PORT OF TACOMA
ON BEHALF OF
THE NORTHWEST SEAPORT ALLIANCE

PCT TRUCK STAGING PROJECT

PROJECT NO. 091606
CONTRACT NO. 070287

Thais Howard, P.E.

Director, Engineering

Pedro Reyes, P.E

Project Manager

END OF PROJECT TITLE PAGE

PROCUREMENT AND CONTRACTING REQUIREMENTS

SPECIFICATIONS

END OF SECTION

PORT OF TACOMA PCT TRUCK STAGING

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 PCT Truck Staging 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:

- Section 01 14 00 Work Restrictions
- Section 01 57 23 Temporary Storm Water Pollution Control
- Section 02 41 13 Selective Site Demolition
- Section 03 20 00 Concrete Reinforcing
- Section 03 30 00 Cast in Place Concrete
- Section 31 00 00 Earthwork
- Section 31 23 19 Dewatering
- Section 31 23 33 Trenching and Backfilling
- Section 31 41 00 Shoring and Underpinning
- Section 32 11 23 Aggregate Base Courses
- Section 32 12 16 Asphalt Paving
- Section 32 17 23 Pavement Markings and Signing
- Section 32 31 13 Chain Link Fence and Gates
- Section 33 40 00 Storm Drainage Utilities
- Section 33 44 19 Storm Water Treatment

PORT OF TACOMA PCT TRUCK STAGING

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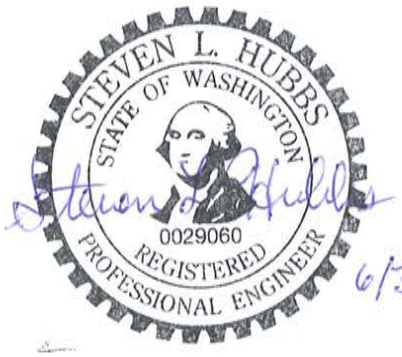
- Section 26 01 26 Acceptance Testing of Electrical Systems
- Section 26 05 00 Common Work Results for Electrical
- Section 26 05 19 Low Voltage Electrical Power Conductors and Cables
- Section 26 05 33 Raceways and Boxes for Electrical Systems
- Section 26 05 53 Identification for Electrical Systems
- Section 26 24 16 Panelboards
- Section 26 27 26 Wiring Devices
- Section 26 56 36 Lighting Fixtures
- Section 33 71 19 Electrical Underground Ducts and Manholes
- Section 33 79 00 Site Grounding



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PART 1 - GENERAL

1.01 SUMMARY

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

Sheet No.	Sheet Designation	Sheet Title
1	G1	Cover Sheet
2	G2	Key Plan and Sheet Index
3	G3	Legend, Notes and Abbreviations
4	G4	Overall Site Plan
5	D1.1	PCT Demolition & TESC Plan - Area 1
6	D1.2	PCT Demolition & TESC Plan - Area 2
7	D2.0	Demolition & TESC Details & Notes
8	D3.1	Portac Demo & TESC Plan - Area A
9	D3.2	Portac Demo & TESC Plan - Area B
10	D3.3	Portac Demo & TESC Plan - Area C
11	C1.1	PCT Site Plan - Area 1
12	C1.2	PCT Site Plan - Area 2
13	C2.1	PCT Grading & Paving Plan - Area 1
14	C2.2	PCT Grading & Paving Plan - Area 2
15	C3.1	PCT Utility Plan - Area 1
16	C3.2	PCT Utility Plan - Area 2
17	C4.0	PCT Site Sections
18	C4.1	PCT Site Sections
19	C4.2	PCT Site Sections
20	C4.3	PCT Site Sections
21	C5.0	Paving Details
22	C5.1	Fencing Details
23	C5.2	Fencing Details
24	C5.3	Fencing Details
25	C5.4	Details
26	C5.5	Details
27	C5.6	Stormwater Details
28	C5.7	Station Offset and Control Tables

Sheet No.	Sheet Designation	Sheet Title
29	C5.8	Enlarged Site Plan
30	C10.0	Portac Overall Site Plan
31	C11.1	Portac Site Plan - Area A
32	C11.2	Portac Site Plan - Area B
33	C11.3	Portac Site Plan - Area C
34	C11.4	Portac Horizontal Control
35	C12.1	Portac Details
36	C12.2	Portac Site Sections
37	C12.3	Portac Details
38	E1.0	Partial Electrical Site Plan - Area 1
39	E1.1	Partial Electrical Site Plan - Area A
40	E2.0	PCT Gate Electrical Details
41	E3.0	Portac Gate Electrical Details
42	1	Cover Sheet
43	2	Survey
44	3	Survey
45	4	Demolition and TESC Plan
46	5	Demolition and TESC Plan
47	6	TESC Details
48	7	Paving-Utility Plan
49	8	Channelization and Signage Plan
50	9	Channelization and Signage Plan
51	10	Driveway Sections
52	11	Details
53	12	Work Order General Notes

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:

PCT TRUCK STAGING

PROJECT NO. 091606 | CONTRACT NO. 070287

Scope of Work:	The work required for this project includes: Drainage improvements, placement of asphalt pavement, installation of chainlink fencing, gates, relocation of utilities, pavement striping, and lighting installation.
Bid Estimate:	Estimated cost range is $1,800,000 to $2,000,000, plus Washington State Sales Tax (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 PM on June 23, 2016,** 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 **Monday, June 13, 2016 at 10:00 AM**. The site visit will convene at the Fabulich Center, located at 3600 Port of Tacoma Road.
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 procurement@portoftacoma.com, attention Jana Prince. No oral answers will be binding by the Port.
Bidding Documents:	Plans, Specifications, Addenda, and Plan Holder's 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 (070287). 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 procurement@portoftacoma.com with questions. Holder's Lists will be updated regularly. Additional Instructions available in 00 21 00 - 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. An “Additive Bid” (or “Additive”) is an amount stated in the Bid to add specified features of the work.

C. "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.

D. The “Award Requirements” include the statutory requirements as a condition precedent to Award.

E. 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.

F. 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.

G. 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.

H. 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.

I. A “Bidder” is a person or entity who submits a Bid.

J. 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.

K. 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.

L. 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 then '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. Step by Step directions are available at: http://portoftacoma.com/contracts/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 seven (7) 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 **seven (7) days prior to the Bid Date**.

5. **Request to Modify Responsibility Criteria. No later than seven (7) 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. Work areas to be examined during the site visit may contain hazardous materials or conditions. Attendees should review the information and safety precautions set forth in the Contract Documents to determine for themselves appropriate protective clothing or equipment. Attendees further agree to indemnify and hold the Port harmless from any and all claims of personal injury arising from their participation in the site visit.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.

8. 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 distributed by Builders Exchange of Washington or any other source specified by the Port for the Project.

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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. 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.

9. 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. 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.

D. 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.

E. 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 (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. Within ten (10) days after the Port's Notice of Award of the Contract, the apparent low Bidder shall also submit to the Port, if requested:

    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 7 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 SUMMARY

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

1.02 HAZARDOUS MATERIALS NOTICE

A. The Port is reasonably certain that asbestos and lead will not be disturbed by the project. If the Contractor encounters material suspected of containing lead or asbestos which will interfere with the execution of the work, the Contractor shall stop work and notify the Engineer.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

BIDDER'S NAME: _____

PROJECT TITLE: **PCT TRUCK STAGING**

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 bid 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 bidding documents, and that the Bidder will complete the work within the time stated, and that Bidder will accept in full payment therefore the lump sums and unit prices set forth below.

