

Amendment #2
Port of Ilwaco Bulkhead Resilience Project

TO ALL PLANHOLDERS AND/OR PROSPECTIVE BIDDERS:

The following changes, additions, and/or deletions are hereby made a part of the Contract Documents for the Ilwaco Bulkhead Resilience Project Dated August 28, 2024, as fully and completely as if the same were fully set forth therein. Except as described below; the original Contract Documents, as amended by all previous addenda, remain unchanged:

GENERAL:

ADD Appendix A1 USACE Permit No. NWP-2022-525.

SPECIFICATIONS:

REMOVE in its entirety the current Technical Specification 01 71 23 and **REPLACE** in its entirety with the attached Technical Specification 01 71 23.

REMOVE in its entirety the current Technical Specification 31 62 00 and **REPLACE** in its entirety with the attached Technical Specification 31 62 00.

DRAWINGS:

For Bid Solicitation, Drawings, **REPLACE** the following drawings with the attached Drawings which includes but is not limited to the following changes:

- Clarification of tie-back anchor testing requirements, Sheet G-005.
- Clarification of chain link fence demolition and replacement extents, Sheets V-100, CD-100, C-100, and C-110.
- Specification of tie-back anchor design load, lock-off load, and tendon type. Sheet S-100.

QUESTIONS & ANSWERS:

1. **Specification Section 31 51 13 Section 2.02B calls for PTI Class I Double Corrosion protection which would be met with uncoated bare strands in an HDPE corrugated sheathing per PTI. But part Project Specification Section B.1**

and B1.3 goes on to require both epoxy coated strand and HDPE corrugated sheathing. Please confirm that epoxy coated strand is not required to meet the double corrosion protection.

- A. Double corrosion protection according to PTI Class 1 and epoxy coating is required.
- 2. The specification section 31 51 13-3.03 calls for proof and verification testing in factors x DL (Design Load). The DL is not called out specifically on the drawings, only the Min Ult. Anchor Capacity and the Anchor Working Load. Please clarify what the DL is.**
 - A. The Design Load (DL) is 225 kips, Drawing S-100 has been updated to reflect this.
 - 3. Sheet S-100 Table GROUTED TIE-BACK ANCHOR SCHEDULE calls for 15ea 0.6" DIA strands per anchor. This is more strands than required to meet the Min Ult Anchor Capacity load of 625 kips. Please clarify the actual number strands required and the alternative minimum size of threaded bar required.**
 - A. Bids shall be based on (11) 0.6" strands, or 2-1/2" diameter bars. Drawing S-100 has been updated to reflect this.
 - 4. Sheet S-100 Table GROUTED TIE-BACK ANCHOR SCHEDULE calls for an anchor working load of 225 kips. Is this the intended to be the permanent lock-off load?**
 - A. The lock-off Load is 225 kips. Drawing S-100 has been updated to reflect this.
 - 5. Does RCW 39.04.320 regarding apprenticeship utilization apply to this project?**
 - A. The Contractor is required to comply with all applicable Federal, State, and Local laws.
 - 6. The plans (Sheet S-100) and specifications (Section 31 62 00) appear to be silent on the sheet pile interlocks. The assumption is that hot-rolled sheet pile interlocks are intended by the designer. Please confirm that this is correct and that cold-formed interlocks are not acceptable.**
 - A. Sheet piles must be hot rolled.
 - 7. Min bond length in rock noted as 65ft with a 6" diameter drillhole. If a larger hole diameter used, can a smaller bond length in rock be considered? For example, 8" hole requires min 49ft bond for 50psi bond stress.**
 - A. The hole diameter and bond length in rock are for bid purposes only. The final anchor design/configuration is the responsibility of the Contractor according to the project specifications (31 51 13 1.02 B and C).

- 8. Bond stress of 50psi provided for rock. Is there no capacity that can be used in the soils overlying the rock? Based on the no-load zone geometry, a 15ft free length is required whereby a 65-ft free length is required to get to rock at a 45deg angle.**
- A. Due to the strength loss of the soils during a seismic event, the capacity of the anchors between the no load zone and the siltstone must be disregarded as part of the anchor capacity calculation.
- 9. No anchor head design currently shown in plans. Is this the anchor designer's responsibility?**
- A. Design of the anchor head and bearing plate are the responsibility of the Contractor according to the project specifications (31 51 13 1.02 C). Anchor head requirements are provided in 31 51 13 2.02 J.1.
- 10. Specs state that bulkhead deflection can't exceed 1" during testing. At the anticipated test loads, the current design will deflect up to 3". Is it the contractor's responsibility to design a reaction frame that limits lateral movement of the bulkhead to just 1"?**
- A. Reaction frames or other measures to limit sheet pile deflection during testing are required and are the responsibility of the Contractor (31 51 13 3.03 G).
- 11. Per Suggested Construction Sequence note 10 on drawing C-100, it appears the Concrete Cap will be installed in multiple lifts. Please clarify where the horizontal construction joint in the concrete cap will be located. Would a construction joint near the located shown below be acceptable? Please advise.**
- A. A mid height construction joint will be permitted. The exact location will be finalized after award and coordinated with the tie back block-out size for the selected anchor and equipment.
- 12. Note 2 on Drawing Sheet S-501 allows contractor to adjust size of block outs for the Tie-Back Anchors in order to accommodate the jacking equipment selected to use during post tensioning and testing. Please confirm that these block-outs will need to be filled following anchor testing and installation of anchor covers. Please provide necessary details.**
- A. The block-outs must be filled with concrete after the anchors are completed. See Detail B1 on S-501. All rebar that needs to be discontinuous to allow clearance for jacking equipment must be spliced with mechanical couplers. Final details of the block-out and rebar will be coordinated after award with the selected anchor and equipment.

13. Detail C1 on Drawing Sheet S-201 calls out a Guardrail along the South End of the New Bulkhead Concrete Cap. Please provide details of the required fabricated Guard Rail.

A. No guardrail is required. Drawing S-201 has been updated to reflect this.

14. Detail D1 on Drawing Sheet S-511 shows a Typical Fence Configuration, please clarify where this fencing is to be installed on the project.

A. The fence detail is used to replace fencing that must be removed to facilitate installation of the bulkhead and berm. Clarification of fence extents have been updated on sheets V-100, CD-100, C-100, and C-110.

15. S-100 provides anchor ultimate capacity of 625-kips, and anchor working load of 225-kips. Specification 31 51 13 calls for performance testing to 2.0 x Design Load, and proof testing to 1.33 x Design Load. Please confirm if the "Design Load" is the same as the "Anchor Working Load".

A. The Design Load (DL) is 225 kips, Drawing S-100 has been updated to reflect this.

16. Specification 31 51 13 – 3.04 A calls for three initial soil anchors to be performance tested, with the remaining anchors to be proof tested. Note 2 on plan sheet G-005 calls for performance testing of the first three anchors installed and then on a minimum of the two remaining anchors. Note 4 on plan sheet G-005 calls for a minimum of three pre-production or verification tests to be performed to 200% of the design bond strength. Please clarify what the requirements are for verification, performance, and proof testing of the anchors.

A. The requirements in the specifications control - the first three anchors must be performance tested, and the remaining anchors must be proof tested. No pre-production tests are required. Sheet G-005 has been updated to reflect this.

17. If the anchor proof and performance test loads are based on the working design load, can the number of strands in the anchor tendons be reduced from the 15-strand requirement shown in the plans?

A. Anchors must be sized using the specified design load and have a minimum ultimate strength satisfying the requirement on S-100. The (15) strand requirement on S-100 has been updated, bids shall be based on (11) 0.6" strands, or 2-1/2" diameter bars.

18. Section 31 51 13 includes specifications regarding:

○ **Providing an anchor test reaction frame.**

- **Predicting the anticipated lateral movement of the sheet pile wall during anchor testing.**
- **Provide methods for monitoring and preventing excessive sheet pile lateral movement during anchor testing (listed as 1-inch).**

The primary means for limiting the lateral movement of the sheet pile wall is in the stiffness provided by the wall design itself, which is under the responsibility of the Owner's Design Team. Please evaluate the stiffness provided by the sheet pile and cap beam design and specify what length of the wall cap beam that the test load would need to be distributed over with the reaction frame to meet the stated lateral displacement limitations.

- A. Reaction frames or other measures to limit sheet pile deflection during testing are required and are the responsibility of the Contractor (31 51 13 3.03 G).

19. Please provide the anchor lock-off load.

- A. The lock-off Load is 225 kips. Drawing S-100 has been updated to reflect this.

20. Detail C3/S-501 calls for "Tendon Anchor and Local Zone Reinf per PT Supplier". Please confirm the intent of this note. Typically, the ground anchor installer will design the bearing plate, but any reinforcement in the pile cap (for punching shear, etc.) would be designed by the engineer of record.

- A. Design of the tendon anchor (e.g. plate, trumpet) and the local zone reinforcing (e.g. confining spirals if required) are the responsibility of the Contractor. The pile cap general zone reinforcing has been designed by the EOR and is shown in C3/ and B1/S-501. See ACI 318 for the definitions of local and general zone reinforcing.

21. Specification 31 51 13 – 2.02 B & C – call for the anchor tendons to be PTI Class 1 double corrosion protected. They also call for epoxy coating of the strands or bar. Can the epoxy coating not be used if the Class 1 double corrosion protection is provided by a grout filled encapsulation?

- A. Double corrosion protection according to PTI Class 1 and epoxy coating is required.

22. Specification 31 51 13 – 2.02.E calls for Type II cement. Type II cement is no longer readily available. Please confirm if Type 1L cement is acceptable.

- A. Type 1L cement is acceptable.

23. Specification 31 51 13 – 3.05.B provides a procedure for rejected soil anchors. The pile cap reinforcement per C1&C3/S-501 does not appear to

accommodate the potential coring for new anchor block-outs. Please provide an updated pile cap reinforcement layout to accommodate future anchor coring if needed (minimum 12” diameter).

- A. Coring through the pile cap is not permitted. Additional block-outs may be provided at the Contractors discretion using detail B1/S-501. Unused block-outs or block-outs from rejected anchors must be filled with concrete with all discontinuous reinforcing spliced with mechanical couplers according to detail B1/S-501. Final details of the block-outs and rebar will be coordinated after award with the selected anchor and equipment.

24. Please provide weight limits for equipment behind the new sheet pile wall prior to installation and lock off of the ground anchors.

- A. The suggested construction sequence on C-100 assumes a construction live load of 80 psf as noted in "Bulkhead Design Criteria" Note 5 on G-003.

25. Specification 31 51 13 -1.07.4 limits work hours for anchor installation to weekdays between 7:00 AM and 7:00 PM. Variations to this time frame may be necessary to work around the high tide schedule. Will a waiver to the work hour limitations based on working around the tide schedule be approved by the City Manager?

- A. The Port will coordinate with the selected Contractor, the City, and the regulatory agencies after award to facilitate work hours based on the Contractors work schedule to allow work in low-tide windows.

26. Please clarify if the Organic Vapor / Odor Control System mentioned in Section 01 57 19-14 applies to this project.

- A. Organic vapor and odor control measures are required.

27. Please clarify if the Pre & Post Bathymetric Survey mentioned in Section 01 71 23 applies to this project.

- A. Pre- and post-construction bathymetric surveys are not required. 01 71 23 has been updated to reflect this.

28. Section 31 62 00 – Driven Piles states that the Sheet Pile Order Lengths should be a minimum length between Cutoff and Pile Tip plus 10ft and without splices. An additional 10ft added to the neat length of the sheet pile seems excessive, maybe a 5ft additional length is more accurate for a neat length of 49.5 ft, please confirm this additional sheet pile length is required.

- A. 5ft of additional length is acceptable. Specification Section 31 62 00 has been updated to reflect this.

29. Section 31 62 00, paragraph 3.01 states that the contractor is responsible to drive the sheet pile, free of damage to the required ultimate pile capacity and final tip elevation shown in the drawings. Tip elevation is provided on the drawings, please clarify the Ultimate Pile Capacity.

A. The piles must have a minimum ultimate axial capacity of 37 kips/LF of wall (as measured in plan).

30. Section 31 62 00, paragraph 2.02 states to Coat the Steel Sheet Piles from the Top of Pile down to 10ft below the design mudline unless otherwise indicated on the drawings. Drawing sheet S-301 identifies a future dredge depth of -10.0 MLLW and an Allowable Over dredge depth of -11.0 MLL. The existing average mudline elevation is approx. -5.0ft along the bulkhead. Please clarify coating limits.

A. Piles must be coated to an elevation of EL -21.0 ft, MLLW. Specification Section 31 62 00 has been updated to reflect this.

31. Section 31 62 00, paragraph 3.03.3, states that the maximum deviation from plumb must not exceed 1:120 (0.50 Degree). This requirement appears to be more stringent than typical sheet pile installation tolerances, what is the basis of this requirement and can a more lenient tolerance of approx. 2.0 degrees be considered?

A. The pile plumb tolerance will not be relaxed.

Questions 32 through 51 were asked at the Pre-Bid Meeting 1 (August 20, 2024)

32. Are fender piles included in the design? Some of the reference documents in the Appendices show fender piles.

A. Fender piles are not included in the design. Draft versions of some documents are included in the appendices as attachments to permit coordination. Only signed final design documents shall be used for bidding.

33. Have all permits been issued for the project?

A. All permits have been issued, see the recently issued Army Corps Permit in Appendix A1.

34. When will the Army Corps permit be issued?

A. The Corps permit was issued on September 4, 2024.

35. Are the existing steel fender piles being salvaged?

A. No, refer to Technical Specification Section 02 41 00 1.07.

36. There are protruding lumps in the pavement behind the existing bulkhead. Does the Port know what these are?

- A. It is suspected that these are anchor piles for the existing bulkhead, but this is unconfirmed. There are no record drawings available for the existing structures.

37. What are the access requirements for Safe Coast Seafood employees during construction?

- A. The Contractor will have access to the work area up to the Safe Coast buildings as shown in the plans. Detailed coordination with Safe Coast with construction phasing will occur after Award. Safe Coast access and operations will not rely on access through the work area.

38. What is the load rating of the existing bulkhead?

- A. There is currently a pedestrian only restriction on the bulkhead. A detailed load rating (i.e. allowable load values) has not been conducted as there are no record drawings of the existing structure. This load restriction has been in place since August 2022.

39. Is the existing bulkhead being monitored? If so who has been doing the monitoring, for how long, and how much movement has there been?

- A. The bulkhead is currently being monitored, and has been monitored since November 2022. Monitoring has been conducted by Moffatt & Nichol and Port staff. To date the bulkhead has moved approximately 0.8 inches since monitoring was initiated.

40. When was the existing bulkhead constructed?

- A. Unknown, there are no record drawings for the existing structures.

41. What is the anticipated work schedule?

- A. The Port has received an early in-water work window for this project, and hopes to start construction in October 2024. The anticipated project completion date is end of May 2025 depending on when the project is awarded. All in-water work must be completed during the permitted work window of September 1 through February 28.

42. Due to limited upland and waterside access, will the Port clear vessel moorage at the adjacent float to the east?

- A. Yes, the west side of the float adjacent to the project site will be cleared to provide access for the selected Contractor.

43. What is the due diligence for piles not being able to be driven to the design tip elevation?

- A. Unforeseen geotechnical conditions will be evaluated by the project Geotechnical and Structural Engineers based on actual driving conditions.

44. What kind of environmental monitoring will be required (e.g. mammal, turbidity)?

- A. The contractor is responsible for being familiar with all permit requirements and adhering to them during construction. As noted in the WQC communication (email dated 2/8/24) included with the Ecology WQC (Appendix A9), visual turbidity monitoring will be required during all in-water work and instrumented monitoring may need to be implemented if work produces visible turbidity plumes. Turbidity monitoring equipment is required to be on hand in the event that instrumented monitoring is triggered by visual monitoring observations. Marine mammal monitoring is required during pile driving activities as noted in Appendix A (Biological Evaluation, ESA consultation information, etc.) All other permit requirements are as described in Appendix A.

45. Will turbidity curtains be required?

- A. A turbidity curtain is not required but should be readily available as a contingency measure in the event that increased turbidity triggers additional BMP requirements during construction.

46. Is material testing the responsibility of the Contractor?

- A. The Contractor is responsible for all testing other than Special Inspections, refer to Special Provision 17.

47. Is the Contractor responsible for surveying?

- A. The Contractor is responsible for surveying, refer to Special Provision 15.

48. What are the allowable work hours for the project? Due to elevations and timing of the tides during the construction season, work may be required outside of normal working hours.

- A. The Port will coordinate with the selected Contractor, the City, and the regulatory agencies after award to facilitate work hours based on the Contractors work schedule to allow work in low-tide windows.

49. Will there be a Geotechnical Engineer onsite during pile driving and tie-back installation?

A. Yes, the Port's Geotechnical Engineer will be present.

50. Would it permissible to eliminate the paint coating on the piles and use thicker sheets instead?

A. Value engineering proposals are allowed per the project specifications, Refer to Technical Specification Section 01 25 00. These will be evaluated after Award.

51. The specifications include vibration monitoring, have thresholds and distances been established?

A. Yes, refer to Technical Specification Section 31 09 00.

Questions 52 through 59 were asked at the Pre-Bid Meeting 2 (September 10, 2024)

52. There is a note on the drawings about dredge elevations, is dredging included in this project?

A. Dredging is not included in this project.

53. Is there a load restriction on the existing bulkhead?

A. There is currently a pedestrian only restriction on the bulkhead. A detailed load rating (i.e. allowable load values) has not been conducted as there are no record drawings of the existing structure. This load restriction has been in place since August 2022.

54. When is the expected start of construction?

A. Expected start is October 2024.

55. Is Build America Buy America (BABA) Required?

B. Yes, BABA is required.

56. Will Safe Coast Seafoods require access to the truck lane between the existing bulkhead and the adjacent buildings?

A. The Contractor will have access to the work area up to the Safe Coast buildings as shown in the plans. Detailed coordination with Safe Coast with construction phasing will occur after Award. Safe Coast access and operations will not rely on access through the work area.

57. Are drawings available for the existing buildings or the bulkhead?

A. There are no record drawings available for the existing structures.

58. Have geotechnical explorations been conducted?

- A. Geotechnical borings were performed, refer to the geotechnical report in the Appendices.

59. Is the hoist installation part of this project or a separate contract?

- A. This project includes installation of the hoist anchor bolts only. The hoist base plate information has been provided only to facilitate placement of the anchor bolts. Hoist installation is not in this project.

PLEASE BE SURE TO ACKNOWLEDGE THIS ADDENDUM ON THE PROPOSAL FORM.

The above changes shall constitute a binding change to the contract documents for this project and shall become a part of any resulting contract awarded subsequent to the opening of bids for the project. Remember that the bidder must acknowledge receipt on the signature page of the proposal of all addenda issued during the bidding period. *Failure to so acknowledge may result in the proposal being rejected as not responsive.*

End of ADDENDUM NO. 2

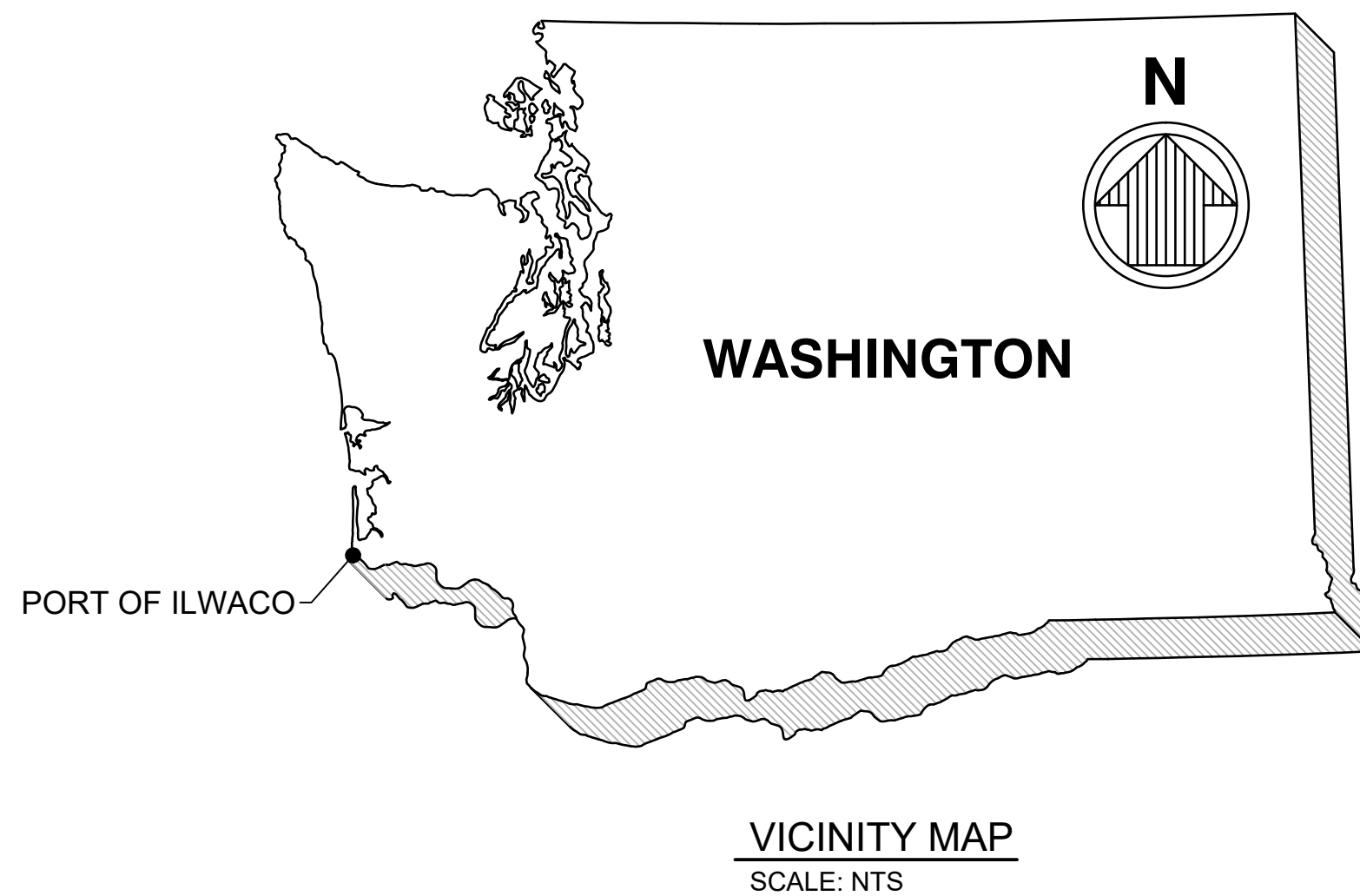
PORT OF ILWACO EAST BULKHEAD REPLACEMENT

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ALAN BENNETT
BUTCH SMITH

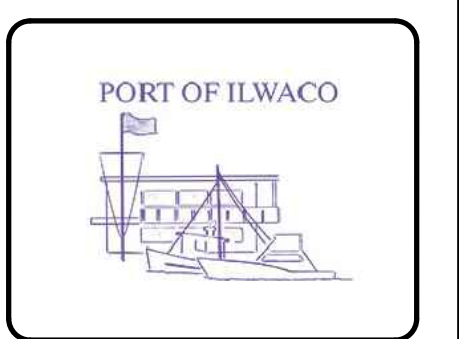
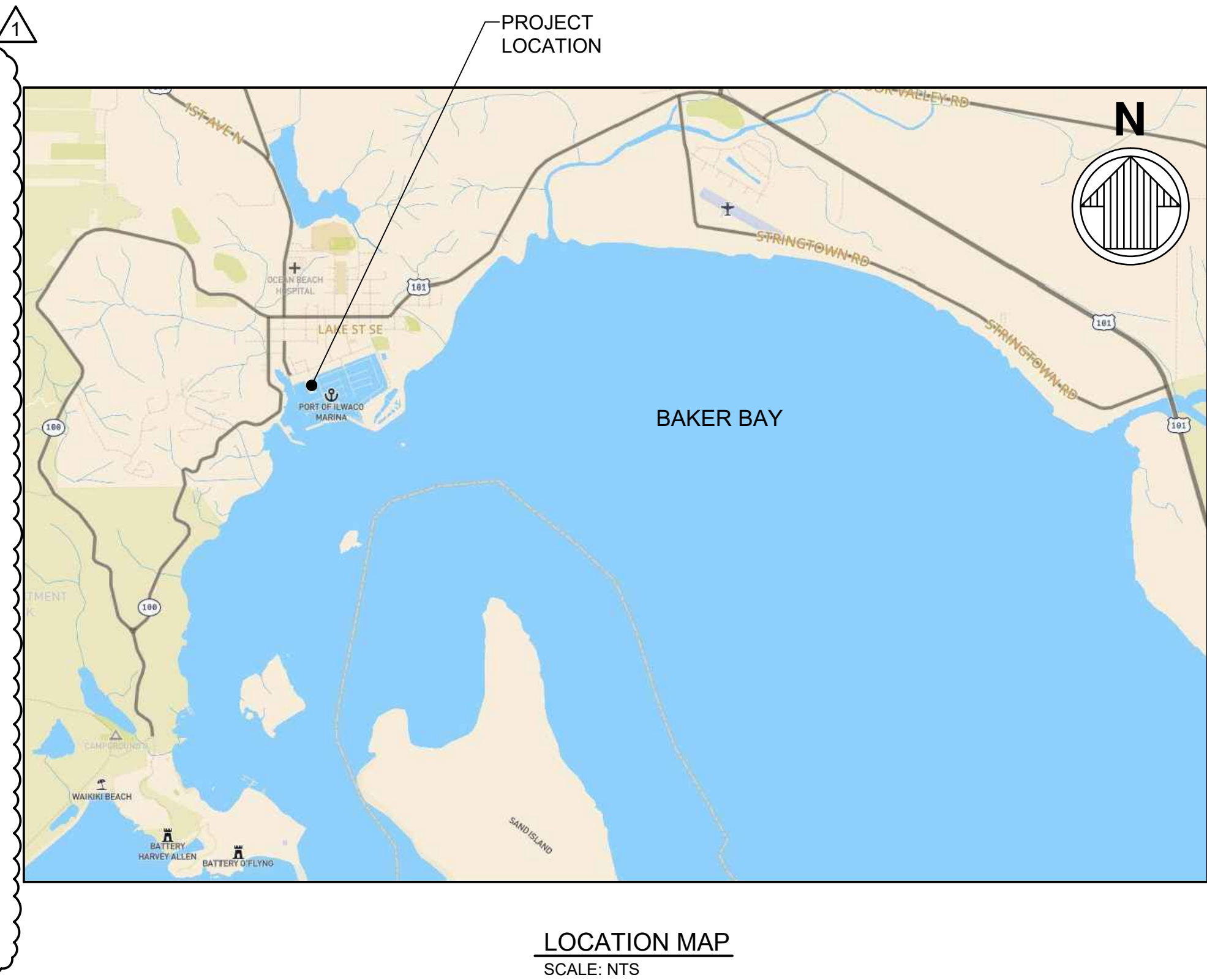
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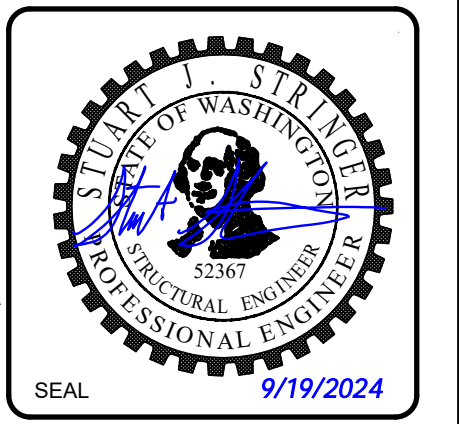
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1	BID ADDENDUM 2	9/19/2024		

**PORT OF ILWACO
MARINA STRUCTURES
REPLACEMENT**

**COVER SHEET, VICINITY
& LOCATION MAPS AND
SHEET INDEX**

Designed by: S. STRINGER	Checked by: CG	Drawn by: S. BRANLUND	Submitted by: S. STRINGER MOFFATT & NICHOL
Date: 4/19/2024	MAN Project No. 213282	Drawing code:	Drawing Scale: 1" = 1' (0 SHEET)

600 UNIVERSITY STREET SUITE 610 SEATTLE, WA 98101 (206) 622-0222



BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024

Sheet Reference No.
G-001
INDEX: 1 OF 23

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SPECIAL INSPECTION NOTES

- THE ITEMS CHECKED WITH AN "X" MUST BE INSPECTED IN ACCORDANCE WITH IBC CHAPTER 17 BY AN INSPECTOR MEETING THE MINIMUM QUALIFICATIONS OUTLINED IN THE SPECIFICATIONS. FOR MATERIAL SAMPLING AND TESTING REQUIREMENTS, REFER TO THE PROJECT SPECIFICATIONS, THE SPECIFIC GENERAL NOTES SECTIONS, AND THE CODE SECTIONS REFERENCED. SEND COPIES OF ALL STRUCTURAL TESTING AND INSPECTION REPORTS DIRECTLY TO THE PORT. ANY MATERIALS WHICH FAIL TO MEET THE PROJECT SPECIFICATIONS MUST IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE PORT. SPECIAL INSPECTION TESTING REQUIREMENTS APPLY EQUALLY TO ALL BIDDER DESIGNED COMPONENTS.
- CONTINUOUS SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ON THE SITE AT ALL TIMES OBSERVING THE WORK REQUIRING SPECIAL INSPECTION IBC SECTION 1702. PERIODIC SPECIAL INSPECTION MEANS THAT THE SPECIAL INSPECTOR IS ONSITE AT TIME INTERVALS NECESSARY TO CONFIRM THAT ALL WORK REQUIRING INSPECTION IS IN COMPLIANCE.
- VISUALLY INSPECT ALL WELDS.
- ALL COMPLETE PENETRATION WELDS MUST BE TESTED ULTRASONICALLY OR BY USE OF A COMPARABLE APPROVED METHOD.
- CONTINUOUS SPECIAL INSPECTION BY A REGISTERED DEPUTY INSPECTOR IS REQUIRED FOR FIELD WELDING, CONCRETE STRENGTH, HIGH STRENGTH BOLTING, SPRAYED-ON FIREPROOFING, GROUTING.

