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.



Historic structure 45KI924, in WSDOT right of way for SR99 tunnel.



Ellensburg: Intact foundation below parking lot



City of Spokane Historic Trolley Tracks

- Bone- Complete or broken pieces of bone may be discovered exposed in trench walls or in back dirt piles. Bone can come from either animal remains or human remains and requires a trained professional to identify. If you find bone, notify the WSPRC archaeologist immediately and follow their directions.

Steps to Take If a Cultural Resource Is Found During Construction

1. **Stop** if a cultural resource(s) is observed or suspected, all work within the immediate area of the discovery must stop.
2. **Protect** the area from further disturbance. Do not touch, move, or further disturb the exposed materials/artifacts. Create a protected area with temporary fencing, flagging, stakes, or other clear markings that is large enough (30 feet or larger) to protect the discovery location area. The WSPRC archaeologist can help determine the size of the protected area. Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site.
3. **Notify** the WSPRC archaeologist. If the area needs to be secured, notify the Park Ranger or Park staff as well.
4. If requested by the WSPRC archaeologist, take photographs with a scale (e.g., pen, coin, etc.) and collect geospatial information of the discovery site to document the initial finds.

What Not to Do If a Cultural Resource Is Found During Construction

- Do not remove any artifacts from the site of the discovery.
- Do not dig out objects protruding from any trench walls as this may cause further damage to artifacts and/or destroy important contextual information.
- Do not share any information about the find, including on social media, except as necessary to implement the IDP.

What Happens Next?

1. The find will be assessed by a professional archaeologist (may be a WSPRC archaeologist or an archaeology consultant).
   a. If the find is not a cultural resource, construction work may resume.
   b. If the find is a cultural resource, the WSPRC archaeologist will contact the DAHP and affected Tribes, as appropriate, to develop a suitable treatment plan for the resource.
2. Construction work may resume in the protected area after the WSPRC archaeologist assigned to the undertaking has determined that the find has been adequately investigated and, if necessary, a treatment plan and monitor are in place to protect any remaining archaeological deposits.

INADVERTENT DISCOVERY PLAN FOR HUMAN SKELETAL REMAINS

Native American burials and historic grave sites are common features on Washington State Park lands. These remains, as well as any associated artifacts or funerary objects, are protected under state law and, if the park is a federal lease, applicable federal law. If you discover human remains (or bones that you believe may be human remains) during construction, please follow these

important instructions**.** It is imperative that reporting and treatment of any human remains found during construction or any ground-disturbing activities are treated with utmost dignity and respect.

Steps to Take If Human Skeletal Remains are Found During Construction

1. **Stop** if human skeletal remains observed or suspected, all work within the immediate area of the discovery must stop.
2. **Protect** the area from further disturbance. Do not touch, move, or further disturb the remains. Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection in place and shield them from being photographed. Create a protected area with temporary fencing, flagging, stakes, or other clear markings that is large enough (30 feet or larger) to protect the discovery location area. The WSPRC archaeologist can help determine the size of the protected area. Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site.
3. **Notify** local law enforcement (Park Ranger) and the appropriate county medical examiner/coroner as soon as possible. If you are unsure if the remains are human, the physical anthropologist at DAHP may be called. Also notify the Area Manager, the WSPRC archaeologist, and the WSPRC Curator of Collections/NAGRPA Specialist of the discovery of the remains.
4. If requested by the local law enforcement, the county coroner/examiner, the DAHP physical anthropologist, or the WSPRC archaeologist, take photographs with a scale (e.g., pen, coin, etc.) and geospatial information of the discovery site to document the initial finds.

What Not to Do If Human Skeletal Remains are Found During Construction

- Do not pick up or remove anything.
- Do not take any photographs of the remains unless instructed to do so by local law enforcement, the county coroner/examiner, the DAHP physical anthropologist, or the WSPRC archaeologist. If pictures are requested, be prepared to photograph them with a scale (e.g., pen, coin, etc.) and collect geospatial information of the remains.
- Do not call 911 unless you cannot reach local law enforcement or the coroner/examiner by other means.
- Do not share any information about the find, including on social media, except as necessary to implement the IDP.

What Happens Next?

1. The county medical examiner/coroner will assume jurisdiction over the human skeletal remains and decide whether those remains are forensic (crime-related) or non-forensic.
    a. If forensic, the county medical examiner/coroner will retain jurisdiction over the remains.
    b. If non-forensic, the county medical examiner/coroner will report that finding to the DAHP who will then take jurisdiction over the remains. The DAHP will notify any appropriate cemeteries and all affected Tribes of the remains. The State Physical Anthropologist will decide whether the remains are Indian or Non-Indian and report that finding to any appropriate cemeteries and the affected Tribes. The DAHP will then handle all consultation with the affected parties as to the future preservation, excavation, and disposition of the remains.

Note: The WSPRC archaeologist assigned to the undertaking will be coordinating and consulting with the DAHP, affected Tribes, and other groups as necessary. Additionally, WSPRC's Curator of Collections/NAGPRA Specialist should be included on all written and/or verbal correspondence until the remains have been officially transferred from WSPRC's possession to an outside authority. Until the remains are transferred off of WSPRC's property, it is the responsibility of the Curator of Collections/NAGPRA Specialist to document and track the information regarding all human remains and associated funerary objects (including all material from excavation areas/units from which the human remains were removed).

2. Construction work may resume in the protected area after the WSPRC archaeologist assigned to the undertaking has determined that the find has been adequately investigated and, if necessary, a treatment plan and monitor are in place.

EMERGENCY CONTACTS

WSPRC Region Archaeologists

Sean Stcherbinine, NW Region Archaeologist (360) 770-1419 (cell)
Email: sean.stcherbinine@parks.wa.gov
Laura Syvertson, NW Region Archaeologist (360) 770-0444 (cell)
Email: laura.syvertson@parks.wa.gov

Alternative WSPRC Archaeologist Contacts

Jennifer Wilson, Cultural Resources Program Manager (360) 787-6511 (cell)
Email: jennifer.wilson@parks.wa.gov (360) 902-8637 (office)

Statewide:

Maurice Major, Stewardship Archaeologist (360) 701-6218 (cell)
Email: maurice.major@parks.wa.gov (360) 902-8503 (office)

Eastern Region:

Ayla Aymond, Eastern Region Archaeologist (509) 743-8251 (cell)
Email: ayla.aymond@parks.wa.gov
Sarah DuBois, Eastern Region Archaeologist (509) 972-5884 (cell)
Email: sarah.dubois@parks.wa.gov (509) 665-4336 (office)

SW Region:

Shari Silverman, SW Region Archaeologist (360) 790-6742 (cell)
Email: shari.silverman@parks.wa.gov (360) 902- 8640 (office)
Kayley Bass, SW Region Archaeologist (360) 701-1277 (cell)
Email kayley.bass@parks.wa.gov

WSPRC Curator of Collections/NAGPRA Specialist

Alicia L. Woods, Statewide Curator of Collections & NAGPRA Specialist
Email: alicia.woods@parks.wa.gov (360) 586-0206 (office)

State Physical Anthropologist

Guy Tasa, DAHP (360) 790-1633 (cell)

Assistant State Physical Anthropologist

Jennifer Spence, DAHP	(360) 890-0174 (cell)
<u>County Coroner/Examiner</u>	
Randall K. Gaylord	(360) 378-4101
<u>Local Law Enforcement</u>	
Dylan McElhaney	(360) 622-6679
<u>Area Manager</u>	
Aaron Davidson	(360) 622-6611

Attachment 9

State Environmental Policy Act (SEPA)

Determination of Non-Significance (DNS)

(Alternate Bid Item A1)

Don Hoch
Acting Director

STATE OF WASHINGTON
WASHINGTON STATE PARKS AND RECREATION COMMISSION
1111 Israel Road S.W. • P.O. Box 42650 • Olympia, WA 98504-2650 • (360) 902-8500
TDD Telecommunications Device for the Deaf: 800-833-6388
www.parks.state.wa.us

STATE ENVIRONMENTAL POLICY ACT
DETERMINATION OF NON-SIGNIFICANCE

Date of Issuance: January 05, 2022

Project Name: Sucia Island, Floating Pumpout Station Installation

Proponent: Washington State Parks and Recreation Commission

Lead Agency: Washington State Parks and Recreation Commission

Agency Contact: Kira Swanson, Environmental Planner
kira.swanson@parks.wa.gov

Description of Proposal: Washington State Parks and Recreation Commission (State Parks) proposes to install a pumpout facility at Sucia Island Marine State Park in order to reduce environmental impacts from illegal dumping of sewage by recreational boaters. The proposed project has been designed to avoid and minimize adverse impacts to the aquatic environment by providing a facility for recreational boaters to offload black sewage, thus preventing contamination from illegal dumping. Additionally, the proposed pumpout barge will be located in the subtidal zone (deeper than -10 feet MLLW) and 175 feet offshore, which is a less impactful placement than in the nearshore, which can provide habitat for juvenile salmonid and rockfish, including in submerged aquatic vegetation.

The pumpout barge will consist of one (1) 10-foot by 34-foot aluminum-framed custom fabricated and towable pumpout barge station and installation of two 16-inch galvanized steel pipe piles to provide lateral support. The barge will have a 3,000-gallon self-contained storage tank internal to the hull of the barge for sewage pumpout material. This double-walled design will prevent any accidental spillage from entering the marine environment. The keel of the barge will hover around -3 ft Mean Lower Low Water (MLLW), providing approximately 10 feet of clearance to the mudline at MLLW. The sewage pumpout barge will be serviced by State Parks and sewage transported to a state-certified sewage treatment facility by a private vendor at appropriate intervals. Given the vessel hull shape design of this pumpout barge, no light passage will be possible through this structure; however, eelgrass and macroalgae surveys conducted in 2020 indicated that no eelgrass was present within 25 feet of the pumpout float footprint. Due to the water depth, the pumpout float will not ground out at low water.

Location of Proposal: Fossil Bay, Sucia Island at Sucia Island State Park. The project is located within Section 26, Township 38 North, Range 02 West, Willamette Meridian, San Juan County, Tax Parcel 282531001000.

Threshold Determination: The lead agency (Washington State Parks and Recreation Commission) has determined that this proposal will not have a probable significant adverse impact on the environment, nor does it need mitigation to avoid significant adverse environmental impacts. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with the lead agency. This information is available at: http://bit.ly/ParksSEPA

This determination is based on the following findings and conclusions:

1. The proposed project has been designed to avoid and minimize adverse impacts to the aquatic environment by providing a facility for recreational boaters to offload black sewage, thus preventing contamination from illegal dumping.
2. The sewage pumpout barge will be serviced by State Parks and sewage transported to a state-certified sewage treatment facility by a private vendor at appropriate intervals.
3. Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
4. The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
5. Work barge(s) will not ground out during any construction activities.
6. Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.
7. The contractor will be required to capture any debris associated with Project activities.
8. All in-water and over-water work will be conducted using equipment staged from a floating work barge platform. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
9. The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
10. The proposed pumpout barge will be located in the subtidal zone (deeper than -10 feet MLLW) and 175 feet offshore, which is a less impactful placement than in the nearshore, which can provide habitat for juvenile salmonid and rockfish.
11. No eelgrass or macroalgae was observed during a 2020 survey within the 25 feet of the float footprint (Grette Associates 2020).
12. The keel of the barge will hover around -3 ft Mean Lower Low Water (MLLW), providing approximately 10 feet of clearance to the mudline at MLLW.
13. In-water work will take place during the in-water work window (July 16 – September 23).
14. If impact pile driving is required, a bubble curtain or other approved attenuation device will be used for noise attenuation.
15. Any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

16. Monitoring will be conducted during pile driving (both vibratory and impact) or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

☒ This DNS is issued under 197-11-340 (2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted to the Responsible Official below by **January 19, 2022** or they may not be considered.

Responsible Official: Kira Swanson
Position/Title: Environmental Planner
Phone: (360) 522-2287
Address: 220 N. Walnut St
Burlington, WA 98233-1138
Email: kira.swanson@PARKS.WA.GOV

Date: January 05, 2022 **Signature:** 

"All Washington State Parks are developed and maintained for the enjoyment of all persons regardless of age, sex, creed, ethnic origin, or physical limitations."

There is no agency SEPA appeal; however all comments are welcome and will be thoroughly considered.

SEPA ENVIRONMENTAL CHECKLIST

A. Background [HELP]

1. Name of proposed project, if applicable:

Sucia Island Floating Pumpout Station Installation

2. Name of applicant:

Washington State Parks and Recreation Commission

3. Address and phone number of applicant and contact person:

Applicant and: Joelene Boyd
Contact Washington State Parks and Recreation Commission
Northwest Region
220 N. Walnut St.
Burlington, WA 98233-1138
joelene.boyd@parks.wa.gov
(360) 855-5533

4. Date checklist prepared:

September 13, 2021

5. Agency requesting checklist:

Washington State Parks and Recreation Commission (State Parks)

6. Proposed timing or schedule (including phasing, if applicable):

September 2022 through March 2025

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

No future additions, expansion, or further activity connected to this project are being contemplated at this time. State Parks has plans for replacement of moorage facilities at Fossil Bay, also within Sucia Island State Park. However, the Fossil Bay moorage facility project is separate from the pumpout station project and will proceed along a different timeframe.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Joint Aquatic Resources Permit Application form

Biological Evaluation – Sucia Island State Park Renovation Project: Fossil Bay Pumpout Station; Grette Associates, September 2021
Eelgrass and Macroalgae Habitat Survey Verification; Grette Associates, August 2021
High Tide Line Determination Memo; Grette Associates, April 2021
Geotechnical Engineer Services Report, Sucia Island State Park Improvements, San Juan County, Washington, GeoEngineers, November 2020.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain.

We are not aware of any pending applications directly affecting the property covered by this proposal.

10. List any government approvals or permits that will be needed for your proposal, if known.

Federal:
- Department of the Army Section 10 Authorization – U.S. Army Corps of Engineers
- Coastal Zone Management Act Consistency Determination

State of Washington:
- Hydraulic Project Approval – Washington Department of Fish and Wildlife
- Aquatic Use Authorization – Washington State Department of Natural Resources
- SEPA Review and Determination

San Juan County:
- Shoreline Substantial Development Permit – San Juan County
- Building Permit

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.)

Sucia Island State Park is accessible only by boat, and in 2020 hosted nearly 100,000 visitors. Currently, the nearest available pumpout station is located on northwest Orcas Island, approximately five nautical miles from Sucia Island. Vessel sewage can contain harmful bacteria and viruses, toxic chemicals and nutrients (Herrera 2012). The release of boater sewage in Puget Sound threatens the health of Puget Sound and its ability to support healthy wildlife and human communities. If released, sewage can negatively impact water quality resulting in closures of recreational and commercial shellfish harvesting, limited or no recreation along beaches, harmful algae blooms and low dissolved oxygen. In an effort to improve water quality, the Puget Sound No Discharge Zone (WAC 173-228) became effective on May 10, 2018. This rule bans the discharge of any type of sewage in Puget Sound (in Washington state).

State Parks proposes to install a pumpout facility at Sucia Island Marine State Park in order to reduce environmental impacts from illegal dumping of sewage by recreational boaters. The proposed project has been designed to avoid and minimize adverse impacts to the aquatic environment by providing a facility for recreational boaters to offload black sewage, thus preventing contamination from illegal dumping. Additionally, the proposed pumpout barge will be located in the subtidal zone (deeper than -10 feet MLLW) and 175 feet offshore, which is a less impactful placement than in the nearshore, which can provide habitat for juvenile salmonid and rockfish, including in submerged aquatic vegetation.

The pumpout barge will consist of one (1) 10-foot by 34-foot aluminum-framed custom fabricated and towable pumpout barge station and two 16-inch galvanized steel pipe piles to provide lateral support. The barge will have a 3,000-gallon self-contained storage tank internal to the hull of the barge for sewage pumpout material. This double-walled design will prevent any accidental spillage from entering the marine environment. The keel of the barge will hover around -3 ft Mean Lower Low Water (MLLW), providing approximately 10 feet of clearance

to the mudline at MLLW. The sewage pumpout barge will be serviced by State Parks and sewage transported to a State-certified sewage treatment facility by a private vendor at appropriate intervals. Given the vessel hull shape design of this pumpout barge, no light passage will be possible through this structure; however, eelgrass and macroalgae surveys conducted in 2020 indicated that no eelgrass was present within 25 feet of the pumpout float footprint. Due to the water depth, the pumpout float will not ground out at low water.

Pile installation will be performed by vibratory hammer whenever possible. In cases where piles encounter premature refusal when using a vibratory hammer, an impact hammer or rock drill will be used to reach the design elevations. Float piles will have fiberglass bird caps installed.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist.

This project is located approximately 175 feet offshore of Sucia Island State Marine Park in Fossil Bay, Sucia Island.

Section 26, Township 38N, Range 02W

Lat: 48.750152 Long: -122.897952

Tax Parcel Number: 282531001000

See Sheet 1 of JARPA drawings for vicinity map (Attachment A).

B. Environmental Elements [HELP]

1. Earth [help]

a. General description of the site:

(circle one): Flat, rolling, hilly, steep slopes, mountainous, other **Harbor**

b. What is the steepest slope on the site (approximate percent slope)?

The project is located within Fossil Bay; thus, there are no slopes onsite.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils.

Soil properties used in design of the project elements are based on observations and soil probes via dynamic cone penetrometer that occurred in 2020 conducted and reported by GeoEngineers at the existing moorage facility (GeoEngineers, 2020). Based on this report, the primary soil unit is expected to be very soft marine sediment to sandstone bedrock overwater. It is anticipated that sandstone bedrock could be encountered during pile installation.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill.

No filling, excavation, or grading are proposed.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

No, there are no ground-disturbing activities in the upland and beyond the installation of two piles proposed as part of this project.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

No impervious surfaces will be added as part of this project.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

None proposed as the project will not result in erosion (project will take place entirely within the aquatic environment of Fossil Bay).

2. Air [help]

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known.

Construction activities may create some temporary boat/equipment exhaust. No new emissions will be generated as a result of the project. Elevated emissions from construction equipment would occur for a short duration and be temporary.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

No; the only off-site sources of emissions are from recreational boaters in the area. These off-site sources of emissions or odor would not affect the proposed project.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

There are no emission-reduction measures proposed because this project will not result in an increase in emissions aside from a temporary increase from use of construction equipment.

3. Water [help]

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into.

The proposed project is in Fossil Bay in the southern portion of Sucia Island, north of Orcas Island in the Salish Sea.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans.

State Parks proposes to install a new pumpout float within Fossil Bay, approximately 175 feet offshore at -13 ft MLLW. This float will include a single 10 ft by 34 ft float anchored by two 16-inch diameter steel piles.

Piles

Two (2) new galvanized steel pipe piles with a 16" diameter will be installed to provide lateral support to the new floating pumpout station. Pile installation will be performed by vibratory hammer, impact hammer, or rock sockets depending on subsurface conditions. In cases where piles encounter premature refusal when using a vibratory hammer, an impact hammer or rock drill will be used to reach the design elevations. All float piles will have fiberglass bird caps installed.

Floating Pumpout Station

One (1) 10-foot by 34-foot aluminum framed custom fabricated and towable pumpout barge station will be attached to the above-mentioned piles. The barge will have a 3,000-gallon self-contained storage tank internal to the hull of the barge for sewage pumpout material. The keel of the barge will hover around -3 ft MLLW; because the float will be installed at -13 ft MLLW, this will provide approximately 10 feet of clearance to the mudline at MLLW. The sewage pumpout barge will be serviced by State Parks and sewage transported to a State-certified sewage treatment facility by a private vendor at appropriate intervals. Given the vessel hull shape design of this pumpout barge, no light passage will be possible through this structure. Due to the water depth, the pumpout float will not ground at low water.

Please see attached plan and figures for a detailed project description, Attachment A.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material.

No fill is proposed for this project.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known.

No, the proposed project will not require any surface water withdrawals or diversions.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

No, the project is waterward of the OHW and HTL line in Fossil Bay, Sucia Island. San Juan County's Polaris mapper (accessed September 15, 2021) indicates that the project site is within 2018 Flood Insurance Map in Flood Zone: Open Water.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge.

The proposed pumpout float will allow for recreational users to pump sewage into a 3,000 gallon self-contained storage tank internal to the hull of the barge. The sewage pumpout barge will be serviced by State Parks and sewage transported to a State-certified sewage treatment facility by a private vendor at appropriate intervals. Also, due to

the water depth, the pumpout float will not ground at low water. This will ensure no waste materials enter surface waters.

The proposal does not involve any discharge of waste materials to surface waters.

b. Ground Water: [help]

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known.

No groundwater will be withdrawn and no water will be discharged to groundwater.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals...; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve.

No waste material will be discharged.

c. Water runoff (including storm water):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe.

No impervious surfaces will be added to the upland as part of this proposal.

2) Could waste materials enter ground or surface waters? If so, generally describe.

Proper use and maintenance of the facility will ensure that waste materials do not enter surface waters.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.

The project does not alter drainage patterns at the site.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:

No impacts are anticipated to surface, ground, or runoff water or drainage patterns.

4. Plants [help]

a. Check the types of vegetation found on the site:

____deciduous tree: alder, maple, aspen, other
____evergreen tree: fir, cedar, pine, other
____shrubs

____grass
____pasture
____crop or grain
____ Orchards, vineyards or other permanent crops.
____ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
__X__water plants: water lily, **eelgrass**, milfoil, other
____other types of vegetation

A macroalgae survey was performed by Grette Associates (2020) around the proposed location for the new pumpout barge station. Small eelgrass patches were observed during the survey but were located outside the 25 ft buffer around the proposed pumpout location. There was also macroalgae observed over much of the survey area. Species of macroalgae consisted primarily of *Laminaria saccharina* and *Gracilaria* sp. Both attached and adrift algae were observed.

b. What kind and amount of vegetation will be removed or altered?

No vegetation will be removed or altered.

c. List threatened and endangered species known to be on or near the site.

There are no threatened or endangered plant species on or near the site.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

The project is located completely in the marine environment approximately 175 feet offshore from Sucia Island; thus, no landscaping is proposed.

e. List all noxious weeds and invasive species known to be on or near the site.

There are no noxious weeds or invasive plant species known to occur on or near the site.

5. Animals [help]

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site.

Examples include:

birds: hawk, **heron**, **eagle**, songbirds, other:
mammals: deer, bear, elk, beaver, other: **seals**
fish: bass, **salmon**, trout, herring, **shellfish**, other:

b. List any threatened and endangered species known to be on or near the site.

Federally listed endangered species that could occur on or near the site include:

Listed Species	Federal Status	Designated CH in Action Area	Species Effects Determinations	CH Effects Determinations
Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)	threatened	yes	NLAA[1]	NLAA[1]
Hood Canal Summer-run Chum Salmon (*Oncorhynchus keta*)	threatened	no	NLAA[1]	N/A
Puget Sound Steelhead Trout (*Oncorhynchus mykiss*)	threatened	no	NLAA[1]	N/A
Bull Trout (*Salvelinus confluentus*)	threatened	no	NLAA[1]	N/A
Bocaccio rockfish (*Sebastes paucispinis*)	endangered	yes	NLAA[1]	NLAA[1]
Yelloweye rockfish (*Sebastes ruberrimus*)	threatened	yes	NLAA[1]	NLAA[1]
Southern Resident Killer Whale (*Orcinus orca*)	endangered	yes	NLAA[1]	NLAA[1]
Humpback Whale (*Megaptera novaeangliae*)	endangered	no	NLAA[1]	N/A
Leatherback Sea Turtle (*Dermochelys coriacea*)	endangered	no	No effect	N/A
Marbled Murrelet (*Brachyramphus marmoratus*)	threatened	no	NLAA[1]	N/A

State-listed species that may be found in or near the project area include pinto abalone (*Haliotis kamtschatkana*), and Dungeness crab (*Cancer magister*).

No impacts to either the Federally- or State-listed species are anticipated as a result of the project.

c. Is the site part of a migration route? If so, explain.

The site is part of the Pacific Flyway for bird migration and is part of the salmon migration corridor.

d. Proposed measures to preserve or enhance wildlife, if any:

The purpose of the proposed project is to provide a sewage pumpout facility for recreational boaters so as to minimize the possibility of illegal dumping of sewage.

This work will be conducted within the approved in-water work window. The USACE and Washington Department of Fish and Wildlife (WDFW) both designate work windows for Puget Sound. For this Project Area (San Juan Islands), the USACE work window for salmon is July 16 through March 1 and for bull trout is July 16 through February 15. There is no documented forage fish spawning in Fossil Bay. The WDFW designated work window is more restrictive: September 1 through March 1 for work in the San Juan Islands. Because it is more conservative, the WDFW work window of September 1 through February 15 will be applied to this project.

Monitoring will be conducted during pile driving (both vibratory and impact) or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

Also, any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

e. List any invasive animal species known to be on or near the site.

There are no known invasive animal species on or near the site.

6. Energy and Natural Resources [help]

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc.

The pump will be solar powered with a manual pump option should the solar power pump fail.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe.

No, the project will not affect potential use of solar energy by adjacent properties.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any:

The pump works through creating a vacuum within a diaphragm which provides enough suction to push/pull sewage from a vessel into the barge sewage tank. The pump will be solar powered with a manual pump option should the solar power pump fail.

7. Environmental Health [help]

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe.

The purpose of the proposed project is to minimize illegal dumping of sewage into the Salish Sea. Barring unforeseen circumstances, proper use and maintenance of the facility will ensure that no environmental health hazards will occur as a result of this proposal. Pump design and operation BMPs include leak detection, double-wall design for sewage storage, an on-unit spill kit, and a warning light for users to be notified if the tank is full or the unit is leaking.

Construction equipment could be a source of environmental health hazards; best management practices (BMPs) will be followed to minimize the potential for construction-related contamination and environmental health hazards. BMPs to protect water quality may include but are not limited to:

- Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

- Work barge(s) will not ground out during any construction activities.
- Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.
- The contractor will be required to capture any debris associated with Project activities.
- All in-water and over-water work will be conducted using equipment staged from a floating work barge platform. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.
- The contractor will adhere to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC) and San Juan County's Stormwater Management for Development Guidelines during all operations.

Potential risks would be localized, minimal, and temporary.

1) Describe any known or possible contamination at the site from present or past uses.

Review of the Department of Ecology's What's in My Neighborhood website and EPA's Toxic Release Inventory website (accessed September 29, 2021) indicates there are no contamination sites on Sucia Island.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.

There are no hazardous conditions or chemicals that might affect project development.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.

During construction, petroleum-based fuel (gasoline and/or diesel) will be stored and used by construction equipment. Once the project is complete, up to 3,000 gallons of blackwater may be stored in the pumpout barge. The intent of the project is to ensure the blackwater is contained and does not enter the marine environment.

4) Describe special emergency services that might be required.

No special emergency services will be required. Spill containment kits will be onsite as part of standard operating procedures, and the risk of injury to workers is no greater than during regular marine construction operations. A contractor will be required to develop and submit to State Parks a site health and safety plan prior to work commencing.

5) Proposed measures to reduce or control environmental health hazards, if any:

Construction equipment could be a source of environmental health hazards; best management practices (BMPs) will be followed to minimize the potential for construction-related contamination and environmental health hazards. BMPs to protect water quality may include but are not limited to:

- Operations will be conducted in such a manner to limit disturbance to the minimum required to complete the work.
- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
- Work barge(s) will not ground out during any construction activities.
- Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.
- The contractor will be required to capture any debris associated with Project activities.
- All in-water and over-water work will be conducted using equipment staged from a floating work barge platform. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.
- The contractor will adhere to the water quality standards and/or the WDOE Section 401 Water Quality Certification (WQC) and San Juan County's Stormwater Management for Development Guidelines during all operations.

Potential risks would be localized, minimal, and temporary.

Additionally, the pumpout facility will contain up to 3,000 gallons of blackwater at any given time. Proper use instructions will be posted on the complete pumpout facility. Pump design and operation BMPs include leak detection, double-wall design for sewage storage, an on-unit spill kit, and a warning light for users to be notified if the tank is full or the unit is leaking.

The purpose of installing the pumpout facility at this site is to reduce illegal dumping of blackwater into the aquatic environment by recreational boaters; thus, installing the pumpout facility itself is a proposed measure to reduce or control environmental health hazards.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

No sources of noise are expected to affect the project.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site.

Short-term noise associated with the project includes that of construction equipment (excavators, cranes, barges), and construction operations, including excavation and pile driving. Once construction is completed, noise from the pump will occur when in use, but the noise will be negligible and short in duration.

3) Proposed measures to reduce or control noise impacts, if any:

If impact pile driving is required, a bubble curtain or other approved attenuation device will be used for noise attenuation. Also, to control noise impacts, any pile driving occurring during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging. Otherwise, noise will not be at levels that require noise control measures.

8. Land and Shoreline Use [help]

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe.

Sucia Island Marine State Park is an 814-acre marine park with 77,700 feet of shoreline and abundant camping and moorage within Fossil Bay. The main island and several smaller islands comprise the "Sucia Group." There are no services on this island.

The proposed project will not affect current land or marine uses on nearby or adjacent properties.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use?

No, the project site has not been used as working farmlands or working forest lands.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:

No, the project will not affect or be affected by working farm or forest land.

c. Describe any structures on the site.

State Parks proposes to install a new float with a pumpout facility for Sucia Island Marine State Park users. There are not currently any structures at the proposed site of the pumpout float. A pier and float system that provides access to the State Park is located approximately 285 feet northwest of the proposed pumpout site. A number of mooring buoys are also present near the Project Area.

d. Will any structures be demolished? If so, what?

No.

e. What is the current zoning classification of the site?

Due to its location entirely within Fossil Bay, the site has not been zoned.

f. What is the current comprehensive plan designation of the site?

The entirety of the project is located in Fossil Bay; the comprehensive plan Land Use Designation of the adjacent land is Conservancy.

g. If applicable, what is the current shoreline master program designation of the site?

The current San Juan County Shoreline Master Program designation for the upland adjacent to the project area is Conservancy. Waterward of the ordinary high water mark, the shoreline designation is Aquatic

i. Has any part of the site been classified as a critical area by the city or county? If so, specify.

No. The San Juan County Polaris Mapper (accessed September 15, 2021) indicates that there are no critical areas at the site. The upland surrounding the site is classified as a critical aquifer recharge area.

i. Approximately how many people would reside or work in the completed project?

None.

j. Approximately how many people would the completed project displace?

None.

k. Proposed measures to avoid or reduce displacement impacts, if any:

Nobody will be displaced by the project.

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed project will allow continued use of the State Park and nearby mooring buoys by providing recreational boaters a place to dump black sewage water.

m. Proposed measures to reduce or control impacts to agricultural and forest lands of long-term commercial significance, if any:

The project will not have impacts on agricultural or forest lands.

9. Housing [help]

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

None.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

None.

c. Proposed measures to reduce or control housing impacts, if any:

None. This is not applicable to this project.

10. Aesthetics [help]

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed?

The tallest height of structures are the steel pile associated with the pumpout float. The top of the pile will be at approximately +20 ft MLLW.

b. What views in the immediate vicinity would be altered or obstructed?

No views will be altered or obstructed.

b. Proposed measures to reduce or control aesthetic impacts, if any:

Materials have been selected to provide maximum durability and longevity while also considering habitat quality. No aesthetic impacts are anticipated.

11. Light and Glare [help]

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

No long-term light or glare will be produced by the proposal. If operations occur at night, lighting of construction site will be necessary. It is expected that a PATON (Private Aid To Navigation) will be required as part of the new facility.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

There will be no light or glare resulting from the finished project.

c. What existing off-site sources of light or glare may affect your proposal?

No off-site sources of light will affect the proposal.

d. Proposed measures to reduce or control light and glare impacts, if any:

There are no anticipated impacts of light or glare, so there are no proposed measures to reduce or control light and glare.

12. Recreation [help]

a. What designated and informal recreational opportunities are in the immediate vicinity?

Sucia Island Marine State Park is an 814-acre marine park with 77,700 feet of shoreline and abundant camping and moorage. The main island and several smaller islands comprise the "Sucia group." There are no services on this island.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No, the project will improve the facility by providing a sewage pumpout for State Park users and the public.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

The project will improve the site for recreational users by providing a sewage pumpout facility.

13. Historic and cultural preservation [help]

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers? If so, specifically describe.

The project is located approximately 175 feet offshore in Fossil Bay. There are no buildings or structures over 45 years old in the project site.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources.

While archaeological sites are known within the vicinity of the project, no archaeological or historic sites are known in the project area.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc.

This project is subject to Section 106 of the Historic Preservation Act. The U.S. Army Corps of Engineers, as the lead agency, will be responsible for assessment of potential impacts to cultural and historic resources on or near the project site.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.

The project is subject to Section 106 of the Historic Preservation Act. Therefore, as the lead agency, the U.S. Army Corps of Engineers is responsible for decisions about measures to avoid, minimize, or compensate for loss, changes to, and disturbances of resources.

14. Transportation [help]

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any.

The project site is located in Fossil Bay and is only accessible by boat.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop?

No.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate?

No parking will be added or eliminated as a result of the project.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private).

No.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

The project will use water transportation (e.g., tug and barge) to import construction materials to the site, but the vessels transporting materials will be contracted vessels, not ferries or other public transportation vessels. The completed project will not require use of water, rail, or air transportation.

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non-passenger vehicles). What data or transportation models were used to make these estimates?

No vehicular trips will be generated by the completed project.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.

No, the proposal will not interfere with or otherwise affect or be affected by the movement of agricultural and forest products.

h. Proposed measures to reduce or control transportation impacts, if any:

This is not applicable for this project.

15. Public Services [help]

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe.

No, the project will not result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

This is not applicable to the proposed project.

16. Utilities [help]

a. Circle utilities currently available at the site:
electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other _____

No utilities are currently located at the site. However, if approved, this project would result in sanitary sewage disposal for recreational boaters.

c. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed.

No utilities are proposed for the project.

C. Signature [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

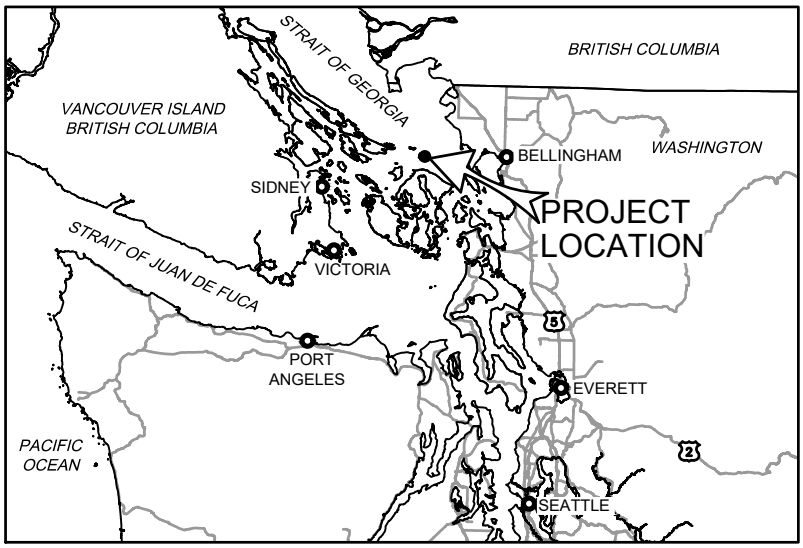
Signature: _____

Name of signee Joelene Boyd

Position and Agency/Organization Environmental Planner, WA State Parks and Recreation Commission

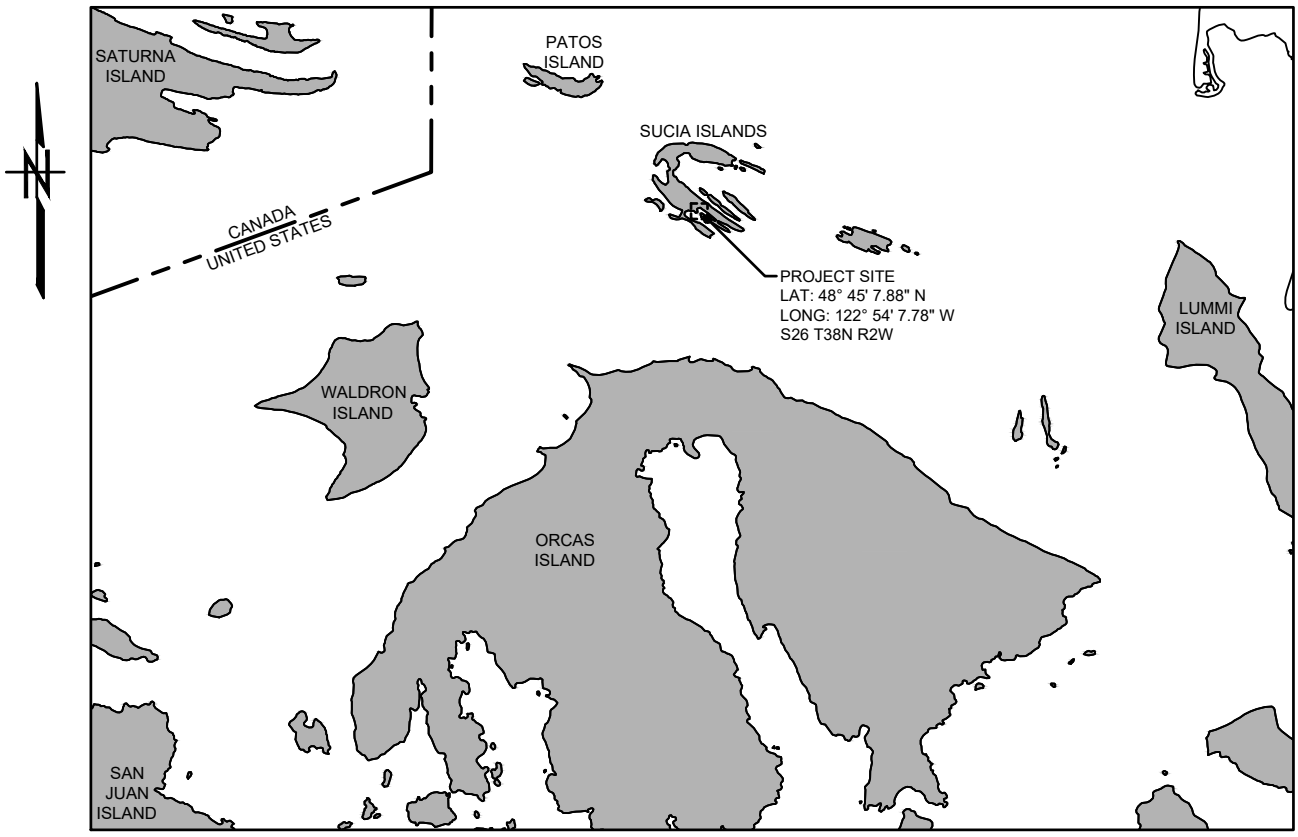
Date Submitted: 12/23/2021

S26 T38N R2W



VICINITY MAP

DRAWING INDEX	
SHEET NO.	SHEET TITLE
1	VICINITY MAP
2	OVERALL SITE PLAN
3	PROPOSED PUMPOUT BARGE SITE PLAN
4	PROPOSED PUMPOUT BARGE DETAILS
5	PROPOSED PUMPOUT BARGE PROFILE



LOCATION MAP

9,000'
0 18,000'

DRAFT
PERMIT SET

TIDAL WATER LEVELS (MLLW)	
MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT
HIGH TIDE LINE / ORDINARY HIGH WATER	9.25 FT

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS
HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)
ADJACENT PROPERTY OWNERS:
1. DEPARTMENT OF NATURAL RESOURCES (DNR)
APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

SUCIA ISLAND STATE PARK PUMPOUT INSTALLATION

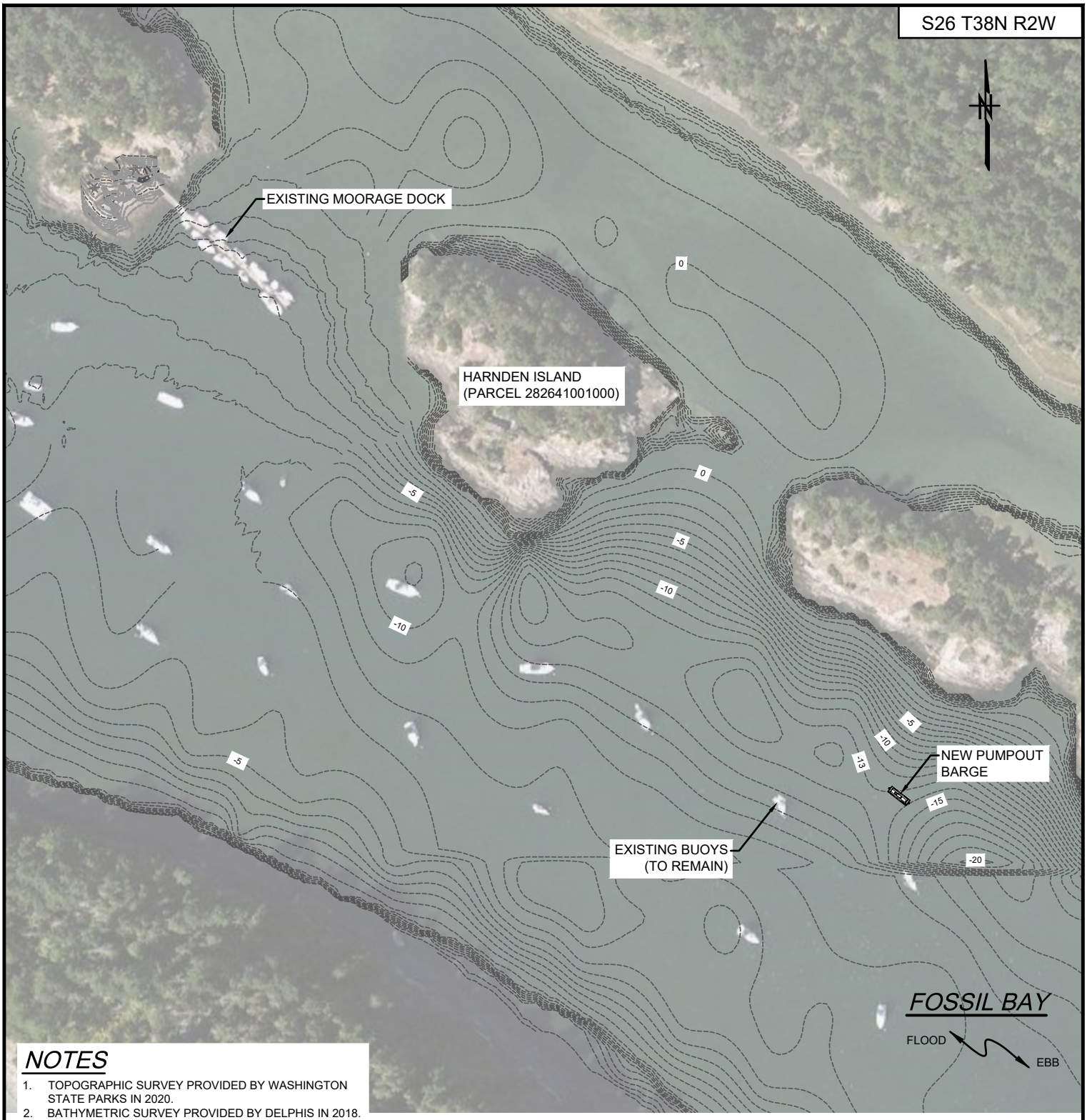
VICINITY MAP

PROPOSED: PUMPOUT INSTALLATION

IN: WASHINGTON
AT: SUCIA ISLAND
COUNTY: SAN JUAN

SHEET 1 OF 5 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Sucia Island Pumpout Permit - Cover.dwg DATE: 4/28/2021 USER: Tyler Morrison



NOTES

1. TOPOGRAPHIC SURVEY PROVIDED BY WASHINGTON STATE PARKS IN 2020.
2. BATHYMETRIC SURVEY PROVIDED BY DELPHIS IN 2018.
3. HORIZONTAL DATUM IN WASHINGTON STATE PLANE, NORTH ZONE, US FT.
4. VERTICAL DATUM IN MEAN LOWER LOW WATER.
5. NO BENCHMARKS EXIST IN THE VICINITY.

LEGEND

------ -10 ------ EXISTING CONTOUR

SITE PLAN

PROPOSED

25'

0 50'

DRAFT
PERMIT SET

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

SUCIA ISLAND STATE PARK PUMPOUT INSTALLATION

OVERALL SITE PLAN

PROPOSED: PUMPOUT INSTALLATION

IN: WASHINGTON

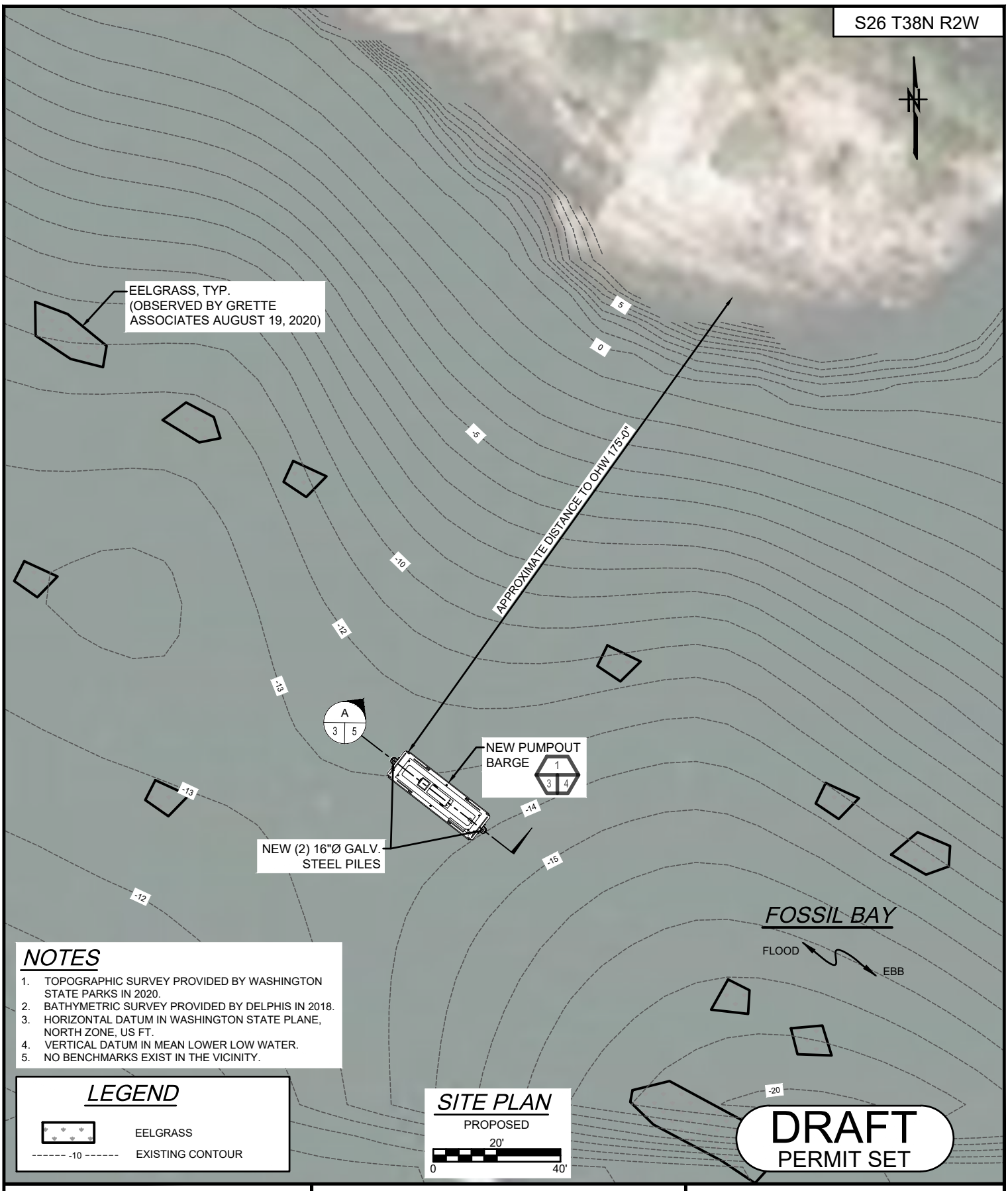
AT: SUCIA ISLAND

COUNTY: SAN JUAN

SHEET 2 OF 5 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519/L-C/Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Sucia Island Pumpout Permit - Site Plans, Sections, and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

S26 T38N R2W



NOTES

1. TOPOGRAPHIC SURVEY PROVIDED BY WASHINGTON STATE PARKS IN 2020.
2. BATHYMETRIC SURVEY PROVIDED BY DELPHIS IN 2018.
3. HORIZONTAL DATUM IN WASHINGTON STATE PLANE, NORTH ZONE, US FT.
4. VERTICAL DATUM IN MEAN LOWER LOW WATER.
5. NO BENCHMARKS EXIST IN THE VICINITY.

LEGEND

EELGRASS

------ -10 ------ EXISTING CONTOUR

SITE PLAN

PROPOSED

20'

0 40'

DRAFT
PERMIT SET

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS

HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT

VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)

ADJACENT PROPERTY OWNERS:

1. DEPARTMENT OF NATURAL RESOURCES (DNR)

APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

SUCIA ISLAND STATE PARK PUMPOUT INSTALLATION

PROPOSED PUMPOUT BARGE SITE PLAN

PROPOSED: PUMPOUT INSTALLATION

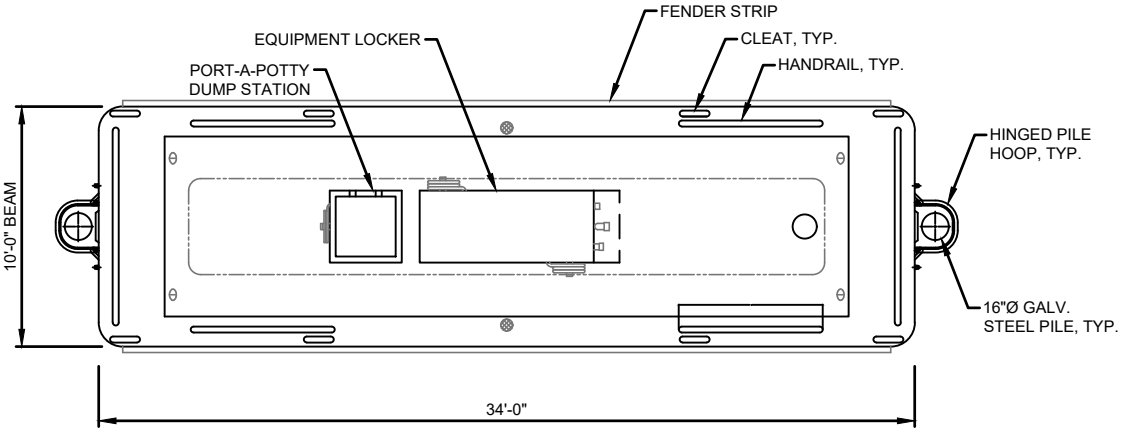
IN: WASHINGTON

AT: SUCIA ISLAND

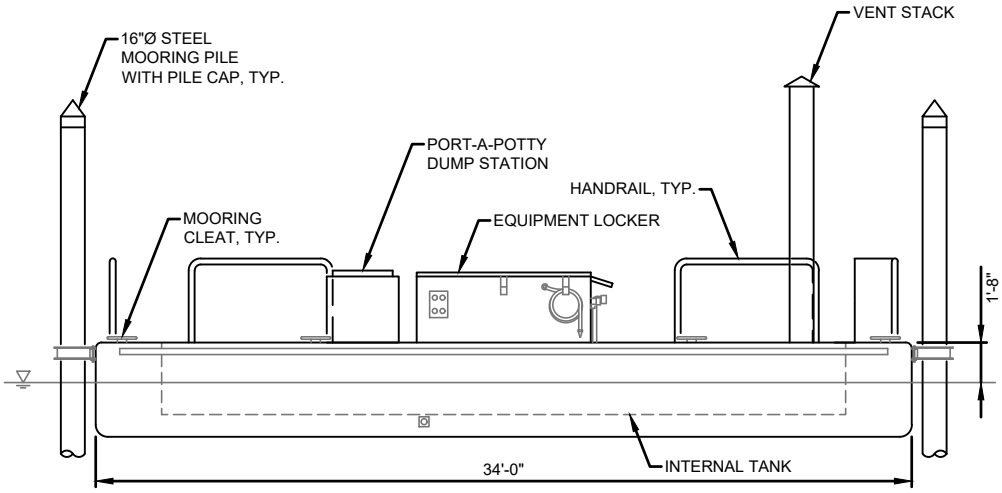
COUNTY: SAN JUAN

SHEET 3 OF 5 DATE: 4/28/21

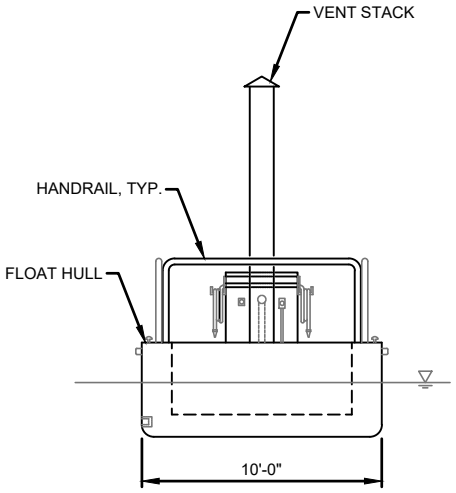
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PLAN



ELEVATION



SIDE

DETAIL - PUMPOUT BARGE

1 / 3 4

4'

0 8'

DRAFT
PERMIT SET

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS
HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)
ADJACENT PROPERTY OWNERS:
1. DEPARTMENT OF NATURAL RESOURCES (DNR)
APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

SUCIA ISLAND STATE PARK PUMPOUT INSTALLATION

PROPOSED PUMPOUT BARGE DETAILS

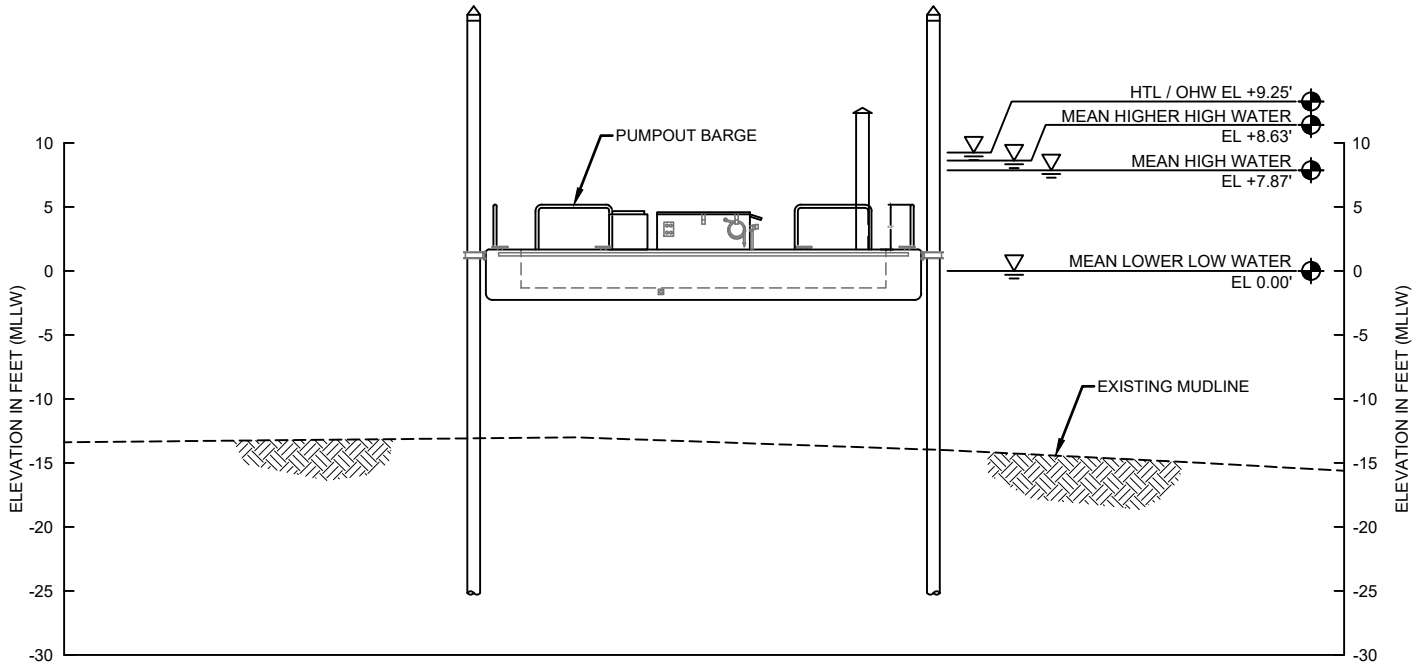
PROPOSED: PUMPOUT INSTALLATION

IN: WASHINGTON
AT: SUCIA ISLAND
COUNTY: SAN JUAN

SHEET 4 OF 5 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Sucia Island Pumpout Permit - Site Plans, Sections, and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

S26 T38N R2W



DRAFT
PERMIT SET

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS
HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)
ADJACENT PROPERTY OWNERS:
1. DEPARTMENT OF NATURAL RESOURCES (DNR)
APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

SUCIA ISLAND STATE PARK PUMPOUT INSTALLATION

PROPOSED PUMPOUT BARGE PROFILE

PROPOSED: PUMPOUT INSTALLATION

IN: WASHINGTON
AT: SUCIA ISLAND
COUNTY: SAN JUAN

SHEET 5 OF 5 DATE: 4/28/21

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/Sucia Island Pumpout Permit - Site Plans, Sections, and Details.dwg DATE: 4/28/2021 USER: Tyler Morrison

Attachment 10

San Juan County

Shoreline Substantial Development Permit

Landuse-22-0019

(Alternate Bid Item A1)

Before Hearing Examiner
Gary N. McLean

BEFORE THE HEARING EXAMINER
FOR SAN JUAN COUNTY

In the Matter of the Shoreline Substantial Development Application filed by **WASHINGTON STATE PARKS AND RECREATION,** Applicant, *[Project: Construction/installation of a floating sewage pump-out station in Fossil Bay on Sucia Island, tax parcel number 282531001000]*	**File No. LANDUSE-22-0019** **FINDINGS OF FACT, CONCLUSIONS OF LAW AND DECISION APPROVING SHORELINE SUBSTANTIAL DEVELOPMENT PERMIT**

S.J.C. DEPARTMENT OF
JUL 29 2022
COMMUNITY DEVELOPMENT

I. SUMMARY OF DECISION.

The requested Shoreline Substantial Development Permit submitted on behalf of Washington State Parks and Recreation is approved, subject to conditions.

The proposed project is subject to compliance with all applicable development, design, building code, engineering, and other regulations, including without limitation those requiring verification of performance, inspections, monitoring, and maintenance associated with conditions or mitigation measures that might be imposed consistent with this Decision or any subsequent approval, or authorization issued by any state agency or county department with jurisdiction over a particular aspect of the Project as on-site work unfolds.

II. RELEVANT CODE PROVISIONS.

Shoreline Regulations: The County's Shoreline Master Plan/Program (SMP) is comprised of Chapter 18.50 of the San Juan County Unified Development Code (UDC), together with Element 3 of the County's Comprehensive Plan, the official maps and common descriptions of shoreline designation boundaries that do not follow property lines (Ordinance

1-2016, Exhibit D), Section 2(B) Figures 130-6, 130-7 of the Eastsound Subarea Plan, SJCC 18.30.480, the Eastsound Waterfront Access Plan, and SJCC 18.80.110. *See SJCC 18.50.020(A).*

Circumstances that trigger requirement to obtain a Shoreline Substantial Development Permit: "Substantial Development" is defined in RCW 90.58.030(3)(e) and SJCC 18.20.190, and means any development proposed in the shoreline areas of San Juan County of which the total cost, or fair market value, exceeds the dollar threshold established by the Washington State Office of Financial Management (RCW 90.58.030(3)(e)) or any development which materially interferes with the normal public use of the water or shorelines of the state, except for the exemptions specified in WAC 173-27-040 or Chapter 18.50 SJCC. SJCC 18.50.060(A) and the Table at SJCC 18.50.600 mandates that the shoreline modification project proposed by the applicant, which includes construction/installation work in the waters of the state, specifically in Fossil Bay, an area with a Conservancy shoreline designation, requires a Shoreline Substantial Development Permit. There is no dispute that this project requires a substantial development permit.

Approval Criteria for Shoreline Substantial Development Permits: The procedures for review of shoreline permit applications are contained in Chapter 18.80.110 of the county's code, with the Criteria for Approval of Shoreline Substantial Development Permits found in SJCC 18.80.110.8, which reads as follows:

> A. A shoreline substantial development permit will be granted by the County if the applicant demonstrates the proposal is:
>
> 1. Consistent with the policies of the SMA, Chapter 90.58 RCW and Chapters 173-26 and 173-27 WAC, as amended;
> 2. Consistent with the policies and regulations of this SMP;
> 3. Consistent with other applicable sections of this code; and
> 4. Consistent with the goals and policies of the Comprehensive Plan.
>
> B. The conditions specified by the decision-maker to make the proposal consistent with the SMP and to mitigate or avoid adverse impacts to shoreline ecological functions will be attached to the permit.

Jurisdiction: Under SJCC 18.80.020, at Table 8.1, the Hearing Examiner is given the authority to hold open-record pre-decision public hearings and issue decisions regarding shoreline permits, including shoreline substantial development permits, shoreline conditional use permits, and shoreline variances. Under SJCC 18.80.110.5(B)(1), the Hearing Examiner is given the authority to hear and approve, approve with conditions, or deny shoreline substantial development permits following receipt of the recommendations of the director, based upon the criteria found in SJCC 18.80.110.8, as set forth above.

Burden of Proof: Under SJCC 18.80.010(A), "Shoreline Permits" are specifically listed as "Project Permits" covered by the provisions of SJCC Chapter 18.80 re: application, notice, review and appeal requirements for the County's Unified Development Code, which is found in Title 18 of the SJCC and includes Chapter 18.50, the County's Shoreline Master Program. SJCC 18.80.040(B) reads as follows:

> *"[t]he burden of proof is on the project permit applicant. The project permit application must be supported by evidence that it is consistent with the applicable state law, County development regulations, the Comprehensive Plan, and the applicant meets his burden of proving that any significant adverse environmental impacts have been adequately analyzed and addressed."*

Standard of Review: SJCC 2.22.210(H) explains that: "for an application to be approved, a preponderance of the evidence presented at the hearing must support the conclusion that the application meets the legal decision criteria that apply."

Filing with the Department of Ecology; no construction allowed until appeal periods (and any appeals) have concluded: Finally, if the Examiner approves or denies the requested Shoreline Substantial Development Permit, such decision must be forwarded to the Department of Ecology, for state review and any appeals of the Shoreline Permits, in accord with SMC 18.80.110(G)(4) and Washington Shoreline Management regulations found in WAC 173-27-130. If approved, WAC 173-27-190 mandates that all shoreline permits for a substantial development, conditional use or variance, issued by local government shall contain a provision that construction pursuant to the permit shall not begin and is not authorized until twenty-one days from the date of filing as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).

III. RECORD AND EXHIBITS.

Copies of all materials in the record and a digital audio recording of the open-record hearing conducted for this application are maintained by the County and may be requested or reviewed by contacting the Community Development Department during regular business hours. Given the ongoing Covid-19 public health considerations, the hearing occurred on May 25, 2022, using an online hearing platform coordinated by county staff. All people who appeared during the course of the hearing and were recognized to offer comments regarding this application provided their testimony under oath, as administered by the hearing examiner.

Colin Maycock, the designated County Planner assigned to review the pending application, appeared at the hearing and summarized the Staff Report and its recommendation of approval, subject to conditions of approval. Mr. Maycock noted now the proposed pump-out facility should improve existing conditions in the Fossil Bay, where some boaters may be discharging sewage into the water because pump-out facilities are not readily available in the area. The applicant, Washington State Parks and Recreation, was represented by Jonathan Gibson, who accepted the Staff Report analysis and recommended conditions without objection or requests for changes. No one appeared during the public hearing or offered written comments opposing the requested permit. There is no evidence in this record that would serve as a basis to deny the requested shoreline permit.

The Staff Report, prepared by Mr. Maycock, with 20 pages, dated May 5, 2022, with 10 separate documents as numbered and identified on page 20 of the Staff Report, are all included as part of the Record for this matter. During the review period to draft this Decision, the Examiner noted that certain documentation regarding marine mammal monitoring during construction appeared to be missing from the materials, so Staff reviewed the project file and transmitted copies of two additional items earlier in July that are now included in the record: Ex. 11, a Marine Mammal Monitoring Plan for this project, dated March 2022, prepared for Washington Parks by Grette Associates, Environmental Consultants, which includes specific monitoring and protective measures to be following during construction related work at the site; and Ex. 12, a Marbled Murrelet Monitoring Plan prepared by the same team of consultants for this project. With the addition of these two items, the record is now closed and this Decision is in order.

Upon consideration of all the evidence, testimony, expert consultant studies and reports, codes, policies, regulations, and other information contained in the record, the undersigned Examiner issues the following findings, conclusions and Decision.

IV. FINDINGS OF FACT.

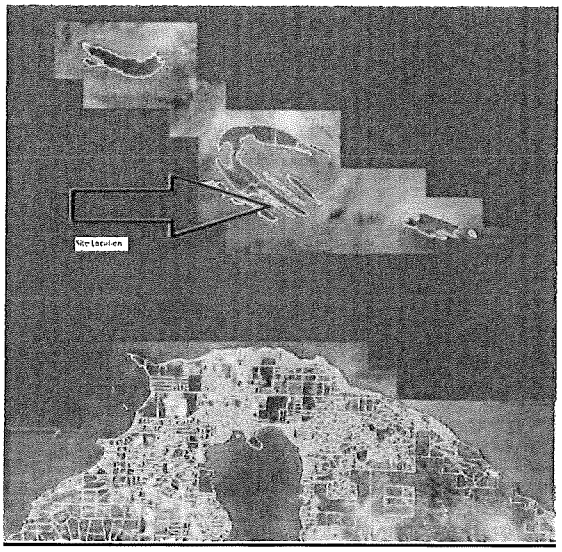
Based on the record, the Examiner issues the following findings of fact:

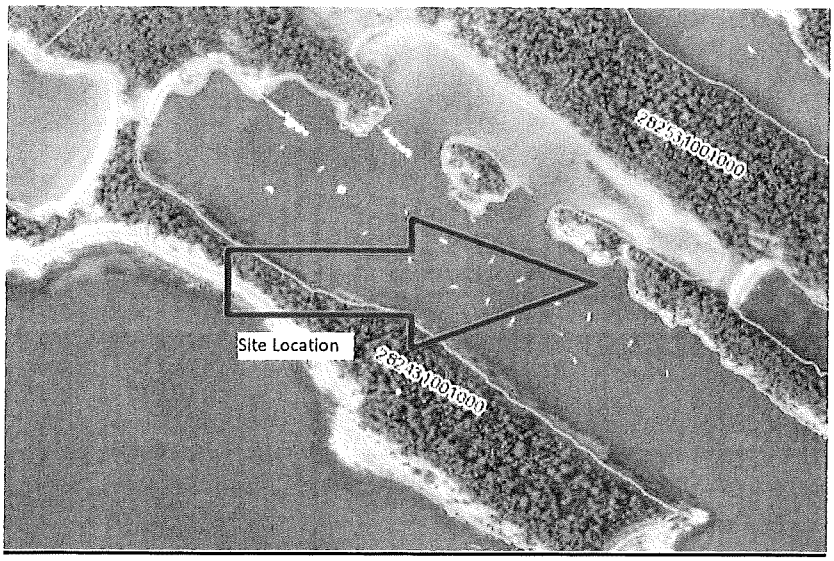
1. Any statements contained in a previous or following sections of this Decision that are deemed to be Findings of Fact are hereby adopted as such and incorporated by reference.

2. Washington State Parks and Recreation (Washington Parks) is the applicant in this matter. The applicant currently owns, operates, and maintains public moorage buoys and facilities in Fossil Bay, on Sucia Island, in the northernmost portion of San Juan County. The entirety of Sucia Island makes up the Sucia Island Marine State Park. There is no private property located within 300 feet of Sucia Island, simplifying regular noticing requirements for this proposal. *(Staff Report, page 4).*

3. This application is for a Shoreline Substantial Development Permit to install a floating sewage pump-out station within the waters of Fossil Bay. Fossil Bay is heavily used by recreational boaters during the Summer season, so the need for appropriate sewage disposal facilities is easily understood. The Examiner is familiar with existing conditions, as he has personally visited Fossil Bay, moored along a buoy in the bay, and walked the beaches surrounding the project site.

4. Sucia Island, and the project site, Fossil Bay, lies north of Orcas Island, in San Juan County, Washington, as shown on the following aerial photos republished from the Staff Report:





5. The purpose of the project is to reduce the adverse impacts of illegal dumping of sewage by recreational boaters and improve Washington State Park services to the public by creating a public facility allowing recreational boaters to offload black sewage. *(Staff Report; Application materials).*

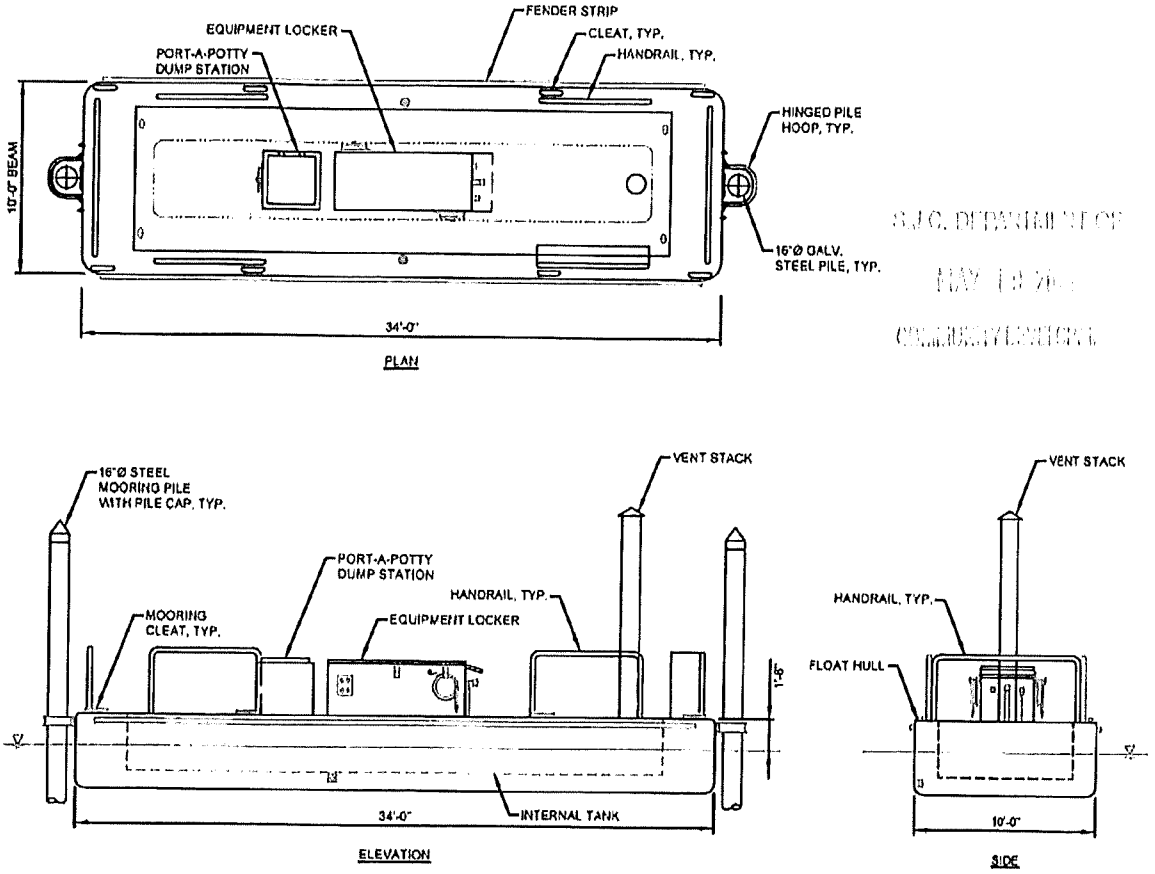
6. The project includes the construction of a 10' X 34' moorage float, anchored by two 16-inch galvanized piles. The float will contain a 3,000 gallon double walled storage tank. The float will be approximately 175 feet offshore and located in water with a MLLW depth of -9.25 ft. The pump out float will be serviced by State Parks and the sewage will be transported to a state certified sewage treatment facility by a private vendor. *(Staff Report; Application materials).*

7. The following illustration, provided on page 3 of the Staff Report, depicts the proposed pump-out facility and its principal elements:

//

//

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8. A vibratory hammer will be used to install the two new galvanized steel pilings. Given state and County regulations and policies implemented to protect marine mammals and other wildlife from potential adverse impacts associated with pile installation work, qualified wildlife consultants generated monitoring plans with specific recommendations that are included as Conditions of Approval for this permit. *(See Exs. 11 and 12, and additional Conditions of Approval added by the Examiner).*

9. The Staff Report, on page 3, summarizes the project history associated with this application, including the preapplication meeting, initial review comments by Staff *(Ex. 1)*, submittal of application materials *(Ex. 2)*, resulting in a determination that the application materials were complete for purposes of review and vesting in March of this year. The Staff Report confirms that all public notice requirements were satisfied for this application. *(Ex. 4, confirmation of notice materials).*

SEPA

10. The applicant is a large State agency and elected to serve as lead agency for purposes of satisfying all SEPA review and notice requirements, in accord with applicable law. Based on the environmental checklist, application materials, and reports, Washington State Parks, the entity serving as the SEPA lead agency, issued a Determination of Non-Significance for the pending proposal, a copy of which is included in the record as *Ex. 3.* The SEPA determination was published on or about January 5, 2022. *(Staff Report, page 4; Ex. 3).*

11. Throughout the public hearing process, no one submitted any written comments or offered any testimony that would question the SEPA DNS issued for this project, and no one provided any environmental information that would warrant further SEPA review for the applicant's proposal.

No comments through public review process to challenge this application

12. Throughout the public notice and public hearing process for this Shoreline Permit application, no one submitted written comments or testimony to rebut or challenge any of the findings, analysis, and recommended conditions of approval that are provided in the Staff Report.

13. The unrebutted Staff Report and exhibits included in the record for this matter constitute credible, substantial, and unchallenged evidence demonstrating how this proposal is consistent with all State and County Shoreline codes and policies, and satisfies all applicable approval criteria for the requested permit.

14. The substantial evidence in this record supporting issuance of this requested permit includes, but is not limited to, the detailed "Consistency Analysis" on pages 4-17 of the Staff Report, which addresses the following policies and regulations set forth in various provisions of the San Juan County Code:

Applicable Policies and Regulations:

SJCC 18.35.110-140 Fish and Wildlife Habitat Conservation Areas
SJCC 18.50.060 Shoreline Modification regulations
SJCC 18.50.120 General environmental protection
SJCC 18.50.130 Critical areas
SJCC 18.50.240 Over the water structures including boating facilities, docks, piers, mooring buoys and mooring and recreational floats
SJCC 18.50.250 Boating facilities – general
SJCC 18.50.330 Boating facilities, docks, piers, floats, and ramps – submittal requirements
SJCC 18.80.030 Public Notice of Applications and Comment

SJCC 18.80.050 SEPA Implementation Rules
SJCC 18.80.110 Shoreline Permit and Exemption Procedures

15. As noted in the Staff Report, the County received no comments from members of the general public regarding this project. There are no private property owners within 300 feet of remote Sucia Island. No park customers/users, recreational boaters, or local environmental groups, submitted any comments questioning or opposing this project.

16. During the public hearing, the Examiner received sworn testimony from Mr. Maycock, the County's planner responsible for reviewing the application materials and generating the Staff Report recommending approval of this application, subject to conditions, the applicant's hearing representative, Jonathan Gibson, spoke to the merits of the project, and accepted the Staff Report and recommended conditions without objection. All witnesses were credible and answered questions from the Examiner with reference to relevant facts or exhibits included in the record.

17. The Staff Report, the application materials, the SEPA checklist and SEPA threshold determination issued for this proposal, and supporting expert consultant reports, all comprise far more than a preponderance of unrebutted evidence showing how this application meets all applicable approval criteria for the requested shoreline permit. There is no evidence in this record that would serve as a basis to deny the pending request for a shoreline permit.

No net loss; Instead, the proposal should result in benefits to the affected area.

18. There is far more than a preponderance of credible and unrebutted evidence in the record and application materials to demonstrate that no net loss of shoreline ecological functions will occur as a result of this project. In fact, based on a preponderance of environmental documentation in this project file, the Examiner finds and concludes that this project will actually benefit, rather than harm, the shoreline ecological functions by helping to reduce illicit sewage discharges made into the waters of Fossil Bay.

19. The installation of a floating sewage pump-out station within the waters of Fossil Bay will positively impact the shoreline functions in this area. *(Staff Report, pages 8-9).*

20. There are no eelgrass beds or macroalgae beds within the area to be affected by this project. Exhibit 9, page 3, states, "Eelgrass was not noted within the potential footprint of the pump-out float and no eelgrass was observed within 25 feet surrounding the pump-out float footprint."

21. Sucia Island State Park is accessible only by boat, and in 2020, it hosted nearly 100,000 visitors. Currently, the nearest available pump-out station is located on northwest

Orcas Island, approximately five nautical miles from Sucia Island. *(Staff Report, page 13).*

22. As explained in the Staff Report, marine vessel sewage can contain harmful bacteria and viruses, toxic chemicals and nutrients. The release of boater sewage in Puget Sound threatens the health of Puget Sound and its ability to support healthy wildlife and human communities. If released, sewage can negatively impact water quality. Water contaminated with raw sewage may result in:

a. closures of recreational and commercial shellfish harvesting;
b. closures or constrained recreation along beaches;
c. harmful algae blooms; and
d. conditions resulting in low dissolved oxygen.

23. In an effort to improve water quality, the Puget Sound No Discharge Zone (WAC 173-228) became effective on May 10, 2018. This rule bans the discharge of any type of sewage in Puget Sound (in Washington state). *(Staff Report, page 13).*

24. The Staff Report credibly explains that the installation of the pump-out float, by reducing the negative impacts of illegal sewage dumping, in effect, makes the development self-mitigating.

25. The applicant's proposed project supports the healthy function of natural ecosystems and critical areas while ensuring there is no net loss of ecological function by the proposed placement of the floating pump-out improvement, *(See Exhibit 5, Section B)*, through removal of raw black sewage from the environment by providing an environmentally responsible place for recreational boaters to dump waste. *(Staff Report, page 17; Site Visit).*

The Record includes a preponderance of evidence that the application meets requirements to approve the requested Shoreline Permit.

26. Based on this record, and as conditioned below, there is no evidence and an absence of legal authority to support denial of the proposed shoreline substantial development permit. No one offered testimony or written comments that would refute the analysis and findings regarding the project's compliance and consistency with relevant Shoreline Codes, plans and policies, Comprehensive Plan Polices, or County development regulations, as set forth in the Staff Report issued for this project. An unrebutted preponderance of evidence in the record fully supports the analysis, findings, and recommended conditions contained in the Staff Report. Additional conditions have been added by the Examiner, all of which are supported by evidence in the record.

27. A preponderance of credible evidence in the record, including without limitation the analysis provided in the Staff Report, and the unchallenged DNS issued for the project, establishes that the applicant has met its burden to prove that the pending application satisfies all criteria for approval of a Substantial Development Permit, found at SJCC 18.80.110(H). Specifically, the applicant has met its burden to establish that: a) The proposal is consistent with the policies of the Shoreline Management Act and its implementing regulations, Chapter 90.58 RCW and Chapter 173-27 WAC, as amended; b) The proposal is consistent with the policies and regulations of the Shoreline Master Program in Chapter 18.50 SJCC; c) The proposal is consistent with applicable provisions of SJCC chapter 18.80 and other applicable sections of the SJCC; and d) The proposal is consistent with the goals and policies of the Comprehensive Plan. *(See Staff Report, analysis of applicable shoreline code provisions on pages 4-17).*

28. All findings, statements of fact, and analysis provided in the Staff Report are incorporated herein as findings of fact by the undersigned hearing examiner, except as modified herein.

29. Consistent with SJCC 18.80.110(H)(2), the Examiner has conditioned approval of the project to make the proposal consistent with the shoreline master program and to mitigate or avoid adverse impacts.

V. CONCLUSIONS OF LAW.

1. The record includes a preponderance of evidence establishing that the pending Shoreline Substantial Development Permit application satisfies all applicable approval criteria.

2. As conditioned, professional design recommendations and environmental reports show that the requested shoreline permit will not result in any net loss of shoreline ecological functions. The requested permit is fully supported by evidence in the record and meets all applicable approval criteria. Following notice of the application and DNS issued for the project, there were no opposing comments or challenges made to the SEPA threshold determination issued for this proposal. Therefore, the requested shoreline permit should be approved.

3. Any finding or other statement contained in a previous section of this Decision that is deemed to be a Conclusion of Law is hereby adopted as such and incorporated by reference.

VI. DECISION, CONDITIONS OF APPROVAL.

Based on the record, and for the reasons set forth above, the Shoreline Substantial Development Permit for the Washington State Parks and Recreation project to install a floating sewage pump-out station in Fossil Bay on Sucia Island is approved, subject to the following Conditions of Approval, which are attached hereto and incorporated herein by reference.

ISSUED this 29th Day of July, 2022

Gary N. McLean
Hearing Examiner

CONDITIONS OF APPROVAL

Washington State Parks and Recreation
Floating Sewage Pump-Out Station Project

Shoreline Substantial Development Permit
File No. LANDUSE-22-0019
Location:
Fossil Bay, on Sucia Island
Parcel No. 282531001000

Based on the Record, and under authority of applicable county code provisions, the Examiner imposes the following Conditions of Approval on the above-referenced permit. The terms Applicant, Applicants, Permittee, or Permittees should be read to have the same meaning.

This permit authorizes the following Project work on the above-identified property, substantially as described in the Staff Report and application materials, except as the same may be modified by the following conditions:

Project: Installation of a floating, off-shore sewage pump-out facility, including the following elements:

1. The installation of two 16-inch diameter piles approximately 175 feet from the coast of Sucia Island in Fossil Bay as shown on the approved site plan, included in the record as part of Exhibit 6.

2. The installation of one 10' X 34' aluminum framed, double hulled, 3,000-gallon sewage storage tank. The storage tank to be serviced by Washington State Parks or its designees regularly.

A. All development shall be consistent with the approved site plan, included in the record as part of **Exhibit 6.**

B. The contractor shall comply with permit conditions, and all applicable County, State and Federal regulations.

C. The pump-out float shall be located in -14 feet MLLW water approximately 175 feet from shore and located to avoid eelgrass.

D. Pile installation shall take place during daylight hours.

E. If visible turbidity exceeds the 150-foot allowable temporary mixing zone during rock socket drilling, the contractor shall install a silt curtain. The silt curtain shall not be removed until suspended solids have settled out of the water column

F. Marine mammal monitoring shall be conducted during vibratory pile driving or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

G. Using a pre-fabricated float minimizes the amount and duration of aquatic construction.

H. Pump-out design and operation BMPs shall include leak detection, double wall hull design for the sewage storage, an on-unit spill kit, and a warning light to notify users if the tank is full or leaking.

I. Operations will be stopped temporarily if listed species are observed as injured, sick, or dead in the project area, to evaluate whether additional listed species are present and to assess whether operations may continue without further impact. NOAA Fisheries law enforcement will be notified, and fish will be handled with care to ensure effective treatment or analysis of cause of death or injury.

J. The contractor shall have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.

K. The Contractor shall be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.

L. Corrective actions shall be taken in the event of any discharge of oil, fuel, or chemicals into the water (WAC 173-201A), including:

- In the event of a spill, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup includes proper disposal of any spilled material and used cleanup material.

- The cause of the spill shall be assessed, and appropriate action shall be taken to prevent further incidents or environmental damage.

M. Work barge(s) shall not ground out during any construction activities.

N. Excess or waste materials shall not be disposed of waterward of MHHW or allowed to enter waters of the state.

O. The contractor shall be required to capture any debris associated with Project activities.

P. All in-water and over-water work shall be conducted using equipment staged from a floating work barge platform.

Q. Pilings shall have a minimum vertical clearance of one foot above the extreme high water of marine shorelines.

R. Timing restrictions specifying that construction must occur when juvenile salmonids are absent or present in very low numbers in the adjacent waterbody shall be strictly observed. All timing restrictions be established by WDFW, the USACE, NOAA Fisheries, or USFWS shall be strictly observed (USACE permit and HPA).

