

**SECTION 00 01 01
PROJECT TITLE PAGE**

**PORT OF TACOMA
TACOMA, WASHINGTON
PIER 4 PHASE 1 REMOVAL ACTION**

**PROJECT NO. 091452
CONTRACT NO. 069982**

PROJECT MANUAL

**Thais Howard, P.E.
Director, Engineering**

**Stan Ryter, P.E.
Project Manager**

END OF PROJECT TITLE PAGE

PROCUREMENT AND CONTRACTING REQUIREMENTS

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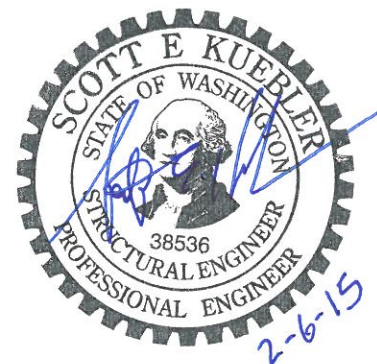
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PORT OF TACOMA PIER 4 PHASE 1 REMOVAL ACTION PROJECT

The undersigned Engineer of Record hereby certifies that the Technical Specifications for the following portions of this project for the Bid Submittal of the Port of Tacoma Pier 4 Phase 1 Removal Action Project were written by me, or under my direct supervision, and that I am duly registered under the laws of the State of Washington, and hereby affix my Professional Seal and signature. Those sections prepared under my direct supervision and being certified by my seal and signature below are as follows:

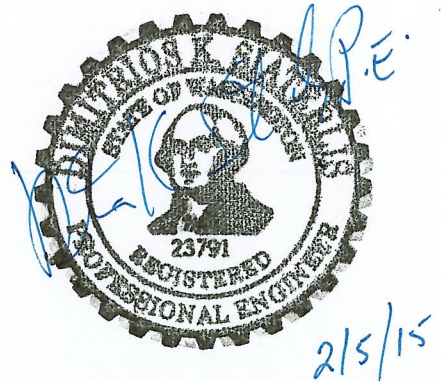
- 02 41 00 – Demolition
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- 26 01 26 - Acceptance Testing of Electrical Systems
- 26 05 00 - Common Work Results for Electrical
- 26 05 19 - Low Voltage Electrical Power Conductors and Cables
- 26 05 33 - Raceways and Boxes for Electrical Systems
- 26 05 53 - Identification for Electrical Systems
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- 33 79 00 - Site Grounding



PART 1 - GENERAL

1.01 SUMMARY

A. Contract Drawings: The following drawings are a part of the Contract Documents:

Sheet No.	Drawing No.	Sheet Title
1	G1.1	Cover Sheet
2	G2.1	Drawing List
3	G3.1	Symbols and Abbreviations
4	G3.2	General Notes
5	G4.1	Survey Control and Notes
6	G5.1	Overall Site Plan
7	G6.1	Constraints and Access Plan
8	G7.1	Existing Conditions Plan
9	G8.1	TESC General Notes
10	G8.2	TESC Plan - Sheet 1
11	G8.3	TESC Plan - Sheet 2
12	G8.4	TESC Plan - Sheet 3
13	G8.5	TESC Details
14	D1.1	Utility and Site Demolition Plan - Sheet 1
15	D1.2	Utility and Site Demolition Plan - Sheet 2
16	D1.3	Utility and Site Demolition Details
17	D2.1	Pier Demolition Plan Sheet 1
18	D2.2	Pier Demolition Plan Sheet 2
19	D3.1	Pile Extraction Plan - Sheet 1
20	D3.2	Pile Extraction Plan - Sheet 2
21	D4.1	Pier Demolition Sections - Sheet 1
22	D4.2	Pier Demolition Sections - Sheet 2
23	C1.1	Dredge Plan
24	C1.2	Dredge Sections - Sheet 1
25	C1.3	Dredge Sections - Sheet 2
26	C1.4	Dredge Sections - Sheet 3
27	C1.5	Dredge Sections - Sheet 4
28	C2.1	Transload Facility Location Plan
29	C2.2	Transload Facility Plan
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DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 01 15 - LIST OF DRAWING SHEETS

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34	C4.2	Temporary Navigation Marker Details
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36	S1.2	Precast Concrete Pile - Details
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40	E1.1	Electrical Symbols, Abbreviations and General Notes
41	E2.1	Site Electrical Demolition Key Plan
42	E2.2	Electrical Demolition Plan - Sheet 1
43	E2.3	Electrical Demolition Plan - Sheet 2
44	E2.4	Electrical Demolition Plan - Sheet 3
45	E2.5	Enlarged Electrical Demolition Plan Substation #8410
46	E3.1	Site Electrical Key Plan
47	E3.2	Electrical Plan - Sheet 1
48	E3.3	Electrical Plan - Sheet 2
49	E3.4	Enlarged Electrical Plan Substation #8410
50	E4.1	Demolition One-Line Diagram
51	E6.1	Conduit and Conductor Schedule
52	E6.2	Conduit and Conductor Schedule
53	E6.3	Conduit and Conductor Schedule
54	E6.4	Conduit and Conductor Schedule

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF LIST OF DRAWINGS

**THE PORT OF TACOMA IS CURRENTLY ACCEPTING SEALED BIDS FOR CONSTRUCTION OF
THE FOLLOWING:**

**PIER 4 PHASE 1 REMOVAL ACTION
PROJECT NO. 091452 | CONTRACT NO. 069982**

- Scope of Work:** The work required for this project includes: Demolition of a approximately 1,040 feet (~133,780 SF) of concrete pier structure including pavement, ballast, deck panels, bulkhead, crane beams, crane rail and pile caps; extraction of timber and steel fender piles, concrete piles; clean sediment dredging; contaminated sediment dredging, transloading and disposal; contaminated water treatment, navigation light relocations, miscellaneous site utility improvements and a concrete test pile program.
- Bid Estimate:** Estimated cost range is \$12,500,000 to \$13,500,000, plus WSST.
- Sealed Bid Date/Time/ Location:** Bids will be received at the Front Reception Desk, Port Administration Office, One Sitcum Plaza, Tacoma, Washington until **2:00 P.M. on March 10, 2015**, at which time they will be publicly opened and read aloud.
- Pre-bid Conference and Site Tour:** A pre-bid conference and site visit have been set for **February 17th, 2015 at 10:30 A.M.** The site visit will convene at the Port's Administrative building, located at One Sitcum Plaza.
- Bidding Security:** Each bid must be accompanied by a Certified Check or Bid Security Bond in an amount equal to five (5%) percent of the bid.
- Contact Information:** All questions are to be put into writing to Jana Prince, Port of Tacoma at: procurement@portoftacoma.com. No oral answers will be binding by the Port.
- Bidding Documents:** Plans, Specifications, Addenda, and Plan Holders List for this project are available on-line through The Port of Tacoma's Website www.portoftacoma.com. Click on "Contracts"; "Procurement", and then the Procurement Number **(069982)**. Bidders must subscribe to the Holder's List on the right hand side of the screen in order to receive automatic email notification of future addenda and to be placed on the Holder's List. Contact Jana Prince at (253) 383-9459 or procurement@portoftacoma.com with questions. Holder's Lists will be updated once daily. Additional Instructions available in Instructions to Bidders.

END OF SECTION

PART 1 - SUMMARY

1.01 DEFINITIONS

All definitions set forth in the Agreement, the General Conditions of the Contract for Construction and in other Contract Documents are applicable to the Bidding Documents.

- A. "Addenda" are written or graphic instruments issued prior to the execution of the Contract which modify or interpret the Bidding Documents by additions, deletions, clarifications or corrections. The contents of an Addendum are issued in no particular order and therefore should be carefully and completely reviewed.
- B. "Award" means the formal decision by the Port of Tacoma ("Port") notifying a Responsible Bidder with the lowest responsive Bid of the Port's acceptance of the Bid and intent to enter into a Contract with the Bidder.
- C. The "Award Requirements" include the statutory requirements as a condition precedent to Award.
- D. The "Base Bid" is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents as the base to which work may be added or from which work may be deleted for sums stated in Alternate Bids.
- E. A "Bid" is a complete and properly signed proposal to do the Work, submitted in accordance with the Bidding Documents, for the sums therein stipulated and supported by any data called for by the Bidding Documents.
- F. The "Bid Date" is the day and hour specified in the Bidding Documents, as may be changed through an Addendum, by which Bidders are required to submit Bids to the Port.
- G. The "Bid Form" is the form(s) included with the Bidding Documents, with Specification Section 00 41 00, through which a Bidder submits a Bid.
- H. A "Bidder" is a person or entity who submits a Bid.
- I. The "Bidding Documents" include the Advertisement or Invitation to Bid, Instructions to Bidders, the Bid Form, any other sample bidding and contract forms, the Bid Bond, and the proposed Contract Documents, including any Addenda issued prior to the Bid Date.
- J. The "Contract Documents" proposed for the Work consist of the Agreement, the General Conditions of the Contract (as well as any Supplemental, Special or other Conditions included in the project manual), the Drawings, the Specifications, and all Addenda issued prior to, and all modifications issued after, execution of the Contract.
- K. The "Holder's List" is the officially kept list of planholders who will get the automatic emails of new project information posted to the project page of the Port of Tacoma's site for procurements.
- L. The "Schedule of Unit Prices" is a separate schedule on the Bid Form for Unit Pricing as an all-inclusive price per unit of measurement for materials, equipment or services as described in the Bidding Documents or in the proposed Contract Documents for the optional use of the Port. Quantities are not predictions of amounts anticipated. The Port may but is not obligated to accept a Schedule of Unit Price if it accepts the Base Bid. The Schedule of Unit Prices are not factored into the evaluation of determining the low bid amount and are not included as part of the bid award amount.
- M. A "Sub-Bidder" is a person or entity of any tier who submits a bid or proposal to or through the Bidder for materials, equipment or labor for a portion of the Work.

1.02 BIDDER'S REPRESENTATIONS

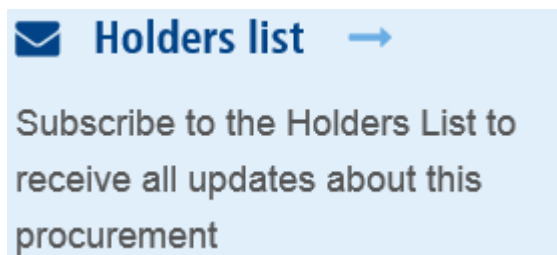
By making its Bid, each Bidder represents that:

- A. BIDDING DOCUMENTS. The Bidder has read and understands the Bidding Documents, and its Bid is made in accordance with them.
- B. PRE-BID MEETING. The Bidder has attended pre-Bid meeting(s) required by the Bidding Documents. Attendance at a mandatory meeting or training session means that, in the sole opinion of the Port, a Project representative of a prospective Bidder has attended all or substantially all of such meeting or session.
- C. BASIS. Its Bid is based upon the materials, systems, services, and equipment required by the Bidding Documents, and is made without exception.
- D. EXAMINATION. The Bidder has carefully examined and understands the Bidding Documents, the Contract Documents (including, but not limited to, any liquidated damages and insurance provisions), and the Project site, including any existing buildings, it has familiarized itself with the local conditions under which the Work is to be performed and has correlated its observations with the requirements of the proposed Contract Documents and it has satisfied itself as to the nature, location, character, quality and quantity of the Work, the labor, materials, equipment, goods, supplies, work, services and other items to be furnished, and all other requirements of the Contract Documents. The Bidder has also satisfied itself as to the conditions and other matters that may be encountered at the Project site or affect performance of the Work or the cost or difficulty thereof, including but not limited to those conditions and matters affecting: transportation, access, disposal, handling and storage of materials, equipment and other items; availability and quality of labor, water, electric power and utilities; availability and condition of roads; climatic conditions and seasons; physical conditions at the Project site and the surrounding locality; topography and ground surface conditions; and equipment and facilities needed preliminary to and at all times during the performance of the Work. The failure of the Bidder fully to acquaint itself with any applicable condition or matter shall not in any way relieve the Bidder from the responsibility for performing the Work in accordance with, and for the Contract Sum and within the Contract Time provided for in, the Contract Documents.
- E. PROJECT MANUAL. The Bidder has checked its copies of the project manual (if any) with the table of contents bound therein to ensure the project manual is complete.
- F. SEPARATE WORK. The Bidder has examined and coordinated all Drawings, Contract Documents, and Specifications with any other contracts to be awarded separately from, but in connection with, the Work being Bid upon, so that the Bidder is fully informed as to conditions affecting the Work under the Contract being Bid upon.
- G. LICENSE REQUIREMENTS. Bidders and Sub-Bidders shall be registered and shall hold such licenses as may be required by the laws of Washington, including a certificate of registration in compliance with RCW 18.27, for the performance of the Work specified in the Contract Documents.
- H. NO EXCEPTIONS. Bids must be based upon the materials, systems and equipment described and required by the Bidding Documents, without exception.

1.03 BIDDING DOCUMENTS

A. COPIES

1. Bidding Documents. Bidders may obtain complete sets of the Bidding Documents from the Port's website at www.portoftacoma.com 'Contracts' 'Procurement' and then find the project number and title.
2. Holder's List. Subscribe to the Holder's List for this procurement by clicking on the Holder's List icon:



Then typing in the contact email address to receive updates and clicking 'Submit'. Following the Submit, a screen will come up to verify subscription. From there, select 'Subscriber Preferences' and then 'Questions' (the 3rd tab). Fill out all information in the questions section and the select 'Submit' and this will complete the registration to the Port's Holder's List for this procurement.

3. Complete Sets. Bidders shall use complete sets of Bidding Documents in preparing Bids and are solely responsible for obtaining updated information. The Port does not assume any responsibility for errors or misinterpretations resulting from the use of incomplete and/or superseded sets of Bidding Documents.
4. Conditions. The Port makes copies of the Bidding Documents available only for the purpose of obtaining Bids on the Work and does not confer a license or grant permission for any other use.
5. Legible Documents. To the extent any Drawings, Specifications, or other Bidding Documents are not legible, it is the Bidder's responsibility to obtain legible documents.

B. INTERPRETATION OR CORRECTION OF BIDDING DOCUMENTS

1. Format. The Contract Documents are divided into parts, divisions, and sections for convenient organization and reference. Generally, there has been no attempt to divide the Specification sections into Work performed by the various building trades, any Work by separate contractors, or any Work required for separate facilities in or phases of the Project.
2. Duty to Notify. Bidders shall promptly notify the Port in writing of any ambiguity, inconsistency, or error that they may discover upon examination of the Bidding Documents or of the site and local conditions.
3. Products and Installation. All Bidders shall thoroughly familiarize themselves with specified products and installation procedures and submit to the Port any objections (in writing) no later than ten (10) days prior to the Bid Date. The submittal of the Bid constitutes acceptance of products and procedures specified as sufficient, adequate, and satisfactory for completion of the Contract.

4. **Written Request**. Bidders requiring clarification or interpretation of the Bidding Documents shall make a written email request to procurement@portoftacoma.com at least ten (10) days prior to the Bid Date.
5. **Request to Modify Responsibility Criteria**. No later than ten (10) days prior to the Bid Date, a potential Bidder may request in writing that the Port modify the Responsibility Criteria. The Port will evaluate the information submitted by the potential Bidder and respond before the Bid Date. If the evaluation results in a change of the Criteria, the Port will issue an Addendum identifying the new Criteria.
6. **Addenda**. The Bidder shall not rely on oral information provided at any pre-Bid meetings or during site visits. Verbal statements made by representatives of the Port are for informational purposes only. Any interpretation, correction or change of the Bidding Documents will be made solely by written Addendum. Interpretations, corrections or changes of the Bidding Documents made in any manner other than by written Addendum, including but not limited to oral statements, will not be binding, and Bidders shall not rely upon such statements, interpretations, corrections or changes. The Port is not responsible for explanations or interpretations of the Bidding Documents other than in a written Addendum.
7. **Site Visits**. Any site visits are provided as a courtesy to potential Bidders to assist them in becoming familiar with the Project site conditions. However, only the Bidding Documents, including any issued Addenda, may be relied upon by Bidders. ***The site visit for this project is located in a restricted area. Bring photo ID and a safety vest/jacket for the site visit for all attending.**
8. **Singular References**. Reference in the singular to an article, device, or piece of equipment shall include as many of such articles, devices, or pieces as are indicated in the Contract Documents or as are required to complete the installation.
9. **Utilities and Runs**. The Bidder should assume that the exact locations of any underground or hidden utilities, underground fuel tanks, and plumbing and electrical runs may be somewhat different from any location indicated in the surveys or Contract Documents.

C. SUBSTITUTIONS

1. For substitutions during bidding, refer to Section 00 26 00 – Substitution Procedures During Bidding.

D. ADDENDA

1. **Distribution**. All Addenda will be written and will be posted to the Port's project website for this bid. www.portoftacoma.com, then under 'Contracts', 'Procurement' and the select the project number/title to go to the project page. **Only those who have signed up for the Holder's List will get the automatic emails when new project information is posted.**
2. **Copies**. Copies of Addenda will be made available for inspection wherever Bidding Documents are on file for that purpose.
3. **Verification and Acknowledgment of Receipt**. Prior to submitting a Bid, each Bidder shall ascertain that it has received all Addenda issued. Each Bidder shall acknowledge its receipt and consideration of all Addenda in its Bid.

1.04 BIDDING PROCEDURE

A. FORM AND STYLE OF BIDS

1. Form. Bids (including required attachments) shall be submitted on forms identical to the Bid Form included with the Bidding Documents. No oral, email, or telephonic responses or modifications will be considered.
2. Entries on the Bid Form. All blanks on the Bid Form shall be filled in by typewriter, printer, or manually in ink.
3. Figures. All sums shall be expressed in figures, not words. Portions of the Bid Form may require the addition or multiplication of components bids to a total or the identification of component amounts within a total. In case of discrepancy between unit prices listed and their sum(s), the unit prices listed shall govern (rather than the sum).
4. Initial Changes. Any interlineation, alteration or erasure shall be initialed by an authorized representative of the Bidder.
5. Bid Breakdown. The Bid Form may contain, for the Port's accounting purposes only, a breakdown of some or all of the components included in the Base Bid.
 - a. For lump sum bids the total Contract Sum shall be submitted.
 - b. For unit price bids a price shall be submitted for each item of the Work, an extension thereof, and, if requested, the total Contract Sum.
6. Schedule of Unit Prices. All Unit Prices under this schedule shall be bid. The Port reserves the right, but is not obligated to, reject any Bid on which all requested Schedule of Unit Prices are not bid.
7. No Conditions. The Bidder shall make no conditions or stipulations on the Bid Form nor qualify its Bid in any manner.
8. Identity of Bidder. The Bidder shall include in the specified location on the Bid Form the legal name of the Bidder and, if requested, a description of the Bidder as a sole proprietor, a partnership, a joint venture, a corporation, or another described form of legal entity. The Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. The Port verifies signature authority on the Labor and Industries website <https://fortress.wa.gov/lni/bbip/Search.aspx> under the contractor registration business owner information. If the business owner information is not current the bidder shall show proof of authority to sign at the request of the Port. A Bid submitted by an agent shall have a current power of attorney attached certifying the agent's authority to bind the Bidder.
9. Bid Amounts Do Not Include Sales Tax. The Work to be performed constitutes a "retail sale" as this term is defined in RCW 82.04.050. Thus, the Base Bid amount shall include in the sum stated all taxes imposed by law, EXCEPT WASHINGTON STATE AND LOCAL SALES TAX. The engaged Contractor will pay retail sales tax on all consumables used during the performance of the Work and on all items that are not incorporated into the final Work; this tax shall be included in the Base Bid price and in any other prices set forth on the Bid Form. The Port will pay state and local retail sales tax on each progress payment and final payment to the engaged Contractor for transmittal by the Contractor to the Washington State Department of Revenue or to the applicable local government.

B. POTENTIAL LISTING OF SUB-BIDDERS (SUBCONTRACTORS)

1. Procedure. On certain projects of the Port, the Bid Form includes a requirement that certain Sub-Bidders be listed, in which case the Bidder must complete the required list. In these circumstances, and regardless of the anticipated cost of the Project, the Bidder must name the Sub-Bidder or Sub-Bidders with whom the Bidder, if Awarded the Contract, will subcontract directly (i.e., not lower-tier Sub-Bidders) for performance of the Work of:
 - a. HVAC (heating, ventilation and air conditioning) Work,
 - b. plumbing Work as described in RCW 18.106,
 - c. electrical Work as described in RCW 19.28, and
 - d. any other categories of Work listed on the Sub-Bidder listing form and/or Bid Form.
 - 1) **SELF-PERFORMANCE**: If the Bidder intends to self-perform any of these categories of Work, it must name itself for each such category of Work.
 - 2) **MULTIPLE ENTRIES**: The Bidder shall not list more than one (1) entity for a particular category of Work identified, unless a Sub-Bidder will vary based on an Alternate Bid, in which case the Bidder shall identify the Sub-Bidder to be used for the Alternate and the affected portion of the Work.
2. Failure to Submit. In accordance with RCW 39.30.060, failure of a Bidder to submit as part of the Bid the names of such proposed HVAC, plumbing, and electrical Sub-Bidders or to name itself to perform such Work or the naming of two or more Sub-Bidders to perform the same Work shall render the Bidder's Bid non-responsive and, therefore, void.
3. Requirement to Subcontract. The Bidder, if Awarded the Contract, will subcontract with the listed Sub-Bidders for performance of the portion of the Work designated on the Bid Form, subject to the provisions of the Contract for Construction and RCW 39.30.060. The Bidder shall not substitute a listed Sub-Bidder in furtherance of bid shopping or bid peddling.
4. Sub-Bidder Qualification. Listed Sub-Bidders may be required to provide evidence of their qualifications, including a statement of experience and references, prior to Award, or at any time during the Contract Time. Such information shall be provided within 24 hours of request. This evidence shall demonstrate that the Sub-Bidder meets or exceeds all requirements for experience, qualifications, manufacturer's certifications, or any other requirements specified in any of the technical sections of the Contract Documents for which the Sub-Bidder proposes to perform Work.
5. Replacement. If a listed Sub-Bidder fails to provide adequate evidence of qualifications, is unable to comply with any bonding requirements of the Bidding Documents or with other requirements of the Contract or Bidding Documents, is not properly licensed, or fails to meet the Responsibility Criteria of the Bidding Documents, the Port may require the Bidder to replace the Sub-Bidder with another subcontractor reasonably acceptable to the Port at no change in the Contract Sum or Contract Time.
6. Sub-Bidder Standards. Sub-Bidders shall meet contractual and technical qualification standards, and provide specialized certification, licensing, and/or payment and performance bonding, if required.
7. Small business participation encouraged. The Port's policy is to encourage the Contractor to solicit and document participation, and to provide and promote the maximum lawful, practicable opportunity for increased participation, by small business enterprises.

C. BID SECURITY

1. Purpose and Procedure. Each Bid shall be accompanied by Bid security payable to the Port in the form required by the Bidding Documents and equal to five percent (5%) of the Base Bid only (i.e., not including any Alternates or Unit Prices). The Bid security constitutes a pledge by the Bidder to the Port that the Bidder will enter into the Contract with the Port in the form provided, in a timely manner, and on the terms stated in its Bid, and will furnish in a timely manner the payment and performance bonds, certificates of insurance, and all other documents required in the Contract Documents. Should the Bidder fail or refuse to enter into the Contract or fail to furnish such documents, the amount of the Bid security shall be forfeited to the Port as liquidated damages, not as a penalty. By submitting a Bid, each Bidder represents and agrees that the Bid security, if forfeited, is a reasonable prediction on the Bid Date of future damages to the Port.
2. Form. The Bid security shall be in the form of a certified or bank cashier's check payable to the Port or a Bid bond executed by a bonding company reasonably acceptable to the Port licensed in the State of Washington, registered with the Washington State Insurance Commissioner, possess and A.M. Best rating of "A minus, Fiscal Size Category (FSC) (6) or better and be authorized by the U.S. Department of the Treasury. The Bid security shall be signed by the person or persons legally authorized to bind the Bidder. Bid bonds shall be submitted using the form included with the Bidding Documents.
3. Retaining Bid Security. The Port will have the right to retain the Bid security of Bidders to whom an Award is being considered until the earliest of either (a) mutual execution of the Contract, and the Port's receipt of payment and performance bonds, or (b) the specified time has elapsed so that Bids may be withdrawn, or (c) when all Bids have been rejected.
4. Return of Bid Security. Within sixty (60) days after the Bid Date, the Port will release or return Bid securities to Bidders who's Bids are not to be further considered in Awarding the Contract. Bid securities of the three apparent low Bidders will be held until the Contract has been finally executed, after which all unforfeited Bid securities will be returned. Bid security may be returned in the form provided or by separate payment.

D. SUBMISSION OF BIDS

1. Procedure. The Bid, the Bid security, and other documents required to be submitted with the Bid shall be enclosed in a sealed envelope identified with the Project name and number and the Bidder's name and address. If the Bid is sent by mail the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face of the mailing envelope.
 - a. If a Bid is mailed, it shall be addressed to the Port of Tacoma, Contracts Department, One Sitcum Plaza, Tacoma, WA 98421.
 - b. If a Bid is delivered, it shall be delivered to the Front Reception Desk, Port of Tacoma, One Sitcum Plaza, Tacoma, WA 98421.
 - c. The time stamp clock at the Front Reception Desk at One Sitcum Plaza is the Port's official clock.
2. Deposit. Bids shall be deposited at the designated location prior to the Bid Date indicated in the Advertisement or Invitation to Bid, or any extension thereof made by Addendum. Bids received after the Bid Date and time specified shall be returned without consideration at the discretion of the Port or rejected at the time of receipt.
3. Delivery. The Bidder assumes full responsibility for timely delivery at the location designated for receipt of Bids.

4. Form. Oral, facsimile, telephonic, electronic, or email Bids are invalid and will not be considered.

E. MODIFICATION OR WITHDRAWAL OF BID

1. After the Bid Date. A Bid may not be modified, withdrawn or canceled by the Bidder during a sixty (60) day period following the Bid Date, and each Bidder so agrees by virtue of submitting its Bid.
2. Before the Bid Date. Prior to the Bid Date, any Bid submitted may be modified or withdrawn only by notice to the party receiving Bids at the place designated for receipt of Bids. The notice shall be in writing with the signature of the Bidder and shall be worded so as not to reveal the amount of the original Bid. Email notice will not be accepted. It shall be the Bidder's sole responsibility to verify that the notice has been received by the Port in time to be withdrawn before the Bid opening.
3. Resubmittal. Withdrawn Bids may be resubmitted up to the time designated for the receipt of Bids provided that they are then fully in conformance with these Instructions to Bidders.
4. Bid Security with Resubmission. Bid security shall be in an amount sufficient for the Bid as modified or resubmitted.

F. COMMUNICATIONS

1. Communications from a Bidder related to these Instructions to Bidders must be in writing to procurement@portoftacoma.com. Communications, including but not limited to notices and requests, by Sub-Bidders shall be made through the Bidder and not directly by a Sub-Bidder to the Port.

1.05 CONSIDERATION OF BIDS

- A. OPENING OF BIDS: Unless stated otherwise in the Advertisement or Invitation to Bid or an Addendum, the properly identified Bids received on time will be opened publicly and will be read aloud. An abstract of the Base Bids and any Alternate Bids will promptly (and generally within 24 hours) be made available to Bidders and other interested parties.
- B. REJECTION OF BIDS: The Port shall have the right but not the obligation to reject any or all Bids for any reason or for no reason, to reject a Bid not accompanied by the required Bid security, or to reject a Bid which is in any way incomplete or irregular.
- C. BIDDING MISTAKES: The Port will not be obligated to consider notice of claimed Bid mistakes received more than 24 hours after the Bid Date. In accordance with Washington law, a low Bidder that claims error and fails to enter into the Contract is prohibited from Bidding on the Project if a subsequent call for Bids is made for the Project.
- D. ACCEPTANCE OF BID (AWARD)
 1. Intent to Accept. The Port intends (but is not bound) to Award a Contract to the Responsible Bidder with the lowest responsive Bid, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents and does not exceed the funds available. The Port has the right to waive any informality or irregularity in any Bid(s) received and to accept the Bid which, in its judgment, is in its own best interests.
 2. Requirements for Award. Before the Award, the lowest responsive Bidder must be deemed Responsible by the Port and must satisfy all Award Requirements.

E. BID PROTEST PROCEDURES

1. Procedure. A Bidder protesting for any reason the Bidding Documents, a Bidding procedure, the Port's objection to a Bidder or a person or entity proposed by the Bidder, including but not limited to a finding of non-Responsibility, the Award of the Contract or any other aspect arising from or relating in any way to the Bidding shall cause a written protest to be filed with the Port within two (2) business days of the event giving rise to the protest. (Intermediate Saturdays, Sundays, and legal holidays are not counted as business days.) The written protest shall include the name of the protesting Bidder, the bid solicitation number and title under which the protest is submitted, a detailed description of the specific factual and legal grounds for the protest, copies of all supporting documents, evidence that the apparent low bidder has been given notice of the protest, and the specific relief requested. The written protest shall be sent by email to procurement@portoftacoma.com.
2. Consideration. Upon receipt of the written protest, the Port will consider the protest. The Port may, within three (3) business days of the Port's receipt of the protest, provide any other affected Bidder(s) the opportunity to respond in writing to the protest. If the protest is not resolved by mutual agreement of the protesting Bidder and the Port, the Contracts Director of the Port or his or her designee will review the issues and promptly furnish a final and binding written decision to the protesting Bidder and any other affected Bidder(s) within six (6) business days of the Port's receipt of the protest. (If more than one (1) protest is filed, the Port's decision will be provided within six (6) business days of the Port's receipt of the last protest.) If no reply is received from the Port during the six (6) business-day period, the protest will be deemed rejected.
3. Waiver. Failure to comply with these protest procedures will render a protest waived.
4. Condition Precedent. Timely and proper compliance with and exhaustion of these protest procedures shall be a condition precedent to any otherwise permissible judicial consideration of a protest.

1.06 POST BID INFORMATION

A. THE LOWEST RESPONSIVE BIDDER SHALL:

1. Responsibility Detail Form. Within 24 hours of the Low Responsive Bidder Selection Notification, the apparent low Bidder shall submit to the Port the Responsibility Detail Form and Project Example Sheets (Section 00 45 13) executed by an authorized company officer. As requested from the Port, the low, responsive Bidder shall provide written confirmation that the person signing the Bid on behalf of the Bidder was duly authorized at the time of bid, a detailed breakdown of the Bid in a form acceptable to the Port, and other information required by the Port.
2. Bidder Submittal. Within ten (10) days after the Port's Notice of Award of the Contract, the apparent low Bidder shall also submit to the Port:
 - a. additional information regarding the use of the Bidder's own forces and the use of subcontractors and suppliers;
 - b. the names of the persons or entities (including a designation of the Work to be performed with the Bidder's own forces, and the names of those who are to furnish materials or equipment fabricated to a special design) proposed for each of the principal portions of the Work (i.e., either a listed Sub-Bidder or a Sub-Bidder performing Work valued at least ten percent (10%) of the Base Bid), consistent with the listing required with the Bid; and

- c. the proprietary names and the suppliers of the principal items or systems of materials and equipment proposed for the Work.
 3. Failure to provide any of the above information in a timely manner will constitute an event of breach permitting forfeiture of the Bid security.
 4. Bidder Responsibility. The Bidder will be required to establish to the satisfaction of the Port the reliability and Responsibility of itself and the persons or entities proposed to furnish and perform the Work described in the Bidding Documents. If requested, the Bidder shall meet with the Port to discuss the Bid, including any pricing, the Bid components, and any assumptions made by the Bidder.
 5. Sub-Bidder Responsibility. The Responsibility of the Bidder may be judged in part by the Responsibility of Sub-Bidders. Bidders must verify the Responsibility Criteria for each first-tier Sub-Bidder. A Sub-Bidder of any tier that hires other Sub-Bidders must verify Responsibility Criteria for each of its lower-tier Sub-Bidders. The verification shall include a representation that each Sub-Bidders, at the time of subcontract execution, is Responsible and possesses required licenses.
 6. Objection. Prior to an Award of the Contract, the Port will notify the Bidder in writing if the Port, after due investigation, has reasonable objection to the Bidder or a person or entity proposed by the Bidder. Upon receiving such objection, the Bidder may, at Bidder's option, (1) withdraw their Bid, (2) submit an acceptable substitute person or entity with no change in the Contract Time and no adjustment in the Base Bid or any Alternate Bid, even if there is a cost to the Bidder occasioned by such substitution, or (3) file a protest in accordance with the Bidding Documents.
 7. Change. Persons and entities proposed by the Bidder to whom the Port has made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Port.
 8. Right to Terminate. The Bidder's representations concerning its qualifications will be construed as a covenant under the Contract. If a Bidder makes a material misrepresentation on a Qualification Statement, the Port has the right to terminate the Contract for cause and may then pursue any remedies that exist under the Contract or that are otherwise available.
- B. INFORMATION FROM OTHER BIDDERS: All other Bidders designated by the Port as under consideration for Award of a Contract shall also provide a properly executed Qualification Statement, if so requested by the Port.

1.07 PERFORMANCE BOND, LABOR AND MATERIAL PAYMENT BOND, AND INSURANCE

- A. BOND REQUIREMENTS: Within ten (10) days after the Port's Notice of Award of the Contract, the successful Bidder shall obtain and furnish statutory bonds pursuant to RCW 39.08 covering the faithful performance of the Contract and the payment of all obligations arising thereunder in the form and amount prescribed in the Contract Documents. The cost of such bonds shall be included in the Base Bid.
- B. TIME OF DELIVERY AND FORM OF BONDS: The successful Bidder shall deliver an original copy of the required bonds to the Port, 1 Sitcum Plaza, Tacoma, WA 98421, within the time specified in the Contract Documents.
- C. INSURANCE: a certificate of insurance from the Bidder's insurance company that meets or exceeds all requirements of the Contract Documents;

- D. GOVERNMENTAL REQUIREMENTS: Notwithstanding anything in the Bidding or Contract Documents to the contrary, the Bidder shall provide all bonding, insurance and permit documentation as required by governmental authorities having jurisdiction for any portions of the Project.

1.08 FORM OF AGREEMENT

- A. FORM TO BE USED: The Contract for the Work will be written on the form(s) contained in the Bidding Documents, including any General, Supplemental or Special Conditions, and the other Contract Documents included with the project manual.
- B. CONFLICTS: In case of conflict between the provisions of these Instructions and any other Bidding Document, these Instructions shall govern. In case of conflict between the provisions of the Bidding Documents and the Contract Documents, the Contract Documents shall govern.
- C. CONTRACT DELIVERY. Within ten (10) days after Notice of Award, the Bidder shall submit a signed Contract to the Port in the form tendered to the Bidder and without modification.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Supplementary Conditions, and Division 0 and 1 Specifications sections shall apply to all sections of the Contract Documents, including specifications, drawings, addenda, or other changes of documents issued for bidding.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions during bidding.

1.03 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- B. The bidding documents include performance specifications for products and equipment which meet project requirements. In those cases where a representative item or manufacturer is named in the specification, it is provided for the sole purpose of identifying a product meeting the required functional performance, and where the words "or equal" are used, a substitution request as further described, is not required.
- C. Where non-competitive or sole source products or manufacturers are explicitly specified with the words "or approved equal", or "Engineer approved equal", or "as approved by the Engineer" are used, they shall be taken to mean "or approved equal". In these cases a substitution request as further described in this section, is required.

1.04 SUBMITTALS

- A. Pre-Bid Substitution Requests: Submit one PDF of the substitution request form along with all supporting documentation for consideration of each request. Identify product or fabrication or installation method to be replaced. Include Drawing numbers and titles. Substitution requests prior to bid date may originate directly from a prime bidder, or from a prospective supplier or subcontractor.
 - 1. Substitution Request Form: Use copy of form located in Section 00 43 25.
 - 2. Documentation: Show compliance with requirements for substitutions with the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - d. Samples, where applicable or requested.
 - e. Certificates and qualification data, where applicable or requested.
 - f. Research reports evidencing compliance with building code in effect for project
 - 3. Engineer's Action: Engineer will review substitution requests if received electronically to procurement@portoftacoma.com at least 10 days prior to the bid opening date set forth in these documents. Substitution requests received after this time will not be reviewed.

- a. Forms of Acceptance: Substitution requests will be formally accepted via written addendum prior to the bid opening date. Bidders shall not rely upon approvals made in any other manner.
 - b. Use product originally specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.
 - c. The Port's decision of approval or disapproval of a proposed substitution shall be final.
- B. Substitutions will not be considered when:
- 1. Indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this Section.
 - 2. Acceptance will require substantial revision of Contract Documents or other items of the Work.
 - 3. Submittal for substitution request does not include point-by-point comparison of proposed substitution with specified product.

1.05 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 EXISTING CONDITIONS

- A. Certain information relating to existing surface and subsurface conditions and structures is available to bidders but will not be part of the Contract Documents.
- B. The reference documents noted below are available at: <https://webftp.portoftacoma.com>
Username: pot069982 Password: 1TyNZ3
- C. The recommendations described within the reference documents noted below shall not be construed as a requirement of this Contract, unless specifically referenced in the Contract Documents.
- D. Reference Plans:
 - 1. Entitled Pier 4 Cargo Warehouses, Dock and Services, dated May 1967.
 - 2. Entitled Pier 4 Extension, dated September 1983
 - 3. Entitled Terminal 3 and 4 Wharf Construction, dated July 1987
 - 4. Entitled Modification of Pier 4 Fender System, dated March 1998
 - 5. Entitled Pier 4 Crane Rail Modifications, dated March 1986
 - 6. Entitled Terminal 4 Wharf Crane Rail Upgrade, dated September 1992(As-Built)
 - 7. Entitled Terminal 4 Wharf Crane Rail Upgrade, dated January 1991
 - 8. Entitled Terminal 4 Wharf Crane Rail Upgrade, dated June 1995
 - 9. Entitled Blair Waterway Widening Bridge Reach & Inner Reach - Phase 2, dated April 2005
 - a. These plans include demolition of the southern portion of the original Pier 4 structure.
 - 10. Entitled Terminal 3 and 4 Redevelopment, dated April 2006
 - 11. Entitled Blair Waterway Widening Bridge Reach & Inner Reach - Phase 3, dated April 2008
 - 12. Entitled APMT Miscellaneous As-Built Drawings (5 sheets)
 - 13. Entitled Maersk Pacific Limited Pier Extension, dated October 2000
 - a. These plans include pier load rating and electrical improvements within transload area.
- E. Geotechnical Reports:
 - 1. Entitled Geotechnical Data Report - Port of Tacoma; Pier 4 Reconfiguration, dated September 18, 2014.
 - a. The Geotechnical Data Report presents the results of subsurface explorations and laboratory tests for the geotechnical engineering design of the Pier 4 Reconfiguration project. The report contains the geotechnical subsurface data collected and evaluated for the project and interpretation of the subsurface conditions at the site. Some of the information in the report includes the following:
 - b. A discussion of the soil types, densities, consistencies, classifications, etc., as observed in a series of subsurface borings and cone penetrometer tests.
 - c. Logs showing soil descriptions at various depths and the corresponding standard penetration test and cone penetration results.
 - d. Laboratory results of samples including grain size analyses.

- e. A generalized cross-section showing the existing subsurface conditions as interpreted for purposes of design.
 - f. Selected historical exploration logs from previous geotechnical studies performed at the site.
 - 2. Entitled Geotechnical Data for Contaminated Sediment, dated December 4, 2014.
 - a. This memo presents results of a soil classification testing program of the sediments to be dredged including grain size and plasticity test results.
 - 3. Entitled Results of Bench Scale Testing of Contaminated Sediment, dated December 4, 2014.
 - a. The Geotechnical Memorandum presents the results of bench-scale testing performed on samples of the contaminated dredge sediment to assess dewatering characteristics.
 - 4. Entitled Pile Recommendations for Navigation Lights, Port of Tacoma: Pier 4 Phase 1 Removal Action, dated December 10, 2014.
 - a. The memorandum includes pile design parameters for the steel pipe piles supporting the navigation light towers
 - 5. The accuracy of the report information is subject to the limitations of scope and generally accepted practices in the field of geotechnical engineering at the time the report was prepared.
 - 6. The Contractor may review the reports and further investigate, interpret, and evaluate, as necessary, the subsurface conditions in order to determine and assess the required means and methods of excavation, shoring, groundwater control, dredging, dewatering, demolition, pile removal, and other activities.
- F. Dive Survey:
- 1. Entitled Pier 4 Relocation Pile Inspection, dated July 2014.
 - a. This survey identifies conditions of existing sediment that has accumulated over the existing rip rap slope protection along the proposed dredge prism.
 - b. This survey includes a photographic record of existing conditions visible.
- G. Existing Conditions Survey:
- 1. Entitled Facility Condition Assessment - Husky Terminal, dated November 19, 2012.
 - a. This survey identifies conditions of existing structure prepared primarily for the use of the Engineer in establishing the extent of the new versus existing work.
 - b. This survey includes a photographic record of existing conditions visible.
- H. Environmental Reports:
- 1. Entitled Removal Site Evaluation Report, dated September 25, 2014.
 - a. This report provides a summary of the environmental investigations and characterization events completed for this project.

2. Entitled Sediment Characterization Report, dated November 24, 2014.
 - a. This report presents the results of the characterization sampling required through the Dredged Material Management Program (DMMP) of material to be dredged and cut back in the Blair Waterway as part of the Pier 4 Reconfiguration project.
 - b. Results of additional sediment sampling to fulfill data gaps identified by the DMMP and the requirement of a site removal action evaluation conducted under an agreed order on consent (AOC) between the Port and the U.S. Environmental Protection Agency (USEPA) are also presented.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section provides the notification required for disclosure of asbestos, lead-containing or other hazardous materials.

1.02 HAZARDOUS MATERIALS NOTICE

- A. Contractor is notified that certain portions of the Work area are known to contain lead or asbestos-containing materials (ACM), as detailed in the Pier 4 Regulated Building Materials Inspection, dated October 31, 2014. A copy of the assessment is included in the Appendix.
- B. Contractor is notified that during characterization testing of material to be dredged for future reconfiguration of Pier 4, elevated levels of trybutyltin (TBT) were identified in the sediment underneath and directly in front of the pier. The levels and extent of TBT identified, and their harmful effects to aquatic life, have prompted this removal action project. For more information on the levels and extents of TBT encountered refer to the Environmental Reports identified in Section 00 31 00 Available Project information.

1.03 NOTIFICATION AND SUSPENSION

- A. In the event the Contractor detects the presence of potentially contaminated materials not previously identified in this specification, the Contractor shall immediately notify the Port. Following such notification by the Contractor, the Port shall in turn notify the various governmental and regulatory agencies concerned with the presence of potentially contaminated materials, if warranted. Depending upon the type of contaminated materials identified, the Port may suspend work in the vicinity of the discovery under the provisions of General Conditions.
- B. Following completion of any further testing necessary to determine the nature of the materials involved, the Port will determine how the material shall be managed. Although the actual procedures used in resuming the work shall depend upon the nature and extent of the potentially contaminated material, the following alternate methods of operation are foreseen as possible:
 - 1. Contractor to resume work as before the suspension.
 - 2. Contractor to move its operations to another portion of the work until measures to eliminate any hazardous conditions can be developed and approved by the appropriate regulatory agencies.
 - 3. The Port to direct the Contractor to dispose or treat the material in an approved manner.
 - 4. The Port to terminate or modify the Contract.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

BIDDER'S NAME: _____

PROJECT TITLE: **PIER 4 PHASE 1 REMOVAL ACTION**

The undersigned Bidder declares that it has read the specifications, understands the conditions, has examined the site, and has determined for itself all situations affecting the work herein bid upon. Bidder proposes and agrees, if this proposal is accepted, to provide at Bidder's own expense, all labor, machinery, tools, materials, etc., including all work incidental to, or described or implied as incidental to such items, according to the contract documents of the Port of Tacoma, and that the Bidder will complete the work within the time stated, and that Bidder will accept in full payment therefore the lump sum or unit price(s) set forth below:

Proposed Bid Price (Note: Show prices in figures only.) For Complete Installation:

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE
1	Mobilization and Demobilization	1	LS		
2	Project Administration	1	LS		
3	Field Engineering	1	LS		
4	Demolition	1	LS		
5	Clean Material Dredging and Disposal	9,000	CY		
6	Contaminated Material Dredging	49,000	CY		
7	Transload Operation	49,000	CY		
8	Relocate Navigation Lights	1	LS		
9	Test Pile Installation	4	EA		
10	Additional Dredging	14	DAY		
11	Standby Time	10	DAY		
12	Hot Spot Fill	500	CY		
13	All Other Work	1	LS		
14	Unforeseen Conditions	1	LS	\$75,000	\$75,000
BASE BID SUBTOTAL					
9.5% Washington State Sales Tax					
Not To Exceed Bid Total (With WSST)					

Evaluation of Bids. In accordance with the provisions of these Contract Documents, Bids will be evaluated to determine the lowest Base Bid Subtotal offered by a responsible Bidder submitting a responsive bid.

Trench Excavation Safety Provision. If the bid amount contains work which requires trenching exceeding a depth of 4 feet, all costs for trench safety shall be included in the Base Bid and indicated below for adequate trench safety systems in compliance with RCW 39.04 and WAC 296-155-650. Bidder shall include a lump sum amount, excluding Washington State Sales Tax. If trench excavation safety provisions do not pertain to the Work, the Bidder should enter "N.A." or "Not Applicable" in the blank on the Bid Form

Trench Excavation Safety: _____ (Total in Written Figures Only)

Addenda. Bidder acknowledges review of all Addenda through No. _____.

Bid Security. A certified check, cashier's check, or other obligation of a bank, or a bid security bond in substantially the form set forth in Section 00 43 13, Bid Security Form for at least 5% of the total bid without sales tax, accompanies this bid.

Principal Subcontractors/Suppliers. The bidder shall list below the name of each subcontractor or supplier to whom the bidder proposes to subcontract the portions of the work listed below, or name itself for the work.

Work to be Performed	Name of Firm
HVAC (Heating, Ventilation and Air Conditioning) Work	
Plumbing Work as described in RCW 18.106	
Electrical Work as described in RCW 19.28	

Noncollusion. The undersigned declares under penalty of perjury that the bid submitted is a genuine and not a sham or collusive bid, or made in the interest or on behalf of any person or firm not therein named; and further says that the said bidder has not directly or indirectly induced or solicited any bidder on the above work or supplies to put in a sham bid, or any other person or corporation to refrain from bidding; and that said bidder has not in any manner sought by collusion to secure to the bidder an advantage over any other bidder or bidders.

Name of Firm	Date
Signature	By Title
Mailing Address	City, State Zip Code
Telephone Number	Email Address
WA State Contractor's Licence No.	Date of Issue Expiration Date
Unified Business Identifier (UBI) No.	Employment Security Department No.

Identification of Contractor as a sole proprietor, a partnership, a joint venture, a corporation, or another described form of legal entity

Main Contact (if other than listed above)	Title
Telephone Number	Email Address

END OF SECTION

KNOW ALL MEN BY THESE PRESENTS:

That we, _____, as Principal, and _____, as Surety, are held and firmly bound unto the PORT OF TACOMA as Obligee, in the penal sum of _____ Dollars, for the payment of which the Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigned, jointly and severally, by these present.

The condition of this obligation is such that if the Obligee shall make any award to the Principal for **Pier 4 Phase 1 Removal Action**, according to the terms of the proposal or bid made by the Principal therefor, and the Principal shall duly make and enter into a contract with the Obligee in accordance with the terms of said proposal or bid and award and shall give bond for the faithful performance thereof, with Surety or Sureties approved by the Obligee; or, if the principal shall, in case of failure to do so, pay and forfeit to the Obligee the penal amount of the deposit specified in the call for bids, then this obligation shall be null and void; otherwise it shall be and remain in full force and effect and the Surety shall forthwith pay and forfeit to the Obligee, as penalty and liquidated damages, the amount of this bond.

SIGNED, SEALED AND DATED THIS _____ day of _____, 20____

BY _____
Principal

BY _____
Surety

Agent and Address

Note: Bidder may submit Surety's bid bond form, provided it is similar in substance, made out in the name of the Port of Tacoma, and that the agent's name and address appear as specified. Bonds containing riders limiting responsibility for toxic waste or limiting the term of responsibility will be rejected.

END OF SECTION

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 43 25 – SUBSTITUTION REQUEST FORM – DURING BIDDING

Project Title _____

Project No. _____

Submitted By: _____

Contract No. _____

Prime/Sub/Supplier: _____

Date: _____

Specification Title: _____

Section No. _____

Description: _____

Paragraph: _____

Page No. _____

Proposed Substitution: _____

Trade Name: _____

Model No.: _____

Manufacturer: _____

Address: _____

Phone No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: _____

Signed By: _____ Firm: _____

Address: _____

Telephone: _____ Email: _____

Supporting Data Attached:

☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ Other _____

ENGINEER'S REVIEW AND ACTION

- ☐ Substitution approved
- ☐ Substitution approved as noted
- ☐ Substitution rejected - Use specified materials.
- ☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Project No. 091452
Contract No. 069982

00 43 25 - 1

The low responsive Bidder shall be required to complete this Responsibility Detail Form as specified in Section 00 21 00 – Instructions to Bidders. **This completed Responsibility Detail Form shall be submitted electronically (pdf) via email to the Contact(s) identified in the Low Responsive Bidder Selection Notification. THIS IS NOT TO BE SUBMITTED WITH A BID.**

Bidder's Company Name: _____

For the below Mandatory Bidder Responsibility Criteria, please check the appropriate box.

1.0 MANDATORY BIDDER RESPONSIBILITY CRITERIA

A. The Bidder shall meet the following mandatory responsibility criteria as described in RCW 39.04.350(1). The Bidder shall be rejected as not responsible if any answer to questions 1 through 5 is "No" or any answer to questions 6 through 8 is "Yes".

1. Does the Bidder have a Certificate of Registration in compliance with RCW 18.27?
☐ Yes ☐ No
2. Does the Bidder have a current Washington State Unified Business Identifier number?
☐ Yes ☐ No
3. Does the Bidder have Industrial Insurance Coverage for the Bidder's employees working in Washington State as required in RCW 51?
☐ Yes ☐ No
4. Does the Bidder have an Employment Security Department number as required in RCW 50?
☐ Yes ☐ No
5. Does the Bidder have a Washington State Excise Tax Registration number as required in RCW 82?
☐ Yes ☐ No
6. Has the Bidder been disqualified from bidding on any public works project under RCW 39.06.010 or 39.12.065(3)?
☐ Yes ☐ No
7. Has the Bidder violated RCW 39.04.370 more than one time as determined by the Washington State Department of Labor and Industries?
☐ Yes ☐ No
8. Has the Bidder ever been found to be out of compliance with Apprenticeship Utilization requirements of RCW 39.04.320?
☐ Yes ☐ No

If any answer to questions 1 through 5 is "No" or any answer to questions 6 through 8 is "Yes" - STOP HERE and contact the Contract Administrator. The Bidder is not responsible for this Work. Otherwise proceed to 1.1. Provide attached to this completed form documentation to confirm responsibility criteria.

For remaining criteria below, check or fill-out the appropriate box. Based upon the answer provided by the Bidder, the Port may request additional information or seek further explanation. As needed, provide backup documentation for any explanations listed below.

1.1 CONTRACT AND REGULATORY HISTORY

A. The Port will evaluate whether the Bidder's contract and regulatory history demonstrates an acceptable record of past project performance and consistent responsibility. The Bidder shall answer the following questions. The Bidder may be rejected as not responsible if any answer to questions 1 through 5 below is "Yes".

1. Has the Bidder had a contract terminated for cause or default, in the last 5 years?

☐Yes ☐No **If YES, explain below.**

2. Has the Bidder required a Surety to take over all, or a portion of, a project to cure or respond to an asserted default or material breach of contract on the part of the Bidder on any public works project, in the last 5 years?

☐Yes ☐No **If YES, explain below.**

3. Have the Bidder and major Sub-Bidders been in bankruptcy, reorganization and/or receivership on any public works project, in the last 5 years?

☐Yes ☐No **If YES, explain below.**

4. Have the Bidder and major Sub-Bidders been disqualified by any state or local agency from being awarded and/or participating on any public works project, in the last 5 years?

☐Yes ☐No **If YES, explain below.**

5. Are the Bidder and major Sub-Bidders currently a party to a formal dispute resolution process with the Port—i.e., a pending mediation, arbitration or litigation.

☐Yes ☐No **If YES, explain below.**

1.2 ACCIDENT/INJURY EXPERIENCE

- A. The Port will evaluate the Bidder's accident/injury Experience Modification Factor ("EMF") from the Washington State Department of Labor and Industries to assess whether the Bidder has an acceptable safety record preventing personal injuries on projects.
- B. List the Bidder's accident/injury EMF for the last five (5) years. An experience factor is calculated annually by the Washington State Department of Labor and Industries.

Year	Effective Year	Experience Factor
1		
2		
3		
4		
5		

If the Bidder has received an EMF of greater than 1.0 for any year, explain the cause(s) of the designation and what remedial steps were taken to correct the EMF. The Bidder may be rejected as not responsible if the Bidder's EMF is greater than 1.0 and sufficient remedial steps have not been implemented.

1.3 WORK PERFORMED BY BIDDER

- A. The Bidder shall state the amount of the Contract Work, as an equivalent to the Total Bid Price, excluding taxes, insurance and bonding, the Bidder will execute with its own forces.

_____ %

1.4 PROJECT EXAMPLE SHEETS

- A. As part of completing this Responsibility Detail Form, the Bidder shall be required to complete the following Project Example Sheets. The Bidder shall provide one project example sheet for each project submitted.
- B. If necessary, the Bidder shall print the appropriate number of additional Project Example Sheets in order to satisfy the project information requirements.**
- C. The Bidder's failure to provide the required project information may result in a determination of the Bidder being declared non-responsible by the Port.
- D. The Bidder shall submit it's completed Project Example Sheets with this **SIGNED** Responsibility Detail Form electronically (PDF) via email to the Contact(s) noted on the Low Responsive Bidder Selection Notification.

PROJECT: PIER 4 PHASE 1 REMOVAL ACTION

PROJECT NO. 091452 | CONTRACT NO. 069982

Responsibility Certification Form

The Low responsive Bidder shall complete the Responsibility Detail Form, attach all Project Example Sheets and submit to the Port within 24 hours following receipt of the Low, Responsive Bidder Selection Notification. All forms shall be submitted electronically (PDF) via email to the contact(s) listed on the Selection Notice. Note, the same project may be used to demonstrate experience across multiple categories if applicable.

By completing and signing this Responsibility Detail Form, the Bidder is certifying that the information contained within the form, the Project Example Sheets and any additional information requested by the Port is true and complete. The Bidder's failure to disclose the required information or the submittal of false or misleading information may result in the rejection of the Bidder's bid, revocation of award or contract termination.

The information provided herein is true and complete.	
Signature of Authorized Representative	Date
Print Name and Title	

PROJECT: PIER 4 PHASE 1 REMOVAL ACTION

PROJECT SPECIFIC EXAMPLE FOR : DREDGING OF CONTAMINATED MATERIAL

BIDDER'S NAME: _____

Statement of Criteria:

The Bidder and/or subcontractors shall demonstrate that the firm(s) responsible for performing **Dredging of Contaminated Material** has past experience in performing at least 2 construction project(s), as a prime or subcontractor, within the United States, where the work was substantially completed within the last 10 years, where the total price of the contaminated dredging work for each identified project was at least \$100,000. Such project experience shall meet the following requirements:

1. Performing permit compliant work within waterways, streams or rivers (i.e. without violation of state Water Quality Standards for turbidity).
2. Performing contaminated dredging exceeding a total of 5,000 cubic yards.

For each identified project the Bidder shall provide project examples which demonstrate their, or their sub-Bidder's, experience and competence with each of the identified criteria.

Bidder Project Information	
Project Name:	
Project Summary:	
Scope of work performed:	
Owner's Name:	Owner's Telephone Number:
Owner's Project Manager's Name (or person who can verify experience)	Owner's Project Manager Telephone Number:
Owner's Project Manager's Email:	Substantial Completion Date:
	Contract Price (at Final Acceptance):
Architect/Engineer Name (if applicable):	Architect/Engineer Telephone Number (if applicable):
Name of additional reference (if applicable):	Telephone Number of additional reference (if applicable):

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 45 13 – RESPONSIBILITY DETAIL FORM

Project Detail Information	Yes	No
For each of the criteria identified below, please check the appropriate box. If your answer is "No", the Port may request additional information regarding the Bidder's response or reject the Bidder as being not responsible.		
Were you the prime contractor for the project?	<input type="checkbox"/>	<input type="checkbox"/>
Did you manage and coordinate the dredging activity on the project site for the project?	<input type="checkbox"/>	<input type="checkbox"/>
Was the work performed on schedule (original schedule plus any time extensions)?	<input type="checkbox"/>	<input type="checkbox"/>
Did you have any violations of WA State Water Quality Standards for turbidity during the work?	<input type="checkbox"/>	<input type="checkbox"/>
Did you comply with permits and/or agreed orders on this project?	<input type="checkbox"/>	<input type="checkbox"/>
Did you dredge >5000 cubic yards of contaminated material for this project?	<input type="checkbox"/>	<input type="checkbox"/>

PROJECT: PIER 4 PHASE 1 REMOVAL ACTION

PROJECT SPECIFIC EXAMPLE FOR : TRANSLOADING CONTAMINATED MATERIAL

BIDDER'S NAME: _____

Statement of Criteria:

The Bidder and/or subcontractors shall demonstrate that the firm(s) responsible for performing **Transloading of Contaminated Material** has past experience in performing at least 2 construction project(s), as a prime or subcontractor, within the United States, where the work was substantially completed within the last 10 years, where the total price of the in-water work for each identified project was at least \$100,000. Such project experience shall meet the following requirements:

1. Performing permit compliant transfer of contaminated dredge material from barges to upland for processing and delivery to upland disposal site exceeding a total of 1,000 cubic yards (i.e. without violation of state Water Quality Standards for turbidity).
2. Performing permit compliant transfer of contaminated water from barges to upland for treatment or processing for disposal exceeding a total of 100,000 gallons.

For each identified project the Bidder shall provide project examples which demonstrate their, or their sub-Bidder's, experience and competence with each of the identified criteria.

Bidder Project Information	
Project Name:	
Project Summary:	
Scope of work performed:	
Project Owner's Name:	Owner's Telephone Number:
General Contractor's Name:	General Contractor's Telephone Number:
Project Manager's Name (or person who can verify experience)	Project Manager Telephone Number:
Project Manager's Email:	Substantial Completion Date of in-water Work:
Name of additional reference (if applicable):	Telephone Number of additional reference (if applicable):
	Contract Price for in-water work (at Final Acceptance):

Project Detail Information For each of the criteria identified below, please check the appropriate box. If your answer is "No", the Port may request additional information regarding the Bidder's response or reject the Bidder as being not responsible.	Yes	No
Did you perform the transloading of contaminated material exceeding 1,000 CY on this project?	<input type="checkbox"/>	<input type="checkbox"/>
Did you perform the transloading of contaminated water exceeding 100,000 gallons on this project?	<input type="checkbox"/>	<input type="checkbox"/>
Did you comply with permits for work at the transloading facility?	<input type="checkbox"/>	<input type="checkbox"/>
Did you have any violations of WA State Water Quality Standards for turbidity during the work?	<input type="checkbox"/>	<input type="checkbox"/>

PROJECT: PIER 4 PHASE 1 REMOVAL ACTION

PROJECT SPECIFIC EXAMPLE FOR : CONTAMINATED WATER TREATMENT

BIDDER'S NAME: _____

Statement of Criteria:

The Bidder and/or sub-Bidder shall demonstrate that the firm responsible for performing the **Contaminated Water Treatment** has past experience in performing at least 2 environmental projects, as a prime or subcontractor, within the United States, that included dredge return water capture, treatment and discharge substantially completed within the last 5 years and where the volume of water treated exceeded 500,000 gallons. Such project experience shall also meet the following special requirements:

1. The water treatment sub-contractor shall have designed, constructed, and operated a minimum of two (2) temporary water treatment systems, including at least one (1) dredge water return treatment project and at least one (1) electrocoagulation system.

For each identified project, the Bidder shall provide project examples which demonstrate their, or their sub-Bidder's, experience and competence with each of the identified criteria.

Bidder Project Information	
Project Name:	
Project Summary:	
Scope of work performed:	
Project Owner's Name:	Owner's Telephone Number:
General Contractor's Name:	General Contractor's Telephone Number:
Project Manager's Name (or person who can verify experience)	Project Manager Telephone Number:
Project Manager's Email:	Substantial Completion Date of Habitat Enhancement Structure Work: :
Name of additional reference (if applicable):	@Telephone Number of additional reference (if applicable):
Contract Price for Specialty Work (As Awarded):	@Contract Price for @Specialty Work (At Final Acceptance):

Project Detail Information For each of the criteria identified below, please check the appropriate box. If your answer is "No", the Port may request additional information regarding the Bidder's response or reject the Bidder as being not responsible.	Yes	No
Did you design, construct and operate the water treatment system?	<input type="checkbox"/>	<input type="checkbox"/>
Did the treatment system include electrocoagulation?	<input type="checkbox"/>	<input type="checkbox"/>
Did the project include dredge return water?	<input type="checkbox"/>	<input type="checkbox"/>
Did the return water meet water quality standards for turbidity?	<input type="checkbox"/>	<input type="checkbox"/>

AGREEMENT BETWEEN PORT AND CONTRACTOR

THIS **AGREEMENT** is made and entered into on _____, 20____ by and between the **PORT OF TACOMA**, a State of Washington municipal corporation, hereinafter designated as the "**Port**," and:

The "Contractor": _____ (Legal Name)
 _____ (Address)
 _____ (Address 2)
 _____ (Phone No.)

The “**Project**” is: **Pier 4 Phase 1 Removal Action** (Title)
 091452 | 069982 (Project &Contract No)
 (Project Address)
 (Project Address 2)

The “Engineer” is: Thais Howard, P.E. (Engineer)
 _____ (Title)
 _____ (Email)
 _____ (Phone No.)

The “Contractor’s representative” is: _____ (Representative)
 _____ (Title)
 _____ (Email)
 _____ (Phone No.)

BACKGROUND AND REPRESENTATIONS:

The Port has caused Drawings, Specifications, and other Contract Documents to be prepared for the performance of Work on the Project.

The Port publicly solicited bids on the Contract Documents. The Contractor submitted a bid to the Port on the _____ day of _____, 20____ to perform the Work.

The Contractor represents that it has the personnel, experience, qualifications, capabilities, and means to accomplish the Work in strict accordance with the Contract Documents, within the Contract Time and for the Contract Price, and that it and its Subcontractors satisfy the responsibility criteria set forth in the Contract Documents, including any supplemental responsibility criteria.

The Contractor further represents that it has carefully examined and is fully familiar with all provisions of the Contract Documents, including any Addenda, that it has fully satisfied itself as to the nature, location, difficulty, character, quality, and quantity of the Work required by the Contract Documents and the conditions and other matters that may be encountered at or near the Project site(s), or that may affect performance of the Work or the cost or difficulty thereof including all applicable safety and site responsibilities, and that it understands and can satisfy all scheduling and coordination requirements and interim milestones.

AGREEMENT:

The Port and the Contractor agree as follows:

1.0 CONTRACTOR TO FULLY PERFORM THE WORK

The Contractor shall fully execute and complete the entire Work described in the Contract Documents, except to the extent specifically indicated in the Agreement, the General Conditions of the Contract (as well as any Supplemental, Special or other Conditions included in the project manual), the Drawings, the Specifications, and all Addenda issued prior to, and all modifications issued after, execution of the Contract.

2.0 DATE OF COMMENCEMENT

The date of commencement of the Work, which is the date from which the Contract Time is measured, shall be fixed as the date this agreement is executed.

3.0 CONTRACT TIME AND LIQUIDATED DAMAGES

This Contract will have two Substantial Completion milestones; one for completion of in-water work at Pier 4 and one for completion of the transloading operation at APMT. The Contractor shall achieve these milestones as set forth in the Contract Documents and Substantial Completion of the in-water Work not later than **270 calendar days** from contract execution; and for the transloading operation not later than **300 calendar days** from contract execution, subject to adjustments of this Contract Time as provided in the Contract Documents. The Contractor shall achieve Final Completion of all Work within **60 calendar days** of the date on which Substantial Completion is achieved for the in-water work at Pier 4.

Provisions for liquidated damages as a reasonable estimate of future loss, as of the date of this Agreement, are included in the Contract Documents. The parties agree that the stated liquidated damages are not penalties individually or cumulatively

The liquidated damages for failure to achieve Substantial Completion for of the in-water milestone by the prescribed date shall be **\$1500 per calendar day**.

The liquidated damages for failure to achieve Substantial Completion for of the transloading operation milestone by the prescribed date shall be **\$1500 per calendar day**.

After the prescribed Final Completion date, the liquidated damages for failure to achieve Final Completion shall be **\$150 per calendar day**.

Liquidated damages assessed by the Port will be deducted from monies due to the Contractor, or from monies that will become due to the Contractor. The liquidated damages, as specified and calculated herein, shall be levied for each and every calendar day that Substantial Completion and/or Final Completion of the work is delayed beyond the prescribed completion dates, or the completion dates modified by the Port for extensions of the contract time.

4.0 CONTRACT PRICE

In accordance with the Contractor's bid dated [], the Port shall pay the Contractor in current funds for the Contractor's performance of the Contract the Contract Price of _____ dollars (\$), subject to additions and deductions as provided in the Contract Documents. State and local sales tax is not included in the Contract Price but will be due and paid by the Port with each progress payment.

5.0 INSURANCE AND BONDS

The Contractor shall purchase and maintain insurance and provide bonds as set forth in the Contract Documents.

This Agreement is entered into as of the day and year first written above:

CONTRACTOR

PORT OF TACOMA

By: _____

By: _____

Title: _____

Title: _____

Date _____

Date _____

END OF SECTION

PERFORMANCE BOND # _____

CONTRACTOR (NAME AND ADDRESS)

SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)

OWNER (NAME AND ADDRESS)

AGENT OR BROKER (FOR INFORMATION ONLY)

PORT OF TACOMA

P.O. BOX 1837

TACOMA, WA 98401-1837

KNOW ALL MEN BY THESE PRESENTS:

That _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto the Port of Tacoma as Obligee, hereinafter called the Port, in the amount of _____ Dollars (\$_____) for the payment whereof Contractor and Surety bind themselves, their executors, administrators, legal representatives, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS:

Contractor has executed an agreement with the Port dated _____ for _____ a copy of which Contract is by reference made a part hereof (the term "Contract" as used herein to include the aforesaid agreement together with all the Contract Documents, addenda, modifications, all alterations, additions thereto, deletions therefrom and any other document or provision incorporated into the Contract) and is hereinafter referred to as the Contract.

This bond is executed and issued pursuant to the provisions of Chapter 39.08 Revised Code of Washington.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Contractor shall promptly and faithfully perform said Contract, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

FURTHER:

- A. Surety hereby waives notice of any alterations, change orders, modifications or extensions of time made by the Port.
- B. Surety recognizes that the Contract includes provisions for additions, deletions and modifications to the work or Contract Time and the amounts payable to the Contractor. Subject to the limitations contained in (A) above, Surety agrees that no such addition, deletion, or modification, or any combination thereof, shall avoid or impair Surety's obligation hereunder.
- C. Whenever Contractor has been declared by the Port to be in default, and the Port has given Surety notice of the Port's determination of such default, Surety shall promptly (in no event more than fifteen (15) days following receipt of such notice) advise the Port of its intended action to:
 1. Remedy the default within fifteen (15) days following its advice to the Port as set forth above, or

2. Assume within fifteen (15) days, following its advice to the Port as set forth above, completion of the Contract in accordance with the Contract Documents and become entitled to payment of the balance of the Contract Sum, or
 3. Pay the Port upon completion of the Contract, in cash, the cost of completion together with all other reasonable costs and expenses incurred by the Port as a result of the Contractor's default, including but not limited to, those reasonable costs and expenses incurred by the Port in its efforts to mitigate its losses, which may include but are not limited to, attorney's fees and efforts to complete the Work prior to the Surety exercising the options available to it as set forth herein.
- D. If the Port shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgment, shall pay all costs and attorney's fees incurred by the Port in enforcement of its rights hereunder. Venue for any action arising out of or in connection with this bond shall be in Pierce County, Washington.
- E. No right or action shall accrue on this bond to or for the use of any person or corporation other than the Port of Tacoma.