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

ITEM NO.	DESCRIPTION OF ITEM	QTY	UOM	UNIT PRICE	EXTENDED PRICE
1	PCT Staging Project - All Other Work	1	LS		
2	Portac Project - All Other Work	1	LS		
3	Chain Link Fence, 8-Ft PVC Coated Standard - PCT	3,075	LF		
4	Chain Link Fence, 8-Ft PVC Coated Standard - Portac	830	LF		
5	Chain Link Fence, 8-Ft PVC Coated Sloped Condition - Portac	3,620	LF		
6	Chain Link Fence, 8-Ft PVC Coated Bolted Condition - Portac	730	LF		
7	Manual Chain Link Double Swing Gate, 24 Ft - PCT	1	LS		
8	Manual Chain Link Rolling Gate, 30 Ft - PCT	1	LS		
9	Manual Chain Link Rolling Gate, 17 Ft - PCT	1	LS		
10	Motorized Chain Link Gate With Card Readers, 24 Ft - PCT	1	LS		
11	Manual Chain Link Swing Gate, 12ft - PCT	1	LS		
12	Manual Chain Link Swing Gate, 24 Ft - Portac	1	LS		
13	Motorized Chain Link Gate With Card Reader, 20 Ft - Portac	1	LS		
14	Asphalt Class 1/2" Pg 70-22 - PCT	9,050	TON		
15	Stormwater and Utility Improvements - PCT	1	LS		
				BASE BID SUBTOTAL	

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.

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

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)

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	

[*Remainder of Page Left Intentionally Blank; Signature Page Immediately Follows*]

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 bidder.

Name of Firm	Date
Signature	Print Name, Title
Mailing Address	City, State, Zip Code
Telephone Number	Email Address
WA State Contractor's License 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

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 _____, 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

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: _____

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? **Attach* *letter dated within 6 months of bid opening date.*

   **Request a letter electronically by clicking on the following link https://fortress.wa.gov/esd/twt/pwcinternet/ or by emailing a request to publicworks@esd.wa.gov . .*

   ☐ 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 SUBCONTRACTOR VERIFICATION

A. The Bidder and its subcontractors to verify that its subcontractors at each tier meet the responsibility criteria as required by RCW 39.06.020 and 39.04.350.

1. Bidder shall verify major subcontractors meet the responsibility criteria required. Fill out one Port of Tacoma Public Works Project Bidder Evaluation Checklist for Subcontractors for each major subcontractor and submit to the Port with this form. Backup documentation is not required to be submitted.

1.5 PROJECT EXAMPLE SHEETS

A. As part of completing this Responsibility Detail Form, **submit the following information with the completed Responsibility Detail Form**:

1. Bidder's recent job resume including a list of similar projects performed and contact information for the similar project Owner(s).
2. Resumes of bidder's proposed project manager and job superintendent.

B. 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.

C. The Bidder shall submit this completed, **SIGNED** Responsibility Detail Form electronically (PDF), with all requested backup documentation, via email to the Contact(s) noted on the Low Responsive Bidder Selection Notification.

PROJECT: _____

PROJECT NO. _____

CONTRACT NO. _____

Responsibility Certification Form

The Low responsive Bidder shall complete the Responsibility Detail Form, attach all documentation 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, and the backup documentation, 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

Port of Tacoma Public Works Project Bidder Evaluation Checklist for Subcontractors

Project Title _____

Bidder _____

Contract and Project Number _____

This checklist shall be completed by the Bidder and its subcontractors to verify that its subcontractors at each tier meet the responsibility criteria as required by RCW 39.06.020 and 39.04.350.
This checklist should be submitted to the Port of Tacoma Contracts Administrator within 24 hours of request. **Document verification information or backup data is not to be submitted to the Port, this information should remain on file with the Contractor and presented to the Port should it be requested at a later date.**

Item no.	Item	Initials/Comments
1.	At the time of bid submittal, have a certificate of registration in compliance with RCW 18.27: Check the L&I site https://fortress.wa.gov/lni/bbip/ Verify that a subcontractor has an electrical contractor license, if required by chapter 19.28 RCW, or an elevator contractor license, if required by chapter 70.87 RCW.	
2.	While reviewing registration information above, also check contractor's **Employer Liability Certificate** to verify workers' comp (industrial insurance) premium status – current account. Complete a "Submit Contractor Tracking Request" to be notified if the contractor fails to pay workers' comp premiums or renew their contractor registration or if their electrical contractor license is suspended or revoked within one year.	
3.	State excise tax registration number (Department of Revenue). (contractor's Washington State Unified Business Identifier and tax registration number) http://dor.wa.gov/content/doingbusiness/registermybusiness/brd/	
4.	Not disqualified from bidding on any public works contract under RCW 39.06.010 or 39.12.065(3). Check the Department of Labor and Industries http://www.lni.wa.gov/TradesLicensing/PrevWage/AwardingAgencies/DebarredContractors/	
5.	Verify subcontractors are registered with the Washington State Employment Security Department (ESD) and have an account number. Request a letter to be sent to them the subcontractor electronically by clicking on the following link https://fortress.wa.gov/esd/twt/pwcinternet/ or by email a request to publicworks@esd.wa.gov. Include ES#, UBI#, and business name in the email. Certificate of Coverage letter issued/dated within the last six months. Document if subcontractor confirms in writing under penalty of perjury that it has no employees this requirement does not apply.	

AGREEMENT BETWEEN PORT AND CONTRACTOR

THIS **AGREEMENT** is made and entered into 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: **PCT Truck Staging** **(Title)**
091606 / 070287 (Project &Contract No)
4215 SR 509 North Frontage Rd (Project Address)
Tacoma, WA (Project Address 2)

The "**Engineer**" is: **Thais Howard, P.E.** **(Engineer)**
Director of Engineering (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

The Contractor shall achieve all interim milestones as set forth in the Contract Documents and Substantial Completion of the entire Work not later than **60 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 the Work within **30 calendar days** of the date on which Substantial Completion is achieved.

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 by the prescribed date shall be **$1,000 per calendar day**. After the prescribed Final Completion date, the liquidated damages for failure to achieve Final Completion shall be **$500 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 execution date written below:

CONTRACTOR		**PORT OF TACOMA**	
By:	_____	By:	_____
Title:	_____	Title:	_____
Date	_____	Execution 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 shall execute an agreement with the Port 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	**CONTRACTOR**
_____	_____
Signature	Signature
_____	_____
Printed Name and Title	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)	**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, 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 shall execute an agreement with the Port 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, 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

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.

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.

To:	Bank Name, Address, Phone	Escrow Account No:	
		Contract No:	Port fills in
		Project No:	Port fills in
Agency:	Port of Tacoma PO Box 1837 Tacoma, WA 98401-1837	Project Title:	Port fills in

The Undersigned _____, (Contractor Name and Address) hereinafter referred to as the Contractor, has directed the Port of Tacoma, hereinafter referred to as the Port, to deliver to _____ (Name of Bank), hereinafter referred to as "You", its checks for retainage under the Contract which shall be payable to You and the Contractor jointly, and which shall be held and disposed of by You in accordance with the following instructions and upon the terms and conditions hereinafter set forth.

ESCROW INSTRUCTIONS:

1. Checks made payable to You and the Contractor jointly upon delivery to You shall be endorsed by the Contractor and by You and then forwarded for collection by You. The moneys will then be used by You to purchase, as directed by the Contractor, bonds or other securities (hereinafter collectively referred to as "Securities") chosen by the Contractor and approved by the Port. Attached is a list of Securities approved by the Port. Other Securities, except stocks, may be selected by the Contractor, subject to express prior written approval of the Port, in its sole and absolute discretion. The purchase of Securities shall be in a form which shall allow You alone to reconvert such Securities into money if You are required to do so by the Port as provided in Paragraph 4 of this Escrow Agreement.