TABLE 1705.3 REQUIRED SPECIAL INSPECTIONS AND TESTS OF CONCRETE CONSTRUCTION

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION	REFERENCED STANDARD	IBC REFERENCE
1. INSPECT REINFORCEMENT, VERIFY PLACEMENT.	-	X	ACI 318: 20, 25.2, 25.3, 26.6.1-26.6.3	1908.4
2. REINFORCING BAR WELDING A. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"; AND B. INSPECT ALL OTHER WELDS.	-	X	AWS D1.4 ACI 318: 26.6.4	-
3. REINFORCING BAR WELDING	-	X	ACI 318: 17.8.2	-
4. INSPECT ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS. A. ADHESIVE ANCHORS INSTALLED IN HORIZONTAL OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS. B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.A.	X	X	ACI 318: 17.8.2.4 ACI 318: 17.8.2	-
5. VERIFY USE OF REQUIRED DESIGN MIX.	-	X	ACI 318: 19, 26.4.3, 26.4.4	1904.1 1904.2 1908.2 1908.3
6. PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS. PERFORM SLUMP AND AIR CONTENT TESTS. AND DETERMINE THE TEMPERATURE OF THE CONCRETE.	X	-	ASTM C172 ASTM C31 ACI 318: 26.4, 26.12	1908.10
7. INSPECT CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES.	X	-	ACI 318: 26.5	1908.6 1908.7 1908.8
8. VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES.	-	X	ACI 318: 26.5.3-26.5.5	1908.9
9. VERIFY IN-SITU CONCRETE STRENGTH, PRIOR TO REMOVAL OF SHORES AND FORMS FROM BEAMS.	-	X	ACI 318: 26.11.2	-
10. INSPECT FORMWORK FOR SHAPE, LOCATION, AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED.	-	X	ACI 318: 26.11.1.2(b)	-

TABLE 1705.6 REQUIRED SPECIAL INSPECTIONS AND TESTS OF SOILS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY.	-	X
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER SUPPORTING MATERIAL.	-	X
3. PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS.	-	X
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF COMPACTED FILL.	X	-
5. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY.	-	X

TABLE 1705.7 REQUIRED SPECIAL INSPECTIONS AND TESTS OF DRIVEN DEEP FOUNDATION ELEMENTS

TYPE	CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1. VERIFY ELEMENT MATERIALS, SIZES, AND LENGTHS COMPLY WITH REQUIREMENTS.	X	-
2. DETERMINE CAPACITIES OF TEST ELEMENTS AND CONDUCT ADDITIONAL LOAD TESTS, AS REQUIRED.	X	-
3. INSPECT DRIVING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	X	-
4. VERIFY PLACEMENT LOCATIONS AND PLUMBNESS, CONFIRM TYPE AND SIZE OF HAMMER, RECORD NUMBER OF BLOWS PER FOOT OF PENETRATION, DETERMINE REQUIRED PENETRATIONS TO ACHIEVE DESIGN CAPACITY, RECORD TIP AND BUTT ELEVATIONS, AND DOCUMENT ANY DAMAGE TO FOUNDATION ELEMENT.	X	-
5. FOR STEEL ELEMENTS, PERFORM ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.2 SEE QUALITY ASSURANCE INSPECTION REQUIREMENTS OF AISC-360.	-	-
6. FOR CONCRETE ELEMENTS AND CONCRETE-FILLED ELEMENTS, PERFORM TESTS AND ADDITIONAL SPECIAL INSPECTIONS IN ACCORDANCE WITH SECTION 1705.3.	-	-
7. FOR SPECIALTY ELEMENTS, PERFORM ADDITIONAL INSPECTIONS AS DETERMINED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE.	X	-

TIE-BACK ANCHORS TESTING AND INSPECTION

- SUBMIT GROUTED TIE-BACK ANCHOR TESTING AND SPECIAL INSPECTION PROGRAM. CONTINUOUS SPECIAL INSPECTION IS REQUIRED FOR TIE-BACK ANCHOR INSTALLATION, GROUTING, AND TESTING. SEE SPECIFICATION 31 51 13 SOIL ANCHORS.
- AT A MINIMUM, PERFORMANCE TESTING OF GROUTED TIE-BACK ANCHORS MUST OCCUR ON THE FIRST THREE ANCHORS INSTALLED.
- PERFORMANCE AND PROOF TESTS MUST BE ACCOMPLISHED IN ACCORDANCE WITH THE POST-TENSIONING INSTITUTE RECOMMENDATIONS (PTI, 2014).



Mark	Description	Date	SJS	Appr.
1	BID ADDENDUM 2	9/19/2024		

PORT OF ILWACO
MARINA STRUCTURES REPLACEMENT
STRUCTURAL SPECIAL INSPECTIONS & REQUIREMENTS & DETAILS

Designed by: S. STRINGER	Checked by: CGS	Reviewed by: S. BRANLUND	Submitted by: S. STRINGER, MOFFATT & NICHOL
Date: 4/19/2024	MAN Project No: 213282	Drawing code:	Drawing Scale: 1" = 1' (0 SHEET)
Drawn by: CG	CSB		

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ISSUED: SEPTEMBER 19, 2024

Sheet Reference No. **G-005**
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A1 PLAN - CONTRACTOR SITE ACCESS & LAYDOWN AREAS
SCALE: NTS

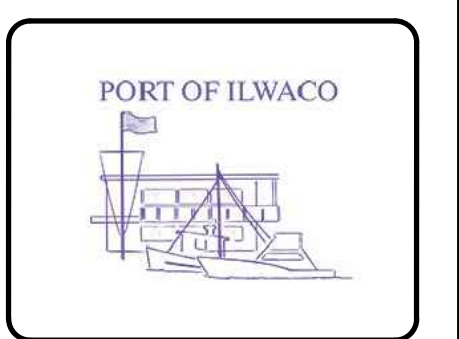
LAYDOWN AREA KEY NOTES

THE FOLLOWING AREAS WILL BE AVAILABLE FOR CONTRACTOR LAYDOWN & STAGING.

- ① UNFENCED GRAVEL LOT, APPROXIMATELY 72'x100'
- ② UNFENCED GRAVEL PARKING LOT, APPROXIMATELY 125'x80'
- ③ FENCED GRAVEL LOT, APPROXIMATELY 154'x64'

LEGEND

- CONTRACTOR LAYDOWN AREA
- CONSTRUCTION ACCESS ROUTE



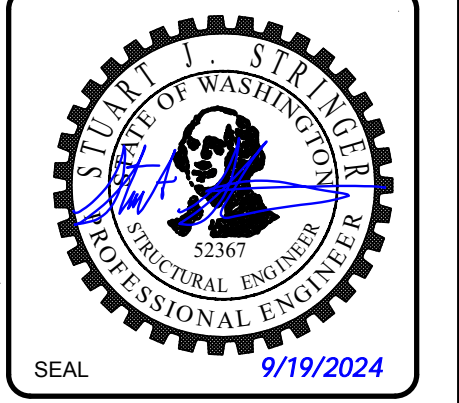
Mark	Description	Date	Appr.
1	BID ADDENDUM 2	9/19/2024	SJS

**PORT OF ILWACO
MARINA STRUCTURES
REPLACEMENT**

**CONTRACTOR SITE
ACCESS & LAYDOWN
AREAS**

Designed by: S. STRINGER	Date: 4/19/2024	Rev: 1
Drawn by: CG	MAN Project No: 213282	
Checked by: CSB	Drawing code:	
Reviewed by: S. BRANLIND	Drawing Scale: 1" = 100'	
Submitted by: S. STRINGER	Submitted by: M. COFFATT & NICHOL	

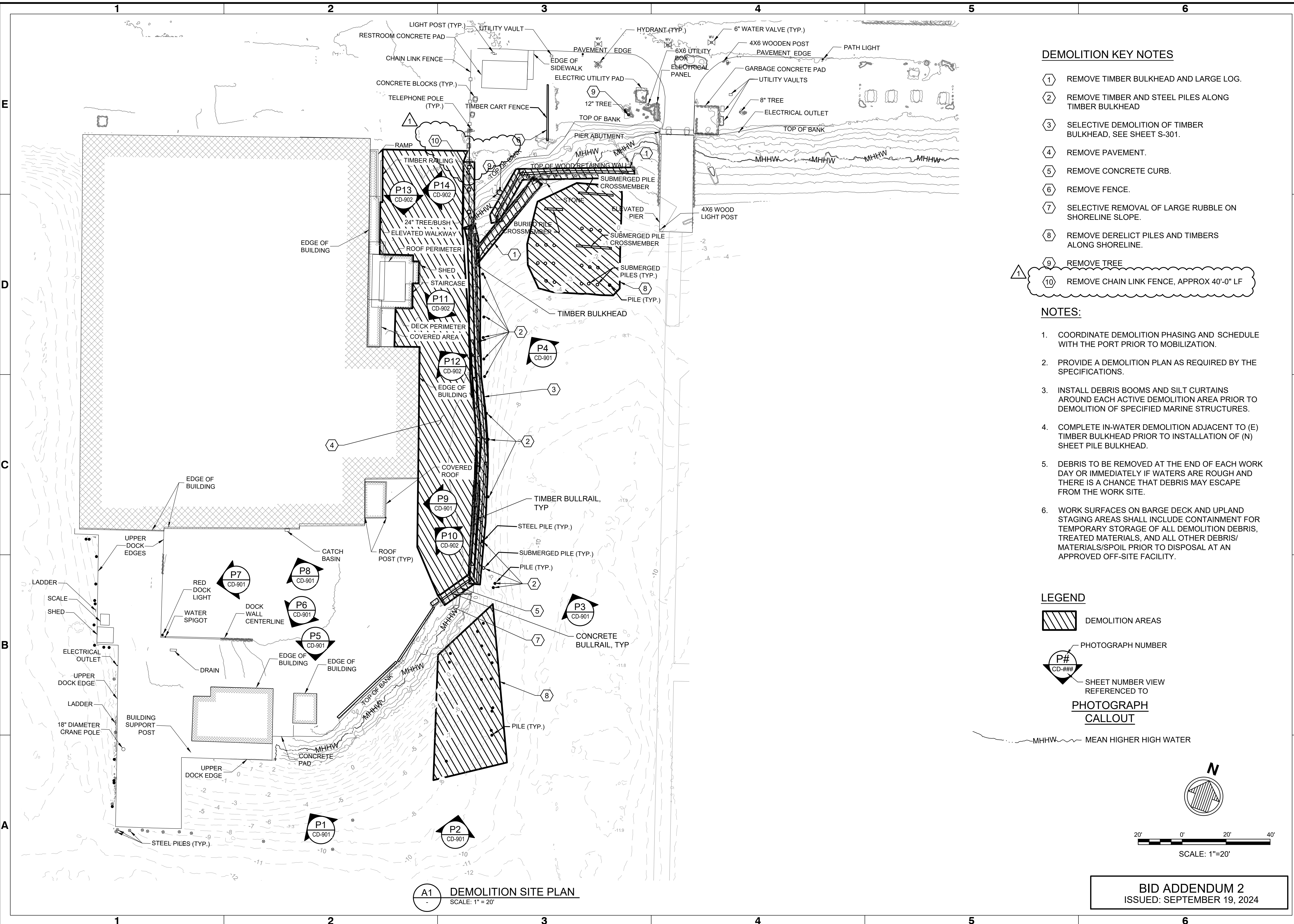
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BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024

Sheet Reference No.
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DEMOLITION KEY NOTES

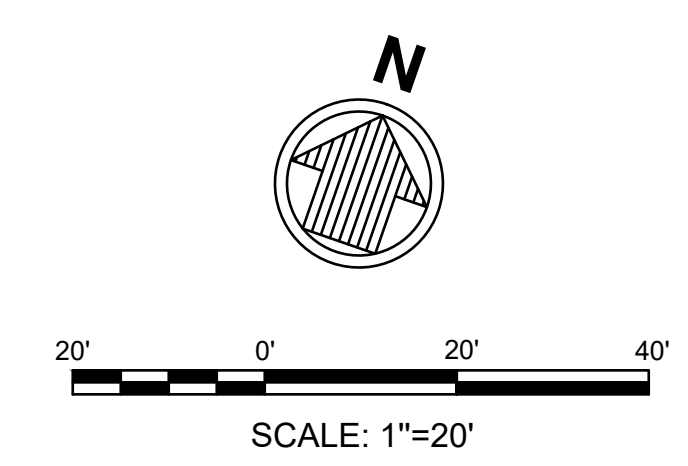
- ① REMOVE TIMBER BULKHEAD AND LARGE LOG.
- ② REMOVE TIMBER AND STEEL PILES ALONG TIMBER BULKHEAD
- ③ SELECTIVE DEMOLITION OF TIMBER BULKHEAD, SEE SHEET S-301.
- ④ REMOVE PAVEMENT.
- ⑤ REMOVE CONCRETE CURB.
- ⑥ REMOVE FENCE.
- ⑦ SELECTIVE REMOVAL OF LARGE RUBBLE ON SHORELINE SLOPE.
- ⑧ REMOVE DERELICT PILES AND TIMBERS ALONG SHORELINE.
- ⑨ REMOVE TREE
- ⑩ REMOVE CHAIN LINK FENCE, APPROX 40'-0" LF

NOTES:

1. COORDINATE DEMOLITION PHASING AND SCHEDULE WITH THE PORT PRIOR TO MOBILIZATION.
2. PROVIDE A DEMOLITION PLAN AS REQUIRED BY THE SPECIFICATIONS.
3. INSTALL DEBRIS BOOMS AND SILT CURTAINS AROUND EACH ACTIVE DEMOLITION AREA PRIOR TO DEMOLITION OF SPECIFIED MARINE STRUCTURES.
4. COMPLETE IN-WATER DEMOLITION ADJACENT TO (E) TIMBER BULKHEAD PRIOR TO INSTALLATION OF (N) SHEET PILE BULKHEAD.
5. DEBRIS TO BE REMOVED AT THE END OF EACH WORK DAY OR IMMEDIATELY IF WATERS ARE ROUGH AND THERE IS A CHANCE THAT DEBRIS MAY ESCAPE FROM THE WORK SITE.
6. WORK SURFACES ON BARGE DECK AND UPLAND STAGING AREAS SHALL INCLUDE CONTAINMENT FOR TEMPORARY STORAGE OF ALL DEMOLITION DEBRIS, TREATED MATERIALS, AND ALL OTHER DEBRIS/MATERIALS/SPOIL PRIOR TO DISPOSAL AT AN APPROVED OFF-SITE FACILITY.

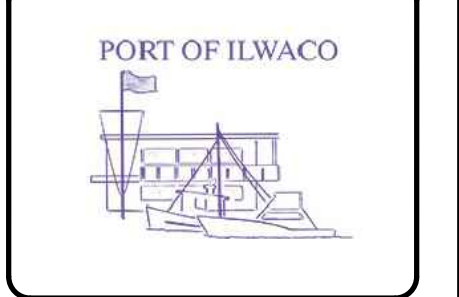
LEGEND

- DEMOLITION AREAS
- PHOTOGRAPH NUMBER
- SHEET NUMBER VIEW REFERENCED TO PHOTOGRAPH CALLOUT
- MHHW - MEAN HIGHER HIGH WATER



A1 DEMOLITION SITE PLAN
SCALE: 1" = 20'

BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024

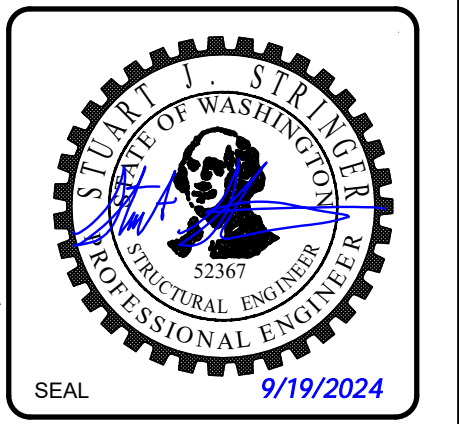


Rev.	Date	Description
1	9/19/2024	BID ADDENDUM 2

DEMOLITION SITE PLAN
(1 OF 2)

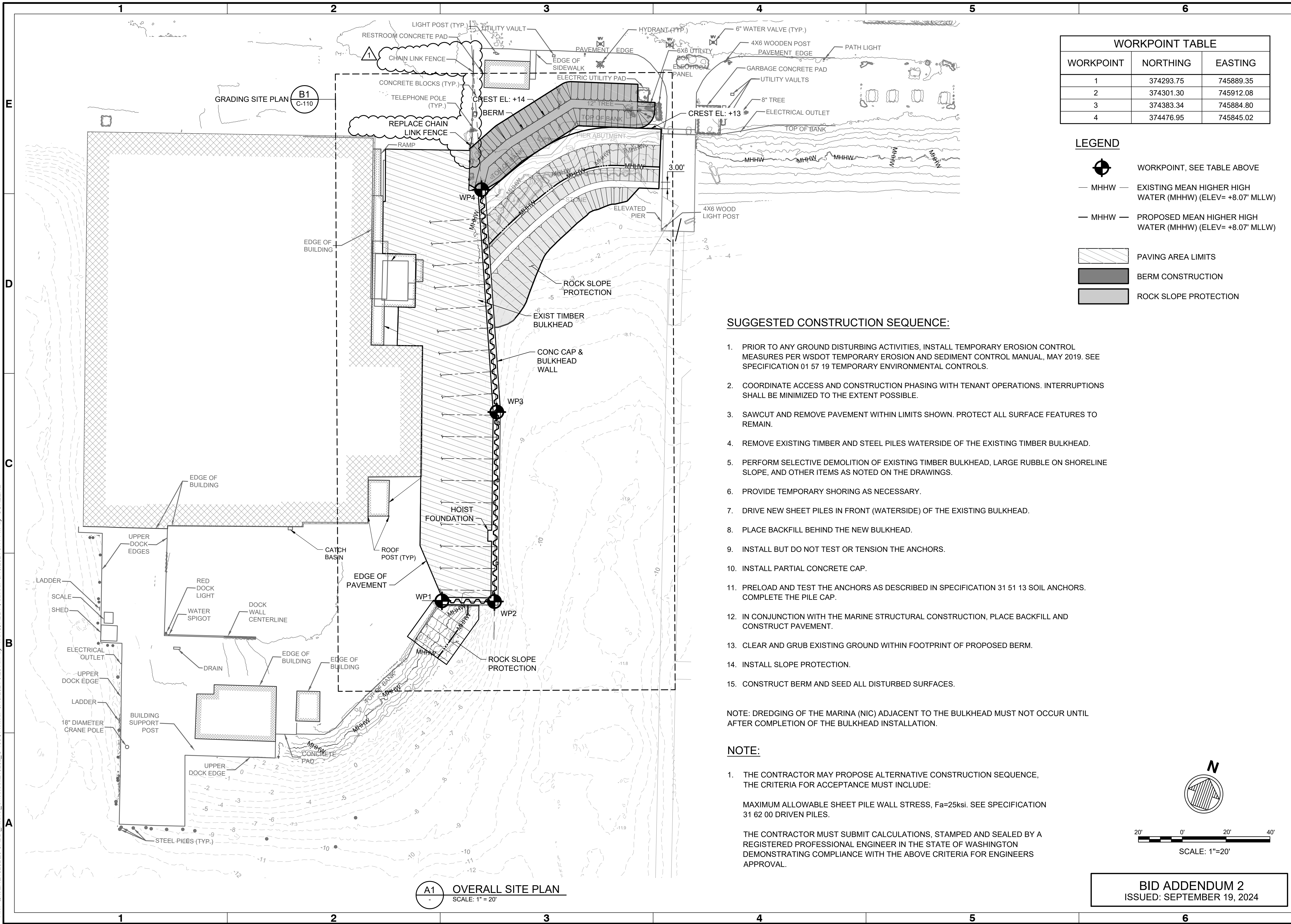
Designed by: S.STRINGER	Date: 4/19/2024	Rev. 1
Dwn by: CG	MAN Project No: 213282	
Reviewed by: S.BRANLIND	Drawing code:	Drawing Scale: 1" = 20' (0 SHEET)
Submitted by: S.STRINGER	MOFFATT & NICHOL	

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WORKPOINT TABLE		
WORKPOINT	NORTHING	EASTING
1	374293.75	745889.35
2	374301.30	745912.08
3	374383.34	745884.80
4	374476.95	745845.02

LEGEND

- WORKPOINT, SEE TABLE ABOVE
- MHHW — EXISTING MEAN HIGHER HIGH WATER (MHHW) (ELEV= +8.07' MLLW)
- MHHW — PROPOSED MEAN HIGHER HIGH WATER (MHHW) (ELEV= +8.07' MLLW)
- PAVING AREA LIMITS
- BERM CONSTRUCTION
- ROCK SLOPE PROTECTION

SUGGESTED CONSTRUCTION SEQUENCE:

1. PRIOR TO ANY GROUND DISTURBING ACTIVITIES, INSTALL TEMPORARY EROSION CONTROL MEASURES PER WSDOT TEMPORARY EROSION AND SEDIMENT CONTROL MANUAL, MAY 2019. SEE SPECIFICATION 01 57 19 TEMPORARY ENVIRONMENTAL CONTROLS.
2. COORDINATE ACCESS AND CONSTRUCTION PHASING WITH TENANT OPERATIONS. INTERRUPTIONS SHALL BE MINIMIZED TO THE EXTENT POSSIBLE.
3. SAWCUT AND REMOVE PAVEMENT WITHIN LIMITS SHOWN. PROTECT ALL SURFACE FEATURES TO REMAIN.
4. REMOVE EXISTING TIMBER AND STEEL PILES WATERSIDE OF THE EXISTING TIMBER BULKHEAD.
5. PERFORM SELECTIVE DEMOLITION OF EXISTING TIMBER BULKHEAD, LARGE RUBBLE ON SHORELINE SLOPE, AND OTHER ITEMS AS NOTED ON THE DRAWINGS.
6. PROVIDE TEMPORARY SHORING AS NECESSARY.
7. DRIVE NEW SHEET PILES IN FRONT (WATERSIDE) OF THE EXISTING BULKHEAD.
8. PLACE BACKFILL BEHIND THE NEW BULKHEAD.
9. INSTALL BUT DO NOT TEST OR TENSION THE ANCHORS.
10. INSTALL PARTIAL CONCRETE CAP.
11. PRELOAD AND TEST THE ANCHORS AS DESCRIBED IN SPECIFICATION 31 51 13 SOIL ANCHORS. COMPLETE THE PILE CAP.
12. IN CONJUNCTION WITH THE MARINE STRUCTURAL CONSTRUCTION, PLACE BACKFILL AND CONSTRUCT PAVEMENT.
13. CLEAR AND GRUB EXISTING GROUND WITHIN FOOTPRINT OF PROPOSED BERM.
14. INSTALL SLOPE PROTECTION.
15. CONSTRUCT BERM AND SEED ALL DISTURBED SURFACES.

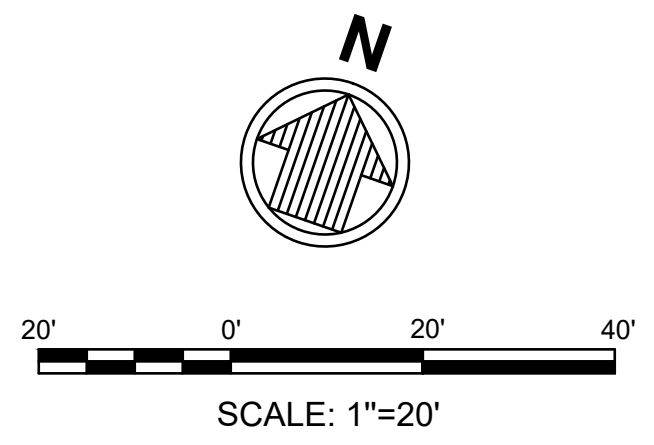
NOTE: DREDGING OF THE MARINA (NIC) ADJACENT TO THE BULKHEAD MUST NOT OCCUR UNTIL AFTER COMPLETION OF THE BULKHEAD INSTALLATION.

NOTE:

1. THE CONTRACTOR MAY PROPOSE ALTERNATIVE CONSTRUCTION SEQUENCE, THE CRITERIA FOR ACCEPTANCE MUST INCLUDE:

MAXIMUM ALLOWABLE SHEET PILE WALL STRESS, $F_a=25\text{ksi}$. SEE SPECIFICATION 31 62 00 DRIVEN PILES.

THE CONTRACTOR MUST SUBMIT CALCULATIONS, STAMPED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF WASHINGTON DEMONSTRATING COMPLIANCE WITH THE ABOVE CRITERIA FOR ENGINEERS APPROVAL.



BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024

PORT OF ILWACO

Rev.	Date	MAN Project No.	Drawing code	Drawing Scale	Post scale
1	4/19/2024	213282		1" = 1'	1" = 20'

PORT OF ILWACO MARINA STRUCTURES REPLACEMENT

OVERALL SITE PLAN

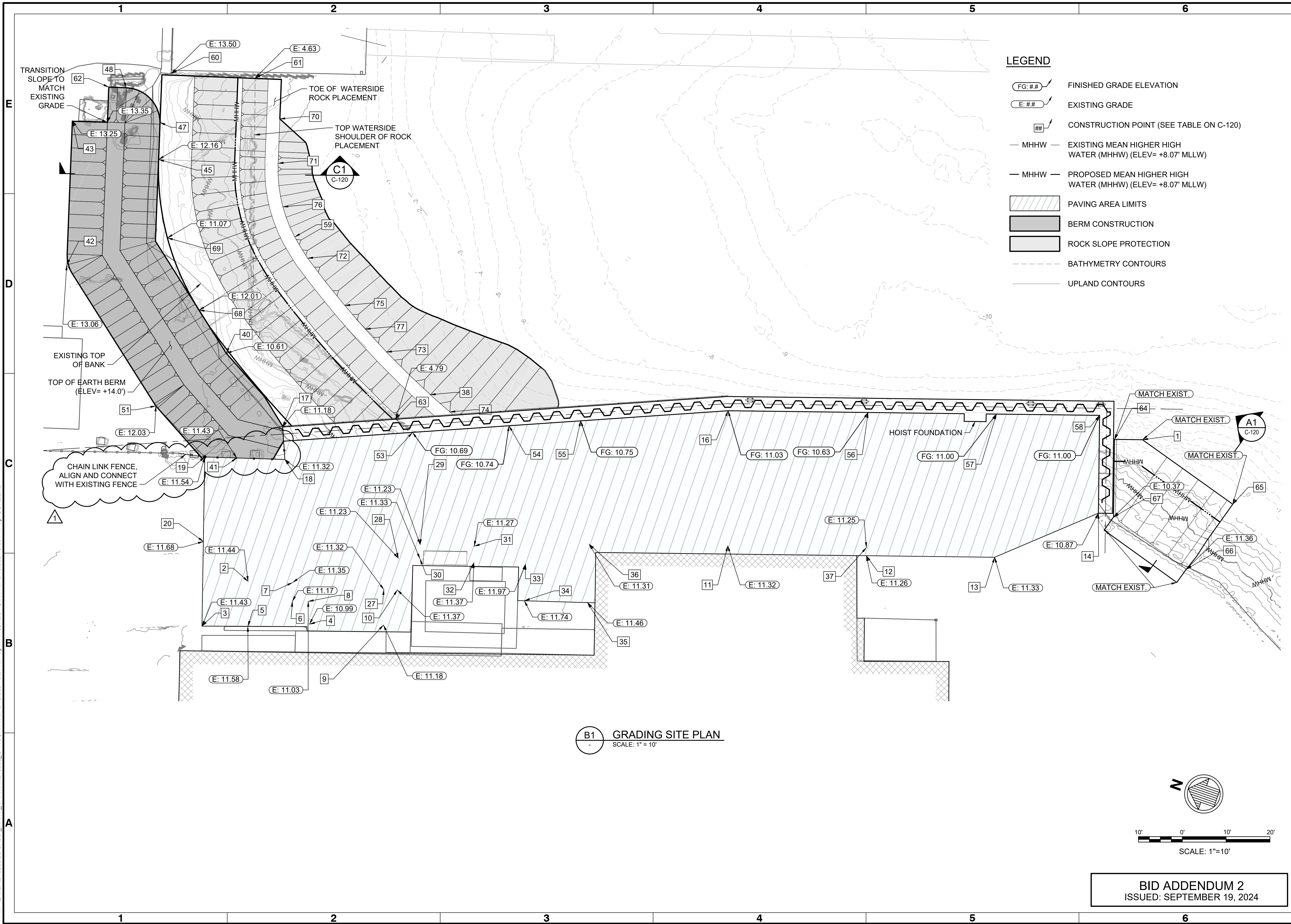
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SEAL 9/19/2024

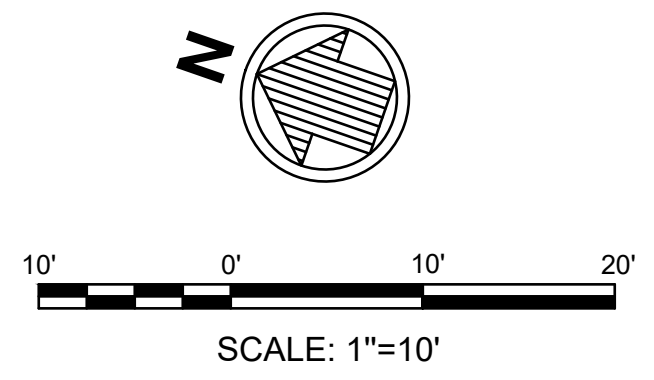
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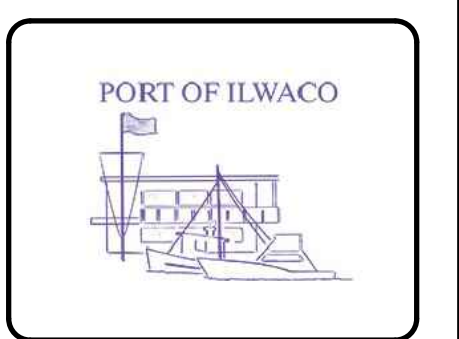
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B1 GRADING SITE PLAN
SCALE: 1" = 10'



BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024



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1	9/19/2024	213282	CG	CSB	S.BRANLIND	MOFFATT & NICHOL

PORT OF ILWACO
MARINA STRUCTURES REPLACEMENT
GRADING SITE PLAN

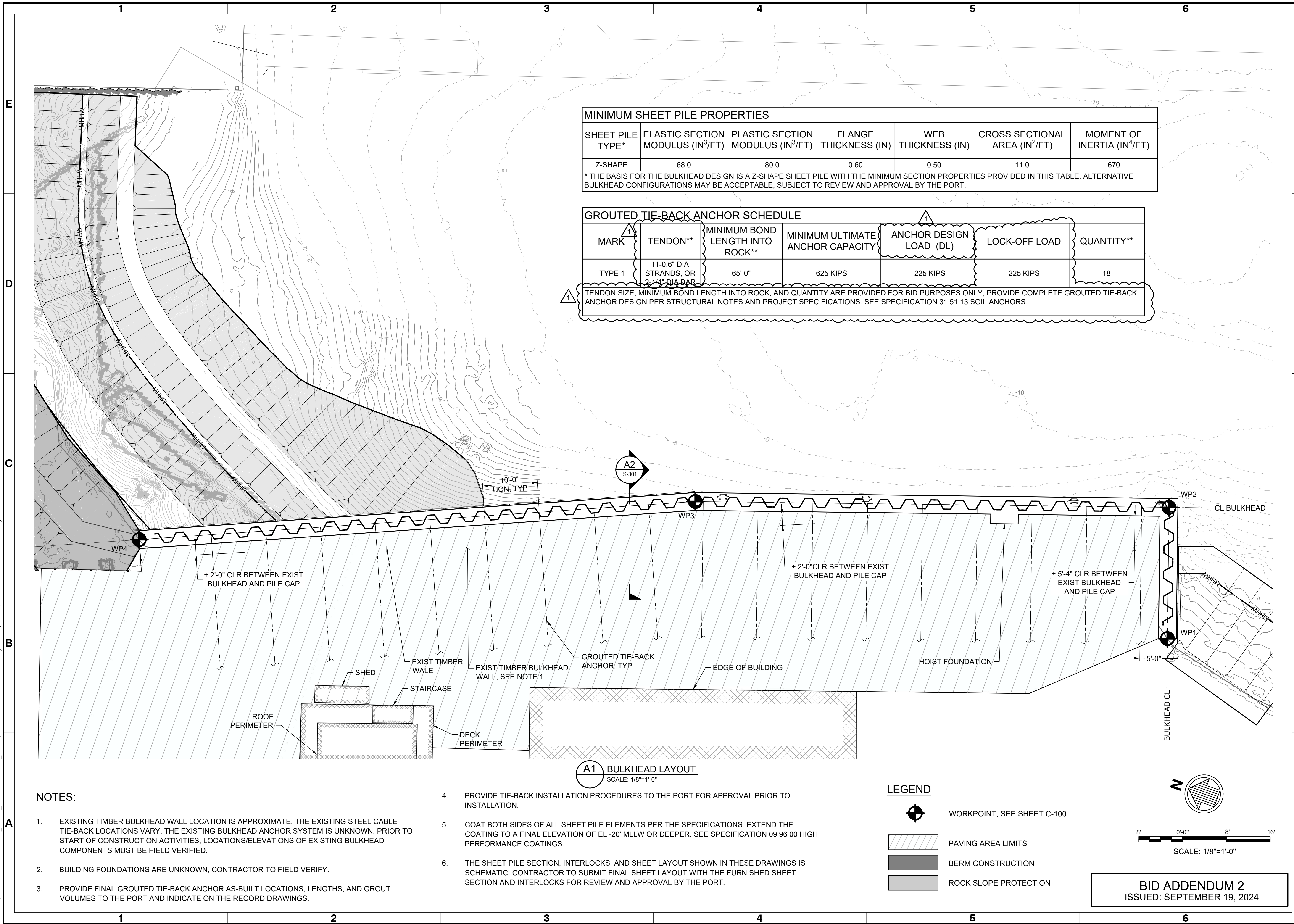
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1	4/19/2024	213282	CG	CSB	S.BRANLIND	MOFFATT & NICHOL

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Sheet Reference No.
C-110
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MINIMUM SHEET PILE PROPERTIES						
SHEET PILE TYPE*	ELASTIC SECTION MODULUS (IN ² /FT)	PLASTIC SECTION MODULUS (IN ² /FT)	FLANGE THICKNESS (IN)	WEB THICKNESS (IN)	CROSS SECTIONAL AREA (IN ² /FT)	MOMENT OF INERTIA (IN ⁴ /FT)
Z-SHAPE	68.0	80.0	0.60	0.50	11.0	670

* THE BASIS FOR THE BULKHEAD DESIGN IS A Z-SHAPE SHEET PILE WITH THE MINIMUM SECTION PROPERTIES PROVIDED IN THIS TABLE. ALTERNATIVE BULKHEAD CONFIGURATIONS MAY BE ACCEPTABLE, SUBJECT TO REVIEW AND APPROVAL BY THE PORT.