Signed and Sealed the _____ day of _____, 20____.

IMPORTANT: Surety companies executing bonds must have an A.M. Best Rating of A- FSC of (6) or higher, have an underwriting limitation of not less than the Contract Sum, and be authorized to transact business in the State of Washington.

SURETY

Signature

Printed Name and Title

CONTRACTOR

Signature

Printed Name and Title

Power of Attorney attached.

END OF SECTION

LABOR AND MATERIAL PAYMENT BOND # _____

CONTRACTOR (NAME AND ADDRESS)

SURETY (NAME AND PRINCIPLE PLACE OF BUSINESS)

OWNER (NAME AND ADDRESS)

PORT OF TACOMA

P.O. BOX 1837

TACOMA, WA 98401-1837

AGENT OR BROKER (FOR INFORMATION ONLY)

KNOW ALL MEN BY THESE PRESENTS:

That _____ as Principal, hereinafter called Contractor, and _____ as Surety, hereinafter called Surety, are held and firmly bound unto the Port of Tacoma as Obligee, hereinafter called the Port, and all others entitled to recovery hereunder, in the amount of _____ Dollars (\$_____) for the payment whereof Contractor and Surety bind themselves, their executors, administrators, legal representatives, successors and assigns, jointly and severally firmly by these presents.

WHEREAS:

Contractor has executed an agreement with the Port dated _____ for _____ a copy of which Contract is be reference made a part hereof (the term "Contract" as used herein to include the aforesaid agreement together with all the Contract Documents, addenda, modifications, alterations, additions thereto, deletions therefrom and any other documents or provisions incorporated into the Contract) and is hereinafter referred to as the Contract.

This bond is executed pursuant to the provisions of Chapter 39.08 Revised Code of Washington.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if Contractor shall promptly make payment to all claimants, as hereinafter defined, for all labor and material used or reasonably required for use in the performance of the Contract and shall indemnify and save the Port harmless from all cost and damage by reason of Contractor's default, then this obligation shall be null and void; otherwise it shall remain in full force and effect, subject to the following conditions:

- A. The Surety hereby waives notice of any alterations, change orders, modifications or extensions of time made by the Port.
- B. Surety recognizes that the Contract includes provisions for additions, deletions and modifications to the Work or Contract Time and the amounts payable to the Contractor. Surety agrees that no such addition, deletion, or modification, or any combination thereof, shall avoid or impair Surety's obligation hereunder.

- C. Surety hereby agrees that every person protected under the provisions of RCW 39.08.010 who has not been paid as provided under the Contract and pursuant to RCW 39.08.010, less any amounts withheld pursuant to statute, and less retainage withheld pursuant to RCW 60.28, after the expiration of a period of thirty (30) days after the date on which the completion of the Contract in accordance with RCW 39.08, may sue on this bond, prosecute the suit to final judgment as may be due claimant, and have execution thereon including recovery of reasonable costs and attorney's fees as provided by RCW 39.08. The Port shall not be liable for the payment of any costs or expenses of any such suit.
- D. No suit or action shall be commenced hereunder by any claimant unless claimant shall have given the written notices to the Port, and where required, the Contractor, in accordance with RCW 39.08.030.
- E. The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment by Surety of claims which may be properly filed in accordance with RCW 39.08 whether or not suit is commenced under and against this bond.
- F. If any Claimant shall commence suit and obtain judgment against the Surety for recovery hereunder, then the Surety, in addition to such judgment and attorney fees as provided by RCW 39.08.030, shall also pay such costs and attorney fees as may be incurred by the Port as a result of such suit. Venue for any action arising out of or in connection with this bond shall be in Pierce County, Washington.

Signed and Sealed this _____ day of _____, 20____.

IMPORTANT: Surety companies executing bonds must have an A.M. Best Rating of A- FSC of (6) or higher, have an underwriting limitation of not less than the Contract Sum, and be authorized to transact business in the State of Washington.

SURETY

CONTRACTOR

Signature

Signature

Printed Name and Title

Printed Name and Title

Power of Attorney attached.

END OF SECTION

Retainage Bond No: _____

Bond No. _____

Project Title: _____

Project No.: _____

Contract No. _____

KNOW ALL MEN BY THESE PRESENTS: That we _____,
a corporation existing under and by virtue of the laws of the State of Washington and authorized to do
business in the State of Washington, as Principal, and
_____, a corporation organized and existing under the
laws of the State of _____ and authorized to transact the business of
surety in the State of Washington, as Surety, are jointly and severally held and bound unto the PORT OF
TACOMA, hereinafter called Port, as Obligee, and are similarly held and bound unto the beneficiaries of
the trust fund created by RCW 60.28 as their heirs, executors, administrators, successors and assigns in
the penal sum of _____
(_____) plus 5% of any increases in the contract amount that have occurred or may occur,
due to change orders, increases in the quantities or the addition of any new item of work.

WHEREAS, on the _____ day of _____, the said Principal herein executed Contract No.
_____ with the Port for _____
_____.

WHEREAS, said contract and RCW 60.28 require the Port to withhold from the Principal the sum of
5% from monies earned by the Principal on estimates during the progress of the work, hereinafter
referred to as earned retained funds.

WHEREAS, the Principal has requested that the Port accept a bond in lieu of earned retained funds as
allowed under Chapter 60.28 RCW.

NOW THEREFORE, this obligation is such that the Surety, its successors, and assigns are held and
bound unto the Port and unto all beneficiaries of the trust fund created by RCW 60.28.011(1) in the
aforesaid sum. This bond, including any proceeds therefrom, is subject to all claims and liens and in the
same manner and priority as set forth for retained percentages in Chapter 60.28 RCW. The condition of
this obligation is also that if the Principal shall satisfy all payment obligations to persons who may lawfully
claim under the trust fund created pursuant to Chapter 60.28 RCW, to the Port, and indemnify and hold
the Port harmless from any and all loss, costs, and damages that the Port may sustain by release of said
retainage to Principal, then this obligation shall be null and void, provided the Surety is notified by the
Port that the requirements of RCW 60.28.021 have been satisfied and the obligation is duly released by
the Port.

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 61 23 - RETAINAGE BOND

Retainage Bond No: _____

IT IS HEREBY DECLARED AND AGREED that the Surety shall be liable under this obligation as Principal. The Surety will not be discharged or released from liability for any act, omission or defenses of any kind or nature that would not also discharge the Principal.

IT IS HEREBY FURTHER DECLARED AND AGREED that this obligation shall be binding upon and inure to the benefit of the Principal, the Surety, the Port, the beneficiaries of the trust fund created by Chapter 60.28 Revised Code of Washington (RCW) and their respective heirs, executors, administrators, successors and assigns.

IN WITNESS WHEREOF, said Principal and said Surety have caused these presents to be duly signed and sealed this _____ day of _____, 201__.

By: _____
Principal

Address: _____

City/ST/Zip: _____

Phone: _____

Surety Name _____

By: _____
Attorney-In-Fact

Address: _____

City/ST/Zip: _____

Phone: _____

IMPORTANT: Surety companies executing bonds must have an A.M. Best Rating of A- FSC of (6) or higher, and be authorized to transact business in the State of Washington.

ARTICLE 1 - THE CONTRACT DOCUMENTS

1.01 GENERAL

- A. Contract Documents form the Contract. The Contract Documents are enumerated in the Agreement between the Port and Contractor ("Agreement"). Together, the Contract Documents form the Contract. The Contract represents the entire integrated agreement between the parties and supersedes all prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only in writing and only as set forth in the Contract Documents.
- B. Headings only for convenience. The titles or headings of the sections, divisions, parts, articles, paragraphs, and subparagraphs of the Contract Documents are intended only for convenience.

1.02 DEFINITIONS

- A. "Contractor" means the person or entity contracting to perform the Work under these Contract Documents. The term Contractor includes the Contractor's authorized representative for purposes of identifying obligations and responsibilities under the Contract Documents, including the ability to receive notice and direction from the Port.
- B. "Drawings" are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, including plans, elevations, sections, details, and diagrams.
- C. "Engineer" is the Port employee generally tasked with administering the Project on the Port's behalf and the person with overall responsibility for managing, for the Port, the Project scope, budget, and schedule. To the extent empowered, the Engineer may delegate to others at the Port (such as a Project Manager or Inspector) the responsibility for performing delegated responsibilities of the Engineer's under this Contract.
- D. "Port" means the Port of Tacoma. The Port will designate in writing a representative (usually the Engineer) who shall have the authority to act on the Port's behalf related to the Project. The "Port" does not include staff, maintenance or safety workers, or other Port employees or consultants that may contact the Contractor or be present at the Project site.
- E. "Project" is identified in the Agreement and is the total construction to be performed by or through the Port, of which the Work performed under the Contract Documents may be only a part.
- F. "Specifications" are those portions of the Contract Documents that specify the written requirements for materials, equipment, systems, standards and workmanship for the Work and for the performance of related services.
- G. "Subcontractor" means a person or entity that contracts directly with the Contractor to perform any Work under the Contract Documents. "Subcontractor of any tier" includes Subcontractors as well as any other person or entity, including suppliers, that contracts with a Subcontractor or a lower-tier Subcontractor (also referred to as "Sub-subcontractors") to perform any of the Work.
- H. "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all labor, tools, equipment, materials, services and incidentals necessary to complete all obligations under the Contract Documents. The Work may constitute only a part of the Project, and may interface and need to be coordinated with the work of others.

1.03 INTENT OF THE CONTRACT DOCUMENTS

- A. Intent of Contract Documents. The intent of the Contract Documents is to describe the complete Work and to include all items necessary for the proper execution and completion of the Work by the Contractor.
- B. Contract Documents are complementary. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor is required to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.
- C. No third party contract rights. The Contract Documents shall not create a contractual relationship of any kind (1) between the Port and a Subcontractor of any tier (although the Port does not waive any third-party beneficiary rights it may otherwise have as to Subcontractors of any tier), (2) between the Contractor and the Engineer or other Port employees or consultants, or (3) between any persons or entities other than the Port and Contractor.

1.04 CORRELATION OF THE CONTRACT DOCUMENTS

- A. Precedence. In the event of a conflict or discrepancy between or among the Contract Documents, the conflict or discrepancy will be resolved by the following order of precedence: with an addendum or Change Order having precedence over an earlier document, and computed dimensions having precedence over scaled dimensions and large scale drawings take precedence over small scale drawings:
 - 1. The signed Agreement
 - a. Supplemental Conditions
 - b. General Conditions
 - c. Division 01 General Requirements of Specifications
 - d. All other Specifications, including all remaining divisions, material and system schedules and attachments, and Drawings
 - e. All other sections in Division 00 not specifically identified herein by Section.
 - 2. Inconsistency between or among Contract Documents. If there is any inconsistency between the Drawings, schedules, or Specifications, or any attachments, the Contractor will make an inquiry to the Engineer to determine how to proceed, and, unless otherwise directed, the Contractor will provide the better quality or greater quantity of any work or materials, as reasonably interpreted by the Port, at no change in the Contract Sum or Contract Time. Thus, if Work is shown on Drawings but not contained in Specifications or schedules, or contained in Specifications or schedules but not shown on the Drawings, the Work as shown or contained will be provided at no change in the Contract Sum or Contract Time, according to Specifications or Drawings to be issued by the Port.
- B. Inconsistency with law. In the event of a conflict between the Contract Documents and applicable laws, codes, ordinances, regulations or orders of governmental authorities having jurisdiction over the Work, or in the event of any conflict between such laws, the most stringent requirements govern.
- C. Organization of Contract Documents. The organization of the Specifications and Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of the Work to be performed. The Port assumes no responsibility for the division and proper coordination of Work between particular Subcontractors.

- D. Bid quantities are estimates only. Any "bid quantities" set forth in the Contract Documents are estimates only. The Port does not warrant that the actual amount of Work will correspond to any estimates. The basis of payment will be the actual quantities performed in accordance with the Contract Documents.

1.05 OWNERSHIP OF THE CONTRACT DOCUMENTS

- A. Port owns all Contract Documents. All Drawings, Specifications, and other Contract Documents furnished to the Contractor are Port property, and the Port retains all intellectual property rights, including copyrights. The Contract Documents are to be used only with respect to the Project.

ARTICLE 2 - PORT OF TACOMA

2.01 AUTHORITY OF THE ENGINEER

- A. Engineer will be Port's representative. The Engineer or the Engineer's designee will be the Port's representative during the Project and will administer the Project on the Port's behalf.
- B. Engineer may enforce all obligations. The Engineer has the authority to enforce all requirements imposed on the Contractor by the Contract Documents.
- C. Only Engineer is agent of Port. Other than the Engineer, no other Port employee or consultant is an agent of the Port, and none are authorized to agree on behalf of the Port to changes in the Contract Sum or Contract Time, nor to waive provisions of the Contract Documents, nor to direct the Contractor to take actions that change the Contract Sum or Contract Time, nor to accept notice of protests or claims on behalf of the Port.

2.02 ADMINISTRATION OF THE CONTRACT

- A. Port will administer Contract. The Port will provide administration of the Contract through the Engineer or the Engineer's designee. All communications with the Port or its consultants related to the Contract will be through the designated representative.
- B. Port not responsible for means and methods. The Port is not responsible for, and will have no control or charge of, the means, methods, techniques, sequences, or procedures of construction, or for safety precautions or programs incidental thereto, because these are the sole responsibility of the Contractor. If the Port makes any suggestion of means, methods, techniques, sequences or procedures, the Contractor will exercise its independent judgment in deciding whether to adopt the suggestion, except as otherwise provided in the Contract Documents.
- C. Port not responsible for acts or omissions of Contractor or Subcontractors. The Port is not responsible for, and will have no control or charge of, the acts or omissions of the Contractor, Subcontractors of any tier, suppliers, or any of their agents or employees, or any other persons performing a portion of the Work.
- D. Port not responsible for the Work. The Port is not responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The presence of the Engineer or others at the Project site at any time does not relieve the Contractor from its responsibility for non-conforming Work.
- E. Port will have access to the Work. The Port and its representatives will at all times have access to the Work in progress, and the Contractor will provide proper facilities for such access and for inspection.

2.03 INFORMATION PROVIDED BY THE PORT

- A. Port to furnish information with reasonable promptness. The Port shall furnish information and services required of the Port by the Contract Documents with reasonable promptness.
- B. Subsurface investigation. The Port may have undertaken a limited investigation of the soil and other subsurface conditions at the Project site for design purposes only. The results of these investigations will be available for the convenience of the Contractor, but they are not Contract Documents. There is no warranty or guarantee, express or implied, that the conditions indicated are representative of those existing at the site or that unforeseen developments may not occur. The Contractor is solely responsible for interpreting the information.

2.04 CONTRACTOR REVIEW OF PROJECT INFORMATION

- A. Contractor to familiarize itself with site and conditions of Work. Prior to executing the Contract, the Contractor shall visit the site, become generally familiar with local conditions under which the Work is to be performed, and correlate personal observations with the requirements of the Contract Documents. By signing the Contract, the Contractor confirms that the Contract Sum is reasonable compensation for the Work; that the Contract Time is adequate; that it has carefully examined the Contract Documents and the Project site; and that it has satisfied itself as to the nature, location, and character of the Work, the labor, materials, equipment, and other items required and all other requirements of the Contract Documents. The Contractor's failure fully to acquaint itself with any such condition does not relieve the Contractor from the responsibility for performing the Work in accordance with the Contract Documents, within the Contract Time, and for the Contract Sum.
- B. Contractor to review Contract Documents. Because the Contract Documents are complementary, the Contractor will, before starting each portion of the Work, carefully study and compare the various Drawings, Specifications, and other Contract Documents, as well as all information furnished by the Port.
- C. Contractor to confirm field conditions. Before starting each portion of the Work the Contractor shall take field measurements of and verify any existing conditions, including all Work in place, and all general reference points; shall observe any conditions at the site affecting the Contractor; and shall carefully compare field measurements, conditions and other information known to the Contractor with the Contract Documents.

2.05 PORT'S RIGHT TO REJECT, STOP AND/OR CARRY-OUT THE WORK

- A. Port may reject Work. The Port has the authority but not the obligation to reject work, materials and equipment that is defective or that otherwise does not conform to the Contract Documents, and to decide questions concerning the Contract Documents. However, the failure to so reject or the presence of the Port at the site shall not be construed as assurance that the Work is acceptable or being completed in compliance with the Contract Documents.
- B. Port may stop Work. If the Contractor fails to correct Work that does not comply with the requirements of the Contract Documents, or repeatedly or materially fails to properly carry out the Work, the Port may issue an order to stop all or a portion of the Work until the cause for the order has been eliminated. The Port's right to stop the Work shall not impose a duty on the Port to exercise this right for the benefit of the Contractor or any third party.

- C. Port may carry-out Work. If the Contractor fails to perform the Work properly, fails to perform any provision of this Contract, or fails to maintain the Progress Schedule, or if the Port reasonably concludes that the Work will not be completed in the specified manner or within the Contract Time, then the Port may, after three (3) days' written notice to the Contractor and without prejudice to any other remedy the Port may have, perform itself or have performed any or all of the Work and may deduct the cost thereof from any payment then or later due the Contractor.

2.06 SEPARATE CONTRACTORS

- A. Port may engage separate contractors or perform work with its own forces. The Port may contract with other contractors ("Separate Contractor") in connection with the Project or perform work with its own forces. The Contractor shall coordinate and cooperate with any Port forces or Separate Contractors, as applicable. The Contractor shall provide reasonable opportunity for the introduction and storage of materials and the execution of work by others.
- B. Contractor to inspect work of others. If any part of the Contractor's Work depends on the work of the Port or any Separate Contractor, the Contractor shall inspect and promptly report to the Port, in writing, any defects that impact the Contractor. Failure of the Contractor to so inspect and report defects in writing shall constitute an acceptance by Contractor of the work of the Port or Separate Contractor.
- C. Contractor to resolve claims of others. Should the Contractor or any of its Subcontractors of any tier cause damage of any kind, including but not limited to delay, to any Separate Contractor, the Contractor shall promptly and using its best efforts settle or otherwise resolve the dispute with the Separate Contractor. The Contractor shall also promptly remedy damage caused to completed or partially completed construction.

2.07 OFFICERS AND EMPLOYEES OF THE PORT

- A. No personal liability. Officers, employees, and representatives of the Port, including the Commissioners, acting within the scope of their employment, shall not be personally liable to Contractor for any acts or omissions arising out of the Project.

ARTICLE 3 - CONTRACTOR'S RESPONSIBILITIES

3.01 DUTY TO PERFORM THE ENTIRE WORK

- A. Contractor must perform entire Work in accordance with Contract Documents. The Contractor shall perform the entire Work required by the Contract in accordance with the Contract Documents. Unless otherwise specifically provided, the Contractor shall provide and pay for all labor, tools, equipment, materials, electricity, power, water, other utilities, transportation and other facilities necessary for the execution and completion of the Work.
- B. Contractor shall be independent contractor. The Contractor shall be and operate as an independent contractor in the performance of the Work. The Contractor is not authorized to enter into any agreements or undertakings for or on behalf of the Port and is not an agent or employee of the Port.

3.02 OBSERVED ERRORS, INCONSISTENCIES, OMISSIONS OR VARIANCES IN THE CONTRACT DOCUMENTS

- A. Contractor to notify Port of any discrepancy. The Contractor's obligations to review and carefully study the Contract Documents and field conditions are for the purpose of facilitating coordination and construction. If the Contractor at any time observes that the Contract Documents, including Drawings and Specifications, vary from the conditions of the Project site, are in error, or omit any necessary detail, the Contractor shall promptly notify the Engineer in writing through a Request for Information. Any Work done after such observation, until authorized by the Engineer, shall be at Contractor's risk. The Contractor shall also promptly report to the Engineer any observed error, inconsistency, omission, or variance with applicable laws through a Request for Information. If the Contractor fails either to carefully study and compare the Contract Documents, or to promptly report any observed error, inconsistency, omission, or variance, the Contractor shall assume full responsibility and shall bear all costs, liabilities and damages attributable to the error, inconsistency, omission, or variance.
- B. Requests for Information. The Contractor shall submit Requests for Information concerning the Contract Documents by following the procedure and using such form as the Port may require. The Contractor shall minimize Requests for Information by thoroughly studying the Contract Documents and reviewing all Subcontractor requests. The Contractor shall allow adequate time in its planning and scheduling for a response from the Port to a Request for Information.
- C. Port may provide information to supplement Drawings and Specifications. Minor items of work or detail that are omitted from the Drawings and Specifications but inferable from the information presented and normally provided by accepted good practice shall be provided and/or performed by the Contractor as part of the Contract Sum and within the Contract Time. Similarly, the Engineer may furnish to the Contractor additional Drawings and clarifications, consistent with the Contract Documents, as necessary to detail and illustrate the Work. The Contractor shall conform its Work to such additional Drawings and clarifications at no increase in the Contract Sum or Contract Time.

3.03 SUPERVISION AND RESPONSIBILITY FOR SUBCONTRACTORS

- A. Contractor responsible for Work and workers. The Contractor shall have complete control of the means, methods, techniques, sequences or procedures related to the Work, and for all safety precautions or programs. The Contractor shall have complete control over and responsibility for all personnel performing the Work. The Contractor is also responsible for the acts and omissions of the Contractor's principals, employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors of any tier.
- B. Contractor to supervise the Work. The Contractor shall continuously supervise and direct the Work using competent and skilled personnel and the Contractor's best skill and attention.
- C. Contractor to enforce discipline and good order. The Contractor shall enforce strict discipline and good order among all workers on the Project, and shall not employ any unfit person or anyone not skilled in the work to which they are assigned. Incompetent, careless, or negligent workers shall immediately be removed from the Work. The Port may, but is not obligated to, require the Contractor to remove from the Work, at no change in the Contract Sum or Contract Time, anyone whom the Port considers objectionable.

3.04 MATERIALS AND EQUIPMENT

- A. Material and equipment to be new. All materials and equipment to be incorporated into the Work shall be new unless specifically provided otherwise in the Contract Documents. The Contractor shall, if required in writing by the Port, furnish satisfactory evidence regarding the kind and quality of any materials, identify the source, and warrant compliance with the Contract Documents. The Contractor shall ensure that all materials and equipment are protected, kept dry and stored under cover in a manner to protect such materials and equipment.
- B. Material and equipment shall conform to manufacturer instructions. All materials and equipment shall conform, and shall be applied, installed, used, maintained and conditioned in accordance with, the instructions of the applicable manufacturer, fabricator or processor, unless otherwise specifically provided by the Engineer.

3.05 CONTRACTOR WARRANTIES

- A. Work will be of good quality and performed in workmanlike manner. In addition to any specific warranties set forth in the Contract Documents, the Contractor warrants that the Work, including all materials and equipment furnished under the Contract, will be of good quality and new, will be performed in a skillful and workmanlike manner and will conform to the requirements of the Contract Documents. Any Work not conforming to this warranty, including unapproved or unauthorized substitutions, shall be considered defective.
- B. Work will be free from defects. The Contractor warrants that the Work will be free from defects for a period of one (1) year from the date of Substantial Completion of the Project.
- C. Contractor to collect and deliver warranties to Port. The Contractor shall collect and deliver to the Port any written warranties required by the Contract Documents. These warranties shall be obtained and enforced by the Contractor for the benefit of the Port without the necessity of separate assignment. These warranties shall extend to the Port all rights, claims, benefits and interests that the Contractor may have under express or implied warranties or guarantees against a Subcontractor of any tier, supplier or manufacturer for defective or non-conforming Work. Warranty provisions that purport to limit or alter the Port's rights under the Contract Documents or the laws of the State of Washington are null and void.
- D. General requirements. The Contractor is not relieved of its general warranty obligations by the specification of a particular product or procedure in the Contract Documents. Warranties in the Contract Documents shall survive completion, acceptance and final payment.

3.06 REQUIRED WAGES

- A. Contractor will pay required wages. The Contractor shall pay (and shall ensure that all Subcontractors of any tier pay) all prevailing wages and other wages (such as Davis-Bacon Act wages) applicable to the Project. See Specification Section 00 73 46.
- B. The Contractor shall defend (at Contractor's sole cost, with legal counsel approved by Port), indemnify and hold the Port harmless from all liabilities, obligations, claims, demands, damages, disbursements, lawsuits, losses, fines, penalties, costs and expenses, whether direct or indirect, and including but not limited to attorneys' fees and consultants' fees and other costs and expenses of litigation, from any violation or alleged violation by the Contractor or any Subcontractor of any tier of RCW 39.12 ("Prevailing Wages on Public Works") or Chapter 51 RCW ("Industrial Insurance").

3.07 STATE AND LOCAL TAXES

- A. Contractor will pay taxes on consumables. The Contractor will pay the retail sales tax on all consumables used during performance of the Work and on all items that are not incorporated into the final Work; this tax shall be included in the Contract Sum.
- B. Port will pay taxes on the Contract Sum. The Port will pay state and local retail sales tax on the Contract Sum with each progress payment and on final payment for transmittal by the Contractor to the Washington State Department of Revenue or to the applicable local taxing authority. Rule 170: WAC 458-20-170.
- C. Direct all tax questions to the Department of Revenue. The Contractor should direct all questions concerning taxes on any portion of the Work to the State of Washington Department of Revenue or to the local taxing authority.
- D. State Sales Tax - Rule 171: WAC 458-20-171. For work performed related to building, repairing, or improving streets, roads, etc., which are owned by a municipal corporation, or political subdivision of the state, or by the United States, and which are used, primarily, for foot or vehicular traffic, the Contractor shall include Washington State Retail Sales Taxes in the various schedule prices, or other contract amounts, including those that the Contractor pays on the purchase of materials, equipment, or supplies used or consumed in doing the Work.
 - 1. The bid form will indicate which bid items are subject to Rule 171. Any such identification by the Port is not binding upon the Department of Revenue.

3.08 PERMITS, LICENSES, FEES, AND ROYALTIES

- A. Contractor to provide and pay for permits unless otherwise specified. Unless otherwise specified, the Contractor shall procure and pay for all permits, licenses, and governmental inspection fees necessary or incidental to the performance of the Work. All costs related to these permits, licenses, and inspections shall be included in the Contract Sum. Any action taken by the Port to assist the Contractor in obtaining permits or licenses shall not relieve the Contractor of its sole responsibility to obtain and pay for permits, licenses, and inspections as part of the Contract Sum.
- B. Contractor's obligations when permit must be in Port's name. When applicable law or agency requires a permit to be issued to a public agency, the Port will support the Contractor's request for the permit and accept the permit in the Port's name, if:
 - 1. The Contractor takes all necessary steps required for the permit to be issued;
 - 2. The permit applies to Work performed in connection with the Project; and
 - 3. The Contractor agrees in writing to abide by all requirements of the permit and to defend and hold harmless the Port from any liability in connection with the permit.
- C. Contractor to pay royalties. The Contractor shall pay all royalties and license fees required for the Work unless otherwise specified in the Contract Documents.

3.09 SAFETY

- A. Contractor solely responsible for safety. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and the performance of the Contract.

- B. Port not responsible for safety. The Port may identify safety concerns to the Contractor. However, no action or inaction of the Port or any third party relating to safety will: (1) relieve the Contractor of its sole and complete responsibility for safety and sole liability for any consequences; (2) impose any obligation on the Port or a third party to inspect or review the Contractor's safety program or precautions; (3) impose any continuing obligation on the Port or a third party to ensure the Contractor performs the Work safely; or (4) affect the Contractor's responsibility for the protection of property, workers, and the general public.
- C. Contractor to maintain a safe Work site. The Project site may be occupied during performance of the Work. The safety of these site occupants is of paramount importance to the Port. The Contractor shall maintain the Work site and perform the Work in a safe manner and in accordance with the Washington Industrial Safety and Health Act (WISHA) and all other applicable safety laws, rules, and regulations. This requirement shall apply continuously and not be limited to working hours.
- D. Contractor to protect Work site and adjacent property until Final Completion. The Contractor shall continuously protect the Work and adjacent property from damage. At all times until Final Completion, the Contractor shall be responsible for and protect from damage, weather, deterioration, theft, and vandalism the Work and all materials, equipment, tools, and other items incorporated or to be incorporated in the Work, and shall repair any damage, injury or loss.

3.10 CORRECTION OF WORK

- A. Contractor to correct defective Work. The Contractor shall, at no cost to the Port, promptly correct Work that is defective or that otherwise fails to conform to the requirements of the Contract Documents. Such Work shall be corrected, whether before or after Substantial Completion, and even if it was previously inspected or observed by the Port.
- B. One-year correction period. The Contractor shall correct all defects in the Work appearing within one (1) year of Substantial Completion or within any longer period prescribed by law or by the Contract Documents. The Contractor shall initiate remedial action within fourteen (14) days of receipt of notice from the Port and shall complete remedial work within a reasonable time. Work corrected by the Contractor shall be subject to the provisions of this Section 3.10 for an additional one-year period following the Port's acceptance of the corrected Work.
- C. Contractor responsible for defects and failures to correct. The Contractor shall be responsible for any expenses incurred by the Port resulting from defects in the Work. If the Contractor refuses or neglects to correct the defects or does not timely accomplish corrections, the Port may correct the Work and charge the Contractor the cost of the corrections. If damage or loss of service may result from a delay in correction, the corrections may be made by the Port and reimbursed by the Contractor.
- D. Port may accept defective work. The Port may, at its sole option, elect to retain defective or nonconforming Work. In such a case, the Port shall reduce the Contract Sum by a reasonable amount to account for the defect or non-conformance.
- E. No period of limitation established. Nothing contained in this Section 3.10 establishes a period of limitation with respect to any obligations under the Contract Documents or law. The establishment of the one (1) year correction period relates only to the specific obligation of the Contractor to correct defective or non-conforming Work.

3.11 UNCOVERING OF WORK

- A. Contractor to uncover work covered prior to inspection. If any portion of the Work is covered prior to inspection and approval, the Contractor shall, at its expense, uncover or remove the Work for inspection by the Port or others, and replace the Work to the standard required by the Contract Documents.
- B. Contractor to uncover work at Port's request. After initial inspection and observation, the Port may order a reexamination of Work, and the Work must be uncovered by the Contractor. If the uncovered Work complies with the Contract Documents, the Port shall pay the cost of reexamination and replacement. If the Work is found not to comply with the Contract Documents, the Contractor shall pay the cost of replacement unless the Contractor demonstrates that it did not cause the defect in the Work.

3.12 RELOCATION OF UTILITIES

- A. Contractor should assume underground utilities are in approximate locations. The Contractor should assume that the locations of any underground or hidden utilities, underground tanks, and plumbing or electrical runs indicated in surveys or the Contract Documents are shown in approximate locations. The accuracy of this information is not guaranteed by the Port and shall be verified by the Contractor. The Contractor shall comply with RCW 19.122.030 and utilize a utility locator service to locate utilities on Port property. The Contractor shall bear the risk of loss if any of its Work directly or indirectly damages or interrupts any utility service or causes or contributes to damages of any nature.
- B. Utility relocation or removal. Where relocation or removal of utilities is necessary or required, it shall be performed at the Contractor's sole expense, unless the Contract Documents specify otherwise. If a utility owner is identified as being responsible for relocating or removing utilities, the work will be accomplished at the utility owner's convenience, either during or in advance of construction. Unless otherwise specified, it shall be the Contractor's sole responsibility to coordinate, schedule, and pay for work performed by a utility owner.
- C. Contractor to notify Port of unknown utilities. If the Contractor discovers the presence of any unknown utilities, it shall immediately notify the Engineer in writing.

3.13 LABOR

- A. Contractor responsible for labor peace. The Contractor is responsible for labor peace relating to the Work and shall cooperate in maintaining Project-wide labor harmony. The Contractor shall use its best efforts as an experienced contractor to adopt and implement policies and practices designed to avoid work stoppages, slowdowns, disputes or strikes.
- B. Contractor to minimize impact of labor disputes. The Contractor will take all necessary steps to prevent labor disputes from disrupting or otherwise interfering with access to Port property. If a labor dispute disrupts the progress of the Work or interferes with access, the Contractor shall promptly and expeditiously take all necessary action to eliminate or minimize the disruption or interference.

3.14 INDEMNIFICATION

- A. Duty to defend, indemnify, and hold harmless. To the fullest extent permitted by law and subject to this Section 3.14, the Contractor shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify and hold harmless the Port, including its Commission, officers, managers, employees (including the Engineer), any consultants, and the agents and employees, successors and assigns of any of them (the "Indemnified Parties") from and against claims, damages, lawsuits, losses (including loss of use), disbursements, liabilities, obligations, fines, penalties, costs and expenses, whether direct and indirect or consequential, including but not limited to consultants' fees, and attorneys' fees incurred on such claims and in proving the right to indemnification ("Claims"), arising out of or resulting from the acts or omissions of the Contractor, a Subcontractor of any tier, their agents and anyone directly or indirectly employed by any of them or anyone for whose acts they may be liable (individually and collectively, the "Indemnitor").
- B. Duty to defend, indemnify, and hold harmless for sole negligence. The Contractor will fully defend, indemnify, and hold harmless the Indemnified Parties for the sole negligence or willful misconduct of the Indemnitor.
- C. Duty to defend, indemnify, and hold harmless for concurrent negligence. Where Claims arise from the concurrent negligence of (1) the Port and (2) the Indemnitor, the Contractor's obligations to indemnify and defend the Indemnified Parties under this Section 3.14 shall be effective only to the extent of the Indemnitor's negligence.
- D. Duty to indemnify not limited by workers' compensation or similar employee benefit acts. In claims against any of the Indemnified Parties by an employee of the Contractor, a Subcontractor of any tier, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Section 3.14 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable under workers' compensation acts, disability benefit acts or other employee benefit acts. After mutual negotiation of the parties, the Contractor waives immunity as to the Indemnified Parties under Title 51 RCW, "Industrial Insurance."
- E. Intellectual property indemnification. The Contractor will be liable for and shall defend (at the Contractor's sole cost, with legal counsel approved by Port) indemnify and hold the Indemnified Parties harmless for Claims for infringement by the Contractor of copyrights or patent rights arising out of or relating to the Project.
- F. Labor peace indemnification. If the Contractor fails to satisfy its labor peace obligations under the Contract, the Contractor will be liable for and shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify and hold harmless the Indemnified Parties for Claims brought against the Port by third parties (including but not limited to lessees, tenants, contractors, customers, licensees and invitees of the Port) for injunctive relief or monetary loss.
- G. Joinder. The Contractor agrees to being added by the Port as a party to any arbitration or litigation with third parties in which the Port alleges indemnification or seeks contribution from the Indemnitor. The Contractor shall cause each of its Subcontractors of any tier to similarly stipulate in their subcontracts; in the event any does not, the Contractor shall be liable in place of such Subcontractor(s) of any tier.

- H. Other. To the extent that any portion of this Section 3.14 is stricken by a court or arbitrator for any reason, all remaining provisions shall retain their vitality and effect. The obligations of the Contractor under this Section 3.14 shall not be construed to negate, abridge, or otherwise reduce any other right or obligations of indemnity which would otherwise exist. To the extent the wording of this Section 3.14 would reduce or eliminate an available insurance coverage, it shall be considered modified to the extent necessary so that the insurance coverage is not affected. This Section 3.14 shall survive completion, acceptance, final payment and termination of the Contract.

3.15 WAIVER OF CONSEQUENTIAL DAMAGES

- A. Mutual waiver of consequential damages. The Contractor and Port waive claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes but is not limited to: (1) damages incurred by the Port for rental expenses, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and (2) damages incurred by the Contractor for principal and home office overhead and expenses including but not limited to the compensation of personnel stationed there, for losses of financing, business and reputation, for losses on other projects, for loss of profit, and for interest or financing costs. This mutual waiver includes but is not limited to all consequential damages due to either party's termination.
- B. Limitation. Nothing contained in this Section 3.15, however, shall be deemed to preclude an award of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents, to preclude damages specified in the Agreement or to affect the Contractor's obligation to indemnify the Port for direct, indirect or consequential damages alleged by a third party.

ARTICLE 4 - SUBCONTRACTORS AND SUPPLIERS

4.01 RESPONSIBILITY FOR ACTIONS OF SUBCONTRACTORS AND SUPPLIERS.

- A. Contractor responsible for Subcontractors. The Contractor is fully responsible to the Port for the acts and omissions of its Subcontractors of any tier and all persons either directly or indirectly employed by the Contractor or its Subcontractors.

4.02 AWARD OF CONTRACTS TO SUBCONTRACTORS AND SUPPLIERS

- A. Contractor to provide proposed Subcontractor information. The Contractor, within ten (10) days after the Port's notice of award of the Contract, shall provide to the Engineer with the names of the persons or entities proposed to perform each of the principal portions of the Work (i.e., either a Subcontractor listed in a bid or proposal or a Subcontractor performing Work valued at least ten percent (10%) of the Contract Sum) and the proprietary names and the suppliers of the principal items or systems of materials and equipment proposed for the Work. No progress payment will become due until after this information has been furnished.
- B. Port to respond promptly with objections. The Port may respond promptly to the Contractor in writing stating (1) whether the Port has reasonable objection to any proposed person or entity or (2) whether the Port requires additional time for review. If the Port makes a reasonable objection, the Contractor shall replace the Subcontractor with no increase to the Contract Sum or Contract Time. Such a replacement shall not relieve the Contractor of its responsibility for the performance of the Work and compliance with all of the requirements of the Contract within the Contract Sum and Contract Time.

- C. Reasonable objection defined. "Reasonable objection" as used in this Section 4.02 includes but is not limited to: (1) a proposed Subcontractor of any tier different from the entity listed with the bid, (2) lack of "responsibility" of the proposed Subcontractor, as defined by Washington law and the Bidding Documents, or lack of qualification or responsibility of the proposed Subcontractor based on the Contract or Bidding Documents, or (3) failure of the Subcontractor to perform satisfactorily in the Port's opinion (such as causing a material delay or submitting a claim that the Port considers inappropriate) on one or more projects for the Port within five (5) years of the bid date.
- D. No substitution allowed without permission. The Contractor shall not substitute a Subcontractor, person, or organization without the Engineer's written consent.

4.03 SUBCONTRACTOR AND SUPPLIER RELATIONS

- A. Contractor to schedule, supervise, and coordinate Subcontractors. The Contractor shall schedule, supervise and coordinate the operations of all Subcontractors of any tier, including suppliers. The Contractor shall ensure that appropriate Subcontractors coordinate the Work of lower-tier Subcontractors.
- B. Subcontractors to be bound to Contract Documents. By appropriate agreement, the Contractor shall require each Subcontractor and supplier to be bound to the terms of the Contract Documents and to assume toward the Contractor, to the extent of their Work, all of the obligations that the Contractor assumes toward the Port under the Contract Documents. Each subcontract shall preserve and protect the rights of the Port and shall allow to the Subcontractor, unless specifically provided in the subcontract, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Port. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with lower-tier Subcontractors.
- C. Contractor to correct deficiencies in Subcontractor performance. When a portion of the Work subcontracted by the Contractor is not being prosecuted in accordance with the Contract Documents, or if such subcontracted Work is otherwise being performed in an unsatisfactory manner in the Port's opinion, the Contractor shall, on its own initiative or upon the written request of the Port, take immediate steps to correct the deficiency or remove the non-performing party from the Project. The Contractor shall replace inadequately performing Subcontractors upon request of the Port at no change in the Contract Sum or Contract Time.
- D. Contractor to provide subcontracts. Upon request, the Contractor will provide the Port copies of written agreements between the Contractor and any Subcontractor.

ARTICLE 5 - WORKFORCE AND NON-DISCRIMINATION REQUIREMENTS

5.01 COMPLIANCE WITH NON-DISCRIMINATION LAWS

- A. Contractor to comply with non-discrimination laws. The Contractor shall fully comply with all applicable laws, regulations, and ordinances pertaining to non-discrimination.

5.02 SMALL BUSINESS ENTERPRISE PARTICIPATION.

- A. Small business participation encouraged. The Port's policy is to encourage the Contractor to solicit and document participation, and to provide and promote the maximum lawful, practicable opportunity for increased participation, by small business enterprises.

ARTICLE 6 - CONTRACT TIME AND COMPLETION

6.01 CONTRACT TIME

- A. Contract Time is measured from Contract execution. Unless otherwise provided in the Agreement, the Contract Time is the period of time, including authorized adjustments, specified in the Contract Documents from the date the Contract is executed to the date Substantial Completion of the Work is achieved.
- B. Commencement of the Work. The Contractor shall begin Work in accordance with the notice of award and the notice to proceed and shall complete all Work within the Contract Time. When the Contractor's signed Agreement, required insurance certificate with endorsements, bonds and other submittals required by the notice of award have been accepted by the Port, the Port will execute the Contract and, following receipt of other required pre-work submittals, will issue a notice to proceed to allow the Contractor to mobilize and commence physical Work at the Project site, as further described in these contract documents. No Work at the Project site may commence until the Port issues a notice to proceed.
- C. Contractor shall achieve specified completion dates. The Contractor shall achieve Substantial Completion within the Contract Time and shall achieve Final Completion within the time period thereafter stated in the Contract Documents.
- D. Time is of the essence. Time limits stated in the Contract Documents, including any interim milestones, are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

6.02 PROGRESS AND COMPLETION

- A. Contractor to maintain schedule. The Contractor's sequence and method of operations, application of effort, and work force shall at all times be created and implemented to ensure the orderly, expeditious, and timely completion of the Work and performance of the Contract. The Contractor shall furnish sufficient forces and shall work such hours, including extra shifts, overtime operations and weekend and holiday work as may be necessary to ensure completion of the Work within the Contract Time and the approved Progress Schedule.
- B. Contractor to take necessary steps to meet schedule. If the Contractor fails substantially to perform in a timely manner in accordance with the Contract Documents and, through the fault of the Contractor or Subcontractor(s) of any tier, fails to meet the Progress Schedule, the Contractor shall take such steps as may be necessary to immediately improve its progress by increasing the number of workers, shifts, overtime operations or days of work, or by other means and methods, all without additional cost to the Port. If the Contractor believes that any action or inaction of the Port constitutes acceleration, the Contractor shall immediately notify the Port in writing and shall not accelerate the Work until the Port either directs the acceleration in writing or denies the constructive acceleration.
- C. Liquidated damages not exclusive. Any provisions in the Contract Documents for liquidated damages shall not preclude other damages due to breaches of Contract of the Contractor.

6.03 SUBSTANTIAL COMPLETION

- A. Substantial Completion defined. Substantial Completion is the stage in the progress of the Work, or portion or phase thereof, when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Port can fully occupy or utilize the Work, or the designated portion thereof, for its intended use, all requirements in the Contract Documents for Substantial Completion have been achieved, and all required documentation has been properly submitted to the Port in accordance with the Contract Documents. All Work other than incidental corrective or punch list Work and final cleaning must be completed. The fact that the Port may occupy the Work or a designated portion thereof does not indicate that Substantial Completion has occurred or that the Work is acceptable in whole or in part.
- B. Work not Substantially Complete unless Final Completion attainable. The Work is not Substantially Complete unless the Port reasonably judges that the Work can achieve Final Completion within the period of time specified in the Contract Documents.
- C. Notice of Substantial Completion. When the Work or designated portion has achieved Substantial Completion, the Port will provide a notice to establish the date of Substantial Completion. The notice shall establish responsibilities of the Port and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all remaining Work. If the notice of Substantial Completion does not so state, all responsibility for the foregoing items shall remain with the Contractor until Final Completion.

6.04 COMPLETION OF PUNCH LIST

- A. Contractor shall complete punch list items prior to Final Completion. The Contractor shall cause punch list items to be completed prior to Final Completion. If, after Substantial Completion, the Contractor does not expeditiously proceed to correct punch list items or if the Port considers that the punch list items are unlikely to be completed prior to the date established for Final Completion (or such other period of time as is specified in the Contract Documents), the Port may, upon seven (7) days' written notice to the Contractor, take over and perform some or all of the punch list items. The Port may also take over and complete any portion of the Work at any time following Substantial Completion and deduct the actual cost of performing the Work (including direct and indirect costs) from the Contract Sum. The Port's rights under this Section 6.04 are not obligations and shall not relieve the Contractor of its responsibilities under any other provisions of the Contract Documents.

6.05 FINAL COMPLETION

- A. Final Completion. Upon receipt of written notice from the Contractor that all punch list items and other Contract requirements are completed, the Contractor will notify the Port, and the Port will perform a final inspection. If the Port determines that some or all of the punch list items have not been addressed, the Contractor shall be responsible to the Port for all costs, including re-inspection fees, for any subsequent reviews to determine completion of the punch list. When the Port determines that all punch list items have been satisfactorily addressed, that the Work is acceptable under the Contract Documents and that the Work has fully been performed, the Port will promptly notify the Contractor of Final Completion.
- B. Contractor responsible for costs if Final Completion is not timely achieved. In addition to any liquidated damages, the Contractor is liable for, and the Port may deduct from any amounts due the Contractor, all costs incurred by the Port for services performed after the contractual date of Final Completion, whether or not those services would have been performed prior to that date had Final Completion been timely achieved.

- C. Final Completion submittals. The Port is not obligated to accept the Project as complete until the Contractor has submitted all required submittals to the Port.
- D. Contractor responsible for the Work until Final Completion. The Contractor shall assume the sole risk of loss and responsibility for all Work under the Contract, and all materials to be incorporated in the Work, whether in storage or at the Project site, until Final Completion. Damage from any cause to either permanent or temporary Work, utilities, materials, equipment, existing structures, the site, or other property owned by the Port or others, shall be repaired by the Contractor to the reasonable satisfaction of the Port at no change in the Contract Sum.

6.06 FINAL ACCEPTANCE

- A. Final Acceptance. Final Acceptance is the formal action of the Port accepting the Project as complete. Public notification of Final Acceptance will be posted on the Port's external website (<<http://www.portoftacoma.com/final-acceptance>>).
- B. Final Acceptance not an acceptance of defective Work. Final Acceptance shall not constitute acceptance by the Port of unauthorized or defective Work, and the Port shall not be prevented from requiring the Contractor to remove, replace, repair, or dispose of unauthorized or defective Work or recovering damages due to the same.
- C. Completion of Work under RCW 60.28. Pursuant to RCW 60.28, "Lien for Labor, Materials, Taxes on Public Works," completion of the Contract Work shall occur upon Final Acceptance.

6.07 PORT'S RIGHT TO USE THE PREMISES

- A. Port has right to use and occupy Work. The Port reserves the right to occupy or use any part of the Work before or after Substantial Completion of some or all of the Work without relieving the Contractor of any of its obligations under the Contract. Such occupancy or use shall not constitute acceptance by the Port of any of the Work, and shall not cause any insurance to be canceled or lapse.
- B. No compensation due if Port elects to use and occupy Work. No additional compensation shall be due to the Contractor as a result of the Port's use or occupancy of the Work or a designated portion.

ARTICLE 7 - PAYMENT

7.01 ALL PAYMENTS SUBJECT TO APPLICABLE LAWS AND SCHEDULE OF VALUES

- A. Payment of the Contract Sum. The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Port to the Contractor for performance of the Work under the Contract Documents. Payments made to the Contractor are subject to all laws applicable to the Port and the Contractor. Payment of the Contract Sum constitutes full compensation to the Contractor for performance of the Work, including all risk, loss, damages, or expense of whatever character arising out of the nature or prosecution of the Work. The Port is not obligated to pay for extra work or materials furnished without prior written approval of the Port.
- B. Schedule of Values. All payments will be based upon an approved Schedule of Values. Prior to submitting its first Application for Payment, the Contractor shall submit a Schedule of Values to the Port allocating the entire Contract Sum to the various portions of the Work. The Schedule of Values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Port may require. This schedule, unless objected to by the Port, shall be used as a basis for reviewing the Contractor's applications for payment.

7.02 APPLICATIONS FOR PAYMENT

- A. Applications for Payment. Progress payments will be made monthly for Work duly certified, approved by the Engineer, and performed (based on the Schedule of Values and actual quantities of Work performed) during the calendar month preceding the Application for Payment. These amounts are paid in trust to the Contractor for distribution to Subcontractors to the extent and in accordance with the approved Application for Payment.

7.03 PROGRESS PAYMENTS

- A. Progress payments. Following receipt of a complete Application for Payment, the Engineer will either authorize payment or indicate in writing to the Contractor the specific reasons why the payment request is being denied, in whole or in part, and the remedial action the Contractor must take to receive the withheld amount. After a complete Application for Payment has been received and approved by the Port, payment will be made within thirty (30) days. Any payments made by, or through, or following receipt of payment from third parties will be made in accordance with the third party's policies and procedures.
- B. Port may withhold payment. The Port may withhold payment in whole or in part as provided in the Contract Documents or to the extent reasonably necessary to protect the Port from loss or potential loss for which the Contractor is responsible, including loss resulting from the Contractor's acts and omissions.

7.04 PAYMENT BY CONTRACTOR TO SUBCONTRACTORS

- A. Payment to Subcontractors. With each Application for Payment, the Contractor shall provide a list of Subcontractors to be paid by the Contractor. No payment request shall include amounts the Contractor does not intend to pay to a Subcontractor because of a dispute or other reason. If, however, after submitting an Application for Payment but before paying a Subcontractor, the Contractor discovers that part or all of a payment otherwise due to the Subcontractor is subject to withholding from the Subcontractor under the subcontract (such as for unsatisfactory performance or non-payment of lower-tier Subcontractors), the Contractor may withhold the amount as allowed under the subcontract, but it shall give the Subcontractor and the Port written notice of the remedial actions that must be taken and pay the Subcontractor within eight (8) working days after the Subcontractor satisfactorily completes the remedial action identified in the notice.
- B. Payment certification to be provided upon request. The Contractor shall provide with each Application for Payment a certification signed by Contractor attesting that all payments by the Contractor to Subcontractors from the last Application for Payment were made within ten (10) days of the Contractor's receipt of payment. The certification will also attest that the Contractor will make payment to Subcontractors for the current Application for Payment within ten (10) days of receipt of payment from the Port.

7.05 FINAL PAYMENT

- A. Final payment. Final applications for payment are due within seven (7) days following Final Completion. Final payment of the unpaid balance of the Contract Sum, except retainage, will be made following Final Completion and within thirty (30) days of the Contractor's submission of an approved final Application for Payment.

- B. Releases required for final payment. The final payment shall not become due until the Contractor delivers to the Port a complete release of all liens arising out of the Contract, as well as an affidavit stating that, to the best of Contractor's knowledge, its release includes all labor and materials for which a lien could be filed. If a Subcontractor of any tier refuses to furnish a release or waiver required by the Port, the Port may (a) retain in the fund, account, or escrow funds in such amount as to defray the cost of foreclosing the liens of such claims and to pay attorneys' fees, the total of which shall be no less than 150% of the claimed amount, or (b) accept a bond from the Contractor, satisfactory to the Port, to indemnify the Port against the lien. If any such lien remains unsatisfied after all payments from the retainage are made, the Contractor shall refund to the Port all moneys that the Port may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.
- C. Contractor to hold Port harmless from liens. The Contractor shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify, and hold harmless the Port from any liens, claims, demands, lawsuits, losses, damages, disbursements, liabilities, obligations, fines, penalties, costs and expenses, whether direct, indirect, including but not limited to attorneys' fees and consultants' fees and other costs and expenses, except to the extent a lien has been filed because of the failure of the Port to make a contractually required payment.

7.06 RETAINAGE

- A. Retainage to be withheld. In accordance with RCW 60.28, a sum equal to five percent (5%) of each approved Application for Payment shall be retained. Prior to submitting its first Application for Payment, the Contractor shall exercise one of the options listed below:
 - 1. Retained percentages will be retained by the Port in a fund; or
 - 2. Deposited by the Port in an interest-bearing account in a bank, mutual savings bank or savings and loan association; or
 - 3. Placed in escrow with a bank or trust company; or
 - 4. If the Contractor provides a bond in place of retainage, it shall be in an amount equal to 5% of the Contract Sum plus Change Orders. The retainage bond shall be based on the form furnished in Section 00 61 23 or otherwise acceptable to the Port and duly completed and signed by a licensed surety or sureties registered with the Washington State Insurance Commissioner and on the currently authorized insurance list published by the Washington State Insurance Commissioner. The surety or sureties must be rated at least A minus, FSC(6), or higher by A.M. Best Rating Guide and be authorized by the Federal Department of the Treasury. Attorneys-in-fact who sign the retainage bond must file with each bond a certified and effective Power of Attorney statement.
- B. Contractor may withhold retainage from Subcontractors. The Contractor or a Subcontractor may withhold not more than five percent (5%) retainage from the monies earned by any Subcontractor or lower-tier Subcontractor, provided that the Contractor pays interest to the Subcontractor at the same interest rate it receives from its reserved funds. If requested by the Port, the Contractor shall specify the amount of retainage and interest due a Subcontractor.

- C. Release of retainage. Retainage will be withheld and applied by the Port in a manner required by RCW 60.28 and released in accordance with the Contract Documents and statutory requirements. Release of the retainage will be processed in the ordinary course of business within sixty (60) days following Final Acceptance of the Work by the Port provided that no notice of lien has been given as provided in RCW 60.28, that no claims have been brought to the attention of the Port, that the Port has no claims under this Contract, and that release of retention has been duly authorized by the State. The following items must also be obtained prior to release of retainage: pursuant to RCW 60.28, a certificate from the Department of Revenue; pursuant to RCW 50.24, a certificate from the Department of Employment Security; and appropriate information from the Department of Labor and Industries including approved affidavits of wages paid for the Contractor and each subcontractor.

7.07 DISPUTED AMOUNTS

- A. Disputed amounts. If the Contractor believes it is entitled to payment for Work performed during the prior calendar month in addition to the agreed-upon amount, the Contractor may submit to the Port along with the approved Application for Payment, a separate written payment request specifying the exact additional amount claimed to be due, the category in the Schedule of Values to which the payment would apply, the specific Work for which additional payment is sought, and an explanation of why the Contractor believes additional payment is due.

7.08 EFFECT OF PAYMENT

- A. Payment does not relieve Contractor of obligations. Payment to the Contractor of progress payments or final payment does not relieve the Contractor from its responsibility for the Work or its responsibility to repair, replace, or otherwise make good defective Work, materials or equipment. Likewise, the making of a payment does not constitute a waiver of the Port's right to reject defective or non-conforming Work, materials, or equipment (even though they are covered by the payment), nor is it a waiver of any other rights of the Port.
- B. Acceptance of final payment waives claims. Acceptance of final payment by the Contractor, a Subcontractor of any tier or a supplier shall constitute a waiver of claims except those previously made in writing and identified as unsettled in Contractor's final Application for Payment.
- C. Execution of Change Order waives claims. The execution of a Change Order shall constitute a waiver of claims by the Contractor arising out of the Work to be performed or deleted pursuant to the Change Order, except as specifically described in the Change Order.

7.09 LIENS

- A. Contractor to discharge liens. The Contractor shall promptly pay (and secure the discharge of any liens asserted by) all persons properly furnishing labor, equipment, materials or other items in connection with the performance of the Work (including, but not limited to, any Subcontractors of any tier).

ARTICLE 8 - CHANGES IN THE WORK

8.01 CHANGES IN THE WORK

- A. Changes in the Work authorized. Without invalidating the Contract and without notice to the Contractor's surety, the Port may authorize changes in the Work after execution of the Contract, including changes in the Contract Sum or Contract Time. Changes shall occur solely by Change Order, Unilateral Change Directive, or Minor Change in Work. All changes in the Work are effective immediately and the Contractor shall proceed promptly to perform the change, unless otherwise provided in the Change Order or Directive.

B. Changes in the Work Defined.

1. A Change Order is a written instrument signed by the Port and Contractor stating their agreement to a change in the Work and the adjustment, if any, in the Contract Sum and/or Contract Time.
2. A Unilateral Change Directive is a written instrument issued by the Port to transmit new or revised Drawings, issue additions or modifications to the Contract, furnish other direction and documents adjustment, if any, to the Contract Sum and/or Contract Time. A Unilateral Change Directive is signed only by the Port, without requiring the consent or signature of the Contractor.
3. A Minor Change in the Work is a written order from the Port directing a change that does not involve an adjustment to the Contract Sum or the Contract Time.

C. Request for Proposal: At any time, the Port may issue a Proposal Request directing the Contractor to propose a change to the Contract Sum and/or Contract Time, if any, based on a proposed change in the Work. The Contractor shall submit a responsive Change Order proposal as soon as possible and no later than fourteen (14) days after receipt in which the Contractor specifies in good faith the extent to which the Contract Sum and/or Contract Time would change. All cost components shall be limited to the manner described in Section 8.02(B). If the Contractor fails to timely respond to a Proposal Request, the Port may issue the change as a Unilateral Change Directive.

1. Fixed price method is default for Contractor Change Order proposal. When the Port has requested that the Contractor submit a Change Order proposal, the Port may specify the basis on which the Contract Sum will be adjusted by the Contractor. The Engineer's preference, unless otherwise indicated, is for changes in the Work to be priced using Lump Sums or Unit Prices or on a time and material (Force Account) basis if unit pricing or lump sums cannot be negotiated or determined. In all instances, however, proposed changes shall include a not-to-exceed price for the change and shall be itemized for evaluation purposes in accordance with Section 8.02(B), as requested by the Engineer.
2. The Port may accept or reject the Contractor's Change Order proposal, request further documentation, or negotiate acceptable terms with the Contractor. If The Port and Contractor reach agreement on the terms of any change in the Work, including any adjustment in the Contract Sum or Contract Time, such agreement shall be incorporated in a Change Order.
3. The Change Order shall constitute full payment and final settlement of all claims for time and for direct, indirect, and consequential costs, including costs of delays, inconvenience, disruption of schedule, or loss of efficiency or productivity, related to any Work either covered or affected by the Change Order, or related to the events giving rise to the request for equitable adjustment. The Port may reject a proposal, in which case the Port may either not effectuate the change or issue a Unilateral Change Directive. The Port will not make payment to the Contractor for any work until that work has been incorporated into an executed Change Order.

- D. Unforeseen Conditions: If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or any soils reports made available by the Port to the Contractor or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall immediately provide oral notice to the Engineer before conditions are disturbed, followed within 24 hours by an initial written notice. The Contractor shall submit a detailed proposal no later than seven (7) days following discovery of differing site conditions. The Engineer will promptly investigate these conditions and, if the Engineer determines that they differ materially and cause an increase or decrease in the Contractor's cost or time required for, performance of any part of the Work, will establish a change in the Contract Sum or Contract Time, or both, consistent with the requirements of the Contract Documents. If the Contractor disputes the Engineer's determination, the Contractor may proceed as provided in the dispute resolution procedure (Article 11). No increase to the Contract Sum or the Contract Time shall be allowed if the Contractor does not comply with the contractual requirements or if the Contractor knew or reasonably should have known of the concealed conditions prior to executing the Contract.
- E. Proceed Immediately: Pending agreement on the terms of the Change Order or upon determination of a differing site condition as defined in 8.01(D), the Engineer may direct Contractor to proceed immediately with the change in the Work. Contractor shall not proceed with any change in the Work until it has obtained the Engineer's written approval and documentation of the following:
1. The scope of work
 2. An agreed upon maximum not-to-exceed amount
 3. The method of final cost determination
 4. Estimated time to complete the changed work.
 5. As a change in the Work is performed, unless the parties have signed a written Change Order to establish the cost of the change, the Contractor shall maintain an itemized accounting of all costs related to the change based on the categories in Section 8.02(B) and provide such data to the Port upon request. This includes, without limitation, invoices, including freight and express bills, and other support for all material, equipment, Subcontractor, and other charges related to the change and, for material furnished from the Contractor's own inventory, a sworn affidavit certifying the actual cost of such material. Failure to provide data to the Port within seven (7) days of a request constitutes a waiver of any claim. The Port may furnish any material or equipment to the Contractor that it deems advisable, and the Contractor shall have no claim for any costs or fee on such material or equipment.
- F. Procedure for Unilateral Change Directive. Whether or not the Port has rejected a Contractor's proposal, the Port may issue a Unilateral Change Directive and the Contractor shall promptly proceed with the specified Work. If the Contractor disagrees with a Unilateral Change Directive, the Contractor shall advise the Port in writing through a Change Order proposal within seven (7) days of receipt. The Contractor's Change Order proposal shall reasonably specify the reasons for any disagreement and the adjustment it proposes. Without this timely Change Order proposal, the Contractor shall conclusively be deemed to have accepted the Port's proposal.

- G. Payment pending final determination of Force Account work. Pending final determination of the total cost of Force Account Work, and provided that the Work to be performed under Force Account is complete and any reservations of rights have been signed by the Port, the Contractor may request payment for amounts not in dispute in the next Application for Payment accompanied by documentation indicating the parties' agreement. Work done on a Force Account basis must be approved in writing on a daily basis by the Engineer or the Engineer's designee and invoices shall be submitted with an Application for Payment within sixty (60) days of performance of the Work.

8.02 CHANGES IN THE CONTRACT SUM

- A. Port to Decide How Changes are Measured. The Port may elect, in its sole discretion, how changes in the Work will be measured for payment. Change in the Work may be priced on a lump sum basis, through Unit Prices, as Force Account, or by another method documented in the executed Change Order, Unilateral Change Directive or Minor Change in the Work.
- B. Determination of Cost of Change. The total cost of any change in the Work, including a claim under Article 11, shall not exceed the prevailing cost for the Work in the locality of the Project. In all circumstances, the change in the Work shall be limited to the reasonable, actual cost of the following components:
1. Direct labor costs: These are the actual labor costs determined by the number of additional craft hours at their normal hourly rate necessary to perform a change in the Work. The hourly cost of labor will be based upon the following:
 - a. Basic wages and fringe benefits: The hourly wage (without markup or labor burden) and fringe benefits paid by the Contractor as established by the Washington Department of Labor and Industries or contributed to labor trust funds as itemized fringe benefits, whichever is applicable, not to exceed that specified in the applicable "Intent to Pay Prevailing Wage," for the laborers, apprentices, journeymen, and foremen performing or directly supervising the change in the Work on site. These wages do not include the cost of Contractor's project manager or superintendent or above, and the premium portion of overtime wages is not included unless pre-approved in writing by the Port. Costs paid or incurred by the Contractor for vacations, per diem, subsistence, housing, travel, bonuses, stock options, or discretionary payments to employees are not separately reimbursable. The Contractor shall provide to the Port copies of payroll records, including certified payroll statements for itself and Subcontractors of any tier, upon the Port's request.
 - b. Workers' insurance: Direct contributions to the State of Washington as industrial insurance; medical aid; and supplemental pension by class and rates established by the Washington Department of Labor and Industries.
 - c. Federal insurance: Direct contributions required by the Federal Insurance Compensation Act (FICA); Federal Unemployment Tax Act (FUTA); and State Unemployment Compensation Act (SUCA).
 2. Direct material costs: This is an itemization, including material invoices, of the quantity and actual cost of additional materials necessary to perform the change in the Work. The cost will be the net cost after all discounts or rebates, freight costs, express charges, or special delivery costs, when applicable. No lump sum costs will be allowed unless approved in advance by the Port.

3. Construction equipment usage costs: This is an itemization of the actual length of time that construction equipment necessary and appropriate for the Work is used solely on the changed Work times the applicable rental cost as established by the lower of the local prevailing rates published in www.equipmentwatch.com, as modified by the AGC/WSDOT agreement, or the actual rate paid to an unrelated third party. If more than one rate is applicable, the lowest available rate will be utilized. Rates and quantities of equipment rented that exceed the local fair market rental costs shall be subject to the Port's prior written approval. Total rental charges for equipment or tools shall not exceed 75% of the fair market purchase value of the equipment or the tool. Actual, reasonable mobilization costs are permitted if the equipment is brought to the site solely for the change in the Work. Mobilization and standby costs shall not be charged for equipment already present on the site.

The rates in effect at the time of the performance of the changed Work are the maximum rates allowable for equipment of modern design and in good working condition and include full compensation for furnishing all fuel, oil, lubrication, repairs, maintenance, and insurance. No gas surcharges are payable. Equipment not of modern design and/or not in good working condition will have lower rates. Hourly, weekly, and/or monthly rates, as appropriate, will be applied to yield the lowest total cost.

4. Subcontractor costs: These are payments the Contractor makes to Subcontractors for changed Work performed by Subcontractors. The Subcontractors' cost of changed Work shall be determined in the same manner as prescribed in this Section 8.02 and, among other things, shall not include consultant costs, attorneys' fees, or claim preparation expenses.
5. Service provider costs: These are payments the Contractor makes to service providers for changed Work performed by service providers. The service providers' cost of changed Work shall be determined in the same manner as prescribed in this Section 8.02.
6. Markup: This is the maximum total amount for overhead, profit and other costs, including office, home office and site overhead (including purchasing, project manager, superintendent, project engineer, estimator, and their vehicles and clerical assistants), taxes (except for sales tax on the Contract Sum), warranty, safety costs, printing and copying, layout and control, quality control/assurance, small or hand tools (a tool that costs \$500 or less and is normally furnished by the performing contractor), preparation of as-built drawings, impact on unchanged Work, Change Order and/or claim preparation, and delay and impact costs of any kind (cumulative, ripple, or otherwise), added to the total cost to the Port of any Change Order work. No markup shall be due, however, for direct settlements of Subcontractor claims by the Port after Substantial Completion. The markup shall be limited in all cases to the following schedule:
- Direct labor costs -- 20% markup on the direct cost of labor for the party (Contractor or Subcontractor) providing labor related to the change in the Work;
 - Direct material costs -- 20% markup on the direct cost of material for the party (Contractor or Subcontractor) providing material related to the change in the Work;
 - Construction equipment usage costs -- 10% markup on the direct cost of equipment for the party (Contractor or Subcontractor) providing equipment related to the change in the Work;

- d. Contractor markup on Subcontractor costs -- 10% markup for the Contractor on the direct cost (excluding markup) of a change in the Work performed by Subcontractors (and for Subcontractors, for a change in the Work performed by lower-tier Subcontractors); and
- e. Service provider costs -- 5% markup for the Contractor on the direct cost (excluding markup) of a change in the Work performed by service providers.

The total summed markup of the Contractor and all Subcontractors of any tier shall not exceed 30% of the direct costs of the change in the Work. If the markup would otherwise exceed 30%, the Contractor shall proportionately reduce the markup for the Contractor and all Subcontractors of any tier.

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

- a. Contractor's liability insurance: The actual cost (expressed as a percentage submitted with the certificate of insurance provided under the Contract Documents and subject to audit) of the Contractor's liability insurance arising directly from the changed Work; and
- b. Public works bond: The actual cost (expressed as a percentage submitted under the Contract Documents and subject to audit) of the Contractor's performance and payment bond arising directly from the changed Work.

Upon request, the Contractor shall provide the Port with supporting documentation from its insurer or surety of any associated cost incurred. The cost of the insurance or bond premium together shall not exceed 2.0% of the cost of the changed Work.

- 8. Unit Prices. If Unit Prices are specified in the Contract Documents or established by agreement of the parties for certain Work, the Port may apply them to the changed Work. Unit Prices shall include pre-agreed rates for material quantities and shall include reimbursement for all direct and indirect costs of the Work, including overhead, profit, bond, and insurance costs arising out of or related to the Unit Priced item. Quantities must be supported by field measurement statements signed by the Port, and the Port shall have access as necessary for quantity measurement. The Port shall not be responsible for not-to-exceed limit(s) without its prior written approval.

8.03 CHANGES IN THE CONTRACT TIME

- A. Extension of the Contract Time. If the Contractor is delayed at any time in the commencement or progress of the Work by events for which the Port is responsible, by unanticipated abnormal weather (subject to Section 8.03(E) below), or by other causes not the fault or responsibility of the Contractor that the Port determines may justify a delay in the Contract Time, then the Contract Time shall be extended by Change Order for such reasonable time as the Port may determine. In no event, however, shall the Contractor be entitled to any extension of time absent proof of (1) delay to an activity on the critical path of the Project, or (2) delay transforming an activity to the critical path, so as to actually delay the anticipated date of Substantial Completion.
- B. Allocation of responsibility for delay not caused by Port or Contractor. If a delay was not caused by the Port, the Contractor, or anyone acting on behalf of any of them, the Contractor is entitled only to an increase in the Contract Time but not an increase in the Contract Sum.