2. When and as interest on the Securities held by You pursuant to this Agreement accrues and is paid, You shall collect such interest and forward it to the Contractor at its address designated in the first paragraph unless otherwise directed by the Contractor.

3. You are not authorized to deliver to the Contractor all or any part of the checks or moneys received by You or the Securities held by You pursuant to this Agreement (or moneys derived from the sale of such Securities, or the negotiation of the Port's checks) except in accordance with written instructions from the Port's Sr. Contract Administrator. Compliance with such instructions shall relieve You of any further liability related thereto. The estimated final completion date on the Contract underlying this Agreement is _____.

4. In the event the Port orders You to do so in writing, You shall, within ten (10) days of receipt of such order, reconvert into money some or all of the Securities held by You pursuant to this Agreement, as required to satisfy the Port's order, and return such money, together with any other moneys held by You hereunder and required to satisfy the Port's order, to the Port. Consent of Contractor shall not be required for payment to the Port hereunder, and objection or other communication from Contractor shall not prevent, delay, or otherwise affect payment to the Port forthwith in accordance with the Port's order and this Agreement.

5. The Contractor agrees to pay You as compensation for Your services hereunder as follows: Payment of all fees shall be the sole responsibility of the Contractor and shall not be deducted from any checks, moneys, Securities, or other property placed with You or held by you pursuant to this Agreement until and unless the Port directs the release thereof to the Contractor, whereupon You shall be granted a first lien upon such property released and shall be entitled to reimburse Yourself from such property for the entire amount of Your fees as provided for hereinabove. In the event that You

are made a party to any litigation with respect to the checks, moneys, Securities, or other property held by You hereunder, or in the event that the conditions of this escrow are not promptly fulfilled or that You are required to render any service not provided for in these instructions, or that there is any assignment of the interests of this escrow or any modification hereof, You shall be entitled to reasonable compensation for such extraordinary services from the Contractor and reimbursement from the Contractor for all costs and expenses, including reasonable attorney fees occasioned by such default, delay, controversy or litigation.

6. This Agreement shall not be binding until executed by Contractor and Port, and accepted by You.

7. This instrument contains the entire agreement between You, the Contractor, and the Port with respect to this escrow. There are no terms, obligations, covenants, or conditions regarding this escrow other than those contained herein, and You are not a party to nor bound by any instrument or agreement regarding this escrow other than this Agreement. You shall not be required to take notice of any default or any other matter under the Contract nor be bound by nor required to give notice or demand under the Contract, nor required to take any action whatsoever except as herein expressly provided. You shall not be liable for any loss or damage not caused by Your own negligence or wilful misconduct.

8. The foregoing provisions shall be binding upon the assigns, successors, personal representatives and heirs of the parties hereto.

9. The Contractor's Federal Income Tax Identification number is _____.

The undersigned have read and hereby approve the instructions as given above governing the administration of this escrow and do hereby execute this Agreement this ___ day of _____, 20__.

Contractor:	**Port of Tacoma**
_____	_____
Signature	Signature
_____	_____
Name/Title	Name/ Port Treasurer or Deputy Treasurer
_____	_____
Date	Date

The above escrow instructions received and accepted this _____ day of _____, 20__.

Bank: By _____ Name:_____
(Signature of Authorized Bank Officer) Title: _____

SECURITIES AUTHORIZED BY THE PORT:

1. FDIC insured time deposits and time deposits in commercial banks authorized by the Washington State Public Deposit Protection Commission.
2. Savings account deposits in commercial banks authorized by the Washington State Public Deposit Protection Commission.
3. Bills, certificates, notes or bonds of the United States;
4. Other obligations of the United States or its agencies; and
5. Obligation of any corporation wholly-owned by the government of the United States;

INSTRUCTIONS FOR RETAINAGE ESCROW AGREEMENTS:

Whenever possible, use the Port of Tacoma (Port) approved Escrow Agreement. The Port, at its discretion, may or may not accept an agreement form from another source.

Please return all three (3) originals of the Agreement, with completed contractor and bank information and signatures, and the escrow account number. The Port will review and sign the Agreement and distribute copies. One (1) original will go directly to the Bank, one (1) original will be returned to the Contractor.

Fill in the following on the Escrow Agreement:

1) Page 1 – Escrow Account Number
2) Page 1 – Name, address, and phone number of the Bank
3) Page 2 – Signature, typed/printed name, date, and the title of the Contractor Signatory.
4) Page 2 – Signature, typed/printed name, date, and the title of the Authorized Bank Officer signatory.

Do not fill in the date in the paragraph directly following paragraph 9. The Port will fill in this date once the document has been fully executed by the Port.

Project Title _____ **Project No.** _____

Submitted By: _____ Contract No. _____

Contractor: _____ Date: _____

Specification Title: _____ Section No. _____

Description: _____ Paragraph: _____

_____ Page No. _____

Proposed Substitution: _____

Trade Name: Model No.:

Manufacturer: _____

Address: _____ Phone No.: _____

Installer: _____

Address: _____ Phone No.: _____

History:

☐ New product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old ☐ Other _____

Differences between proposed substitution and specified product: _____

☐ Point-by-point comparative data attached - REQUIRED

Reason for not providing specified item: _____

Similar Installation:

Project: _____ A/E _____

Address: _____

Owner: _____ Date Installed: _____

Proposed substitution affects other parts of Work: ☐ No ☐ Yes; explain _____

Savings to Port for accepting substitution: $_____

Proposed substitution changes Contract Time: ☐ No ☐ Yes [Add] [Deduct] _____# of days.

Supporting Data Attached:

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

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.
- Cost data as stated above is complete. Claims for additional costs related to accepted substitution which may subsequently become apparent are to be waived.
- 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.
- Coordination, installation, and changes in the Work as necessary for accepted substitution will be complete in all respects.

Submitted By: _____

Signed By: _____ Firm: _____

Address: _____

_____

Telephone: _____ Email: _____

Attachments: _____

_____

A/E's REVIEW AND RECOMMENDATION

☐ Approve Substitution
☐ Approve Substitution as noted
☐ Reject Substitution - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

ENGINEER'S REVIEW AND ACTION

☐ Substitution approved - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures. Prepare Change Order.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01 25 00 Substitution Procedures. Prepare Change Order.
☐ Substitution rejected - Use specified materials.

Signed by: _____ Date: _____

END OF SECTION

TABLE OF CONTENTS

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. "Day" means, unless otherwise specified, a calendar day.

C. "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.

D. "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.

E. "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.

F. "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.

G. "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.

H. "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.

I. "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
2. Supplemental Conditions
3. General Conditions
4. Division 01 General Requirements of Specifications
5. All other Specifications, including all remaining divisions, material and system schedules and attachments, and Drawings
6. All other sections in Division 00 not specifically identified herein by Section.

B. 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.

C. 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.

D. 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.

E. 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.

B. 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.

E. 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.

G. 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.

I. 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:

   a. 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;

   b. 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;

   c. 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 Portand 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

3. 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 of Tacoma (Port) and the Northwest Seaport Alliance (NWSA) will be included as an additional insured(s) 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). The inclusion of the the Port and the NWSA Port and the NWSA as an additional insured(s) shall not create premium liability for the Port.

Also, by endorsement to the policy, there shall be:

1. An express waiver of subrogation in favor of the Port and the NWSA;
2. A cross liabilities clause,
3. An endorsement stating that the Contractor’s policy is primary and not contributory with any insurance carried by the Port and the NWSA.

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 and the NWSA as additional insured(s), 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. Commercial General 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. By endorsement to the policy, not exclude work within fifty feet of any railroad track.

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. 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.

3. Railroad protective liability issued in name of the railroad and in the limits required by the railroad.

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 and the NWSA shall be named as an Additional Insured(s) 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 and $2,000,000 in the aggregate. 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.