GROUTED TIE-BACK ANCHOR SCHEDULE						
MARK	TENDON**	MINIMUM BOND LENGTH INTO ROCK**	MINIMUM ULTIMATE ANCHOR CAPACITY	ANCHOR DESIGN LOAD (DL)	LOCK-OFF LOAD	QUANTITY**
TYPE 1	11-0.6" DIA STRANDS, OR 2-1/4" DIA BAR	65'-0"	625 KIPS	225 KIPS	225 KIPS	18

△ TENDON SIZE, MINIMUM BOND LENGTH INTO ROCK, AND QUANTITY ARE PROVIDED FOR BID PURPOSES ONLY, PROVIDE COMPLETE GROUTED TIE-BACK ANCHOR DESIGN PER STRUCTURAL NOTES AND PROJECT SPECIFICATIONS. SEE SPECIFICATION 31 51 13 SOIL ANCHORS.

A1 BULKHEAD LAYOUT
SCALE: 1/8"=1'-0"

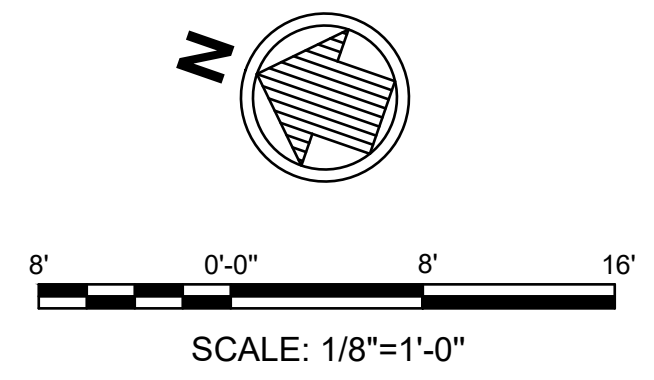
NOTES:

- EXISTING TIMBER BULKHEAD WALL LOCATION IS APPROXIMATE. THE EXISTING STEEL CABLE TIE-BACK LOCATIONS VARY. THE EXISTING BULKHEAD ANCHOR SYSTEM IS UNKNOWN. PRIOR TO START OF CONSTRUCTION ACTIVITIES, LOCATIONS/ELEVATIONS OF EXISTING BULKHEAD COMPONENTS MUST BE FIELD VERIFIED.
- BUILDING FOUNDATIONS ARE UNKNOWN, CONTRACTOR TO FIELD VERIFY.
- PROVIDE FINAL GROUTED TIE-BACK ANCHOR AS-BUILT LOCATIONS, LENGTHS, AND GROUT VOLUMES TO THE PORT AND INDICATE ON THE RECORD DRAWINGS.

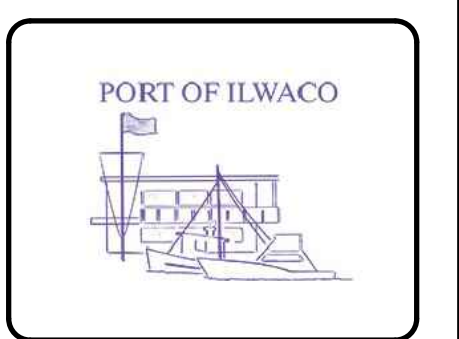
- PROVIDE TIE-BACK INSTALLATION PROCEDURES TO THE PORT FOR APPROVAL PRIOR TO INSTALLATION.
- COAT BOTH SIDES OF ALL SHEET PILE ELEMENTS PER THE SPECIFICATIONS. EXTEND THE COATING TO A FINAL ELEVATION OF EL -20' MLLW OR DEEPER. SEE SPECIFICATION 09 96 00 HIGH PERFORMANCE COATINGS.
- THE SHEET PILE SECTION, INTERLOCKS, AND SHEET LAYOUT SHOWN IN THESE DRAWINGS IS SCHEMATIC. CONTRACTOR TO SUBMIT FINAL SHEET LAYOUT WITH THE FURNISHED SHEET SECTION AND INTERLOCKS FOR REVIEW AND APPROVAL BY THE PORT.

LEGEND

- WORKPOINT, SEE SHEET C-100
- PAVING AREA LIMITS
- BERM CONSTRUCTION
- ROCK SLOPE PROTECTION



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ISSUED: SEPTEMBER 19, 2024



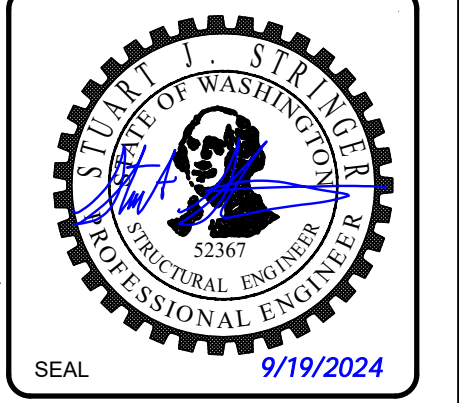
Rev.	Date	Description	By	Appr.
1	9/19/2024	BID ADDENDUM 2		

PORT OF ILWACO
MARINA STRUCTURES
REPLACEMENT

BULKHEAD LAYOUT

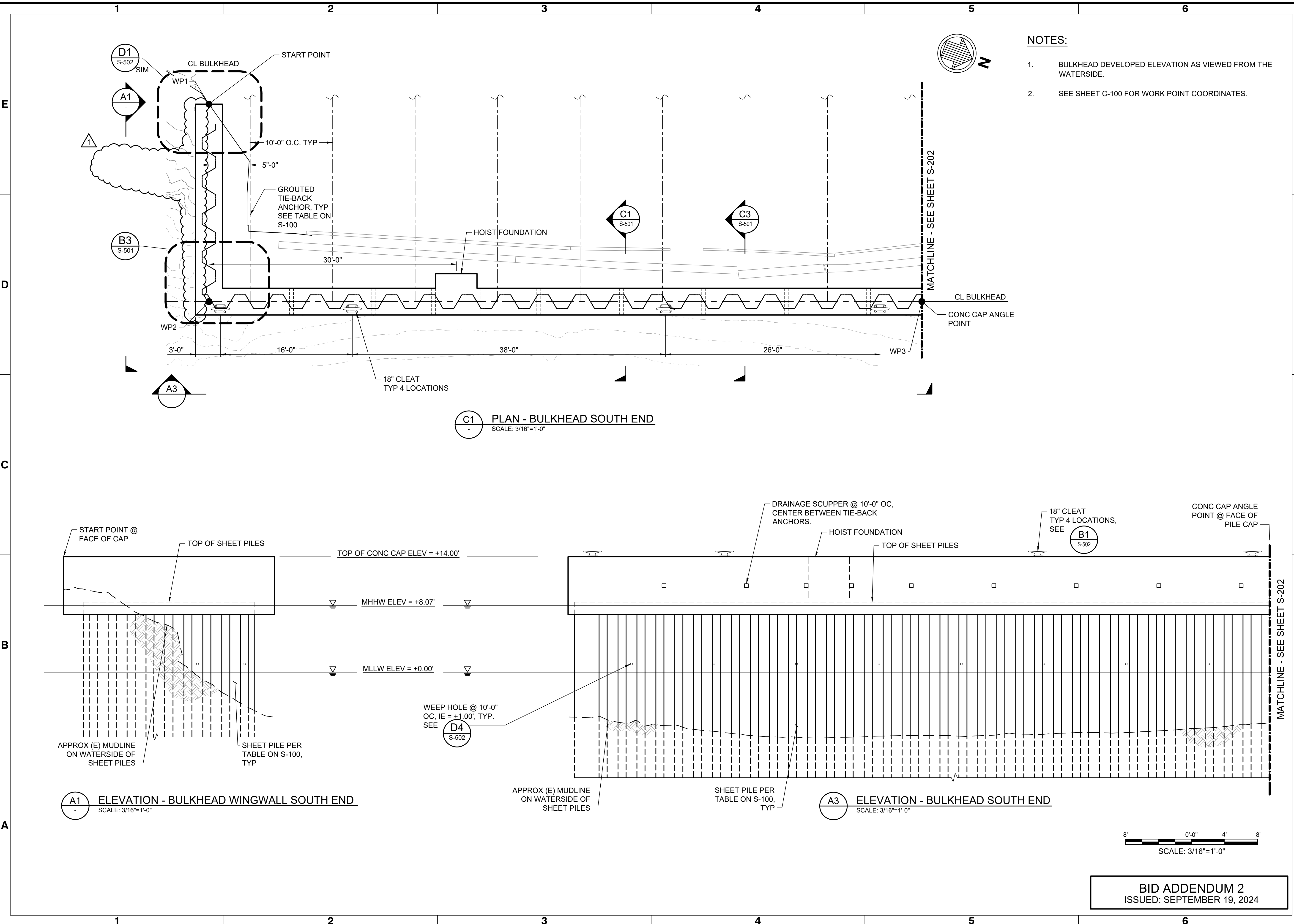
Designed by:	S. STRINGER	Drawn by:	CG	Reviewed by:	S. BRANLIND	Submitted by:	S. STRINGER
Date:	4/19/2024	MAN Project No.:	213282	Drawing code:		Drawing Scale:	1" = 10' (0 SHEET)

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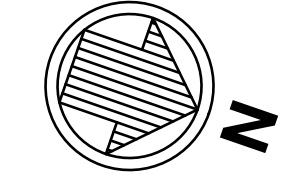
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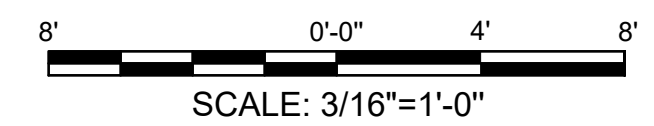
1. BULKHEAD DEVELOPED ELEVATION AS VIEWED FROM THE WATERSIDE.
2. SEE SHEET C-100 FOR WORK POINT COORDINATES.



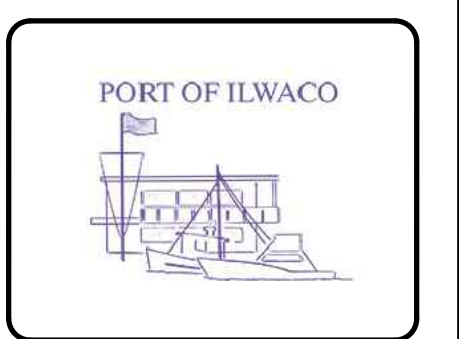
C1
PLAN - BULKHEAD SOUTH END
SCALE: 3/16"=1'-0"

A1
ELEVATION - BULKHEAD WINGWALL SOUTH END
SCALE: 3/16"=1'-0"

A3
ELEVATION - BULKHEAD SOUTH END
SCALE: 3/16"=1'-0"



BID ADDENDUM 2
ISSUED: SEPTEMBER 19, 2024



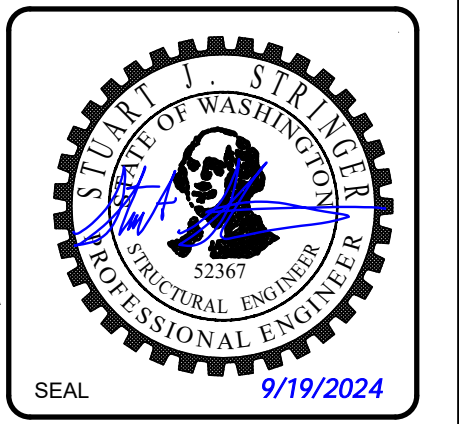
Mark	Description	Date	Appr.
1	BID ADDENDUM 2	9/19/2024	SJS

PORT OF ILWACO
MARINA STRUCTURES
REPLACEMENT

BULKHEAD PLAN & ELEVATION (1 OF 2)

Designed by:	S. STRINGER	Date:	4/19/2024
Drawn by:	CG	MAN Project No.:	213282
Reviewed by:	S. BRANLIND	Drawing code:	
Submitted by:	S. STRINGER	Drawing Scale:	1" = 10' (0 SHEET)
MOFFATT & NICHOL		Post scale:	1" = 10' (0 SHEET)

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DIVISION 01 – GENERAL REQUIREMENTS
Section 01 71 23 – Field Engineering

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the contract, including the General Conditions, and General Requirements, apply to this work as if specified in this Section. Coordinate related requirements in other sections of these Specifications, including but not limited to the following.
1. Section 01 33 00 – Submittal Procedures
 2. Section 01 45 00 – Quality Control
 3. Section 01 70 00 – Execution and Closeout Requirements
 4. Section 31 00 00 – Earthwork

1.02 REFERENCES

US Army Corps of Engineers (USACE), latest version unless otherwise noted:

- A. Engineer Manual (EM) 1110-2-1003, Hydrographic Surveying Manual
- B. EM 1110-1-1005, Control and Topographic Surveying Manual

1.03 DESCRIPTION OF WORK

- A. This Section describes the general requirements for site surveying and grade control as follows.
1. Measurement and Payment Surveying - the Pre-Construction and Post-Construction Surveys (upland topographic and bathymetric) as described in this Section. ~~Bathymetric surveys may also be referred to as hydrographic surveys in the Section.~~
 - ~~2. Progress Surveying – the daily and weekly Progress Surveys (upland topographic and bathymetric) that define the progress of the work (dredging, filling, etc.) as described in this Section.~~
 - ~~3.2. Positioning control methods~~
 - ~~4.3. Surveying for utilities~~
 - ~~5.4. Surveying for new construction~~
 - ~~6.5. Record keeping and record drawing development~~
 - ~~7.6. Submittals~~

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 71 23 – Field Engineering

- B. Employ a third-party professional land surveyor (PLS) currently licensed in the State of Washington (i.e., do not use Contractor in-house survey crew) to perform Pre-Construction and Post-Construction Surveys. Contractor in-house surveyors may be used to conduct Progress Surveys. Provide the name of the PLS as part of the Construction Quality Control Plan.
- C. Local survey control and upland benchmark locations are shown on the Drawings. Refer to benchmark location information to establish survey control for the Contract work.
- D. Drawings represent conditions existing on the date of the surveys provided and are for information purposes only. Drawings shall serve as the basis for the estimated quantities of materials as described in the Bid Documents.
- ~~E. Methods and procedures for bathymetric surveys shall meet the accuracy requirements of "Navigation and Dredging Support Surveys – Hard Bottom" per USACE EM 1110-2-1003. Should there be discrepancies between this manual and this Section, the more strict survey requirements shall take precedence as determined by the Engineer, unless the Contractor obtains clarification from the Engineer otherwise.~~
- F.E. Land surveying equipment and methods shall meet the standards associated with USACE EM 1110-1-1005 for contract payment surveys. Should there be discrepancies between this manual and this Section, the more strict survey requirements shall take precedence as determined by the Engineer, unless the Contractor obtains clarification from the Engineer otherwise.
- ~~G.F.~~ Conduct and submit to the Engineer a Pre-Construction Survey for review and acceptance at least fourteen (14) calendar days prior to start of any work on site, excluding mobilization and establishment of temporary facilities.
- ~~H.G.~~ The Port may conduct its own Pre-Construction Survey to compare against the Contractor's survey. If there are discrepancies between the two Pre-construction Surveys, the Contractor's PLS shall coordinate with the Port's surveyor to determine which survey is inaccurate. If the Engineer determines that the Contractor's survey means and methods and/or survey are inaccurate, the Contractor shall adjust and correct its surveying means and methods and develop a new Pre-Construction Survey at no additional cost to the Port. No excavation or dredging work shall commence until the Engineer has accepted both the Pre-Construction Survey and the Contractor's positioning control methods.
- ~~I.H.~~ The Engineer may review the Contractor's survey work or conduct additional surveys throughout the construction work and after the work has been completed as a quality assurance check.

DIVISION 01 – GENERAL REQUIREMENTS

Section 01 71 23 – Field Engineering

~~J.~~ Establish survey and positioning control to provide an accurate method of horizontal and vertical control before any in-water or upland work starts.

~~K.~~ Work under this Section will be paid under Bid Item 6 – Field Engineering as shown on the Bid Form and described in Section 01 20 00.

1.04 QUALITY ASSURANCE

- A. Provide all necessary quality controls to successfully complete the work.
- B. Schedule the surveys and verify that the Contract requirements have been met prior to proceeding to the next sequence of work.
- C. The Contractor's PLS shall perform, seal, and sign all survey work that establishes control points, monuments, or benchmarks, or ties into existing legal survey monuments or legal evidence.
- D. The Contractor's PLS shall have actively engaged in legal land survey operations for at least the past ten (10) years.
- E. The Engineer will inspect the work for quality assurance purposes. Port inspection shall not release the Contractor from complying with these Specifications and all permits, and shall not be construed as acceptance of work. The Port reserves the right to retain an independent surveyor to periodically check the Contractor's Progress Surveys. Such surveying performed by the Port will be at no cost to the Contractor.

1.05 SURVEY VERTICAL DATUM AND HORIZONTAL DATUM

The project vertical datum and horizontal datum are provided on the Drawings.

1.06 SUBMITTALS

- A. Pre-Construction Submittals
 - 1. As part of the Contractor's Quality Control Plan, in accordance with Section 01 33 00 and Section 01 45 00, prepare a Survey and Positioning Control Plan that describes the means and methods that will be implemented for all surveying and positioning control activities required for the work. In-water construction activities shall not begin until the Quality Control Plan has been reviewed and accepted by the Engineer. At a minimum, the Survey and Positioning Control Plan shall contain the following information:
 - a) Name, address, telephone number, license number and license expiration date, and statement of qualification for the PLS proposed. The Port reserves the right to require substitution of another licensed PLS, at no additional cost to

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the Port, if the Port determines that the proposed PLS does not have sufficient experience or capacity to conduct the Measurement and Payment Surveys.

- b) Description of equipment proposed for use in collection of all survey data for the work.
- c) Description of survey methods and procedures.
- d) Description of how positioning control (horizontal and vertical control) for the equipment used to perform the work will be provided.
- e) Description of quality control procedures used for surveying, positioning control, and volume calculations.

B. Construction Submittals

1. Pre-Construction Survey

- a) Submit surveys to the Engineer in hard copy drawing format and electronic drawing format as described below.
- b) Submit Pre-Construction Survey and calculated quantities (to be removed/added) to the Engineer at least fourteen (14) calendar days prior to start of upland excavation.

2. As-Built Drawings

- a) Upon completion of all construction activities, prepare as-built drawings. The as-built drawings shall locate all features as constructed and all real estate/property boundaries and public land survey section corners and lines. The as-built drawings shall be produced full size (ANSI D) on bond paper sealed and signed by the Contractor's PLS and signed by the Contractor. Also prepare a paper copy of half-size as-built drawings. Submit as-built drawings in paper and electronic formats.
- b) Electronic files for as-built drawings shall be fully editable so as to allow future changes by the Port.

3. Hard Copy Drawing Requirements

- a) Provide plan view contour drawings using 0.5-foot contour intervals.
- b) Provide plan view spot elevation drawings.

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- c) On each drawing include, as a minimum, the date of survey, datum, extent of survey coverage, elevation markings (for spot elevations and contour lines), scale bar, and PLS seal and signature (for Pre-Construction Survey).
4. Electronic Drawing Requirements
- a) Submit all survey data in AutoCAD/Civil3D 2018 format or older format if acceptable to the Engineer.
 - b) Submit all survey data in a separate ASCII text file with XYZ spot elevation data.
 - c) The Engineer will provide the Contractor with the work site base map file in “*.dwg” drawing format for Contractor use.
5. Quantity Calculations
- a) Upland excavation-related bid items will be paid for based on measured weights of materials disposed of at various disposal locations.
 - b) For upland excavation related bid items, weigh quantities as specified, or submit certified weight tickets from landfill disposal and/or recycling facilities.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.01 GENERAL

- A. At the Pre-Construction Meeting, the Contractor's PLS shall meet with the Engineer to discuss the survey proceedings, methods, and equipment to be employed for surveys, and the survey submittal schedules.

3.02 SURVEY EQUIPMENT AND METHODS

~~A. The Contractor's PLS and in-house surveyors shall use multi-beam survey equipment for all Pre-Construction Surveys, unless noted otherwise. Accuracy for measured elevations shall be +/- 0.5 feet; accuracy of horizontal position shall be +/- 3 feet at the 95% confidence interval, unless noted otherwise.~~

~~B.A.~~ Employ an accepted method to locate and control horizontal position. Real Time Kinematic Global Positioning System (RTK-GPS) or Differential Global Positioning System (DGPS) are acceptable. If an alternative

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positioning method is considered, that method shall be submitted to the Engineer and accepted prior to start of work.

3.03 SURVEY AND POSITIONING CONTROL POINTS

- A. Establish an accurate method of horizontal and vertical control before the work begins. Survey control points shown on the Drawings are provided for reference purposes only to assist in establishing horizontal and vertical control.
- B. The proposed method and maintenance of the horizontal control system shall be subject to the acceptance of the Engineer. If, at any time, the method fails to provide accurate location of the work, suspend operations until such time that accurate control is established.
- C. Lay out work using Contractor-established control points as part of the work. The Contractor's PLS shall be responsible for all measurements taken to establish these points.
- D. Furnish, at no cost to the Port, all stakes, templates, platforms, range markers, buoys, transponder stations, labor, and equipment required to lay out the work shown on the Drawings.
- E. Furnish, set, and maintain in good order, all ranges, buoys, and other markers necessary to define the work and to facilitate inspection. ~~Establish and maintain tide gauges or boards in locations where they may be clearly seen during operations and inspections. Install an automatic recording tide gauge with water level sensor that provides a continuous recording of tidal change for every 15-minute interval or each 0.1-foot change, whichever occurs first. Record tidal changes in NOS MLLW datum. All costs for providing the tide gauges and other survey controls shall be incidental to this work.~~
- F. Maintain all control points established for the work until authorized by the Port to remove them. If such control points are destroyed or disturbed prior to authorized removal, replace at no additional cost to the Port.

3.04 SURVEYS

- A. Existing Condition Survey

Solmar Hydro performed the condition survey as shown on the Drawings. This multi-beam condition survey is the basis for the estimated bid quantities listed in the Bid Form.

- B. Pre-Construction Survey

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1. Conduct a Pre-Construction Survey (~~multi-beam bathymetric survey~~ and topographic survey) as necessary to fully identify pre-construction elevations and grades throughout the work site. Complete and submit this survey to the Engineer for review and acceptance at least fourteen (14) calendar days prior to the excavation and dredging.
2. Multiple Pre-Construction Surveys may be submitted, but only one survey shall be submitted for a given location. Clearly identify the boundaries of each survey.
3. The surveys will be used as the basis for Measurement and Payment purposes.
4. The surveys shall have adequate resolution to allow subsequent accurate calculations of excavated volumes. Locate all tops and toes of slopes, and all grade breaks, with horizontal and vertical coordinates.
5. The surveys shall cover all areas of work as shown on the Drawings, and extend at least 20 feet past the boundaries of the work site, unless noted otherwise.
6. This surveys shall cover the full extent of the work site involving any and all construction activities including, but not limited to excavation, demolition, and construction of marine facilities.
7. If vessels or other obstructions prevent a full survey of the work site, coordinate with the Engineer to determine whether to rely upon the Drawings in those areas or to re-survey those missing areas to complete the Pre-Construction Survey.

3.05 UNDERGROUND UTILITIES

- A. Locate all underground utilities and notify all underground utility companies prior to commencing work.
- B. Provide as-built drawings showing accurate locations of utilities installed or relocated as part of the work.

3.06 NEW CONSTRUCTION

Develop and make all detailed surveys necessary for construction of new work, including setting bench marks for location of working points, verification of existing structures and critical topographic features, cut sheets, slope stakes, and other surveys as required to ensure the work is installed in accordance with the Contract Documents. Perform each survey prior to start of construction of the new work. Notify the Port of any discrepancies found as a result of each detailed survey.

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END OF SECTION

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PART 1 GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

The provisions and intent of the Contract, including the General Conditions, Supplementary Conditions, and General Requirements, apply to this work as if specified in this section. Work related to this section is described in:

- A. Section 02 32 00 – Geotechnical Investigations
- B. Section 03 10 00 – Concrete Forming and Accessories
- C. Section 03 20 00 – Concrete Reinforcement
- D. Section 03 30 00 – Cast-in-Place Concrete
- E. Section 03 60 00 – Grouting
- F. Section 05 50 00 – Metal Fabrications
- G. Section 09 96 00 – High Performance Coatings
- H. Section 31 00 00 – Earthwork
- I. Section 31 09 00 - Geotechnical Instrumentation and Monitoring

1.02 DESCRIPTION OF WORK

- A. The extent and location of the piling work is indicated on the drawings. The work includes the requirements for furnishing, transporting, handling, and installing steel sheet piles.
- B. The work also includes the requirements for meeting installation tolerances, daily record keeping including pile driving logs, and pile cut-offs.

1.03 REFERENCES

- A. Geotechnical report: See Section 02 32 00 – Geotechnical Investigations.
- B. American Society for Testing Materials (ASTM), Specifications, Test Methods, Practices, Guides, Terminology, Classification Systems, Tables, Nomenclature, and other publications. Publications are designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- C. American Welding Society (AWS) D1.1 – 2020, Structural Welding Code – Steel

1.04 QUALITY ASSURANCE

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- A. Provide at least one qualified person with a minimum of five (5) years of experience with marine conditions, piling types and lengths for the project, and installation methods to be used on the project, and who must supervise and direct work performed under this section.
- B. Provide at least one qualified person with a minimum of five (5) years of experience in marine piling inspection, and who must keep detailed driving records and logs for each pile from the time the member is picked until the installation is complete and accepted. A sample driving record is provided at the end of this section.
- C. Install piling in a satisfactory and undamaged manner and inspect piling as necessary to ensure that this is done.
- D. Install piling in the locations indicated on the drawings, accounting for adverse impacts from the slope on pile positioning during and after pile driving.
- E. Drive piling to the criteria provided in this section.
- F. Mark piles at 1-foot intervals beginning at the tip and, with each foot mark covering at least two thirds of the pile diameter. At a minimum, provide callouts of the length from the tip at 5-foot intervals.
- G. The Port reserves the right to inspect piling before and after installation, and the Contractor must make available the site, or portions thereof, to meet the Port's inspection schedule. Any reports including photographs or video prepared will be made available for the Contractor's review. Observed damage or defects identified by the Port must be repaired at no additional expense to the Port using damage-specific or defect-specific products specified by the Engineer.

1.05 SUBMITTALS

- A. Mill certificates for piling.
- B. Manufacturer's certificates of compliance for piling.
- C. Joint welding procedures for pile splices and non-destructive testing (NDT) results.
- D. Order and coating lengths for piling.
- E. Documentation demonstrating the qualifications and experience of the individuals supervising pile driving and individuals keeping driving logs, as described above.
- F. List of proposed equipment and procedures to be used in driving, including

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crane capacities, lead length, lead types, hammer types, rated energies, helmet materials, modulus of elasticity, etc., for each pile type.

- G. Detail drawings for sheet piling including fabricated sections that show complete piling dimensions (plan and elevation) and details, driving sequence and location of piling. Detail drawings must include details and dimensions of templates and other temporary guide structures for installing piling. Detail drawings must provide details of the method of handling piling to prevent permanent deflection, distortion or damage to piling interlocks. Special corner sections, corner piles, and/or arcs and circles interlock swing piles must be used to conform to the configuration shown on the drawings. The metal sheet pile shop drawings must include manufacturers section number, the designated angle (bending and/or corner) pile positioning, the Contractors established bearings for tangents, and repetitive pattern of the new sheet pile wall. These plans must also include the locations for the Bulkhead Anchor System, the existing bulkhead, building foundations, utilities, and any other observed interference that may exist. Details must consider minimization of risk to adjacent structures. The Contractor must verify the existing site conditions and positioning of the existing wall. The Contractor must monitor the upland area and existing bulkhead for settlement and movement during pile driving. It will be the responsibility of the Contractor to mitigate any detrimental movement noted by this monitoring.
- H. Detailed piling installation plan and driving schedule showing the location of each pile to be driven. As a minimum, include the following:
1. Dimensions and field-verified measurements relative to the existing features including the existing bulkhead, and demolition lines.
 2. Descriptions of proposed equipment and procedures to be used in driving. Provide data on crane types and capacities, lead types, lead lengths, hammer types, rated energies, cushion materials, helmet materials, modulus of elasticity, etc., for each pile type. A sample hammer data sheet is provided as a supplement at the end of this section.
 3. Descriptions of means and methods to install piles in the pile locations indicated on the drawings including a description of how adverse impacts from the pile slope will be accounted for during pile installation.
- I. An assessment of pile drivability made by a licensed Professional Engineer, trained in geotechnical engineering, retained by the contractor. The pile drivability assessment shall include a wave equation analysis report (WEAP) or an alternative quantitative assessment of pile drivability for each proposed hammer, pile type, and soil profile combination, as prescribed

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within this section. The pile drivability assessment shall include verification that the maximum driving stresses during pile installation will not exceed 90 percent of the specified yield strength. The pile drivability assessment shall also include all other recommendations from the Professional Engineer retained by contractor related to pile installation.