S. Project construction shall be completed in compliance with WAC 173-201A.

T. Any discharge of oil, fuel or chemicals into state waters is prohibited (WAC 173-201A).

U. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall also be maintained to prevent vandalism (WAC 173-201A).

(Conditions added by the Examiner)

V. To ensure consistency with and enhance public awareness of Marine Mammal and other wildlife monitoring that must be undertaken in connection with this project – as required for similar private shoreline projects in other parts of the County – these conditions of approval mandate full compliance with all practices and recommendations included the Marine Mammal Monitoring Plan prepared for this project (included in the record as Ex. 11), as well as those included in the Marbled Murrelet Monitoring Plan prepared for this project (included in the Record as Ex. 12).

W. All construction activities shall be consistent with the approved site plan and compliant with San Juan County codes, state regulations, and federal law applicable to any aspect of the project.

X. The Permittee shall obtain any associated permit, lease, license, or approval required by any state, federal, tribal, or other regulatory body with jurisdiction over any aspect of the project. Any conditions of regulatory agency permits, leases, licenses, or approvals issued for any aspect of this project shall be considered conditions of approval for this permit and are incorporated herein by this reference.

Y. The Permittee shall comply with all professional report conclusions and recommendations submitted in connection with this Shoreline Permit and associated approvals issued by the San Juan County for this project, as approved, referenced, relied-upon, and/or modified by the County.

Z. Consistent with SJCC 18.80.110.G.5, construction or substantial progress toward construction of this Project must be undertaken within two years after the Washington Department of Ecology's date of filing. Substantial progress toward construction includes letting bids, making contracts, purchase of materials, utility installation and site preparation, but does not include use or development inconsistent with the SMP or the terms of permit approval. However, the two-year period does not include time when development could not proceed due to related administrative appeals or litigation, nor include time necessary to obtain other required permits for the project from state and federal agencies.

AA. Consistent with SJCC 18.80.110.G.6, all development authorized by this shoreline permit shall be completed within five years of the WDOE date of filing or the permit shall become null and void. A permittee may request a time extension before the permit expires by making a written request to the Director, stating the reasons. The hearing examiner will review the permit, and upon a finding of good cause:

a. Extend the permit for a period not to exceed one year; or
b. Terminate the permit.

BB. Consistent with WAC 173-27-190, it is expressly understood that construction pursuant to this permit shall not begin and is not authorized until twenty-one days from the date of filing with the Department of Ecology as defined in RCW 90.58.140(6) and WAC 173-27-130, or until all review proceedings initiated within twenty-one days from the date of such filing have been terminated; except as provided in RCW 90.58.140 (5)(a) and (b).

CC. Failure to comply with these Conditions of Approval shall be grounds for rescission of the Shoreline Permit. As provided in SJCC 18.80.110.12, "[a]ny shoreline permit may be rescinded by the issuing authority pursuant to RCW 90.58.140(8) upon finding that the permittee has failed to comply with the permit terms and conditions. In the event that the permittee is denied a required sewage disposal, building, or other permit necessary for the project in question, the shoreline permit may be rescinded by the decision-maker. If a shoreline permit is rescinded, the permittee shall be notified by certified mail. Copies of the final action will be filed with the WDOE."

Effective Date, Appeals

Hearing Examiner decisions become effective when mailed or such later date in accordance with the laws and ordinance requirements governing the matter under consideration. SJCC 2.22.170. Before becoming effective, shoreline permits may be subject to review and approval by the Washington Department of Ecology, pursuant to RCW 90.58.140, WAC 173-27-130 and/or SJCC 18.80.110.

Decisions of the Hearing Examiner are final and not subject to administrative appeal to the San Juan County Council, unless the County council has adopted, by ordinance, written procedures for the discretionary review of such decisions. See Section 4.50 of the San Juan County Home Rule Charter and SJCC 2.22.100.

Depending on the subject matter, this decision may be appealable to the San Juan County Superior Court or to the Washington State Shorelines Hearings Board. State law provides short deadlines and strict procedures for appeals and failure to timely comply with filing and service requirements may result in dismissal of any appeal. See RCW 36.70C and RCW 90.58. Persons seeking to file an appeal are encouraged to promptly review appeal deadlines and procedural requirements and confer with advisors of their choosing, possibly including a private attorney.

Attachment 11

Marine Mammal Monitoring Plan

March 2022

(Alternate Bid Item A1)

WASHINGTON STATE PARKS
SUCIA ISLAND – FOSSIL BAY FLOATING PUMPOUT STATION INSTALLATION

MARINE MAMMAL MONITORING PLAN

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

MARCH 2022

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

This Marine Mammal Monitoring Plan (MMMP) was developed to detect the presence of Endangered Species Act (ESA)- and Marine Mammal Protection Act (MMPA)-listed marine mammals (ESA: Southern Resident killer whales [SRKW] and humpback whales; MMPA: all other cetaceans, pinnipeds, and sea otters; "listed marine mammals" hereafter) before and during pile installation in Fossil Bay, Sucia Island, Washington. This MMMP will be implemented in connection with the Sucia Island Floating Pumpout Station Installation Project (Project) on behalf of the Washington State Parks and Recreation Commission.

The Project will require installation of two new pile on either end of the floating barge.

2. VISUAL SURVEY METHODS

Visual observations will be used to detect the presence of listed marine mammals. Due to the surface behavior of these marine mammals, it is possible to locate, identify, and follow marine mammal species using binoculars and other optical equipment. The largest monitoring zone extends approximately 15.1 km (9.4 miles) to the southeast of construction activity (see Figures 1, Figure 2, and Figure 3). Monitoring of the area of potential impacts will be conducted using binoculars (10 x 42 or similar) and the naked eye.

We propose the following measures to prevent disturbance to listed marine mammals within the observation area:

1) Qualified observers will be present at all times during pile driving activities. In order to be considered "qualified," the observers will meet the list of qualifications for marine mammal observers (Section 3).

    a. Impact pile driving: One observer will be stationed on the shoreline adjacent to the work area, at an elevated location with a good vantage point of Fossil Bay. The largest monitoring zone for impact pile driving is 159 m (522 ft; Figure 1).

    b. Vibratory pile driving: The area of ensonification will be monitored by three qualified observers. One observer will be stationed on the shoreline adjacent to the work area, at an elevated location with a good vantage point of Fossil Bay. A second observer will be stationed on a vessel to monitor the central third of the monitoring zone. A third observer will be stationed on the northeast coast of Orcas Island, or on a vessel in order to monitor the southeastern third of the monitoring zone. The largest monitoring zone for vibratory pile driving is 8,600 m (5.34 mi; Figure 2).

    c. Rock drilling: The area of ensonification will be monitored by four qualified observers. One observer will be stationed on the shoreline adjacent to the work area, at an elevated location with a good vantage point of Fossil Bay. A second observer will be stationed on a vessel to monitor the quarter of the monitoring zone extending southeast from the mouth of Fossil Bay. A third observer will be stationed at Clark Island Marine State Park looking west to monitor the portion of the monitoring zone west of Clark Island. A fourth observer will be stations at Clark Island Marine State Park looking south to monitor the southeastern quarter of the monitoring zone. The largest monitoring zone for rock drilling is 15,200 m (9.44 mi; Figure 3).

2) Observer(s) will contact the Orca Network by phone (1-866-672-2638) or by checking their Facebook page (per their recommendation) before vibratory or impact pile driving or rock drilling work begins for the day to get an update on the latest SRKW sightings data.

3) The observer will scan the visible waters within the potential impact area using binoculars (10 x 42 or similar) and the naked eye.

4) The waters will be scanned for 20 minutes prior to and during all pile driving or rock drilling activities. If listed marine mammals enter or are observed within the designated radius during the 20 minute clear, the observer(s) will notify the designated point of contact (inspector or contractor) and work will be delayed until the zone is clear. The monitoring zone will be considered clear when animals have not been sighted within the designated radius for 20 minutes, or when they are observed outside the radius.

5) The entirety of the largest monitoring zone must be visible to clear for operations. If visibility does not allow for clearing of the entire zone, start of operations must be delayed until the zone is visible. If vessels are being used, it is acceptable to traverse the monitoring zone until the entire monitoring zone has been observed. Once operations have commenced, if visibility of the injury zone is lost, operations must cease until visibility is restored. If visibility of the behavioral disturbance zone is lost due to weather, operations may continue as long as there is not a break in operations longer than one hour. If no noise has been introduced to the water from operations for longer than one hour, the zone must be cleared again prior to commencing work. If impact driving, a soft start will be used. Operations will not occur after dusk, except when approved by the agencies.

3. MINIMUM QUALIFICATIONS FOR MARINE MAMMAL OBSERVERS

Marine mammal monitors employed to implement the proposed MMMP shall meet the following minimum qualifications:

1) Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance. Use of binoculars may be necessary to correctly identify the target.

2) Experience and ability to conduct field observations and collect data according to assigned protocols (this may include academic experience).

3) Experience or training in the field identification of listed marine mammals.

4) Sufficient training, orientation or experience with the construction operation to provide for personal safety during observations.

5) Writing skills sufficient to prepare a report of observations that would include such information as the number and type of listed marine mammals observed; the behavior of listed marine mammals in the project area during construction, dates and times when observations were conducted; dates and times when in water construction activities were conducted; dates and times when listed marine mammals were present at or within the defined disturbance zone; dates and times when in water construction activities were suspended to avoid incidental harassment by disturbance from construction noise; etc.

6) Ability to communicate orally, by radio or in person, with project personnel to provide real time information on listed marine mammals observed in the area as necessary.

4. MONITORING ZONES

Figure 1. Project area and proposed observer location (yellow star) for impact pile driving operations. Monitoring zones for all marine mammals are shown at an example pile location; a second pile will be installed at the northwest end of the floating pumpout barge. See BE and JARPA figures for a detailed project description.

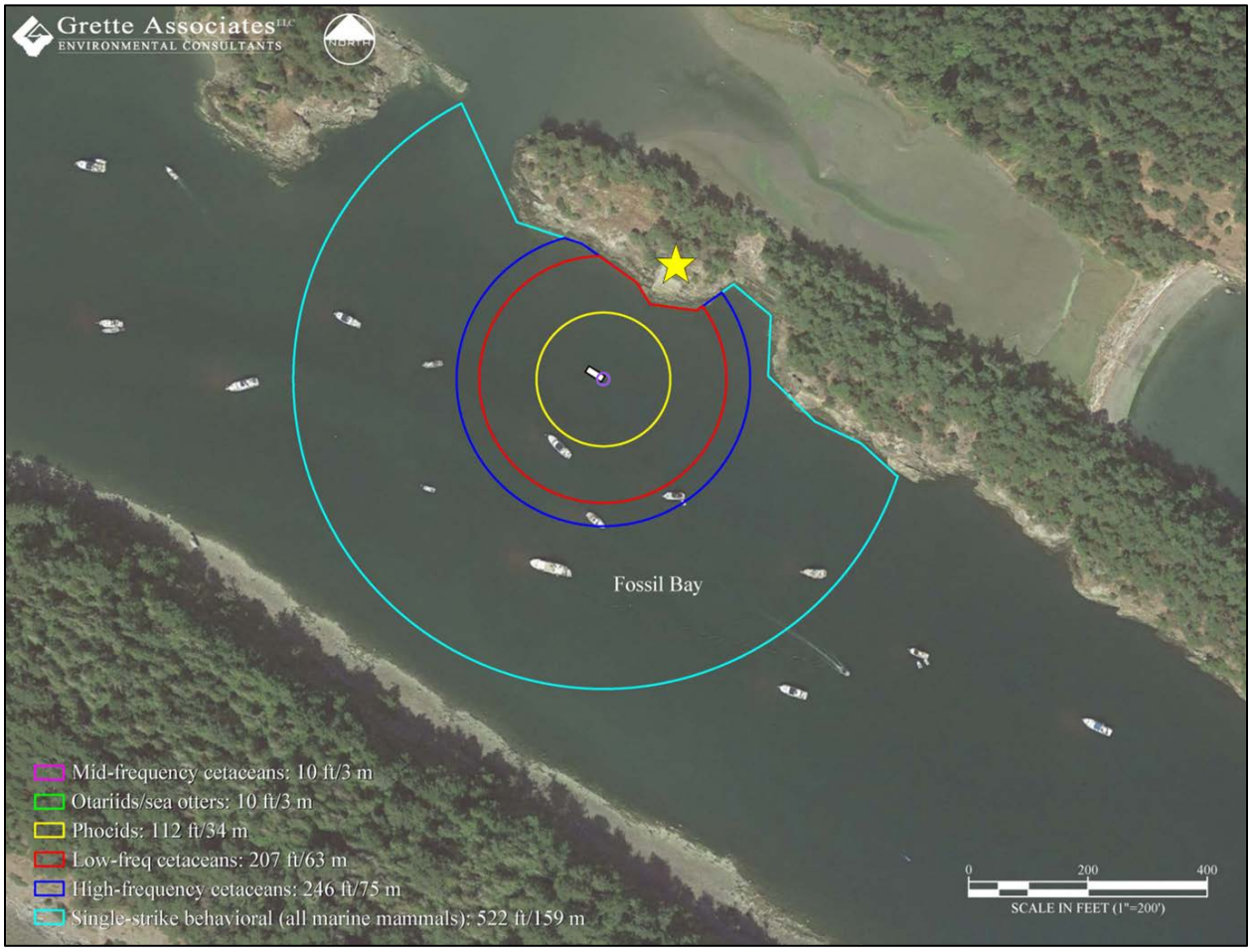
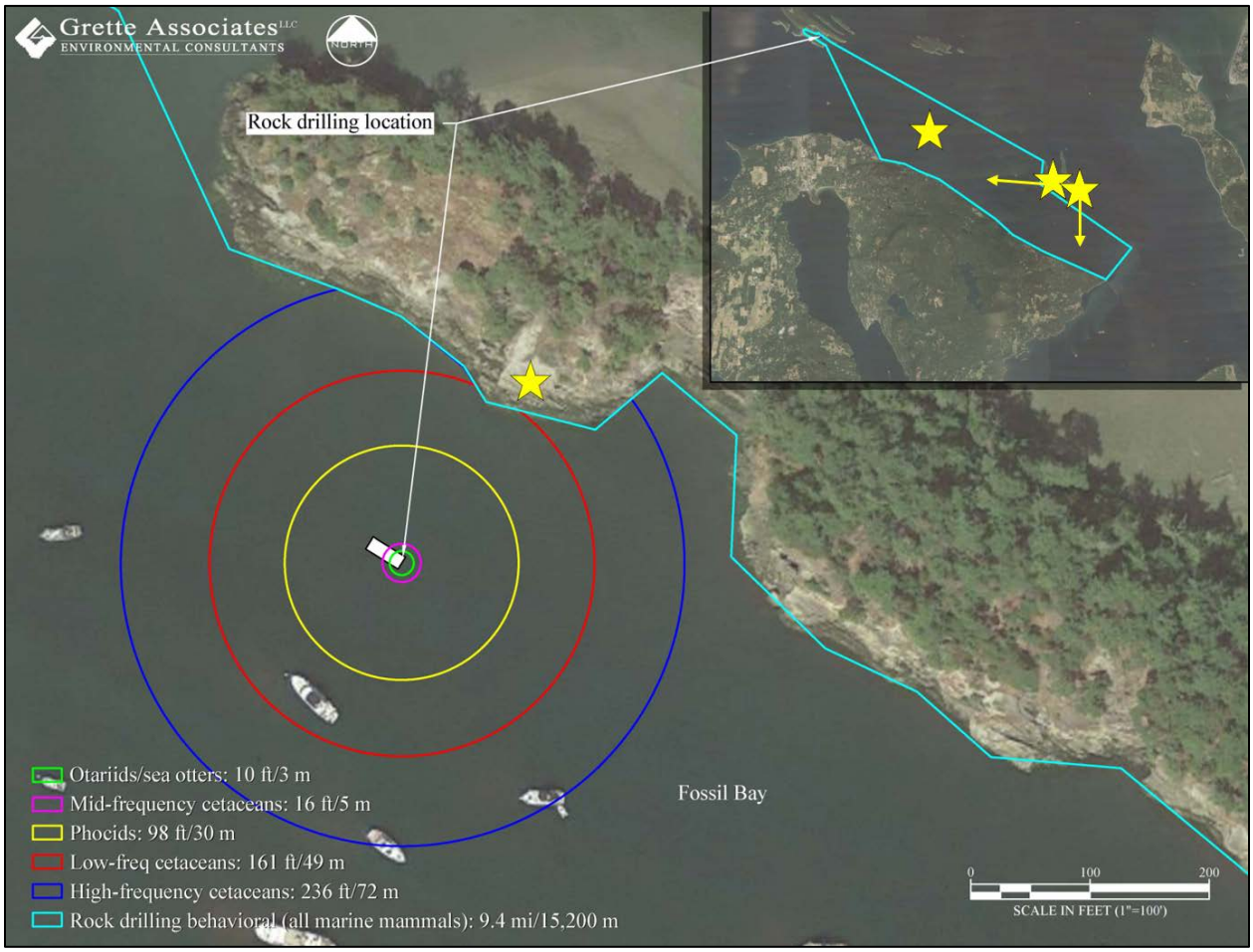


Figure 2. Project area and proposed observer locations (yellow stars) for vibratory pile driving operations. Monitoring zones for all marine mammals are shown at an example pile location; a second pile will be installed at the northwest end of the floating pumpout barge. See BE and JARPA figures for a detailed project description.



Figure 3. Project area and proposed observer locations (yellow stars) for rock drilling operations. Monitoring zones for all marine mammals are shown at an example pile location; a second pile will be installed at the northwest end of the floating pumpout barge. See BE and JARPA figures for a detailed project description.



Attachment 12

Marbled Murrelet Monitoring Plan March 2022

(Alternate Bid Item A1)

WASHINGTON STATE PARKS
SUCIA ISLAND – FOSSIL BAY FLOATING PUMPOUT STATION INSTALLATION

MARBLED MURRELET MONITORING PLAN

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

MARCH 2022

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

This Marbled Murrelet Monitoring Plan (Plan) was developed to facilitate detection of ESA-listed marbled murrelets before and during impact pile installation in Fossil Bay, Sucia Island, Washington, if deemed necessary. Monitoring would occur in connection with the Sucia Island Floating Pumpout Station Installation Project, to be conducted on behalf of the Washington State Parks and Recreation Commission. This Plan defines the barotrauma and auditory injury monitoring zones for marbled murrelets and proposes a monitoring station for marbled murrelet monitors. Attachment A: U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office Protocol for Marbled Murrelet Monitoring During Pile Driving Observation (USFWS Protocols) outlines the observation protocols, data collection methods, and reporting requirements that would be followed.

2. MONITORING ZONES

The project proposes to install two pile to support a pumpout float. The monitoring zone for both barotrauma and auditory injury is 1 m (3 ft; Figure 1). Because the zone is so small, marbled murrelets are unlikely to be present within the barotrauma/injury zones.

If monitoring is required, one vessel-based monitor will be onsite during impact pile driving. The vessel will be positioned so as to see the 1 m radius around the pile.

Figure 1. Aerial photo showing pile locations, monitoring zones, and proposed observer location (yellow star) for impact pile driving operations. Marbled murrelet barotrauma and auditory injury zones are shown (1 m radius for both).



3. ATTACHMENT A

U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office Protocol for Marbled Murrelet Monitoring During Pile Driving Observation

U.S. Fish and Wildlife Service – Washington Fish and Wildlife Office
Protocol for Marbled Murrelet Monitoring During Pile Driving (Revised 6/20/2012)

1.0 Objective

The intent of the monitoring protocol is to:

1. Comply with the requirements of the Endangered Species Act Section 7 consultation.
2. Detect all marbled murrelets (*Brachyramphus marmoratus*) (murrelets) within the monitoring area.
3. To minimize take of murrelets from both exposure to potentially injurious underwater sound pressure levels, and from the masking effects of in-air sound by communicating immediately with the pile driver operator.
4. Track incidental take exempted through the Incidental Take Statement found in the final Biological Opinion for the project so that the Lead Federal Action Agency will know when take occurs and/or when take exemptions might be exceeded.

2.0 Adaptive Approach

The individuals that implement this protocol will assess its effectiveness during implementation. They will use their best professional judgment throughout implementation and will seek improvements to these methods when deemed appropriate. Any modifications to this protocol will be coordinated between the Lead Federal Action Agency and the Washington Fish and Wildlife Office.

3.0 Monitoring

3.1 Activities to be Monitored

Application of this protocol is required as specified through the Endangered Species Act consultation process for individual projects. It may apply projects that involve either in-water impact pile driving when injurious sound pressure levels are expected and to projects that involve either vibratory or impact pile driving when in-air sounds are expected to cause masking effects.

3.2 Equipment

- Binoculars - quality 8 or 10 power;
- Spotting scopes
- Two-way radios with earpieces;

- range finder;
- Log books; and,
- Seabird identification guide.
- Life vest or other personal flotation device for observers in boats.
- Cellular phone to contact Lead Federal Action Agency, the Construction Contractor, or WFWO.

3.3 Locations

Proposed monitoring locations will be indicated on the Seabird Monitoring Site/Transect Identification Form. Due to limitations that could result from construction activity and/or other site specific variables, the monitoring locations may be refined in the field. In that case, final monitoring locations will be noted on an aerial photo or plan sheet, and documented in the final monitoring report.

3.4 Monitoring Techniques

One qualified biologist shall be identified as the Lead Biologist. The Lead Biologist has the authority to stop pile driving when murrelets are detected in the monitoring area or when visibility impairs monitoring. The Lead Biologist is responsible for:

- Ensuring consistency with the criteria in the consultation;
- Communicating with monitoring crew(s), the pile driver operator, and the WFWO; and
- Determining monitoring start and end times.

An appropriate number of qualified observers will be positioned on shore and in boats to provide adequate coverage of the monitoring area to ensure no murrelets are in the monitoring area. Monitoring will begin at least 30 minutes prior to commencement of pile driving. Each qualified observer will cover an on shore station or boat transect that is no more than 50 meters wide. All observers are responsible for:

- Understanding the requirements in the consultation and monitoring plan;
- Knowing the lines and method of communicating with the Lead Biologist and boat operator (if an observer on the boat);
- Evaluating the sea conditions and visibility;
- Calibrating their ability to determine a 50-meter distance at the beginning of each day. Calibration should be done using a range finder on a stationary object on the water; and
- Determining when conditions for monitoring are not met.

Monitoring will only occur when the sea state is at a Beaufort scale of 2 or less. The Beaufort scale is presented in Table 1 below. Observers should scan without a scope or binoculars; scopes and binoculars should only be used to verify species.

Observers will be positioned at on-shore vantage points to scan for murrelets within the monitoring zone. The on-shore vantage points will be on either side of the project to allow for an unobstructed view of the monitoring zone at all times. Observers in boats will conduct at least 2 full sweeps of the monitoring zone prior to pile driving to ensure

that no murrelets are in the monitoring zone. Each observer is responsible for scanning from 0° (straight ahead of bow) to 90° left or right, depending upon which side of the boat they occupy. Observers should occasionally scan past 90°, looking for murrelets that may have surfaced behind the boat. Boat speed should be no less than 5 knots and no greater than 10 knots. Observer coverage should not be compromised; therefore, observer's ability to scan dictates the speed of the boat. Boat operators will not function as murrelet monitors while operating the boat.

If no murrelets are within the monitoring zone, the observers will notify the Lead Biologist who will communicate to the pile driver operator that pile driving may commence. During pile driving the observers on shore will continue scanning the area for murrelets. The observers in the boats will patrol and scan the monitoring area. All observers will have two-way radios with earpieces to allow for effective communication during pile driving. If murrelets are seen within the monitoring zone during pile driving, the observers will immediately notify the Lead Biologist who will communicate to the pile driver operator that he/she is to cease pile driving. Pile driving will not resume until the murrelets have left the monitoring area and at least 2 full sweeps of the monitoring area have confirmed murrelets are not present.

When a murrelet is detected within the monitoring area, it will be continuously observed until it leaves the monitoring area. If observers lose sight of the murrelet, searches for the murrelet will continue for at least 5 minutes. If the murrelet is still not found, then at least 2 full sweeps of the monitoring area to confirm no murrelets are present will be conducted prior to resumption of pile driving.

It is the observer's responsibility to determine if he/she is not able to see murrelets and inform the Lead Biologist that the monitoring needs to be terminated until conditions allow for accurate monitoring.

Murrelets are especially vulnerable to disturbance when they are molting and flightless. Molting occurs after nesting in late summer, typically July through October in Puget Sound populations. Extra precaution should be exercised during this period.

Table 1 – Beaufort Wind Scale develop in 1805 by Sir Francis Beaufort of England (0=calm to 12=hurricane)

Force	Wind (knots)	Classification	Appearance of wind effects on the water	Appearance of wind effects on land	Notes specific to on-water seabird observations
0	<1	Calm	Sea surface smooth and mirror like	Calm, smoke rises vertically	Excellent conditions, no wind, small or very smooth swell. You have the impression you could see anything.
1	1-3	Light air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes	Very good conditions, surface could be glassy (Beaufort 0), but with some lumpy swell or reflection from forests, glare, etc.
2	4-6	Light breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move	Good conditions, no whitecaps, texture/lighting contrast of water make murrelets hard to see. Surface could also be glassy or have small ripples, but with a short, lumpy swell, thick fog, etc.
3	7-10	Gentle breeze	Large wavelets, crests beginning to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended	Surveys cease, scattered whitecaps present, detection of murrelets definitely compromised, a hit-or-miss chance of seeing them owing to water choppiness and high contrast. This could also occur at lesser wind with a very short wavelength, choppy swell.
4	11-16	Moderate breeze	Small waves 0.3 to 1.1m becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move	Poor conditions, end surveys, whitecaps abundant, sea chop bouncing the boat around, etc.
5	17-21	Fresh breeze	Moderate waves 1.1 to 2.0 m taking longer form, many whitecaps, some spray	Small trees begin to sway	

3.5 Limitations

No monitoring will be conducted during inclement weather that creates potentially hazardous conditions as determined by the Lead Biologist. Observers must have visibility to at least 50 meters. No monitoring will be conducted when visibility is significantly limited such as during heavy rain, fog, glare or in a Beaufort sea state greater than 2.

Glare can significantly limit an observer's ability to detect birds. Boat orientation may be adjusted to reduce glare (e.g. change direction or reduce width of transects to 50 meters with observers on only one side of boat). However, if visibility cannot be adjusted, monitoring and pile driving must cease until effective monitoring can be conducted.

Monitoring will not start until after sunrise and will cease prior to sunset. Specific timing restrictions may be in place per the consultation documents.

3.6 Documentation

The observers will document the number and general location of all murrelets in the monitoring area. Additional information on other seabirds and behaviors will be collected during documentation to improve general data knowledge on seabird presence and distribution as well as project impacts on various seabirds. Each observer will record information using the *Seabird Monitoring Data Collection Form* and reference completed *Seabird Monitoring Site/Transects Identification* and *Seabird Land-Based Monitoring Site Forms*. Forms are included in the Appendix.

Office Pre-Monitoring Set-up
Determine the number of monitoring stations or sites that will be needed to appropriately cover the monitoring area. Each observer is limited to 50 meters. Using the *Seabird Monitoring Site/Transects Identification Form*, insert an aerial photo of the project site and outline (box) each boat transect or land-based monitoring site. This demonstrates limitations of the site and areas where observers overlap. Identify on the aerial where each of the two types of monitoring (boat transects and land-based sites) will occur (See Example Dolphin Repair).

For each land-based monitoring site, draw the shoreline on the *Seabird Land-Based Monitoring Site Form*. Include in your drawing helpful information on the site such as visual limitations, structures that could be used by seabirds, or fishing piers, which may draw in feeding birds (i.e. gulls). The gridwork will allow the observer to quickly fill in location identifiers during monitoring.

Data Collection
All murrelets within transects or monitoring sites will be continuously documented during impacting activities. On the *Seabird Monitoring Data Collection Form*, document the time, number of birds, location, and observed behavior (See Example Dolphin Repair). Update the documentation when a murrelet changes behavior, changes location, or leaves the area. To the extent possible, the observers will also record each murrelet "take" incident observed, as defined in the final Biological Opinion. This may include obvious disturbance responses from pile driving or other construction activities, and injury or mortality that can be attributed to project-related activities.

Observers will also note all seabirds within the area that appear to be acting abnormally during any project activities. For example, if a seabird is listing, paddling in circles,

shaking head, or suddenly flushing at the onset of activity, note the information on the *Seabird Monitoring Data Collection Form.* For all birds except murrelets, providing a genus level (grebe, loon, cormorant, scoter, gull, etc) of identification is sufficient.

General information on other seabird behavior and distribution within the monitoring area will be collected. Every two hours at minimum during pile driving activities, the observer will document other seabird presence, behavior, and distribution in the monitoring area. This information can be collected more frequently. Many seabirds may linger in an area for several hours. If this is the case, note the time, species, and in the comments section identify that this is the same group from earlier and document any notable changes in behavior.

Under location, the data form indicates two separate options for documenting location. Land-based observers can fill out the land-based only or both land-based and boat sections. The land-based location will be based on the grid drawn out on the *Seabird Land-Based Monitoring Site Form* (See Example Dolphin Repair). For the boat transect locations, identify the distance in meters from the boat to the seabird and whether it is landward (toward activity) or seaward (away from activity).

Example Dolphin Repair

Seabird Monitoring Site/Transect Identification Form

Project Name

Dolphin repair

Monitoring Dates

November 8, 9, 10, 2012

Number of Monitoring Sites/Transects

4

Insert aerial photo of entire monitoring project area. Identify each monitoring site/station reflecting 50 meter zones for each observer. For example, if there are two observers on a boat transect, the box will be 100 meters wide. Some monitoring stations will overlap and should be indicated here.



Seabird Land-Based Monitoring Site Form

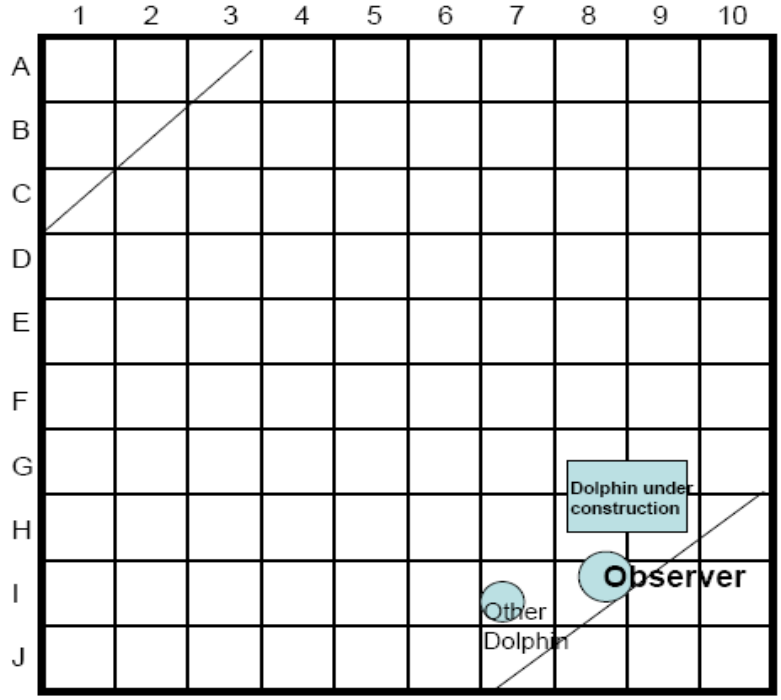
Project Name Dolphin Repair **Date** 11/10/12

Land Based Monitoring Site ID Station #4

For each monitoring station referenced in the main map grid, sketch the coastline using the 5 meter squares. Indicate the direction to where impacting activities are occurring.

Use space below to describe additional monitoring site details that may be pertinent such as other structures seabirds may use.

Observer located at end of terminal pier adjacent to construction activities. There is another dolphin to the west currently used by cormorants.



Seabird Monitoring Data Collection Form

Date

Project Name Dolphin Repair **Monitoring Site/Transect ID** Land Based Station #4

Observers Harry Downy

Activity Pile Driving **Time and Duration** 10:30 am to 4:00 pm

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
10 am	scoters	10	2	C6			R	
10 am	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin
11:15 am	marbled murrelet	1	1	B4			F	Pile driving ceased, MM left observation area at 11:20
12:00 pm	grebe	2	2	G6			P	
12:00 pm	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin
2:00	gulls	15	1	H10			F	Group attracted by fisherman dumping guts
2:00	cormorants	20	1	I8			R, P	Hanging out on adjacent dolphin
4:00	gulls	5	2	H10			F	Residuals from earlier
4:00	cormorants	20	2	I8			R, P	Hanging out on adjacent dolphin

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

Seabird Monitoring Data Collection Form Date 11/10/12

Project Name Dolphin Repair Monitoring Site/Transect ID Land Based Station #4

Observers Jimmy Jones

Activity Pile Driving Time and Duration 10:30 am to 4:00 pm

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		
10 am	grebe	1	2		25	sea	T	
11:25	marbled murrelet	1	1		45	land	F	Pile driving ceased at 11:15, left monitoring area at 11:45
12:00	scoters, loon	8	1		15	land	R, P	Startled by pile driving re-start, flushed out of area
12:00	common murre	2	1		25	sea	T	Startled by pile driving re-start, flushed out of area
2:00	gulls	1	2		75	sea	T	
4:00	gulls	5	2		50	sea	T	

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

3.7 Timing and Duration

Monitoring will commence at least 30 minutes before the initiation of pile driving (but not before daylight) and will continue until pile driving is completed each day (but not after nightfall).

3.8 Contingency

In the unlikely event that a murrelet is perceived to be injured by pile driving, all pile driving will cease and WFWO will be contacted as soon as possible.

The Lead Federal Action Agency will work with WFWO to make necessary changes to the monitoring plan as described in section 2.0 above. Pile driving cannot resume until the plan has been amended, unless the WFWO cannot be reached, then the Lead Biologist determines the course of action and continues to ensure consistency with the consultation.

4.0 Beach Surveys

Searches for diving seabird carcasses along nearby beaches will be conducted following pile driving activities. The biologist will walk accessible beaches within 0.5 mile of the pile driving location. Beach surveys will be conducted during low or receding tides, if

possible, to maximize the chances of finding beached carcasses. Beach surveys will be conducted each day following in-water impact pile driving (as is practical based on the timing of tide events and pile driving activities.) Beach surveys are of secondary priority and will not be conducted if such activities would interfere with the implementation of murrelet monitoring or if the timing of low/receding tides imposes unreasonable schedule demands on the biologist.

Any dead murrelets or other diving seabirds found during the beach surveys (or during monitoring activities) will be collected by monitoring staff and delivered, as soon as possible, to the WFWO in Lacey, Washington for examination. Collected carcasses will be put in plastic bags, and kept cool (but not frozen) until delivery to the WFWO. Surveyors will follow the chain-of-custody process included in the consultation documents.

5.0 FWS Communication

Prior to the initiation of monitoring the Lead Federal Action Agency and a representative from the WFWO will meet to review the proposed monitoring locations and any logistical concerns that may have developed during monitoring preparation. The Lead Federal Action Agency will keep the WFWO informed of the progress and effectiveness of the monitoring activities and of the number and disposition of murrelet take that is documented throughout the duration of the project.

The Lead Federal Action Agency will notify the WFWO of any problems and/or necessary modification to the monitoring plan. The Lead Federal Action Agency will coordinate with the WFWO in the development of a modified approach and will obtain WFWO approval for such modifications.

Primary points of contact at the WFWO are:

1. Consulting Biologist – phone:
2. Emily Teachout – phone: (360) 753-9583
3. Deanna Lynch – phone: (360) 753-9545

6.0 Personnel Qualifications and Training

All observers must be certified under the Marbled Murrelet Marine Protocol. Observers will have appropriate qualifications, including education or work experience in biology, ornithology, or a closely related field; at least one season (2-3 months) of work with bird identification being the primary objective (i.e. not incidental to other work). Observers must have experience identifying marine birds in the Pacific Northwest, as well as understanding and documenting bird behavior.

All observers will attend the marbled murrelet marine monitoring protocol training and pass the written and photo examination with 90% proficiency. Upon successful completion, observers will be certified. Certification is valid for one year.

Recertification is required annually, unless the observer can document that he/she implemented the monitoring protocol for at least 25 monitoring days in the previous year. Recertification can then be delayed for one year; however, recertification can only be delayed for one year.

Certifications will be considered expired after one year, unless the WFWO is notified by the biologist that greater than 25 days of survey were done within one year of their certificate date. If an observer does conduct greater than 25 days of survey the certificate will be valid for an additional year from the certificate date. To extend a certification the biologist sends an email to the attention of Emily Teachout (emily_teachout@fws.gov) with the dates of the surveys they conducted and the date of their original certificate. The WFWO will maintain a list a certified observers and it will be available on our website.

The Lead Federal Agency is expected to provide all observers with a copy of the consultation documents for the project. Observers must read and understand the contents of the consultation documents related to identifying, minimizing, and reporting "incidental take" of murrelets.

7.0 Reporting

At the completion of each in-water work window for which there has been impact pile driving, the Lead Federal Action Agency will forward a monitoring report to the WFWO within 30 days. Reports shall be sent to the attention of (WFWO Branch Manager). The report shall include:

- Observation dates, times, and conditions
- Description of the any "take" (as described in the final Biological Opinion) identified by the biologist
- Copies of field data sheets or logs

Note: Questions and comments regarding this protocol should be directed to Emily Teachout at the USFWS, Washington Fish and Wildlife Office (360-753-9583); emily_teachout@fws.gov

APPENDIX

Print Form

Seabird Monitoring Site/Transect Identification Form

Project Name

Monitoring Dates

Number of Monitoring Sites/Transects

Insert aerial photo of entire monitoring project area. Identify each monitoring site/transect. Each monitoring station will reflect the 50 meter zone for each observer. For example, if there are two observers on a boat transect, the box will be 100 meters wide. Some monitoring stations will overlap and should be indicated here.

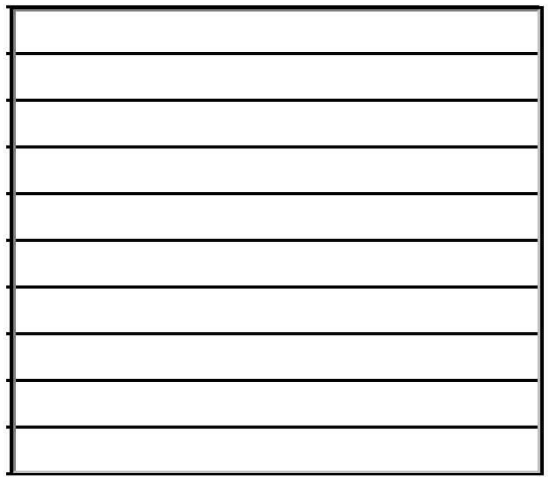
Seabird Land-Based Monitoring Site Form

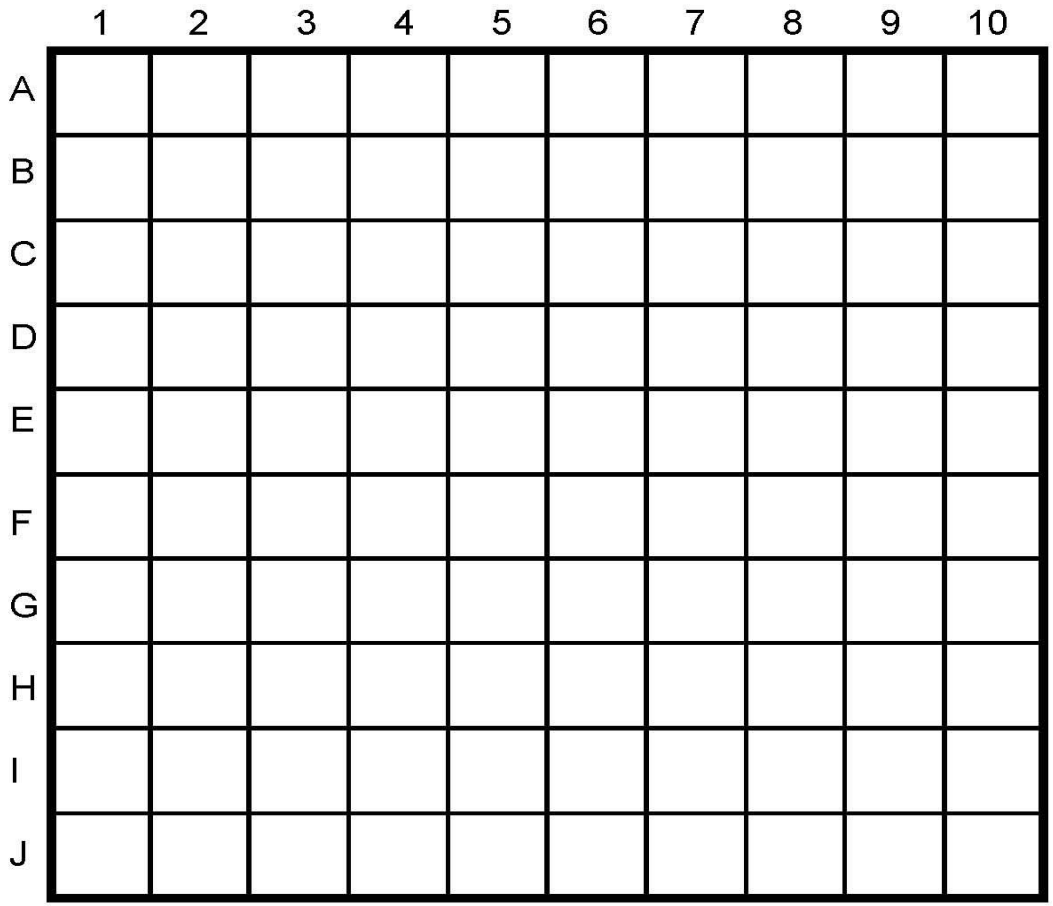
Project Name _____ **Date** _____

Land Based Monitoring Site ID _____

For each monitoring station referenced in the main map grid, sketch the coastline using the 5 meter squares. Indicate the direction to where impacting activities are occurring.

Use space below to describe additional monitoring site details that may be pertinent such as other structures seabirds may use.





Seabird Monitoring Data Collection Form

Date_____

Project Name _____ **Monitoring Site/Transect ID** _____

Observers_____

Activity _____ **Time and Duration**_____

Time	Species	# of birds	Wind speed (Beaufort Marine scale)	Land Observer	Boat Observer		Observed Behavior*	Comments
				Grid Location	Distance	Land/Sea Ward		

* R=resting, F=feeding/diving, P=preening, Y=flying/flushing, T=transient, N=nesting, O=other

Attachment 13

Washington Department of Fish and Wildlife

Hydraulic Project Approval (HPA)

HPA 2022-4-101+01

(Alternate Bid Item A1)

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: February 16, 2022
Project End Date: February 15, 2027

Permit Number: 2022-4-101+01
FPA/Public Notice Number: N/A
Application ID: 27280

PERMITTEE	AUTHORIZED AGENT OR CONTRACTOR
Washington State Parks and Recreation Commission ATTENTION: Joelene Boyd 220 North Walnut Street Burlington, WA 98233	

Project Name: Sucia Island Floating Pumpout Station Installation

Project Description: Washington State Parks and Recreation Commission (State Parks) proposes to install a new offshore floating sewage pumpout station for recreational boaters at Fossil Bay at Sucia Island Marine State Park. Two galvanized steel pile will be installed by barge using vibratory hammer, impact hammer or rock sockets depending on the subsurface conditions. The floating pumpout station will be fabricated off-site and transported to the project site and attached to the two pile. Sucia Island receives up to 100,000 visitors annually. The proposed pumpout station will reduce environmental impacts from illegal dumping of sewage by recreational boaters.

PROVISIONS

1. TIMING LIMITATION: To protect fish and shellfish habitats at the job site, work below the ordinary high water line (OHWL) must occur from September 1 and March 1 of any year.

2. APPROVED PLANS: Work must be accomplished per plans and specifications submitted with the application and approved by the Washington Department of Fish and Wildlife, entitled "SUCIA ISLAND FLOATING PUMPOUT STATION INSTALLATION," dated January 7, 2022, except as modified by this Hydraulic Project Approval (HPA). You must have a copy of these plans and this HPA available on site during all phases of the project construction.

NOTIFICATION

3. PRE- AND POST-CONSTRUCTION NOTIFICATION: You, your agent, or contractor must contact the Washington Department of Fish and Wildlife by e-mail at HPAapplications@dfw.wa.gov; mail to Post Office Box 43234, Olympia, Washington 98504-3234; or fax to (360) 902-2946 at least three business days before starting work, and again within seven days after completing the work. The notification must include the permittee's name, project location, starting date for work or date the work was completed, and the permit number. The Washington Department of Fish and Wildlife may conduct inspections during and after construction; however, the Washington Department of Fish and Wildlife will notify you or your agent before conducting the inspection.

4. PHOTOGRAPHS: You, your agent, or contractor must take photographs of the job site before the work begins and after the work is completed. You must upload the photographs to the post-permit requirement page in the Aquatic Protection Permitting System (APPS), mail them to Washington Department of Fish and Wildlife at Post Office Box 43234, Olympia, Washington 98504-3234, or email them to the Habitat Biologist (HB) listed below within 30-days after the work is completed.

5. FISH KILL/ WATER QUALITY PROBLEM NOTIFICATION: If a fish kill occurs or fish are observed in distress at the job site, immediately stop all activities causing harm. Immediately notify the Washington Department of Fish and Wildlife of the problem. If the likely cause of the fish kill or fish distress is related to water quality, also notify the Washington Military Department Emergency Management Division at 1-800-258-5990. Activities related to the fish kill or fish distress must not resume until the Washington Department of Fish and Wildlife gives approval. The Washington

Department of Fish and Wildlife may require additional measures to mitigate impacts.

STAGING, JOB SITE ACCESS AND EQUIPMENT

6. Establish the staging area (used for activities such as equipment storage, vehicle storage, fueling, servicing, and hazardous material storage) in a location and manner that will prevent contaminants like petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials from entering waters of the state.

7. Check equipment daily for leaks and complete any required repairs before using the equipment in or near the water.

8. Lubricants composed of biodegradable base oils such as vegetable oils, synthetic esters, and polyalkylene glycols are recommended for use in equipment operated in or near water.

9. Operate vessels with minimal propulsion power to avoid prop scour damage to the bed and marine vegetation habitats.

10. Operate vessels during tidal elevations that are adequate to prevent grounding of the barge.

11. Do not deploy anchors or spuds in seagrass or kelp.

CONSTRUCTION-RELATED SEDIMENT, EROSION AND POLLUTION CONTAINMENT

12. Prevent contaminants from the project, such as petroleum products, hydraulic fluid, fresh concrete, sediments, sediment-laden water, chemicals, or any other toxic or harmful materials, from entering or leaching into waters of the state.

PUMPOUT STATION

13. The design and location of the floating pumpout station must avoid shading of seagrass.

14. Prior to construction, re-establish the pumpout station centerline using the same methodology used to establish the centerline during the seagrass/macroalgae habitat survey.

15. The structure must not exceed the following width; the 34 – foot long floating pumpout station, 10 feet.

16. The bottom of the pumpout station must be at least one foot above the substrate so that the structure will not rest on the bottom.

PILE DRIVING

17. As specified in the approved plans, the (2) pilings must be 16 – inch diameter steel pilings.

18. The use of both a vibratory and/or an impact hammer is authorized for piling installation under this Hydraulic Project Approval, however a vibratory driver is preferred.

19. Sound attenuation methods are required for the driving or proofing of steel piles with an impact hammer below the ordinary high water line. For impact driving of steel piles that exceed the following criteria, a bubble curtain or other Washington Department of Fish and Wildlife approved sound attenuation device must be used. The specific criteria include sound pressure levels of:

a) Greater than or equal to 206 dB (one micropascal squared per second) peak,
b) Greater than or equal to 187 dB (one micropascal squared per second) accumulated sound exposure level (SEL) for fish greater than or equal to 2 grams, and
c) Greater than or equal to 183 dB (one micropascal squared per second) (SEL) for fish less than 2 grams.
d) Install a bubble curtain around the pile during all driving operations to ensure proper sound attenuation. The bubble curtain must distribute air bubbles around 100 percent of the perimeter of the piling over the full length of the pile in the water column.

20. To avoid attracting fish to artificial light at night, limit impact pile driving to daylight hours whenever feasible.

21. Fit all pilings with devices to prevent perching by fish-eating birds.

HYDRAULIC PROJECT APPROVAL

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

Issued Date: February 16, 2022
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Permit Number: 2022-4-101+01
FPA/Public Notice Number: N/A
Application ID: 27280

DEMOBILIZATION/CLEANUP

22. Remove all debris or deleterious material resulting from construction from the beach area or bed and prevent from entering waters of the state.

LOCATION #1:	Site Name: Sucia Island Fossil Bay Fossil Bay, Sucia Island, WA					
WORK START:	February 16, 2022			WORK END:	February 15, 2027	
WRIA		Waterbody:			Tributary to:	
02 - San Juan		Wria 02 Marine			Puget Sound	
1/4 SEC:	Section:	Township:	Range:	Latitude:	Longitude:	County:
	25	38 N	02 W	48.749748	-122.898540	San Juan
Location #1 Driving Directions						
The project site is located in Fossil Bay and is only accessible by boat. Please see Sheet 1 of the attached project plans for a vicinity map. If a site visit needs to be arranged please contact the applicant.						

APPLY TO ALL HYDRAULIC PROJECT APPROVALS

This Hydraulic Project Approval pertains only to those requirements of the Washington State Hydraulic Code, specifically Chapter 77.55 RCW. Additional authorization from other public agencies may be necessary for this project. The person(s) to whom this Hydraulic Project Approval is issued is responsible for applying for and obtaining any additional authorization from other public agencies (local, state and/or federal) that may be necessary for this project.

This Hydraulic Project Approval shall be available on the job site at all times and all its provisions followed by the person (s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work.

This Hydraulic Project Approval does not authorize trespass.

The person(s) to whom this Hydraulic Project Approval is issued and operator(s) performing the work may be held liable for any loss or damage to fish life or fish habitat that results from failure to comply with the provisions of this Hydraulic Project Approval.

Failure to comply with the provisions of this Hydraulic Project Approval could result in civil action against you, including, but not limited to, a stop work order or notice to comply, and/or a gross misdemeanor criminal charge, possibly punishable by fine and/or imprisonment.

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: February 16, 2022
Project End Date: February 15, 2027

Permit Number: 2022-4-101+01
FPA/Public Notice Number: N/A
Application ID: 27280

All Hydraulic Project Approvals issued under RCW 77.55.021 are subject to additional restrictions, conditions, or revocation if the Department of Fish and Wildlife determines that changed conditions require such action. The person(s) to whom this Hydraulic Project Approval is issued has the right to appeal those decisions. Procedures for filing appeals are listed below.

MINOR MODIFICATIONS TO THIS HPA: You may request approval of minor modifications to the required work timing or to the plans and specifications approved in this HPA unless this is a General HPA. If this is a General HPA you must use the Major Modification process described below. Any approved minor modification will require issuance of a letter documenting the approval. A minor modification to the required work timing means any change to the work start or end dates of the current work season to enable project or work phase completion. Minor modifications will be approved only if spawning or incubating fish are not present within the vicinity of the project. You may request subsequent minor modifications to the required work timing. A minor modification of the plans and specifications means any changes in the materials, characteristics or construction of your project that does not alter the project's impact to fish life or habitat and does not require a change in the provisions of the HPA to mitigate the impacts of the modification. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a minor modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are seeking a minor modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234, or by email to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

MAJOR MODIFICATIONS TO THIS HPA: You may request approval of major modifications to any aspect of your HPA. Any approved change other than a minor modification to your HPA will require issuance of a new HPA. If you originally applied for your HPA through the online Aquatic Protection Permitting System (APPS), you may request a major modification through APPS. A link to APPS is at http://wdfw.wa.gov/licensing/hpa/. If you did not use APPS you must submit a written request that clearly indicates you are requesting a major modification to an existing HPA. Written requests must include the name of the applicant, the name of the authorized agent if one is acting for the applicant, the APP ID number of the HPA, the date issued, the permitting biologist, the requested changes to the HPA, the reason for the requested change, the date of the request, and the requestor's signature. Send your written request by mail to: Washington Department of Fish and Wildlife, PO Box 43234, Olympia, Washington 98504-3234. You may email your request for a major modification to HPAapplications@dfw.wa.gov. You should allow up to 45 days for the department to process your request.

APPEALS INFORMATION

If you wish to appeal the issuance, denial, conditioning, or modification of a Hydraulic Project Approval (HPA), Washington Department of Fish and Wildlife (WDFW) recommends that you first contact the department employee who issued or denied the HPA to discuss your concerns. Such a discussion may resolve your concerns without the need for further appeal action. If you proceed with an appeal, you may request an informal or formal appeal. WDFW encourages you to take advantage of the informal appeal process before initiating a formal appeal. The informal appeal process includes a review by department management of the HPA or denial and often resolves issues faster and with less legal complexity than the formal appeal process. If the informal appeal process does not resolve your concerns, you may advance your appeal to the formal process. You may contact the HPA Appeals Coordinator at (360) 902-2534 for more information.

Washington Department of
Fish & Wildlife
PO Box 43234
Olympia, WA 98504-3234
(360) 902-2200

HYDRAULIC PROJECT APPROVAL

Issued Date: February 16, 2022
Project End Date: February 15, 2027

Permit Number: 2022-4-101+01
FPA/Public Notice Number: N/A
Application ID: 27280

A. INFORMAL APPEALS: WAC 220-660-460 is the rule describing how to request an informal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete informal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request an informal appeal of that action. You must send your request to WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. WDFW must receive your request within 30 days from the date you receive notice of the decision. If you agree, and you applied for the HPA, resolution of the appeal may be facilitated through an informal conference with the WDFW employee responsible for the decision and a supervisor. If a resolution is not reached through the informal conference, or you are not the person who applied for the HPA, the HPA Appeals Coordinator or designee may conduct an informal hearing or review and recommend a decision to the Director or designee. If you are not satisfied with the results of the informal appeal, you may file a request for a formal appeal.

B. FORMAL APPEALS: WAC 220-660-470 is the rule describing how to request a formal appeal of WDFW actions taken under Chapter 77.55 RCW. Please refer to that rule for complete formal appeal procedures. The following information summarizes that rule.

A person who is aggrieved by the issuance, denial, conditioning, or modification of an HPA may request a formal appeal of that action. You must send your request for a formal appeal to the clerk of the Pollution Control Hearings Boards and serve a copy on WDFW within 30 days from the date you receive notice of the decision. You may serve WDFW by mail to the HPA Appeals Coordinator, Department of Fish and Wildlife, Habitat Program, PO Box 43234, Olympia, Washington 98504-3234; e-mail to HPAapplications@dfw.wa.gov; fax to (360) 902-2946; or hand-delivery to the Natural Resources Building, 1111 Washington St SE, Habitat Program, Fifth floor. The time period for requesting a formal appeal is suspended during consideration of a timely informal appeal. If there has been an informal appeal, you may request a formal appeal within 30 days from the date you receive the Director's or designee's written decision in response to the informal appeal.

C. FAILURE TO APPEAL WITHIN THE REQUIRED TIME PERIODS: If there is no timely request for an appeal, the WDFW action shall be final and unappealable.

Habitat Biologist	Marcus.Reaves@dfw.wa.gov		for Director
Marcus Reaves	360-466-4345, Ext:251		WDFW

Attachment 14

Washington Department of Natural Resources

Aquatic Lands Lease No. 20-105889

(Alternate Bid Item A1)

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

When recorded, return to:
Washington State Parks and Recreation Commission
Attn: Real Estate Program
PO Box 42650
Olympia, WA 98504-2650

DAVE UPTHEGROVE
COMMISSIONER OF PUBLIC LANDS

AQUATIC LANDS LEASE

Lease No. 20-105889

Grantor: Washington State Department of Natural Resources
Grantee(s): Washington State Parks and Recreation Commission
Legal Description: Mineral Survey 314 (NW1/4 SW1/4), Section 25, Township 38 North, Range 2 West, W.M.
Complete Legal Description on Page 35
Assessor's Property Tax Parcel or Account Number: Not Applicable
Assessor's Property Tax Parcel or Account Number for Upland parcel used in conjunction with this lease: 282531001000

THIS LEASE is between the STATE OF WASHINGTON, acting through the Department of Natural Resources ("State"), and the STATE OF WASHINGTON acting through the State Parks and Recreation Commission, a government agency ("Tenant").

BACKGROUND

Tenant desires to lease a portion of the aquatic lands commonly known as Fossil Bay, which is bedlands located in San Juan County, Washington, from State, and State desires to lease the Property to Tenant pursuant to the terms and conditions of this Lease. State has authority to enter into this Lease under Chapter 43.12, Chapter 43.30 and Title 79 of the Revised Code of Washington (RCW).

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

THEREFORE, the Parties agree as follows:

SECTION 1 PROPERTY

1.1 Property Defined.

(a) State leases to Tenant and Tenant leases from State the real property described in Exhibit A together with all the rights of State, if any, to improvements on and easements benefiting the Property, but subject to the exceptions and restrictions set forth in this Lease (collectively the "Property").

(b) This Lease is subject to all valid interests of third parties noted in the records of San Juan County, or on file in the Office of the Commissioner of Public Lands, Olympia, Washington; rights of the public under the Public Trust Doctrine or federal navigation servitude; and treaty rights of Indian Tribes.

(c) This Lease does not include a right to harvest, collect, or damage natural resources, including aquatic life or living plants; water rights; mineral rights; or a right to excavate or withdraw sand, gravel, or other valuable materials.

(d) State reserves the right to grant easements and other land uses on the Property to others when the easement or other land uses will not interfere unreasonably with the Permitted Use.

1.2 Survey and Property Descriptions.

(a) Tenant warrants that Exhibit A includes a true and accurate description of the Property boundaries and the location of the Improvements to be constructed. Tenant's obligation to provide a true and accurate description of the Property boundaries and the location of the Improvements to be constructed is a material term of this Lease.

(b) Tenant's use or occupancy of any state-owned aquatic lands outside the Property boundaries is a material breach of this Lease and State may seek remedies under Section 14 of this Lease in addition to any other remedies afforded by law or equity or otherwise.

(c) Tenant warrants that the Property lies only in front of upland property owned or otherwise legally controlled by the Tenant.

(d) State may require Tenant to obtain a record of survey that describes the Property boundaries and the Improvements to be constructed or already existing on the Property if State determines a record of survey is necessary.

(e) Tenant shall hold harmless State and will not seek damages from State in the event a subsequent record of survey reveals an error in the legal description provided in Exhibit A.

1.3 Inspection. State makes no representation regarding the condition of the Property, Improvements located on the Property, the suitability of the Property for Tenant's Permitted Use, compliance with governmental laws and regulations, availability of utility rights, access to the Property, or the existence of hazardous substances on the Property. Tenant inspected the Property and accepts it "AS IS."

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

SECTION 2 USE

2.1 Permitted Use. Tenant shall use the Property for:

floating sewage pumpout station for public use by recreational boaters

(the "Permitted Use"), and for no other purpose. Exhibit B includes additional details about the Permitted Use, the Property, and Improvements, and additional obligations on Tenant. The Permitted Use of this Lease shall not be changed or modified without the written consent of State, which shall be at State's sole discretion.

2.2 Restrictions on Permitted Use and Operations. The following limitations and requirements apply to the Property and adjacent state-owned aquatic land. Tenant's compliance with the following does not limit Tenant's liability under any other provision of this Lease or the law.

(a) Tenant shall not cause or permit:
  (1) Damage to land or natural resources,
  (2) Waste, or
  (3) Deposit of material, unless approved by State in writing. This prohibition includes, but is not limited to, deposit of fill, rock, earth, ballast, wood waste, refuse, garbage, waste matter, pollutants of any type, or other matter.

(b) Nothing in this Lease shall be interpreted as an authorization to dredge the Property.

(c) Tenant shall not allow floating structures to come in contact with underlying bedlands (commonly referred to as "grounding out"). Tenant must either (1) locate all floating structures in water too deep to permit grounding out or (2) install stoppers sufficient to prevent grounding, keeping the bottom of the structure above the level of the substrate.

2.3 Conformance with Laws. Tenant shall keep current and comply with all conditions and terms of permits, licenses, certificates, regulations, ordinances, statutes, and other government rules and regulations regarding Tenant's use or occupancy of the Property.

2.4 Liens and Encumbrances. Unless expressly authorized by State in writing, Tenant shall keep the Property free and clear of liens or encumbrances arising from the Permitted Use or Tenant's occupancy of the Property.

2.5 Residential Uses Prohibited. Residential uses, as defined by WAC 332-30-106(62), are not permitted on the Property.

SECTION 3 TERM

3.1 Term Defined. The term of this Lease is thirty (30) years, beginning on the 1st day of June, 2025 (the "Commencement Date"), and ending on the 31st day of May, 2055 (the

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"Termination Date"), unless terminated sooner under the terms of this Lease (the "Term"). Whenever the phrase "termination of this Lease" or "termination of the Lease" is used in this Lease, it shall refer to the ending, termination, cancellation, or expiration of the Lease.

3.2 Renewal of the Lease. This Lease does not provide a right of renewal. Tenant may apply for a new lease, which State has discretion to grant or deny. Tenant must apply for a new lease at least one (1) year prior to the Termination Date.

3.3 End of Term.

(a) Removal of Improvements and Personal Property: Prior to the termination of this Lease, Tenant shall remove Improvements and Personal Property in accordance with Section 7.

(b) Restoration of Property:

(1) Prior to the termination of this Lease, Tenant shall restore the Property to its condition before the installation of any Improvements on the Property.

(2) This restoration is to be done at Tenant's expense and to the satisfaction of State. Restoration of the Property is considered to be Work, as described in Section 7 of the Lease. Tenant's plans for restoring the Property shall be submitted to State for prior approval in accordance with Section 7 of this Lease.

(3) If Tenant fails to restore the condition of the Property as required by this Paragraph, State may take steps reasonably necessary to remedy Tenant's failure. Upon demand by State, Tenant shall pay all costs of State's remedy, including but not limited to the costs of removing and disposing of material deposited on the Property, lost revenue resulting from the condition of the Property, and administrative costs associated with State's remedy.

(c) Vacation of Property: Upon the termination of this Lease, Tenant shall cease all operations on and use of the Property and surrender the Property to State.

3.4 Holdover.

(a) If Tenant remains in possession of the Property after the Termination Date, and State has not notified Tenant that Tenant must vacate the Property, in the absence of a new lease agreement between State and Tenant, the following terms apply: Tenant's occupancy will be a month-to-month tenancy, on terms identical to the terms of this Lease, except that either Party may terminate the tenancy on thirty (30) days' written notice. The month-to-month occupancy will not be an extension or renewal of the Term.

(1) The monthly rent during the month-to-month tenancy will be the same rent that would be due if the Lease were still in effect and all adjustments in rent were made in accordance with its terms.

(2) Payment of more than the monthly rent will not be construed to create a periodic tenancy longer than month-to-month. If Tenant pays more than the monthly rent and State provides notice to vacate the property, State shall refund the amount of excess payment remaining after the Tenant ceases occupation of the Property.

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(b) If State notifies Tenant to vacate the Property and Tenant fails to do so within the time set forth in the notice, Tenant will be a trespasser and shall owe State all amounts due under RCW 79.02.300 or other applicable laws.

SECTION 4 RENT

4.1 Annual Rent.

(a) The Annual Rent is based on the use classification of Tenant's Permitted Use of the Property and the square footage of each use classification, as set forth in Exhibit A.

(b) Until adjusted as set forth below, Tenant shall pay to State an annual rent of Zero Dollars ($0), consisting of Zero Dollars ($0) related to the water-dependent rent.

(c) The annual rent, as it currently exists or as adjusted or modified (the "Annual Rent"), is due and payable in full on or before the Commencement Date and on or before the same date of each year thereafter. Any payment not paid by State's close of business on the date due is past due.

(d) Public Use and Access. This Lease allows for free or reduced rent for areas that meet the requirements of RCW 79.105.230 and WAC 332-30-131. If Tenant's use of these areas cease to meet the requirements for free or reduced rent in RCW 79.105.230 and WAC 332-30-131, State will charge Tenant water-dependent rent for using these areas.

4.2 Payment Place. Tenant shall make payment to Financial Management Division, 1111 Washington St SE, PO Box 47041, Olympia, WA 98504-7041.

4.3 Adjustment Based on Change in Use Classification. Neither the use classification, nor the square footage of a use classification, shall be changed without the prior written consent of State. If the use classification or the square footage of a use classification is changed, the Annual Rent shall be adjusted based on the revised use classification or square footage of each use classification.

4.4 Rent Adjustment Procedures.

(a) Notice of Rent Adjustment. State shall provide notice of adjustments to the Annual Rent allowed under Paragraph 4.5(b) to Tenant in writing no later than ninety (90) days after the anniversary date of the Commencement Date.

(b) Procedures on Failure to make Timely Adjustment. If State fails to provide the notice required in Paragraph 4.4(a), State shall not collect the adjustment amount for the year in which State failed to provide notice. Upon providing notice of adjustment, State may adjust and prospectively bill Annual Rent as if missed or waived adjustments had been implemented at the proper interval. This includes the implementation of any inflation adjustment.

4.5 Rent Adjustments for Water-Dependent Uses.

(a) Inflation Adjustment. State shall adjust water-dependent rent annually pursuant to RCW 79.105.200-.360, except in those years in which State revalues the rent

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under Paragraph 4.5(b) below. This adjustment will be effective on the anniversary of the Commencement Date.

(b) Revaluation of Rent. At the end of the first four-year period of the Term, and at the end of each subsequent four-year period, State shall revalue the water-dependent Annual Rent in accordance with RCW 79.105.200-.360.

(c) Rent Cap. State shall increase rent incrementally in compliance with RCW 79.105.260 as follows: If application of the statutory rent formula for water-dependent uses would result in an increase in the rent attributable to such uses of more than fifty percent (50%) in any one year, State shall limit the actual increase implemented in such year to fifty percent (50%) of the then-existing rent. In subsequent, successive years, State shall increase the rental amount incrementally until State implements the full amount of increase as determined by the statutory rent formula.

SECTION 5 OTHER EXPENSES

5.1 Utilities. Tenant shall pay all fees charged for utilities required or needed by the Permitted Use.

5.2 Taxes and Assessments. Tenant shall pay all taxes (including leasehold excise taxes), assessments, and other governmental charges applicable or attributable to the Property, Tenant's leasehold interest, the Improvements, or Tenant's use and enjoyment of the Property.

5.3 Right to Contest. If in good faith, Tenant may contest any tax or assessment at its sole cost and expense. At the request of State, Tenant shall furnish reasonable protection in the form of a bond or other security, satisfactory to State, against loss or liability resulting from such contest.

5.4 Proof of Payment. If required by State, Tenant shall furnish to State receipts or other appropriate evidence establishing the payment of amounts this Lease requires Tenant to pay.

5.5 Failure to Pay. If Tenant fails to pay any of the amounts due under this Lease, State may pay the amount due, and recover its cost in accordance with Section 6.

SECTION 6 LATE PAYMENTS AND OTHER CHARGES

6.1 Failure to Pay Rent. If Tenant fails to pay rent when due under this Lease, State may seek remedies under Section 14 as well as late charges and interest as provided in this Section 6.

6.2 Late Charge. If State does not receive full rent payment within ten (10) days of the date due, Tenant shall pay to State a late charge equal to four percent (4%) of the unpaid amount or Fifty Dollars ($50), whichever is greater, to defray the overhead expenses of State incident to the delay.

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6.3 Interest Penalty for Past Due Rent and Other Sums Owed.

(a) Tenant shall pay interest on the past due rent at the rate of one percent (1%) per month until paid, in addition to paying the late charges determined under Paragraph 6.2. Rent not paid by the close of business on the due date will begin accruing interest the day after the due date.

(b) If State pays or advances any amounts for or on behalf of Tenant, Tenant shall reimburse State for the amount paid or advanced and shall pay interest on that amount at the rate of one percent (1%) per month from the date State notifies Tenant of the payment or advance. This includes, but is not limited to, State's payment of taxes, assessments, insurance premiums, costs of removal and disposal of materials or Improvements under any provision of this Lease, or other amounts not paid when due.

6.4 Referral to Collection Agency and Collection Agency Fees. If State does not receive full payment within thirty (30) days of the due date, State may refer the unpaid amount to a collection agency as provided by RCW 19.16.500 or other applicable law. Upon referral, Tenant shall pay collection agency fees in addition to the unpaid amount.

6.5 No Accord and Satisfaction. If Tenant pays, or State otherwise receives, an amount less than the full amount then due, State may apply such payment as it elects. State may accept payment in any amount without prejudice to State's right to recover the balance or pursue any other right or remedy. No endorsement or statement on any check, any payment, or any letter accompanying any check or payment constitutes accord and satisfaction.

6.6 No Counterclaim, Setoff, or Abatement of Rent. Except as expressly set forth elsewhere in this Lease, Tenant shall pay rent and all other sums payable by Tenant without the requirement that State provide prior notice or demand. Tenant's payment is not subject to counterclaim, setoff, deduction, defense or abatement.

SECTION 7 IMPROVEMENTS, PERSONAL PROPERTY, AND WORK

7.1 Improvements Defined.

(a) "Improvements," consistent with RCW 79.105 through 79.140, are additions within, upon, or attached to the land. Improvements include, but are not limited to, fill, structures, bulkheads, docks, pilings, and other fixtures.

(b) "Personal Property" means items that can be removed from the Property without (1) injury to the Property, adjacent state-owned aquatic lands, or Improvements or (2) diminishing the value or utility of the Property, adjacent state-owned aquatic lands or Improvements.

(c) "State-Owned Improvements" are Improvements made or owned by the State of Washington. State-Owned Improvements includes any construction, alteration, or addition to State-Owned Improvements made by Tenant.

(d) "Tenant-Owned Improvements" are Improvements authorized by State and (1) made by Tenant, (2) acquired by Tenant from the prior tenant, (3) made by

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subtenants on the Property, or (4) acquired by a subtenant from Tenant or a prior subtenant or tenant.

(e) "Unauthorized Improvements" are Improvements made on the Property without State's prior consent or Improvements made by Tenant that do not conform to plans submitted to and approved by State.

(f) "Improvements Owned by Others" are Improvements owned by others (not including Tenant or a subtenant) with a right to occupy or use the Property.

7.2 Existing Improvements. On the Commencement Date, there are no Improvements located on the Property.

7.3 Construction, Major Repair, Modification, and Other Work.

(a) This Paragraph 7.3 governs construction, alteration, replacement, major repair, modification, and removal of Improvements (collectively "Work").

(b) Except in an emergency, Tenant shall not conduct Work without State's prior written consent. Tenant shall obtain State's prior written consent as follows:

(1) Tenant shall submit to State plans and specifications describing the proposed Work at least sixty (60) days before submitting permit applications to regulatory authorities unless Tenant and State otherwise agree to coordinate permit applications. At a minimum, or if no permits are necessary, Tenant shall submit plans and specifications to State at least ninety (90) days before commencement of Work.

(2) State may deny consent if State determines that denial is in the best interest of the State of Washington or if the proposed Work does not comply with Paragraphs 7.4 and 11.3. State may impose additional conditions intended to protect and preserve the Property or adjacent state-owned aquatic lands.

(3) State will not approve plans to construct new Improvements or expand existing Improvements in or over habitats designated by State as important habitat, including, but not limited to: native aquatic vegetation, commercial geoduck tracts, forage fish spawning areas, and salmon critical habitat. Tenant shall confirm location of important habitat on Property, if any, with State before submitting plans and specifications in accordance with Paragraph 7.3.

(c) Tenant shall immediately notify State of emergency Work. Upon State's request, Tenant shall provide State with as-built plans and specifications of emergency Work.

(d) Tenant shall not commence or authorize Work until Tenant or Tenant's contractor has:

(1) Obtained a performance and payment bond in an amount equal to one hundred twenty-five percent (125%) of the estimated cost of construction. Tenant or Tenant's contractor shall maintain the performance and payment bond until the costs of the Work, including all laborers and material persons, are paid in full.

(2) Obtained all required permits.

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(e) Before completing Work, Tenant shall remove all debris and restore the Property to an orderly and safe condition. If Work is for removal of Improvements at End of Term, Tenant shall restore the Property in accordance with Paragraph 3.3, End of Term.

(f) Upon completing Work, Tenant shall promptly provide State with as-built plans and specifications. State may also require Tenant to obtain an updated record of survey showing the Property boundaries and the as-built location of all Improvements on the Property.

(g) State shall not charge rent for authorized Improvements installed by Tenant on the Property during the Term, but State may charge rent for such Improvements when and if Tenant or successor obtains a subsequent use authorization for the Property and State has waived the requirement for removal of Improvements as provided in Paragraph 7.5.

7.4 Standards for Work.

(a) Applicability of Standards for Work.

(1) The standards for Work in Paragraph 7.4(b) apply to Work commenced in the five year period following the Commencement Date. Work commences when State approves plans and specifications.

(2) If Tenant commences Work five years or more after the Commencement Date, Tenant shall comply with State's current standards for Work.

(3) If Tenant commences Work five (5) or more years after the Commencement Date, Tenant shall ascertain State's current standards for Work as follows:

(i) Before submitting plans and specifications for State's approval as required by Paragraph 7.3 of the Lease, Tenant shall request State to provide Tenant with State's current standards for Work on state-owned aquatic lands.

(ii) Within thirty (30) days of receiving Tenant's request, State shall provide Tenant with State's current standards for Work, which will be effective for the purpose of State's approval of Tenant's proposed Work, provided Tenant submits plans and specifications for State's approval within two (2) years of Tenant's request for standards.

(iii) If State does not timely provide State's current standards upon Tenant's request, the standards for Work under Paragraph 7.4(b) apply to Tenant's Work provided Tenant submits plans and specifications as required by Paragraph 7.3 within two (2) years of Tenant's request for State's current standards for Work.

(iv) If Tenant fails to (1) make a request for State's current standards for Work or (2) timely submit plans and specifications to State after receiving State's current standards for Work, Tenant shall, at Tenant's sole expense, make changes in plans or Work necessary to conform to State's current standards for Work upon State's demand.

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(b) The following standards for Work apply to Work commenced in the five-year period following the Commencement Date:

(1) Tenant shall only conduct in-water Work during time periods authorized for such work under WAC 220-660-330, Authorized Work Times in Saltwater Areas, or as otherwise directed by the Washington Department of Fish and Wildlife (WDFW), United States Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS).

(2) Tenant shall orient and shield lighting fixtures attached to overwater structures in a manner that minimizes the amount of light shining directly on the water, minimizes the amount of glare on the water, and minimizes the amount of light broadcasting into the night sky. Tenant shall implement the following measures to achieve this requirement:

(i) Tenant shall direct light to walkways; and

(ii) Tenant shall use fixtures that do not emit light upward.

7.5 Tenant-Owned Improvements.

(a) Removal of Tenant-Owned Improvements upon termination.

(1) Tenant shall remove Tenant-Owned Improvements in accordance with Paragraph 7.3 upon the termination of the Lease unless State waives the requirement for removal.

(2) Tenant-Owned Improvements remaining on the Property after the termination of the Lease shall become State-Owned Improvements without payment by State, unless State elects otherwise. State may refuse or waive ownership.

(3) If Tenant-Owned Improvements remain on the Property after the termination of the Lease without State's consent, State may remove all Improvements and Tenant shall pay State's costs.

(b) Conditions Under Which State May Waive Removal of Tenant-Owned Improvements.

(1) State may waive removal of any Tenant-Owned Improvements whenever State determines that it is in the best interests of the State of Washington, and regardless of whether Tenant enters into a new Lease for the Property.

(2) If Tenant enters into a new Lease for the Property, State may waive requirement to remove Tenant-Owned Improvements. State also may consent to Tenant's continued ownership of Tenant-Owned Improvements.

(3) If Tenant does not enter into a new Lease for the Property, State may waive requirement to remove Tenant-Owned Improvements upon consideration of a timely request from Tenant, as follows:

(i) Tenant shall submit its request to leave Tenant-Owned Improvements to State at least one (1) year before the Termination Date.

(ii) State, within ninety (90) days of receiving Tenant's request, will notify Tenant whether State consents to any Tenant-Owned Improvements remaining. State has no obligation to grant consent.

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(iii) State's failure to respond to Tenant's request to leave Improvements within ninety (90) days is a denial of the request.

(c) Tenant's Obligations if State Waives Removal.

(1) For any Tenant-Owned Improvements that State has waived the requirement for removal, Tenant shall not remove such Tenant-Owned Improvements.

(2) For any Tenant-Owned Improvements that State has waived the requirement for removal, Tenant shall maintain such Tenant-Owned Improvements in accordance with this Lease until the termination of the Lease. Tenant is liable to State for cost of repair if Tenant causes or allows damage to Tenant-Owned Improvements State has designated to remain.

7.6 Unauthorized Improvements.

(a) Unauthorized Improvements belong to State, unless State elects otherwise.

(b) The placement of Unauthorized Improvements on the Property is a default of the Lease. State may require removal of any or all Unauthorized Improvements. If State requires removal of Unauthorized Improvements and if Tenant fails to remove the Unauthorized Improvements, State may remove the Unauthorized Improvements and Tenant shall pay for the cost of removal and disposal.

(c) In addition to requiring removal of Unauthorized Improvements, State may charge Tenant a use fee that is sixty percent (60%) higher than the full market value of the use of the land for the Unauthorized Improvements from the time of installation or construction until the time the Unauthorized Improvements are removed.

(d) If State consents to Unauthorized Improvements remaining on the Property, upon State's consent, the Unauthorized Improvements will be treated as Tenant-Owned Improvements and the removal and ownership of such Improvements shall be governed by Paragraph 7.5. If State consents to the Unauthorized Improvements remaining on the Property, State may charge a use fee that is sixty percent (60%) higher than the full market value of the use of the land for the Unauthorized Improvements from the time of installation or construction until State consents.

7.7 Personal Property.

(a) Tenant retains ownership of Personal Property unless Tenant and State agree otherwise in writing.

(b) Tenant shall remove Personal Property from the Property by the termination of the Lease. Tenant is liable for damage to the Property and any Improvements that may result from removal of Personal Property.

(c) State may sell or dispose of all Personal Property left on the Property after the termination of the Lease.

(1) If State conducts a sale of Personal Property, State shall first apply proceeds to State's costs of removing the Personal Property, State's costs in conducting the sale, and any other payment due from Tenant to State. State shall pay the remainder, if any, to the Tenant. Tenant shall be liable for any costs of removing the Personal Property and conducting the sale that exceed the proceeds received by State.

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(2) If State disposes of Personal Property, Tenant shall pay for the cost of removal and disposal.

SECTION 8 ENVIRONMENTAL LIABILITY/RISK ALLOCATION

8.1 Definitions.

(a) "Hazardous Substance" means any substance that now or in the future becomes regulated or defined under any federal, state, or local statute, ordinance, rule, regulation, or other law relating to human health, environmental protection, contamination, pollution, or cleanup.

(b) "Release or threatened release of Hazardous Substance" means a release or threatened release as defined under any law described in Paragraph 8.1(a).

(c) "Utmost care" means such a degree of care as would be exercised by a very careful, prudent, and competent person under the same or similar circumstances; the utmost care required under RCW 70A.305.040(3)(a)(iii) of the Washington State Model Toxics Control Act.

(d) "Tenant and affiliates" when used in this Section 8 means Tenant or Tenant's subtenants, contractors, agents, employees, guests, invitees, licensees, affiliates, or any person on the Property with the Tenant's permission.

(e) "Liabilities" as used in this Section 8 means any claims, demands, proceedings, lawsuits, damages, costs, expenses, fees (including attorneys' fees and disbursements), penalties, or judgments.

8.2 General Conditions.

(a) Tenant's obligations under this Section 8 extend to the area in, on, under, or above:

(1) The Property; and

(2) Adjacent state-owned aquatic lands if affected by a release of Hazardous Substances that occurs as a result of the Permitted Use.

(b) Standard of Care.

(1) Tenant shall exercise the utmost care with respect to Hazardous Substances.

(2) Tenant shall exercise utmost care for the foreseeable acts or omissions of third parties with respect to Hazardous Substances, and the foreseeable consequences of those acts or omissions, to the extent required to establish a viable, third-party defense under the law.

8.3 Current Conditions and Duty to Investigate.

(a) State makes no representation about the condition of the Property or adjacent state-owned aquatic lands. Hazardous Substances may exist in, on, under, or above the Property or adjacent state-owned aquatic lands.

(b) This Lease does not impose a duty on State to conduct investigations or supply information to Tenant about Hazardous Substances.

(c) Tenant is responsible for conducting all appropriate inquiry and gathering sufficient information about the existence, scope, and location of Hazardous

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Substances on or near the Property necessary for Tenant to meet Tenant's obligations under this Lease and utilize the Property for the Permitted Use.

8.4 Use of Hazardous Substances.

(a) Tenant and affiliates shall not use, store, generate, process, transport, handle, release, or dispose of Hazardous Substances, except in accordance with all applicable laws.

(b) Tenant shall not undertake, or allow others to undertake by Tenant's permission, acquiescence, or failure to act, activities that result in a release or threatened release of Hazardous Substances.

(c) If use of Hazardous Substances related to Tenant's Permitted Use or Tenant's use or occupancy of the Property results in violation of law:

(1) Tenant shall submit to State any plans for remedying the violations, and

(2) Tenant shall implement any remedial measures to restore the Property or natural resources that State may require in addition to remedial measures required by regulatory authorities.

8.5 Management of Contamination, if any.

(a) Tenant and affiliates shall not undertake activities that:

(1) Damage or interfere with the operation of remedial or restoration activities, if any;

(2) Result in human or environmental exposure to contaminated sediments, if any;

(3) Result in the mechanical or chemical disturbance of on-site habitat mitigation, if any.

(b) If requested, Tenant shall allow reasonable access to:

(1) Employees and authorized agents of the United States Environmental Protection Agency (EPA), the Washington State Department of Ecology, health department, or other similar environmental agencies; and

(2) Potentially liable or responsible parties who are the subject of an order or consent decree that requires access to the Property. Tenant may negotiate an access agreement with such parties, but Tenant may not unreasonably withhold such agreement.

8.6 Notification and Reporting.

(a) Tenant shall immediately notify State if Tenant becomes aware of any of the following:

(1) A release or threatened release of Hazardous Substances;

(2) Any new discovery of or new information about a problem or liability related to, or derived from, the presence of Hazardous Substances;

(3) Any lien or action arising from Hazardous Substances;

(4) Any actual or alleged violation of any federal, state, or local statute, ordinance, rule, regulation, or other law pertaining to Hazardous Substances;

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(5) Any notification from the EPA or the Washington State Department of Ecology that remediation or removal of Hazardous Substances is or may be required at the Property.

(b) Tenant's duty to report under Paragraph 8.6(a) extends to lands described in Paragraph 8.2(a) and to any other property used by Tenant in conjunction with the Property if a release of Hazardous Substances on the other property could affect the Property.

(c) Tenant shall provide State with copies of all documents Tenant submits to any federal, state or local authorities concerning environmental impacts or proposals relative to the Property. Documents subject to this requirement include, but are not limited to, applications, reports, studies, or audits for National Pollutant Discharge Elimination System permits; United States Army Corps of Engineers permits; State Hydraulic Project Approvals (HPA); State Water Quality Certifications; Shoreline Substantial Development permits; and any reporting necessary for the existence, location, and storage of Hazardous Substances on the Property.

8.7 Indemnification.

(a) Tenant shall fully indemnify, defend, and hold harmless State from and against Liabilities that arise out of, or relate to:

(1) The use, storage, generation, processing, transportation, handling, or disposal of any Hazardous Substance by Tenant and affiliates occurring whenever Tenant occupies or has occupied the Property;

(2) The release or threatened release of any Hazardous Substance resulting from any act or omission of Tenant and affiliates occurring whenever Tenant occupies or has occupied the Property.

(b) Tenant shall fully indemnify, defend, and hold harmless State for Liabilities that arise out of or relate to Tenant's breach of obligations under Paragraph 8.5.

(c) If Tenant fails to exercise care as described in Paragraph 8.2(b)(2), to the extent permitted by law, Tenant shall fully indemnify, defend, and hold harmless State from and against Liabilities arising from the acts or omissions of third parties in relation to the release or threatened release of Hazardous Substances.

8.8 Reservation of Rights.

(a) For Liabilities not covered by the indemnification provisions of Paragraph 8.7, the Parties expressly reserve and do not waive any rights, claims, immunities, causes of action, or defenses relating to Hazardous Substances that either Party may have against the other under law.

(b) The Parties expressly reserve all rights, claims, immunities, and defenses that either Party may have against third parties. Nothing in this Section 8 benefits or creates rights for third parties.