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 and the NWSA 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 with applicable sub-limits, 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. 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.

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 2, 2016**.

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 OIympia, 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.

2. 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.

3. 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. Immediately following the end of all work completed under this Contract, the Contractor, and each Subcontractor of any tier, shall file an approved Affidavit of Wages Paid with the L&I.

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.

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.

1. 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.

2. The PCT Truck Staging consists of:

a. Excavation, grading and drainage improvements.

b. Placement of asphalt pavement.

c. Installation of chainlink fencing.

d. Installation of electric gate.

e. Installation of manual gates

f. Relocation of utilities.

g. Pavement striping.

h. Stormwater improvements.

i. Lighting installation.

1.02 LOCATION

A. The work is located at:

4215 SR 509 North Frontage Rd

Tacoma, Wa

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 sequence and constraints.

B. The purpose of the milestones, sequence and 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. Activity Regulations

1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations or restrictions established by the Engineer.

B. Working Facility

1. The Facility will remain in operation for the duration of construction. The Contractor shall conduct all items of the Work in such a manner as to prevent interference with the normal operations of the Facility.

C. Work Site Regulations

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 (phone (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 laydown area at the end of each shift.

1.03 CONSTRAINTS - GENERAL

A. Constraints for Work at Site

1. Other:

a. The adjacent lot is used by auto warehousing for auto storage. The existing driveway off of Alexander Ave. will need to remain usuable at all times.

b. Contractor must coordinate work on driveway with the Engineers representative before commencing any work on driveway.

c. Fencing must remain in place at all times to that site is protected and secure from anauthorized entry.

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 approved Schedule of Values.

1. At the Pre-construction meeting, the Engineer and the Contractor shall agree upon a date each month when 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 including labor, materials and equipment charges to be billed.

1. Prior to the payment application meeting, 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 prior to meeting with Engineer all Force Account back-up documentation as required to process the payment application where Force Account work is being billed. The Engineer and the Contractor shall review the documentation at the payment application meeting to verify quantities and review the work accomplished.

3. The Contractor shall bring a copy of all documentation to the pay application meeting with the Engineer.

C. Following the Engineers' review, the Contractor shall prepare an original pay estimate, in a form approved by the Port or with the Port's supplied form, signed and complete with all supporting documentation attached and submit it electronically using Adobe PDF file format to cpinvoices@portoftacoma.com.

1. With each payment application, the Contractor shall submit a list of all subcontractors (at all tiers) and suppliers on the Port supplied form.

2. An estimated cashflow statement projecting the Contractor's monthly billings on the project shall be submitted with each payment application.

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: PCT STAGING PROJECT - ALL OTHER WORK

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary to construct the project including demolition of the existing fence shown on the Portac plans, clearing and grubbing, striping, bollards, shaker wire conduit, and work that is shown on the PCT Staging plans that is not specifically identified on or included in other bid items described in this section.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.

3. Payment: PCT STAGING PROJECT - ALL OTHER WORK will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

B. Item #2: PORTAC PROJECT - ALL OTHER WORK

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary to construct the project including demolition of the existing fence shown on the Portac plans, clearing and grubbing, striping, bollards, shaker wire conduit,

and work that is shown on the PORTAC plans that is not specifically identified on or included in other bid items described in this section.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.

3. Payment: PORTAC PROJECT - ALL OTHER WORK will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

C. Item #3 THROUGH 4: CHAIN LINK FENCE, 8-FT PVC COATED STANDARD

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals for the installation of the chain link fence for the PCT and Portac plans respectively as per detail 1 on drawing C5.1.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED STANDARD will be paid for at the unit price based on actual quantities for the period being billed.

D. Item #5:CHAIN LINK FENCE, 8-FT PVC COATED SLOPED CONDITION - PORTAC.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the chain link fence as per detail 1 on drawing C5.1.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED SLOPED CONDITION - PORTAC will be paid for at the unit price based on actual quantities for the period being billed.

E. Item #6:CHAIN LINK FENCE, 8-FT PVC COATED BOLTED CONDITION - PORTAC.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the chain link fence as per detail 3 on drawing C12.3.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED BOLTED CONDITION - PORTAC will be paid for at the unit price based on actual quantities for the period being billed.

F. Item #7: MANUAL CHAIN LINK DOUBLE SWING GATE, 24 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 1 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK DOUBLE SWING GATE, 24 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor’s submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

G. Item #8: MANUAL CHAIN LINK ROLLING GATE, 30 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 2 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK ROLLING GATE, 30 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

H. Item #9: MANUAL CHAIN LINK ROLLING GATE, 17 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 2 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK ROLLING GATE, 17 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

I. Item #10: MOTORIZED CHAIN LINK GATE WITH CARD READERS, 24 FT - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 3 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MOTORIZED CHAIN LINK GATE WITH CARD READERS, 24 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

J. Item #11: MANUAL CHAIN LINK SWING GATE, 12 FT - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 3 on drawing C5.2.

2. Measurement: This item will measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK SWING GATE, 12 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

K. Item #12: MANUAL CHAIN LINK SWING GATE, 24 FT - PORTAC

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 4 on drawing C12.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK SWING GATE, 12 FT - PORTAC will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

L. Item #13: MOTORIZED CHAIN LINK GATE WITH CARD READER, 20 FT - PORTAC

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 1 on drawing C12.3.
2. Measurement: This item will be measured as a lump sum unit.
3. Payment: MOTORIZED CHAIN LINK GATE WITH CARD READER, 20 FT - PORTAC will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

M. Item #14: ASPHALT CLASS 1/2" PG 70-22 - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment associated with the preparation of grade, tack coat, joint seal, street sweeping, and the preparing, furnishing, hauling, placing, spreading, and compacting of the material.
2. Measurement: This item will be measured by the TON of furnished and accepted material calculated from certified weigh tickets and delivery slips collected on site by the Engineer.
3. Payment: ASPHALT CLASS 1/2" PG 70-22 - PCT will be paid for at the unit price indidcated on the bid form and on actual quantities for the period being billed.

N. Item #15: STORMWATER AND UTILITY IMPROVEMENTS - PCT

1. Item Decription: The Work of this item includes all labor, materials, tools, equipment associated with the installation, dewatering, trenching and backfilling, shoring and underpinning, electrical site work, storm drainage utilities, and storm water treatment work as indicated on the drawings.
2. Measurement: This item will be measured as a lump sum unit.
3. Payment: STORMWATER AND UTILITY IMPROVEMENTS - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. 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 - EXEUCTION - 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 performanceWhere 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 63 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 5 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 10 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.

3. No applications for payment or change orders will be processed for the Contractor until labor and equipment rates have been submitted and approved.

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 attached to this section.

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

1. Submit list as required in section 00 73 63 – Security Requirements

B. List of Contractor and Subcontractor Personnel

C. List of Emergency Contacts

D. Submittal Log

E. Health and Safety Plan

F. Spill Prevention, Control and Countermeasure Plan

G. Construction Stormwater Pollution Prevention Plan

H. Waste Management Plan

I. Export Soil Management Plan

J. Detailed CPM Project Schedule

K. Demolition Management Plan

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 potions.

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. Major subcontractors who will engage in the work shall attend.
2. Location of the Pre-Construction Meeting will be held at the Port of Tacoma Administration Building located at One Sitcum Plaza.

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.
    a. The Engineer will approve submitted meeting minutes in writing within 10 working days.
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. Field observations, problems, and decisions.
    d. Identification of problems that impede planned progress.
    e. Maintenance of Progress Schedule (3 weeks ahead; 1 week back).
    f. Corrective measures to regain projected schedules.
    g. Planned progress during succeeding work period.
    h. Coordination of projected progress.
    i. Maintenance of quality and work standards.
    j. Effect of proposed changes on progress schedule and coordination.
    k. Demonstration that the project record drawings are up-to-date.
    l. Other business relating to the work.