- J. Daily driving logs, as prescribed within this section: A sample driving record is provided as a supplement at the end of this section.
- K. Pile surveys, as prescribed within this section.
- L. Pile inspection reports, as prescribed within this section.

1.06 SITE CONDITIONS

A. Existing Facilities:

- 1. Drive piling at the designated locations and be prepared to encounter slope armoring, slope protection, riprap, debris and other surface or subsurface obstructions.
- 2. The waterway and adjacent Port and tenant facilities are active areas. Do not interrupt the operation of the waterway or any facility at any time without obtaining prior written approval from the Engineer.
- 3. Driving hours for piles must not commence prior to 7:00 AM or after 7:00 PM on weekdays. For variations to this time frame, prepare and submit a waiver to the Engineer for approval by the City of Ilwaco. Do not commence driving until approved.

B. Subsurface Conditions:

- 1. Subsurface conditions have been explored at the project site. See Section 02 32 00 – Geotechnical Investigations. The subsurface soils information presented in the above referenced documents is intended solely and specifically to provide a general representation of the materials that may be encountered.
- 2. Neither the Port nor Engineer warrant the correctness or completeness of the subsurface soils information presented in the previously referenced documents and of any interpretation, deduction, or conclusion regarding subsurface soils conditions that may be indicated or implied by the plans, specifications, and previously referenced documents.
- 3. The Contractor must make its own determinations and conclusions regarding the nature of the soils, and the methods and procedures

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to be utilized in performing the piling installation work, based on the available project information.

4. Investigate, interpret, evaluate, and plan for pile driving conditions that may be affected by existing piles or buried infrastructure, and potential impacts on installation methods.
5. Layout in the field, using permanent means, piles adjacent to the existing bulkhead, and existing utilities before commencing any work. Verify that the pile grids and utilities do not conflict. Immediately report potential conflicts to the Engineer for further direction.

PART 2 PRODUCTS

2.01 PRODUCT HANDLING

- A. Before handling or transporting, inspect and verify that piles are undamaged and free of defects and coating damage. Provide specific details to the Engineer if any member does not meet those criteria and obtain subsequent direction from the Engineer before transporting to the project site.
- B. Delivery, Handling, and Replacements
 1. Lift and support piling during manufacturing, handling, stockpiling, transporting, erection, and installation operations to prevent piling damage, permanent deformations, or coating damage.
 2. Do not cut holes in piles for operations, including lifting, handling, stockpiling, transporting, erection, or installation.
 3. At a minimum, perform transportation, site handling, and erection with industry standard equipment and methods, and by qualified personnel.
 4. Handle piling by the use of bridles, strong backs, or other rigging.
 5. Do not overstress, fracture, or produce impact forces on the piling. Repair damaged piles and coating at no additional cost to the Port. Repair methods must be approved by the Engineer prior to additional handling or driving. Remove and replace piling damaged beyond repair, as determined by the Engineer, at no additional cost to the Port.
- C. Storage
 1. Store piling so that identification marks are discernible.

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2. Separate stacked members by battens cushioned across full width of each bearing area, or other measures as necessary to prevent coating damage. Store piling on cushioned timber blocking so that the axis of each member is maintained in a straight line and that bending stresses, and misalignments are not produced. Locate the blocking of successive tiers exactly above the blocking of the lower tiers.

2.02 STEEL SHEET PILING

- A. Provide sheet piles in accordance with ASTM A 572, Grade 60.
- B. Coat the sheet piles as specified in Section 09 96 00 – High Performance Coatings, from the top to EL -21.0 ft, MLLW. ~~10 feet below the design mudline unless otherwise indicated on the drawings.~~
- C. The minimum sheet pile section properties are indicated on the drawings.
- D. The interlocks must be free-sliding, provide a swing angle suitable for the intended installation but not less than 5 degrees when interlocked, and maintain continuous interlocking when installed. Fabricated sections must conform to the requirement and the piling manufacturer's recommendations for fabricated sections.

2.03 SPECIAL INTERLOCKING PILE SECTIONS

- A. Special corner sections, corner piles, and/or arcs and circle interlocking swing piles must be used to conform to the configuration shown on the drawings.

2.04 PILE ORDER LENGTHS

- A. Order lengths must be a minimum of the length indicated on the drawings between cutoff and pile tip plus ~~10 feet~~ 5 feet and without splices.

2.05 HANDLING HOLES

- A. Handling holes are the responsibility of the Contractor. The contractor must submit proposed holes for review.
- B. Handling holes if used must be located within the top 9 inches of the sheet pile. This requirement is to ensure that holes do not occur below the concrete cap.

PART 3 EXECUTION

3.01 GENERAL

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- A. Engineer's review of pile driving equipment will not relieve the Contractor of responsibility to drive piles, free of damage, to the required ultimate pile capacity and the final tip elevation shown in the drawings.
- B. During pile driving operations, the Contractor must use the approved system. Any change in the driving system will only be considered after the Contractor has submitted revised pile driving equipment data to the Engineer. The Contractor will be notified of the acceptance or rejection of the driving system changes within 2 working days of the Engineer's receipt of the requested change. The time required for submission and review of a revised driving system will not constitute a basis for a contract time extension to the Contractor.

3.02 GENERAL DRIVING REQUIREMENTS FOR PILING

- A. Select the appropriate hammers and related equipment for driving the piling to the tip elevations shown on the drawings, based upon a review of the site conditions, available geotechnical information, and geotechnical information obtained by the Contractor.
- B. The hammer supplied must be in excellent working order and must be capable of supplying at least 90 percent of the maximum rated energy specified by the manufacturer. Hammers not performing to the required efficiency must be repaired prior to further pile driving.
- C. Maintain hammers and other equipment in proper alignment during driving operations by use of leads or guides attached to the hammer.
- D. Drive piling in true line and position. Prior to driving piling, submit details of driving equipment, templates, falsework or other methods to be used to place piling and provide assurance that plumbness, batters, and prescribed alignment can be achieved. Remove obstructions before proceeding with pile driving; do not use crooked alignment to avoid interference from obstructions.
- E. Drive piling to the minimum tip elevations shown on the drawings.
- F. Drive piling to achieve the minimum penetration of coated length into the mudline, unless otherwise indicated on the drawings. Verify this embedment on the driving log. Field verify the design mudline at each pile and record this field measurement on the driving log.
- G. Once driving has started, drive piling continuously until reaching the minimum tip elevation, even if the required ultimate load capacity has been achieved. Avoid voluntary pauses or interruptions during driving.
- H. Drive piling in the designated locations, remove visible riprap, slope armoring, and/or spud as necessary to obtain the required penetration and

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pile alignment tolerances. Adjust alignment and initial stab location to account for soil movement from driving or adjacent construction activities, so that each pile is in its designated final location after completion of driving and other construction activities.

- I. Cut off piling level and true, at the elevations indicated on the drawings. Do not allow pile cutoffs to fall into the water. All cut-off lengths of piling must remain the property of the Contractor and shall be properly disposed of offsite.
- J. Do not push, pull, or otherwise manipulate piles to force them into position. Check piles for heave. Redrive heaved piles to the required tip elevation.
- K. Do not drive piles within 150 feet of concrete until a minimum of 7 days after initial concrete set, unless otherwise approved by the Engineer.
- L. Remove any pile damaged in the driving, improperly driven, or driven at an incorrect location and drive another pile in its place at no additional cost to the Port.
- M. Do not jet or blast.

3.03 AS-DRIVEN PILING SURVEYS AND DRIVING TOLERANCES

- A. Survey the as-driven locations of piling immediately after pile installation has been completed. Do not erect falsework until the survey is complete for piling in a structure. For each pile, provide a written record of horizontal (plan) location, tip elevation, and top elevation (before cut-off or before build-up if necessary) and submit it to the Engineer within twenty-four (24) hours of driving.
- B. The Contractor must not demobilize pile driving equipment until the Engineer has approved the as-driven pile information and the Contractor must allow a minimum of 5 calendar days for the Engineer to complete its review.
- C. If the initial as-driven survey is not provided within the specified time frame, the Port may retain a surveyor to record such information and will deduct the cost of such survey work from the contract.
- D. Notify the Engineer immediately when piling do not meet the specified driving tolerances.
- E. After cut-offs and falsework installation, but prior to concrete placement, survey and submit the final plan locations and elevations at the tops of piles.
- F. Driving Tolerances:

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1. Horizontal (Plan) Location: The top work points must be within 4 inches of the indicated location shown on the drawings.
2. Vertical Cut-off Elevations: Deviation from elevations indicated on the drawings must not be more than 1/2 inch.
3. Plumbness: Maximum deviation from plumb must not exceed 1 horizontal to 120 vertical units of pile length (0.50 degree).

3.04 OBSTRUCTIONS

- A. Definition: An obstruction, unforeseen circumstance, or unforeseeable situation is a subsurface condition that prevents a pile from advancing, in its prescribed location, at its prescribed batter, at a depth greater than 10 pile diameters below the mudline.
- B. As determined by the Port, the Contractor may receive additional compensation for piles that are rejected due to obstructions, unforeseen circumstances, or unforeseeable conditions, in accordance with the pre-approved rates established for Force Account work.
- C. Where obstructions inhibit or prevent piles from being driven to capacity, to minimum tip embedment, to the prescribed location, or within tolerances, the Port may direct that special methods be incorporated including spudding, predrilling, complete pile replacement, or request that the Contractor propose means and methods to achieve pile acceptance and that meet local, state, and federal requirements and permit requirements.
- D. Any pre-approved additional measures taken, labor engaged, equipment used, and materials supplied to mitigate a pile obstruction must be detailed by the Contractor and submitted to the Port. Payment will be made as an adjustment to the contract price.
- E.

3.05 REJECTED OR REPAIRED PILES

- A. Any pile that deviates more than the driving tolerance limits specified above may be rejected by the Engineer.
- B. If subsurface conditions cause drifting beyond allowable tolerances, notify the Engineer immediately of the circumstances and submit proposed corrective measures for review.
- C. Any pile that does not reach the prescribed tip elevation shown on the drawings or achieve the Engineer's refusal or capacity criteria may be rejected by the Engineer.

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- D. Rejected piles will not be paid for by the Port.
- E. The Engineer may direct that a rejected pile be removed and replaced with a new pile driven in its place, or that a new pile be driven adjacent to the rejected pile. The Engineer may further direct that both new and rejected piles be incorporated into the structure.
- F. Design and construction costs resulting from rejected piling, including removal, disposal, and modifications to pile caps, bulkheads, existing infrastructure, etc., must be borne by the Contractor.
- G. Repair coating damaged during handling, storage, driving, redriving, cutoffs, or connection installation (piles to pile caps) in accordance with Section 09 96 00 – High Performance Coatings, at no additional cost to the Port.

3.06 DAILY DRIVING RECORDS

Daily Pile Driving Records: For each pile driven, submit a driving record form. Each initial driving record and re-strike record must be submitted daily, and must show the information below. However, report damaged piles to the Engineer immediately.

- A. Date, time, and weather
- B. Start/end of coated length, pile location, pile length, pile size, and pile type
- C. Field measurement of existing grade (mudline) elevation
- D. Hammer used, rated hammer energy, pile cushion type and thickness
- E. Vibratory hammer drive records: hammer on/off times, elapsed time per 5 feet of penetration during fast driving, and elapsed time per foot of penetration as driving rate slows
- F. Impact hammer drive records:
 - 1. Hammer on/off times, blows per foot of penetration, blows per minute of driving, and hammer stroke (correlate from blows per minute)
 - 2. In the last 6 inches, blows per inch, blows per minute of driving, and hammer stroke (can be correlated from blows per minute)
 - 3. For restrikes, blows per inch, blows per minute of driving, and hammer stroke (can be correlated from blow per minute)
- G. Damage, obstructions, or any unusual occurrences during driving, and all other data required on the driving form.

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3.07 INSPECTIONS

- A. After installation, conduct full-height inspections of piling, from the top to the existing grade, to ensure that each is undamaged and conforms to the drawings and specifications. Each inspection day, report the results to the Engineer in writing.
- B. Submit for review a written inspection report detailing the as-driven condition of each pile within fourteen (14) days of final driving, but before falsework installation begins. Note coating damage, other defects, or unusual features at the mudline.
- C. The Engineer may inspect any or all of the piling. Any discrepancy between the Engineer's and the Contractor's inspection reports must be resolved by a joint inspection. Inspections by the Engineer will be performed at no cost to the Contractor.

3.08 SUPPLEMENTS

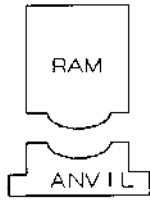
The supplements, "Hammer Data Sheet" and "Driving Record" following the "END OF SECTION" marker are part of this section.

END OF SECTION

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HAMMER DATA SHEET

Contract No.:	Structure Name and/or No.:
Project:	
Pile Driving CONTRACTOR or Subcontractor:	
County:	Piles Driven By:



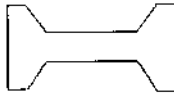
HAMMER

Manufacturer:	Model:
Type:	Serial No.:
Rated Energy:	@ Length of Stroke
Modifications:	



CAP BLOCK

Material:	
Thickness:	Area:
Modulus of Elasticity - E	(psi)
Coefficient of Restitution - e	



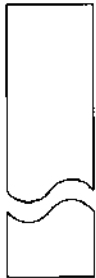
HELMET

ALL COMPONENTS	Weight:
----------------	---------



CUSHION

Cushion Material:	
Thickness:	Area:
Modulus of Elasticity - E	(psi)
Coefficient of Restitution - e	



PILE

Pile Type:	Weight/ft
Length in Leads:	
Wall Thickness:	Taper:
Design Pile Capacity:	(Tons)
Description of Splice:	
Tip Treatment Description:	

NOTE: If mandrel is used to drive pile, attach separate manufacturer's detail sheet(s), including weight and dimensions.

Submitted By: _____ Date: _____

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PILE-DRIVING RECORD _____ PILE NO. _____

PAGE NO. ____ OF ____

JOB NO. _____ NAME _____
 JOB LOCATION _____
 PILE LOCATION _____
 DRIVING CONTRACTOR _____

DATE _____
 JOB ENGINEER _____
 DATUM _____
 SUPT _____

Pile: Type* _____
 Length _____ Weight (lb) _____
 Penetration: _____
 Ground Elev. before Driving _____
 Ground Elev. after Driving _____
 Tip Elev. after Driving _____
 Butt Elev. after Driving Group _____

Hammer: Make and Model _____
 Stroke: Rated _____ Meas.** _____
 Weight of Ram _____ lb _____
 Strokes per Minute _____
 Steam Pressure at Boiler _____
 Driving Cap, Anvil, Helmet, etc. _____
 Weight _____ lb Description _____

(Make sketch on back)

Time: Start Driving _____ Finish Driving _____ Driving Time _____ Minutes

ft	No. of Blows	ft	No. of Blows	ft	No. of Blows	ft	No. of Blows	ft	No. of Blows	ft	No. of Blows	ft	No. of Blows	ft	No. of Blows
0		0		0		0		0		0		0		0	
1		1		1		1		1		1		1		1	
2		2		2		2		2		2		2		2	
3		3		3		3		3		3		3		3	
4		4		4		4		4		4		4		4	
5		5		5		5		5		5		5		5	
6		6		6		6		6		6		6		6	
7		7		7		7		7		7		7		7	
8		8		8		8		8		8		8		8	
9		9		9		9		9		9		9		9	

DRIVING RESISTANCE LAST FOOT

1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12"

Remarks*** _____

- * If wood, state kind, seasoning, and treatment. If concrete, state mix and age. If steel, state weight per foot.
- ** Note any falling off in rated speed and stroke during driving.
- *** Jetting, cause and duration of delays in driving, boulders, bark, condition of cushions, types and thickness of cushions, plumbness, twisting, banding, damage, driving shoe, wetting of pile surface, etc.

USE BACK OF SHEET



DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, PORTLAND DISTRICT
P.O. BOX 2946
PORTLAND, OR 97208-2946

September 4, 2024

Regulatory Branch
Corps No. NWP-2022-525

Port of Ilwaco
Tracy Lofstrom
P.O. Box 307
Ilwaco, Washington, 98624
tlofstrom@portofilwaco.org

Dear Tracy Lofstrom:

Enclosed is your fully executed Department of the Army permit. Please carefully read the permit and its conditions. This permit is based on the project description and construction methods provided in your permit application. If you propose changes to the project, you must submit revised plans to this office and receive our approval of the revisions prior to performing the work.

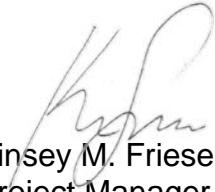
The time limit to complete the authorized work is in General Condition 1. If the work cannot be completed prior to the time limit, you may apply for a time extension. We recommend you apply for a time extension at least 90 days before the time limit is reached.

Failure to comply with all terms and conditions of this permit could result in a violation of Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. You must also obtain all local, State, and other Federal permits that apply to this project.

We would like to hear about your experience working with the Portland District Regulatory Branch. Please complete a customer service survey form at the following address: <https://regulatory.ops.usace.army.mil/customer-service-survey/>.

If you have any questions, please contact me by telephone at (503) 808-4378 or email at kinsey.m.friesen@usace.army.mil.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kinsey M. Friesen', written in a cursive style.

Kinsey M. Friesen
Project Manager, Regulatory Branch

Enclosures

cc:

Moffatt & Nichol (Victoria England, vengland@moffattnichol.com)

Washington State Department of Ecology (Brook Swensen, bswe461@ecy.wa.gov)

Corps, Waterways Maintenance Section (Casey O'Donnell,
casey.p.odonnell@usace.army.mil) (with permit and drawings)

DEPARTMENT OF THE ARMY PERMIT

Permittee: Port of Ilwaco
P.O. Box 307
Ilwaco, Washington 98624

Permit No: NWP-2022-525

Issuing Office: U.S. Army Corps of Engineers, Portland District

NOTE: The term "you" and its derivatives as used in this permit means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the U.S. Army Corps of Engineers (Corps) having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

Project Description: The Port of Ilwaco proposes to replace the failing east bulkhead of the Port's pier within the Marina with an anchored steel sheet pile bulkhead by installing the sheet pile approximately two to five feet in front of the existing bulkhead in Baker Bay. The sheet pile wall would extend approximately 225 linear feet in length and the sheet pile tip elevation would extend to approximately -40 to -50 feet mean low lower water (MLLW). The top of the bulkhead pile cap would be set at an elevation of +14.0 feet MLLW. The area between the existing structure and the new bulkhead would be backfilled with up to 450 cubic yards (cy) of drainage rock to allow for water to flow in and out of the soil supporting the Safe Coast Seafood facility. The drainage rock would be placed using a clamshell bucket operating from a barge. The clean drainage rock would be obtained from a commercial supplier. The new bulkhead, drain rock, and pile cap would have a footprint of approximately 0.033 acre below the high tide line (HTL) of Baker Bay within the marina.

The applicant would remove up to 14 cy of concrete rubble from the shoreline on the south side of the existing bulkhead wall within approximately 0.008 acre of Baker Bay for slope protection and to accommodate the bulkhead wall replacement. Up to 35 cy of riprap would be placed within the same 0.008 acre area to maintain slope stability. North of the new bulkhead, up to 198 cy of riprap and gravel fish mix would be placed in and over 0.05 acre of Baker Bay, of which 172 cy would be below the HTL within 0.043 acre of Baker Bay to replace the existing creosote treated timber retaining wall and provide shore protection.

The Port would remove approximately sixty-four (64) 12-inch creosote-treated timber piles, three (3) 12-inch steel piles, 70 linear feet of timber retaining wall, and 40 linear feet

of derelict creosote-treated timber pile caps. The work would restore approximately 0.0038 acre of benthic habitat and remove approximately 34 tons of creosote from the marine environment.

Table 1. Approximate Fill Impacts

Activity	Fill below HTL (sf)	Fill below HTL (cy)	Fill above HTL (sf)	Fill above HTL (cy)
Bulkhead wall and shoreline protection installation				
Sheet pile installation	400	80	-	-
Bulkhead drainage rock placement	1,000	450	-	-
Rip-rap shore protection and Fish Mix placement (north shoreline)	1,850	172	350	26
Concrete rubble removal (south shoreline)	-350	-14	-50	-2
Rip-rap replacement (south shoreline)	350	30	30	5
subtotal	3,250	718	350	29
Structure removal				
Pile removal adjacent to existing bulkhead	-12	-6	-	-
North shoreline-retaining wall removal	-85	-12	-	-
Derelict pile/timber removal	-68	-12	-	-
Derelict Timber Structure/Debris Removal -South Marina	-2,510	-250	-	-
Subtotal	-2,675	-380	-	-

Creosote pile removal from the Site	35 tons
-------------------------------------	---------

Bulkhead Replacement Construction for the new bulkhead would include localized demolition of the existing bulkhead wall, installation of the new steel sheet pile wall 2-5 feet waterward off the existing bulkhead, and placement of drainage rock between the existing bulkhead wall and new bulkhead wall. The majority of the existing timber bulkhead would be abandoned in place behind the replacement bulkhead to protect the existing buildings at the Safe Coast Seafoods facility. Portions of the existing creosote treated bulkhead would be removed.

The bulkhead wall would not increase in length. The top elevation of the new bulkhead wall would be approximately three feet higher than the existing top of bulkhead to accommodate for high tides and sea level rise. The Port proposes to install the steel sheet piles using a vibratory hammer. The option for impact proofing would be included in the event that difficult driving conditions are encountered.

The replacement bulkhead would include approximately 20 grouted ground anchors extending from the cast-in place concrete pile caps down to the bedrock layer below the site. The grouted ground anchors would be either high strength steel strands or steel bars that are connected to the pile caps and driven at an approximately 1:1 or 45° angle to elevation -70 to -80 feet MLLW. The anchor tie backs would be grouted for a minimum of 25 feet into the underlying siltstone unit. The top elevation would be approximately -57 feet MLLW. The ground anchors would be installed using either land-based equipment or from a barge.

The anchor holes would be drilled with a full-length casing. All drill spoils would be contained and prevented from entering marine waters. The anchor holes would be filled with grout using a tremie tube and pressure grouted after the anchor tendons are installed. The anchors would be tensioned after all anchors have been installed and have reached the required grout and concrete strengths. The pile caps would be cast-in place in the dry and uncured concrete would not be allowed to come in contact with waters of Baker Bay.

Slope Protection Slope protection north and south of the existing bulkhead would be repaired and raised at the top of north slope at the head of the slip approximately 1.5 feet for future sea level rise resilience to elevation +14 feet MLLW. The existing creosote treated timber revetment that currently provides limited shore protection would be removed and replaced with a layer of riprap under a layer of fish mix rock. This riprap/fish mix rock would serve as shore protection between the HTL and the toe of the riprap.

The riprap slope protection would serve as a grade transition from the vertical bulkhead structure to the adjacent sloped shorelines in the north and south. Akin to the slope protection along the bulkhead, a layer of fish mix rock would be placed over the riprap located below HTL at the north shoreline around the bulkhead to provide fish habitat. The embankment height would be increased to an elevation of approximately +14.0 feet, MLLW between the bulkhead and the marina access pier to the east to accommodate sea level rise.

Derelict Structure and Creosote Removal Approximately twenty-eight (28) creosote-treated timber piles (12-inch diameter) and three (3) steel piles (12-inch diameter) located adjacent to the existing bulkhead would be removed as part of the north shoreline rehabilitation. Approximately thirty-six (36) 12-inch diameter additional derelict creosote-treated timber piles and 3 creosote-treated timber pile caps would be removed to compensate for the fill and benthic habitat effects from the placement of the new

bulkhead wall. Approximately sixty-four (64) creosote-treated timber piles and 3 steel piles in total would be removed along with approximately 70 linear feet of creosote-treated timber retaining wall, and 40 linear feet of creosote-treated timber pile caps. The piles would be removed by either pulling them out directly using a chain or with a vibratory hammer. The piles would be cut at the mudline if complete removal is not possible, or the piles break. In addition, a derelict timber structure measuring approximately 0.058 acre in size would be removed as part of the mitigation proposed and result in a decrease of overwater coverage in the south portion of the marina.

Purpose: To reinforce wharf and shoreline.

Project Location: The project is located in Baker Bay at the Port of Ilwaco Marina (marina), SE 117 Howerton Avenue in Ilwaco, Pacific County, Washington. The site is in Sections 33 & 34, Township 10 North, Range 11 West. Latitude/Longitude: 46.30442°, -124.03852°.

Drawings: Nine (9 of drawings/maps) (Attachment 1)

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on 4 September 2029. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition No. 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. 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 (Order Number: 22523, dated 22February 2024) is attached if it contains such conditions (Attachment 2).

6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

a. 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 U.S Army 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.

b. Upon starting the activities authorized by this permit, Permittee shall notify the U.S. Army Corps of Engineers, Portland District, Regulatory Branch that the work has started. Notification shall be provided by e-mail to cenwp.notify@usace.army.mil and the email subject line shall include: NWP-2022-525, Pacific County.

c. Permittee shall comply with the conditions specified in the Oregon Department of Land Conservation and Development coastal zone management consistency determination dated February 26, 2024 (Enclosure 3).

d. Permittee shall submit all permittee-responsible mitigation notifications and reports (e.g. as-built report, monitoring reports, site protection documentation) to the U.S. Army Corps of Engineers (Corps), Portland District, Regulatory Branch by e-mail to cenwp.notify@usace.army.mil and the email subject line shall include: NWP-2022-525, Pacific County. If you are submitting files larger than 20 MB, contact your county Regulatory Project Manager for instructions.

e. Permittee shall implement and abide by the mitigation plan, Port of Ilwaco East Bulkhead Resilience Project Mitigation Sequencing and No Net Loss Narrative dated June 1, 2023.

f. Permittee shall submit an as built report to the Corps at the address shown in Special Condition "b" by December 31 each year work occurs. The report shall contain photographs of the site and the initial grading survey. A map identifying the locations and directions of the photographs shall be included in the as-built report. The as-built report shall be provided by e-mail to cenwp.notify@usace.army.mil and the email

subject line shall include: NWP-2022-525, Pacific County. If you are submitting files larger than 20 MB, contact your county Regulatory Project Manager for instructions.

g. All in-water work shall be performed during the in-water work period of September 1 to February 28 to minimize impacts to aquatic species.

h. Permittee shall dispose of excavated materials at a suitable upland location, and materials shall be adequately stabilized to minimize increases in turbidity levels and indirect impacts to wetlands and other aquatic systems. The material shall be placed in a location and manner that prevents its discharge into waterways or wetlands. In the event of spills, affected material shall be taken to an appropriate upland location (and properly disposed of in accordance with any state standards or requirements).

j. This Corps permit does not authorize you to take an endangered species in particular those species identified in Attachment 5. In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a biological opinion (BO) under ESA Section 7, with “incidental take” provisions with which you must comply). The MARAD is the lead federal agency for ESA consultation for this project. The enclosed BO prepared by the National Marine Fisheries Service (NMFS), dated August 16, 2023, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with the “incidental take” that is also specified in the BO (NMFS Reference Number WCRO-2022-03087). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms and conditions associated with incidental take of the attached BO Attachment 5, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the BO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute noncompliance with your Corps permit. The NMFS is the appropriate authority to determine compliance with the terms and conditions of its BO, and with the ESA.

k. This Corps permit does not authorize you to take an endangered species, in particular the Bull Trout (*Salvelinus confluentus*), Marbled Murrelet (*Brachyramphus marmoratus*), and Streaked Horned Lark (*Eremophila alpestris strigata*). In order to legally take a listed species, you must have separate authorization under the Endangered Species Act (ESA) (e.g., an ESA Section 10 permit, or a biological opinion under ESA Section 7, with “incidental take” provisions with which you must comply). The MARAD is the lead federal agency for ESA consultation for this project. On August 23, 2023, the U.S. Fish and Wildlife Service (USFWS) concurred your project, if implemented as proposed, is not likely to adversely affect a listed species and/or adversely modify critical habitat nor constitute take of a listed species (USFWS Reference Number FWS/R1/2023-0026807). Failure to implement the project as proposed Attachment 6, which is the concurrence letter from the USFWS, may constitute noncompliance with the ESA and your Corps permit. The USFWS is the appropriate authority to determine compliance with the ESA.

l. Permittee shall install bird excluder devices on all piles to reduce predation by piscivorous birds.

m. Permittee shall notify the U.S. Coast Guard District Thirteen of the project by email at D13-SMB-D13-LNM@uscg.mil at least 14 days prior to commencing Const./Dredging, so the project information can be issued in the Local Notice to Mariners.

n. Permittee shall complete and sign the enclosed Compliance Certification (Attachment 7). Permittee shall submit the completed certification to the U.S. Army Corps of Engineers, Portland District, Regulatory Branch within 30 days of completion of the authorized activity or any required permittee-responsible compensatory mitigation, whichever occurs later. The completed certification shall be provided by e-mail to cenwp.notify@usace.army.mil and the email subject line shall include: NWP-2022-525, Pacific County. If you are submitting files larger than 20 MB, contact your county Regulatory Project Manager for instructions.

o. Permittee shall provide a copy of the permit transmittal letter, permit form, and permit drawings to all contractors performing any work authorized by Corps No. NWP-2022-525.

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

- (X) Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).
- (X) Section 404 of the Clean Water Act (33 U.S.C. 1344).
- () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).

2. Limits of this Authorization:

a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability: In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages 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.

c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision: This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

a. You fail to comply with the terms and conditions of this permit.

b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).

c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions: General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



(PERMITTEE SIGNATURE)

9/3/24

(DATE)

Tracy Lofstrom

(PRINTED NAME)

Manager

(TITLE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

FOR THE COMMANDER, LARRY D. CASWELL, JR., PE, PMP, COLONEL, U.S. ARMY, DISTRICT COMMANDER and DISTRICT ENGINEER:

Katharine A. Mott

(DISTRICT COMMANDER)

3 September 2024

(DATE)

For: William D. Abadie
Chief, Regulatory Branch

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign below.