(c) The allocations of risks, Liabilities, and responsibilities set forth in this Section 8 do not release either Party from or affect the liability of either Party for Hazardous Substances claims or actions by regulatory agencies.

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8.9 Cleanup.

(a) If Tenant's act, omission, or breach of obligation under Paragraph 8.4 results in a release of Hazardous Substances that exceeds the threshold limits of any applicable regulatory standard, Tenant shall, at Tenant's sole expense, promptly take all actions necessary or advisable to clean up the Hazardous Substances in accordance with applicable law.

(b) If a cleanup is eligible for the Washington State Department of Ecology's Voluntary Cleanup Program, Tenant may undertake a cleanup of the Property pursuant to the Washington State Department of Ecology's Voluntary Cleanup Program, provided that Tenant cooperates with the Department of Natural Resources in development of cleanup plans. Tenant shall not proceed with Voluntary Cleanup without the Department of Natural Resources' approval of final plans. Nothing in the operation of this provision is an agreement by the Department of Natural Resources that the Voluntary Cleanup complies with any laws or with the provisions of this Lease. Tenant's completion of a Voluntary Cleanup is not a release from or waiver of any obligation for Hazardous Substances under this Lease.

8.10 Sampling by State, Reimbursement, and Split Samples.

(a) State may enter the Property and conduct sampling, tests, audits, surveys, or investigations ("Tests") of the Property at any time to determine the existence, scope, or effects of Hazardous Substances.

(b) If such Tests, along with any other information, demonstrate a breach of Tenant's obligations regarding Hazardous Substances under this Lease, Tenant shall promptly reimburse State for all costs associated with such Tests, provided State gave Tenant thirty (30) days' advance notice in nonemergencies and reasonably practical notice in emergencies.

(c) In nonemergencies, Tenant is entitled to obtain split samples of Test samples, provided Tenant gives State written notice requesting split samples at least ten (10) days before State conducts Tests. Upon demand, Tenant shall promptly reimburse State for additional cost, if any, of split samples.

(d) If either Party conducts Tests on the Property, the conducting Party shall provide the other Party with validated final data and quality assurance/quality control/chain of custody information about the Tests within sixty (60) days of a written request by the other Party, unless Tests are part of a submittal under Paragraph 8.6(c) in which case Tenant shall submit data and information to State without written request by State. Neither party is obligated to provide any analytical summaries or the work product of experts.

SECTION 9 ASSIGNMENT AND SUBLETTING

9.1 State Consent Required. Tenant shall not sell, convey, mortgage, assign, pledge, sublease, or otherwise transfer or encumber all or any part of Tenant's interest in this Lease or the Property without State's prior written consent, which shall be at State's sole discretion.

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(a) In determining whether to consent, State may consider, among other items, the proposed transferee's financial condition, business reputation, and experience, the nature of the proposed transferee's business, the then-current value of the Property, and such other factors as may reasonably bear upon the suitability of the transferee as a tenant of the Property. Tenant shall submit information regarding any proposed transferee to State at least thirty (30) days prior to the date of the proposed transfer.

(b) State reserves the right to condition its consent upon:
  (1) Changes in the terms and conditions of this Lease, including, but not limited to, the Annual Rent; and/or
  (2) The agreement of Tenant or transferee to conduct Tests for Hazardous Substances on the Property or on other property owned or occupied by Tenant or the transferee.

(c) Each permitted transferee shall assume all obligations under this Lease, including the payment of rent. No assignment, sublet, or transfer shall release, discharge, or otherwise affect the liability of Tenant. Tenant shall remain liable for the full and complete performance, satisfaction, and compliance with the terms of this Lease.

(d) State's consent under this Paragraph 9.1 does not constitute a waiver of any claims against Tenant for the violation of any term of this Lease.

9.2 Rent Payments Following Assignment. The acceptance by State of the payment of rent following an assignment or other transfer does not constitute consent to any assignment or transfer.

9.3 Terms of Subleases.

(a) Tenant shall submit the terms of all subleases to State for prior approval.

(b) Tenant shall incorporate the following requirements in all subleases:
  (1) The sublease must be consistent with and subject to all the terms and conditions of this Lease;
  (2) The sublease must provide that this Lease controls if the terms of the sublease conflict with the terms of this Lease;
  (3) The term of the sublease (including any period of time covered by a renewal option) must end before the Termination Date of the initial Term or any renewal term;
  (4) The sublease must terminate if this Lease terminates for any reason;
  (5) The sublease must include an acknowledgment that the subtenant has received a copy of this Lease;
  (6) The sublease must prohibit the prepayment to Tenant by the subtenant of more than one year of rent;
  (7) The sublease must identify the rental amount subtenant is to pay to Tenant;
  (8) The sublease must provide that there is no privity of contract between the subtenant and State;
  (9) The sublease must require removal of the subtenant's Improvements and Personal Property upon termination of the sublease;

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(10) The subtenant's permitted use must be within the scope of the Permitted Use;
(11) The sublease must require the subtenant to indemnify, defend, and hold harmless State to the same extent Tenant is required to indemnify, defend, and hold harmless State under this Lease;
(12) The sublease must require the subtenant to meet the Insurance requirements under Section 10 unless State agrees in writing to exempt a subtenant from this requirement;
(13) The sublease must require the subtenant to comply with the Financial Security requirements under Section 10; and
(14) If the sublease includes moorage of a vessel, the sublease must require the subtenant to procure marine insurance as set forth in Paragraph 10.2(c)(4) of this Lease.

9.4 Event of Assignment. If Tenant is a corporation, dissolution of the corporation or a transfer (by one or more transactions) of a majority of the voting stock of Tenant is an assignment of this Lease. If Tenant is a partnership, dissolution of the partnership or a transfer (by one or more transactions) of the controlling interest in Tenant is an assignment of this Lease. If Tenant is a limited liability company, conveyance of an economic interest of greater than fifty percent (50%) is an assignment of this Lease. Assignments defined in this Paragraph 9.4 require State's consent under Paragraph 9.1.

SECTION 10 INDEMNITY, INSURANCE, FINANCIAL SECURITY

10.1 Liability.

(a) To the extent permitted by law, Tenant shall be liable for any Claims arising from the acts or omissions of itself and those of its employees, subtenants, contractors, and subcontractors, agents, invitees, guests, affiliates, licensees, or permittees while operating under this Lease or at the Property. "Claims" as used in this Paragraph 10.1 means any financial loss, claim, suit, action, damage, expenses, costs, fees (including attorneys' fees), fines, penalties, or judgments attributable to bodily injury, sickness, disease, or death, or injury or damages to tangible property. "Damages to tangible property" includes, but is not limited to, physical injury to the Property, diminution in value, and/or damages resulting from loss of use of the Property. Tenant shall not be liable for the acts or omissions of State.
(b) Recreation Use Liability Protection. If Tenant holds the Property open for public recreation, State, as landowner, and Tenant, as the party in lawful possession and control of the Property, agree to preserve the protection from liability under RCW 4.24.210 by allowing the public to use the Property for outdoor recreation without fee. Tenant shall post conspicuous warning signs for any known dangerous artificial latent conditions on the Property.
(c) Environmental Liability. Section 8, Environmental Liability/Risk Allocation, exclusively shall govern Tenant's liability to State for Hazardous Substances and its obligation to indemnify, defend, and hold harmless State for Hazardous Substances.

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(d) Insurance Premiums. Tenant shall be liable for any increase in State's annual insurance premium attributable to the acts or omissions of Tenant, its officers, employees, subtenants, contractors, or subcontractors, agents, invitees, guests, affiliates, licensees, or permittees while operating under this Lease or at the Property.

(e) The following indemnity requirement shall be incorporated into any sublease:

(1) Subtenant shall indemnify, defend, and hold harmless State, its employees, officials, officers, and agents from any Claim arising out of the Permitted Use, any Claim arising out of activities related to the Permitted Use, and any Claim arising out of the use, occupation, or control of the Property by subtenant, its subtenants, contractors, agents, invitees, guests, employees, affiliates, licensees, or permittees to the fullest extent permitted by law and subject to the limitations provided below.

(2) "Claim" as used in this Paragraph 10.1 means any financial loss, claim, suit, action, damages, expenses, costs, fees (including attorneys' fees), fines, penalties, or judgments attributable to: bodily injury; sickness; disease; death; and damages to tangible property, including, but not limited to, land, aquatic life, and other natural resources. "Damages to tangible property" includes, but is not limited to, physical injury to tangible property, diminution in value to tangible property, damages resulting from loss of use of tangible property, and loss or diminution of natural resource values.

(3) State shall not require subtenant to indemnify, defend, and hold harmless State, its employees, officials, officers, and agents for a Claim caused solely by or resulting solely from the negligence or willful act of State, its employees, officials, officers, or agents.

(4) Subtenant specifically and expressly waives any immunity that may be granted under the Washington State Industrial Insurance Act, Title 51 RCW in connection with its obligation to indemnify, defend, and hold harmless State and its employees, officials, officers, and agents. Further, subtenant's obligation under this Lease to indemnify, defend, and hold harmless State and its employees, officials, officers, and agents shall not be limited in any way by any limitation on amount or type of damages, compensation, or benefits payable to or for any third party under the worker's compensation acts.

(5) Only to the extent RCW 4.24.115 applies and requires such a limitation, if a Claim is caused by or results from the concurrent negligence of (a) State or State's employees, officials, officers, or agents, and (b) the subtenant or subtenant's subtenants, agents, or employees, these indemnity provisions shall be valid and enforceable only to the extent of the negligence of the subtenant and those acting on its behalf.

(6) Section 8, Environmental Liability/Risk Allocation, exclusively shall govern subtenant's liability to State for Hazardous Substances and its obligation to indemnify, defend, and hold harmless State for Hazardous Substances.

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10.2 Insurance Terms.

(a) Insurance Required.

(1) Tenant certifies that on the Commencement Date of this Lease it is self-insured for all the liability exposures, its self-insurance plan satisfies all State requirements, and its self-insurance plan provides coverage equal to that required in this Paragraph 10.2 and by Paragraph 10.3, Insurance Types and Limits. Tenant shall provide to State evidence of its status as a self-insured entity. Upon request by State, Tenant shall provide a written description of its financial condition and/or the self-insured funding mechanism. Tenant shall provide State with at least thirty (30) days' written notice prior to any material changes to Tenant's self-insured funding mechanism. If during the Term Tenant's self-insurance plan fails to provide coverage equal to that required in Paragraph 10.2 and Paragraph 10.3 of this Lease, Tenant shall procure additional commercial insurance coverage to meet the requirements of this Lease. The requirements in Paragraph 10.2(a)(3) and (4) only apply where the Tenant procures additional commercial insurance to meet the requirements of this Lease.

(2) Unless State agrees to an exception, Tenant shall provide insurance issued by an insurance company or companies admitted to do business in the State of Washington and have a rating of A- or better by the most recently published edition of A.M. Best's Insurance Reports. Tenant may submit a request to the risk manager for the Department of Natural Resources to approve an exception to this requirement. If an insurer is not admitted, the insurance policies and procedures for issuing the insurance policies shall comply with Chapter 48.15 RCW and 284-15 WAC.

(3) All general liability, excess, umbrella and pollution legal liability insurance policies must name the State of Washington, the Department of Natural Resources, its elected and appointed officials, officers, agents, and employees as an additional insured by way of endorsement.

(4) All property insurance, builder's risk insurance, and equipment breakdown insurance must name the State of Washington, the Department of Natural Resources, its elected and appointed officials, officers, agents, and employees as a loss payee.

(5) All insurance provided in compliance with this Lease must be primary as to any other insurance or self-insurance programs afforded to or maintained by State.

(b) Waiver.

(1) Tenant waives all rights against State for recovery of damages to the extent insurance maintained pursuant to this Lease covers these damages.

(2) Except as prohibited by law, Tenant waives all rights of subrogation against State for recovery of damages to the extent that they are covered by insurance maintained pursuant to this lease.

(c) Proof of Insurance.

(1) Tenant shall provide State with a certificate(s) and endorsement(s) of insurance executed by a duly authorized representative of each insurer,

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showing compliance with insurance requirements specified in this Lease; and, if requested, copies of policies to State.

(2) The certificate(s) of insurance must reference the Lease number.

(3) Receipt of such certificates, endorsements or policies by State does not constitute approval by State of the terms of such policies.

(d) State must receive written notice before cancellation or non-renewal of any insurance required by this Lease, as follows:

(1) Insurers subject to RCW 48.18 (admitted and regulated by the Insurance Commissioner): If cancellation is due to non-payment of premium, provide State ten (10) days' advance notice of cancellation; otherwise, provide State forty-five (45) days' advance notice of cancellation or non-renewal.

(2) Insurers subject to RCW 48.15 (surplus lines): If cancellation is due to non-payment of premium, provide State ten (10) days' advance notice of cancellation; otherwise, provide State twenty (20) days' advance notice of cancellation or non-renewal.

(e) Adjustments in Insurance Coverage.

(1) State may impose changes in the limits of liability for all types of insurance as State deems necessary.

(2) Tenant shall secure new or modified insurance coverage within thirty (30) days after State requires changes in the limits of liability.

(f) If Tenant fails to procure and maintain the insurance required in this Lease within fifteen (15) days after Tenant receives a notice to comply from State, State may either:

(1) Deem the failure an Event of Default under Section 14 and terminate the Lease without giving Tenant any further opportunity to cure, or

(2) Procure and maintain comparable substitute insurance and pay the premiums. Upon demand, Tenant shall pay to State the full amount paid by State, together with interest at the rate provided in Paragraph 6.3 from the date of State's notice of the expenditure until Tenant's repayment.

(g) General Terms.

(1) State does not represent that coverage and limits required under this Lease are adequate to protect Tenant.

(2) Coverage and limits do not limit Tenant's liability for indemnification and reimbursements granted to State under this Lease.

(3) The Parties shall use any insurance proceeds payable by reason of damage or destruction to property first to restore the real property covered by this Lease, then to pay the cost of the reconstruction, then to pay State any sums in arrears, and then to Tenant.

10.3 Insurance Types and Limits.

(a) General Liability Insurance.

(1) Tenant shall maintain commercial general liability insurance (CGL) or marine general liability (MGL) covering claims for bodily injury, personal injury, or property damage arising on the Property and/or arising out of Tenant's use, occupation, or control of the Property and, if necessary,

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commercial umbrella insurance with a limit of not less than One Million Dollars ($1,000,000) per each occurrence. If such CGL or MGL insurance contains aggregate limits, the general aggregate limit must be at least twice the "each occurrence" limit. CGL or MGL insurance must have products-completed operations aggregate limit of at least two times the "each occurrence" limit.

(2) CGL insurance must be written on Insurance Services Office (ISO) Occurrence Form CG 00 01 (or a substitute form providing equivalent coverage). All insurance must cover liability arising out of premises, operations, independent contractors, products completed operations, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another party assumed in a business contract) and contain separation of insured (cross-liability) condition.

(3) MGL insurance must have no exclusions for non-owned watercraft.

(b) Workers' Compensation.

(1) State of Washington Workers' Compensation.

(i) Tenant shall comply with all State of Washington workers' compensation statutes and regulations. Tenant shall provide workers' compensation coverage for all employees of Tenant. Coverage must include bodily injury (including death) by accident or disease, which arises out of or in connection with Tenant's use, occupation, and control of the Property.

(ii) If Tenant fails to comply with all State of Washington workers' compensation statutes and regulations and State incurs fines or is required by law to provide benefits to or obtain coverage for such employees, Tenant shall indemnify State. Indemnity shall include all fines; payment of benefits to Tenant, employees, or their heirs or legal representatives; and the cost of effecting coverage on behalf of such employees.

(2) Longshore and Harbor Workers' and Jones Acts. The Longshore and Harbor Workers' Act (33 U.S.C. Section 901 *et seq.*) and/or the Jones Act (46 U.S.C. Section 30104) may require Tenant to provide insurance coverage in some circumstances. Tenant shall ascertain if such insurance is required and, if required, shall maintain insurance in compliance with the law. Tenant is responsible for all civil and criminal liability arising from failure to maintain such coverage.

(c) Employers' Liability Insurance. Tenant shall procure employers' liability insurance, and, if necessary, commercial umbrella liability insurance with limits not less than One Million Dollars ($1,000,000) each accident for bodily injury by accident and One Million Dollars ($1,000,000) each employee for bodily injury by disease.

(d) Property Insurance.

(1) Tenant shall buy and maintain property insurance covering all real property and fixtures, equipment, tenant improvements and betterments (regardless of whether owned by Tenant or State). Such insurance must be

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written on an all risks basis and, at minimum, cover the perils insured under ISO Special Causes of Loss Form CP 10 30, and cover the full replacement cost of the property insured. Such insurance may have commercially reasonable deductibles. Any coinsurance requirement in the policy must be waived.

(2) Tenant shall buy and maintain equipment breakdown insurance covering all real property and fixtures, equipment, tenant improvements and betterments (regardless of whether owned by Tenant or State) from loss or damage caused by the explosion of equipment, fired or unfired vessels, electric or steam generators, electrical arcing, or pipes.

(3) In the event of any loss, damage, or casualty that is covered by one or more of the types of insurance described above, the Parties shall proceed cooperatively to settle the loss and collect the proceeds of such insurance, which State shall hold in trust, including interest earned by State on such proceeds, for use according to the terms of this Lease. The Parties shall use insurance proceeds in accordance with Paragraph 10.2(g)(3).

(4) When sufficient funds are available, using insurance proceeds described above, the Parties shall continue with reasonable diligence to prepare plans and specifications for, and thereafter carry out, all work necessary to:

(i) Repair and restore damaged building(s) and/or Improvements to their former condition, or

(ii) Replace and restore damaged building(s) and/or Improvements with a new building(s) and/or Improvements on the Property of a quality and usefulness at least equivalent to or more suitable than, damaged building(s) and/or Improvements.

(e) Builder's Risk Insurance.

(1) Tenant shall procure and maintain in force, or require its contractor(s) to procure and maintain in force, builder's risk insurance on the entire work during the period construction is in progress and until completion of the project and acceptance by State. Such insurance must be written on a completed form and in an amount equal to the value of the completed building and/or Improvements, subject to subsequent modifications to the sum. The insurance must be written on a replacement cost basis. The insurance must name Tenant, all contractors, and all subcontractors in the work as insured.

(2) Insurance described above must cover or include the following:

(i) All risks of physical loss except those specifically excluded in the policy, including loss or damage caused by collapse;

(ii) The entire work on the Property, including reasonable compensation for architect's services and expenses made necessary by an insured loss;

(iii) Portions of the work located away from the Property but intended for use at the Property, and portions of the work in transit;

(iv) Scaffolding, falsework, and temporary buildings located on the Property; and

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(v) The cost of removing debris, including all demolition as made legally necessary by the operation of any law, ordinance, or regulation.

(3) Tenant or Tenant's contractor(s) is responsible for paying any part of any loss not covered because of application of a deductible contained in the policy described above.

(f) Protection and Indemnity Insurance (P&I). For each vessel owned, used, and/or operated on the Property by Tenant or Tenant's contractor(s), Tenant or Tenant's contractor(s) shall procure and maintain P&I insurance with limits of liability not less than One Million Dollars ($1,000,000). The P&I insurance must cover, at a minimum, all claims relating to injuries or damages to persons or property sustained in, on, or about the property; fuel spills; wreck removal; salvage; injuries to passengers and crew of the vessel; and damages to nets and fishing lines. If necessary, Tenant shall procure and maintain commercial umbrella liability insurance covering claims for these risks.

10.4 Financial Security.

(a) On the Commencement Date of this Lease, Tenant is not required to procure and maintain a corporate security bond or other financial security ("Security"). During the Term, State may require Tenant to procure and maintain Security upon any of the events listed in Paragraph 10.4(c)(1). Tenant's failure to maintain the Security in the required amount during the Term constitutes a breach of this Lease.

(b) All Security must be in a form acceptable to State.

(1) Bonds must be issued by companies admitted to do business within the State of Washington and have a rating of A-, Class VII or better, in the most recently published edition of A.M. Best's Insurance Reports, unless State approves an exception in writing. Tenant may submit a request to the Risk Manager for the Department of Natural Resources for an exception to this requirement.

(2) Letters of credit, if approved by State, must be irrevocable, allow State to draw funds at will, provide for automatic renewal, and comply with RCW 62A.5-101, *et. seq.*

(3) Savings account assignments, if approved by State, must allow State to draw funds at will.

(c) Adjustment in Amount of Security.

(1) State may require an adjustment in the Security amount:

(i) At the same time as revaluation of the Annual Rent,

(ii) As a condition of approval of assignment or sublease of this Lease,

(iii) Upon a material change in the condition or disposition of any Improvements, or

(iv) Upon a change in the Permitted Use.

(2) Tenant shall deliver a new or modified form of Security to State within thirty (30) days after State has required adjustment of the amount of the Security.

(d) Upon any default by Tenant in its obligations under this Lease, State may collect on the Security to offset the liability of Tenant to State. Collection on the Security

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does not (1) relieve Tenant of liability, (2) limit any of State's other remedies, (3) reinstate the Lease or cure the default or (4) prevent termination of the Lease because of the default.

SECTION 11 MAINTENANCE AND REPAIR

11.1 State's Repairs. State shall not be required to make any alterations, maintenance, replacements, or repairs in, on, or about the Property, or any part thereof, during the Term.

11.2 Tenant's Repairs, Alteration, Maintenance and Replacement.

(a) Tenant shall, at its sole cost and expense, keep and maintain the Property and all Improvements in good order and repair, in a clean, attractive, and safe condition.

(b) Tenant shall, at its sole cost and expense, make any and all additions, repairs, alterations, maintenance, replacements, or changes to the Property or to any Improvements on the Property that may be required by any public authority having jurisdiction over the Property and requiring it for public health, safety and welfare purposes.

(c) Except as provided in Paragraph 11.2(d), all additions, repairs, alterations, maintenance, replacements or changes to the Property and to any Improvements on the Property shall be made in accordance with, and ownership shall be governed by, Section 7, above.

(d) Routine maintenance and repair are acts intended to prevent a decline, lapse, or cessation of the Permitted Use and associated Improvements. Routine maintenance or repair that does not require regulatory permits does not require authorization from State pursuant to Section 7.

11.3 Limitations. The following limitations apply whenever Tenant conducts maintenance, repair, replacement, alterations, or additions. The following limitations also apply whenever Tenant conducts Work on the Property.

(a) Tenant shall not use or install treated wood on decking, docks, rafts, floats, wharves, piers, fixed docks, gangways, pilings, or any other structure at any location above or below water, except that Tenant may use Ammoniacal Copper Zinc Arsenate (ACZA) treated wood for above water structural framing. Tenant shall never use Chromated Copper Arsenate (CCA), Alkaline Copper Quaternary (ACQ), or creosote-treated wood at any location.

(b) Tenant shall not use or install tires (for example, floatation or fenders) at any location above or below water.

(c) Tenant shall install only floatation material encapsulated in a shell resistant to ultraviolet radiation and abrasion. The shell must be capable of preventing breakup and loss of floatation material into the water.

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SECTION 12 DAMAGE OR DESTRUCTION

12.1 Notice and Repair.

(a) In the event of any damage to or destruction of the Property or any Improvements, Tenant shall immediately notify State, with subsequent written notice to State within five (5) days.

(b) Unless otherwise agreed in writing, Tenant shall promptly reconstruct, repair, or replace the Property and Improvements in accordance with Section 7 and Tenant's additional obligations in Exhibit B, if any.

12.2 State's Waiver of Claim. State does not waive any claims for damage or destruction of the Property unless State provides written notice to Tenant of each specific claim waived.

12.3 Insurance Proceeds. Tenant's duty to reconstruct, repair, or replace any damage or destruction of the Property or any Improvements on the Property is not conditioned upon the availability of any insurance proceeds to Tenant from which the cost of repairs, reconstruction, replacement, removal, or restoration may be paid. The Parties shall use insurance proceeds in accordance with Paragraph 10.2(g)(3).

12.4 Rent in the Event of Damage or Destruction. Unless the Parties agree to terminate this Lease, there is no abatement or reduction in rent during such reconstruction, repair, and replacement.

12.5 Default at the Time of Damage or Destruction. If Tenant is in default under the terms of this Lease at the time damage or destruction occurs, State may elect to terminate the Lease and State then shall have the right to retain any insurance proceeds payable as a result of the damage or destruction.

SECTION 13 CONDEMNATION

13.1 Definitions.

(a) "Taking" means that an entity authorized by law exercises the power of eminent domain, either by judgment, settlement in lieu of judgment, or voluntary conveyance in lieu of formal court proceedings, over all or any portion of the Property and Improvements. This includes any exercise of eminent domain on any portion of the Property and Improvements that, in the judgment of State, prevents or renders impractical the Permitted Use.

(b) "Date of Taking" means the date upon which title to the Property or a portion of the Property passes to and vests in the condemner or the effective date of any order for possession if issued prior to the date title vests in the condemner.

13.2 Effect of Taking. If there is a taking, the Lease terminates proportionate to the extent of the taking. If this Lease terminates in whole or in part, Tenant shall make all payments due and attributable to the taken Property up to the date of taking. If Tenant has pre-paid rent and Tenant

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is not in default of the Lease, State shall refund Tenant the pro rata share of the pre-paid rent attributable to the period after the date of taking.

13.3 Allocation of Award.

(a) The Parties shall allocate the condemnation award based upon the ratio of the fair market value of (1) Tenant's leasehold estate and Tenant-Owned Improvements and (2) State's interest in the Property; the reversionary interest in Tenant-Owned Improvements, if any; and State-Owned Improvements, if any.

(b) If Tenant and State are unable to agree on the allocation, the Parties shall submit the dispute to binding arbitration in accordance with the rules of the American Arbitration Association.

SECTION 14 DEFAULT AND REMEDIES

14.1 Default Defined. Tenant is in default of this Lease on the occurrence of any of the following:

(a) Failure to pay rent or other expenses when due;

(b) Failure to comply with any law, regulation, policy, or order of any lawful governmental authority;

(c) Failure to comply with any other provision of this Lease; or

(d) Commencement of bankruptcy proceedings by or against Tenant or the appointment of a trustee or receiver of Tenant's property.

14.2 Tenant's Right to Cure.

(a) A default becomes an "Event of Default" if Tenant fails to cure the default within the applicable cure period following State's written notice of default. Upon an Event of Default, State may seek remedies under Paragraph 14.3.

(b) Unless expressly provided elsewhere in this Lease, the cure period is ten (10) days for failure to pay rent or other monetary defaults; for other defaults, the cure period is thirty (30) days. This cure period does not apply where State terminates this Lease under Paragraph 10.2(f) or Paragraph 12.5.

(c) For nonmonetary defaults not capable of cure within thirty (30) days, Tenant may submit a reasonable alternative cure schedule for State's approval, which State has discretion to grant or deny. The default is not an Event of Default if State approves the alternative cure schedule and Tenant cures the default in accordance with the approved alternative cure schedule.

14.3 Remedies.

(a) Upon an Event of Default, State may terminate this Lease and remove Tenant by summary proceedings or otherwise.

(b) State's Rights to Cure Tenant's Defaults.

(1) If an Event of Default occurs, State may, without terminating this Lease, remedy the default (in whole or in part) on behalf of Tenant at Tenant's expense. Tenant shall pay State all costs, expenses, fees, and damages incurred by State in connection therewith.

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(2) If Tenant is in default under the terms of the Lease, and State determines that such default poses an imminent threat of injury or damage to persons or property, State may enter the Property and take actions to eliminate, mitigate, or remedy the imminent threat at Tenant's expense. On demand by State, Tenant shall pay State the amount of all costs, expenses, and fees incurred by State in connection therewith.

(3) The rights given to State under Paragraph 14.3(b)(1)-(2) shall neither impose a duty on State nor excuse any failure on Tenant's part to comply with any term, covenant, or condition of this Lease.

(c) Without terminating this Lease, State may relet the Property on any terms and conditions as State may decide are appropriate.

(1) State shall apply rent received by reletting: (1) to the payment of any indebtedness other than rent due from Tenant to State; (2) to the payment of any cost of such reletting; (3) to the payment of the cost of any alterations and repairs to the Property; and (4) to the payment of rent and leasehold excise tax due and unpaid under this Lease. State shall hold and apply any balance to Tenant's future rent as it becomes due.

(2) Tenant is responsible for any deficiency created by the reletting during any month and shall pay the deficiency monthly.

(3) At any time after reletting, State may elect to terminate this Lease for the previous Event of Default.

(d) State's reentry or repossession of the Property under Paragraph 14.3 is not an election to terminate this Lease or cause a forfeiture of rents or other charges Tenant is obligated to pay during the balance of the Term, unless (1) State gives Tenant written notice of termination or (2) a legal proceeding decrees termination.

(e) The remedies specified under this Paragraph 14.3 are not exclusive of any other remedies or means of redress to which State is lawfully entitled for Tenant's default or threatened default of any provision of this Lease.

SECTION 15 ENTRY BY STATE

15.1 Right to Enter The Property.

(a) State and persons authorized by State may, without notice to Tenant, enter the Property and any Improvements on the Property at any reasonable hour to inspect the Property and Improvements, to inspect for compliance with the terms of this Lease, to monitor impacts to habitat, to survey habitat and species, enforce the terms of the Lease, or to exercise any right of State under the Lease or the law.

(b) State and persons authorized by State, may enter the Property and any Improvements at any time without notice in the case of an imminent threat of injury or damage to persons or property or to prevent waste on the Property.

15.2 Disclaimer. State's failure to inspect the Property does not constitute a waiver of any rights or remedies under this Lease. The rights given to State under this Section 15 do not

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impose, nor does State assume by reason thereof, any responsibility for the care, maintenance, or supervision of the Property or any part thereof.

SECTION 16 DISCLAIMER OF QUIET ENJOYMENT

16.1 No Guaranty or Warranty.

(a) State believes that this Lease is consistent with the Public Trust Doctrine and that none of the third-party interests identified in Paragraph 1.1(b) will materially or adversely affect Tenant's right of possession and use of the Property, but State makes no guaranty or warranty to that effect.

(b) State disclaims and Tenant releases State from any claim for breach of any implied covenant of quiet enjoyment. This disclaimer and release includes, but is not limited to, interference arising from exercise of rights under the Public Trust Doctrine; Treaty rights held by Indian Tribes; and the general power and authority of State and the United States with respect to aquatic lands and navigable waters.

(c) Tenant is responsible for determining the extent of Tenant's right to possession and for defending Tenant's leasehold interest.

16.2 Eviction by Third-Party. If a third-party evicts Tenant, this Lease terminates as of the date of the eviction. In the event of a partial eviction, Tenant's rent obligations abate as of the date of the partial eviction, in direct proportion to the extent of the eviction; this Lease shall remain in full force and effect in all other respects.

SECTION 17 NOTICE AND SUBMITTALS

Following are the locations for delivery of notice and submittals required or permitted under this Lease. Any Party may change the place of delivery upon ten (10) days' written notice to the other.

State: DEPARTMENT OF NATURAL RESOURCES
Aquatic Resources Division
Orca-Straits District
919 N. Township St
Sedro-Woolley, WA 98284

Tenant: WASHINGTON STATE PARKS AND RECREATION COMMISSION
Attn: Real Estate Program
PO Box 42650
Olympia, WA 98504-2650

The Parties may deliver any notice in person, by facsimile machine, or by certified mail. Depending on the method of delivery, notice is effective upon personal delivery, upon receipt of a confirmation report if delivered by facsimile machine, or three (3) days after mailing. All

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notices must identify the Lease number. On notices transmitted by facsimile machine, the Parties shall state the number of pages contained in the notice, including the transmittal page, if any.

SECTION 18 MISCELLANEOUS

18.1 Authority. Tenant and the person or persons executing this Lease on behalf of Tenant represent that Tenant is qualified to do business in the State of Washington, that Tenant has full right and authority to enter into this Lease, and that each and every person signing on behalf of Tenant is authorized to do so. Upon State's request, Tenant shall provide evidence satisfactory to State confirming these representations.

18.2 Successors and Assigns. Subject to the limitations set forth in Section 9, this Lease binds and inures to the benefit of the Parties, their successors, and assigns.

18.3 Headings. The headings used in this Lease are for convenience only and in no way define, limit, or extend the scope of this Lease or the intent of any provision.

18.4 Entire Agreement. This Lease, including the exhibits, attachments, and addenda, if any, contains the entire agreement of the Parties. This Lease merges all prior and contemporaneous agreements, promises, representations, and statements relating to this transaction or to the Property.

18.5 Waiver.

(a) The waiver of any breach or default of any term, covenant, or condition of this Lease is not a waiver of such term, covenant, or condition; of any subsequent breach or default of the same; or of any other term, covenant, or condition of this Lease. State's acceptance of a payment is not a waiver of any preceding or existing breach other than the failure to pay the particular payment that was accepted.

(b) The renewal of the Lease, extension of the Lease, or the issuance of a new lease to Tenant, does not waive State's ability to pursue any rights or remedies under the Lease.

18.6 Cumulative Remedies. The rights and remedies of State under this Lease are cumulative and in addition to all other rights and remedies afforded by law or equity or otherwise.

18.7 Time is of the Essence. TIME IS OF THE ESSENCE as to each and every provision of this Lease.

18.8 Language. The word "Tenant" as used in this Lease applies to one or more persons and regardless of gender, as the case may be. If there is more than one Tenant, their obligations are joint and several. The word "persons," whenever used, shall include individuals, firms, associations, and corporations. The word "Parties" means State and Tenant in the collective. The word "Party" means either or both State and Tenant, depending on the context.

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18.9 Invalidity. The invalidity, voidness, or illegality of any provision of this Lease does not affect, impair, or invalidate any other provision of this Lease.

18.10 Applicable Law and Venue. This Lease is to be interpreted and construed in accordance with the laws of the State of Washington. Venue for any action arising out of or in connection with this Lease is in the Superior Court for Thurston County, Washington.

18.11 Statutory Reference. Any reference to a statute or rule means that statute or rule as presently enacted or hereafter amended or superseded.

18.12 Recordation. At Tenant's expense and no later than thirty (30) days after receiving the fully-executed Lease, Tenant shall record this Lease in the county in which the Property is located. Tenant shall include the parcel number of the upland property used in conjunction with the Property, if any. Tenant shall provide State with recording information, including the date of recordation and file number. If Tenant fails to record this Lease, State may record it and Tenant shall pay the costs of recording upon State's demand.

18.13 Modification. No modification of this Lease is effective unless in writing and signed by both Parties. Oral representations or statements do not bind either Party.

18.14 Survival. Any obligations of Tenant not fully performed upon termination of this Lease do not cease, but continue as obligations of the Tenant until fully performed.

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

18.15 Exhibits and Attachments. All referenced exhibits and attachments are incorporated in the Lease unless expressly identified as unincorporated.

THIS AGREEMENT requires the signature of all Parties and is effective on the date of the last signature below.

WASHINGTON STATE PARKS AND RECREATION COMMISSION

Dated: 4/24/2025, 20__

Heather Saunders

By: HEATHER SAUNDERS
Title: Director of Parks Development
Address: PO Box 42650
Olympia, WA 98504-2650

STATE OF WASHINGTON
DEPARTMENT OF NATURAL RESOURCES

Dated: 4/28/2025, 20__

Katie Rose Allen

By: KATIE ROSE ALLEN
Title: Acting Deputy Supervisor for Forest Resilience, Regulation and Aquatics
Address: 1111 Washington St SE
Olympia, WA 98504-7027

Aquatic Lands Lease
Template approved as to form this
20th day of July, 2022
Jennifer Clements, Assistant Attorney General

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

REPRESENTATIVE ACKNOWLEDGMENT

Notarized online using audio-video communication

STATE OF WASHINGTON)
) ss.
County of Skagit)

I certify that I know or have satisfactory evidence that HEATHER SUANDERS is the person who appeared before me, and said person acknowledged that they signed this instrument, on oath stated that they were authorized to execute the instrument and acknowledged it as the Director of Parks Development of Washington State Parks and Recreation Commission to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

This notarial act involved the use of communication technology.

Dated: 4/24/2025, 20__

Jamie Johnson
(Signature)

(Seal or stamp)

Jamie Johnson
(Print Name)

JAMIE JOHNSON
Notary Public
State of Washington
Commission # 24028060
Commission Expires 10/8/2028

Notary Public in and for the State of Washington, residing at
Skagit

My appointment expires 10/8/2028

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

STATE ACKNOWLEDGMENT

Notarized online using audio-video communication

STATE OF WASHINGTON)
) ss.
County of Thurston)

I certify that I know or have satisfactory evidence that KATIE ROSE ALLEN is the person who appeared before me, and said person acknowledged that they signed this instrument, on oath stated that they were authorized to execute the instrument and acknowledged it as the Acting Deputy Supervisor for Forest Resilience, Regulation and Aquatics of the Department of Natural Resources, to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

This notarial act involved the use of communication technology.

Dated: 4/28/2025, 20__

Tina Champion
(Signature)

(Seal or stamp)

TINA CHAMPION
Notary Public
State of Washington
Commission # 156116
Commission Expires 5/14/2028

Tina Champion
(Print Name)

Notary Public in and for the State of Washington, residing at
Olympia

My appointment expires 5/14/2028

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

EXHIBIT A

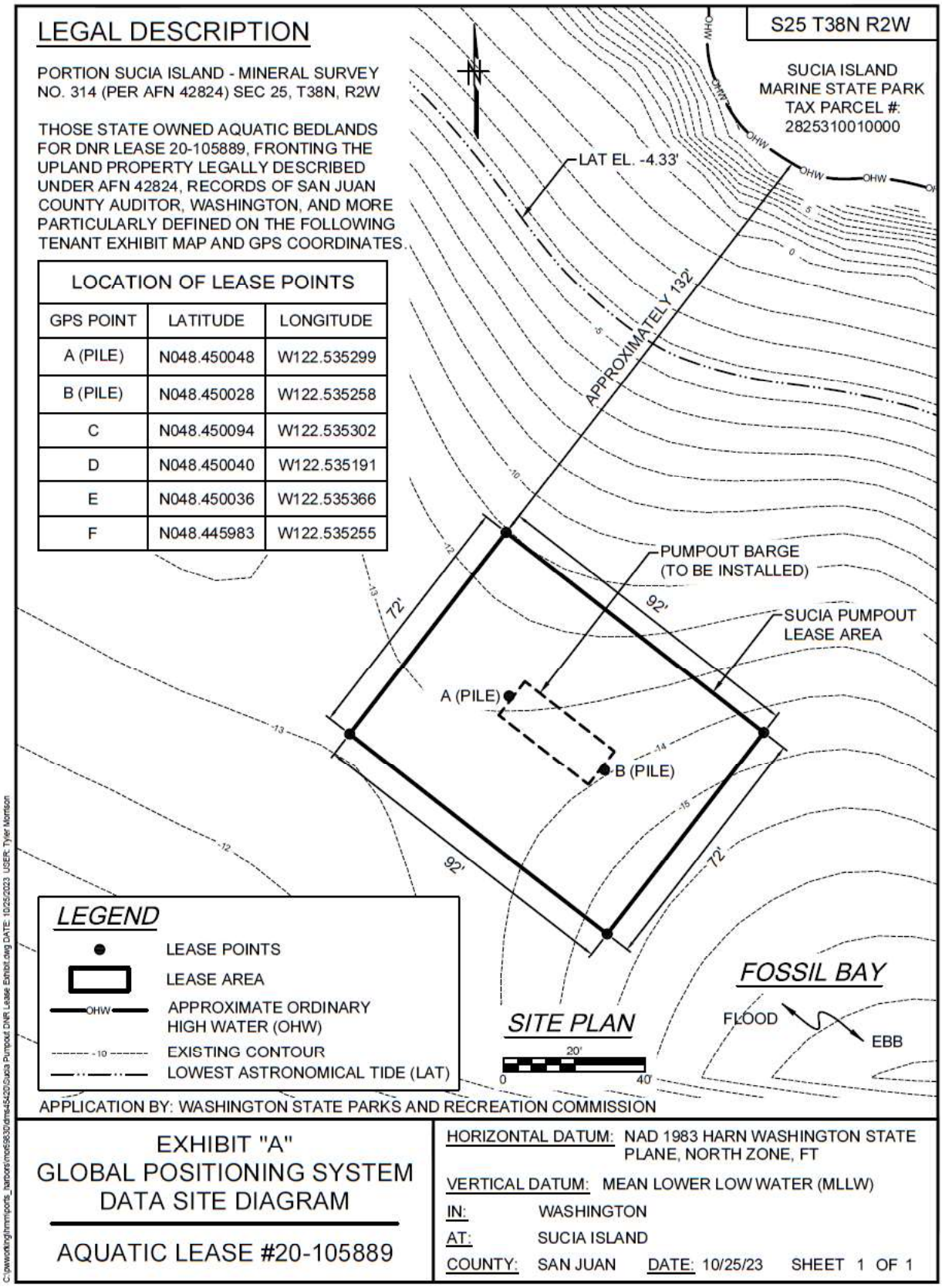
LEGAL DESCRIPTION OF PROPERTY & USE CLASSIFICATIONS

Agreement Number 20-105889

1. LEGAL DESCRIPTION OF THE PROPERTY:

(see next page)

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2. SQUARE FOOTAGE OF EACH USE CLASSIFICATION:

Water-dependent	0
Water-dependent that is public use and access	6,624
Nonwater-dependent	0
Water-oriented subject to water-dependent rental rates	0
Water-oriented subject to nonwater-dependent rental rates	0
Total Square Feet	6,624

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EXHIBIT B

1. DESCRIPTION OF PERMITTED USE

A. Existing Facilities. Sucia Island Marine State Park is an 814-acre marine park with 77,700 feet of shoreline. The main island and several smaller islands comprise the "Sucia group", which is owned by Washington State Parks and Recreation Commission. A pier and float system owned and maintained by State Parks provides access to the island, in addition to providing limited moorage for recreational boaters. A number of mooring buoys are also present within the vicinity of the island. Sucia Island Marine State Park offers abundant camping, hiking, and boating opportunities. There are no services on Sucia Island. In 2020, Sucia Island Marine Park hosted nearly 100,000 visitors.

The proposed floating sewage pumpout station will provide recreational boaters with a much-needed pumpout facility in the vicinity of Sucia Island Marine Park. The nearest available pumpout station is located on northwest Orcas Island, approximately five nautical miles from Sucia Island. Vessel sewage can contain harmful bacteria and viruses, and the release of boater sewage threatens the health of Puget Sound. In 2018, the Puget Sound No Discharge Zone (Chapter 173-228 WAC) became effective and bans the discharge of any type of sewage in Puget Sound. The pumpout facility proposed by State Parks will reduce environmental impacts from illegal dumping of sewage by recreational boaters. The project is supported by a federal grant from the National Fish and Wildlife Foundation (Project #8006.19.066664/66664).

The proposed floating sewage pumpout station is the only Improvement that will be located on the Property. The pumpout station will be located approximately 175 feet offshore in Fossil Bay and will only be accessible by boat. This will allow recreational boaters to temporarily tie up to the pumpout barge to properly dispose of sewage that will then be managed by WA State Parks (Tenant). The sewage pumpout station will consist of an aluminum floating barge anchored by two (2) steel piling. The barge contains an internal sewage tank within the float hull and houses a port-a-potty dump station, equipment locker, and vent stack on the top deck. The deck will be solid to prevent any spills from directly entering the water. The pumpout barge measures 34' long by 12' wide.

The pumpout barge will be positioned at approximately -13 feet Mean Lower Low Water (MLLW). No eelgrass was observed within 25 feet of the proposed pumpout float location during eelgrass and macroalgae surveys conducted in 2020.

B. Proposed Work. Tenant has submitted to State plans and specifications for the Proposed Work, which are attached as Attachment 1 to this Exhibit B (Proposed Work). State grants its consent to the Proposed Work. Tenant shall conform the Proposed Work to the plans and specifications. Tenant's Proposed Work is

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considered Work and subject to the terms and conditions of this Lease. If the Proposed Work is not commenced within five years of the Commencement Date of the Lease, or if Tenant is required to renew, extend, modify, or obtain a new regulatory permit for the Proposed Work, Tenant shall obtain State's prior written consent before conducting the Proposed Work pursuant to Section 7.3 of the Lease.

C. Permits for Proposed Work. Tenant has secured the following permits for the Proposed Work:

- Letter of Permission (LOP) number NWS-2022-61. Issued By: United States Army Corps of Engineers. Issued Date: August 18, 2023. Permit Expiration Date: August 17, 2026.
- Hydraulic Project Approval (HPA) number 2022-4-101+01. Issued By: Washington Department of Fish and Wildlife. Issued Date: February 16, 2022. Expiration Date: February 15, 2027.
- Permit for Shoreline Management Substantial Development LANDUSE-22-0019 Issued By: San Juan County Department of Community Development. Issued Date: July 29, 2022. Expiration Date: July 28, 2027.

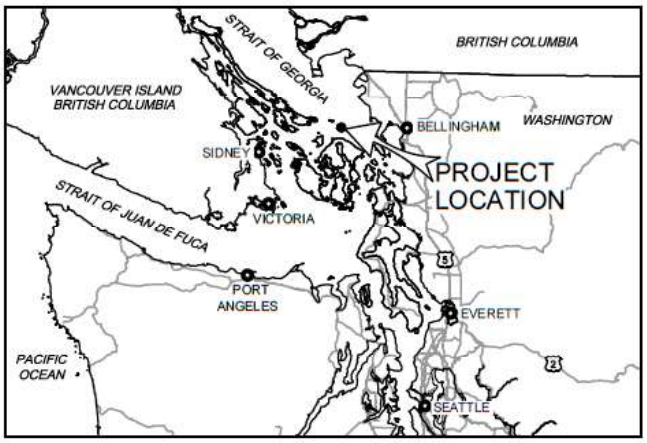
2. ADDITIONAL OBLIGATIONS.

None.

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

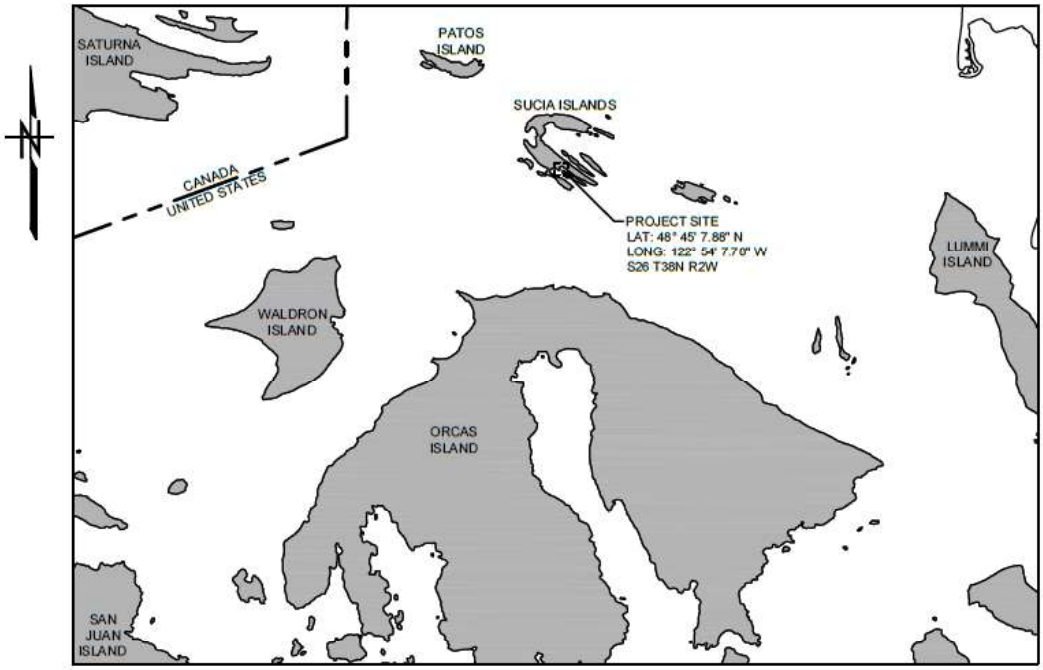
ATTACHMENT 1 TO EXHIBIT B

S26 T38N R2W



VICINITY MAP

DRAWING INDEX	
SHEET NO.	SHEET TITLE
1	VICINITY MAP
2	OVERALL SITE PLAN
3	PROPOSED PUMPOUT BARGE SITE PLAN
4	PROPOSED PUMPOUT BARGE DETAILS
5	PROPOSED PUMPOUT BARGE PROFILE



LOCATION MAP

9,000' 0 18,000'

DRAFT
PERMIT SET

TIDAL WATER LEVELS (MLLW)	
MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT
HIGH TIDE LINE / ORDINARY HIGH WATER	9.25 FT

PURPOSE: PROVIDE A PUMPOUT BARGE FOR RECREATIONAL VESSELS
HORIZONTAL DATUM: WASHINGTON STATE PLANE, NORTH ZONE, FT
VERTICAL DATUM: MEAN LOWER LOW WATER (MLLW)
ADJACENT PROPERTY OWNERS:
1. DEPARTMENT OF NATURAL RESOURCES (DNR)
APPLICATION BY: WASHINGTON STATE PARKS & RECREATION COMMISSION

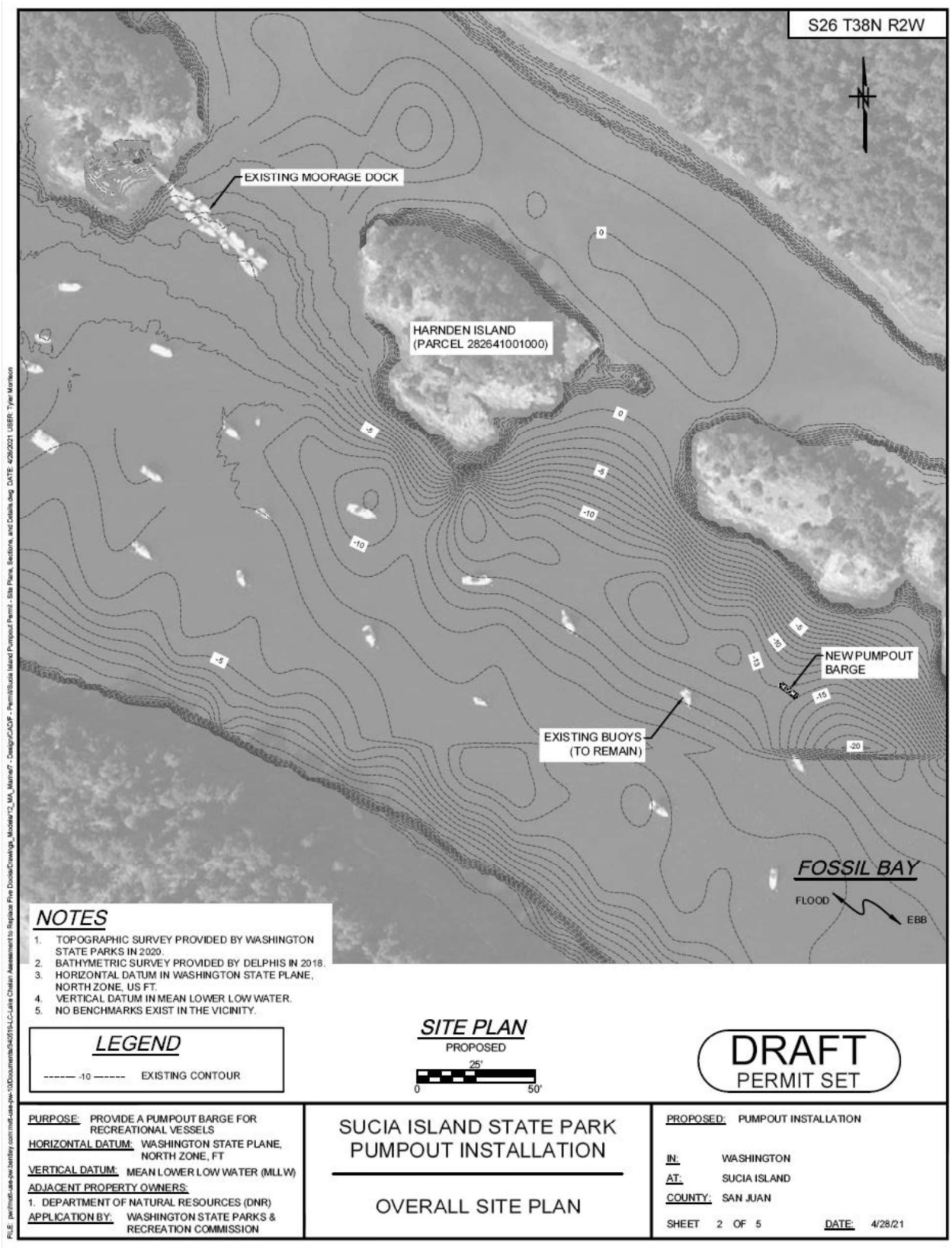
SUCIA ISLAND STATE PARK
PUMPOUT INSTALLATION

VICINITY MAP

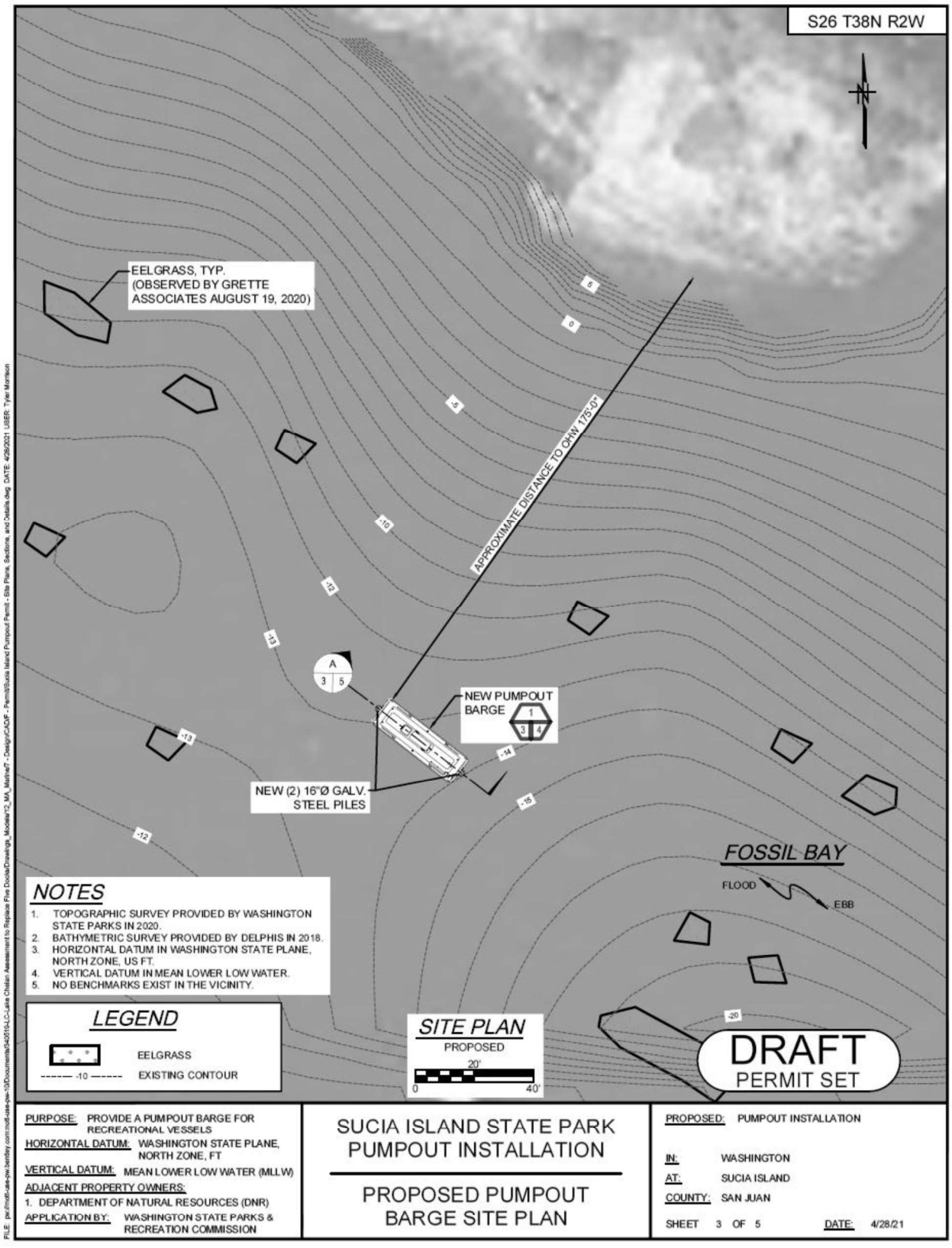
PROPOSED: PUMPOUT INSTALLATION
IN: WASHINGTON
AT: SUCIA ISLAND
COUNTY: SAN JUAN
SHEET 1 OF 5 DATE: 4/28/21

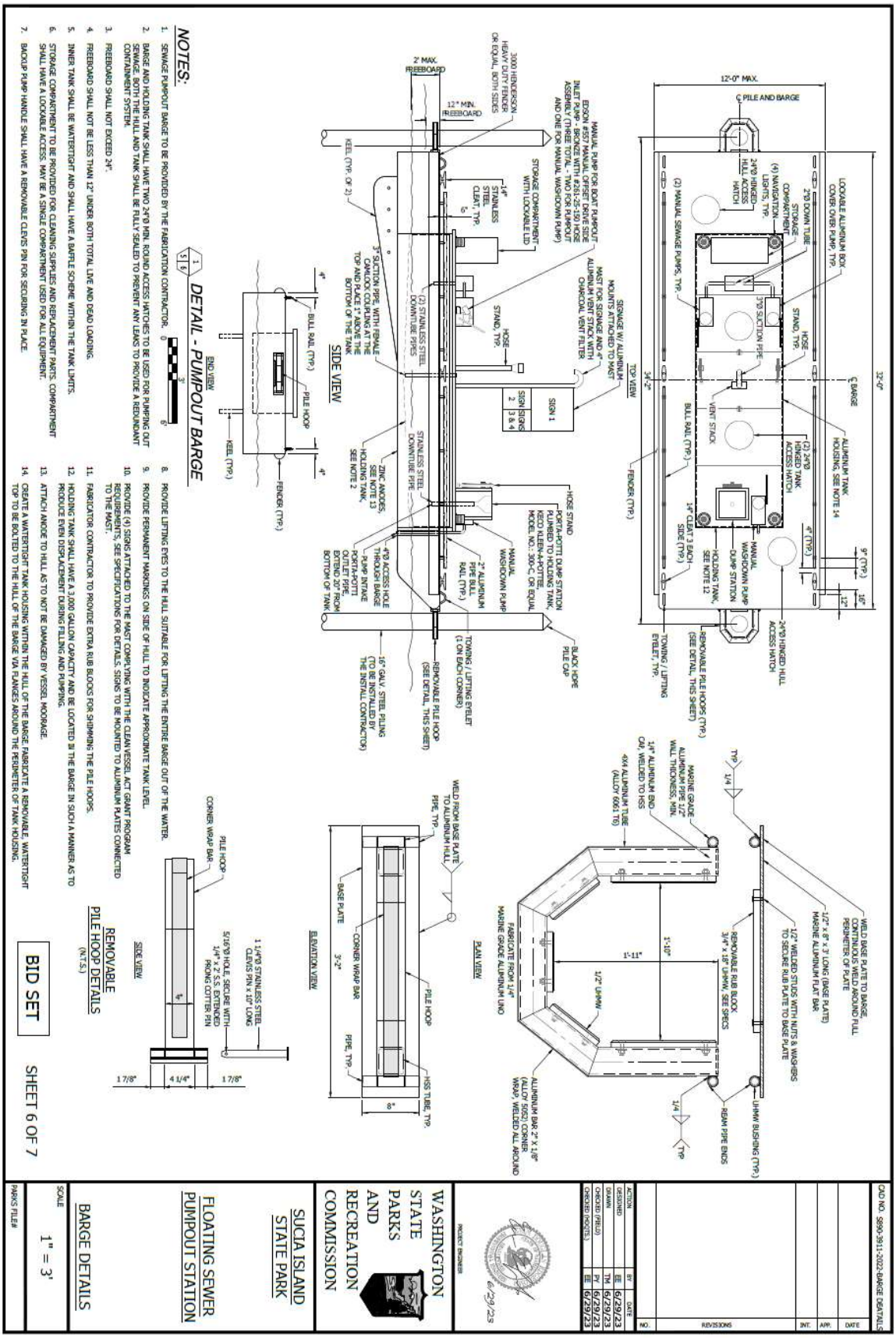
FILE: I:\wa\Anacortes.hartley.com\mdl-data\pw-1\Documents\NA0514-LC-Lake Chelan Assessment to Replace Five Docks\Drawings_Models\12_MA_Marine\7 - Design\CADF - Permit\Sucia Island Pumpout Permit - Cover.dwg DATE: 4/28/2021 USER: Tyler Morrison

Docusign Envelope ID: D587103C-AD27-457E-A841-1778EEC96747

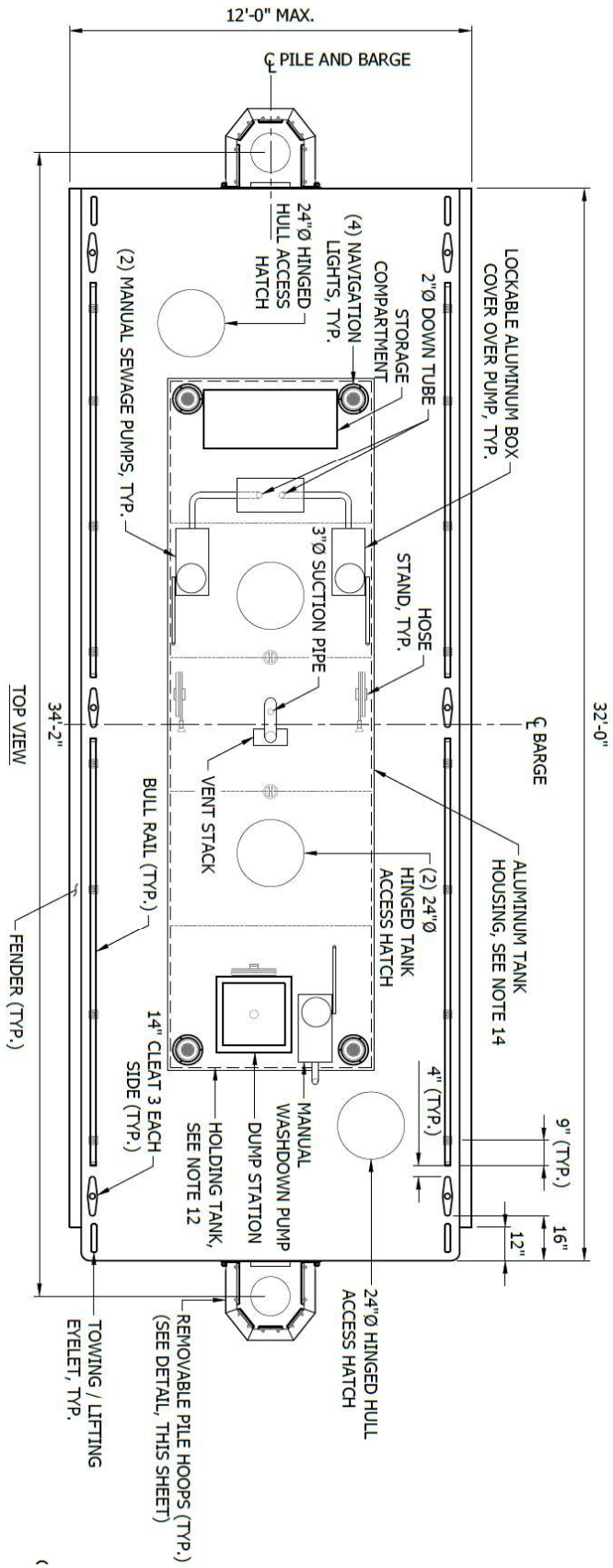


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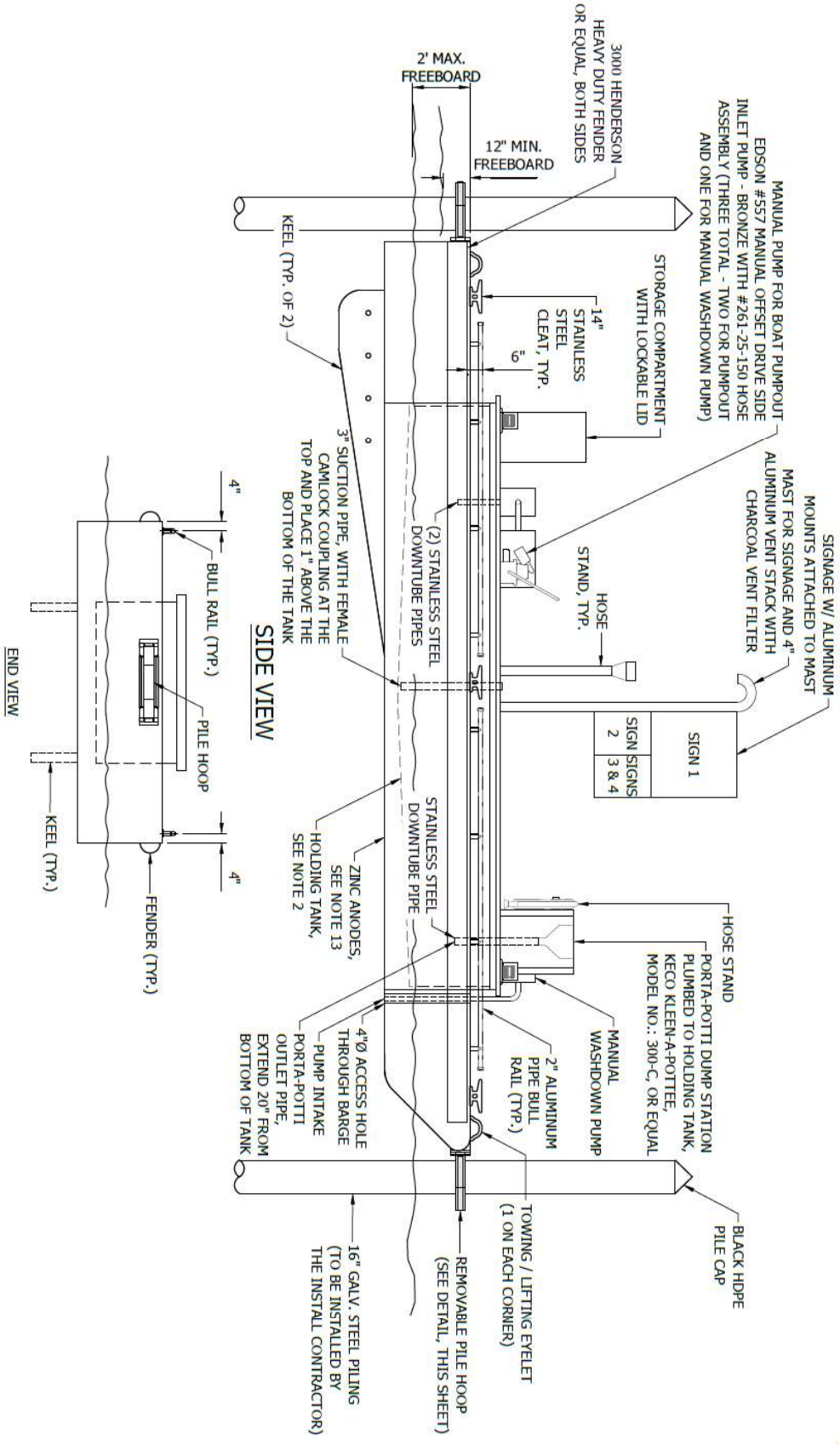



NOTES:
1. SEWAGE PUMPOUT BARGE TO BE PROVIDED BY THE FABRICATION CONTRACTOR.
2. BARGE AND HOLDING TANK SHALL HAVE TWO 24"Ø MIN. ROUND ACCESS HATCHES TO BE USED FOR PUMPING OUT SEWAGE, BOTH THE HULL AND TANK SHALL BE FULLY SEALED TO PREVENT ANY LEAKS TO PROVIDE A REDUNDANT CONTAINMENT SYSTEM.
3. FREEBOARD SHALL NOT EXCEED 24".
4. FREEBOARD SHALL NOT BE LESS THAN 12" UNDER BOTH TOTAL LIVE AND DEAD LOADING.
5. INNER TANK SHALL BE WATERTIGHT AND SHALL HAVE A BAFFLE SCHEME WITHIN THE TANK LIMITS.
6. STORAGE COMPARTMENT TO BE PROVIDED FOR CLEANING SUPPLIES AND REPLACEMENT PARTS. COMPARTMENT SHALL HAVE A LOCKABLE ACCESS. MAY BE A SINGLE COMPARTMENT USED FOR ALL EQUIPMENT.
7. BACKUP PUMP HANDLE SHALL HAVE A REMOVABLE CLEVIS PIN FOR SECURING IN PLACE.
8. PROVIDE LIFTING EYES TO THE HULL SUITABLE FOR LIFTING THE ENTIRE BARGE OUT OF THE WATER.
9. PROVIDE PERMANENT MARKINGS ON SIDE OF HULL TO INDICATE APPROXIMATE TANK LEVEL.
10. PROVIDE (4) SIGNS ATTACHED TO THE MAST COMPLYING WITH THE CLEAN VESSEL ACT GRANT PROGRAM REQUIREMENTS. SEE SPECIFICATIONS FOR DETAILS. SIGNS TO BE MOUNTED TO ALUMINUM PLATES CONNECTED TO THE MAST.
11. FABRICATOR CONTRACTOR TO PROVIDE EXTRA RUB BLOCKS FOR SHIMMING THE PILE HOOPS.
12. HOLDING TANK SHALL HAVE A 3,000 GALLON CAPACITY AND BE LOCATED IN THE BARGE IN SUCH A MANNER AS TO PRODUCE EVEN DISPLACEMENT DURING FILLING AND PUMPING.
13. ATTACH ANODE TO HULL AS TO NOT BE DAMAGED BY VESSEL MOORAGE.
14. CREATE A WATERTIGHT TANK HOUSING WITHIN THE HULL OF THE BARGE. FABRICATE A REMOVABLE, WATERTIGHT TOP TO BE BOLTED TO THE HULL OF THE BARGE VIA FLANGES AROUND THE PERIMETER OF TANK HOUSING.
DETAIL - PUMPOUT BARGE
SIDE VIEW
END VIEW
TOP VIEW
PLAN VIEW
ELEVATION VIEW
REMOVABLE PILE HOOP DETAILS
BID SET
SHEET 6 OF 7
SUCIA ISLAND STATE PARK
FLOATING SEWER PUMPOUT STATION
BARGE DETAILS
1" = 3'
WASHINGTON STATE PARKS AND RECREATION COMMISSION
CAD NO. S890-3911-2022-BARGE DETAILS
PARKS FILE#

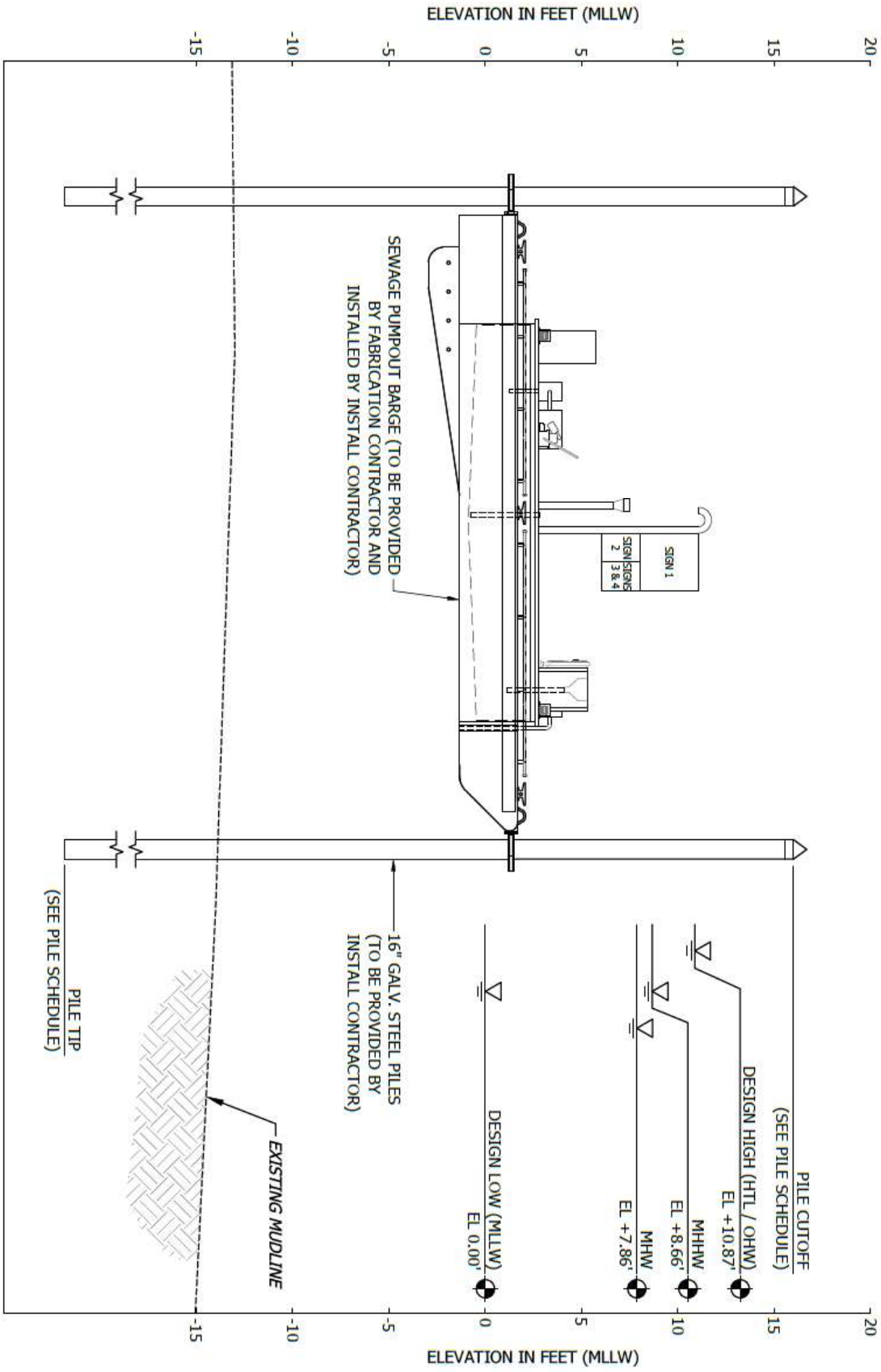
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Attachment 15

U.S. Army Corps of Engineers

Letter of Permission

NWS-2022-61

(Alternate Bid Item A1)

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, SEATTLE DISTRICT
4735 EAST MARGINAL WAY SOUTH, BLDG 1202
SEATTLE, WA 98134-2388

Regulatory Branch August 18, 2023

Ms. Joelene Boyd
Washington State Parks and Recreation Commission
220 North Walnut Street
Burlington, Washington 98233-1138

Reference: NWS-2022-61
Washington State Parks and Recreation Commission
(Sucia Island Floating Pumpout Station)

Dear Ms. Boyd:

We have reviewed your application to install a floating pumpout station in Fossil Bay at Sucia Island, San Juan County, Washington. Based on the information you provided to us, this "Letter of Permission" (LOP) permit authorizes your proposal as depicted on the enclosed drawings dated April 28, 2021, which are made part of this permit. In order for this LOP authorization to be valid, you must ensure that the work is performed in accordance with the enclosed *Letter of Permission General Conditions* and the following special conditions:

a. In order to meet the requirements of the Endangered Species Act (ESA) and the Magnuson Stevens Fishery Conservation and Management Act (MSA), you must implement and abide by the applicable terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" and the applicable Essential Fish Habitat Conservation Recommendations as set forth in the Salish Sea Nearshore Programmatic (SSNP) Biological Opinion (BO) (National Marine Fisheries Service (NMFS) Reference Number WCRO-2019-04086) dated June 29, 2022, and U.S. Fish and Wildlife Service (USFWS) Reference Number FWS/R1/2022-0048454 dated July 29, 2022). The specific General Construction Measures, Project Design Criteria, Essential Fish Habitat Conservation Measures, and monitoring and/or reporting requirements applicable to this permit are identified in the

enclosed Notification Summary Sheet dated November 1, 2022, (NMFS Reference Number WCRO-2019-04086-5122; USFWS Reference Number 2022-0056332). The BO is available on the U.S. Army Corps of Engineers (Corps) website (https://www.nws.usace.army.mil/Missions/Civil-Works/Regulatory/Permit-Guidebook/Endangered-Species/). You must provide the Corps and NMFS the information requested in the enclosed Notification Summary Sheet. All information must prominently display the reference number NWS-2022-61. Failure to comply with these requirements constitutes non-compliance with the ESA and your Corps permit. The NMFS and USFWS is the appropriate authority to determine compliance with the terms and conditions of their BO and with the ESA. If you cannot comply with the terms and conditions of this programmatic consultation, you must, prior to commencing construction, contact the Corps, Seattle District, Regulatory Branch for an individual consultation in accordance with the requirements of the ESA and/or the MSA.

b. In order to meet the requirements of the Endangered Species Act you may conduct the authorized activities from September 1 through March 1 in any year this permit is valid. You shall not conduct work authorized by this permit from March 2 through August 31 in any year this permit is valid.

We have reviewed your project pursuant to the requirements of the Endangered Species Act and the Magnuson-Stevens Fishery Conservation and Management Act in regards to Essential Fish Habitat. The U.S. Army Corps of Engineers has determined that this project will comply with the requirements of the above laws provided you comply with special conditions “a” and “b” listed above.

Please be reminded that Special Condition “a” of your permit requires that you implement and abide by the Endangered Species Act (ESA) requirements set forth in the programmatic Biological Opinion (BO) for this project. In particular, note that the BO requires you submit the enclosed *Certificate of Compliance with Department of the Army Permit,* implement your habitat improvement plan which consists of establishing the pumpout facility and submit written confirmation within 60 days of completed construction of the pumpout facility, and submit a summary of marbled murrelet monitoring results to USFWS. All documents must be submitted to the Corps at nws.compliance@usace.army.mil, NMFS at projectreports.wcr@noaa.gov, and USFWS at ssnp_wa@fws.gov. Failure to comply with the commitments above constitutes non-compliance with the ESA and with this authorization.

The Washington State Department of Ecology determined your project does not trigger the need for a Water Quality Certification or a Coastal Zone Management consistency determination.

You have not requested a jurisdictional determination for this proposed project. If you believe the U.S. Army Corps of Engineers does not have jurisdiction over all or portions of your project you may request a preliminary or approved jurisdictional determination (JD). If one is requested, please be aware that we may require the submittal of additional information to complete the JD and work authorized in this letter may not occur until the JD has been completed.

Any change in the plans for this work will require that you submit revised drawings to this office and receive our written approval of those changes prior to conducting the work. If you object to any terms or conditions of this LOP, you may request an administrative appeal under our regulations (33 CFR Part 331) as described in the enclosed *Notification of Administrative Appeal Options and Process and Request for Appeal* form.

Your authorization to conduct the proposed work under this permit expires 3 years from the date of this letter. Within 30 days of completing the authorized work, you must fill out and return the enclosed *Certificate of Compliance with Department of the Army Permit*. Your signature on this form is our assurance you have conducted the work in accordance with the terms and conditions of this LOP, including all special conditions. All compliance reports should be submitted to the U.S. Army Corps of Engineers, Seattle District, Regulatory Branch at nws.compliance@usace.army.mil. Please remember that failure to comply with the terms and conditions of this LOP, including any special conditions, will invalidate your authorization and could result in a violation of Federal law.

Thank you for your cooperation during the permitting process. We are interested in your experience with our Regulatory Program and encourage you to complete a customer service survey form. This form and information about our program is available on our website at: www.nws.usace.army.mil (select “Regulatory Branch, Permit Information”).

While this project will not require further authorization from us, please note that it must comply with all local, State, and other Federal requirements that may apply. If you have any questions about this letter or our regulatory program, please contact Ms. Jen Casper by phone at (206) 549-2682 or at jennifer.p.casper@usace.army.mil.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Kristina G. Long

for Kathryn P. Sanborn, PhD, PE, PMP
Colonel, Corps of Engineers
District Commander

Enclosures

cc:
NMFS (consultationupdates.wcr@noaa.gov)
USFWS (SSNP_WA@fws.gov)
Ecology (ecyrefedpermits@ecy.wa.gov)
DNR (lalena.amiotte@dnr.wa.gov)

Attachment 15a

U.S. Army Corps of Engineers

Project Notification Summary Sheet

NWS-2022-61

(Alternate Bid Item A1)

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
Version: August 02, 2022

Notification Summary Sheet

The following information is provided as notification and/or a request for verification for Section 7 Endangered Species Act and/or Magnuson-Stevens Fishery Conservation Management Act coverage under the Salish Sea Nearshore Programmatic (SSNP) consultations with the National Marine Fisheries Service (NMFS), WCRO-2019-04086, and the U.S. Fish and Wildlife Service (USFWS), FWS/R1/2002-0048454.

Date of Notification:	9/16/22	
Project Name:	Washington State Parks and Recreation Commission (Stuart Island Moorage Improvements)	
Corps Reference Number:	NWS-2022-56	
Location (Lat./Long.):	48.67526, -123.20077	
Type of Request	NMFS	USFWS
	☐ Notification Only ☒ Notification and Verification ☐ Minor Alteration Request and Verification	☒ Notification Only ☐ Minor Alteration Notification
Statutory Authority	☒ NMFS: ESA and EFH ☐ NMFS: EFH Only	☒ USFWS: ESA Only
General Information	☒ JARPA enclosed ☒ Project Drawings Enclosed	
Project Description including conservation offsets, if applicable.	The proposed action is to replace, reconfigure, and expand an existing moorage facility at Stuart Island Marine State Park. The project includes replacement of the existing moorage facility (pile, floats, pier, components), removal of one offshore island floating dock, replacement of one offshore island floating dock, and replacement of creosote dolphins with stainless steel pile at the pumpout. The total change in overwater cover is 855 square feet, with grated surfaces incorporated in the replacement structure design. The structure is designed to be ADA compliant and improve accessibility at the community structure. A detailed description of the proposed project is located in the enclosed BE starting on page 3. Conservation and/or mitigation measures are located in the enclosed BE starting on page 50.	

Activity Category:

☐	Culvert and bridge repair and replacement resulting in improvements for fish passage	PDC #1
☐	Utilities	PDC #2
☐	Stormwater facilities and outfalls	PDC #3
☐	Shoreline modifications	PDC #4
☑	Expand or install a new in-water or overwater structure	PDC #5
☑	Repair or replace an existing structure	PDC #6
☐	Minor maintenance of an existing structure	PDC #7
☐	Repair, replace, or install a new aid to navigation, scientific measurement device, or tideland marker	PDC #8
☐	Dredging for vessel access	PDC #9
☐	Dredging and debris removal to maintain functionality of culverts, water intakes, or outfalls	PDC #10
☐	Habitat enhancement activities	PDC #11
☐	Set-back or removal of existing tidegates, berms, dikes or levees	PDC #12
☐	Beach nourishment	PDC #13
☐	Sediment remediation	PDC #14

Review the PDC checklist(s) for each applicable activity category.

1. Are all applicable project design criteria met? Yes
    a. If no, describe why and how the work would not result in any adverse effects beyond those considered in the programmatics:

2. If applicable, provide a list of the required monitoring plans/reports enclosed or required post-construction:

   SAV Survey, enclosed, dated April 7, 2021 and July 14, 2021

General Construction Measures (GCM):

☑	Minimize Construction Impacts at Project Site	GCM #1
☑	In-Water Work Timing	GCM #2
☑	Isolation of Concrete Work	GCM #3
☐	Fish Screens	GCM #4
☐	Drilling, Boring, and Tunneling	GCM #5
☑	Pile Installation	GCM #6
☑	Marbled Murrelet Monitoring Plan	GCM #7

☐	Treated Wood Piles	GCM #8
☑	Pile Removal – Intact	GCM #9
☑	Pile Removal – Broken or Intractable	GCM #10
☐	Treated Wood for Uses Other Than Piles	GCM #11
☑	Barge Use	GCM #12
☐	Stormwater Management	GCM #13
☐	Pollution and Erosion Control	GCM #14
☐	Fish Capture and Release	GCM #15
☑	Marine Mammals	Program Administration # 9

Review the applicable GCM List of Requirements specific to the proposed work.