1.06 PROJECT SCHEDULE

A. The Work under this Contract will be planned, scheduled, executed and reported by the Contractor using a bar (Gantt) chart schedule prepared utilizing project scheduling software. The schedule shall be a detailed CPM schedule showing milestones, relationships, begin and dates for all tasks.

B. Bar Chart Schedule Requirements

1. The Progress Schedule shall clearly show all holidays and other non-work days.
2. The Progress Schedule shall be in a bar chart format and shall consist of horizontal lines, or bars, plotted along a time scale.

3. The schedule shall have a logical association of predecessor and/or successor ties between the activities.
4. The Contractor shall arrange the chart so as to show the activities which are necessary to fulfill each and every Milestone and Completion Date requirement.
5. The Contractor understands and agrees that its schedule is intended to accurately reflect, at all times, the status of the Work and projected activities. The Contractor also understands and agrees that updating is a key requirment to accomplish this intent and shall comply with the requirment to update.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

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. 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 supplied transmittal form for all submittals and email submittals in a clear PDF document to the Engineer at preyes@portoftacoma.com

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.

C. Product submittals that cannot be accomplished electronically shall be accompanied by a printed version of the transmittal. These submittals will be hand delivered to the Port offices at One Sitcum Plaza, Attention: Engineering Department - Pedro Reyes, 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. The Contractor shall monitor site conditions for indications of identified and other potentially hazardous, dangerous, and/or regulated materials (suspicious material). Indicators of suspicious material include, but are not limited to, refuse, oily sheen or coloring on soil 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. Prior to the start of any Work, the Contractor shall provide a site specific Health and Safety Plan (HASP), which meets all the requirements of local, state and federal laws, rules and regulations. The HASP 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 site(s) illustrating the location of the anticipated hazards and areas of control for those hazards (including containments, exclusion/work zones, and contaminant reduction/decontamination zones).
3. Hazardous material inventory and safety data sheets (SDSs) 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 Hazardous Waste Operations and Emergency Response (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. Suspicious materials and/or unidentified materials;
    b. Confined-space entry (could include dewatering storage tanks, manholes, or other items);
    c. Confined-space rescue;
    d. Odorous conditions and toxic gases.
9. Site housekeeping procedures and personal hygiene practices.
10. Administrative controls.
11. Emergency plan including locations of and route to nearest hospital.
12. Recordkeeping including:

a. Documentation of appropriate employee training (e.g., Hazardous Waste Operations and Emergency Response [HAZWOPER] 40-hour training for staff involved with excavation and handling of soil)

13. Name and qualification of person preparing the HASP and person designated to implement and enforce the HASP.

14. Excavation, stockpiling, and truck loading procedures.

15. Lighting and sanitation.

16. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the HASP.

B. Prior to the start of any Work, the Contractor shall provide a site specific Spill Prevention, Control and Countermeasures (SPCC) Plan, which meets all the requirements of local, state and federal laws, rules and regulations.

C. Contractor may submit the HASP and SPCC Plan as one comprehensive document or may submit the plans as separate documents.

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 296-843). 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 HASP requirements as noted in WAC 296-901-14010 and 296-843. Workers shall be instructed on basic methods or techniques to assist in detecting suspicious material.

B. Potential Exposures Routes

1. Skin and Eye Contact: Dusts generated during site work activities may settle on the skin or clothing of site workers. Also, workers may contact potentially regulated sediments, or water, in the normal course of their work. Precautions to prevent skin or eye contact with hazardous materials will be included in the HASP.

2. Ingestion: Inadvertent transfer of site contaminants from hands or other objects to the mouth could occur if site workers eat, drink, smoke, chew tobacco, or engage in similar activities in work areas. This could result in ingestion of site contaminants. Precautions to prevent accidental or inadvertent ingestion of hazardous materials will be included in the HASP.

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 HASP.

B. Specific aspects of construction resulting in physical hazards anticipated for this project include, but are not limited to the following:

1. Major hazards associated with earthwork impacts from moving construction vehicles and trucks, noise, thermal stress, contact with unguarded machines, excavation hazards (i.e.,

cave-in, utility, etc.), strains from heavy lifting, and reduced visibility and communications difficulties in work area.

2. Operation of equipment, including excavators, loaders, and related equipment, presenting hazards of entrapment, ensnarement, and being struck by moving parts.

C. Other anticipated physical hazards:

1. Heat stress, such as that potentially caused by impermeable clothing (may reduce the cooling ability of the body due to evaporation reduction).

2. Cold stress, such as that potentially caused during times when temperatures are low, winds are high, especially when precipitation occurs during these conditions.

3. Biological hazards, such as mold, insect stings, or bites, poisonous plants (i.e., poison oak, sumac, etc.).

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 HASP. Equipment and supplies may include but are not limited to:

1. All chemicals to be used on site;

2. A hazardous materials inventory and SDSs 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. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection);

9. First aid equipment;

10. Spill response and spill prevention equipment; and

11. Field documentation logs/supplies

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 regulated materials, equipment, soils and groundwater at the project site.

1. The Contractor shall not proceed with jobsite activities that might result in exposure of employees to hazardous materials, until the HASP is reviewed by the Engineer.

2. In addition, the Engineer will submit a copy of the Contractor's HASP to Ecology for review. Ecology and the Engineer will review but not approve HASP.

C. All Contractor employees expected to work at the jobsite or individuals entering the jobsite shall read the Contractor HASP before they enter the jobsite, and will sign a statement provided by the Contractor that they have read and understand the HASP. A copy of the Contractor's HASP shall be readily available at the site at all times the work is being performed.

D. The Contractor's HASP shall be amended as needed to include special work practices warranted by jobsite conditions actually encountered. Special practices could include provisions for decontamination of personnel and equipment, and the use of special equipment not covered in the initial plan.

E. 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.

F. The Engineer's review of the Contractor's performance does not include an opinion regarding the adequacy of, or approval of, the Contractor's safety supervisor, the site-specific HASP, safety program or safety measures taken in, on, or near the job site.

G. Accidents causing death, injury, or damage must 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.

H. 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, has a minimum current 40-hour HAZWOPER certification (minimum), and trained to use all necessary safety equipment, air monitoring equipment, and gas detectors. The person must be available and/or 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 SPILL PREVENTION AND CONTROL

A. The Contractor shall be responsible for prevention, containment and cleanup of spilling petroleum and other chemicals/hazardous materials used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor.

B. The Contractor is advised that discharge of oil, fuel, other petroleum, or any chemicals/hazardous materials from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.

C. In the event of a discharge of oil, fuel or chemicals/hazardous materials into waters, or onto land with a potential for entry into waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of all spilled material and used cleanup materials.

D. The Contractor shall, at a minimum, take the following measures regarding 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 chemical, oil and products' storage tanks shall be diked, contained and/or located so as to prevent spills from escaping into the water. Dikes and containment area surfaces shall be lined with impervious material to prevent chemicals or oil from seeping through the ground and dikes.

   3. All visible floating sheen shall be immediately contained with booms, dikes or other appropriate means and removed from the water prior to discharge into state waters. All visible spills on land shall be immediately contained using dikes, straw bales or other appropriate means and removed using sand, 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 offsite 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

E. The Contractor shall maintain the following materials (as a minimum) at each of the project sites:

   1. Oil-absorbent booms: 100 feet.

   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 SUMMARY

A. This Section discloses procedures to follow if unknown regulated materials are encountered.

1.02 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 specified in this section. Work related to this Section is described in, but not limited to:

1. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
2. Section 01 35 43.19 – Export Soil Management
3. Section 01 74 19 – Waste Management and Disposal

1.03 NOTIFICATION AND SUSPENSION

A. In the event the Contractor detects the presence of potentially regulated materials not previously identified in this specification, the Contractor shall stop work and 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 regulated materials, if warranted. Depending upon the type of materials identified, the Port may suspend work in the vicinity of the discovery under the provisions of General Conditions.