- C. Allocation of responsibility for delay caused by Port. If a delay was caused by the Port or someone acting on behalf of the Port and affected the critical path, the Contractor shall be entitled to a change in the Contract Time and Contract Sum in accordance with Section 8.02. The Contractor shall not recover damages, an equitable adjustment or an increase in the Contract Sum or Contract Time from the Port, however, where the Contractor could reasonably have avoided the delay. The Port is not obligated directly or indirectly for damages for any delay suffered by a Subcontractor of any tier that does not increase the Contract Time.
- D. Allocation of responsibility for delay caused by Contractor. If a delay was caused by the Contractor, a Subcontractor of any tier, or anyone acting on behalf of any of them, the Contractor is not entitled to an increase in the Contract Time or in the Contract Sum.
- E. Adverse weather. If adverse weather is identified as the basis for a claim for additional time, the claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not reasonably have been anticipated and had an adverse effect on the critical path of construction, and that the Work was on schedule (or not behind schedule through the fault of the Contractor) at the time the adverse weather conditions occurred. Neither the Contract Time nor the Contract Sum will be adjusted for normal inclement weather. For a claim based on adverse weather, the Contractor shall be eligible only for a change in the Contract Time (but not a change in the Contract Sum) if the Contractor can substantiate that there was significantly greater than normal inclement weather considering the full term of the Contract Time.
- F. Damages for delay. In the event the Contractor (including any Subcontractors of any tier) is held to be entitled to damages from the Port for delay beyond the amount permitted in Section 8.02(B), the total combined damages to the Contractor and any Subcontractors of any tier for each day of delay shall be limited to the same daily liquidated damage rate specified in the Contract Documents due the Port for the Contractor's delay in achieving Substantial Completion. By submitting a bid on the Work and executing the Contract, the Contractor represents that these liquidated damages are a reasonable estimate of its loss.
- G. Limitation on damages. The Contractor shall not be entitled to damages arising out of loss of efficiency; morale, fatigue, attitude, or labor rhythm; constructive acceleration; home office overhead; expectant under run; trade stacking; reassignment of workers; rescheduling of Work, concurrent operations; dilution of supervision; learning curve; beneficial or joint occupancy; logistics; ripple; season change; extended or increased overhead or general conditions; profit upon damages for delay; impact damages including cumulative impacts; or similar damages. Any effect that such alleged costs may have upon the Contractor or its Subcontractors of any tier is fully compensated through the markup on Change Orders paid through Section 8.02(B) and any liquidated damages paid hereunder.

8.04 RESERVATION OF RIGHTS

- A. Reservations of rights void unless signed by Port. Reservations of rights will be deemed waived and are void unless any reserved rights are described in detail and are signed by the Contractor and the Port.

- B. Procedure for unsigned reservations of rights. If the Contractor adds a reservation of rights not signed by the Port to any Change Order, Unilateral Change Directive, Change Order proposal, Application for Payment or any other document, all amounts and all Work therein shall be considered disputed and not payable until costs are re-negotiated or the reservation is withdrawn or changed in a manner satisfactory to and signed by the Port. If the Port makes payment based on a document that contains a reservation of rights not signed by the Port, and if the Contractor cashes such payment, then the reservation of rights shall be deemed waived, withdrawn and of no effect.

8.05 UNIT PRICES

- A. Adjustment to Unit Prices. If Unit Prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed (less than eighty percent (80%) or more than one hundred and twenty percent (120%) of the quantity estimated) so that application of a Unit Price would be substantially unfair, the applicable Unit Price but not the Contract Time shall be adjusted if the Port prospectively approves a Change Order revising the Unit Price.
- B. Procedure to change Unit Prices. The Contractor or Port may request a Change Order revising a Unit Price by submitting information to support the change. A proposed change to a Unit Price will be evaluated by the Port based on the change in cost resulting solely from the change in quantity, any change in production rate or method as compared to the original plan, and the share, if any, of fixed expenses properly chargeable to the item. If the Port and Contractor agree on the change, a Change Order will be executed. If the parties cannot agree, the Contractor shall comply with the dispute resolution procedures (Article 11).

ARTICLE 9 - SUSPENSION AND TERMINATION OF CONTRACT

9.01 PORT'S RIGHT TO SUSPEND WORK

- A. Port may suspend the Work. The Port may at any time suspend the Work, or any part thereof, by giving notice to the Contractor. The Work shall be resumed by the Contractor as soon as possible, but no later than fourteen (14) days after the date fixed in a notice to resume the Work. The Port shall reimburse the Contractor for appropriate and reasonable expenses consistent with Section 8.02 incurred by the Contractor as a result of the suspension, except where a suspension is the result of the Contractor repeatedly or materially failing to carry out or correct the Work in accordance with the Contract Documents, and the Contractor shall take all necessary steps to minimize expenses.
- B. Contractor obligations. During any suspension of Work, the Contractor shall take every precaution to prevent damage to, or deterioration of, the Work. The Contractor shall be responsible for all damage or deterioration to the Work during the period of suspension and shall, at its sole expense, correct or restore the Work to a condition acceptable to the Port prior to resuming Work.

9.02 TERMINATION OF CONTRACT FOR CAUSE BY THE PORT

- A. Port may terminate for cause. If the Contractor is adjudged bankrupt or makes a general assignment for the benefit of the Contractor's creditors, if a receiver is appointed due to the Contractor's insolvency, or if the Contractor, in the opinion of the Port, persistently or materially refuses or fails to supply enough properly skilled workmen or materials for proper completion of the Contract, fails to make prompt payment to Subcontractors or suppliers for material or labor, disregards laws, ordinances, or the instructions of the Port, fails to prosecute the Work continuously with promptness and diligence, or otherwise materially violates any provision of the Contract, then the Port, without prejudice to any other right or remedy, may terminate the Contractor after giving the Contractor seven (7) days' written notice (during which period the Contractor shall have the right to cure).
- B. Procedure following termination for cause. Following a termination for cause, the Port may take possession of the Project site and all materials and equipment, and utilize such materials and equipment to finish the Work. The Port may also exclude the Contractor from the Project site(s). If the Port elects to complete all or a portion of the Work, it may do so as it sees fit. The Port shall not be required to accept the lowest bid for completion of the Work and may choose to complete all or a portion of the Work using its own work force. If the Port elects to complete all or a portion of the Work, the Contractor shall not be entitled to any further payment until the Work is finished. If the expense of finishing the Work, including compensation for additional managerial and administrative services of the Port, exceeds the unpaid balance of the Contract Sum, the excess shall be paid by the Contractor.
- C. Port's remedies following termination for cause. The Port may exercise any rights, claims or demands that the Contractor may have against third persons in connection with the Contract, and for this purpose the Contractor assigns and transfers to the Port all such rights, claims and demands.
- D. Inadequate termination for cause converted to termination for convenience. If, after the Contractor has been terminated for cause, it is determined that inadequate "cause" for such termination exists, then the termination shall be considered a termination for convenience pursuant to Section 9.03.

9.03 TERMINATION OF CONTRACT FOR CONVENIENCE BY THE PORT

- A. Port may terminate for convenience. The Port may, at any time (without prejudice to any right or remedy of the Port), terminate all or any portion of the Contract for the Port's convenience and without cause. The Contractor shall be entitled to receive payment consistent with the Contract Documents only for Work properly executed through the date of termination, and costs necessarily incurred by reason of the termination (such as the cost of settling and paying claims arising out of the termination under subcontracts or orders), along with a fee of one percent (1%) of the Contract Sum not yet earned on the whole or part of the Work. The total amount to be paid to the Contractor shall not exceed the Contract Sum as reduced by the amount of payments otherwise made. The Port shall have title to all Work performed through the date of termination.

9.04 TERMINATION OF CONTRACT BY THE CONTRACTOR

- A. Contractor may terminate for cause. The Contractor may terminate the Contract if the Work is stopped for a period of sixty (60) consecutive days through no act or fault of the Contractor or a Subcontractor of any tier, for either of the following reasons:
 - 1. Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped; or

2. An act of government, such as a declaration of national emergency that requires all Work to be stopped.
- B. Procedure for Contractor termination. If one of the reasons described in Section 9.04A exists, the Contractor may, upon seven (7) days' written notice to the Port (during which period the Port has the opportunity to cure), terminate the Contract and recover from the Port payment for Work executed through the date of termination in accordance with the Contract Documents and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit on Work executed and direct costs incurred by reason of such termination. The total recovery of the Contractor shall not exceed the unpaid balance of the Contract Sum.
- C. Contractor may stop the Work for failure of Port to pay undisputed amounts. The Contractor may stop Work under the Contract if the Port does not pay undisputed amounts due and owing to the Contractor within fifteen (15) days of the date established in the Contract Documents. If the Port fails to pay undisputed amounts, the Contractor may, upon fifteen (15) additional days' written notice to the Port, during which the Port can cure, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately, and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up.

9.05 SUBCONTRACT ASSIGNMENT UPON TERMINATION

- A. Subcontracts assigned upon termination. Each subcontract is hereby assigned by the Contractor to the Port provided that:
 1. The Port requests that the subcontract be assigned;
 2. The assignment is effective only after termination by the Port and only for those subcontracts that the Port accepts in writing; and
 - a. The assignment is subject to the prior rights of the surety, if any, under any bond issued in accordance with the Contract Documents.

When the Port accepts the assignment of a subcontract, the Port assumes the Contractor's rights and obligations under the subcontract, but only for events and payment obligations that arise after the date of the assignment.

ARTICLE 10 - BONDS

10.01 CONTRACTOR PERFORMANCE AND PAYMENT BONDS

- A. Contractor to furnish performance and payment bonds. Within ten (10) days following its receipt of a notice of award, and as part of the Contract Sum, the Contractor shall secure and furnish duly executed performance and payment bonds using the forms furnished by the Port. The bonds shall be executed by a surety (or sureties) reasonably acceptable to the Port, admitted and licensed in the State of Washington, registered with the Washington State Insurance Commissioner, and possessing an A.M. Best rating of "A minus, FSC (6)" or better and be authorized by the U.S. Department of the Treasury. Pursuant to RCW 39.08, the bonds shall be in an amount equal to the Contract Sum, and shall be conditioned only upon the faithful performance of the Contract by the Contractor within the Contract Time and upon the payment by the Contractor of all taxes, fees, and penalties to the State of Washington and all laborers, Subcontractors, and suppliers, and others who supply provisions, equipment, or supplies for the performance of the Work covered by this Contract. The bonds shall be signed by the person or persons legally authorized to bind the Contractor.

- B. Port may notify surety. If the Port makes or receives a claim against the Contractor, the Port may, but is not obligated to, notify the Contractor's surety of the nature and amount of the claim. If the claim relates to a possibility of a Contractor's default, the Port may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

ARTICLE 11 - DISPUTE RESOLUTION

11.01 NOTICE OF PROTEST AND CLAIM

- A. Dispute resolution procedure mandatory. All claims, direct or indirect, arising out of, or relating to, the Contract Documents or the breach thereof, shall be decided exclusively by the following alternative dispute resolution procedure unless the parties mutually agree otherwise. If the Port and Contractor agree to a partnering process to assist in the resolution of disputes, the partnering process shall occur prior to, and not be in place of, the mandatory dispute resolution procedures set forth below.
- B. Notice of protest defined. Except for claims requiring notice before proceeding with the affected Work as otherwise described in the Contract Documents, the Contractor shall provide immediate oral notice of protest to the Engineer prior to performing any disputed Work and shall submit a written notice of protest to the Port within seven (7) days of the occurrence of the event giving rise to the protest that includes a clear description of the event(s). The protest shall identify any point of disagreement, those portions of the Contract Documents believed to be applicable, and an estimate of quantities and costs involved. When a protest relates to cost, the Contractor shall keep full and complete records and shall permit the Port to have access to those records at any time as requested by the Port.
- C. Claim defined. A claim is a demand by one of the parties seeking adjustment or interpretation of the Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract Documents. The term "claim" also includes all disputes and matters in question between the Port and Contractor arising out of or relating to the Contract Documents. Claims must be initiated in writing and include a detailed factual statement and clear description of the claim providing all necessary dates, locations and items of Work, the date or dates on which the events occurred that give rise to the claim, the names of employees or representatives knowledgeable about the claim, the specific provisions of the Contract Documents that support the claim, any documents or oral communications that support the claim, any proposed change in the Contract Sum (showing all components and calculations) and/or Contract Time (showing cause and analysis of the resultant delay in the critical path), and all other data supporting the claim. Claims shall also be submitted with a statement certifying, under penalty of perjury, that the claim as submitted is made in good faith, that the supporting cost and pricing data are true and accurate to the best of Contractor's knowledge and belief, that the claim is fully supported, and that the amount requested accurately reflects the adjustment in the Contract Sum or Contract Time for which Contractor believes the Port is liable. A claim shall be deemed to include all changes, direct and indirect, in cost and in time to which the Contractor and Subcontractors of any tier are entitled and may not contain reservations of rights without the Port's written approval; any unapproved reservations of rights shall be without effect.
- D. Claim procedure. The Contractor shall submit a written claim within thirty (30) days of providing written notice of protest. The Contractor may delay submitting supporting data by an additional thirty (30) days if it notifies the Port in its claim that substantial data must be assembled. Any claim of a Subcontractor of any tier may be brought only through, and after review by and concurrence of, the Contractor.

- E. Failure to comply with notice of protest and claim requirements waives claims. Any notice of protest by the Contractor and any claim of the Contractor, whether under the Contract or otherwise, must be made pursuant to and in strict accordance with the applicable provisions of the Contract. Failure to properly and timely submit a notice of protest or to timely submit a claim shall waive the claim. No act, omission, or knowledge, actual or constructive, of the Port shall waive the requirement for timely written notice of protest and a timely written claim unless the Port and the Contractor sign an explicit, unequivocal written waiver approved by the Port. The Contractor expressly acknowledges and agrees that the Contractor's failure to timely submit required notices of protest and/or timely submit claims has a substantial impact upon and prejudices the Port. For the purpose of calculating time periods, an "event giving rise to a claim," among other things, is not a Request for Information but rather is a response that the Contractor believes would change the Contract Sum and/or Contract Time.
- F. False claims. The Contractor shall not make any fraudulent misrepresentations, concealments, errors, omissions, or inducements to the Port in the formation or performance of the Contract. If the Contractor or a Subcontractor of any tier submits a false or frivolous claim to the Port, which for purposes of this Section 11.01(F) is defined as a claim based in whole or in part on a materially incorrect fact, statement, representation, assertion, or record, the Port shall be entitled to collect from the Contractor by offset or otherwise (without prejudice to any right or remedy of the Port) any and all costs and expenses, including investigation and consultant costs, incurred by the Port in investigating, responding to, and defending against the false or frivolous claim.
- G. Compliance with lien and retainage statutes required. If a claim relates to or is the subject of a lien or retainage claim, the party asserting the claim may proceed in accordance with applicable law to comply with the notice and filing deadlines prior to resolution of the claim by mediation or by litigation.
- H. Performance required pending claim resolution. Pending final resolution of a claim, the Contractor shall continue to perform the Contract and maintain the Progress Schedule, and the Port shall continue to make payments of undisputed amounts due in accordance with the Contract Documents.

11.02 MEDIATION

- A. Claims must be subject to mediation. At any time following the Port's receipt of a written claim, the Port may require that an officer of the Contractor and the Port's designee (all with authority to settle) meet, confer, and attempt to resolve a claim. If the claim is not resolved during this meeting, the claim shall be subject to mandatory mediation as a condition precedent to the initiation of litigation. This requirement can be waived only by an explicit, written waiver signed by the Port and the Contractor.

- B. Mediation procedure. A request for mediation shall be filed in writing with the other party to the Contract, and the parties shall promptly attempt to agree upon a mediator. If the parties have not reached agreement within thirty (30) days of the request, either party may file the request with the American Arbitration Association or such other alternative dispute resolution service to which the parties mutually agree, with a copy to the other party, and the mediation shall be administered by the American Arbitration Association (or other agreed service). The parties to the mediation shall share the mediator's fee and any filing fees equally. The mediation shall be held in Pierce County, Washington unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof. Unless the Port and the Contractor mutually agree in writing otherwise, all claims shall be considered at a mediation session that shall occur prior to Final Completion.

11.03 LITIGATION

- A. Claims not resolved by mediation are subject to litigation. Claims not resolved through mediation shall be resolved by litigation unless the parties mutually agree otherwise. The venue for any litigation shall be Pierce County, Washington. The Contractor may bring no litigation on claims unless such claims have been properly raised and considered in the procedures of this Article 11. The Contractor must demonstrate in any litigation that it complied with all requirements of this Article.
- B. Litigation must be commenced promptly. All unresolved claims of the Contractor shall be waived and released unless the Contractor has complied with the requirements of the Contract Documents, and litigation is served and filed within 180 days of the date of Substantial Completion approved in writing by the Port or termination of the Contract. The pendency of mediation (the time period between receipt by the non-requesting party of a written mediation request and the date of mediation) shall toll these deadlines until the earlier of the mediator providing written notice to the parties of impasse or thirty (30) days after the date of the mediation session.
- C. Port not responsible for attorneys' fees. Neither the Contractor nor a Subcontractor of any tier, whether claiming under a bond or lien statute or otherwise, shall be entitled to attorneys' fees directly or indirectly from the Port (but may recover attorneys' fees from the bond or statutory retainage fund itself to the extent allowable under law).
- D. Port may join Contractor in dispute. The Port may join the Contractor as a party to any litigation or arbitration involving the alleged fault, responsibility, or breach of contract of the Contractor or Subcontractor of any tier.

ARTICLE 12 - MISCELLANEOUS

12.01 GENERAL

- A. Rights and remedies are cumulative. The rights and remedies of the Port set forth in the Contract Documents are cumulative and in addition to and not in limitation of any rights and remedies otherwise available to the Port. The pursuit of any remedy by the Port shall not be construed to bar the Port from the pursuit of any other remedy in the event of similar, different, or subsequent breaches of this Contract. All such rights of the Port shall survive completion of the Project or termination of the Contractor.
- B. Reserved rights do not give rise to duty. The rights reserved or possessed by the Port to take any action shall not give rise to a duty for the Port to exercise any such right.

12.02 WAIVER

- A. Waiver must be in writing and authorized by Port. Waiver of any provisions of the Contract Documents must be in writing and authorized by the Port. No other waiver is valid on behalf of the Port.
- B. Inaction or delay not a waiver. No action, delay in acting, or failure to act by the Port shall constitute a waiver of any right or remedy of the Port, or constitute an approval or acquiescence of any breach or defect in the Work. Nor shall any delay or failure of the Port to act waive or otherwise prejudice the right of the Port to enforce a right or remedy at any subsequent time.
- C. Claim negotiation not a waiver. The fact that the Port and the Contractor may consider, discuss, or negotiate a claim that has or may have been defective or untimely under the Contract shall not constitute a waiver of the provisions of the Contract Documents unless the Port and the Contractor sign an explicit, unequivocal waiver.

12.03 GOVERNING LAW

- A. Washington law governs. This Contract and the rights and duties of the parties hereunder shall be governed by the internal laws of the State of Washington, without regard to its conflict of law principles.

12.04 COMPLIANCE WITH LAW

- A. Contractor to comply with applicable laws. The Contractor shall at all times comply with all applicable Federal, State and local laws, ordinances, and regulations. This compliance shall include, but is not limited to, the payment of all applicable taxes, royalties, license fees, penalties, and duties.
- B. Contractor to provide required notices. The Contractor shall give notices required by all applicable Federal, State, and local laws, ordinances and regulations bearing on the Work.
- C. Contractor to confine operations at site to permitted areas. The Contractor shall confine operations at the Project site to areas permitted by applicable laws, ordinances, permits, rules and regulations, and lawful orders of public authorities and the Contract Documents.

12.05 ASSIGNMENT

- A. Assignment. The Port and Contractor respectively bind themselves, their partners, successors, assigns and legal representatives to the other party and to the partners, successors, assigns and legal representatives of such other party. The Contractor may not assign, transfer, or novate all or any portion of the Contract, including but not limited to any claim or right to the Contract Sum, without the Port's prior written consent. If the Contractor attempts to make an assignment, transfer, or novation without the Port's consent, the assignment shall be of no effect, and Contractor shall nevertheless remain legally responsible for all obligations under the Contract. The Contractor also shall not assign or transfer to any third party any claims it may have against the Port arising under the Contract or otherwise related to the Project.

12.06 TIME LIMIT ON CAUSES OF ACTION

- A. Time limit on causes of action. The Port and Contractor shall commence all causes of action, whether in contract, tort, breach of warranty or otherwise, against the other arising out of or related to the Contract in accordance with the requirements of the dispute resolution procedure set forth in Article 11 of these General Conditions, within the time period specified by applicable law, and within the time limits identified in the Contract Documents. The Contractor waives all claims and causes of action not commenced in accordance with this Section 12.06.

12.07 SERVICE OF NOTICE

- A. Notice. Written notice under the Contract Documents by either the Contractor or Port may be served on the other party by personal service, electronic or facsimile transmission, or delivery service to the last address provided in writing to the other party. For the purpose of measuring time, notice shall be deemed to be received by the other party on the next business day following the sender's electronic or facsimile transmittal or delivery by delivery service.

12.08 RECORDS

- A. Contractor and Subcontractors to maintain records and cooperate with Port audit. The Contractor and Subcontractors of any tier shall maintain books, ledgers, records, documents, estimates, bids, correspondence, logs, schedules, emails, and other tangible and electronic data and evidence relating or pertaining to costs and/or performance of the Contract ("records") to such extent and in such detail as will properly reflect and fully support compliance with the Contract Documents and with all costs, charges and other amounts of whatever nature. The Contractor shall preserve these records for a period of six (6) years following the date of Final Acceptance under the Contract. Within seven (7) days of the Port's request, both during the Project and for six (6) years following Final Acceptance, the Contractor and Subcontractors of any tier shall make available at their office during normal business hours all records for inspection, audit and reproduction (including electronic reproduction) by the Port or its representatives; failure to fully comply with this requirement shall constitute a material breach of contract and a waiver of all claims by the Contractor and Subcontractors of any tier.
- B. Rights under RCW 42.56. The Contractor agrees, on behalf of itself and Subcontractors of any tier, that any rights under Chapter 42.56 RCW will commence at Final Acceptance, and that the invocation of such rights at any time by the Contractor or a Subcontractor of any tier, or their respective representatives, shall initiate an equivalent right to disclosures from the Contractor and Subcontractors of any tier for the benefit of the Port.

12.09 STATUTES

- A. Contractor to comply with Washington statutes. The Contractor shall abide by the provisions of all applicable statutes, regulations, and other laws. Although a number of statutes are referenced in the Contract Documents, these references are not meant to be and are not a complete list.
 - 1. Pursuant to RCW 39.06, "Registration, Licensing of Contractors," the Contractor shall be registered and licensed as required by the laws of the State of Washington, including but not limited to RCW 18.27, "Registration of Contractors," and shall satisfy all State of Washington bonding and insurance requirements. The Contractor shall also have a current state unified business identifier number; have industrial insurance coverage for the Contractor's employees working in Washington as required by Title 51 RCW; have an employment security department number as required by Title 50 RCW; have a state excise tax registration number as required in Title 82 RCW, and; not be disqualified from bidding on any public works contract under RCW 39.06.010 (unregistered or unlicensed contractors) or RCW 39.12.065(3) (prevailing wage violations).
 - 2. The Contractor shall comply with all applicable provisions of RCW 49.28, "Hours of Labor."
 - 3. The Contractor shall comply with pertinent statutory provisions relating to public works of RCW 49.60, "Discrimination."
 - 4. The Contractor shall comply with pertinent statutory provisions relating to public works of RCW 70.92, "Provisions in Buildings for Aged and Handicapped Persons," and the Americans with Disabilities Act.

5. Pursuant to RCW 50.24, "Contributions by Employers," in general and RCW 50.24.130 in particular, the Contractor shall pay contributions for wages for personal services performed under this Contract or arrange for an acceptable bond.
6. The Contractor shall comply with pertinent provisions of RCW 49.17, "Washington Industrial Safety and Health Act," and Chapter 296-155 WAC, "Safety Standards for Construction Work."
7. Pursuant to RCW 49.70, "Worker and Community Right to Know Act," and WAC 296-62-054 et seq., the Contractor shall provide to the Port and have copies available at the Project site, a workplace survey or material safety data sheets for all "hazardous" chemicals under the control or use of Contractor or any Subcontractor of any tier.
8. All products and materials incorporated into the Project as part of the Work shall be certified as "asbestos-free" and "lead-free" by United States standards, and shall also be free of all hazardous materials or substances. At the completion of the Project, the Contractor shall submit certifications of asbestos-free and of lead-free materials certifying that all materials and products incorporated into the Work meet the requirements of this Section, and shall also certify that materials and products incorporated into the Work are free of hazardous materials and substances.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General and Supplemental Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications.

1.02 SUBMITTAL REQUIREMENTS

- A. Evidence of the required insurance within 10 days of the issued Notice of Award to the Contractor.
- B. Updated evidence of insurance as required until final completion.

1.03 CONTRACTOR LIABILITY INSURANCE

- A. The Contractor shall secure and maintain until Final Completion, at its sole cost and expense, the following insurance in carriers reasonably acceptable to the Port, licensed in the State of Washington, registered with the Washington State Insurance Commissioner, and possessing an A.M. Best rating of "A-, FSC (6)" or better.
- B. The Port will be included as an additional insured for both ongoing and completed operations by endorsement to the policy using ISO Form CG 20 10 11 85 or forms CG 20 10 03 97 and CG 20 37 10 01 (or equivalent coverage endorsements). Also, by endorsement to the policy, there shall be an express waiver of subrogation in favor of the Port; a cross liabilities clause, and an endorsement stating that the Contractor's policy is primary and not contributory with any insurance carried by the Port. The inclusion of the Port as an additional insured shall not create premium liability for the Port.
- C. If the Contractor, Supplier or Subcontractor's will perform any work requiring the use of a licensed professional per RCW 18 the Contractor shall provide evidence to the Port of professional liability insurance in amounts not less than \$1,000,000.
- D. This insurance shall cover all of the Contractors' operations of whatever nature connected in any way with the Contract, including any operations performed by the Contractor's Subcontractors of any tier. It is the obligation of the Contractor to ensure that all Subcontractors (at whatever level) carry a similar program that provides the identified types of coverage, limits of liability, inclusion of the Port as an additional insured, waiver of subrogation and cross liabilities clause. The Port reserves the right to reject any insurance policy as to company, form, or substance. Contractor's failure to provide or the Port's acceptance of the Contractor's certificate of insurance does not waive the Contractor's obligation to comply with the insurance requirements of the Contract as specifically described below:
 - 1. Marine General or Liability Insurance on an Occurrence Form Basis including but not limited to:
 - a. Bodily Injury Liability;
 - b. Property Damage Liability;
 - c. Contractual Liability;
 - d. Products - Completed Operations Liability;
 - e. Personal Injury Liability;
 - f. Marine coverages as appropriate for the scope of work;

Alternatively, a Commercial General Liability (CGL) policy is acceptable if all of the above coverages are incorporated in the policy and there are no marine exclusions that will remove coverage for either vessels or work done by or above or around the water.

2. Marine Protection and Indemnity/Vessel Pollution Liability: Contractor shall obtain, at Contractor's expense and keep in effect during the term of the contract, Marine Protection and Indemnity insurance which shall include Collision Liability and Jones Act coverages, including coverage for all masters, crew and passengers. The limit of liability shall not be less than \$5,000,000. If Collision Liability is part of the Hull and Machinery coverage for the vessel, evidence of Hull and Machinery coverage in amounts not less than the actual cash value of the vessel shall also be provided.
 - a. Vessel Pollution Liability: Contractor shall obtain at Contractor's expense and keep in effect during the term of the contract, Vessel Pollution Liability on all vessels used under this contract. Vessel Pollution Liability limits shall be the same as the Protection and Indemnity (P&) limits call for in section 2.
3. Comprehensive Automobile Liability including but not limited to:
 - a. Bodily Injury Liability;
 - b. Property Damage Liability;
 - c. Personal Injury Liability;
 - d. Owned and Non-Owned Automobile Liability; and
 - e. Hired and Borrowed Automobile Liability.
4. Contractor's Pollution Liability (CPL) covering claims for bodily injury, property damage and cleanup costs and environmental damages from pollution conditions arising from the performance of covered operations.
 - a. If the Work involves remediation or abatement of regulated waste to include but not limited to: asbestos containing materials, lead containing products, mercury, PCB, underground storage tanks or other hazardous materials or substances, the CPL policy shall not exclude such coverage or a specific policy covering such exposure shall be required from the Contractor and all Subcontractors performing such Work.
 - b. If the Work involves transporting regulated materials or substances or waste, a separate policy or endorsement to the CPL policy specifically providing coverage for liability and cleanup arising from an upset of collision during transportation of hazardous materials or substances shall be required from the Contractor and all Subcontractors performing such Work.
 - c. It is preferred that CPL insurance shall be on a true occurrence form without a sunset clause. However, if CPL insurance is provided on a Claims Made basis, the policy shall have a retroactive date prior to the start of this project and this insurance shall be kept in force for at least three years after the final completion of this project. Alternatively, the contractor at its option may provide evidence of extended reporting period of not less than three (3) years in its place. The Contractor shall be responsible for providing the Port with certificates of insurance each year evidencing this coverage.
 - d. The Port shall be named as an Additional Insured on the CPL policy.

- E. Except where indicated above, the limits of all insurance required to be provided by the Contractor shall be not less than \$2,000,000 for each occurrence. However, coverage in the amounts of these minimum limits shall not be construed as to relieve the Contractor from liability in excess of such limits. The Additional Insured endorsement shall NOT be limited to the amounts specified by this contract unless expressly waived in writing by the Port of Tacoma.
- F. Contractor shall certify that its operations are covered by the Washington State Worker's Compensation Fund. The Contractor shall provide its Account Number or, if self-insured, its Certificate of Qualification Number. The Contractor shall also provide evidence of Stop-Gap Employers' Liability Insurance.

United States Longshoremen's and Harbor Worker's Act (USL&H) and Jones Act may be required for this project. The contractor shall be solely responsible for determining the applicability of USL&H and Jones Act coverage. The failure of the Contractor to procure either USL&H or Jones Act coverage shall at no time create liability on the part of the Port. The Contractor shall bear all responsibility and shall indemnify and hold harmless the Port for any and all liability, cost and/or damages.

- G. The Contractor shall furnish within ten (10) days following issuance of the notice of award a certificate of insurance satisfactory to the Port evidencing that insurance in the types and minimum amounts required by the Contract Documents has been secured. The Certificate of Insurance shall be signed by an authorized representative of the insurer together with a copy of the endorsement, which shows that the Port is named as additional insured.
- H. Contractor shall provide at least forty-five (45) days prior written notice to the Port of any termination or material change or ten (10) days notice in the case of non-payment of premium(s).
- I. If the Contractor is required to make corrections to the Work after Final Completion, the Contractor shall obtain at its own expense, prior to the commencement of any corrective work, insurance coverage as required by the Contract Documents, which coverage shall be maintained until the corrections to the Work have been completed and accepted by the Port.

1.04 BUILDER'S RISK INSURANCE

- A. Until Final Completion of the Work, the construction Work is at the risk of the Contractor and no partial payment shall constitute acceptance of the Work or relieve the Contractor of responsibility of completing the Work under the Contract.
- B. Whenever the estimated cost of the Work is less than \$25,000,000, the Port will purchase and maintain, in a company or companies lawfully authorized and admitted to do business in Washington, property insurance written on a builder's risk "all-risk" including Earthquake and Flood or equivalent policy form to cover the course of construction in the amount of the full insurable value thereof. This property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Port has an insurable interest in the property, whichever is later. This insurance shall include interests of the Port, the Contractor, and Subcontractors of any tier on the Project. There may be some differences between this Section and the builder's risk insurance secured by the Port; therefore, the Contractor shall provide an "installation floater" or similar property coverage for materials not yet installed, whether stored on site or off site or in transit, and the Contractor shall obtain property coverage for all Contractor-owned equipment and tools.. Each loss may be subject to a deductible of \$25,000. Losses up to the deductible amount shall be the responsibility of the Contractor. All tools and equipment not intended as part of the construction or installation will be the sole responsibility of the Contractor.

- C. Whenever the estimated cost of the Work is \$25,000,000 or more, the Contractor shall purchase and maintain, in a company or companies lawfully authorized and admitted to do business in Washington, property insurance written on a builder's risk "all-risk" including Earthquake and Flood or equivalent policy form to cover the course of construction in the amount of the full insurable value thereof. This property insurance shall be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment has been made or until no person or entity other than the Port has an insurable interest in the property, whichever is later. This insurance shall include as named insureds and as loss payees the Port, the Contractor, and Subcontractors of any tier, as their respective interests appear. This insurance shall insure against the perils of fire (with extended coverage) and physical loss or damage including without limitation, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings and debris removal, and shall also provide "all risk" coverage for the interests of the Port, the Contractor and Subcontractors of any tier as named insureds, as their respective interests appear. Upon written request, the Contractor will provide a copy of its policy to the Port. Each loss may be subject to a deductible of not more than \$10,000, except that the deductible for earthquake and flood losses shall be no greater than 5% of the loss or \$100,000, whichever is more. Losses up to the deductible amount or otherwise not covered by insurance shall be the responsibility of the Contractor. This insurance shall include as named insureds and as loss payees the Port, the Contractor and Subcontractors of any tier, as their respective interests appear. The policy shall be endorsed to allow complete or partial occupancy by the Port before or after Substantial Completion without the insurer's approval. All tools and equipment of the Contractor and Subcontractors of any tier not intended as part of the construction or installation of the Work will be the sole responsibility of the Contractor.

PART 2 - PRODUCTS - NOT USED

PART 3 - PRODUCTS - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 PREVAILING AND OTHER REQUIRED WAGES

- A. The Contractor shall pay (and shall ensure that all Subcontractors of any tier pay) all prevailing wages and other wages (such as Davis-Bacon Act wages) applicable to the Project.
- B. Pursuant to RCW 39.12, "Prevailing Wages on Public Works," no worker, laborer, or mechanic employed in the performance of any part of the Work shall be paid less than the "prevailing rate of wage" in effect as of the date that bids are due.
 - 1. Based on the bid submittal deadline for this project, the applicable effective date for prevailing wages for this project is March 4, 2015.
- C. The State of Washington prevailing wage rates applicable for this public works project, which is located in Pierce County, may be found at the following website address of the Department of Labor and Industries:

<https://fortress.wa.gov/lni/wagelookup/prvWagelookup.aspx>
- D. The schedule of the prevailing wage rates is made a part of the Contract Documents by reference as though fully set forth herein; and a copy of the applicable prevailing wage rates are also available for viewing at the Port Administration Building, located at One Sitcum Plaza, Tacoma, WA 98421 (253-383-5841). Upon request to the Procurement Department at procurement@portoftacoma.com, the Port will email or mail a hard copy of the applicable Journey Level prevailing wages for this project.
- E. Questions relating to prevailing wage data should be addressed to the Industrial Statistician.

Mailing Address: Washington State Department of Labor and Industries
Prevailing Wage Office
P.O. Box 44540
Olympia, WA 98504

Telephone: (360) 902-5335

Facsimile: (360) 902-5300

- 1. If there is any discrepancy between the attached or provided schedule of prevailing wage rates and the published rates applicable under WAC 296-127-011, or if no schedule is attached, the applicable published rates shall apply with no increase in the Contract Sum. It is the Contractor's responsibility to ensure that the correct prevailing wage rates are paid.
- F. Statement to Pay Prevailing Wages
 - 1. Prior to any payment being made by the Port under this Contract, the Contractor, and each Subcontractor of any tier, shall file a Statement of Intent to Pay Prevailing Wages under oath with the Port and certified by the Director of Labor and Industries. The statement shall include the hourly wage rate to be paid to each classification of workers entitled to prevailing wages, which shall not be less than the prevailing rate of wage, and the estimated number of workers in each classification employed on the Project by the Contractor or a Subcontractor of any tier, as well as the Contractor's contractor registration number and other information required by the Director of Labor and Industries. The statement, and any supplemental statements, shall be filed in accordance with the

requirements of the Department of Labor and Industries. No progress payment shall be made until the Port receives such certified statement.

- G. The Contractor shall post in a location readily visible to workers at the Project site (1) a copy of the Statement of Intent to Pay Prevailing Wages approved by the Industrial Statistician of the Department of Labor and Industries and (2) the address and telephone number of the Industrial Statistician of the Department of Labor and Industries to whom a complaint or inquiry concerning prevailing wages may be directed.
- H. If a State of Washington prevailing wage rate conflicts with another applicable wage rate (such as Davis-Bacon Act wage rate) for the same labor classification, the higher of the two shall govern.
- I. Pursuant to RCW 39.12.060, if any dispute arises concerning the appropriate prevailing wage rate for work of a similar nature, and the dispute cannot be adjusted by the parties in interest, including labor and management representatives, the matter shall be referred for arbitration to the Director of the Department of Labor and Industries, and his or her decision shall be final and conclusive and binding on all parties involved in the dispute.
- J. Prior to final payment being made by the Port under this Contract, the Contractor, and each Subcontractor of any tier, shall file an approved Affidavit of Wages Paid with the Port.
- K. The Contractor shall defend (at the Contractor's sole cost, with legal counsel approved by Port), indemnify and hold the Port harmless from all liabilities, obligations, claims, demands, damages, disbursements, lawsuits, losses, fines, penalties, costs and expenses, whether direct, indirect, including but not limited to attorneys' fees and consultants' fees and other costs and expenses, from any violation or alleged violation by the Contractor or any Subcontractor of any tier of RCW 39.12 ("Prevailing Wages on Public Works") or Chapter 51 RCW ("Industrial Insurance"), including but not limited to RCW 51.12.050.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 REQUIREMENTS APPLICABLE PORT-WIDE

- A. The Contractor shall submit prior to the start of work a list of emergency contact numbers for itself and subcontractors, suppliers and manufacturer representatives. Each person on the project site shall have a valid identification card that is tamper proof with laminated photo identification such as one of the following:
 - 1. State-issued Driver's license (also required if driving a vehicle)
 - 2. Card issued by a governmental agency
 - 3. Passport
 - 4. Identification card issued by the Port of Tacoma
 - 5. Pacific Maritime Association card, or
 - 6. Labor organization identification card
- B. Identification cards shall be visible while on the work site or easily displayed when requested.

1.02 TRANSPORTATION WORKER IDENTIFICATION CARD (TWIC) SUMMARY

- A. TWIC is required for all personnel needing unescorted access to secure and restricted areas of Port facilities subject to 33 CFR 105, including truckers, surveyors, construction personnel, and delivery personnel. Secure areas are those areas with security measures for access control in accordance with a Coast Guard approved security plan; restricted areas are those areas within a secure area that require increased limited access and a higher degree of security protection. New terminals under construction prior to terminal operations may not be designated secure areas. Construction on existing maritime transportation facilities and punchlist or other type of work requirements on facilities that have been certified under 33 CFR will require a TWIC.
- B. Contractors should allow sufficient time for application and enrollment for the security threat assessment and issuance of TWIC when submitting a bid.
- C. The APMT site is a restricted site requiring TWIC credentials for access to and within the transload site. Access to and within the Pier 4 work area limits is unrestricted and does not require TWIC credentials. TWIC is required in the event the Contractor requires access beyond the work area limits as noted in Section 01 14 00 Work Restrictions.

1.03 ESCORTING

- A. To access restricted Port facilities, all un-credentialed individuals must be accompanied by a person who has been issued a TWIC and trained as an escort.
- B. For more information, refer to the Port Security website at:
<http://portoftacoma.com/shipping/security>
- C. For project specific information, refer to 01 14 00 - Work Restrictions.

1.04 ELIGIBILITY FOR TWIC

- A. Refer to the Transportation Worker Identification Credential website at:
<https://twicprogram.tsa.dhs.gov/TWICWebApp> for information on eligibility and applying for TWIC.

1.05 1.06 TWIC USE AND DISPLAY

- A. Each worker granted unescorted access to secure areas of a facility or vessel must present their cards to authorized personnel, who will compare the holder to his or her photo, inspect security features on the TWIC and evaluate the card for signs of tampering. The Coast Guard will verify TWIC's when conducting vessel and facility inspections and during spot checks using hand-held scanners, ensuring credentials are valid.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE

- A. The accompanying Drawings and Specifications show and describe the location and type of Work to be performed under this project. Work is more specifically defined on the drawings listed in Section 00 01 15.
- B. The Work under this contract is to provide, furnish and install all labor, materials and equipment required to complete the work, installed, tested, and ready for use, and as described in these documents.
- C. The Pier 4 Phase 1 Removal Action project is being accomplished in accordance with an Administrative Settlement Agreement and Order on Consent for Time Critical Removal Action (AOC) entered into with the Environmental Protection Agency (EPA). The AOC refers to the development of a Removal Action Work Plan (RAWP) which describes in detail how and when the work is to be accomplished as well as confirmation that all contaminants have been removed. Refer to the Appendix for both of these documents.
- D. The project consists of the following elements, but this summary neither necessarily nor completely describes all work elements or potential construction features. Quantities noted below are approximate and are provided for description purposes only. The Contractor is to calculate their own quantities for bidding purposes and payment is based on price and payment section of these specifications. The Contractor shall review the entire set of contract documents and reference documents to ascertain all the contract and project requirements.
 - 1. Demolition of Existing Pier 4 Structure: The existing Pier 4 structure, approximately 133,780 square feet and including the existing bulkhead and supporting batter piles, will be demolished. This includes the existing Pier 4 deck between Bents 92 and 144 (approximately 1,040 feet). The existing fender system, asphalt pavement, ballast, utilities, and other appurtenances will be removed and as well as the existing crane beam, bull rail, and all crane appurtenances.
 - 2. Pile Extraction: Pile extraction will include removing approximately 87 14-inch-diameter creosote-treated timber fender piles; 22 20-inch diameter steel fender pipe piles; and approximately 1,210 16.5-inch-diameter concrete piles.
 - 3. Removal of approximately 2,300 cubic yards of clean light loose rip rap along the upper slope area along the pier.
 - 4. Clean Sediment Dredging: Approximately 9,000 cubic yards of clean sediment will be dredged and disposed at the Washington Department of Natural Resources Commencement Bay open water dredge material disposal site (DMMP Site).
 - 5. Contaminated Sediment Dredging: Approximately 49,000 cubic yards of material (light loose rip rap and sediment) will be dredged along the slope and toe of slope across the entire pier demolition area. Contaminated material and water will be transported to the Contractor designed transload facility located at APM Terminals for transloading.
 - 6. Transloading Operation: The contaminated water and sediment will be offloaded from the barge on to the transload site (APM Terminals) for dewatering and water treatment. This operation will include installation of necessary BMPs to facilitate the transfer of material and sediment dewatering; installation and management of an onsite water treatment system; management of stockpiles during sediment dewatering, loading and disposal of contaminated sediment to an upland landfill disposal site.

7. Miscellaneous Site Work: There is minor demolition required behind the pier bulkhead including pavement, water, power, sanitary sewer and storm drainage. Additional site work includes minor electrical improvements, temporary fencing, barriers, erosion control and storm drain outfall modifications.
8. Navigation Light Relocation: Two existing navigation lights; one located on Pier 4 and one within the Blair Waterway will be relocated to a location south of Pier 4. This work will involve installation of temporary navigation lights, 8 steel pipe pile installations and relocation of existing light structures.
9. Concrete Test Pile Installation: Upon completion of dredging activities a test pile program will be completed along the future pier alignment. This will involve manufacturing and installation of 4 concrete piles including pile driving analyzer dynamic testing, restrikes, pile removal and disposal.

1.02 LOCATION

- A. The Pier 4 demolition and dredging work is located at Husky Terminal 1101 Port of Tacoma Road, Tacoma, WA. 98421. The transload operation is located at APM Terminals 1675 Lincoln Avenue, Tacoma, WA. 98421. Refer to 01 14 00 Work Restrictions for Contractor access.

1.03 WORK PERFORMED UNDER SEPARATE CONTRACTS

- A. The Contractor shall, by way of the Engineer, familiarize itself with other contracts which have been awarded, about to be awarded or are in progress in the same or immediate area. The Contractor shall coordinate the progress of its work with the established schedules for completion and phasing.
 1. APM Terminals Shoreline Repairs
 - a. This work involves shoreline repairs along the top bank directly north of the transload site.
 2. Crack Sealing
 - a. This work will involve sealing cracks within the transload area prior to mobilization on to the transload site.
 3. Port of Tacoma Road Reconstruction
 - a. The City of Tacoma will be reconstructing Port of Tacoma Road from East 11th Street to Marshall Avenue beginning in Spring 2015 and continuing through the end of 2015. While the City will be maintaining access to businesses during construction the Contractor is alerted to potential public road detours during this period.
 4. Substation #8410 Improvements
 - a. Tacoma Power will be removing the existing 13.8kV-4.16V pad-mounted transformer at Substation #8410. Refer to Electrical Drawings for Contractor coordination requirements.

1.04 PERMITS

- A. General
 1. The Contractor shall comply with all conditions, provisions and requirements noted in all permits.
- B. Permits acquired by the Port (refer to Appendix)
 1. Waste Disposal Authorization

2. Administrative Settlement Agreement and Order on Consent for Time Critical Removal Action (pending) and Removal Action Work Plan
3. DMMP Suitability Determination
- C. Permits acquired by the Contractor
 1. Electrical Permit
- D. Site Use Authorization (Department of Natural Resources)
 1. The Site Use Authorization will be acquired by the Port in coordination with the Contractor. Refer to details associated with Contractor's responsibility discussed in Section 35 20 23.

1.05 CONTRACT TIME

- A. The Contract Time specified in Section 00 52 00 Agreement Form provides for two substantial completion milestones; one for in-water work at Pier 4 and another for the transloading operation at APMT. In-water work is defined as all Contract work occurring at the Pier 4 site. Transloading work is defined as all work occurring at the APMT site.

1.06 CONTRACTOR QUALIFICATIONS

- A. The Contractor is to note specific qualification requirements noted in Section 00 45 13 Responsibility Criteria that must be submitted within 24 hours of the apparent low bidder notification.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. This Section specifies work constraints in and around the project sites.
- B. The purpose of the limitations of construction are to ensure that the Contractor understands the requirements and limitations on its work by the specific characteristics of the Contract, schedules and conducts work in a manner consistent with achieving these purposes, and complies with the construction schedule, the specific sequence, constraints, milestones and limitations of work specified.
- C. Sequence of construction: Plan the sequence of construction to accommodate all the requirements of the specifications. The Contract Price shall include all specified requirements as described in this Section.

1.02 CONTRACTOR ACCESS AND USE OF PREMISES

- A. Husky Terminal (Pier 4)
 - 1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations or restrictions established by the Engineer.
 - 2. The Contractor shall have access to the construction site off of Port of Tacoma Road. All Contractor's employee cars and other private vehicles shall be parked off site or within the designated project work area limits as shown on Drawing No. G6.1 Constraints and Access Plan. If off site parking is utilized the Contractor, as part of its bid, shall provide necessary shuttle service to transport its employees to and from the work site.
 - 3. There are no work hours restrictions associated with this location, although the Contractor shall comply with local ordinances with regard to noise and work hour restrictions. In the event the Contractor is planning to work outside typical work hours (Monday - Friday 0700 - 1700) the Contractor is to notify the Engineer at least 3 days in advance to arrange for necessary inspection and testing as may be necessary.
 - 4. Access to and within the project work area limits at Husky Terminal is unrestricted. Husky Terminal, outside of the project work area limits, is a restricted site subject to TWIC requirements as noted in Section 00 73 63 Security Requirements. Should the Contractor require access within Husky Terminal outside of the work area limits the noted security requirements shall apply.
 - 5. For ingress/egress of specialty equipment that may be too large for the designated access route the Contractor shall make arrangements with the Engineer at least 24 hours in advance for access through the main terminal gate. This alternate access may be restricted to off terminal hours. Terminal hours are Monday - Friday 0800 to 1700. Lunch between 1200 - 1300.
- B. APM Terminals (Transload Site)
 - 1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations and restrictions established by the Engineer.

2. The Contractor shall have access to the construction site by city street and/or the Sitcum Waterway. Street access shall be at the gate located at the intersection of Sitcum Way and Milwaukee Way. All Contractor's employee cars and other private vehicles shall be parked outside the terminal and the Contractor, as a part its bid, shall provide shuttle service to transport its employees to and from the work site. Absolutely no parking of private vehicles on site is permitted. The Contractor may be required to relocate entry as required by the Engineer.
3. Once within the terminal vehicles shall follow the designated route to and from the transload area as designated on Drawing No. C2.1. The Contractor may at any time be required to alter this route as directed by APM Terminal operations to avoid terminal operation conflicts.
4. APM Terminals is an active container terminal. Terminal operations shall not be impacted by construction activities; terminal operator equipment and vehicles shall have the right-of-way at all times.
5. The Contractor can access the transload site 24 hours a day, 7 days a week with proper notification. The Contractor shall provide notification to the Engineer of off hour access requirements at least 24 hours in advance. Off hours include any hours outside of Monday - Friday 0800 to 1700.
6. APM Terminals is a restricted site, refer to Section 00 73 63 Security Requirements for information on requirements for Contractor, Subcontractors, suppliers, Manufacturing Representatives and other personnel to access the construction site.

C. Waterway Restrictions

1. The work is in a congested waterway and is surrounded by active terminals. The Contractor shall make themselves aware of the shipping schedules in the waterway and shall adjust their work accordingly; in particular the Contractor shall review the placement of equipment, anchors, anchor lines, buoys, etc. to avoid interruption or interference with marine vessel traffic in the waterway. The operations of commercial business shall have precedence over related bid items of work. The Contractor shall coordinate with Port Operations at (253) 383-9420 on a daily basis to confirm Contractor's work and scheduled ship traffic

D. Work Site Regulations (Husky Terminal and APM Terminals)

1. Keep within the limits of work and assigned avenues of ingress and egress. Do not enter any areas outside the designated work location unless previously approved by the Engineer. The Contractor must comply with the following conditions:
 - a. Restore all common areas to a clean and useable condition that permits the resumption of Tenant operations after the Contractor ceases daily work.
 - b. Be responsible for control and security of Contractor-owned equipment and materials at the work site. Report to Port Security at (253) 383-9472 any missing/lost/stolen property.
 - c. Ensure all materials, tools and equipment will be removed from the site or secured within the designated work area limits at the end of each shift.
 - d. Existing lighting within the terminals must not be effected by construction activities. Necessary temporary outages must occur during daylight hours and must be coordinated with the Engineer at least 3 working days in advance of the outage.

1.03 SCHEDULE CONSTRAINTS

- A. There are several scheduling constraints associated with various items of work as noted below. The Contractor shall consider these constraints when preparing its bid, and scheduling and performing the work, as well as the detailed requirements related to specific items of work discussed in the Removal Action Work Plan in the Appendix and within other specifications contained herein.
1. Navigation light removal may not occur until temporary navigation lights(s) are in place and operational.
 2. Pile extractions, including timber, steel and concrete piles, are restricted to occur between June 15, 2015 and February 15, 2016. (Bulkhead pile extraction is unrestricted as they are above the Ordinary High Water Mark (Elev. 12.78).
 3. Rip rap removal within the clean sediment dredge area below Ordinary High Water Mark (Elev. 12.78) is restricted to occur between July 15, 2015 and February 15, 2016.
 4. Dredging of clean sediment material is restricted to begin after rip rap removal and between July 15, 2015 and February 15, 2016.
 5. Dredging of contaminated sediment is restricted to begin after removal of clean material up slope and between August 1, 2015 and February 15, 2016.
 6. Installation of concrete test piles, navigation light steel pipe piles and temporary steel pipe piles at APMT (if necessary) are restricted to occur between the in-water work window from July 15, 2015 to February 15, 2016. Removal of concrete test piles and temporary steel pipe piles are also restricted to occur between July 15, 2015 and February 15, 2016.
 7. In addition to timing requirements noted above, the concrete test piles within the contaminated dredge prism cannot be installed until after completion of contaminated dredging and confirmation that the contaminated materials at those locations have been removed. Refer to Section 35 20 23 Dredging for confirmation sampling approach.
 8. The Contractor may not mobilize on to the APMT transload site until July 1, 2015 or 30 calendar days prior to contaminated dredging activities, whichever is later.
- B. Electrical Work Restriction
1. The electrical work noted on Drawing E3.2 Electrical Plan Sheet 1 where conduit is installed to the existing high mast light pole #WYL04 falls outside of the work area limits. The work outside of the work area limits is restricted occur within 5 calendar days to minimize disruption to terminal operations. The Contractor is to install a temporary fence around this area and maintain a continuous ingress/egress route to the marine building. The Contractor is required to coordinate with the Engineer at least 7 calendar days prior to beginning of this work.
- C. Throughout the specifications the Contractor is directed to adherence to requirements within the RAWP, included in the Appendix. Within the RAWP under Section 9 Project Schedule and Post-Construction Reporting is a discussion of work sequencing associated with the main components of work including estimated durations and start dates. These dates and durations were estimated by the Port for project planning purposes only and to facilitate communication with EPA. The Contractor is to develop his own work schedule that complies with the basic work restrictions identified above.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General and Supplemental Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications.
- B. Individual submittals are required in accordance with the pertinent sections of these Specifications

1.02 PAYMENT PROCEDURES

- A. Monthly pay estimates shall clearly identify the work performed for the given time period based on the Contractor's submitted bid or the approved schedule of values, as determined by the Engineer.
 - 1. At the Pre-construction meeting, the Engineer and the Contractor shall agree upon a date each month when DRAFT payment applications shall be submitted.
- B. Prior to submitting a payment application, the Contractor and Engineer shall meet each month to review the work accomplished to determine the actual quantities or percentage of work completed to be billed for that month. The Contractor shall bring a copy of all documentation to the payment application meeting.
- C. Following the meeting with the Engineer, the Contractor shall submit a 'DRAFT' payment application to the Engineer in accordance with Section 01 33 00 - Submittal Procedures.
 - 1. The Contractor shall submit to the Engineer all measurement documentation as referenced in these Contract documents; to include all measurement by weight, volume or field.
 - 2. For all change work being done on a force account basis, the Contractor shall submit all Force Account back-up documentation as required to process the payment application where Force Account work is being billed.
 - 3. Submit with the DRAFT payment application the following:
 - a. An estimated cash flow statement projecting the Contractor's monthly billings.
 - b. A list of subcontractors and suppliers used for the period covered by the payment application.
- D. Following the Engineer's review and final approval, the Engineer will approve the DRAFT payment application under the submittal process and then forward to the Contractor the 'Certification of Payment Form' for the Contractor's signature.
- E. The Contractor shall sign the 'Certification of Payment Form' and submit it electronically using Adobe PDF file format to the Port at cpinvoices@portoftacoma.com.

1.03 PAYMENT PRICING

- A. Pricing for the various lump sum or unit prices in the Bid Form, as further specified herein, shall include all compensation to be received by the Contractor for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of work being described, as necessary to complete the various items of the work in accordance with the requirements of the Contract Documents.
- B. Pricing also includes all costs of compliance with the regulations of public agencies having jurisdiction, including safety and health requirements of the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).

- C. No separate payment will be made for any item that is not specifically set forth in the Bid Form, and all costs therefore shall be included in the prices named in the Bid Form for the various appurtenant items of work.
- D. All other work not specifically mentioned in the measurement and payment sections identified below shall be considered incidental to the work performed and merged into the various unit and lump sum prices bid. Payment for work under one item will not be paid for under any other item.
- E. The Port of Tacoma reserves the right to make changes should unforeseen conditions necessitate such changes. Where work is on a unit price basis, the actual quantities occasioned by such changes shall govern the compensation.

1.04 LUMP-SUM MEASUREMENT

- A. Lump-sum measurement will be for the entire item, unit of Work, structure, or combination thereof, as specified and as indicated in the Contractor's submitted bid.
 - 1. If the Contractor requests progress payments for lump-sum items, such progress payments will be made in accordance with an approved schedule of values. The quantity for payment for completed work shall be an estimated percentage of the lump sum amount, agreed to between the Engineer and Contractor, payable in monthly progress payments in increments proportional to the work performed in amounts as agreed between the Engineer and the Contractor.

1.05 REJECTED, EXCESS, OR WASTED MATERIALS

- A. Quantities of material wasted or disposed of in a manner not called for under the Contract; rejected loads of material, including material rejected after it has been placed by reasons of the failure of the Contractor to conform to the provisions of the Contract; material not unloaded from the transporting vehicle; material placed outside the lines indicated on the Contract Drawings or established by the Engineer; or material remaining on hand after completion of the Work, will not be paid for, and such quantities shall not be included in the final total quantities. No additional compensation will be permitted for loading, hauling, and disposing of rejected material.

1.06 MEASUREMENT AND PAYMENT

- A. Item # 1: MOBILIZATION AND DEMOBILIZATION
 - 1. Payment for MOBILIZATION AND DEMOBILIZATION shall be for preparatory work and operations performed by the Contractor including, but not limited to, those necessary for the movement of its personnel, equipment, supplies and incidentals to and from the Pier 4 project site and the APMT Transload site; for the establishment, maintenance and removal of field offices, buildings and other facilities necessary for work on the project; temporary facilities and controls; for premiums on bonds and insurance for the project, for other work and operations which it must perform or costs it must incur before beginning production work on the various items on the project site, and for removal of personnel, equipment, supplies, offices, building facilities, sheds, fencing, and other incidentals from the site.
 - 2. MOBILIZATION AND DEMOBILIZATION shall be paid at the lump sum price listed in the Contractor's submitted bid. Incremental payment shall be made for each location as follows:
 - a. 40% after completion of 5% of the total contract amount of other bid items have been earned.

- b. 40% after completion of 20% of the total contract amount of other bid items have been earned.
- c. 20% after completion of all work on the project has been completed, including cleanup and acceptance of the project by the Port.

B. Item # 2: PROJECT ADMINISTRATION

- 1. Payment for PROJECT ADMINISTRATION shall be full compensation for all administrative costs associated with administering and supervising the project including supervision of personnel, coordination of all work activities, coordination of subcontractors and/or suppliers, preparation and transmittal of submittals, permit acquisitions, and project overhead.
- 2. PROJECT ADMINISTRATION will be paid at the lump sum price listed in the bid form. Incremental payment for completed work shall be a percentage, determined by the Engineer in accordance with the schedule of values, payable in monthly progress payments, proportional to the work completed.

C. Item # 3: FIELD ENGINEERING

- 1. Payment for FIELD ENGINEERING shall be full compensation for verifying survey reference points, completion of progress surveys and pre and post-dredge surveys (including interim post-dredge surveys) as described in these Specifications. This includes land-based and hydrographic surveys; survey data processing; and preparation and submittal of all required surveys and calculations in the formats noted herein. This bid item does not include additional post-dredge surveys that may be required to document ADDITIONAL DREDGING.
- 2. FIELD ENGINEERING will be paid at the lump sum price listed in the bid form. Incremental payment for completed work shall be a percentage, determined by the Engineer in accordance with the schedule of values, payable in monthly progress payments, proportional to the work completed.

D. Item # 4: DEMOLITION

- 1. Payment for DEMOLITION shall be full compensation for all pier, upland and utility demolitions as noted on the Drawings. This item includes, but is not limited to set up, operation, and demobilization of any processing equipment and containment measures used to further reduce demolished items for handling, transport, or recycling purposes including asbestos, lead hazard control and fugitive dust control; sawcutting, removal, and disposal of the asphalt pavement and ballast; removal and disposal of the fender system, superstructure, piles and appurtenances of Pier 4; removal and disposal of existing water, storm drain, sewer, communications and electrical utilities; installation, maintenance, and removal of temporary structures and measures, as required, to ensure no debris or other construction materials fall into the water or land on the slope.
- 2. DEMOLITION will be paid at the lump sum price listed in the bid form. Incremental payment for completed work shall be a percentage, determined by the Engineer in accordance with the schedule of values, payable in monthly progress payments, proportional to the work completed.

E. Item # 5: CLEAN MATERIAL DREDGING AND DISPOSAL

1. Payment for CLEAN MATERIAL DREDGING AND DISPOSAL shall be full compensation for removal and open water disposal of clean soil and sediment material as noted on the Drawings. This item includes, but is not limited to implementation of required best management practices; dredging/excavation of clean material; loading into barges; transport and disposal of material in open water; and compliance, coordination and reporting requirements associated with open water disposal.
2. CLEAN MATERIAL DREDGING AND DISPOSAL will be paid at the cubic yard unit price listed in the bid form. Measurement will be based on a neat-line dredge-cut volume calculation comparing the post-dredge survey after removal of clean rip rap to the post-dredge survey performed after the removal of clean material. Incremental payment for completed work shall be determined by the Engineer upon review of Progress Surveys and calculation, payable in monthly progress payments. No compensation will be provided for dredging below the Payable Over-dredge Depth as noted in Section 35 20 23 - Dredging.

F. Item # 6: CONTAMINATED MATERIAL DREDGING

1. Payment for CONTAMINATED MATERIAL DREDGING shall be full compensation for dredging contaminated material consisting of water, sediment, rip rap and debris and placing it in water-tight barges for transport to the transloading site. This item includes, but is not limited to implementation of the required best management practices; water quality monitoring; outfitting equipment as required; fabrication and installation of hot spot silt curtain; contaminated material dredging and loading into barges; and incidental Standby Time as defined in Section 35 20 23 - Dredging.
2. CONTAMINATED MATERIAL DREDGING will be paid at the cubic yard unit price listed in the bid form. Measurement will be based on a neat-line dredge-cut volume calculation comparing the pre-dredge survey and post-dredge survey performed upon completion of the clean material dredging to the Final Post-Dredge Survey. Incremental payment for completed work shall be determined by the Engineer upon review of Progress Surveys and calculation, payable in monthly progress payments. No compensation will be provided for dredging below the Payable Over-dredge Depth as noted in Section 35 20 23 - Dredging.

G. Item # 7: TRANSLOAD OPERATION

1. Payment for TRANSLOAD OPERATION shall be full compensation for establishment and management of the transload facility and operation for the transfer, treatment and disposal of contaminated water and the transfer of contaminated sediment, rip rap, and debris to an upland landfill. This item includes, but is not limited to implementation of the required best management practices; removal of existing curb stops; installation of temporary facilities necessary for the transload operation including fences, ecology blocks, wheel wash, utility connections, and containment measures; modifications to the existing storm drainage system; installation of fender system and pier protective measures; transporting barges from Pier 4 to the transload site; transferring contaminated sediment and water from the barge to transload area; design, installation, operation, maintenance, monitoring and reporting of the water treatment system; contaminated sediment stockpiling rehandling, dewatering and management of process water; loading, and hauling of contaminated material to a landfill; site restoration including installation of curb stops and striping; and site cleanup.

2. TRANSLOAD OPERATION will be paid at the cubic yard unit price listed in the bid form. Measurement will be based on the neat-line dredge-cut volume paid for under the CONTAMINATED MATERIAL DREDGING bid item. Incremental payment for completed work shall be determined by the Engineer upon review of Progress Surveys and calculation, payable in monthly progress payments.
3. In the event that Additional Dredging is required, this bid item shall be used to compensate the Contractor for costs associated with transloading additional dredge water and material per the unit price listed in the bid form. Measurement will be based on a neat-line dredge-cut volume calculation performed to measure Additional Dredging.

H. Item # 8: RELOCATE NAVIGATION LIGHTS

1. Payment for RELOCATE NAVIGATION LIGHTS shall be full compensation for the removal and relocation of two navigation lights. This work shall include, but is not limited to fabrication and installation of temporary navigation light(s); extraction and disposal of existing steel piles; furnish and installation of steel pipe piles; removal, protection and installation of existing lights, towers and tower platform; furnish and installation of new tower platform; and coordination with the Puget Sound Pilots and the US Coast Guard. Payment shall include compensation for all required Contractor performed maintenance of temporary and permanent navigation systems for the full period of the Contract.
2. RELOCATE NAVIGATION LIGHTS will be paid at the lump sum price listed in the bid form. Incremental payment for completed work shall be a percentage, determined by the Engineer in accordance with the schedule of values, payable in monthly progress payments, proportional to the work completed.

I. Item # 9: TEST PILE INSTALLATION

1. Payment for TEST PILE INSTALLATION shall be full compensation for the fabrication and installation of concrete test piles as shown on the Drawings and within these Specifications. This item includes, but is not limited to the manufacturing and delivery of the 24-inch octagonal prestressed concrete piles; handling, driving and restriking piles; performing PDA and dynamic pile analysis testing and reporting for initial driving and restrikes; and concrete pile extraction and disposal.
2. TEST PILE INSTALLATION will be paid at the per each unit price listed in the bid form.

J. Item # 10: ADDITIONAL DREDGING

1. Payment for ADDITIONAL DREDGING shall be full compensation for additional dredging that may be required as a result of confirmation sediment sampling. This bid item will include the necessary tools, labor, equipment, materials and appurtenances necessary to dredge the contaminated material as directed by the Engineer and load it into the barge for transport to the transload site as discussed in Section 35 20 23 Dredging. Payment for transport, transloading, water treatment and disposal are included under the TRANSLOAD OPERATION bid item. This entire bid item may or may not be used.
2. ADDITIONAL DREDGING will be paid at the per day unit price listed in the bid form.

K. Item # 11: STANDBY TIME

1. Payment for STANDBY TIME shall be full compensation for additional standby time beyond that considered incidental to dredging of contaminated material as noted in Section 35 20 23 - Dredging. This bid item includes additional costs to maintain the dredging equipment on site while waiting for additional confirmation sampling results as directed by the Engineer. See Section 35 20 23 - Dredging for additional information regarding the start and end of Standby Time. This entire bid item may or may not be used.
2. Payment for STANDBY TIME will only be for time periods determined by the Engineer to be periods requiring the Contractor to standby dredging equipment during which time other dredge work could not be accomplished. If dredging equipment is utilized for other work during this additional standby period it will not be eligible for standby compensation under this bid item.
3. STANDBY TIME will be paid at the per day unit price listed in the bid form. This item will be measured by the day composed of a single 24-hour period beginning at the hour that standby is initiated. Partial payment of this bid item will be considered in the event some of the dredging equipment is utilized elsewhere on the contract.

L. Item # 12: HOT SPOT FILL

1. Payment for HOT SPOT FILL shall be full compensation for placement of clean sediment fill within a designated area as directed by the Engineer. This work shall include, but is not limited to implementation of the required BMPs; water quality monitoring; outfitting of equipment as required; importing clean sediment fill and placement of that material in areas within the designated hot spot as shown on the Drawings. This entire bid item may or may not be used.
2. HOT SPOT FILL will be paid at the cubic yard unit price listed in the bid form. Measurement will be based on a neat-line volume calculation at the fill area comparing the Post-Dredge Survey and the Additional Dredge Survey that will be completed upon placement of the fill material.

M. Item #13: ALL OTHER WORK

1. Payment for ALL OTHER WORK shall be full compensation to comply with the contract provisions and complete the work, as shown on the Drawings and as defined the specifications, that is not specifically identified or included in other bid items described in this section. This includes, but is not limited to temporary fencing, barriers and signage; traffic control, flaggers and spotters; health and safety requirements; temporary erosion and sediment control; stormwater pollution control requirements; upland dewatering; bank protection; electrical, communications and water improvements; clean rip rap removal and disposal; stormwater outfalls improvements; trench excavation and safety; earthwork; permanent barriers and asphalt pavement; and project closeout.
2. ALL OTHER WORK will be paid at the lump sum price listed in the bid form. Incremental payment for completed work shall be a percentage, determined by the Engineer in accordance with the schedule of values, payable in monthly progress payments, proportional to the work completed.