1. Are all applicable GCM's met? Yes
    a. If no, describe why and how the work would not result in any adverse effects beyond those considered in the programmatic:

2. If applicable, provide a list of the required monitoring plans/reports enclosed or required post-construction:

    Marbled Murrelet Monitoring Plan, enclosed, dated March 2022
    Marine Mammal Monitoring Plan, enclosed, dated March 2022

Project Modifications:

☐	Work outside the specified in-water work period when the change would not result in any adverse effects beyond those considered in the programmatic consultation.
☐	Alternate location for equipment, refueling, and staging due to topographical or other site-specific constraints.
☐	Not installing an anti-perch device (on piling).
☐	Marina facility expansion with no more than 1,000 square feet of additional over water coverage or 10 new slips. Whichever is less so long as the other criteria in PDC #5 are met.
☐	Underwater sound attenuation methods demonstrating equivalent sound attenuation to bubble curtains.

If an alteration is requested, include information detailing why the alteration is needed and how the proposal would not result in any adverse effects beyond those considered in the programmatic consultations:

Essential Fish Habitat Conservation Measures:

Applicable	If applicable but will not be implemented, explain.	
☐		1. All projects resulting in a loss of eelgrass habitat, are required to follow eelgrass mitigation monitoring requirements put forth in the Washington Department of Fish and Wildlife "Eelgrass/Macroalgae Habitat Interim Survey Guidelines" unless it conflicts with Seattle District Corps guidelines, in which case the Corps guidelines apply.
☐		2. All new moorings buoys should be anchored in areas where SAV (e.g., eelgrass, kelp) habitat is absent. This will reduce adverse impacts to SAV. Additionally, all new mooring buoys should, to the maximum extent practicable, be in waters deep enough so that the bottom of the vessel remains a minimum of 18 inches off the substrate during extreme low tide events. This will reduce adverse grounding impacts to benthic habitat.
☐		3. When repairing or replacing mooring buoys, located within SAV habitat should be of the type that use midline floats, where appropriate, to prevent chain scour to the substrate. This will reduce adverse impacts to SAV and other benthic habitat.
☐		4. Encircle the pile with a silt curtain that extends from the surface of the water to the substrate, where appropriate and feasible.
☐		5. Drive piles during low tide periods when substrates are exposed in intertidal areas, where appropriate and feasible. This minimizes the direct impacts to fish from sound waves and minimizing the amount of sediments re-suspended in the water column.
☐		6. Any cross or transverse bracing should be placed above the plane of MHHW, where appropriate and feasible, to avoid impacts to water flow and circulation.
☑		7. Minimize, to the maximum extent practicable, the footprint of the overwater structure.
☑		8. Design structures in a north-south orientation, to the maximum extent practicable, to minimize persistent shading over the course of a diurnal cycle.

☐		9. For residential dock and pier structures, the height of the structure above water should be a minimum of 5 feet above MHHW, where appropriate and feasible.
☑		10. The use of floats should be minimized to the extent practicable and should be restricted to terminal platforms placed in deep water where appropriate and feasible and when the Corps determines there will not be a navigation hazard.
☐		11. When breakwaters are required, floating breakwaters are preferred. Encourage seasonal use of breakwaters.
☐		12. Use soft approaches (e.g., beach nourishment, soft or hybrid armoring, vegetative plantings, and placement of LWD) in lieu of “hard” shoreline stabilization and modifications (such as concrete bulkheads and seawalls, concrete or rock revetments), where appropriate and feasible.
☐		13. If planting in the riparian zone, use an adaptive management plan with ecological indicators and performance standards to oversee monitoring and ensure mitigation objectives are met, unless it is contrary to a Corps approved riparian planting plan.

Attachment 15b

U.S. Army Corps of Engineers

General Construction Measures

and

Essential Fish Habitat Conservation Measures

NWS-2022-61

(Alternate Bid Item A1)

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
LIST OF REQUIREMENTS
Version: May 25, 2023

General Construction Measures (GCM) and Essential Fish Habitat (EFH) Conservation Recommendations

Programmatic Endangered Species Act (ESA) Consultations [National Marine Fisheries Service (NMFS) reference number WCRO-2019-04086, U.S. Fish and Wildlife Service (USFWS) reference number FWS/R1/2002-0048454] have been completed for the activities listed below. If you can design your project to meet all of the requirements of the Programmatic Biological Opinions (i.e. Project Design Criteria, GCM, and EFH Conservation Recommendations) including those GCM's and EFH Conservation Recommendations listed below, then the review of your ESA consultation and permit application will be streamlined. The submittal of this list is not required. However, to further expedite your review you may include a description of how you meet these requirements in your SSNP application materials.

Notification Requirements The application materials and notification should include the information below, if applicable. If there is an alteration requested from the applicable GCM requirements, verification is required from both NMFS and USFWS.
• If concrete would dry quicker than the 7-day curing rate, information must be provided as part of the project submittal as described in GCM #3.
• If in-water impact pile driving more than two piles greater than 12 inches per day, a Marbled Murrelet Monitoring Plan as described in GCM #7 must be submitted. Applicants must confirm, after construction a summary of monitoring reports will be provided to USFWS.
• If impervious surface is installed or replaced as part of the proposed work or resulting from the proposed work, a Post-Construction Stormwater Management Plan (PCSMP) must be submitted as described in GCM #13. • In addition, include the name, email address, and telephone number of the person responsible for designing the stormwater management facilities, so that NMFS may contact that person if additional information is necessary.
• If the work area may be isolated, applicant must confirm after construction a Fish Salvage Report will be submitted within 60 days to NMFS and the Corps. The report should include the date, time, and place of fish relocation; number and species of fish captured; number of fish killed; and location of fish release.
• If the following is applicable, a Marine Mammal Monitoring Plan must be submitted. See Program Administration (PA) Section 9 of the Biological Opinions for supporting information. NMFS verification of the plan is required. o In-water construction activities cause underwater noise greater than 120dBrms. o Southern Resident Killer whales have been documented in the action area more than four times during the proposed work window.

○ Or four or more humpback whale sightings have been documented in the action area in the past two years during the proposed work month.
• If removing creosote piling for conservation offset credits: applicants must confirm after creosote removal and upland disposal they will submit the disposal receipts and a picture of the dump truck on the scale to the Services. Disposal receipts need to contain actual weight of the total removed creosote.

General Construction Measures	
	The proposed project must comply with the following General Construction Measures (GCMs) as applicable.
1.	**Minimize Construction Impacts at Project Site**
	To the extent feasible, retain natural vegetation, limit impermeable surfaces, limit duration of in-water work and otherwise minimize the extent and duration of earthwork (e.g., compacting, dredging, drilling, excavation, and filling).
2.	**In-Water Work Timing**
	Complete all work waterward of the line of the Highest Astronomical Tide (HAT) during dates listed in the most recent version of in-water work guidelines, Washington Department of Fish and Wildlife (WDFW) Marine Water Work Windows: https://app.leg.wa.gov/WAC/default.aspx?cite=220-660-330
	Hydraulic and bathymetric measurement, sediment sampling and geotechnical sampling are not constrained by the work timing constraints above and may be completed at any time.
3.	**Isolation of Concrete Work**
	All concrete will be placed in the dry (e.g., isolated from water) or within confined waters (i.e., within a form or cofferdam) not connected to surface waters, and will be allowed to cure a minimum of 7 days before contact with surface water. Should new concrete technology develop which has a quicker curing rate, information must be provided as part of the project submittal and NMFS and USFWS will evaluate whether a shorter cure time will be no more impactful than the cure time evaluated in this Opinion.
4.	**Fish Screens**
	Whenever diverting or pumping surface water or water in an isolated work area, a fish screen that meets the most recent revisions of NMFS' fish screen criteria will be installed prior to and during pumping activities and will be maintained in a condition that prevents fish movement through the barrier. Fish screen criteria can be found in Chapter 11 of NMFS Anadromous Salmonid Fish Facility manual or most recent version (NMFS 2022): https://media.fisheries.noaa.gov/2022-06/anadromous-salmonid-passage-design-manual-2022.pdf. If at any time fish screens have damage, pumping activities and in-water work shall cease until damaged fish screens are repaired.
5.	**Drilling, Boring, and Tunneling**

	If drilling, boring, or tunneling are used, isolate drilling operations in wetted areas using a steel casing or other appropriate isolation method to prevent drilling fluids from contacting water.
	If drilling through decking is necessary, use containment measures to prevent drilling debris from entering the water.
	Sampling and directional drill recovery/recycling pits, and any associated waste or spoils will be completely isolated from surface waters and wetlands.
	All waste or spoils will be covered if precipitation is falling or imminent.
	All drilling fluids and waste will be recovered and recycled or disposed of to prevent entry into the water.
	If a drill boring case breaks and drilling fluid or waste is visible in water or a wetland, make all possible efforts to contain the waste.
	All drilling equipment, drill recovery and recycling pits, and any waste or spoil produced, will be contained and then completely recovered and recycled or disposed of as necessary to prevent entry into any waterway. Use a tank to recycle drilling fluids.
	When drilling is completed, remove as much of the remaining drilling fluid as possible from the casing (e.g., by pumping) to reduce turbidity when the casing is removed.
	Drilling, boring, or coring may be used to collect sediment samples/cores. Work at contaminated sites is addressed in PDC #14.
6.	**Pile Installation**
	Piles may be round concrete, steel pipe, untreated wood or some pressure-treated wood with appropriate wrapping (see below). Pressure-treated wood may be installed as described below. Piles must be 36 inches in diameter or smaller or steel H-pile designated as HP 24 inches or smaller.
	Whenever practical, use a vibratory hammer for in-water pile installation.
	Jetting may be used to install pile in areas with coarse, uncontaminated sediments that meet criteria for unconfined in-water disposal.
	When using an impact hammer to drive or proof a steel pile, one of the following sound attenuation methods will be used: (a) complete isolation from water by dewatering the area around the pile; (b) a double-walled pile; or (c) a bubble curtain that will distribute small air bubbles around the pile perimeter for the full depth of the water column during pile installation (see NMFS and USFWS (2006), CALTRANS Technical Report No. CTHWASSNP-RT-306.01.01 (2015), Wursig et al. (2000), and Longmuir and Lively (2001)); or c) if water velocity is greater than 1.6 feet per second, the permittee will use a confined bubble curtain (e.g., surrounded by a fabric or sleeve) that will distribute air bubbles around 100% of the pile perimeter for the full depth of the water column during impact pile installation. New technologies that have demonstrated equivalent sound attenuation can be used if verified by USFWS.
	To assist a permittee in determining biological monitoring needs during pile installation, an optional Pile Installation Calculator is available: https://www.fws.gov/library/collections/washingtonsection-7-consultation-technical-assistance-and-guidance

	The tool aids in determining the extent of underwater noise impacts and distances. Construction activities will cease if marbled murrelets are observed within or entering a zone where pile driving noise is likely to cause injury.
	No more than 8 piles may be driven on any day using impact pile driving.
	Impact pile driving will not begin earlier than two hours after sunrise and will be complete at least one hour before sunset for the period from April 1 through September 30.
	Complete all work waterward of the line of the Highest Astronomical Tide (HAT) during dates listed in the most recent version of in-water work guidelines, Washington Department of Fish and Wildlife (WDFW) Marine Water Work Windows: https://app.leg.wa.gov/WAC/default.aspx?cite=220-660-330
	Hydraulic and bathymetric measurement, sediment sampling and geotechnical sampling are not constrained by the work timing constraints above and may be completed at any time.
7.	**Marbled Murrelet Monitoring Plan**
	The applicant will develop and implement a marbled murrelet monitoring plan for projects that include in-water impact pile driving when injurious sound pressure levels are expected or when in-air sounds are expected to cause masking effects.
	Applicants may request technical assistance from the USFWS while developing a Marbled Murrelet Monitoring Plan to ensure it meets requirements under the USFWS Protocol for Marbled Murrelet Monitoring During Pile Driving (further detail is provided in Appendix B of USFWS's Biological Opinion for this programmatic consultation). A plan must be submitted with the project notification.
	Certified observers will visually monitor the monitoring area (area of potential injury) for marbled murrelets following the protocol. Protocol is provided in Appendix B of USFWS's Biological Opinion for this programmatic consultation.
	An appropriate number of certified marbled murrelet observers will be positioned to provide adequate coverage of the monitoring area without looking farther than 50 meters to ensure no murrelets are in the monitoring area.
	All monitoring will be conducted by observers meeting appropriate qualifications and certified by the USFWS.
	One qualified biologist will be identified as the Lead Biologist. The Lead Biologist has the authority to stop pile driving when murrelets are detected in the monitoring area or when visibility impairs monitoring.
	If murrelets are spotted in the monitoring area, pile driving will not resume until the murrelets have left the monitoring area and at least 2 full sweeps of the monitoring area have confirmed no murrelets are present. If visibility impairs monitoring, pile driving will not resume until effective monitoring can be conducted.
	If weather or sea conditions restrict the observer's ability to observe for marbled murrelets, or become unsafe for the monitoring vessels to operate, cease pile installation until conditions allow for monitoring to resume. Monitoring will only occur when the sea state is at a Beaufort scale of 2 or less.

	The Permittee will provide a summary of marbled murrelet monitoring results, including observation dates, times, and conditions; description of any "take" identified by the biologist, and seabirds found during beach surveys to USFWS.
8.	**Treated Wood Piles**
	Inorganic arsenical pressure-treated wood piles (chromated copper arsenate (CCA) or ammoniacal copper zinc arsenate (ACZA)) that are sealed with a wrapping or a polyurea barrier may be installed under SSNP. Any proposal to use arsenical pressure-treated wood pilings without a wrapping or polyurea barrier systems is not covered by SSNP. Pile wrappings must meet the following criteria:
	A. Wrappings are made from a pre-formed plastic such as polyvinyl chloride (PVC), a fiber glass-reinforced plastic or a high density polyethylene (HDPE) with an epoxy fill or petrolatum saturated tape (PST) inner wrap in the void between the HDPE and the pile.
	B. Wrapping material used for interior pilings must be a minimum of 1/10 of an inch thick, durable enough to maintain integrity for at least 10 years, and have all joints sealed to prevent leakage.
	C. Wrapping material used for exterior pilings that come into direct contact with ocean going vessels or barges must be HDPE pile wrappings with epoxy fill or PST inner wrap.
	D. The tops of all wrapped piles must be capped or sealed to prevent exposure of the treated wood surface to the water column and to prevent preservative from dripping into the water.
	E. Polyurea barrier systems must meet these additional criteria: i. The polyurea barrier must be an impact-resistant, biologically inert coating that lasts or can be maintained for 10 years and in accordance with American Wood Protection Association M 27 standard. ii. The polyurea barrier must be ultraviolet light resistant and a minimum of 250 mm (0.25 inch) thick in the area that is submerged (Morrell 2017). iii. Polyurea barriers must be installed on dry piles that are free of loose wood, splinters, sawdust or mechanical damage. iv. Wrappings or polyurea barriers will extend both above and below the portion of the pile that is in contact with the water. The wrapping or polyurea barrier must extend at least 18 inches below the mudline into the substrate and to the top of the pile. v. All operations to prepare wrappings or polyurea barriers for installation over piles (cutting, drilling, and placement of epoxy fill) will occur in a staging area away from the waterbody. vi. All piles with wrappings or polyurea barriers must be regularly inspected and maintained to identify unobserved failures of the wrapping or polyurea barrier or anytime a wrapping or polyurea barrier breach is observed.
9.	**Pile Removal - Intact**

	The following steps will be used to minimize contaminant release, sediment disturbance, and total suspended solids when removing an intact pile:
	A. Install a floating surface boom to capture floating surface debris.
	B. To the extent possible, keep all equipment (e.g., bucket, steel cable, vibratory hammer) out of the water, grip piles above the waterline, and complete all work during low water and low current conditions.
	C. Dislodge (i.e., wake up) the piling with a vibratory hammer, whenever feasible.
	D. Slowly lift piles from the sediment and through the water column.
	E. Place piles in a containment basin on a barge deck, pier, or shoreline without attempting to clean or remove any adhering sediment. A containment basin for the removed piles and any adhering sediment may be constructed of durable plastic sheeting with continuous sidewalls supported by hay bales or other support to contain all sediment and return flow which may otherwise be directed back to the waterway. Containment basin shall be lined with an oil absorbent boom.
	F. Dispose of all removed piles, floating surface debris, any sediment spilled on work surfaces, and all containment supplies at a permitted upland disposal site.
	If removing creosote piling for conservation offset credits: applicants must submit the disposal receipts and a picture of the dump truck on the scale to the Services after creosote removal and upland disposal. Disposal receipts need to contain actual weight of the total removed creosote.
10.	**Pile Removal - Broken or Intractable Pile.**
	If a pile breaks above the surface of uncontaminated sediment, or less than two feet below the surface, make every feasible attempt short of excavation to remove it entirely. If the pile cannot be removed without excavation, drive the pile deeper if possible.
	If a pile in contaminated sediment is intractable or breaks above the surface, of contaminated sediment, cut the pile or stump off at the sediment line. Cutting the pile up to two feet below the sediment line is allowed if required by a state permit or other authorization.
	If a pile breaks below the surface of contaminated sediment, make no further effort to remove it.
	If removing creosote piling for conservation offset credits: applicants must submit the disposal receipts and a picture of the dump truck on the scale to the Services after creosote removal and upland disposal. Disposal receipts need to contain actual weight of the total removed creosote.
11.	**Treated Wood For Uses Other Than Piles.**
	The following criteria pertains to the repair or maintenance of pre-existing bridges, boardwalks, pier, ramp and floats, footbridges, piers, stringers, and structures in or near waterways and wetlands:
	A. Pesticide and preservative-treated wood can only be used for substructures that are not in direct exposure to leaching by precipitation, overtopping waves, or submersion. Treated wood is prohibited for the application of decking and repair or replacement of bulkheads.

	B. Treated wood shipped to the project area will be stored out of contact with standing water and wet soil and will be protected from precipitation.
	C. Each load and piece of treated wood will be visually inspected and rejected for use in or above aquatic environments if visible residue, bleeding of preservative, preservative-saturated sawdust, contaminated soil, or other dispersible materials are present.
	D. Offsite prefabrication will be used whenever possible to minimize cutting, drilling and field preservative treatment over or near water.
	E. When field fabrication is necessary, all drilling, and field preservative treatment of exposed treated wood will be done above the plane of the High Tide Line to minimize discharge of sawdust, drill shavings, excess preservative and other debris. Tarps, plastic tubs, or similar devices will be used to contain the bulk of any fabrication debris, and any excess field preservative will be removed from the treated wood by wiping and proper disposal to prevent run-off to marine waters.
	F. Cutting of treated wood shall occur 50 feet from open water. Cutting of treated wood in nearshore areas shall include means of minimizing sawdust contamination, such as vacuum dust collectors or similar means of collecting dust.
	G. Evaluate all wood construction debris removed during a project to ensure proper disposal of treated wood.
	H. Ensure that no treated wood debris falls into the water or, if debris does fall into the water, remove it immediately.
	I. After removal, place treated wood debris in an appropriate dry storage site protected from precipitation until it can be removed from the project area.
	J. Treated wood debris shall not be left in the water or stacked at or below the High Tide Line.
12.	**Barge Use.**
	Barges will be large enough to remain stable under foreseeable loads and adverse conditions.
	Barges will be inspected before arrival to ensure the vessel and ballast are free of invasive species if the barge has been used in any other waterbody.
	Barges will be secured, stabilized, and maintained as necessary to ensure no loss of balance, stability, anchorage, or other condition that can result in the release of contaminants or construction debris.
	Ensure the barge does not ground out.
13.	**Stormwater Management**
	Stormwater management, as described below, is required for PDC #3 and any other project that will create or prolong stormwater runoff discharging to a stream, river, estuary, or nearshore marine area when that proposed project: (1) Includes construction of new impervious surface that; (2) repairs or replaces existing impervious surface when the stormwater management at the site does not currently meet all the criteria identified below; or (3) prolongs the life of an existing impervious surface and the stormwater management at the site does not currently meet the all of the criteria identified below.

	The following actions do not require any post-construction stormwater management: i. Removing marine debris or marine life from existing outfalls. ii. Replacing outfall flap gates or flow control devices. iii. Minor repairs or non-structural pavement preservation including installation or repair of guard rails, patching, chip seal, grind/inlay, overlay; removal or plugging of scuppers in a way that benefits stormwater treatment. iv. Modifying on-street parking modifications that reduces contributing impervious surfaces. v. Retrofitting, without increasing the amount of pollution generating impervious surface (PGIS), an existing impervious surface (pavement, parking lot, etc.) as necessary and required by law to comply with Americans with Disabilities Act (ADA) standards for accessible design (e.g., curbcuts). This does not include retrofitting of overwater structures. vi. Minor building repairs such as re-roofing, re-siding, painting, replacing or installing fasteners, shingles, flashing, and gutters, or similar building elements.
	For residential application, hardscape areas should utilize pervious materials (e.g., pavers, porous concrete) as feasible; if infeasible, incorporate rain gardens, bioswales, planted wetponds or comparable Low Impact Development (LID) treatments.
	For commercial, industrial, or public application, utilize LID approaches to design stormwater treatment and management facilities. LID uses on-site features to maximize evapotranspiration and infiltration, which improve water quality and reduce adverse effects to receiving waters such as hydromodification. Manufactured (or proprietary) stormwater facilities, or alternative approaches, will only be considered if site constraints preclude the implementation of LID methods or the alternative can demonstrate improvement in ecosystem health and function commensurate with identified LID practices. Examples of LID practices, ordered by preference, include: i. Minimize impervious area. ii. Limit disturbance. iii. Landscape and hardscape areas.
	Provide a Post-Construction Stormwater Management Plan (PCSMP) for any action proposed to be carried out under this GCM to NMFS. This plan will be validated by NMFS during the verification step. A PCSMP must include the following information: i. All relevant plans, drawings, exhibits, and a narrative report addressing PDC #3 below, that describes, explains, and defines the proposed project. Any engineering design sheets must be stamped and signed by a professional engineer licensed to practice in the state of Washington. ii. Site maps indicating the following elements within the project boundaries:

	a. Property boundaries and project boundaries, especially if the project includes activities extending beyond/outside the property or parcel boundaries. b. Impervious areas, landscape areas, and undeveloped natural areas (e.g., forested areas, wetlands, riparian zones). c. Location and extent of all LID stormwater facilities and BMPs by type and capacity. d. Location and extent of proprietary stormwater treatment technologies by type and capacity, if proposed. e. Location and extent of other structural source control practices by type and capacity (e.g., special practices for known or suspected contaminated sites, methods for targeting specific pollutants of concern). f. All runoff discharge points and conveyance paths to the nearest receiving water.
	Water Quality Treatment Analysis that describes how LID or commensurate practices will treat the water quality design storm and provide adequate treatment for runoff that will be discharged from the site, based on design storm flows. The Water Quality Treatment Analysis should include: i. Descriptions of each proposed LID facility's capacity in terms of discharge or volume depending on the type of facility (i.e., flow rate or volume managed facilities). ii. If proposed, describe each proprietary stormwater treatment facility's capacity to treat the water quality design storm and provide adequate treatment for runoff that will be discharged from the site. iii. Describe any other structural source control practices that address LID or proprietary facilities treatment efficiency objectives (i.e., amount or percent of contaminant reduction, treatment, or management).
	Flow Control Analysis that describes how treatment facilities (LID or commensurate practices) will manage and control the quantity of stormwater discharged from the site (i.e., detention, retention). Flow control is required for all projects, unless the outfall of the stormwater facility discharges directly into a major water body or directly to nearshore marine areas. Post-construction stormwater flow control methods shall demonstrate that the post-construction stormwater runoff is equal to, or less than, the pre-development stormwater runoff for all storm events between the 50% of the 2-year, 24-hour and the 10-year storm events. i. Describe each proposed LID facility's capacity in terms of flow or volume retention/detention depending on facility type. ii. Describe each proprietary stormwater facility's capacity in terms of flow or volume retention/detention depending on facility type. iii. Describe any other structural source control practices in terms of flow or volume retention/detention depending on facility type.

	If relevant, a description of how the proposed stormwater treatment prevents adverse hydromodification of receiving waters. This step would not typically be required for discharge directly into nearshore marine areas. This step is necessary if a project will: i. Peak runoff exceeds 0.5 cfs during the 2-year, 24-hour storm event; and, ii. Not meet the flow control requirements, detailed above; and, iii. Discharge into an intermittent or perennial water body with a watershed area less than 100 square miles above the discharge location.
	Flow control treatment and practices must be designed using continuous simulation modeling to ensure facilities are designed to capture the frequency and duration of flows generated by storms within the following criteria: i. Lower discharge endpoint, by U.S. Geological Survey (USGS) flood frequency zone = 50% of 2-year event (i.e., Water Quality Design Storm) ii. Upper discharge endpoint a.Entrenchment ratio <2.2 = 10-year event, 24-hour storm; or, b. Entrenchment ratio >2.2 = bank overtopping event.
	Provide a description of the stormwater conveyance system. When conveyance is necessary to discharge treated stormwater directly into a surface water or a wetland, the following requirements apply: i. Maintain natural drainage patterns such that runoff is not redirected to a different drainage basin (i.e., watershed, subwatershed) from the pre-project conditions. ii. Ensure that treatment for post-construction runoff from the site is completed before it is allowed to commingle with any offsite runoff in the conveyance. iii. Prevent erosion of the flow path from the project to the receiving water(s). If preventing erosion using a natural flow path is not feasible, use manufactured elements (e.g., pipes, ditches, discharge facility protection) to discharge runoff that extends below the OHWM or HTL elevation of the receiving water. Note: The Corps does not consider activities occurring above the OHWM or HTL.
	Provide an Operations and Maintenance Plan that describes the schedule of the proposed inspection as well as maintenance activities for the stormwater facilities. This plan will be validated by NMFS during the verification step. The party that is legally responsible for maintenance and monitoring activities should also be stated. Finally, describe events that would trigger an inspection outside of routine inspection (e.g., a large storm event, localized flooding). Provide a contact phone number and email address for the legally responsible party or parties.
	The name, email address, and telephone number of the person responsible for designing the stormwater management facilities, so that NMFS may contact that person if additional information is necessary.
14.	**Pollution and Erosion Control**

	Use site planning and site erosion control measures commensurate with the scope of the project to minimize damage to natural vegetation and permeable soils and prevent erosion and sediment discharge from the project site.
	Before significant earthwork begins, install appropriate, temporary erosion controls downslope to prevent sediment deposition in the riparian area, wetlands, or water body. In tidal areas, plan work in dry areas as much as possible.
	During construction: i. Complete earthwork in wetlands, riparian areas, and stream channels as quickly as possible. ii. Cease project operations when high flows may inundate the project area, except for efforts to avoid or minimize resource damage. iii. If eroded sediment appears likely to be deposited in the stream during construction, install additional sediment barriers as necessary. iv. Temporary erosion control measures may include fiber wattles, silt fences, jute matting, wood fiber mulch and soil binder, or geotextiles and geosynthetic fabric. v. Soil stabilization using wood fiber mulch and tackifier (hydro-applied) may be used to reduce erosion of bare soil, if the materials are free of noxious weeds and non-toxic to aquatic and terrestrial animals, soil microorganisms, and vegetation. vi. Inspect and monitor pollution and erosion control measures throughout the length of the project. vii. Remove sediment from erosion controls if it reaches one-third of the exposed height of the control. viii. Whenever surface water is present, maintain a supply of sediment control materials and an oil-absorbing floating boom at the project site. ix. Stabilize all disturbed soils following any break in work unless construction will resume within four days.
	Remove temporary erosion controls after construction is complete and the site is fully stabilized.
15.	**Fish Capture and Release**
	If practicable, allow listed fish species to migrate out of the work area or remove fish before dewatering; otherwise remove fish from an exclusion area as it is slowly dewatered with methods such as hand or dip-nets, seining, or trapping with minnow traps (or gee-minnow traps).
	Manage isolation areas in a manner to avoid multiple salvage events (e.g. do not let water or fish into the isolated area during non-work times).
	Fish capture will be supervised by a qualified fisheries biologist, with experience in work area isolation and competent to ensure the safe handling of all fish.
	Conduct fish capture activities during periods of the day with the coolest air and water temperatures possible, normally early in the morning to minimize stress and injury of species present.

	Monitor the block nets frequently enough to ensure they stay secured to the banks and free of organic accumulation.
	Electrofishing will be used during the coolest time of day, only after other means of fish capture are determined to be not feasible or ineffective. a. Do not electrofish when the water appears turbid, e.g., when objects are not visible at depth of 12 inches. b. Do not intentionally contact fish with the anode. c. Follow NMFS (2000 or most recent) electrofishing guidelines, including use of only direct current (DC) or pulsed direct current within the following ranges: i. If conductivity is less than 100 microsecond (µs), use 900 to 1100 volts. ii. If conductivity is between 100 and 300 µs, use 500 to 800 volts. iii. If conductivity greater than 300 µs, use less than 400 volts. iv. Begin electrofishing with a minimum pulse width and recommended voltage, then gradually increase to the point where fish are immobilized. v. Immediately discontinue electrofishing if fish are killed or injured, i.e., dark bands visible on the body, spinal deformations, significant de-scaling, torpid or inability to maintain upright attitude after sufficient recovery time. Recheck machine settings, water temperature and conductivity, and adjust or postpone procedures as necessary to reduce injuries. vi. If buckets are used to transport fish: 1. Minimize the time fish are in a transport bucket. Check condition of fish in the bucket frequently. 2. Keep buckets in shaded areas or, if no shade is available, covered by a canopy. 3. Limit the number of fish within a bucket; fish will be of relatively comparable size to minimize predation. 4. Use aerators or replace the water in the buckets at least every 15 minutes with cold clear water. 5. Release fish in an area upstream with adequate cover and flow refuge; downstream is acceptable provided the release site is below the influence of construction. 6. Ensure water levels in buckets is low enough to prevent fish from jumping out of the bucket or cover the bucket with a wet towel
	The USFWS is to be notified within three working days upon locating a dead, injured or sick endangered or threatened species specimen. Initial notification must be made to the nearest U.S. Fish and Wildlife Service Law Enforcement Office. Contact the U.S. Fish and Wildlife Service Law Enforcement Office at

	(425) 883-8122, or the Service's Washington Fish and Wildlife Office at (360) 753-9440.
PA #9	**Marine Mammals**
	In-water construction activities causing underwater noise greater than 120dBrms, such as pile driving, jackhammering, and underwater sawing, will shut down if marine mammals enter the zone of influence. See Program Administration (PA) Section 9 of the Biological Opinions for supporting information. Construction activities will not resume until all marine mammals have been cleared from the zone of harm and are observed to be moving away from the construction site.
	A. If Southern Resident Killer whales have been documented more than four times during the proposed work window in the quadrant the project area is in, a Marine Mammal Monitoring Plan (MMMP) must be prepared and submitted with the project notification. The MMMP will be reviewed by a NMFS biologist. The goal of a MMMP is to stop or not start work if a marine mammal is in the area where it may be affected by pile driving noise.
	If in the previous two years there were four or more humpback whale sightings during the proposed work month, in the action area of the proposed work, a MMMP must be submitted with the project notification.
	NOAA's website identifies these quadrants and contains guidance on the potential for ESA-listed marine mammal occurrences in project areas: http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/evaluating_sound.html
	Check the Orca Network Sightings Maps at: http://www.orcanetwork.org/Archives/index.php?categories_file=Sightings%20Archives%20Home for Humpback whale sightings.
	Guidance for developing an MMMP can be found on NOAA's website: http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/monitoring_plan_guidance.html

	Essential Fish Habitat Conservation Recommendations
	1. All projects resulting in a loss of eelgrass habitat, are required to follow eelgrass mitigation monitoring requirements put forth in the Washington Department of Fish and Wildlife "Eelgrass/Macroalgae Habitat Interim Survey Guidelines" unless it conflicts with Seattle District Corps guidelines, in which case the Corps guidelines apply. .
	Mooring Anchors and Persistently Moored Vessels
	2. All new moorings buoys should be anchored in areas where SAV (e.g., eelgrass, kelp) habitat is absent. This will reduce adverse impacts to SAV. Additionally, all new mooring buoys should, to the maximum extent practicable, be in waters deep enough so that the bottom of the vessel remains a minimum of 18 inches off the substrate during extreme low tide events. This will reduce adverse grounding impacts to benthic habitat.

	3. When repairing or replacing mooring buoys, located within SAV habitat should be of the type that use midline floats, where appropriate, to prevent chain scour to the substrate. This will reduce adverse impacts to SAV and other benthic habitat.
	Pile Removal and Installation
	4. Encircle the pile with a silt curtain that extends from the surface of the water to the substrate, where appropriate and feasible.
	5. Drive piles during low tide periods when substrates are exposed in intertidal areas, where appropriate and feasible. This minimizes the direct impacts to fish from sound waves and minimizing the amount of sediments re-suspended in the water column.
	Over- and in- water Structures
	6. Any cross or transverse bracing should be placed above the plane of MHHW, where appropriate and feasible, to avoid impacts to water flow and circulation.
	7. Minimize, to the maximum extent practicable, the footprint of the overwater structure.
	8. Design structures in a north-south orientation, to the maximum extent practicable, to minimize persistent shading over the course of a diurnal cycle.
	9. For residential dock and pier structures, the height of the structure above water should be a minimum of 5 feet above MHHW, where appropriate and feasible.
	10. The use of floats should be minimized to the extent practicable and should be restricted to terminal platforms placed in deep water where appropriate and feasible and when the Corps determines there will not be a navigation hazard.
	11. When breakwaters are required, floating breakwaters are preferred. Encourage seasonal use of breakwaters.
	Nearshore Structures
	12. Use soft approaches (e.g., beach nourishment, soft or hybrid armoring, vegetative plantings, and placement of LWD) in lieu of “hard” shoreline stabilization and modifications (such as concrete bulkheads and seawalls, concrete or rock revetments), where appropriate and feasible.
	13. If planting in the riparian zone, use an adaptive management plan with ecological indicators and performance standards to oversee monitoring and ensure mitigation objectives are met, unless it is contrary to a Corps approved riparian planting plan.

Attachment 15c

U.S. Army Corps of Engineers

Project Design Criteria #5

NWS-2022-61

(Alternate Bid Item A1)

SALISH SEA NEARSHORE PROGRAMMATIC (SSNP) CONSULTATIONS
LIST OF REQUIREMENTS
Version: August 02, 2022

Project Design Criteria (PDC) #5 Expand or install a new in-water or overwater structure

Programmatic Endangered Species Act (ESA) Consultations [National Marine Fisheries Service (NMFS) reference number WCRO-2019-04086, U.S. Fish and Wildlife Service (USFWS) reference number FWS/R1/2002-0048454] have been completed for the activities listed below. If you can design your project to meet all of the requirements of the Programmatic Biological Opinions (i.e. General Construction Measures, and Essential Fish Habitat Conservation Recommendations, and PDC's) including the specific project design criteria listed below, then the review of your ESA consultation and permit application will be streamlined. The submittal of this list is not required. However, to further expedite your review you may include a description of how you meet these requirements in your SSNP application materials.

<table>
<tr><th colspan="2">Activities Covered</th></tr>
<tr><td colspan="2">All actions necessary to complete installation of the following:</td></tr>
<tr><td>• Mooring Buoys</td><td>• Mooring dolphin/piles</td></tr>
<tr><td>• Debris booms</td><td>• Fender pile(s)</td></tr>
<tr><td>• Staircases</td><td>• Marine rails</td></tr>
<tr><td>• Noncovered boat lift(s)</td><td>• Boat ramps</td></tr>
<tr><td>• Residential overwater structures (i.e. fixed pier, elevated walkway, ramp, and float)</td><td>• Community overwater structures (i.e. fixed pier, elevated walkway, ramp, and float)</td></tr>
<tr><th colspan="2">Notification Requirements

NMFS notification and verification is required for this activity category. USFWS notification is required for this activity category. The application materials and notification should include the information below if applicable.</th></tr>
<tr><td colspan="2">• Conservation offsets are needed for activities under this PDC. Submit a proposal for conservation offsets and any applicable report(s) (i.e. conservation calculator, habitat improvement plan, pre-sale agreement etc.). See Program Administration Section 8 of the Biological Opinions for supporting information.</td></tr>
<tr><td colspan="2">• If a new structure is proposed or submerged aquatic vegetation (SAV) is present within 25-feet of the proposed float, submit a SAV survey.</td></tr>
<tr><td colspan="2">• If an embedded anchor cannot be used, provide analysis for concrete anchor in the notification.</td></tr>
<tr><td colspan="2">• Project description should include when applicable: dimensions (square feet) of the proposed work in the upper shore zone, lower shore zone, and/or deep shore zone; percent grating; material, length, and diameter of pilings to be removed or placed.</td></tr>
<tr><td colspan="2">• If a minor alteration from the PDC is requested, provide documentation in the notification. See Program Administration Section 6 of the Biological Opinions for supporting information.</td></tr>
</table>

Project Design Criteria	
	New structures will require submerged aquatic vegetation (SAV) surveys to determine presence or absence and the applicant will describe measures necessary to avoid and minimize impacts to such habitat features.
	The Corps recommends the project meet applicable construction specifications of the most current version of RGP 6 to minimize impacts.
	New mooring buoys and OWSs will not be proposed in areas where water depth is insufficient to prevent the structure from grounding out on substrate during normal low flow or low tide conditions. Floating structures remain at least 12 inches above the substrate at all times.
	If SAV is present within 25-feet of the proposed float, the bottom side of the float must be elevated at least 4 feet above the substrate at low tide to reduce prop scour impacts on SAV.
	A new structure is not proposed in a mitigation site or other habitat enhancement, restoration, preservation or creation site.
	This activity category does not include new covered OWS (e.g., boat house, boat garage, storage shed).
	New in-water residential or community OWS design criteria
	Unless the applicant demonstrates that project modifications are necessary to comply with other laws or regulations, e.g., the accessibility guidelines from the Architectural Barriers Act of 1968 (ABA) or the Americans with Disabilities Act of 1990 (ADA).
	To the maximum extent practicable, the location of the proposed in-water or overwater structures should not be in areas occupied by or determined to be suitable for sensitive habitat (e.g. SAV, salt marsh, intertidal flats).
	Skirting and other continuous protective bumper material that may impede light penetration beneath an overwater structure may not extend below the bottom edge of a float frame or pier.
	Structures will be placed with as much horizontal and vertical distance to SAV as possible to minimize shading impacts, to allow for greater circulation, and to reduce impacts from boat maneuvering, grounding, and propeller damage (prop scarring).
	All synthetic float material must be permanently encapsulated to prevent breakup into small pieces and dispersal in water.
	Up to two watercraft lifts may be installed at a single-use overwater structure and up to four may be installed at a joint-use structure.
	A maximum of 2 additional piles may be used to attach a watercraft lift/grid to the piles used for anchoring the floats.
	Piles
	In addition to float and pier support piles, a maximum of 2 moorage piles to be installed.

	Use the smallest diameter piles and the fewest number necessary for support of the structure to minimize pile shading, substrate impacts, and impacts to water circulation.
	Pier support pilings must be spaced a minimum distance of 20 feet apart unless site specific conditions or engineering needs dictate a shorter distance.
	Pier support pilings in forage fish spawning habitat must be spaced a minimum distance of 40 feet apart unless site specific conditions or engineering needs dictate a shorter distance
	All pilings and mooring buoys must be fitted with devices to prevent perching by piscivorous birds.
	Mooring Buoys
	Anchor lines must not rest or drag on the substrate. A midline float must be installed to prevent this.
	Anchors should be helical screw or another type of embedded anchor. Only if the substrate prohibits use of embedded anchors may an alternative anchor (i.e., concrete block) be used.
	If an embedded anchor cannot be used and a concrete anchor is needed, calculations showing that the anchor will hold without dragging/breaking during storm events is required. This analysis should include the size of the vessel and the dry weight/dimensions of the anchor.
	No other buoys may be anchored within a 117-foot radius of the proposed buoy. Note: This requirement can be waived up to no more than 3 other buoys within a 117-foot radius of the proposed buoy provided water quality impacts to shellfish are minimized. Show all existing buoys within a 117- foot radius of the proposed buoy on the project drawings.
	Floats
	Floats must have a minimum of 50 percent grating and all grating must have a minimum of 60 percent open space (WAC 220-110-300).
	Floats may be held in place with lines anchored with a helical screw or “duckbill” embedded anchor or piles.
	Grating
	Piers, gangway ramps, and stairs must be fully grated.
	Grating openings should be oriented lengthwise in the east-west direction to the maximum extent practicable.
	New Boat Ramps
	Concrete ramps must use pre-cast concrete slabs below High Tide Line, although the slabs may be cast-in-place if completed in the dry.
	Boarding floats for a ramp may be allowed to ground out only on the ramp surface.
	The extent, size, and amount of rock used to prevent scouring, down-cutting, or failure at the boat ramp will be determined by a professional engineer.
	For elevated boat ramps, debris will be removed from under the boat ramp for the life of the project. While man-made debris (e.g., Styrofoam, fishing line, etc.) should be disposed of properly in an upland location, organic material,

	including wood and marine algae, will be moved to the beach down drift of the structure.
	New Marine Rail
	A residential property can have only one structure located within the intertidal area, a marine rail or an overwater structure, but not both.
	A marine rail has to be at least 20 feet long or an overwater structure, but not both.
	Support a marine rail with as few piles as practicable.
	New Staircase
	Stairway landings and steps must be entirely grated with either multi-directional grating with 40% open space or square grating with 60% open space.
	New Tram
	For anchoring of tram cables or footings for stairs: No more than one cubic yard of fill can be used for each footing or anchor. The number and size of footings and anchors must be minimized.

Attachment 15d

U.S. Army Corps of Engineers

Habitat Improvement Plan

NWS-2022-61

(Alternate Bid Item A1)

WASHINGTON STATE PARKS
SUCIA ISLAND – FOSSIL BAY FLOATING PUMPOUT STATION INSTALLATION

HABITAT IMPROVEMENT PLAN

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

OCTOBER 2022

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

1. INTRODUCTION

Sucia Island Marine State Park (Sucia) is an 814-acre marine park with 77,700 feet of shoreline and abundant camping and moorage. Sucia is accessible only by boat, and in 2020 hosted nearly 100,000 visitors. Currently, the nearest available pumpout station is located on northwest Orcas Island, approximately five nautical miles from Sucia Island.

Vessel sewage can contain harmful bacteria and viruses, toxic chemicals, and nutrients (Herrera 2012). The release of boater sewage in Puget Sound threatens the health of Puget Sound and its ability to support healthy wildlife and human communities. If released, untreated ("black") sewage can negatively impact water quality resulting in closures of recreational and commercial shellfish harvesting, limited or no recreation along beaches, harmful algae blooms and low dissolved oxygen, which, in turn, can have negative impacts on endangered and threatened species and their prey. In an effort to improve water quality, the Puget Sound No Discharge Zone (WAC 173-228) became effective on May 10, 2018. This rule bans the discharge of any type of sewage in Puget Sound (in Washington state).

Washington State Parks and Recreation Commission (State Parks) proposes to install a 10-foot by 34-foot pumpout float at Sucia Island Marine State Park. This facility is expected to collect approximately 2,000 gallons of black sewage per month so it can be transferred to an appropriate treatment facility, thus deterring potential illegal dumping. Recognizing the lack of pumpout facilities in north Puget Sound, the project is being co-funded by the Clean Vessel Act Program (Grant #: CV 921-295; 75% of the total) and the National Fish and Wildlife Federation (Grant # 8006.19.066664; 25% of the total). The Clean Vessel Act Program "provides funds to help reduce pollution from recreational vessel sewage discharges into U.S. waters." The National Fish and Wildlife Federation "is dedicated to sustaining, restoring and enhancing the nation's fish, wildlife, plants and habitats for current and future generations." Both of these funding sources are conservation driven and strive to make a positive impact on the environment. This project was designed to be self-mitigating and with a focus toward conservation of natural resources with the long-term benefits offsetting any impacts caused by the pumpout itself; thus, it is consistent with the missions of both funding sources.

During consultation with National Marine Fisheries Service for this project, the following conclusion regarding offsets was reached (email from Ashley Schrader – NOAA; received September 16, 2022):

> *Although the Conservation Calculator is our preferred way of quantifying impacts and maintaining consistency across projects and applicants, under very specific circumstances, such as those associated with this project, it is more appropriate to forgo the use of the Calculator and rectify the debits through another avenue. Since water quality impacts are not considered by the Conservation Calculator, and the benefits of this project should be recognized, we have determined that the most appropriate course of action is to use Option 2, as discussed on page 16 the Salish Sea Nearshore Programmatic (SSNP) biological opinion. Under Option 2, the applicant may implement within-basin habitat improvements within the boundaries of the applicant's property (in this case, within the jurisdiction of Washington State Parks). We are willing to support that the prevention of illegal black sewage dumping qualifies as within-basin habitat improvement.*

This Habitat Improvement Plan was prepared to comply with Option 2 in the SSNP Biological Opinion.

2. HABITAT IMPROVEMENTS

The release of boater sewage in Puget Sound threatens the health of Puget Sound and its ability to support healthy wildlife and human communities. If released, untreated ("black") sewage can negatively impact water quality resulting in closures of recreational and commercial shellfish harvesting, limited or no recreation along beaches, harmful algae blooms and low dissolved oxygen, which, in turn, can have negative impacts on endangered and threatened species and their prey. Vessel sewage can contain harmful bacteria and viruses, toxic chemicals, and nutrients (Herrera 2012), which can also negatively impact both humans and wildlife.

The proposed project has been designed to avoid and minimize adverse impacts to the aquatic environment by providing a facility for recreational boaters to offload black sewage, deterring illegal dumping and thus reducing potential contamination. This project aims to protect the Salish Sea, including the immediate project vicinity (Fossil Bay/San Juan Basin), by collecting approximately 2,000 gallons of black sewage per month.

Placement of the proposed pumpout barge will be in Fossil Bay off the southern end of Sucia Island (Figure 1). The float will be located approximately 175 feet offshore, away from the nearshore environment, and in the subtidal zone (deeper than -10 feet mean lower low water [MLLW]). This design was intended to minimize potential impacts to juvenile salmon and rockfish by avoiding nearshore habitats, including eelgrass and submerged aquatic vegetation beds. Any impacts from this 340-square foot overwater structure in the deep subtidal zone will be offset by collection and proper disposal of approximately 2,000 gallons of black sewage per month. The habitat improvement will extend beyond Sucia Island to the entire Salish Sea.

The pumpout will be towed to the site and then anchored in place by two 16-inch diameter steel pile. The pumpout station will be immediately useable by the public and will be serviced per the pumpout instructions by a State Parks contractor. It will continuously provide habitat benefits for the duration of the life of the pumpout.

State Parks recognizes that the habitat improvement must be completed within three years of the impacting project's construction start date; in the case of this project, the habitat improvement project and the impacting project are the same. Improvements will occur immediately.

3. SUMMARY

- Quantitative Description of Improvements:

  Collects approximately 2,000 gallons of black sewage per month to help protect the Salish Sea from the effects of illegal dumping.

- Location of Improvements:

  North Salish Sea. The pumpout will be located in Fossil Bay, near the southern portion of Sucia Island, 175 feet offshore at -12 to -14 feet MLLW, but the benefits of offering a sewage pumpout will extend to anywhere illegal dumping occurs.

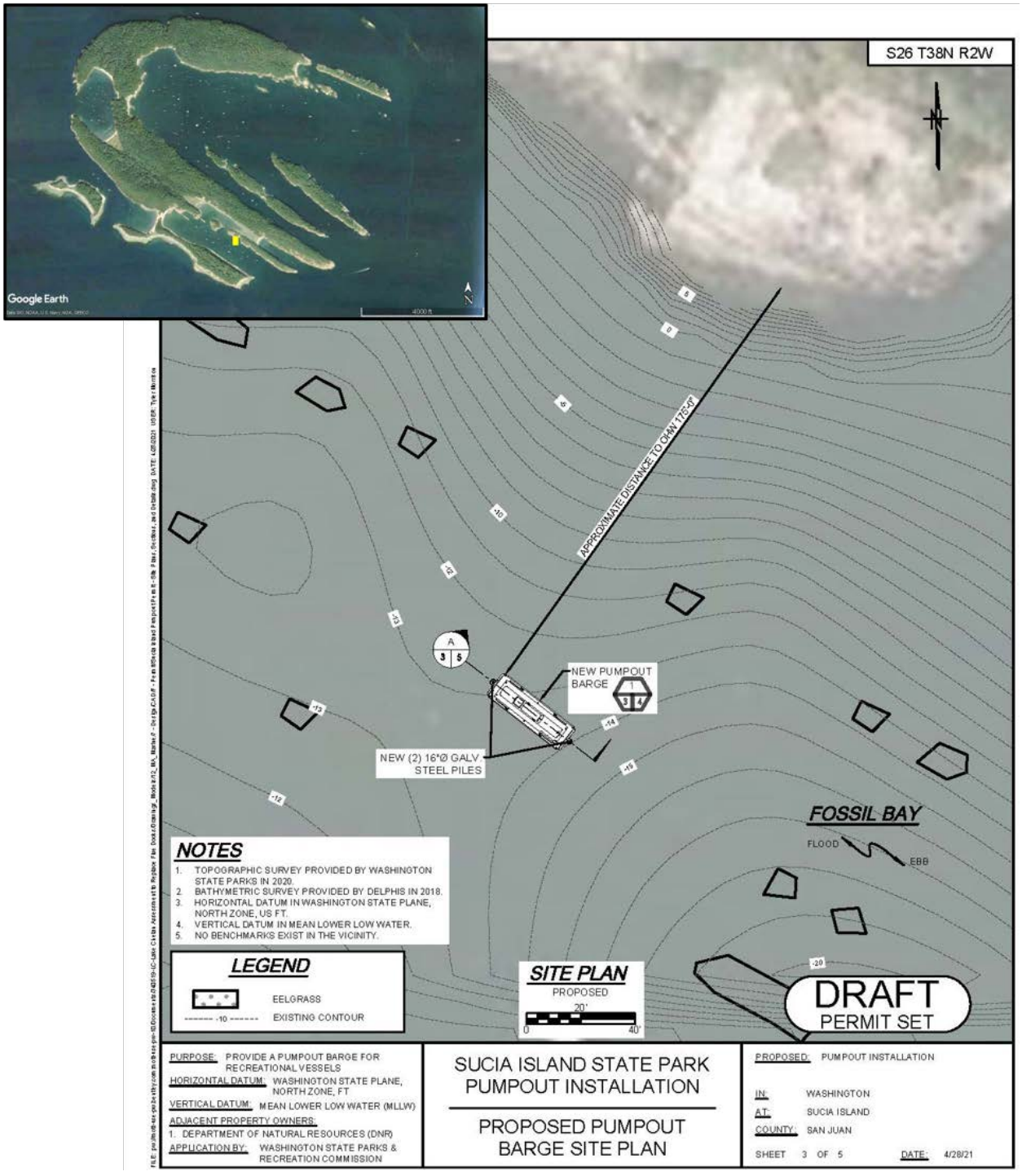
- Methods/Mechanism for Improvements:

  Building on the successful implementation of similar facilities elsewhere in the Salish Sea, this pumpout station is proposed for a busy area where marine sewage disposal services are currently missing, maximizing the ecological benefit of the available grant funding.

- Timing of Improvements:

  Immediately upon installation, continuing for the duration of the life of the pumpout station

Figure 1. Sucia Island Pumpout proposed project location. Inset shows location at Sucia Island (yellow rectangle).



4. CONCLUSIONS

The Sucia Island Pumpout has been designed to be self-mitigating by reducing the impacts of illegal sewage dumping in the north Salish Sea. Habitat improvements will occur within-basin, including on-site, and will provide long-term and widespread benefits to the Salish Sea. The proposal is consistent with the terms presented in Section 8 of the SSNP Biological Opinion and the conclusions of the consultation with NMFS as communicated to Parks on September 16, 2022.

Attachment 15e

U.S. Army Corps of Engineers

Letter of Permission General Conditions

NWS-2022-61

(Alternate Bid Item A1)

US Army Corps of Engineers ®
Seattle District

Letter of Permission
General Conditions
July 29, 2022

1. Reliance on Permittee's Information. In authorizing this work under this Letter of Permission (LOP), the Department of the Army has relied, in part, on the information provided by the permittee. If this information proves to be false, incomplete, or inaccurate, the permittee's authorization may be modified, suspended, or revoked, in whole or in part.

2. Compliance with Terms and Conditions. Projects authorized by this LOP shall comply with all terms and conditions herein and any case-specific conditions added or required by the District Engineer. Failure to abide by these terms and conditions invalidates this authorization and may result in a violation of federal law, which may require that the permittee restore the site or take other remedial action. Activities requiring Department of the Army authorization that are not specifically authorized by this LOP are prohibited unless authorized by another Department of the Army permit.

3. Contractor's Copy of Permit. The permittee shall provide a copy of the LOP (letter, drawings, and general conditions) to each contractor involved in the project and keep a copy of the LOP available for inspection at the project site.

4. Compliance Certification. Within 30 days of completing the authorized work, the permittee shall submit to the issuing office certification that the work, including any required compensatory mitigation, was conducted in accordance with the provisions of this LOP.

5. Access for Inspection. The permittee shall allow the District Engineer or his/her authorized representative to inspect the project whenever deemed necessary to assure that the work is being, or has been, accomplished in accordance with the terms and conditions of this permit.

6. Limits of Authorization. This permit does *not*:

   a. Obviate the requirement to obtain all state, local, or other federal authorizations required by law for the activity authorized herein, including any authorization required from Congress;

   b. Convey any property rights, either in real estate or material, or any exclusive privileges;

   c. Authorize any injury to property, invasion of rights, or any infringement of federal, state, or local laws or regulations; or

   d. Authorize the interference with any existing or proposed federal project.

7. Limits of Federal Liability. This permit is not an approval of the design features of any authorized project or an implication that such work is adequate for the intended purpose; a Department of the Army permit merely expresses the consent of the Federal Government to conduct the proposed work insofar as public rights are concerned. In issuing this LOP, the Federal Government does not assume any liability for the following:

a. Design or construction deficiencies associated with the authorized work;

b. Damages to the permitted project or uses thereof as a result of other permitted activities or from natural causes, such as flooding;

c. Damages to persons, property, or to other permitted or unauthorized activities or structures caused by the activity authorized by this permit;

d. Damages associated with any future modification, suspension, revocation of this permit; or

e. Damage to the permitted project or uses thereof as a result of current or future activities undertaken by, or on behalf of, the United States in the public interest.

8. Obstruction of Navigation. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration. If the permittee fails to comply with the direction of the Corps of Engineers, the District Engineer may restore the navigable capacity of the waterway, by contract or otherwise, and recover the cost thereof from the permittee.

9. Navigation. The authorized work shall not interfere with the public's right to free navigation on navigable waters of the United States.

10. Tribal Rights. No activity authorized by this permit may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights. Please be aware that certain Tribes assert a right to attach nets to piers, docks, wharves, and other structures that may have been authorized by Department of the Army permits.

11. USACE Coordination. The permittee shall contact the appropriate office of the U.S. Army Corps of Engineers prior to commencing any construction in a federally maintained channel and/or waterway.

12. Stability. The permittees shall design projects to be stable against the forces of flowing water, wave action, and the wake of passing vessels.

13. Maintenance. The permittee must maintain all structures and work authorized by this LOP in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this responsibility if you abandon the authorized activity unless you complete a good faith transfer to a third party in compliance with General Condition 14, below. Should you wish to cease to maintain the authorized activity or abandon it without a good faith transfer, you must obtain a modification of this LOP from this office, which may require restoration of the area.

14. Transfer of Ownership. If you sell the property associated with this permit, the new owner must agree in writing to comply with all terms and conditions of this permit. A copy of that written agreement must be submitted to the issuing office to validate the transfer of this authorization.

15. Marking Structures. Permittees shall install and maintain any lights, signals, or other appropriate markers necessary to clearly designate the location of structures or work that might pose a hazard to public safety. Permittees shall abide by U.S. Coast Guard requirements concerning the marking of structures and work in navigable waters of the United States.

16. Endangered Species. This LOP does not authorize any activity that is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Endangered Species Act (ESA). Prospective permittees must notify the District Engineer if any listed species or designated critical habitat might be affected by, or is in the vicinity of, the project and shall not begin work until notified by the District Engineer that the requirements of the ESA have been satisfied and that the activity is authorized.

17. Historic Properties. This LOP does not authorize any activity that may affect historic properties listed, or eligible for listing, in the National Register of Historic Places (NRHP) until the provisions of 33 CFR 325, Appendix C, have been satisfied. Historic properties include prehistoric and historic archeological sites, and areas or structures of cultural interest. A prospective permittee must notify the District Engineer if the proposed activity may affect an historic property that is listed, eligible for listing, or may be eligible for listing in the NRHP, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. If a previously unknown historic property is encountered during work authorized by this LOP, the permittee shall cease work immediately, notify the District Engineer of the situation within one day of discovering the impact, and avoid any further impact to the property until the District Engineer verifies that the requirements of 33 CFR Part 325, Appendix C, have been satisfied.

18. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status unless the federal agency (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service) with direct management responsibility for that river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

19. Alternatives. Activities authorized by LOP shall be designed and constructed to avoid and minimize adverse impacts to waters of the United States to the extent practicable through the use of alternatives.

20. Minimization of Environmental Impact. Permittees shall make every reasonable effort to conduct the authorized work in a manner that minimizes the adverse impact of the work on water quality and stream flow, fish and wildlife, and the natural environment, including adverse impacts to migratory waterfowl breeding areas, spawning areas, shellfish beds, and aquatic resource buffer zones. Work should be limited to periods of low flow and/or low tide when practicable.

21. Compensatory Mitigation. Appropriate and practicable compensatory mitigation shall be required to the extent necessary to ensure that the authorized activities would not have more than a minor adverse impact on the aquatic environment.

22. Soil Erosion and Sediment Controls. Permittees shall use and maintain appropriate erosion and sediment controls in effective operating condition and permanently stabilize all exposed soil and other fills, including any work below the ordinary high water mark or high tide line (in Seattle District, the high tide line is located at the "mean higher high water" line), at the earliest

practicable date using native vegetation to the maximum extent practicable. The permittee shall remove all installed controls as soon as they are no longer needed to control erosion or sediment.

23. Water Quality. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.

24. Coastal Zone Management. If a conditioned Coastal Zone Management Act consistency determination has been made for your project, you must comply with the conditions specified in the determination as special conditions to this permit. For your convenience, a copy of the determination is attached if it contains such conditions.

25. Equipment. Permittees shall place heavy equipment working in wetlands on mats, and take all other appropriate measures to minimize soil disturbance.

26. Disposal of Construction Debris. Except as specifically authorized by this LOP, all construction debris and excess materials resulting from the authorized work shall be properly disposed of, and in a manner that does not allow it to enter into a waterway or otherwise degrade water quality.

27. Aquatic Life Movements. The work shall not substantially disrupt the necessary life-cycle movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area.

28. Skirting. The attachment of skirting to a pier, dock, float or similar structure is prohibited unless specifically authorized.

29. Water Supply Intakes. Permittees shall ensure that activities authorized by this LOP have no more than a minimal adverse impact on public water supply intakes.

30. Hazardous Materials. Permittees shall take all reasonable precautions to prevent any petroleum product, chemical, or other toxic or deleterious material from entering any waterbody. Should a spill occur, or if an oil sheen or distressed or dying fish are observed in the project vicinity, the permittee shall immediately cease work and contact the appropriate Washington Department of Ecology regional spill response office: (360) 407-6300, Southwest Region; (206) 594-0000, Northwest Region; (509) 575-2490, Central Region; (509) 329-3400, Eastern Region; or (360) 407-6000, Main Receptionist.



31. Re-evaluation of Decision. The Corps may re-evaluate it's decision to authorize the work by a LOP whenever circumstances warrant. Such circumstances may include, but are not limited to, a failure on the part of the permittee to comply with the terms and conditions of the LOP; the permittee having submitting information in support of the permittee's application that proves to be false, incomplete, or inaccurate; or this office receiving pertinent new information that it did not consider during its original public interest review. Subsequent to its re-evaluation, the Corps may suspend, modify, or revoke its authorization pursuant to 33 CFR 325.7 or initiate an enforcement action as provide for in 33 CFR 326.4 and 326.5.

32. Extension of Time. A permittee may request an extension of the time allowed to complete the authorized activity, providing the reasons for the extension. The request must be submitted to this office well in advance of the above expiration date. Unless there are circumstances requiring either a prompt completion of the authorized activity or a re-evaluation of the public interest decision, the Corps normally gives favorable consideration to a request for an extension of this time limit.

Attachment 15f

U.S. Army Corps of Engineers

Certificate of Completion

NWS-2022-61

(Alternate Bid Item A1)

US Army Corps of Engineers ®
Seattle District

CERTIFICATE OF COMPLIANCE WITH DEPARTMENT OF THE ARMY PERMIT

Permit Number: NWS-2022-61

Name of Permittee: Washington State Parks and Recreation Commission

Date of Issuance: _____

Upon completion of the activity authorized by this permit, please check the applicable boxes below, date and sign this certification, and return it to the following email or mailing address:

NWS.Compliance@usace.army.mil OR

Department of the Army
U.S. Army Corps of Engineers Seattle
District, Regulatory Branch
4735 E. Marginal Way S, Bldg 1202
Seattle, Washington 98134-2388

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of your authorization, your permit may be subject to suspension, modification, or revocation.

☐	The work authorized by the above-referenced permit has been completed in accordance with the terms and conditions of this permit. Date work complete: _____ ☐ Photographs and as-built drawings of the authorized work (OPTIONAL, unless required as a Special Condition of the permit).

☐	If applicable, the mitigation required (e.g., construction and plantings) in the above-referenced permit has been completed in accordance with the terms and conditions of this permit (not including future monitoring). Date work complete: _____ ☐N/A ☐ Photographs and as-built drawings of the mitigation (OPTIONAL, unless required as a Special Condition of the permit).

☐	Provide phone number/email for scheduling site visits (must have legal authority to grant property access). Printed Name: _____ Phone Number: _____ Email: _____

Printed Name: _____

Signature: _____

Date: _____

Attachment 15g

Grette Associates, LLC

Sucia Island Floating Pumpout Station Installation

Biological Evaluation and Essential Fish Habitat Assessment

USACE Letter of Permission NWS-2022-61

(Alternate Bid Item A1)

WASHINGTON STATE PARKS AND RECREATION COMMISSION
SUCIA ISLAND FLOATING PUMPOUT STATION INSTALLATION

BIOLOGICAL EVALUATION AND ESSENTIAL FISH HABITAT ASSESSMENT

PREPARED BY:

GRETTE ASSOCIATES LLC
2102 NORTH 30TH STREET, SUITE A
TACOMA, WASHINGTON 98403
(253) 573-9300

OCTOBER 2021

Grette Associates LLC
ENVIRONMENTAL CONSULTANTS

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1 INTRODUCTION

Washington State Parks and Recreation Commission (State Parks) proposes to install a new pumpout float and two lateral support pile. The Sucia Island Floating Pumpout Station Installation Project (Project) consists only of work below the High Tide Line (HTL) and Ordinary High Water Mark (OHWM). The property is located in Fossil Bay on Sucia Island in the Strait of Georgia, just north of Orcas Island, San Juan County, Washington (Sheet 1).

State Parks is submitting an application for a U.S. Army Corps of Engineers (USACE) authorization under Section 10 of the Rivers and Harbors Act for the Project. The Endangered Species Act (ESA) requires federal agencies to ensure that they do not authorize, fund, or carry out actions that are likely to jeopardize the continued existence of endangered or threatened species or result in the destruction or adverse modification of critical habitat for such species. ESA is co-administered by the National Oceanographic and Atmospheric Administration Fisheries Service (NOAA Fisheries) and U.S. Fish and Wildlife Service (USFWS).

This Biological Evaluation (BE) addresses the potential effects of the proposed Project on the listed species and designated critical habitats summarized in Table 1 and has been prepared to assist USACE in its review of the permit application. The species list in Table 1 is based on the Project's USFWS Official Species Lists (Consultation Code 01EWFW00-2021-SLI-1804) and information received from NOAA Fisheries West Coast Region species list website (http://www.westcoast.fisheries.noaa.gov/protected_species/species_list/species_lists.html, queried September 27, 2021). Streaked horned lark (*Eremophila alpestris strigata*), yellow-billed cuckoo (*Coccyzus americanus*), Island Marble Butterfly (*Euchloe ausonides insulanus*) and Golden Paintbrush (*Castilleja levisecta*) are identified on the USFWS Official Species List; however, because the nearshore marine Project area lacks suitable habitat for these species and is 175 feet offshore, the Project will have no effect on those species and they are not discussed further within this BE.

In addition, an evaluation of the effects of the proposed Project on Essential Fish Habitat (EFH) has been prepared pursuant to the Magnuson-Stevens Fishery Conservation and Management Act and the 1996 Sustainable Fisheries Act. The effects of the proposed Project on EFH are addressed in Section 9 of this document.

Washington State Parks is the applicant for aquatic resource permits. The contact at Washington State Parks is Joelene Boyd; she can be reached at (360) 855-5533.

Table 1. Summary of ESA species and critical habitats (CH) with corresponding effect determinations.

Listed Species	Federal Status	Designated CH in Action Area	Species Effects Determinations	CH Effects Determinations
Puget Sound Chinook Salmon (*Oncorhynchus tshawytscha*)	threatened	yes	NLAA[1]	NLAA[1]
Hood Canal Summer-run Chum Salmon (*Oncorhynchus keta*)	threatened	no	NLAA[1]	N/A
Puget Sound Steelhead Trout (*Oncorhynchus mykiss*)	threatened	no	NLAA[1]	N/A
Bull Trout (*Salvelinus confluentus*)	threatened	no	NLAA[1]	N/A
Bocaccio rockfish (*Sebastes paucispinis*)	endangered	yes	NLAA[1]	NLAA[1]
Yelloweye rockfish (*Sebastes ruberrimus*)	threatened	yes	NLAA[1]	NLAA[1]
Southern Resident Killer Whale (*Orcinus orca*)	endangered	yes	NLAA[1]	NLAA[1]
Humpback Whale (*Megaptera novaeangliae*)	endangered	no	NLAA[1]	N/A
Leatherback Sea Turtle (*Dermochelys coriacea*)	endangered	no	No effect	N/A
Marbled Murrelet (*Brachyramphus marmoratus*)	threatened	no	NLAA[1]	N/A

[1] May Affect, Not Likely to Adversely Affect

2 DESCRIPTION OF PROJECT

2.1 BACKGROUND

Sucia Island Marine State Park is an 814-acre marine park with 77,700 feet of shoreline and abundant camping and moorage. The main island and several smaller islands comprise the "Sucia group." There are no services on this island. State Parks proposes to install a new offshore floating pumpout station for recreational boaters in Fossil Bay at Sucia Island Marine State Park. This will include installation of two steel pipe pile and one aluminum floating pumpout barge station.

2.2 PURPOSE OF PROJECT

Sucia Island State Park is accessible only by boat, and in 2020 hosted nearly 100,000 visitors. Currently, the nearest available pumpout station is located on northwest Orcas Island, approximately five nautical miles from Sucia Island. Vessel sewage can contain harmful bacteria and viruses, toxic chemicals and nutrients (Herrera 2012). The release of boater sewage in Puget Sound threatens the health of Puget Sound and its ability to support healthy wildlife and human communities. If released, sewage can negatively impact water quality resulting in closures of recreational and commercial shellfish harvesting, limited or no recreation along beaches, harmful algae blooms and low dissolved oxygen. In an effort to improve water quality, the Puget Sound No Discharge Zone (WAC 173-228) became effective on May 10, 2018. This rule bans the discharge of any type of sewage in Puget Sound (in Washington state).

State Parks proposes to install a pumpout facility at Sucia Island Marine State Park in order to reduce environmental impacts from illegal dumping of sewage by recreational boaters. The proposed project has been designed to avoid and minimize adverse impacts to the aquatic environment by providing a facility for recreational boaters to offload black sewage, thus preventing contamination from illegal dumping. Additionally, the proposed pumpout barge will be located in the subtidal zone (deeper than -10 feet MLLW) and 175 feet offshore, which is a less impactful placement than in the nearshore, which can provide habitat for juvenile salmonid and rockfish, including in submerged aquatic vegetation.

2.3 PROJECT DESCRIPTION

State Parks proposes to install a new pumpout float within Fossil Bay in the southern portion of Sucia Island. This float will include a single 10-foot by 34-foot float anchored by two 16-inch diameter steel piles.

Pile

New galvanized steel pipe piles will be installed to provide lateral support to the new floating pumpout station. Driving of the piles will require the use of a vibratory hammer. Pile installation will be performed by vibratory hammer, impact hammer, or rock sockets depending on subsurface conditions. In cases where piles encounter premature refusal when using a vibratory hammer, an impact hammer or rock drill will be used to reach the design elevations. Both float piles will have fiberglass bird caps installed.

Driving of the pile will require the use of a vibratory hammer. The estimated time to install each pile with a vibratory hammer will be typically 15-30 minutes based on the medium-dense sand observed by the geotechnical engineer. Depending on soil conditions, up to 45 minutes of driving may be required through very dense material. The pile for the floats will only need to be proof loaded with an impact hammer with the use of a bubble curtain if subsurface conditions prevent the pile from being driven to the minimum required embedment depth for lateral capacity. If necessary, it is assumed that the impact hammer may have to proof load at 250 blows/pile for the last 5 ft of embedment.

If bedrock is encountered, and the pile reaches premature refusal with the vibratory and impact hammers, a rock drill will be required to create rock sockets for the piling that will go roughly 15 feet into the bedrock. Active drilling may be up to two hours per pile. All spoils from the drilling will be recovered and disposed of offsite. A silt curtain will be used during rock drill operations if water quality becomes affected.

Floating Pumpout Station

One (1) aluminum framed pumpout barge station will be attached to the two above-mentioned piles. The barge will have a 3,000-gallon self-contained storage tank internal to the hull of the barge for sewage pumpout material. The keel of the barge will hover around -3 ft MLLW; because the float will be installed at -13 ft MLLW, this will provide approximately 10 feet of clearance to the mudline at MLLW. The sewage pumpout barge will be serviced by State Parks and sewage transported to a State-certified sewage treatment facility by a private vendor at appropriate intervals. Given the vessel hull shape design of this pumpout barge, no light passage will be possible through this structure. Due to the water depth, the pumpout float will not ground at low water.

2.4 SUMMARY

Below is a summary table of work tasks, quantities, and square footage below OHW.

Table 2. Summary of Work Elements and Proposed Quantities.

	Work Task	Work Item	Below OHW		Total Area (SF)	No.
			Volume (CY)	Area (SF)		
Pumpout	**Installation**	16” Dia. Galv. Steel Piles	-	3	**3**	**2**
		10’x34’ Pumpout Barge	-	340	**340**	**1**

2.5 CONSTRUCTION TIMING

Because this project is grant-funded, State Parks proposes to conduct this work as soon as permits are received, within the approved in-water work windows. The USACE and Washington Department of Fish and Wildlife (WDFW) both designate work windows for Puget Sound. For this Project Area (San Juan Islands), the USACE work window for salmon is July 16 through March 1 and for bull trout is July 16 through February 15. There is no documented forage fish spawning at the site (see Section 3.4.3). The WDFW designated work window is more restrictive:

September 1 through March 1 for work in the San Juan Islands. Because it is more conservative, the WDFW work window of September 1 through February 15 will be applied to this project.

Also, any pile driving occurring within the above work window during the marbled murrelet nesting season (July 16 through September 23) will be conducted outside of the two-hour diurnal crepuscular periods (no work until two hours after sunrise and stop work two hours before sunset) during which marbled murrelets may be most actively foraging.

3 DESCRIPTION OF PROJECT AREA AND ACTION AREA

3.1 HABITAT ZONES

For the purposes of this BE, intertidal habitat is defined as aquatic habitat located from HTL (+9.25 feet MLLW) to -4.0 feet MLLW. Shallow subtidal habitat is located between -4.0 feet MLLW to -10.0 feet MLLW. Subtidal habitat includes all habitat deeper than -10.0 feet MLLW.

3.2 PROJECT AREA

The Project Area includes the aquatic areas adjacent to the proposed work. Work at the pumpout facility would occur between approximately -12 ft and -14 ft MLLW (see Pumpout Facility Sheet 3).

3.3 ACTION AREA

The Project effects are described within a broader setting to provide context for evaluating potential impacts. This broader area, termed the "Action Area," encompasses the Project area as well as all areas that may be directly or indirectly affected by proposed Project activities. The Action Area for the Project was defined by considering the potential spatial extent of mechanisms that may affect listed species. In this case, the geographic extent of the Action Area is primarily based on the predicted maximum extent of sound associated with potential impact proofing of 16-inch steel pile (Figure 1).

The Practical Spreading Loss Model is widely used to determine the distance at which sound associated with Project activities attenuates to ambient conditions. For marine mammal consultations, NOAA Fisheries requires either a detailed site-specific assessment of background and ambient underwater sound or that the applicant uses the lowest in-water acoustic effect thresholds to determine the area of potential sound effects (http://www.westcoast.fisheries.noaa.gov/protected_species/marine_mammals/consultation_tools.html, queried May 6, 2021). Because there is a continuous sound (vibratory driver operation), the potential effect threshold used in lieu of background is 120 decibels (dB^{1})$_{RMS}$.

The model was used with the following assumptions:

- The loudest sound is anticipated to be generated by pile driving 16-inch diameter steel pipe piles. To estimate the extent of pile driving noise, the most applicable published sound data were used. Impact proofing of 16-inch pile is estimated to generate noise at 200 dB_{peak}, 187 dB_{RMS}, and 173 dB_{SEL} (Laughlin 2004).

- There are no reference sound pressure levels (SPLs) for vibratory driving 16-inch diameter steel pipe pile; therefore, reference SPLs from the next largest, applicable pile size (18-

[1] Sound pressure in water is referenced at 1 micropascal (1 µPa). In this document, all Peak (dB_{peak}) and Root Mean Squared (dB_{RMS}) pressures are referenced at 1 µPa (e.g., 195 dB_{RMS} (re. 1 µPa). Sound Exposure Levels (SEL) are referenced at 1 µPa*sec (e.g., 187 dB_{SEL} (re. 1 µPa*sec). For readability purposes, the pressure references are not repeated throughout the text.

inch) were used, calculating the average SPL level of all available data points, resulting in 164 dB_{RMS} (Laughlin 2010 a, b).

- Use of a confined bubble curtain during impact driving is assumed to result in at least 9 dB of sound attenuation at the source. Bubble curtains often achieve much higher rates of attenuation. However, the assumption of a 9 dB attenuation at 10 meters is a typical conservative estimate.

- With the use of a bubble curtain, attenuated impact proofing sound levels are anticipated to be at 191 dB_{peak}, 178 dB_{RMS}, and 162 dB_{SEL}.

- Sound pressure travels in a linear direction (concentrically) away from the source.

- Sound does not reflect off of or travel through landmasses.

The Practical Spreading Loss model was used to calculate the distance necessary for sound to attenuate from 178 dB_{RMS} to 120 dB_{RMS}. The model returned a distance of 45 miles. Because sound is constrained by land mass, sound will mostly be confined to Fossil Bay, but may travel up to approximately 19 miles before attenuating on islands (Figure 1). These noise volumes will only be reached if impact driving or rock drilling are necessary to install the pile. Because only two pile are included in this proposal, the duration of impact driving, if necessary, would be approximately 30 minutes (15 minutes for 250 strikes per pile) and for rock drilling would be four hours (two hours per pile). Thus, the 19-mile Action Area would occur for a maximum of half of one day.

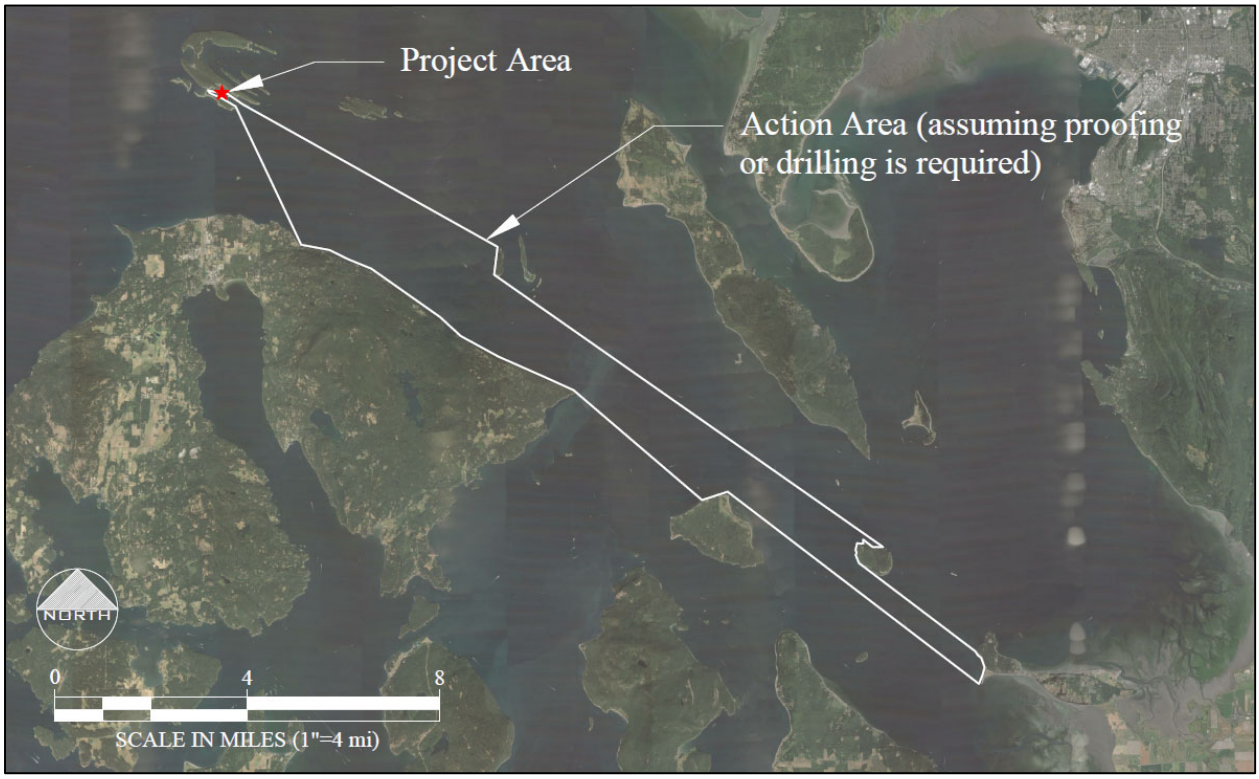


Figure 1. Action Area based on elevated sound during impact proofing and vibratory pile driving (approximately 19 miles maximum for pumpout).

3.4 BASELINE CONDITIONS

3.4.1 Fossil Bay

The Project Area is located within Fossil Bay, a shallow bay at Sucia Island. This area is heavily used for boat-in only camping. A pier and float system that provides access to the State Park is located approximately 285 feet northwest of the proposed pumpout site. A number of mooring buoys are also present near the Project Area.

The marine habitat within the greater Action Area consists of the entirety of Fossil Bay, and a narrow section of the waters just north of Orcas Island, bounded by Clark, Sinclair, Vendovi, and Samish islands. This area is characterized as typical marine habitat of North Puget Sound.

3.4.2 Salmonid Use of Action Area

Juvenile salmonids use nearshore habitats primarily for migration, foraging, and as nursery areas for residence and refuge. The Project Area may be used for migration, rearing, and/or foraging. With a few exceptions (coho and chum occurrences; documented kokanee and sockeye), salmon, steelhead, and bull trout are not found in the freshwaters of the San Juan Islands (Streamnet 2021). Juvenile salmonids in nearshore habitats would be coming from nearby mainland river systems. These could include the following systems, all of which enter saltwater between 11 and 35 miles from Sucia Island (except as noted): Lummi River, Dakota Creek, Colony Creek, Samish River Basin, Nooksack River Basin, Squalicum Creek, Whatcom Creek, Chuckanut Creek, Skagit River Basin, Dungeness Creek (46 miles), and the Stillaguamish River Basin (47 miles), (see Sections 4.1.1, 4.1.2, and 4.1.3).

Beamer and Fresh (2012) conducted extensive beach seining throughout the San Juan Islands over a two-year period. They sampled twice monthly, March through October. Juvenile Chinook (*Oncorhynchus tshawytscha*), chum (*O. keta*), and pink (*O. gorbuscha*) salmon were observed in beach seines throughout the islands, with their timing and relative abundance variable by species.

Larger juveniles as well as sub-adult and adult fish from other salmonid populations could be present in offshore portions of the Action Area, including coho (*O. kisutch*), sockeye (*O. nerka*), steelhead trout (*O. mykiss*), cutthroat trout (*O. clarki*), and bull trout (*Salvelinus confluentus*).

Project activities will occur between -12 and -14 feet MLLW. Because of the location in the Bay coupled with the orientation 175 feet offshore in greater than -10 feet MLLW, this area is unlikely to be utilized by nearshore-dependent juvenile salmonids during outmigration. Adherence to approved in-water work periods will further minimize the likelihood of juvenile salmonids being present during and immediately following in-water work.

3.4.3 Forage Fish Species

The Project Area has a solid rock bank in upper intertidal areas, which transitions to gravel/cobble in middle to lower intertidal areas and then sand in subtidal areas (these elevation categories are roughly estimated based on Project and aerial photos). There are no sandlance, surf smelt, or herring spawning areas or herring pre-spawner holding areas mapped in the Project or Action Areas (WDFW 2021).

3.4.4 Eelgrass and Macroalgae

Nearshore areas contain rocky coastline with both patchy and continuous fringing eelgrass and kelp (Ecology 2021). A macroalgae and eelgrass survey was performed by JenJay Inc. in 2018 and confirmed by Grette Associates in 2020 at the proposed location for the new pumpout barge station. No eelgrass or attached macroalgae was present within the 25-foot buffer around the proposed pumpout location. Further, the proposed location is in the Deeper Shore Zone/Shallow Subtidal (below -10 feet MLLW), between -13 and -14 feet MLLW.

4 DESCRIPTION OF THE SPECIES AND CRITICAL HABITAT

The ESA-listed species associated with the Action Area are Puget Sound Chinook salmon, Hood Canal summer-run chum salmon, Puget Sound steelhead trout, bull trout, bocaccio, yelloweye rockfish, Southern Resident killer whale, humpback whale, leatherback sea turtle, and marbled murrelet. Designated critical habitat associated with the Action Area includes that for Puget Sound Chinook salmon, listed rockfish, and Southern Resident killer whale. The geographic distribution and boundaries of critical habitat areas as well as the extent of the Action Area within these critical habitats is discussed below.

4.1 LISTED SPECIES

4.1.1 Puget Sound Chinook Salmon

The Puget Sound ESU includes all naturally spawned Chinook originating from rivers flowing into Puget Sound from the Elwha River (inclusive) eastward, including rivers in Hood Canal, South Sound, North Sound, and the Strait of Georgia. It also includes fish from twenty-six artificial propagation programs (see NOAA 2014a). This ESU was originally listed on March 24, 1999 (NOAA 1999); the listing was reaffirmed in 2005 (NOAA 2005). The ESA status of this ESU is threatened (NOAA 2014a).

According to WDFW, Puget Sound Chinook salmon do not spawn and are not present within any freshwater watersheds in the San Juan Islands (WDFW 2015a). Chinook presence has been documented in a number of creeks, rivers and river basins in the surrounding area (within approximately 50 miles, straight-line distance, see Table 3). Juvenile Chinook, particularly fall-run fish, migrate and rear in nearshore environments in the San Juan Islands during their outmigration period.

Beamer and Fresh (2012) observed outmigrating Chinook in beach seine samples throughout the San Juans from April through the end of their sampling period in October. Juvenile Chinook in San Juan nearshore areas typically are larger and arrive later than in nearby mainland areas (Beamer and Fresh 2012). Within the San Juans, outmigrating juvenile Chinook are most likely to be present in the Waldron-President Channel region.

Sub-adult and adult Chinook may be present in the Action Area any time of the year, but are not dependent on shallow water areas.

General life history and stock information on Chinook in the vicinity of the Action Area can be found in the following references: Congleton et al. 1982; Healey 1991; NOAA 1998.

Table 3. Freshwater systems in which Chinook presence has been documented in the general vicinity of Sucia Island.

Creek, River, or Basin	Distance from Sucia (miles)	Run Type
Lummi River	11	fall
Dakota Creek	19	fall
Colony Creek	24	fall
Samish River Basin	24	fall
Nooksack River Basin	26	spring, fall
Squalicum Creek	26	fall
Whatcom Creek	26	fall
Skagit River Basin	35	spring, summer, fall
Dungeness Creek	46	spring
Stillaguamish River Basin	47	summer, fall

4.1.2 Hood Canal Summer-run Chum

The Hood Canal summer-run ESU includes all naturally spawned summer-run chum originating from Hood Canal and its tributaries as well as from Olympic Peninsula rivers between Hood Canal and Dungeness Bay (inclusive). It also includes summer-run chum salmon from four artificial hatchery programs: Hamma Hamma Fish Hatchery Program, Lilliwaup Fish Hatchery Program, Tahuya River Program, and the Jimmycomelately Creek Fish Hatchery Program (NOAA 2014a). This ESU was originally listed on March 25, 1999 (NOAA 1999); the listing was reaffirmed in 2005 (NOAA 2005). The ESA status of this ESU is threatened (NOAA 2014a).