1. 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 regulated material, the following alternate methods of operation are foreseen as possible:

a. Contractor to resume work as before the suspension.

b. 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.

c. The Port to direct the Contractor to dispose or treat the material in an approved manner.

d. The Port to terminate or modify the Contract accordingly, for unforeseen conditions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Soils that cannot be reused onsite and are anticipated to be exported to an industrial zoned off-site facility must have a completed soil profile prior to export. Contractor is responsible for collecting the appropriate data that satisfies the requirements of the receiving facility.

B. Soils excavated within the project area, as shown on the drawings, are anticipated to be free of regulated material; however, should the Contractor identify soil that cannot be reused as part of the project, the Contractor shall notify the Engineer to determine if the soil requires special handling.

1. Soil with unexpected regulated material, as identified by visual and/or olfactory methods, shall be segregated from other excavated material until such time as appropriate testing and analysis can be completed by the Port. Upon completion of the soil profile, the Engineer will inform the Contractor of any special handling requirements based on the results.

2. Soil beyond construction excavation limits will not require excavation unless free draining product is observed or other special conditions exist; in which case the Engineer will direct the Contractor in additional excavation. Soils determined to require special handling will be hauled and disposed of at an approved disposal facility.

C. No soil shall be removed from the site without prior notification to the Engineer. The notification shall include:

1. An estimate of the number of truck-trips, the haul destination, and the period in which these trips will be made (e.g., 20 truck-trips to the Waste Management Facility over the two-week period beginning on March 1, 2012).

1.02 DEFINITIONS

A. Olfactory Indications (methods): Of or relating to the sense of smell. Soils containing petroleum and other volatile constituents typically exhibit characteristic odors that can be detected (and sometimes identified) by smell.

B. Regulated Material: Any chemical, physical, biological, or radiological substance that does not occur naturally in the environment, or that occurs at concentrations higher than natural background levels, and is regulated by agencies as to the disposal/recycling facility(ies) the material can and cannot go (i.e., EPA, Department of Ecology, Tacoma-Pierce County Health Department).

C. Soil (waste) Profile: A characterization of the chemical and physical properties of soil material designated for off-site disposal, including the presence of pollutants and their concentrations as measured by approved laboratory analytical methods. A profile is required by the receiving permitted disposal or recycling facility.

D. Special Handling: Refers to hauling and disposal of soils that cannot be reused in place as backfill or as general fill at another (off-site) location due to the presence of pollutants in concentrations above allowable limits. Such soils must be hauled to and managed at a permitted disposal facility.

E. Type A Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that exceed state or federal dangerous or hazardous designations (respectively), or other special Port-determined criteria. Type A Regulated Soil requires disposal at an approved Subtitle C hazardous waste landfill.

F. Type B Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that are below dangerous or hazardous levels, but could negatively impact the quality of air, waters of the state, soils or sediments, or pose a threat to the health of humans or other living organisms, depending on where the soil is disposed. Type B Regulated Soil requires disposal an approved Subtitle D solid waste landfill.

G. Type C Regulated Soil: Soil that must be removed from the Project site and has been determined by Engineer to contain unknown constituent(s) and/or in unknown concentration(s) and requires further analysis and characterization. Type C Regulated soil will require disposal at an approved Subtitle C hazardous waste landfill or Subtitle D solid waste landfill if additional soil characterization indicates special handling is required.

H. Type D Soil: Soil determined by the Engineer not to require special handling with regard to this Contract. Classification of material as Type D Soil by the Port is not a certification nor does it release the Contractor of liability or obligation to meet any disposal or storage facility acceptance or testing requirements.

I. Unexpected Regulated Material: Regulated material unexpectedly found in an excavation or in other locations where there is no prior knowledge, information, or history to indicate possible spills or releases of regulated material.

J. Visual Indications (methods): A preliminary evaluation of the potential presence of contamination based on visual observation. For example, soils containing petroleum are frequently discolored or stained relative to non-petroleum impacted native soils or clean fill.

1.03 HEALTH AND SAFETY

A. The Contractor is required to implement all health and safety provisions as required by Specification 01 35 29 – Health, Safety and Emergency Response. These provisions include any special monitoring, personal protective equipment, or work plans to accommodate regulated soil or material special handling. Use of environmental characterization data may not be appropriate for health and safety purposes.

1.04 SUBMITTALS

A. Prior to excavation of any subsurface materials, the Contractor shall submit a Soils Management Plan to the Engineer. The Soils Management Plan must be approved by the Engineer prior to any excavation of subsurface materials. The Soils Management Plan must include the following:

1. Identification of all soil disposal facilities anticipated to be used for soils that are determined to be Type A or Type B Regulated Soil.

2. Identification of all fill sites, disposal/recycling facilities and/or end uses anticipated to be used for soil determined to be Type D Soil in accordance with paragraph 3.02 of this section.

3. Contingency for delivery and placement of Type C Regulated Soil at an on-site soil stockpile area.

4. Contingency for managing soil/debris encountered during excavation that may disqualify soil for disposal or recycle at the anticipated facilities.

5. General description of how equipment operators, safety staff and other applicable on-site personnel will identify and respond to soil containing potentially regulated material.

6. Contractor shall coordinate with the Engineer to facilitate handling of regulated soil in accordance with this specification.
7. Description of all haul routes to be used on the project.

B. A completed soil profile prior to export to an off-site receiving facility.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 EXCAVATION/TESTING

A. The field-testing for soil to be exported offsite will be performed by the Port and will result in the following classification of material:
   1. Type A Regulated Soil as defined in 1.02(E) of this Section
   2. Type B Regulated Soil as defined in 1.02(F) of this Section
   3. Type C Regulated Soil as defined in 1.02(G) of this Section
   4. Type D Soil as defined in 1.02(H) of this Section

B. Contractor shall give Port no less than one week notice to sample export soil prior to disposal offsite.

C. Laboratory turnaround times may require up to 21 calendar days for analytical results; therefore, Contractor should coordinate with Engineer well in advance of anticipated disposal date. Samples that are required to have “rush” analysis performed due to the Contractor’s failure to disclose the anticipated disposal date shall have the difference in service fees paid by the Contractor, or the Contractor may delay the disposal until the standard analysis turnaround time is complete, at no additional cost to the Port.

3.02 TRANSPORTATION AND OFF-SITE DISPOSAL OF SOILS

A. The Contractor shall be responsible for handling, re-handling, loading, transporting, and legal off-site removal of all waste materials and excavated soils not reused onsite.
   1. Contractor shall ensure that transport truck gross weight meets federal and/or state Department of Transportation (DOT) requirements and the requirements of the receiving facility, whichever is more stringent.
   2. Contractor shall take measures to prevent debris from being spilled from trucks or tracked from the site to local streets. Contractor shall sweep streets adjacent to the site as necessary or as directed by the Engineer.
   3. Contractor shall ensure that any vehicle transporting materials offsite are properly labeled and placarded in accordance with federal and state DOT requirements.

B. Type A Regulated and Type B Regulated Soil shall be hauled to an approved facility by the Contractor for disposal.

C. Type C Regulated Soil is of unknown origin or special circumstances. Type C Regulated Soil shall be hauled to an on-site segregated stockpile area. The Contractor shall protect the material from weather and other disturbances once stockpiled. The Port will inform the Contractor of the soil profile following additional analysis of the suspect material (as needed), and the soil will be categorized as either Type A Regulated, Type B Regulated or Type D Soil and disposed of accordingly.