PERMIT TRANSFEREE:

Transferee Signature

DATE

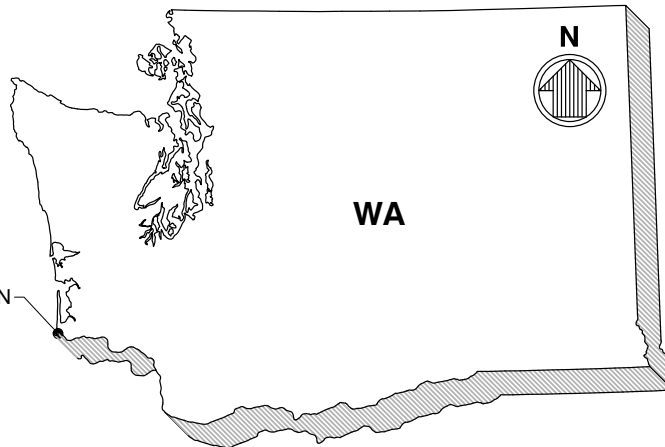
Name (Please print)

Address

City, State, and Zip Code

TIDAL DATUM:
 BASED ON NOAA TIDAL STATION NO.
 9440581, IN US FEET. HTL/OHW DELINEATED
 BY GEOENGINEERS DECEMBER, 2022.

LEVELS:
 MHHW: +8.07' MHW: +7.37'
 MLW: 1.35' MLLW: +0.00'
 OHW (DELINEATED): APPROX. +11.50'



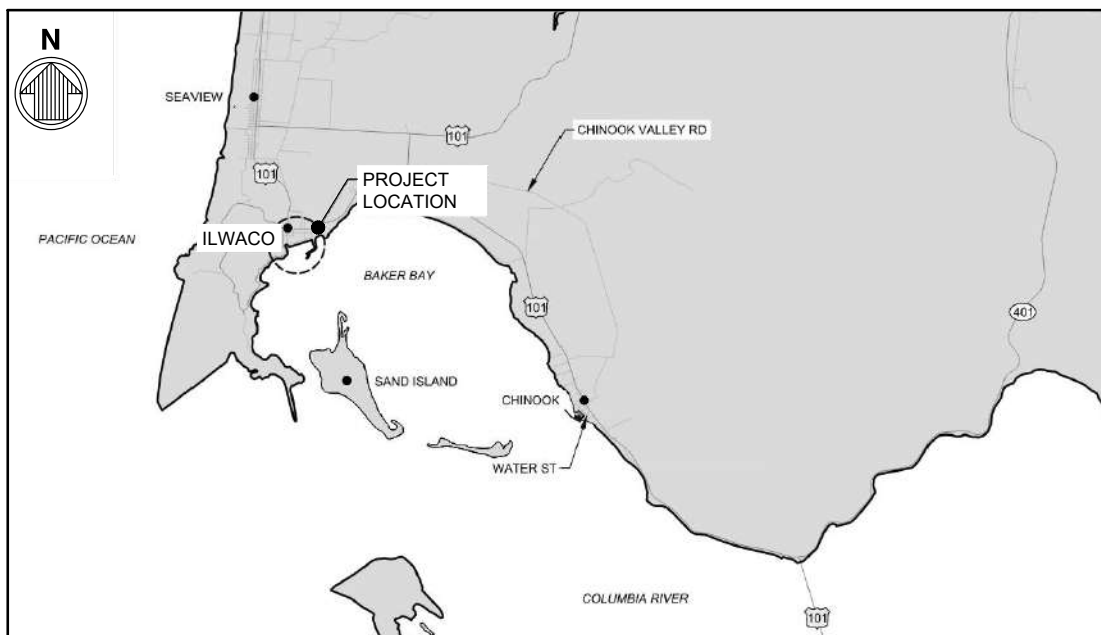
PROJECT LOCATION

DIRECTIONS TO SITE FROM SEATTLE:

1. I-5 S, US-101, WA-8 AND US-12 TO WA-107 S/S MAIN ST IN MONTESANO 98 MILES
2. TAKE US-101 TO ILWACO 72 MILES
3. ARRIVE AT PROJECT SITE

PROJECT ADDRESS:
 PORT OF ILWACO
 117 HOWERTON AVE SE
 ILWACO, WA 98624

VICINITY MAP
 SCALE: NTS



LOCATION MAP
 SCALE: NTS

APPLICANT:
 PORT OF ILWACO

ADJACENT PROPERTY OWNERS:
 1) PORT OF ILWACO

LOCATION: PORT OF ILWACO
 117 HOWERTON AVE SE
 ILWACO, WA 98624

LAT/LONG: 46.30442 N, -124.03852 W

DATUM: MLLW
SHEET: 1 OF 9 DATE: JUNE 2023

PROPOSED PROJECT: PORT OF ILWACO
 EAST BULKHEAD RESILIENCE PROJECT

IN: BAKER BAY
NEAR/AT: ILWACO
COUNTY: PACIFIC STATE: WA
SEC: 33/34 T: 10 N R: 11 W



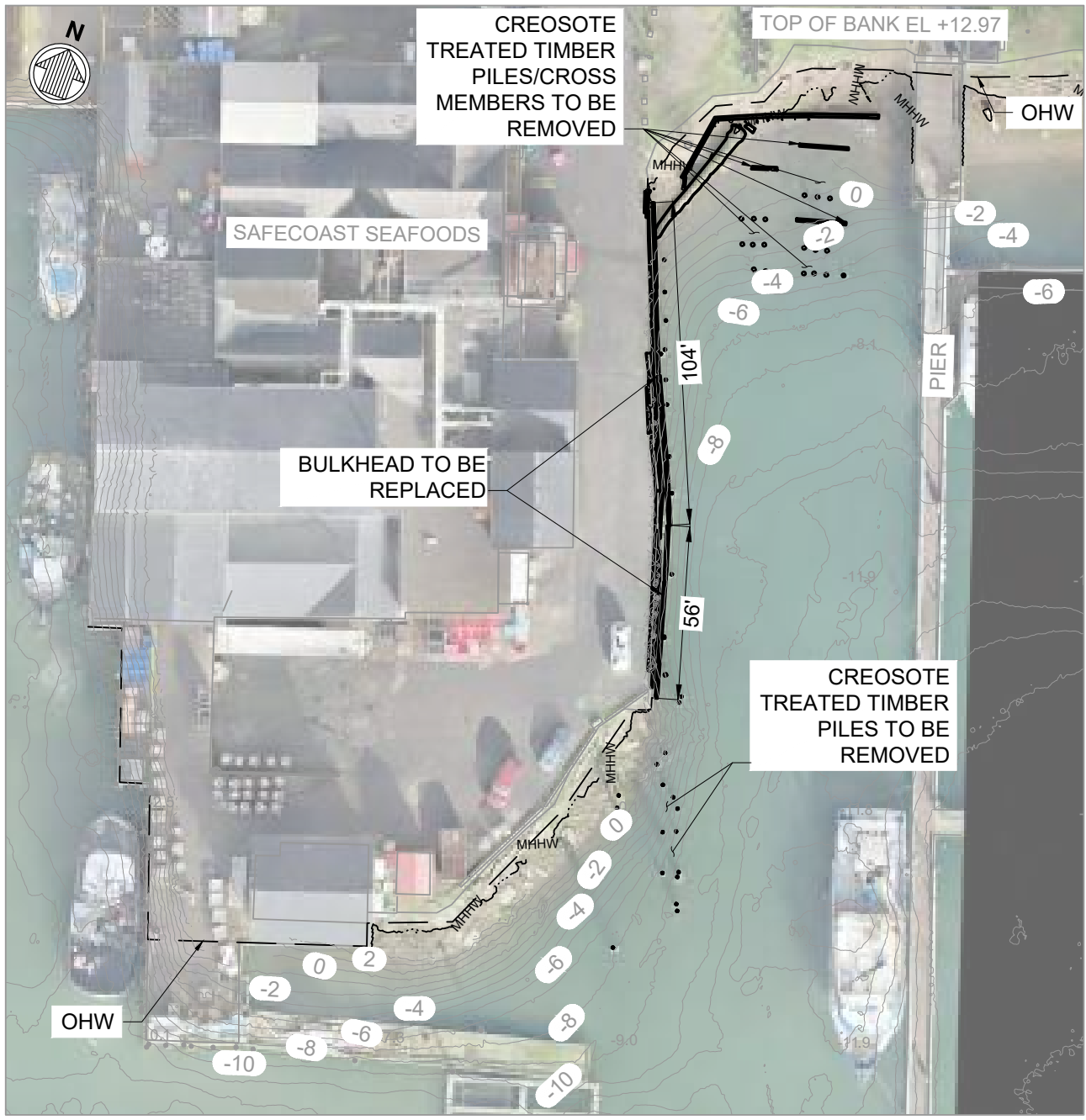
PURPOSE: PORT OF ILWACO BULKHEAD REPLACEMENT AND SEA LEVEL RISE RESILIENCE.
DATUM: MLLW
ADJACENT PROPERTY OWNERS:
 1. CITY OF ILWACO
 2. STATE OF WASHINGTON
 3. STARLIGHT ONE LLC.

Port of Ilwaco East Bulkhead Resilience Project
Parcel Map
 APPLICATION BY: Port of Ilwaco





PROPOSED: DERELICT ILWACO E. BULKHEAD REPLACEMENT, DRIVEWAY REGRADING/REPAVING, & SHORE PROTECTION REPLACEMENT
IN: BAKER BAY
AT: ILWACO
COUNTY: PACIFIC
 SHEET 2 OF 9
 DATE: JUNE 2023

S33 T10N R11W

File: Q:\SEA\213282\20_CADD\Permit_Sheetset\213282_F2

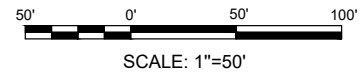


LEGEND

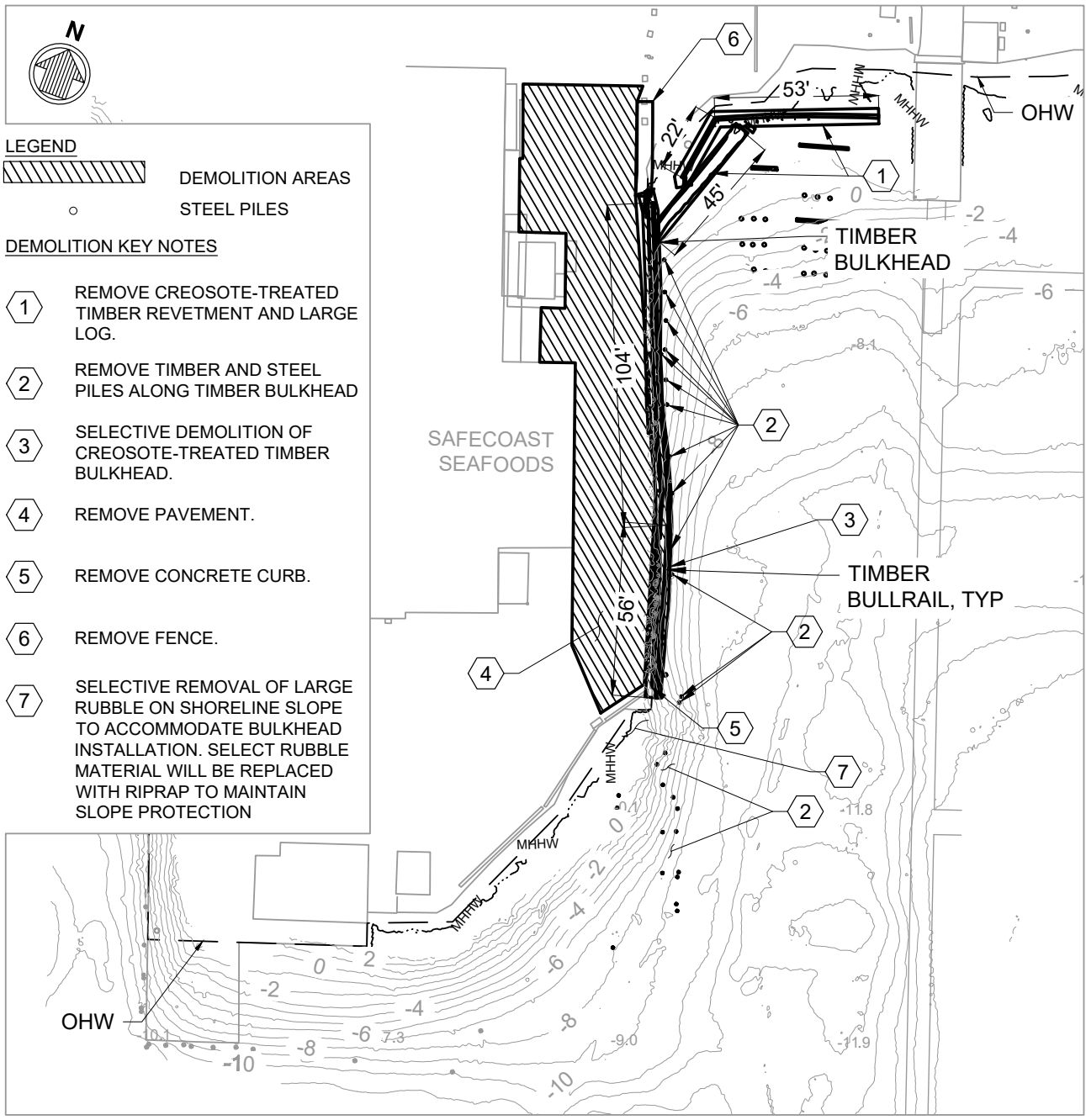
-  PILES
-  CREOSOTE-TREATED REVETMENT (TO BE REMOVED)
-  CREOSOTE-TREATED LOG (TO BE REMOVED)
-  BULKHEAD (TO BE REMOVED)

PLAN - EXISTING CONDITIONS
SCALE: 1" = 50'

LEVELS:	
MHHW: +8.07'	MHW: +7.37'
MLW: 1.35'	MLLW: +0.00'
OHW (DELINEATED):	APPROX. +11.50'



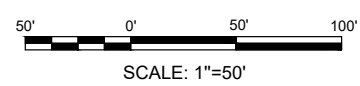
<p>APPLICANT: PORT OF ILWACO</p> <p>ADJACENT PROPERTY OWNERS: 1) PORT OF ILWACO</p>	<p>LOCATION: PORT OF ILWACO 117 HOWERTON AVE SE ILWACO, WA 98624</p> <p>LAT/LONG: 46.30442 N, -124.03852 W</p> <p>DATUM: MLLW</p> <p>SHEET: 3 OF 9 DATE: JUNE 2023</p>	<p>PROPOSED PROJECT: PORT OF ILWACO EAST BULKHEAD RESILIENCE PROJECT</p> <p>IN: BAKER BAY NEAR/AT: ILWACO COUNTY: PACIFIC STATE: WA</p> <p>SEC: 33/34 T: 10 N R: 11 W</p>
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- LEGEND**
- DEMOLITION AREAS
 - STEEL PILES
- DEMOLITION KEY NOTES**
- 1 REMOVE CREOSOTE-TREATED TIMBER REVETMENT AND LARGE LOG.
 - 2 REMOVE TIMBER AND STEEL PILES ALONG TIMBER BULKHEAD
 - 3 SELECTIVE DEMOLITION OF CREOSOTE-TREATED TIMBER BULKHEAD.
 - 4 REMOVE PAVEMENT.
 - 5 REMOVE CONCRETE CURB.
 - 6 REMOVE FENCE.
 - 7 SELECTIVE REMOVAL OF LARGE RUBBLE ON SHORELINE SLOPE TO ACCOMMODATE BULKHEAD INSTALLATION. SELECT RUBBLE MATERIAL WILL BE REPLACED WITH RIPRAP TO MAINTAIN SLOPE PROTECTION

A
3 PLAN - DEMOLITION
SCALE: 1" = 50'

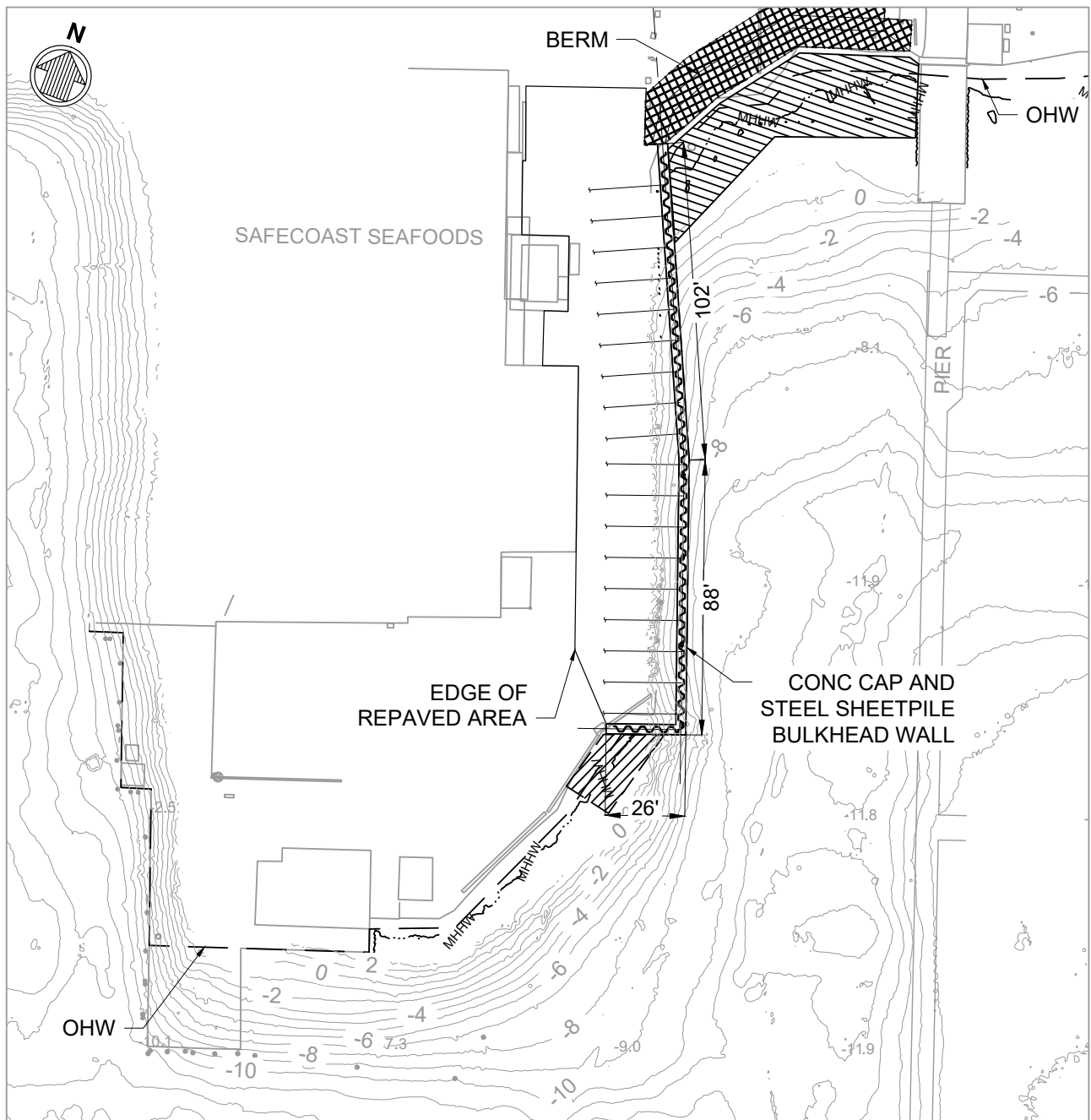
LEVELS:	
MHHW: +8.07'	MHW: +7.37'
MLW: 1.35'	MLLW: +0.00'
OHW (DELINEATED):	APPROX. +11.50'





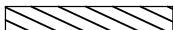
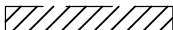
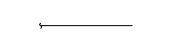


<p>APPLICANT: PORT OF ILWACO</p> <p>ADJACENT PROPERTY OWNERS: 1) PORT OF ILWACO</p>	<p>LOCATION: PORT OF ILWACO 117 HOWERTON AVE SE ILWACO, WA 98624</p> <p>LAT/LONG: 46.30442 N, -124.03852 W</p> <p>DATUM: MLLW</p> <p>SHEET: 4 OF 9 DATE: JUNE 2023</p>	<p>PROPOSED PROJECT: PORT OF ILWACO EAST BULKHEAD RESILIENCE PROJECT</p> <p>IN: BAKER BAY NEAR/AT: ILWACO COUNTY: PACIFIC STATE: WA</p> <p>SEC: 33/34 T: 10 N R: 11 W</p>
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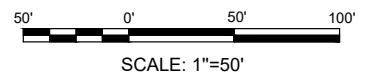


LEGEND

-  PAVING AREA LIMITS
-  BERM CONSTRUCTION
-  SLOPE PROTECTION
-  APPROXIMATE AREA OF SLOPE PROTECTION REPLACEMENT
-  TIEBACKS
-  PROPOSED BULKHEAD
-  PILES

A PLAN - PROPOSED
SCALE: 1" = 50'

LEVELS:
MHHW: +8.07' MHW: +7.37'
MLW: 1.35' MLLW: +0.00'
OHW (DELINEATED): APPROX. +11.50'



APPLICANT:
PORT OF ILWACO

ADJACENT PROPERTY OWNERS:
1) PORT OF ILWACO

LOCATION: PORT OF ILWACO
117 HOWERTON AVE SE
ILWACO, WA 98624

LAT/LONG: 46.30442 N, -124.03852 W

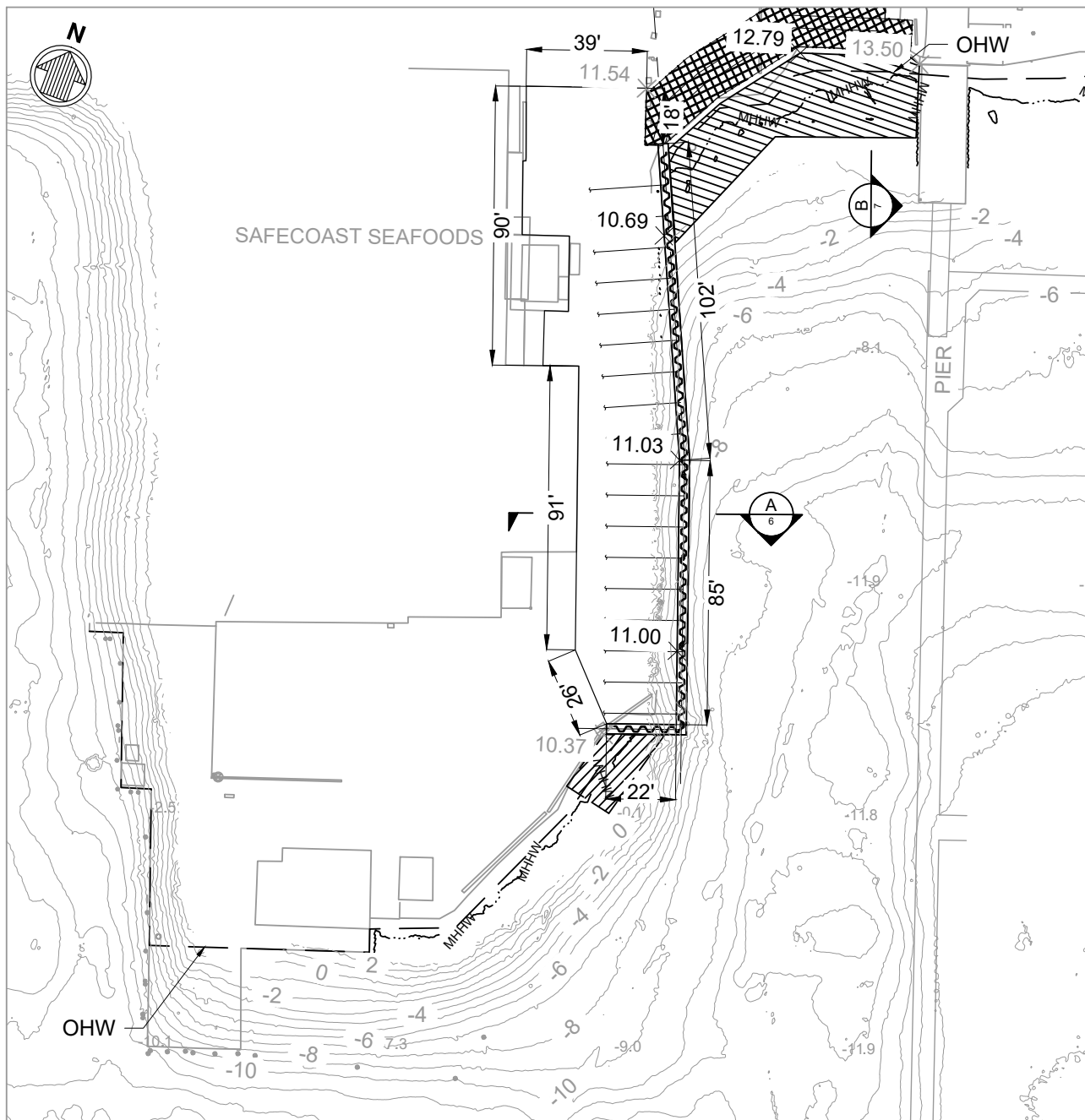
DATUM: MLLW

SHEET: 5 OF 9 **DATE:** JUNE 2023

PROPOSED PROJECT: PORT OF ILWACO
EAST BULKHEAD RESILIENCE PROJECT

IN: BAKER BAY
NEAR/AT: ILWACO
COUNTY: PACIFIC **STATE:** WA
SEC: 33/34 **T:** 10 N **R:** 11 W

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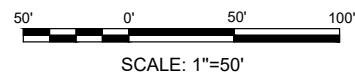
LEGEND

- PAVING AREA LIMITS
- BERM CONSTRUCTION
- SLOPE PROTECTION
- APPROXIMATE AREA OF SLOPE PROTECTION REPLACEMENT
- TIEBACKS
- PROPOSED BULKHEAD
- STEEL PILES
- 0.00 EXISTING ELEVATION
- 0.00 PROPOSED ELEVATION

PLAN - GRADING
SCALE: 1" = 50'

LEVELS:

MHHW: +8.07' MHW: +7.37'
MLW: 1.35' MLLW: +0.00'
OHW (DELINEATED): APPROX. +11.50'



APPLICANT:
PORT OF ILWACO

ADJACENT PROPERTY OWNERS:
1) PORT OF ILWACO

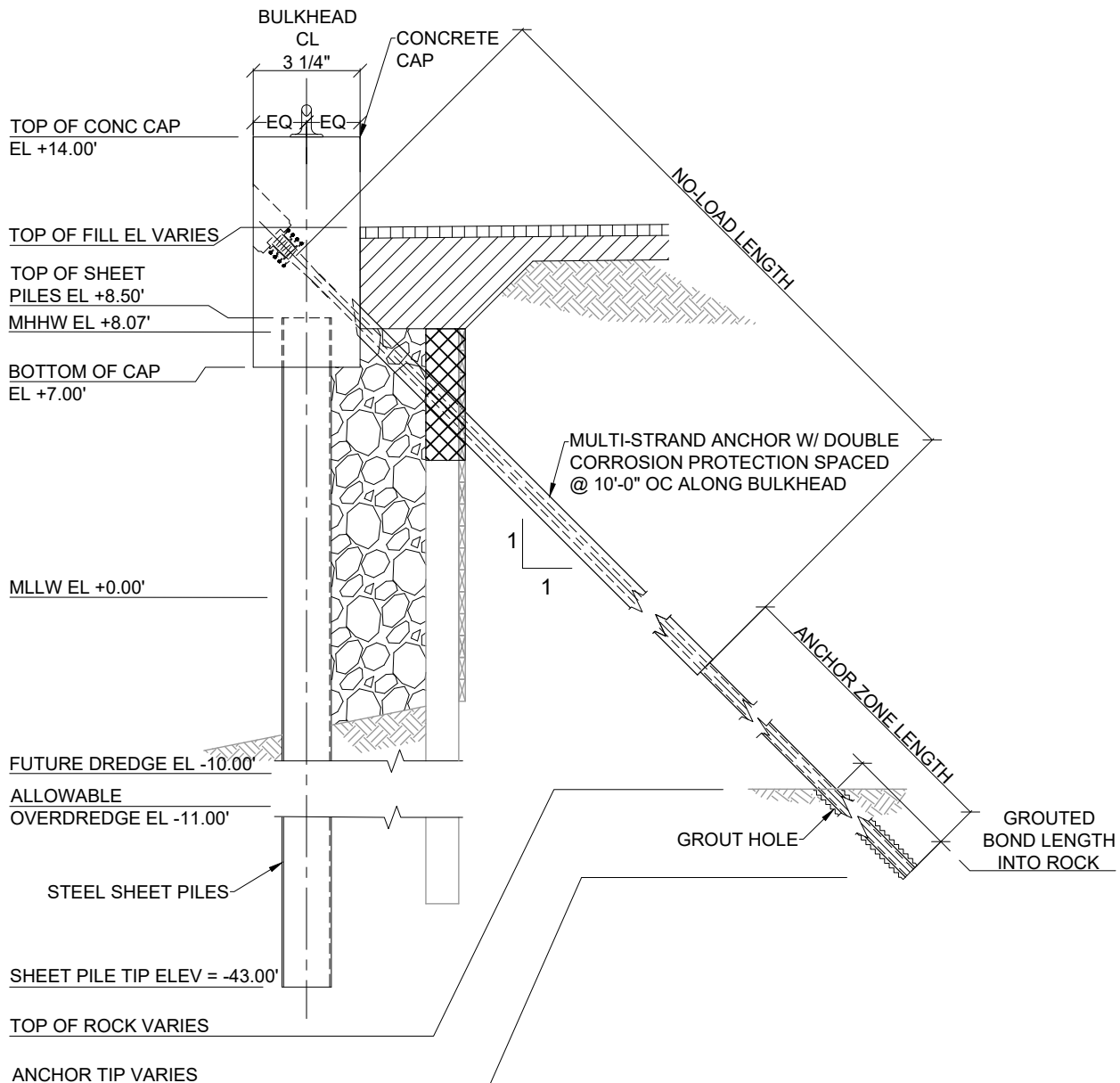
LOCATION: PORT OF ILWACO
117 HOWERTON AVE SE
ILWACO, WA 98624

LAT/LONG: 46.30442 N, -124.03852 W




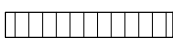
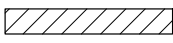