N. Item #14 - UNFORESEEN CONDITIONS ALLOWANCE

1. This allowance will be for UNFORESEEN CONDITIONS for work unidentified at the time of bid and will be paid preferably as negotiated unit price(s) or lump sum(s). If unit prices or lump sums cannot be established, work will be paid on a time and material basis per Section 00 72 00 General Conditions Article 8.0. Work under this bid item will be accomplished upon written direction of the Engineer as a Minor Change in Work. This entire bid item may or may not be used.
2. UNFORESEEN CONDITIONS ALLOWANCE will be paid at the price agreed upon for each Minor Change in Work issued by the Engineer. The measurement for payment will depend upon the method agreed upon for each Minor Change issued. For longer duration changes incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions, Supplementary Conditions and Division 0 and 1 Specifications sections shall apply to all sections of the Contract Documents including specifications, drawings, addenda or other changes of documents issued for bidding/construction.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for substitutions.

1.03 DEFINITIONS

- A. Substitutions: Changes in products, materials, equipment and methods of construction from those required by the Contract Documents and proposed by Contractor.
- B. The contract documents include performance specifications for products and equipment which meet project requirements. In those cases where a representative item or manufacturer is named in the specification it is provided for the sole purpose of identifying a product meeting the required functional performance. Where the words "or equal" are used a substitution request as further described is not required.
- C. Where non-competitive or sole source products or manufacturers are explicitly specified with the words "or approved equal", or "Engineer approved equal", or "as approved by the Engineer" are used, they shall be taken to mean "or approved equal". In these cases a substitution request as further described in this section, is required.

1.04 SUBMITTALS

- A. Post-Award Substitution Requests: Submit a substitution request as defined in 01 33 00 – Submittal Procedures. All substitution requests must be submitted by the Contractor and not a subcontractor or supplier.
 - 1. Substitution Request Form: Use a copy of form located in Section 00 43 25.
 - 2. Documentation: Show compliance with requirements for substitutions with the following, as applicable:
 - a. Statement indicating why specified product or fabrication or installation cannot be provided, if applicable.
 - b. Coordination information, including a list of changes or modifications needed to other parts of the Work that will be necessary to accommodate proposed substitution.
 - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable specification section. Significant qualities may include, but are not limited to, attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified. -
 - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
 - e. Samples, where applicable or requested.
 - f. Certificates and qualification data, where applicable or requested.

- g. List of similar installations for completed projects with project names, and addresses. Also provide names and addresses of the AE and Owners.
 - h. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
 - i. Research reports evidencing compliance with building code in effect for project
 - j. Comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
 - k. Cost information, including a proposal of change, if any, in the Contract Sum.
 - l. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
 - m. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Engineer's Action: If necessary, Engineer will request additional information or documentation for evaluation within 7 calendar days of receipt of a request for substitution. Engineer will notify Contractor through Port of acceptance or rejection of proposed substitution within 15 calendar days of receipt of request, or 7 calendar days of receipt of additional information or documentation, whichever is later.
- a. Forms of Acceptance: Change Order or Minor Change in Work.
 - b. Use product originally specified if Engineer does not issue a decision on use of a proposed substitution within time allocated.
- B. Substitutions will not be considered when:
- 1. Indicated or implied on shop drawings or product data submittals without formal request submitted in accordance with this Section.
 - 2. Submittal for substitution request has not been reviewed and approved by Contractor.
 - 3. Acceptance will require substantial revision of Contract Documents or other items of the Work.
 - 4. Submittal for substitution request does not include point-by-point comparison of proposed substitution with specified product.

1.05 QUALITY ASSURANCE

- A. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage qualified testing agency to perform compatibility tests recommended by manufacturers.

PART 2 - PRODUCTS

2.01 SUBSTITUTIONS

- A. Substitutions for Cause: Submit requests for substitution immediately upon discovery of need for change, but not later than 30 calendar days prior to date required for preparation and review of related submittals.

1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - b. Requested substitution will not adversely affect Contractor's construction schedule.
 - c. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - d. Requested substitution is compatible with other portions of the Work
 - e. Requested substitution has been coordinated with other portions of the Work
 - f. Requested substitution provides specified warranty.
 - g. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- B. Substitutions for Convenience: Engineer will consider Contractor's requests for substitution if received within 60 calendar days after the Notice of Award.
 1. Conditions: Engineer will consider Contractor's request for substitution when the following conditions are satisfied:
 - a. Requested substitution offers Port a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Port must assume. Port's additional responsibilities may include compensation to Engineer for redesign and evaluation services, increased cost of other construction by Port, and similar considerations.
 - b. Requested substitution does not require extensive revisions to the Contract Documents.
 - c. Requested substitution is consistent with the Contract Documents and will produce indicated results.
 - d. Requested substitution will not adversely affect Contractor's construction schedule.
 - e. Requested substitution has received necessary approvals of authorities having jurisdiction.
 - f. Requested substitution is compatible with other portions of the Work.
 - g. Requested substitution has been coordinated with other portions of the Work.
 - h. Requested substitution provides specified warranty.
 - i. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for handling and processing Contract modifications.

1.03 SUBMITTALS

- A. The Contractor shall submit the following documentation to the Port:
 - 1. List of Labor Rates
 - a. For the Contractor and each subcontractor, a list of labor rates for each trade applicable to the scope of work to be performed. These submitted rates shall be broken down to include the base wage, fringes, FICA, SUTA, FUTA, industrial insurance and medical aid premiums as stated in the General Conditions. The rates shall not contain any travel time, safety, loss efficiency factors, overhead or profit. Rates shall be submitted for straight time, overtime and double time in a form acceptable to the Engineer. Contractor shall provide proof of all labor rate costs as required by the Engineer including the submission of a copy of the most current Workers Compensation Rate Notice from Labor & Industries and a copy of the Unemployment Insurance Tax Rate notice from the Employment security department.
 - 1) If labor rates change during the course of the project or additional labor rates become required to complete the work, the Contractor shall submit new rates for approval.
 - 2. List of Equipment.
 - a. Submit for the Contractor and each subcontractor, a list of equipment and rates applicable to the scope of work to be performed. The equipment rates shall conform to the rates shown on Equipment Watch. A separate page from equipment watch detailing the hourly rate shall be submitted as backup documentation for each piece of equipment.
 - 1) If the list of equipment and/or equipment rates changes during the course of the project or additional equipment becomes required to complete the work, the Contractor shall submit a new list and rates for approval.

1.04 METHOD TO CALCULATE ADJUSTMENTS TO CONTRACT PRICE

- A. One of the following methods shall be used:
 - 1. Unit Price Method;
 - 2. Firm Fixed Price Method (Lump Sum); or,
 - 3. Time and Materials Method (Force Account).
- B. The Port preferred methods are firm fixed price or unit prices.

1.05 MINOR CHANGES IN THE WORK

- A. Engineer will issue a written directive authorizing minor changes in the Work, not involving adjustment to the Contract Sum or the Contract Time.

1.06 PROPOSAL REQUESTS

- A. Port-Initiated Proposal Requests: The Engineer will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
1. Work Change Proposal Requests issued by Engineer are not instructions either to stop work in progress or to execute the proposed change.
 2. Contractor shall submit a written proposal within the time specified in the General Conditions. The proposal shall represent the Contractor's offer to perform the requested work, and the pricing set forth within the proposal shall represent full, complete, and final compensation for the proposed change and any impacts to any other Contract Work, including any adjustments in the Contract Time.
 - a. Include a breakdown of the changed work in sufficient detail that permits the Engineer to substantiate the costs.
 - 1) Generally, the cost breakdown should be divided into the time and materials categories listed in the General Conditions under Article 8.02B for either Lump Sum Proposals or Force Account Proposals.
 - 2) For Unit Price Proposals, include the quantity and description of all work involved in the unit pricing being proposed, along with a not to exceed total cost.
 - b. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or differing site conditions require modifications to the Contract, the Contractor may initiate a claim by submitting a request for a change to the Engineer.
1. Notify the Engineer immediately upon finding differing conditions prior to disturbing the site.
 2. Provide follow-up written notification and differing site conditions proposal within the time frames set forth in the General Conditions.
 3. Provide the differing site condition change proposal in the same or similar manner as described above under 1.04.A.
 4. Comply with requirements in Section 01 25 00 Substitution Procedures During Construction if the proposed change requires substitution of one product or system for product or system specified.
 5. Proposal Request Form: Use form acceptable to Engineer.

1.07 PROCEEDING WITH CHANGED WORK

- A. The Engineer may issue a directive instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order per the General Conditions, Article 8.01.E.
1. The directive will contain a description of change in the Work and a not-to exceed amount. It will designate the method to be followed to determine the change in the Contract Sum or the Contract Time.

1.08 CHANGE ORDER PROCEDURES

- A. Issuance of Change Order

1. On approval of the Contractor's proposal, and following successful negotiations, the Engineer will issue a Change Order for signature by the Contractor and execution by the Engineer.
 - a. The Contractor shall sign and return the Change Order to the Engineer within **four (4) days** following receipt of the Change Order from the Engineer. If the Contractor fails to return the signed Change Order within the allotted time, the Engineer may issue a Unilateral Change Directive.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

- A. This section includes specifications for preparation, format, and submittal of Schedule of Values.
- B. The Schedule of Values will establish unit prices for individual items of work.
- C. The Schedule of Values will be the basis for payment of contract work.

1.02 PREPARATION

- A. To facilitate monthly pay requests, develop the Schedule of Values based on the Contractor's submitted Bid. The schedule of Values shall be used to provide an allocation of the Work for measurement and payment to a level of detail to ensure accurate payment for the Work accomplished.
- B. Obtain the agreement of the Engineer on the Schedule of Values. No payment will be made prior to an agreed upon Schedule of Values.
- C. Include an updated version of the Schedule of Values as changes occur. Update the Schedule of Values to include:
 - 1. Dollars earned and percent complete for the current progress payment period.
 - 2. Dollars earned and percent complete to-date, excluding the current progress payment period.
 - 3. Total dollars earned and percent complete to-date.
 - 4. Total dollars remaining
 - 5. Changes resulting from Change Orders
- D. The total value of the line items in the Schedule of Values plus any approved Change Orders shall be equal to the current approved contract price.
- E. The value of stored material shall be identified in the Schedule of Values with both a material-purchase activity and a separate corresponding installation activity in the Construction Schedule(s).
- F. Include as exhibits, drawings or sketches as necessary, to better define the limits of pay items that are in close proximity and that have no clear boundary in the Contract Drawings.

1.03 SUBMITTAL

- A. Submit preliminary Schedule of Values within 10 days of the effective date of the Notice to Proceed.
- B. Submit corrected Schedule of Values within 10 days upon receipt of reviewed Schedule of Values.
- C. At the Engineer's request, submit documentation substantiating the cost allocations for line items within the Schedule of Values.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SCHEDULE OF VALUES

- A. Submit the Schedule of Values in a form acceptable to the Engineer.

- B. Provide updated Schedule of Values as required by the Engineer and as indicated in the Contract Documents.

END OF SECTION

PART 1 - GENERAL

1.01 SCOPE

- A. The purpose of this section is to provide the framework for communication between the Port and the Contractor by defining the types and timing of administrative tasks including meetings and other items related to communications.

1.02 NOTICE TO PROCEED

- A. Contract execution will be made per the requirements of the Contract Documents. Once the contract has been executed and all pre-work submittals have been received, the Engineer will issue a Notice to Proceed (NTP).
 - 1. In certain instances, the Engineer may issue to the Contractor a Limited NTP for specified elements of the work described in these Contract Documents.
- B. The Contractor shall submit all pre-work submittals within 10 days of contract execution.
 - 1. A list of all pre-work submittals required for NTP is noted below.
 - 2. No contract time extension shall be granted for any delays in issuance of the NTP by the Engineer due to the Contractor's failure to provide acceptable submittals required by the Contract Documents.

1.03 PRE-WORK SUBMITTALS

- A. List of Contractor and Subcontractor personnel per Section 00 73 63 Security Requirements
- B. List of emergency contacts
- C. Project Schedule per Section 01 32 16 Construction Progress Schedule
- D. Submittal Log per Section 01 33 00 Submittal Procedures
- E. Health & Safety Plan per Section 01 35 29 Health, Safety and Emergency Response Procedures

1.04 COORDINATION

- A. The Contractor shall coordinate all its activities through the Engineer.
- B. The Contractor shall coordinate construction operations as required to execute the Work efficiently, to obtain the best results where installation of one part of the Work depends on other portions.

1.05 PROJECT MEETINGS

- A. Pre-Construction Meeting
 - 1. After execution of the contract but prior to commencement of any work at the site, a mandatory one time meeting will be scheduled by the Engineer to discuss and develop a mutual understanding relative to the administration of the safety program, preparation of the schedule of values, change orders, RFI's, submittals, scheduling prosecution of the work.
 - 2. Suggested Agenda: The agenda will include items of significance to the project.
 - 3. Location of the Pre-Construction Meeting will be held at the Port of Tacoma Administration Building located at One Sitcum Plaza.

4. Attendance shall include representatives from the Port, EPA, design and environmental consultants, Husky Terminal and the Contractor. The Contractor representatives shall include at a minimum the Project Manager, Superintendent/Foreman, and Major Subcontractors.
- B. Weekly Progress Meetings – Progress meetings include the Contractor, Engineer, consultants and others affected by decisions made.
 1. The Engineer will arrange meetings, prepare standard agenda with copies for participants, preside at meetings, record minutes and distribute copies within ten working days to the Contractor, meeting participants, and others affected by decisions made.
 2. Attendance is required for the Contractor's job superintendent, major subcontractors and suppliers, Engineer, and representatives of the Port as appropriate to the agenda topics for each meeting.
 3. Standard Agenda
 - a. Review minutes of previous meeting.
 - b. Review of work progress.
 - c. Discussion of field observations and issues.
 - d. Identification of problems that impede planned progress.
 - e. Review of Progress Schedule (3 weeks ahead; 1 week back) provided by the Contractor.
 - f. Corrective measures to regain projected schedules.
 - g. Review and discussion of submittal, RFI and change order proposal logs.
 - h. Coordination requirements for upcoming work week.
 - i. Review of project safety procedures
 - j. Demonstration that the project record drawings are up-to-date.
 - k. Other business relating to the work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION

- A. The Port and Contractor shall use the Port Contract Management application (Oracle Primavera Contract Management 13, herein after referred to as PCM) for electronic information exchange throughout the duration of the Contract as later described.
- B. PCM is a web-based application accessed through the Port's web portal, "PoT Connect" (herein after referred to as Connect).
 - 1. A Non-Disclosure Agreement (NDA) must be completed by the Contractor for each individual requesting PCM access through the Connect site.
 - 2. The Contractor will receive separate user accounts for access to both the Port network (Connect), and PCM for each individual with an Port approved NDA.
- C. The joint use of this system is to facilitate and coordinate the electronic exchange of Requests for Information, Submittals, and project specific correspondence.

1.02 USER ACCESS LIMITATIONS

- A. Access to the Connect and PCM is granted by the Engineer.
- B. Contractor's access to PCM is controlled by the Engineer.
 - 1. The user assigned by the Contractor to use PCM shall be competent and experienced with the practices commonly employed in the industry for electronically submitting requests for information, submittals, product data, shop drawings and related items as required by the contract and the methods commonly used for project correspondence transmission and filing.
 - 2. Any user assigned by the Contractor whom the Engineer determines is incapable of performing the prescribed tasks in an accurate, competent and efficient manner will be removed upon request from the Engineer. The qualifications and identity of a replacement user shall be submitted within 24 hours for consideration by the Engineer. Once accepted by the Engineer, the replacement user shall follow the NDA requirements of section 1.01B above and begin using PCM.

1.03 CONTRACTOR COMPUTER HARDWARE REQUIREMENTS

- A. The Contractor is responsible for providing and maintaining the following:
 - 1. Hardware and integrated software capable of running one of the following personal computer operating systems; Microsoft Windows XP, Win7, or Linux which fully supports the Java Runtime Environment (JRE).

1.04 CONTRACTOR COMPUTER SOFTWARE REQUIREMENTS

- A. The Contractor is responsible for providing and maintaining the following:
 - 1. A personal computer OS such as Microsoft Windows XP, Win7, or Linux that fully supports the Java Runtime Environment (JRE) 1.6.0-31 in the web browser.
 - 2. A web browser such as Microsoft Explorer 9 for Windows XP through Win 8, Mozilla Firefox, Google Chrome or Opera for Windows XP and Win 7 or Linux for gaining access to Connect and PCM. Microsoft Windows 8 and 8.1 have limited support at this time.
 - 3. An office suite that is Microsoft Office 2010 compatible for generation and manipulation of correspondence.

4. A program capable of editing, annotating and manipulating Adobe pdf files for inserting the Contractor's review stamp, clouding and adding notation to the files as necessary for review by the Engineer.
5. IT support capable of making, maintaining and troubleshooting connection to Connect and PCM and ensuring all computers are JAVA compatible.

1.05 CONTRACTOR RESPONSIBILITY

- A. Provide all the equipment, internet connections, software, personnel and expertise required to support the use of PCM as described in the Contract documents.
- B. Provide personnel competent in the use of PCM.

1.06 PORT RESPONSIBILITY

- A. Provide the Contractor with all forms necessary for application to obtain permissions to access the Port network as described above.
- B. Provide information, basic user guides and requirements on methods for using Connect and following Port specific PCM procedures.
- C. Provide the Contractor with the user accounts to access Connect and PCM.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 UTILIZATION OF PCM

- A. The Contractor shall provide required information in a timely manner that also supports the project schedule and meets the requirements of the Contract.
- B. The Contractor shall provide and maintain competent and qualified personnel to perform the various tasks required to support the work within PCM which may include, but not be limited to the following Modules:
 1. Communication Module for Correspondence Received, RFI's and Transmittals
 2. Logs Module for Submittals Packages, Submittals and Punch Lists
- C. The Port will not be liable for any delays associated from the usage of Connect or PCM including, but not limited to: slow response time, Port maintenance and off-line periods, connectivity problems or loss of information. Under no circumstances shall the usage of the Port web portal or PCM software be grounds for a time extension or cost adjustment to the contract.

END OF SECTION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preliminary schedule.
- B. Construction progress schedule, bar chart type.

1.02 RELATED SECTIONS

- A. Section 01 10 00 - Summary: Work sequence.
- B. Section 01 14 00 - Work Restrictions

1.03 REFERENCES

- A. M-H (CPM) - CPM in Construction Management - Project Management with CPM, O'Brien, McGraw-Hill Book Company; 2006.

1.04 SUBMITTALS

- A. Within 10 days after date of Agreement, submit preliminary baseline schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.
- B. If preliminary baseline schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary baseline schedule, submit draft of proposed complete schedule for review.
- D. Submit updated schedule with each Application for Payment.

1.05 QUALITY ASSURANCE

- A. Scheduler: Contractor's personnel or specialist Consultant specializing in CPM scheduling with one years minimum experience in scheduling construction work of a complexity comparable to this Project, and having use of computer facilities capable of delivering a detailed graphic printout within 48 hours of request.

1.06 SCHEDULE FORMAT

- A. The baseline project schedule shall be produced using the Critical Path Method (CPM) format and shall be submitted on CD-ROM.
- B. Shall be produced using scheduling software that is fully compatible with Microsoft Project or P6.
- C. Sheet Size: Multiples of 8-1/2 x 11 inches (216 x 280 mm).

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 BASELINE SCHEDULE

- A. Prepare preliminary schedule in the form of a horizontal bar chart.
- B. The baseline project schedule shall include all the activities listed in the Schedule of Values and be directly related to items listed in the Bid Form. The Contractor is encouraged to add sufficient activities to facilitate a clear understanding of the means and methods planned for the various work items.

- C. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction. At a minimum it shall include and show the following:
 - 1. A time scale showing the elementary work items needed to complete the work.
 - 2. Estimated time durations for each activity, defined as any single identifiable work step within the project.
 - 3. A graphical network diagram showing the logical sequence of activities, their precedence relationships, and estimated float or leeway available for each.
 - 4. The different categories of work as distinguished by crew requirements, equipment requirements, and construction materials.
 - 5. The different areas of responsibility, such as distinctly separate or subcontracted work, and identifiable subdivisions of work such as structural, electrical, civil, mechanical, etc.
- D. It shall be maintained and updated as necessary to accurately reflect past progress and the most probable future progress
- E. Activities shown shall include submittals, milestones, sufficient task breakdown for major components of work.
- F. Identify work of separate stages and other logically grouped activities.
- G. Provide sub-schedules to define critical portions of the entire schedule.
- H. Provide separate schedule of submittal dates for shop drawings, product data, and samples, owner-furnished products, Products identified under Allowances, and dates reviewed submittals will be required from Architect. Indicate decision dates for selection of finishes.

3.02 PROGRESS SCHEDULE

- A. From the regularly-maintained baseline project schedule, progress schedules showing a three-week look-ahead, one-week look-back, shall be submitted and distributed at the weekly meetings. The progress schedule shall represent a practical plan to complete the work shown within the contract work window presented. At a minimum, the presentation, typically a Gantt-style chart, shall convey the task durations, a logical work sequence, task interdependencies, and identify important or critical constraints.
- B. Submittal and distribution of progress schedules will be understood to be the Contractor's representation that the scheduled work meets the requirements of the contract documents and that the work will be executed in the manner and sequence presented, and over the durations indicated.
- C. The scheduling, coordination, and execution of construction in accordance with the contract documents are the responsibility of the Contractor. The Contractor shall involve, coordinate, and resolve scheduling with all subcontractors, material suppliers, or others affected in development of the progress schedules.
- D. The progress schedule shall be used for coordination purposes for inspection and testing purposes as well as validation of work progress against the baseline schedule.

3.03 UPDATING SCHEDULE

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision, with projected completion date of each activity.

- C. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- D. Indicate changes required to maintain Date of Substantial Completion.
- E. Submit reports required to support recommended changes.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions apply to this work as if specified in this section. Work related to this section is described throughout these Specifications
- B. Individual submittals required in accordance with the pertinent sections of these specifications. Other submittals may be required during the course of the project and are considered part of the normal work to be completed under the Contract.

1.02 SUBMITTAL LOG

- A. Contractor shall, within 10 days prepare and submit for Engineer approval a detailed log of all the submittals required under this Contract, along with any other submittals identified by the Port or Contractor. The log shall include, but not be limited to, schedules, required construction work plans, equipment and material cut sheets, shop drawings, project record documents, test results, survey records, record drawings, results of QC testing, and all other items for which a submittal is required. The submittal log shall be organized by CSI Specification Division, and Section number and include the following information:
 - 1. Submittal Number
 - 2. Item identification.
 - 3. Scheduled submittal date, date returned, date approved.
 - 4. Date submittal or material is needed.
 - 5. After the submittal log is reviewed and approved by the Engineer, it shall become the basis for the submittal of all items by Contractor.

1.03 COMPLIANCE

- A. Failure to comply with these requirements shall be deemed as the Contractor's agreement to furnish the exact materials specified or materials selected by the Engineer based on these specifications.

1.04 SHOP DRAWINGS AND MANUFACTURERS' LITERATURE

- A. The Port will not accept shop drawings that prohibit the Port from making copies for its own use.
- B. Shop drawings shall be prepared accurately and to a scale sufficiently large to indicate all pertinent features of the products and the method of fabrication, connection, erection, or assembly with respect to the work.
- C. All drawings submitted to the Engineer for approval shall be drawn to scale as ANSI D
- D. Required electronic formats for these drawings are as follows:
 - 1. AutoCad DWG
 - 2. PDF - Formatted to print to half-scale using 11x17 paper.
- E. Catalog cuts or brochures shall show the type, size, ratings, style, color, manufacturer, and catalog number of each item and be complete enough to provide for positive and rapid identification in the field. General catalogs or partial lists will not be accepted. Manufacturers' original electronic files are required for submitting.

1.05 SUBMITTAL REVIEW

- A. After review of each of Contractor's submittals, the submittal will be returned to Contractor with a form indicating one or more of the following:
 - 1. No Exceptions Taken. Means, accepted subject to its compatibility with future submittals and additional partial submittals for portions of the work not covered in this submittal. But it does not constitute approval or deletion of specified or required items not shown in the partial submittal.
 - 2. Make Corrections Noted. Same as Item 1, except that minor corrections as noted shall be made by Contractor.
 - 3. Reviewed - Submittal has been reviewed by the Port. Does not constitute approval and the Contractor is responsible for requirements in submittal.
 - 4. Review as Noted – Submittal has to be reviewed by the Port with comments as noted.
 - 5. Revise and Resubmit. Means, rejected because of major inconsistencies or errors. Resolve or correct before next submittal.
 - 6. Rejected - Resubmit. Submitted material does not conform to the Contract Documents in a major respect (e.g., wrong material, size, capacity, model, etc.).
- B. Submittals marked "No Exceptions Taken", "Make Corrections Noted" or "Reviewed as Noted" authorizes Contractor to proceed with construction covered by those data sheets or shop drawings with corrections, if any, incorporated.
- C. When submittals or prints of shop drawings have been marked "Revise and Resubmit" or "Rejected-," Contractor shall make the necessary corrections and submit required copies. Every revision shall be shown by number, date, and subject in a revision block, and each revised shop drawing shall have its latest revision numbers and items clearly indicated by clouding around the revised areas on the shop drawing.
- D. Submittals authorized by the Engineer do not in any case supersede the Contract Documents. The approval by the Engineer shall not relieve the Contractor from responsibility to conform to the Drawings or Specifications, or correct details when in error, or ensure the proper fit of parts when installed. A favorable review by the Port of shop drawings, method of work, or information regarding material and equipment Contractor proposes to furnish shall not relieve Contractor of its responsibility for errors therein and shall not be regarded as assumption of risk or liability by the Port or its officers, employees, or representatives. Contractor shall have no claim under the Contract on account of failure or partial failure, or inefficiency or insufficiency of any plan or method of work, or material and equipment so accepted. Favorable review means that the Port has no objection to Contractor using, upon its own full responsibility, the plan or method of work proposed, or furnishing the material and equipment proposed.
- E. It is considered reasonable that the Contractor's submittals shall be complete and acceptable by at least the second submission of each submittal. The Port reserves the right to deduct monies from payments due Contractor to cover additional costs for review beyond the second submission.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 PREPARATION OF SUBMITTALS

- A. The Contractor shall use the Port PCM software, to submit all shop drawings, catalog cuts, brochures including samples which must be hand-delivered. Notes, clouding, arrows or other

post document generation notations must be applied directly into the electronic file using software designed for that purpose. Each submittal shall be accompanied by a transmittal developed within the PCM software.

- B. A separate submittal shall be prepared for each product or procedure and shall be further identified by referencing the Specification Section and paragraph number and each submittal shall be numbered consecutively. An example of the numbering protocol is given here for an Electrical Submittal "26 05 33-001- PVC Schedule 80 Conduit". If something is rejected and needs resubmitted it gets resubmitted with the same number adding an R for revised or.1 but the submittal number stays the same ALWAYS.
- C. Product submittals that cannot be accomplished electronically shall be accompanied by a printed version of the transmittal developed within PCM. These submittals will be hand delivered to the Port offices at One Sitcum Plaza, Attention: Engineering Department - Stan Ryter, P.E..
- D. Shop and detail drawings shall be submitted in related packages. All equipment or material details which are interdependent or are related in any way must be submitted indicating the complete installation. Submittals shall not be altered once marked "No Exceptions Taken". Revisions shall be clearly marked and dated. Major revisions must be submitted for approval.
- E. The Contractor shall thoroughly review all shop and detail drawings, prior to submittal, to assure coordination with other parts of the work.
- F. Components or materials which require shop drawings and which arrive at the job site prior to approval of shop drawings shall be considered as not being made for this project and shall be subject to rejection and removal from the premises.
- G. All submittal packages including (but not limited to) product data sheets, mix designs, shop drawings and other required information for submittal must be submitted, reviewed and approved before the relevant scheduled task may commence. It is the responsibility of the Contractor to provide the submittal information which may drive a task on the construction schedule to submit items well enough in advance as to provide adequate time for review and comment from the Engineer without adversely impacting the construction schedule.

3.02 MAINTENANCE OF SUBMITTAL LOG

- A. Prepare and submit for Port review a detailed submittal log conforming to the requirements of paragraph 1.02 of this section. When approved by the Engineer use the submittal log to track the transmittal of submittals to the Engineer, the receipt of submittal comments from the Engineer, and all subsequent action with respect to each submittal. Provide an updated copy of the submittal log to the Engineer during each weekly progress meeting, unless otherwise approved by the Engineer.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The work includes the requirements for health and safety provisions necessary for all work at the site for this project. The work also includes compliance with all laws, regulations and ordinances with respect to safety, noise, dust, fire and police action, civil disobedience, security or traffic.
- B. Detailed information regarding the known nature and extent of refuse and contaminated soil in the project area is included in Section 00 31 26 Existing Hazardous Material Information.
- C. The Contractor shall monitor soils, groundwater, and waste materials for indications of potentially hazardous, dangerous, and/or contaminated materials (suspicious material). Indicators of suspicious material include, but are not limited to refuse, oily sheen or coloring on soils or water, or oily or chemical odors. If suspicious materials are encountered, the Contractor shall stop all work in that area and notify the Engineer immediately.

1.02 SUBMITTALS

- A. The Contractor shall prepare a Spill Prevention, Control and Countermeasure (SPCC) Plan prior to the start of any Work. The Contractor may submit the Health and Safety Plan (HASP) and SPCC Plan as one comprehensive document or may submit the plans as separate documents.
- B. Prior to the start of any Work, the Contractor shall provide a site specific Health and Safety Plan, which meets all the requirements of local, state and federal laws, rules and regulations and the pertinent regulations. The Health and Safety Plan shall address all requirements for general health and safety and shall include but not be limited to:
 - 1. Description of work to be performed and anticipated chemical and/or physical hazards associated with the work.
 - 2. Map of the sites illustrating the location of the anticipated hazards and areas of control for those hazards.
 - 3. Hazardous material inventory and MSDS's for all chemicals which will be brought on site.
 - 4. Signage appropriate to warn site personnel and visitors of anticipated site hazards.
 - 5. Documentation that the necessary workers have completed the required HAZWOPER training.
 - 6. Engineering controls/equipment to be used to protect against anticipated hazards.
 - 7. Personal protective equipment and clothing including head, foot, skin, eye, and respiratory protection.
 - 8. Procedures which will be used for:
 - a. Lockout/Tagout;
 - b. Fall Protection;
 - c. Trenching and shoring;
 - d. Hot Work;
 - e. Explosive conditions due to methane;
 - f. Oxygen deficient conditions;

- g. Asbestos and lead hazards;
 - h. Suspicious Materials and/or unidentified materials;
 - i. Confined-space entry (could include dewatering storage tanks, manholes, or other items);
 - j. Confined-space rescue;
 - k. Odorous conditions and toxic gases.
- 9. Exposure monitoring to be used to evaluate actual hazards compared with anticipated conditions.
 - 10. Site housekeeping procedures and personal hygiene practices.
 - 11. Personnel and equipment decontamination plan.
 - 12. Railroad safety procedures.
 - 13. Administrative controls.
 - 14. Emergency plan including locations of and route to nearest hospital.
 - 15. Medical surveillance program for site personnel before, during, and after completion of site work.
 - 16. Record keeping including:
 - a. Documentation of appropriate employee training
 - b. Respirator fit testing
 - 17. Name and qualification of person preparing the health and safety plan and person designated to implement and enforce the plan.
 - 18. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the plan.

1.03 POTENTIAL CHEMICAL HAZARDS

A. Site Contaminants

- 1. The Contractor must provide site workers with Hazard Communication standard information for potential site contaminants (in accordance with WAC 296-62-054). The Contractor shall ensure that all site workers are aware of and understand this information. Additional information shall also be provided by the Contractor, as necessary, to meet the Hazard Communication Standard and Health and Safety Plan requirements as noted in WAC 296-62-054 and 296-62-300. Workers shall be instructed on basic methods or techniques to assist in detecting suspicious material.

B. Potential Exposures Routes

- 1. Inhalation
- 2. Skin and Eye Contact
- 3. Ingestion

- C. Chemical hazards may also result from Contractor operations resulting in inadvertent release of fuel, oil, or other chemicals in a manner that would expose workers.

1.04 POTENTIAL PHYSICAL AND OTHER HAZARDS

- A. The Work of the Contractor is described elsewhere in these specifications. Precautions to prevent all anticipated physical and other hazards, including heavy equipment and vessels, shall be addressed in the Health and Safety Plan.
- B. Specific aspects of construction resulting in physical hazards anticipated for this project included, but are not limited to the following:
 - 1. Work over water: falling overboard, hypothermia and drowning.
 - 2. Operation of marine equipment, including winches, dredges, and related equipment, entrapment, ensnarement, and being struck by moving parts hazards
 - 3. Completion of diver surveys with specific health and safety elements.
- C. Other anticipated physical hazards:
 - 1. Heat stress
 - 2. Cold stress
 - 3. Biological hazards
 - 4. Trips and falls

PART 2 - PRODUCTS

2.01 PRODUCTS SPECIFIED FOR HEALTH AND SAFETY

- A. Provide the equipment and supplies necessary to support the work as described in the site-specific Health and Safety Plan. Equipment and supplies may include but are not limited to:
 - 1. All chemicals to be used on site;
 - 2. A hazardous materials inventory and MSDSs for the chemicals brought on site;
 - 3. Enclosure equipment (for dust and asbestos fiber control);
 - 4. Fencing and barriers;
 - 5. Warning signs and labels;
 - 6. Trenching equipment;
 - 7. Fire extinguishers;
 - 8. Equipment to support 'hot' work;
 - 9. Equipment to support lock out/tag out procedures;
 - 10. Scaffolding and fall protection equipment;
 - 11. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection);
 - 12. The need to have area and personnel exposure monitoring equipment;
 - 13. Demolition equipment and supplies;
 - 14. Decontamination equipment and supplies;
 - 15. First aid equipment;
 - 16. Release prevention equipment;
 - 17. Field documentation logs/supplies; and

18. Confined space equipment.

PART 3 - EXECUTION

3.01 WORK AREA PREPARATION

- A. Contractor shall comply with health and safety rules, regulations, ordinances promulgated by the local, state, and federal government, the various construction permits, and other sections of the Contract Documents. Such compliance shall include, but not be specifically limited to: any and all protective devices, equipment and clothing; guards; restraints; locks; latches; switches; and other safety provisions that may be required or necessitated by state and federal safety regulations. The Contractor shall determine the specific requirements for safety provisions and shall have inspections and reports by the appropriate safety authorities to be conducted to ensure compliance with the intent of the regulations.
- B. Contractor shall inform employees, subcontractors and their employees of the potential danger in working with any potentially contaminated materials, equipment, soils and groundwater at the project site.
- C. Contractor shall perform whatever work is necessary for safety and be solely and completely responsible for conditions of the job site, including safety of all persons (including employees of the Engineer, Engineer's Representative, and Contractor) and property during the Contract period. This requirement applies continuously and is not limited to normal working hours.
- D. Accidents causing death, injuries, or damage shall be reported immediately to the Engineer and the Port Security Department in person or by telephone or messenger. In addition, promptly report in writing to the Engineer all accidents whatsoever arising out of, or in connection with, the performance of the work whether on, or adjacent to, the site, giving full details and statements of witnesses.
- E. If a claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall promptly report the facts in writing within 24 hours after occurrence, to the Engineer, giving full details of the claim.

3.02 SITE SAFETY AND HEALTH OFFICER

- A. Contractor shall provide a person designated as the Site Safety and Health Officer, who is thoroughly trained in rescue procedures, HAZWOPER, and the use of all necessary safety equipment, air monitoring equipment, and gas detectors. The person must be present at all times while work is being performed and conduct testing, as necessary.
- B. The Site Safety and Health Officer shall be empowered with the delegated authority to order any person or worker on the project site to follow the safety rules. Failure to observe these rules is sufficient cause for removal of the person or worker(s) from this project.
- C. The Site Safety and Health Officer is responsible for determining the extent to which any safety equipment must be utilized, depending on conditions encountered at the site.

3.03 GENERAL SAFETY GUIDELINES FOR HAZARDOUS GASES

- A. The generally accepted procedure to protect the worker from the effects of the dangers from hazardous gases is through the use of four safeguard measures:
 - 1. Test the atmosphere;
 - 2. Ventilate all confined spaces;
 - 3. Use appropriate safety equipment;
 - 4. Personal protective equipment;

5. Provide backup safety personnel.
- B. Test the Atmosphere: Before entering a trench, underground vault, or any other excavation, the atmosphere shall be tested to detect any adverse environmental conditions with a gas detector instrument. Test instruments shall be properly maintained and calibrated. The test shall be conducted from top to bottom of the excavation or every four (4) feet.
- C. Ventilate Confined Spaces: Before entry and during the entire time workers are in the confined space. Forced ventilation is the generally accepted procedure.
- D. Use Appropriate Safety Equipment: All personnel shall be trained to operate the appropriate safety equipment that would be utilized during the course of their work. It is the responsibility of the Contractor's Site Safety and Health Officer to ascertain that all safety equipment is being used when appropriate.
- E. Backup Safety Personnel: Prior to any personnel entering an excavation or confined space, a separate individual shall be positioned outside the space.
- F. Safety Monitoring Instrumentation: The Safety Officer shall have appropriate instruments (detector[s]) to test for oxygen deficiency and for the presence of methane gas and hydrogen sulfide, and/or other known or suspected vapors and gases.

3.04 SUPPLEMENTAL SAFETY PROGRAM FOR GASES

- A. Supplemental to the Contractor's regular safety program, the Contractor shall develop and institute procedures to inform all workers at the site of the potential for the presence of methane and other landfill gases emanating from the natural decomposition of refuse buried at or near the job site, and the importance of safety precautions to ensure the safety of workers and the public.
- B. Recommended Precautions: In addition to conforming to safety rules and regulations of governmental authorities having jurisdiction, the Contractor shall conform to the following minimum precautionary measures:
 1. Frequently monitor for all possible hazardous gasses, oxygen deficiency and other known or suspected vapors and gases.
 2. Prohibit smoking in or near open excavations, exposed refuse, and in the vicinity of underground pipe laying activities. Smoking will be permitted only in those areas designated by the Site Safety and Health Officer.
 3. In the event toxic gas is present in sufficient quantities to trigger a gas detection alarm, the Contractor shall immediately excavate all personnel from the area until determine safe by the Site Safety and Health Officer.
 4. Do not use explosives.
 5. Do not leave refuse exposed overnight, unless otherwise approved by the Engineer. Any refuse exposed during construction activities shall be covered with at least a 6-inch layer of earth, tarps, or membrane.
 6. Do not weld in trenches, enclosed areas, or over refuse unless performed in areas of the site tested and approved by the Site Safety and Health Officer.
 7. Construction equipment used in excavating activities and/or refuse removal operations shall be equipped with vertical exhaust and spark arresters.
 8. Electric motors utilized in excavation areas and below ground shall be explosion-proof.

9. As construction progresses, all pipe openings and valves shall be closed as soon as installed to prevent the migration of gases through the pipeline system.
- C. Suggested Measures: If not already included in the Contractor's standard safety practices, the Contractor shall add the following measures to his safety program:
1. Workers shall be cautioned on the possibility of collapsing excavations during construction operations near and in open excavations particularly in refuse-filled areas. Anyone working near the edge of deep excavations should be secured with a safety belt, harness, or limit line to preclude the possibility of falling into the opening. Refuse filling operations and compaction is quite variable and therefore may not provide the same slope stability as excavations in native soils.
 2. Any personnel working near the edge of well excavations or similar construction should wear a harness securely attached to a lanyard. The lanyard shall be made as short as possible and securely fastened to a safe object.
 3. Safe and suitable ladders that project 2 feet above the top of the trench shall be provided for all trenches over 4 feet in depth. A minimum of one ladder shall be provided for each 25 feet of open trench, and be so located that workers in the trench need not move more than 25 feet to a ladder.
 4. No worker shall be allowed to work alone in an excavation. An individual shall be positioned outside the excavation, but within eyesight of the workers in the excavation, and assist them should an emergency develop.
 5. Work upwind of an excavation where possible, unless the excavation is constantly monitored and declared safe.
 6. Workers should avoid contact with exposed refuse where possible.
 7. No excavation or drilled hole greater than 2 feet deep shall be left unattended or open overnight unless it is securely covered in a manner acceptable to the Engineer.
 8. Fire extinguishers with a rating of at least A, B, and C shall be available.
 9. Start-up and shutdown of equipment shall be avoided in areas of exposed refuse.
 10. Personnel when in an open excavation or in the presence of landfill gas shall be fully clothed with appropriate P.P.E.S.. Workers shall immediately vacate the excavation if gases are detected therein, and shall not be permitted to re-enter the excavation unless satisfactory precautionary measures are implemented.

3.05 SPILL PREVENTION AND CONTROL

- A. The Contractor shall be responsible for prevention, containment and cleanup of spilling oil, fuel and other petroleum products used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor. The Contractor shall prepare a Spill Prevention, Control and Countermeasures (SPCC) Plan prior to the start of construction activity.
- B. The Contractor is advised that discharge of oil from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.
- C. The Contractor shall, at a minimum, take the following measures regarding oil spill prevention, containment and cleanup.
 1. Fuel hoses, lubrication equipment, hydraulically operated equipment, oil drums and other equipment and facilities shall be inspected regularly for drips, leaks or signs of damage,

- and shall be maintained and stored properly to prevent spills. Proper security shall be maintained to discourage vandalism.
2. All land-based oil and products' storage tanks shall be diked, contained and/or located so as to prevent spills from escaping into the water. Diking and containment area surfaces shall be lined with impervious material to prevent oil from seeping through the ground and dikes.
 3. All visible floating oils shall be immediately contained with booms, dikes or other appropriate means and removed from the water prior to discharge into state waters. All visible oils on land shall be immediately contained using dikes, straw bales or other appropriate means and removed using sand, ground clay, sawdust or other absorbent material, which shall be properly disposed of by the Contractor. Waste materials shall be temporarily stored in drums or other leak-proof containers after cleanup and during transport to disposal. Waste materials shall be disposed off site in accordance with applicable local, state and federal regulations.
 4. In the event of any oil or product discharges into public waters, or onto land with a potential for entry into public waters, the Contractor shall immediately notify the Port Security at their listed 24-hour response number:
 - a. Port Security: 253-383-9472
- D. The Contractor shall maintain the following materials (as a minimum) at each of the project sites:
1. Oil-absorbent booms: 4 each, 5 feet long
 2. Oil-absorbent pads or bulk material, adequate for coverage of 200 square feet of surface area.
 3. Oil-skimming system.
 4. Oil dry all, gloves and plastic bags.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The Work includes the requirements to provide air and noise control measures until Final Completion of the Work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 AIR POLLUTION CONTROL

- A. The Contractor shall use renewable energy to the maximum extent practicable. The Contractor shall use only ultra-low sulfur diesel (ULSD), biodiesel and ULSD blend, gasoline fuels and other equivalent clean fuels.
- B. The Contractor shall meet or exceed EPA Tier 2 off-road diesel engine emission standards for off-road equipment = 25hp and meet or exceed EPA 1994 on-road diesel engine emission standards for on-road equipment except as follows:
 - 1. equipment being used in an emergency or public safety capacity
- C. The Contractor shall not discharge smoke, dust, and other hazardous materials into the atmosphere that violate local, state or federal regulations. The Contractor shall maintain construction vehicles and equipment in good repair. The Engineer will request the Contractor, at the Contractor's cost, to replace or repair equipment if exhaust emissions are determined to be excessive by the Engineer.
- D. No vehicles can idle for more than 5 consecutive minutes, except as follows:
 - 1. Idling is necessary to ensure the safe operation of the equipment, including idling to verify that the equipment is in safe operating condition and equipped as required by all the provisions of law, and all equipment is in good working order, either a part of the daily equipment inspection, or as otherwise needed.
 - 2. Idling is required to bring the equipment to operating temperature;
 - 3. Engine operation is necessary to accomplish work for which the equipment was designed (i.e. operating a crane)
 - 4. Idling is necessary for the operator's physical well-being while accomplishing such work;
 - 5. Idling when queuing (i.e. machine is situated in a queue of other vehicles, must intermittently move forward to perform work or service, and when shutting the engine off would impede the progress of the queue and be impractical); and
 - 6. Idling vehicles being used in an emergency or public safety capacity.
- E. The Contractor shall minimize nuisance dust by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. The use of water, in amounts which result in mud on public streets or runoff to onsite or offsite storm drain catchments, is not acceptable as a substitute for sweeping or other methods. Equipment for this operation shall be on the job site or available at all times.
- F. All wash water, dust and/or waste residuals shall be collected and properly managed by the Contractor. Under no circumstances shall wash water be directly introduced to the storm drain system.

3.02 NOISE CONTROL

- A. Construction involving noisy operations, including starting and warming up of equipment shall be in compliance with local noise ordinances.
- B. The Contractor shall comply with all local controls and noise level rules, regulations and ordinances which apply to all work performed pursuant to the Contract.
- C. Each internal combustion engine, used on the job or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler.
- D. Workers shall not be exposed to noise levels for scrapers, pavers, graders and trucks exceeding 90 dBA as measured under the noisiest operating conditions. For all other equipment, workers shall not be exposed to noise levels exceeding 85 dBA. Equipment that cannot meet these levels shall be quieted by use of improved exhaust mufflers, portable acoustical screens, or other means. Equipment not modified to meet these requirements shall be removed from the project.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Requirements relating to referenced standards.

1.02 QUALITY ASSURANCE

- A. For products or workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue specified in this section, except where a specific date is established by applicable code.
- C. Should specified reference standards conflict with Contract Documents, request clarification from the Engineer before proceeding.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered by the Contract Documents by mention or inference otherwise in any reference document.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 QUALITY CONTROL FOR COMPLIANCE:

- A. All work described in the Contract Documents must be fully tested in accordance with applicable sections of these Specifications. 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.
- B. The Contractor shall perform such detailed examination, inspection and quality control and assurance of the Work as to ensure that the Work is progressing and is being completed in strict accordance with the Contract Documents. The Contractor shall plan and lay out all Work in advance of operations so as to coordinate all Work without delay or revision. The Contractor shall be responsible for inspection of portions of the Work already performed to determine that such portions are in proper condition to receive subsequent Work. Under no conditions shall a portion of Work proceed prior to preparatory work having been satisfactorily completed. The Contractor shall ensure that the responsible Subcontractor has carefully examined all preparatory work and has notified the Contractor (who shall promptly notify the Port in writing) of any defects or imperfections in preparatory work that will, in any way, affect completion of the Work.

1.02 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop Drawings or as instructed by the manufacturer.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.04 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties or responsibilities of the parties in Contract, nor those of the Engineer, shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 TESTING SERVICES

- A. Tests, inspections and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules and regulations or lawful orders of public authorities.
 - 1. Neither observations by an inspector retained by the Port, the presence or absence of such inspector at the site, nor inspections, tests, or approvals by others, shall relieve the Contractor from any requirement of the Contract Documents, nor is any such inspector authorized to change any term or condition of the Contract Documents.
- B. Necessary materials testing shall be performed by an independent testing laboratory during the execution of the Work and paid for by the Port of Tacoma, unless otherwise specified. Access to the area necessary to perform the testing and/or to secure the material for testing, shall be provided by the Contractor.
- C. Testing does not relieve Contractor to perform work to contract requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Sum.
- E. Material testing for initial material approval will be performed by an independent, certified laboratory and paid for by the Contractor. These tests must be dated within six (6) months of the submittal date.
- F. Subsequent sampling and testing, required as the work progresses to ensure continual control of materials and compliance with all requirements of the Contract documents, shall be the responsibility of the Port, except as required by other sections of these Specifications.

1.06 MANUFACTURER'S FIELD SERVICES

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up equipment, test, and adjust and balance equipment as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer 30 days in advance of required observations. Observer subject to approval of Engineer.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary communications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Barriers, enclosures, and fencing.
- E. Field offices.

1.02 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- B. Acquire necessary meters for temporary use of water and power.
- C. Provide fresh drinking water for employees in sanitary containers. Make arrangements with the City of Tacoma or other sources to supply construction water for the duration of this contract.
- D. Facilitate and make all arrangements for furnishing electric power for construction purposes, and to all construction and temporary field offices. The power meter shall be registered in the name of the Contractor.

1.03 COMMUNICATION SERVICES

- A. Install and maintain the appropriate equipment to allow for efficient communication via telephone and the Internet with the Port and outside parties at all times during the term of this contract. Remove at completion of the work. All accounts shall be registered in the name of the Contractor.

1.04 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.
- C. At end of construction, return facilities to same or better condition as originally found.

1.05 FENCES AND BARRIERS

- A. Refer to Drawing G6.1 Constraints and Access Plan for required fence and barrier installations. The Contractor may furnish and install additional fences and barriers to protect materials, equipment or subdivide the construction zone.
- B. Provide barriers and signage to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

1.06 EXTERIOR ENCLOSURES

- A. Provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.07 FIELD OFFICES

- A. Provide, install, and maintain the necessary Contractor field office space during the contract.
- B. Within 30 days of Notice to Proceed, provide and install a separate field office for Port staff, located adjacent to the Contractor's field offices within the project limits. The building shall be weather-tight, installed plumb and level including exterior access stairs and ramps. The field office shall remain in place until substantial completion and shall include the following as a minimum:
 - 1. 300 square feet of floor space
 - 2. Above ground floor with side boards
 - 3. Heat and air conditioning
 - 4. Electric overhead lighting and wall outlets
 - 5. Adequate windows
 - 6. 20 LF of shelving
 - 7. Two plane tables: 3 feet 6 inches by 6 feet long
 - 8. Two desks with chairs
 - 9. A conference table: 4 feet by 8 feet with six chairs
 - 10. Cylinder door lock and six keys
 - 11. Toilet facility adjacent to the building
 - 12. Bottled water service
 - 13. Photocopy machine (up to 11" x 17" capability)
- C. Payment shall be full compensation for furnishing, installing, maintaining, and removing the facility, including all costs associated with all required permits, utility hookups and disconnects, and monthly charges for all utilities, including telephone. Remove all field offices at the completion of the contract and restore the site to pre-installation conditions, or as directed by the Engineer.

1.08 TREE AND VEGETATION PROTECTION

- A. The Contractor shall carefully protect existing trees and vegetation noted to remain from damage by construction activities.
- B. All trees and vegetation noted to remain shall have 4' high, high visibility fence installed at the drip line of the tree or vegetation or as noted and shown on the Drawings.
- C. If a tree or vegetation designated for protection is damaged or destroyed in the course of the Work, the Contractor shall replace it with new comparable in species and size as required by the Engineer. Where it is necessary to replace trees or vegetation damaged by construction, the Contractor shall bear all expenses associated with replacement and establishment of the replacement vegetation.
- D. The contractor shall provide any necessary irrigation and other care necessary to warrant the replacement vegetation for two growing seasons (April through September) following replacement.

1.09 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Final Completion.

- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.
- D. Restore new permanent facilities used during construction to specified condition.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 WORK DESCRIPTION

- A. The Work shall consist of planning, installing, inspecting, maintaining and removing Temporary Erosion and Sediment Control (TESC) Best Management Practices (BMPs) to prevent pollution of air and water, and to control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract.
- B. A Construction Stormwater Pollution Prevention Plan (SWPPP) has been prepared for the Husky Terminal (Pier 4) Site by the Port which is included in the Appendix. The Contractor is responsible for developing a SWPPP for the APM Terminal (Transload Site) and submitting to the Port for review and approval.
- C. These TESC requirements shall apply to all areas associated with the Work including but not limited to the following:
 - 1. Work areas
 - 2. Equipment and material storage areas
 - 3. Staging areas
 - 4. Stockpiles
 - 5. Discharge points within or adjacent to the work areas that are impacted by stormwater runoff from the site.
- D. Acceptance of TESC plans does not constitute an approval of permanent Work or drainage design (e.g., size and location of roads, pipes, restrictors, channels, retention facilities, utilities, etc.).
- E. Contractor shall read and conform to all requirements set forth in Ecology's NPDES General Permit for Discharges Associated with Construction Activities (CSGP).

1.02 REFERENCES

- A. The rules, requirements, and regulations that apply to this Work include, but are not necessarily limited to the following:
 - 1. Washington Department of Ecology, "Stormwater Management Manual for Western Washington," 2014.
 - 2. Department of Ecology NPDES General Permit for Discharges Associated with Construction Activities, 2010.
 - 3. Washington State Department of Transportation 2012 Standard Specification M41-10, Division 8-01 Erosion Control and Water Pollution Control.
 - 4. Pierce County Stormwater and Site Development Manual, 2012.
 - 5. City of Tacoma, "Surface Water Management Manual," Tacoma Public Works, Environmental Services, February 2012.
 - 6. Administrative Order on Consent, EPA. (See Appendix)

1.03 SUBMITTALS

- A. A SWPPP per the requirements in Section 3.02 of this section for the APM Terminals site.
- B. A SWPPP shall include TESC requirements stated below.

1. For the Husky Terminal Site (Pier 4) the Contractor may elect to adopt and comply with a Port provided SWPPP, or provide an alternative project SWPPP. If the Contractor is going to adopt the Port provided SWPPP he must submit that intent in writing.
2. Contractor shall be responsible for updating the project SWPPP during construction to reflect the required changes to BMPs, as needed, to comply with the CSGP at no additional cost to the Port.

C. Safety Data Sheet (SDS) for any dust palliative product.

1.04 AUTHORITY OF ENGINEER

- A. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, excavation, borrow and fill operations, as determined by analysis of project conditions, and to direct the Contractor to provide immediate permanent or temporary pollution control measures to minimize contamination of adjacent streams or other watercourses, lakes, ponds, and other areas of water impoundments.
- B. In the event that areas adjacent to the work area are suffering degradation due to erosion, sediment deposit, water flows, or other causes, the Engineer may stop construction activities until the Contractor rectifies the situation.

PART 2 - PRODUCTS

2.01 DUST CONTROL

- A. Dust palliative for dust control proposed by the Contractor and approved by the Engineer.

PART 3 - EXECUTION

3.01 GENERAL

- A. A CSGP is not required for this project; however, the Contractor shall conform to all requirements set forth in the CSGP. The Contractor shall be the responsible operator for the duration of the project.
- B. In the event of conflict between these requirements and pollution control laws, rules, or regulations of other federal, state, or local agencies, the more restrictive laws, rules, or regulations shall apply as determined by the Engineer.
- C. No project discharge of water shall be allowed that exceeds the regulated pollutant levels in Ecology's CSGP.
- D. Contractor shall be solely responsible for all BMP modifications and upgrades to comply with the CSGP and the requirements of this Section, at no additional cost to the Port.
- E. Contractor shall be solely responsible for any damages and fines incurred because of Contractor, subcontractor, or supplier actions in implementing the requirements of this Section.
- F. The Contractor shall be solely responsible for schedule impacts incurred because of Contractor, subcontractor, or supplier actions in implementing the requirements of this Section.

3.02 TEMPORARY EROSION AND SEDIMENT CONTROL DEVELOPMENT

- A. The Contractor shall prepare a project SWPPP for the APMT site that complies with the CSGP requirements.
 1. The SWPPP shall describe the proposed construction activities and all Temporary and Permanent Erosion and Sediment Control measures.

2. The SWPPP shall consist of planning, installing, inspecting, maintaining, and removing TESC BMPs per Volume II of the Stormwater Management Manual for Western Washington (2012). The BMPs are the minimum required to prevent pollution of air and water, to control peak volumetric flow rates and velocity of stormwater, and to control, respond to, and dispose of eroded sediment and turbid water during the term of the Contract.
 3. If Contractor chooses to write a SWPPP for the Pier 4 site separate from the Port-provided SWPPP, it must comply with all of the requirements set forth by the CSGP.
- B. Contractor shall develop TESC BMPs and incorporate them into the SWPPP. Contractor shall address the following issues as part of developing and implementing the BMPs.
1. TESC BMPs must meet the requirements in Ecology's Volume II of the Stormwater Management Manual for Western Washington (2012).
 2. TESC notes and details shown in the Drawings and the information in this Section of these Specifications form a basis of the minimum requirements for a TESC Plan. The Contractor shall develop and submit a TESC Plan specific to the construction schedule and means and methods prior to commencing construction activities for the duration of the Project.
 3. Contractor shall modify TESC measures for changing site conditions (such as relocation of ditches and silt fences, etc.) and update the SWPPP to document the modifications made, at no additional cost to the Port.

3.03 TEMPORARY EROSION AND SEDIMENT CONTROL IMPLEMENTATION

- A. Contractor is responsible for implementing and updating the SWPPP including TESC BMPs.
1. Contractor shall inspect the TESC measures daily and maintain these measures to ensure continued proper functioning for the duration of the Project.
 2. Contractor will be responsible for documenting TESC site inspections on a weekly basis in areas of active construction and on a monthly basis in areas that have undergone stabilization. Contractor shall keep records of the inspections on site.
 3. During the construction period the Contractor shall, at no additional cost to the Port, upgrade and/or maintain TESC measures as needed, based on Contractor means and methods, work sequencing, and for storm events. Contractor shall modify these measures for changing site conditions and update the SWPPP to document all modifications made.
- B. Catch basins shall be cleaned when the depth of debris reaches 30% of the sump depth. Contractor shall clean all catch basins, manholes, and conveyance lines prior to Work completion. The cleaning process shall not flush sediment-laden water into a downstream system.
- C. Contractor shall ensure that water, or a dust palliative and a dispensing subcontractor, if needed, is available for project use. It is the responsibility of the Contractor to develop and adhere to appropriate safety measures pertaining to the palliative use. This also includes ensuring the dispensing subcontractor develops and adheres to the appropriate safety measures, if a dispensing subcontractor is used.
- D. In the event that additional temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of the Work as scheduled or as ordered by the Engineer, such work shall be performed by the Contractor at its own expense.

- E. Contractor shall remove all TESC facilities, install permanent site surfacing improvements, permanent BMPs with minimal disturbance and shall clean stormwater facilities prior to Work completion.

END OF SECTION

PART 1 - GENERAL

1.01 SUBMITTALS

- A. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- B. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- C. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 - PRODUCTS

2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.

2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 3 - EXECUTION

3.01 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.02 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.

- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- G. Prevent contact with material that may cause corrosion, discoloration, or staining.
- H. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

PART 1 - GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Cutting and patching.

1.02 SUBMITTALS

- A. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of the Port or separate Contractor.
- B. Project As-Built Documents: Accurately record actual locations of capped and active utilities.

PART 2 - PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.

- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.04 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- F. Restore work with new products in accordance with requirements of Contract Documents.
- G. Fit work to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- H. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.05 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.06 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED SECTIONS

- 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 the Specifications, including but not limited to the following:
 - 1. Section 01 33 00 Submittal Procedures
 - 2. Section 01 70 00 Execution and Closeout Requirements.
 - 3. Section 35 20 23 Dredging

1.02 DESCRIPTION OF WORK

- A. This section describes the general requirements for site surveying and grade control including upland surveying, pre-dredge and post-dredge surveys (field-run and hydrographic), dredging hydrographic progress surveys, record keeping, and submittals. In addition, establish and maintain dredging limits indicated in the Contract Documents.

1.03 REFERENCE STANDARDS

- A. US Army Corps of Engineers (ACOE) EM-1110-2-1003 – Hydrographic Surveying

1.04 QUALITY ASSURANCE

- A. It is the responsibility of the Contractor to schedule Contractor's survey and to verify that it has met the Contract requirements prior to proceeding to the next sequence of work. The Port shall review and approve each survey or survey increment prior to the Contractor proceeding to the next area. The Contractor shall allow up to two (2) business day for Port review. Surveys may need to be completed in small increments to document work progress and sequential dredging.
- B. All surveys shall be performed and stamped by a Professional Land Surveyor (PLS) registered in the State of Washington and acceptable to the Engineer. The surveyor shall have actively engaged in land and hydrographic survey operations during the past ten (10) years.
- C. Hydrographic surveying shall be performed by a hydrographic surveyor with a minimum of 5 years of documented experience with hydrographic survey data collection and processing. The hydrographic surveyor shall be familiar with US Army Corps of Engineers Hydrographic Survey Standards as documented in ACOE EM-1110-2-1003 – Hydrographic Surveying, shall be experienced in dredging and marine work, and shall be familiar with the use (and quality control of) all applicable electronic survey instruments proposed for use on this project. The hydrographic surveyor shall also be knowledgeable of the requirements for hydrographic survey data processing and the specific deliverables to the Port related to the analysis of the survey results, including, but not limited to: color contour plots, cross section development, detailed dredge volume reports, and surface (TIN) creation. The hydrographic surveyor statement of qualifications shall be submitted to the Port for approval in the Dredging and Disposal Work Plan (DDWP) described in Section 35 20 23 – Dredging.
- D. The Port reserves the right to retain an independent surveyor to periodically check the Contractor's survey. Surveying performed by the Port will be at no cost to the Contractor.

1.05 SUBMITTALS

- A. General submittals required for this Contract include:

1. Name, address, telephone number, and statement of qualifications of Professional Land Surveyor and Hydrographic Surveyor before starting survey work. This surveyor shall be responsible for stamping and signing all work as noted below.
2. On request, field notes and documentation verifying accuracy of survey work, to include cross sections of interim surveys by the Contractor.
3. Project survey data shall be stored as electronic files on a compact disc (CD) formatted as a) DWG; b) PDF and printed to bond paper. At a minimum, data for each survey point shall include a sequential reference number, the elevation, and appropriate northing and easting coordinates.
4. Field notes, Drawings, quantity computations, and point data for each survey shall be submitted to:
 - a. Port of Tacoma, Attention: Stan Ryter, Project Manager, P.O. Box 1837, Tacoma, WA 98401-1837

B. Dredge Progress Surveys

1. Progress surveys shall be conducted to monitor the accuracy and progress of the work being performed. Dredge progress surveys shall be submitted every other day until dredging is complete. See Section 35 20 23 – Dredging for additional information

C. Pre- and Post-Dredge Progress Surveys (including Interim Post-Dredge Surveys)

1. Dredging surveys include all pre- and post-dredge surveys noted in Section 35 20 23 - Dredging.
2. Closure calculation for horizontal and vertical control. Submit prior to commencing survey work.
3. At a minimum dredge survey submittals shall consist of the following:
 - a. A hardcopy drawing showing spot elevations for the area surveyed. The scale for the plan drawing shall be 1 inch = 50 feet.
 - b. A hardcopy plan drawing showing elevation contours (in color) for the area surveyed. The scale of the plan drawing shall be 1 inch = 50 feet.
 - c. Digital survey data in AutoCAD.dwg format along with an ASCII file including point number, Northing, Easting, and Depth with comma delimiters. Depth shall be relative to MLLW = 0.00 and shall be recorded as negative if recorded below MLLW.

D. As-Built Drawings:

1. Upon completion of the dredging, the Contractor shall prepare final hydrographic as-built drawings. The final survey shall consist of a spot elevation drawing and a contour drawing of the sediment removal area. Provide final surveys in accordance with Section 01 77 00 Closeout Procedures.
2. Contractor electronic files for the As-Built shall be fully editable and manipulable so as to allow future changes by the Port.

1.06 SURVEY VERTICAL DATUM

- A. Surveys shall use the same vertical datum and horizontal coordinate system as noted on Drawing G4.1 Survey Control and Notes.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 GENERAL

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

3.02 SURVEY REFERENCE POINTS

- A. Verify locations of survey control points prior to starting work. Promptly notify the Port in writing of any discrepancies discovered.
- B. Mark and protect survey control points prior to starting site work. Make no change without prior written notice to the Port.
- C. Promptly report to the Port the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- D. Replace or relocate dislocated survey control points, or establish new control points, based on original survey control at no added cost to the Port.

3.03 PROCEDURES

- A. Contractor survey procedures (positioning modes, equipment calibration, and data reduction, adjustment, processing, and plotting) shall conform to industry standards.
- B. Failure to perform and process such surveys in accordance with recognized standards will result in a rejection and nonpayment for work performed.
- C. Failure to perform and process such surveys in accordance with recognized standards will result in a rejection and nonpayment for work performed.
- D. All systems, methods, and procedures shall be as described in the Dredge and Disposal Work Plan (DDWP) and is subject to the Engineer's approval.

3.04 DREDGING SURVEYS

- A. For Progress and Pre- and Post-Dredge Surveys refer to Section 35 20 23 - Dredging for execution requirements.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK DESCRIBED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Conditions, Supplementary Conditions, and other sections of the General Requirements apply to this work as if specified in this section. Work related to this section is described throughout the specifications.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.01 PROGRESS CLEAN-UP

- A. The Contractor shall clean the project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
 - 1. Comply with all requirements for removal of combustible waste materials and debris.
 - 2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
 - 3. Containerize unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
 - a. Use containers intended for holding waste materials for the type of material to be stored.
 - 4. Coordinate progress cleaning for joint use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free from waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

- H. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- I. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.02 FINAL CLEANING

- A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
 - a. Clean Project site, yard, and grounds in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove spills, stains, and other foreign deposits.
 - c. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - d. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 - e. Remove debris and surface dust from limited access spaces, including roofs, attics, and similar spaces.
 - f. Remove labels that are not permanent.
 - g. Leave Project clean and ready for occupancy.

3.03 REPAIR OF WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surface, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
 - 1. Touch up and otherwise repair and restore marred or exposed finishes and surface. Replace finishes and surfaces that already show evidence of repair or restoration.
 - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
 - 2. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

END OF SECTION

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.
- F. Methods of trash/waste disposal that are not acceptable are:
 - 1. Burning on the project site.
 - 2. Burying on the project site.
 - 3. Dumping or burying on other property, public or private.
 - 4. Other illegal dumping or burying.
- G. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

- A. Section 01 30 00 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.
- B. Section 01 50 00 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.
- C. Section 01 60 00 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.
- D. Section 01 70 00 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.
- E. Section 02 41 00 - Demolition: Additional requirements associated with demolition activities, salvaging material and reuse of material.

1.03 DEFINITIONS

- A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.
- B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.
- C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

- D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.
- E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.
- F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.
- G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.
- H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.
- I. Return: To give back reusable items or unused products to vendors for credit.
- J. Reuse: To reuse a construction waste material in some manner on the project site.
- K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.
- L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.
- M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.
- N. Toxic: Poisonous to humans either immediately or after a long period of exposure.
- O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.
- P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

- A. Waste Management Plan: Include the following information:
 - 1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 - 2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 - 3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
 - a. List each material proposed to be salvaged, reused, or recycled.
 - b. List the local market for each material.
 - 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
 - 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.

6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.
- B. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, show both totals to date and since last report.
 1. Submit updated Report monthly;
 2. Submit Report on a form acceptable to Owner.
 3. Landfill Disposal: Include the following information:
 - a. Identification of material.
 - b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
 4. Recycled and Salvaged Materials: Include the following information for each:
 - a. Identification of material, including those retrieved by installer for use on other projects.
 - b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
 - c. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
 5. Material Reused on Project: Include the following information for each:
 - a. Identification of material and how it was used in the project.
 - b. Amount, in tons.
 6. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 2 PRODUCTS

PART 3 EXECUTION

3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.
- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.
- D. Meetings: Discuss trash/waste management goals and issues at project meetings.
 1. Pre-bid meeting.
 2. Pre-construction meeting.
 3. Regular job-site meetings.
- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.

1. As a minimum, provide:
 - a. Separate area for storage of materials to be reused on-site, such as wood cut-offs for blocking.
 - b. Separate dumpsters for each category of recyclable.
 2. Provide containers as required.
 3. Provide temporary enclosures around piles of separated materials to be recycled or salvaged.
 4. Provide materials for barriers and enclosures that are nonhazardous, recyclable, or reusable to the maximum extent possible; reuse project construction waste materials if possible.
 5. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 6. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.
- G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.
- H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.
- I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Substantial Completion procedures
 - 2. Final completion procedures
 - 3. Warranties
 - 4. As-Built Drawings

1.03 ACTION SUBMITTALS

- A. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

1.04 PROJECT SUBMITTALS

- A. Submittal of Project Warranties
- B. Record Drawings
 - 1. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous recordkeeping requirements and submittals in connection with various construction activities.
- C. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.05 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list) indicating the value of each item on the list and reasons why the Work is incomplete.
- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 - 1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Port unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 - 2. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 3. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by the Contract Document or Engineer. Label with manufacturer's name and model number where applicable.
 - 4. Submit test/adjust/balance records.