D. Type D Soil that is not reused onsite shall be hauled by the Contractor to a site determined by the Contractor. If the receiving/disposal facility requires additional testing or certification of this soil, Contractor shall complete these requirements, at no additional cost to the Port. The Port will not certify or declare the material suitable for unrestricted use.

3.03 OTHER REQUIREMENTS

A. Type A, Type B or Type C Regulated Soil may be, upon approval of the Engineer, temporarily stockpiled within the construction area. Contractor shall place an impervious liner beneath the soil and securely cover the stockpile with waterproof covering (e.g., plastic sheeting). Additional measures (e.g., berm, jersey barriers, silt fence, etc.) may be required to minimize soil runoff from the stockpile area. The soil shall be removed prior to completion of Work.

B. Contractor shall provide the Engineer with all hauling receipts (or copies of receipts) from the disposal facility for all Type A, Type B or Type C Regulated Soil at least weekly.

C. The Engineer may shut down excavation activities should unexpected regulated material be encountered during excavation.

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.

1.02 SUBMITTALS

A. Prior to Notice to Proceed, the Contractor shall submit of a list of equipment to be used on the project and certify in writing that all equipment on the list and any additional equipment, including Contractor's, subcontractors or supplier's equipment, shall meet the requirements of 3.01 below.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION

3.01 AIR POLLUTION CONTROL

A. 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

B. The Contractor shall not discharge smoke, dust, and other hazardous materials into the atmosphere that violate local, state or federal regulations.

C. No vehicles can idle for more than 5 consecutive minutes, except as follows:

1. Idling is required to bring or maintain the equipment to operating temperature;

2. Engine idling is necessary to accomplish work for which the equipment was designed (i.e. operating a crane)

3. Idling vehicles being used in an emergency or public safety capacity.

D. The Contractor shall minimize nuisance dust by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. Equipment for this operation shall be on the job site or available at all times.

3.02 NOISE CONTROL

A. The Contractor shall comply with all local controls and noise level rules, regulations and ordinances which apply to work performed pursuant to the Contract.

B. All internal combustion engines used on the job shall be equipped with a muffler of a type recommended by the manufacturer.

END OF SECTION

PART 1 - GENERAL

1.01 PERMITS, CODES AND REGULATIONS

A. The following permits/approvals have been applied for (or are on file) and incorporated into the Contract:

1. City of Tacoma Critical Areas Activities Allowed with Staff Review
2. State Environmental Policy Act (SEPA) Exemption
3. City of Tacoma Grading, Excavation, Erosion Control Permit
4. City of Tacoma Work Order Permit
5. City of Tacoma Critical Areas Minor Development Permit

B. Conform with the requirements of listed permits and additional or other applicable permits, codes, and regulations as may govern the Work.

C. Obtain and pay fees for licenses, permits, inspections, and approvals required by laws ordinances, and rules of appropriate governing or approving agencies necessary for proper completion of Work (other than those listed under item 1.01A above and Special Inspections called for by the International Building Code).

D. Conform with current applicable codes, regulations and standards, which is the minimum standard of quality for material and workmanship. Provide labor, materials, and equipment necessary for compliance with code requirements or interpretations, although not specifically detailed in Drawings or specifications. Be familiar with applicable codes and standards prior to bidding.

E. Process through Engineer, request to extend, modify, revise, or renew any of the permits (listed in 1.01.A above). Furnish requests in writing and include a narrative description and adequate Drawings to clearly describe and depict proposed action. Do not contact regulatory agency with requests for permit extensions, modifications, revisions, or renewals without the prior written consent of the Engineer.

1.02 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

A. Nothing in the Drawings and specifications permits Work not conforming to codes, permits or regulations. Promptly submit written notice of the Engineer of observed variations or discrepancies between the Contract Documents and governing codes and regulations.

B. Appropriate modifications to the Contract Documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.

C. Contractor is not relieved from complying with requirements of Contract Documents which may exceed, but not conflict with requirements of governing codes.

1.03 COORDINATION WITH REGULATORY AGENCIES

A. Coordinate Work with appropriate governing or regulating authorities and agencies.

B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, in order to allow proper scheduling of inspection visits at proper stages of Work completion.

C. Regulation coordination is in addition to inspections conducted by Engineer. Notify Engineer at least 48 hours in advance of scheduled inspections involving outside regulating officials, to allow Engineer to be present for inspections.

D. Prior to the Work Order permit being issued by the City of Tacoma the Contractor must submitt a Traffic Control Plan (TCP) and Pedestrian Accessible Route (PAR) to the City. Once the submittal is approved by the City a preconstruction meeting will be scheduled by the City at which Contractor attendance is required.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

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 sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. 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. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 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.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public to allow for Port's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

A. Provide 8 ft. (2.4 m) high fence around construction site; equip with vehicular gates with locks.

B. Port property is to remain fenced and secure at all times.

1.06 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.

1.07 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Clean and repair damage caused by installation or use of temporary work.

B. Restore existing facilities used during construction to original condition.

C. 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 SECTION INCLUDES

A. Access roads.

B. Parking.

C. Construction parking controls.

D. Traffic Control

E. Flares and lights.

F. Haul routes.

G. Maintenance.

H. Removal, repair.

I. Mud from site vehicles.

PART 2 - PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

A. Post Mounted and Wall Mounted Traffic Control and Informational Signs, as specified.

B. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.

C. Flag Person Equipment: As required by local jurisdictions.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clear areas, provide surface and storm drainage of road, parking, area premises, and adjacent areas.

3.02 ACCESS TO SITE

A. Contractor shall conduct all business through the gate assigned by the Engineer.

1. The Contractor may be required to relocate entry and related work areas as required by Port Operations.

B. Provide unimpeded access for emergency vehicles. Maintain 20 foot (6 m) width driveways with turning space between and around combustible materials.

C. Provide and maintain access to fire hydrants free of obstructions.

3.03 PARKING

A. All Contractor's employee cars and work vehicles will be parked on-site as designated by the Engineer.

3.04 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Port operations.

B. Prevent parking on or adjacent to access roads or in non-designated areas.

3.05 TRAFFIC CONTROL

A. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

B. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, flaggers and other traffic control devices necessary for the safe ingress and egress of the Project Site. Traffic control shall include but is not limited to:

1. The Contractor shall be liable for injuries and damages to persons and property suffered by reason of the Contractor's operations or any negligence in connection therewith.

3.06 FLARES AND LIGHTS

A. Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.07 HAUL ROUTES

A. Confine construction traffic to designated haul routes.

B. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

3.08 MAINTENANCE

A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, Products, mud, snow, and ice.

B. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

3.09 REMOVAL, REPAIR

A. Repair existing facilities damaged by use, to original condition.

B. Repair damage caused by installation.

3.10 PUBLIC STREET AND ONSITE ROADWAY CLEANING

A. The Contractor shall be responsible for preventing dirt and dust escaping from trucks and other vehicles operating on or departing the project site by sweeping, covering dusty loads, washing truck tires and all other reasonable methods.

B. When trucks and other equipment are operating on paved public streets and site roadways/paved surfaces, the Contractor will be required to clean said streets, roadways and other paved surfaces at least daily, and at other times if required by the Engineer.

C. In the event that the above requirements are violated and no action is taken by the Contractor after notification of infraction by the Engineer, the Port reserves the right to have the streets, roadways and other paved surfaces in question cleaned by others and the expense of the operation charged to the Contractor.

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. 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.