DATUM: MLLW
SHEET: 6 OF 9 **DATE:** JUNE 2023

PROPOSED PROJECT: PORT OF ILWACO
EAST BULKHEAD RESILIENCE PROJECT

IN: BAKER BAY
NEAR/AT: ILWACO
COUNTY: PACIFIC **STATE:** WA
SEC: 33/34 **T:** 10 N **R:** 11 W



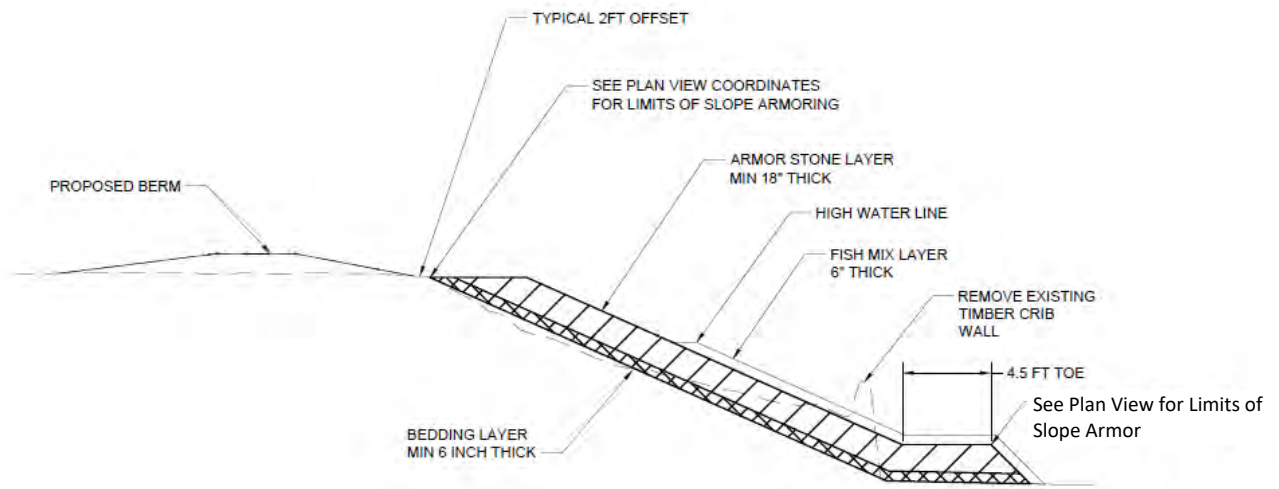
LEGEND

-  CLEAT
-  EXISTING CREOSOTE-TREATED TIMBER BULKHEAD, LAGGING TO REMAIN
-  DRAIN ROCK BACKFILL
-  ASPHALT PAVING
-  STRUCTURAL FILL
-  LOCAL DEMOLITION/REMOVAL OF CREOSOTE-TREATED TIMBER BULKHEAD FOR INSTALLATION OF GROUND ANCHORS

A SECTION - TYP BULKHEAD
SCALE: NTS

<p>APPLICANT: PORT OF ILWACO</p> <p>ADJACENT PROPERTY OWNERS: 1) PORT OF ILWACO</p>	<p>LOCATION: PORT OF ILWACO 117 HOWERTON AVE SE ILWACO, WA 98624</p> <p>LAT/LONG: 46.30442 N, -124.03852 W</p> <p>DATUM: MLLW</p> <p>SHEET: 7 OF 9 DATE: JUNE 2023</p>	<p>PROPOSED PROJECT: PORT OF ILWACO EAST BULKHEAD RESILIENCE PROJECT</p> <p>IN: BAKER BAY NEAR/AT: ILWACO COUNTY: PACIFIC STATE: WA</p> <p>SEC: 33/34 T: 10 N R: 11 W</p>
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C1 SLOPE ARMOR SECTION 2
C-110 SCALE

File: Q:\SEA\213282\20_CADD\Active\Permit_Sheetset\213282_F7

<p>APPLICANT: PORT OF ILWACO</p> <p>ADJACENT PROPERTY OWNERS: 1) PORT OF ILWACO</p>	<p>LOCATION: PORT OF ILWACO 117 HOWERTON AVE SE ILWACO, WA 98624</p> <p>LAT/LONG: 46.30442 N, -124.03852 W</p> <p>DATUM: MLLW</p> <p>SHEET: 8 OF 9 DATE: JUNE 2023</p>	<p>PROPOSED PROJECT: PORT OF ILWACO EAST BULKHEAD RESILIENCE PROJECT</p> <p>IN: BAKER BAY NEAR/AT: ILWACO COUNTY: PACIFIC STATE: WA SEC: 33/34 T: 10 N R: 11 W</p>
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APPLICANT:
PORT OF ILWACO

ADJACENT PROPERTY OWNERS:
1) PORT OF ILWACO

LOCATION: PORT OF ILWACO
117 HOWERTON AVE SE
ILWACO, WA, 98624

LAT/LONG: 46.20442 N, -124.03852 W

DATUM: MLLW

SHEET: 9 OF 9 **DATE:** JUNE, 2023

PROPOSED: PORT OF ILWACO EAST BULKHEAD
RESILIENCE PROJECT

IN: BAKER BAY
NEAR/AT: PORT OF ILWACO

COUNTY: PACIFIC **STATE:** WA

SEC: 33/34 **T:** 10 N **R:** 11 W

Scale: 1" = 395'



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 22, 2024

Port of Ilwaco
ATTN: Tracy Lofstrom
P.O. Box 307
Ilwaco, WA 98624

Re: Water Quality Certification Order No. **22523** (Corps No. NWP-2022-525), Port of Ilwaco East Bulkhead Resilience Project, Pacific County, Washington

Dear Tracy Lofstrom:

On July 6, 2023, the Port of Ilwaco submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Port of Ilwaco East Bulkhead Resilience project in Pacific County, Washington.

On behalf of the state of Washington, the Department of Ecology certifies with conditions that the work described in the Water Quality Certification Request and supplemental documents complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended, and applicable state laws. **This certification is subject to the enclosed Water Quality Certification Order (WQC Order).**

Please ensure that anyone doing work under this WQC Order has read, is familiar with, and is able to follow all of the provisions within the attached WQC Order.

If you have any questions about this decision, please contact Brook Swensen at 564-999-1749. The enclosed WQC Order may be appealed by following the procedures described within.

Sincerely,

Loree' Randall, Section Manager
Aquatic Permitting & Protection Section
Shorelands and Environmental Assistance Program

WQC Order No. 22523, Corps No. NWP-2022-525
Aquatics ID No. 142236
February 22, 2024
Page 2 of 2

Enclosure (1)

By certified mail: 9489 0090 0027 6383 2203 14

Sent via e-mail: tlofstrom@portofilwaco.org

E-cc: Kinsey Friesen, U.S. Army Corps of Engineers
Victoria England, Moffat & Nichol
Brook Swensen, Ecology
ECYREFEDPERMITS@ecy.wa.gov

In The Matter of Granting a Water Quality
 Certification With Conditions to Port of Ilwaco
 pursuant to 33 U.S.C. 1341 (FWPCA § 401), RCW 90.48.120, RCW
 90.48.260 and Chapter 173-201A WAC

Port of Ilwaco
 Attn: Tracy Lofstrom
 P.O. Box 307
 Ilwaco, Washington 98624

WQC Order No.	22523
Corps Reference No.	NWP-2022-525
Site Location	Port of Ilwaco East Bulkhead Resilience located within Baker Bay, Pacific County, Washington.

The Port of Ilwaco submitted a request for a Section 401 Water Quality Certification (WQC) under the federal Clean Water Act for the Port of Ilwaco East Bulkhead Resilience, Pacific County, Washington. The following required processing dates are listed below:

- On 12/8/2022, the Port of Ilwaco submitted a pre-filing meeting request.
- On 7/6/2023, Ecology received a request for Clean Water Section 401 Water Quality Certification.
- On 7/13/2023, the Port of Ilwaco submitted additional information, and the Department of Ecology (Ecology) considered the Request valid on this date.
- Ecology’s “Reasonable Period of Time” for this project has been established as 7/6/2024.
- On 10/6/2023, the U.S. Army Corps of Engineers (Corps) issued a joint public notice.

This project proposes to replace a failing bulkhead with a new structure and repair slope protection north and south of the existing bulkhead. Additional work entails paving and regrading the upland wharf area directly landward of the bulkhead to mitigate projected seal level rise.

Bulkhead Replacement: The majority of the existing bulkhead will be abandoned in place but the top several feet of timber above the timber wale may be removed and localized notching of the existing bulkhead to accommodate installing new tie-back ground anchors for the new bulkhead. The new bulkhead will be constructed directly adjacent to the existing structure. New sheet pile will be driven into the substrate and drainage rock will be placed between the existing bulkhead and the new bulkhead wall to maintain water pressure equilibrium on both

sides of the bulkhead. The length of the bulkhead will remain the same but will be ~3 feet higher than the existing structure to accommodate for projected sea level rise.

Slope Protection Repair: An existing creosote treated timber retaining wall located to the north of the bulkhead will be completely removed and replaced with 198 cubic yards of riprap. A layer of fish mix rock will be placed over the riprap located below the high tide line to provide fish habitat. To the south of the existing bulkhead, 14 cubic yards of concrete rubble will be replaced with 35 cubic yards of riprap.

To mitigate for aquatic impacts the following actions will be taken:

- Removal of ~28 creosote-treated timber piles and 3 steel piles will be removed adjacent to the existing bulkhead.
- Removal of 36 derelict creosote-treated timber piles and 3 creosote-treated timber pile caps.
- Removal of a derelict structure ~ 2510 square feet in area will be removed decreasing overwater coverage.

The project site is located at 117 Howerton Ave SE, Ilwaco in Baker Bay, Pacific County, Washington, Section 33 and 34, Township 10 N., Range 11 W., within Water Resource Inventory Area (WRIA) 24 - Willapa.

With this WQC Order, Ecology is granting with conditions the Port of Ilwaco's request for a Section 401 Water Quality Certification for the Port of Ilwaco East Bulkhead Resilience project, provided that the activity is conducted in accordance with the Section 401 Water Quality Certification request and attachments Ecology received on 7/6/2023, and the following supporting documentation:

1. E-mail to Ecology dated 2/8/2024, regarding water quality monitoring and agreement to conduct physical sampling, if needed, to determine compliance with the water quality standards.

Based on the information submitted, Ecology has determined that the discharge from the project will comply with state water quality requirements. Prior to undertaking any changes that materially alter the project, the Port of Ilwaco must contact Ecology to determine whether a new Section 401 Water Quality Certification is required.

Issuance of this Section 401 Water Quality Certification for this proposal does not authorize the Port of Ilwaco to exceed applicable state water quality standards (Chapter 173-201A WAC), ground water quality standards (Chapter 173-200 WAC), or sediment quality standards (Chapter 173-204 WAC). Furthermore, nothing in this Section 401 Water Quality Certification

absolves the Applicant from liability for contamination and any subsequent cleanup of surface waters, ground waters, or sediments resulting from project construction or operations.

Special Conditions:

1. No petroleum products, fresh concrete, lime or concrete, chemicals, or other toxic or deleterious materials shall be allowed to enter waters of the state.
 - Justification - Ecology must protect waters of the state from all discharges and potential discharges of pollution that can affect water quality to protect aquatic life and beneficial uses.
 - Citation - Chapter 90.48 RCW, RCW 90.48.030, RCW 90.48.080, Chapter 173-201A WAC, WAC 173-201A-300 - 330, WAC 173-204-120, and WAC 173-225-010.
2. The following notifications shall be made via phone or e-mail (e-mail is preferred) to Ecology's Federal permit Manager via e-mail to fednotification@ecy.wa.gov and cc to brook.swensen@ecy.wa.gov Notifications shall be identified with WQC Order No. 22523, Corps Reference No. NWP-2022-525, and include the Project Proponent name, project name, project location, project contact and the phone number.
 - a. Immediately following a violation of state water quality standards or when the project is out of compliance with any conditions of this WQC Order;
 - b. At least 10 days prior to all pre-construction meetings
 - c. At least 10 days prior to conducting initial in-water work activities.
 - Justification - Ecology has independent state authority to ensure protection of state water quality. Ecology must be aware of when a project starts and ends and whether there are any issues. This allows Ecology to evaluate compliance with the state water quality requirements.
 - Citation - Chapter 90.48 RCW, RCW 90.48.030, RCW 90.48.120, Chapter 173-201A WAC, WAC 173-201A-300 - 330, Chapter 173-204 WAC, and WAC 173-225-010.

In view of the foregoing and in accordance with 33 U.S.C. §1341, RCW 90.48.120, RCW 90.48.260 Chapter 173-200 WAC and Chapter 173-201A WAC, this WQC is granted with conditions to the Port of Ilwaco for the Port of Ilwaco East Bulkhead Resilience project.

This Certification is not effective until the U.S. Corps of Engineers (Corps) Seattle District issues a Department of the Army (DA) permit for this project. WQC Order No. **22523** will remain valid for the duration of the associated DA permit. The Port of Ilwaco should send a copy of the final

WQC Order No. 22523, Corps No. NWP-2022-525

Aquatics ID No. 142236

February 22, 2024

Page 4 of 6

DA permit to fednotification@ecy.wa.gov within two weeks of receiving it. To transfer this Order to a new owner or operator, complete a Request for Transfer of Order form following the instructions at the top of the form. Link to form:

<https://apps.ecology.wa.gov/publications/SummaryPages/ECY070695.html>.

Your right to appeal

You have a right to appeal this Order to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do all of the following within 30 days of the date of receipt of this Order:

- File your notice of appeal and a copy of this Order with the PCHB (see filing information below). "Filing" means actual receipt by the PCHB during regular business hours as defined in WAC 371-08-305 and -335. "Notice of appeal" is defined in WAC 371-08-340.
- Serve a copy of your notice of appeal and this Order on the Department of Ecology mail, in person, or by email (see addresses below).

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Filing an appeal

Filing with the PCHB

For the most current information regarding filing with the PCHB, visit: <https://eluhho.wa.gov/> or call: 360-664-9160.

Service on Ecology

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

WQC Order No. 22523, Corps No. NWP-2022-525
Aquatics ID No. 142236
February 22, 2024
Page 5 of 6

E-Mail Address:

ecologyappeals@ecy.wa.gov

Americans with Disabilities Act Information

Accommodation Requests

To request ADA accommodation including materials in a format for the visually impaired, call Ecology at 360-407-6831 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with speech disability may call TTY at 877-833-6341.

Contact Information

Please direct all questions about this WQC Order to:

Brook Swensen
Department of Ecology
564-999-1749
brook.swensen@ecy.wa.gov

More Information

- **[Pollution Control Hearings Board Website](https://elaho.wa.gov)**
<https://elaho.wa.gov>
- **[Chapter 43.21B RCW - Environmental and Land Use Hearings Office – Pollution Control Hearings Board](http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B)**
<http://app.leg.wa.gov/RCW/default.aspx?cite=43.21B>
- **[Chapter 371-08 WAC – Practice And Procedure](http://app.leg.wa.gov/WAC/default.aspx?cite=371-08)**
<http://app.leg.wa.gov/WAC/default.aspx?cite=371-08>
- **[Chapter 34.05 RCW – Administrative Procedure Act](http://app.leg.wa.gov/RCW/default.aspx?cite=34.05)**
<http://app.leg.wa.gov/RCW/default.aspx?cite=34.05>
- **[Chapter 90.48 RCW – Water Pollution Control](http://app.leg.wa.gov/RCW/default.aspx?cite=90.48)**
<http://app.leg.wa.gov/RCW/default.aspx?cite=90.48>
- **[Chapter 173.204 WAC – Sediment Management Standards](http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204)**
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-204>

WQC Order No. 22523, Corps No. NWP-2022-525

Aquatics ID No. 142236

February 22, 2024

Page 6 of 6

- **Chapter 173-200 WAC – Water Quality Standards for Ground Waters of the State of Washington**
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-200>
- **Chapter 173-201A WAC – Water Quality Standards for Surface Waters of the State of Washington**
<http://apps.leg.wa.gov/WAC/default.aspx?cite=173-201A>

Signature

Dated this 22nd day of February, 2024 at the Department of Ecology, Lacey, Washington.



Loree' Randall, Section Manager
Aquatic Permitting & Protection Section
Shorelands and Environmental Assistance Program



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

February 26, 2024

Port of Ilwaco
ATTN: Tracy Lofstrom
P.O. Box 307
Ilwaco, WA 98624

Re: Coastal Zone Management Federal Consistency Decision for Port of Ilwaco East Bulkhead Resilience Project (Corps No. **NWP-2022-525**), in Baker Bay, Ilwaco, Pacific County, Washington

Dear Tracy Lofstrom:

On September 8, 2023, the Department of Ecology (Ecology) received a Certification of Consistency with the Washington State Coastal Zone Management Program (CZMP) for the above project. Pursuant to Section 307(c)(3) of the Coastal Zone Management Act of 1972 as amended, Ecology concurs with Port of Ilwaco's determination that the proposed work is consistent with Washington's CZMP.

The proposed work includes replacing a failing bulkhead with a new structure and repair slope protection north and south of the existing bulkhead. Additional work entails paving and regrading the upland wharf area directly landward of the bulkhead to mitigate projected sea level rise.

Bulkhead Replacement: The majority of the existing bulkhead will be abandoned in place but the top several feet of timber above the timber wale may be removed and localized notching of the existing bulkhead to accommodate installing new tie-back ground anchors for the new bulkhead. The new bulkhead will be constructed directly adjacent to the existing structure. New sheet pile will be driven into the substrate and drainage rock will be placed between the existing bulkhead and the new bulkhead wall to maintain water pressure equilibrium on both sides of the bulkhead. The length of the bulkhead will remain the same but will be ~3 feet higher than the existing structure to accommodate for projected sea level rise.

Slope Protection Repair: An existing creosote treated timber retaining wall located to the north of the bulkhead will be completely removed and replaced with 198 cubic yards of riprap. A layer

of fish mix rock will be placed over the riprap located below the high tide line to provide fish habitat. To the south of the existing bulkhead, 14 cubic yards of concrete rubble will be replaced with 35 cubic yards of riprap.

To mitigate for aquatic impacts the following actions will be taken:

- Removal of ~28 creosote-treated timber piles and 3 steel piles will be removed adjacent to the existing bulkhead.
- Removal of 36 derelict creosote-treated timber piles and 3 creosote-treated timber pile caps.
- Removal of a derelict structure ~ 2510 square feet in area will be removed decreasing overwater coverage.

This activity is located at 117 Howerton Ave SE, Ilwaco in Baker Bay, Pacific County, Washington.

If you have any questions regarding Ecology's decision, please contact Brook Swensen at 564-999-1749.

Your right to appeal

You have a right to appeal this decision to the Pollution Control Hearings Board (PCHB) within 30 days of the date of receipt. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal, you must do all of the following within 30 days of the date of receipt of this decision:

- File your notice of appeal and a copy of this decision with the PCHB (see filing information below). "Filing" means actual receipt by the PCHB during regular business hours as defined in WAC 371-08-305 and -335. "Notice of appeal" is defined in WAC 371-08-340.
- Serve a copy of your notice of appeal and this decision on the Department of Ecology mail, in person, or by email (see addresses below).

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Filing an appeal

Filing with the PCHB

For the most current information regarding filing with the PCHB, visit: <https://elaho.wa.gov/> or call: 360-664-9160.

Corps No. NWP-2022-525, Aquatics ID No. 142236
February 26, 2024
Page 3 of 3

Service on Ecology

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

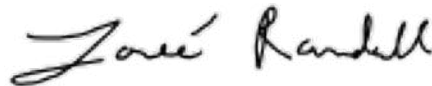
Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

E-Mail Address:

ecologyappeals@ecy.wa.gov

Sincerely,



Loree' Randall, Section Manager
Aquatic Permitting & Protection Section
Shorelands and Environmental Assistance Program

Sent via e-mail: tlofstrom@portofilwaco.org

E-cc: Kinsey Friesen, U.S. Army Corps of Engineers
Victoria England, Moffat & Nichol
Brook Swensen, Ecology
fedconsistency@ecy.wa.gov



600 University Street, Suite 610
Seattle, WA 98101

(206) 622-0222
www.moffattnichol.com

MEMORANDUM

To: City of Ilwaco

From: Moffatt & Nichol on Behalf of Port of Ilwaco

Date: June 2023

Subject: **Port of Ilwaco East Bulkhead Resilience Project
Mitigation Sequencing and No Net Loss Narrative**

M&N Job No.: 213282

Introduction

The City of Ilwaco (City), Washington's Shoreline Master Plan (SMP) section 6.3(1) requires that projects protect the critical area at a project site so that project actions result in no net loss of critical area functions and values. The proposed Port of Ilwaco Bulkhead Resilience Project will meet the no net loss objective through avoidance, minimization and compensatory mitigation for environmental impacts from the project action. This memorandum summarizes a Mitigation Sequence Analysis as required by the City [SMP6.3(3)] in their pre-application meeting comment letter dated 2 May 2023 (attached).

Existing Conditions

The project site is located on the east side of the Safe Coast Seafood wharf in the northwest portion of the Port of Ilwaco Marina in Ilwaco, Washington. The marine, benthic, and shoreline habitat are disturbed habitat based on the use and maintenance of the marina as described below. Eelgrass is not present at the project site based on the eelgrass survey completed in 2022 (GeoEngineers 2022).

The existing bulkhead, to be replaced as part of the project, consists of a creosote treated timber pile and pile cap bulkhead apparently tied back with cable tie backs to deadman piles near the seafood facility buildings. The existing bulkhead is leaning waterward as much as 10 degrees in places and is in poor condition. Bulkhead movement waterward has been observed since monitoring began in November 2022.



Figure 1. Damaged Bulkhead Wall

The paved driveway west of the bulkhead, to be regraded and repaved as part of the project, shows signs of settlement and damage from piles protruding through the pavement and represents additional indication of bulkhead movement and associated settlement behind the bulkhead. The head of the adjacent slip is occupied by a creosote treated timber revetment and various logs at the toe of the slope and grasses and low vegetation are located along the top of the slope.



Figure 2. Drive Settlement

Various creosote-treated timber piles and features are located within the adjacent marina slip. The slip is part of the busy Ilwaco Marina that is actively used by tenants (including vessels accessing Safe Coast Seafoods) and visiting vessels and is periodically dredged to maintain permitted depth to accommodate the draft of the vessels using the marina. The disturbed habitat in the marina provides lower function and value as habitat to marine species based on the baseline conditions and use of the facility.

Proposed Project

The proposed Project is required for improved the safety, efficiency, and reliable use of the wharf. The Port is a key hub for commercial fishing, seafood and aquaculture processing, and recreation activities that greatly benefit the regional economy. The commercial fishing wharf, operated by Safe Coast Seafoods, is one of the most active in the state, landing roughly \$14 million in commercial seafood each year. Repair of the bulkhead wall is critical to ongoing operations at Safe Coast Seafoods. In its current condition, the bulkhead is in serious structural condition and at risk of failing. Recent biweekly and monthly measurements have been completed to monitor ongoing movement of the bulkhead. The monitoring has recorded movement along 13 monitoring points along the face of the bulkhead ranging from approximately 0.06 inch to up to 0.31 inch waterward since monitoring began in November 2022. The monitoring indicates that the bulkhead is the process of active failure. Frequent flooding due to high water levels from “king tides” and severe winter storm surges further threaten the structural capacity of the bulkhead.

Bulkhead failure would shut down cargo operations at the Port and negatively impact a wide variety of businesses in maritime and non-maritime sectors including Safe Coast Seafoods. The shutdown of the Safe Coast site due to failure of the bulkhead would lead to a series of economic impacts for many more

workers and businesses and the region. Bulkhead failure would also adversely affect the Port of Ilwaco Marina operations, likely fully blocking at least one slip from use and potentially causing damage to adjacent float structures and tenant vessels. Until this Project is completed, the facility is capacity-limited and at risk. The main access driveway to Safe Coast Seafoods has been blocked based on recommended load limitations in an effort to minimize vibration and load resulting from vehicles and machinery using the driveway located adjacent to the failing bulkhead. Without the Project, the eventual closure of the wharf will have cascading negative transportation and economic impacts for the region.

The proposed project includes the following elements as summarized in the project JARPA and JARPA figures (Sheet 1 through 9):

- Replacement of the existing bulkhead by removing limited portions of the existing creosote-treated timber bulkhead to accommodate placement of a new steel sheetpile bulkhead with steel cable tiebacks. The new bulkhead must be placed waterward of the existing bulkhead due to the instability of the existing structure and the risk of failure of the wharf and potential damage to the adjacent seafood facility structures during construction if the bulkhead was removed.
The bulkhead sheetpiles will be driven using a vibratory hammer. Impact hammer proofing may also be required to drive the sheetpiles to the final design elevation. Additional construction details are summarized in the attached project Joint Aquatic Resources Permit Application (JARPA) and affiliated drawings. A portion of the concrete rubble slope protection on the south end of the bulkhead will be moved and replaced with riprap to accommodate installation of the new bulkhead and maintain slope protection/stability.
- The access drive located behind and to the west of the bulkhead will be regraded and repaved as part of the bulkhead replacement.

Mitigation Sequence Analysis

The following mitigation sequence analysis is provided pursuant to City of Ilwaco SMP 6.3(2) and (3) and as requested by the City in a letter dated 2 May 2023. The project will implement Best Management Practices (BMPS)/avoidance and minimization measures (AMMs) during demolition and construction as described in Section 8.a. of the project JARPA (attached). The BMPs will avoid and minimize impacts to the environment to the extent practicable and include general construction and demolition BMPs; in-, over-, and near-water specific BMPs; creosote and pile removal BMPs; pile installation BMPs; and BMPs associated with overwater concrete placement.

The following mitigation sequence will be completed for the project and is presented as described in the Ilwaco SMP.

A. Avoidance

The proposed project only consists of maintenance and replacement/repairs to existing structures. The site use and purpose will not change. No "overall" expansion of the footprint is proposed, only that necessary to replace the bulkhead.

Several alternatives were considered prior to identifying the preferred alternative. The following is a summary of the alternatives considered and how they were evaluated as the Project was developed.

- *No Action*
 - The existing creosote treated timber bulkhead is actively failing with observed movement of up to 0.3 inch since monitoring began in November 2022.
 - Left as-is, the bulkhead will eventually fail, which will result in:
 - Permanent access removal by permanently blocking the access driveway adjacent to the bulkhead,
 - Potential damage to buildings/building foundations,
 - Life/safety issue for Safe Coast Seafood workers and marina tenants,
 - Inability for Safe Coast Seafood to maintain operations resulting in loss of income and revenue for this small community.
 - Obstructing a portion of marina (adjacent slip) and making it unusable.
- *Removal of bulkhead prior to construction of new bulkhead wall*
 - No bulkhead as-builts are available to identify how the existing bulkhead was constructed. Associated unknowns increase the risk of removing the structure prior to replacement. Removing the existing structure prior to replacement poses a high risk of slope failure and damage to:
 - the access drive,
 - Safe Coast building foundations, and
 - adjacent marina slip (including obstructing access to parts of the marina and potential damage to float structures).
 - Bulkhead failure would pose unacceptable risks to life/safety for Safe Coast Seafood workers and marina tenants.
- *Sheetpile bulkhead placement behind existing bulkhead*
 - No as-builts: The bulkhead appears to be supported by cable tie backs, possibly anchored to deadman piles behind/shoreward of the bulkhead. There is a potential for:
 - Increased risk of failure if sheet piles were driven behind the existing wall, severing the support provided by the cable tiebacks.
 - Unknown obstructions that could damage or impede sheetpile installation, increasing cost, delays and potential risk of existing slope failure.
 - The Project area is restricted by the continued business need for the adjacent access drive and the close proximity of the facility buildings and infrastructure. Space limitations also pose constructability challenges relative to pile and cap placement for a new bulkhead.
- *Cantilever bulkhead waterward of the existing bulkhead*
 - The cantilever option placed waterward of the existing bulkhead would have essentially the same impacts to marine habitat as the Preferred Alternative and would also require placement of filter rock backfill in the space between the new and the existing bulkhead.
 - The placement of the cantilever and Preferred Alternative is dictated by the

profile of the existing bulkhead which is leaning waterward by as much as 10 degrees in places and the need for a usable temporary berth area to replace the berth area rendered unusable by the deteriorated and unstable nature of the existing bulkhead.

- The cantilever option would require more steel as the bulkhead sheetpiles would be both longer and thicker to provide the necessary slope support at the site. The requirement for more steel will result in a higher cost to the Port.
- *Preferred Alternative – Anchored Sheetpile Bulkhead*
 - The Preferred Alternative will result in commensurate environmental impacts (approximately the same footprint, backfill volume, etc.) as the cantilever bulkhead alternative and, similarly, be the least environmentally impactful and will be a more economical solution for the Port.
 - The proposed placement of the bulkhead is controlled by the waterward lean of the existing bulkhead face and Safe Coast's need to replace the existing unusable temporary berth area with a usable temporary berth to support the facility's operations.
 - The size of the space/void between existing and replacement bulkheads results from the way the bulkhead leans waterward and the need for a usable berth area to replace existing one for Safe Coast Seafood operations.

Avoidance and minimization measures (AMMs) and BMPs will be implemented during construction to avoid and/or minimize impacts to wildlife. See the attached JARPA and Biological Evaluation for a full list of measures to preserve or enhance wildlife. Key AMMs/BMPs include:

- In-water construction activities will comply with the in-water construction window (anticipated to be November 1 through February 28)
- During any in-water and embankment work, containment booms will be used to surround the work areas or separate embankment work from surface water.
- Steel piling will be installed with a vibratory hammer when possible. Impact hammering will start with light tapping, then increase to full force gradually.
- A bubble curtain and one or more other noise attenuation methods will be used during impact installation or proofing of all steel piling.
- Where possible pre-cast concrete features will be used in lieu of cast-in-place concrete features.
- Uncured concrete will not be allowed to come into contact with the surface water for cast-in-place features.

The creosote treated timber revetment on the north end of the adjacent slip will be replaced with riprap shore protection rather than replacing in kind with a concrete revetment in the same location.

Additionally, the temporary berth for vessels along the bulkhead will be rehabilitated by adding anchor features (e.g. steel cleats) along the top of the new bulkhead wall versus incorporating fender piles and fender features that were eliminated as the design progressed. The final design eliminated the piles and features associated with the fenders thus avoiding the associated additional overwater and benthic impacts associated with such features.

B. Minimization

All federal, state, and local project permit requirements will be adhered to avoid and minimize impacts to protected species and habitat. Minimization measures associated with the proposed project BMPs include the use of steel sheetpiles (vs. treated timber or concrete piles) which minimizes the footprint of the structure to the extent practicable, placing sheetpiles using a vibratory hammer will limit or eliminate the need for impact pile driving except in those instances where the piles need to be driven to their final design elevation with impact proofing due to harder driving conditions at depth. Additional pile installation BMPs and monitoring (marine mammal monitoring) will be implemented to minimize pile driving noise impacts (e.g. bubble curtains, soft starts, etc.) and containment booms will be used during demolition and construction to prevent debris and sheen that may be associated with the creosote pile and feature removal. See the attached JARPA for additional impact minimization BMPs proposed for the project.

The proposed bulkhead has been sited as close to the existing bulkhead as possible based on the condition and lean of the existing, failing bulkhead while maintaining the purpose and utility of the structure as a temporary berth for vessels on- and off-loading at the Safe Coast Seafood facility. The proposed location for the new bulkhead construction minimizes the new overwater coverage, benthic habitat impacts, and fill placement (drainage rock placement in the space between existing and new structures) required to construct the new bulkhead to the extent practicable while maintaining the facility's purpose and utility.