5. Submit changeover information related to Port's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
 1. Advise Port of changeover in heat and other utilities
 2. Terminate and remove temporary facilities from Project site
 3. Complete final cleaning requirements
- D. Submit a written request for inspection to determine Substantial Completion a minimum of 3 days prior to days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Notice of Substantial Completion after inspection or will notify Contractor of items, either on the Contractor's list or additional items identified by the Engineer, that must be completed or corrected before notice will be issued.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for final completion.

1.06 PUNCH LIST (LIST OF INCOMPLETE ITEMS)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of Construction.
 1. Organize list of spaces in sequential order.
 2. Organize items applying to each space by major elements.

1.07 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete and submit the following:
 1. Submittal of all remaining items, including as-built documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, surveys, and similar final record information and all other submittals defined in the Contract Documents.
 2. List of Incomplete Items: Submit copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (Punch List). Copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 3 days prior to date the work will be complete and ready for final inspection and tests. On receipt of request, the Engineer will either proceed with inspection or notify contractor of unfulfilled requirements.
 1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.08 FINAL ACCEPTANCE PROCEDURES

- A. Submittals Prior to Final Acceptance:

1. Receipt and approval of application for final payment; due within seven (7) days of receipt of Final Completion by the Engineer.
2. Execution of all Change Orders.
3. Contractor's signed waiver and release of claims on the Engineer provided form.
4. Contractor's submittal of list of all suppliers and subcontractors and the total amounts paid to each on the Engineer provided form;
5. Contractor's submittal of a list of all subcontractors and suppliers requiring Affidavits of Wages paid on the Contract and certify that each of companies will submit an approved Affidavit of Wages paid to the Port within 30 days.

B. The Engineer will issue the Final Acceptance Memo upon receipt of the required submittals.

PART 2 - PRODUCTS

2.01 CONTRACTOR'S WARRANTY

- A. The Contractor warrants the labor, materials and equipment delivered under the contract to be free from defects in design, material, or workmanship, and against damage caused prior to final inspection. Unless otherwise specified, this warranty extends for a period of one (1) year from the date of Substantial Completion.
1. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit the Port's rights under warranty.
 2. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Port or Port tenants during construction.
 3. Submit Warranties to the Engineer as a submittal, as described in 01 33 00 – Submittal Procedures.
- B. In the event of equipment failure, during such time or in such a location that immediate repairs are mandatory, the Contractor shall respond promptly (within 48 hours), irrespective of day of the week. If the Contractor is not available, the Port will affect repairs. The Contractor shall then reimburse the Port for parts and labor necessary to correct deficiencies as defined within the warranty clause and time.

2.02 AS-BUILT DRAWINGS

- A. Project As-Built Drawings: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
- B. Project As-Built Drawings shall be compiled by the Contractor and submitted to the Engineer for translation to the Record Drawings on a monthly basis.
1. The Project As-Built Drawings will be submitted on paper full-sized (ANSI D) copy.
 2. Drawings shall be kept current and shall be done at the time the material and equipment is installed. Annotations to the record documents shall be made with an erasable colored pencil conforming to the following color code:
 - a. Additions – Red
 - b. Deletions – Green

- c. Comments – Blue
- d. Dimensions – Graphite
- 3. Project As-Built Drawings must be complete and accepted by the Engineer before Final Completion is issued.
- 4. As-Built Drawings shall be in accordance with horizontal and vertical control as shown on the drawings.

PART 3 – EXECUTION

3.01 MAINTENANCE OF AS-BUILT DRAWINGS

- A. The Contractor shall maintain at the Project site, in good order for ready reference by the Engineer, one complete copy of the Contract Documents, including Addenda, Change Orders, other documents issued by the Port, a current Progress Schedule, and approved Submittals. The Contractor shall also generate and keep on site all documents and reports required by applicable permits.
- B. The Contractor's As-Built Drawings shall be updated to record all changes made during construction. The location of all existing or new underground piping, valves and utilities, and obstructions located during the Work shall be appropriately marked until the Contractor incorporates the actual field dimensions and coordinates into the as-built drawings. The as-built drawings shall be updated at least weekly and before elements of the Work are covered or hidden from view. After the completion of the Work, the as-built drawings shall be provided to the Port.

END OF SECTION

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. Work related to this section is described in the following sections:
1. Section 00 31 00 – Available Project Information
 2. Section 00 31 26 – Existing Hazardous Material Information
 3. Section 01 10 00 – Summary
 4. Section 01 14 00 – Work Restrictions
 5. Section 01 33 00 – Submittal Procedures
 6. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
 7. Section 01 50 00 – Temporary Facilities and Controls
 8. Section 01 74 19 – Construction Waste Management and Disposal
 9. Section 02 83 13 – Lead-Hazard Control Activities
 10. Section 02 90 00 – Fugitive and Silica Dust Control Procedures
 11. Division 26 – Electrical
 12. Section 31 00 00 – Earthwork
 13. Section 31 62 00 – Driven Piles
 14. Section 35 20 23 - Dredging
 15. Appendix – Removal Action Work Plan (RAWP) (includes the Water Quality Monitoring and Protection Plan, (WQMPP))
 16. Appendix – Pier 4 Regulated Building Materials Inspection, dated October 13, 2014

1.02 DESCRIPTION OF WORK

- A. The extent and location of the "Demolition" work is indicated on the Drawings, in the specifications, and as outlined below.
1. Removal and disposal, in whole or in part, of all items (demolition materials, debris, etc.) in compliance with the specifications, the RAWP, and all agencies of jurisdiction. All items shall become the property of the Contractor unless otherwise noted.
 2. Payment of all costs required for disposal of items at legal disposal sites, including all permit fees and related costs.
 3. Salvaging items as indicated on the Drawings and in the specifications. Items noted to be salvaged shall be dismantled, transported, and reassembled at a location designated by the Port, within 5 miles of the project site, or as designated on the Drawings.
 4. Backfilling and compaction of holes, voids, trenches, or pits that result from such removal.
- B. The demolition details shown on the Drawings are based upon information contained in the reference drawings. The details indicate typical features of the various structures and shall not be construed as complete or adequate to supplant actual on-site inspection, additional review,

and interpretation of the reference drawings by the Contractor. The reference drawings shall be used by the Contractor to establish typical features and quantities for demolition.

- C. The Contractor shall furnish all labor, materials, tools, equipment, and supervision necessary to perform demolition work as described in the Drawings and these specifications and in strict accordance with the Removal Action Work Plan (RAWP).

1.03 REFERENCE DRAWINGS

- A. Not all information pertaining to the features of structure to be demolished under this contract is shown on the Contract Drawings. The reference drawings indicated below provide additional information regarding the existing structure that is to be demolished. These documents shall be reviewed by the Contractor and are available as noted in Section 00 31 00 – Available Project Information.

1. **Pier Structure Between Bents 101 and 144:**

- a. Pier 4 Cargo Warehouses, Dock, and Services (EDA Project No. 07-1- 00095, dated May 15, 1967), Sheets P-1 through P-16, AS-1 and AS-2.
- b. Pier 4 Crane Rail Modifications – 1986 (Contract No. 598, Project No. EP-4049-13, As-builts dated September 25, 1986), Sheets 1 through 6.
- c. Terminal 4 Wharf Crane Rail Upgrade (Contract No. 651, Project No. EP-4291-13, As-built dated September 1, 1992), Sheets 1 through 8.
- d. Terminal 4 Wharf Crane Rail Upgrade (Contract No. 690, Project No. EP-4439-13, dated January 4, 1991), Sheets 1 through 9.
- e. Terminal 4 Wharf Crane Rail Upgrade (Contract No. 958016, Project No. EP-4504-13, dated June 1995), Sheets 1 through 10.
- f. Blair Waterway Widening Bridge Reach & Inner Reach – Phase 2 (Contract No. 998206, Project No. EP-6268-16, dated April 22, 2005) Sheets 11, 13 through 16, 39 through 41.

2. **Pier Structure Between Bents 92 and 101:**

- a. Pier 4 Extension (Contract No. 546, Project No. EP-3700-13, dated September 15, 1983), Sheets 1 through 25.
- b. Pier 4 Crane Rail Modifications – 1986 (Contract No. 598, Project No. EP-4049-13, As-builts dated September 25, 1986), Sheets 1 through 6.
- c. Terminal 4 Wharf Crane Rail Upgrade (Contract No. 651, Project No. EP-4291-13, As-built dated September 1, 1992), Sheets 1 through 8.

3. **Steel Fender Panels Between Bents 92 and 130:**

- a. Modification of Pier 4 Fender System (Contract No. 978044, Project No. EP-5130-13, dated March 13, 1998), Sheets 1 through 10.

4. **Navigation Light Towers:**

- a. Blair Waterway Widening Bridge Reach & Inner Reach – Phase 3 (Contract No. 998254, Project No. EP-6291-13, Project Record Set dated April 9, 2008), Sheets 56, 57, and 61 through 6.

1.04 SITE CONDITIONS:

- A. Husky Terminal (Terminals 3 and 4) is an operating facility. The work shall be completed in accordance with the constraints and access plan shown on the Drawings. Access to the site is restricted by ongoing terminal operations. Contractor operations shall be restricted to the designated areas.
- B. Coordinate and schedule, with the Engineer, access to the site in advance, and acknowledge that terminal operations take precedence over construction activities.
- C. For access to the site see Section 01 10 00 – Summary and Section 01 14 00 – Work Restrictions.
- D. All demolition items not identified for salvage shall become the property of the Contractor. Disposal of all demolition items shall be in accordance with the specifications, local, state and federal requirements.
- E. Lead Containing Paint (LCP) and Asbestos Containing Materials (ACM) have been detected within the project demolition area as indicated in the Pier 4 Regulated Building Materials Inspection Report. Refer to Section 00 31 26 – Existing Hazardous Material Information and Section 01 83 13 - Lead-Hazard Control Activities for additional information.

1.05 SUMMARY

- A. Items and material categories for demolition include, but are not limited to, the following:
 - 1. Pier 4 timber fender system including treated timber fender piles, chocks, walers, connections, steel pipe piles, and fender panels.
 - 2. Portions of Pier 4 substructure and superstructure including prestressed concrete piles, prestressed concrete deck panels, cast-in-place concrete pile caps, cast-in-place crane rail pad, embedded appurtenances, and adjacent elements including the crane rail system as indicated on the Drawings.
 - 3. Pier 4 utilities and appurtenances including conduits, ladders, bollards, bullrail, steel crane stops, and utility vaults.
 - 4. Deck pavement, ballast, crane rail pads, underground utilities, storm sewers, outfalls, manholes, utility vaults, conduits and cables for power and fiber optic systems.
 - 5. Yard pavement, base course, water lines, hand holes, vaults, and related features.
 - 6. Prestressed concrete test piles.
 - 7. Navigation light towers #3 and #4.
- B. Items or equipment to be salvaged or recycled shall be dismantled without damage. Items designated for salvage or recycling are listed below.

	Salvage/Recycle List	Destination
1	Navigation light tower #4 located at southeast corner of Pier 4	Reinstall on new piling and platform at relocated position in waterway.
2	Navigation light tower #3 and steel platform located on the east side of the Blair Waterway	Reinstall on new piling at relocated position in waterway.
3	Deck Ballast	For Contractor disposal or reuse as backfill as needed.

4	Clean Riprap	For Contractor Disposal or reuse for slope protection as needed.
5	Lids to Pier 4 ship service vaults located along the bullrail	Port Maintenance.

- C. Any damage by the Contractor's operations to materials identified to be salvaged shall be repaired or replaced, as determined by the Engineer, by the Contractor and at the Contractor's expense.

1.06 SUBMITTALS

- A. Demolition Management Plan (DMP) with documentation that includes and addresses the following:
1. Work sequence and schedule. Include phased demolition requirements consistent with the overall project schedule.
 2. Activity-based schedule.
 3. List of equipment to be used for demolition operations.
 4. Means and methods to protect existing infrastructure, stockpile materials, and deliver salvaged material. Include the methods used to provide floats, false work, temporary supports, bracing, and shoring.
 5. Means and methods to prevent demolition materials, debris, water from construction activities, etc. from falling into or entering the Blair Waterway.
 6. Means and methods for removing or cutting timber piles that break during extraction.
 7. Laydown areas for materials management.
 8. Puget Sound Clean Air Agency, Notice of Intent to Demolish.
 9. Means, methods, procedures, and controls for handling and disposal of Asbestos Containing Material in accordance with all applicable local, state, and federal regulations.
- B. If the DMP is revised, resubmit with any proposed changes for review by the Engineer prior to incorporating changes to means, methods, equipment, tools, temporary supports, etc.
- C. Water Quality Protection, Monitoring, and Notification Procedures
1. The Contractor shall be subject to the requirements and procedures specified in the Water Quality Monitoring and Protection Plan (WQMPP) and the RAWP. Provide written acknowledgement of understanding of all requirements and procedures contained in these documents with respect to water quality monitoring, best management practices (BMPs), and notification procedures associated with demolition. Written acknowledgement shall be provided in the form of a signed letter from the Contractor to the Port of Tacoma. The WQMPP is located in the Appendix of the Contract Documents.
 2. Proposed methods and procedures for monitoring water quality in strict compliance with the WQMPP.
 3. The personnel and equipment that will be used to monitor water quality during the course of the project.
 4. Contingency measures to be implemented if water quality violations occur.

- D. Surveyed positions of all piles that break off before or while being pulled. Provide a plan that shows the position of each broken pile.

PART 2 - PRODUCTS

2.01 GENERAL

- A. All products that are required to repair, accomplish, or be incorporated into the work shall be selected by the Contractor, subject to the approval of the Engineer.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Utility locates shall be performed prior to start of demolition. Coordinate and resolve with the Engineer and terminal operators to turn off or de-energize affected services before starting demolition.
- B. Verify all items for demolition, disposal, and salvage as early as practicable prior to start of the work. Notify the Engineer immediately if observed conditions differ from anticipated conditions.

3.02 DEMOLITION OF STRUCTURES

- A. All demolition work shall be coordinated and performed in strict accordance with the permit requirements and the RAWP. This specification section does not include all required protection measures, mitigation measures, and BMPs associated with this project. The Contractor shall pay particular attention to the conditions of issued permits, the RAWP, the WQMPP, and applicable regulations and authorizations associated with this project. All protection measures, mitigation measures, and BMPs included in these documents shall be implemented by the Contractor.
- B. Completely remove and dispose of all designated items. Infrastructure or materials designated to remain that are damaged by Contractor activities shall be replaced or repaired at the Contractor's expense.
- C. Do not damage existing pavement which is to remain in place. Pavement demolition shall be accomplished by making neat vertical saw cuts at the boundaries of areas to be removed.
- D. All prestressed concrete piles and steel pipe piles designated for demolition shall be completely removed by pulling. Jetting is not permitted.
- E. Timber Pile Removal:
 - 1. All timber piles designated for demolition shall be completely removed by pulling vertically to avoid breaking. Jetting shall not be permitted.
 - 2. The position of each pile that breaks during pulling shall be recorded and submitted to the Port. Piles that break during pulling shall be cut off 3 feet below mudline and the hole backfilled with clean sand. Depending on the location of the broken piling, it may be removed or cut-off at a later date in coordination with the Port and the EPA to avoid or minimize resuspension of contaminated material. Backfilling holes can only occur between July 15 and February 15.
 - 3. Pile extraction, cutting, and hole backfilling activity shall be performed in compliance with the work restrictions described in Section 01 14 00 – Work Restrictions. The means and method of cut-off or removal of broken piling shall be subject to approval of the Port and EPA.
 - 4. All removed piling shall be cut into maximum lengths of 4 feet prior to disposal.

- 5. Due to timing restrictions it may be necessary to secure the timber piles to allow for deck demolition to occur prior to pile extraction.
- F. At no time shall any debris be allowed to enter the water. The Contractor shall make provisions using floats, falsework, scaffolding, and other means as necessary to prevent debris from falling into the water. All floating debris that falls into the water shall be removed immediately. All non-floating debris shall be noted and retrieved immediately upon coordination with the Port and the EPA. Depending on the type of item to be retrieved and where it fell, materials may be removed at a later date to avoid or minimize resuspension of contaminated material. The means and method of item retrieval shall be subject to approval of the Port and EPA. Removal and disposal of all debris shall occur at no additional cost to the Port.
- G. Blasting shall not be used.
- H. Treated timber exposed to salt water shall be cut into lengths of 4-ft or less and disposed of at an approved off-site disposal facility.
- I. Treated timber not exposed to salt water (assumed to be above elevation +15.0 Mean Lower Low Water) shall be cut into lengths of 4-ft or less and disposed of as hog fuel or recycled to the extent practicable.
- J. Disposal of all asphalt pavement shall be at a Contractor-selected recycle site.
- K. Disposal of all concrete (plain and reinforced) shall be at a Contractor-selected recycle site.
- L. Removal and disposal of Asbestos Containing Material shall be performed in accordance with all applicable local, state, and federal regulations.

3.03 DEMOLITION OF UTILITIES

- A. Notify the Engineer a minimum of 72 hours before scheduled demolition of utilities. Schedule with each utility agency the work required by that agency. Meeting the conditions required by the Contract Documents and the affected utility shall be the sole responsibility of the Contractor.
- B. Piping: Remove all piping in the demolition area, including fire hydrants and underground piping or exposed piping.
- C. Electrical, camera, fiber optics cables and telephone items: Remove electrical conduit, fixtures and equipment from the demolition area as indicated on the Drawings. Salvage and reuse items designated for reinstallation as indicated in the specifications or on the Drawings.
- D. Water Lines: Remove and cap water and other utility lines as indicated on the Drawings.
- E. Storm Drains: Remove catch basins and drains in the demolition area and trim pipes to clear construction as indicated on the Drawings.
- F. Electrical Supply: Remove electrical conductors as indicated on the Drawings.

3.04 DISPOSAL

- A. Disposal shall be in accordance with the Specifications, and in compliance with local, state, and federal regulatory agencies.
- B. Cleanup: Clean the site after removal of all demolition items and materials. There shall be no debris, rubble or litter left at the site from any of the demolition operations.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 00 31 26 – Existing Hazardous Material Information
 - 2. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
 - 3. Section 01 50 00 – Temporary Facilities and Controls
 - 4. Section 02 41 00 – Demolition
 - 5. Section 02 90 00 – Fugitive and Silica Dust Control Procedures
 - 6. Appendix – Pier 4 Regulated Building Materials Inspection, dated October 13, 2014

1.02 DESCRIPTION OF WORK

- A. Review the Pier 4 Regulated Building Materials Inspection report for information on the investigation for Lead Containing Paint (LCP) within the project area. The report is provided in the Appendix.
- B. Representative painted surfaces in the project area were assessed for the presence of lead containing paint (LCP) in the above referenced report. Detectible amounts of lead were found in the following 3 locations:
 - 1. Yellow paint on concrete barrier
 - 2. Yellow paint on bollard post
 - 3. Orange paint on ship bollard
- C. General work items include, but are not necessarily limited to, the following.
 - 1. Supply all labor, materials, services, insurance, special permits, and equipment necessary to accomplish LCP materials abatement and demolition.
 - 2. Be responsible for all costs associated with testing, engineering controls, decontamination, and personal protection as part of this contract.
 - 3. Ensure that the scope of lead work complies with WAC 296-155-176, Lead-in-Construction Standard and WAC 173-303, Dangerous Waste Regulations
 - 4. If painted components are discovered during the project that are different than those apparent in the project area or other areas that have been characterized, notify the Engineer so that the material can be assessed for the presence of lead.

1.03 CODES AND REGULATIONS

- A. Due to the potential health and environmental hazards associated with exposure to lead in construction, the Work shall be performed in compliance with the applicable provisions of the Washington Industrial Safety and Health Act (WISHA), and the Washington State Hazardous Waste Management Act, as well as other applicable federal, state, and local codes and regulations governing hazardous materials and hazardous waste. The Contractor shall be fully responsible for planning and executing all the Work under this Contract in a manner that meets the requirements of the Washington Administrative Code (WAC) 296-62-07521 and WAC

296-155-176 for protecting the health and safety of employees, the public, and for protecting the environment.

- B. The following regulations of the United States Department of Labor, Occupational Safety and Health Administration (OSHA), the United States Environmental Protection Agency (EPA) and applicable requirements of the State of Washington are pertinent to this work. Other applicable regulations not specifically identified herein also apply.

1. OSHA

- a. 29 CFR 1910, Occupational Safety and Health Standards
 - 1) 29 CFR 1910.134, Respiratory Protection
 - 2) 29 CFR 1910.1100, Air Contaminants
 - 3) 29 CFR 1910.1200, Hazard Communication
- b. 29 CFR 1926, Safety and Health Regulations for Construction
 - 1) 29 CFR 1926.28, Personal Protective Equipment
 - 2) 29 CFR 1926.57, Ventilation
 - 3) 29 CFR 1926.62, Lead

2. EPA

- a. 40 CFR 260, Hazardous Waste Management Systems: General
- b. 40 CFR 261, Identification and Listing of Hazardous Waste
- c. 40 CFR 262, Standards Applicable to Generators of Hazardous Waste
- d. 40 CFR 263, Standards Applicable to Transporters of Hazardous Waste
- e. 40 CFR Part 745, Lead, Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities;

3. Department of Transportation

- a. 49 CFR 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- b. 49 CFR 173, Shippers -- General Requirements for Shipments and Packagings
- c. 49 CFR 178, Specifications for Packagings

4. State of Washington

- a. Chapter 296-24 WAC, Safety Standards for General Safety & Health
- b. Chapter 296-62 WAC, General Occupational Health Standards
 - 1) WAC 296-62-054, Hazard Communication
 - 2) WAC 296-62-071, Respiratory Protection
 - 3) WAC 296-62-07515, Control of Chemical Agents
- c. Chapter 296-155 WAC, Safety Standards for Construction Work
 - 1) WAC 296-155-176, Lead
 - 2) WAC 296-155-200, Personal Protective Equipment

- d. Chapter 173-303 WAC, Dangerous Waste Regulations
- 5. Local Regulations
 - a. Local landfill regulations

1.04 DEFINITIONS

- A. Whenever the terms below occur in this section, they will have the meanings which follow.
 - 1. Action Level: Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period. As used in this section, "30 micrograms per cubic meter of air" refers to the action level.
 - 2. Air Monitoring: The process of measuring the concentration of lead in a specific volume of air in a stated period of time. Air samples shall be collected and analyzed in accordance with the methods specified by the National Institute for Occupational Safety and Health (NIOSH Method 7105) and as required by WAC 296-155-176.
 - 3. Area Monitoring: Sampling of lead concentrations inside the physical boundaries of the lead control area that are representative of airborne lead concentrations that may reach the breathing zone of personnel.
 - 4. Eight-Hour Time Weighted Average (TWA): Airborne concentration of lead averaged over an 8-hour workday to which an employee is exposed.
 - 5. Lead: Metallic lead, inorganic lead compounds, and organic lead soaps. Excluded from this definition are other organic lead compounds.
 - 6. Lead Permissible Exposure Limit (PEL): Fifty micrograms per cubic meter of air as an 8-hour time weighted average.
 - 7. Personal Monitoring: Sampling of lead concentrations within the breathing zone of an employee to determine the 8-hour TWA concentration in accordance with WAC 296-155-176. Samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and the center at the nose or mouth of the employee.
 - 8. Industrial Hygienist: The Industrial Hygienist shall be subject to approval as specified under Paragraph 1.06 Submittals of this specification section and shall be at least one of the following:
 - a. Certified by the American Board of Industrial Hygiene and have prior experience in the health and safety aspects of a lead hazard control work project.
 - b. A professional engineer or safety professional certified by the Board of Certified Safety Professionals with a minimum of three (3) years prior experience in industrial hygiene relating to lead hazard control work.

1.05 QUALITY ASSURANCE

- A. The Engineer will perform periodic observation of the site work to ensure that it is being performed in a manner consistent with the approved work plan and the contract documents. The Engineer will have the authority to issue a "Stop Work" order for contract and or regulatory non-compliance.

1.06 SUBMITTALS

- A. Submit for review and approval a Lead Waste Management and Disposal Plan (LWMDP) demonstrating that the handling of the LCP materials will be in compliance with applicable agency regulations and the contract documents. No lead-related work will be permitted prior to approval by the Engineer. The LWMDP shall include the following:
 - 1. Description of waste streams (liquid and solids including PPE) that will be generated during the site work
 - 2. Methods for managing/storing/stockpiling (accumulating) lead waste materials on site
 - 3. Waste minimization efforts
 - 4. Container selection and labeling
 - 5. Qualification/certificates of lead waste transportation subcontractor
 - 6. Qualification/certification of lead waste disposal facilities
 - 7. Documentation of final lead waste transportation and disposition

PART 2 – PRODUCTS

2.01 EQUIPMENT AND SUPPLIES

- A. As required, provide the following equipment and supplies necessary to support the work as described in the work plan.
 - 1. Chemicals to be used on site including solvents, dust suppressants, wetting agents, cleaning products, degreasing agents, welding/cutting supplies, and encapsulants.
 - 2. Demolition equipment
 - 3. Demolition hauling and moving equipment
 - 4. Material storage containers and supplies
 - 5. Decontamination equipment and supplies
 - 6. Protective clothing and respirators
 - 7. Labels, manifests, and other shipping documentation
 - 8. Release prevention equipment

PART 3 – EXECUTION

3.01 WORK AREA PREPARATION

- A. Perform the following preliminary steps to prepare the Work Areas prior to demolition of lead-containing materials, if encountered.
- B. Control Areas: Establish a Control Area that includes a perimeter sufficient to perform the demolition work around each area that contains lead or lead-coated materials. The control area shall also consist of the pathway for transport of any lead-contaminated material to a stockpile or storage receptacle if the demolition debris is not immediately transported from the site. Provide and display caution signs in clearly visible areas at entrances indicating that hazardous material work is being conducted and that unauthorized persons should not enter. Signs shall comply with WAC 296-155-176.

- C. Lead Waste Accumulation Area: Prepare the lead waste accumulation area as described in the approved LWMDP.

3.02 WORK PROCEDURE

- A. Coordination of Work of all Trades: Coordinate the work of all trades to assure that work is performed in accordance with the applicable regulations and that the control limits are maintained at all times both inside and outside the control area.
- B. Dust Control: Prevent dust generation at all times to the maximum extent practicable, as provided in Section 02 90 00 – Fugitive and Silica Dust Control Procedures. Dry scraping, dry sanding, or dry grinding on lead-containing paints or lead-contaminated surfaces shall not be permitted without a full enclosure.
- C. Demolition Procedures: Perform demolition in areas of lead-containing paints in accordance with the approved health and safety plan. Use procedures and equipment required to limit occupational and environmental exposure to lead when lead-containing coatings or dusts may be released. All lead-coated demolition debris shall be handled, stored, and disposed of as to meet applicable federal, state, and local requirements.
- D. Unsafe Work Practices: Grossly inadequate health, safety, or environmental precautions on the part of the Contractor or the belief that the Contractor's personnel, the general public, or the environment are or may be exposed to an immediate hazard, may be cause for the Port to suspend the Contractor's site work and ask the Contractor's personnel to evacuate the hazard area. The Contractor shall not be compensated for such delays. The Contractor shall be responsible for costs identified by the Port and the Port's tenants as a consequence of the Contractor's actions.

3.03 SITE QUALITY CONTROL AND MONITORING

- A. Site Inspection: While performing the work, the Contractor may be subject to on-site inspection by WISHA, OSHA, EPA/Ecology inspectors, and/or local building or health officials. If found to be in violation of pertinent regulations, the Contractor shall cease all work immediately and may not resume work until the violation is resolved. Standby time required to resolve the violation shall be at the Contractor's expense.
- B. Quality Assurance
 - 1. Prevent dust generation at all times to the maximum extent practicable. The use of water shall be restricted to the smallest quantity necessary to minimize dust and to avoid the potential of runoff or ponding.

3.04 CLEANUP, TESTING, AND DISPOSAL

- A. Housekeeping: Housekeeping and cleanup procedures are essential tasks for contamination control. Maintain all surfaces throughout the area free of debris to the maximum extent practicable. Restrict debris from being distributed over the general area. In all possible instances, workers shall cleanup their own areas. Equip personnel engaged in cleaning up scrap and demolition debris with necessary respiratory equipment and protective clothing, as required.
- B. Cleanup: Maintain surfaces of the lead control area as free of accumulation of paint chips and dust as practicable. Restrict the spread of dust and debris; keep waste from being distributed over the work area. The use of compressed air to cleanup the area is strictly prohibited. At the end of each shift, clean the area of visible lead paint contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area, or cleanup by other appropriate means.

- C. Disposal of Lead Demolition Waste: The following requirements shall be met for the disposal of lead dangerous waste:
1. Collect lead dangerous waste, scrap, debris, bags, containers, equipment, and lead-contaminated clothing that may produce airborne concentrations of lead particles. Label the containers in accordance with WAC 296-155-176 and Chapter 173-303 WAC.
 2. Handle, store, transport, and dispose of lead or lead dangerous waste in accordance with 40 CFR 260, 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265 and Chapter 173-303 WAC. Comply with land disposal restriction notification requirements as required by 40 CFR 268.
 3. The Contractor shall characterize the waste and provide the disposal facility with a waste profile sheet for advance notice of acceptance. At the same time, the Port will use the waste profile sheet to obtain a Generator EPA Identification Number for dangerous waste, if required. Waste shall not be transported or disposed of without this number.
 4. The Transporter and Disposal Facility must each have an EPA Identification Number. The Contractor shall submit the name, address, emergency contact phone numbers, and EPA Identification Number of the Transporter and Disposal Site to the Port prior to the disposal of hazardous waste.
 5. The Contractor shall notify the Port three (3) days in advance of the time when the wastes are to be removed from the site. A copy of the completed hazardous waste manifest/bill of lading (for non-hazardous waste), and/or other documents required by the state or local agencies, shall be signed by the Port, with the final copy submitted to the Port within two weeks of pickup. These shall be signed by the generator, licensed transporter, and approved disposal or treatment facility representative.
 6. It is a condition of Substantial Completion by the Port and a condition for final payment of this project that the Port has received all of the required waste disposal documentation that demonstrate proper handling, transportation, and disposal/recycling of demolition wastes and materials.
 7. Payment for disposal of waste will not be made until a signed copy of the disposal documentation from the treatment or disposal facility certifying the amount of lead-containing materials delivered is provided to the Port.

END OF SECTION

PART 1 – GENERAL

1.01 RELATED WORK DESCRIBED 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. Work related to this section is described in the following sections:
 - 1. Section 00 31 26 – Existing Hazardous Material Information
 - 2. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
 - 3. Section 01 42 19 – Reference standards
 - 4. Section 01 50 00 – Temporary Facilities and Controls
 - 5. Section 01 74 19 – Construction Waste Management and Disposal
 - 6. Section 02 41 00 – Demolition
 - 7. Section 35 20 24 – Contaminated Dredge Material Transloading

1.02 DESCRIPTION

- A. The Contractor shall supply all labor, materials, facilities, equipment, services, employee training and testing, handling, transport, disposal, and agreements necessary to perform the work required for fugitive dust control activities and potential silica-containing dust control activities in accordance with these specifications and applicable regulations from the State of Washington Department of Labor and Industries (WISHA), Puget Sound Clean Air Agency (PSCAA), and any other applicable federal, state, and local government regulations. Whenever there is a conflict or overlap of the above references, the most stringent provisions are applicable.
- B. In all cases where potential silica dust exposures may occur, the Contractor shall use any and all feasible engineering and work practice controls to reduce and maintain employee exposure levels at or below the Washington State Permissible Exposure Limits (PELs) for silica compounds, as specified in WAC 296-62-07515. It shall be assumed that the workers generating the silica dust are exposed above the Permissible Exposure Limit (PEL) until the Contractor air monitoring demonstrates levels below the PEL.
- C. The work specified herein shall be performed by competent persons. Competent persons are those who are trained, knowledgeable, and qualified in both fugitive and silica dust evaluation and control methods.
- D. If fugitive dust emissions are visible beyond the perimeter of the work area, or if respirable crystalline silica dust concentrations exceed 0.05 mg/m³ beyond the perimeter of the work area, the Engineer is authorized to stop work. The Contractor shall perform all necessary corrective actions to eliminate visible dust and reduce respirable crystalline silica concentrations to less than 0.05 mg/m³ before resuming work. The Port may visually monitor for fugitive dust and collect air samples for silica at any time.

1.03 SCOPE OF WORK

- A. Construction work will potentially generate fugitive dust. It is the responsibility of the Contractor to control fugitive dust generation and emissions.
- B. Construction site work that requires control of silica-containing dust includes chipping, sanding, sawing, jack-hammering, and other aggressive methods on concrete building materials associated with this project.

C. Work activities shall include the following, as applicable:

1. Provide site security to assure that no member of the public is able to gain access to the construction work area at any time. The Contractor shall maintain access and egress routes at all times.
2. Provide worker training, respiratory protection, and medical examinations, as necessary, to meet applicable silica regulations and regulatory guidance regarding silica exposures where work involves the generation of concrete or demolition-related dust.
3. Adopt work practices that prevent the release of fugitive and silica dust outside of the work area, as described in Part 3 of this section.
4. Use wet methods and High-Efficiency Particulate Absorption (HEPA) vacuuming equipment within the work area to clean the work area and control fugitive dust during demolition and construction activities, and at the completion of demolition and construction activities.
5. Use barriers to prevent the release of dust from the work area to other areas of the project.
6. Provide for worker and equipment decontamination. Worker decontamination and equipment areas shall be cleaned daily or more frequently, as required, to prevent dust emissions.
7. Protect personal security, life safety, and energy management systems, including associated wiring, which shall remain operational throughout the work activities.

1.04 PERSONAL PROTECTION

A. Respiratory Protection

1. Where exposures to respirable crystalline silica may exceed the PEL of 0.05 mg/m³ based on an 8-hour time-weighted average (8-hr TWA) per WAC 296-62-07515, workers shall be provided, as a minimum, with personally issued and marked respirators equipped with high efficiency particulate air (HEPA) filters approved by the National Institute for Occupational Safety and Health (NIOSH), 99.97% efficient, that shall be worn in the designated work area. Sufficient filters shall be provided for replacement as required by the workers or applicable regulations. Disposable respirators shall not be used. Respirators and respirator supplies shall be provided to the workers at the expense of the Contractor.
2. The Contractor shall comply with OSHA 29 CFR Part 1926.134, WAC 296-62-071 (Respiratory Protection), and ANSI Standard Z88.2-1990 "Practices for Respiratory Protection."
3. No worker shall be exposed to levels greater than 0.05 mg/m³ respirable crystalline silica as determined by the protection factor of the respirator worn and the work airborne area respirable crystalline silica levels.
4. A sufficient supply of replacement parts and HEPA filter cartridges shall be provided to the workers.
5. The Contractor shall maintain daily inspection(s) of all respirators to verify cleanliness and to replace damaged, worn or missing parts.

B. Protective Clothing

1. Workers shall be provided with sufficient sets of protective full-body clothing to be worn in the designated work area whenever a potential exposure to respirable crystalline silica concentrations exists above the PEL. Such clothing shall include, but not be limited to, coveralls and eye protection.
2. Protective clothing shall not be worn outside the work area. Non-disposable-type protective clothing and footwear shall be left in the work area.
3. Eye protection shall be provided and worn as required by applicable safety regulations. Equipment shall conform to ANSI Z87.1-1989.
4. Head Protection: Hard hats or other head protection shall be provided as required by applicable safety regulations. Hard hats shall conform to ANSI Z89.1-1991, Class A or B.
5. Foot Protection: Nonskid footwear shall be provided to all workers. Footwear shall conform to ANSI Z41.1-1993, Class 75.
6. Workers shall not eat, drink, smoke, or chew gum or tobacco in or near the work areas.

1.05 SUBMITTALS

- A. Contractors shall provide complete submittals as per Section 01 33 00 – Submittal Procedures for review by the Engineer. Following receipt of review comments from the Engineer, submit additional complete sets of revised submittals. No hazardous material abatement work or demolition work will be permitted prior to submittals being approved by the Engineer. Allow fifteen (15) calendar days for submittal review.
- B. Pre-Work Submittals: The Contractor shall submit to the Engineer for review and acceptance the Contractor's Work Plan as a prerequisite to demolition activities. The work plan must be reviewed and signed by a Certified Industrial Hygienist chosen by the Contractor. The plan must be suitably titled and indexed, providing detailed information concerning the following items as a minimum in the order listed below:
 1. Safety and health hazards;
 2. Personal protective measures and decontamination system requirements;
 3. Respiratory protection program, fit testing and training records for all employees potentially exposed above the PEL;
 4. Specific work practices and procedures;
 5. Description of engineering controls designed to keep fugitive dust and silica exposures below the levels specified herein, for outside and inside each work area;
 6. Silica Air Monitoring Plan;
 7. Dust disposal plan;
 8. Emergency procedures; and
 9. Internal administrative and inspection procedures.

1.06 SILICA AIR SAMPLING EVALUATION BY CONTRACTOR

- A. The Contractor shall conduct air sampling of workers and subcontractors for respirable crystalline silica in accordance with NIOSH Method 7500, and according to the Contractor's Work Plan. This sampling is performed to evaluate workers' exposure levels.

- B. The Contractor shall conduct perimeter area air sampling in areas of the marine building occupied by Terminal Employees and Port Employees for respirable crystalline silica in accordance with the NIOSH Method 7500, and according to the Contractor's Work Plan. This sampling is performed to evaluate potential exposures to building occupants.
- C. The Contractor shall conduct air sampling in accordance with the NIOSH Method to collect a sufficient volume of air to determine if the airborne silica dust levels are below the PELs. If the sampling detection levels are above the PELs, the Contractor is required to re-sample at no expense to the Port of Tacoma.
- D. Results of area air samples collected by the Contractor shall be submitted to the Port Engineer within 48 hours after sample collection.

PART 2 - PRODUCTS

2.01 TOOLS AND EQUIPMENT

- A. Equipment and supplies may include but are not limited to:
 - 1. Chemicals to be used on site including solvents, dust suppressants, wetting agents, cleaning products, degreasing agents, welding/cutting supplies, and encapsulants;
 - 2. Enclosure equipment (for dust control);
 - 3. Material storage containers and supplies;
 - 4. Suitable tools for dust collection and water-jet dust suppression systems; and

PART 3 - EXECUTION

3.01 WET METHODS

- A. Use "wet" systems that eliminate or reduce dust generated by demolition activities including cutting concrete. Cleanup sludge and /or waste immediately following its generation.

3.02 ENCLOSURE METHOD

- A. Use enclosures in conjunction with air filtration devices. Air shall be moved through the filtration unit with a minimum of 1500 CFM. Provide HEPA filter-based shop vacuum units to control dust generated at the work face and use tools that include dust control features where possible.

3.03 OVERSIGHT

- A. The Engineer will stop work if, in the course of performing their monitoring duties, they observe an instance of substantial non-conformance with the contract documents and/or a situation presenting a health hazard to workers, Port employees, or the public. Work shall not resume until corrective measures have been enforced. Instances of substantial non-conformance shall include, but not be limited to, the following:
 - 1. Visible dust emissions outside of the work area barriers;
 - 2. Loss of negative pressurization (if required);
 - 3. Activities or misconduct affecting worker's or building occupant's safety; and
 - 4. Breaches of containment that could substantially damage building life safety systems.
- B. If poor work practices are observed, the Engineer shall direct the Contractor to make the necessary corrections. If appropriate corrections are not made, or if there is an immediate threat exists that silica dust could be released outside the work area, work shall be stopped. The decision to stop work shall be made by Engineer. The decision to stop work can also be

made by the Contractor as part of the Contractor's management and control of the site and site activities.

- C. The Engineer may perform air sampling inside and outside the work area during the project. The Contractor shall cooperate fully with the Consultant and ensure the cooperation of his workers during collection of air samples and work area inspections.
- D. The Engineer's oversight role does not relieve the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the federal, state, or local governments. Air monitoring results generated by the Port shall not be used by the Contractor to represent compliance with regulatory agency requirements for monitoring of workers exposure to airborne silica, nor shall any other activity on the part of the Port represent the Contractor's compliance with applicable health and safety regulations.

3.04 RECORDKEEPING

- A. The Contractor shall maintain for at least thirty (30) years, employee health and safety records for the project, as specified in WAC 296-802. Furnish one copy to the Engineer. The record shall include the following information:
 - 1. The starting and completion dates of the project;
 - 2. A copy of all analytical results;
 - 3. Copies of negative pressure documentation records (as required);
 - 4. The name and address of the analytical laboratory used for silica analyses; and
 - 5. The name and address of all persons who were engaged in the concrete demolition activities.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 03 20 00 – Concrete Reinforcing
 - 2. Section 03 30 00 – Cast-in-Place Concrete
 - 3. Section 03 40 00 – Precast Concrete Piles

1.02 DESCRIPTION OF WORK

- A. The Work includes furnishing all necessary material, labor, and equipment for providing the structural support and physical barriers or forms which control the shape and location of the concrete. Also included in this section are the requirements for the removal of the forms and their supports.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-10: Specifications for Structural Concrete.
- B. American Concrete Institute ACI 318-11: Building Code Requirements for Structural Concrete and Commentary.
- C. American Concrete Institute ACI 347-04: Guide to Formwork for Concrete.
- D. Precast/Prestressed Concrete Institute PCI MNL-116, 4th Edition: Quality Control for Plants and Production of Structural Precast Concrete Products.

1.04 QUALITY ASSURANCE

- A. Design all forms, falsework, and accessories to meet the requirements of the concrete type, sequence of placing, schedule, and other conditions of the project.
- B. Before casting concrete, inspect all forms, falsework, accessories, and shoring, using workers having at least five (5) years of experience with the types of construction involved and the techniques necessary for completion of the work.

1.05 SUBMITTALS

- A. Documentation demonstrating each inspection worker's qualifications in and experience at inspecting or supervising concrete work, forms, falsework, accessories, and shoring as described above.
- B. In the event that patented or prefabricated systems are used for forms or falsework, submit complete drawings, details, and calculations for review. Paper, fiberglass, micarta, asphalt-impregnated fiber, and other miscellaneous form materials shall be approved by the Engineer prior to delivery, fabrication, and construction.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Materials for concrete forms may be new or used. The quality of the materials, not the age or previous usage, will be the determining factor as to their suitability.
- B. All prefabricated form details, whether they are part of a patented system or custom-fabricated, shall be submitted for approval by the Engineer prior to assembly or arrival on site. Forms shall

be kept in a condition to produce finished work meeting the location, alignment, and surface tolerances specified.

2.02 FORM LINERS AND COATINGS

- A. Forms shall be lined, coated, or treated with a suitable release agent or bond-breaker to ensure their timely removal with no damage to the concrete.

PART 3 – EXECUTION

3.01 GENERAL

- A. Forms shall be constructed as to be rigid, unyielding, true to line, level, and sufficiently tight to prevent escape of mortar.
- B. Openings, embedded objects, and reinforcement shall be placed at the locations shown on the Drawings. They shall be formed and fastened securely in position to maintain minimum cover for all reinforcement, and to leave smooth surfaces, true openings, accurate geometry, etc., after the forms are removed.
- C. Clean forms of all waste, debris, or other objects and substances deleterious to the concrete, concrete surface, or concrete element, prior to casting.

3.02 FORM INSTALLATION

- A. Prior to final setting or placing of reinforcing steel, forms shall be treated with a release agent, bond-breaker, or parting compound. Apply the compound at a rate recommended by the manufacturer, to provide a smooth surface free of dusting action caused by the chemical reaction of the compound.
- B. Immediately remove any release agent or bond-breaker that comes in contact with reinforcement or embedded objects.
- C. All forms shall be mortar-tight.
- D. Remove all debris, waste, foreign objects from forms before assembly. Standing water in the forms shall not be permitted. Forms shall be cleaned with fresh water before assembly and prior to placing concrete.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories
 - 2. Section 03 30 00 – Cast-in-Place Concrete
 - 3. Section 03 40 00 – Precast Concrete Piles

1.02 DESCRIPTION OF WORK

- A. The work includes the requirements for manufacture, detailing, cutting, bending, transporting, handling, and placing of all concrete reinforcement and associated items required or indicated on the Drawings.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-10: Specifications for Structural Concrete for Buildings.
- B. American Concrete Institute SP-66(04): ACI Detailing Manual (including ACI 315-99).
- C. American Concrete Institute ACI 318-11: Building Code Requirements for Structural Concrete and Commentary.
- D. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- E. Concrete Reinforcing Steel Institute (CRSI) Manual of Standard Practice (MSP), 2009, 28th Edition.

1.04 QUALITY ASSURANCE

- A. Provide at least one (1) qualified person who shall be present at all times during execution of this portion of work, be thoroughly familiar with the type of materials being installed, be skilled in the required methods for installation, and who shall direct all the work. Qualified personnel shall have a minimum of five (5) years of experience in placement of reinforcement for prestressed concrete structures.

1.05 SUBMITTALS

- A. Documentation demonstrating the qualifications and experience of the supervisor's of the work, as described above.
- B. Detailed shop drawings that are coordinated and checked for all concrete reinforcement prior to casting concrete.
 - 1. The shop drawings shall include, but not be limited to, material specifications, bar lengths, bar bending schedules, order lists, splice lengths, and proposed splice locations.
- C. Mill certificates for each heat of reinforcing steel to be furnished, indicating specification compliance, yield strength, ultimate strength, and chemistry.
- D. Data sheets for mortar blocks and chairs used for placing reinforcement.

PART 2 – PRODUCTS

2.01 HANDLING

- A. Protect from damage all reinforcement before, during, and after installation in the work.
- B. All reinforcement shall be new and free from rust, grease, oil, wax, paint, soil, dirt, kinks, bends, or other defects. Store in a manner to prevent corrosion, or fouling with bond-breaking or deleterious coatings.
- C. The surface of prestressing steel shall be free from any substance or coating that may impair bond transfer length or pullout strength. If calcium stearate is used as a die lubricant during manufacture, methods approved by the Engineer shall be used to clean the steel completely.
- D. In the event of damage, immediately make all repairs and replacements necessary as directed by the Engineer and at no additional cost to the Port.

2.02 REINFORCEMENT

- A. All reinforcing bars shall be deformed billet-steel bars conforming to ASTM A 615, Grade 60, deformed. Bars conforming to ASTM A 706 may be substituted for ASTM A 615 reinforcing bars at the Contractor's expense.
- B. Prestressing steel shall be uncoated, low-relaxation seven-wire strand conforming to ASTM A 416, Grade 270.
- C. Cold drawn steel wire for spirals shall conform to ASTM A 82.

PART 3 – EXECUTION

3.01 GENERAL

- A. Details of bending, placing, and splicing of all reinforcing steel shall conform to ACI 318, except as modified herein.

3.02 REINFORCING STEEL BARS

- A. Order Lists: Before ordering material, furnish all order lists and bending diagrams for approval by the Engineer; reinforcement placing drawings submitted for approval shall conform to the CRSI MSP. Do not order material until such lists and bending diagrams have been approved. The approval of order lists and bending diagrams by the Engineer shall in no way relieve the Contractor of responsibility for the correctness of such lists and diagrams.
- B. General Fabrication Requirements for Reinforcing Bars: Bend all bars cold to the shapes indicated on the Drawings unless otherwise approved by the Engineer. Do not field-bend bars partially embedded in concrete. Make bends and hooks in accordance with the applicable portions of the CRSI MSP.
- C. Placing and Fastening:
 - 1. Place all steel reinforcement accurately and hold firmly in the position indicated on the Drawings during the placing and setting of concrete. Tie bars at all intersections.
 - 2. Minimum concrete cover to reinforcement shall be as indicated on the Drawings.

3.03 SPLICING

- A. Splicing of spiral wire in precast piling shall be done in accordance with the details as shown on the Drawings.

3.04 CLEANING REINFORCEMENT

- A. Steel reinforcement, at the time concrete is placed around it, shall be free from loose rust or mill scale, oil, paint, and all other coatings which will destroy, impair, or reduce the bond between steel and concrete.

3.05 INSPECTION

- A. Reinforcement in any member shall be placed and inspected by qualified personnel before placement of concrete.
- B. Access at the concrete pile manufacturing facility for inspection by the Engineer prior to concrete placement shall be provided for all pours. Concrete placed in violation of this provision will be rejected. The Contractor shall remove the rejected concrete, place new reinforcing steel, and cast new concrete at its own expense.
- C. The Contractor shall notify the Engineer at least 48 hours in advance of any concrete pour, to allow for inspection.
- D. Inspection by the Engineer shall in no way relieve the Contractor of their responsibility to provide materials and quality of construction as specified.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories
 - 2. Section 03 20 00 – Concrete Reinforcing
 - 3. Section 03 40 00 – Precast Concrete Piles

1.02 DESCRIPTION OF WORK

- A. The work includes furnishing of all labor, material, and equipment for all cast-in-place concrete work for manufacture of precast concrete piling in conformance with these specifications and as indicated on the Drawings.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-10: Specifications for Structural Concrete.
- B. American Concrete Institute ACI 308R-01: Guide to Curing Concrete.
- C. Modification of ACI 305R, 306R, and 308R: accomplish work in accordance with these guides except as modified herein. Consider the advisory or recommended provisions to be mandatory. Interpret reference to the "Building Official," the "Structural Engineer," and the "Architect/Engineer" to mean the Engineer.
- D. American Concrete Institute ACI 318-11: Building Code Requirements for Structural Concrete and Commentary.
- E. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- F. Precast/Prestressed Concrete Institute (PCI) MNL-116-99, 4th Edition, Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products.

1.04 QUALITY ASSURANCE

- A. All concrete work shall conform to the requirements of ACI 301, unless otherwise noted in the Drawings or the specifications.
- B. Inspection: The Port will provide for periodic inspections for their own purposes. The Contractor shall provide all necessary access and assistance in carrying out such inspections at its own expense. The Contractor shall provide all necessary production inspections and testing as required by PCI MNL-116.
- C. Qualifications of Supplier: Ready-mixed concrete plants shall be approved and certified by the National Ready Mix Concrete Association (NRMCA) or qualified by WSDOT. Ready-mixed concrete shall be batched in accordance with the applicable portions of ASTM C 94.
- D. Qualifications of Personnel:
 - 1. Provide at least one qualified person who shall be present at all times during execution of this portion of the work, who shall be thoroughly trained and experienced in placing the types of concrete specified, and who shall direct all work performed under this section.

Qualified personnel shall have at least five (5) years of experience performing the work described in this section.

2. Trained and experienced journeyman concrete finishers having at least five (5) years of experience shall be responsible for finishing all exposed surfaces.

1.05 SUBMITTALS

- A. Documentation demonstrating the qualifications and experience of supervisors and directors of work, as described above.
- B. Proposed concrete design mixes, indicating all material contents per cubic yard of concrete, including certificates of specification compliance. Written evidence that the ready-mix concrete plant is approved and certified by the NRMCA and other organizations.
- C. Test certificates for compressive strength, yield, air content, and slump of the proposed concrete mix. Report strength test results in accordance with ACI 318, Section 5.3.
- D. Manufacturer's name, address, catalog number, and specifications for all proposed admixtures, concrete bonding agents, curing compounds, etc.
- E. Identify all aggregate supply pit names and locations. Submit certificates of specification compliance for materials to be used including aggregate alkali-silica reactivity (ASR).
- F. Proposed curing methods including manufacturer's data for curing membranes, evaporation retardants, accelerated cure methods, etc.

PART 2 – PRODUCTS

2.01 CONCRETE

- A. General:
 1. All concrete, unless otherwise specifically permitted by the Engineer, shall be batched and mixed at the approved Ready-Mix plant. Batching, mixing, and delivery of ready-mix concrete shall conform to ASTM C 94.
 2. All cast-in-place concrete shall be proportioned on the basis of field experience or laboratory trial mixtures according to ACI 318, Section 5.3.
- B. Cementitious Materials:
 1. All cement shall be Portland cement conforming to ASTM C 150.
 2. Portland cement for use in mixes without fly ash shall be Type I-II or Type II conforming to ASTM C 150.
 3. Portland cement for use in mixes with fly ash shall be Type I or Type I-II conforming to ASTM C 150.
 4. Fly ash, if used, shall meet the requirements of ASTM C 618, Type F, with the added provision that the loss on ignition shall not exceed 1 percent, and that the fly ash is stored in a separate silo from the cement. Split bins are not acceptable.
- C. Aggregates:
 1. Aggregates shall conform to ASTM C 33. All coarse and fine aggregate shall consist of hard, tough, durable particles free from foreign and deleterious materials, and shall be stored in such a manner as to prevent segregation, excessive breakage, and the introduction of foreign material.

2. The maximum size of coarse aggregate shall not be larger than three fourths of the minimum clear spacing between reinforcing bars, between reinforcing bars and side forms, and between reinforcing bars and top or bottom surface of the concrete.
- D. Admixtures: All admixtures shall be supplied by one manufacturer approved by the Engineer.
1. Air-entraining admixtures shall conform to ASTM C 260. Dosage rates shall be in accordance with the manufacturer's recommendations to meet the air content specified herein.
 2. Water-reducing admixtures shall conform to the requirements of ASTM C 494. Dosage rates shall be in accordance with the manufacturer's recommendations.
 3. Water reducing admixture shall be Type A, D, F, or G. The amount shall control the desired workability and water/cement ratio of the mix and shall be within the manufacturer's recommended range.

2.02 OTHER MATERIALS

- A. All other materials not specifically described but required for a complete and proper installation of cast-in-place concrete shall be selected by the Contractor subject to the approval of the Engineer.

2.03 MIX PROPORTIONS AND STRENGTH

- A. The mix proportions shall produce a mixture that will readily work into all corners, sides, and angles of the forms, around reinforcement and embedded items, with no segregation, and prevent free water from collecting on the surface.
- B. The mix proportions shall be selected in accordance with ACI 318.
1. Test data representing thirty recent consecutive tests for each design shall be submitted to establish the standard deviation used in ACI 318 Section 5.3.1.
 2. The criteria for acceptance of submitted tests shall be accordance with ACI 318 Section 5.3.1.1. Section 5.3.1.1(b) shall be amended to read, "... 500 psi of f'_c ", instead of 1000 psi.
 3. Where 30 recent consecutive tests are not available, the standard deviation may be determined by records based on no less than 15 tests as described in Section 5.3.1.2.
 4. Where no previous data are available, the mix or mixes shall be oversized in accordance with Section 5.3.2.2.
 5. When consecutive test data have been established during the project the overdesign criteria may be relaxed in accordance with Section 5.5.
 6. Deviation from any reviewed design mix without approval of the Engineer will not be permitted.
- C. Unless otherwise indicated, concrete minimum 28-day compressive strengths are shown on the Drawings.
- D. Concrete shall meet the following requirements:
1. Minimum Cementitious Material

Cement without fly ash	6.5 sacks/cy (611 lbs/cy)
Cement with fly ash	6 sacks/cy (564 lbs/cy) and 100 lbs fly ash/cy

2. Maximum Water/Cement Ratio (by weight, including free moisture on aggregate) = 0.40. If fly ash is used, then the water/cement ratio shall be calculated as the weight of water divided by the weight of cement plus the weight of fly ash.
3. Concrete for piling need not be air-entrained.
4. Slump: Maximum of 8 inches and chosen to enhance workability without violating the maximum water/cement ratio requirement.

PART 3 – EXECUTION

3.01 PREPARATORY WORK

A. General:

1. Prior to casting, inspect the installed work of all other trades and verify it is complete to the point where this installation may commence.
2. Verify that all items to be embedded in concrete are in place, properly oriented, located, and secured.
3. Verify that concrete may be placed to the lines and elevations indicated on the Drawings with all required clearances for reinforcement.
4. All areas in which concrete is to be placed shall be thoroughly cleaned to remove wood debris, sawdust, tie wire cuttings, and all other deleterious material.
5. Tie wire ends shall be bent back so they do not encroach into the specified clear cover of the concrete.
6. Concrete forms which have not been treated with oils, waxes, or other bond breakers shall be thoroughly wet prior to placing concrete.
7. All transporting and handling equipment shall be cleaned of all hardened concrete and other debris.

- B. Notification:** Notify the Engineer at least 48 hours in advance of any concrete pour. Notify the Engineer when inspection by the Contractor is complete. In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation until all discrepancies have been fully resolved.

3.02 TRANSPORTING AND PLACING CONCRETE

A. Placement:

1. Place concrete as soon as possible after mixing. Concrete which has developed initial set or partially hardened shall not be re-tempered or remixed.
2. The method and manner of placing concrete shall not allow segregation of the aggregates or displacement of reinforcement and embedded objects.
3. When using a concrete pumps as the placing system, the pump priming slurry shall be discarded before placement into the forms. Initial acceptance testing may be delayed until the pump priming slurry has been eliminated. No pump shall be used that allows free water to flow past the piston. Aluminum conduits or tremies shall not be used for pumping or placing concrete.
4. Place concrete in continuous horizontal layers, or lifts, not exceeding 18 inches and compact so that there will be no line of separation between layers. Carefully fill each part of the forms by depositing concrete directly in its final destination.

5. When concrete must be dropped more than five feet into the forms, it shall be deposited through a sheet metal or other approved conduit. Approved conduit shall also be used to place concrete in sloping forms or in other locations, as directed by the Engineer, to prevent concrete from sliding around reinforcing or other embedded objects.
6. The methods of depositing and compacting concrete shall produce compact, dense, impervious concrete with the required surface finishes and no segregation. Remove defective concrete as directed by the Engineer at no additional cost to the Port.

B. Consolidation of Concrete:

1. Provide suitable internal vibrators for use in compacting all concrete. The vibrators shall be of the type designed to be placed directly in the concrete, and their frequency of vibration shall not be less than 7,000 impulses per minute when in actual operation.
2. Vibration shall be such that the concrete becomes uniformly plastic. Insert vibrators to a depth sufficient to vibrate the bottom of each layer effectively, but do not penetrate partially hardened concrete. Do not apply the vibrators directly to steel which extends into partially hardened concrete. The intervals between points of insertion shall be not less than 2 feet, nor more than 3 feet.
3. Do not continue vibration in any one spot such that pools of cement or cement and sand are formed. In vibrating and finishing top surfaces which are exposed to weather or wear, avoid drawing water or laitance to the surface. In relatively high lifts, the top layer shall be comparatively shallow and the concrete mix shall be as stiff as can be effectively vibrated into place and properly finished.
4. Do not use vibrators to transport or move concrete inside the form.
5. A sufficient number of vibrators shall be supplied to effectively vibrate all of the concrete placed. Hand-tamping or rodding shall be required wherever necessary to secure a smooth and dense concrete on the outside surfaces.

3.03 CURING CONCRETE

- A. Follow ACI 308R.
- B. Accelerated curing methods, if used, shall meet the requirements of PCI MNL-116, Division III.

3.04 FINISHING CONCRETE

- A. Finish: All permanently exposed surfaces, unless specifically noted otherwise, shall be free from local bulging and all ridges or lips shall be removed to leave a smooth, flat surface. The un-formed face of the piles shall have a smooth wood float finish.
- B. Protect finished surfaces from damage, stains and abrasion. Surfaces or edges damaged during construction shall be repaired at the Contractor's expense.

3.05 TESTING

- A. Testing of concrete material for contract compliance shall be done by the Contractor. Methods for sampling, testing, evaluation, and acceptance shall conform to ACI 301.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 03 10 00 – Concrete Forming and Accessories
 - 2. Section 03 20 00 – Concrete Reinforcing
 - 3. Section 03 30 00 – Cast-in-Place Concrete
 - 4. Section 31 62 00 – Driven Piles

1.02 DESCRIPTION OF WORK

- A. The work includes furnishing of all necessary material, labor, and equipment for providing four (4) precast prestressed concrete test piles including manufacture, transportation, erection, and other related work as required for complete installation and removal.

1.03 REFERENCE STANDARDS

- A. American Concrete Institute ACI 301-10: Specifications for Structural Concrete.
- B. American Concrete Institute ACI 308R-01: Guide to Curing Concrete.
- C. Modification of ACI 308R: accomplish work in accordance with this guide except as modified herein. Consider the advisory or recommended provisions to be mandatory. Interpret reference to the "Building Official," the "Structural Engineer," and the "Architect/Engineer" to mean the Engineer.
- D. American Concrete Institute ACI 318-11: Building Code Requirements for Structural Concrete and Commentary.
- E. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- F. Precast/Prestressed Concrete Institute (PCI) MNL-116-99, 4th Edition, Manual for Quality Control for Plants and Production of Precast Prestressed Concrete Products.

1.04 QUALITY ASSURANCE

- A. Use a company specializing in providing precast prestressed concrete piles and services associated with the industry for at least five (5) years. The Contractor shall make the manufacturing facility available for inspection by the Port.
- B. Precast concrete materials, manufacturing, testing, quality control, record keeping, and product tolerances shall be in accordance with the provisions of PCI MNL-116.
- C. Individual piles will be inspected by the Port at the manufacturing facility. The Contractor shall give notice 14 days prior to the time the members will be available for plant inspection. Neither the exercise nor waiver of inspection at the plant by the Port shall affect the Port's right to enforce contractual provisions after units are transported or erected.
- D. All damaged and/or otherwise defective piles, as determined by the Engineer, shall be rejected.

1.05 SUBMITTALS

- A. Proof of plant certification by PCI for precast prestressed piles according to PCI MNL-116. Include written evidence to show experience, qualifications, and adequacy of the plant's facilities for performance of contract requirements.
- B. Detailed plant quality control plan including specific and pertinent references to PCI MNL-116 provisions.
- C. Proposed concrete mix designs, indicating material contents per cubic yard, test certificates for compressive strength, yield, air content, slump, admixtures, aggregate suitability, etc. Include manufacturer's data sheets for all proposed admixtures, release agents, curing compounds, epoxy grout, etc. See Section 03 30 00 – Cast-in-Place Concrete.
- D. Detailed shop drawings indicating all shop and fabrication details, including position and quantities of reinforcing steel, prestressing steel, anchors, inserts, element geometry, etc. Indicate the concrete compressive strength, prestressing forces, and material stresses at the various stages of manufacture, handling, and erection. Provide supporting calculations for handling and delivery stress calculations.
- E. Records of the actual curing temperature regimes and cast dates for each precast element.
- F. Mill certificates indicating specification compliance of strength and chemistry of reinforcing steel. See Section 03 20 00 – Concrete Reinforcing.
- G. Certificates indicating specification compliance of alkali-silica reactivity (ASR) for aggregates. See Section 03 30 00 – Cast-in-Place Concrete.
- H. Test reports indicating specification compliance of concrete material and strengths. See Section 03 20 00 – Cast-in-place Concrete.

PART 2 – PRODUCTS

2.01 CONCRETE

- A. See Section 03 30 00 – Cast-in-Place Concrete.
- B. Portland cement for use in precast mixes without fly ash may be Type III conforming to ASTM C 150, with tricalcium aluminate (C3A) content between 6% and 8%, and also with total alkali content no greater than 0.6% per ASTM C 114.
- C. Concrete for piling need not be air entrained.
- D. Concrete for piling shall develop the minimum 28-day compressive strength as indicated on the Drawings before being delivered to the site.

2.02 OTHER MATERIALS

- A. Reinforcing: See Section 03 20 00 – Concrete Reinforcing.

PART 3 – EXECUTION

3.01 FABRICATION

- A. Obtain acceptance of all test reports and submittal documentation prior to delivery of materials and casting concrete. Manufacturing procedures shall be in compliance with PCI MNL-116.
- B. Formwork: See Section 03 10 00 – Concrete Forming and Accessories. Construct forms to maintain units within specified tolerances and to withstand tensioning and detensioning operations. Forms shall be thoroughly cleaned before each use.

- C. The prestressing elements shall be held in the prescribed positions and stressed by jacks. A record shall be kept of the jacking force and corresponding elongations. The prestressing elements shall be released only after the concrete has attained a minimum strength of 60% of the specified 28-day strength. The prestressing elements shall be released in such an order that lateral eccentricity of prestress is minimized.
- D. See Section 03 30 00 - Cast-in-Place Concrete, for mixing, placing, consolidating, and curing requirements.
- E. Accelerated curing methods for precast concrete shall meet the requirements of PCI MNL-116, Division IV. Maximum curing temperature shall not exceed 150°F.
- F. Exposed concrete surfaces shall have a wood float finish. The formed areas shall have smooth dense steel-formed surfaces free of defects, abrasions, voids, stains, etc.
- G. Piling Manufacturing Tolerances:
 - 1. Length +6 inches, -2 inches
 - 2. Section Size $\pm 3/8$ inch
 - 3. Horizontal alignment (sweep) 1/8 inch per 10 feet of pile
 - 4. End squareness 1/8 inch maximum
 - 5. Tendon locations $\pm 1/8$ inch
 - 6. Lifting eye locations ± 6 inches along major axis
- H. Each element shall be marked with a Product Identification Number using a permanent system that includes, at a minimum, the element type, cast date, cast length, and casting number.
- I. Any element that is structurally impaired, as determined by the Engineer, will be rejected. The Engineer shall make the sole determination whether a member is structurally impaired.
- J. Repairs to honeycombed sections shall be approved by the Engineer prior to repairs. Elements which contain honeycombed sections deep enough to expose reinforcing steel or contain excessive honeycombed sections, as determined by the Engineer, will be rejected.
- K. Elements containing cracks greater than 0.007 inches in width may be approved by the Engineer. If approved, the member shall be repaired in a manner approved by the Engineer prior to repairs. If not approved, the member shall be replaced at the Contractor's expense.

3.02 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Delivery and Handling:
 - 1. Precast concrete piles shall be lifted and supported during manufacturing, stockpiling, transporting, and erection operations only at the lifting or supporting points, or both, as shown on the approved shop drawings, and with approved lifting devices.
 - 2. Transportation, site handling, and erection shall be performed with industry standard equipment and methods, and by qualified personnel.
 - 3. Do not damage units during handling and delivery operations. Handling methods and delivery operations shall not overstress, crack, damage, fracture, or produce impact on the members.
 - 4. Damaged members shall be repaired at the Contractor's expense. Repair methods shall be approved by the Engineer prior to commencement. Members damaged beyond repair,

as determined by the Engineer, shall be removed and replaced at the Contractor's expense.

B. Storage:

1. Store all members off ground.
2. Place stored members so that identification marks are discernible.
3. Separate stacked members by battens across full width of each bearing area.
4. Stack so that lifting devices are accessible and undamaged.
5. Store all members on level ground and timber blocking so that the axis of each pile is maintained in a straight line and that bending stresses are not produced. Locate the blocking of successive tiers exactly above the blocking of the lower tiers.
6. Do not use upper member of stacked tier as storage area for shorter member or heavy equipment.

3.03 INSTALLATION AND TESTING

- A. See Section 31 62 00 - Driven Piles.
- B. Prior to erection, and again after installation, The Contractor shall check piles for damage, such as cracking, spalling, and honeycombing. Follow the requirements herein for repair or rejection of elements with damage.
- C. Piling shall not be driven until the concrete has attained the full design strength and only after a minimum of 28 days after casting.
- D. Cut off lifting devices and fill voids with an approved epoxy grout.
- E. Installed precast elements will be inspected by the Engineer to verify compliance with the Drawings and specifications.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 09 96 00 – High Performance Coatings
 - 2. Section 31 62 00 – Driven Piles
 - 3. Section 35 20 60 – Navigation Light Relocation

1.02 DESCRIPTION OF WORK

- A. All metal fabrications are indicated on the Drawings and in the specifications. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, in accordance with the Drawings and this specification.

1.03 REFERENCE STANDARDS

- A. American Galvanizers Association (AGA), Quality Assurance Manual.
- B. American Institute of Steel Construction (AISC), Specification for Structural Steel Buildings, 2010.
- C. American Institute of Steel Construction (AISC), Code of Standard Practice for Steel Buildings and Bridges, 2010.
- D. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- E. American Welding Society (AWS) D1.1 – 2010, Structural Welding Code – Steel.
- F. American Welding Society (AWS) A2.4 – 2012, Standard Symbols for Welding, Brazing, and Nondestructive Examination.
- G. Society for Protective Coatings (SSPC), Surface Preparation Specifications.
- H. Washington Association of Building Officials (WABO) Standard No. 27-13, WABO Welder and Welding Operator Performance Qualification Standard for Structural Steel, Sheet Steel, and Reinforcing Steel.