The closest spawning system for Hood Canal summer-run chum is Chuckanut Creek, approximately 22 miles from Sucia Island (StreamNet 2021). Similar to fall run chum, summer-run fish outmigrate shortly after their emergence from stream gravel and begin to migrate downstream to estuary rearing areas (WDFW and Point No Point Treaty Tribes 2000). Although Beamer and Fresh (2012) observed outmigrating chum in beach seine samples throughout the San Juans from March through August, it is unlikely that these would include outmigrating fry from the Hood Canal summer-run ESU. The authors speculate that most chum in their samples originated from Canada or the nearby rivers with large chum populations, specifically Nooksack and Skagit.

Sub-adult and adult Hood Canal summer-run chum are potentially present in the Action Area any time of the year, but are not dependent on shallow water areas.

General life history and stock information on chum in the vicinity of the Action Area can be found in Salo 1991.

4.1.3 Puget Sound Steelhead Trout

The Puget Sound Distinct Population Segment (DPS) includes all naturally spawned steelhead originating below natural and manmade impassable barriers from rivers flowing into Puget Sound from the Elwha River (inclusive) eastward, including rivers in Hood Canal, South Sound, North Sound and the Strait of Georgia. It also includes fish from six artificial propagation programs: the

Green River Natural Program; White River winter Steelhead Supplementation Program; Hood Canal Steelhead Supplementation Off-station Projects in the Dewatto, Skokomish, and Duckabush Rivers; and the Lower Elwha Fish Hatchery Wild Steelhead Recovery Program, (NOAA 2014a). This Evolutionary Significant Unit (ESU) was originally listed on May 11, 2007 (NOAA 2007). The ESA status of this ESU is threatened (NOAA 2014a).

According to WDFW, Puget Sound steelhead trout do not spawn and are not present within any freshwater watersheds in the San Juan Islands (WDFW 2015a). Steelhead presence has been documented in a number of creeks, rivers and river basins in the surrounding area (within approximately 28 miles, straight-line distance, see Table 4).

Juvenile steelhead were not noted or otherwise included in the analysis of juvenile salmon and forage fish presence in the shorelines of the San Juan Islands (Beamer and Fresh 2012). Juvenile steelhead typically outmigrate as older, larger smolts that are far less reliant on shallow water than smaller ocean-type salmon smolts. Any juvenile steelhead present in the Action Area would likely overlap temporally with Chinook and other ocean-type salmon. It is unlikely that juvenile rearing occurs in shallow waters of the Action Area; occasional opportunistic foraging in the Action Area is more likely, but still would not comprise regular use by steelhead. Sub-adult and adult steelhead may use the deeper, offshore waters of the Action Area for migration and foraging, but are not expected to be present in significant numbers at any time.

General life history information for Puget Sound steelhead trout has been reviewed in the Final Listing Determination (NOAA 2007) and the Status Review Update for Puget Sound Steelhead (NMFS 2005). Critical habitat for Puget Sound steelhead has been designated, but it does not include nearshore marine areas or San Juan County (NOAA 2016).

Table 4. Freshwater systems in which steelhead presence has been documented in the general vicinity of Sucia Island.

Creek, River, or Basin	Distance from Sucia (miles)	Run Type
Dakota Creek, California Creek	19	winter
Chuckanut Creek	22	winter
Colony Creek	24	winter
Samish River Basin	24	winter
Nooksack River Basin	26	winter
Squalicum Creek	26	winter
Whatcom Creek	26	winter
Skagit River Basin	35	summer, winter
Dungeness Creek	46	summer, winter
Stillaguamish River Basin	47	summer, winter

4.1.4 Bull Trout

The Coterminous United States DPS includes all bull trout in the lower 48 states. This DPS was listed on November 11, 1999 (USFWS 1999). The ESA status of this DPS is threatened (USFWS 2009).

The Coastal Recovery unit includes bull trout from the Puget Sound, Olympic Coast, and Lower Columbia River geographic regions (USFWS 2015). Eight core areas within the Puget Sound are currently occupied by bull trout: Chilliwack River, Nooksack River, Upper Skagit River, Lower Skagit River, Stillaguamish River, Snohomish and Skykomish River, Chester Morse Lake, and Puyallup River (USFWS 2015). The Skagit River core area has been identified as a population stronghold within the recovery unit (USFWS 2015). The Puget Sound geographic region also includes associated marine waters supporting the anadromous life history form of bull trout and additional shared Forage Migration and Overwintering (FMO).

The Nooksack, Skagit, and Stillaguamish Rivers enter freshwater approximately 26, 35, and 47 miles from Sucia Island. Bull trout presence has also been documented in a number of smaller drainages in the vicinity, but not in any freshwater areas in the San Juan Islands (StreamNet 2021).

Because anadromous bull trout may range in salt water as much as 30 or 40 kilometers (approximately 18 to 25 miles) from the mouth of their natal stream (Kraemer 1994), they may be present in the Action Area. Sub-adult and adult bull trout may be in the area year round. Juvenile bull trout would most likely be present at the same time as other juvenile salmonids, although like steelhead these juveniles are larger at outmigration and are less nearshore dependent than juvenile Chinook salmon.

Life history and stock information on bull trout potentially occurring in the Action Area can be found in the following references: Buchanan and Gregory (1997); Lee et al. (1997); Rieman and McIntyre (1993; 1995); USACE (2000); USFWS (1999).

Critical habitat has been designated for bull trout, but does not include the Action Area (USFWS 2010).

4.1.5 Bocaccio

The Puget Sound/Georgia Basin DPS includes all bocaccio originating from Puget Sound and the Georgia Basin (NOAA 2014a). This DPS was originally listed on April 28, 2010 (NOAA 2010). The ESA status of this DPS is endangered (NOAA 2014a).

Bocaccio rockfish are a large rockfish, often reaching up to three feet in length. Bocaccio rockfish, like other rockfish species, give birth to live larval young that are pelagic for several months. Juvenile bocaccio rockfish then settle into nearshore habitat, often including aquatic vegetation such as macroalgae-covered rocks or sand/eelgrass habitat (Love et al. 2002). Juveniles typically inhabit shallower water than adults, though still are most commonly found in relatively deep waters (100 to 400 feet [COSEWIC 2002]). Bocaccio rockfish and most rockfish species migrate to deeper water as they mature (Love et al. 1991), and adult bocaccio rockfish are usually found at depths of between 165 feet and 825 feet (Love et al. 2002). Adults often congregate around rocky bottom and outcrop habitat, though occasionally wander into mudflats (NMFS 2008). Adults are typically found well off the bottom (Love et al. 2002). Juvenile bocaccio rockfish are planktivorous, feeding on larval krill, diatoms, and dinoflagellates. Adults are piscivorous, primarily feeding on other rockfishes, hake sablefish, anchovies, lanternfish, and also squid (NMFS 2008). Bocaccio rockfish are prey of Chinook salmon, terns, and harbor seals (NMFS 2008).

Bocaccio have not been documented in greater Puget Sound since 2001, although it is assumed an extant population exists (NMFS 2008). Historically, bocaccio were more frequently observed as bycatch or in the recreational fisheries in the southern portion of Puget Sound, including the area around Point Defiance and the Tacoma Narrows (NOAA 2009, NMFS 2008, and Palsson et al. 2009). They are not included on the WDFW Priority Habitats and Species List for San Juan County (WDFW 2021).

Bocaccio presence is unlikely in both the Project and larger Action Area. The aquatic habitat in the immediate vicinity of Fossil Bay is shallower than typical adult bocaccio habitat. Eelgrass and macroalgae are present along the shoreline of the Action Area, which may be utilized by juveniles for rearing. However, considering what is known about bocaccio distribution, their presence is generally less likely in the San Juan Islands than in areas further south in Puget Sound. Based on the available information, it is unlikely that bocaccio would be present in the Action Area.

4.1.6 Yelloweye Rockfish

The Puget Sound/Georgia Basin DPS includes all yelloweye rockfish originating from Puget Sound and the Georgia Basin (NOAA 2014a). This DPS was originally listed on April 28, 2010 (NOAA 2010a). The ESA status of this DPS is threatened (NOAA 2014a).

Yelloweye rockfish, one of the larger rockfish, are generally considered rare in greater Puget Sound (Love et al. in NMFS 2008). Like other rockfish, yelloweye rockfish give birth to live larval young that are pelagic for several months. Juvenile yelloweye rockfish generally settle in shallow, high relief zones, crevices and sponge gardens (Love et al. in NMFS 2008). Juveniles move from shallow rocky reefs to deeper pinnacles and rocky habitats as they mature (NMFS 2008). Adults generally inhabit water between approximately 40 and 1,560 feet deep, but are most common between 300 and 600 feet (Love et al. 2002). Adult yelloweye rockfish are generally attached to a specific site and do not move much from that site (NMFS 2008). Adult yelloweye rockfish were observed in association with coral reefs at depths between approximately 650 and 820 feet in the Olympic Marine Sanctuary off the Washington Coast during coral surveys (Brancato et al. 2007). Juvenile yelloweye rockfish are planktivorous. Adults, due to their large size, prey on a wider range of prey items than bocaccio, including smaller rockfish, sand lance, gadids, flatfishes, shrimp, crab, and gastropods (Love et al. 2002 and Yamanaka et al. 2006 in NMFS 2008). Yelloweye rockfish are preyed on less frequently than most rockfish due to their size, though they are occasionally preyed upon by killer whales.

As with bocaccio, the area in the immediate vicinity of Fossil Bay is shallower than typical yelloweye rockfish habitat due to the lack of very deep water and/or rocky reefs or outcrops. WDFW includes yelloweye rock fish on its PHS list and shows that they are present within San Juan County (WDFW 2021). The greater Action Area includes deeper, rockier habitat. Based on available information, yelloweye rockfish may be present in the Action Area.

4.1.7 Southern Resident Killer Whale

The Southern Resident DPS of killer whale (SRKW) includes killer whales from the J, K, and L pods, except such whales placed in captivity prior to November 2005 and their captive progeny

(NOAA 2014a). This DPS was listed on November 18, 2005 (NOAA 2005a). The ESA status of this DPS is endangered (NOAA 2014a).

The three resident whale pods (J, K, and L pods) have spring through fall ranges in Puget Sound and the Straits of Georgia and Juan de Fuca. A number of factors have been identified by NOAA Fisheries as having resulted in the listing of these whales as endangered. Sound and disturbance from vessel traffic, toxic chemicals which accumulate in top predators, and uncertain prey availability (primarily salmon) all have been identified as concerns for the continued survival of this population.

The Orca Network maintains a whale sighting database for SRKWs. Based on that data, Southern Residents frequently pass through the San Juan Islands and through the Action Area on a somewhat regular basis (Orca Network 2021). Based on the available information, Southern Resident killer whale sightings in the Action Area are strongly seasonally variable, and likelihood of presence during Project construction will be minimized through adherence to the anticipated work window (September 1 through February 15). Nevertheless, Southern Resident presence in the portions of the Action Area outside the Fossil Bay is possible. Due to shallow water, use of Fossil Bay is not likely.

Life history information on Southern Resident killer whales potentially found in the Action Area can be found in the following references: Barrett-Lennard and Ellis (2001); Braham and Dahlheim (1982); Dahlheim and Heyning (1999); Ford et al. (2000); NOAA (2006); Reeves and Leatherwood (1994).

4.1.8 Humpback Whale

The humpback whale (entire species) was listed as endangered when the Endangered Species Act was enacted on June 2, 1970.

Humpback whales inhabit coastal waters with high plankton and forage fish productivity, and are typically found within about 50 nautical miles of shore (Evans 1987, Calambokidis and Steiger 1995). They are dependent on abundant food resources because of their size and metabolic needs for reproduction, nursing, and sustenance during times of the year (i.e., winter) when food resources are less abundant (Evans 1987).

Humpback whales typically inhabit coastal areas because of the productivity of these habitats. They enter the inland waters of the Straits of Juan de Fuca and Georgia, or Puget Sound relatively infrequently. Prior to 2003, only three individual whales had been observed in these inland waters, although reported sightings have increased in recent years with 13 different individuals during 2003 and 2004 (Falcone et al. 2005). Based on a review of OrcaNetwork (http://www.orcanetwork.org/Archives/index.php?categories_file=Sightings%20Archives%20Home, queried May 10, 2021), humpback whales have been sighted in the islands generally at least once during most months (except January and February), but have been observed less frequently in the northern portions of the San Juans/Strait of Georgia than areas to the west and south of the Islands. Given the infrequency of observations in this area, they are considered unlikely to be present in the Action Area at any time.

Life history information on humpback whales potentially found in the Action Area can be found in the following references: Braham 1991; Calambokidis et al. 1997, 1998, 2001; Calambokidis and Quan 1997; Calambokidis and Steiger 1995; Evans 1987; Scheffer and Slipp 1948.

4.1.9 Marbled Murrelet

The marbled murrelet was listed as threatened on October 1, 1992 (USFWS 1992). Marbled murrelets feed in marine waters but nest in old-growth coniferous forests. While murrelet at-sea foraging behavior is not well understood, murrelets are typically observed foraging in marine waters between 20 and 80 meters (65 and 262 feet) deep, though they have been observed foraging in water as shallow as 1 meter (3 feet) and as deep as 100 meters (328 feet) (Ralph et al. 1995). Marbled murrelets reportedly feed on a wide variety of prey, including sand lance, Pacific herring, and other marine taxa such as crustaceans. Murrelets nest in old growth or mature forests composed of conifers, including Douglas fir, western red cedar, Sitka spruce, and western hemlock. Designated critical habitat for the marbled murrelet applies only to nesting habitat, and does not occur in the Action Area (USFWS 2011). Murrelets may be present and forage within the Action Area.

Life history and population information on marbled murrelets potentially found in the Action Area can be found in the following references: Carter 1984; Parametrix, Inc. 1996; Ralph et al. 1995; USFWS 1995, 1996, 1997.

4.1.10 Leatherback Sea Turtle

The leatherback sea turtle was listed as endangered on June 2, 1970. Leatherback sea turtles are found in the Pacific, Atlantic, and Indian Oceans (Groombridge 1982). In the Pacific Ocean, this species has been recorded along the coast of South America and as far north as Alaska; however, they are uncommon in Washington waters and found off the coast only during the summer and early fall when sea surface temperatures are highest (Mager 1985). They have not been documented in Puget Sound (Jenkerson pers. comm. 2019)

Bowlby et al. (1994) observed 16 leatherback sea turtles off the Oregon and Washington coasts in 1989 and 1990, and three more in 1992. During the study, no other sea turtles were observed. The majority of these turtle sightings occurred off the Washington coast with a mean offshore distance of 33 nautical miles and a range of 4.5 to 80 nautical miles. Critical habitat is associated with breeding areas and does not occur in Washington.

Because the leatherback sea turtle typically occurs in offshore locations and there are no documented sightings within Puget Sound, there is no expectation that this species uses the Action Area.

Life history information on leatherback sea turtles can be found in the following references: Bowlby et al. 1994; CEE 1983; Groombridge 1982; Mager 1985.

4.2 DESIGNATED CRITICAL HABITATS

4.2.1 Puget Sound Chinook Salmon Critical Habitat

On September 2, 2005, NMFS designated critical habitat for 12 ESUs of Pacific salmon and steelhead, including critical habitat for the Puget Sound Chinook ESU (NOAA 2005b). Critical habitat for this ESU includes 15 associated subbasins within Puget Sound and the Nearshore Marine Areas (Unit 16). Nearshore Marine Areas include the entirety of the nearshore zones of Puget Sound (including areas adjacent to islands), Hood Canal, and the Strait of Juan de Fuca (to the mouth of the Elwha River) (NOAA 2005c). The Nearshore Marine Areas are further divided into subunits based on the boundaries separating the 19 Water Resource Inventory Areas (WRIAs) that discharge into Puget Sound. The Action Area includes shorelines in Nearshore Marine Areas 2 (San Juans), 1 (Nooksack), and 3 (Lower Samish/Skagit) (NOAA 2005b).

Designated critical habitat within the Nearshore Marine Areas includes elevations from Extreme High Water (EHW; +11.15 ft MLLW based on NOAA Station 9449880, Friday Harbor WA) to -30 m (-98 ft) MLLW. The focus within the Nearshore Marine Areas has been identified as photic zone habitat based on the presence of macrophytes (eelgrass and macroalgae) that are vital to rearing, migrating, and maturing Chinook salmon and their prey (NOAA 2005b). Based on this designation, the entirety of the Project Area as well areas within the appropriate depth range in the Action Area is designated as critical habitat for Chinook salmon.

4.2.2 Puget Sound Rockfish Critical Habitat

NOAA fisheries designated critical habitat for both species of listed rockfish on November 13, 2014 (NOAA 2014b). NOAA designated two separate areas of critical habitat to cover both juvenile and adult life history stages of the listed rockfish species. Deep water critical habitat consists of benthic habitats or sites deeper than 30 meters (98 feet) that possess or are adjacent to areas of complex bathymetry consisting of rock and/or highly rugose habitat. Deep water critical habitat is considered essential for adult rockfish (all species) and juvenile yelloweye rockfish to promote growth, survival, reproduction and feeding opportunities.

Nearshore critical habitat for juvenile bocaccio consists of settlement habitats located in the nearshore with substrates such as sand, rock and/or cobble compositions that also support kelp. Nearshore critical habitat provides forage opportunities and refuge from predators and enables behavioral and physiological changes needed for rockfish juveniles to occupy deeper adult habitats. Deepwater and nearshore critical habitat for Puget Sound rockfish have been designated, and the Action Area contains both nearshore and deepwater critical habitat (Figure 2).

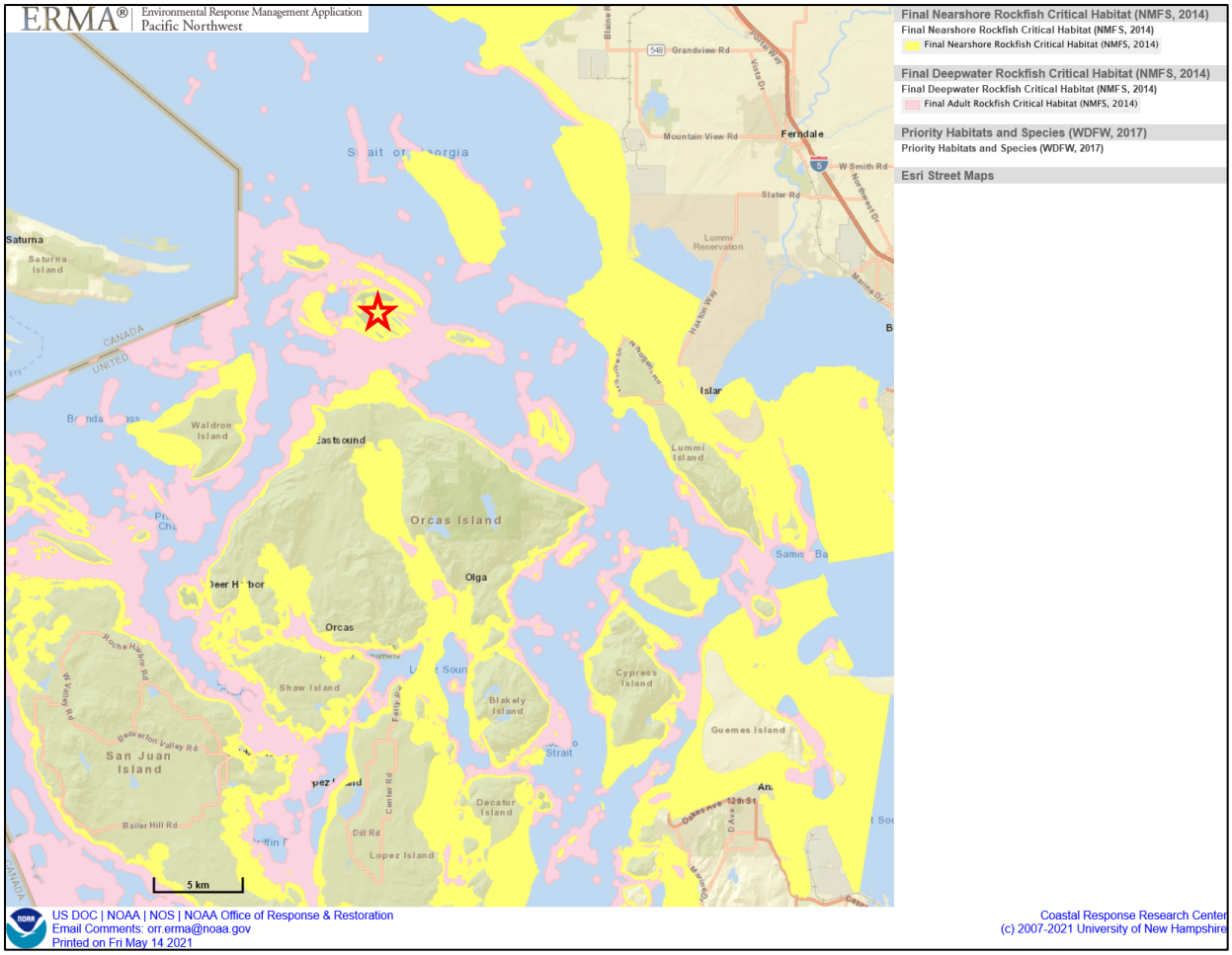


Figure 2. Final designated nearshore (juvenile) and deepwater (adult) critical habitat for listed rockfish (bocaccio and yelloweye rockfish; ERMA 2021).

4.2.3 Southern Resident Killer Whale Critical Habitat

NOAA designated critical habitat for Southern Resident killer whale on November 29, 2006, effective December 29, 2006 (NOAA 2006). Three areas have been designated as critical habitat: Area 1: the Core Summer Area in Haro Strait and waters around the San Juan Islands; Area 2: Puget Sound excluding Hood Canal; and Area 3: the Strait of Juan de Fuca. The Action Area is located within Area 1: the Core Summer Area in Haro Strait and waters around the San Juan Islands. Designated critical habitat for Southern Residents includes waters deeper than -20 ft relative to EHW, or -8.85 feet MLLW. Therefore, the Project Area as well as the entirety of the Action Area deeper than -8.85 ft MLLW are designated critical habitat for Southern Resident killer whale.

5 EFFECTS OF THE PROJECT

The effects of an action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. Though previously, effects of an action were to be assessed as direct, indirect, interdependent and interrelated effects, recent guidance has collapsed all of the aforementioned types of effects such that all are evaluated as "effects of the action" without further regard for the type of effect (USFWS and NOAA 2019). Effects are organized according to construction-related effects and long-term effects to habitat. Effects on ESA-listed species are presented in this section, and effects on listed critical habitat are discussed in Section 6.

Broadly, the potential effects of Project activities for ESA-listed species in the Action Area include the effects of pile driving, construction-related turbidity and water quality effects, changes in overwater coverage, and changes in pile number. The effects of these elements on the species of concern are analyzed below.

5.1 CONSTRUCTION EFFECTS

5.1.1 Underwater Sound from Pile Installation

The Project requires installation of two (2) new 16-inch steel pile.

Pile will be installed using a vibratory hammer whenever possible. Pile that cannot reach full embedment depth with vibratory driving alone will require impact proofing. Alternately, a rock drill may be used to penetrate bedrock.

5.1.1.1 Impact Pile Proofing

During impact proofing, underwater noise and sound pressure levels (SPLs) could affect listed fish, avian, and marine mammal species. At lower levels, pile proofing noise can cause behavioral effects on fish, such as startle or avoidance of an area. At higher levels, injury such as hearing threshold shifts or barotrauma could occur.

To assess the potential for injury from pile proofing, the Practical Spreading Loss model is used in species-specific calculators developed by the Services. These calculators model the distance from the pile within which SPLs may exceed thresholds; this distance is referred to as an "isopleth". To calculate this requires an estimate of the anticipated SPL of the particular pile being driven, the number of strikes anticipated per day, and an estimate of SPL reduction achieved by any sound attenuation measures employed. The following assumptions are made:

- Proofing would occur only when necessary to achieve full embedment when substrate prevents sufficient embedment of anchor piles for lateral loads.
- It is assumed that up to 250 blows per pile will be necessary to reach full embedment.

- A bubble curtain would be used during impact pile proofing to reduce SPL; the bubble curtain is assumed to attenuate SPL by approximately 9 dB[2].
- 18-inch steel pile (used in lieu of measurements for 16-inch pile) attenuated with a bubble curtain would generate sound at 191 dB_{peak}, 178 dB_{RMS}, and 162 dB_{SEL}.

Salmonids

An interim agreement signed by several agencies has set threshold levels for potential injury and adverse behavioral effects for salmonids, which are used by the Services (Fisheries Hydroacoustic Working Group 2008). Additionally, USFWS promulgates the same thresholds for bull trout (USFWS 2014a). NOAA Fisheries also supports an injury threshold based on cumulative sound exposure, which accounts for impact pile proofing over an entire work day using the NOAA Fisheries Stationary Fish Model[3]. Current guidance from NOAA Fisheries is that the distance to injury threshold should be calculated for both criteria (single strike based on dB_{peak} and cumulative sound based on dB_{SEL}), and the more conservative value (greater distance) should be applied.

Injury thresholds only apply to juvenile salmonids, not adults. Steelhead and bull trout potentially present in the Action Area would be much larger than Chinook and chum salmon, and thus much less vulnerable to underwater noise. Injury thresholds are presented in Table 5.

Table 5. Fish Injury and Disturbance Thresholds Impact Pile Driving.

Effect type	Salmonid[1]
Injury, single strike	206 dB_{peak}
Injury, cumulative strikes	187 dB_{SEL} (>2g); 183 dB_{SEL} (<2g)
Behavioral disruption	150 dB_{RMS}

[1] Source: Fisheries Hydroacoustic Working Group, 2008

A noise impact calculator has been prepared by NMFS (NMFS 2009), which uses the Practical Spreading Loss Model to assess potential for instantaneous injury and the Stationary Fish Model to assess potential cumulative injury[4]. The Model assumes that cumulative effects "reset" overnight based on assumed fish movement, so only strikes in a single day are counted toward cumulative impacts. Since driving conditions are unknown until the time of construction, the worst-case scenario for impact pile proofing is presented in the model to determine the maximum potential extent of impacts during pile proofing operations.

Instantaneous Injury Impacts

As mentioned above, the potential for injury to salmonids from instantaneous impulses is assumed possible at SPLs above 206 dB_{peak}. Since estimated SPLs generated by impact proofing would be below this level, it is assumed that no potential exists for instantaneous injury or direct mortality to salmonids.

[2] In the absence of site-specific and equipment-specific data, 9 dB is assumed as a modest attenuation level based on data presented in WSDOT 2020.

[3] The NOAA Fisheries Stationary Model is available for download at the WSDOT BA Guidance website http://www.wsdot.wa.gov/Environment/Biology/BA/BAguidance.htm#Noise

[4] FWS has also prepared a calculator, which uses the same functions and thresholds as NMFS'. Thus, results from both calculators are identical, and only NMFS' calculator is used herein.

Cumulative Injury Impacts

In calculating potential cumulative pile proofing impacts, it is necessary to estimate the number of strikes needed to fully embed a pile in addition to knowing the sound exposure level (SEL) resulting from each individual strike. The model assumes that cumulative effects "reset" overnight based on assumed fish movement, so only strikes in a single day are counted toward cumulative impacts. As discussed above, it is estimated that each pile will take 250 blows to fully proof. If both piles are driven in one day, up to 500 blows could occur in one day.

Additionally, cumulative impacts are assumed to occur at a lower SPL for salmonids less than 2 grams than for salmonids larger than 2 grams. To be conservative, the threshold for salmonids less than 2 grams was used

Based on the assumptions above, the cumulative effects threshold for salmonids would be exceeded within 82 ft (25 m) of proofing (Table 6).

The cumulative pile proofing impacts model assumes that an individual fish experiences all impact hammer sound over an entire pile work day, which means that fish would have to be present within the applicable isopleth for the entirety of each day's proofing. For this project, impact pile driving, if needed, would be expected to last only half of one day. Individual salmonids would likely move away from piles upon commencement of driving. This would result in a much smaller radius of potential cumulative injury. Adherence to the in-water work window would ensure that a minimum number of juvenile salmonids would be present.

Thus, there is very low potential for juvenile salmonids to experience cumulative injury from pile proofing noise. Timing restrictions and the low number of piles to be proofed further reduces this potential. Thus, the risk of cumulative injury to salmonids is negligible. The potential for impacts to steelhead or bull trout is even lower, so as to be discountable.

Behavioral Impacts

Behavioral effects on salmonids are assumed possible at SPLs above 150 dB_{RMS}. Using NMFS' calculator, impact pile proofing would exceed the salmonid behavior threshold within 2,414 ft (736 m; Table 6). Exceedance of the behavioral threshold may cause avoidance behavior. However, there is ample comparable habitat in the vicinity in which juvenile salmonids could forage. Thus, even if this effect were to occur, the risk of adverse effects is negligible.

Table 6. Distance to salmonid effects threshold

Pile size	Anticipated SPL (dB_{RMS}/dB_{SEL})	Distance to threshold	
		Cumulative*	Behavioral
16"	178/162	82 ft / 25 m	2,414 ft / 736 m

*Assumes effects on salmonids smaller than 2g to be conservative; value for salmonids >2g is 46 ft / 14 m.

Overall, due to the low likelihood of juvenile salmonids encountering injurious sound levels, pile driving is determined to have discountable risk of adverse effects to juvenile salmonids, and should effects occur they would likely be negligible.

Cetaceans

Marine mammals in the Action Area can similarly be affected by pile driving. Impact pile proofing can potentially injure marine mammals, mask communication between individuals, or cause behavioral effects such as avoidance, the effect of which varies based on the importance of the habitat.

Marine mammals of different taxa are sensitive to sound in different frequencies. Southall (2007) has divided marine mammals into functional hearing groups, including low frequency cetaceans (baleen whales), medium frequency cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales), and high frequency cetaceans (true porpoises, river dolphins), phocid pinnipeds (true seals), and otariid pinnipeds (sea lions). For the purpose of this analysis, only the functional groups that include an ESA-listed species that may be present have been assessed: the low-frequency cetacean (humpback whale) and mid-frequency cetacean (Southern Resident killer whale) groups. NMFS has set underwater noise level thresholds for injury and behavioral disturbance for each hearing group (NMFS 2018); these are presented in Table 7.

Table 7. Marine mammal injury and disturbance thresholds during impact pile proofing

Effect type	Low Frequency Cetaceans[1]	Mid Frequency Cetaceans[1]
Injury, single strike	219 dB_{peak}	230 dB_{peak}
Injury, cumulative strikes	183 dB_{SEL_cum}	185 dB_{SEL_cum}
Behavioral disruption	160 dB_{RMS}	160 dB_{RMS}

[1] Source: NMFS 2018

NMFS has developed a calculator to assess the potential for injury to marine mammals resulting from impact pile proofing (NMFS 2018). The calculator considers the level at which individual strikes may cause injury, and at which repetitive impulsive sounds would cumulatively cause a permanent threshold shift (PTS). The calculator includes two calculation methods, using dB_{RMS} and dB_{SEL}, respectively, and the more conservative of the two results are to be used. Additionally, NMFS recommends using the Practical Spreading Loss model to calculate the distance within which behavioral effects may occur. Each of these potential effects are analyzed below.

Instantaneous Permanent Threshold Shift

NMFS' calculator was used to assess the potential for PTS to occur. However, the anticipated SPL generated by pile strikes would be below the PTS thresholds (Table 7). For this reason, NMFS' calculator indicates no potential for PTS to occur from single pile strikes.

Cumulative Impacts

To assess the potential for cumulative PTS to occur, both of NMFS' calculator methods were run for 16-inch diameter pile, with the assumptions described above, and the most conservative result was used (the RMS method). Cumulative PTS would be anticipated over a larger area for the low-frequency hearing group than the mid-frequency hearing group cetaceans: within 207 ft (63 m) for low-frequency, and within 8 ft (2 m) for mid-frequency hearing groups (Table 8; Figure 3). Both of these areas remain within the shallow water of Fossil Bay.

For PTS to occur, an individual cetacean would have to be present within the given distances for the entirety of a day's pile proofing. This project would only require an estimated half day of

impact pile driving, if any. Based on the shallow water within Fossil Bay, cetacean presence is unlikely.

Behavioral Effects
Using the Practical Spreading Loss Model, the distance to potential behavioral effects was calculated. Behavioral effects may be expected within 520 ft (158 m) of proofing (Table 8; Figure 3).

As with the cumulative injury thresholds, it is extremely unlikely for a cetacean to come within 520 ft of active pile proofing, and within a shallow, enclosed bay like Fossil Bay, this is even less likely. Thus, the potential for impact pile proofing to have behavioral effects on cetaceans is discountable.

Table 8. Marine mammal injury and disturbance isopleths for impact pile proofing by hearing group

Pile size	dB_{PEAK}[1]	dB peak SPL Impact Threshold Distance		dB_{RMS}[1]	dB RMS Cumulative Impact Threshold Distance		Behavioral (all)
		Low freq (219 dB_{peak} threshold)	Mid freq (230 dB_{peak} threshold)		Low freq (183 dB_{SEL_CUM} threshold)	Mid freq (185 dB_{SEL_CUM} threshold)	
16”	191	NA	NA	178	207 ft / 63 m	8 ft / 2 m	520 ft / 158 m

[1]Attenuated 9 dB from use of a bubble curtain

In summary, based on the unlikelihood of ESA-listed cetaceans entering within the isopleths of potential injury or disturbance, the effects of impact pile proofing on cetaceans are discountable.

Rockfish
In the absence of more specific information, and since rockfish—like salmonids—possess a swim bladder that would increase the potential for barotraumatic injury, potential effect analyses described above for salmonids may also be applied to rockfish.

Larval rockfish are typically present in the water column in the spring (Palsson et al. 2009). Though for this reason they would be less likely to be present during the work period, there is potential for their presence year-round. No studies have been conducted directly on larval rockfish; however, a peak SPL and cumulative barotrauma study conducted on other larval fish bearing swim-bladders found no difference in mortality between control and exposed individuals (Bolle et al. 2014). Based on similar structural composition, Popper et al (2019) indicate that this study may be an appropriate surrogate for rockfish. Thus, it is extremely unlikely that pile driving would affect larval rockfish. Juvenile rockfish could be present in Fossil Bay year-round, utilizing patchy eelgrass.

Based on potential juvenile rockfish presence, there is likely similar potential for effects resulting from pile driving as with juvenile salmonids (see above).

Marbled Murrelet
Marbled murrelets foraging in marine waters can be exposed to potentially injurious or disturbing sound pressure levels. USFWS has set injury thresholds related to behavior, auditory injury, and non-auditory barotraumatic injury.

In addition, impact proofing of larger piles can cause above-water auditory masking for foraging murrelets. Current USFWS guidance indicates that pile proofing that results in a received level of 29 dB will mask communication. However, FWS indicates that intermittent pile driving (e.g., proofing) is unlikely to cause masking, especially of smaller piles such as are proposed here. Thus, masking is not anticipated to occur, and is not addressed further.

USFWS has created a pile injury calculator for marbled murrelet, which calculates the distance within which cumulative barotrauma and auditory injury could occur, respectively (USFWS 2014a).

Based on that calculator, proofing of 16-inch piles would potentially generate behavioral responses within 2,414 ft (736 m; Table 9; Figure 3). Barotrauma and auditory injury are possible, but only within a very small area. Proofing could generate potential barotrauma and/or auditory injury within 3 ft (1 m; Table 9).

It is unlikely that a murrelet would approach within such small distances of active work areas. Thus, potential injury to murrelets from underwater sound generated by impact pile proofing is discountable. Should murrelets be within the behavioral effects radius, there is ample foraging habitat within the vicinity to use, and avoidance behavior would have negligible effect on foraging success.

Table 9. Potential effects threshold distances, marbled murrelet

Pile size	Behavioral	Auditory Injury	Barotrauma
16”	2,414 ft / 736 m	3 ft / 1 m	3 ft / 1 m

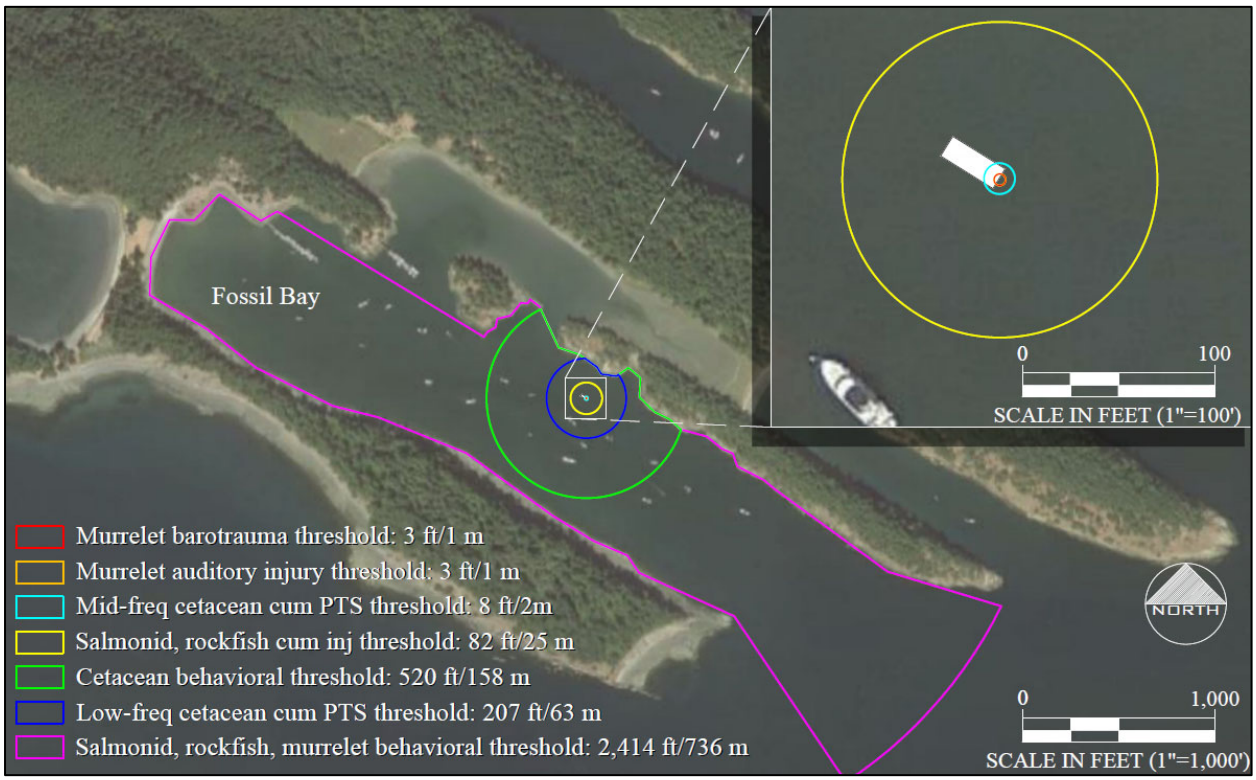


Figure 3. Distance to in-water effects thresholds from impact pile proofing.

5.1.1.2 Vibratory Installation

Sound from vibratory hammer operation is continuous in nature, as opposed to impact pile proofing which results in a pulsed sound. Impacts to fish have not been observed from a vibratory hammer (WSDOT 2020), and USFWS has not set a threshold for impacts from vibratory pile driving on marbled murrelet (USFWS 2014a). However, NOAA Fisheries is concerned about potential effects of elevated underwater continuous sound on listed marine mammals (for this Project: humpback whale and Southern Resident killer whale).

Two (2) pile will initially be installed using a vibratory driver. The project engineer estimates that vibratory installation typically takes 15-30 minutes, but if driving in dense substrate, up to 45 minutes may be required. Additionally, rock drilling, if required, would generate similar continuous noise as a vibratory hammer. If rock drilling is required, it is estimated that each pile would require approximately 2 hrs of drilling.

Cetaceans

As mentioned above, if bedrock is encountered and thus preventing full embedment, rock socket drilling may be used. The project engineer describes the sound associated with rock socket drilling to be more similar to vibratory than impact driving in nature, with a continuous rather than a pulsed sound signature. This is consistent with NOAA Fisheries characterization of drilling as an example of non-pulse noise, similar to vibratory driving, in its definition of Level B behavioral disruption for non-pulse noise. Therefore, during pile work for this Project, noise and SPLs could affect

listed marine mammal species (Level B behavioral disruption, continuous sound) and potentially listed fish (behavioral effects, non-specific), as summarized in Table 10.

NOAA Fisheries has established dual thresholds—one threshold that assesses the distance within which PTS of hearing sensitivity is anticipated, varying by hearing group, and another threshold that predicts behavioral effects. These thresholds are presented in Table 10.

Table 10. Marine mammal vibratory sound thresholds

Effect	Low-frequency cetaceans	Mid-frequency cetaceans
Permanent Threshold Shift (PTS)	199 dB_{SEL_CUM}	198 dB_{SEL_CUM}
Behavioral	120 dB_{RMS}	

NMFS' calculator tool was used to assess the potential for PTS resulting from vibratory pile installation and rock drilling. Additionally, the Practical Spreading Loss model was used to determine the distance to potential behavioral effects on ESA-listed marine mammals. The following assumptions were used to populate the models:

- Vibratory installation of 16-inch piles is anticipated to generate nose levels of approximately 164 dB_{RMS} (Laughlin 2010 a, b).
- The maximum sound anticipated to be generated by rock socket drilling 16-inch diameter steel pipe pile is 182.7 dB_{RMS} at 1 meter (maximum from Dazey et al. 2012, see Appendix B); Typical sound anticipated to be generated by rock socket drilling 16-inch diameter steel pipe pile is 158.8 dB_{RMS} at 1 meter (average from Dazey et al. 2012).
- The Practical Spreading Loss model assumes that underwater sound transmission stops at landmasses.
- Both piles would be drilled in half of a day.
- Vibratory installation would take up to 45 minutes per pile
- Rock drilling would extend up to 15 ft into rock and require up to 2 hrs per pile.

Using the Practical Spreading Loss model, with the assumptions listed above, the resulting distances are presented in Table 11.

Cumulative PTS

Based on the values presented in Table 11, vibratory installation would exceed cumulative PTS thresholds within a very small area—up to 47 ft (14 m) from pile driving for low-frequency cetaceans and up to 3 ft (1 m) for mid-frequency cetaceans.

Rock drilling under maximum volume conditions would generate PTS within up to 165 ft (50 m) for low-frequency cetaceans and 15 ft (5 m) for mid-frequency cetaceans. Under typical volume conditions, these would be 4 ft and less than 1 ft, respectively.

It is extremely unlikely that a humpback or Southern Resident killer whale would be within these distances of vibratory pile driving or rock drilling. Thus, the potential for vibratory pile driving or rock drilling to cause PTS is discountable.

Behavioral Effects

NMFS estimates that behavioral effects on marine mammals from continuous noise sources can be expected at levels above 120 dB_{RMS}. Based on the assumption above, the behavioral effects threshold isopleth would be exceeded by vibratory installation within 5.3 miles (Table 11; Figure 4).

The behavioral threshold could be exceeded by rock drilling under typical noise conditions within 1,266 feet, and under maximum noise conditions within 9.4 miles (Table 11; Figure 4).

For vibratory installation and maximum noise rock drilling, these actions could generate sound that would extend beyond the Project Area.

Assuming both pile could be driven in half a day, vibratory pile noise would be generated for up to four hours over only one day. For efficiency of work, pile work in a day may include a combination of vibratory driving and rock drilling depending on the contractor's plan. Given the intermittent nature of vibratory installation, short duration of vibing, relatively small area of effect, and low likelihood of humpback and Southern Resident killer whale presence in the Action Area during the period of the work window, it is unlikely that these species would enter within the anticipated disturbance isopleths.

To reduce the likelihood that ESA-listed cetaceans are exposed to disturbing sound levels, a marine mammal monitoring plan will be prepared. For these reasons, the risk of either harm or disturbance to humpback whale or Southern Resident killer whale from vibratory pile driving noise is discountable.

Table 11. Marine mammal distances to PTS and behavioral effects from vibratory pile driving and rock drilling.

Pile size	Expected SPL dB_{RMS} (measure distance)	PTS Distance		Behavioral Effects
		Low freq (199 dB_{SEL_CUM} threshold)	Mid freq (198 dB_{SEL_CUM} threshold)	
16" install	164 (10 m)	47 ft / 14 m	3 ft /1 m	5.3 miles
Rock drilling (typ.)	158.8 (1 m)	4 ft /1 m	0.3 ft / 0.1 m	1,266 ft / 386 m
Rock drilling (max)	182.7 (1 m)	165 ft / 50 m	15 ft / 5 m	9.4 miles

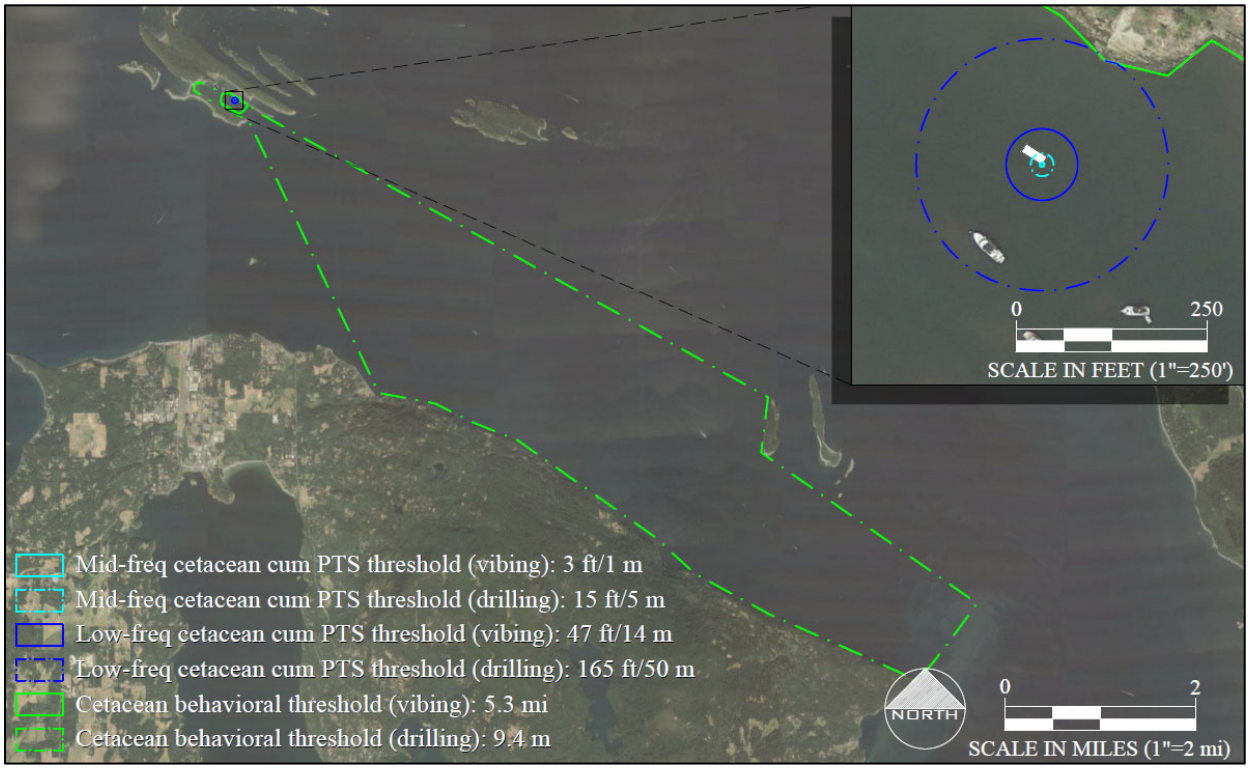


Figure 4. Distance to potential PTS from vibratory pile driving and rock drilling (maximum drilling noise).

Leatherback Sea Turtle

Leatherback sea turtles have not been documented in Puget Sound, and are not expected in the Action Area at any time. There would be no effects of elevated sound on this this species.

5.1.2 Water Quality Effects

5.1.2.1 Turbidity

Vibratory pile driving and rock socket drilling are activities that disturb the substrate, which temporarily suspends sediment in the water column and results in localized and minimal increases in turbidity. Temporary turbidity associated with vibratory driving is typically minimal and highly

localized. During rock socket drilling, drilling spoils are exhausted up and out of the pile during drilling by compressed air. The material is expected to consist of a small amount of overburden (likely some mud, sand, and gravel) and drilled rock pieces. Based on the expected composition of material, any temporary turbidity would be minimal and localized during rock socket drilling (up to 2 hours per pile), and would settle out quickly following pile work.

Temporary turbidity associated with placing the small quantities of clean material necessary to cover pile voids is typically minimal and highly localized, based on the sandy nature of the substrate.

Project construction will be in compliance with Washington State water quality standards as administered by the Department of Ecology under WAC 173 201A 210(1)(e)(i). Based on the WAC, temporary exceedances for turbidity would be allowed within a 150-foot radius from the sediment disturbing activities. If temporary exceedances were to be observed beyond this area during rock socket drilling, the contractor would deploy a silt curtain around the pile to contain turbidity until suspended solids have settled out of the water column. However, this is not expected to occur based on the material to be drilled.

Salmonids

The potential effects of increased turbidity on salmonids have been investigated by a number of studies (Servizi and Martens 1987 and 1992, Noggle 1978, Simenstad 1988, Redding et al. 1987, Mortensen et al. 1976, Berg and Northcote 1985, LaSalle 1988). The potential mechanisms by which turbidity could affect salmonids include direct mortality, sublethal effects (stress, gill damage, and increased susceptibility to disease), and behavioral responses (disruptions to feeding or migration). Turbidity levels which might result in direct harm are typically associated with activities such as dredging in very fine sediments. There is no expectation that pile installation, including by rock socket drilling, would generate turbidity approaching those levels. Turbidity increases would only occur during these activities and are anticipated to be extremely localized, temporary, and minimal. Standard BMPs for pile removal include a number of measures to additionally reduce the potential for temporary turbidity increases, including use of a silt curtain if necessary to maintain compliance within the allowable exceedance area during rock socket drilling (Section 7). However, this is not expected to occur based on the material to be drilled (Section 5.1.2). No harm or direct mortality of listed salmonids would occur. It is also extremely unlikely that a behavioral response such as avoidance of a small-scale and temporary turbidity exceedance would adversely affect any fish present in the Action Area.

Overall, effects of increased turbidity on salmonids are expected to be insignificant and also largely discountable due to work timing.

Non-salmonid Listed Species

As described, temporary turbidity from Project activities would be minimal and highly localized. Project compliance with the Ecology Water Quality Certification would limit increases in turbidity to within 150 feet of active work. Such small-scale, temporary turbidity would be insignificant to any rockfish or murrelets potentially in close proximity to construction. Due to the shallow nature of the waters in Fossil Bay, there is no expectation that Southern Resident killer whales or humpback whales would experience Project-related turbidity. Overall, effects of temporary, minimal, and highly localized increases turbidity would be insignificant to these species.

Leatherback sea turtles are not expected to be present in the Action Area at any time, and therefore temporary, minimal, and highly localized turbidity would have no effect that species.

5.1.2.2 Potential Spills

Remaining project construction includes installing the pumpout float. This action would be mobilized from a construction barge or a vessel towing the pumpout. This is work on the surface of the water (float placement), and would not directly disturb the sediment.

During all project construction, there is a risk of minimal, localized, and temporary water quality impacts from the unintentional release of fuel, lubricants, or hydraulic fluid from construction machinery. All prudent and necessary actions would be taken to avoid such a discharge, including regular maintenance and checks for potential contamination sources. In the event of a spill, containment and cleanup would take precedence over continued work, ensuring that effects would be temporary and extremely localized relative to the Action Area as a whole.

There would be potential for debris to enter the water during construction operations. This risk will be managed through adherence to standard above-water and in-water construction best management practices (BMPs; Section 7). Pile driving could affect water quality through turbidity (addressed above).

Adherence to these BMPs would make the likelihood and potential for harm during in-water work so low as to be insignificant. Overall, potential chemical contamination is not expected to adversely affect any listed species present within the Action Area.

5.2 LONG-TERM EFFECTS

5.2.1 Overwater Coverage Effects on Primary Productivity

The proposed pumpout results in an overall increase in overwater footprint by 340 sq ft. The float will be rectangular (10 feet by 34 feet) which allows underwater light to penetrate further under the float rather than leaving a portion shadowed at all times. Overwater coverage can lead to reduced primary productivity of the aquatic habitat beneath the structure, reducing foraging conditions for juvenile salmonids. The pumpout float will be located in the deeper shore zone and 175 feet offshore so that reduction in primary productivity does not occur in the nearshore waters where juvenile fish are most likely to occur. The benefits to water quality resulting in providing a pumpout float for sewage exceed the impacts from a 10-foot x 34-foot overwater structure.

5.2.2 Overwater Coverage Effects on Juvenile Salmonids

5.2.2.1 Behavioral Effects

The potential effect of new overwater structures on fish behavior has been raised as an issue specific to juvenile salmonids.

As reviewed in Nightingale and Simenstad (2001), the underwater light environment directly affects the ability of fish to execute behaviors including but not limited to schooling, foraging, predator avoidance, migration, and orientation. While juvenile salmonids can see under very low-

light conditions, they may require up to 40 minutes to adapt from light to dark, or from dark to light conditions, during which time they may experience somewhat deteriorated to total lack of vision (as reviewed in Nightingale and Simenstad 2001). There is evidence that under some conditions, juvenile salmonids avoid areas of strong light/dark interfaces, including shading cast by dock or pier edges. Thus, an increase in dock footprint could potentially adversely affect juvenile salmonid behavior under certain circumstances.

Studies indicate that juvenile salmonids pass readily under narrow structures. Weitkamp's (1982) observations at the Port of Seattle showed that shoreline-oriented juvenile salmonids crossed the shadow cast by a narrow (15- to 20-foot wide) overwater structure, but were unwilling to cross under a darker shadow cast by a wider structure. In contrast, under some conditions, juvenile salmonids have avoided entering or passing through shaded areas when a strong light/dark contrast exists, particularly at larger/wider structures. This has been observed at a number of ferry terminals (e.g., Shreffler and Moursand 1999, Southard et al. 2006; Ono et al. 2010). These terminals are wide, typically 80- to 160-ft wide.

Because the proposed pumpout float is 10 feet wide and located 175 feet offshore in the subtidal zone, shoreline-oriented juvenile salmon would not encounter the structure. Thus, adverse effects on salmonids are not anticipated.

5.2.2.2 Predator/Prey Interactions, Piscivorous Fish

The risk of predation increases when juvenile salmonids are forced into deeper water by a wide, highly-contrasting shadow. The proposed pumpout constitutes a much narrower structure than has been observed to generate this effect and would be an isolated, offshore float that shoreline-oriented juvenile salmonids would not pass under or around (e.g., Shreffler and Moursand 1999, Southard et al. 2006; Ono et al. 2010). Thus, there is no risk of additional predation as a result of the increased overwater coverage.

5.2.2.3 Increased Migration Route

Finally, overwater structures can increase the migration route of juvenile salmonids, should they be forced to swim around the structure. The proposed structure would be much narrower than the structures observed to have this effect and would be an isolated, offshore float that shoreline-oriented juvenile salmonids would not pass under or around. Thus, there is expected to be no effect on migration route.

In summary, overwater structures can adversely affect juvenile salmonids. However, due to the narrow nature of the float and the isolated offshore location in the subtidal zone, there is no basis to conclude that the increase of overwater coverage would adversely affect any juvenile salmonids. Thus, it is concluded that the new overwater footprint's effect on ESA-listed salmonids is negligible.

5.2.3 Effects on Prey Species

As was the case for listed fish, elevated SPLs associated with pile installation would be so low that behavioral responses by prey species (specifically fish) are expected to be insignificant and/or discountable (Section 5.1.1). Therefore, effects relative to prey availability and distribution would

also be insignificant and/or discountable. The conclusion for turbidity effects is the same; any effects of temporary, minimal, and highly localized turbidity increases would be insignificant to prey species. Effects would be further minimized through Project timing after the peak outmigration period.

6 CRITICAL HABITAT EVALUATION

6.1 EFFECTS ON PUGET SOUND CHINOOK SALMON CRITICAL HABITAT

NMFS (NOAA 2005b) identified six primary constituent elements (PCEs) (i.e., physical and biological features) essential to the conservation of Chinook salmon. The Project's Action Area is located within a nearshore marine area, therefore only PCE #5 applies to the Project's Action Area (listed and addressed below).

> *5. Nearshore marine areas free of obstruction and excessive predation with water quality and quantity conditions and 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.*

There are four primary elements of PCE #5: water quality and quantity, forage, natural cover, obstruction/predation. Each of these elements is addressed below.

6.1.1 Water Quality and Quantity

Water quality is addressed in Section 5.1.2 of this document. In summary, there is potential for localized and temporary increases in suspended sediment and associated turbidity during pile installation, but this would occur at levels well below those that could result in injury or behavioral effects for juvenile salmonids. There is also potential for accidental spills during construction. BMPs will be implemented to minimize this risk. Additionally, adherence to in-water work windows for pile driving will ensure that work will be limited to periods when juvenile Chinook are unlikely to be present in the Action Area.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Water quantity would not be affected by this Project.

Overall, the Project would not adversely affect the water quality component of PCE #5.

6.1.2 Forage

Effects on forage species are addressed in Sections 5.2.1 and 5.2.3. Temporary effects of elevated SPLs and turbidity during Project activities would be insignificant and/or discountable to salmonid prey species, including Chinook prey species.

The pumpout float would be located offshore and in the subtidal zone to avoid impacts to eelgrass or macroalgae (Sheets 3 and 4). The installation of the replacement structures would have negligible effects on the existing habitat features with respect to juvenile Chinook forage opportunities, but would be an improvement over the previous design.

Overall, the Project would not adversely affect the forage component of PCE #5.

6.1.3 Natural Cover

The primary element of natural cover in the vicinity of the Project area is aquatic vegetation, which may consist of patchy macroalgae in the general vicinity. Effects on these features are addressed in Sections 5.2.1 and 5.2.3. No eelgrass has been documented within the 25 foot buffer around the proposed pumpout float. Temporary turbidity associated with Project activities would be minimal, highly localized, and subject to BMPs.

Overall, the Project would not adversely affect the natural cover component of PCE #5.

6.1.4 Obstruction and Predation

Predation was discussed in Section 5.2. Installation of the pumpout float would not present an obstruction or predation risk based on the narrow nature of the structure and the location 175 feet offshore.

Overall, the Project would not adversely affect the obstruction/predation component of PCE #5.

6.1.5 Summary

Overall, any short-term effects on PCE #5 would be localized, minimal, and temporary, and would not adversely affect Chinook salmon critical habitat. Long-term effects are expected to be neutral with respect to critical habitat.

6.2 ROCKFISH CRITICAL HABITAT

NOAA has identified two primary "essential attributes" vital to the conservation of bocaccio juveniles. Settlement habitats are typically located in the nearshore with substrate such as sand, rock, and/or cobble compositions that also support kelp. Juvenile/nearshore critical habitat for bocaccio rockfish is defined by the following essential attributes (NOAA Fisheries 2013):

- *Quantity, quality, and availability of prey species to support individual growth, survival, reproduction, and feeding opportunities*

- *Water quality and sufficient levels of dissolved oxygen to support growth, survival, reproduction, and feeding opportunities*

Additionally, NOAA has identified three primary "essential attributes" vital to the conservation of adult bocaccio and yelloweye rockfish. These benthic habitats or sites are generally deeper than 30 m and possess or are adjacent to areas of complex bathymetry consisting of rock and/or highly rugose habitat. Adult/deepwater critical habitat for all listed rockfish is defined by the following essential attributes:

- *Quantity, quality, and availability of prey species to support individual growth, survival, reproduction, and feeding opportunities*

- *Water quality and sufficient oxygen to support growth, survival, reproduction, and feeding opportunities*

- *The type and amount of structure and rugosity that supports feeding opportunities and predator avoidance*

The effects of the Project on the three "essential attributes" are presented in detail below.

6.2.1 Nearshore Critical Habitat

Nearshore critical habitat only applies to bocaccio rockfish.

Quantity, Quality and Availability of Prey Species

As discussed in Section 4.1.5, juvenile bocaccio rockfish are planktivores. There is no indication that pile proofing sound would have any effects on planktonic prey items. Primary productivity would not be dramatically reduced due to the location in the subtidal zone.

Overall, the Project would have negligible effects on this essential attribute of rockfish critical habitat.

Water Quality and Dissolved Oxygen

Potential effects of the Project on water quality and resulting effects on rockfish are addressed in Section 5.1.2. Turbidity resulting from pile installation would be temporary, minor, and localized. Effects to water quality would be limited to the immediate vicinity of the work. Standard BMPs for pile driving (Section 7) will be employed to minimize water quality impacts during pile work. In addition, there is the potential for incidental discharges of fuel, oil, or other materials during construction, but these would be minimized and managed through standard BMPs for work in aquatic areas (Section 7). The Project would have no effect on levels of dissolved oxygen in the Action Area.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

The Project would have negligible temporary impacts to this essential attribute of rockfish critical habitat.

6.2.2 Deepwater Critical Habitat

Deepwater critical habitat applies to both bocaccio and yelloweye rockfish. The only Project element that would affect deepwater critical habitat would be noise from pile driving. Based on the analysis conducted in Section 5.1.1, the behavioral threshold would be exceeded within up to 2,414 ft. There is no expectation that pile driving noise would have any behavioral effects on adult rockfish within deepwater critical habitat. The potential effects of this pile proofing noise on the essential elements of deepwater critical habitat would be on adult prey items, as discussed below. These effects would be one half day in duration.

Quantity, Quality and Availability of Prey Species

As discussed in Sections 4.1.5 and 4.1.6, adult bocaccio rockfish are piscivorous, and adult yelloweye rockfish feed on a wider range of prey. It is possible that pile proofing would cause behavioral effects on rockfish prey species. Should this occur, there is potential that prey species

may be less available for adult rockfish during pile proofing. There is no evidence to suggest that low levels (i.e., below 150 dB_{RMS}) of pile driving noise adversely affect rockfish prey. Even if effects were to occur, the Action Area extends into deepwater critical habitat only in very narrow strips, as sound projects between narrow gaps between islands (Figure 1), and the duration of the noise would be half a day (four hours). Thus, the effect area would be extremely small. Potential effects of pile proofing on prey species are negligible and discountable.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Rugose Structure

Since the Project footprint is not within Deepwater critical habitat, it will not affect the physical environment, including any topographic relief areas or rugose structures that may be present in Deepwater critical habitat within the Action Area. The Project would not affect this essential attribute of rockfish critical habitat.

Overall, this Project will have negligible and discountable effects on Puget Sound rockfish critical habitat.

6.3 EFFECTS ON SOUTHERN RESIDENT KILLER WHALE CRITICAL HABITAT

NOAA has identified three primary constituent elements (PCEs; i.e. physical and biological features) essential to the conservation of Southern Resident killer whale critical habitat (NOAA 2006).

1. *Water quality to support growth and development;*

2. *Prey species of sufficient quantity, quality, and availability to support individual growth, reproduction, and development, as well as overall population growth;*

3. *Passage conditions to allow for migration, resting and foraging;*

Southern Resident killer whale critical habitat begins at -20 feet relative to EHW (approximately -8.85 feet MLLW). Thus, most of the Action Area is within Southern Resident killer whale critical habitat. The effects of the Project on the three PCEs are presented in detail below.

6.3.1 Primary Constituent Element #1: Water Quality

Water quality is addressed in Section 5.1.2 of this document. In summary, there is potential for short term, temporary increases in suspended sediment and associated turbidity during pile installation, but any such increases would be minimal and highly localized. Standard BMPs would minimize turbidity associated with that action.

There is also potential for accidental spills during construction. BMPs will be implemented to minimize this risk. Project timing and also Project location (within Fossil Bay at -12 to -14 feet MLLW) would minimize potential for Southern Resident killer whales to experience temporary effects on water quality.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Overall, the Project would not adversely affect, and may slightly benefit, PCE #1.

6.3.2 Primary Constituent Element #2: Prey Quantity, Quality, and Availability

Southern Resident killer whales prey mainly on salmonids, and may prefer Chinook and chum salmon runs within Puget Sound (NOAA 2006). Consumption of a considerable biomass of fish is vital to growth and sexual maturity in Southern Residents and enables population growth of the pods.

Effects of the Project on salmonids were discussed in Sections 5.1.1 and 5.2.2, and effects of the Project on Chinook salmon critical habitat were discussed in Section 6.1. Overall, the Project would have insignificant and/or discountable effects. Any response to Project activities by salmonids would be so temporary, minimal, and highly localized that they would be insignificant in terms of Southern Resident killer whale foraging opportunity. Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas and would contribute to an overall improvement in habitat conditions relative to salmonids. In the long term, the Project would have negligible effect on prey quantity, quality, or availability.

The Project would not adversely affect PCE #2.

6.3.3 Primary Constituent Element #3: Passage Conditions

Elevated underwater sound during pile installation is the mechanism by which passage conditions could be affected. This is addressed in Sections 5.1.1.1 and 5.1.1.2.

Potentially injurious SPLs during pile installation would be limited to the immediate vicinity of the pile to be driven. Based on the shallow nature of this area and the level of activity surrounding pile driving, Southern Resident killer whales are unlikely to be present in this area and any effects on passage would be insignificant and/or discountable.

SPLs exceeding the behavioral threshold during vibratory driving and rock socket drilling could occur over much larger areas. However, this would occur only within the narrow band that projects from the Project Area (Figure 4). While it is possible that Southern Residents could pass through those areas during pile driving, the narrow nature of these areas of exceedance would affect a very small area at a time, and the duration of pile installation (approximately four hours) further reduces the possibility of SRKWs encountering the noise. Thus, effects on Southern Residents are unlike, and any temporary responses over the half-day duration of installation would not constitute barriers to passage, or disallow migration, resting, or foraging.

In the long term, the Project has no effects on passage for Southern Resident killer whales.

The Project would not adversely affect PCE #3.

In summary, the Project's effects on Southern Resident killer whale critical habitat would be negligible.

7 REGULATORY CONSIDERATIONS, BEST MANAGEMENT PRACTICES, AND MINIMIZATION MEASURES

Federal, state, and local permits contain conditions that are intended to reduce the potential for short-term effects from in-water Project activities and long-term effects from habitat impacts. These provisions comprise an extensive list of considerations and measures that are applied to projects in or near estuarine and marine waters.

7.1 REGULATORY CONSIDERATIONS

- Timing restrictions specifying that construction must occur when juvenile salmonids are absent or present in very low numbers in the adjacent waterbody would be strictly observed. All timing restrictions that may be established by WDFW, the USACE, NOAA Fisheries, or USFWS would be strictly observed (USACE permit and HPA).

- Water quality standards and procedures that limit the impact of turbidity to a defined mixing zone would be observed (WAC 173-201A).

- Project construction will be completed in compliance with WAC 173-201A.

- Any discharge of oil, fuel or chemicals into state waters is prohibited (WAC 173-201A).

- Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall also be maintained to prevent vandalism (WAC 173-201A).

- Corrective actions will be taken in the event of any discharge of oil, fuel, or chemicals into the water (WAC 173-201A), including:

    - In the event of a spill, containment and cleanup efforts will begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup will include proper disposal of any spilled material and used cleanup material.

    - The cause of the spill shall be assessed and appropriate action will be taken to prevent further incidents or environmental damage.

- Spills and/or conditions resulting in distressed or dying fish shall be reported immediately to DOE's Northwest Regional Spill Response Office at (425) 649-7000 (a 24-hour phone number) (WAC 173-201A). Spills of oil or hazardous materials also shall be reported immediately to the National Response Center at 1 (800) 424-8802 and the Washington Emergency Management Division at 1 (800) 258-5990 or 1 (800) OILS-911.

7.2 DESIGN CONSIDERATIONS

- The new pumpout float will be located in deeper (-14 ft MLLW) water farther from shore (175 feet), and has been located to avoid existing eelgrass.

- Using a pre-fabricated float minimizes the amount and duration of aquatic construction.

- Pump design and operation BMPs include leak detection, double-wall design for sewage storage, an on-unit spill kit, and a warning light for users to be notified if the tank is full or the unit is leaking.

7.3 General Measures during All Activities

- The contractor will comply with permit conditions.
- The contractor will comply with all water quality restrictions imposed by Ecology and implement corrective measures if temporary water quality standards are exceeded.
- Operations will be stopped temporarily if listed species are observed as injured, sick, or dead in the project area, to evaluate whether additional listed species are present and to assess whether operations may continue without further impact. NOAA Fisheries law enforcement will be notified, and fish will be handled with care to ensure effective treatment or analysis of cause of death or injury.
- The contractor will have a spill containment kit, including oil-absorbent materials, on site to be used in the event of a spill or if any oil product is observed in the water.
- Work barge(s) will not ground out during any construction activities.
- Excess or waste materials will not be disposed of waterward of MHHW or allowed to enter waters of the state.
- The contractor will be required to capture any debris associated with Project activities.
- All in-water and over-water work will be conducted using equipment staged from a floating work barge platform. Equipment will not operate on the substrate in aquatic areas (waterward of MHHW).
- The Contractor will be responsible for the preparation of a Spill, Prevention, Control, and Countermeasure (SPCC) Plan to be used for the duration of the project. The SPCC Plan will be submitted to and approved by the project engineer prior to the commencement of any construction activities. A copy of the SPCC Plan with any updates will be maintained at the work site by the Contractor. The SPCC Plan will provide advanced planning for potential spill sources and hazardous materials (gasoline, oils, chemicals, etc.) that the Contractor may encounter or utilizes as part of conducting the work. The SPCC plan will outline roles and responsibilities, notifications, inspection, and response protocols.

7.4 Measures during Pile Driving

- Pile installation will be conducted during daylight hours.
- If visible turbidity exceeds the 150-foot allowable temporary mixing zone during rock socket drilling, the contractor will a silt curtain. The silt curtain will not be removed until suspended solids have settled out of the water column.

- Biological monitoring will be conducted during pile driving or rock socket drilling to ensure that work stops if ESA-listed cetaceans enter the area of potential threshold exceedance.

8 CONCLUSIONS AND EFFECTS DETERMINATIONS

8.1 LISTED SPECIES

8.1.1 Puget Sound Chinook Salmon, Hood Canal Summer-run Chum Salmon, Bull Trout and Puget Sound Steelhead Trout

Effects of the Project on listed salmonids are addressed in Section 5. Potential construction effects include injury from pile driving noise and behavioral effects from turbidity. However, it was determined that these effects have a discountable potential for occurring and would generate negligible effects, due to the unlikelihood that juvenile salmonid would encounter impact pile driving sound for long enough duration to sustain injury, and the low anticipated levels of turbidity, respectively. Long-term effects include an increase in total overwater structure footprint by 340 sq ft; however, this structure would be located in the subtidal zone 175 feet offshore, and impacts would be offset by localized water quality improvement within the Project and Action Areas by offering recreational boaters a sewage pumpout facility. Based on these factors, it is determined that the Project ***may affect, but is not likely to adversely affect*** Puget Sound Chinook salmon, Hood Canal summer-run chum salmon, Puget Sound bull trout, and Puget Sound steelhead trout.

8.1.2 Bocaccio and Yelloweye Rockfish

Effects of the Project on listed rockfish are addressed in Section 5. As was discussed relative to salmonids above, both construction and long-term effects of the project would have negligible effect on listed rockfish, and the potential for a take to occur is discountable. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** bocaccio and yelloweye rockfish.

8.1.3 Southern Resident Killer Whales and Humpback Whales

Effects of the Project on Southern Resident killer whales and humpback whales are addressed in Section 5. Though these species utilize the waters in San Juan County, the portion of the Action Area within the deeper waters they most commonly inhabit is narrow. Pile driving noise may be injurious only within a small area of pile driving, and will only occur for approximately four hours. Thus, only individuals that remain in very close proximity to pile driving for the half day of work may be impacted, which is so unlikely as to be discountable. Behavioral effects from pile driving are possible, though, should individuals pass through the Action Area. Biological monitoring will be conducted to ensure work stops should listed cetaceans approach the Action Area, effectively eliminating all chance of disturbance discussed above. Long-term effects would include localized water quality improvement within the Project and Action Areas by offering recreational boaters a sewage pumpout facility, though the improvements may be marginal on the scale proposed. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** Southern Resident killer whales and humpback whales.

8.1.4 Marbled Murrelet

Effects of the Project on marbled murrelets are addressed in Section 5. Based on that analysis, pile driving effects are unlikely due to the small area in which injury or behavioral thresholds could be

exceeded. Based on the analysis in this BE, the Project ***may affect, but is not likely to adversely affect*** marbled murrelets.

8.1.5 Leatherback Sea Turtle

Effects of the Project on leatherback sea turtles are addressed in Section 5. Leatherback sea turtles are not expected to be in or near the Action Area at any time, and have not been documented in Puget Sound for many years. Based on the analysis in this document, the Project would have ***no effect*** on leatherback sea turtles.

8.2 DESIGNATED CRITICAL HABITATS

8.2.1 Puget Sound Chinook Salmon Critical Habitat

An analysis of the Project's effects on Puget Sound Chinook salmon critical habitat was presented in Section 6.1. It was discussed that the Project generates moderate benefits of localized water quality improvement within the Project and Action Areas by offering recreational boaters a sewage pumpout facility. Based on this analysis, the Project ***may affect, but would not likely adversely affect*** Chinook salmon critical habitat.

8.2.2 Listed Rockfish Juvenile (Nearshore) and Adult (Deepwater) Critical Habitat

An analysis of the Project's effects on rockfish nearshore and deepwater critical habitat was presented in Section 6.2. It was discussed that the Project generates moderate benefits of localized water quality improvement within the Project and Action Areas by offering recreational boaters a sewage pumpout facility. Based on that analysis, the Project ***may affect, but would not likely adversely affect*** rockfish critical habitat.

8.2.3 Southern Resident Killer Whale Critical Habitat

An analysis of the Project's effects on Southern Resident killer whale critical habitat was presented in Section 6.3. Based on that analysis, the Project ***may affect, but would not likely adversely affect*** Southern Resident killer whale critical habitat.

8.3 NO NET LOSS ANALYSIS

The purpose of this project is to provide pumpout facilities for recreational boaters. Currently, the nearest pumpout facility is more than five nautical miles away at West Beach Resort on the northwest side of Orcas Island. The small increase in overwater coverage from installation of a new float will be offset by the water quality benefits of providing a pumpout facility and the resulting reduction in discharging of blackwater sewage by these boaters. Additionally the pumpout float will be located in the subtidal zone 175 feet offshore in order to limit the effects of shading.

The proposed project will have no adverse impact to shoreline ecological functions and thus will result in no net loss of ecological function over the existing conditions.

9 ESSENTIAL FISH HABITAT ASSESSMENT

9.1 ESSENTIAL FISH HABITAT DESIGNATIONS

Pursuant to the MSFCMA and the 1996 SFA, an Essential Fish Habitat (EFH) evaluation of impacts is necessary for the actions that are associated with this Project. EFH is defined by the MSFCMA in 50 CFR 600.905-930 as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity."

Estuaries of Washington State, including Puget Sound and the Pacific Ocean off the mouth of these estuaries, are designated as EFH for various groundfish, coastal pelagic and salmonid species (NMFS 1998; PFMC 1998a, 1998b, 1999). EFH and life history stages for groundfish, pelagic and salmonid species commonly found in Puget Sound estuaries are listed in Table 12.

Table 12. Species with essential fish habitat in the Action Area by life history stage.

Guild / Common Name	Species Name	Adults	Eggs	Juveniles	Larvae
Groundfish[1]					
Big skate	*Raja binoculata*	x	x	x	
Black rockfish	*Sebastes melanops*	x		x	
Blue rockfish	*Sebastes mystinus*	x		x	x
Bocaccio	*Sebastes paucispinis*	x		x	x
Brown rockfish	*Sebastes auriculatus*	x		x	
Butter sole	*Isopsetta isolepis*	x	x	x	x
Cabezon	*Scorpaenichthys marmoratus*	x	x	x	x
China rockfish	*Sebastes nebulosus*	x		x	
Copper rockfish	*Sebastes caurinus*	x		x	
Dover sole	*Microstomus pacificus*	x	x	x	x
English sole	*Parophrys vetulus*	x	x	x	
Flathead sole	*Hippoglossoides elassodon*	x		x	
Greenstriped rockfish	*Sebastes elongatus*	x		x	x
Kelp greenling	*Hexagrammos decagrammus*	x	x	x	x
Lingcod	*Ophiodon elongatus*	x	x	x	x
Longnose skate	*Raja rhina*	x	x	x	
Pacific cod	*Gadus macrocephalus*	x			
Pacific hake	*Merluccius productus*	x		x	
Pacific sanddab	*Citharichthys sordidus*	x	x	x	x
Petrale sole	*Eopsetta jordani*	x		x	
Quillback rockfish	*Sebastes maliger*	x		x	x
Redstripe rockfish	*Sebastes proriger*	x		x	x
Rex sole	*Glyptocephalus zachirus*	x		x	
Rock sole	*Lepidopsetta bilineata*	x	x	x	x
Sablefish	*Anoplopoma fimbria*	x	x	x	x
Sand sole	*Psettichthys melanostictus*	x	x	x	x
Silvergray rockfish	*Sebastes brevispinis*	x			
Spiny dogfish	*Squalus acanthias*	x		x	

Guild / Common Name	Species Name	Adults	Eggs	Juveniles	Larvae
Splitnose rockfish	*Sebastes diploproa*	x		x	x
Spotted ratfish	*Hydrolagus colliei*	x	x	x	
Starry flounder	*Platichthys stellatus*	x	x	x	x
Tiger rockfish	*Sebastes nigrocinctus*	x		x	x
Widow rockfish	*Sebastes entomelas*	x		x	x
Yelloweye rockfish	*Sebastes ruberrimus*	x		x	x
Yellowtail rockfish	*Sebastes flavidus*	x		x	
Pacific Salmon[2]					
Chinook	*Oncorhynchus tshawytscha*	x		x	
Coho	*Oncorhynchus kisutch*	x		x	
Puget Sound pink	*Oncorhynchus gorbuscha*	x		x	
Coastal Pelagics[2]					
Northern anchovy	*Engraulis mordax*	x	x	x	x
Pacific sardine	*Sardinops sagax caerulea*	x			
Pacific mackeral	*Scomber japonicus*	x			
Market squid	*Loligo opalescens*	x			

[1] Based on information from EFH database provided by J. Stadler (NFMS) dated January 16, 2007. This list comprises the entire "inland sea" category, based on the large extent of the Action Area.
[2] Based on previously published Puget Sound EFH lists from NFMS used in EFH Assessments through 2012.

All three of the Pacific salmon management unit species (Chinook, coho and pink salmon) may be present within the Action Area. Spawning and rearing of these species does not occur in the Action Area, although all three species may use the Action Area for adult migration and juvenile out-migration.

Many of the ground fish species that occur in Puget Sound may also occur within the Action Area. West coast pelagic fishes are primarily associated with open ocean and coastal areas (PFMC 1998a), but may occur within the Action Area.

9.2 POTENTIAL EFFECTS OF THE PROJECT

The primary elements of the Project that could potentially impact designated EFH, and Conservation Measures that would avoid and minimize impacts, are summarized in Table 13, below. Details concerning all potential Project impacts on species of concern may be found in Section 5.

9.3 ANALYSIS OF THE EFFECTS ON EFH

The assessment of potential impacts from the proposed Project to the species' EFH is based on information in the referenced documents (NMFS 1998; PFMC 1998a, 1998b, 1999).

The specific elements of the Project that could potentially impact groundfish, pelagic and salmon species EFH, impact mechanisms, and Conservation Measures that avoid and minimize impacts are identified in Table 13.

Table 13. Affected EFH by Project element and proposed Conservation Measures

Project Element	Affected EFH	Impact Mechanism	Applicable Conservation Measures (see list below)
Pile driving	Groundfish, coastal pelagic, and salmon EFH (water)	Pile installation may result in sound pressure levels in excess of the cumulative injury (187 dB_{SEL_CUM}) and behavioral disturbance thresholds (150 dB_{RMS}) for fish. Installation with a rock drill could result in temporary, minimal, and highly localized increases turbidity (Section 5.1.2).	**1, 2, 3, 4, 5, 6, 7**
Pumpout float installation	Groundfish, coastal pelagic, and salmon EFH (water and substrate)	Installation of a new pumpout float will result in an increase in overwater coverage by 340 sq ft in total. Overwater coverage can reduce primary productivity through light attenuation.	**5**
Construction activities	Groundfish, coastal pelagic, and salmon EFH (water and substrate)	Construction in aquatic areas can result in habitat impacts through mechanisms such as unintentional release of fuel, lubricants, or hydraulic fluid from equipment construction debris, etc.	**6, 7, 8, 9, 10, 11**

List of Applicable Conservation Measures (consolidated from Section 7)

1. Pile size and pile number would be minimized to the extent possible to reduce the level of underwater sound generated.
2. Pile driving would occur over relatively short durations on only one day.
3. Cumulative injury thresholds would be exceeded only within a very small area (82 ft from pile; Section 5.1.1.
4. Behavioral thresholds would be exceeded within 2,414 ft (5.1.1).
5. Compliance with the substantive requirements of the Hydraulic Code would minimize effects of the project.
6. Timing restrictions specifying that in-water work must occur when juvenile salmon are absent or present in very low numbers.
7. Compliance with applicable State water quality standards (WAC 173-201A).
8. Risk of spills of deleterious materials will be mitigated through standard BMPs (Section 7).
9. Care will be taken to prevent any petroleum products, chemicals, or other toxic or deleterious materials from entering the water. Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., will be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into State waters.
10. Short-term impacts to water quality will be limited by careful installation of pile and float structures. If necessary, a silt curtain will be used to manage turbidity during rock socket pile drilling.
11. The contractor will be required to capture any debris associated with construction and not allow it to enter aquatic areas.

9.4 CONCLUSIONS AND DETERMINATION OF EFFECTS

9.4.1 Salmon EFH

The impacts of the Project on salmon EFH are shown in Table 13.

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function of EFH for salmon.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Overall, long term effects on EFH would be negligible or slightly beneficial. The Project ***will not adversely affect salmon EFH.***

9.4.2 Groundfish EFH

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function on of EFH for groundfish.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Overall, long term effects on EFH would be negligible or slightly beneficial. The Project ***will not adversely affect groundfish EFH.***

9.4.3 Coastal Pelagic EFH

While Project construction would result in temporary effects including elevated sound, increased turbidity, and effects generally related to aquatic construction, none of these effects would be permanent, and they would be insignificant with respect to the function of EFH for coastal pelagics.

Over the long term, offering a sewage pumpout facility to recreational users at Sucia Island Marine State Park will improve localized water quality within the Project and Action Areas.

Overall, long term effects on EFH would be negligible or slightly beneficial. The Project ***will not adversely affect coastal pelagic EFH.***

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Attachment 15h

Grette Associates, LLC

Sucia Island Floating Pumpout Station Installation

Eelgrass and Macroalgae Preliminary Survey

USACE Letter of Permission NWS-2022-61

(Alternate Bid Item A1)

TECHNICAL MEMORANDUM

Prepared by: Grette Associates[LLC]
2102 North 30th Street, Ste A
Tacoma, WA 98403

April 7, 2021

Prepared for: Mott MacDonald
Evan Edgecomb
1601 5th Avenue, Suite 800
Seattle, WA 98101

File No.: 306.036

Re: Eelgrass and Macroalgae Preliminary Survey – Sucia Island Proposed Pumpout Float

1 INTRODUCTION

Grette Associates is under contract to Mott MacDonald to conduct an Eelgrass and Macroalgae Preliminary Survey at the proposed pumpout float on Sucia Island, San Juan County, WA. The intent of the survey was to identify the presence and extent of eelgrass and macroalgae at the site and within the immediate vicinity. This technical memorandum presents the results of Grette Associates' Eelgrass and Macroalgae Preliminary Survey.

2 METHODS

A Grette Associates staff scientist conducted the survey on August 19, 2020 at approximately 13:00. Weather at the time of the survey was sunny and warm, with high clouds. The predicted tidal elevation at the time of the survey was approximately -1.6 ft MLLW (NOAA Tide Station 9449712). Staff utilized a State Parks 35-foot landing craft/work boat piloted by State Parks staff. The survey employed the use of a NavRoute Technologies Neptune underwater video drop camera connected to a laptop computer. The vessel made four passes through the survey area (Figure 1), with the drop camera lowered over the side of the vessel and surveying the site approximately 1-2 feet off the bottom.