C. Rectify the impact by repairing, rehabilitating, or restoring the affected environment.

Approximately 350 sf of concrete rubble will be removed to accommodate construction of the new bulkhead. The concrete will be removed from the marine environment and replaced with 350 sf of rip-rap shore protection. This will remove approximately 14 cy of concrete from the marine environment (below HTL). An additional 50 sf (2 cy) of concrete rubble slope protection will be removed from above HTL in the same area, removing more concrete from the shore environment. The removal of concrete improves the marine and shore environment improves site habitat conditions by eliminating concrete and its potential impacts on pH and marina chemistry from the site at these locations.

D. Reduce or eliminate the impact over time by preservation and maintenance operations.

The project includes removal of creosote from the environment by removing limited portions of the existing bulkhead. The amount of the existing bulkhead removal is limited by the condition and instability of the existing structure and additional removal of the bulkhead structure risks catastrophic failure of the wharf which has the potential to endanger Safe Coast Seafood building foundations and infrastructure. Bulkhead failure could adversely impact continued operations of the facility and risk the safety of the workers at that facility and the customers using the marina. Such a failure would likely have adverse effects on the marine environment due to the potential for increased turbidity caused by slope failure and the potential for building

materials and other materials used at the Safe Coast Seafood facility entering the marine waters immediately after a catastrophic bulkhead failure.

The placement of the new bulkhead and associated drainage gravel backfill waterward of the remaining portion of the creosote treated timber bulkhead will provide a measure of protection from wave action and vessel wakes, slowing the deterioration of the old bulkhead structure and likely slowing the release of creosote from the timbers staying place. This decrease in creosote releases from the remaining bulkhead will likely improve habitat conditions over the long term by diminishing the episodic concentration of creosote leaching into the marine waters.

E. Compensatory Mitigation for the impact by replacing, enhancing, or providing substitute resources or environments.

The Port of Ilwaco proposes the following compensatory mitigation to offset the reduction in habitat function to the marine environment due to increase in overwater shading and loss of benthic habitat from the new bulkhead construction. The proposed compensatory mitigation consists of pile removal, removal of creosote from the marine environment, beach nourishment, removal of floating timber debris/overwater coverage from the marine environment. The proposed compensatory mitigation was identified during extensive consultation with federal and state agencies including additional coordination with WDFW to identify sufficient mitigation to address project impacts.

Approximately twenty-eight (28) creosote-treated timber piles (12-inch diameter) and three (3) steel piles (12-inch diameter) will be removed adjacent to the existing bulkhead and as part of the north shoreline rehabilitation. In addition, the Port proposes to remove approximately thirty-six (36) 12-inch diameter derelict creosote-treated timber piles and 3 creosote-treated timber pile caps as mitigation for the fill and benthic habitat impacts created by the placement of the new bulkhead wall in front of the existing structure. This will result in approximately 64 total creosote-treated timber piles and 3 steel piles being removed along with approximately 70 lf of creosote treated timber retaining wall, and 40 lf of creosote treated timber pile caps.

Approximately 1,200 sf of fill below the HTL will result from the placement of the new bulkhead and drainage rock backfill (Table 1). Of the overall footprint, 1,200 sf will come into contact with the bottom substrate and result in benthic habitat impacts.

North shoreline riprap placement will occur in a 2,200-sf area, 1,850 sf of which occurs below the HTL and would result in benthic habitat impacts (Table 1). Approximately 750 sf of this will occur waterward of the existing retaining wall. A 6-inch layer (approximately 34 cy) of fish mix gravel will be placed over the north shoreline riprap below HTL to provide beach nourishment and improved habitat for fish passing through the marina.

South shoreline riprap placement will not result in any additional benthic habitat impacts (Table 1) but will result in the removal of approximately 350 sf (14 cy) of concrete from the

environment to be replaced with riprap shore protection. The removal of approximately sixty-four (64) 12-inch creosote-treated timber piles, three (3) 12-inch steel piles, 70 lf of creosote-treated timber retaining wall, and 40 lf of derelict creosote-treated timber pile caps, will restore approximately 165 sf of benthic habitat (Table 1) and remove approximately 34 tons of creosote from the marine environment.

Additionally, floating timber debris will be removed from the south portion of the marina as part of the project mitigation. This will remove approximately 2,510 sf of overwater coverage currently present in that portion of the marina (JARPA figure set, Sheet 9).

Table 1. Approximate Fill Impacts

Activity	Fill below HTL (sf)	Fill below HTL (cy)	Fill above HTL (sf)	Fill above HTL (cy)
<i>Bulkhead wall and shoreline protection installation</i>				
Sheetpile installation	400 sf	80 cy	0 sf	0 cy
Bulkhead drainage rock placement	1,000 sf	450 cy	0 sf	0 cy
Rip-rap shore protection and Fish Mix placement (north shoreline)	1,850 sf	172 cy	350 sf	26 cy
Concrete rubble removal (south shoreline)	-350 sf	-14 cy	-50 sf	-2 cy
Rip-rap replacement (south shoreline)	350 sf	30 cy	50 sf	5 cy
<i>Subtotal</i>	<i>3,250 sf</i>	<i>718 cy</i>	<i>350 sf</i>	<i>29 cy</i>
<i>Structure removal</i>				
Pile removal adjacent to existing bulkhead	-12 sf	-6 cy	0 sf	0 cy
North shoreline- retaining wall removal	-85 sf	-12 cy	0 sf	0 cy
Derelict pile/timber removal	-68 sf	-12 cy	0 sf	0 cy
Derelict Timber Structure Removal -South Marina	-2,510 sf	-350 cy	0 sf	0 cy
<i>Subtotal</i>	<i>-2,675 sf</i>	<i>-380 cy</i>	<i>0 sf</i>	<i>0 cy</i>
<i>Creosote removal from the Environment</i>	<i>34 tons</i>			

No Net Loss

The project will result in no net loss to habitat functions based on the baseline habitat conditions¹ that should be considered as “disturbed” at the project site and the avoidance, minimization, and mitigation measures that are included as part of the project and described in this memorandum. The project and associated mitigation will result in “equal or greater habitat functions....compared to existing conditions”^{2,3} at the project site as water quality and benthic habitat will be improved through removal of creosote and concrete from the environment. The shoreline habitat will be improved from existing

¹ WAC 220-660-080 (4)(f) “For calculating compensatory mitigation requirements under this chapter, the environmental baseline is habitat conditions at the time the HPA application is submit ed.”

² WAC 220-660-080 (5)(d)

³ Ilwaco SMP, 4.1.2 (1) “The existing ecological functions and ecosystem-wide processes of critical areas should be protected.”



condition through placement of fish mix material over the project rip rap shoreline protection for beach nourishment and improved habitat for fish passing through the marina. The project will also provide protection to the timber bulkhead remaining in place, likely slowing deterioration from weathering, vessel wake, and wave action and decreasing the speed and concentration of the remaining creosote leaching into the marine waters. Additionally, the project mitigation will remove existing overwater coverage from the marina resulting in improved habitat for fish passing through the marina.

The proponent has avoided and minimized impacts to the marine environment to the greatest extent practicable through redesign, BMP implementation, and mitigation for permanent critical area impacts. Based on these measures, the project will not result in a net loss in critical area functions and values.

Attachments

- City of Ilwaco [SMP6.3(3)] pre-application meeting comment letter dated 2 May 2023
- WDFW Mitigation Consultation – Emails dated 14 June 2023
- Project JARPA & Permit Drawings
- Project Biological Evaluation (submitted to NOAA/NMFS 28 November 2022)



*The City of Ilwaco is an
equal opportunity provider
and employer.*

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May 2, 2023

Port of Ilwaco
PO Box 307
Ilwaco, WA 98624

Subject: Port of Ilwaco East Bulkhead Resilience Project

Thank you for discussing this project at the pre-application meeting on April 12, 2023. As a follow up to the pre-application meeting, this letter provides comments from the City project review team in anticipation of formal application submittal, as well as initial comments from the Washington Department of Fish and Wildlife (WDFW).

The comments in this letter are the result of a preliminary review of materials provided by the applicant/contact. Additional review may disclose additional substantive or procedural requirements.

This letter contains several references to the City's Shoreline Master Program (SMP). The City's SMP can be found here:

<https://www.ilwaco-wa.gov/wp-content/uploads/2017/09/Locally-adopted-SMP.pdf>

Project Review Process

1. The project is not exempt under the State Environmental Policy Act (SEPA) and will require SEPA review.
2. The project is not eligible for a shoreline exemption under WAC 173-27-040(2).
3. The project will require a shoreline substantial development permit for activities including, but not necessarily limited to, shoreline stabilization (SMP Table 7-1).
4. The project will require a shoreline conditional use permit for fill below the ordinary high water mark in the Aquatic shoreline environment designation (SMP Table 7-1). The City's Hearing Examiner has the authority to grant or deny shoreline conditional use permits (SMP 8.1(3)A). The Washington State Department of Ecology must also approve the shoreline conditional use permit pursuant to WAC 173-27-200.
5. The project will require engineering review by the City.

Project Submittal Requirements

The following submittals are required for formal application review. Please ensure all submittals are consistent with one another. All submittals must be complete and signed and sealed as applicable.

1. Master Planning Permit Form and Checklist. This is available online here:
<https://cdn.townweb.com/ilwaco-wa.gov/wp-content/uploads/2022/03/Master-Planning-Permit-Application-Packet.pdf>
2. SMP Conditional Use Permit Application. This is available online here:
<https://cdn.townweb.com/ilwaco-wa.gov/wp-content/uploads/2022/06/Shoreline-Master-Program-SMP-Conditional-Use.pdf>
3. SEPA Checklist. This is available online here:
<https://cdn.townweb.com/ilwaco-wa.gov/wp-content/uploads/2022/06/SEPA-Checklist-with-added-help-links-and-instructions.pdf>
4. Joint Aquatic Resource Permit Application (JARPA). Include in the JARPA a brief description of the predicted sea level rise scenario that the project is designed to accommodate and supporting methodology.
5. Geotechnical report. Demonstrate compliance with SMP 7.9(4), 7.18(3), (6) and (7). In demonstrating compliance with SMP 7.18(7), provide separate consideration of the area proposed for the sheetpile bulkhead, the adjacent shoreline area to the north, and the adjacent area to the south.
6. A narrative detailing how the proposed project will achieve no net loss of ecological functions prepared by a qualified professional. The narrative must consider aquatic habitat and vegetation. The City project review team, as well as other regulatory agencies with jurisdiction, have concerns about the adequacy of the mitigation currently proposed. Offsetting the aquatic area lost as a result of the proposed development with an equal or greater area of aquatic area gained would be expected to provide substantial support to a demonstration of no net loss of ecological functions. The letter from WDFW (Attachment A) provides several specific suggestions for mitigation measures that might be considered for demonstrating compliance with the requirement for no net loss of ecological functions in SMP 6.3(1).
7. A mitigation sequencing analysis, which is required when an action requires a conditional use permit (SMP 6.3(2)). See SMP 6.3(3) for specific instructions. This analysis may be included as a section in the no net loss narrative, above.
8. Biological Evaluation (referenced in JARPA).
9. Site plans, including the information in SMP 8.5(1)I, as applicable. Show proposed temporary erosion and sediment control (TESC) measures in the site plans.

10. Cultural resource survey (referenced in JARPA).

11. Fees payable to the City of Ilwaco in the amount of \$2,250.00. The fee breakdown is as follows:

- Shoreline Substantial Development Permit (Commercial): \$1,000.00;
- Shoreline Conditional Use Permit: \$750.00; and
- Hearing Examiner: \$500.00.

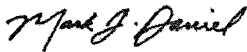
Further, the applicant shall be financially responsible for any engineering and planning services or other professional consulting/legal services deemed necessary by the City for the complete permit and plan review. These additional fees, if applicable, shall be paid in full prior to final signing of any permits.

Please contact the City with any questions.

Sincerely,



Holly Beller
City Administrator



Mark Daniel, AICP
Consultant Planner

Enclosures:

1. Attachment A, email from L. Bauernschmidt, WDFW, dated May 1, 2023

CC: Victoria England, Moffat & Nichol

From: Bauernschmidt, Lauren N (DFW) <Lauren.Bauernschmidt@dfw.wa.gov>
Sent: Monday, May 1, 2023 2:25 PM
To: Alexandra Plumb <aplumb@dgcwatershed.com>
Cc: Mark Daniel <mdaniel@dgcwatershed.com>; Holly Beller <treasurer@ilwaco-wa.gov>
Subject: RE: Port of Ilwaco Bulkhead Replacement

Hi Alexandra,

A short recap of the discussion we had on Thursday about the adequacy of the proposed mitigation for the Ilwaco Bulkhead Replacement.

The current proposal is not meeting WAC 220-660-080's requirement for no-net loss. The new permanent fill of 2,850 sq ft on the benthic habitat is not being offset by 165 sq ft of benthic habitat restored through piling and creosote removal. The mitigation is inadequate. I suggest the Port of Ilwaco reviews the requirements of compensatory mitigation as outlined in WAC 220-660-080. As the project currently stands, WDFW would not permit the work due to the project having unmitigated impacts.

I think there are additional ways to mitigate for the project, though these are only suggestions and will not necessarily meet the full need:

- Remove the scattered cement and marine debris bulkhead and restore the site.
- Remove any derelict piers or floats from the port.
- Incorporate grating into the project to prevent further shading of the benthic substrate.
- Wrap or remove the "abandoned in place" creosote pilings to prevent further leaching from occurring.
- Look for restoration areas in the flats outside of the marina.

Our preference for mitigation is in-kind, on-site but will consider mitigation that is out-of-kind and/or off-site if the Port can show limitations to meeting in-kind, on-site.

Please let me know if you have any questions, and I'm happy to discuss different options.

Thank you,



Lauren Bauernschmidt (she/her)
Pacific County Habitat Biologist
Washington Dept of Fish & Wildlife
Office: 360-249-1217
Mobile: 360-480-2558
Email: Lauren.Bauernschmidt@dfw.wa.gov
48 Devonshire Rd
Montesano, WA 98563



From: [Bauernschmidt, Lauren N \(DFW\)](#)
To: [England, Victoria](#)
Subject: RE: Port of Ilwaco Mitigation Follow-Up
Date: Wednesday, June 14, 2023 5:02:06 PM
Attachments: [image001.jpg](#)

Hi Victoria,

Yes, after further discussion we chose to consider the fish mix as part of the mitigation due to the proximity of the placement to the construction footprint. The placement is an on-site habitat benefit and therefore boosts the value of the action. I was also informed by some local restoration proponents that sand lance have been present in the area in the past, so there is a chance this placement could be utilized.

Thank you,
Lauren

From: England, Victoria <vengland@moffattnichol.com>
Sent: Wednesday, June 14, 2023 4:54 PM
To: Bauernschmidt, Lauren N (DFW) <Lauren.Bauernschmidt@dfw.wa.gov>
Subject: RE: Port of Ilwaco Mitigation Follow-Up

External Email

Hi Lauren,
One follow up question – during our recent call you had stated that fish mix would not be considered part of the mitigation based on WDFW’s assessment that sand lance and smelt would not be likely to pass through the marina but you mention the fish mix in your email below. Will WDFW consider the fish mix layer as part of the mitigation after all? The Port just wants to make sure that they aren’t including anything that won’t be considered part of the mitigation if it doesn’t serve any other project purpose.
Please let me know.
Thank you!
Victoria

From: Bauernschmidt, Lauren N (DFW) <Lauren.Bauernschmidt@dfw.wa.gov>
Sent: Wednesday, June 14, 2023 4:41 PM
To: England, Victoria <vengland@moffattnichol.com>
Subject: Port of Ilwaco Mitigation Follow-Up


CAUTION: This email originated from outside of the organization.

Good afternoon,

I was able to discuss the proposed mitigation, that you presented of behalf of the Port, with my team yesterday. To recap: the Port is proposing removal of the derelict pier/floats in the south area of the port (estimated to be 2,500 sq ft), creosote pile/timber and steel pile removal (165 sq ft), and fish mix placed on top of the rip-rap replacement (south shoreline). As per the draft JARPA, permanent impacts to waterbodies are 3,250 sq ft with 2,900 sq ft directly impacting benthic habitat.

I believe the proposed mitigation as listed above will collectively offset the permanent benthic habitat impacts from construction of the Ilwaco Port improvements. We still encourage the removal of the cement debris wall, but it is not required. When submitting the HPA application, please outline this mitigation plan in the application form. If you have any questions, please let me know.

Thank you,

	<p>Lauren Bauernschmidt (she/her/hers) Pacific County & WIRA 24 Habitat Biologist</p> <p>Office 360-249-1217 Mobile 360-480-2558 Region 6 – Coastal 48 Devonshire Rd, Montesano WA 98563</p>
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Friesen, Kinsey M CIV USARMY CENWP (USA)

From: England, Victoria <vengland@moffattnichol.com>
Sent: Monday, May 20, 2024 10:09 AM
To: Friesen, Kinsey M CIV USARMY CENWP (USA)
Cc: Schwertner, Margaret; Tracy Lofstrom; HPA Applications (DFW); Bauernschmidt, Lauren N (DFW); ECY RE FED PERMITS (SEA); Swensen, Brook (ECY); Holly Beller (treasurer@ilwaco-wa.gov); Stringer, Stuart
Subject: [Non-DoD Source] Port of Ilwaco Bulkhead Resilience Project NWP-2022-525; FWS/R1/2023-0026807; WCRO 2022-03087; HPA32313; WQC 22523
Attachments: Minor Mod Approved.pdf; WCRO-2022-03087 IWWE, FWS/R1/2023-0026807) Port of Ilwaco, East Bulkhead Resilience Projec; RE: [EXTERNAL] Request to amend project in-water work window (WCRO-2022-03087, FWS/R1/2023-0026807) Port of Ilwaco, East Bulkhead Resilience Project
Follow Up Flag: Follow up
Flag Status: Flagged

Hello,

This email serves as no. fica. on that the services, NMFS/NOAA (WCRO 2022-03087) and USFWS (FWS/R1/2023-0026807), have approved the requested early start date to the allowable in-water work window for the Port of Ilwaco Bulkhead Resilience project with the revised approved work window of September 1 through February 28. The attached include email approvals from the services as well as an approval of a minor modification of the project HPA 32313 (revising the in-water work window end date to February 28).

Please let us know if you have any questions.

Kind regards,

Victoria R. England, LG, Env SP
Senior Environmental Scientist

600 University Street, Suite 610 | Seattle, WA 98101

P 206.501.2332

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<Blocked<https://www.linkedin.com/company/moffatt-&-nichol/>>

<Blockedhttps://workforcenow.adp.com/mascsr/default/mdf/recruitment/recruitment.html?cid=4c9b5572-11d3-4da0-8092-712e81e614b9&cclid=19000101_000001&lang=en_US&source=CC4&selectedMenuKey=CareerCenter> Per Title VI of the Civil Rights Act, Moffatt & Nichol will not discriminate on the grounds of race, color, or national origin in the selection and retention of subconsultants, including procurement of materials and leases of equipment. Moffatt & Nichol will ensure that minorities will be afforded full opportunity to present proposals and will not be discriminated against in consideration for an award. For additional information go to: <http://www.moffattnichol.com/content/small-business-outreach> <Blocked<http://www.moffattnichol.com/content/small-business-outreach>> .

From: [Dennis, Mitchell \(Mitch\)](#)
To: [McReynolds, Ryan](#); [Gilson, Kristine \(MARAD\)](#); [Schwertner, Margaret](#)
Cc: [England, Victoria](#)
Subject: RE: (FWS/R1/2023-0026807) Port of Ilwaco, East Bulkhead Resilience Project
Date: Wednesday, September 6, 2023 2:44:42 PM
Attachments: [image001.png](#)

Margaret,

Those modifications were part of the analysis and I'm fine with it. If anything, you have it more fleshed out here and it continues to lessen the impact to the species, always appreciated. If you any more questions, feel free to reach out to me. I'm hoping that the next time I go down to the Salt Pub for albacore and chips that there is a nice looking bulkhead to go look at.

Thanks,
Mitch

^^

Mitch Dennis
(he/his/him)
Fish and Wildlife Biologist
US Fish and Wildlife Service - Lacey, WA
Phone – 564-669-0716
Email – Mitchell_Dennis@fws.gov

From: McReynolds, Ryan <ryan_mcreynolds@fws.gov>
Sent: Wednesday, September 6, 2023 9:25 AM
To: Gilson, Kristine (MARAD) <kristine.gilson@dot.gov>; Schwertner, Margaret <mschwertner@moffattnichol.com>; Dennis, Mitchell (Mitch) <mitchell_dennis@fws.gov>
Cc: McReynolds, Ryan <ryan_mcreynolds@fws.gov>; England, Victoria <venland@moffattnichol.com>
Subject: Re: (FWS/R1/2023-0026807) Port of Ilwaco, East Bulkhead Resilience Project

Hello,

On Aug. 28 we issued a Letter of Concurrence -- (FWS/R1/2023-0026807) Port of Ilwaco, East Bulkhead Resilience Project.

Thank you for providing updates ,, There are quite a few! ,, And, It appears to me, the 'changes' further reduce impacts and improve long term nearshore habitat functions.

If Mitch agrees, And we do not have questions ,, We will place a copy of these correspondence in our files; Please do the same.

Answer To Process Question: No, If there are no changed or additional effects/ consequences of concern (and here I see improvements), Reinitiation of consultation is not warranted. Changes that further reduce impacts and improve long term functions, can be addressed with these records retained for our files.

Thank You --Ryan--

Ryan McReynolds
Zone Team Supervisor
Coastal, Lowland Aquatic, and Marine Zone
U.S. Fish and Wildlife Service, Lacey WA
ryan_mcreynolds@fws.gov
360.480.2336 (Work Cell)

*Working with others to conserve, protect, and enhance
fish, wildlife, plants, and their habitats for the continuing
benefit of the American people.*

From: Schwertner, Margaret <mschwertner@moffattnichol.com>
Sent: Wednesday, August 30, 2023 8:49 AM
To: Dennis, Mitchell (Mitch) <mitchell_dennis@fws.gov>; Rhodes, Darold <darold_rhodes@fws.gov>
Cc: McReynolds, Ryan <ryan_mcreynolds@fws.gov>; Gilson, Kristine (MARAD) <kristine.gilson@dot.gov>; England, Victoria <vengland@moffattnichol.com>
Subject: [EXTERNAL] RE: Port of Ilwaco East Bulkhead

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Mitch and Darold,

Thank you very much for the LOC.

We have a short project update for the Port of Ilwaco East Bulkhead Resilience Project. There have been a few changes to the project description (removal of pile fender system due to cost) and some

additional mitigation elements required as a result of ongoing coordination with the City of Ilwaco and Washington State Department of Fish and Wildlife (WDFW). This email provides a detailed summary of those recent project changes. The changes are minor in nature and do not impact the species Effect Determinations made for the project nor are they anticipated to warrant changes to the LOCs received (NMFS WCRO-2022-03087, FWS 2023-0025807). All proposed avoidance, minimization, and mitigation measures will still be implemented as described in the permit documents.

The project modifications are described below and are reflected in the attached revised design drawings.

Fender Pile System

The installation of 10, 12-inch fiberglass fender piles external to the bulkhead to support temporary berthing is no longer proposed.

Fish Mix Placement

A 6-inch layer (approximately 34 cy) of fish mix gravel will be placed over the north shoreline riprap below the high tide line (HTL) to provide beach nourishment and improved habitat for fish passing through the marina.

Debris Removal

Floating timber debris will be removed from the south portion of the marina. This will remove approximately 2,510 sf of overwater coverage currently present in that portion of the marina.

Fill Impacts

Minor fill impact changes have occurred due the removal of the fender pile system from the project, the addition of fish mix on the north shoreline, and changes to the way in which fill quantities are calculated including an update to the High Tide Line elevation used to calculate fill impacts. Fill impact changes are summarized in Table 1 and Table 2 below.

Table 1. Fill Impacts Provided in Biological Evaluation Dated December 12, 2022 and Submitted for ESA Consultations

Activity	Fill below HTL (sf)	Fill below HTL (cy)	Fill above HTL (sf)	Fill above HTL (cy)
<i>Bulkhead wall and shoreline protection installation</i>				
Sheetpile and fender pile installation	500 sf	40 cy	0 sf	0 cy
Bulkhead drainage rock placement	1,000 sf	400 cy	0 sf	0 cy
Rip-rap placement (north shoreline)	1,850 sf	140 cy	350 sf	25 cy
Rubble/ rip-rap removal (south shoreline)	-350 sf	-14 cy	-50 sf	-2 cy
Rip-rap replacement (south shoreline)	350 sf	30 cy	50 sf	5 cy
<i>Structure removal</i>				
Pile removal adjacent to existing bulkhead	-12 sf	-6 cy	0 sf	0 cy
North shoreline- creosote-treated timber retaining wall removal	-85 sf	-12 cy	0 sf	0 cy
Derelict pile/timber removal	-68 sf	-12 cy	0 sf	0 cy

Table 2. Revised Fill Impacts

Activity	Fill below HTL (sf)	Fill below HTL (cy)	Fill above HTL (sf)	Fill above HTL (cy)
<i>Bulkhead wall and shoreline protection installation</i>				
Sheetpile installation	400 sf	80 cy	0 sf	0 cy
Bulkhead drainage rock placement	1,000 sf	450 cy	0 sf	0 cy

Rip-rap shore protection and Fish Mix placement (north shoreline)	1,850 sf	172 cy	350 sf	26 cy
Concrete rubble removal (south shoreline)	-350 sf	-14 cy	-50 sf	-2 cy
Rip-rap replacement (south shoreline)	350 sf	30 cy	50 sf	5 cy
<i>Subtotal</i>	<i>3,250 sf</i>	<i>718 cy</i>	<i>350 sf</i>	<i>29 cy</i>
<i>Structure removal</i>				
Pile removal adjacent to existing bulkhead	-12 sf	-6 cy	0 sf	0 cy
North shoreline- retaining wall removal	-85 sf	-12 cy	0 sf	0 cy
Derelect pile/timber removal	-68 sf	-12 cy	0 sf	0 cy
Derelect Timber Structure/Debris Removal - South Marina	-2,510 sf	-350 cy	0 sf	0 cy
<i>Subtotal</i>	<i>-2,675 sf</i>	<i>-380 cy</i>	<i>0 sf</i>	<i>0 cy</i>
<i>Creosote removal from the Environment</i>	<i>34 tons</i>			

We do not anticipate that these minor modifications will change the overall assessment of potential impacts but would like to confirm that the LOCs do not need to be updated nor consultation reinitiated based on these minor revisions. Please reach out if you require any additional information or have any questions or concerns.

Thank you.

Regards,
Margaret

Margaret Schwertner
Senior Environmental Scientist
505 S. 336th St. | Federal Way, WA 98422
P 253.237.5928 | M 206.818.2600



From: Rhodes, Darold darold_rhodes@fws.gov
Sent: Monday, August 28, 2023 1:57 PM
To: kristine.gilson kristine.gilson@dot.gov
Cc: Schwertner, Margaret mschwertner@moffattnichol.com; England, Victoria vengland@moffattnichol.com; tlofstrom@portofilwaco.org; Dennis, Mitchell (Mitch) mitchell_dennis@fws.gov; McReynolds, Ryan ryan_mcreynolds@fws.gov
Subject: Port of Ilwaco East Bulkhead

CAUTION: This email originated from outside of the organization.

Kris,

Attached is the signed concurrence for the above project.
No hard copy will follow but should you require one please respond to this email and one will be provided.

Darold Rhodes

Administrative Assistant
US Fish and Wildlife Service
500 Desmond DR SE
Suite 102
Lacey, WA
cell: 360-480-6921



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
West Coast Region
1201 NE Lloyd Boulevard, Suite 1100
PORTLAND, OR 97232-1274

Refer to NMFS No:
WCRO-2022-03087

August 16, 2023

Kristine Gilson
Director, Office of Environmental Compliance
U.S. Department of Transportation
Maritime Administration
1200 Ney Jersey Avenue, SE
Washington, D.C. 20590

Re: Endangered Species Act Section 7(a)(2) Concurrence Letter and Magnuson-Stevens
Fishery Conservation and Management Act Essential Fish Habitat Response for the
Ilwaco East Bulkhead Resilience Project, Port of Ilwaco, Pacific County, Washington
HUC 170800060500

Dear Ms. Gilson:

On December 13, 2022, NOAA's National Marine Fisheries Service (NMFS) received your request for a written concurrence that U.S. Department of Transportation Maritime Administration (MARAD) funding of the Port of Ilwaco Resilience Project under the Port Infrastructure Development Program is not likely to adversely affect (NLAA) species listed as threatened or endangered or critical habitats designated under the Endangered Species Act (ESA). This response to your request was prepared by NMFS pursuant to section 7(a)(2) of the ESA and implementing regulations at 50 CFR 402.

On July 5, 2022, the U.S. District Court for the Northern District of California issued an order vacating the 2019 regulations that were revised or added to 50 CFR part 402 in 2019 ("2019 Regulations," see 84 FR 44976, August 27, 2019) without making a finding on the merits. On September 21, 2022, the U.S. Court of Appeals for the Ninth Circuit granted a temporary stay of the district court's July 5 order. On November 14, 2022, the Northern District of California issued an order granting the government's request for voluntary remand without vacating the 2019 regulations. The District Court issued a slightly amended order two days later on November 16, 2022. As a result, the 2019 regulations remain in effect, and we are applying the 2019 regulations here. For purposes of this consultation and in an abundance of caution, we considered whether the substantive analysis and conclusions articulated in the letter of concurrence would be any different under the pre-2019 regulations. We have determined that our analysis and conclusions would not be any different.

Thank you also for your request for consultation pursuant to the essential fish habitat (EFH) provisions in Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) (16 U.S.C. 1855(b)) for this action.

WCRO-2022-03087



This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). The document will be available in the Environmental Consultation Organizer [<https://eco.fisheries.noaa.gov>]. A complete record of this consultation is on file at Lacey, Washington.

Consultation History

We received the consultation request and biological evaluation on December 15, 2022. We had a conference call to discuss the project with the Port of Ilwaco, MARAD, the USACE and USFWS on May 10, 2023. We initiated consultation on May 10, 2023.

Proposed Action and Action Area



Figure 1. Project area and project elements

MARAD proposes to find modifications to a commercial fishing wharf within the Port of Ilwaco Marina (Figure 1 from BA).

Replace bulkhead: The eastern bulkhead of the wharf is creosote timbers supported by creosote piles. This bulkhead is failing and too low to protect the wharf from king tides and storm surges. A Port of Ilwaco contractor will remove 12 of the creosote timber piles and 3 steel pipe piles on the exterior of the bulkhead. The contractor will install a steel sheet pile bulkhead in front of the existing bulkhead. The new bulkhead is 225 feet long and its construction will take up to 8 hours of vibratory pile driver per day and up to 600¹ impact pile driver blows per day for 12 days. The contractor will fill the space between the new bulkhead and the old bulkhead with about 400 cubic yards of drainage rock. The contractor will cast a 7 foot tall by 3.25 foot wide concrete pile cap on top of the sheet pile. The top of the new bulkhead will be 3 feet higher than the existing bulkhead to accommodate storms and sea level rise. The contractor will stabilize the new bulkhead with 22 steel anchor cables from the pile cap to grout filled holes drilled into the bedrock beneath the wharf. The contractor will install twelve 12 inch diameter fiberglass coated concrete fender piles at the southern end of the new bulkhead with a vibratory pile driver and impact pile driver as needed.