1.04 QUALITY ASSURANCE

- A. Demonstrate that the fabricator has a minimum of five (5) years experience fabricating and working similar metals and configurations, including cutting, bending, forming, welding, and finishing.
- B. Welders shall be currently certified by the Washington Association of Building Officials (WABO) for structural welding.
- C. Qualify welding procedures, operations, welders, and tackers in accordance with AWS D1.1.
- D. The galvanized coating applicator shall specialize in hot-dip galvanizing after fabrication and follow the procedures in the AGA Quality Assurance Manual.

- E. Perform nondestructive testing (NDT) and inspection of all shop and field welds in accordance with AWS D1.1 by an independent testing agency retained by the Port. Welds failing to comply shall be repaired or replaced at the Contractor's expense.

1.05 SUBMITTALS

- A. Detailed and coordinated shop drawings indicating all shop and erection details, including cuts, copes, connections, holes, fasteners, material specifications, welds, surface preparations, and finishes.
- B. Documentation that the fabricator has the qualifications and experience described above.
- C. Welder qualifications and certifications.
- D. Weld Procedure Specifications (WPS's) proposed for use on the project. Submit supporting Procedure Qualification Records (PQR's) for all WPS's not prequalified by AWS.
- E. Galvanized coating applicator's Certificate of Compliance that the hot-dip galvanized coatings meets or exceed the specified requirements of ASTM A 123 or A 153, as applicable, and has followed the procedures in the AGA Quality Assurance Manual.
- F. Mill certificates for each heat number of structural and miscellaneous steel.

PART 2 – PRODUCTS

2.01 GENERAL

- A. All products shall be new, free from oxidation, corrosion, and defects, and shall be of the specified quality.
- B. Protect all materials and fabrications before, during, and after installation from damage. Protect the installed work of other trades from damage.
- C. Protect galvanized finishes and painted coatings from damage by use of padded slings and straps.
- D. In the event of damage, immediately make all repairs and replacements as per the manufacturer's written recommendations and as approved by the Engineer at no additional cost to the Port.

2.02 STRUCTURAL STEEL

- A. Plates and bars: ASTM A 572, Grade 50, unless noted otherwise.
- B. Angles and channels: ASTM A 36.
- C. Wide flange shapes: ASTM A 992.
- D. Pipe: ASTM A 53, Grade B.

2.03 BOLTS, NUTS, AND WASHERS

- A. High-Strength bolts, nuts, and washers: ASTM A 325-X, Type 3, ASTM A 563-DH, hot-dip zinc coated, and ASTM F 436, hot-dip zinc coated, respectively.

2.04 OTHER MATERIALS

- A. All other materials not specifically described but required shall be proposed by the Contractor, new, free of corrosion, and subject to the approval of the Engineer.

PART 3 – EXECUTION

3.01 PREPARATORY REVIEW

- A. Prior to all work of this section, inspect the installed work of all other trades affecting this work and verify that all such work is complete to the point where this installation may commence.
- B. Verify that the work can be fabricated and installed in accordance with the Drawings, specifications, and reference standards. Immediately report discrepancies to the Engineer and do not proceed with fabrication or installation until discrepancies are resolved and direction is provided.

3.02 FABRICATION

- A. All structural steel shall be fabricated in accordance with the approved shop drawings and reference standards.
- B. Shop-fabricate and preassemble all items complete for installation to the extent practicable to minimize field assembly. Disassemble units only as necessary for shipping and handling limitations.
- C. Unless otherwise indicated on the Drawings, weld all shop connections. All joints shall be tightly fitting, securely fastened, square, plumb, straight, and true.
- D. Drill or punch all holes required for attachments and bolted connections including those of other trades. Burned holes are not acceptable.
- E. Welding of all metal fabrications shall conform to AWS D1.1.
- F. Install and erect all miscellaneous metal and metal fabrications in accordance with the design Drawings, shop drawings, and reference standards.

3.03 PROTECTIVE COATINGS

- A. Galvanizing:
 - 1. All miscellaneous metal, metal fabrications, and fasteners, except as noted in this specification, shall be hot-dip galvanized in conformance with ASTM A 123, A 143, A 153, A 384, and A 385, as applicable.
 - 2. Identify proposed drain holes or vent holes required to produce galvanized coatings to the specified standards. Clearly locate these holes on the shop drawings.
 - 3. Galvanize items, to the extent practicable, immediately after fabrication is complete.
 - 4. Damaged galvanizing, including damage due to welding, shall be restored in accordance with ASTM A 780, annex A3. Zinc-rich paints and cold spray materials are not acceptable. Surface preparation and application shall be according to annex A3 and the manufacturer's specifications.
- B. High Performance Coating
 - 1. The galvanized exterior of the upper portion of all steel pipe piles as delineated in the Drawings and all new steel at the platform supporting the relocated Navigation Tower #4 shall be cleaned, prepared, primed, and coated (painted) per Section 09 96 00 – High Performance Coatings.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 05 50 00 – Metal Fabrications
 - 2. Section 31 62 00 – Driven Piles

1.02 DESCRIPTION OF WORK

- A. The work includes furnishing all materials, labor, equipment, and accessories for preparing and providing the required finished painting and protective coatings on the exterior of steel pipe piles and on all new steel at the platform for the relocated Navigation Tower #4.

1.03 REFERENCE STANDARDS

- A. Society for Protective Coatings (SSPC), SSPC Painting Manual, Volume I, 4th Edition, “Good Painting Practice”.
- B. SSPC Painting Manual, Volume II, 2008 Edition, “Systems and Specifications”.
- C. SSPC, “Procedure for Determining Conformance to Dry Coating Thickness Requirements”, SSPC-PA2.

1.04 QUALITY ASSURANCE

- A. Coating application shall be by qualified and experienced personnel having demonstrated at least five (5) years of experience in coating applications for marine structures.
- B. Conform to all manufacturers’ specifications and recommendations for achieving published results with each product, application, and condition. If manufacturers’ specifications or recommendations differ from those in these specifications, report the discrepancy to the Engineer and obtain further direction before proceeding.
- C. The Engineer may inspect coating preparation, application, or touchup at its discretion. Provide access to the Engineer for these inspections and at no additional cost to the Port.

1.05 SUBMITTALS

- A. A complete list of products and product descriptions proposed for use as coating systems.
 - 1. Provide manufacturer product data and accessories, including specifications, physical characteristics, and performance data.
 - 2. Manufacturer instructions and directions for application of the coating systems.
 - 3. Manufacturer instructions and procedures for use in performing field repairs and touch-ups to the coating systems.
 - 4. Use the same manufacturer’s products for all coats unless otherwise approved by the Engineer.
- B. Documentation that key personnel of the coating applicator have at least the minimum experience and certifications described above and below. Demonstrate consistent experience applying the proposed coating systems under similar conditions. List information by individual and include the following.
 - 1. Position or responsibility

2. Employer (if other than the Contractor)
 3. Name of facility owner
 4. Mailing address and telephone number of facility owner
 5. Name of contact reference in facility owner's organization
 6. Location, size, and description of structure
 7. Dates work was performed
 8. Description of work performed on structure
- C. Samples of all paints and finishes proposed for use.
- D. Schedule of coating operations with dates and items listed.
- E. Measurement reports of dry paint thickness on metal surfaces according to SSPC-PA2.

1.06 PRODUCT HANDLING

- A. Deliver paint and associated materials in undamaged and unopened containers bearing labels of the manufacturer, which indicate the contents and directions for use, storage, and handling. Store materials in a location where the ambient temperature and humidity is not outside the ranges recommended by the manufacturer.
- B. Prevent fire. Open containers of inflammable materials only as needed. Keep rubbing cloths, oily rags, etc., in tightly closed metal containers, or remove from the job site daily. Benzene, gasoline, or distillates shall not be stored on the job site.
- C. Do not damage the coating materials before, during, or after installation and prevent damage to the installed work and materials of other trades.
- D. In the event of damage, immediately make all repairs and replacements as directed by the Engineer according to the manufacturer's recommendations and procedures at no additional cost to the Port.

PART 2 – PRODUCTS

2.01 COATING SYSTEMS

- A. Manufacturers who have provided acceptable coating systems for past marine projects include the following. This does not imply that products from any manufacturer listed below will be acceptable.
 1. Carboline Protective Coatings (1-206-243-6494)
 2. International Marine Coatings of AkzoNobel (1-206-763-8003),
 3. Sherwin Williams Co Industrial and Marine Coatings (1-360-931-4645)
 4. Tnemec Company (1-206-762-5755)
 5. Wasser High-Tech Coatings (1-253-218-2222)
 6. Fields Company LLC (1-253-627-4098)
- B. Coating systems selected for each type of finish surface shall be products of a single manufacturer. Coating materials shall be suitable for corrosion protection in an aggressive marine environment.

- C. Materials not specifically noted but required for the work, such as thinners, or other materials, shall be products of the approved paint manufacturer or compatible products accepted by the coating manufacturer.
- D. Paint products for coating systems shall be mixed according to the manufacturer's directions. Do not deviate except with written approval of the Engineer.

2.02 SUBSTITUTIONS

- A. Manufacturer-specific coating systems are referenced in this specification. The manufacturer's product identification numbers indicate the product type, quality, and performance required for a specific application. Bids shall be based upon the manufacturer-specific coating systems referenced herein.
- B. Submit in writing a request to the Engineer for review and approval prior to material procurement and in accordance with Section 01 25 00 – Substitution Procedures. Substantiating technical data and documentation are required as described above for all submittals.
- C. Proposed coating system substitutions will be reviewed and evaluated, subject to the approval of the Engineer, based on equivalency to the coating systems referenced in this herein. Substitute coating system data and documentation that does not demonstrate equivalency will not be approved.
- D. Approved substitutions shall be at no additional cost to the Port.

2.03 COLOR

- A. Steel pipe piles and navigation tower platform steel shall be painted standard gray.

2.04 COATING SCHEDULE

- A. Galvanized surfaces to be painted or coated:
 - 1. Solvent cleaned to remove contaminants using a biodegradable, water soluble, cleaner in conformance with SSPC-SP1.
 - 2. Solvent cleaned galvanized surfaces shall receive a light, sweeping abrasive sand blast to create a toothed surface profile in accordance with SSPC-SP7.
 - 3. Primer: Interzone 954 modified epoxy barrier coat by International Marine Coatings of AkzoNobel or equal, applied to a minimum dry film thickness of 15 mils on all surfaces.
 - 4. Top coat: Interthane 990 acrylic polyurethane by International Marine Coatings of AkzoNobel, or equal, applied to a minimum dry film thickness of 2.5 mils on all surfaces.

PART 3 – EXECUTION

3.01 GENERAL

- A. Apply paints and coatings in accordance with the manufacturer's recommendations for each application. Adhere to the manufacturer's provisions, directions, and procedures for the following.
 - 1. Surface preparation
 - 2. Ambient temperature and humidity monitoring
 - 3. Mixing techniques
 - 4. Minimum and maximum thickness per coat to achieve total thickness

5. Minimum time between coats

- B. Use clean equipment and brushes. Spread materials evenly without runs, drips, sags, laps, brush marks, variations in color, texture, or sheen, and without "holidays".
- C. Vary color or sheens between coats and apply all coats to uniform thicknesses. Refinish any work determined defective or damaged, and repair all defective or damaged work at no additional cost to the Port. Leave finished surfaces clean, completely covered, and uniform in appearance.

3.02 APPLICATION

- A. Number of coats as specified herein.
- B. Thickness of coats: Use ample undiluted materials; apply in uniform thickness over entire areas; do not exceed manufacturer's recommended spreading rate per gallon.
- C. Tint prime coats if necessary to obtain uniform finish coats.

3.03 TOUCHUP PAINTING

- A. Paint film damaged due to field welding or other Contractor activities shall be immediately restored to its original thickness after thorough cleaning and necessary surface preparation according to the written manufacturer's recommendations.
- B. Touchup painting shall be at the Contractor's expense.

3.04 INSPECTION

- A. The Contractor shall perform measurements of dry paint thickness on all metal surfaces by means of magnetic gages as described in SSPC-PA2.
- B. Copies of the measurement reports shall be provided to the Engineer prior to delivery.
- C. The Engineer will perform verification testing/inspection at the Port's expense. The Contractor shall make arrangements for these tests/inspections at all facilities performing coating applications and give the Engineer a notice at least 14 days in advance of each coating operation.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ESLEWHERE

- 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. Work related to this section is described in the following sections:
 - 1. Section 26 05 00 – Common Work Results for Electrical
 - 2. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 3. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 4. Section 26 05 53 – Identification for Electrical Systems
 - 5. Section 33 71 19 – Electrical Underground Ducts and Manholes
 - 6. Section 33 79 00 – Site Grounding

1.02 SUMMARY

- A. This Section includes requirements for acceptance testing by the Contractor and testing required to be completed by a Contractor retained independent testing agency.
- B. Related Documents: The provisions and intent of the Contract, the General and Division 1 Specification Sections, apply to the Work as if specified in this Section.

1.03 APPLICABLE PUBLICATIONS

- A. All inspections and tests shall be in accordance with the following applicable standards and codes. These publications form a part of this specification to the extent referenced.
 - 1. Institute of Electrical and Electronic Engineers (IEEE):
 - a. 81 Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.
 - 2. National Electrical Code – NEC
 - 3. American National Standards Institute - ANSI
 - 4. National Fire Protection Association - NFPA
 - 5. Occupational Safety and Health Administration - OSHA 29CFR Part 1910.269
 - 6. InterNational Electrical Testing Association – NETA
 - 7. Nationally Recognized Testing Laboratory - NRTL
 - 8. State of Washington Administrative Code – WAC

1.04 TESTING FIRM QUALITY ASSURANCE

- A. The Contractor shall include costs in the bid for an independent testing organization which can function as an unbiased testing authority, professionally independent of the manufacturers, suppliers and installers of systems being evaluated, and regularly engaged in the testing of electrical equipment, devices, installations and systems. The Testing Firm shall meet Washington State Department of Labor and Industries criteria for accreditation of testing laboratories, for electrical product testing.

- B. Testing Firm's Field Supervisor Qualifications: A person, regularly employed by the firm for testing services and currently certified by the International Electrical Testing Association to supervise on-site testing specified.
- C. Contractor shall submit testing firm qualifications to the Engineer for their review of qualifications for items to be tested.

1.05 GENERAL REQUIREMENTS AND SUBMITTALS

- A. General Scope: Engage the services of a recognized independent testing firm for the purpose of performing quality control inspections and tests as herein specified.
 - 1. The Testing Firm shall provide all material, equipment, labor and technical supervision to perform all tests and inspections.
 - 2. The Testing Firm (not the Contractor) shall inspect and test following:
 - a. Low voltage conductors (600V and below).
 - b. Ground resistance at new and revised wiring.
- B. Submittals by the Testing Firm:
 - 1. Field Test Reports: Maintain a written record of all tests. Assemble and certify a final test report upon completion of Phase 1 of the project, showing dates, personnel making tests, equipment used, material tested, tests performed, and results. The field test forms included in the report shall be the original hand-written test results that were recorded and signed by the individual(s) who performed the testing.
- C. Testing firm and personnel qualifications.

1.06 DIVISION OF RESPONSIBILITY

- A. The Contractor shall perform routine insulation-resistance and continuity tests for all utilization equipment prior to, and in addition to tests performed by the Independent Testing Firm.
- B. The Contractor shall supply a suitable and stable source of electrical power to each test site. The Testing Firm shall determine the specific power requirements.
- C. The Contractor shall notify the Testing Firm when equipment becomes available for acceptance tests. Coordinate work to expedite project scheduling.
- D. The Contractor shall supply a complete set of electrical drawings and specifications, and any pertinent change orders prior to commencement of testing.
- E. The Testing Firm shall notify the Contractor/Engineer prior to commencement of any testing.
- F. Contractor shall have a liaison staff person to coordinate and facilitate testing schedule and documentation. Contractor shall review and identify testing scope of services, documentation and coordination of schedule prior to submittals to Engineer.

1.07 SAFETY

- A. The Contractor shall adhere to safety procedures as required by the following:
 - 1. Occupational Safety and Health Act.
 - 2. Accident Prevention Manual for Industrial Operations, National Safety Council.
 - 3. ANSI/NFPA 70E, Electrical Safety Requirements for Employee Workplaces.
 - 4. American National Standards for Personnel Protection: Lockout/Tagout.

5. Applicable state and local safety operating procedures.
- B. Perform all tests with apparatus de-energized, except where specifically required.
- C. Designate a Project Safety Representative to supervise operations with respect to safety.

1.08 WORK INCLUDED:

- A. The Contractor shall perform tests of the electrical system to assure code compliance and proper system operation according to the intent of the contract documents.
- B. Applicable Codes, Standards and References for Tests:
- C. All inspections and tests shall be in accordance with the following applicable codes and standards except as provided otherwise herein.
 1. National Electrical Code - NEC
 2. National Electrical Manufacturer's Association - NEMA
 3. American Society for Testing and Materials - ASTM
 4. Institute of Electrical and Electronic Engineers - IEEE
 5. InterNational Electrical Testing Association - NETA
 6. American National Standards Institute - ANSI
 7. State and Local Codes and Ordinances
 8. Insulated Cable Engineers Association - ICEA
 9. Association of Edison Illuminating Companies - AEIC

1.09 CIRCUIT TESTS:

- A. The Contractor shall perform routine insulation resistance, continuity and grounding tests for all utilization equipment prior to their connection and energization.
- B. A standard megger-type instrument shall be used to demonstrate insulation values are 200 megohms, ground system is continuous and the neutral system is isolated from the grounding system except at the systems' single ground point.
- C. System defects, indicated by the circuit tests, shall be corrected. Tests shall be repeated until satisfactory results are obtained.

1.10 GROUNDING TEST:

- A. Measure the ohmic value of the new ground rod with reference "Earth Ground".
- B. Maximum resistance to ground shall be less than 10 ohms. Notify the Engineer if this resistance value is not obtained for the initially installed system; and then Contractor shall recommend and provide corrective measures required to reduce ground resistance to less than 10 ohms.

PART 2 - PRODUCTS

2.01 TEST EQUIPMENT

- A. Utilize test equipment in good mechanical and electrical condition with shape and frequency output waveforms appropriate for the test and the tested equipment.

1. Accuracy shall be appropriate for the test being performed, but not in excess of 2% of the scale being used.

2.02 TEST INSTRUMENTS AND CALIBRATION

- A. The Testing Firm shall have a calibration program which assures all applicable test instruments are maintained within rated accuracy as dictated by the National Institute of Standards and Technology (NIST).
 1. Instruments calibration schedule:
 - a. Field instruments: Analog, 6 months maximum; Digital, 12 months maximum
 - b. Laboratory instruments - 12 months.
 - c. Leased specialty equipment - 12 months (where lessor guarantees accuracy).
 2. Provide visible dated calibration labels on all test equipment.
 3. Maintain up-to-date instrument calibration instructions and procedures for each test instrument.
- B. Provide all testing equipment required including, but not limited to, the following:
 1. 1000V megger.
 2. Multimeter (Volts-Ohms-Millimeter) rated 20k ohms per volt or higher.
 3. Miscellaneous cable, test leads, jumpers, test lights, buzzers, bells, switches, plugs, receptacles, and other test equipment as required.
 4. Clamp-on Ammeter.

2.03 MATERIALS AND INSTRUMENTATION:

- A. Contractor and/or testing agency shall supply all apparatus and materials required for indicated tests.
- B. Contractor shall include all costs associated with testing in bid proposal.

2.04 TEST REPORT(S):

- A. Furnish minimum three (3) bound copies of test reports and an electronic PDF copy, as specified herein, for inclusion into the project operation and maintenance manuals. Each test report shall include the following items:
 1. Name, address and telephone number of the testing agency.
 2. Name(s) of personnel conducting the tests
 3. Summary of Project.
 4. Description of equipment tested.
 5. Description of test procedure
 6. List of items tested
 7. List of actual test equipment including make, model(s), serial number(s) and calibration date(s) as applicable.
 8. Test results
 9. Analysis and recommendations

10. Appendix, including appropriate test forms.
- B. Furnish 3 copies of the completed report to the Engineer no later than twenty days after completion of the tests.
- C. These are in addition to requirements on Paragraph 3.05.

PART 3 - EXECUTION

3.01 TESTING

- A. General requirements: Test all wire and cable, installed and connected by the Contractor to assure proper installation, connection, and function as indicated or to conform to Contract Documents and manufacturer's instructions. After the installation has been completed, the Contractor shall conduct an operating test demonstrating all equipment and devices operate in accordance with the requirements of the plans and specifications.
 1. Be responsible for all damage to equipment or material due to improper test procedures or test apparatus handling.

3.02 IDENTIFICATION

- A. Upon completion of the tests and inspections noted in these specifications, attach a label to all serviced devices indicating the date serviced and the testing company responsible.

3.03 TESTING PROCEDURE:

- A. All tests shall be conducted according to applicable industry standards.

3.04 SCHEDULING:

- A. Notify Engineer at least seven (7) calendar working days prior to performance of any test.

3.05 TRANSMITTAL OF REPORTS:

- A. Transmit test reports to the Engineer per Section 01 77 00 – CLOSEOUT PROCEDURES.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 3. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 4. Section 26 05 53 – Identification for Electrical Systems
 - 5. Section 33 71 19 – Electrical Underground Ducts and Manholes
 - 6. Section 33 79 00 – Site Grounding

1.02 DEFINITIONS:

- A. NEC means National Electrical Code.
- B. The term "code" as used herein shall mean all applicable National, State and local codes.

1.03 WORK INCLUDED:

- A. The Electrical work consists of furnishing, installing, testing and placing in satisfactory operation all materials and appurtenances, necessary to provide a complete electrical system according to the intent of the Drawings and Specifications. In general this includes all labor, materials, etc. to complete the electrical work.
- B. General requirements for materials and installation methods.

1.04 INTENT OF DRAWINGS:

- A. The Electrical Drawings are intended to serve as working Drawings for general layout. Equipment, j-boxes and raceway locations are partially diagrammatic and do not necessarily indicate actual routings or all appurtenances required for a complete installation.
- B. Minor changes in the locations of j-boxes, raceways and the like, from those shown on the Drawings, shall be made without extra charge if so directed before installation.
- C. Contractor is required to take all working dimensions from civil drawings and field measurements. Do not scale electrical Drawings.

1.05 MANUFACTURERS' RECOMMENDATIONS:

- A. Make all installations in strict accordance with manufacturers' published recommendations and details. All materials and installation methods recommended by manufacturers' shall be considered as part of this contract.

1.06 SUPERVISION AND COORDINATION:

- A. Contractor shall have a responsible person in charge at the site any time work is in progress or when necessary for coordination with other trades.

1.07 CODES AND REGULATIONS:

- A. All work shall conform to current applicable National, State and local Codes; these shall be regarded as the minimum standard of quality for material and workmanship. Contractor shall provide all Labor and Material required for compliance with Code Requirements or Code

Interpretations, although not specifically detailed on the Drawings or in the Specifications. Contractor shall become familiar with all the following codes prior to bidding.

1. ASTM American Society for Testing and Materials
 2. NEC National Electrical Code
 3. WAC Washington State Administrative Code
 4. NESC National Electrical Safety Code
 5. NEMA National Electric Manufacturers Association
 6. NETA National Electrical Testing Association
 7. NFPA National Fire Protection Association
 8. UL Underwriters Laboratories, Inc.
 9. ICEA Insulated Cable ENGINEERs Associations
 10. ETL Electrical Testing Laboratories
 11. TPU Tacoma Public Utilities Standards and Requirements
- B. Nothing in these Drawings and Specifications shall be construed as permitting work not conforming to governing codes.
- C. The Contractor shall not be relieved from complying with any requirements of these contract documents which may exceed, but not conflict with requirements of the governing codes.
- D. Contractor shall include in bid all costs to have a Department of Labor & Industries approved firm to evaluate the installation safety, and compliance with code as required per WAC 296-40-100 for any equipment specified or furnished that is not UL labeled.

1.08 PERMITS AND FEES:

- A. Obtain and pay all fees for licenses, permits and inspections required by laws, ordinances and rules governing work specified herein. Arrange for inspection of work and provide inspectors with all necessary assistance.

1.09 WORKMANSHIP:

- A. All work shall be done by competent craftsmen skilled in the specific work to be done. Equipment shall be installed in a neat and workmanlike manner following the best practice of the trade.

1.10 AS-BUILT RECORD DRAWINGS:

- A. See Specification Section 01 77 00 - Closeout Procedures.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. All materials shall be new, free from defects, of the quality specified herein and on the Drawings. Materials shall be designed to ensure satisfactory operation and manufacturer's rated life in the prevailing environmental conditions where installed. Materials and equipment shall be listed by Underwriter's Laboratories or a Washington Administration Code (WAC) recognized testing laboratory for use under these conditions.

- B. Each type of material shall be of the same make and quality throughout the job. The materials furnished shall be the latest standard design products of manufacturers regularly engaged in their production.

PART 3 - EXECUTION

3.01 HIGH BAY LIGHTING:

- A. High bay lighting fixtures to remain operational every night. If Contractor needs to shutdown normal power to the lighting fixtures, Contractor shall provide backup power supply to maintain service to the fixtures.

3.02 PROTECTION OF WORK:

- A. Protect all work, wire and materials installed under this Division against damage by other trades, weather conditions or any other causes. Equipment found damaged or in other than new condition will be rejected as defective.
- B. Equipment shall be kept covered or enclosed to exclude moisture, dust, dirt, cement, or paint and shall be free of all such contamination before acceptance. Enclosures and trims shall be in new condition, free of rust, scratches or other finish defects. Properly refinish in a manner acceptable to the Engineer if damaged.
- C. Keep conduit and raceways closed with suitable plugs or caps during construction to prevent entrance of dirt, moisture, concrete or foreign objects. Pull a properly sized mandrel through each underground conduit prior to installation of wire. Raceways shall be clean and dry before installation of wire and at the time of acceptance.
- D. Make up and insulate wiring promptly after installation of conductors. Wire shall not be pulled-in until raceways are complete, all bushings are installed and raceway terminations are completed.

3.03 CUTTING AND PATCHING:

- A. All construction materials damaged or cut into during installation must be repaired or replaced with materials of like kind and quality as original materials by skilled labor experienced in that particular building trade.

3.04 LABELING:

- A. Refer to Specification 26 05 53 - Identification for Electrical System.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 00 – Common Work Results for Electrical
 - 3. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 4. Section 26 05 53 – Identification for Electrical Systems
 - 5. Section 33 71 19 – Electrical Underground Ducts and Manholes
 - 6. Section 33 79 00 – Site Grounding

1.02 WORK INCLUDED:

- A. Provide all wire and terminations for a complete installation

1.03 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections:
 - 1. Product Data: For each type of product indicated.

1.04 REFERENCES:

- A. General: Type XHHW-2, per UL Standard 44, NEMA WC 70, and NFPA 70.

PART 2 - PRODUCTS

2.01 PACKAGING:

- A. Conductors shall be delivered to the job site in approved original cartons, or on reels as recommended by the manufacturer, and shall bear the Underwriter's Label. Reels shall be provided with suitable protection to prevent fork-lift damage to conductors during shipment or storage prior to use.

2.02 CONDUCTORS - 600 VOLTS:

- A. Stranded Copper, insulated for 90 degree centigrade and 600 volts.
- B. Insulation type XHHW-2. Insulation requirements may vary per the NEC where necessary to suit more stringent installation conditions.

2.03 CONNECTORS - 600 VOLTS:

- A. Branch circuit conductor splices:
Pre-insulated "twist-on" type or "crimped-on" type as approved (Scotch-lok, Ideal or equal).
- B. Terminator lugs of No. 12 wire and smaller:
Spade, insulated type to be tool applied.
- C. Terminator lugs for No. 10 wire or larger:
Two bolt (or approved positive restraint), tool applied compression type (Burndy or equal).

2.04 INSULATING MATERIALS:

- A. Insulating tape or heat shrink tubing shall have the equivalent rating of the applicable conductor insulation (Scotch 3M, RAYCHEM or equal).

2.05 PLASTIC CABLE TIES:

- A. Nylon, or equivalent, locking type (T&B or equal).

PART 3 - EXECUTION

3.01 GENERAL:

- A. Install all wiring in raceway.

3.02 CONDUCTOR TYPES, REFERENCED ON PLAN:

- A. Conductors shall be stranded copper.

3.03 CONDUCTOR COLORING CODE:

- A. CONDUCTOR COLOR CODING SHALL BE AS FOLLOWS:

1. 208/120 volt system
 - a. A Phase - Black
 - b. B Phase - Red
 - c. C Phase - Blue
 - d. Neutral – White
 - e. Grounding - Green
2. 480/277 volt system
 - a. A Phase - Brown
 - b. B Phase - Orange
 - c. C Phase - Yellow
 - d. Neutral -Gray
 - e. Grounding – Green with Yellow Trace
 - f. Other Colors - Switched Wires
3. Conductors shall have colored insulation except wires larger than #8 may be black with colored tape identification at all terminations and splices.
4. Additional colors may be used where such colors will help in identifying wires and different systems.

3.04 CONDUCTOR INSTALLATION:

- A. Raceways shall be complete, clean and free of burrs before pulling conductors.
- B. U.L. approved pulling compounds may be used with the residue cleaned from the conductors and raceway entrances after the pull is made.
- C. Contractor shall obtain the manufacturer's published recommendations for the handling, pulling and terminating of the cable. Contractor shall perform work in accord with manufacturer's recommendations.

- D. Pulleys or blocks shall be used for alignment of the conductors when pulling. Pulling shall be in accordance with manufacturer's specifications regarding pulling tensions, bending radius of the cable and compounds. No mechanical pulling means shall be used for wires No. 8 AWG and smaller. Cables shall be pulled by the conductor, not by the insulation or shielding.

3.05 MOISTURE PROTECTION:

- A. Cable ends shall be protected at all times from moisture. Provide approved heat-shrink end caps or equivalent for all unterminated cable ends.

3.06 TERMINATIONS - COPPER CONDUCTORS 600 VOLTS:

- A. All bolt type connectors shall be made up tight and retightened after an eight-hour period. Tighten all bolted connections with a ratcheting type torque wrench per manufacturer's standards.
- B. All tool applied crimped connectors shall be applied per manufacturer's recommendations and physically checked for tightness.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 00 – Common Work Results for Electrical
 - 3. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 4. Section 26 05 53 – Identification for Electrical Systems
 - 5. Section 33 71 19 – Electrical Underground Ducts and Manholes
 - 6. Section 33 79 00 – Site Grounding

1.02 WORK INCLUDED:

- A. Provide all raceways for a complete electrical system. Include all fittings, hangers and appurtenances required for a complete installation.

1.03 SUBMITTALS:

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections:
 - 1. Product Data: For each type of product indicated.

1.04 REFERENCES:

- A. Rigid Steel Conduit (RSC): UL-6, ANSI C80.1, and NFPA 70.
- B. Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit: NEMA FB 1.
- C. Flexible Metal Conduit with polyvinyl chloride (PVC) jacket: UL360, and NFPA 70.
- D. Stainless Steel Enclosures: UL 508.

PART 2 - PRODUCTS

2.01 CONDUITS:

- A. Rigid Steel Conduit.
- B. Flexible Metal Conduit with PVC jacket.
- C. Stainless Steel Enclosures.

2.02 FITTINGS:

- A. RSC fittings shall have threaded connections, and material to match conduit.
- B. PVC Coated Flexible Metal Conduit: Thomas & Betts "Super Liquid-Tight" with external ground lug or equal.

2.03 PULL AND JUNCTION BOXES

- A. Enclosures: Stainless steel NEMA 4X, with hinged door, suitable for outdoor locations.

2.04 EXPOSED RACEWAY IDENTIFICATION:

- A. Refer to Specification 26 05 53 Identification for Electrical System

PART 3 - EXECUTION

3.01 GENERAL:

- A. Install raceways exposed in construction.
- B. Cut conduit ends square, ream smooth and extend maximum distance into all couplings and connectors.
- C. Provide and install manufactured end caps on all conduit ends during construction to prevent the entrance of water or dirt. Tape, as a cover, is unacceptable.
- D. The conduit layout shall be carefully planned by the Contractor to ensure neat and workmanlike installation.
- E. Any work showing inadequate planning may be ordered removed by the Engineer and shall be replaced in a neat and proper manner at no additional cost to the Port of Tacoma.

3.02 CONDUIT SIZING:

- A. Conduits shall be sized per code for conductors with type XHHW-2 insulation. Conduit size shall not be reduced if large size is specified on the drawing. Minimum conduit size shall be 1" trade diameter.

3.03 RSC:

- A. Install RSC for all conduits where conduit is exposed, except as noted in 3.04.

3.04 FLEXIBLE CONDUIT:

- A. Provide liquid tight flexible metal conduit connection to equipment subject to vibration. Provide bonding jumper when required by N.E.C.

3.05 CONTINUITY OF CONDUIT SYSTEM:

- A. Conduits shall be assembled continuous and secured to boxes, panels, etc., with appropriate fittings to maintain electric continuity.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 00 – Common Work Results for Electrical
 - 3. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 4. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 5. Section 33 71 19 – Electrical Underground Ducts and Manholes
 - 6. Section 33 79 00 – Site Grounding

1.02 SUMMARY

- A. This Section includes identification of electrical materials, equipment, and installations.

1.03 REFERENCES

- A. ANSI/IEEE C2 - National Electrical Safety Code.
- B. NFPA 70 (National Fire Protection Association) – National Electrical Code.

1.04 QUALITY ASSURANCE

- A. Comply with NFPA 70, as adopted and administered by the Authority Having Jurisdiction.
- B. Comply with ANSI C2.

1.05 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections:
 - 1. Product Data for each type of product specified.
 - 2. Provide sample label with identification nomenclature for one of each label type to be used for identification and equipment labels.

PART 2 - PRODUCTS

2.01 LABEL TYPES

- A. Manufacturer's standard products with colors prescribed by ANSI A13.1, NFPA 70, and these Specifications. Refer to Drawings for label schedule and types:
- B. Flexible, preprinted pre-tensioned wraparound plastic sleeves sized to suit the diameter of the wire it identifies and arranged to stay in place by pre-tensioned gripping action when placed in position.
- C. Exterior, use adhesive-backed plastic machine-printed labels, white with black letters.
- D. Plain-colored vinyl adhesive tape, 3-mil minimum by 1-inch wide minimum. Apply 1/2-inch minimum over-wrap through 2-inch minimum length.
- E. Stainless-steel machine or hand-stamped wire marker plates, 0.010-inch minimum thickness, with 2 holes at each end for attachment with stainless steel wire. Wire tags shall have source

- point, circuit breaker, fused switch, equipment name or equipment ID. Labels shall be provided in all power signal manholes for all wires, cables and pull ropes provided under this contract.
- F. Conduit tags shall be corrosion-resistant, embossed metal tags. Mount to conduits with stainless steel wires. The conduit identifying texts shall be as shown on the Drawings and shall be a minimum of ½" in height.
 - G. Underground metallic line-warning tape with pre-printed warning message identifying type of system. Material shall be compounded for unlimited life when direct buried. Use when metal-detection of line is required on Medium Voltage Systems. 6-inch minimum width by 4-mils thick. (Reference Seton style 6ELE.)
 - H. Stencils: Machine-punched patterns, paint with color and formulation appropriate for material and location.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install identification labels according to manufacturer's written instructions.
- B. Install labels where indicated and as required by the Authority Having Jurisdiction. Locate for optimum viewing and without interference with the operation and maintenance of equipment.
- C. Coordinate names, abbreviations, colors, graphics and other designations used for electrical identification with corresponding designations used in the Contract Documents or as required by codes and standards.
 - 1. Use consistent designations throughout the Project. Labeling abbreviations are not allowed.
- D. Clean surfaces of dust, loose material, and oily films before applying painted or self-adhesive identification products.
- E. Conductor Identification:
 - 1. Conductors to be Extended in the Future: Indicate source and circuit numbers.
 - 2. Provide wire markers on each conductor in panelboards, pullboxes, junction boxes, vaults, etc. and at load connection. Identify with panelboard designation and branch circuit or feeder number.
 - 3. Multiple Power or Lighting Circuits in the Same Enclosure: Identify each conductor with source, voltage, circuit number, and phase. Use color coding for voltage and phase indication of secondary circuit.
 - 4. Multiple Control and Communications Circuits in the Same Enclosure: Identify each conductor by its system and circuit designation. Use a consistent system of tags, color coding, or cable marking tape.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 00 31 00 – Available Project Information
 - 2. Section 01 35 29 – Health, Safety and Emergency Response Procedures
 - 3. Section 01 45 00 – Quality Control
 - 4. Section 01 71 23 – Field Engineering
 - 5. Section 01 74 19 – Construction Waste Management and Disposal
 - 6. Section 02 41 00 – Demolition
 - 7. Section 26 05 00 – Common Work Results for Electrical
 - 8. Section 31 23 19 – Dewatering
 - 9. Section 32 12 16 – Asphalt Paving
 - 10. Section 32 15 40 – Crushed Stone Surfacing
 - 11. Section 33 71 19 – Electrical Underground Ducts and Manholes

1.02 DESCRIPTION OF WORK

- A. The work includes excavation, trenching, backfill and shoring, of upland areas associated with pier and utility demolition, utility installation and paving as indicated on the Drawings and in the specifications.
- B. This section also describes quality control procedures including testing and characterization requirements for various material sources and products.

1.03 REFERENCE STANDARDS

- A. American Society for Testing Materials (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- B. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10, 2014 edition, by Washington State Department of Transportation (WSDOT Standard Specifications).

1.04 QUALITY ASSURANCE

- A. On-Site Testing and Inspection: The Port will provide and pay for on-site testing and inspection services. Sampling and testing for compliance with the contract provisions will be in accordance with Section 01 45 00 – Quality Control. The Contractor shall assist in obtaining samples and may obtain copies of test results performed by the Port at no cost. Tests conducted for the sole benefit of the Contractor shall be at the Contractor's expense.
- B. Compaction Control Tests: The Port will provide and pay for laboratory and on-site field compaction control tests in accordance with the applicable provisions of these specifications.
 - 1. The compaction control density shall be the maximum density at optimum moisture content as determined by ASTM D 1557, Standard Methods for Moisture-Density Relationships of Soil and Soil Aggregates, Methods B, C or D as applicable, but shall be

no less than 95% of dry density for Landside Backfill, Base Course, and Top Course, and trench backfill above the bedding zone. Compact trench bedding zone material to 90% of dry density.

2. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D 1556, D 2167, or D 2922.
- C. Shoring shall be provided in accordance with applicable local, State and Federal safety codes. Design, agency approval, permits, construction, maintenance, and removal of all shoring elements are the sole responsibility of the Contractor.

1.05 SUBMITTALS

- A. Source characterization, testing, reporting, and certification for all off-site borrow materials.
- B. Written request for use of on-site borrow materials.
- C. Samples of on-site borrow material for physical and/or chemical characterization as requested by the Engineer.

1.06 SITE CONDITIONS

- A. Subsurface investigations have been made at and near Pier 4 in connection with this project. Review and make determinations about the anticipated soil and foundation conditions from the information and reports described in Section 00 31 00 – Available Project Information.
- B. Anticipate encountering groundwater at or above the adjacent waterway level over the majority of the project site. The groundwater elevation varies depending upon proximity to the shoreline, soil conditions, tidal conditions, and weather. See Section 31 23 19 – Dewatering.
- C. Verify the location of existing utilities at the site, and use an independent private locate company to assist. Those utilities which are to remain shall be protected from damage and remain operational. Damage to utilities which are to remain shall be repaired by the Contractor at its own expense.

PART 2 – PRODUCTS

2.01 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION

- A. Materials and products shall be of the quality, size, shape, and gradation as specified in the contract documents, or shall be approved by the Engineer as equal.
- B. Provide and pay for source characterization, testing, reporting, and certification for all off-site borrow materials as described below. Provide documentation for the Engineer's approval demonstrating that all imported materials from a borrow pit meet the contract requirements and certify that the materials are free of regulated materials.
- C. Regulated Materials are defined as materials or combinations of materials containing hazardous or dangerous wastes as defined under state laws, federal laws, or under the Model Toxics Control Act listed in WAC 173-340-900, Table 740-1, which exceed the Method A cleanup levels for unrestricted land use.
- D. Characterization Testing shall be conducted at a laboratory accredited under WAC Chapter 173-50, and shall include the following. Provide the name of the material source with each sample submitted.
 1. Grain Size Distribution / Sieve analysis (ASTM D 422)
 2. Specific gravity determined from absolute volume (ASTM D 854)

3. Maximum Dry Density (ASTM D 1557)
4. Priority Pollutant Metals (EPA SW 846 6010/6020/7041)
5. Volatile Organic Compounds (EPA SW 846 8260)
6. Semi-volatile Organic Compounds (EPA SW 846 8270)
7. PCBs and Pesticides (EPA SW 846 8080)
8. Petroleum Hydrocarbons (NWTPH-HCID)

2.02 ON-SITE BACKFILL SOURCE CHARACTERIZATION

- A. Excavated in-situ soils generated during site construction activities may be used or reused as backfill material, if approved by the Engineer. For bidding purposes, it shall be assumed that all excavated in-situ material will be found acceptable for reuse. The Contractor will be compensated for costs associated with disposal of in-situ soils and for import of new material if it is determined that in-situ soils cannot be reused as backfill material. Compensation will be made based on a Changed Condition.
 1. Submit a written request for use of on-site borrow materials at least 3 weeks prior to on-site placement. Identify the source of the excavated material, proposed on-site use, and quantity of material to be used.
 2. Provide samples of the material for physical and/or chemical characterization as requested by the Engineer. The material shall not be reused at the site until approved by the Engineer.
- B. Characterization testing of excavated materials proposed for reuse may be performed by the Port, as determined by the Engineer, to assure that backfill materials are free of regulated materials and the material meets the requirements of the contract documents.
- C. The Engineer may reject any materials that have been determined to be substandard or contain regulated materials. One or more of the tests listed in these specifications may be required prior to acceptance.

2.03 RECYCLED MATERIALS

- A. Asphalt removed by demolition activities, and asphalt grindings from milling operations, shall be taken to a Contractor-selected and Port-approved recycler, but shall not be reused on-site. Refer to Section 02 41 00 – Demolition, and Section 01 74 19 – Construction Waste Management and Disposal.
- B. Upon approval of the Engineer, existing wharf ballast removed during demolition activities may be reused as landside backfill material. See requirements for landside backfill material specified herein, and refer to Section 02 41 00 – Demolition.

2.04 BEDDING MATERIAL

- A. Bedding material for pipes shall consist of imported clean, well graded granular material meeting the requirements of the WSDOT Standard Specifications, Section 9-03.12(3), including sand equivalent requirements.
- B. Pea-gravel will not be allowed.
- C. Imported bedding materials shall be characterized, tested and certified as specified herein.

2.05 LANDSIDE BACKFILL MATERIAL

- A. Material used for backfill, including in trenches, and areas requiring Select Backfill, shall be geotechnically suitable excavated in-situ material generated during site construction.
- B. Geotechnically suitable material shall be clean, free-draining, sandy gravel or gravelly sand that is free from deleterious coatings and shall contain no organic matter, soft friable particles, or other performance-reducing properties, as determined by the Engineer.
 - 1. The material shall not have excessive moisture content, excessive fine-grained fraction passing the U.S. No. 200 sieve, or other factors rendering the material unsuitable for placement, compaction, or supporting applied loads.
 - 2. 100% of material shall pass a 3-inch screen.
 - 3. The moisture content of fill material shall be within minus 2 percent to plus 1 percent of the optimum moisture content at the time of compaction.
 - 4. Excavated ballast material from the existing wharf may also be stockpiled and reused for landside backfill material if it meets the requirements above. Excess material shall be removed by the Contractor.
- C. For bidding purposes it shall be assumed that the quantity of suitable excavated in-situ material exceeds the quantity of backfill required for the project and that the use of imported material will not be required. If the Engineer determines the site conditions require backfill quantities greater than the quantity available from suitable excavated in-situ material, such as in the case where there is an excess amount of unsuitable material encountered, then the Contractor shall import Select Backfill after obtaining approval from the Engineer.
 - 1. Select Backfill shall meet 2014 WSDOT Standard Specifications Section 9-03.14(2), with the exception the amount of fines passing the 200 Sieve shall not exceed 5 percent and 100% of material shall pass a 3-inch screen.
 - 2. Characterize, and perform characterization testing and certification of imported select backfill as specified herein.

2.06 FOUNDATION GRAVEL

- A. Foundation Gravel for use as directed by the Engineer shall be crushed surfacing base course in accordance with WSDOT Standard Specifications Section 9-03.12(1)A.
- B. Characterize, and perform characterization testing and certification of imported foundation gravel as specified herein.

2.07 COMPRESSIBLE MATERIAL AND FILTER FABRIC

- A. Compressible material for placement between utilities, and other locations shall be radiated polyethylene foam board Youngboard Y-S-30 as manufactured by Specialty Foams or an Engineer approved equal.
- B. Filter fabric shall be Mirafi 140NL or an Engineer approved equal.

2.08 UNDERGROUND MARKING TAPE

- A. Underground marking tape shall consist of inert polyethylene plastic, 4-mil thickness that is impervious to all known alkalis, acids, chemical reagents and solvents likely to be encountered in the soil, with a metallic foil core to provide the most positive detection and pipeline locators.

- B. The tape shall be color coded and shall be imprinted continuously over its entire length in permanent black ink. The message shall convey the type of line buried below and shall also have the word "Caution" prominently shown. The width of the tape shall be as recommended by the manufacturer for the depth of installation.
- C. Color coding of the tape shall be as follows:

<u>Utility</u>	<u>Tape Color</u>
Water	Blue
Electrical	Red

2.09 SHORING

- A. Products that are required to accomplish, or to be incorporated into, the work of this section shall be selected by the Contractor, subject to review by the Engineer

PART 3 – EXECUTION

3.01 SUSPECT MATERIALS, SAMPLING, TESTING, AND DISPOSAL

- A. All excavated materials will be inspected and categorized as suspect or non-suspect by the Engineer. Soil will be considered suspect if it has an odor, sheen, or color typical of soil containing regulated materials.
- B. All suspect materials shall be stockpiled and segregated by the Contractor from other stockpiles or materials by the Contractor. The Port will provide and pay for sampling and characterization testing for all suspect materials prior to reuse or removal from the site. Allow 21 days for Port testing and direction to the Contractor.
 - 1. Suspect soils characterized to be free of regulated materials, and meeting the requirements of the contract documents, may be reused on-site provided it is suitable for its intended use, as determined by the Engineer.
 - 2. Suspect soils characterized to contain regulated materials shall be loaded by the Contractor into trucks and disposed of at a Port approved disposal facility capable of receiving regulated material. Work and costs related to transporting and disposing of said material will be considered Changed Work.
 - 3. Surplus suspect soils characterized to be free of regulated materials, and meeting the requirements of the contract documents, shall be considered the same as non-hazardous excess material. Surplus / excess soils shall be loaded, transported, hauled, and disposed of off-site in accordance with the contract documents and applicable laws and regulations.
- C. All non-suspect soils shall be stockpiled by the Contractor, but segregated from suspect soils, and may be reused on-site provided they are suitable for the intended use, as determined by the Engineer.

3.02 EXCAVATION - GENERAL

- A. Excavate and backfill as specified herein, within the tolerances established in the contract documents, and conform to recognized industry standards, whichever are more stringent.
- B. Excavation: Homogeneous or mixtures of naturally occurring earth, fill, sand, gravel, stones, clays, or loam, moved to facilitate the construction of structures, utilities, trenches, and associated work.

1. Excavation material shall be moved with the use of mechanical equipment, such as shovels, clamshells, loaders, bulldozers, graders, rippers, etc., but shall not require drilling and blasting or drilling and line breaking.
 2. Excavation by sluicing method will not be permitted.
 3. Where possible, excavation shall be removed in horizontal layers, and in such a way that the resulting stockpiles are a blend of the naturally occurring materials.
- C. Protect excavated material, stockpiled for reuse as backfill, from contamination by other materials and from weather damage by covering with waterproof sheeting and other effective means. Any material not properly protected which becomes unsuitable or contaminated shall be replaced at no additional cost to the Port.
- D. Separate stockpiles shall be employed for material to be reused as backfill, unsuitable material, and suspect material. At end of project, any material remaining in temporary "material acceptable for reuse" stockpiles shall be considered Excess Material, and following testing of material by the Port, Contractor shall haul excess material off-site to a Port-approved disposal facility that is appropriate for the material being disposed. Disposal of material off-site prior to the end of project, when there is still potential the material may be needed for backfill, shall first be approved by the Engineer.

3.03 EXCAVATION FOR STRUCTURES AND UTILITIES

- A. Excavate as necessary for utilities and other miscellaneous structures to the lines and grades indicated on the Drawings.
- B. Excavation below the designed depth, except as directed by the Engineer, shall be backfilled with select backfill material, and compacted as specified at the Contractor's expense.
- C. Brace and shore sides of excavations. Comply with all federal, state, and local regulations regarding shoring, bracing, and other protection requirements.
- D. Keep water out of excavated pits and trenches by pumping or other means of dewatering.

3.04 SHORING

- A. The method of shoring shall be according to the Contractor's design. The design, planning, installation and removal, if required, of sheeting and bracing shall be accomplished in such a manner as to maintain the required excavation or trench section and to maintain the undisturbed state of soils below and adjacent to the excavation.

3.05 TEMPORARY TRENCH COVERS

- A. Maintain vehicular traffic at and around the trench work. Provide temporary steel plate trench covers of sufficient thickness to support the typical traffic loads present at the site based on span dimension across trenches.
- B. Temporary trench covers are to be removed as soon as underground utility work is completed to allow backfill and compaction work.

3.06 UNSUITABLE EXCAVATION AND DISPOSAL

- A. Unsuitable Structural and Trench Excavation: Shall consist of unstable materials, such as peat, muck, water-impregnated clays, swampy or other undesirable materials, including buried logs, stumps, or trash. Unsuitable excavation materials shall be removed to the depth designated by the Engineer.

1. Unsuitable material excavated shall be replaced with Foundation Gravel as defined herein and as directed by the Engineer.
2. Unsuitable materials, excess material and any excavated material not approved by the Engineer for use as backfill shall be tested by the Port and then transported off-site by the Contractor to a proper disposal facility.
3. The Contractor will be compensated for costs associated with disposal of unsuitable excavation materials and for placement of Foundation Gravel. Compensation will be made based on a Changed Condition.

3.07 FILL AND BACKFILL FOR UTILITIES AND FILLS

- A. Beneath all underground structures, place a minimum of 6-inches of Bedding Material, or more if specified on Drawings, over compacted subgrade. If subgrade is soft and cannot be adequately compacted, contact the Engineer for direction.
- B. Remove water from excavated areas, by pumping or other means, before placing any backfill material.
- C. Compact subgrade, as specified below, before placing any fill or aggregate material.
- D. Pipe zone bedding material shall provide uniform support along the entire pipe barrel, without load concentration at joint collars or bells. All adjustments to line and grade shall be made by scraping away or filling in with bedding material under the body of the pipe and not by blocking or wedging. Bedding disturbed by pipe movement, or by removal of shoring movement of a trench shield or box, shall be reconsolidated prior to backfill. Pipe zone bedding shall be placed in loose layers and compacted to 90 percent maximum density. Bedding shall be placed, spread, and compacted before the pipe is installed so that the pipe is uniformly supported along the barrel. Lifts of not more than 6 inches in thickness shall be placed and compacted along the sides of the pipe to the height shown in the Drawings. Material shall be worked carefully under the pipe haunches and then compacted. If the Engineer determines that the material existing in the bottom of the trench is satisfactory for bedding the pipe, the existing material shall be loosened, regraded, and compacted to form a dense, unyielding base.
- E. Do not place and compact any backfill material against recently poured concrete until the concrete has attained a minimum of 0.80 f'c (80% of design strength) or has set and cured a minimum of 7 days.
- F. Backfill by placing material in horizontal layers not exceeding 8-inches upon earth which has been undisturbed, stabilized, or otherwise approved by the Engineer.
 1. Construct in compacted layers of uniform thickness. Carry the layers up full width from the bottom. Compact with modern, efficient compacting units, or as directed by the Engineer. The compacting units may be of any type, provided they are capable of compacting each lift of the material to the specified density. The Engineer may order the use of any particular compacting unit discontinued if it is not capable of compacting the material to the required density within a reasonable time, or if the equipment may damage underlying or adjacent soils or structures.
 2. Unless noted elsewhere compact each layer to 95% of the maximum density as determined by compaction control tests described herein. Use small mechanical or vibratory compactor units to compact the layers adjacent to structures that are inaccessible to other compaction equipment.

3.08 PREPARATION FOR CRUSHED STONE SURFACING / BASE COURSE:

A. Preparation of Subgrade:

1. Immediately prior to placement of crushed stone surfacing or base course, clean the entire width of the area of all debris and dispose of as directed by the Engineer. All depressions or ruts which contain water shall be drained.
2. Shape the entire subgrade to a smooth uniform surface, true to line, grade, and cross section. Compact the subgrade material to 95% of the maximum density as determined by compaction tests ASTM D 1557. If soft or spongy material underlying the upper six inches of the area being prepared precludes satisfactory compaction of the upper six inches, loosen, aerate, or excavate, replace and compact to the required density as directed by the Engineer.
3. Remove and dispose of excess subgrade material. Subgrade areas deficient in materials shall be brought to grade by importing suitable materials from other areas.
4. Once subgrade is prepared, maintain and protect subgrade in the finished condition until the first course of aggregate has been placed.

B. Finishing Subgrades:

1. Before any paving material is placed, the subgrade shall be brought to the proper line, grade and cross section and shall be so maintained until the base course and paving is placed, except that extra depth of subgrade for increased thickness of the pavement, for pavement anchors, for pavement headers, and for increased thickness at the edges of the pavement may be removed just before the pavement is placed.
2. Compact the subgrade for pavement to 95% of maximum density as defined by the Compaction Control Tests herein.

C. Subgrade Protection:

1. Take all precautions necessary to protect the subgrade from damage; hauling over the finished subgrade shall be limited to that which is essential for construction purposes.
2. Equipment used for hauling over the prepared subgrade which causes damage to the prepared subgrade or underlying materials, or as determined by the Engineer, shall be removed from the work at the request of the Engineer.
3. Repair all cuts, ruts and breaks in the surface of the subgrade prior to placing surfacing, treated base, or paving materials at no cost to the Port.
4. Protect the prepared subgrade from both the Contractor's traffic and public traffic and maintain the subgrade by blading and rolling as frequently as may be necessary to preserve the subgrade in an undamaged and complete condition.

END OF SECTION

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. Work related to this section is described in the following sections.
 - 1. Section 00 31 00 Available Project Information
 - 2. Section 01 57 13 – Temporary Erosion and Sediment Control and Stormwater Pollution Prevention Plan
 - 3. Section 31 00 00 – Earthwork

1.02 DESCRIPTION OF WORK

- A. The work includes providing all supervision, labor, materials, and equipment required to dewater excavations, trenches, and subsurface construction at the Pier 4 site. It also includes handling, discharge, and disposal of all groundwater generated, surface runoff entering excavations, chemically contaminated groundwater, stormwater ponds, and rinse and wash waters. See Section 35 20 23 - Dredging and Section 35 20 24 - Contaminated Dredge Material Transloading for dewatering of dredged material and treatment of dewater and surface water at the transload site.

1.03 QUALITY ASSURANCE

- A. The Contractor shall obtain all necessary permits and authorizations for collecting and disposing of the dewatering discharge.
- B. It shall be the sole responsibility of the Contractor to control the rate and effect of the dewatering operations in such a manner as to avoid all settlement, subsidence, and undermining.
- C. Dewatering systems shall be designed by the Contractor. All dewatering operations shall be adequate to assure the integrity of the finished project and shall be the responsibility of the Contractor.

1.04 SUBMITTALS

- A. A dewatering plan including the proposed means and methods for handling the dewatering discharge and the permits required. Include the types of equipment, materials, and manufactured items to be incorporated in the dewatering system. Work affected by the plan shall not be performed until the original plan, or a revised plan, is approved by the Engineer.
- B. Contractor-obtained authorizations or permits associated with dewatering and wastewater handling and discharge.
- C. All handling and discharge records or receipts for the project duration.

1.05 SITE CONDITIONS

- A. Subsurface investigations have been made at the project site. The information is available for review as described in Section 00 31 00 – Available Project Information.
- B. Groundwater shall be anticipated at or above the waterway elevation at any location within the project site. Dewatering may be required for shallow foundations, deep foundations, manholes, piping, trenching, utility vaults, and other installations. The groundwater elevation varies depending upon proximity to the shoreline, tidal conditions, and weather.

- C. The Contractor shall investigate and determine to its own satisfaction the extent and methods in which dewatering will be required to meet all required safety codes based on the nature of the existing soils and groundwater conditions.

PART 2 – PRODUCTS

2.01 GENERAL

- A. Products required to accomplish, or to be incorporated into, the work of this section shall be selected by the Contractor, subject to review by the Engineer.
- B. Provide sufficient pumping equipment and other machinery to assure that the operation of the dewatering system can be maintained.

PART 3 – EXECUTION

3.01 GENERAL

- A. Adequate pumping equipment shall be provided to handle and dispose of the water without damage to adjacent properties and infrastructure and in accordance with the permit authorizations. The dewatering system shall be capable of continuous (24-hours per day) operation and for the duration of each activity requiring dewatering.
- B. Water shall be disposed of in accordance with the conditions of the Construction Stormwater General Permit, in a manner that does not disrupt adjacent tenant operations, and does not endanger public health. Coordinate disposal operations with the Engineer.
- C. Site work for excavations and pipe trenches shall be kept free from water to facilitate grading, construction of structures, laying and joining of pipe and appurtenances, placement of backfill material, and compaction. The dewatered condition shall be maintained at all times until backfill and compaction is completed.
- D. As directed by the Engineer, dewater trenches if the quantity of water reduces the stability of the excavation or prevents the proper installation of pipes, ductbanks, vaults, etc. Water in pipe trenches shall not be allowed to flow through the pipe while construction work is in progress. Adequate measures shall be implemented to prevent the entrance of material into pipes and conduits.
- E. Provide and maintain at all times during construction, multiple means and devices with which to promptly remove and properly dispose of all water entering trenches and excavations and other parts of the work, whether the water be surface water or underground water. Water shall not be discharged anywhere on the project site without approval of the Engineer.
- F. No piping shall be laid in water. Water shall not be permitted to rise over pipes or conduits until the concrete or mortar has set at least 24 hours or until the pipes or conduits have been adequately backfilled to prevent buoyancy.
- G. No embankment or backfill materials shall be placed in standing water.
- H. Written permission shall be secured from the Engineer before locating any wells, well points, or drain lines for purposes of dewatering within the limits of an excavation. The Engineer shall have the right to require that any abandoned dewatering well, line, or trench drains left in place within the excavation limits be filled with concrete or grout.
- I. Dewatering of excavations shall be controlled to prevent settlement damage to adjacent or nearby infrastructure caused by lowering of the groundwater table.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. 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 the following sections:
 - 1. Section 00 31 00 – Available Project Information
 - 2. Section 01 14 00 – Work Restrictions
 - 3. Section 02 41 00 – Demolition
 - 4. Section 03 40 00 – Precast Concrete Piles
 - 5. Section 05 50 00 – Metal Fabrications
 - 6. Section 09 96 00 – High Performance Coatings
 - 7. Section 35 20 60 – Navigation Light Relocation
 - 8. Appendix – Removal Action Work Plan (RAWP)

1.02 DESCRIPTION OF WORK

- A. The extent and location of the driven pile work is indicated on the Drawings. The work includes the requirements for furnishing, transporting, handling, and installing steel pipe piling for the navigation light towers and precast prestressed concrete test piles.
- B. It also includes the requirements for pile tolerances, record keeping, pile driving analyzer (PDA) dynamic testing, PDA re-strikes, and wave equation analysis of pile (WEAP) analyses.
- C. All pile installation work shall be performed in strict compliance with the BMPs provided in the Removal Action Work Plan (RAWP) located in the Appendix.
- D. All pile installation work shall be performed in compliance with the work sequence and schedule constraints described in Section 01 14 00 – Work Restrictions.

1.03 REFERENCES

- A. Geotechnical report: See Section 00 31 00 – Available Project Information.
- B. American Welding Society (AWS) D1.1 - 2010, Structural Welding Code - Steel.
- C. ASTM D 4945-12 – Standard Test Method for High-Strain Dynamic Testing of Deep Foundations.

1.04 QUALITY ASSURANCE

- A. Provide at least one qualified person who shall have a minimum of five (5) years experience with marine conditions, all piling types, piling lengths, and installation methods to be used on the project and who shall supervise and direct all work performed under this section.
- B. Provide at least one qualified person who shall have a minimum of five (5) years of experience in marine piling inspection and who shall keep detailed driving records and logs for each pile from the time the pile is picked until installation is complete. The Contractor shall keep a complete record of each pile installed, noting the make, model, weight, dynamic force, frequency or range of frequencies, maximum eccentric moment, clamping method, pile size and length, pile penetration rate during driving, and total pile penetration below mudline. A sample pile driving log is provided at the end of this section.

- C. Retain other assistance as directed by the Engineer for observation of pile installation activities.
- D. Mark all piling at 1-foot intervals beginning at the tip and provide callouts of the length at 5-foot intervals.
- E. It is the Contractor's responsibility to install in an acceptable condition and location all the piles to the minimum tip and cut-off elevations indicated on the Drawings. The Contractor shall operate the pile driving system so that piles can be installed without damage.
- F. No piles shall be driven until the Engineer's review of proposed equipment is complete and an authorization to proceed is given.
- G. The PDA testing firm shall be an independent agency demonstrating at least five (5) years of experience with PDA instrument installation, PDA testing, PDA results interpretation, and case pile wave analysis program (CAPWAP) analysis. At least one (1) person from the firm shall be a licensed Professional Engineer in Washington State and shall supervise the work.
- H. The Port reserves the right to inspect the above-water and underwater portions of all piling after installation, and the Contractor shall make available the site, or portions thereof, to meet the Port's inspection schedule. Any reports including underwater photographs or video prepared will be made available for the Contractor's review. All observed damage or defects shall be repaired at the Contractor's expense using damage-specific or defect-specific products specified by the Engineer.

1.05 SUBMITTALS

- A. See Section 03 40 00 – Precast Concrete Piles for concrete pile submittal requirements.
- B. Manufacturer or fabricator of steel pipe piling, including proof of certification by Steel Plate Fabricators Association (SPFA).
- C. Mill certificates for steel pipe piling. Manufacturer's certificate of compliance for steel pipe piling.
- D. Detailed pile installation plan and driving schedule showing the location of each pile to be driven. Include descriptions of proposed equipment and procedures to be used in pile 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.
- E. Order lengths for all piling.
- F. For prestressed concrete test piles, a wave equation analysis report (WEAP) for each proposed hammer, pile type, and soil profile combination, as prescribed within this section.
- G. Daily pile driving logs, as prescribed within this section: A sample pile driving form is provided as a supplement at the end of this section.
- H. Pile surveys, as prescribed within this section.
- I. PDA work plan and schedule including test methods, equipment descriptions, instrumentation, PDA agency credentials as described above, PDA agency personnel resumes, and CAPWAP or other capabilities.
- J. PDA test results, interpretations, and report for each PDA mobilization, as prescribed within this section.
- K. Re-strike results, as prescribed herein.

- L. Pile inspection reports, as prescribed herein.
- M. Test reports for splice welding of steel pipe piles.

1.06 SITE CONDITIONS

- A. Existing Facilities:
 - 1. Drive piling at the designated locations and be prepared to encounter slope protection, riprap and/or other subsurface obstructions.
 - 2. The Blair Waterway is an active shipping channel. The Contractor shall not interrupt the operation of the Husky Terminal, any other terminal, or any other vessel traffic in the waterway at any time without obtaining written prior approval from the Port.
- B. Subsurface Conditions:
 - 1. Subsurface conditions have been explored at the project site. See Section 00 31 00 – Available Project Information. Additional soils reports from previous projects in the vicinity are also available for review at the Port's office.
 - 2. The Contractor shall make its own determinations and conclusions regarding the nature of the materials and the methods and procedures to be utilized in performing the pile driving work, based upon all of the available project information.

PART 2 - PRODUCTS

2.01 PRODUCT HANDLING

- A. Before handling or transporting, inspect and verify that all piles are undamaged and free of defects. Provide specific details to the Engineer if any pile does not meet those criteria and obtain subsequent direction from the Engineer before transporting to the project site.
- B. Delivery, Handling, and Replacements
 - 1. Precast concrete piling shall be lifted and supported during manufacturing, stockpiling, transporting, and erection operations only at the lifting or supporting points, or both, as shown on the approved shop drawings, and with approved lifting devices.
 - 2. Transportation, site handling, and erection shall be performed with industry standard equipment and methods, and by qualified personnel.
 - 3. Do not damage piling during any handling and delivery operations. Handling methods shall not overstress, crack, damage, fracture, or produce impact on the units. Repair all damaged piles at no cost to the Port. Repair methods shall be approved by the Engineer prior to additional handling or driving. Piles damaged beyond repair shall be removed and replaced at no additional cost to the Port.
- C. Storage
 - 1. Place stored piles so that identification marks are discernible. Separate stacked members by battens across full width of each bearing area.
 - 2. Store all piling on timber blocking so that the axis of each pile is maintained in a straight line and that bending stresses, misalignments, and cracking are not produced. Locate the blocking of successive tiers exactly above the blocking of the lower tiers.

2.02 STEEL PILING

- A. Pipe piling shall be fabricated from steel plate and have diameter and wall thickness as indicated on the Drawings. Steel pipe piling shall conform to the requirements of ASTM A252, Grade 2, except that the yield strength shall be a minimum of 50 ksi.
- B. In fabricating piling, the number of splices shall be limited to a maximum of three per pile, spaced no closer than 10 feet apart. Splice piles by complete joint penetration groove weld. Carefully align and hold pieces concentric until welding is complete. Provide backing bar (minimum ¼ inch thick) for all splices. Underwater welding for pile splicing is prohibited. Splices shall develop the full strength of the pile in tension, bending, and bearing. Welding shall conform to the requirements of the applicable provisions of American Welding Society (AWS) D1.1. All pipe pile splices shall be 100% tested by either radiographic, radioscopy, real time imaging systems, or ultrasonic methods that are in conformance with the requirements of AWS D1.1. Testing shall be performed by an independent testing agency retained by the Contractor and at the Contractor's expense.
- C. Steel pipe piles shall be hot-dipped galvanized in accordance with ASTM A123 to Thickness Grade 100 and coated per Section 09 96 00 – High Performance Coatings.
- D. Repair all galvanized surfaces removed or damaged during shipping or handling in accordance with Section 05 50 00 – Metal Fabrications. Repair all coated surfaces removed or damaged during shipping or handling in accordance with Section 09 96 00 – High Performance Coatings.

2.03 PRESTRESSED CONCRETE PILES

- A. Precast, prestressed concrete piling shall be manufactured as indicated on the Drawings with lifting points detailed and provided by the manufacturer. See Section 03 40 00 – Precast Concrete Piles, Section 03 30 00 – Cast-in-Place Concrete, and Section 03 20 00 – Concrete Reinforcing.
- B. Prior to delivery, verify that the piling have reached the specified concrete compressive strength indicated on the Drawings and have been cured for a minimum of twenty-eight (28) days.
- C. Inspect all piling for conformance with the Drawings, specifications, and manufacturing tolerances. Do not accept delivery of out of tolerance piling and report any such rejection to the Engineer. Submit written notice to the Engineer that the piles have been inspected and that the piling condition is in accordance with the Drawings and specifications.