3 RESULTS

Visibility during the drop-camera survey was generally low, approximately 4-6 feet.

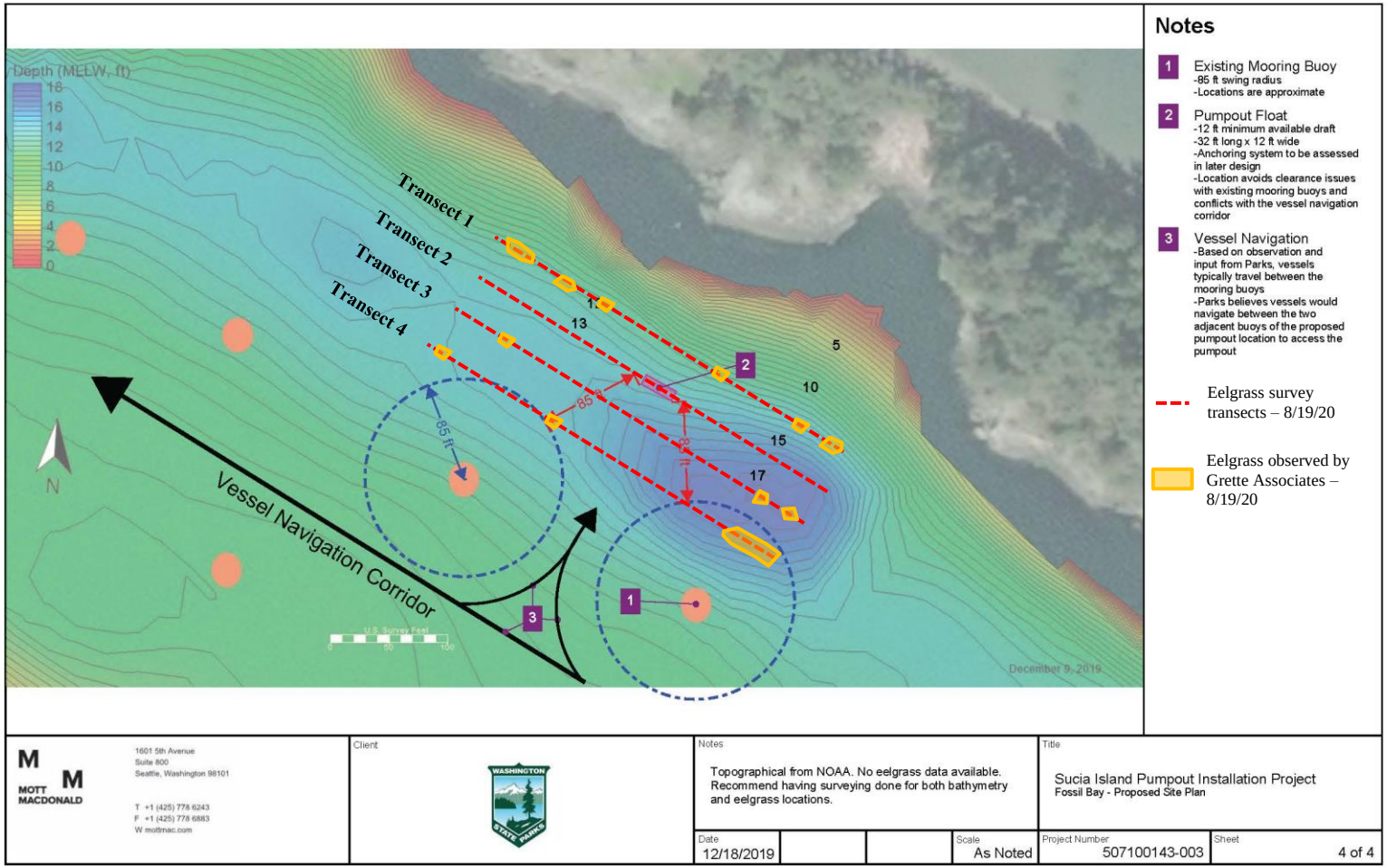
Grette Associates observed several sparse patches of eelgrass within the survey area (Figure 1). These patches appeared relatively small, with the exception of a patch observed along Transect 4. This patch, while relatively sparse, appeared to extend approximately 40-50 feet at the start of the transect southeast of the proposed float location. Eelgrass was not noted within the potential footprint of the pumpout float, and no eelgrass was observed within 25 feet surrounding the pumpout float footprint. The nearest eelgrass patch to the pumpout float location is approximately 35 feet to the northeast on Transect 1 (Figure 1).

Macroalgae coverage was moderate to dense over much of the survey area, consisting primarily of *Laminaria saccharina* and *Gracilaria* sp. Much of the *L. saccharina* observed appeared to be drift (not attached), though attached algae were also observed. The coverage of macroalgae was

such that it was not feasible to map the specific patches, given the limitations of the survey methodology (i.e., not a diver survey). However, coverage estimates ranged from 40-100% within the areas where macroalgae was observed. Overall coverage within the survey area is estimated to be approximately 60-70%.

Substrate conditions noted on the site consisted of unconsolidated silt.

Figure 1. Grette Associates eelgrass survey results overlain on Mott MacDonald bathymetry figure.



Attachment 16

Geotechnical Engineering Services Report
Stuart Island State Park Improvements

GeoEngineers, Inc.

(Base Bid)

Geotechnical Engineering Services Report

Stuart Island State Park Improvements
San Juan County, Washington

for
Mott MacDonald, LLC

November 25, 2020

GeoEngineers
Earth Science + Technology

Geotechnical Engineering Services Report

Stuart Island State Park Improvements
San Juan County, Washington

for
Mott MacDonald, LLC

November 25, 2020

GeoEngineers

1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Geotechnical Engineering Services Report

Stuart Island Park Improvements
San Juan County, Washington

File No. 2935-064-01

November 25, 2020

Prepared for:

Mott MacDonald, LLC
110 James Street, Suite 101
Edmonds, Washington 98020

Attention: Evan Edgecomb, PE

Prepared by:

GeoEngineers, Inc.
1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Stephen W. Helvey, LG, LEG, LHG
Senior Engineering Geologist

J. Robert Gordon, PE
Senior Geotechnical Principal

J. ROBERT GORDON
STATE OF WASHINGTON
22151
REGISTERED
PROFESSIONAL ENGINEER
11/25/20

SWH:JRG:tt

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1.0 INTRODUCTION

1.1. General

This report presents the results of our geotechnical engineering services for the proposed Stuart Island State Park improvement project. Improvements are planned at Prevost Harbor and Reid Harbor. The location of these sites are shown in Figures 1 through 3.

Our understanding of the project is based on our previous work at the site and information provided by Mott MacDonald (Mott). This includes a concept drawing set dated December 18, 2019 and permit drawings dated July 7, 2020. A copy of the permit drawings are included in Appendix A. Park infrastructure to be replaced include timber-pile supported piers, aluminum gangways, and timber-pile restrained moorage floats.

We understand the goal of the project is to install larger metal fixed deck piers and wood boarding floats at each site. The new features require mat foundation and pile support/restraint. The proposed improvements are shown in Figures 2 and 3 and are described in Section 1.2 below.

We completed a preliminary geologic evaluation of the sites in January 2020. Our geologic evaluation included a site visit to Stuart Island on December 2, 2019. The results of our previous work were presented in a report submitted to Washington State Parks (State Parks) dated January 2, 2020.

1.2. Project Descriptions

A summary of the various project elements is provided below and is based on review of the drawings previously referenced, conversations with Mott, and our site observations.

1.2.1. Prevost Harbor

- Cast-in-place concrete abutment in the upland area about 85 feet south of the existing pier. Abutment to be a mat foundation about 8 feet long and 8 feet wide varying from 2 to 3 feet thick. Abutment to rest on an 18-inch-thick layer of “foundation gravel”, which bears on bedrock.
- Aluminum fixed pier with two 12-foot by 12-foot platforms. Total pier length, including platforms, is to be 176 feet. The pier platforms to be supported on piles. The platforms will be about 16 to 22 feet above mudline, according to plans provided by Mott. We understand that vertical pier/platform loads will be about 24.5 kips (4.05 kips dead and 20.4 kips live). Lateral loads are 5 kips (wind load). Lateral loads applied at Elevation 25 feet at the nearshore bent and Elevation 18 feet at the offshore bent.
- Aluminum gangway, 80 feet long, 5 feet wide. Attached to the fixed platform to the south and the floating dock to the north
- Timber-framed floating dock, 160 feet long, 12 feet wide. Restrained by six piles. We understand that lateral pile loads will be 8 kips applied at ordinary high water (OHW).
- The new structure will be located near the existing structure, as shown in Figure 2.

1.2.2. Reid Harbor

- Cast-in-place concrete abutment in the upland area as shown in Figure 3. The abutment to be about 8 feet long and 8 feet wide varying from 1 to 2 feet thick. Abutment to be mat foundation anchored to bedrock. The abutment to be located about 30 feet south of the top of a very steep slope.
- Aluminum fixed pier with two 12-foot by 12-foot platforms. Total pier length, including platforms, is to be 204 feet. The pier platforms to be supported on piles. The platforms will be about 28 to 33 feet above mudline, according to plans provided by Mott. We understand that vertical pier/platform loads will be about 24.5 kips (4.05 kips dead and 20.4 kips live). Lateral loads are 5 kips (wind load). Lateral loads to be applied at Elevation 32 feet at the nearshore bent and Elevation 21 feet at the offshore bent.
- Aluminum gangway, 80 feet long, 5 feet wide. Attached to the fixed platform to the east and the floating dock to the west.
- Timber-framed floating dock, 160 feet long, 12 feet wide. Restrained by six piles. We understand that lateral pile loads will be 8 kips applied at OHW.
- The new structure will be "L" shaped. The fixed pier will be located just east of the existing fixed pier. The new boarding float will be located about 40 feet south of the existing boarding float.

We understand the new pile-supported structures will be supported/restrained by open-ended steel pipe piles. The two pile diameters being considered include 12.75-inch and 16-inch outside diameter (OD) piles with ½-inch wall thickness.

2.0 SCOPE OF SERVICES

Our services have been performed in general accordance with our proposal dated June 5, 2020. We received written authorization on August 12, 2020. The specific scope of services completed include the following:

Complete a geologic reconnaissance of the sites during low-tide conditions.

- Review our January 2020 document for this site and geologic maps for the site.
- Complete a geologic hazards analyses, with respect to steep slopes/landslide hazard areas, in accordance with San Juan County code criteria.
    - Establish and/or confirm existing planned setbacks from the top of steep slope areas for pier abutment locations.
- Complete six shallow probes, three at each site, using a Triggs® Wildcat Dynamic Cone Penetrometer (DCP). All DCPs at Prevost Harbor were completed from the existing floating and fixed piers. Two DCPs at Reid Harbor (Reid 1 and Reid 2) were completed from the floating pier. One DCP at Reid Harbor (Reid 3) was completed on the shoreline during low tide conditions. DCP logs are contained in Appendix B.
- Prepare and review a simple cross section with estimated soil depths along the existing pier alignments.
- Develop and provide lateral capacities for new boarding float piles and axial and lateral capacities for fixed pier platform piles based on results of the DCP testing, our observations and experience.

- Provide an estimate of rock strength including an estimate of rock density and rock compressive strength.
- Provide an estimate of uplift capacity for a single steel bar epoxy grouted into the rock, or other suitable methods.
- Develop geotechnical recommendations for design and construction of the proposed pier abutment mat foundation.
- Evaluate and discuss general seismic considerations for the pier design.
- Develop and provide general pile installation criteria.
- Prepare a report summarizing our conclusions and recommendations with supporting data.

3.0 SITE CONDITIONS

3.1. General

We observed site features during mobilizations in December 2019 and August 2020. The project sites are located about 500 feet apart, on opposite sides of a northwest-southeast oriented peninsula within Stuart Island. A relatively wide pathway within a low valley connects the two project areas. Outcroppings of sandstone and conglomerate bedrock were observed throughout the valley walls. Our observations at Prevost and Reid harbors are contained in the following sections.

Upland soil and bedrock conditions were evaluated by observations during our December 2019 site visit and by striking rock exposures throughout the site area using a rock hammer and recording the Rebound Quality (RQ) in accordance with Unified Rock Classification System (URCS). RQ can range from "Rebounds" (Class A) to "Moldable" (Class E).

Subsurface sediment conditions in overwater areas at each site were evaluated by completing three Triggs® Wildcat Dynamic Cone Penetrometers (DCPs) at the approximate locations shown in Figures 2 and 3. Field-measured blow counts from the DCP program were converted to approximate equivalent Standard Penetration Test (SPT) N-values based on the penetrometer manufacturer's recommended procedures. The logs are presented in Appendix B as Figures B-1 through B-6.

The DCP probes do not provide the opportunity for sample collection and only provide relative density information for the sediment profile. The DCPs can be refused on gravel, cobbles or on bedrock. Refusal does not indicate that bedrock was encountered by the DCPs. This exploration program was used because of the cost, permitting, and scheduling associated with traditional offshore drilling.

3.2. Prevost Harbor

3.2.1. Upland

The Prevost Harbor shoreline is a circular feature that opens to the north. The existing pier and dock are located in the approximate center of the shoreline area (Figure 2) and is oriented slightly northeast/ southwest. Steep shoreline bluffs were observed around the harbor. The bluff at the existing dock appeared to be inclined at about 70 percent and appeared to be about 15 to 20 feet in vertical height, based on our observations and a review of available topographic maps. We observed near-vertical to vertical sandstone

and shale exposed in shoreline bluff outcrops north and south of the existing dock/pier. We did not observe evidence of slope instability at the time of our site visits.

We observed outcrops of conglomerate just upslope of the existing pier abutment. Hammer strikes indicate the observed rock has an interpreted Class C (Dents) RQ. Published unconfined compressive strengths for DQ quality rock range from 3,000 to 8,000 pounds per square inch (psi). The density of the conglomerate bedrock range likely ranges between 130 and 150 pounds per cubic foot (pcf).

3.2.2. Overwater Explorations

Three DCPs were advanced at Prevost Harbor, at the approximate locations shown in Figure 2. Based on our site observations and the density profile obtained from the DCP probes, sediment conditions at Prevost Harbor generally consist of very loose/very soft marine materials below the mudline to depths ranging from about 9 feet in Prevost 1 to about 16 feet in Prevost 2. Medium dense/very stiff to dense/hard conditions were then encountered to the base of each exploration, where practical refusal was encountered.

3.3. Reid Harbor

3.3.1. Upland

Reid Harbor is rectangular and is oriented northwest-southeast. The existing "L" shaped timber pier and dock are located on the north side of the harbor. A steep, to near vertical bedrock bluff, forms the north side of the harbor. The bluff is about 40 feet in vertical height, is near vertical in places and appears to comprise conglomerate bedrock. It appears, based on a review of geologic maps and our observations that that these materials dip at near vertical inclinations at the project site. Rock strike is essentially parallel to the orientation of the shoreline. The existing dock is accessed via a steep boardwalk, which descends the slope through a narrow pathway in the bedrock. We did not observe evidence of slope instability at the Reid Harbor site during our site visits.

Hammer strikes of exposed conglomerate rock near the proposed abutment location indicate Class D (Craters) and Class E (Moldable) RQ. Published unconfined compressive strengths for CQ and MQ quality rock range from 1,000 to 3,000 psi and <1,000 psi, respectively. This is likely due to rock weathering at the evaluated locations. We observed some undercutting at the base of the slope, likely due to wave action, within conglomerate material at the pier site. The density of the evaluated conglomerate bedrock is likely between 100 and 130 pcf. Unweathered conglomerate bedrock at this site likely ranges from 130 to 150 pcf.

3.3.2. Overwater Explorations

Three DCPs were advanced at Reid Harbor, at the approximate locations shown in Figure 3. Two explorations (Reid 1 and Reid 2) were completed from the floating dock and one (Reid 3) was completed on the mudline at low tide.

Very loose/soft materials were encountered in Reid 1 and Reid 2 from the mudline to depths ranging from 4 to 5 feet. Medium dense/stiff to hard conditions were then generally encountered to depths of about 17 feet in Reid 1 and 9.5 feet in Reid 2. Dense/hard sediments were then encountered to the base of each exploration, where practical refusal was encountered.

At Reid 3, loose to very loose materials were generally encountered from the ground surface to a depth of about 9 feet, where very dense/hard materials refused the exploration. It is possible that bedrock was encountered in this exploration.

3.4. Geologic Hazard Area Evaluations

Geologic hazards at and near the sites were evaluated by comparing our field observations to information contained in San Juan County Code Section 18.35.060, Geologically Hazardous Areas. We also reviewed the Coastal Zone Atlas for San Juan County.

The San Juan County Code defines a Class 1, Landslide and other hazard areas as meeting the following criteria:

- Areas designated in the Washington Department of Ecology Coastal Zone Atlas as U (Unstable), UB (Unstable Bluff), URS (Unstable Recent Slide), or UOS (Unstable Old Slide) and other areas identified by site-specific geologic reports.
- Areas with slopes of greater than 50 percent and with a vertical relief of 20 feet or more, except areas of exposed, unfractured bedrock. If any portion of a slope meets this definition, the slope or some larger portion may be designated a landslide hazard area.
- Areas designated as quaternary slumps, earthflows, mudflows, or landslides on maps published by the United States Geological Survey (USGS) or the Washington Department of Natural Resources (DNR).

The upland areas at Reid and Prevost Harbors are mapped as S (Stable). Both harbor sites contain slopes greater than 50 percent; however, they appear to be comprised of exposed competent bedrock. It appears, based on this that neither site meets the technical definition for landslide hazard areas. We conclude that the proposed upland abutment setbacks contained in the permit drawings are appropriate for the observed site conditions.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1. General

Based on our explorations, observations and knowledge of the sites, we conclude that the proposed improvements at Prevost and Reid Harbors can be constructed generally as envisioned. Competent conglomerate bedrock likely exists at shallow depths within the proposed upland abutment areas. The bedrock will provide suitable bearing surfaces for these upland features. The contractor must be prepared to remove soil and weathered bedrock to create relatively level areas in the upland areas in accordance with project plans.

The DCPs indicate that the overwater platform and floating dock piles will likely encounter loose/soft marine sediment and medium dense to dense granular deposits. It is possible the piles could encounter bedrock before achieving the recommended embedment depths based on embedment in a full soil profile. The piling contractor should be prepared to drive the piles into the rock a minimum of 3 feet to socket the piles; if refusal to driving is encountered, then the contractor should be prepared to drill a rock socket 2 feet deep. Specific conclusions and recommendations are presented in the following sections of this report.

4.2. Seismic Considerations

The Western Washington area is a seismically active region that has experienced many earthquakes in historical time. Seismic hazards represent risk of injury or damage to humans and property resulting directly from earthquakes. Seismic hazard mechanisms include surface fault rupture, ground shaking and associated ground failure such as liquefaction and landsliding.

The project sites are in remote locations and are not permanently occupied. Upland elements will be founded on competent bedrock, which is not liquifiable. These materials classify as Site Class C, in accordance with American Society of Civil Engineers (ASCE) 7-16 criteria.

Fixed pier platforms and boarding floats will be founded on and restrained by piles advanced into soft/loose materials and fixed in more dense materials. The loose granular marine sediments encountered by our DCPs are liquifiable. The marine sediments encountered by the DCPs likely classify as ASCE Site Class E. Some displacement of these piles will likely occur during the design seismic event. Socketing the piles into bedrock and/or more dense soils will lessen the amount of displacement these piles will experience. However, the thickness and uniformity of dense soils and/or presence of bedrock in the overwater areas is unknown. We do not recommend that a site-specific response spectra analyses be completed for this project.

4.3. Uplands

4.3.1. Site Preparation and Earthwork

4.3.1.1. General

We expect competent bedrock (likely conglomerate), at shallow depths, will be encountered in the fixed abutment mat foundation areas. Excavation of soil and weathered bedrock will be required to achieve uniformly hard rock conditions to avoid differential settlement and install anchors for lateral and uplift resistance.

4.3.1.2. Clearing and Subgrade Preparation

The proposed abutment and foundation areas should be cleared of deleterious matter, including any significantly decomposed rock, sod, brush, debris and other unsuitable or organic materials. We recommend that the subgrades comprise relatively undisturbed and competent bedrock. Jackhammers and/or hoe hammers will likely be required to remove rock to achieve relatively competent subgrades. The project plans may also indicate a level condition is required. Structural fill should not be placed under the mat foundations; however, lean (minimum 2,000 psi strength) or structural concrete could be placed to create a more level surface if necessary. In this case, the rock bolts can assume that embedment into the lean concrete will provide the same resistance as the bedrock. The exposed surfaces should be evaluated by GeoEngineers staff to examine rock types and rock strengths prior to placement of concrete forms and reinforcing steel.

4.3.2. Shallow Mat Foundation Support

For abutment and platform mat foundations prepared as recommended, an allowable bearing pressure of 5,000 pounds per square foot (psf) can be used for design. A modulus of subgrade reaction of 800 pounds per cubic inch (pci) can be used for designing the abutment slabs. Settlements for these foundations designed and constructed as recommended are estimated to be less than ½ inch.

4.3.2.1. Anchorage and Lateral Resistance

Base friction for foundations supported directly on rock can be designed for a coefficient of friction equal to 0.4. We understand that rock anchors may be used to provide lateral resistance and anchorage. Competent conglomerate bedrock should provide adequate pullout resistance for tiedown anchors. The tiedowns can either be installed as grouted anchor bars or as expansion anchors. The depth, number, size and locations of the tiedowns will depend on the lateral resistance required. We recommend using an ultimate bond stress of 40 psi for grouted anchors in the competent bedrock.

4.4. Overwater Piles

4.4.1. General

Piles for the overwater platforms at both sites will provide both axial and lateral support. Piles for the floats will only provide lateral resistance. For lateral resistance the boarding float piles will need to be sufficiently embedded below the mudline soils to resist the lateral loads with an acceptable deflection, which is assumed to be about 2 inches at the mudline. The minimum embedment required to achieve lateral loads is based on the soil profile observed at the DCP locations and then an assumed soil profile below that because of the DCP limitations discussed previously. This results in a minimum recommended embedment of 30 feet below mudline for float piles at Prevost Harbor and 25 feet below mudline for float piles at Reid Harbor and static platforms/piers piles at both sites. Considering that dense soils and/or bedrock could be encountered above this embedment depth, we also provided an alternative design scenario if encountered. In this case, the piles would need to be cut off during construction at the design height per the project plans.

Two open-ended steel pipe pile diameters were analyzed for float piles; these comprise open-ended 12.75-inch and 16-inch OD steel piles with ½-inch wall thickness. For the static platforms/piers, only the 12.75-inch diameter steel pile type was analyzed.

4.4.2. Lateral Pile Capacity

Lateral capacity and deflections of pile foundations are governed primarily by the lateral capacity of sub-mudline soil and the strength of the pile itself. The design lateral capacity of the piles depends to a large extent on the allowable lateral deflections of these elements and requires an assumption of the degree of fixity at the pile head. We have assumed that the float and pier piles will have a “free-head” condition, although this may be a conservative assumption for the pier platform piles.

We completed our lateral resistance analysis of the two proposed piles using the lateral pile analysis program LPILE, Version 2019.11.02, produced by Ensoft, Inc. Assumptions for pile stickup and lateral load placement, magnitude and pile stickup above mudline are shown in Table 1 below. No axial load was applied for the float piles; an axial load of 4 kips, representing dead load only, was included in the lateral analysis of the pier platform piles.

TABLE 1. LATERAL PILE LOAD MAGNITUDE AND ELEVATION ASSUMPTIONS

Soil Parameter	Prevost Harbor – Float Piles	Prevost Harbor – Pier Piles	Reid Harbor - Float Piles	Reid Harbor – Pier Piles
Applied Lateral Load (kips)	8	5	8	5
Lateral Load Application Elevation (ft, MLLW)	+10	+25	+10	+32

Soil Parameter	Prevost Harbor – Float Piles	Prevost Harbor – Pier Piles	Reid Harbor - Float Piles	Reid Harbor – Pier Piles
Estimated Pile Stickup Above Mudline for Design (ft)	21	25	20	37

Due to the limited exploration capabilities of the DCP, soil conditions underlying the maximum depth of the DCP explorations is unknown. We, therefore, analyzed two potential boundary soil conditions that may exist underlying the loose to medium dense unit encountered immediately prior to driving refusal in the DCPs.

- **Alternate 1: Medium Dense.** The medium dense layer which refused the DCPs may be continuous for the practical pile length. This soil unit represents the lowest anticipated soil strength condition.
- **Alternate 2: Bedrock**. Sandstone bedrock could be present beneath the medium dense unit below the depth at which the DCPs encountered refusal. This represents the highest potential strength condition.

The soil/rock properties used in the analysis are presented in Table 2 and Table 3 below, for Prevost Harbor and Reid Harbor sites, respectively. The values in the tables are ultimate values and no factor of safety has been applied.

TABLE 2. LATERAL PILE ANALYSIS SOIL INPUT PARAMETERS – PREVOST HARBOR

Soil Parameter	Very Soft Marine Sediment	Loose Sand	Medium Dense Sand (Alternate 1)	Sedimentary Bedrock (Alternate 2)
Depth Below Mudline (feet) – Float Piles	0 to 11.5	11.5 to 19	Below 19	Below 19
Depth Below Mudline (feet) – Pier Piles	0 to 3	3 to 14	Below 14	Below 14
Generalized Unit	Soft Clay	Sand	Sand	Bedrock
LPILE Soil/Rock Type	Soft Clay (Matlock)	Sand (Reese)	Sand (Reese)	Vuggy Limestone
Effective Unit Weight, (lb/ft^3)	48	58	58	140
Internal Angle of Friction (degree)	NA	30	34	NA
Cohesion (lb/ft^2)	250	NA	NA	NA
E50	0.02	NA	NA	NA
Modulus, k (lb/in^3)	NA	30	60	NA
Unconfined Compressive Strength (lb/in^2)	NA	NA	NA	5,000

Notes:

Soil and rock parameters are presented in the units typically used in the LPILE program.

Soil and rock unit weights are the buoyant unit weight.

lb/ft^3 = pounds per cubic foot.

lb/ft^2 = pounds per square foot.

lb/in^3 = pounds per cubic inch.

TABLE 3. LATERAL PILE ANALYSIS SOIL INPUT PARAMETERS – REID HARBOR

Soil Parameter	Very Soft Marine Sediment	Loose Sand	Medium Dense Sand	Medium Dense Sand (Alternate 1)	Sedimentary Bedrock (Alternate 2)
Depth Below Mudline (feet) – Float Piles	0 to 5	Not Present	5 to 12	Below 12	Below 12
Depth Below Mudline (feet) – Pier Piles	0 to 3	3 to 13	Not Present	Below 13	Below 13
Generalized Unit	Soft Clay	Sand	Sand	Sand	Bedrock
LPILE Soil/Rock Type	Soft Clay (Matlock)	Sand (Reese)	Sand (Reese)	Sand (Reese)	Vuggy Limestone
Effective Unit Weight, (lb/ft^3)	48	58	58	58	140
Internal Angle of Friction (degree)	NA	30	34	34	NA
Cohesion (lb/ft^2)	250	NA	NA	NA	NA
E50	0.02	NA	NA	NA	NA
Modulus, k (lb/in^3)	NA	30	60	60	NA
Unconfined Compressive Strength (lb/in^2)	NA	NA	NA	NA	5,000

Notes:

Soil and rock parameters are presented in the units typically used in the LPILE program.

Soil and rock unit weights are the buoyant unit weight.

lb/ft^3 = pounds per cubic foot.

lb/ft^2 = pounds per square foot.

lb/in^3 = pounds per cubic inch.

For purposes of our analyses for Alternate 2, we assumed that bedrock was encountered at the depths below mudline indicated in Tables 2 and 3 and driven/drilled to a depth of 2 feet into the rock. LPILE output diagrams for pile deflection, bending moment, and shear are presented in Appendices C and D as follows:

4.4.2.1. Prevost Harbor

- Figures C-1 through C-3, deflection, moment and shear diagrams for 12.75-inch diameter boarding float piles (both base alternative conditions).
- Figures C-4 through C-6, deflection, moment and shear diagrams for 16-inch diameter boarding float piles (both base alternative conditions).
- Figures C-7 through C-9, deflection, moment and shear diagrams for 12.75-inch diameter pier platform piles (both base alternative conditions).

4.4.2.2. Reid Harbor

- Figures D-1 through D-3, deflection, moment and shear diagrams for 12.75-inch diameter float piles (both base alternative conditions).
- Figures D-4 through D-6, deflection, moment and shear diagrams for 16-inch diameter piles (both base alternative conditions).

- Figures D-7 through D-9, deflection, moment and shear diagrams for 12.75-inch diameter pier platform piles (both base alternative conditions)

We recommend a minimum planned embedment to 30 feet below mudline to provide sufficient lateral fixity for float piles at Prevost Harbor and 25 feet below mudline at Reid Harbor. If bedrock or a very dense soil unit is encountered at shallower depths, we recommend piles be driven/drilled a minimum of 2 feet into the very dense soil and or bedrock. Based on additional analyses performed, the deflection, moment, and shear values presented in the figures are similar if the piles are shorter and socketed into the bedrock.

4.4.3. Axial Capacity

We understand fixed pier/platform piles at both sites will be subject to 4.05 kips of dead load and 20.4 kips of live load. Axial loads will be supported by end bearing into rock or combination of end bearing and skin friction in medium dense to dense soils, depending on the underlying soil conditions. Allowable axial compressive pile capacities for 12.75-inch diameter piles for both bedrock and medium dense soil conditions are provided in Table 4 below. Allowable axial capacities presented in Table 4 are applicable for both the Prevost and Reid Harbor sites.

TABLE 4. LATERAL PILE ANALYSIS SOIL INPUT PARAMETERS – 12.75-INCH DIAMETER PILES

Pile Diameter (in)	Allowable Axial Capacity (kips)	Required Depth Pile Embedment Depth (Feet Below Mudline Elevation)
Bedrock Condition	50	NA, Refusal Condition Required
Medium Dense Soil Condition	25	25

4.4.4. Pile Installation

We understand that pile installation with a vibratory hammer is preferred. Because of the relative unknown conditions of the soils below the DCP depth, we recommend that a large vibratory hammer be used to install the pier/platform and float piles. Pile driving should be accomplished in accordance with Section 6-05 of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road and Bridge Construction (hereafter referred to as the WSDOT Standard Specifications).

The Standard Specifications require an impact hammer to drive piles the final 2 feet before reaching the planned depth or meeting vibratory driving refusal criteria. In this case, it is our opinion that using an impact hammer is not necessary provided that the minimum embedment is achieved, and it is confirmed during installation that at least 10 feet of medium dense to dense conditions are confirmed by a representative of GeoEngineers as described in Section 4.5 of this report.

However, it is possible that dense soils and/or bedrock could be encountered such that using an impact hammer may be necessary to achieve the embedment depth for fixity for lateral load resistance. We recommend a hammer size in the range of 60,000 to 80,000 foot-pounds to embed the pile the minimum 2 feet into the bedrock, if encountered, and we recommend that the contract documents state that the contractor should be required to have an impact hammer onsite if very dense soil or bedrock conditions are encountered. Driving shoes are recommended for all piles, since bedrock could be encountered.

If the minimum 2 feet of embedment into bedrock cannot be achieved, we recommend that a hole be drilled into the rock very slightly less than the same diameter as the pile (e.g., using a downhole hammer), and then the pile driven to achieve the required 2 feet of embedment. The hole should be sized to facilitate pile

installation without damage to the pile, but maintain the tight fit for the required lateral resistance. It may be appropriate to prepare project specifications such that this procedure is a contingency with a separate pay item. We recommend that the bid items include (a) mobilization and rock socket for the first pile and (b) unit cost for each additional rock socket.

We recommend the contractor submit a detailed installation plan for review and approval by the engineer before construction. Pile driving criteria and the dynamic response of the piles during driving are dependent upon pile type, the driving hammer characteristics, required capacity, and other factors. Refusal criteria will vary with the hammer size actually used by the contractor and its efficiency. We recommend the contractor submit details of the selected hammer including manufacturer, model, rated energy or drive force, and any modifications. For impact driving, details of the hammer cushion, pile cap, and pile cushion are also appropriate. We recommend that wave equation analyses be performed to assess pile drivability and to develop pile installation criteria based on the contractor's pile hammer submittal.

4.5. Construction Monitoring

The project site has variable subsurface conditions and has some complex geotechnical issues. GeoEngineers' limited DCP exploration program did not fully define subsurface conditions, including the deep subsurface conditions for the offshore piles and extent of bedrock, which could limit pile drivability. We recommend that pile installations be monitored by GeoEngineers. It is our experience that providing geotechnical support from the design team during the construction facilitates the contractor, progress and schedule and helps protect the owner from change orders. We recommend observation of the following:

- Observation of subgrades for the upland fixed pier abutments.
- Observation of test pile(s), if determined appropriate.
- Driving of piles to confirm driving conditions match assumptions in our analyses.
- If the piles do not have obvious fixity due to premature refusal and/or lack of embedment into rock or underlying dense unit, it may be appropriate to perform lateral load tests in the field to evaluate performance.

5.0 LIMITATIONS

We have prepared this report for use by Mott MacDonald, LLC and Washington State Parks for use in design of the moorage float replacement project at Stuart Island in San Juan County, Washington, as discussed herein.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices for geotechnical engineering in this area at the time this report was prepared.

Please refer to Appendix E titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this document.





N
W E
S

4,000 0 4,000

Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

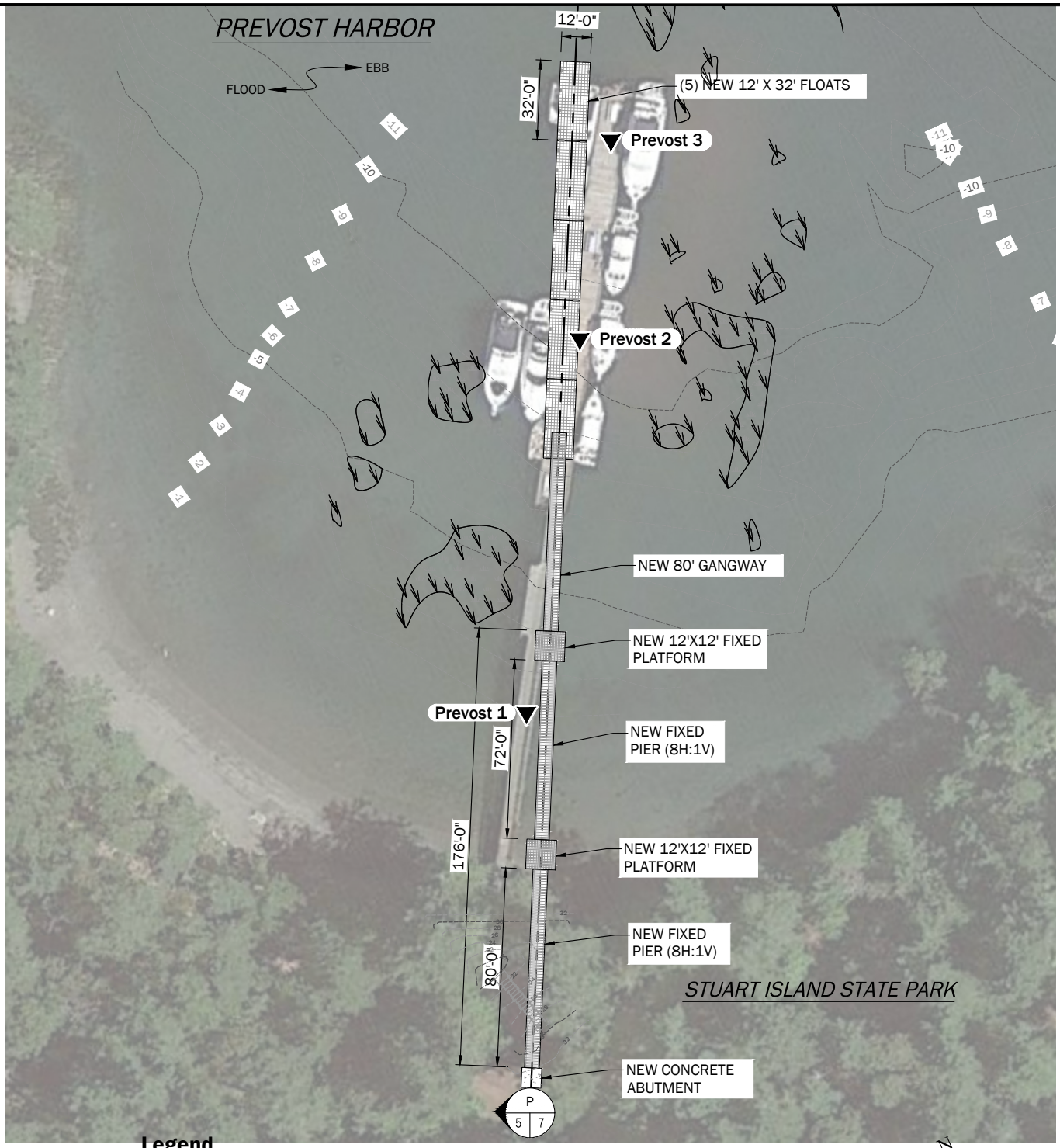
Vicinity Map

Proposed Improvements Stuart Island State Park
San Juan County, Washington

GeoEngineers

Figure 1

P:\2\2935064\GIS\MXD\2935064_F01_VicinityMap.mxd Date Exported: 11/09/20 by ccabrera



Legend

Prevost 1 ▼ Dynamic Cone Penetrometer Test by GeoEngineers, Inc., 2020

New Dock/Floats

Eelgrass

------- -10 ------- Existing Contour

60 0 60
Feet

N E S W

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Background from Mott MacDonald dated 10/19/20.

Vertical Datum: MLLW = 0.00 Ft.

Projection: NAD83 Washington State Planes, North Zone, US Foot.

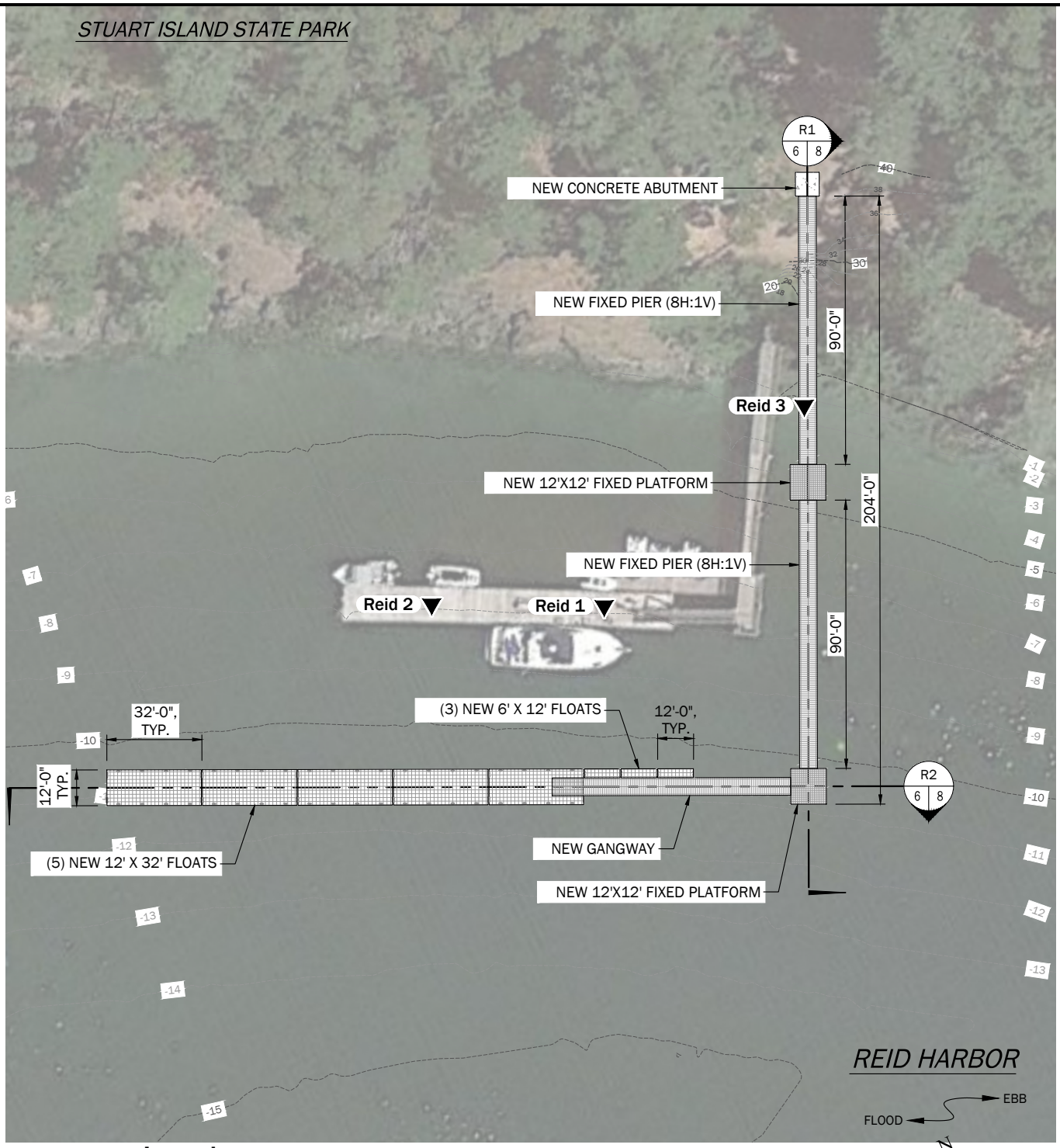
Proposed Site and Exploration Plan - Prevost Harbor, Stuart Island

Proposed Improvements Stuart Island State Park
San Juan County, Washington

GeoEngineers

Figure 2

P:\2\2935064\CAD\01\GeoTech\293506401_F02_F03_Proposed Site and Exploration Plan.dwg TAB:F02 Date Exported: 11/13/20 - 14:48 by syi



Legend

Reid 1 ▼ Dynamic Cone Penetrometer Test by GeoEngineers, Inc., 2020

New Dock/Floats

------- -10 ------- Existing Contour

50 0 50
Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Background from Mott MacDonald dated 10/19/20.

Vertical Datum: MLLW = 0.00 Ft.

Projection: NAD83 Washington State Planes, North Zone, US Foot.

Proposed Site and Exploration Plan - Reid Harbor, Stuart Island

Proposed Improvements Stuart Island State Park
San Juan County, Washington

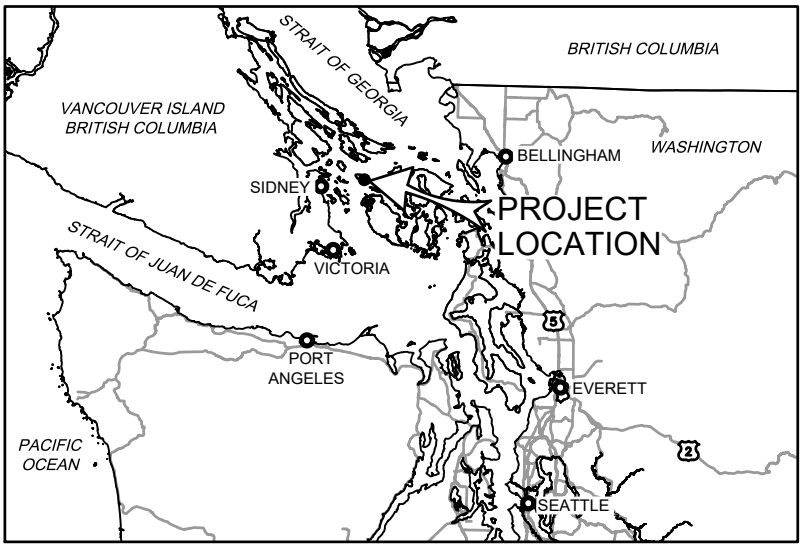
GeoEngineers

Figure 3

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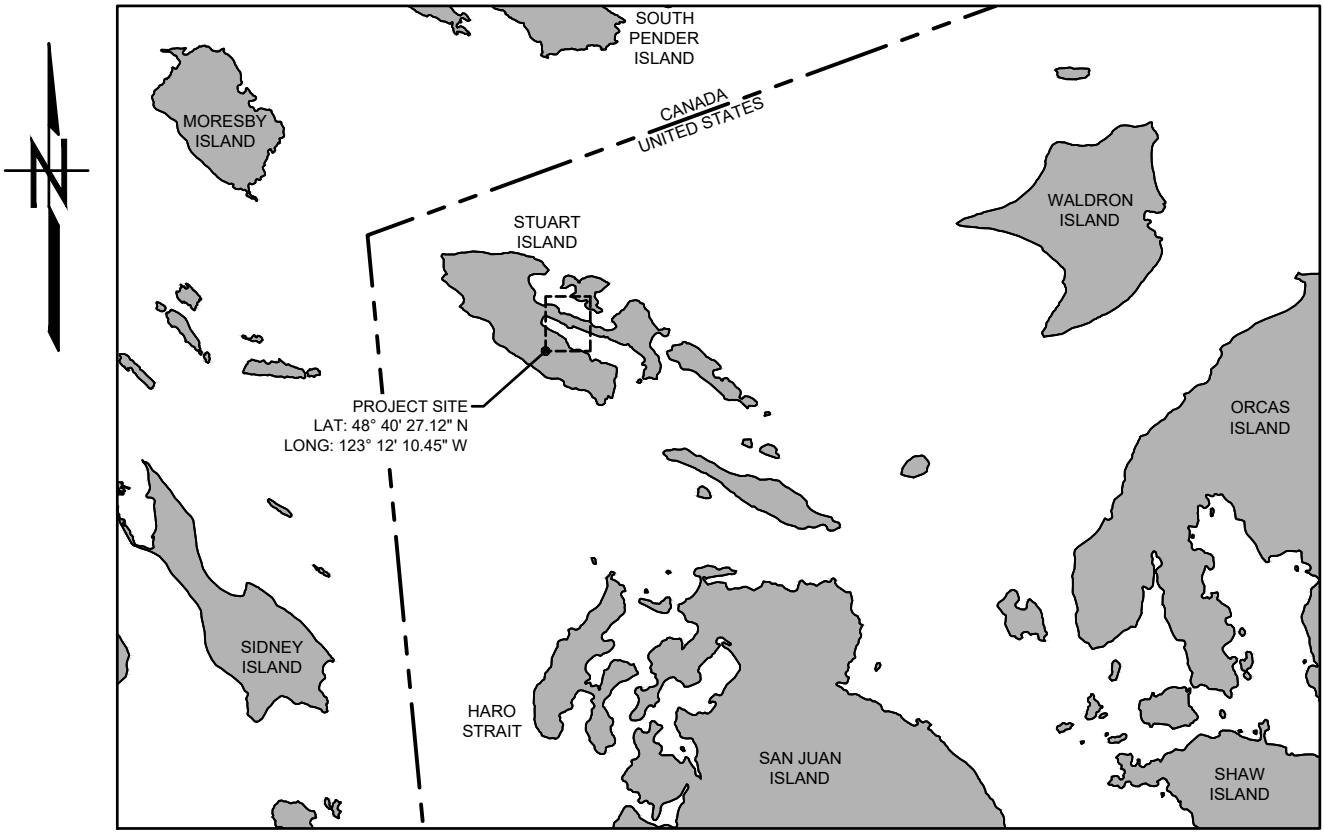
APPENDIX A
Permit Drawings

S28 T36N R4W



VICINITY MAP

DRAWING INDEX	
SHEET NO.	SHEET TITLE
1	VICINITY MAP
2	OVERALL EXISTING SITE PLAN
3	EXISTING SITE PLAN - PREVOST HARBOR
4	EXISTING SITE PLAN - REID HARBOR
5	PROPOSED SITE PLAN - PREVOST HARBOR
6	PROPOSED SITE PLAN - REID HARBOR
7	PROFILE - FLOAT AND PIER PREVOST HARBOR
8	PROFILE - FLOAT AND PIER REID HARBOR
9	UPLAND PLAN - PREVOST HARBOR
10	UPLAND PLAN - REID HARBOR
11	PROPOSED UPLAND SECTION - PREVOST HARBOR
12	PROPOSED UPLAND SECTION - REID HARBOR
13	FLOAT DETAILS
14	PIER DETAILS
15	GANGWAY DETAILS



LOCATION MAP

7,500'
0 15,000'

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

VICINITY MAP

PROPOSED: PIER REPLACEMENT

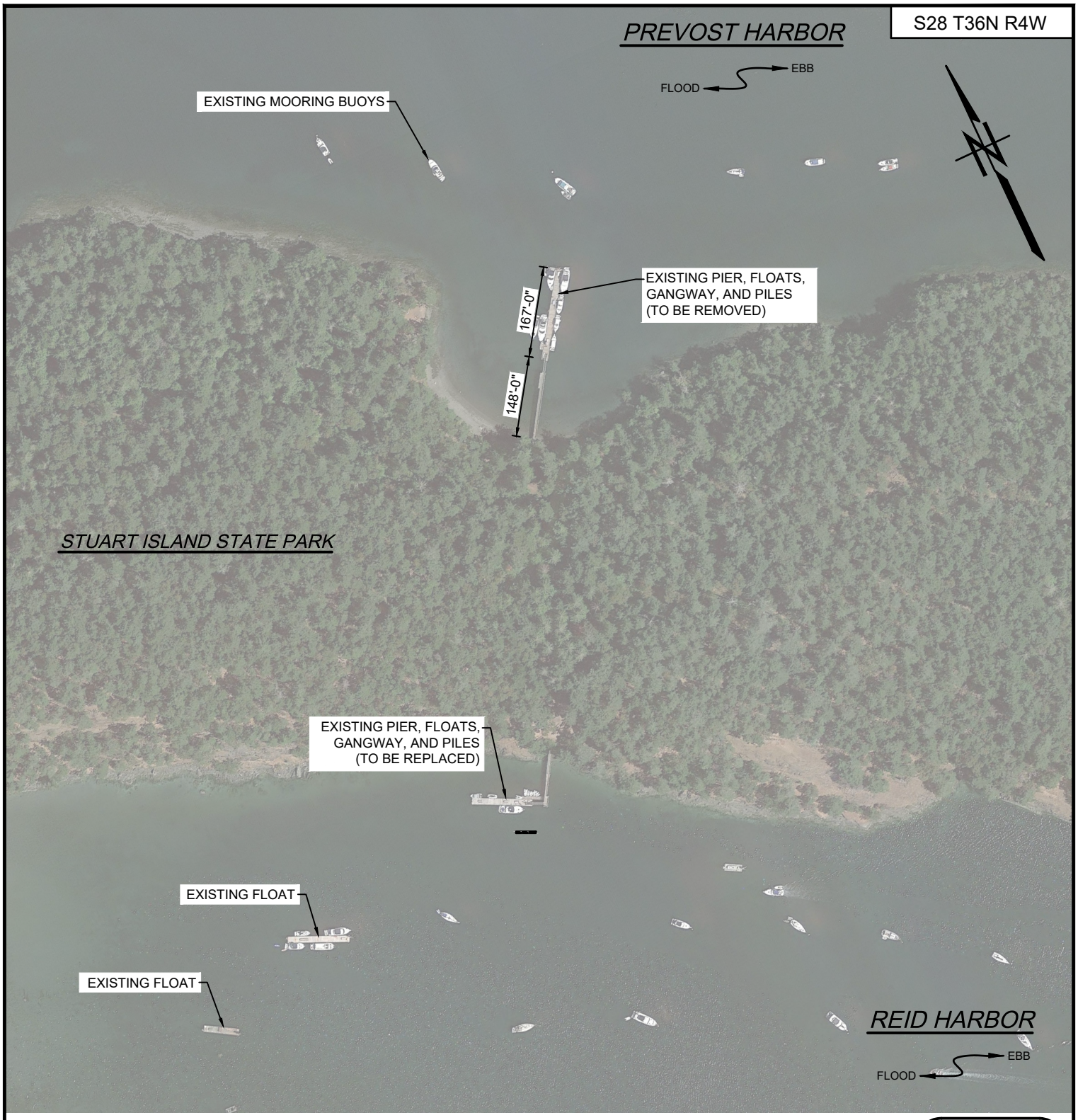
IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 1 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/340519-LC-Lake Chelan Assessment to Replace Five Docks/Drawings_Models/12_MA_Marine/7 - Design/CADF - Permit/100143-003_PERMIT_Stuart Island Cover.dwg DATE: 7/7/2020 USER: Tyler Morrison



DRAFT

SITE PLAN

OVERALL EXISTING

125'

0 250'

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

OVERALL EXISTING SITE PLAN

PROPOSED: PIER REPLACEMENT

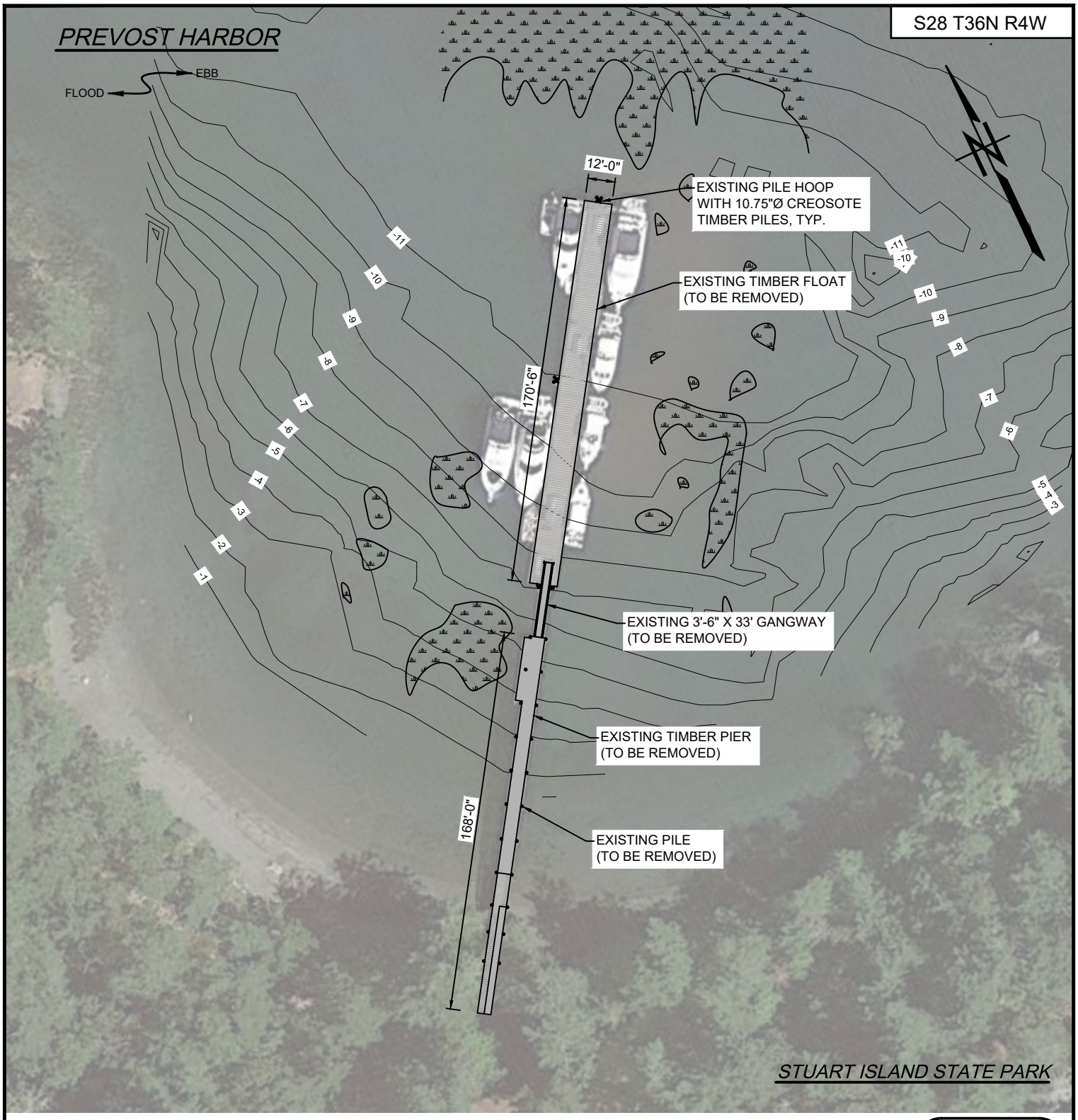
IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 2 OF 15 DATE: 4/17/20

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LEGEND

- EXISTING DOCK/FLOATS TO BE REPLACED
- EELGRASS
- -10 EXISTING CONTOUR

SITE PLAN

EXISTING

30'

0 60'

DRAFT

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

EXISTING SITE PLAN - PREVOST HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

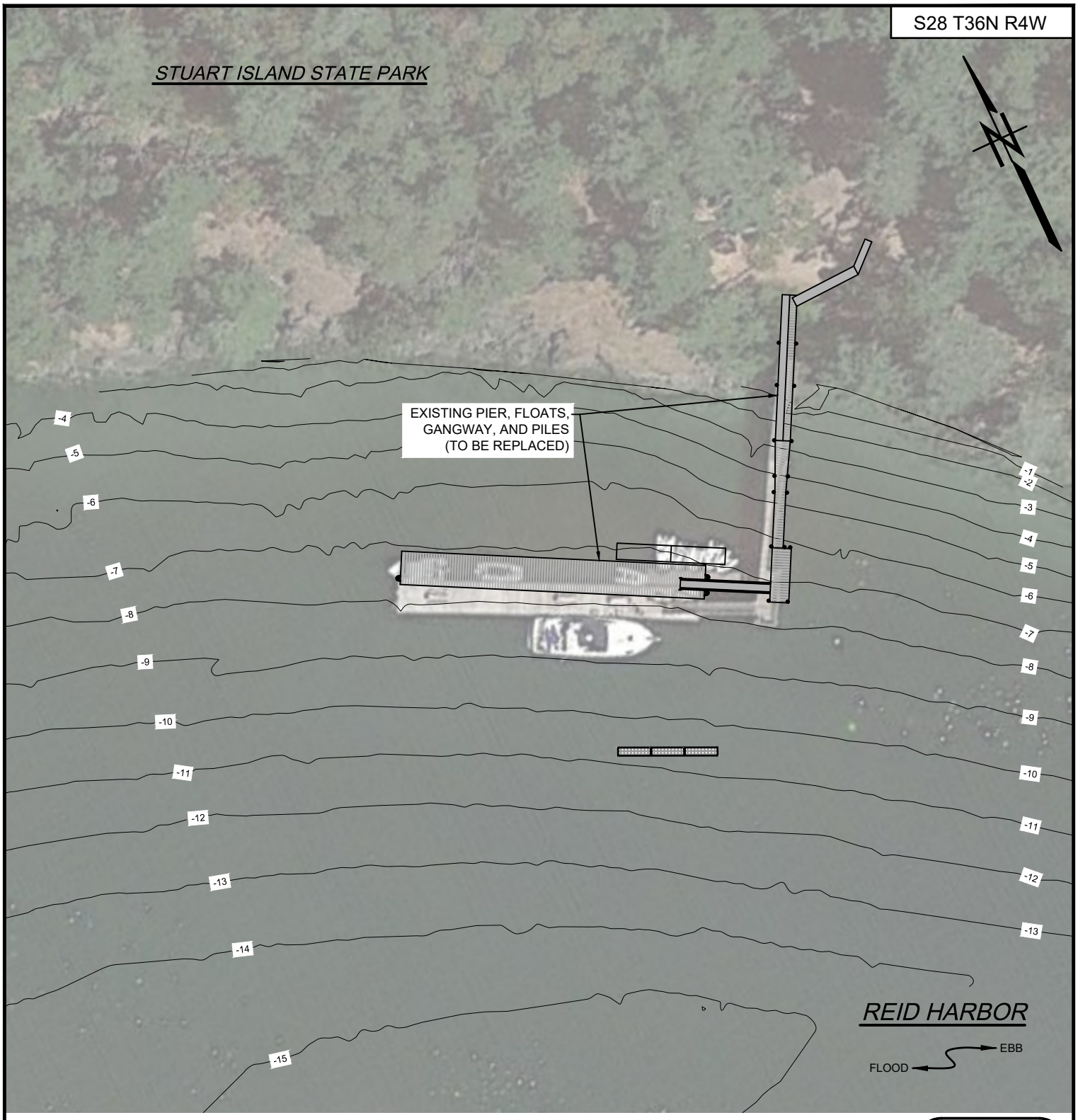
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 3 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



LEGEND

EXISTING DOCK/FLOATS TO BE REPLACED

-10 EXISTING CONTOUR

SITE PLAN

EXISTING

25'

0 50'

DRAFT

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

EXISTING SITE PLAN - REID HARBOR

PROPOSED: PIER REPLACEMENT

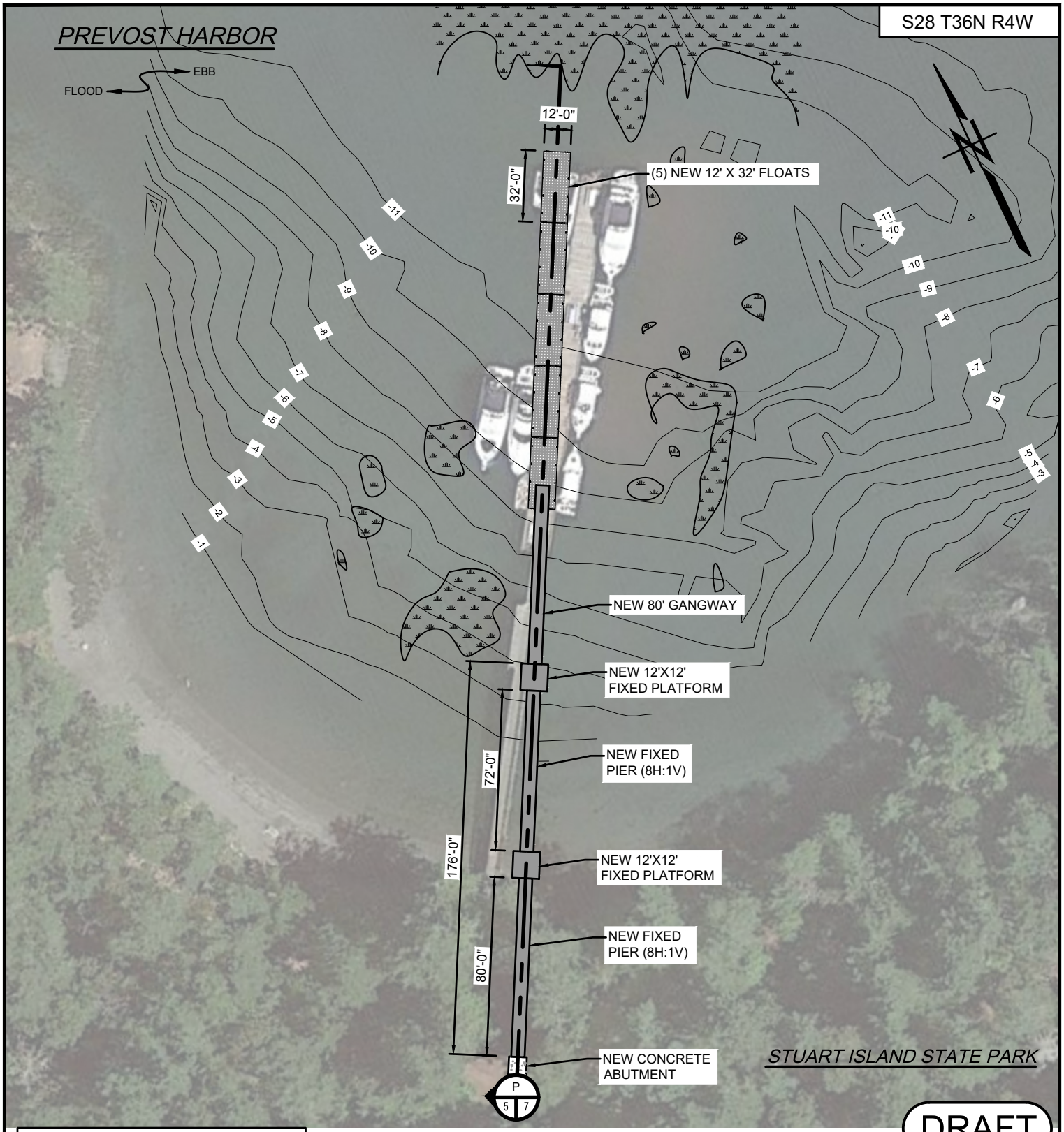
IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 4 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison



DRAFT

LEGEND

- NEW DOCK/FLOATS
- EELGRASS
- -10 EXISTING CONTOUR

SITE PLAN

PROPOSED

30'

0 60'

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROPOSED SITE PLAN - PREVOST HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

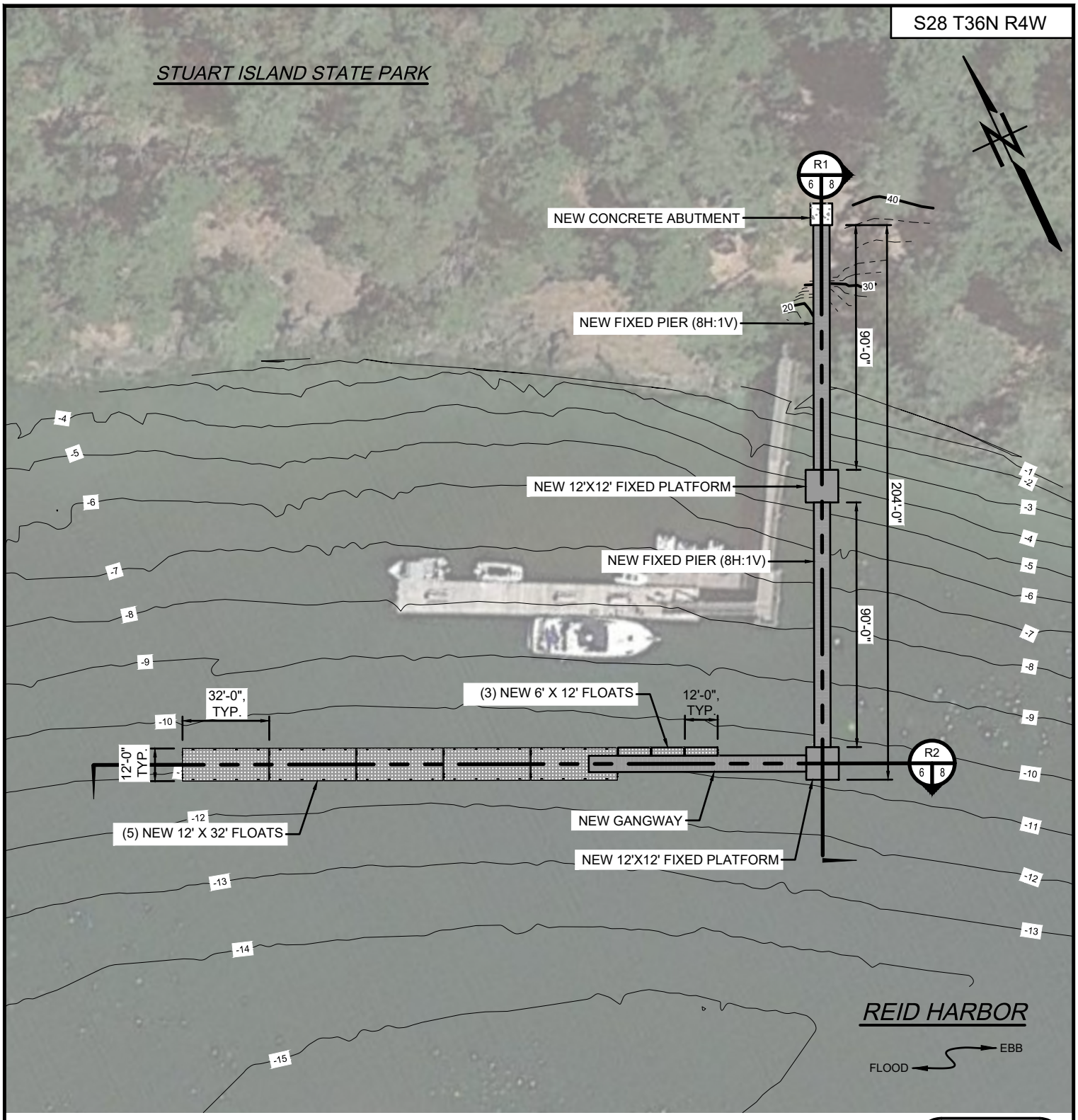
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 5 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/1001143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/1001143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



DRAFT

LEGEND

NEW DOCK/FLOATS

-10 EXISTING CONTOUR

SITE PLAN

PROPOSED

25'

0 50'

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROPOSED SITE PLAN - REID HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

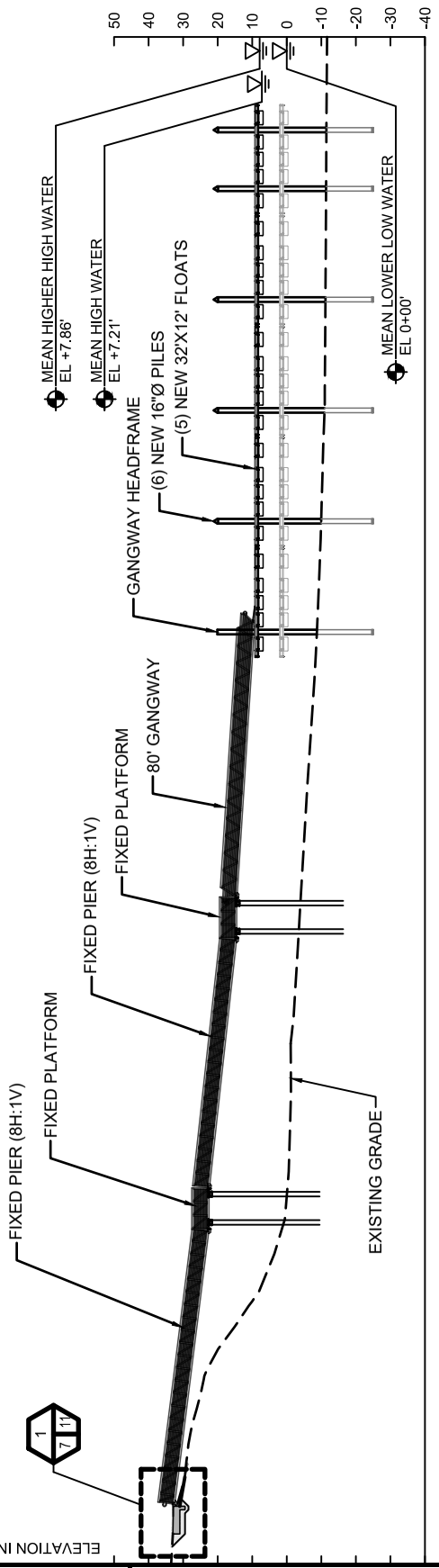
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 6 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



P 5 7 PROFILE

0 25' 50'

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROFILE - FLOAT AND PIER
PREVOST HARBOR

PROPOSED: PIER REPLACEMENT

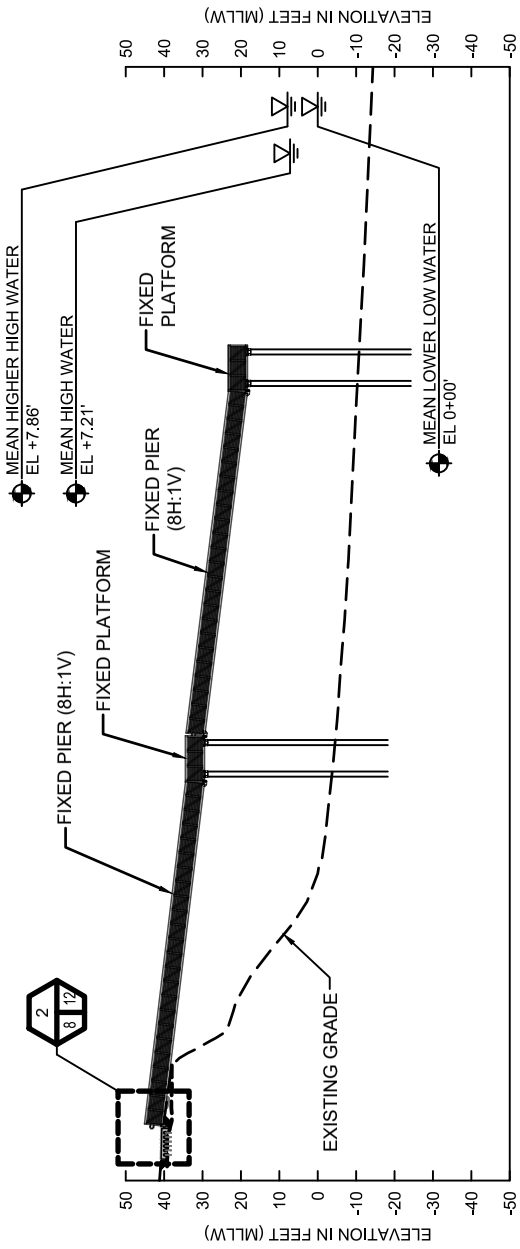
IN: WASHINGTON

AT: STUART ISLAND

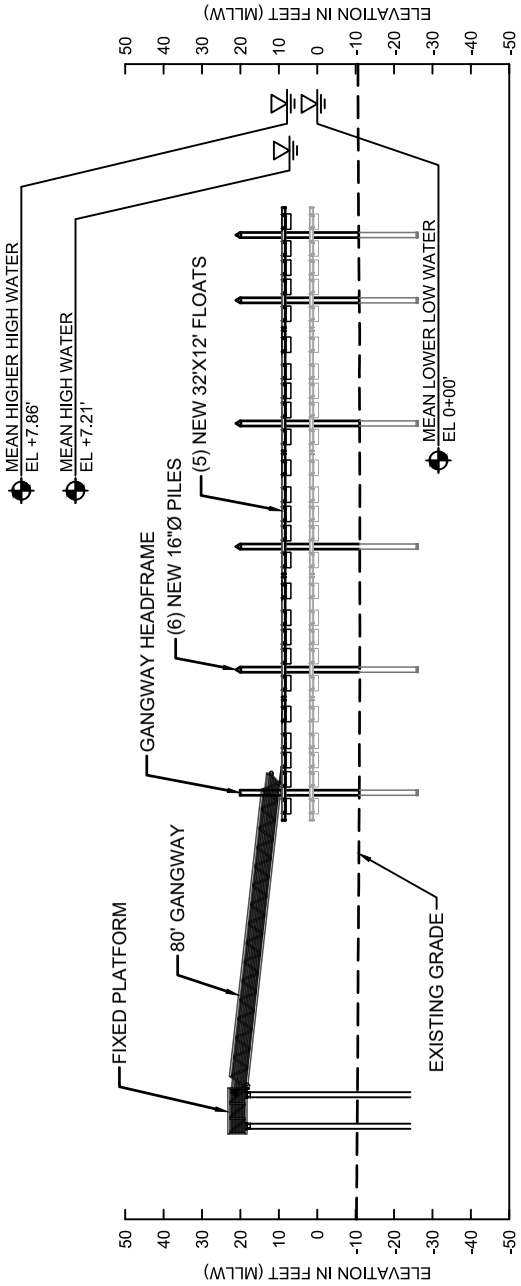
COUNTY: SAN JUAN

SHEET 7 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison









DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROFILE - FLOAT AND PIER
REID HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

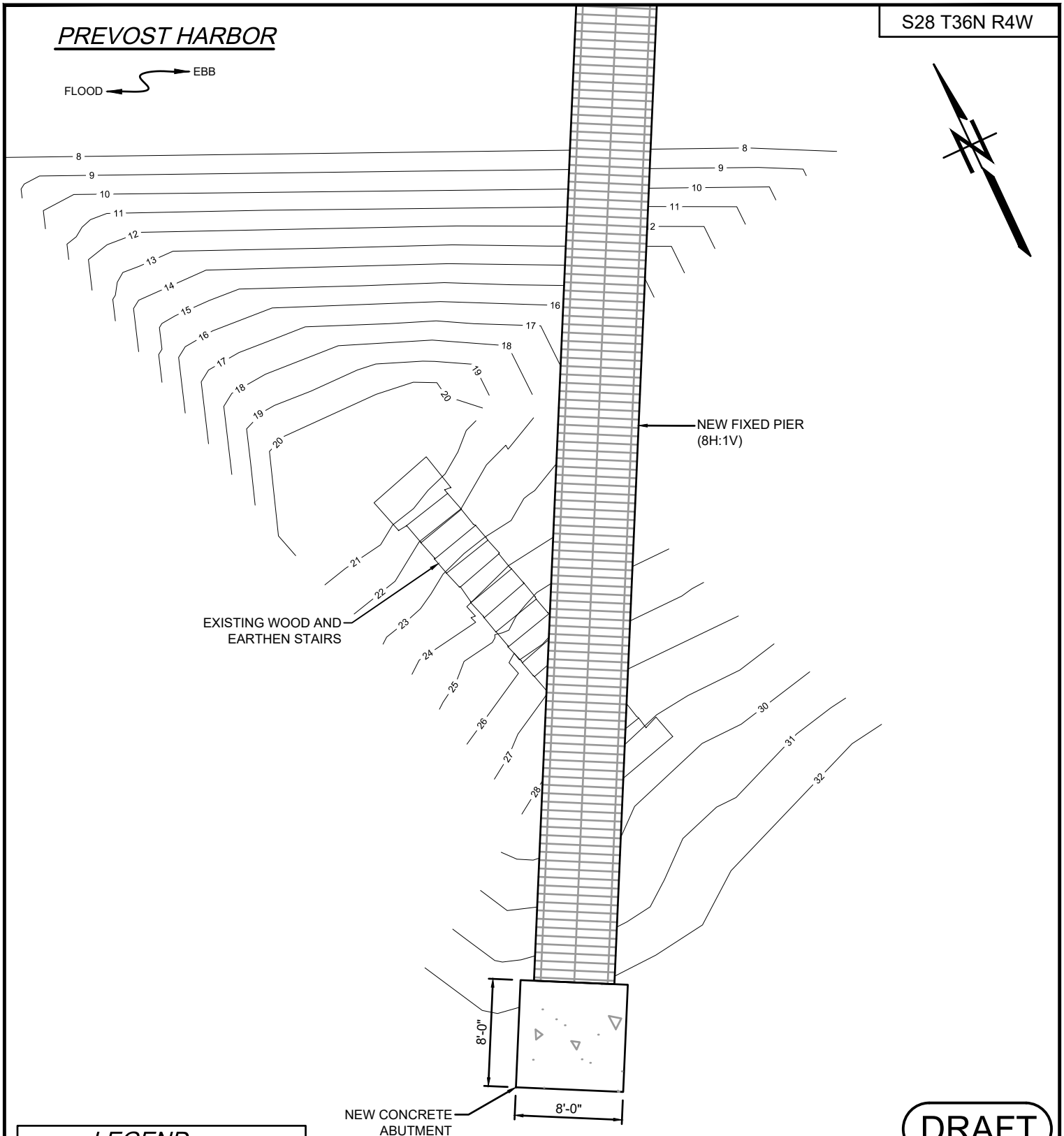
COUNTY: SAN JUAN

SHEET 8 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CADF - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W

PREVOST HARBOR



LEGEND

EXISTING DOCK/FLOATS TO BE REPLACED

-10 EXISTING CONTOUR

SITE PLAN

UPLAND

0 5' 10'

DRAFT

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

UPLAND PLAN - PREVOST HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

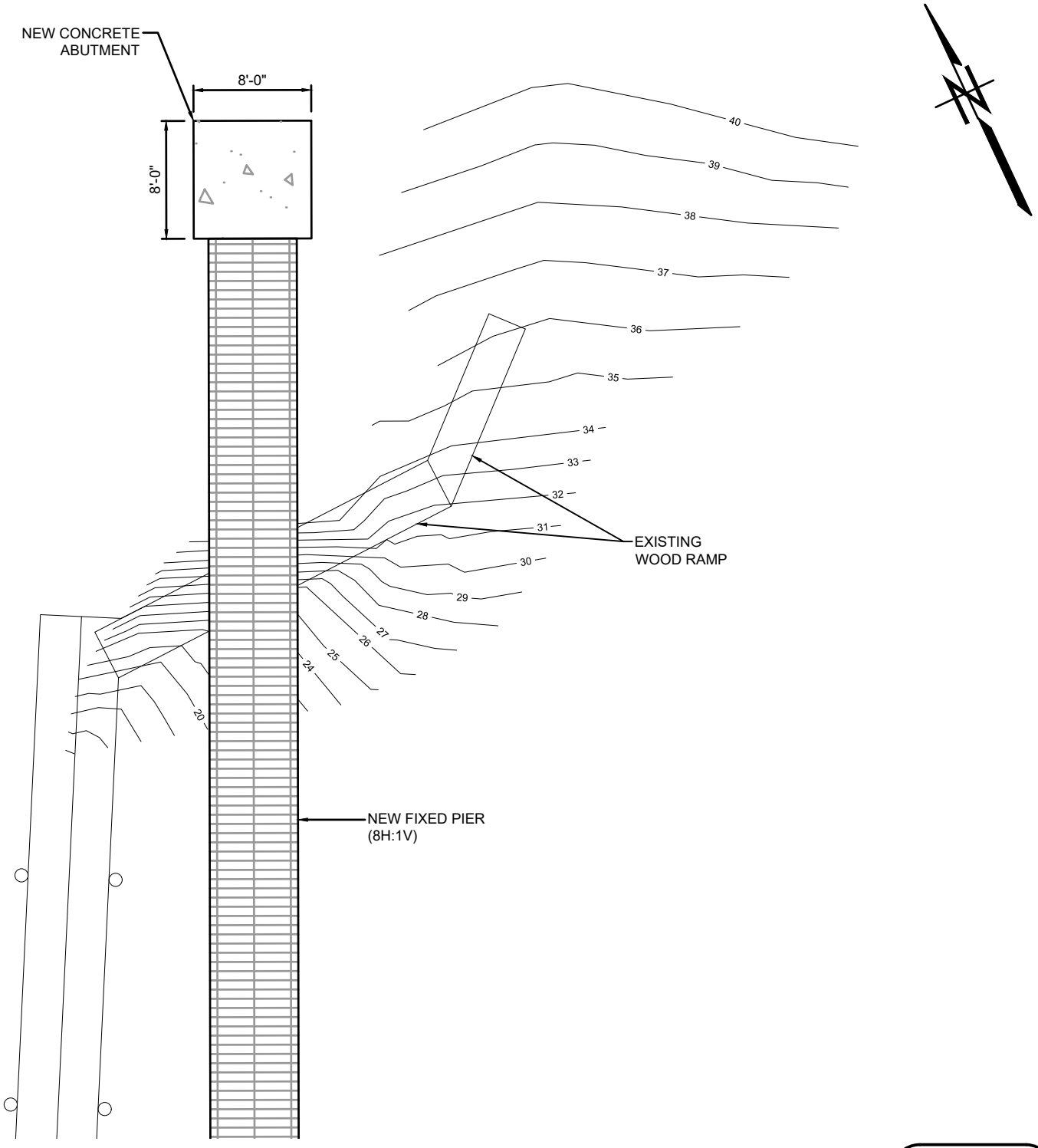
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 9 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



LEGEND

NEW DOCK/FLOATS

-10 EXISTING CONTOUR

SITE PLAN

UPLAND

5'

0 10'

DRAFT

TIDAL WATER LEVELS (MLLW)

MEAN LOWER LOW WATER	0.00 FT
MEAN HIGH WATER	7.21 FT
MEAN HIGHER HIGH WATER	7.86 FT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