Replace shoreline protection: The contractor will remove 16 cubic yards of riprap and concrete debris from the shoreline south of the bulkhead and replace it with 36 cubic yards of riprap to maintain slope stability.

Replace retaining wall: The contractor will remove 16 creosote treated timber piles and the creosote treated timbers of the retaining wall at the north end of the bulkhead and replace them with 165 cubic yards of riprap to maintain slope stability.

Mitigation: The contractor will remove an additional 36 derelict creosote treated piles from the wharf as mitigation for sacrificing 372 square yards of the soft benthic habitat between the old bulkhead and the new bulkhead and beneath the new riprap north and south of the new bulkhead.

Action area: The action area of the proposed action for aquatic species is defined by the point in space where the sound pressure level from pile driving decreases below 150 dB_{RMS}. Since the marina is surrounded by a riprap breakwater (

Figure 2), all noise from the wharf construction is contained within the marina.

¹ BA notes that 600 strikes are a worst case estimate.



Figure 2. East bulkhead resilience project action area

Avoidance and Minimization Measures:

- Containment booms will be used to surround in-water work areas or separate embankment work from surface water. The booms will serve to contain and collect any oily material and or floating debris potentially released during construction. Oil-absorbent materials will be employed immediately if visible sheen is observed. Accumulated debris will be collected daily and disposed of at a permitted upland site approved by the owner.
- Water quality standards and procedures that limit the impact of pollutants will be observed
- Land based staging areas for activities, such as storage of machinery, equipment, materials, and stockpiled soils will be established landward of the top of bank. A silt fence will be installed around the perimeter of the upland work areas and locations where machinery, materials, and stockpiled soils are situated. Any temporary stockpiles will be covered and bermed when not in use.
- All federal, state, and/or local construction permit requirements will be followed during demolition and construction activities.
- In water construction activities will comply with the in water construction window November 1 through February 28.
- Checking equipment for leaks and other problems that could result in the discharge of petroleum-based products or other material into waters of Baker Bay.

- Corrective actions will be taken in the event of any discharge of oil, fuel, or chemicals in the water including:
 - Containment and cleanup efforts will begin immediately upon discovery of a spill and will be completed in an expeditious manner in accordance with all local, state, and federal regulations. Cleanup will include proper disposal of any spilled material and used cleanup material.
 - The cause of any spill will be ascertained, and appropriate actions taken to prevent further incidents of environmental damage.
 - Spills will be reported to the Washington State Department of Ecology Southwest Regional Spill Response Office pursuant to WAC 173-303-145 and WAC 173-182-260.
 - Work barges will not be allowed to ground out.
 - Excess or waste materials will not be disposed of or abandoned waterward of ordinary high water or allowed to enter waters of the state. Waste materials will be disposed of in an appropriate manner consistent with applicable local, state, and federal regulations.
 - Demolition and construction materials will not be stored where wave action or upland runoff can cause materials to enter surface waters.
 - Oil absorbent materials will be present on site for use in the event of a spill or if any oil product is observed in the water.
 - Removal of creosote treated piles will be conducted consistent with the BMPs established in U.S. Environmental Protection Agency (EPA) Region 10, Best Management Practices for Piling Removal and Placement in Washington State, dated February 18, 2016.
 - While creosote treated piles are being removed, a containment boom will surround the work area to contain and collect any floating debris and sheen. Debris will be retrieved and disposed of properly.
 - The piles will be dislodged with a vibratory hammer when possible and will not be intentionally broken by twisting or bending.
 - The piles will be removed in a single, slow, and continuous motion in order to minimize sediment disturbance and turbidity in the water column.
 - If a pile breaks above or below the mudline, it will be cut or pushed in the sediment consistent with agency approved BMPS (USACE, DNR, Ecology and EPA).
 - Removed piles, stubs, and associated sediments (if any) will be contained on a barge. If piles placed directly on the barge and not in a container, the storage area will consist of a row of hay or straw bales, filter fabric or similar material placed around the perimeter of the barge.
 - All creosote-treated material, pile stubs, and associated sediments (if any) will be disposed of by the contractor in a landfill approved to accept those types of materials.
- Steel piling will be installed with a vibratory hammer when possible. Impact hammering will start with light tapping, then increase to full force gradually.
 - A bubble curtain and one or more other noise attenuation methods such as wood cushion block will be used during impact installation or proofing of all steel piling.

- Pile driving will commence with soft start procedure (ramping up) in order to alert nearby wildlife, allowing them to move out of the area prior to construction activities. For impact pile driving, contractors will be required to provide an initial set of strikes from the hammer at reduced percent energy, each strike followed by no less than a 30 second waiting period. This procedure will be conducted a total of two times before impact pile driving begins.
- To avoid impacts to marine mammals, an exclusion zone will be monitored during and immediately before pile driving activities. The exclusion zone will include the entire marina area shoreward of the breakwaters. Although ESA listed species, including Southern Resident killer whales and humpback whales are not anticipated to occur with the marina where noise impacts could occur, this avoidance measure would provide further protections against potential noise impacts to these species.
- During pile driving activities a qualified observer will monitor the exclusion zone, if any marine mammals are observed within the exclusion zone, all in water Project activities shall cease. Project activities shall not commence or continue until the marine mammal has either been observed having left the exclusion zone, or at least 15 minutes have passed since the last sighting whereby it is assumed the marine mammal has voluntarily left the exclusion zone.
- Wet concrete will not contact surface waters.
- Forms for any concrete structure will be constructed to prevent leaching of wet concrete.
- Concrete process water will not be allowed to enter surface waters. Any process water/contact water will be routed to a contained area for treatment and will be disposed of at an upland location.

Background and Action Agency’s Effects Determination

MARAD concluded that the proposed action is not likely to adversely affect ESA listed species or their critical habitat in Table 1:

Table 1. MARAD effects determinations

Species	Listing Classification, Date and Federal Register Notice	Critical Habitat Designation Date and Federal Register Notice	Action Agency Species Determination	Action Agency Critical Habitat Determination
1. Columbia River Chum Salmon	Threatened 6/28/05 70 FR 37160	9/02/05 70 FR 52630	NLAA	NLAA
2. Lower Columbia River Coho Salmon	Threatened 6/28/05 70 FR 37160	2/24/16 81 FR 9252	NLAA	NLAA
3. Snake River Sockeye Salmon	Endangered 6/28/05 70 FR 37160	10/25/99 64 FR 57399	NLAA	NLAA
4. Lower Columbia River Chinook Salmon	Threatened 6/28/05 70 FR 37160	9/02/05 70 FR 52630	NLAA	NLAA
5. Upper Columbia River Spring Chinook	Endangered 6/28/05 70 FR 37160	9/02/05 70 FR 52630	NLAA	NLAA
6. Snake River Spring/Summer run Chinook Salmon	Threatened 6/28/05 70 FR 37160	10/25/99 64 FR 57399	NLAA	NLAA
7. Snake River Fall Run Chinook Salmon	Threatened 6/28/05 70 FR 37160	10/25/99 64 FR 57399	NLAA	NLAA
8. Upper Willamette River Chinook Salmon	Threatened 4/14/14 79 FR 20802	6/28/05 70 FR 37159	NLAA	NLAA
9. Lower Columbia River Steelhead	Threatened 1/05/06 71 FR 834	9/02/05 70 FR 52630	NLAA	NLAA
10. Mid Columbia River Steelhead	Threatened 1/05/06 71 FR 834	9/02/05 70 FR 52630	NLAA	NLAA
11. Upper Columbia River Steelhead	Threatened 1/05/06 71 FR 834	9/02/05 70 FR 52630	NLAA	NLAA
12. Snake River Basin Steelhead	Threatened 3/25/99 64 FR 14517	9/02/05 70 FR 52630	NLAA	NLAA
13. Upper Willamette River Steelhead	Threatened 4/14/14 79 FR 20802	9/02/05 70 FR 37159	NLAA	NLAA
14. Southern DPS of Green Sturgeon	Threatened 4/7/06 71 FR 17757	10/09/09 74 FR 52300	NLAA	NLAA

Species	Listing Classification, Date and Federal Register Notice	Critical Habitat Designation Date and Federal Register Notice	Action Agency Species Determination	Action Agency Critical Habitat Determination
15. Southern DPS of Eulachon	Threatened 3/18/10 75 FR 13012	10/20/11 76 FR 65324	NLAA	NLAA

MARAD determined that based on migration timing windows, adult salmon and steelhead of each species except SR sockeye are likely to migrate past the action area during some part of the in water work window but are unlikely to enter the marina itself to be exposed to project effects. MARAD determined that very low numbers juveniles from each salmon and steelhead species except juvenile sockeye salmon may be migrating through or rearing in the estuary during the in water work window because the in water work window is set to minimize the exposure of juvenile salmon and steelhead to the effects of projects in the estuary.

MARAD determined that the direct effect of the proposed action on juvenile salmon and steelhead is noise from pile installation:

Noise from pile installation. MARAD estimated that noise from the maximum vibratory and impact pile driving for steel sheet pile exceeds 183 dB_{SEL} and 187 dB_{SEL} within 24 meters and 13 meters of the pile driver respectively and exceeds 150 dB_{rms} within 215 meters of the pile driver. MARAD concluded that the small noise effects radii, combined with the in water work window, make the likelihood of salmon and steelhead exposure to pile driving noise effects insignificant.

MARAD determined that the effects of the proposed action on salmon and steelhead critical habitat are temporary decrease in water quality during pile driving, permanent loss of benthic habitat covered by riprap and permanent reduction in sediment contaminant concentrations after creosote treated piles are removed.

Water quality from turbidity during pile installation and removal. MARAD estimated that suspended sediment concentrations associated with turbidity during pile driving and pile removal would be 5 to 10 milligrams per liter within 300 feet of the pile driver. MARAD concluded that the salmon and steelhead response to these low suspended sediment concentrations is insignificant.

Habitat disturbance from benthic habitat covered by riprap. MARAD estimated that 372 square yards of soft bottom benthic habitat would be permanently covered by riprap. MARAD concluded that the loss of this small area of low quality salmon and steelhead forage habitat within the marina and adjacent to the wharf is insignificant.

Reduced creosote compound contamination in prey species. MARAD concluded that reduced contaminant concentration in salmon and steelhead prey species following removal of 36 creosote treated piles is beneficial.

MARAD determined that based on life history, adult eulachon are likely to migrate past the action area during the in water work window. Larval eulachon are likely to be carried past the

action area by river currents and may be carried into the action area by tidal currents but eulachon larvae are very unlikely to still be in the estuary during the in water work window so all direct effects are discountable.

MARAD determined that the proposed action direct effects to adult eulachon are:

Noise from pile installation. MARAD concluded that the likelihood of migrating adult eulachon exposure to noise from pile driving is insignificant because they are unlikely to enter the marina.

Water quality from turbidity during pile installation and removal. MARAD concluded that adult eulachon response to estimated suspended sediment concentrations is insignificant.

Habitat disturbance from benthic habitat covered by riprap. MARAD concluded that the loss of low quality benthic habitat to eulachon is discountable.

Reduced creosote compound contamination in prey species. MARAD concluded that the decrease in creosote compounds in eulachon prey species is beneficial.

MARAD determined that based on their life history, green sturgeon are likely to be in the action area from June to August but are not likely to be in the action area during the in water work window. MARAD determined that the proposed action indirect effects to green sturgeon is a small decrease in benthic forage.

MARAD determined that the proposed action would affect EFH of groundfish, coastal pelagic species and salmonids.

MARAD determined that the proposed action would affect groundfish, coastal pelagic species and salmonid EFH by adding noise and suspended sediment to the water column and by converting 372 square yards of soft benthic habitat into hard shoreline armoring. MARAD determined that these effects would be minimized by Avoidance and Minimization Measures and offset by removing creosote created piles and timbers from the action area.

ENDANGERED SPECIES ACT

Effects of the Action

Under the ESA, “effects of the action” means the direct and indirect effects of an action on the listed species or critical habitat, together with the effects of other activities caused by the proposed action (50 CFR 402.02). The applicable standard to find that a proposed action is not likely to adversely affect listed species or critical habitat is that all of the effects of the action are expected to be discountable, insignificant, or completely beneficial. Beneficial effects are contemporaneous positive effects without any adverse effects to the species or critical habitat. Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. Discountable effects are those that are extremely unlikely to occur.

The effects of the proposed action include:

1. Vibratory and impact pile driving noise (sound pressure waves)
2. Turbidity from pile driving
3. Benthic forage displaced by riprap

Likelihood of exposure

We concur with MARAD that all of the effects of pile driving to ESA listed species critical habitats are temporary changes to migration and rearing habitat water quality that returns to its baseline state shortly after the pile driver stops for the day and that riprap permanently changes the rearing substrate in a small part of the action area. We used our pile driving noise calculator to estimate that vibratory pile driving 10 24 inch wide steel sheet piles per day (for 12 days) results in noise greater than 150 dB_{RMS} within 22 meters of the pile driver. Impact proofing these piles with 60 blows per pile results in a single injurious peak sound pressure wave greater than 212 dB_{peak} within 3 meters of the pile driver and injurious cumulative sound pressure energy greater than 183 dB_{SEL} within 10 meters of the pile driver. We estimate that pile driving and pile extraction will result in a turbidity plume extending up to 20 feet from the pile driver with a suspended sediment concentration up to 42 milligrams per liter (Weston Solutions, 2006).

Salmon and steelhead

We concur with MARAD exposure of migrating adult salmon and steelhead to the temporary and permanent effects of the proposed action is discountable because they are extremely unlikely to detour from their migration path to swim into the marina action area.

We concur with MARAD that the exposure of stream type juvenile salmonids (LCR steelhead, LCR coho, UCR chinook, UCR steelhead, UWR steelhead, MCR steelhead, SR sockeye, SR spring/summer Chinook, SR steelhead) to pile driving noise and turbidity is discountable. This is because their downstream migration times do not overlap the IWWW. We concur with MARAD that the permanent change to benthic forage from riprap is insignificant to these species because they migrate and forage in deeper, faster flowing water than is present in the marina action area. Thus the effects of the proposed action are NLAA juveniles from these ten species.

We concur with MARAD that the IWWW minimizes the likelihood that CR chum juveniles will be exposed to the temporary effects of the proposed action because their downstream migration times do not overlap the IWWW. We concur with MARAD that any change in the benthic food web from the conversion of 372 square yards of soft benthic habitat to hard rocky habitat is insignificant to CR chum because they are fry migrants to the ocean (Roegner et al., 2012) and do not search for forage at the channel margins, instead rearing in the lower estuary where available resources are more abundant.

Ocean type juvenile fall Chinook (SR fall chinook, LCR fall Chinook and UWR fall Chinook) are present in the estuary during the work window. However, in the winter their abundance is inversely related to salinity. For example, of 500 juvenile Chinook salmon captured by Roegner et al. (2012) just 25 were captured at the lower estuary sites, while 200 we captured in the middle estuary sites and 275 were captured in the tidal freshwater sites (catch per unit effort equal 1, 8 and 12 respectively). Furthermore, virtually all of the Chinook captured in lower estuary sites were early fry being passively transported to the ocean by the river current and thus they would

be very unlikely to drift through the narrow marina opening into the action area (Morrice et al., 2020). Therefore, we concur with MARAD that the likelihood of juvenile Chinook salmon exposure to pile driving effects is insignificant. We also concur that the effect of a small decrease in forage in the lower estuary is insignificant to juvenile Chinook growth and energy.

We concur with MARAD that adult eulachon are likely to swim past the action area during the IWWE but are unlikely to detour from their migratory path to swim into the marina action area and their exposure to temporary and permanent effects of the proposed action are discountable. Because larval eulachon outmigrate passively by drifting, it is unlikely that they will enter the marina to encounter the structural changes, and if they did, the modified habitat would not modify this migration pattern.

We concur with MARAD that green sturgeon are unlikely to be exposed to the temporary effects of the proposed action because they are not present in the Columbia River estuary during the IWWW. We concur with MARAD that any change to the estuary food web from the conversion of 372 square yards of benthic sandy habitat to rocky habitat inside the marina is discountable to green sturgeon foraging in the large Columbia River estuary.

Conclusion

Based on this analysis, NMFS concurs with MARAD that the proposed action is not likely to adversely affect the subject listed species and designated critical habitats.

Reinitiation of Consultation

Reinitiation of consultation is required and shall be requested by [*name of action agency*] or by NMFS, where discretionary Federal involvement or control over the action has been retained or is authorized by law and (1) new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered; (2) the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this concurrence letter; or (3) a new species is listed or critical habitat designated that may be affected by the identified action (50 CFR 402.16). This concludes the ESA consultation.

Section 7(a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of threatened and endangered species. The MARAD also has the same responsibilities, and informal consultation offers action agencies an opportunity to address their conservation responsibilities under section 7(a)(1).

MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

Section 305(b) of the MSA directs Federal agencies to consult with NMFS on all actions or proposed actions that may adversely affect EFH. Under the MSA, this consultation is intended to promote the conservation of EFH as necessary to support sustainable fisheries and the managed species' contribution to a healthy ecosystem. For the purposes of the MSA, EFH means "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity",

and includes the associated physical, chemical, and biological properties that are used by fish (50 CFR 600.10). Adverse effect means any impact that reduces quality or quantity of EFH, and may include direct or indirect physical, chemical, or biological alteration of the waters or substrate and loss of (or injury to) benthic organisms, prey species and their habitat, and other ecosystem components, if such modifications reduce the quality or quantity of EFH. Adverse effects may result from actions occurring within EFH or outside of it and may include direct, indirect, site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810). Section 305(b) of the MSA also requires NMFS to recommend measures that can be taken by the action agency to conserve EFH. Such recommendations may include measures to avoid, minimize, mitigate, or otherwise offset the adverse effects of the action on EFH (50 CFR 600.905(b)).

NMFS determined the proposed action would adversely affect Pacific Coast Salmon, groundfish and coastal pelagic species EFH as follows:

1. Pile driving noise temporarily degrades EFH aquatic habitat conditions.
2. Turbidity during pile driving temporarily degrades EFH water quality.
3. Riprap permanently displaces EFH benthic forage.

NMFS does not identify any additional measures to further reduce effects on EFH. This concludes the MSA consultation.

Please direct questions regarding this letter to Tom Hausmann, Natural Resource Specialist in Portland, Oregon, at tom.hausmann@noaa.gov, or 503-231-2315.

Sincerely,



Bonnie Shorin
Chief, Washington Coast, Lower Columbia
River Branch
Oregon Washington Coastal Office

cc: Margaret Schwertner, Non-Federal Representative, Moffatt and Nichol

LITERATURE CITED

- Morrice, K.J., Baptista, A.M., and Burke, B.J. (2020). Environmental and behavioral controls on juvenile Chinook salmon migration pathways in the Columbia River estuary. *Ecol Model* 427.
- Roegner, G.C., McNatt, R., Teel, D.J., and Bottom, D.L. (2012). Distribution, Size, and Origin of Juvenile Chinook Salmon in Shallow-Water Habitats of the Lower Columbia River and Estuary, 2002-2007. *Mar Coast Fish* 4, 450-472.
- Weston Solutions (2006). Jimmycomelately Piling Removal Monitoring Project (Port Gamble, WA: Weston Solutions).



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Washington Fish and Wildlife Office
510 Desmond Dr. S.E., Suite 102
Lacey, Washington 98503



In Reply Refer to:
FWS/R1/2023-0026807

August 28, 2023

Kris Gilson
Maritime Administration
U.S. Department of Transportation
1200 New Jersey Avenue SE
Washington, DC 20590

Dear Ms. Gilson:

Subject: Port of Ilwaco, East Bulkhead Resilience Project

This letter is in response to your December 14, 2022, request for our concurrence with your determination that the proposed action in Ilwaco, Pacific County, Washington, “may affect, but is not likely to adversely affect” federally listed species. We received your letter and Biological Evaluation (BE), providing information in support of “may affect, not likely to adversely affect” determinations, on December 14, 2022. On June 14, 2023, an email from Margaret Schwertner (Consultant or Agent) was received, describing minor changes and updates for the proposed action.

Specifically, you requested informal consultation pursuant to section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (ESA) for the federally listed species and designated critical habitat identified below:

Bull trout (*Salvelinus confluentus*)
Designated bull trout critical habitat
Marbled murrelet (*Brachyramphus marmoratus*)
Streaked horned lark (*Eremophila alpestris strigata*)

The U.S. Department of Transportation, Maritime Administration (MARAD) has determined that the proposed action will have “no effect” on additional listed species and designated critical habitat that are known to occur in Pacific County. The determination of “no effect” to listed

PACIFIC REGION 1

IDAHO, OREGON*, WASHINGTON,
AMERICAN SAMOA, GUAM, HAWAII, NORTHERN MARIANA ISLANDS

*PARTIAL

resources rests with the action agency. The U.S. Fish and Wildlife Service (Service) has no regulatory or statutory authority for concurring with “no effect” determinations, and no consultation with the Service is required. We recommend that the action agency document their analyses on effects to listed species and maintain that documentation as part of their project files.

Project Description:

The proposed action has two goals: 1) To repair the failing bulkhead and restore serviceability and safety; and, 2) To increase the overall height of the structure, to better accommodate high tides and projected sea level rise. To accomplish these goals, MARAD and the Port of Ilwaco (Port) will replace the failing east bulkhead, repair/replace the slope protection north and south of the bulkhead, and pave and re-grade the upland wharf area directly landward, to mitigate the effects of sea level rise.

The east bulkhead has reached the end of its serviceable life, is failing, and requires replacement. To preserve the stability of some of the existing structures, a steel sheet pile wall will be constructed two to five feet waterward of the existing bulkhead, and the gap will be backfilled with rock (approximately 400 cubic yards, cy). Wherever possible, existing creosote-treated wood piles will be removed by direct pulling or with a vibratory hammer. Sheet piles will be driven with a vibratory hammer; an impact hammer may be required, if/where difficult driving conditions are encountered. When complete, the top of the bulkhead will be approximately three feet higher vertically than the current features, to withstand high tides and future sea level rise. The bulkhead repairs/ replacement will encroach on approximately 200 square feet (sf) of marine bed and waters (i.e., in excess of the original footprint of the bulkhead).

Slope protection repairs/replacement will be completed at two locations (north and south shoreline), and will include removal of creosote-treated wood piles and removal, adjustment, and augmentation of riprap armor and retaining walls. On the south shoreline, approximately 400 sf (16 cy) of riprap and concrete debris will be removed, and replaced with approximately 35 cy of riprap within the same approximate footprint (including approximately 30 cy placed waterward of the High Tide Line, HTL). On the north shoreline, approximately 2,200 sf (165 cy) of riprap will be placed on the embanked shoreline (including approximately 140 cy placed waterward of HTL), to replace the removed creosote-treated timber retaining wall and provide shore protection. The riprap slope protection will serve as grade transition, from the vertical bulkhead structure to the adjacent sloped shorelines north and south. Once complete, the top of the constructed/ re-constructed shoreline protection features will be raised to approximately +14 ft Mean Lower Low Water.

Approximately sixteen (16) 12-inch diameter creosote-treated wood or timber piles will be removed. If complete removal is not possible or the piles break during removal, the piles will be cut at the mudline. Additional debris removal is proposed and will be completed as mitigation. Grading and paving will be completed landward of the bulkhead. Approximately 8,000 sf of existing hard surface will be repaved with positive drainage away from buildings. The bulkhead will be fitted with scuppers.

Sufficient information has been provided to determine the effects of the proposed action and to conclude whether it would adversely affect federally listed species and/or designated critical habitat. Our concurrence is based on information provided by the action agency, best available science, and complete and successful implementation of the conservation measures included by the action agency.

EFFECTS SPECIFIC TO BULL TROUT AND MARBLED MURRELET

I. Temporary Exposures and Effects

Exposures are extremely unlikely (discountable) because of the following:

- The action is located in the lower Columbia River (downstream of Bonneville Dam), where at present, bull trout occurrence is rare and exposure to construction activities is extremely unlikely.
- The Port's facilities include a substantially altered, degraded, artificial embayment, and provide little or no suitable habitat for marbled murrelets. Exposure to construction activities is extremely unlikely.

II. Effects to Bull Trout and Marbled Murrelet Habitats and Prey

With successful implementation of the conservation measures included by the action agency as part of the proposed action, effects will not be measurable, will not significantly disrupt normal behaviors (i.e., the ability to successfully feed, move, and/or shelter), and are therefore considered insignificant. We expect that the effects of the action will not measurably degrade or diminish habitat functions or prey resources in the action area. Therefore, the effects of the action are considered insignificant:

- Construction at or below Mean Higher High Water will be completed during the recommended in-water work window (November 1 to February 28).
- Construction activities and proposed permanent features may impact habitat that supports the species and/or their prey. These impacts will be limited in physical extent and/or duration, and will not measurably or significantly degrade habitat functions, including prey resources that are important to the species within the action area.
- The action will result in temporary impacts to water quality, including potential temporary increases in levels of turbidity and contaminants (e.g., compounds found in treated wood). These effects will be intermittent and limited in physical extent and duration. The action will remove and properly dispose of creosote-treated wood, and thereby provide benefits in the form of improved water and sediment quality.

- The action includes replacing bank armor within a slightly larger footprint, and will install a steel sheet pile wall waterward of the existing bulkhead. The action will continue to impair some natural shoreline processes. However, with the substantial removal of creosote-treated wood and debris, we conclude that the action will provide a net improvement to habitat conditions for the species and their prey.
- The action includes operations that will produce stormwater discharges. Approximately 8,000 sf of existing hard surface will be repaved. Discharges will be infrequent, episodic, and are unlikely to measurably affect water or sediment quality in the Port's artificial embayment.

EFFECTS TO DESIGNATED BULL TROUT CRITICAL HABITAT

The final revised rule designating bull trout critical habitat (75 FR 63898 [October 18, 2010]) identifies nine Primary Constituent Elements (PCEs) essential for the conservation of the species. The 2010 designation of critical habitat for bull trout uses the term PCE. The new critical habitat regulations (81 FR 7214) replace this term with physical or biological features (PBFs). This shift in terminology does not change the approach used in conducting our analyses, whether the original designation identified PCEs, PBFs, or essential features. In this letter, the term PCE is synonymous with PBF or essential features of designated critical habitat.

The following PCEs are in the action area. Of the PCEs present, some will not be affected by the proposed action.

PCE 2: Migration habitats with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and freshwater and marine foraging habitats, including but not limited to permanent, partial, intermittent, or seasonal barriers.

- The action may temporarily introduce an impediment or barrier within migration habitat. However, it will not preclude bull trout movement through the area, either during or after construction, and any effects will be temporary. Migration habitat will not be permanently altered, destroyed, or degraded.

PCE 3: An abundant food base, including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish.

- The action may temporarily reduce the food base via a small reduction of prey resources. However, the impacts will be temporary and/or components of the project design will avoid, reduce, or compensate for them.

PCE 4: *Complex river, stream, lake, reservoir, and marine shoreline aquatic environments, and processes that establish and maintain these aquatic environments, with features such as large wood, side channels, pools, undercut banks and unembedded substrates, to provide a variety of depths, gradients, velocities, and structure.*

- The action will maintain degraded habitat conditions by continuing to preclude and/or degrade natural shoreline processes, but will not result in further declines in shoreline complexity.

PCE 8: *Sufficient water quality and quantity such that normal reproduction, growth, and survival are not inhibited.*

- The action may impact water quantity and/or quality. However, the effects will be temporary; components of the project design include actions to avoid, reduce, or compensate for the effects; and/or we would be unable to measure, detect, or evaluate the effects. The action will remove and properly dispose of creosote-treated wood, and thereby provide benefits in the form of improved water and sediment quality.

EFFECTS TO STREAKED HORNED LARK

The action will not significantly disrupt normal streaked horned lark behaviors (i.e., the ability to successfully feed, move, and/or shelter). The effects of the action will not measurably degrade or diminish habitat functions. Therefore, the effects the action are considered insignificant.

- There is no suitable breeding habitat in the action area. Construction exposures and effects are extremely unlikely, and therefore considered discountable.

CONCLUSION

This concludes consultation pursuant to the regulations implementing the ESA (50 CFR 402.13). Our review and concurrence with your effect determinations is based on implementation of the project as described. It is the responsibility of the federal action agency to ensure that the projects they authorize or carry out are in compliance with the regulatory permit and ESA. If a permittee or the federal action agency deviates from the measures outlined in a permit or project description, the federal action agency has the obligation to reinitiate consultation and comply with section 7(d).

This action should be re-analyzed and re-initiation may be necessary if 1) new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation, 2) if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or 3) a new species is listed or critical habitat is designated that may be affected by this action.

Kris Gilson

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This letter constitutes a complete response by the Service to your request for informal consultation. A record of this consultation is on file at the Washington Fish and Wildlife Office, in Lacey, Washington. If you have any questions about this letter or our shared responsibilities under the ESA, please contact the consulting biologist identified below.

U.S. Fish and Wildlife Service Consultation Biologist:
Mitchell Dennis (564-669-0716; mitchell_dennis@fws.gov)

Sincerely,

THOMAS
MCREYNOLDS

Digitally signed by
THOMAS MCREYNOLDS
Date: 2023.08.28
12:54:24 -0700

for Brad Thompson, State Supervisor
Washington Fish and Wildlife Office

cc:

Moffatt & Nichol, Federal Way and Vancouver, WA (M. Schwertner; V. England)
Port of Ilwaco, Ilwaco, WA (T. Lofstrom)



US Army Corps
of Engineers
Portland District

Compliance Certification

1. **Permit Number:** NWP-

2. **Permittee Name:**

3. **County Location:**

Upon completing the activity authorized by the permit, please complete the sections below, sign and date this certification, and return it to the U.S. Army Corps of Engineers, Portland District, Regulatory Branch. The certification can be submitted by email at cenwp.notify@usace.army.mil or by regular mail at the following address:

U.S. Army Corps of Engineers
CENWP-OD-GL
P.O. Box 2946
Portland, OR 97208-2946

4. **Corps-required Compensatory Mitigation (see permit special conditions):**

a. Mitigation Bank / In-lieu Fee Credit Transaction Documents:

Not Applicable Submitted Enclosed

b. Permittee-responsible mitigation (e.g., construction and plantings) has been constructed (not including future monitoring). As-built report:

Not Applicable Submitted Enclosed

5. **Endangered Species Act – Standard Local Operating Procedures (SLOPES)**

(see permit special conditions):

a. SLOPES Action Completion Report:

Not Applicable Submitted Enclosed

b. SLOPES Fish Salvage Report:

Not Applicable Submitted Enclosed

c. SLOPES Site Restoration / Compensatory Mitigation Report:

Not Applicable Submitted Enclosed

I hereby certify the work authorized by the above-referenced permit has been completed in accordance with all of the permit terms and conditions.

Signature of Permittee

Date

NWP-

Attachment