PART 3 - EXECUTION

3.01 GENERAL

- A. For concrete pile installation, submit a WEAP report for each proposed hammer-type/pile-type/soil-profile permutation.
 - 1. A minimum of three soil profiles shall be used, one near the south end of the site, one near the middle of the site, and one near the north end of the site.
 - 2. Indicate all input parameters, assumptions, and resulting pile output and stresses for each permutation.
 - 3. For prestressed concrete piles, the maximum “NET” driving stresses shall not exceed 400 psi tension, and 4,500 psi compression.
- B. It is anticipated that the concrete piles can be adequately driven with a Delmag D80 diesel pile hammer. The actual pile driving hammer shall be selected by the Contractor per the requirements of these specifications.

- C. All piles shall be driven with fixed-lead pile drivers. Leads shall be fixed at the top and bottom during pile driving operations. Leads shall be of sufficient length so that the use of a follower will not be necessary. Leads shall be adjustable.
- D. Drive all piling to the minimum tip elevation shown on the Drawings..
- E. Once driving has started, drive piles continuously until reaching the minimum tip elevation. Voluntary pauses or interruptions during driving shall not be allowed.
- F. Drive piles in the designated locations, remove riprap, and/or spud as necessary to obtain the required penetration and pile alignment tolerances.
- G. Survey: As-driven locations of all piling shall be surveyed immediately after leads have been removed and a written record of plan location, tip elevation, and top elevation for each pile shall be submitted to the Engineer within twenty-four (24) hours of driving. If not submitted 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. Notify the Engineer immediately when piles not meeting the specified driving tolerances are identified. Do not erect falsework on piles without the Engineer's approval.
- H. Driving Tolerances:
 - 1. Horizontal (Plan) Location: The top work points of all steel piling shall be within 3 inches of the indicated plan location and shall accommodate reinstallation of the salvaged light tower structures as shown on the Drawings. The top work points of all prestressed concrete test piles shall be within 12 inches of the indicated locations shown on the Drawings.
 - 2. Plumb Piles: Deviation from plumb shall not be more than 1 inch per 10 feet of pile length.
 - 3. Cut-off Elevation: Deviation from elevations indicated on the Drawings shall not be more than $\frac{1}{4}$ inch.
 - 4. Pulling, pushing, or manipulation of piles to force them into position will not be permitted.
- I. Rejected Piles:
 - 1. Any piling that deviate more than the driving tolerance limits specified above may be rejected by the Engineer.
 - 2. If subsurface conditions cause pile drifting beyond allowable tolerances, notify the Engineer immediately of the circumstances and submit proposed corrective measures for review.
 - 3. Any pile that does not reach the prescribed tip elevation shown on the Drawings or achieves the Engineer's refusal criteria may be rejected by the Engineer.
 - 4. Any pile damaged, as indicated by breaks, holes, or spalls deeper than $\frac{1}{4}$ inch, or visible cracks greater than or equal to 0.007 inches in width may be rejected by the Engineer. A damaged pile is also defined as any pile containing one or more cracks, visible to the naked eye, on two or more faces of the pile. The Engineer may direct that damaged piles be repaired or replaced.
 - 5. Rejected piles will not be paid for by the Port.
 - 6. The Engineer may direct that a rejected pile be removed and replaced with a new pile driven in its place.

7. Design and construction costs resulting from rejected piling, including modifications to navigation light tower framing, shall be borne by the Contractor.

3.02 STEEL PILING

- A. Handle steel piling by the use of bridles, strong backs, or other rigging which will prevent permanent deformations and coating damage.
- B. Driving:
 1. Drive steel piling in true line and position with a vibratory hammer. The pile driving hammer shall be selected by the Contractor and shall be suitable for driving the piling in a satisfactory manner to the tip elevations indicated on the Drawings without overstressing the pile.
 2. Carefully plumb the pile before driving. Take care during driving to prevent any tendency of the piles to twist or rotate. The hammer shall be equipped with a suitable clamping system to fit the pile being driven and the hammer being used.
 3. "Proofing" of the piling via the use of an impact hammer is not required.
- C. Cut off steel piling at the elevations indicated on the Drawings. Fresh head all piles after driving. Use templates or other devices after the piling has been located in its final alignment to ensure that the cutoff will be true and level.

3.03 CONCRETE TEST PILING

- A. Handling and Storing: See Section 03 40 00 – Precast Concrete.
- B. Driving:
 1. Do not drive prestressed concrete piling before twenty-eight (28) days of curing has elapsed and until cylinder tests, made from the concrete pour for the piling, show achievement of the specified 28-day compressive strength.
 2. Protect the heads of piling during driving by using helmets of approved design with a wood cushion next to the pile head. The driving helmet shall fit loosely so that the pile head is free to rotate.
 3. The pile cushion shall be a composite of plywood and softwood or solid plywood. The cushion thickness shall be determined by the Contractor, subject to approval by the Engineer, and adequate to prevent damage to the piles.
 4. The minimum cushion thickness shall be sixteen (16) inches. A new pile cushion shall be used for each pile; the cushion shall be replaced as necessary during driving to protect the pile. As a minimum, allow for at least one cushion replacement per pile.
 5. The hammer assembly and leads may be rejected, and a new assembly shall be provided at the Contractor's expense, when any one of the following conditions occur:
 - a. The hammer supplied is not in working order or is not capable of supplying at least 90 percent of the maximum rated energy specified by the manufacturer.
 - b. If downtime due to poor hammer performance (repair and/or maintenance) occurs that affects adversely the construction schedule or the schedule of adjacent tenants.
- C. Dynamic Pile Driving Analysis:
 1. PDA testing shall be performed on all prestressed concrete test piles.

2. Perform dynamic PDA tests in accordance with ASTM D 4945 using a pile driving analyzer on the piles indicated, and in the order prescribed by the Engineer.
3. PDA testing shall be performed for both initial driving and for re-striking.
4. The PDA testing subcontractor shall be fully qualified and regularly engaged in PDA testing. The subcontractor shall use instrumentation consisting of transducers and accelerometers attached to the top of the pile before driving. The instrumentation shall be placed on the pile prior to driving and be connected by wires to a PDA. PDA testing shall be performed during driving of the entire length of the pile.
5. Submit a summary report of the PDA testing and results, including distribution and magnitude of driving stresses, hammer efficiency, and CAPWAP analysis. PDA results shall be delivered to the Engineer within 72 hours after PDA testing is completed.
6. CAPWAP analysis locations shall be coordinated with the Engineer prior to the analysis. For planning purposes, CAPWAP may be assumed to be performed when the pile tip is approximately 20 feet above the required tip elevation, when the pile tip is at the required tip elevation, and at the start of the pile re-strike.

D. Re-strikes:

1. All concrete piling shall be re-driven, also called re-strike piles, after the minimum set-up time has elapsed.
2. The minimum set-up time shall be forty (40) hours, or as directed by the Engineer.
3. Relocate the pile driving rig, personnel, equipment, tools, incidentals, etc. as required to the re-strike locations. Use the same pile driving hammer and equipment as used for initial pile driving.
4. Mark each re-strike pile in one inch increments. Measure pile penetration for each re-strike using level survey techniques from stable ground or an otherwise fixed position such that the number of blows of the hammer can be recorded for each inch of penetration of the pile. Measure and record pile set to the nearest 0.01 foot. The Contractor shall provide survey equipment accurate to 0.01 feet.
5. Re-drive each re-strike pile using the same means and methods as the initial production drive. Conduct all re-strikes in such a manner that full and consistent energy from the hammer is imparted to the pile and operate the hammer at the same energy as for production piles.
6. Use compressed or used pile cushions for re-driving of piles.
7. Drive piles at least 6 inches unless otherwise directed by the Engineer. Record information as described in the paragraph "Daily Pile Driving Records."
8. Re-strike results for a pile shall be delivered to the Engineer within 24 hours after the individual re-strike is complete.

E. Concrete Pile Removal

1. All test piles shall be completely removed after conclusion of the testing program. Removal and disposal of concrete test piles shall be performed in the same manner as performed for removal of existing Pier 4 piling. See Section 02 41 00 – Demolition for additional information regarding pile removal and disposal.

3.04 OBSTRUCTIONS

- A. Where below-ground obstructions prevent piles from being driven in the required plan location, to the required tip penetration the Engineer may direct that special methods be employed to install the piles.
- B. Special methods may include spudding, predrilling, structure modifications, techniques proposed by the Contractor, or other means developed collaboratively between the Contractor and the Engineer. Jetting or blasting shall not be permitted.
- C. Payment for special methods will be made as an adjustment to the contract price.

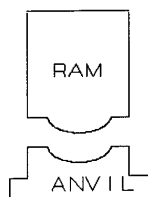
3.05 SUPPLEMENT

- A. The supplements, "Hammer Data Sheet" and "Pile Driving Record" following this section are part of this specification and shall be used for concrete test pile installation.

END OF SECTION

HAMMER DATA SHEET

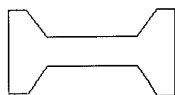
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Project:	
Pile Driving CONTRACTOR or Subcontractor:	
County:	Piles Driven By:



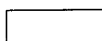
HAMMER



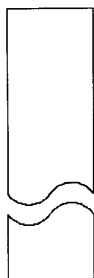
CAP
BLOCK



HELMET



CUSHION



PILE

Manufacturer:		Model:	
Type:		Serial No.	
Rated Energy:		@	Length of Stroke
Modifications: _____			
Material:			
Thickness:		Area:	
Modulus of Elasticity - E (psi)			
Coefficient of Restitution - e			
ALL COMPONENTS		Weight:	
Cushion Material:			
Thickness:		Area:	
Modulus of Elasticity - E (psi)			
Coefficient of Restitution - e			
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: _____



Pile Driving Record

Sheet ____ of ____

Job No: _____ Pile No: _____
Project: _____ Pile Location: _____
H-C Representative: _____ Date: _____

Pile Type: _____ Tip Diam. (in.): _____ Butt Diam. (in.): _____
Length (ft.): _____ Wall Thickness (in.): _____ Grade: _____ Batter (H:V): _____
Hammer Make and Model: _____ Type: _____
Max. Rated Energy (ft.-lbs.): _____ Ram Wt. (lbs.): _____ Rated Stroke (ft.): _____
Cushion Type: _____ Thickness (in.)/Depth(ft.): ____/____, ____/____, ____/____, ____/____
Design Load: _____ Calculated Capacity: _____ Factor of Safety: _____

Penetration into Ground (ft.): _____ Tip Depth, Vertical (ft.): _____
Ground Elevation (ft.): _____ Tip Elevation (ft.): _____
Water Elevation (ft.)/Time: _____/_____, _____/_____, _____/_____, _____/_____
Initial Drive - Start: _____ Finish: _____ Driving Time (min.): _____
Redrive - Start: _____ Finish: _____ Redrive Time(min.): _____
Date of Redrive: _____ Set-up Time: _____ Total No. of Blows: _____

Remarks: _____

Feet	*Energy	Blows /Foot	Feet	*Energy	Blows /Foot	Feet	*Energy	Blows /Foot	Feet	*Energy	Blows /Foot	Feet	*Energy	Blows /Foot	Feet	*Energy	Blows /Foot
0-1			21			41			61			81			101		
2			22			42			62			82			102		
3			23			43			63			83			103		
4			24			44			64			84			104		
5			25			45			65			85			105		
6			26			46			66			86			106		
7			27			47			67			87			107		
8			28			48			68			88			108		
9			29			49			69			89			109		
10			30			50			70			90			110		
11			31			51			71			91			111		
12			32			52			72			92			112		
13			33			53			73			93			113		
14			34			54			74			94			114		
15			35			55			75			95			115		
16			36			56			76			96			116		
17			37			57			77			97			117		
18			38			58			78			98			118		
19			39			59			79			99			119		
20			40			60			80			100			120		

Redrive _____
(Depth=) 1" 2" 3" 4" 5" 6" 7" 8" 9" 10" 11" 12"
*E = Energy (Kip-ft.), B = Blows/min., H = Stroke (ft.), () = Estimated, # = Setting

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 the work as if specified in this section. Work related to this section is described in the following sections:
 - 1. Section 01 45 00 – Quality Control
 - 2. Section 02 41 00 – Demolition
 - 3. Section 31 00 00 – Earthwork
 - 4. Section 32 15 40 – Crushed Stone Surfacing

1.02 DESCRIPTION OF WORK

- A. The extent of work is indicated on the Drawings. The work includes the requirements for producing, transporting, placing, shaping and compacting of one or more courses of materials in conformance with these Specifications and the dimensions and sections indicated on the Drawings. Pavement, asphalt, ACP (Asphaltic Concrete Pavement), and HMA (Hot Mix Asphalt) are all intended to describe asphalt concrete pavement.

1.03 QUALITY ASSURANCE

- A. The Port will provide necessary inspection services. Sampling and testing for compliance with the Contract provisions shall be in accordance with Section 01 45 00 - Quality Control of these Specifications. The Contractor may obtain copies of results of tests performed by the Port from the office of the Port, at no cost. Tests conducted for the sole benefit of the Contractor, shall be at the Contractor's expense.
- B. Unless otherwise referenced or modified herein, quality control and quality standards for this section shall be as specified in the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction 2014 edition.
- C. HMA courses shall not be constructed when the underlying course contains free surface water. Unless otherwise directed, asphalt courses shall not be constructed when the average surface temperatures are less than that specified in the table included in Section 5-04.3(16) in the WSDOT Standard Specifications.
- D. Truck tickets for HMA shall be delivered to the Engineer daily or at the time of delivery to the site. Tickets shall clearly state mix number that corresponds with submittal information. If mix number is not shown on truck ticket, asphalt will not be allowed to be placed, and Contractor will return material at his own expense – no exceptions.

1.04 SUBMITTALS

- A. The Contractor shall submit a mix design / Job Mix Formula (JMF) for this project, taking into account the specific plan and equipment to be used, that is in accordance with WSDOT Standard Specifications Section 5-04.3(7)A1. The Contractor shall also submit certificates of Specification compliance for materials to be used, and supporting documentation showing the submitted mix design has been previously approved by WSDOT for a project within the last 12 months of when paving operations are scheduled to begin. Submittal shall include all the test data demonstrating the JMF meets the requirements of WSDOT Standard Specification Sections 9-03.8(2) and 9-03.8(6). Contractor shall determine anti-strip requirements for the HMA, if any, in accordance with WSDOT test method T718.

- B. The work cannot proceed until the Contractor's mix design and placing methods are approved by the Engineer. Mix design shall ensure air void content is between 4 to 5 percent in laboratory compacted mixtures. Asphalt content shall not be arbitrarily increased in construction to facilitate compaction, to minimize segregation, or for any other reason.
- C. Formulas shall indicate physical properties of the mixes as shown by tests made by a commercial laboratory using materials identical to those to be provided on this project. JMF for each mixture shall be in effect until modified in writing by the Contractor and approved by the Engineer. Provide a new JMF for each source change. Submittal shall include the following as a minimum:
 - 1. Source of proportions, percent by weight, of each ingredient of the mixture.
 - 2. Correct gradation, the percentage passing each size sieve listed in Section 9-03.8(6) of WSDOT Standard Specifications.
 - 3. Effective asphalt content as percent by weight of total mix.
 - 4. Percent air voids (between 4 and 5).
 - 5. Asphalt performance grade.
 - 6. Tack Coat: Type and grade of asphalt.
- D. Truck tickets for HMA.

1.05 TESTING REQUIREMENTS

- A. Shall comply with the WSDOT Standard Specifications Sections 9-03.8(2) and 9-03.20. Aggregates for the HMA Class specified shall meet the requirements for pavements having greater than 30 million ESAL's in accordance with WSDOT Standard Specifications Section 9-03.8(2).

PART 2 – PRODUCTS

2.01 ASPHALT CONCRETE PAVING CLASS

- A. Asphalt concrete paving shall be Class 1/2". Materials shall be proportioned according to WSDOT Standard Specification Section 9-03.8(6).

2.02 ASPHALT MATERIALS

- A. Aggregate for asphalt concrete shall conform to the grading requirement of Section 9-03.8, and shall be tested according to Section 9-03.20 of WSDOT Standard Specifications.
- B. Asphalt: Manufacturer shall be on WSDOT approved list. Performance grade for all courses of paving shall be PG 64-22 conforming to Section 9-02.1(4) of WSDOT Standard Specifications.
- C. Joint sealer shall be paving asphalt 64-22 conforming to AASHTO Specification M 320.
- D. Tack coat shall be emulsified asphalt, CSS-1, conforming to Section 5-04 and 9-02.1(6) of the WSDOT Standard Specifications.
- E. Anti-Stripping Agent: AD-HERE LOF 65-00 manufactured by ARR-MAZ Products, Inc. or approved equal.

2.03 ASPHALT MIXING

- A. Mixing plant for preparing asphalt concrete shall conform to the specific requirements of Section 5-04.3 of WSDOT Standard Specifications.

PART 3 – EXECUTION

3.01 GENERAL - PLACING ASPHALT CONCRETE

- A. The asphalt concrete shall be prepared from materials as previously described and by plants and methods conforming to the WSDOT Standard Specifications. Delivery of materials to the site shall meet the requirements of the WSDOT Standard Specifications.
- B. Bituminous courses shall be placed when the crushed surfacing is dry and weather is not rainy. No mix shall be placed at atmospheric temperature below 40°F unless otherwise approved by the Port. Paving shall be placed using an approved type of paving machine. Workers shall not be allowed to walk or stand on the finished mixture before it has been rolled.
- C. Asphalt concrete shall be placed in lift thicknesses submitted by the Contractor and approved by the Engineer, with a tack coat between.
- D. Construction requirements of Section 5-04.3 of WSDOT Standard Specifications shall be followed.
- E. The minimum thickness of a PG 64-22 base or wearing course lift shall be 4 inches.

3.02 SAW-CUTTING EXISTING ASPHALT PAVEMENT

- A. Pavement sawcutting shall be done where indicated on the plans and as directed by the Engineer.

3.03 TACK COAT

- A. Tack coat of emulsified asphalt shall be applied over existing asphalt pavement surfaces to be overlaid with HMA. Rate of application shall be 0.10 gal/sq. yd. Tack coat requirement between lifts may be waived by the Port if the prior laid surface is kept thoroughly clean and the time lag between placement of the prior course and the following course is small. Prior to applying tack coat or placing HMA, clean asphalt pavement surfaces in accordance with WSDOT Standard Specifications Section 5-04.3(5)A. Areas to receive tack coat must be approved by the Engineer prior to application.

3.04 COMPACTION

- A. Compaction of the asphalt concrete pavement shall conform to the requirements of WSDOT Standard Specifications Section 5-04.3(10), except that the use of pneumatic tired rollers between October 1st and March 31st may be waived by the Engineer. Density of the pavement in place shall be a minimum of 91% of the reference maximum density as determined by WSDOT Test Method 705. The reference maximum density shall be determined as the moving average of the most recent five determinations for the lot of asphalt concrete being placed.

3.05 JOINT SEAL

- A. Apply joint sealer to the edges of new paving joints, catch basins, manholes, utility structures, at the meet lines to concrete structures and as directed by the Engineer. Also apply joint sealer at interface of new and existing paving after paving operations are completed.

3.06 SURFACE SMOOTHNESS

- A. Surface smoothness of completed pavement shall conform to the specific requirements of WSDOT Standard Specifications Section 5-04.3(13).

3.07 TESTING

- A. Testing shall comply with the WSDOT Standard Specifications Section 5-04.3(8)A.

- B. Finish Surface Texture of Wearing Course: Visually check final surface texture for uniformity and reasonable compactness and tightness. Final wearing course with a surface texture having undesirable irregularities such as segregation, cavities, pulls or streaks, indentations, ripples, or lack of uniformity shall be removed and replaced at the Contractor's expense.
- C. Protection: Do not permit vehicular traffic, including heavy equipment, on pavement until surface temperature has cooled to at least 120 degrees F. Measure surface temperature by approved thermometers or other satisfactory methods.

END OF SECTION

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 the work as if specified in this section. Work related to this section is described in the following sections:
 - 1. Section 01 45 00 – Quality Control
 - 2. Section 31 00 00 – Earthwork
 - 3. Section 32 12 16 – Asphalt Paving

1.02 DESCRIPTION OF WORK

- A. The extent of work is indicated on the Drawings. The work includes the requirements for furnishing and installing imported aggregate base. Work includes transporting, placing, shaping and compacting base courses in conformance with these specifications and the dimensions and sections indicated on the Drawings or within the lines and grades established by the Engineer.

1.03 REFERENCES

- A. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10, 2014 edition, by Washington State Department of Transportation (WSDOT Standard Specifications).

1.04 QUALITY ASSURANCE

- A. The Port will provide inspection service to the satisfaction of the Engineer. Sampling and testing for compliance with the Contract provisions shall be in accordance with Section 01 45 00 - Quality Control, of these specifications. The Contractor may obtain copies of results of tests performed by the Port from the office of the Engineer at no cost. Tests conducted for initial approval or for the sole benefit of the Contractor, shall be at the Contractor's expense.

1.05 SUBMITTALS

- A. The Contractor shall submit test reports in accordance with Section 01 33 00 - Submittal Procedures, for Contractor furnished import aggregate base as follows:
 - 1. Sieve analyses for all materials specified in accordance with WSDOT Standard Specifications, Section 9-03.9(3).
 - 2. Certified Test Results for Source Materials & In-Place Density Tests.
 - 3. Borrow Source Characterization.

PART 2 – PRODUCTS

2.01 CRUSHED STONE SURFACING

- A. Material used for crushed stone surfacing shall be imported aggregate Base Course material complying with WSDOT Standard Specifications, Section 9-03.9(3). Where Top Course is shown on Drawings above Base Course, or where allowed by project specifications, material for Top Course shall be in accordance with WSDOT Standard Specifications, Section 9-03.9(3). Crushed stone surfacing shall be characterized in accordance with the requirements of Section 31 00 00 – Earthwork.

PART 3 – EXECUTION

3.01 EQUIPMENT

- A. All equipment necessary for the satisfactory installation of crushed stone surfacing shall meet the requirements of WSDOT Standard Specifications Section 4-04.3(1), as amended to provide for the following:
- B. Equip grading machines or trimmers with a spirit level or other type slope indicator, which will continuously indicate the average transverse slope of the screed. Bubble or indicator movement should be no less than 1/8 inch for each 0.1 percent change in transverse slope.

3.02 PREPARATION OF SUBGRADE

- A. Prepare subgrade as specified in Section 31 00 00 – Earthwork. Obtain approval of the Engineer before placing base course materials.

3.03 PLACEMENT OF CRUSHED STONE SURFACING

- A. Equipment necessary for the satisfactory performance of this construction shall be on the project prior to beginning work.
- B. Mixing: After each layer of material is placed, mix the material by motor graders or other approved equipment until the mixture is uniform throughout. Add water as required to facilitate mixing and compacting.
- C. Placing and Spreading: Spread each layer of material by means of approved spreading equipment. Such equipment may be bottom-dump hauling equipment with transverse spreading facilities; self-propelled spreading and leveling machines; or spreader boxes equipped with wheels or so constructed as to preclude damage to the subgrade or underlying courses. Spreading in small areas of less than 2,000 square yards or in areas irregular in shape may be accomplished by other means as approved by the Engineer. Material shall be placed in layers not exceeding 6 inches.
- D. Shaping and Compacting: Immediately following spreading and final shaping, compact each layer to at least ninety five percent (95%) of the standard density before the next succeeding layer is placed thereon. When the thickness of the base course is less than 0.15 feet, density testing may not be required and the Engineer will determine the number of coverage's required for the particular compaction equipment available.
 - 1. Vibratory compactors or rollers shall be adequate in design and number to provide compaction and obtain the specified density for each layer while still moist. Apply a mist spray of water as needed to replace moisture lost by evaporation. The completed layer shall have a smooth, tight, uniform surface true to the line, grade and cross section indicated on the Drawings.
 - 2. Variations in the surface of the top course shall be a maximum of 1/4 inch in 10 feet. Shave off or fill in variations greater than the allowable, and recompact that area.
- E. Surface Maintenance: Maintain the surface of each layer of material true to line, grade and cross section by blading, watering and rolling until placing the succeeding course. Place the first course of material on all available subgrade before placing the succeeding course unless otherwise authorized by the Engineer. Should irregularities develop in any surface during or after compaction, remedy by loosening the surface and correcting the defects, then thoroughly recompact the entire area, including the surrounding surface. In the event that additional materials are necessary to make the repairs, they shall be provided at no additional cost to the Port.

- F. Route hauling equipment over the roadway in such a manner as to be most effective in the compacting of the material. Hauling over the surfacing in the process of construction will not be permitted when, in the opinion of the Engineer, the effect will be detrimental.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 00 – Common Work Results for Electrical
 - 3. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 4. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 5. Section 26 05 33 – Identification for Electrical Systems
 - 6. Section 33 79 00 – Site Grounding
 - 7. Section 31 00 00 - Earthwork

1.02 REFERENCES

- A. ASTM (American Society for Testing and Materials).
- B. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- C. WSDOT/APWA Specifications, Section 6-02.3.
- D. Polyvinyl chloride (PVC) coated Rigid Steel Conduit: NEMA RN 1, UL-6, ANSI C80.1, and NFPA 70.
- E. Non-metallic, PVC, schedule 80: NEMA TC-2; UL 651, and NFPA 70.
- F. PVC Fittings for Use with Rigid PVC Conduit and Tubing: NEMA TC-3.

1.03 QUALITY ASSURANCE

- A. Listing and Labeling: Provide products Listed and Labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction, and marked for intended use for the location and environment in which they are installed.
- B. Comply with NFPA 70, as adopted and administered by the Authority Having Jurisdiction.
- C. ANSI C2 “National Electrical Safety Code” for components and installation.

1.04 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections:
 - 1. Product data for conduit and duct, duct bank materials, and miscellaneous components.
 - 2. Record Documents: Show dimensioned locations of underground ducts from nearest building or permanent structure.

1.05 DEFINITIONS

- A. Duct: Electrical conduit and other raceway, either metallic or nonmetallic, used underground, embedded in earth or concrete.
- B. Ductbank: Two (2) or more conduits or other raceway installed underground in the same trench.

1.06 COORDINATION

- A. Coordinate layout and installation of ducts, with final arrangement of other utilities as determined by field verification. Revise locations and elevations from those indicated but required to suit field conditions and ensure duct runs drain to vaults.

1.07 SAFETY REQUIREMENTS

- A. Perform work in accordance with the safety requirements of the Department of Labor Occupational Safety and Health Administration, Volume 36, Number 75, Part II, Subpart P, "Excavations, Trenching, and Shoring," and with Section 7 of the Manual of Accident Prevention in Construction as published by the Association General Contractors of America, Inc.
- B. Educate supervisors and employees on safety requirements and practices to be followed during the course of the work.

PART 2 - PRODUCTS

2.01 CONDUIT AND DUCTS

- A. Metallic Conduit: PVC coated Rigid Steel Conduit (RSC): UL 6, ANSI C80.1
 - 1. Use for all below grade conduit elbows and transition of PVC Schedule 80 to above grade exposed conduit.
- B. Nonmetallic conduit:
 - 1. Rigid Plastic Conduit: Schedule 80 PVC, rated for use with 90°C conductors under all installation conditions and labeled for underground use.

2.02 CONDUIT FITTINGS

- A. PVC Conduit and Tubing Fittings: PVC Schedule 80 fittings shall be solvent welded type.
- B. All conduit elbows 30 degrees or greater shall be factory made, PVC coated rigid steel conduit. All 90 degree elbows shall be a minimum radius of 24" or greater.

2.03 DUCT SUPPORTS

- A. Rigid PVC spacers selected to provide minimum NEC 2014 duct spacings. All horizontal spacers shall be staggered a minimum of 12 inches.

2.04 ACCESSORIES

- A. Duct Supports: Rigid PVC stackable manufactured spacers selected to provide 3 1/2" minimum duct spacings.

2.05 BACKFILL MATERIAL

- A. Comply with Specification Section 31 00 00 - Earthwork.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine site to receive ducts for compliance with installation tolerances and other conditions affecting performance of the underground ducts. Do not proceed with installation until unsatisfactory conditions have been corrected.
- B. Existing Utilities: Locate all existing utilities in the area prior to performing any excavation.

3.02 RACEWAY APPLICATIONS

- A. Refer to Specifications and Drawings for raceway materials.
- B. Nonmetallic conduit: PVC Schedule 80, use underground only.
 - 1. Underground Direct Burial: For low-voltage applications. Use Schedule 80 Rigid Plastic Conduit as standard.
- C. Use PVC fittings for PVC conduit and suitable water-tight connections where PVC conduit connects to PVC coated rigid steel conduit.

3.03 CONDUIT AND DUCT INSTALLATION

- A. Install conduit and ducts as indicated on Drawings and according to manufacturer's written instructions.
- B. Slope: Pitch ducts minimum of two inches per 100 feet to drain toward vaults and away from equipment. Slope ducts from a high point in runs between manholes/vaults to drain in both directions.
- C. Curves and Bends: Do not exceed 22 degrees for field bends with out field review and approval by engineer. Contractor shall field stake bend radius for field review prior to conduit installation for bends greater than 22 degrees. Use PVC coated rigid steel conduit on turns 30° or greater. Use manufactured PVC coated rigid steel elbows for stub-ups at equipment with a minimum radius of 24 inches for electrical conduits.
- D. Make joints in ducts and fittings watertight according to manufacturer's instructions. Stagger couplings so those of adjacent ducts do not lie in the same plane.
- E. Duct Entrances to Vaults: Provide bell ends for all conduits entering and leaving existing precast concrete vaults. Space end bells approximately 10 inches on center for 5-inch ducts and varied proportionately for other duct sizes. Change from regular spacing to end-bell spacing 10 feet from the end bell without reducing duct line slope and without forming a trap in the line.
- F. Stub-Ups: Use PVC coated rigid steel conduit for stub-ups through concrete to equipment. Install insulated grounding bushings at the conduit terminations.
- G. Provide metallic line-warning tape per Specification 26 05 53 Identification for Electrical System.
- H. Pulling Cord: Install 150-pound- test nylon cord with distance markings in empty conduits, and conduits with conductors.

3.04 BACKFILLING

- A. Comply with Specification Section 31 00 00 - Earthwork.

3.05 IDENTIFICATION

- A. Identify raceways, cables and equipment as specified in Division 26, Section 26 05 53 "Identification for Electrical Systems."
- B. Provide warning and caution signs as required by the Authority Having Jurisdiction and these specifications.
- C. Label raceways entering concealed locations from exposed locations as to the destination via the concealed area.

3.06 TESTING AND CLEANING

- A. Pull brush through full length of ducts. Use round bristle brush with a diameter 1/2-inch greater than internal diameter of duct. Clean internal surfaces of vaults, including sump.
- B. Duct Integrity: Pull a properly sized mandrel through each conduit prior to installation of conductors to remove any materials trapped within the conduit run. Conduits embedded in CDF concrete shall have a mandrel pulled within 24 hours of CDF concrete pour.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 26 01 26 – Acceptance Testing of Electrical Systems
 - 2. Section 26 05 00 – Common Work Results for Electrical
 - 3. Section 26 05 19 – Low-Voltage Electrical Power Conductors and Cables
 - 4. Section 26 05 33 – Raceways and Boxes for Electrical Systems
 - 5. Section 26 05 53 – Identification for Electrical Systems
 - 6. Section 33 71 19 – Electrical Underground Ducts and Manholes

1.02 SUMMARY

- A. This Section includes grounding of electrical systems and equipment. Grounding requirements specified in this Section may be supplemented by special requirements of systems described in other Sections.
- B. Related Documents: The provisions and intent of the Contract, the General and Supplementary Conditions, and Division 1 Specification Sections, apply to the Work as if specified in this Section.

1.03 REFERENCES

- A. ASTM B8.
- B. NFPA 70 (National Fire Protection Association) – National Electrical Code.
- C. ANSI/UL 467 - (Underwriter's Laboratory) - Grounding and Bonding Equipment.

1.04 QUALITY ASSURANCE

- A. Listing and Labeling: Provide electrical components, devices, and accessories that are Listed and Labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to the Authority Having Jurisdiction, and marked for specific types, sizes, and combinations of conductors and connected items.
- B. Comply with IEEE 837 and UL 467.
- C. Comply with IEEE Std. 142 (Green Book).
- D. Comply with NFPA 70.

1.05 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of the Contract and Division 1 Specification Sections:
 - 1. Grounding conductors and cables.
 - 2. Grounding connectors.
 - 3. Grounding electrodes.
- B. Field Test Reports: Submit written test reports to include the following:

1. Test procedures used.
2. Test results that comply with requirements.
3. Results of failed tests and corrective action taken to achieve test results that comply with requirements.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 1. Grounding Conductor Fittings:
 - a. Erico Inc.
 - b. Chance/Hubbell.
 - c. Copperweld Corp.
 - d. Erico Inc.; Electrical Products Group.
 - e. Framatome Connectors/Burndy Electrical.
 - f. Ideal Industries, Inc.
 - g. ILSCO.
 - h. Kearney/Cooper Power Systems.
 - i. Lyncole XIT Grounding.
 - j. O-Z/Gedney Co.
 - k. Racor, Inc.; Division of Hubbell.
 - l. Thomas & Betts, Electrical.
 - m. Or Approved Equal
 2. Grounding Connectors and Rods:
 - a. Erico.
 - b. ILSCO.
 - c. Lyncole XIT Grounding.
 - d. O-Z/Gedney.
 - e. Racor, Inc.; Division of Hubbell.
 - f. Thomas & Betts
 - g. Or Approved Equal

2.02 GROUNDING CONDUCTORS

- A. For insulated conductors, comply with Section 26 05 19 - Low Voltage Electrical Power Conductors and Cables.
- B. Material: Copper.
- C. Equipment Grounding Conductors: Insulated with green-colored insulation.

- D. Bare Copper Conductors: Assembly of stranded conductors, ASTM B 8.
- E. Copper Bonding Conductors:
 - 1. Bonding Conductor: #4 or #6 AWG, stranded copper conductor.
 - 2. Bonding Jumper: Bare copper tape, braided bare copper conductors, terminated with copper ferrules; 1-5/8 inches wide and 1/16 inch thick.
- F. Bonding Straps: Soft copper.

2.03 CONNECTORS

- A. Pressure Connectors: High-conductivity-plated units.
- B. Bolted Connectors: Heavy-duty, bolted-pressure-type.

2.04 GROUNDING ELECTRODES

- A. Ground Rods: Solid copper clad steel, 3/4-inch diameter by 10-feet length.

PART 3 - EXECUTION

3.01 APPLICATION

- A. Copper conductors for both insulated and bare grounding conductors in direct contact with earth, concrete, masonry, crushed stone, and similar materials.
- B. In raceways, use insulated equipment grounding conductors.
- C. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.
- D. Ground Rod Clamps at Vault: Use bolted pressure clamps with at least two bolts.

3.02 EQUIPMENT GROUNDING CONDUCTORS

- A. Comply with NFPA 70, Article 250, for types, sizes, and quantities of equipment grounding conductors, unless specific types, larger sizes, or more conductors than required by NFPA 70 are indicated.
- B. Install equipment grounding conductors in all feeders and branch circuits unless otherwise noted.
- C. Nonmetallic Raceways: Install an equipment grounding conductor in all nonmetallic raceways unless they are designated for telephone or data cables.

3.03 INSTALLATION

- A. Ground Rods: Install in vault where indicated.
 - 1. Drive ground rods until tops are 4 inches above floor of vault.
- B. Grounding Conductors: Route along shortest and straightest paths possible. Avoid obstructing access or placing conductors where they may be subjected to strain, impact, or damage.
- C. Bonding Straps and Jumpers: Install so vibration by equipment mounted on vibration isolation hangers and supports is not transmitted to rigidly mounted equipment.
 - 1. Use a bolted clamp.
 - 2. Bond straps directly to the basic structure taking care not to penetrate any adjacent parts.
 - 3. Install straps only in locations accessible for maintenance.

3.04 CONNECTIONS

- A. General: Make connections so galvanic action or electrolysis possibility is minimized. Select connectors, connection hardware, conductors, and connection methods so metals in direct contact will be galvanically compatible.
 - 1. Use electroplated or hot-tin-coated materials to ensure high conductivity and to make contact points closer to order of galvanic series.
 - 2. Make connections with clean, bare metal at points of contact.
 - 3. Make aluminum-to-steel connections with stainless-steel separators and mechanical clamps.
 - 4. Make aluminum-to-galvanized steel connections with tin-plated copper jumpers and mechanical clamps.
 - 5. Coat and seal connections having dissimilar metals with inert material to prevent future penetration of moisture to contact surfaces.
- B. Equipment Grounding Conductor Terminations: For #8 AWG and larger, use pressure-type grounding lugs. #10 AWG and smaller grounding conductors may be terminated with winged pressure-type connectors.
- C. Noncontact Metal Raceway Terminations: If metallic raceways terminate at metal housings without mechanical and electrical connection to housing, terminate each conduit with a grounding bushing.
 - 1. Connect grounding bushings with a bare grounding conductor to grounding bus or terminal in housing.
 - 2. Bond electrically noncontinuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.
- D. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values.
- E. Compression-Type Connections: Use hydraulic compression tools to provide correct circumferential pressure for compression connectors. Use tools and dies recommended by connector manufacturer. Provide embossing die code or other standard method to make a visible indication that a connector has been adequately compressed on the grounding conductor.
- F. Moisture Protection: If insulated grounding conductors are connected to ground rods or grounding buses, insulate entire area of connection and seal against moisture penetration of insulation and cable.

3.05 IDENTIFICATION

- A. Identify grounding system components as required by the Authority Having Jurisdiction and as specified in Section 26 05 53 - Identification for Electrical Systems.

3.06 FIELD QUALITY CONTROL

- A. Testing: Perform the following field quality-control testing:
 - 1. Test Requirements:
 - a. Equipment Rated and pullbox/vault grounds: 10 ohms.

2. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
- B. Record test results on a Ground Resistance Test Report form for inclusion with O&M Manuals.

END OF SECTION

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. Work related to this section is described in the following sections:
1. Section 00 31 00 – Available Project Information
 2. Section 00 45 13 – Responsibility Detail Form
 3. Section 01 10 00 - Summary
 4. Section 01 14 00 – Work Restrictions
 5. Section 01 35 29 - Health, Safety and Emergency Response Procedures
 6. Section 01 45 00 - Quality Control
 7. Section 01 71 23 - Field Engineering
 8. Section 01 74 19 – Construction Waste Management and Disposal
 9. Section 02 41 00 - Demolition
 10. Section 31 00 00 – Earthwork
 11. Section 35 20 24 – Contaminated Dredge Material Transloading
 12. Section 35 42 37 – Bank Protection
 13. Section 35 42 38 – Hot Spot Fill Material and Placement
 14. Appendix - Removal Action Work Plan (RAWP) (includes the Water Quality Monitoring and Protection Plan, (WQMPP))
 15. Appendix – DMMP Suitability Determination

1.02 DESCRIPTION OF WORK

- A. The work consists of remedial dredging along the slope under existing Pier 4 (also known as the Husky Container Terminal Pier 4). The existing pier will be partially demolished under this contract prior to commencement of dredging. The existing pier will be referred to as "Pier 4" in the contract documents.
- B. Clean riprap for upland disposal is located from the existing bulkhead and down the top of the slope to the limit shown on the Drawings. This material may be removed using either land-based equipment or with water-borne mechanical dredging equipment. Clean riprap must be removed prior to removal of clean sediment and may not be disposed of in open water. Clean riprap may be reused as bank protection in front of the existing electrical substation and as scour protection in front of modified outfalls as shown on the Drawings and as described in Section 35 42 37 – Bank Protection.
- C. Clean sediments determined to be suitable for open water disposal at the Commencement Bay Open Water Dredged Material Disposal Site are located underneath the clean riprap from the existing bulkhead and down the top of the slope to the limit shown on the Drawings. This material may be removed using either land-based equipment or with water-borne mechanical dredging equipment.
- D. Sediments contaminated with tributyltin (TBT) have been found within a portion of the proposed dredge cut as indicated on the Drawings. The removal of this contaminated material is subject

to explicit regulatory requirements and additional measures identified in the contract documents. All TBT impacted materials within the project area shall be dredged using water-borne mechanical dredging equipment and transported by barges that provide watertight cargo containment to the transload facility as described in Section 01 10 00 - Summary and as shown on the Drawings.

- E. Sediments and rip-rap with relatively high concentrations of TBT have been found within a portion of the proposed dredge cut as shown on the Drawings. Removal of these materials will be referred to as "Hot Spot" dredging. The removal of this material is subject to additional measures identified in the contract documents.
- F. The Contractor shall furnish all labor, materials, tools, equipment and supervision necessary to mechanically dredge the areas shown on the Drawings to the required elevations and grades, and dispose of the materials, as described on the Drawings and these specifications and in strict compliance with the Removal Action Work Plan (RAWP) included in the Appendix of these Specifications.
 - 1. Construction Period
 - a. The work described in the following paragraphs shall be performed in compliance with the work sequence and schedule constraints described in Section 01 14 00 – Work Restrictions.
 - 2. Dredging and Disposal
 - a. **Dredging Prism:** The required dredge elevation for dredging in the former footprint of Pier 4 is shown on the Drawings. Final dredge elevations shall be no higher than those shown on the Drawings. The maximum allowable over-dredge depth (depth below Required Dredging shown on the Drawings) is 2 feet. See paragraph 1.05 – Definitions for additional information regarding maximum allowable over-dredge depth and payable over-dredge depth.
 - b. The Contractor shall use all available means to prevent material from reentering the water once it has been dredged and shall be responsible for dredging any deposition of material outside of the dredge area that occurs from spillage during dredging as determined based on pre- and post-dredge surveys.
 - c. The finished slopes shall be configured as shown on the Drawings or as directed by the Engineer.
 - d. **Disposal of clean sediment at the Commencement Bay Open Water Disposal Site:** The dredged clean material shall be loaded onto bottom-dump barges and transported to the Washington Department of Natural Resources (DNR) Commencement Bay Open Water Dredged Material Disposal Site for disposal ("DMMP site"). Debris as defined herein shall not be disposed of at the DMMP site.
 - e. **Transloading of TBT impacted material for Upland Disposal:** The contaminated dredged material shall be loaded onto barges that provide watertight cargo containment and transported to the transload facility shown on the Drawings. Refer to Section 35 20 24 – Contaminated Dredge Material Transloading for requirements and limitations relative to transloading activities. All TBT impacted materials shall be disposed of at a Port approved upland landfill facility.

1.03 QUALITY ASSURANCE

- A. See Section 00 45 13 – Responsibility Criteria for experience requirements for Dredging of Contaminated Material.

1.04 REFERENCE STANDARDS

- A. US Army Corps of Engineers (ACOE) EM-1110-2-1003 – Hydrographic Surveying

1.05 DEFINITIONS

A. Debris:

1. Debris is defined as any solid waste materials other than sediment and riprap excavated as part of the dredging operations, such as logs, wire, cable, steel bands, anchors, lumber, trash, timber piles, concrete, concrete piles, concrete pile cutoffs, ecology blocks, etc. Any dredged clean materials that do not pass through a grid opening 24-inches by 24-inches square are considered debris and shall not be disposed of at the DMMP disposal site. Clean debris shall be disposed at a Port approved upland landfill facility in accordance with applicable local, state and/or federal regulations. Debris located within the contaminated areas indicated on the Drawings shall be transported to the transload facility for disposal.

B. Required Dredging:

1. Required Dredging includes the removal of material, including associated side slopes, to the minimum elevation within the dredge area as shown on the Drawings.

C. Payable Over-dredge Depth:

1. Dredging up to 1 foot below the depth of Required Dredging will be paid for to account for equipment tolerances. Payment will not be made for removal and disposal of material deeper than 1 foot below the depth of Required Dredging.

D. Maximum Allowable Over-dredge Depth:

1. The maximum allowable over-dredge depth (depth below Required Dredging shown on the Drawings) is 2 feet. Dredging more than 2 feet below the depth of Required Dredging is considered Excessive Dredging. The Contractor will not be paid for dredging and disposal of material between the Payable Over-dredge Depth and the Maximum Allowable Over-dredge Depth.

E. Excessive Dredging:

1. Dredging of material outside of the dredging limits and/or deeper than the Maximum Allowable Over-dredge Depth is considered Excessive Dredging. The Contractor will not be paid for excessive dredging and will be responsible for any required corrective action as a result of excessive dredging, including, but not limited to, replacing material or slope stabilization.

F. Additional Dredging:

1. Additional Dredging is defined as dredging below or outside of project dredge area to meet clean-up objectives in response to confirmational sampling. Additional Dredging shall be per direction of the Engineer only after a post-dredge survey demonstrates that all Required Dredging has been accomplished. Dredging after the post-dredge survey to remove materials in order to meet Required Dredging depth is not considered Additional Dredging, but is considered Required Dredging. Required footprint and elevations for Additional Dredging will be established by the Engineer based on the results of confirmational sampling. The provisions stated above for Payable Over-dredge Depth, Maximum Allowable Over-dredge depth, and Excessive Dredging all apply to Additional Dredging and will be based on the required dredging elevations established by the

Engineer. Additional Dredging shall include dredging additional sediment and placing it in the dredge barge for transport to the transload site.

G. Hot-spot Fill:

1. Hot-spot Fill consists of a minimum 1-foot thick layer of sand fill material placed within the footprint of the dredged hot spot in response to confirmational sampling results. Placement of hot-spot fill shall be at the direction of the Engineer. See Section 35 42 38 – Hot Spot Fill Material and Placement for requirements.

H. Side slope:

1. The side slope is the slope to be excavated between the outer edge of the dredge cut at design depth (toe) and the intersect point at original ground level (daylight line) or to the intersection point of an adjacent dredge cut. Not all side slopes are indicated on the Drawings. All Contractor-created side slopes shall be no steeper than (2) Horizontal to (1) Vertical (2H:1V) unless otherwise indicated on the Drawings.

I. CONFIRMATIONAL SAMPLING

1. Post-dredge environmental sampling and testing activities will be performed by the Port to determine whether project specific Action Levels have been achieved, or whether additional dredging is necessary. Additional information regarding the project specific Post-Dredge Confirmational Sampling Plan is contained in the Removal Action Work Plan (RAWP). It is anticipated that up to 7 days will be required to perform confirmational sampling from initiation of field sampling to receipt of test results from the lab.

1.06 PRE-CONSTRUCTION SUBMITTALS

A. Dredging and Disposal Work Plan (DDWP):

The Contractor shall submit a detailed written Dredging and Disposal Work Plan (DDWP) to address activities associated with dredging of clean and contaminated sediment and transport and disposal of clean sediment. The DDWP shall be a separate document from the Transload, Transport, and Disposal (TTD) Work Plan submittal that is required per Section 35 20 24. The TTD will address activities associated with transloading contaminated dredge material for upland disposal from the point at which it is deposited on the barge at the Pier 4 site. The DDWP shall be submitted to the Engineer at least 60 days prior to dredging. Dredging shall not begin until: 1) the Plan has been reviewed and approved by the Port and applicable regulatory agencies; 2) agency-required notifications have been completed in accordance with the RAWP and the DMMP Suitability Determination; and 3) the Contractor schedules and attends a Pre-dredge conference with the Port and other permitting agencies as required by the RAWP and the DMMP Suitability Determination, and receives agency approval to begin dredging as a result of that conference.

At a minimum, the DDWP shall contain the following:

1. Work Sequence and Equipment
 - a. Order in which the work is to be performed indicating the work sequence.
 - b. A construction schedule shall be prepared that identifies the timing and sequencing of the major activities and milestones of both clean and contaminated dredge work. These shall include, but not be limited to, mobilization, start of dredging, duration of dredging and disposal, demobilization, and cleanup.

- c. Number, types and capacity of equipment to be used, including names of dredge(s) and other marine vessels to be used.
- 2. Means and Methods for Dredging, Transport, Handling, and Disposal
 - a. Methods, procedures, and equipment to be used for removal and transport of clean riprap.
 - b. Methods, procedures and equipment to be used for dredging, including proposed modifications to the digging bucket to provide a “top hat” for dredging TBT impacted materials. See paragraph 3.05.B for additional information on the digging bucket “top hat”.
 - c. Methods, procedures, and equipment to be used to provide the slit curtain system required for Hot Spot dredging.
 - d. Methods to be used to ensure that the dredge bucket removing contaminated material did not swing over clean areas, complete coverage of contaminated surfaces, and that the bucket remains within the silt curtain area during dredging of the “hot spot”.
 - e. Methods, procedures and equipment to be used for transport and disposal of clean sediment at the DMMP site, including methods to be used to track the position of the barge during disposal operations and record exact position (latitude and longitude to the nearest one-thousandths of a minute) at the initiation and completion of discharge.
 - f. Methods to be used for record keeping related to transport and disposal of clean sediment suitable for open water disposal at the DMMP site.
 - g. Methods, procedures and controls to protect existing Port facilities and structures against damage.
 - h. Methods, procedures and controls to be used to segregate, handle, transport and dispose of clean and TBT-contaminated debris to an appropriate disposal facility in accordance with applicable regulations.
- 3. Positioning, Surveys, Environmental Monitoring and Spill Containment
 - a. Hydrographic surveyor qualifications. See Section 01 71 23 – Field Engineering.
 - b. Methods, procedures, equipment, and controls for performing dredge surveys.
 - c. Layout of the work and positioning of dredge equipment.
 - d. Procedures and equipment for positioning dump barges at the dredging and disposal site. Positioning equipment must be capable of tracking the position of the barge during the tow.
 - e. Notification procedures to United States Coast Guard (USCG) for barge operations within the Blair Waterway.
 - f. Environmental monitoring, including procedures for emergency spill containment and removal operations.
- 4. Water Quality Protection, Monitoring, and Notification Procedures
 - a. The Contractor shall be subject to the requirements and procedures specified in the Water Quality Monitoring and Protection Plan (WQMPP), the RAWP, and the DMMP Suitability Determination. Provide written acknowledgement of understanding of all requirements and procedures contained in these documents with respect to water

quality monitoring, best management practices (BMPs), and notification procedures associated with dredge operations. Written acknowledgement shall be provided in the form of a signed letter from the Contractor to the Port of Tacoma.

- b. Proposed methods and procedures for monitoring water quality in strict compliance with the WQMPP.
 - c. The personnel and equipment that will be used to monitor water quality during the course of the project
 - d. Contingency measures to be implemented if water quality violations occur.
5. Debris Removal
- a. Procedures and equipment for collecting and disposing of submerged and floating debris encountered during dredging operations.
 - b. Procedures and equipment for offloading, stockpiling (if necessary), transport, and disposal of debris greater than 24 inches separated from the dredged material. This shall include methods to prevent spillage of material back into the water and cleanup of the barge and materials to allow for proper disposal.
6. Prevention of Interference with Navigation
- a. Notification and procedures to be used for moving dredging equipment to accommodate inbound and outbound commercial vessel traffic using the surrounding waterway.
7. Contractor Quality Control Plan
- a. Organization chart with key personnel and supervisory chain. At a minimum, the Contractor shall identify the following key personnel: superintendent, quality assurance representative, health and safety representative, dredge operator(s), water quality monitoring lead (or firm that the Contractor has hired to conduct monitoring), hydrographic survey lead (or firm that the Contractor has hired to perform daily progress surveys), and other key personnel deemed necessary by the Contractor for the successful implementation and completion of this work.
 - b. Quality control methods and procedures.
- B. DNR "Plan of Operation for Use of Open Water Disposal Site" certification form to be submitted by the Contractor directly to DNR.

1.07 CONSTRUCTION SUBMITTALS

- A. DNR Disposal Site Use Reports
- B. DNR Monthly Disposal Statements
- C. Disposal logs for open water disposal of clean dredge material
- D. Daily Dredge Reports
- E. Weekly Dredge Reports
- F. Dredge Closure Report
- G. Pre-dredge Survey data
- H. Data for Interim Post-Dredge Survey performed after removal of clean riprap and debris
- I. Data for Interim Post-Dredge Survey performed after removal of clean sediment

J. Data for Post-Dredge Survey performed after Required Dredging is completed

K. Post-Dredge Survey(s) data for Additional Dredging and Hot Spot Fill, if required

1.08 SITE CONDITIONS

A. Character of Materials

1. Subsurface investigation reports are available as reference documents as indicated in Section 00 31 00 – Available Project Information. The Contractor shall satisfy itself regarding the nature of materials present at the site, including review of the reference documents prior to bidding.
2. Hard material in its natural state is defined as material requiring blasting, and includes boulders or fragments too large to be removed in one piece by the dredging equipment. With the exception of riprap and concrete debris, naturally occurring hard material is not anticipated to be encountered under this contract.

B. Riprap and Debris

1. The reference documents indicate an approximately 2 foot deep layer of riprap armoring over the slope. Riprap located within the lower two thirds (approximate) of the existing slope is covered with sediment ranging from less than a foot deep towards the top of the slope to at least 6 feet deep at the bottom of the slope. Undocumented debris may also be located on top of, or within, the riprap layer.

C. Inherent Delays

1. The Contractor shall anticipate inherent delays while conducting dredging operations in the waterway or disposal operations in Commencement Bay. Inherent delays are primarily due to commercial shipping traffic within the shipping channel. Commercial shipping traffic shall have precedence over the Contractor's activities and may require them to stop, move, adjust, and/or slow down to accommodate vessel movement. The Contractor shall make allowance in its construction schedule for delays or interruptions due to vessel movement within the shipping channel in the waterway. The bid prices shall include allowances for such inherent delays.

D. Interference with Navigation

1. The Blair Waterway, Sitcum Waterway, and Commencement Bay are active navigation corridors used for transport of deep-draft commerce activities. These activities shall take priority over the Contractor's operations. The Port's tenants and other entities using the waterway must have access along the project site for the duration of the construction contract. The Contractor shall conduct its operations in a manner that will minimize interference with those activities. In the event that the Contractor's construction equipment (dredge, dump scows, tug, floats, barges, workboats, anchors, lines, etc.) obstructs the navigable waterway so as to hinder movement of commercial vessels, the equipment shall immediately be moved to facilitate the shipping activity.
2. Any damage to the Contractor's equipment in navigation lanes due to the Contractor's failure to move when required shall be at the Contractor's sole risk and expense.

E. Protection of Existing Facilities

1. Any damage to the existing pier structure at the Husky Terminal and the APMT Terminal (transload facility), and/or other existing facilities caused by the Contractor's operations, as

determined by the Engineer, shall immediately be repaired to the pre-project condition at the Contractor's expense.

2. The Contractor's Dredging and Disposal Work Plan shall include methods for the above protections.
3. Condition Survey of Existing Structures: The Contractor and Engineer shall review and verify the condition of adjacent structures and appurtenances adjacent to the work areas prior to beginning work to ascertain existing conditions. Any damage documented as a result of the Contractor's activities will be repaired at no additional cost to the Port.

F. Security Concerns

1. For security and vessel navigation concerns, the Contractor shall give notice and receive required approval from the Engineer prior to berthing at any location along the Blair & Sitcum Waterways. The Contractor shall notify the Coast Guard as required to comply with Coast Guard and Port regulations for operating within the Blair Waterway and Commencement Bay.

1.09 MANDATORY TECHNIQUES REQUIRED FOR TBT IMPACTED MATERIALS

- A. Dredging of TBT impacted materials is subject to mandatory techniques that are further described in Part 3 of this specification.

1.10 SPECIAL MANDATORY TECHNIQUES REQUIRED FOR "HOT SPOTS"

- A. Dredging of "Hot Spot" areas is subject to additional special mandatory techniques that are further described in Part 3 of this specification.

1.11 MISPLACED MATERIAL

- A. Should the Contractor, during the execution of the work, lose, dump, throw overboard, sink or misplace any material, dredge, barge, machinery, or appliance, the Contractor shall promptly recover and remove the same. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Engineer and shall mark and buoy such obstructions until they are removed. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Port or its agents, and the cost of such operations may be deducted from any money due to the Contractor, or may be recovered from the Contractor's bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without his fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of 3 March 1899 (33 U.S.C. 410 et seq.). The Contractor shall be responsible for any fees, fines, penalties or other costs resulting from misplaced materials. The Contractor shall also be responsible for removing accumulated spilled dredged materials in the waterway even if the material is located beyond the project dredging limits.

1.12 DREDGING AND DISPOSAL REGULATORY COMPLIANCE

- A. Permits and Compliance. The Contractor shall be responsible to adhere and conform to all applicable provisions, conditions and requirements of the Removal Action Work Plan (RAWP), and the DMMP Suitability Determination included in the Appendix of these Specifications:
 1. The Contractor is responsible for notifying various regulatory agencies prior to commencing dredging, as required by the project permits. These notifications include the USEPA and the DMMP.

2. For open water disposal of clean sediment, the Port will obtain Washington State Department of Natural Resources (DNR), Disposal Site Use Authorization to Utilize Open Water Disposal Site prior to the start of dredging:
 - a. Upon execution of this contract, the Port will endorse the DNR "Open Water Disposal Site Use Authorization" permit as "Grantee". Upon execution of this contract, the Port will transfer the permit to the Contractor and, as a part of this Contract, the Contractor shall assume all duties, obligations, and liabilities imposed herein.
 - b. Operational requirements do not prohibit discharge operations of clean material at the DMMP site from dusk to dawn; however any proposed night time disposal operations must be coordinated with and approved by the Port, EPA, and the Tribe. The Contractor shall request approval for a disposal operations schedule at the pre-dredge conference.
 - c. At least 30 days prior to dredging, the Contractor shall complete the DNR "Plan of Operation for Use of Open Water Disposal Site" certification form and submit to:

Washington Department of Natural Resources
Aquatic Resources Division
DMMP Coordinator
P.O. Box 47027
Olympia, Washington 98504
 - d. The Contractor shall comply with all DNR disposal regulations and reporting requirements, including but not limited to the following:
 - 1) The Contractor shall become familiar with and adhere to DNR disposal site discharge procedures and reporting requirements.
 - 2) The Contractor shall notify DNR 24 hours prior to disposal at the open water site.
 - 3) The Contractor shall verify and record barge location at the initiation and completion of discharge, including the horizontal distance from the center of the disposal site.
 - 4) The Contractor shall complete "Disposal Site Use Reports" at the time of each disposal event and "Monthly Disposal Statement" forms as required by DNR.
 - 5) The DNR reporting week begins on Monday and ends the following Sunday. Disposal Site Use Report forms must be filled out in their entirety and submitted to the Engineer by 12 PM on Monday of the week following the week being reported.
 - 6) Monthly Disposal Statement forms must be completely filled out and submitted to the Engineer with a transmittal letter, no later than the 19th day of the month following the month being reported.
 - 7) Failure to provide forms in accordance with the above schedule may result in suspension or termination of the Site Use Authorization. The Contractor will be held responsible and liable for any damages, penalties, and/or delay costs incurred by the Port as a result of suspension or termination of the Site Use Authorization.

- 8) The Contractor shall provide the Engineer with the originals of all disposal site use reports and forms to be submitted to DNR.
- 9) The Port will pay directly to DNR all fees associated with the permit and dumping operation except that Contractor shall pay for any penalty or damage fees imposed by DNR for material dumped off-site, or other unauthorized disposal operations.
- B. Any conflicts between these contract specifications and issued permits will be brought to the attention of the Engineer. Nothing whatsoever shall be deemed to authorize violation of project permits.
- C. The Contractor shall grant access to its dredge derrick, barge(s), tug(s), and all other equipment mobilized for the project for inspection purposes, to the Port or to any Port-designated representative, and to representatives of the State and Federal agencies issuing the aforementioned permits.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 ORDER OF WORK

- A. The Contractor shall remove and dispose of sediment within the project area to the required elevations and grades as shown on the Drawings in compliance with the work sequence and schedule constraints described in Section 01 14 00 – Work Restrictions.
- B. The Contractor shall perform the Pre-Dredge Survey upon completion of all pile extractions and prior to the start of any dredging operations.
- C. The Contractor shall remove and dispose of all riprap and debris within the limits of the clean area shown on the Drawings after completion of the Pre-Dredge Survey and before performing any other dredging.
- D. The Contractor shall perform an interim post-dredge survey upon removal of clean riprap and debris.
- E. The Contractor shall remove and dispose of the clean sediment within the limits of the clean area shown on the Drawings after completion of the interim post-dredge survey and prior to removal of TBT impacted material.
- F. The Contractor shall perform an interim post-dredge survey upon removal of clean sediment.
- G. TBT impacted materials shall be removed only after completion of the interim post-dredge survey and Port confirmation of Required Dredging for clean sediment removal. All material removed after the start of removal of TBT contaminated material shall be considered contaminated and shall be transported to the transload facility. Open water disposal is not allowed after the start of the removal of contaminated material.
- H. The TBT impacted materials shall be dredged using water-borne mechanical dredging equipment proceeding from the top of the slope toward the bottom of the slope in defined segments as shown in the approved DDWP and in a manner that maintains a stable slope. Dredging of TBT impacted materials shall be subject to the Mandatory Techniques described below.
- I. “Hot Spot” materials may be removed as a part of the normal downslope progression in each dredge segment. Dredging of “Hot Spot” materials shall be subject to the Special Mandatory Techniques described below.

- J. The Contractor shall perform a post-dredge survey after Required Dredging of contaminated material is completed. This survey shall be submitted to the Port for determination as to whether required elevations and grades have been met.
- K. If the post-dredge survey indicates that high spots remain above the required dredge elevations, then the Contractor shall remove such high spots to the satisfaction of the Engineer. The Contractor shall also maintain existing bottom depths within 200 feet waterward of the eastern dredge limit and shall remove any high spots or accumulations of materials resulting from the Contractor's operations. The Contractor shall restore the area within the 200-foot-zone to pre-construction conditions at no cost to the Port.
- L. Once Required Dredging is completed to the satisfaction of the Engineer, confirmational sampling will be performed by the Port within the contaminated areas of the dredge prism as well as outside of the perimeter of the dredge prism. The results of the sampling may indicate that cleanup objectives have not been met, and that Additional Dredging will be required in some or all of the area(s) sampled. Sampling results may also indicate that placement of clean sand fill material (Hot Spot Fill) within the dredged Hot Spots may be required. Additional hydrographic surveying shall be performed following Additional Dredging and placement of Hot Spot fill.

3.02 DREDGE SURVEYS

A. General

- 1. All survey work shall be performed by the Contractor.
- 2. All dredge survey work shall be referenced to existing horizontal and vertical survey control monuments and survey control baselines used during project design.
- 3. All hydrographic surveying shall be performed in accordance with ACOE EM-1110-2-1003 – Hydrographic Surveying.
- 4. Accuracy for measured depth shall be +/- 0.5 feet; accuracy of horizontal position shall be +/- 3 feet at the 95 percent confidence interval.
- 5. See Section 01 71 23 – Field Engineering for additional survey requirements.

B. Progress Surveys

- 1. The Contractor shall provide hydrographic progress surveys every other day (or less frequent as approved by the Engineer) showing cross-sections through the previous two day's work. Sounding data for progress surveys shall be collected using acoustic single beam or full-coverage multi-beam equipment. If single beam equipment is used, surveyed cross sections shall run perpendicular to the shoreline and shall be spaced at 50 foot intervals or less. Progress surveys shall extend from the shoreline to a point 50 feet beyond the original pier face. Progress surveys are not required to be performed for removal of clean material above elevation -2 (MLLW).
- 2. Progress survey results may be used to adjust dredging procedures to assure that the configuration of the dredging site conforms to the Drawing requirements. The Engineer may direct the Contractor to adjust its dredging procedure to assure compliance with the Contract Documents, at no additional expense to the Port.
- 3. For progress surveys, the Contractor shall compute estimated dredge volumes to the nearest cubic yard by comparing the progress survey to the pre-dredge survey. If single beam equipment is used to survey the 50-foot interval cross-sections, then dredge volume shall be estimated using the Average End Area (AEA) method. If multi-beam equipment is

used, then dredge volume shall be estimated using AutoCAD TIN (Triangulated Irregular Network) method. Dredge volume estimates computed from progress surveys will be used to evaluate progression of dredge work and to estimate percent complete for dredging. Progress survey information will not be used as a basis for quantity calculations for final payment or for final acceptance of work.

C. Pre- and Post-Dredge Surveys

1. All pre- and post-dredge surveys shall be performed by the Contractor and will be used by the Port as the basis for determining pay volumes and acceptance of the work. Pay volumes shall be calculated by the Contractor to the nearest cubic yard using AutoCAD TIN (Triangulated Irregular Network) method. The Contractor shall provide a copy of the hydrographic soundings and the quantity calculations to the Engineer for review and approval. Digital survey data shall be provided to the Port in AutoCAD .dwg format along with an ASCII file including point number, Northing, Easting, and Depth with comma delimiters. Depth shall be relative to MLLW = 0.00 and shall be recorded as negative if recorded below MLLW. The Port will perform its own calculations to verify quantities computed by the Contractor.
2. Hydrographic surveying using full-coverage acoustic multi-beam equipment shall be performed for portions of the slope and channel below elevation -2 (MLLW). Field-run surveying may be performed in lieu of hydrographic surveying for portions of the slope above elevation -2 (MLLW). Field-run surveys above elevation -2 (MLLW) shall be performed along track lines running perpendicular to the shoreline and spaced at 50-foot intervals. Hydrographic and field-run survey data shall be combined into one file that represents the survey for the entire area surveyed.
3. Pre-Dredge Survey
 - a. The pre-dredge survey shall be performed upon completion of all pile extractions and prior to the start of any dredging operations. The pre-dredge survey will be the basis for quantity calculations. The survey shall be provided to the Port for their review and approval at least (2) business days prior to the start of riprap removal activities. The survey must be approved prior to the start of riprap removal activities.
4. Interim Post-Dredge Surveys – Clean Material Removal
 - a. An interim post-dredge survey shall be performed after removal of the top layer of clean riprap and debris and after removal of the layer of clean sediment below. Each survey shall be provided to the Port for their review and approval at least (2) business days prior to the start of the next phase of material removal. The Port will review the interim post-dredge surveys to determine whether material removal has been satisfactorily completed and for payment purposes. If all of the Required Dredging has not been satisfactorily completed, as determined by the Engineer, the Contractor shall correct the deficiencies indicated in the survey. The areas shall be resurveyed by the Contractor at no additional cost to the Port. Each additional interim survey must be reviewed and approved by the Port and dredge elevations confirmed prior to the start of the next phase of work.
5. Post-Dredge Survey – Contaminated Material Removal
 - a. A post-dredge survey shall be performed upon completion of dredging to required dredge elevations for removal of contaminated material. A post-dredge survey shall also be performed after each round of Additional Dredging. Each survey shall be provided to the Port for their review and approval at least (2) business days prior to the start of the next phase of dredging. The Port will review the post-dredge survey to

determine whether dredging has been satisfactorily completed and for payment purposes. If all of the Required or Additional Dredging has not been satisfactorily completed, as determined by the Engineer, the Contractor shall correct the deficiencies indicated in the survey. The areas shall be resurveyed by the Contractor at no additional cost to the Port. Each additional post-dredge survey must be reviewed and approved by the Port and dredge elevations confirmed prior to the start of the next phase of work.

6. The pre-dredge survey and post-dredge survey performed after completion of required dredging shall extend to a minimum of 200 feet waterward of the eastern dredge limit and 50 feet beyond all other dredge limits. Interim post-dredge surveys and post-dredge surveys for Additional Dredging shall extend to a minimum of 50 feet beyond the limits of dredging for the dredge phase being surveyed. The Contractor shall be responsible for maintaining existing bottom depths within the 200-foot zone as defined in the Pre-Dredge Survey and shall remove any high spots or accumulations of material and restore the area within the 200-foot zone to the pre-dredge condition, at no cost to the Port.
7. The pre-dredge survey, the interim post-dredge survey to be performed after removal of clean riprap and debris, the interim post-dredge survey to be performed after removal of clean sediment, and the post-dredge survey to be performed at the completion of Required Dredging shall be included in the Contractor's base bid under Bid Item "Field Engineering". The Contractor will receive additional compensation for the cost of additional post-dredge surveying required for Additional Dredging.

3.03 CLEANUP COMPLIANCE AND ADDITIONAL DREDGING

A. Confirmational Sampling

1. After dredging has been completed to required depths as confirmed by the post-dredge hydrographic survey and accepted by the Engineer, the completed dredge areas will be sampled by the Port to confirm if chemically-based required clean-up objectives have been met. The sediment samples will be tested to determine whether the remaining surface sediments meet remediation requirements. The results of the sampling may indicate that remediation objectives have not been met, and that additional dredging will be required in some or all of the area(s) sampled. Additional Dredging will cover a prescribed area to a required depth of 1 foot, as defined during confirmational sampling and as directed by the Engineer.