UPLAND PLAN - REID HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

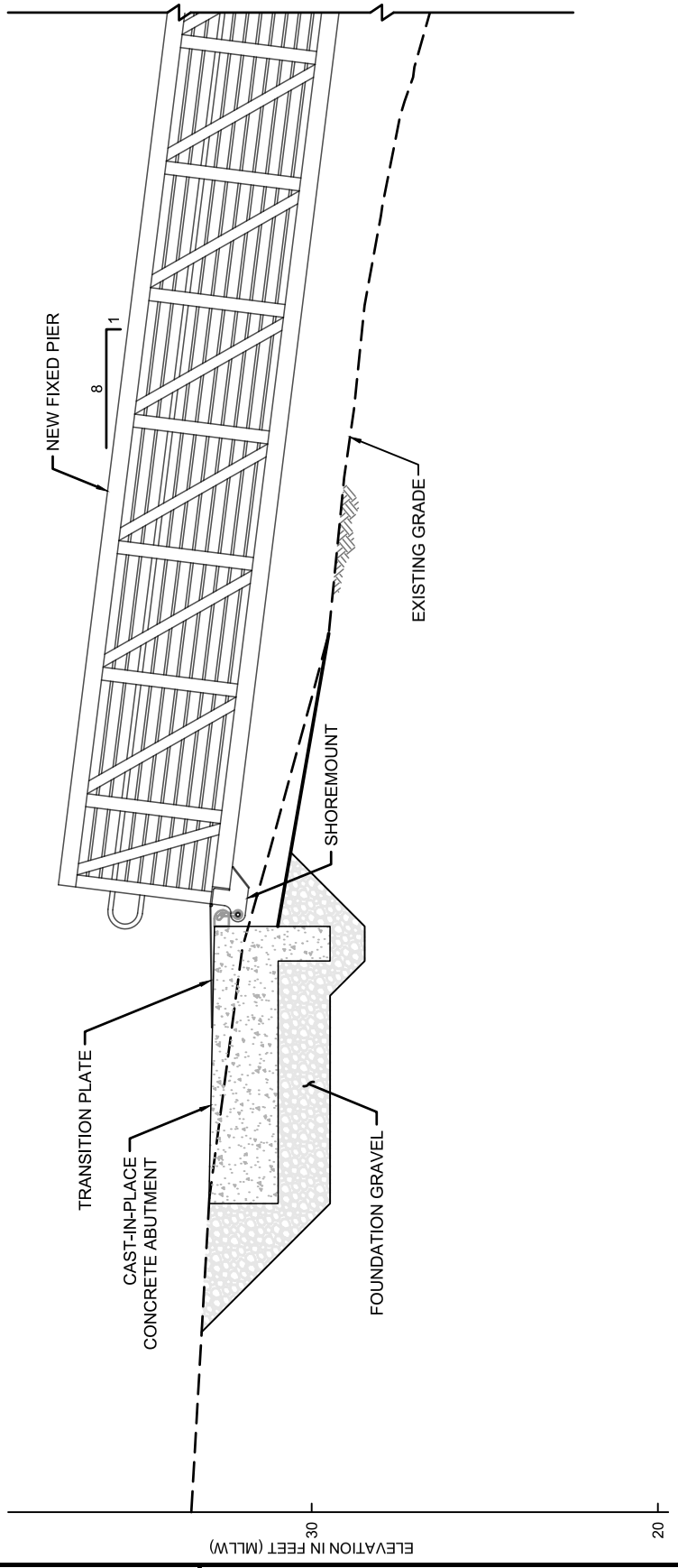
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 10 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



DETAIL - UPLAND SECTION
1" = 5'
0
2.5'
5'

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROPOSED UPLAND SECTION - PREVOST HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

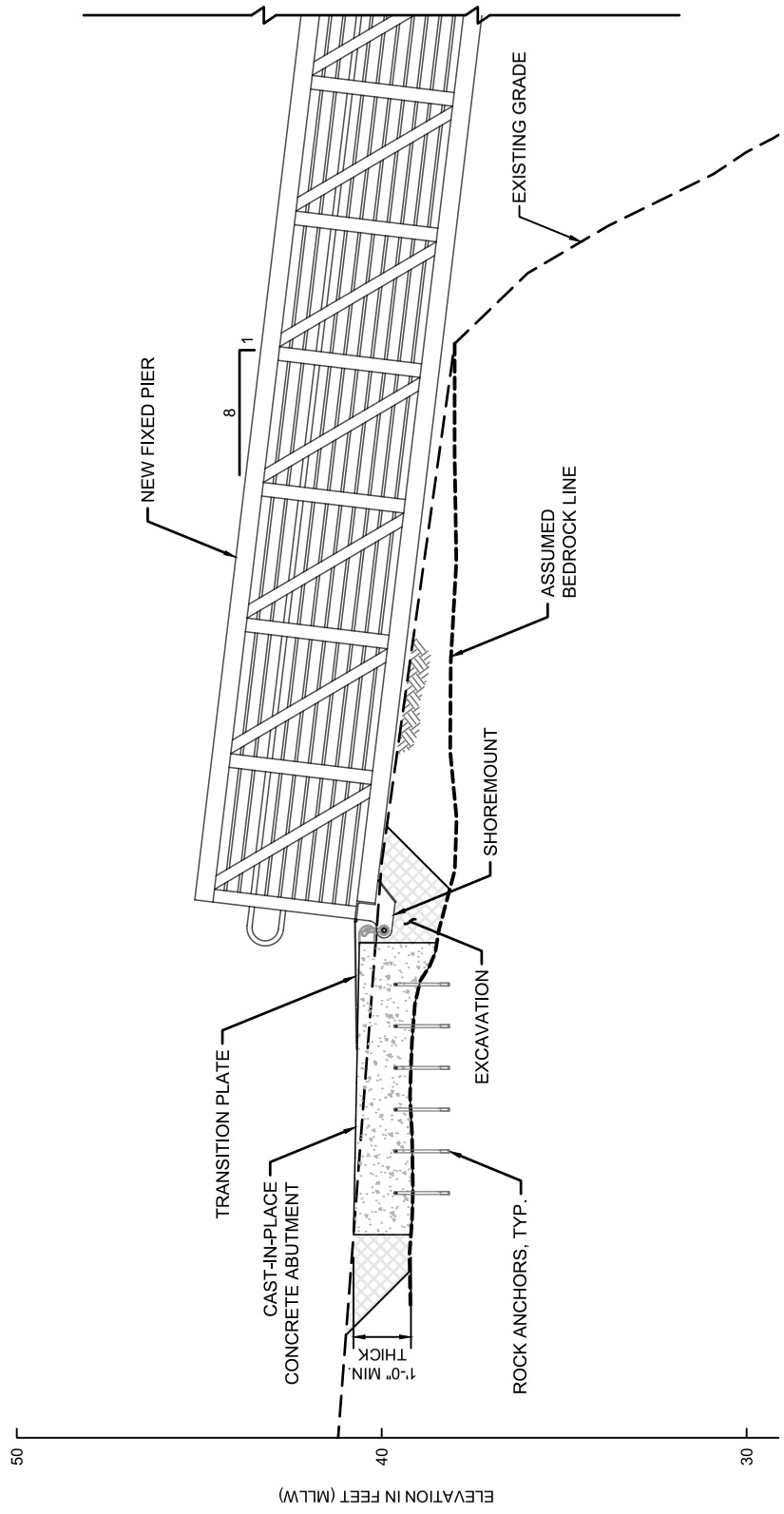
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 11 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CADF - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W





DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PROPOSED UPLAND SECTION - REID HARBOR

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

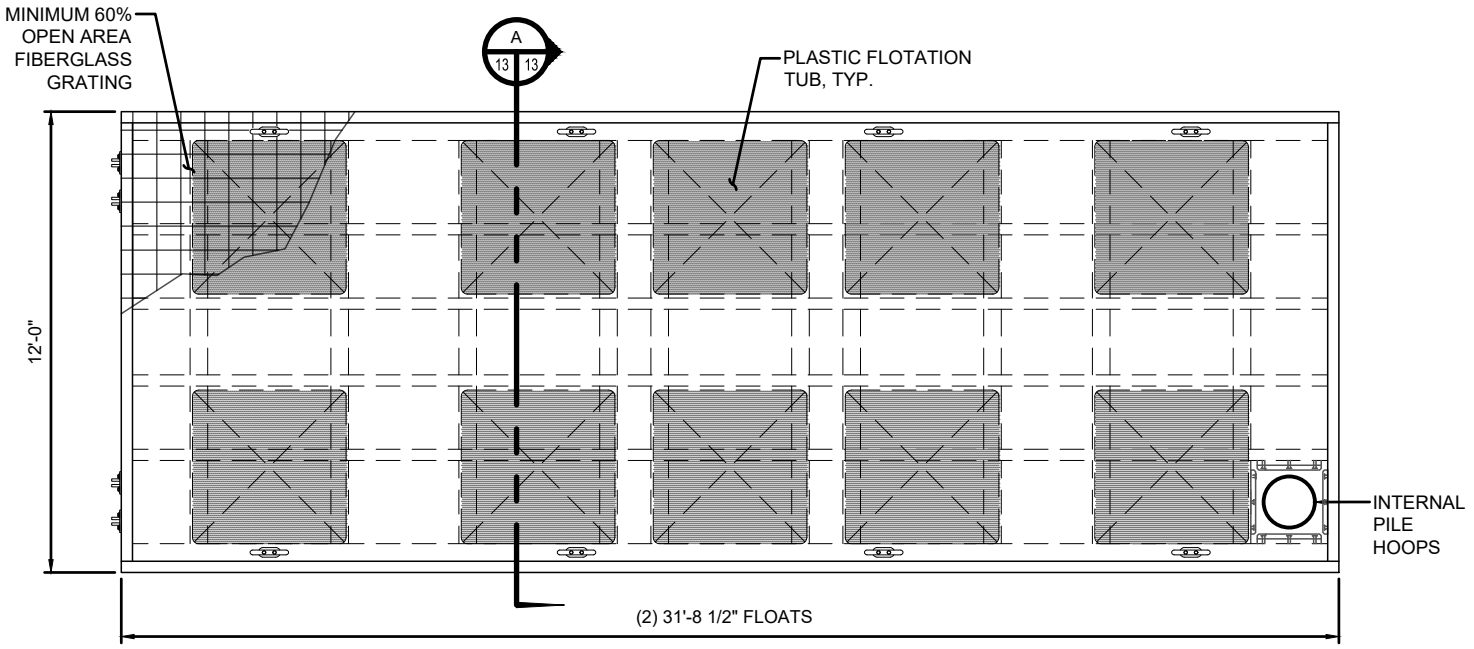
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 12 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/100143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CADF - Permit/100143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W

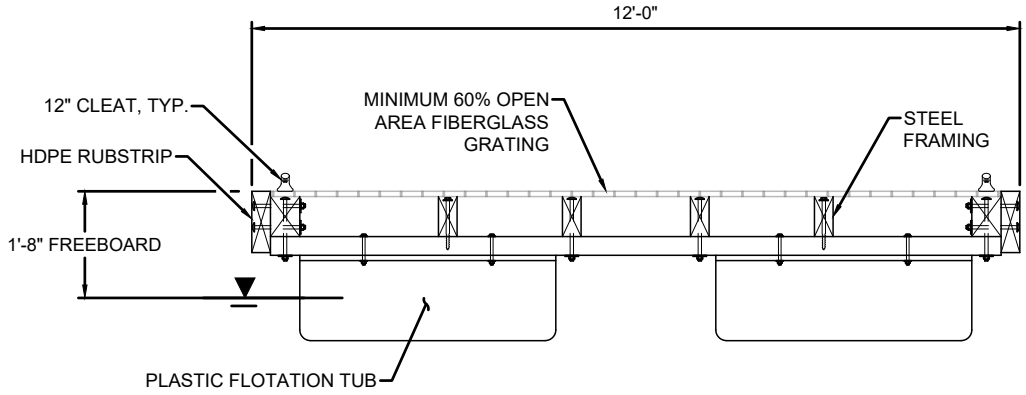


1 / # / 13 DETAIL - TYPICAL 32' FLOAT

PLAN VIEW

2.5'

0 5'



A / 13 / 13 SECTION - TYPICAL FLOAT

1.5'

0 3'

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

FLOAT DETAILS

PROPOSED: PIER REPLACEMENT

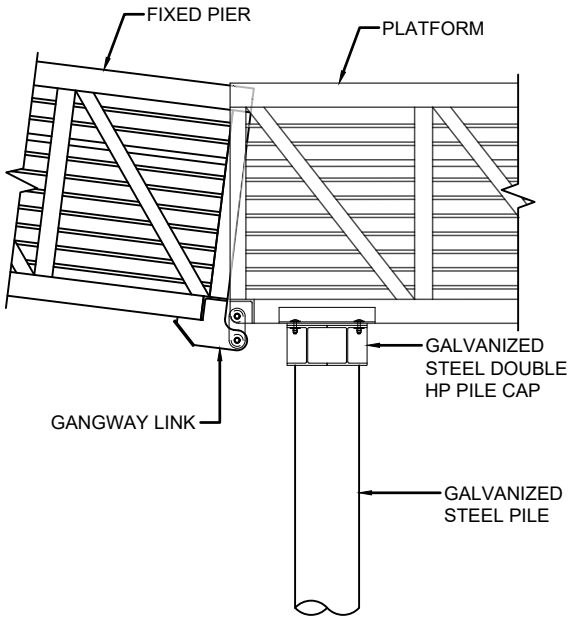
IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 13 OF 15 DATE: 4/17/20

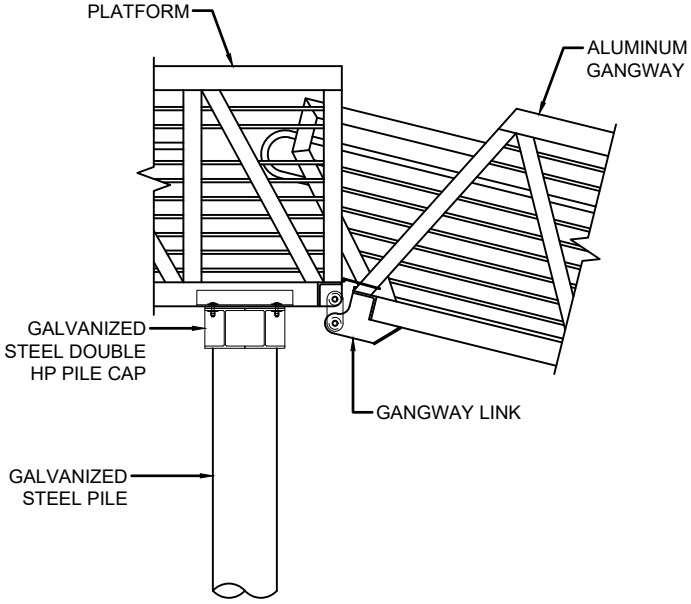
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1 # 14 *DETAIL - PILE CAP*

FIXED PIER TO PLATFORM CONNECTION

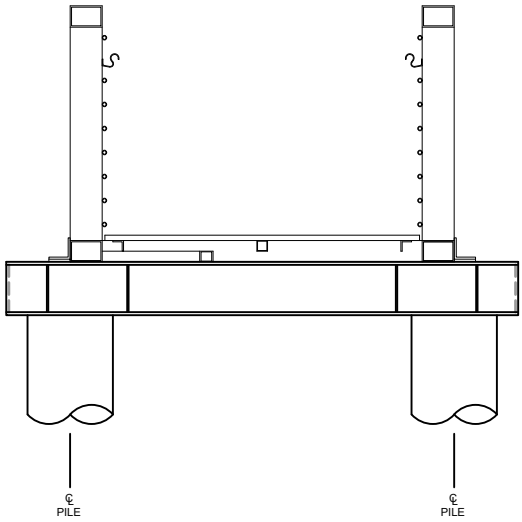
2' 0 4'



2 # 14 *DETAIL - PILE CAP*

PLATFORM TO GANGWAY CONNECTION

2' 0 4'



A 14 14 *SECTION - PILE CAP*

1.5' 0 3'

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

PIER DETAILS

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

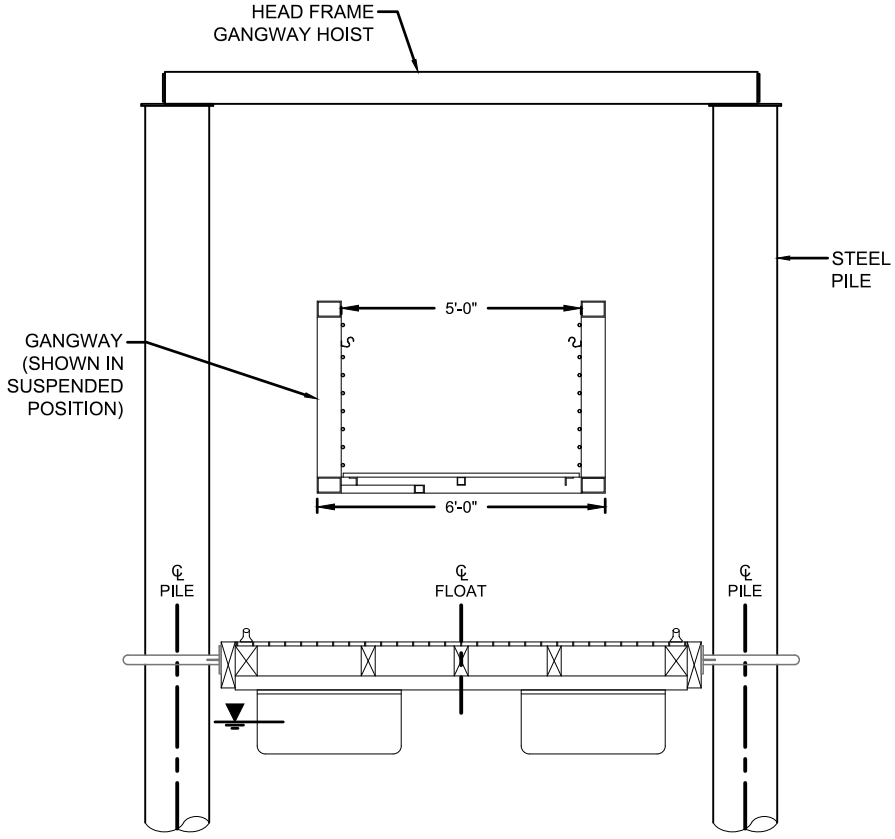
AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 14 OF 15 DATE: 4/17/20

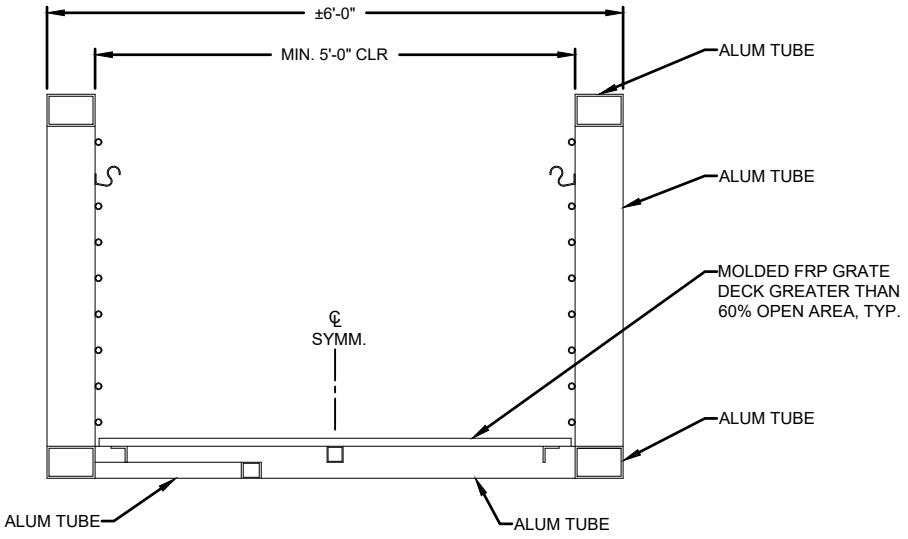
FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/1001143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/1001143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

S28 T36N R4W



A
15 15
SECTION - HEAD FRAME

2'
0 4'



1
15
DETAIL - GANGWAY

1'
0 2'

DRAFT

PURPOSE: PIER REPLACEMENT

VERTICAL DATUM: MLLW

ADJACENT PROPERTY OWNERS:
1. DNR

APPLICATION BY: WASHINGTON STATE PARKS

STUART ISLAND STATE PARK

GANGWAY DETAILS

PROPOSED: PIER REPLACEMENT

IN: WASHINGTON

AT: STUART ISLAND

COUNTY: SAN JUAN

SHEET 15 OF 15 DATE: 4/17/20

FILE: pw://mott-use-pw.bentley.com:mott-use-pw-10/Documents/1001143-003-Stuart Island/Drawings_Models/12_MA_Marine/7 - Design/CAD/F - Permit/1001143-003-Stuart Plans.dwg DATE: 7/7/2020 USER: Tyler Morrison

APPENDIX B
Dynamic Cone Logs

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.18.20
DATE COMPLETED: 8.18.20

HOLE #: Prevost-1
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	2	8.9	••	2	VERY LOOSE	SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
- 1 ft	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
- 2 ft	3	13.3	•••	3	VERY LOOSE	SOFT
-	3	13.3	•••	3	VERY LOOSE	SOFT
-	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
- 3 ft	6	26.6	•••••••	7	LOOSE	MEDIUM STIFF
- 1 m	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
-	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
- 4 ft	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
-	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
-	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
- 5 ft	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
-	18	69.5	••••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	4	15.4	••••	4	VERY LOOSE	SOFT
- 6 ft	1	3.9	•	1	VERY LOOSE	VERY SOFT
-	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 2 m	5	19.3	•••••	5	LOOSE	MEDIUM STIFF
- 7 ft	4	13.7	•••	3	VERY LOOSE	SOFT
-	2	6.8	•	1	VERY LOOSE	VERY SOFT
-	2	6.8	•	1	VERY LOOSE	VERY SOFT
- 8 ft	8	27.4	•••••••	7	LOOSE	MEDIUM STIFF
-	5	17.1	••••	4	VERY LOOSE	SOFT
-	7	23.9	••••••	6	LOOSE	MEDIUM STIFF
- 9 ft	9	30.8	••••••••	8	LOOSE	MEDIUM STIFF
-	16	54.7	••••••••••••••	15	MEDIUM DENSE	STIFF
-	16	54.7	••••••••••••••	15	MEDIUM DENSE	STIFF
- 3 m 10 ft	20	68.4	••••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	20	61.2	•••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
-	32	97.9	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	23	70.4	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
- 11 ft	35	107.1	••••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	33	101.0	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	28	85.7	••••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 12 ft	25	76.5	••••••••••••••••••••••	21	MEDIUM DENSE	VERY STIFF
-	24	73.4	••••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
-	28	85.7	••••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 4 m 13 ft	30	91.8	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF

Wildcat Dynamic Cone Log – Prevost-1

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-1

2935-064-01 Date Exported: 11/10/2020

HOLE #: Prevost-1 **WILDCAT DYNAMIC CONE LOG** Page 2 of 2

PROJECT: Stuart Island State Park Improvements PROJECT NUMBER: 2935-064-01

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
	46	127.4		25+	DENSE	HARD
	57	157.9		25+	DENSE	HARD
14 ft						
15 ft						
16 ft						
5 m						
17 ft						
18 ft						
19 ft						
6 m						
20 ft						
21 ft						
22 ft						
7 m 23 ft						
24 ft						
25 ft						
26 ft						
8 m						
27 ft						
28 ft						
29 ft						
9 m						

Wildcat Dynamic Cone Log – Prevost-1

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-1

2935-064-01 Date Exported: 11/10/2020

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.18.20
DATE COMPLETED: 8.18.20

HOLE #: Prevost-2
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 ft	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 4 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 5 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	2	7.7	••	2	VERY LOOSE	SOFT
- 6 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 m	3	11.6	•••	3	VERY LOOSE	SOFT
- 7 ft	2	6.8	•	1	VERY LOOSE	VERY SOFT
-	1	3.4		0	VERY LOOSE	VERY SOFT
-	2	6.8	•	1	VERY LOOSE	VERY SOFT
- 8 ft	2	6.8	•	1	VERY LOOSE	VERY SOFT
-	3	10.3	••	2	VERY LOOSE	SOFT
-	4	13.7	•••	3	VERY LOOSE	SOFT
- 9 ft	4	13.7	•••	3	VERY LOOSE	SOFT
-	3	10.3	••	2	VERY LOOSE	SOFT
-	2	6.8	•	1	VERY LOOSE	VERY SOFT
- 3 m 10 ft	2	6.8	•	1	VERY LOOSE	VERY SOFT
-	8	24.5	•••••••	6	LOOSE	MEDIUM STIFF
-	11	33.7	•••••••••	9	LOOSE	STIFF
-	9	27.5	•••••••	7	LOOSE	MEDIUM STIFF
- 11 ft	12	36.7	••••••••••	10	LOOSE	STIFF
-	14	42.8	••••••••••••	12	MEDIUM DENSE	STIFF
-	14	42.8	••••••••••••	12	MEDIUM DENSE	STIFF
- 12 ft	15	45.9	•••••••••••••	13	MEDIUM DENSE	STIFF
-	12	36.7	••••••••••	10	LOOSE	STIFF
-	13	39.8	•••••••••••	11	MEDIUM DENSE	STIFF
- 4 m 13 ft	4	12.2	•••	3	VERY LOOSE	SOFT

Wildcat Dynamic Cone Log – Prevost-2

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-2

2935-064-01 Date Exported: 11/10/2020

HOLE #: Prevost-2 **WILDCAT DYNAMIC CONE LOG** Page 2 of 2

PROJECT: Stuart Island State Park Improvements PROJECT NUMBER: 2935-064-01

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
	8	22.2	••••••	6	LOOSE	MEDIUM STIFF
	8	22.2	••••••	6	LOOSE	MEDIUM STIFF
14 ft	12	33.2	•••••••••	9	LOOSE	STIFF
	10	27.7	••••••••	7	LOOSE	MEDIUM STIFF
	6	16.6	••••	4	VERY LOOSE	SOFT
15 ft	5	13.9	••••	3	VERY LOOSE	SOFT
	11	30.5	••••••••	8	LOOSE	MEDIUM STIFF
	8	22.2	••••••	6	LOOSE	MEDIUM STIFF
16 ft	13	36.0	•••••••••	10	LOOSE	STIFF
5 m	13	36.0	•••••••••	10	LOOSE	STIFF
	16	40.6	••••••••••	11	MEDIUM DENSE	STIFF
17 ft	21	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
	21	53.3	••••••••••••••	15	MEDIUM DENSE	STIFF
	50	127.0	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
18 ft	50	127.0	••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
19 ft						
6 m						
20 ft						
21 ft						
22 ft						
7 m 23 ft						
24 ft						
25 ft						
26 ft						
8 m						
27 ft						
28 ft						
29 ft						
9 m						

Wildcat Dynamic Cone Log – Prevost-2

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-2

2935-064-01 Date Exported: 11/10/2020

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.18.20
DATE COMPLETED: 8.18.20

HOLE #: Prevost-3
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 ft	2	8.9	••	2	VERY LOOSE	SOFT
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 ft	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 4 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	1	3.9	•	1	VERY LOOSE	VERY SOFT
-	1	3.9	•	1	VERY LOOSE	VERY SOFT
- 5 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 6 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 m	0	0.0		0	VERY LOOSE	VERY SOFT
- 7 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	6	20.5	•••••	5	LOOSE	MEDIUM STIFF
-	3	10.3	••	2	VERY LOOSE	SOFT
- 8 ft	4	13.7	•••	3	VERY LOOSE	SOFT
-	4	13.7	•••	3	VERY LOOSE	SOFT
-	4	13.7	•••	3	VERY LOOSE	SOFT
- 9 ft	5	17.1	••••	4	VERY LOOSE	SOFT
-	5	17.1	••••	4	VERY LOOSE	SOFT
-	4	13.7	•••	3	VERY LOOSE	SOFT
- 3 m 10 ft	3	10.3	••	2	VERY LOOSE	SOFT
-	4	12.2	•••	3	VERY LOOSE	SOFT
-	5	15.3	••••	4	VERY LOOSE	SOFT
-	6	18.4	•••••	5	LOOSE	MEDIUM STIFF
- 11 ft	5	15.3	••••	4	VERY LOOSE	SOFT
-	5	15.3	••••	4	VERY LOOSE	SOFT
-	7	21.4	••••••	6	LOOSE	MEDIUM STIFF
- 12 ft	7	21.4	••••••	6	LOOSE	MEDIUM STIFF
-	9	27.5	•••••••	7	LOOSE	MEDIUM STIFF
-	9	27.5	•••••••	7	LOOSE	MEDIUM STIFF
- 4 m 13 ft	6	18.4	•••••	5	LOOSE	MEDIUM STIFF

2935-064-01 Date Exported: 11/10/2020

Wildcat Dynamic Cone Log – Prevost-3

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-3

HOLE #: Prevost-3 **WILDCAT DYNAMIC CONE LOG** Page 2 of 2

PROJECT: Stuart Island State Park Improvements PROJECT NUMBER: 2935-064-01

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
	5	13.9	••••	3	VERY LOOSE	SOFT
	5	13.9	••••	3	VERY LOOSE	SOFT
14 ft	8	22.2	••••••	6	LOOSE	MEDIUM STIFF
	4	11.1	•••	3	VERY LOOSE	SOFT
	6	16.6	••••	4	VERY LOOSE	SOFT
15 ft	7	19.4	•••••	5	LOOSE	MEDIUM STIFF
	9	24.9	•••••••	7	LOOSE	MEDIUM STIFF
	16	44.3	••••••••••••	12	MEDIUM DENSE	STIFF
16 ft	20	55.4	••••••••••••••••	15	MEDIUM DENSE	STIFF
5 m	20	55.4	••••••••••••••••	15	MEDIUM DENSE	STIFF
	18	45.7	••••••••••••••	13	MEDIUM DENSE	STIFF
17 ft	36	91.4	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
18 ft						
19 ft						
6 m						
20 ft						
21 ft						
22 ft						
7 m 23 ft						
24 ft						
25 ft						
26 ft						
8 m						
27 ft						
28 ft						
29 ft						
9 m						

Wildcat Dynamic Cone Log – Prevost-3

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-3

2935-064-01 Date Exported: 11/10/2020

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.18.20
DATE COMPLETED: 8.18.20

HOLE #: Reid - 1
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
- 1 ft	2	8.9	••	2	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
- 2 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
-	2	8.9	••	2	VERY LOOSE	SOFT
- 3 ft	1	4.4	•	1	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	2	7.7	••	2	VERY LOOSE	SOFT
- 4 ft	2	7.7	••	2	VERY LOOSE	SOFT
-	2	7.7	••	2	VERY LOOSE	SOFT
-	2	7.7	••	2	VERY LOOSE	SOFT
- 5 ft	9	34.7	•••••••••	9	LOOSE	STIFF
-	13	50.2	••••••••••••	14	MEDIUM DENSE	STIFF
-	19	73.3	••••••••••••••••••	20	MEDIUM DENSE	VERY STIFF
- 6 ft	18	69.5	•••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
-	22	84.9	••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
- 2 m	25	96.5	•••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
- 7 ft	33	112.9	••••••••••••••••••••••••••••	25+	DENSE	HARD
-	28	95.8	•••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	24	82.1	•••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
- 8 ft	28	95.8	•••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	29	99.2	••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	43	147.1	••	25+	DENSE	HARD
- 9 ft	35	119.7	••••••••••••••••••••••••••••	25+	DENSE	HARD
-	28	95.8	•••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
-	42	143.6	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 3 m 10 ft	43	147.1	••	25+	DENSE	HARD
-	38	116.3	••••••••••••••••••••••••••••	25+	DENSE	HARD
-	48	146.9	••	25+	DENSE	HARD
-	45	137.7	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
- 11 ft	46	140.8	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
-	2	6.1	•	1	VERY LOOSE	VERY SOFT
-	9	27.5	•••••••	7	LOOSE	MEDIUM STIFF
- 12 ft	13	39.8	••••••••••••	11	MEDIUM DENSE	STIFF
-	19	58.1	••••••••••••••••	16	MEDIUM DENSE	VERY STIFF
-	18	55.1	••••••••••••••••	15	MEDIUM DENSE	STIFF
- 4 m 13 ft	22	67.3	••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF

Wildcat Dynamic Cone Log – Reid-1

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-4

2935-064-01 Date Exported: 11/10/2020

HOLE #: Reid - 1 **WILDCAT DYNAMIC CONE LOG** Page 2 of 2

PROJECT: Stuart Island State Park Improvements PROJECT NUMBER: 2935-064-01

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
	25	69.3	••••••••••••••••••••	19	MEDIUM DENSE	VERY STIFF
	33	91.4	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
14 ft	28	77.6	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
	24	66.5	•••••••••••••••••••	18	MEDIUM DENSE	VERY STIFF
	28	77.6	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
15 ft	29	80.3	•••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
	43	119.1	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
	35	97.0	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
16 ft	28	77.6	••••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
5 m	42	116.3	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
	43	109.2	••••••••••••••••••••••••••••••	25+	DENSE	HARD
17 ft	38	96.5	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
	48	121.9	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
	45	114.3	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
18 ft	46	116.8	••••••••••••••••••••••••••••••••	25+	DENSE	HARD
19 ft						
6 m						
20 ft						
21 ft						
22 ft						
7 m 23 ft						
24 ft						
25 ft						
26 ft						
8 m						
27 ft						
28 ft						
29 ft						
9 m						

Wildcat Dynamic Cone Log – Reid-1

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-4

2935-064-01 Date Exported: 11/10/2020

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.18.20
DATE COMPLETED: 8.18.20

HOLE #: Reid - 2
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
1 ft	3	13.3	•••	3	VERY LOOSE	SOFT
	2	8.9	••	2	VERY LOOSE	SOFT
	0	0.0		0	VERY LOOSE	VERY SOFT
2 ft	1	4.4	•	1	VERY LOOSE	VERY SOFT
	1	4.4	•	1	VERY LOOSE	VERY SOFT
	2	8.9	••	2	VERY LOOSE	SOFT
3 ft	2	8.9	••	2	VERY LOOSE	SOFT
1 m	1	4.4	•	1	VERY LOOSE	VERY SOFT
	4	15.4	••••	4	VERY LOOSE	SOFT
4 ft	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
	4	15.4	••••	4	VERY LOOSE	SOFT
	10	38.6	••••••••••	11	MEDIUM DENSE	STIFF
5 ft	14	54.0	••••••••••••••	15	MEDIUM DENSE	STIFF
	15	57.9	••••••••••••••	16	MEDIUM DENSE	VERY STIFF
	20	77.2	••••••••••••••••••••	22	MEDIUM DENSE	VERY STIFF
6 ft	21	81.1	•••••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
	28	108.1	••••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
2 m	25	96.5	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
7 ft	27	92.3	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
	25	85.5	•••••••••••••••••••••••	24	MEDIUM DENSE	VERY STIFF
	26	88.9	•••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
8 ft	29	99.2	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
	26	88.9	•••••••••••••••••••••••	25	MEDIUM DENSE	VERY STIFF
	28	95.8	•••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
9 ft	41	140.2	••••••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
	31	106.0	••••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
	30	102.6	••••••••••••••••••••••••••	25+	MEDIUM DENSE	VERY STIFF
3 m 10 ft	34	116.3	••••••••••••••••••••••••••••••	25+	DENSE	HARD
	44	134.6	••••••••••••••••••••••••••••••••••	25+	DENSE	HARD
	53	162.2	••	25+	DENSE	HARD
11 ft						
12 ft						
4 m 13 ft						

Wildcat Dynamic Cone Log – Reid-2

Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-5

2935-064-01 Date Exported: 11/10/2020

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-064-01
DATE STARTED: 8.19.20
DATE COMPLETED: 8.19.20

HOLE #: Reid - 3B
CREW: NBD/MWR
PROJECT: Stuart Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION:
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
	8	35.5	•••••••••	10	LOOSE	STIFF
	5	22.2	••••••	6	LOOSE	MEDIUM STIFF
1 ft	2	8.9	••	2	VERY LOOSE	SOFT
	2	8.9	••	2	VERY LOOSE	SOFT
	2	8.9	••	2	VERY LOOSE	SOFT
2 ft	1	4.4	•	1	VERY LOOSE	VERY SOFT
	2	8.9	••	2	VERY LOOSE	SOFT
	3	13.3	•••	3	VERY LOOSE	SOFT
3 ft	3	13.3	•••	3	VERY LOOSE	SOFT
1 m	4	17.8	•••••	5	LOOSE	MEDIUM STIFF
	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
4 ft	16	61.8	••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
	21	81.1	••••••••••••••••••••••	23	MEDIUM DENSE	VERY STIFF
	7	27.0	•••••••	7	LOOSE	MEDIUM STIFF
5 ft	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
	8	30.9	••••••••	8	LOOSE	MEDIUM STIFF
	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
6 ft	11	42.5	•••••••••••	12	MEDIUM DENSE	STIFF
	12	46.3	••••••••••••	13	MEDIUM DENSE	STIFF
2 m	6	23.2	••••••	6	LOOSE	MEDIUM STIFF
7 ft	4	13.7	•••	3	VERY LOOSE	SOFT
	2	6.8	•	1	VERY LOOSE	VERY SOFT
	4	13.7	•••	3	VERY LOOSE	SOFT
8 ft	3	10.3	••	2	VERY LOOSE	SOFT
	5	17.1	••••	4	VERY LOOSE	SOFT
	3	10.3	••	2	VERY LOOSE	SOFT
9 ft	3	10.3	••	2	VERY LOOSE	SOFT
	57	194.9	••	25+	VERY DENSE	HARD
3 m 10 ft						
11 ft						
12 ft						
4 m 13 ft						

Wildcat Dynamic Cone Log – Reid-3

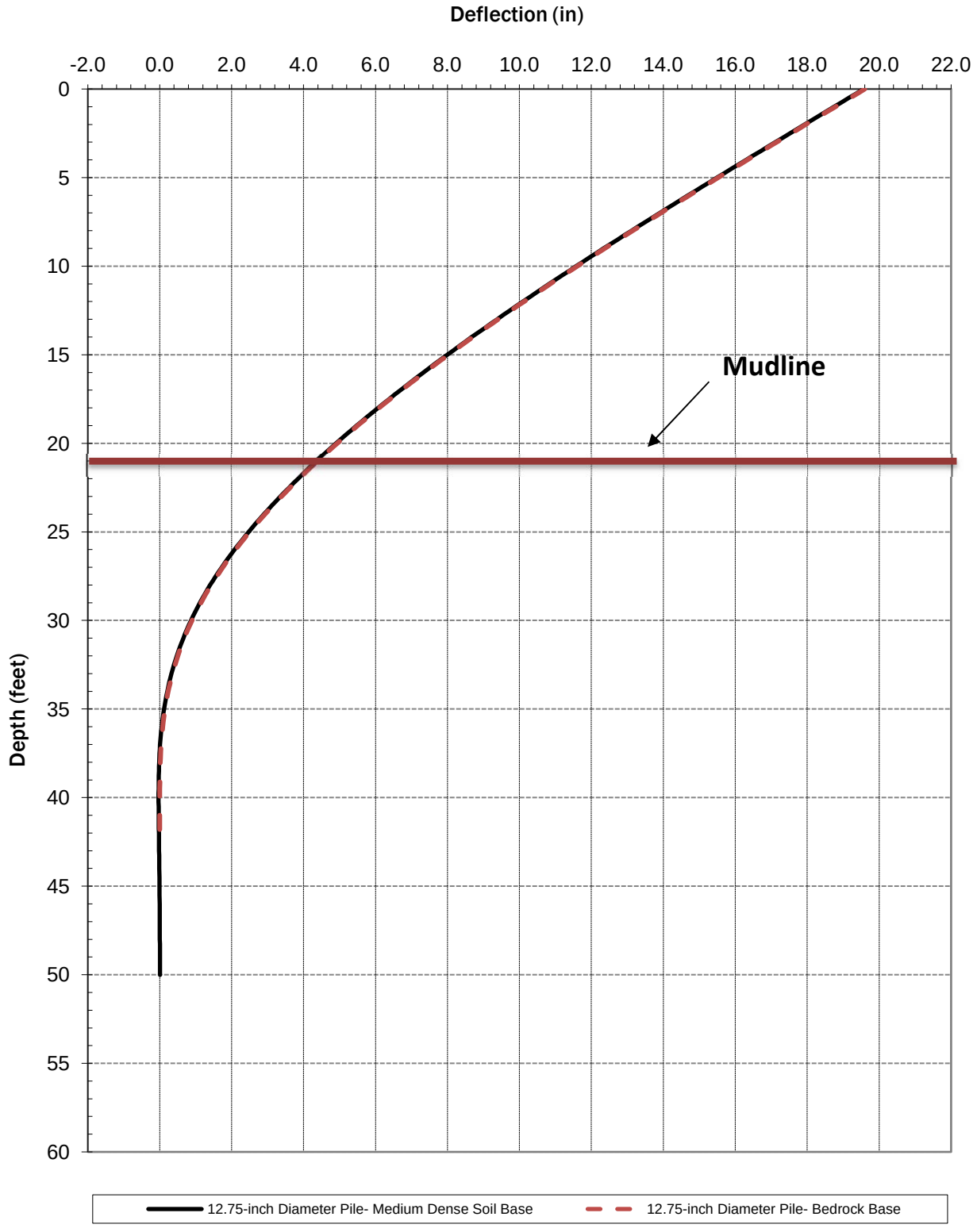
Stuart Island
San Juan County, Washington

GeoEngineers

Figure B-6

2935-064-01 Date Exported: 11/10/2020

APPENDIX C
Prevost Harbor L-Pile Analysis



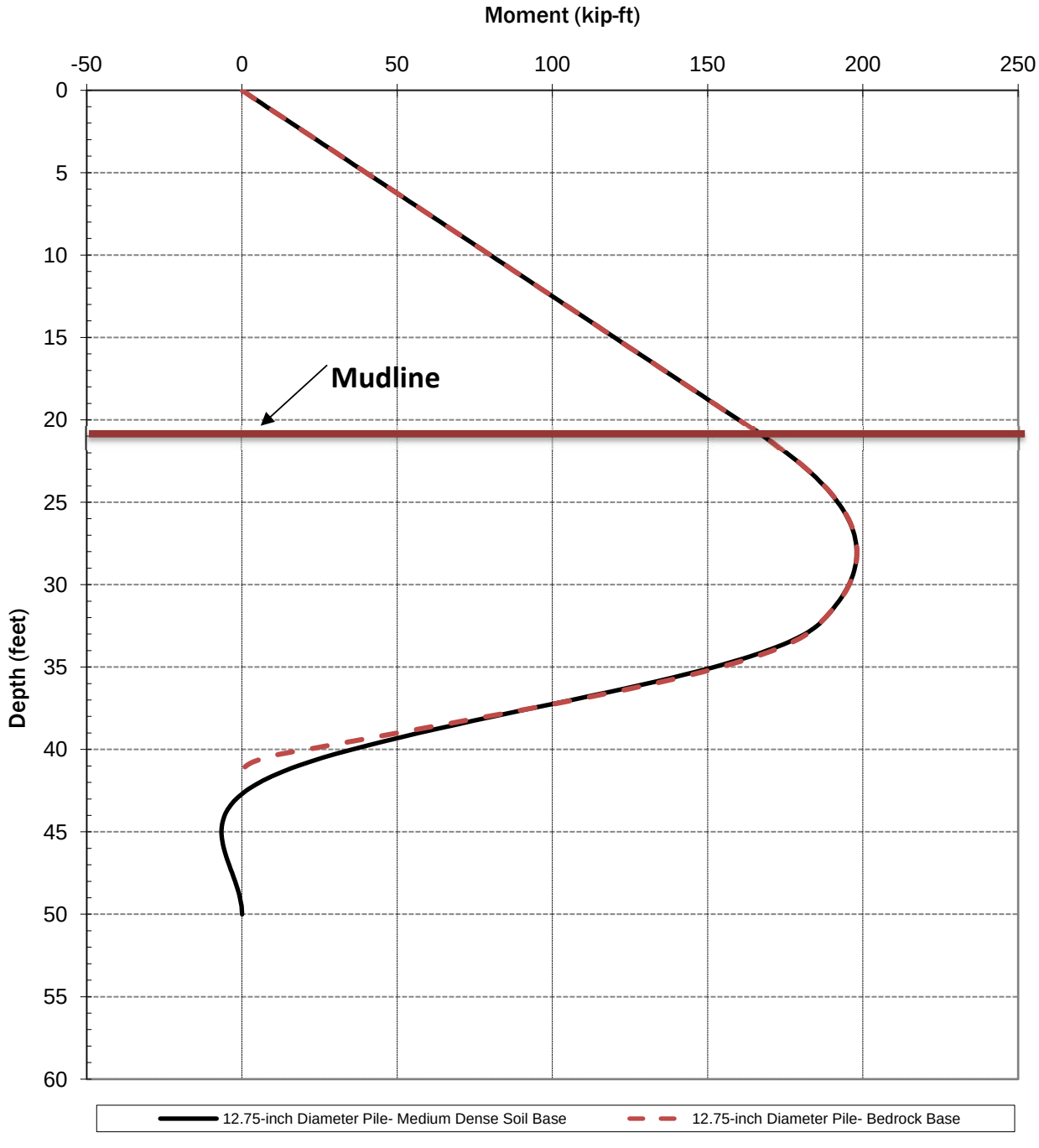
Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Prevost Harbor Float Piles
12.75-inch Diameter Pile, Free Head

Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure C-1



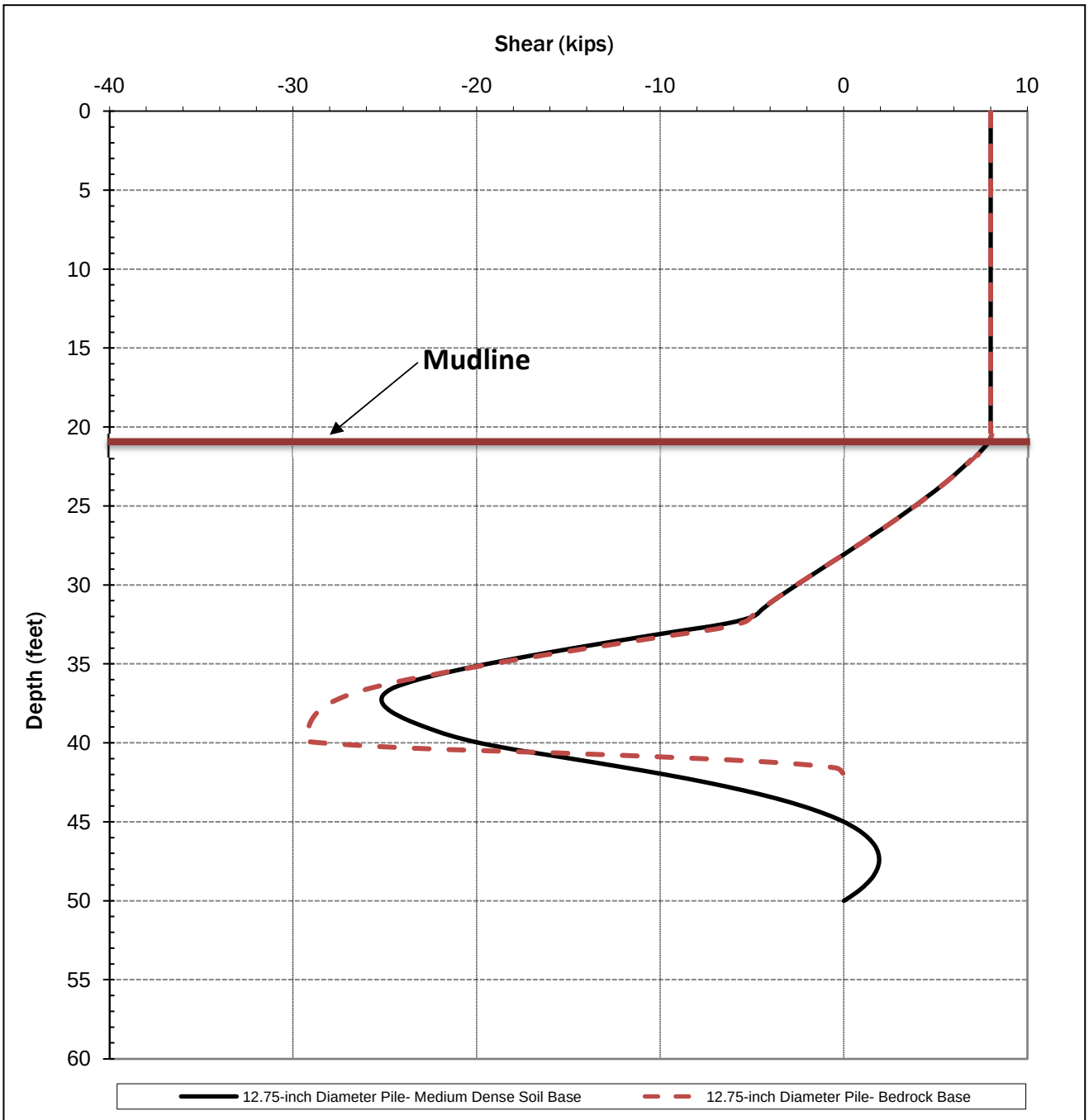
Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Prevost Harbor Float Piles
12.75-inch Diameter Pile, Free Head

Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure C-2

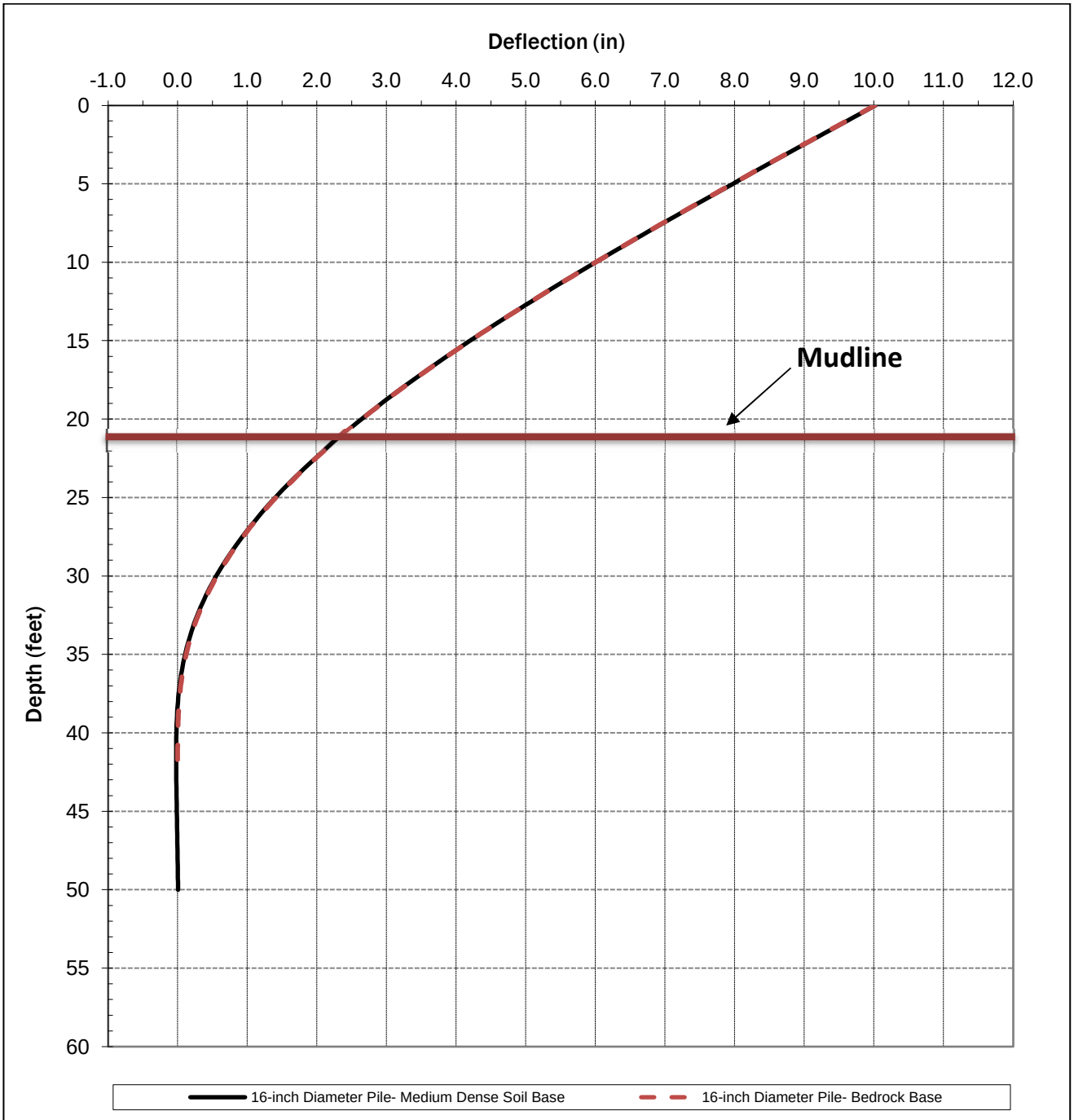


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Prevost Harbor Float Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure C-3

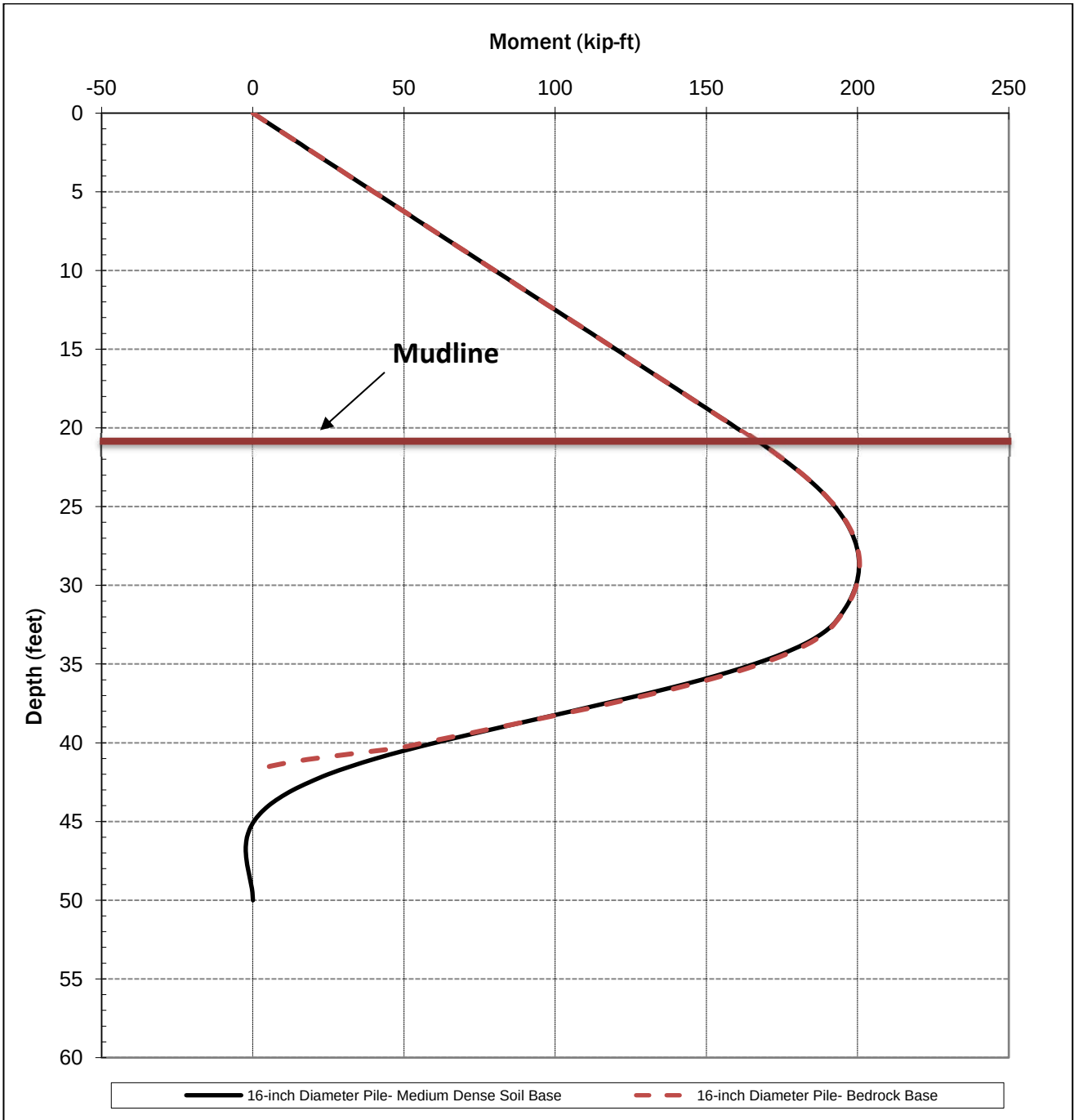


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Prevost Harbor Float Piles
16-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure C-4

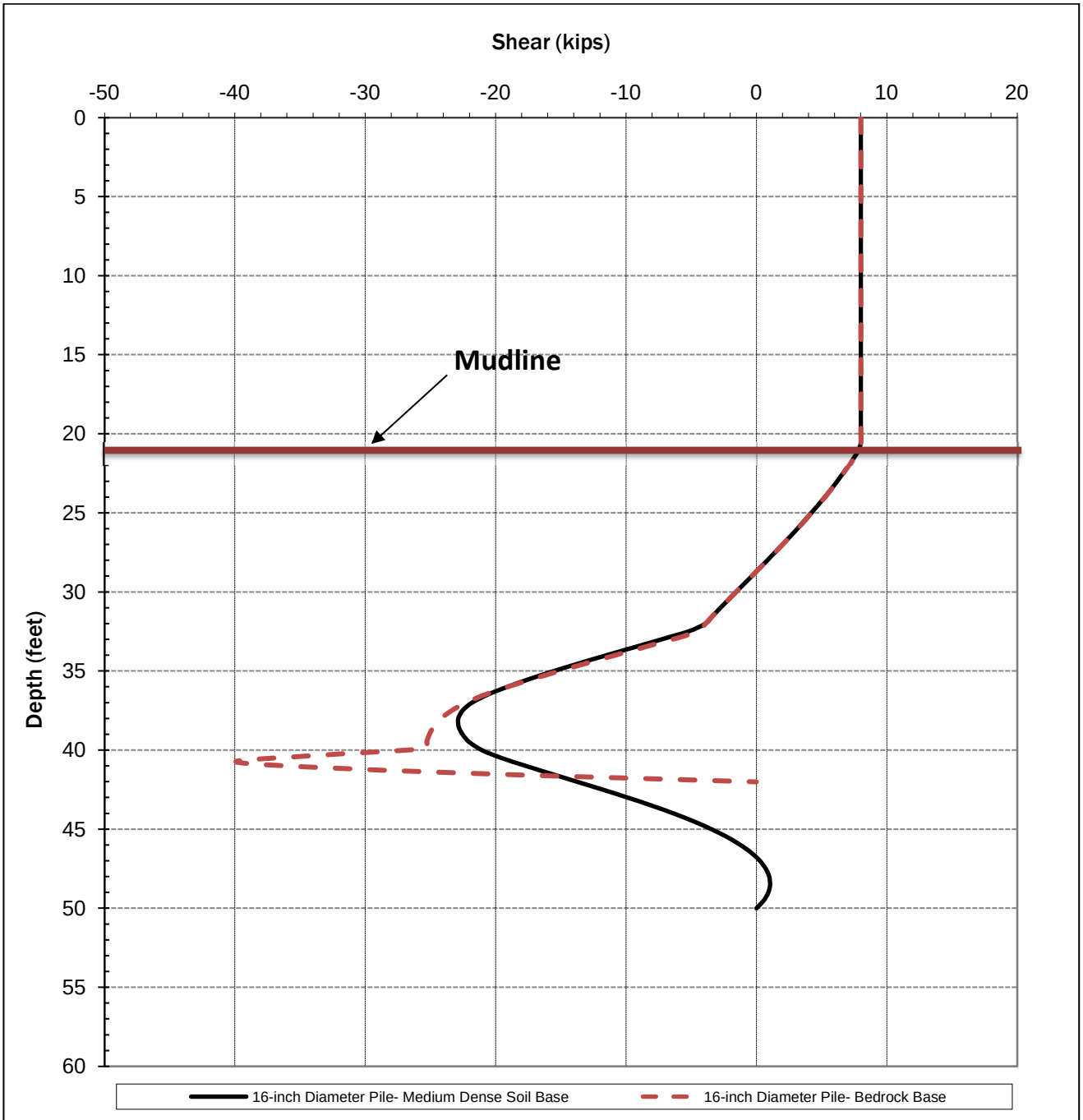


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Prevost Harbor Float Piles
16-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

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Figure C-5

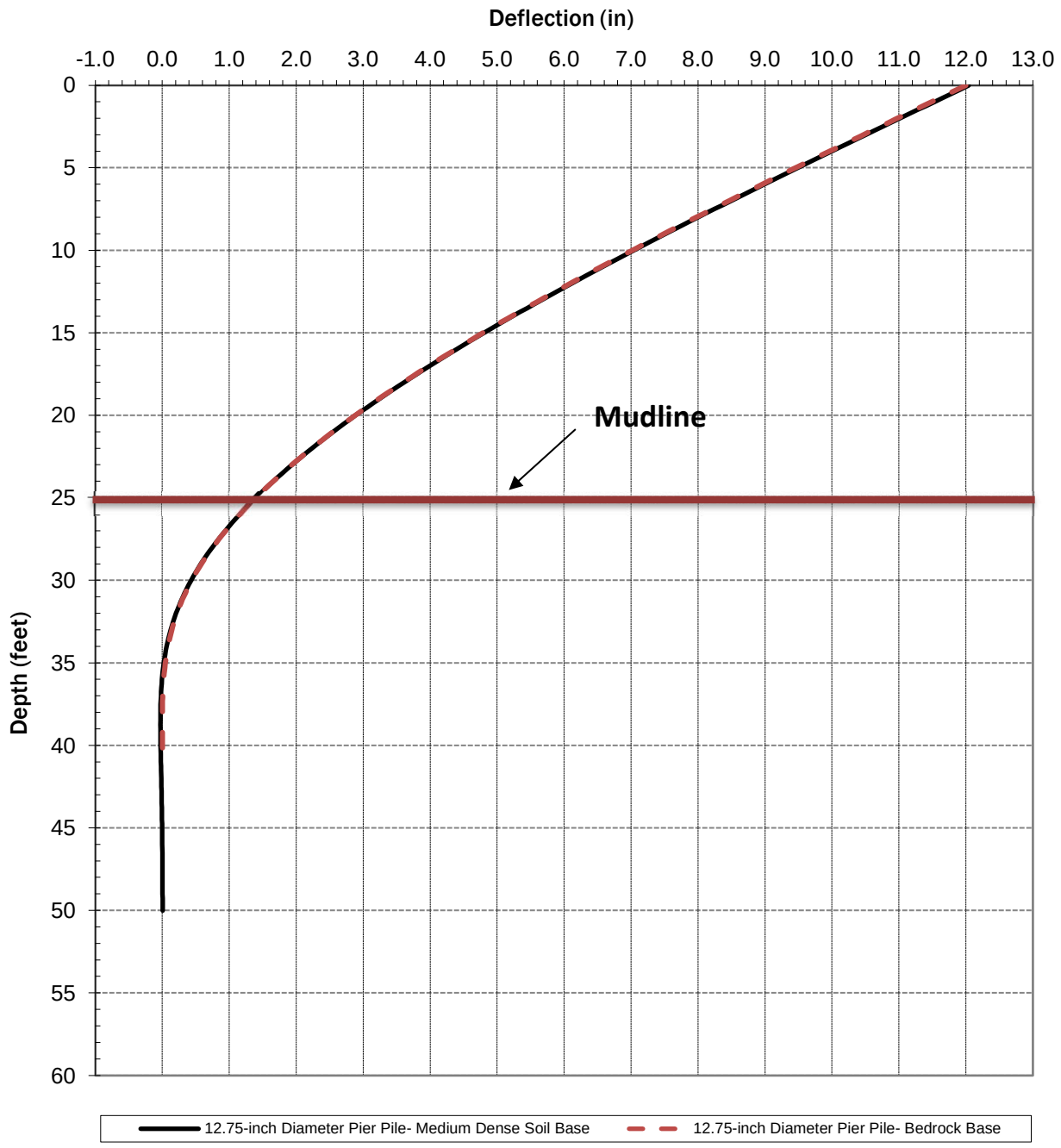


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Prevost Harbor Float Piles
16-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

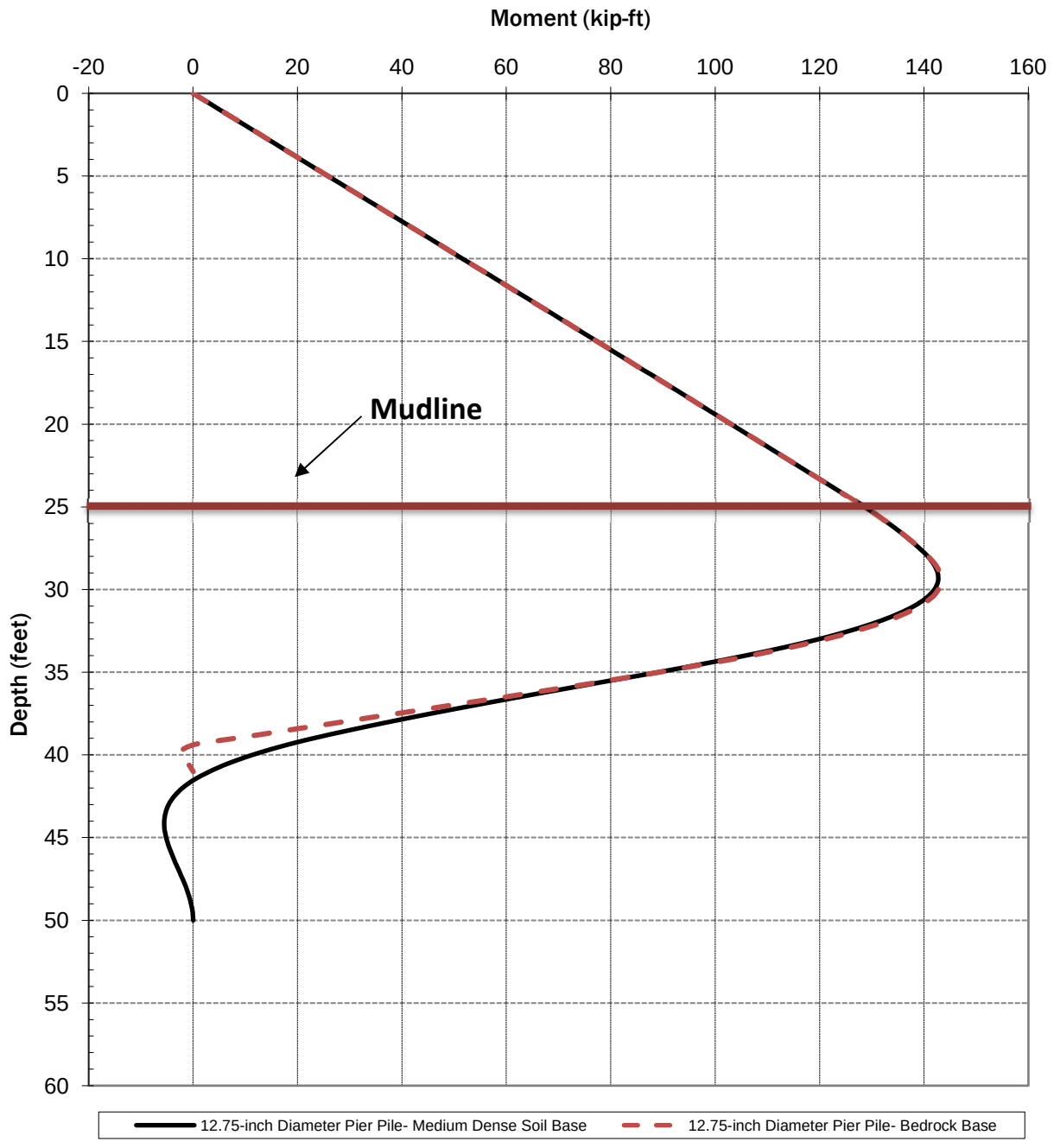
GeoEngineers

Figure C-6



Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Prevost Harbor Pier Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington
GeoEngineers
Figure C-7

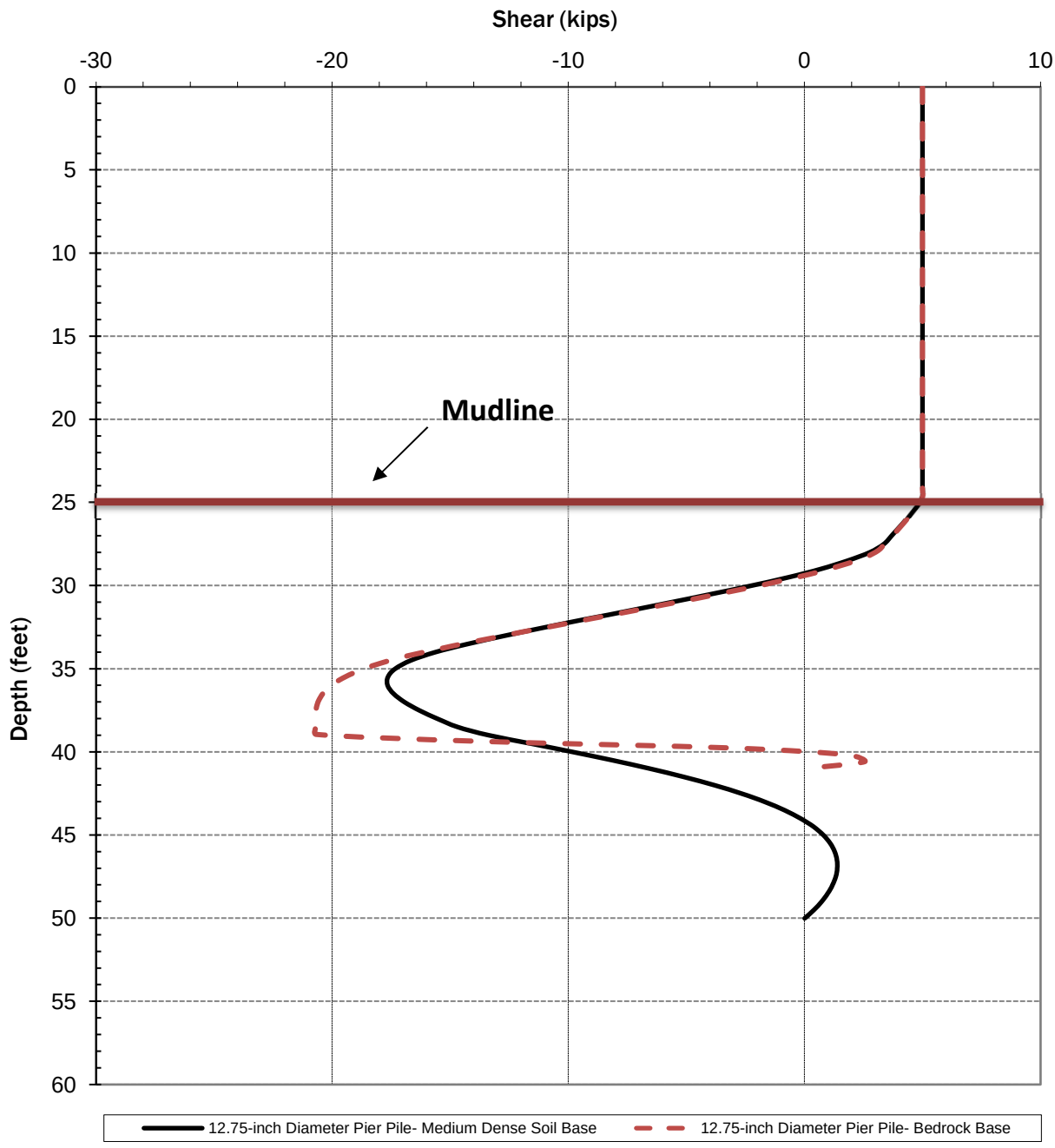


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Prevost Harbor Pier Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

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Figure C-8



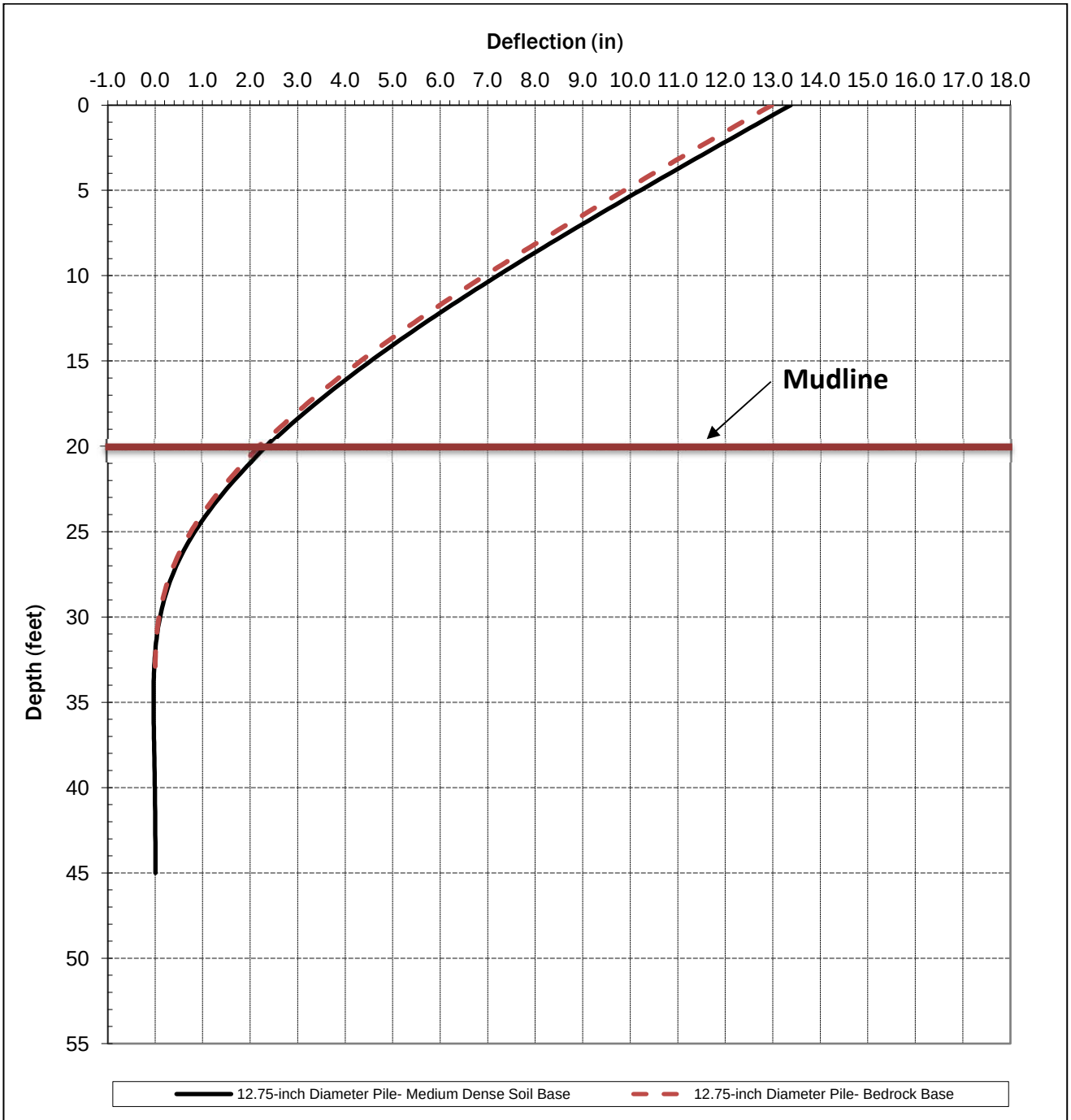
Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Prevost Harbor Pier Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure C-9

APPENDIX D
Reid Harbor L-Pile Analysis

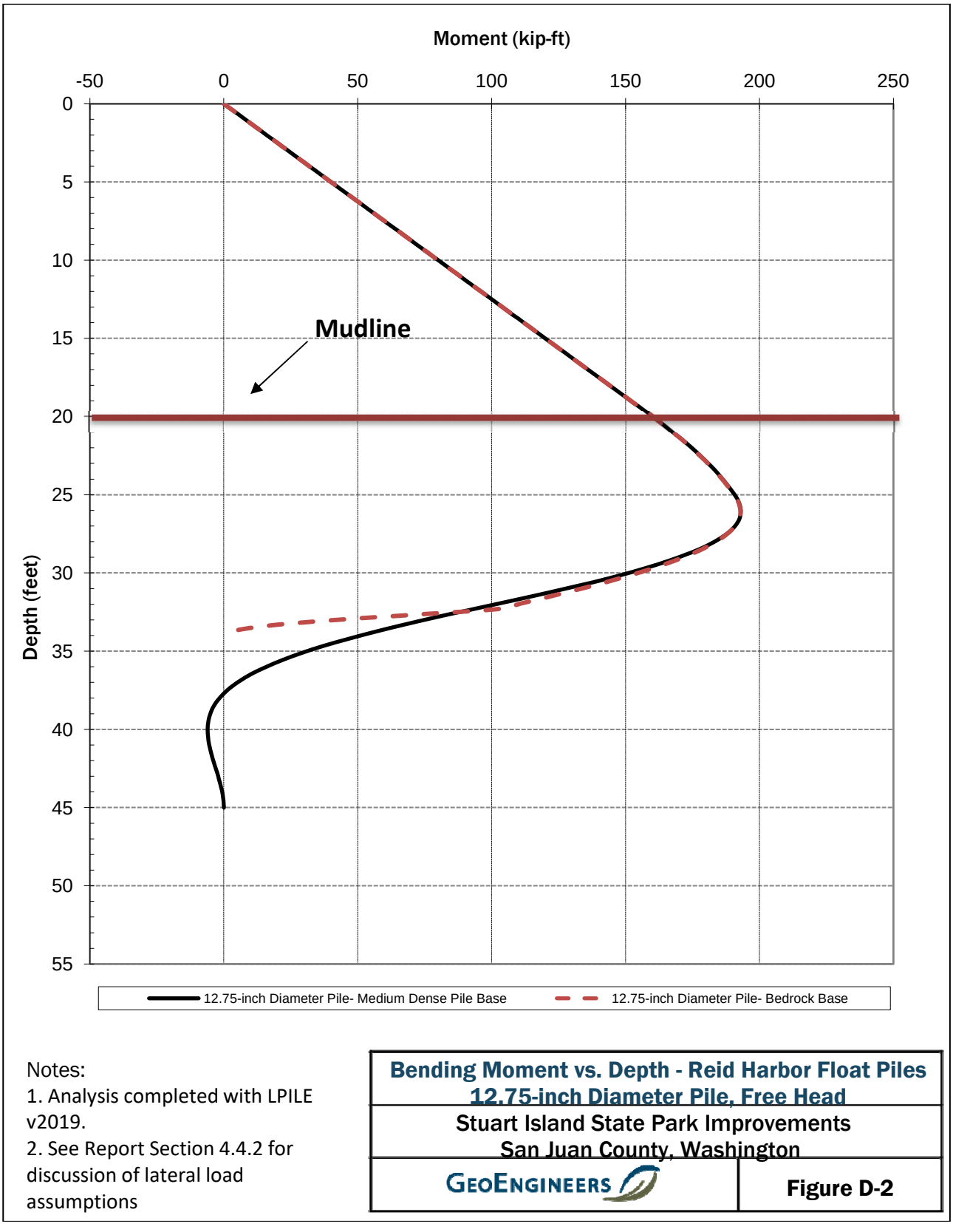


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Reid Harbor Float Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure D-1

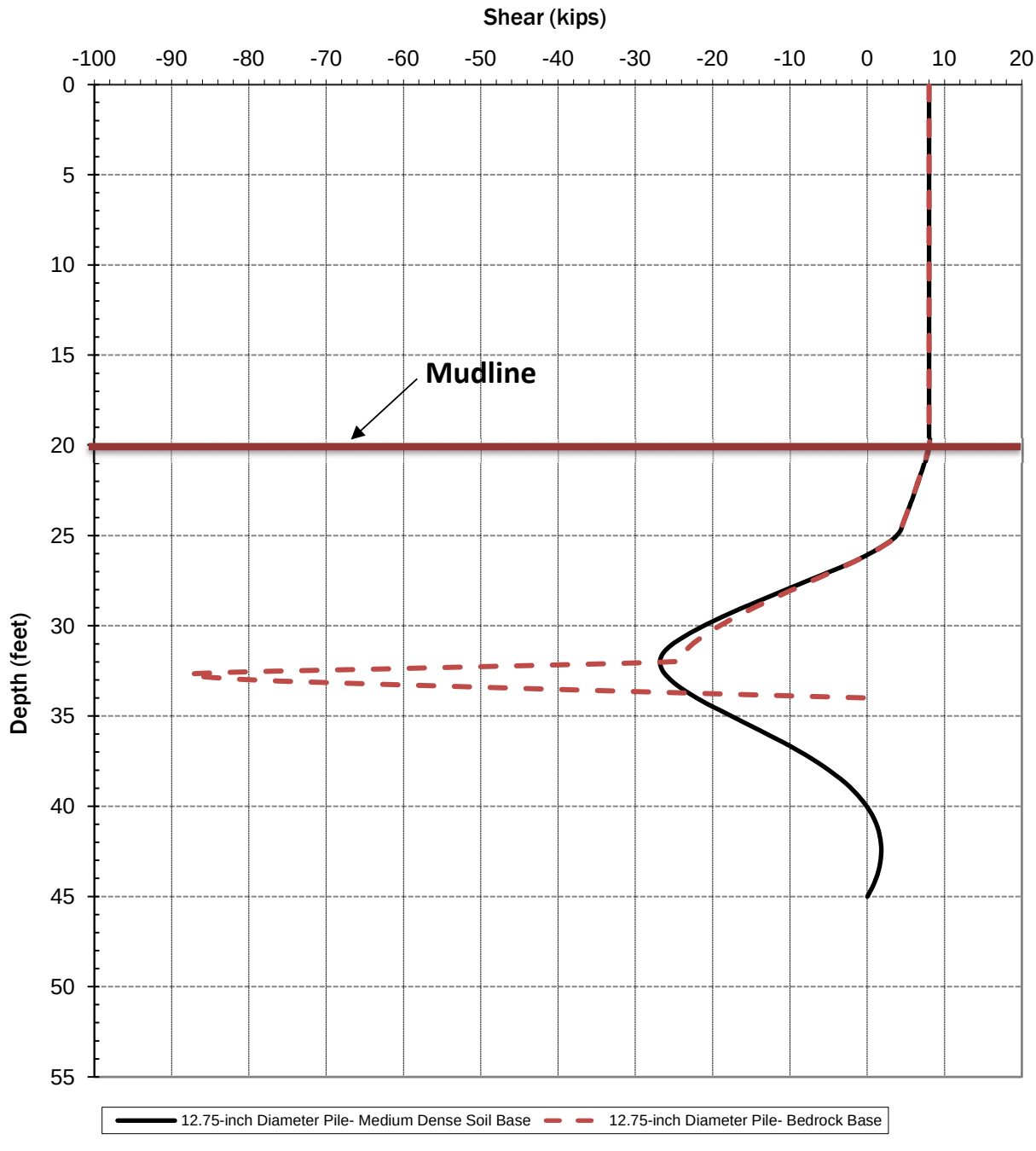


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Reid Harbor Float Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

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Figure D-2

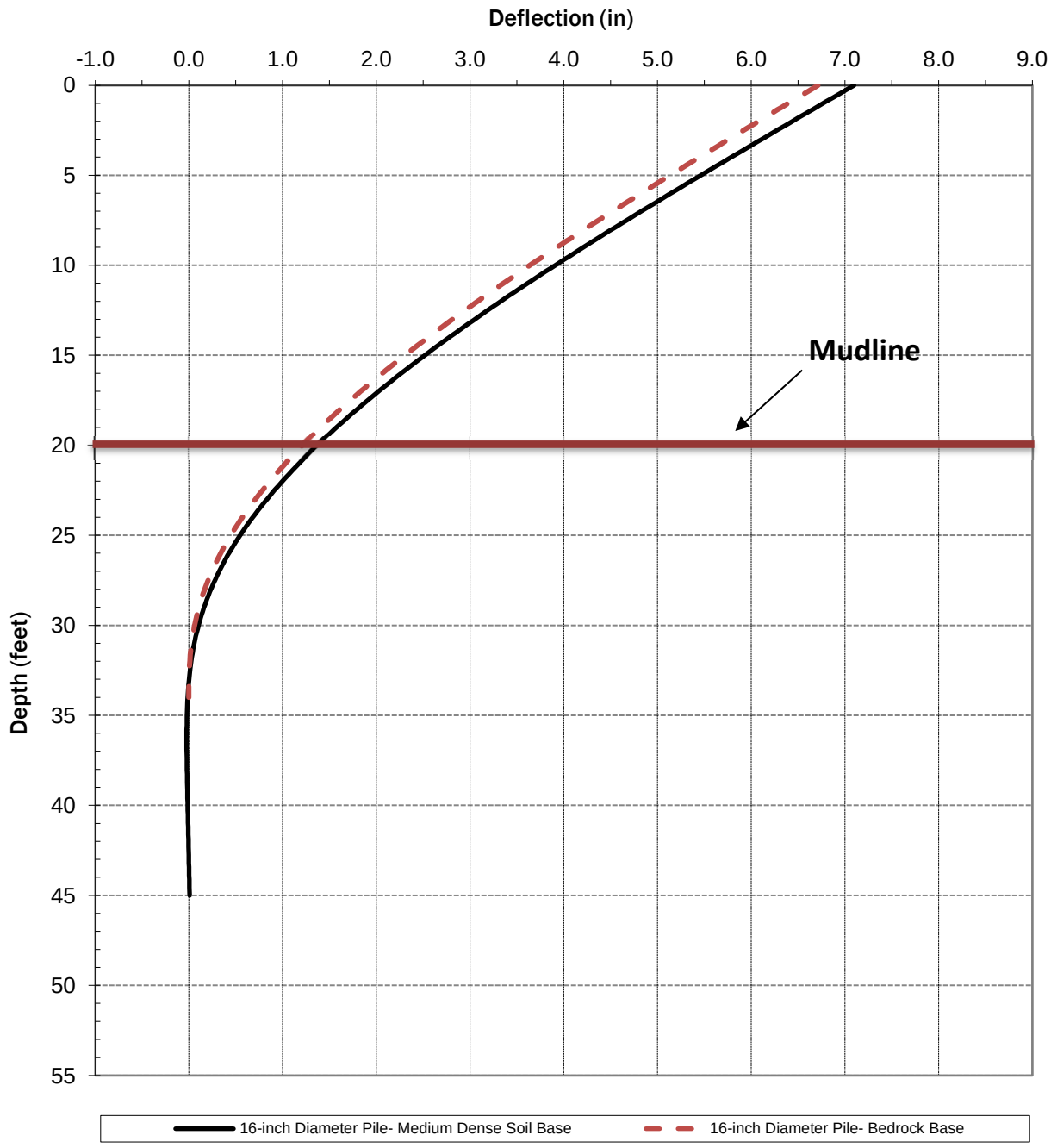


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Reid Harbor Float Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