B. Additional Dredging

1. Should Additional Dredging be required, it will be payable at the unit contract bid price for Optional Bid Item, "Additional Dredging." Once "Additional Dredging" is completed to the Engineer's satisfaction, the Port will be required to conduct an additional round of confirmational sampling to confirm that clean-up objectives are met in the re-dredged area(s) and subject to the same clauses and requirements as stated above. Additional dredging that may be required as a result of this additional round of confirmational sampling will be payable at the unit contract bid price for Bid Item, "Additional Dredging."

C. Standby Time

1. After dredging has been completed to required depth as confirmed by the post-dredge survey and accepted by the Engineer, the Contractor shall remain on "stand-by" to perform Additional Dredging if needed to respond to confirmational sampling results. It is anticipated that up to 7 days of stand-by time will be required for each round of confirmational sampling and testing. The Contractor's stand-by time will start after the Engineer's acceptance of Required Dredging and will end upon either receiving direction

from the Engineer for Additional Dredging or upon receiving notice that Additional Dredging is not required and that dredge work is complete. A total of 7 calendar days of stand-by time for confirmational sampling shall be considered incidental to dredging of contaminated material and shall be included in the Contractor's Base Bid. Additional Stand-by time will be payable at the unit contract bid price for Bid Item "Stand-by Time" as described in this Specification.

3.04 CONDUCT OF WORK

A. Layout of Work

1. The Contractor shall furnish, set and maintain in good order, all ranges, buoys and other markers necessary to define the Work and to facilitate inspection. The Contractor shall also establish and maintain gages (tide boards) in locations where they may be clearly seen at all times during operations and inspection. The tide gauge shall provide a continuous recording of tidal change for every 15-minute interval or each 0.1-foot change, whichever occurs first. Tidal changes shall be visually provided to the dredge operator at all times during the dredging process to allow proper adjustment of dredge depth. The Contractor may be required to suspend dredging when the gages or ranges cannot be seen.
2. An accurate method of horizontal and vertical control shall be established by the Contractor before dredging may begin. The proposed method and maintenance of the horizontal and vertical control system shall be subject to the approval of Engineer and if, at any time, the method fails to provide accurate location for the dredging operations, and the Engineer's inspection, the Contractor may be required to suspend its dredging operations at no additional cost to the Port.
3. It shall be the responsibility of the Contractor to maintain all points established for the work until authorized to remove them. If such points are destroyed by the Contractor or disturbed through its negligence prior to an authorized removal, they shall be replaced by the Contractor at its own expense.

B. Positioning Equipment and Methods

1. The Contractor shall employ a Differential Global Positioning System (DGPS) to locate and control horizontal dredging position. Accuracy of horizontal dredge position shall be within +/- 3 feet at the 95 percent confidence interval. In addition to a tug-mounted DGPS receiver, the Contractor shall provide a DGPS receiver on the barge to record its location at the initiation and completion of discharge at the DMMP site.

C. Dredging

1. Dredging shall be performed using mechanical methods only. The Contractor is required to use an extra heavy digging bucket that has the necessary weight and ability to fully close when removing sediment containing riprap prior to hoisting through the water column. Identification markers on the bucket cables shall be installed to allow the operator to visually confirm that the bucket has fully closed prior to raising the bucket. Additional bucket requirements for dredging TBT impacted materials are provided in Section 3.05.
2. The Contractor shall excavate the required dredge prism to the lines, grades, slopes and elevations shown on the Drawings. Each pass of the clamshell bucket shall be complete and there is to be no stockpiling of sediment in the water. Leveling of the completed dredging surface by dragging a beam or sweeping the clamshell bucket will not be permitted.

3. **Due to potential contamination of clean material to be disposed of in open water, clean sediment dredging shall not extend beyond the downslope limit shown on the Drawings. The Contractor shall ensure that equipment tolerances are accounted for when dredging near the clean sediment dredge boundary. The Contractor shall be responsible for any fees, fines, penalties, or other costs resulting from contamination of clean sediment due to dredging beyond the limits shown on the Drawings.**
4. This specification section does not include all required protection measures, mitigation measures, and BMPs associated with this project. The Contractor shall pay particular attention to the conditions of issued permits, the RAWP, the WQMPP, and applicable regulations and authorizations associated with this project. All protection measures, mitigation measures, and BMPs included in these documents shall be implemented by the Contractor.
5. The Contractor shall make the cut to the lines and grades shown on the Drawings. No undercutting (i.e., excessive dredging) at toes of cuts will be allowed. Dredging from the top down is required to prevent uncontrolled slope failures that may be occur as a result of undercutting at the toe of the excavation.
6. Upon completion of the work, but not until final acceptance by the Engineer, the Contractor shall promptly remove the dredging plant and associated equipment, including ranges, buoys, piles, and other markers or obstructions placed by the Contractor in the water or on shore.

D. Additional Dredging

1. Additional Dredging shall be subject to the same requirements as dredging.

3.05 MANDATORY TECHNIQUES REQUIRED FOR TBT IMPACTED MATERIALS

- A. Dredging of TBT impacted materials shall be planned such that the dredge bucket holding TBT impacted material shall never pass over an area which has been dug to the required dredge depth or any other uncontaminated area, and so that the side slopes of the remaining TBT impacted material do not slump onto a surface that has been dug to the required dredge depth. The Contractor shall remove material in at least 2 passes along the slope such that the final pass to reach the required dredge depth is 3 feet deep. The maximum allowable actual dredge depth for the final pass is 5 feet deep when including 2 feet of allowable over-dredge depth. Each pass shall be made along the entire slope before proceeding to the next pass. Once cutting to required dredge depth (the final pass) has commenced, the Contractor shall not swing TBT impacted material over the clean surface. Contractor's quality control soundings shall be made frequently during the dredging operation to ensure that the dredge is being performed in accordance with the DDWP and to confirm that the multi-pass approach is being followed.
- B. TBT impacted material shall be dredged by a closed bucket. An extra heavy duty digging bucket may be modified for this work with an adequate improvised "top hat" arrangement to effectively cover the surface of spoils in the bucket and minimize wash-off of the TBT impacted material as it is hoisted through the water column. Drawings of the proposed bucket modification shall be submitted for approval as part of the DDWP prior to beginning contaminated dredging. Final approval of the proposed bucket is contingent on observation that the actual "top hat" arrangement installed effectively protects the bucket load from wash-off and re-suspension of TBT impacted sediment and that the bucket is capable of fully closing

- prior to hoisting. If the bucket top hat is damaged or rendered ineffective, dredging shall stop until it is repaired to a serviceable condition and to the satisfaction of the Engineer.
- C. The Contractor shall configure the dredge in a manner that allows for visual confirmation that the bucket is fully closed prior to hoisting the bucket to the water surface.
 - D. The bucket shall be transferred to the barge with no delay at the water surface in order to minimize release of excess water.
 - E. If dredge monitoring reveals that the bucket is over-penetrating the sediments causing material to accumulate on the "top hat", then the bucket speed approaching sediment shall be reduced to prevent sediment from becoming piled on top of the bucket and then washing off during retrieval.
 - F. In the event that water quality monitoring reveals exceedances in turbidity, the cycle time for the hoisting and lowering of the bucket shall be increased, or other modifications to the dredging method shall be made, as necessary to achieve compliance.
 - G. The Contractor shall ensure that the bucket is emptied of sediment over the barge before re-submerging the bucket in the waterway.

3.06 SPECIAL MANDATORY TECHNIQUES REQUIRED FOR "HOT SPOTS"

- A. In addition to the mandatory techniques described in Section 3.05 for TBT impacted material, the following special mandatory techniques shall be used for hot-spot dredging:
 - 1. Hot Spot dredging shall be conducted inside a silt curtain constructed of impermeable material that extends a minimum of thirty feet below the water surface. The silt curtain may be fixed in position enclosing the entire hot spot or it may be supported by a floating boom arrangement attached to the digging end of the dredge and moving with the dredge such that the material is always excavated from within the limits of the silt curtain. If the silt curtain tears, becomes disconnected, or otherwise fails to provide an impermeable barrier for at least 30 feet below the water surface, then the Contractor shall repair the curtain immediately and shall suspend dredging work until the barrier is repaired or replaced. In no case shall the dredge bucket be allowed to swing over any open water that is not enclosed by the silt curtain. The minimum width and length of the silt curtain enclosure shall be 50 feet.
 - 2. Dredging within the outline of the Hot Spots shown on the Drawings shall be performed using a multi-pass approach similar to that described above for removal of TBT-impacted material, except that a minimum of 3 passes is required. The second to last pass shall be between 2 and 3 feet deep and the final pass shall be 1 foot deep. The maximum allowable actual dredge depth for the final pass is 3 feet deep when including 2 feet of allowable over-dredge depth. Each pass shall be made throughout the entire Hot Spot before proceeding to the next pass. Contractor's quality control soundings shall be made frequently during the dredging operation to ensure that the dredge is in fact digging according to the DDWP and to confirm that the multi-pass approach is being followed.
 - 3. Depending on the results of confirmational sampling, placement of a minimum 1 foot layer of clean sand fill material (Hot Spot Fill) within the dredged Hot Spots may be required. Placement of Hot Spot Fill shall be performed by the Contractor at the direction of the Engineer. See Section 35 42 38 – Hot Spot Fill Material and Placement for requirements. Additional hydrographic surveying may be required following placement of Hot Spot Fill. The Contractor will be compensated for the cost of additional surveying specifically required to confirm placement of Hot Spot Fill. Confirmation of placement of Hot Spot Fill

through performance of the Final Post-Dredge Survey will not be considered additional surveying.

3.07 TRANSPORTATION AND DISPOSAL OF DREDGED MATERIALS

A. Use of Commencement Bay Open Water Disposal Site for Disposal of Clean Sediment

1. The Port will obtain a Disposal Site Use Authorization from DNR for disposal of suitable sediments at the DMMP Site. Suitable material as located on the Drawings shall be loaded onto bottom-dump haul barges and transported to the DMMP Site. The use of any type of barge other than a bottom dump barge is prohibited. For DNR reporting requirements, the barge dump will be considered to start at initiation of bottom-dump or split hull opening. The end of the dump will be that time when all materials have exited the barge. No materials shall be dumped unless approved positioning equipment is operational. Overflow will not be permitted from haul barges at any time during loading, transportation, and disposal of dredged material. The haul barges must have tightly sealing doors and compartments to minimize leakage of material during transit. Any barge that exhibits more than minor leakage shall be removed from the equipment utilized on the project until satisfactory repairs are made. All DNR disposal fees will be paid directly by the Port.

B. Vessel Traffic Service (VTS)

1. The Contractor shall contact the USCG VTS by radio before disposal for positioning and verification of location within the surface target zone. Disposal may not commence until verification is received from U.S. Coast Guard. The Contractor must also report the vessel position, tug, barge, skipper's name, DNR permit number and the time dumping begins and ends.
2. Signal lights shall be displayed and operations shall be conducted in accordance with the regulations of local port and harbor authorities and by the applicable regulations of Code of Federal Regulations, Title 33 – Navigation and Navigable Waters, as required by the Department of the Army and the U.S. Coast Guard.

C. Disposal Log

1. The Contractor shall maintain a disposal log of all dumps at the DMMP disposal site. The log shall include: the date, time, operator's name, time when approval was received from VTS and initials of person giving approval, coordinates at the beginning and end of each dump, vessel fathometer reading, and the calculated distance from the center of the disposal site. The distance from the center of the disposal site shall be calculated at the beginning and ending of each dump to verify that material has been dumped completely within the disposal site limits. A printout from the Contractor on-board navigational system shall be generated at the time of each dump and shall be submitted weekly to the Engineer along with the disposal log. The log and printouts shall be prepared in addition to the "Monthly Disposal Statement" and the "Disposal Site Use Report" required by DNR.

D. Transporting, transloading, and disposing of TBT impacted spoils at the Transload Facility

1. See Section 35 20 24 – Contaminated Dredge Material Transloading.

3.08 WATER QUALITY MONITORING

- #### A. The Contractor is responsible for meeting Water Quality criteria as defined in the EPA-approved WQMPP (located in the RAWP).

3.09 DREDGE REPORTS

- A. Daily Dredge Report: The Contractor shall keep a daily record of the area(s) dredged, the estimated quantity of material dredged, the number of scow trips to the disposal sites, the estimated quantity of dredged materials transported to the DMMP Site and the transload site (based on in-situ cubic yards), results from water quality monitoring, progress surveys, and a summary of other details of the work. A map showing the barge position during each dump and coordinates for each dump shall be included in the daily reports. This daily record shall be submitted to the Engineer with a transmittal letter the morning following completion of work on the date of the Daily Report. The Daily Report shall be signed by the Contractor's dredging superintendent or quality control manager.
- B. Weekly Dredge Report: The Contractor shall summarize the week's work in a weekly report to be submitted to the Engineer the following Monday morning. The weekly report shall identify work completed to date, anticipated work to be completed in the present week, and present the latest progress survey.
- C. Dredge Closure Report: The Contractor shall prepare a closure report that summarizes all the weekly reports and identifies Contractor estimates of dredge volume, dredge volume disposed at the DMMP Site and the transload facility, and debris & riprap volume/tonnage disposed of at the Port-approved upland landfill facility.

3.10 DEBRIS MATERIAL

- A. Anchors, chains, straps, and other articles or debris brought to the surface during the course of the dredging operations shall remain the property of the Contractor and shall be disposed of at an approved off-site location per Section 01 74 19 – Construction Waste Management and Disposal. Salvage and removal of such material shall be considered incidental to the dredging work and included in the unit price therefore. Hazardous material/waste, consisting of creosote piles, batteries, PCB's and the like shall be disposed of in accordance with applicable Federal, State and local regulations. The Port does not expect hazardous material, other than TBT impacted material, to be within the dredging area. When such material/waste is encountered, the Contractor shall immediately notify the Engineer to determine the course of action to be taken.

3.11 OUTFALL PROTECTION

- A. Prior to the start of dredging the Contractor shall locate and mark the existing outfalls as shown on the Drawings to prevent damage during dredging. Outfalls shall be modified as indicated on the Drawings prior to dredging and are to remain operational throughout dredging operations.

END OF SECTION

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. Work related to this section is described in the following sections:
1. Section 00 31 00 – Available Project Information
 2. Section 00 45 13 – Responsibility Detail Form
 3. Section 01 14 00 – Work Restrictions
 4. Section 01 35 29 - Health, Safety and Emergency Response Procedures
 5. Section 01 45 00 - Quality Control
 6. Section 01 57 13 – Temporary Erosion and Sediment Control and Construction Stormwater Pollution Prevention
 7. Section 01 71 23 - Field Engineering
 8. Section 02 90 00 – Fugitive and Silica Dust Control Procedures
 9. Section 35 20 23 – Dredging
 10. Appendix - Removal Action Work Plan (RAWP) (includes the Water Quality Monitoring and Protection Plan, (WQMPP) and Dewatering Return Water Treatment Technical Memorandum)

1.02 DESCRIPTION OF WORK

- A. The work consists of transporting TBT contaminated dredged material (soil, sediment, rock, debris and water (free and entrained in the dredge material)) from contaminated areas of the Pier 4 slope to the Transload Facility indicated on the Drawings, offloading the material from the barge to the transload facility, processing the material for disposal and discharge, and disposing and discharging the material in compliance with these Specifications. This work also consists of set-up and clean-up of the transload facility. All dredged soil, sediment, debris, and riprap shall be disposed of at an approved landfill permitted to accept the contaminated material. The Port has obtained Waste Disposal Authorization (WDA) for disposal at the LRI Landfill (LRI) located in Graham, WA for disposal of TBT contaminated dredged material. All water (free and entrained in the dredge material) and surface water collected on the transload site or on the dredge barge shall be discharged into the Sitcum Waterway only after onsite treatment. Requirements for dredging the contaminated material and depositing the material into the transport barges are provided in Section 35 20 23 – Dredging.
- B. The Contractor shall furnish all labor, materials, tools, equipment and supervision necessary to transload the contaminated dredged material as described in these Specifications and in strict compliance with the Removal Action Work Plan (RAWP). Transloading consists of all work activity required to accomplish upland disposal of contaminated dredged material from the point at which it is deposited on the barge at the Pier 4 site. All work shall be performed in compliance with the work sequence and schedule constraints described in Section 01 14 00 – Work Restrictions.

1.03 QUALITY ASSURANCE

- A. The water treatment supervisor must have a minimum of five (5) years of relevant experience and have knowledge of system operation, control, maintenance, and diagnosis. Water treatment operators must have knowledge of system operation and control.
- B. The independent analytical testing laboratory shall have certifications specified in the WQMPP in the RAWP.
- C. See Section 00 45 13 – Responsibility Criteria for additional experience requirements for Transloading Contaminated Material and for Contaminated Water Treatment.

1.04 PRE-CONSTRUCTION SUBMITTALS

- A. Transload, Transport, and Disposal Work Plan (TTD):
 - 1. The Contractor shall submit a detailed written Transload, Transport, and Disposal Work Plan (TTD) to address activities associated with transloading contaminated dredge material. The TTD shall be a separate document from the Dredging and Disposal Work Plan (DDWP) submittal that is required per Section 35 20 23. The TTD shall be submitted to the Engineer at least 60 days prior to dredging. Transloading shall not begin until: 1) the Plan has been reviewed and approved by the Port and applicable regulatory agencies; 2) agency-required notifications have been completed in accordance with the RAWP; and 3) the Contractor schedules and attends a Pre-transload conference with the Port and other permitting agencies as required by the RAWP, and receives agency approval to begin transloading as a result of that conference. The Transloading conference may be included as part of the Pre-dredge conference required per Section 35 20 23.
 - 2. At a minimum, the TTD shall contain the following:
 - a. Work Sequence and Equipment
 - 1) Order in which the work is to be performed indicating the work sequence.
 - 2) A construction schedule shall be prepared that identifies the timing and sequencing of the major activities to setup, operate, and clean-up the Transload facility. These shall include, but not be limited to, mobilization, site setup, start of Transloading operations, anticipated material delivery and processing rates, duration of Transloading, cleanup, and demobilization. The transloading schedule shall be coordinated with the dredge schedule required for submittal per Section 35 20 23.
 - 3) Number, types and capacity of all land-based equipment to be used as well as names of derrick barges, dredge barges, and other marine vessels to be used.
 - b. Means and Methods for Transporting, Offloading, Handling, Dewatering, and Disposal of Contaminated Dredge Material
 - 1) Methods, procedures, and equipment to be used to provide watertight containment of dredged material on disposal barges. Drawings shall be submitted that show the proposed concept for providing watertight containment of all dredged material in route from the Pier 4 site to the transload facility. Documentation of successful leak testing of the dredged material containment system used on the disposal barge shall also be provided. Leak testing documentation shall be submitted prior to start of transloading and may be submitted as a supplement to the TTD.

- 2) Methods, procedures, and equipment to be used to transport the disposal barge from the Pier 4 site to the Transload facility.
 - 3) Methods to be used for record keeping related to transport and disposal of dredged material.
 - 4) Methods, procedures, and controls to protect existing Port facilities against damage, including installation of temporary mooring piles to protect the existing fender system (if used).
 - 5) Methods, procedures, and controls to be used to prevent water from entering the existing storm drain system.
 - 6) Methods, procedures, and controls to be used to offload, segregate, handle, stockpile, dewater, transport, and dispose of dredged sediment and debris.
 - 7) Products, methods, procedures, and controls to be implemented if a drying agent is to be used to dewater the dredged material.
 - 8) Methods, procedures, and controls to be used to provide containment, collection, and conveyance of all dredged water and surface water to the onsite water treatment system, including water collected during offloading of dredged material.
 - 9) Methods, procedures, and controls to be used to provide control of fugitive dust from stockpiles of dredged material.
 - 10) Methods, procedures, and controls to be used to collect and convey dredged water from the dredge barge to the onsite treatment system.
 - 11) Methods, procedures, and controls to be used to ensure that trucks used to haul dredged material to the landfill are sealed and watertight.
 - 12) Information gathered through coordination with the landfill regarding constraints on material receiving capacity, hours of operation, and delivery logistics used for project planning.
 - 13) A site plan(s) shall be submitted that clearly depicts the Contractor's proposed setup and use of the Transload facility, including details depicting the proposed water containment, collection, conveyance, and treatment system.
- c. Dewatering Treatment System Information
- 1) Description of water treatment system, product details, and process and instrumentation details.
 - 2) System scaling calculations, including dredge rates, transload rates, barge dewatering rates, sediment dewatering rates, water treatment rates, stormwater accumulation, and storage requirements.
 - 3) System monitoring, control, and response plan.
 - 4) Proof of Quality Assurance requirements indicated above.
- d. A Stormwater Pollution Prevention Plan (SWPPP) for operation of the transload facility that shall meet National Pollutant Discharge Elimination System (NPDES) substantive requirements. Because this project is being conducted as a Time Critical Removal Action under USEPA's authority, an NPDES permit will not be required as long as substantive requirements for NPDES requirements are met (per RCW 90.48.039). The SWPPP shall describe operational and source control BMPs related to dredge

material transloading and shall describe the routing and ultimate disposal of any water from the dredged material, all stormwater collected within the transload area, all water that is used for wash-down of trucks and equipment, and any water that may come in contact with the dredged material or dredged material handling equipment. The SWPPP shall also discuss the design storm criteria and the contingency for overflows in excess of the design storm and controls to minimize stormwater contributing to the sediment dewatering process. See Section 01 57 13 – Temporary Erosion and Sediment Control and Construction Stormwater Pollution Prevention for additional information.

- e. Notification procedures to United States Coast Guard (USCG) for barge operations within the Blair Waterway and the Sitcum Waterway.
- f. Environmental monitoring, including procedures for emergency spill containment and removal operations. Spill containment and removal procedures shall be provided that address spills that occur while transiting dredged material to the transload site, while offloading at the transload site, and while in route to the landfill.
- g. Water Quality Monitoring and Notification Procedures
 - 1) The Contractor shall be subject to the requirements and procedures specified in the Water Quality Monitoring and Protection Plan (WQMPP) and the RAWP included in the Appendix. Provide written acknowledgement of understanding of all requirements and procedures contained in these documents with respect to water quality monitoring, best management practices (BMPs), and notification procedures associated with transload operations. Written acknowledgement shall be provided in the form of a signed letter from the Contractor to the Port of Tacoma.
 - 2) Proposed methods and procedures for monitoring water quality in strict compliance with the WQMPP.
 - 3) The personnel and equipment that will be used to monitor water quality during the course of the project
 - 4) Contingency measures to be implemented if water quality violations occur.
- h. Prevention of Interference with Navigation
 - 1) Notification and procedures to be used for moving transloading equipment to accommodate inbound and outbound commercial vessel traffic using the surrounding waterway.
- i. Contractor Quality Control and Organization Plan
 - 1) Organization chart with key personnel and supervisory chain. At a minimum, the Contractor shall identify the following key personnel: superintendent, quality assurance representative, health and safety representative, equipment operator(s), water quality monitoring lead (or firm that the Contractor has hired to conduct monitoring), water treatment supervisor, and other key personnel deemed necessary by the Contractor for the successful implementation and completion of this work. Provide 24-hour direct telephone numbers for key staff that will be responsible during off hours work periods (between 5 pm until 8 am the following day and on non-working days)
 - 2) Quality control methods and procedures

- B. Pre-construction survey to confirm or supplement existing transload site topographic information, if performed.

1.05 CONSTRUCTION SUBMITTALS

- A. Daily Transload Reports
- B. Weekly Transload Reports
- C. Transload Closure Report

1.06 SITE CONDITIONS

A. Site Description

1. The site designated to serve as the Transload Facility is located along the northwest edge of the Sitcum Waterway and is contained within the APM Terminals (APMT) container yard. The area contained within the boundary indicated on the Drawings is approximately 7 acres in size and will be made available to the Contractor for transloading TBT contaminated dredge material and water; however the remainder of the APMT yard and dock will continue to operate as an active container terminal. Landside access to the site will be provided through the secured entrance gate located at the south end of the terminal, requiring that Contractor vehicles pass through the active terminal to reach the transload area. Waterside access to the site will be provided by a portion of the existing deep-draft dock. Refer to Section 01 14 00 – Work Restrictions for access requirements.
2. The upland portion of the transload area is paved with approximately 4 inches of asphalt and configured and striped for container handling operations. The pavement is sloped to drain to five catch basins that convey surface water to an underground treatment system that discharges to outfalls located along the Sitcum Waterway. Pavement cracks will be sealed by the Port under a separate contract prior to the Contractor's mobilization to the transload site. After crack sealing work is complete, the Contractor may assume that the upland paved surface of the transload site is impervious for the purpose of providing containment and collection of dredged water and surface water.
3. The waterside portion of the transload area consists of a deep-draft dock built over a riprap-armored slope. The dock is a concrete pile supported structure that supports a 100-foot gage container crane system. Appurtenances and features on the dock include crane rails, crane power trench, bullrail, utility vaults, crane stops, bollards, fender panels, deck drains, pavement striping and bullrail markings, ladders, and traffic barriers. The wharf structure is rated for 750 pounds per square foot (PSF) of uniform deck loading.
4. Water and power are available at the transload site as indicated on the Drawings. All water and power used by the Contractor for transloading operations shall be paid for by the Contractor. Metering equipment shall be installed by the Contractor.
5. Site lighting is provided by high-mast light fixtures that are appropriate for illumination of a container yard. It is anticipated that existing site lighting will be adequate for transloading operations, however the Contractor shall assess if additional lighting is required to facilitate transloading. Additional lighting shall be provided at the Contractor's expense and only at the approval of the Engineer.
6. Record drawings for the site and wharf are available as reference documents as indicated in Section 00 31 00 – Available Project Information. The Contractor shall familiarize itself with the layout, features, constraints, and limitations of the area designed for transloading use (including limitations on wharf deck loading), including review of the reference

documents prior to bidding. All additional survey work to either confirm or supplement existing site topographic information shall be performed by the Contractor and included as part of the base bid for the project.

B. Inherent Delays

1. The Contractor shall anticipate inherent delays while conducting transloading operations in the Blair Waterway, Sitcum waterway, Commencement Bay and within the APM Terminal. Inherent delays are due to commercial shipping traffic within the shipping channel and due to APM Terminal operations. Commercial shipping traffic and APM Terminal operations shall have precedence over the Contractor's activities and may require them to stop, move, adjust, and/or slow down to accommodate vessel movement and terminal operations. The bid prices shall include allowances for such inherent delays.

C. Interference with Navigation

1. The Blair Waterway, Sitcum Waterway, and Commencement Bay are active navigation corridors used for transport of deep-draft commerce activities. These activities shall take priority over the Contractor's operations. The Port's tenants and other entities using the waterway must have access along the project site for the duration of the construction contract. The Contractor shall conduct its operations in a manner that will minimize interference with those activities. In the event that the Contractor's construction equipment (derricks, dump scows, tug, barges, workboats, anchors, lines, etc.) obstructs the navigable waterway so as to hinder movement of commercial vessels, the equipment shall immediately be moved to facilitate the shipping activity.
2. Any damage to the Contractor's equipment in navigation lanes due to the Contractor's failure to move when required shall be at the Contractor's sole risk and expense.

D. Protection of Existing Facilities

1. Any damage to the existing dock structure at the Husky Terminal and the APMT Terminal (transload facility), and/or other existing facilities caused by the Contractor's operations, as determined by the Engineer, shall immediately be repaired to the pre-project condition at the Contractor's expense.
2. All vaults, deck drains, crane rail pockets, and other areas on the dock where dredged material can collect and/or drain through the structure shall be covered using sheeting or impermeable liners and protected during transloading operations. The Contractor will not be allowed to open or access the inside of any vaults along the dock without permission from the Engineer.
3. The existing fender system along the face of the dock consists of discrete fender panels spaced along the length of the berth. These fender panels are intended for use with tall freeboard container vessels and are not configured to accommodate barges or other low free-board vessels through the full tidal range. Damage to the fenders can occur if low freeboard vessels are allowed to snag the fenders on a rising tide. The existing fender system may be used to accommodate berthing of the Contractor's transloading equipment; however the Contractor shall make provisions to protect the fender panels and dock structure from damage throughout the full tidal range.
4. The existing buried storm drain system shall be completely isolated from the dredge and surface water containment and collection system established by the Contractor. All buried piping, vaults, and outfalls shall be protected and shall not receive any water or sediment from transloading operations.

5. The transload area contains removable concrete wheel stops that may be moved by the Contractor to accommodate setup of the transload facility. The wheel stops are pinned to the pavement by steel or rebar dowels. All wheel stops shall be protected from damage, whether they remain in place or are removed. Removed wheel stops shall be reinstalled after completion of transloading operations in their pre-project condition.
 6. All pavement damage due to transloading operations shall be repaired by the Contractor.
 7. Condition Survey of Existing Structures: The Contractor and Engineer shall review and verify the condition of adjacent structures, appurtenances, and pavement adjacent to the work area prior to beginning work to ascertain existing conditions. Any damage documented as a result of the Contractor's activities will be repaired at no additional cost to the Port.
 8. The Contractor's TTD shall include a description of the methods for the above protections.
- E. Security Concerns
1. For security and vessel navigation concerns, the Contractor shall give notice and receive required approval from the Engineer prior to berthing at any location along the Blair and Sitcum Waterways. The Contractor shall notify the Coast Guard as required to comply with Coast Guard and Port regulations for operating within the Blair Waterway, Sitcum Waterway, and Commencement Bay.

1.07 MISPLACED MATERIAL

- A. Should the Contractor, during the execution of the work, lose, dump, throw overboard, sink or misplace any material, dredge, barge, machinery, or appliance, the Contractor shall promptly recover and remove the same. The Contractor shall give immediate verbal notice, followed by written confirmation, of the description and location of such obstructions to the Engineer and shall mark and buoy such obstructions until they are removed. Should the Contractor refuse, neglect, or delay compliance with this requirement, such obstructions may be removed by the Port or its agents, and the cost of such operations may be deducted from any money due to the Contractor, or may be recovered from the Contractor's bond. The liability of the Contractor for the removal of a vessel wrecked or sunk without his fault or negligence shall be limited to that provided in Sections 15, 19, and 20 of the River and Harbor Act of 3 March 1899 (33 U.S.C. 410 et seq.). The Contractor shall be responsible for any fees, fines, penalties or other costs resulting from misplaced materials. The Contractor shall also be responsible for removing accumulated spilled dredged materials in the waterway even if the material is located beyond the project dredging limits.

1.08 REGULATORY COMPLIANCE

- A. Permits and Compliance. The Contractor shall be responsible to adhere and conform to all applicable provisions, conditions and requirements of the Removal Action Work Plan (RAWP).
1. The Contractor is responsible for notifying various regulatory agencies prior to commencing transloading, discharge of treated dredged water, and upland disposal of dewatered sediment as required by the project permits and the RAWP.
- B. Any conflicts between these contract specifications and issued permits will be brought to the attention of the Engineer. Nothing whatsoever shall be deemed to authorize violation of project permits.
- C. The Contractor shall grant access to its dredge derrick, barge(s), tug(s), and all other equipment mobilized for the project for inspection purposes, to the Port or to any

Port-designated representative, and to representatives of the State and Federal agencies issuing the aforementioned permits.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 ORDER OF WORK

- A. Transloading of contaminated dredged material shall be performed in sequence with dredging at the Pier 4 site and shall be performed in compliance with the work sequence and schedule constraints described in Section 01 14 00 – Work Restrictions and in compliance with the provisions and BMPs included in the RAWP. See Section 35 20 23 for work sequence requirements for dredging. All contaminated dredge material shall be processed for disposal through the transload site.
- B. The Contractor shall setup the transload site to accommodate his proposed means and methods for offloading, stockpiling, dewatering, hauling, and disposal of dredged debris, riprap, sediment, and water. The transload site shall be setup as described in the Contractor-prepared TTD and as approved by the Port.
- C. The Contractor shall outfit his dredge disposal barge(s) to provide watertight containment of dredged material as described in the Contractor-prepared TTD and as approved by the Port.
- D. The Contractor shall perform transloading operations only after approval has been received from the Port that transload site setup and barge containment has been completed in accordance with the approved TTD.
- E. Transloading activity shall be coordinated and performed in strict accordance with project-specific BMPs included herein and within the RAWP. This specification section does not include all required protection measures, mitigation measures, and BMPs associated with this project. The Contractor shall pay particular attention to the conditions of issued permits, the RAWP, the WQMPP, and applicable regulations and authorizations associated with this project. All protection measures, mitigation measures, and BMPs included in these documents shall be implemented by the Contractor.
- F. All dredged material shall be disposed of offsite prior to start of site clean-up activities. The Contractor shall clean up the site to its pre-construction condition. The Port will perform pavement striping and bullrail marking work, if required.
- G. The water treatment system shall be removed only after all cleaning of the site and equipment is complete. All wash-down water shall be processed through the water treatment system.

3.02 TRANSLOAD SITE ACCESS AND SETUP

- A. Landside access to the site will be provided through the secured entrance gate located at the south end of the terminal. The access gate is controlled by APMT. The Contractor shall coordinate all gate activity with APMT and shall be aware of, and accommodate, restrictions on hours of operation. Refer to Section 01 10 00 - Summary and Section 01 14 00 – Work Restrictions for access and security requirements.
- B. A preconstruction meeting shall be held prior to Contractor mobilization to the transload site to coordinate proposed transloading operations with APMT and the Port.
- C. At a minimum, the Contractor shall coordinate transload site access activity on a daily basis with APMT. Changes to access routes within the terminal to the transload site may be required depending on container yard activity and will be determined by APMT.

- D. Approximately 250 feet of berth length at the north end of the dock is available for waterside access to the transload site. This portion of the dock will be available for exclusive use by the Contractor for offloading of dredged material from barges. As noted above, measures shall be taken to protect the dock and all appurtenances and features from damage due to transloading activity. For protection of the existing fender system, the Contractor may install up to 10 temporary steel pipe piles along the pier face to provide a stand-off for barge and equipment mooring. The pile standoff system (including means and methods for installation) shall be designed by the Contractor and shall be described in the TTD. Installation of the temporary piles shall occur no earlier than July 15, 2015 and removal shall occur no later than February 15, 2016.
- E. Temporary fencing (including access gates) or barriers shall be installed along the boundary between the transloading area and the container yard as shown on the Drawings. The fencing or barriers is intended to provide clear delineation between the transload area and the container yard. Fencing or barriers shall not impede the flow of water into the transload site such that ponding develops in the container yard. Fencing and barriers shall be secured to the pavement and shall be repaired immediately if damaged or blown over.
- F. The Contractor shall remove the existing wheel stops located within the transload area on an as-needed basis to accommodate transloading operations. All holes in the pavement due to removed dowel pins shall be filled and sealed to be impermeable prior to the start of transloading operations.
- G. All water that enters the transload site shall be treated before discharge into the Sitcum Waterway. A temporary site drainage and collection system separate from the existing storm drain system shall be designed and installed by the Contractor to establish complete containment within the transload area of all surface water and dredge water and to deliver water to the treatment system. The containment system shall not prevent surface water from entering the transload site such that ponding occurs in the container yard and shall be able to accommodate water entering the transload site from the container yard. The approximate area in the container yard that drains to the transload site is indicated on the Drawings. The containment system shall include exclusion zones to prevent migration of dredged material from the transload site via vehicle, equipment, or personnel access leaving the site. Exclusions zones shall include features such as wheel washes, vehicle and equipment wash-down areas, boot washes, etc.
- H. The existing buried storm drain system shall be completely isolated from the dredge and surface water containment and collection system. All buried piping, vaults, and outfalls shall be protected and shall not receive any water or sediment from transloading operations. The existing catch basins within the transload area may be used as drainage sumps as long as all piping into and out of the catch basins is temporarily plugged and the catch basins are proven by the Contractor to be watertight. The Contractor shall demonstrate the effectiveness of the pipe plugging system and the water-tightness of catch basins by performing a leak test of the catch basins. The leak test shall consist of plugging the pipes, filling the catch basins with clean water, and measuring water loss over a 12 hour period. No measureable loss of water will be allowable within the 12 hour period. All crack sealing or repair to the existing catch basins that is necessary to provide watertight drainage sumps shall be at the Contractor's expense.
- I. The Contractor will be responsible for installing temporary water and power metering equipment on the existing utility lines located within the transload area.

3.03 BARGE TRANSIT TO TRANSLOAD SITE

- A. Barges transiting dredge material from the Pier 4 site to the transload site shall provide watertight containment of all dredged material during barge loading, transit, and unloading. Dredged material includes water, soil, sediment, riprap, and debris. Dredged material shall not be piled above the barge sidewalls at any time.
- B. The Contractor's proposed method for providing watertight containment of dredged material on transit barges shall be included in the TTD submittal and shall be verified through a leak test. The leak test shall consist of completely filling the watertight containment area of a clean barge with seawater, visually inspecting the barge containment area for leaks, and measuring water loss over a 4 hour period. No measureable loss of water will be allowed within the 4 hour period. All water used for leak testing shall be discharged back into the waterway from which it came. Performance of the test will be observed by Port personnel. Documentation of successful leak testing shall be provided as a supplement to the TTD and shall be submitted prior to the start of transloading. All repairs or modifications to the Contractor's proposed dredged material containment system that are necessary to demonstrate watertight containment shall be performed at the Contractor's expense.
- C. Any barge that exhibits leakage during transloading shall be removed from the equipment utilized on the project until satisfactory repairs are made. Costs and penalties associated with delays due to repair or failure of the watertight containment system shall be the paid for by the Contractor.

3.04 UNLOADING OF DREDGED MATERIAL FROM BARGE

- A. Unloading of dredged material from the barge shall only occur along the dock at the transload site and shall be done in such a manner as to prevent spillage of dredged material into the waterway. All dredged material shall remain contained either within the barge or within the confines of the contained transload site.
- B. Transfer of dredged material shall occur in a fashion that minimizes splash and splatter of the material. Sheeting or equivalent impermeable lining shall be placed under the travel area of the offloading bucket between the barge and stockpile area to capture any spills.
- C. There shall be no path for dredged material to fall into the water during off-loading operations. Spill aprons or other containment devices shall be used to prevent the release of spilled material into the waterway or on uncontained landside work areas.
- D. Spill aprons shall be impermeable, uninterrupted, and structurally adequate to catch any falling material, including rain water, and hold or deflect it back into a contained area, either on shore or on the barge. Spill aprons shall be able to provide protection throughout the full tidal range and shall be wide enough that caught material will not fall off the sides. Dredged material shall not be allowed to accumulate on the spill apron.
- E. Dockside sediment control (e.g., sweeper trucks, shoveling, sweeping, wash down) shall occur as often as necessary to avoid tracking of sediment by vehicles and personnel and to generally maintain a clean site.
- F. The Port shall be notified immediately if a spill of dredged material into the waterway occurs. Spill response procedures shall follow those described in the approved TTD and in the RAWP.

3.05 DREDGED MATERIAL STOCKPILING AND DEWATERING

- A. All dredged material shall be sufficiently dewatered to meet landfill paint filter test criteria before hauling offsite. Dewatering may occur either by adding a drying agent to the material

or via passive dewatering through stockpiling, or both. All water drained from dredged sediment shall be collected and conveyed to the onsite treatment system.

- B. The Port's Geotechnical Engineer performed a laboratory test to evaluate the drainage characteristics of the dredged sediment. A memorandum summarizing the tests performed and results obtained is referenced in Section 00 31 00 – Available Project Information. Information contained in the memorandum is provided for reference only and is based on the behavior of one composite sample of material. The actual drainage characteristics of the material in the field may be different than those observed in the laboratory. The Contractor shall draw his own conclusions regarding the drainage characteristics of the dredged material based on the available reference information.
- C. It is anticipated that handling of dredged material may require the use of short-term surge piles, short-term mixing piles (if a drying agent is used) and/or long-term stockpiles in order to dewater the material to meet landfill paint filter criteria. The following measures shall be taken if piling of dredge material is necessary:
 - 1. All material shall be located within the confines of the contained transload area.
 - 2. All material piles shall be visually monitored to prevent fugitive dust. Dust control measures as described in the approved TTD shall be employed if necessary.
 - 3. All stockpile areas shall be inspected daily and after high precipitation events to verify that the drainage system is functioning and the material is properly contained. Covering of stockpiles shall be done at no additional cost to the Port.
- D. Drying agents used to dewater dredged sediment shall not introduce environmental health hazards to the project. Drying agents such as hog fuel, sawdust, lime, or cement may be used if mixed in a way that does not create fugitive dust and does not impact air and water quality. Drying agents shall not negatively impact the performance of the dredge return water treatment system or the quality of treated water discharged back into the waterway. The use of any type of drying agent shall be included in the TTD and shall be approved by the Engineer before use.

3.06 DREDGE RETURN WATER TREATMENT

- A. Dredge return water includes the water collected in the enclosed bucket during mechanical dredging and placed on barges, and the entrained water within the dredged sediment. Dredge return water shall include water pumped from the barges and water recovered from the upland sediment dewatering area. The treatment system shall also treat collected stormwater in the transload area.
- B. Treatment of all dredged return water and all runoff from rainfall shall be performed at an upland location at the transload site prior to discharge back into the waterway.
- C. The Contractor shall design, specify, operate, maintain, and monitor a treatment system that includes the following treatment processes:
 - 1. Primary settling and flow equalization to provide initial storage for disparate barge offload, dewatering, and treatment flow rates.
 - 2. Electrocoagulation to coagulate, flocculate, and settle suspended solids without the addition of chemical coagulants.
 - 3. Sand filtration to remove dissolved solids and turbidity to below discharge limits.
 - 4. Granular activated carbon (GAC) to remove TBT to below the discharge limits; and

5. Treated water storage to be used for backwash water supply and for sampling and confirmation of treatment effectiveness during hot spot dredging.
- D. Under conditions included in the RAWP, no chemical coagulants shall be used.
- E. The treatment system shall:
 1. Be scaled and operated to not inhibit the dredging schedule and to treat collected stormwater within the transload area.
 2. Have sufficient redundancy to operate during routine maintenance, which includes removal of solids from primary settling, calibration of electrocoagulation system, backwash of sand filters, and backwash of GAC media.
 3. Have automated system monitoring to measure pH and turbidity of water after electrocoagulation, sand filtration, and GAC treatment and to measure pressure loss across every filter and GAC unit.
 4. Have serial GAC vessels that allow Contractor to collect water samples for analysis of TBT and indicator parameters to assess depletion of the GAC.
 5. Have automated controls that prevent discharge of reject water that exceeds system control limits. Turbidity control limit shall be set as low as practicable before water is discharged through GAC to mitigate head loss and depletion of the GAC.
 6. Retreat reject water until it meets discharge criteria.
 7. Allow for sufficient daily downtime that can be used to catch-up water processing due to system maintenance or to retreat reject water.
 8. Have sufficient treated water storage. Treated water storage shall be used to backwash filters. Filter backwash water shall be re-treated in treatment system. During hot spot dredging, influent and effluent from the treatment system shall be sampled pursuant to Section 6.3 of the WQMPP in the RAWP. No water shall be discharged through the end-of-pipe compliance point until analytical results from Day 1 show that the concentration of TBT is below the discharge limit.
- F. Treated water shall be discharged from the end-of-pipe of the treatment system through a treated water conveyance pipe to a marine outfall specifically established for discharge of treated dredged return water. The marine outfall shall be constructed in the EPA-approved location at the north end of the Sitcum Waterway as shown on the Drawings. The marine outfall shall be constructed to inhibit scouring or damaging existing conditions.
- G. Stormwater control and treatment:
 1. The treatment system shall be completely separate from the existing permitted stormwater sewer system.
 2. Stormwater within the transload area and runoff entering the containment area shall be captured, collected, and treated by the treatment system.
- H. The Contractor shall bear responsibility for the effectiveness, efficiency, and reliability of the treatment system and for consequential project delays attributed to sub-par performance of the treatment system. The Contractor shall plan and account for a delay during hot spot dredging due to the evaluation of system performance, which allows up to four (4) days of turnaround time for the analysis of TBT. The Contractor shall bear costs for additional project delays due to system shutdown because of maintenance or monitoring conditions that warrant subsequent re-evaluation of performance.

- I. The RAWP establishes the treatment criteria for pH and turbidity, and TBT at the treatment system end-of-pipe and at the edge of the mixing zone boundary in marine water, and shall supersede the requirements in this specification, if different. The compliance points are the end-of-pipe of the treatment system, prior to the treated water conveyance pipe, and the edge of the mixing zone at 150 feet from the marine outfall. The discharge limits are:
 - 1. End-of-pipe of treatment system:
TBT: less than 0.42 µg/L
Turbidity: Less than 10 NTU over background when background is 50 NTU or less, or less than 20% over background when background is greater than 50 NTU
pH: 7.0-8.5 SU
 - 2. Edge of Mixing Zone in Marine Water (150 feet from marine outfall):
TBT: less than 0.0074 µg/L
- J. The Water Quality Monitoring and Protection Plan (WQMPP) in the EPA-approved RAWP defines the monitoring requirements for the dredge return water treatment system discharge, and shall supersede this specification, if different. The Contractor shall implement intensive and routine monitoring schedules as described in the RAWP. The Contractor shall abide by notification, response, system control, and reporting requirements in the RAWP.
- K. The Contractor shall develop a system monitoring, control, and response plan to optimize performance of electrocoagulation, preserve the permeability and sorptivity of the GAC, and provide an early warning system for potential exceedances at the end-of-pipe compliance point.
- L. Reference documents:
 - 1. RAWP Appendix C: Technical Memorandum, Port of Tacoma Pier 4 Phase 1 Removal Action Project, Project No. 091452 – Dredge Return Water Treatment Criteria, Evaluation of Treatment Alternatives, and Recommended Approach to Monitoring. The Technical Memorandum provides a basis for selection of water treatment technology. The RAWP supersedes the recommended approach for monitoring described in the Technical Memorandum.
 - 2. Removal Action Work Plan (RAWP): Includes Water Quality Monitoring and Protection Plan.

3.07 WATER QUALITY MONITORING

- A. The Contractor is responsible for all water quality monitoring and is responsible for meeting Water Quality criteria as defined in the EPA-approved WQMPP (located in the RAWP).

3.08 OFFSITE TRANSPORT & DISPOSAL OF DREDGED MATERIAL

- A. All dredged material processed through the transload site shall be disposed of at an approved landfill permitted to accept the contaminated material. The Port has received Waste Disposal Authorization (WDA) for disposal at LRI for the approximate quantity of TBT contaminated material anticipated to be dredged as part of this project. The WDA certificate is included in the Appendix. If the Contractor chooses to dispose of the contaminated material at LRI, then he shall comply with all provisions of the WDA and will be required to provide signed certification stating agreement. Failure to comply with the WDA at any time during the project may result in its immediate revocation. If the Contractor chooses to dispose of the contaminated material at an alternate landfill, then he shall obtain and comply with a WDA issued by that landfill. All

costs associated with obtaining a WDA from an alternate landfill shall be borne by the Contractor.

- B. The Contractor shall coordinate with the landfill regarding all constraints on material receiving capacity, hours of operation, and delivery logistics and incorporate this information into his construction schedule. Information gathered through coordination with the landfill and used for project planning shall be identified in the TTD.
- C. All fees associated with disposal of dredged material at the landfill shall be paid by the Contractor and shall be included in the base bid, including fees associated with additional disposal tonnage due to the addition of drying agents to dewater the material.
- D. Truck loading shall take place within an exclusion zone that is established to contain any spilled material that may occur while loading. Loading practices such as partially loading to provide adequate freeboard and/or loading near the centerline of the truck bed shall be employed to prevent spillage.
- E. All truck loads shall be covered to prevent loss of material during transport to the landfill.
- F. A wheel wash shall be installed immediately adjacent to the outbound gate of the transload area to prevent migration of contaminated material into the APMT container yard. If necessary, the exterior of the haul trucks shall be swept of excess material prior to leaving the loading area. All water generated from cleaning the exterior of the trucks shall be treated onsite.
- G. All loads shall be inspected by the Contractor to ensure that no dredged materials are on the outside of the truck and that the loads are covered and not leaking.
- H. All haul trucks shall be sealed or lined to prevent leaking of water during transportation. 100 percent of all liquid shall be contained within the transportation vehicle.
- I. The Port shall be notified immediately if a spill of dredged material occurs in route to the landfill. Spill response procedures shall follow those described in the approved TTD and in the RAWP.

3.09 TRANSLOAD REPORTS

- A. Daily Transload Report: The Contractor shall keep a daily record of the estimated quantity of dredged material delivered to the transload site, the number of barge trips made to the site, the quantity of material delivered to the landfill (including weight tickets and documentation that all material was delivered), the number of truck trips made to the landfill, the volume of water treated through the onsite treatment system, the volume of treated water discharged back into the Sitcum Waterway, results from water quality monitoring, and a summary of other details of the work. This daily record shall be submitted to the Engineer with a transmittal letter the morning following completion of work on the date of the Daily Report. The Daily Report shall be signed by the Contractor's transloading superintendent or quality control manager.
- B. Weekly Transload Report: The Contractor shall summarize the week's work in a weekly report to be submitted to the Engineer the following Monday morning. The weekly report shall identify work completed to date and anticipated work to be completed in the present week.
- C. Transload Closure Report: The Contractor shall prepare a closure report that summarizes all the weekly reports and identifies Contractor estimates of the total volume of transloaded dredge material, including the total volume of treated water discharged into the Sitcum Waterway.

3.10 SITE CLEANUP

- A. At the conclusion of the transload operation the Contractor shall return the site to the Port in its pre-construction condition. Site cleanup shall include, but not be limited, to the following:

1. Removal of all Contractor-installed temporary structures, utilities, protection devices, etc.
 2. Pressure washing of pavement. All wash water shall be treated through the onsite treatment system.
 3. Repair of existing structure that was damaged during the transload operation.
 4. Repair of pavement damaged during the transload operation.
 5. Unplugging of stormwater pipes at existing catch basins.
 6. Repainting of bullrail marking damaged during transload operations.
 7. Removal of pier deck drain plugs.
 8. Removal of temporary fender/mooring piles installed in front of the dock.
 9. Removal of all utility metering devices.
 10. Replacement of removed wheel stops.
 11. Removal of temporary curbing or flow control structures
 12. Removal of treatment system, including discharge piping and temporary outfall structures.
 13. 13. Removal of Contractor installed fences and traffic control measures.
- B. Engineer's approval that the site has been restored to its pre-construction condition must be obtained prior to the Contractor vacating the site.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

- A. The provisions and intent of the Contract, including the General Condition and General Requirements, apply to this work as if specified in this section. Work related to this section is described in the following sections:
 - 1. Section 01 14 00 – Work Restrictions
 - 2. Section 02 41 00 – Demolition
 - 3. Section 05 50 00 – Metal Fabrications
 - 4. Section 31 62 00 – Driven Piles

1.02 DESCRIPTION OF WORK

- A. The extent of the work is indicated on the Drawings. The work includes the requirements for providing temporary private aids to navigation (PATON), relocating existing PATON and existing supporting structures, and furnishing new components for a complete relocated navigation light system in conformance with these specifications and the plans and details on the Drawings.
- B. PATON will include, but are not limited to, lights, lighted buoys, unlighted buoys, reflective material, and any other product that may be necessary to facilitate safe vessel passage and reduce the risk of damage to vessels and improvements in the shipping channel.
- C. Specific work elements include:
 - 1. Furnishing and installing Temporary Navigation Markers (TNM) during relocation of permanent PATON.
 - 2. Removing and relocating existing lighting equipment to the new locations indicated on the plans.
 - 3. Furnishing and installing a new steel pile-supported platform for relocated light tower #4.
 - 4. Furnishing and installing new steel piles to supported the relocated platform and light tower #3.
 - 5. Providing a fully functioning navigation system for the duration of the contract period and providing on-going maintenance of system components and emergency repair response for the duration of the contract.

1.03 QUALITY ASSURANCE

- A. Engage an experienced PATON installer and fabricator having at least five (5) years experience with similar projects and having completed at five similar aids to navigation projects with similar project elements and equipment.
- B. Comply with the rules, regulations, and procedures pertaining to PATON set forth in the U.S. Coast Guard (USCG) Code of Federal Regulations (CFR), Title 33, Chapter 1, Parts 62, 64 and 66.
- C. Issuance of Local Notice to Mariners (LNM).
- D. Field survey work, the Navigation Light Survey, and as-built PATON survey shall be prepared and certified by a Washington state licensed surveyor in accordance with industry standard practices.

- E. The Port will provide inspection services. The Contractor shall provide all necessary assistance in carrying out such inspections and tests, at no additional cost to the Port.

1.04 SUBMITTALS

- A. Submit an inventory of existing equipment to be relocated and manufacturer's data sheets for new materials, mounting equipment and accessories necessary for the new installation. Identify any equipment not suitable for relocation and provide manufacturers data sheets for equivalent replacements.
- B. Submit shop drawings, catalog cuts and materials specifications for temporary floating buoys. Include data for buoys, anchorage equipment, holding chains and accessories, lights, reflective material, paint, and other material.
- C. Submit a Navigation Light Relocation Plan to the Engineer for review. Include the salvage and relocation methods, sequence of work, schedule, maintenance plan, and removal plan. Sequencing, schedule, and constraints shall be as indicated on the Drawings, as directed by the Engineer, and in accordance with regulatory requirements.
- D. Submit a Navigation Light Survey to the Engineer. Include accurate field surveyed locations of existing PATON (Lights 3 and 4) to be relocated, adjacent PATON remaining in-place (Lights 5 and 6) and existing channel and pier head lines. Plan shall include surveyed focal plane elevations of all 4 existing lights, accurate seafloor elevations at proposed temporary PATON locations, and proposed locations of temporary floating navigation markers and permanent relocated PATON (Lights 3 and 4). Plan shall demonstrate that the temporary and permanent relocated PATON will be installed in accurate vertical and horizontal alignment with the existing system, channel lines and pier head lines.
- E. Submit qualifications of PATON fabricator and installer. Provide resume for PATON supervisor along with 24-hour contact information for the emergency response crew.

PART 2 - PRODUCTS

2.01 TEMPORARY NAVIGATION MARKER

- A. Each Temporary Navigation Marker (TNM) shall be a Contractor designed system consisting of: floating buoy, anchorage system, reflective surfaces, navigation placards, and solar powered light. All work shall be in compliance with U.S. Aids to Navigation System and the USCG, as specified in the USCG CFR, Title 33, Chapter 1, Parts 62, 64 and 66 and the details on the Drawings.
- B. The TNM shall be a system suitable for remaining in place and functioning satisfactorily for a period of approximately 12 months. Components and materials shall be suitable for the environmental conditions at the project site. Lights shall be visible for a distance of 2 miles in clear conditions. The visibility and functionality of the replacement TNM shall meet or exceed the performance of the PATON it is replacing.
- C. The anchorage system shall be capable of securely holding the buoy in place under all anticipated conditions and easily removable after completion of the project. All components of the system shall be easily removed at the completion of the project.

2.02 RELOCATED EQUIPMENT

- A. Contractor shall provide any and all equipment, hardware and accessories necessary to reinstall the existing lights and markers in their new location. New materials shall be equal to or exceed the quality of the existing equipment and be in accordance with the manufacturers recommendations.

- B. Repairable elements of the existing equipment shall be replaced using original manufacturers parts or be in accordance with the manufacturers recommendations.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Each phase of the relocation work shall not commence until an applicable LNM has been reviewed and issued by the USCG and the Contractor has received approval to proceed by the Engineer.
- B. Install, maintain, and operate PATON according to the approved Navigation Light Relocation Plan and the Navigation Light Survey and according to manufacturer's recommendations and applicable regulations.
- C. Contractor shall plan and sequence work such that at all times the system consists of 4 fully functioning PATON consisting of lights 3,4,5 and 6; or a TNM in place of the permanent light.
- D. Contractor shall plan and sequence work in coordination with the operations of marine traffic, the Puget Sound Pilots and the impacted adjacent marine terminals.
- E. Contractor shall inspect each component of the PATON equipment to be relocated and repair and replace elements as needed to insure the equipment can function properly when installed in the new location. If new parts are required, the extra work and materials will be considered Changed Work.
- F. Contractor shall provide all new mounting hardware for reinstallation of PATON equipment at no added cost.
- G. Inspect the TNM daily and repair and replace components as necessary, in accordance with manufacturer's specifications to keep the system functioning properly.
- H. Contractor shall provide a qualified PATON supervisor, emergency response crew and equipment to respond to maintenance and repair issues with the navigation system. The supervisor and crew shall be available to respond on a 24-hour basis with response time within 6 hours of notification.

3.02 INSTALLATION TOLERANCE AND COMMISSIONING

- A. Permanent PATON lights shall be installed within one foot of the horizontal location established by the Navigation Light Survey and with the focal plane of each light within 2-inches of the required elevation.
- B. TNM shall be installed with a tolerance of two-feet measured horizontally with the focal plane of the light within 6-inches of the required elevation when measured with no current.
- C. Prior to activating the TNM and each of the permanent PATON lights the Contractor shall verify and provide documentation to the Engineer that each element has been installed accurately and will function reliably for their intended function. Prior to activation Contractor shall facilitate Engineers inspection of each element and obtain Engineers approval to activate.

3.03 SYSTEM MAINTENANCE

- A. Contractor shall maintain the proper function of TNM and relocated PATON lights for the duration of the contract period. The PATON emergency response crew and equipment shall available for the duration of the contract period.

- B. Contractor shall coordinate maintenance and emergency repairs with the Port, Puget Sound Pilots and US. Coast Guard and take all measures necessary to maintain a safe condition for transiting vessels.

3.04 PROJECT CLOSE OUT

- A. Prior to removal of TNM and after commissioning of relocated PATON lights Contractor shall provide an as-built PATON survey of the installed system identifying the location and elevation of lights 3,4,5,and 6, channel lines, and pier head lines.
- B. At the completion of the as-built PATON survey Contractor shall remove the all components of the TNM and deliver to the Port at a location identified by the Engineer. Protect and repair components as needed to deliver a functioning system to the Port.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 01 45 00 - Quality Control
 - 2. Section 01 50 00 - Temporary Facilities and Controls
 - 3. Section 01 71 23 - Field Engineering
 - 4. Section 31 00 00 - Earthwork
 - 5. Section 35 20 23 - Dredging

1.02 DESCRIPTION OF WORK:

- A. The work includes furnishing of all material, labor and equipment necessary for construction of as-needed temporary slope protection consisting of recycled rock rip rap. The intent is to leave the majority of the dredged cut slope un-protected, except as noted on the Drawings or as directed by the Engineer if additional protection is needed at the existing electric substation.

1.03 QUALITY ASSURANCE:

- A. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. In the event of rejection, it shall be the responsibility of the Contractor to remove all stockpiles of rejected material from the site.

1.04 SUBMITTALS:

- A. Submit product data sheets for Geotextile Fabric indicated on the Drawings.

PART 2 - PRODUCTS

2.01 RECYCLED ROCK RIP RAP

- A. Recycled rock riprap shall be material salvaged off the existing slope by the Contractor from the clean dredge areas. Material selected for reuse shall be suitable for reuse and free of sediment and any other detrimental material.
- B. The size and grading of the reused recycled rock shall be determined by the Contractor and approved by the Engineer as suitable for reuse as temporary slope protection. Recycled material designated for reuse shall be stockpiled on-site and approved by the Engineer prior to installation. Sufficient material shall be stored on-site to provide a stockpile for initial installation and on-going maintenance for the duration of the contract.

PART 3 - EXECUTION

3.01 PLACEMENT:

- A. The intent of this work is to provide temporary slope stability at the electrical substation and scour protection in front of the modified outfalls as indicated on the Drawings. Recycled rock riprap shall be placed over Geotextile Fabric as indicated on the Drawings to form a tight blanket of protection against movement and erosion of the slope under and adjacent to the electrical substation and modified outfalls. Dress the rock to a uniform stable interlocking thickness as indicated on the Drawings. Geotextile Fabric shall be installed as recommended by the manufacturer.

3.02 MAINTENANCE:

- A. The Contractor shall maintain bank protection for the duration of the contract. Any material displaced by erosion and sloughing shall be replaced to the lines and grades shown or as directed by the Engineer. Additional work and materials beyond that indicated on the Drawings or as directed by the Engineer will be Changed Work.

END OF SECTION

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. Work related to this section is described in the following sections:
 - 1. Section 01 45 00 – Quality Control
 - 2. Section 01 71 23 – Field Engineering
 - 3. Section 35 20 23 – Dredging
 - 4. Appendix – Removal Action Work Plan (RAWP)

1.02 DESCRIPTION OF WORK

- A. The work includes furnishing all labor, materials, tools, and equipment necessary for contingent post-dredge placement of sand fill in the dredged hot spots at the direction of the Engineer. All work shall be performed as described in these specifications and in strict compliance with the Removal Action Work Plan (RAWP).

1.03 QUALITY ASSURANCE

- A. Sampling, testing and inspection for compliance with the Contract documents shall be in accordance with the requirements specified herein, and in Section 01 45 00 – Quality Control. Tests conducted for the sole benefit of the Contractor shall be at the Contractor's expense.

1.04 REFERENCE STANDARDS

- A. American Society for Testing Material (ASTM), Standard Specifications and Standard Test Methods, designated by basic reference in this section (use the most current edition at the time of bid unless otherwise indicated).
- B. Standard Specifications for Road, Bridge, and Municipal Construction, M41-10, 2014 edition, by the Washington Department of Transportation (WSDOT Standard Specifications).

1.05 SUBMITTALS

- A. For imported materials, the Contractor shall submit test reports to the Engineer for the following:
 - 1. Import Source Characterization including the following:
 - a. Source Identification.
 - b. Import Material Characterization Test Report.
- B. Daily Post-Dredge Material Placement Reports.
- C. Shipping Receipts and Material Volumes for all Import Materials.
- D. Test reports shall be provided by a laboratory that is independent of the supplier.
- E. Written description of the means, methods, equipment, and controls to be used for placement of Hot Spot Fill material.

PART 2 – PRODUCTS

2.01 MATERIAL SOURCES

- A. Materials shall be of the quality, size, shape, and gradation or equal to that specified herein. Material sources shall be selected well in advance of the time when the material will be required in the work. Suitable representative samples and test reports, as described below, must be submitted to and approved by the Engineer prior to delivery of materials to the jobsite.

2.02 BORROW SOURCE CHARACTERIZATION

- A. These activities shall be performed by the Contractor as specified below to assure that imported materials are natural, native, virgin materials, free of unwanted materials including debris or recycled materials, and meet the requirements of these Contract documents.
- B. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. In the event of rejection, it shall be the responsibility of the Contractor to remove all stockpiles of rejected material from the site.
 - 1. General:
 - a. The Contractor shall submit a characterization of any and all imported material prior to any on-site placement. The characterization will include a physical and chemical analysis of a material source sample, site inspection, and site characterization, as described below.
 - 2. Source Identification
 - a. Prior to material source sampling, the Contractor will provide documentation of the origin of imported material.
 - 3. Inspection of Source
 - a. The Contractor shall inspect all material sources. During such inspection, the Contractor shall assure that materials to be delivered to the jobsite will meet the appropriate specifications. The Contractor shall provide the Engineer two weeks notice of such inspections. The Engineer or a designated representative may accompany the Contractor to witness such inspections. This witnessing shall in no way release the Contractor from complying with the Specifications and in no way shall be construed as approval of any particular source of material.
 - 4. Testing, Reporting, and Certification
 - a. The Contractor shall test sample(s) of materials to be imported for the following:
 - 1) Grain Size Distribution (ASTM D 422-63).
 - 2) Particle Specific Gravity (ASTM D 854).
 - 3) Modified Proctor (ASTM D 1557-78/D 698-78) for applicable materials (i.e., materials that will not require compaction).
 - 4) Weight per unit volume of uncompacted materials.
 - 5) Priority Pollutant Metals (EPA SW 846 6010B/6020/ 7000 Series).
 - 6) Volatile Organic Compounds (EPA SW 846 8260B).
 - 7) Semi-volatile Organic Compounds (EPA SW 846 8270C).
 - 8) Chlorinated Pesticides (EPA Method 8081).

- 9) Polychlorinated Biphenyls (EPA Method 8082).
 - 10) Tributyltin (Krone Method).
 - 11) Total Organic Carbon (EPA Method 9060).
 - b. The results of such tests shall be provided at least two weeks before delivery of the materials to the jobsite and shall be no more than 3 months old. The results of each test shall be provided in a report that clearly identifies the following:
 - 1) Source of samples.
 - 2) Sampling dates.
 - 3) Chain of custody.
 - 4) Sampling locations.
 - 5) Contractor's certification that the samples tested and the results provided are representative of materials that shall be delivered to the site.
 - c. The Contractor shall ensure the chemical nature of the material used for post-dredge material placement does not pose a risk to human health or the environment. As such, imported Hot Spot Fill material shall be less than or equal to the Sediment Quality Objective (SQO) concentrations for Commencement Bay (EPA 1989) and the Explanation of Significant Differences (EPA 2000), or the Sediment Quality Standards (SQS) listed in the Sediment Management Standards for the State of Washington (Chapter 173-204 WAC) for constituents for which SQO or SQS criteria have been established, whichever is lower. For Tributyltin, post-dredge material shall be less than the Dredged Material Management Program (DMMP) bioaccumulation trigger/project screening level of 73 µg/kg.
5. Inspection of Materials at the Jobsite:
- a. The Contractor shall visually inspect truckloads or barge loads of import material upon delivery. Materials shall be inspected for presence of foreign, recycled, or reprocessed material. The Engineer may at any and all times perform an independent inspection. Material may be rejected due to identification of any such material or as a result of substandard test results. Materials may be segregated for testing based on appearance or odor. Segregated material may be tested according to procedures at the Engineer's discretion

2.03 HOT SPOT FILL MATERIAL

- A. The source of Hot Spot fill material shall be from a borrow site approved by the Engineer.

1. Materials to be used for Hot Spot fill shall be clean sand from an approved borrow site.
 - a. Hot spot fill materials shall have the following gradation:

U.S. Standard	Percent Passing
<u>Sieve Size</u>	<u>(by weight)</u>
3/8-inch	100
No. 4	85 to 100
No. 10	25 to 45
No. 40	2 to 8

No. 200

2 max. (wet screen)

PART 3 - EXECUTION

3.01 GENERAL

- A. Post-dredge material placement will involve placement of clean sand material in hot spot excavation areas designated by the Engineer. Materials will be placed to the extent and thicknesses designated by the Engineer, with a minimum thickness of 1 foot. This is a contingent activity, so placement will be determined based on post-dredge confirmational sampling results. Subaqueous placement of post-dredge materials shall be accomplished such that material deposits form a uniform layer of the required thickness over the designated area, and water quality compliance criteria are not exceeded. Suspension of bottom sediments shall be limited. Should placement of Hot Spot fill be required, it will be payable at the unit contract bid price for Bid Item, "Hot Spot Fill".

3.02 PLACEMENT OF HOT SPOT FILL

- A. The following Best Management Practices shall be utilized during post-dredge material placement:
 - 1. Materials shall be placed by controlled release from a clamshell bucket or other appropriate device. Materials shall be uniformly discharged as a stream of material, as opposed to being abruptly discharged, in order to provide for uniform bottom coverage and minimize impacts to the receiving surface.
 - 2. Sand shall be placed from less than 10 feet above the mudline depth to limit sediment disturbance and suspension.
- B. The Contractor shall submit daily Post-Dredge Material Placement Reports, as part of the daily Quality Control Reports in accordance with Section 01 45 00, QUALITY CONTROL, to the Engineer. The reports shall include tabulated summaries of volumes placed. Shipping receipts and material volumes for all materials delivered to the site shall also be submitted to the Engineer on a daily basis.
- C. Placement of Hot Spot Fill may be verified through additional hydrographic surveying performed by the Contractor at the direction of the Engineer. The Contractor will be compensated for the cost of additional surveying specifically required to confirm placement of Hot Spot Fill. Confirmation of placement of Hot Spot Fill through performance of the Final Post-Dredge Survey will not be considered additional surveying.

END OF SECTION