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Figure D-3

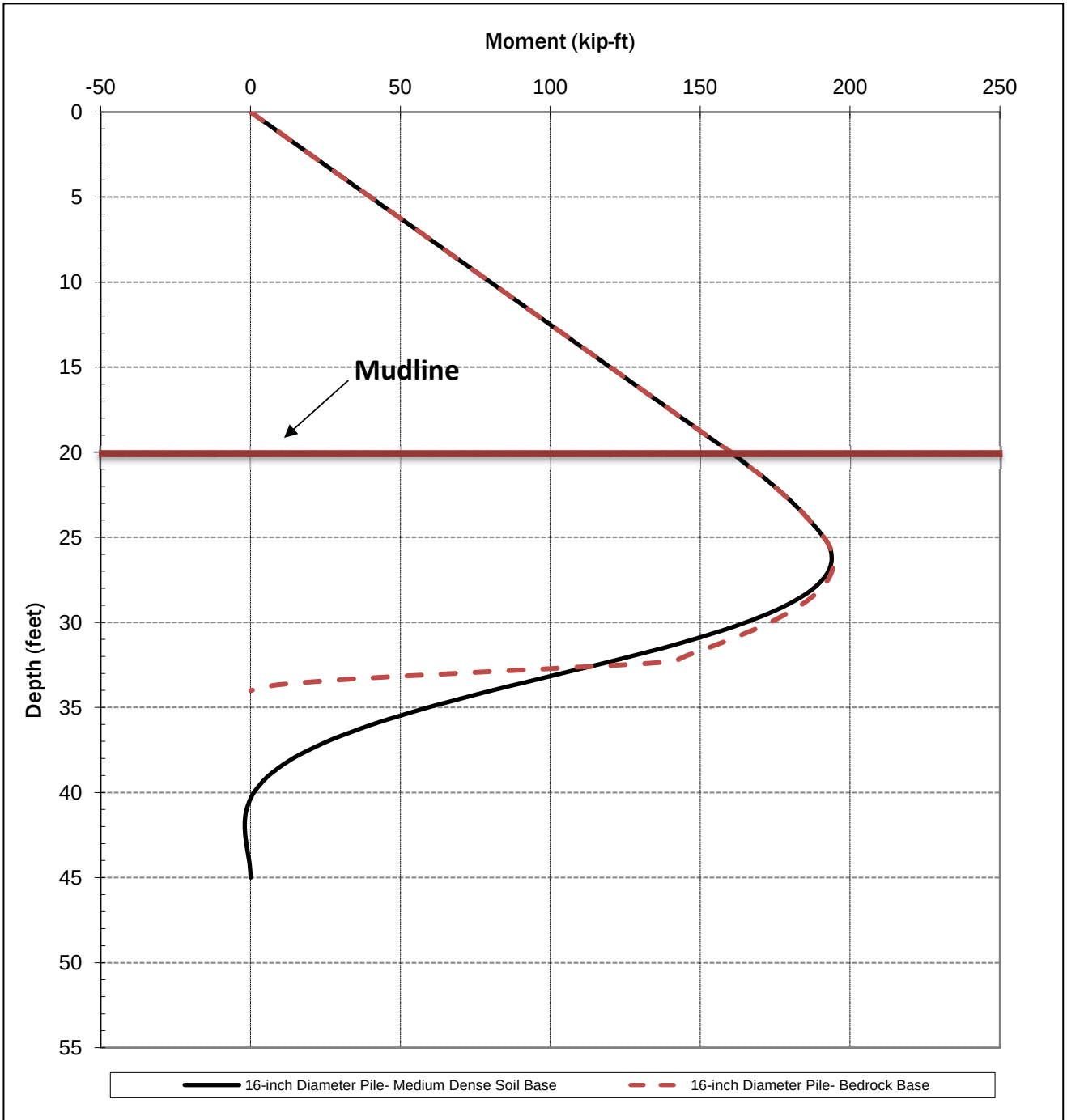


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Reid Harbor Float Piles
16-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure D-4

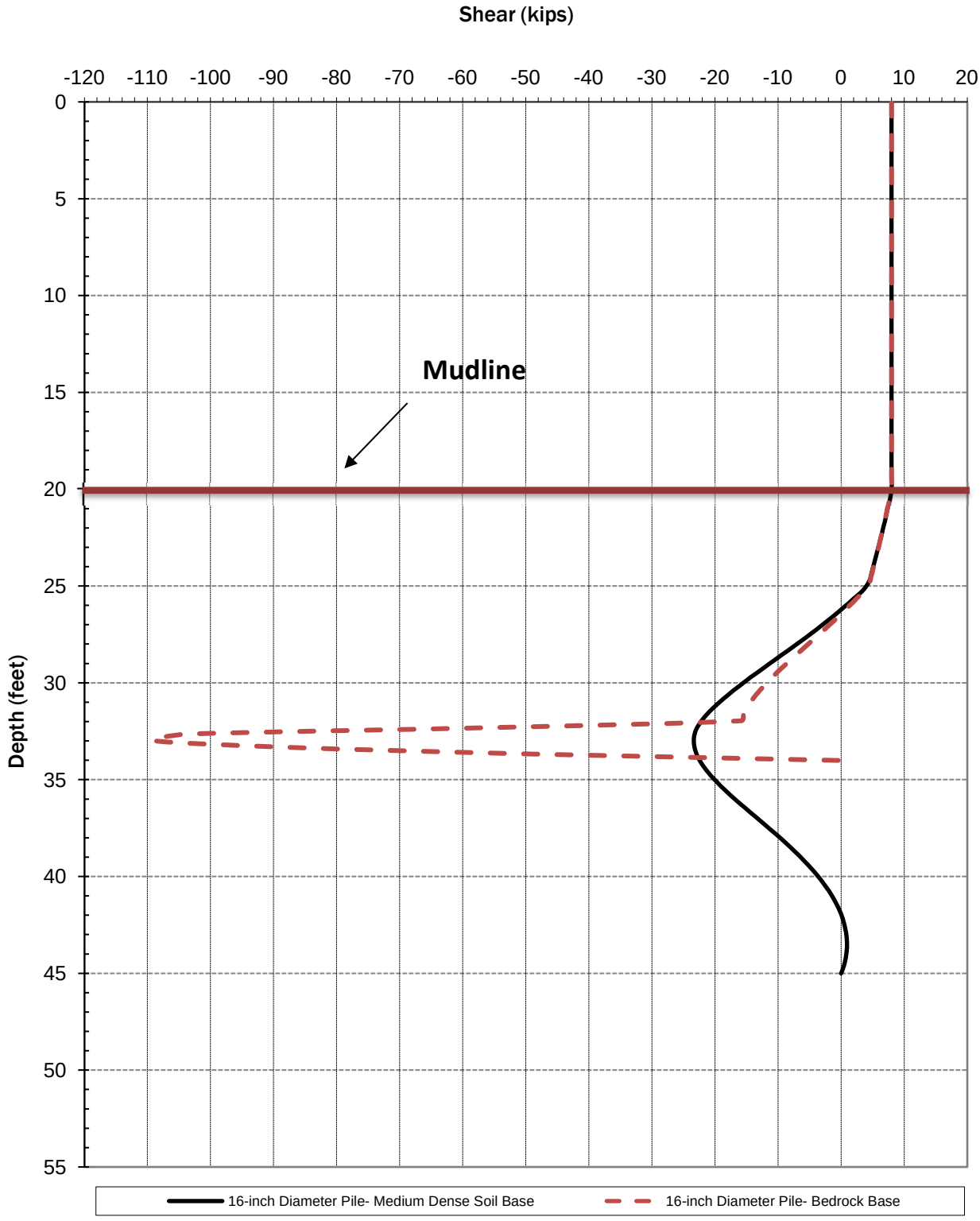


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Reid Harbor Float Piles
16-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

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Figure D-5



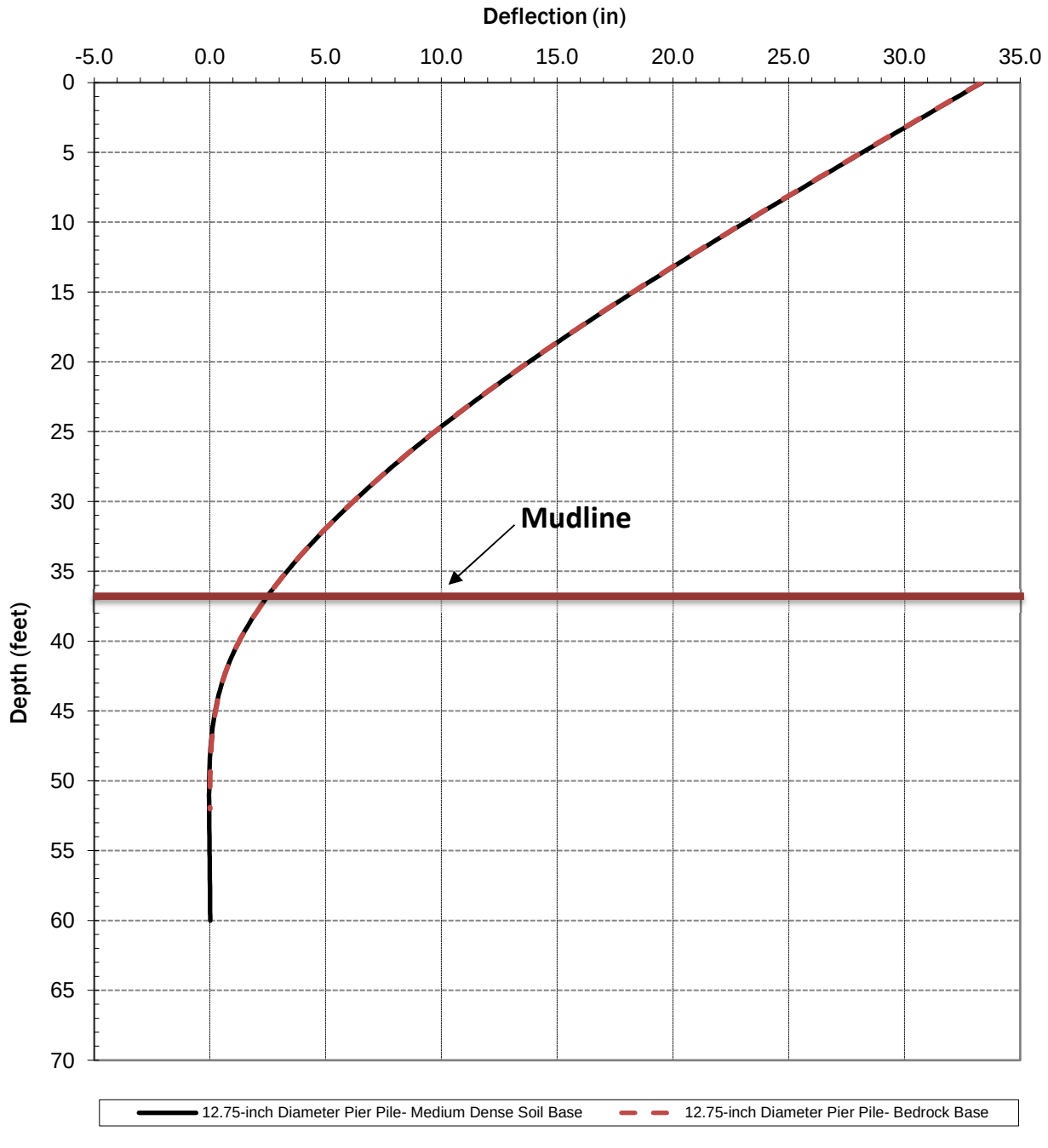
Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Reid Harbor Float Piles
16-inch Diameter Pile, Free Head

Stuart Island State Park Improvements
San Juan County, Washington

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Figure D-6

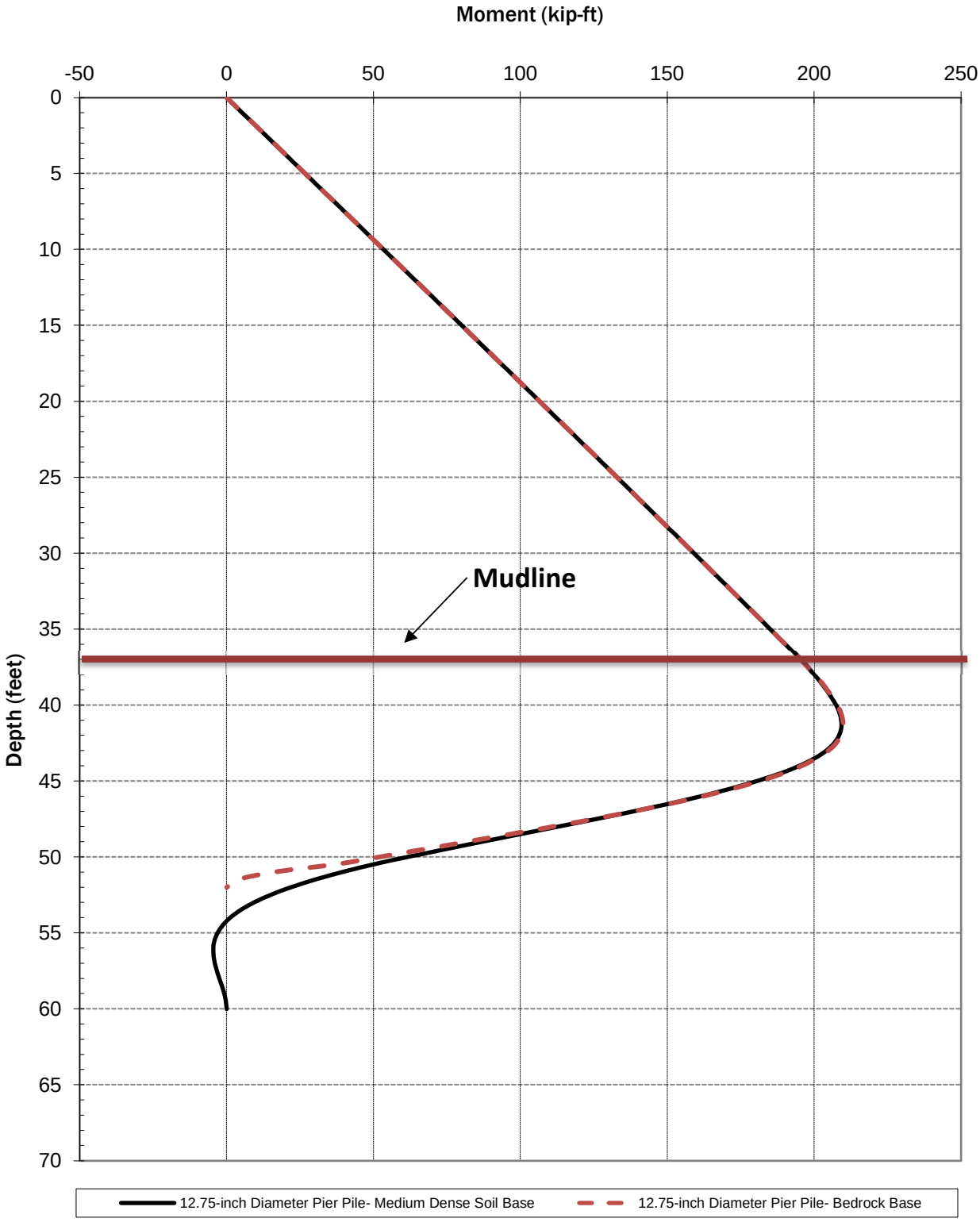


Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Deflection vs. Depth - Reid Harbor Pier Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure D-7



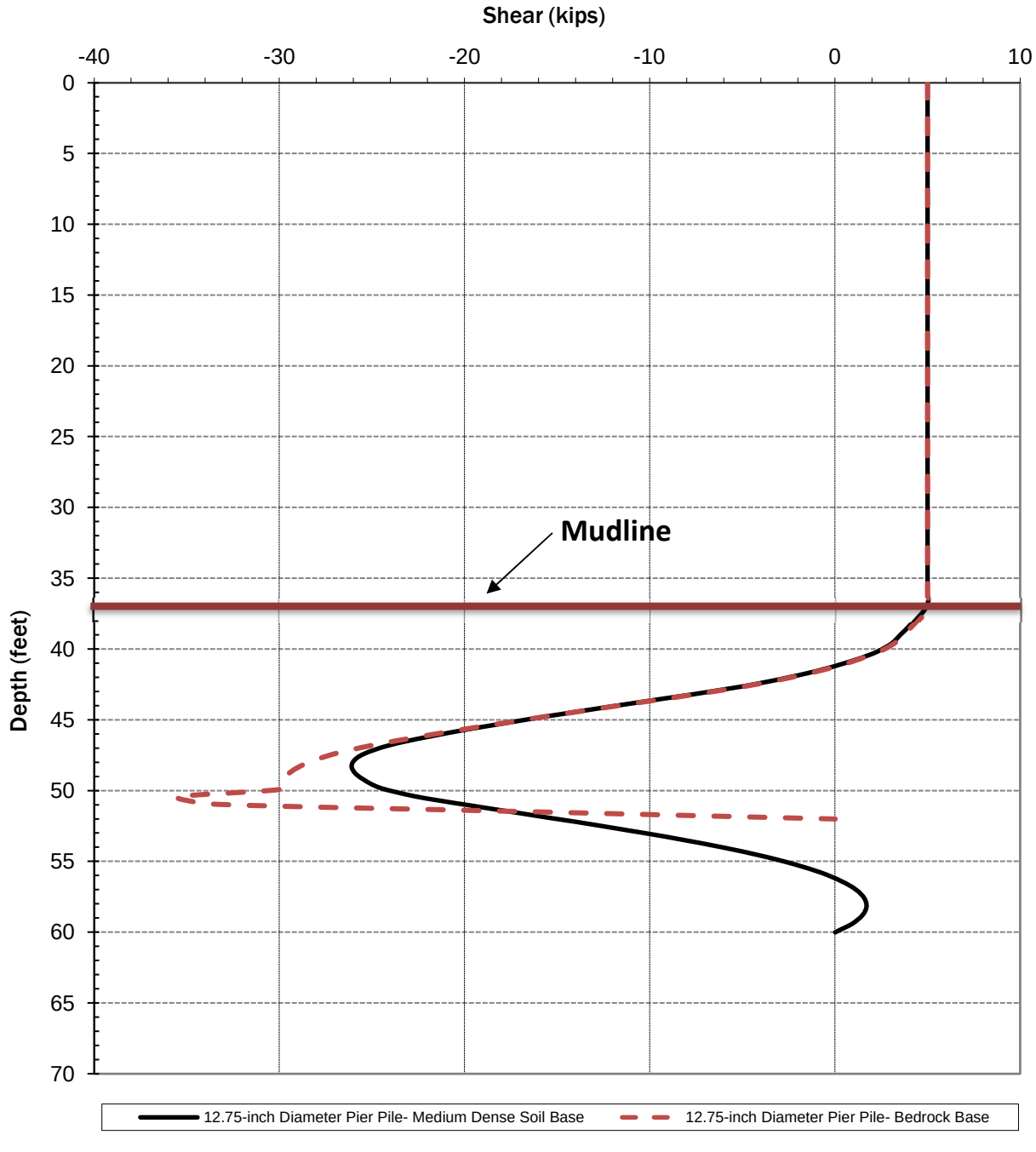
Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Bending Moment vs. Depth - Reid Harbor Pier Piles
12.75-inch Diameter Pile, Free Head

Stuart Island State Park Improvements
San Juan County, Washington

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Figure D-8



Notes:
1. Analysis completed with LPILE v2019.
2. See Report Section 4.4.2 for discussion of lateral load assumptions

Shear vs. Depth - Reid Harbor Pier Piles
12.75-inch Diameter Pile, Free Head
Stuart Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure D-9

APPENDIX E
Report Limitations and Guidelines for Use

APPENDIX E
REPORT LIMITATIONS AND GUIDELINES FOR USE

This appendix provides information to help you manage your risks with respect to the use of this report.

Report Use and Reliance

This report has been prepared for Mott MacDonald, LLC and their authorized agents and regulatory agencies. GeoEngineers structures our services to meet the specific needs of our clients. No party other than Mott MacDonald, LLC. may rely on the product of our services unless we agree to such reliance in advance and in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client dated August 12, 2020 and generally accepted geotechnical practices in this area at the time this report was prepared. Use of this report is not recommended for any purpose or project except the one originally contemplated.

This report should not be applied for any purpose or project except the one originally contemplated. If important changes are made to the project or property after the date of this report, we recommend that GeoEngineers be given the opportunity to review our interpretations and recommendations, and then we can provide written modifications or confirmation, as appropriate.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we used sources that are believed to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.

Subsurface Data

Limited subsurface data was collected at the site. GeoEngineers has relied upon observations of visible geologic materials at the sites and our experience in the performance of our services. It is possible, if not likely, that actual subsurface conditions at the proposed pile locations vary from the conditions assumed in this report. A contingency should be considered for this project for unforeseen subsurface conditions.

Conditions Can Change

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability, or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Professional Judgment

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. By necessity, GeoEngineers uses its professional judgment in arriving at our conclusions and recommendations. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce the risk of misunderstandings regarding the inexact nature of our professional services. Please confer with GeoEngineers if you need to know how these 'Report Limitations and Guidelines for Use' apply to your project or site.

Attachment 17

Geotechnical Engineering Services Report
Sucia Island State Park Improvements

GeoEngineers, Inc.

(Alternate Bid Item A1)

Geotechnical Engineering Services Report

Sucia Island State Park Improvements
San Juan County, Washington

for
Mott MacDonald, LLC

November 6, 2020

GeoEngineers
Earth Science + Technology

Geotechnical Engineering Services Report

Sucia Island State Park Improvements
San Juan County, Washington

for
Mott MacDonald, LLC

November 6, 2020

GeoEngineers

1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Geotechnical Engineering Services Report

Sucia Island Park Improvements
San Juan County, Washington

File No. 2935-063-01

November 6, 2020

Prepared for:

Mott MacDonald, LLC
110 James Street, Suite 101
Edmonds, Washington 98020

Attention: Evan Edgecomb, PE

Prepared by:

GeoEngineers, Inc.
1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Stephen W. Helvey, LG, LEG, LHG
Senior Engineering Geologist

J. Robert Gordon, PE
Senior Geotechnical Principal

J. ROBERT GORDON
STATE OF WASHINGTON
22151
REGISTERED
PROFESSIONAL ENGINEER
11/6/20

SWH:JRG:tt

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APPENDICES

Appendix A. Dynamic Cone Logs
Figures A-1 through A-3. Dynamic Cone Logs
Appendix B. Report Limitations and Guidelines for Use

1.0 INTRODUCTION

This report presents the results of our geotechnical engineering services for the proposed Sucia Island State Park improvement project. The location of the site is shown in Figures 1 and 2. Our understanding of the project is based on our previous work at the site and information provided by Mott MacDonald (Mott). This includes a concept drawing dated December 18, 2019 and permit drawings dated April 17, 2020. The existing park infrastructure to be replaced include a timber-pile supported pier, aluminum gangway, and timber-pile restrained moorage float.

We completed a preliminary geologic evaluation of the site in January 2020. Our geologic evaluation included a site visit to Sucia Island on December 2, 2019. The results of our previous work were presented in a report submitted to Washington State Parks (State Parks) dated January 2, 2020.

We understand the goal of the project is to install a larger metal fixed deck pier and wood boarding float. The new features require pile support/restraint. The proposed improvements will be located south/ southwest of the existing pier, as shown in Figure 2 and described below.

- Cast-in-place concrete abutment in the upland area near the terminus of the existing pier. Abutment to be about 8 feet long and 8 feet wide, varying from about 2 to about 3 feet thick as a mat foundation based on information provided by Mott.
- Aluminum fixed pier, 56 feet long and 6 feet wide. The pier will be supported by the abutment and a new rectangular fixed platform to the south supported by piles. The fixed platform will be about 12 feet above the mudline, which is at about Elevation 0.0 feet (datum is Mean Lower Low Water [MLLW]), according to plans provided by Mott. Based on information provided by Mott, we understand that vertical pier/platform loads will be about 15 kips at each end of the pier.
- Aluminum gangway, 80 feet long, 5 feet wide. Attached to the fixed platform to the west and the floating dock to the east.
- Timber-framed floating dock, 192 feet long, 12 feet wide. Restrained by six piles. We understand that lateral pile loads will be 8 kips applied at ordinary high water (OHW).

We understand the new structure will be supported/restrained by open-ended steel pipe piles. We understand that two pile diameters are being considered. These comprise 12.75-inch and 16-inch outside diameter (OD) piles with ½-inch wall thickness. We understand that the design lateral load will be applied to the piles at the OHM elevation.

2.0 SCOPE OF SERVICES

Our services have been performed in general accordance with our proposal dated June 5, 2020. We received written authorization on August 12, 2020. The specific scope of services completed include the following:

- Complete a geologic reconnaissance of the site during low-tide conditions.
- Review our January 2020 document for this site and geologic maps for the site.

- Complete three shallow probes using a Triggs® Wildcat DCP from the floating pier.
- Prepare and review a simple cross section with estimated soil depths along the existing pier alignment.
- Develop and provide lateral capacities for new boarding float piles based on results of the DCP testing, our observations and experience.
- Provide recommendations for support of fixed pier piles on mat foundations bearing on bedrock.
- Provide an estimate of rock strength including an estimate of rock density and rock compressive strength.
- Provide an estimate of uplift capacity for a single steel bar epoxy grouted into the rock, or other suitable methods.
- Develop geotechnical recommendations for design and construction of the proposed pier abutment mat foundation.
- Evaluate and discuss general seismic considerations for the pier design.
- Develop and provide general pile installation criteria. More detailed pile installation analyses can be provided in a later phase of the project, after the preferred pile type has been selected.

3.0 SITE CONDITIONS

3.1. General

We observed site features during mobilizations in December 2019 and August 2020. The project site is located on the southeast end of a small peninsula, as shown in Figure 1. We observed exposures of arkosic sandstone bedrock throughout the upland project site, including the shoreline area. We also observed, in places, soil and grass which overly bedrock. Similar bedrock exposures were observed on Hadden Island and other shoreline areas within Sucia Island. Natural conditions at the intertidal zone were masked by eroded bedrock material however, sandy soils appeared to be present where exposed.

3.2. Geologic Conditions

Geologic materials as the site was evaluated by a review of the: "Bellingham 1:100,000 Quadrangle, Washington geologic map by Thomas J. Lapen, 2000." Geologic materials mapped at the Sucia Island site comprise Padden Member sedimentary rocks of the Chuckanut Formation. Chuckanut Formation rocks generally comprise arkosic sandstones with some coal and shale beds.

3.3. Subsurface Conditions

3.3.1. General

Upland soil and bedrock conditions were evaluated by observations during our December 2019 site visit and by striking rock exposures throughout the site area using a rock hammer and recording the Rebound Quality (RQ) in accordance with Unified Rock Classification System (URCS). RQ can range from "Rebounds" (Class A) to "Moldable" (Class E).

Subsurface sediment conditions in overwater areas were evaluated by completing three Triggs® Wildcat Dynamic Cone Penetrometers (DCPs) at the approximate locations shown in Figure 2. DCPs were completed from the floating dock on August 19, 2020. The DCPs extended to depths of about 26.5 to 31 feet below

the mudline. Field-measured blow counts from the DCP program were converted to approximate equivalent Standard Penetration Test (SPT) N-values based on the penetrometer manufacturer's recommended procedures. The logs are presented in Appendix A as Figures A-1 through A-3.

The DCP probes do not provide the opportunity for sample collection and only provide relative density information for the sediment profile. The DCPs can be refused on gravel, cobbles or on bedrock. Refusal does not indicate that bedrock was encountered by the DCPs. This exploration program was used because of the cost, permitting, and scheduling associated with traditional offshore drilling.

3.3.2. Upland

Explorations were not completed in upland areas. However, based on visual examination it appears sandstone bedrock exists at the ground surface and at shallow depths throughout the upland portion of the site. A thin layer of soil and some low grasses were observed scattered throughout the project area.

Based on our evaluation, sandstone bedrock at the site appears to have Class C (Dents) RQ. Published unconfined compressive strength for sandstone of this quality ranges from 3,000 to 8,000 pounds per square inch (psi). The density of the sandstone bedrock likely ranges between 130 and 150 pounds per cubic foot (pcf). We measured a dip inclination of about 46 degrees to the east (88 degrees) in exposed rock south of the existing dock. This is similar to published strike and dip measurements for the site area.

3.3.3. Overwater

Based on our site observations and the density profile obtained from the DCP probes, sediment conditions at the site generally consist of very loose/very soft marine materials to depths of at least 16 to 20 feet in the explorations. Loose/medium stiff to medium dense/stiff to very stiff marine sediments were then encountered to the base of each exploration, where practical refusal was encountered.

We reviewed logs of over-water borings completed by GeoEngineers at Sucia Island in June 2008. The borings were completed for a dock structure about 600 feet northwest of the current subject site. Borings were advanced to depths of about 38 and 52 feet below mudline. Marine sediments were mostly encountered to the full depth in the borings. However, layers of medium dense silty sand with gravel and silty gravel were also encountered within the soft marine sediment. It is possible that the DCPs completed for this project refused on similar granular materials. However, it is also possible that bedrock may be shallower at this location since bedrock is exposed in the uplands and along the shoreline.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1. General

Based on our explorations, observations and knowledge of the site, we conclude that the proposed improvements can be constructed generally as envisioned. Competent sandstone bedrock appears to exist at shallow depths within the proposed upland abutment and upland platform foundation areas. The bedrock will provide suitable bearing surfaces for these features. The contractor must be prepared to remove soil and weathered bedrock to create relatively level areas for mat foundations in the upland areas in accordance with project plans.

The DCPs indicate that the over-water piles will likely encounter loose/soft marine sediment and medium dense granular deposits. It is possible the piles could encounter bedrock before achieving the recommended embedment depths based on embedment in a full soil profile. The piling contractor should be prepared to drive the piles into the rock a minimum of 3 feet to socket the piles; if refusal to driving is encountered, then the contractor should be prepared to drill a rock socket 3 feet deep. Specific conclusions and recommendations are presented in the following sections of this report.

4.2. Seismic Considerations

The Western Washington area is a seismically active region that has experienced many earthquakes in historical time. Seismic hazards represent risk of injury or damage to humans and property resulting directly from earthquakes. Seismic hazard mechanisms include surface fault rupture, ground shaking and associated ground failure such as liquefaction and landsliding.

The project site is in a remote location and is not permanently occupied. Upland elements will be founded on competent bedrock, which is not liquifiable. These materials classify as Site Class C, in accordance with American Society of Civil Engineers (ASCE) 7-16 criteria.

Boarding floats will be restrained by piles advanced into soft/loose materials. The granular marine sediments encountered by our DCPs are liquifiable. The marine sediments encountered by the DCPs likely classify as ASCE Site Class E. Some displacement of boarding float piles will likely occur during the design seismic event. Socketing the piles into bedrock and/or dense soils (if encountered) will lessen the amount of displacement these piles will experience. However, the depth to uniformly dense soils and/or bedrock in the over-water areas is unknown. We do not recommend that a site-specific response spectra analyses be completed for this project.

4.3. Upland

4.3.1. Site Preparation and Earthwork

4.3.1.1. General

We expect competent sandstone bedrock, at shallow depths, will be encountered in the fixed abutment and fixed platform mat foundation areas. Excavation of soil and weathered bedrock will be required to achieve uniformly hard rock conditions to avoid differential settlement and install anchors for lateral and uplift resistance. Because the upland foundation portion of the project work will occur within or near the intertidal area, we recommend that the work be performed during periods of dry weather. Surface water runoff and sediment suspension could occur if the work is completed during periods of wet weather.

4.3.1.2. Clearing and Subgrade Preparation

The proposed abutment and platform foundation areas should be cleared of deleterious matter, including any significantly decomposed rock, sod, brush, debris and other unsuitable or organic materials. We recommend that the subgrades comprise relatively undisturbed and competent sandstone bedrock. Jackhammers and/or hoe hammers will likely be required to remove rock to achieve relatively competent subgrades. The project plans may also indicate a level condition is required. Structural fill should not be placed under the mat foundations; however, lean (minimum 2,000 pounds per square inch [psi] strength) or structural concrete could be placed to create a more level surface. In this case, the rock bolts can assume that embedment into the lean concrete will provide the same resistance as the bedrock. The exposed surfaces should be evaluated by GeoEngineers staff to examine rock types and rock strengths prior to placement of concrete forms and reinforcing steel.

4.3.2. Shallow Mat Foundation Support

For abutment and platform mat foundations prepared as recommended, an allowable bearing pressure of 5,000 pounds per square foot (psf) can be used for design. A modulus of subgrade reaction of 800 pounds per cubic inch (pci) can be used for designing the abutment and pier mat foundation slabs. Settlements for these foundations designed and constructed as recommended are estimated to be less than ½ inch. At the platform, an elevated structural system will need to extend up from the mat foundation to the design elevation of the fixed pier and gangway.

4.3.2.1. Anchorage and Lateral Resistance

Base friction for foundations supported directly on rock can be designed for a coefficient of friction equal to 0.4. We understand that rock anchors may be used to provide lateral resistance and anchorage. Competent sandstone bedrock should provide adequate pullout resistance for tiedown anchors. The tiedowns can either be installed as grouted anchor bars or as expansion anchors. The depth, number, size and locations of the tiedowns will depend on the lateral resistance required. We recommend using an ultimate bond stress of 40 psi for grouted anchors in the competent sandstone bedrock.

4.4. Overwater Boarding Float Piles

4.4.1. General

The fixed abutment and fixed platform will be supported by mat foundations and piles for this project will only serve as lateral resistance for the floats. The piles will need to be sufficiently embedded below the mudline soils to resist the lateral loads with an acceptable deflection, which is assumed to be about 2 inches at the mudline. The minimum embedment required to achieve lateral loads is based on the soil profile observed at the DCP locations and then an assumed soil profile below that because of the DCP limitations as discussed previously. This results in a minimum recommended embedment of 55 feet below mudline. Considering that dense soils and/or bedrock could be encountered above this embedment depth, we also provided an alternative design scenario if encountered. In this case, the piles would need to be cut off during construction at the design height per the project plans. Two open-ended steel pipe pile diameters were analyzed. These comprise open-ended 12.75-inch and 16-inch OD steel piles with ½-inch wall thickness.

4.4.2. Lateral Pile Capacity

Lateral capacity and deflections of pile foundations are governed primarily by the lateral capacity of near-surface soil and the strength of the pile itself. The design lateral capacity of the piles depends to a large extent on the allowable lateral deflections of these elements and requires an assumption of the degree of fixity at the pile head. We have assumed that the float piles will have a “free-head” condition.

We completed our lateral resistance analysis of the two proposed piles using the lateral pile analysis program LPILE, Version 2013.7.07, produced by Ensoft, Inc. The LPILE analysis was completed based on the following parameters and assumptions:

- Maximum design lateral load of 8 kips applied at Elevation +10 feet;
- No applied axial load required;
- Maximum pile stick-up above mudline is 18 feet.

Due to the limited exploration capabilities of the DCP, soil conditions underlying the maximum depth of the DCP explorations is unknown. We, therefore, analyzed two potential boundary soil conditions that may exist underlying the medium dense unit encountered immediately prior to driving refusal in the DCPs.

- **Alternate 1: Soft Clay.** Based on nearby borings, the medium dense layer which refused the DCPs may be underlain by soft marine sediments. This soil unit represents the lowest potential soil strength condition.
- **Alternate 2: Sandstone Bedrock**. Sandstone bedrock could be present beneath the medium dense unit below the depth at which the DCPs encountered refusal. This represents the highest potential strength condition.

The soil/rock properties used in the analysis are presented in Table 1 below. The values in the table are ultimate values and no factor of safety has been applied.

TABLE 1. LATERAL PILE ANALYSIS SOIL INPUT PARAMETERS

Soil Parameter	Very Soft Marine Sediment	Medium Dense Sand	Soft Clay (Alternate 1)	Sandstone Bedrock (Alternate 2)
Depth Below Mudline (feet)	0 to 21	21 to 30	Below 30	Below 30
Generalized Unit	Soft Clay	Sand	Soft Clay	Bedrock
LPILE Soil/Rock Type	Soft Clay (Matlock)	Sand (Reese)	Soft Clay (Matlock)	Vuggy Limestone
Effective Unit Weight, (lb/ft^3)	48	58	48	140
Internal Angle of Friction (degree)	NA	32	NA	NA
Cohesion (lb/ft^2)	250	NA	250	NA
E50	0.02	NA	0.02	NA
Modulus, k (lb/in^3)	NA	60	NA	NA
Unconfined Compressive Strength (lb/in^2)	NA	NA	NA	5,000

Notes:

Soil and rock parameters are presented in the units typically used in the LPILE program.

Soil and rock unit weights are the buoyant unit weight.

lb/ft^3 = pounds per cubic foot.

lb/ft^2 = pounds per square foot.

lb/in^3 = pounds per cubic inch.

Figures 3, 4 and 5 show the deflection, moment and shear diagrams, respectively, for both pile base soil alternatives for 12.75-inch diameter piles and Figures 6, 7, and 8, show the deflection, moment and shear diagrams for both pile base soil alternatives for the 16-inch diameter piles. For purposes of our analyses for Alternate 2, we assumed that bedrock was encountered at 30 feet below mudline and driven/drilled to a minimum depth of 3 feet into the rock.

We recommend a minimum planned embedment to 37 feet below the mudline to provide sufficient lateral fixity. If bedrock or a very dense soil unit is encountered at depths shallower than 37 feet, we recommend piles be driven/drilled a minimum of 3 feet into the bedrock. Based on additional analyses performed, the

deflection, moment, and shear values presented in the figures are similar if the piles are shorter and socketed into the bedrock.

4.4.3. Pile Installation

We understand that pile installation with a vibratory hammer is preferred. Because of the relative unknown conditions of the soils below the DCP depth, we recommend that a large vibratory hammer be used to install the float piles. Pile driving should be accomplished in accordance with Section 6-05 of the Washington State Department of Transportation (WSDOT) Standard Specifications for Road and Bridge Construction (hereafter referred to as the WSDOT Standard Specifications). Typically, an impact hammer is required to drive piles the final 2 feet before reaching the planned depth or meeting vibratory driving refusal criteria. In this case, it is our opinion that using an impact hammer is not necessary provided that the minimum embedment is achieved because axial capacity is not a controlling case. However, it is possible that dense soils and/or bedrock could be encountered such that using an impact hammer may be necessary to achieve the embedment depth. Driving shoes are recommended for all piles, since bedrock could be encountered.

As previously mentioned, dense sand and/or bedrock could be encountered. In this case, the piles will need to be driven with an impact hammer. We recommend a hammer size in the range of 60,000 to 80,000 foot-pounds to embed the pile the minimum 3 feet into the bedrock, if encountered.

If the minimum 3 feet of embedment into bedrock cannot be achieved, we recommend that a hole be drilled into the rock very close to the same diameter as the pile, and then the pile driven to achieve the required 3 feet of embedment. The hole should be sized to facilitate pile installation without damage to the pile, but maintain the tight fit for the required lateral resistance.

We recommend the contractor submit a detailed installation plan for review and approval by the engineer before construction. Pile driving criteria and the dynamic response of the piles during driving are dependent upon pile type, the driving hammer characteristics, required capacity, and other factors. Refusal criteria will vary with the hammer size actually used by the contractor and its efficiency. We recommend the contractor submit details of the selected hammer including manufacturer, model, rated energy or drive force, and any modifications. For impact driving, details of the hammer cushion, pile cap, and pile cushion are also appropriate. We recommend that wave equation analyses be performed to assess pile drivability and to develop pile installation criteria based on the contractor's pile hammer submittal.

4.5. Construction Monitoring

The project site has variable subsurface conditions and has some complex geotechnical issues. GeoEngineers' limited DCP exploration program did not fully define subsurface conditions, including the deep subsurface conditions for the offshore piles and extent of bedrock, which could limit pile drivability. We recommend that the mat foundation subgrades be observed and pile installations be monitored by GeoEngineers. It is our experience that providing geotechnical support from the design team during the construction facilitates the contractor, progress and schedule and helps protect the owner from change orders. We recommend observation of the following:

- Observation of subgrades for the upland fixed pier and fixed platform.
- Observation of test pile(s), if determined appropriate.
- Driving of piles to confirm driving conditions match assumptions in our analyses.

- If the piles do not have obvious fixity due to premature refusal and/or lack of embedment into rock or underlying dense unit, it may be appropriate to perform lateral load tests in the field to evaluate performance.

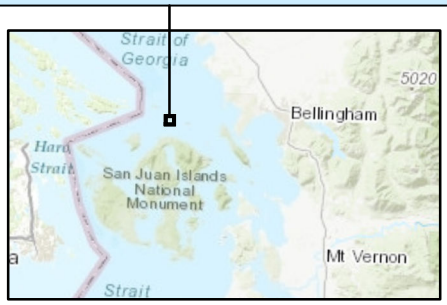
5.0 LIMITATIONS

We have prepared this report for use by Mott MacDonald, LLC and Washington State Parks for use in design of the moorage float replacement project at Sucia Island in San Juan County, Washington, as discussed herein.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices for geotechnical engineering in this area at the time this report was prepared.

Please refer to Appendix B titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this document.





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Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2016. ESRI.

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Vicinity Map

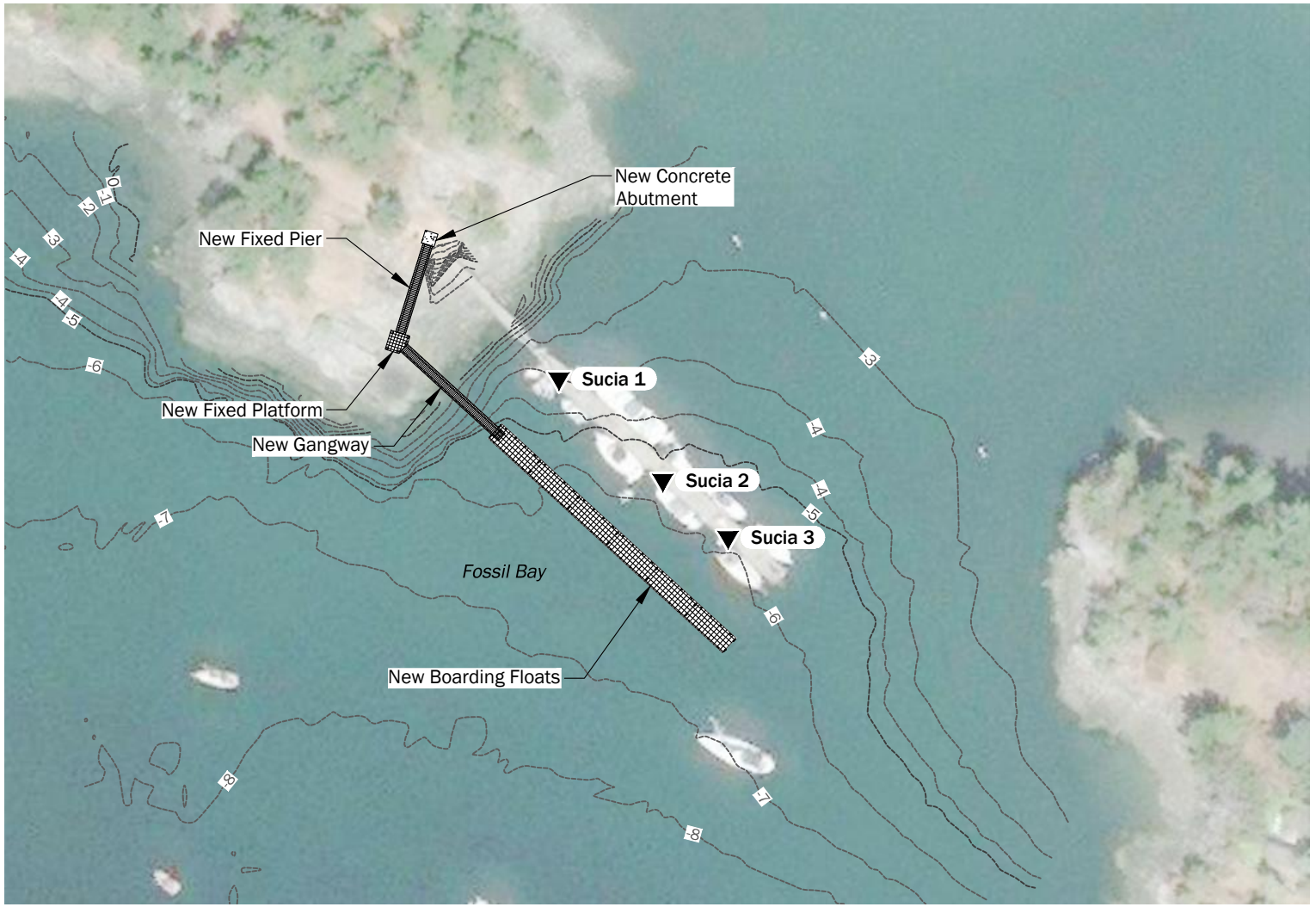
Sucia Island Park Improvements
San Juan County, Washington

GeoEngineers

Figure 1

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P:\2\2935063\CAD\01\GeoTech\293506301_F02_Site Plan.dwg TAB:F02 Date Exported: 11/04/20 - 9:27 by mwoods



Legend

Sucia 1 ▼ Dynamic Cone Penetrometer Test by GeoEngineers, Inc., 2020

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Aerial from Microsoft Bing
Base CAD file from Mott MacDonald.

Projection: WA State Plane, North Zone, NAD83, US Foot

N W E S

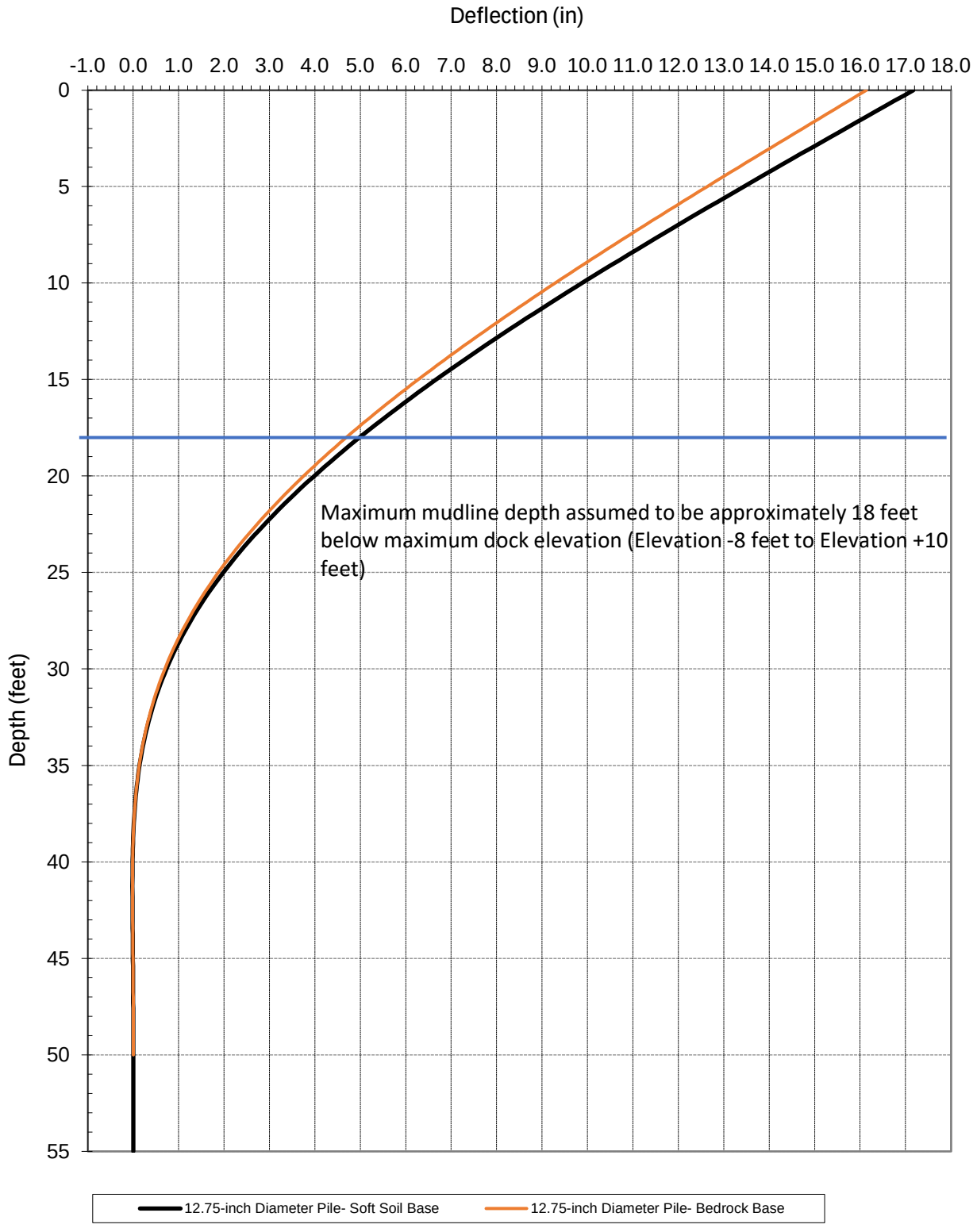
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Site and Exploration Plan

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 2



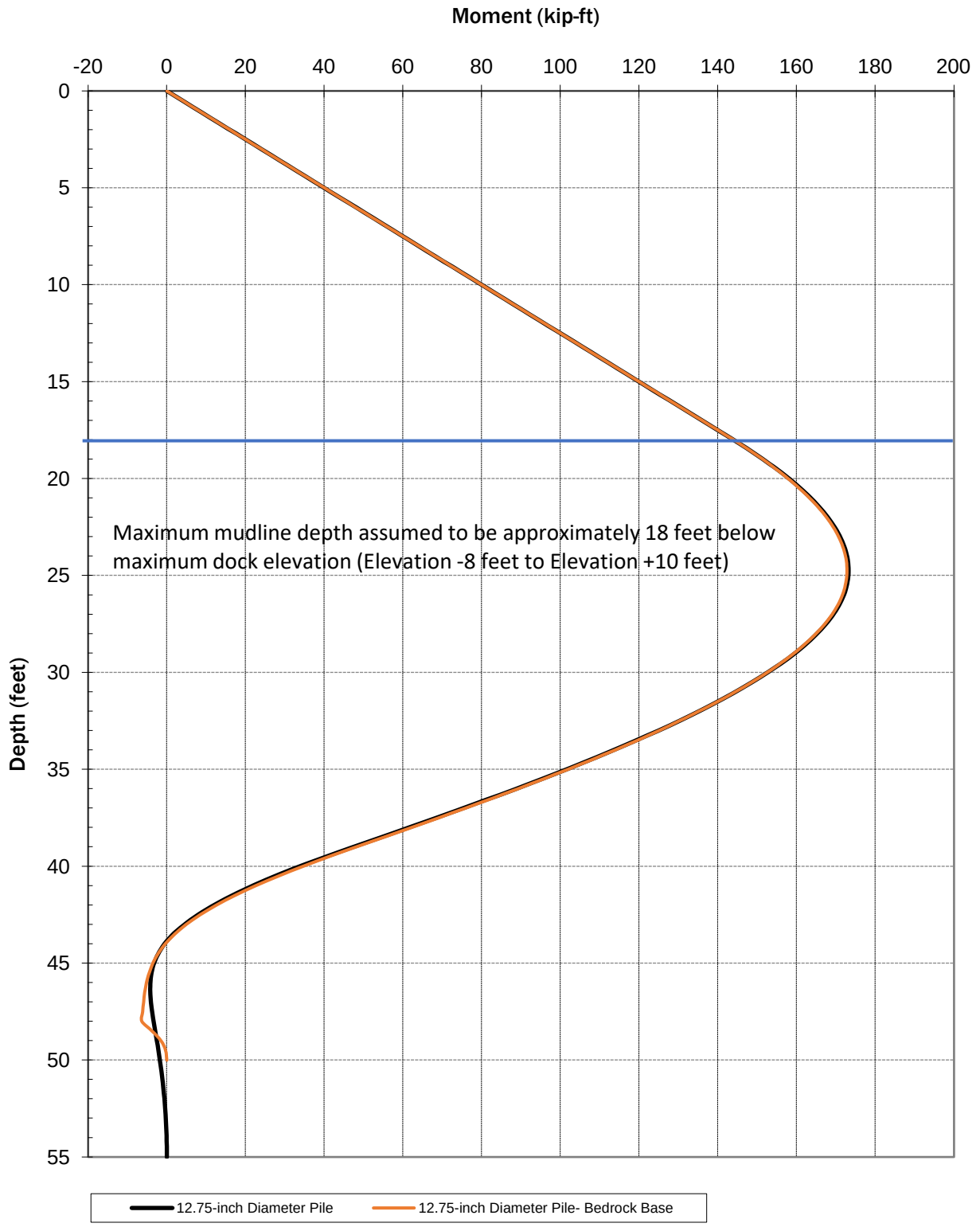
Notes: Analysis completed with LPILE v2019.

Deflection vs. Depth
12.75-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

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Figure 3



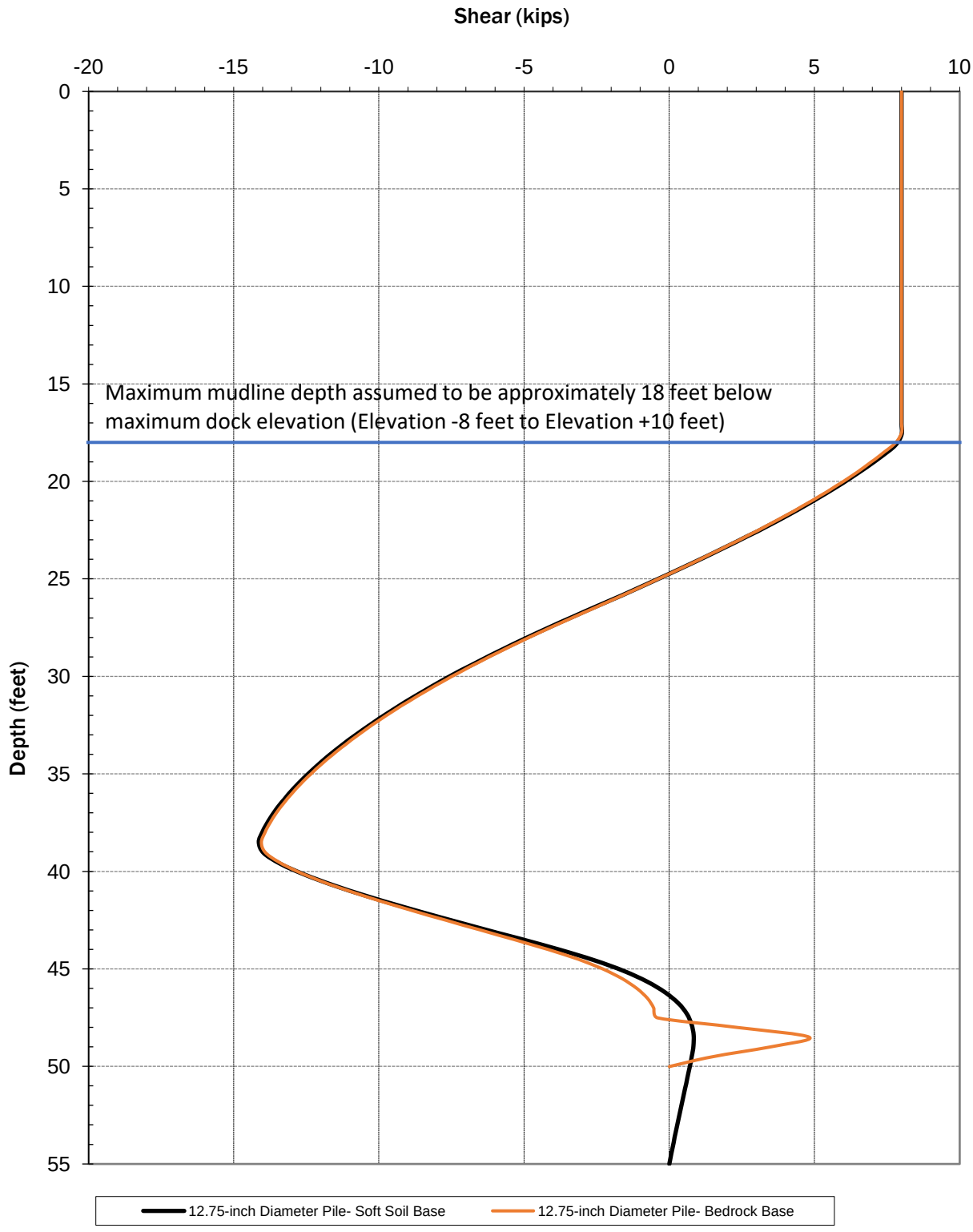
Notes: Analysis completed with LPILE v2019.

Bending Moment vs. Depth
12.75-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 4



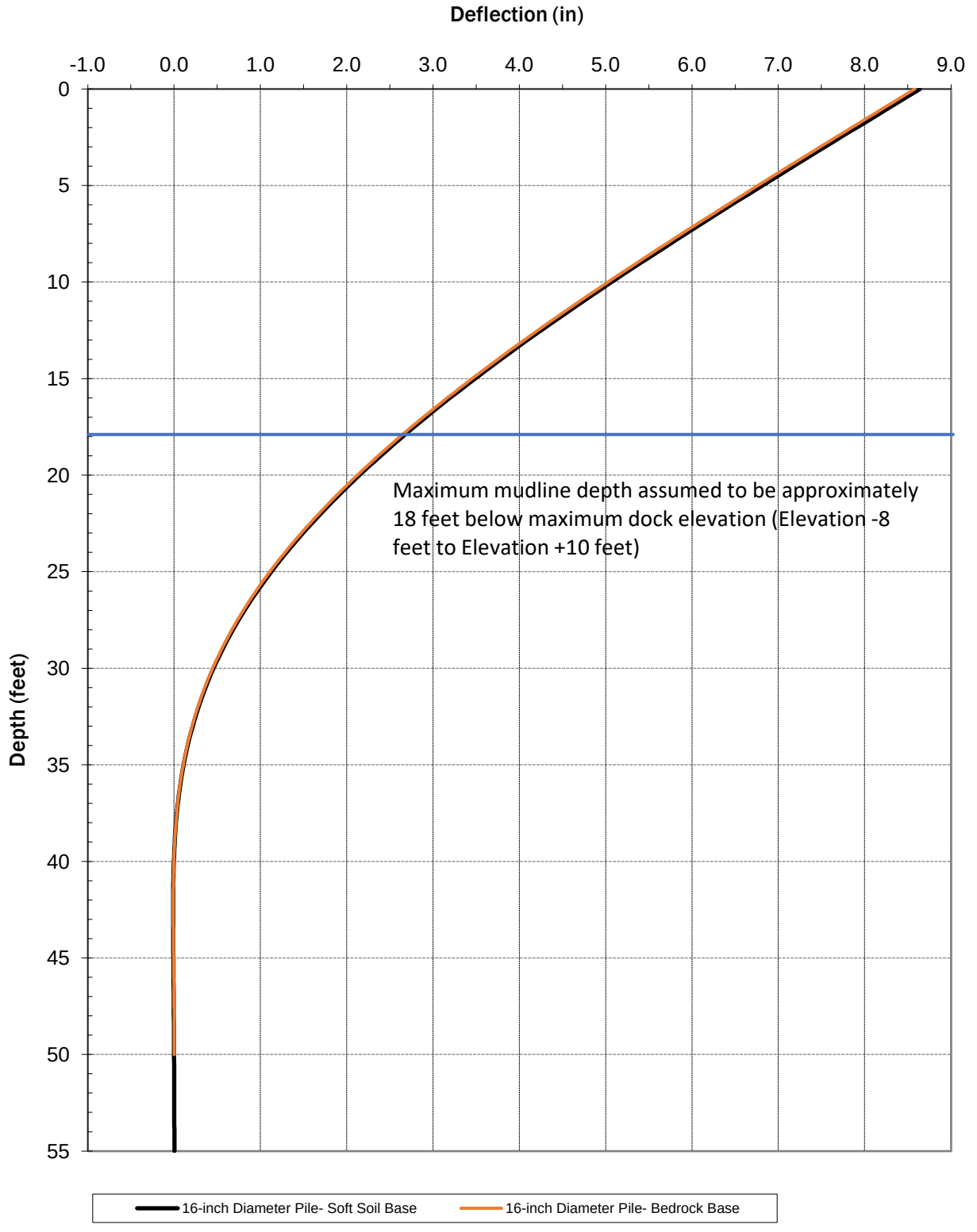
Notes: Analysis completed with LPILE v2019.

Shear vs. Depth
12.75-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 5



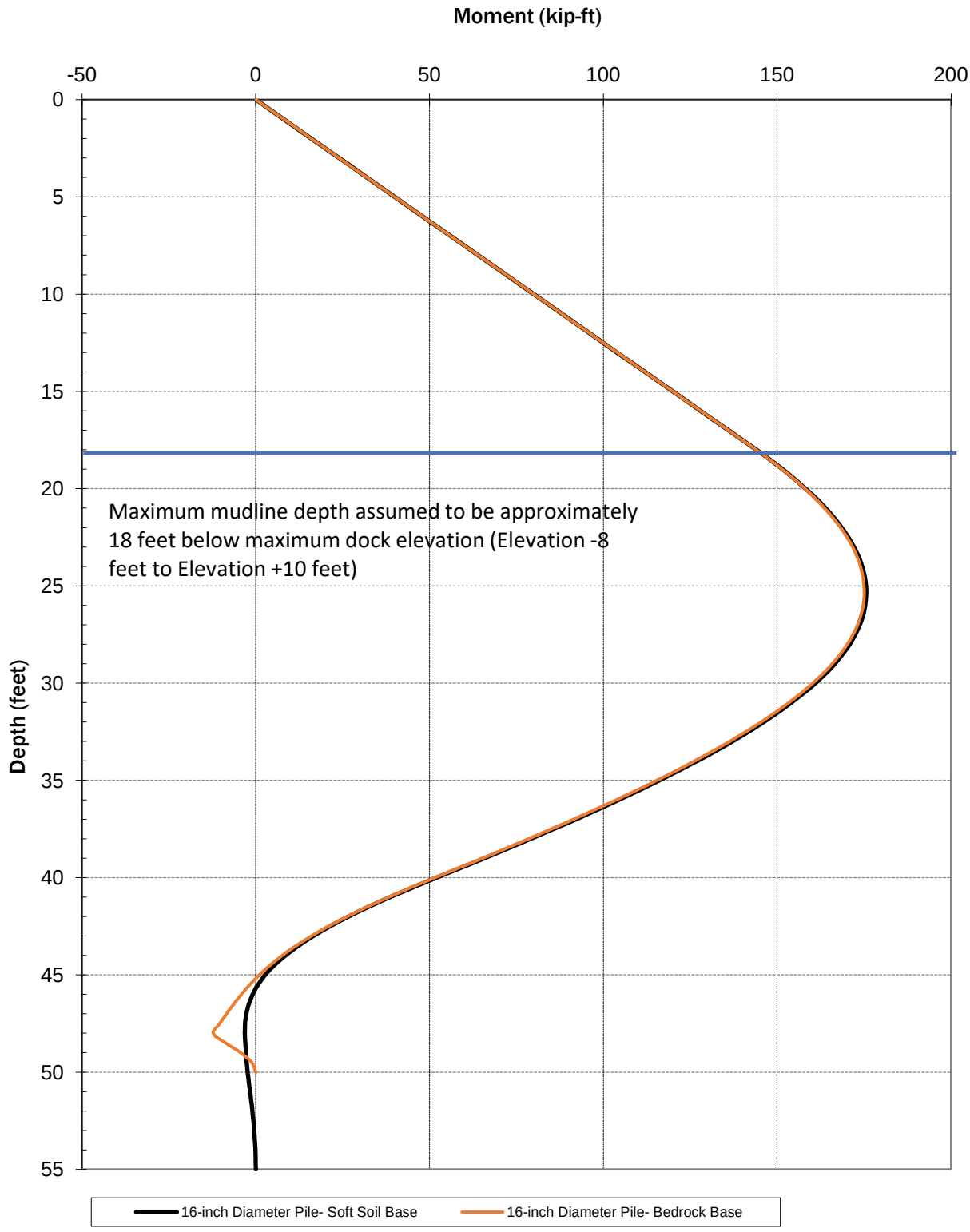
Notes: Analysis completed with LPILE v2019.

Deflection vs. Depth
16-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 6



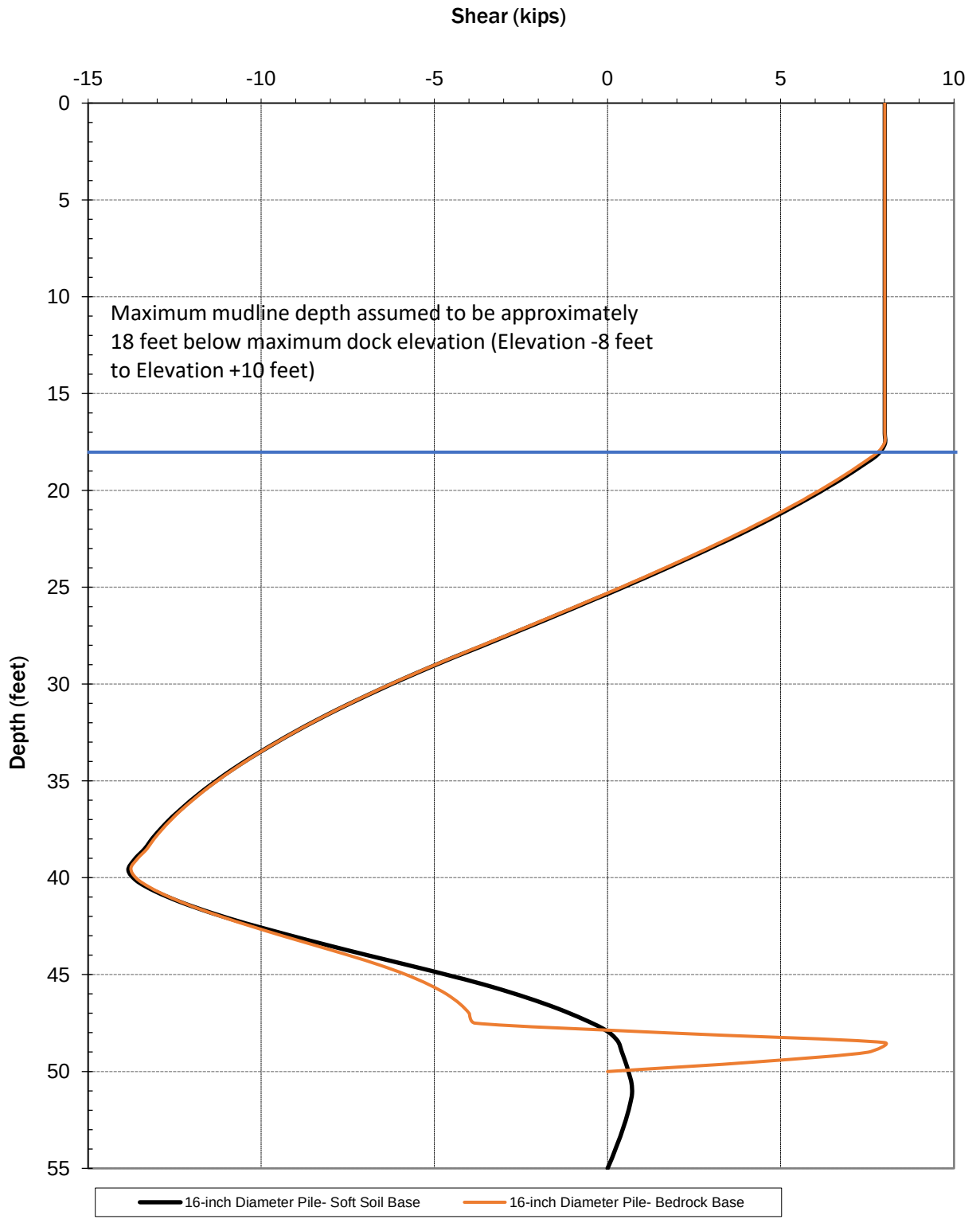
Notes: Analysis completed with LPILE v2019.

Bending Moment vs. Depth
16-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 7



Notes: Analysis completed with LPILE v2019.

Shear vs. Depth
16-inch Diameter Pile, Free Head

Sucia Island State Park Improvements
San Juan County, Washington

GeoEngineers

Figure 8

APPENDIX A
Dynamic Cone Logs

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-063-00
DATE STARTED: 8.19.20
DATE COMPLETED: 8.19.20

HOLE #: Sucia-1
CREW: NBD/MWR
PROJECT: Sucia Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION: -4
WATER ON COMPLETION: 5.75 feet
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 ft	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	2	7.7	**	2	VERY LOOSE	SOFT
- 4 ft	2	7.7	**	2	VERY LOOSE	SOFT
-	1	3.9	*	1	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 5 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	1	3.9	*	1	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 6 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 m	0	0.0		0	VERY LOOSE	VERY SOFT
- 7 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 8 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 9 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	2	6.8	*	1	VERY LOOSE	VERY SOFT
-	1	3.4		0	VERY LOOSE	VERY SOFT
- 3 m 10 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 11 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 12 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	6	18.4	*****	5	LOOSE	MEDIUM STIFF
- 4 m 13 ft	5	15.3	****	4	VERY LOOSE	SOFT

2935-063-01 Date Exported: 10/26/2020

Wildcat Dynamic Cone Log – Sucia-1

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-1

HOLE #: Sucia-1

WILDCAT DYNAMIC CONE LOG

PROJECT: Sucia Island State Park Improvements

PROJECT NUMBER: 2935-063-00

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
	4	11.1	---	3	VERY LOOSE	SOFT
	3	8.3	--	2	VERY LOOSE	SOFT
14 ft	4	11.1	---	3	VERY LOOSE	SOFT
	4	11.1	---	3	VERY LOOSE	SOFT
	5	13.9	----	3	VERY LOOSE	SOFT
15 ft	5	13.9	----	3	VERY LOOSE	SOFT
	5	13.9	----	3	VERY LOOSE	SOFT
	3	8.3	--	2	VERY LOOSE	SOFT
16 ft	4	11.1	---	3	VERY LOOSE	SOFT
5 m	5	13.9	----	3	VERY LOOSE	SOFT
	11	27.9	--------	7	LOOSE	MEDIUM STIFF
17 ft	9	22.9	------	6	LOOSE	MEDIUM STIFF
	9	22.9	------	6	LOOSE	MEDIUM STIFF
	18	45.7	------------	13	MEDIUM DENSE	STIFF
18 ft	14	35.6	----------	10	LOOSE	STIFF
	16	40.6	----------	11	MEDIUM DENSE	STIFF
	12	30.5	--------	8	LOOSE	MEDIUM STIFF
19 ft	9	22.9	------	6	LOOSE	MEDIUM STIFF
	11	27.9	--------	7	LOOSE	MEDIUM STIFF
6 m	13	33.0	---------	9	LOOSE	STIFF
20 ft	13	30.3	--------	8	LOOSE	MEDIUM STIFF
	19	44.3	-----------	12	MEDIUM DENSE	STIFF
	14	32.6	---------	9	LOOSE	STIFF
21 ft	14	32.6	---------	9	LOOSE	STIFF
	12	28.0	--------	7	LOOSE	MEDIUM STIFF
	13	30.3	--------	8	LOOSE	MEDIUM STIFF
22 ft	14	32.6	---------	9	LOOSE	STIFF
	18	41.9	----------	11	MEDIUM DENSE	STIFF
	17	39.6	----------	11	MEDIUM DENSE	STIFF
7 m 23 ft	15	35.0	----------	9	LOOSE	STIFF
	14	30.2	--------	8	LOOSE	MEDIUM STIFF
	16	34.6	----------	9	LOOSE	STIFF
24 ft	16	34.6	----------	9	LOOSE	STIFF
	16	34.6	----------	9	LOOSE	STIFF
	15	32.4	---------	9	LOOSE	STIFF
25 ft	22	47.5	------------	13	MEDIUM DENSE	STIFF
	28	60.5	----------	17	MEDIUM DENSE	VERY STIFF
	28	60.5	----------	17	MEDIUM DENSE	VERY STIFF
26 ft	24	51.8	----------	14	MEDIUM DENSE	STIFF
8 m	57	123.1	----------	25+	DENSE	HARD
27 ft						
28 ft						
29 ft						
9 m						

2935-063-01 Date Exported: 10/26/2020

Wildcat Dynamic Cone Log – Sucia-1

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-1

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-063-00
DATE STARTED: 8.19.20
DATE COMPLETED: 8.19.20

HOLE #: Sucia-2
CREW: NBD/MWR
PROJECT: Sucia Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION: -5.5
WATER ON COMPLETION: 4.8
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	5	22.2	------	6	LOOSE	MEDIUM STIFF
- 3 ft	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 4 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 5 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 6 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 m	0	0.0		0	VERY LOOSE	VERY SOFT
- 7 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 8 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 9 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 m 10 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	1	3.1		0	VERY LOOSE	VERY SOFT
-	1	3.1		0	VERY LOOSE	VERY SOFT
- 11 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 12 ft	2	6.1	-	1	VERY LOOSE	VERY SOFT
-	3	9.2	--	2	VERY LOOSE	SOFT
-	3	9.2	--	2	VERY LOOSE	SOFT
- 4 m 13 ft	3	9.2	--	2	VERY LOOSE	SOFT

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Wildcat Dynamic Cone Log – Sucia-2

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-2

HOLE #: Sucia-2

WILDCAT DYNAMIC CONE LOG

PROJECT: Sucia Island State Park Improvements

PROJECT NUMBER: 2935-063-00

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
	2	5.5	•	1	VERY LOOSE	VERY SOFT
	2	5.5	•	1	VERY LOOSE	VERY SOFT
14 ft	2	5.5	•	1	VERY LOOSE	VERY SOFT
	2	5.5	•	1	VERY LOOSE	VERY SOFT
	3	8.3	••	2	VERY LOOSE	SOFT
15 ft	3	8.3	••	2	VERY LOOSE	SOFT
	2	5.5	•	1	VERY LOOSE	VERY SOFT
	3	8.3	••	2	VERY LOOSE	SOFT
16 ft	3	8.3	••	2	VERY LOOSE	SOFT
5 m	3	8.3	••	2	VERY LOOSE	SOFT
	2	5.1	•	1	VERY LOOSE	VERY SOFT
17 ft	3	7.6	••	2	VERY LOOSE	SOFT
	3	7.6	••	2	VERY LOOSE	SOFT
	3	7.6	••	2	VERY LOOSE	SOFT
18 ft	4	10.2	••	2	VERY LOOSE	SOFT
	11	27.9	•••••••••	7	LOOSE	MEDIUM STIFF
	20	50.8	••••••••••••••	14	MEDIUM DENSE	STIFF
19 ft	15	38.1	••••••••••••	10	LOOSE	STIFF
	7	17.8	•••••	5	LOOSE	MEDIUM STIFF
6 m	4	10.2	••	2	VERY LOOSE	SOFT
20 ft	8	18.6	•••••	5	LOOSE	MEDIUM STIFF
	6	14.0	••••	3	VERY LOOSE	SOFT
	6	14.0	••••	3	VERY LOOSE	SOFT
21 ft	4	9.3	••	2	VERY LOOSE	SOFT
	13	30.3	•••••••••	8	LOOSE	MEDIUM STIFF
	13	30.3	•••••••••	8	LOOSE	MEDIUM STIFF
22 ft	8	18.6	•••••	5	LOOSE	MEDIUM STIFF
	12	28.0	•••••••••	7	LOOSE	MEDIUM STIFF
	12	28.0	•••••••••	7	LOOSE	MEDIUM STIFF
7 m 23 ft	26	60.6	••••••••••••••••••	17	MEDIUM DENSE	VERY STIFF
	20	43.2	••••••••••••	12	MEDIUM DENSE	STIFF
	100	216.0	••••••••••••••••

WILDCAT DYNAMIC CONE LOG

GeoEngineers
600 Dupont Street
Bellingham, WA 98225

PROJECT NUMBER: 2935-063-00
DATE STARTED: 8.19.20
DATE COMPLETED: 8.19.20

HOLE #: Sucia-3
CREW: NBD/MWR
PROJECT: Sucia Island State Park Improvements
ADDRESS:
LOCATION: San Juan County, WA

SURFACE ELEVATION: -6
WATER ON COMPLETION: 4.4 feet
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	COHESIVE
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	1	4.4	•	1	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 ft	0	0.0		0	VERY LOOSE	VERY SOFT
- 1 m	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 4 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 5 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 6 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 2 m	0	0.0		0	VERY LOOSE	VERY SOFT
- 7 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 8 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 9 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 3 m 10 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 11 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 12 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 4 m 13 ft	0	0.0		0	VERY LOOSE	VERY SOFT

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Wildcat Dynamic Cone Log – Sucia-3

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-3

HOLE #: Sucia-3

WILDCAT DYNAMIC CONE LOG

PROJECT: Sucia Island State Park Improvements

PROJECT NUMBER: 2935-063-00

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
-	5	13.9	----	3	VERY LOOSE	SOFT
-	5	13.9	----	3	VERY LOOSE	SOFT
- 14 ft	5	13.9	----	3	VERY LOOSE	SOFT
-	4	11.1	---	3	VERY LOOSE	SOFT
-	3	8.3	--	2	VERY LOOSE	SOFT
- 15 ft	4	11.1	---	3	VERY LOOSE	SOFT
-	3	8.3	--	2	VERY LOOSE	SOFT
-	3	8.3	--	2	VERY LOOSE	SOFT
- 16 ft	3	8.3	--	2	VERY LOOSE	SOFT
- 5 m	3	8.3	--	2	VERY LOOSE	SOFT
-	3	7.6	--	2	VERY LOOSE	SOFT
- 17 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
- 18 ft	0	0.0		0	VERY LOOSE	VERY SOFT
-	0	0.0		0	VERY LOOSE	VERY SOFT
-	1	2.5		0	VERY LOOSE	VERY SOFT
- 19 ft	5	12.7	---	3	VERY LOOSE	SOFT
-	6	15.2	----	4	VERY LOOSE	SOFT
- 6 m	6	15.2	----	4	VERY LOOSE	SOFT
- 20 ft	5	11.7	---	3	VERY LOOSE	SOFT
-	5	11.7	---	3	VERY LOOSE	SOFT
-	7	16.3	----	4	VERY LOOSE	SOFT
- 21 ft	11	25.6	-------	7	LOOSE	MEDIUM STIFF
-	15	35.0	----------	9	LOOSE	STIFF
-	13	30.3	---------	8	LOOSE	MEDIUM STIFF
- 22 ft	12	28.0	---------	7	LOOSE	MEDIUM STIFF
-	15	35.0	----------	9	LOOSE	STIFF
-	24	55.9	----------------	15	MEDIUM DENSE	STIFF
- 7 m 23 ft	18	41.9	----------	11	MEDIUM DENSE	STIFF
-	18	38.9	----------	11	MEDIUM DENSE	STIFF
-	18	38.9	----------	11	MEDIUM DENSE	STIFF
- 24 ft	19	41.0	----------	11	MEDIUM DENSE	STIFF
-	16	34.6	----------	9	LOOSE	STIFF
-	23	49.7	-------------	14	MEDIUM DENSE	STIFF
- 25 ft	25	54.0	--------------	15	MEDIUM DENSE	STIFF
-	25	54.0	--------------	15	MEDIUM DENSE	STIFF
-	22	47.5	------------	13	MEDIUM DENSE	STIFF
- 26 ft	20	43.2	----------	12	MEDIUM DENSE	STIFF
- 8 m	20	43.2	----------	12	MEDIUM DENSE	STIFF
-	20	40.2	----------	11	MEDIUM DENSE	STIFF
- 27 ft	24	48.2	------------	13	MEDIUM DENSE	STIFF
-	19	38.2	----------	10	LOOSE	STIFF
-	21	42.2	----------	12	MEDIUM DENSE	STIFF
- 28 ft	19	38.2	----------	10	LOOSE	STIFF
-	25	50.3	-------------	14	MEDIUM DENSE	STIFF
-	26	52.3	-------------	14	MEDIUM DENSE	STIFF
- 29 ft	21	42.2	----------	12	MEDIUM DENSE	STIFF
-	27	54.3	--------------	15	MEDIUM DENSE	STIFF
- 9 m	29	58.3	----------------	16	MEDIUM DENSE	VERY STIFF

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Wildcat Dynamic Cone Log – Sucia-3

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-3

HOLE #: Sucia-3

WILDCAT DYNAMIC CONE LOG

PROJECT: Sucia Island State Park Improvements

PROJECT NUMBER: 2935-063-00

DEPTH	BLOWS PER 10 cm	RESISTANCE Kg/cm²	GRAPH OF CONE RESISTANCE 0 50 100 150	N'	TESTED CONSISTENCY NON-COHESIVE	TESTED CONSISTENCY COHESIVE
30 ft	39	73.7	----------	21	MEDIUM DENSE	VERY STIFF
	42	79.4	----------	22	MEDIUM DENSE	VERY STIFF
	53	100.2	----------	25+	MEDIUM DENSE	VERY STIFF
31 ft						
32 ft						
10 m						
33 ft						
34 ft						
35 ft						
11 m 36 ft						
37 ft						
38 ft						
39 ft						
12 m						
40 ft						
41 ft						
42 ft						
13 m						
43 ft						
44 ft						
45 ft						
14 m 46 ft						

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Wildcat Dynamic Cone Log – Sucia-3

Sucia/Stuart Islands
San Juan County, Washington

GeoEngineers

Figure A-3

APPENDIX B
Report Limitations and Guidelines for Use

APPENDIX B
REPORT LIMITATIONS AND GUIDELINES FOR USE

This appendix provides information to help you manage your risks with respect to the use of this report.

Report Use and Reliance

This report has been prepared for Mott MacDonald, LLC and their authorized agents and regulatory agencies. GeoEngineers structures our services to meet the specific needs of our clients. No party other than Mott MacDonald, LLC. may rely on the product of our services unless we agree to such reliance in advance and in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client dated August 12, 2020 and generally accepted geotechnical practices in this area at the time this report was prepared. Use of this report is not recommended for any purpose or project except the one originally contemplated.

This report should not be applied for any purpose or project except the one originally contemplated. If important changes are made to the project or property after the date of this report, we recommend that GeoEngineers be given the opportunity to review our interpretations and recommendations, and then we can provide written modifications or confirmation, as appropriate.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we used sources that are believed to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.

Subsurface Data

Limited subsurface data was collected at the site. GeoEngineers has relied upon observations of visible geologic materials at the sites and our experience in the performance of our services. It is possible, if not likely, that actual subsurface conditions at the proposed pile locations vary from the conditions assumed in this report. A contingency should be considered for this project for unforeseen subsurface conditions.

Conditions Can Change

This report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by events such as construction on or adjacent to the site, or by natural events such as floods, earthquakes, slope instability, or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Professional Judgment

It is important to recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. By necessity, GeoEngineers uses its professional judgment in arriving at our conclusions and recommendations.

GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce the risk of misunderstandings regarding the inexact nature of our professional services. Please confer with GeoEngineers if you need to know how these 'Report Limitations and Guidelines for Use' apply to your project or site.