C. 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.).

D. Contractor shall read and conform to requirements set forth in Ecology's Phase I Municipal Stormwater Permit.

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,” 2012.
2. Washington Department of Ecology, “Phase I Municipal Stormwater Permit”, 2013.
3. Washington State Department of Transportation, 2012 Standard Specification M41-10, Division 8-01 Erosion Control and Water Pollution Control.
4. City of Tacoma, “Surface Water Management Manual,” Tacoma Public Works, Environmental Services, February 2012.

1.03 SUBMITTALS

A. A Construction Stormwater Pollution Prevention Plan (SWPPP) per the requirements in Section 3.02 of this section.

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

1.04 AUTHORITY OF ENGINEER

A. 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 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 impoundment.

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 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. 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.

B. Contractor shall be solely responsible for all BMP modifications and upgrades to comply with the requirements of this Section, at no additional cost to the Port.

C. 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.

D. 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. Contractor shall prepare and submit a site-specific SWPPP prior to initiating any ground disturbing activities.

1. The SWPPP shall describe the proposed construction activities and all Temporary and Permanent Erosion and Sediment Control measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project.

2. The SWPPP shall consist of planning, installing, inspecting, maintaining, and removing TESC BMPs per Ecology's 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. A SWPPP template is available to the Contractor for this purpose. The template was prepared by the Port to meet part of the National Pollution Discharge Elimination System (NPDES) stormwater permit requirements for the project. Contractor may use the applicable Port template to prepare the project SWPPP or prepare their own SWPPP. If the Contractor elects to prepare their own SWPPP, it must meet or exceed the control measures required by the Ecology (reference Ecology's Stormwater Management Manual for Western Washington, 2012).

4. Because this Project will disturb less than 1 acre of land, the Port's short form template will meet the project SWPPP requirements. The SWPPP short form template is attached to the end of this Section.

B. The Contractor shall develop project-specific TESC BMPs and incorporate them into the SWPPP. The 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 are minimum requirements for a TESC Plan. Contractor shall develop and submit a TESC Plan specific to the project and means and methods prior to commencing construction activities and update the TESC Plan as needed for the duration of the project.
3. During the construction period the Contractor shall, at no additional cost to the Port, upgrade TESC measures as needed for storm events, modify TESC measures for changing site conditions (such as relocation of ditches and silt fences, etc.), and update the SWPPP to document all modifications made.

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 TESC measures daily and maintain these measures to ensure continued proper functioning during the project period.
   2. Contractor shall upgrade and/or maintain TESC measures as needed, based on Contractor means and methods, work sequencing, and for storm events, at no additional cost to the Port. Contractor shall modify these measures for changing site conditions and update the SWPPP to document all modifications made.

B. Catch basins must be cleaned when the depth of debris reaches 30% of the sump depth or the debris surface is six (6) inches below the outlet pipe. All catch basins, manholes, and conveyance lines, if present, shall be cleaned by the Contractor at the completion of the project. The cleaning process shall not flush sediment-laden water into any downstream system.

C. Contractor shall ensure that water, or a dust palliative and a dispensing methodology 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 a dispensing subcontractor develops and adheres to the appropriate safety measures, if a dispensing subcontractor is used.

D. Any areas of exposed soils, including embankments, which will not be disturbed for two days during the wet season (October 1 - April 30) or seven days during the dry season (May 1 - September 30), shall immediately be stabilized by Contractor with an Ecology-approved TESC measure (seeding, mulching, plastic covering, etc.).

E. TESC measures in an inactive area shall be inspected and maintained by the Contractor until the area is permanently stabilized.

F. 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.

G. 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. See Section 01 33 00 - Submittal Procedures

B. 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.

C. 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.

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.

3.06 ADJUSTING

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

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

A. This section includes construction waste management requirements.

1.02 DEFINITIONS

A. Co-mingled or Off-site Separation: Collecting all material types into a single bin or mixed collection system and separating the waste materials into recyclable material types at an off-site facility.

B. Construction, Demolition and Land-Clearing (CDL) Waste: Includes all nonhazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition, and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage. This also includes uncontaminated soils that are designated as geotechnically unsuitable or excess excavation.

C. Hazardous/Dangerous Waste: As defined by Chapter 70.105.010 Revised Code of Washington and 40 Code of Federal Register 261 and by Washington Administrative Code 173-303.

D. Proper Disposal: As defined by the jurisdiction receiving the waste.

E. Recyclable Materials: Products and materials that can be recovered and remanufactured into new products.

F. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product. Can be conducted on-site (as in the grinding of concrete).

G. Recycling Facility: An operation that is permitted to accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product.

H. Salvage for Reuse: Existing usable product or material that can be saved and reused in some manner on the project site or other projects off-site.

I. Salvage for Resale: Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

J. Source-Separated Materials: Materials that are sorted at the site into separate containers for the purpose of reuse or recycling.

K. Sources Separation: Sorting the recovered materials into specific material types with no, or a minimum amount of, contamination on site.

L. Time-Based Separation: Collecting waste during each phase of construction or deconstruction that results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.

M. Garbage: Product or material typically considered to be trash or debris that is unable to be salvaged for resale, salvaged and reused, returned, or recycled.

1.03 SUBMITTALS

A. Waste Management Plan

B. Waste Management Final Report

1.04 PERFORMANCE GOALS

A. General: Divert CDL waste to the maximum extent practicable from the landfill by one or a combination of the following activities:

1. Salvage
2. Reuse
3. Source separated CDL recycling
4. Co-mingled CDL recycling

B. CDL waste materials that can be salvaged, resold, reused or recycled, include, but are not limited to the following:

1. Clean dimensional wood, pallet wood, plywood, OSB, and particleboard
2. Asphalt
3. Concrete and concrete masonry units
4. Ferrous and non-ferrous metals
5. Field office waste paper, aluminum cans, glass, plastic, and cardboard

C. Hazardous/Dangerous Wastes, contaminated soils and other hazardous materials such as paints, solvents, adhesives, batteries, and fluorescent light bulbs and ballasts shall be disposed of at applicable permitted facilities.

1.05 WASTE MANAGEMENT PLAN

A. Submit to the Engineer a Waste Management Plan narrative in accordance with these specifications. Provide a Waste Management Plan in a format as approved by the Engineer.

B. The Waste Management Plan shall include the following:

1. Name of designated Recycling Coordinator
2. A list of waste materials that will be salvaged for resale, salvaged for reuse, recycled, and disposed.
3. Identify waste handling methods to be used, including one or more of the following:
    a. Method 1 - Contractor or subcontractor(s) hauls recyclable materials to an approved recycling facility.
    b. Method 2 - Contracting with diversion/recycling hauler to haul recyclable material to an approved recycling or material recovery facility.
    c. Method 3 - Recyclable material reuse on-site.
    d. Method 4- Recyclable material salvage for resale.
4. Identification of each recycling or material recovery facility to be utilized, including name, address and types of materials being recycled at each facility
5. Description of the method to be employed in collecting, and handling, waste materials.
6. Description of methods to communicate Waste Management Plan to personnel and subcontractors.

1.06 WASTE MANAGEMENT FINAL REPORT

A. Provide a Waste Management Final Report, in a format approved by the Engineer. The Waste Management Final Report shall list the following for the project:

1. A record of each waste material type and quantity recycled, reused, salvaged, or disposed from the Project. Include total quantity of waste material removed from the site and hauled to a landfill.

2. Percentage of total waste material generated that was recycled, reused, or salvaged.

B. Quantities shall be reported by weight (tons) unless otherwise approved by the Engineer.

C. Submit copies of manifests, weight tickets, recycling/disposal receipts or invoices, which validate the calculations or a signed certification of completeness and accuracy of the final quantities reported.

1.07 QUALITY ASSURANCE

A. Regulatory Requirements: The Contractor shall maintain compliance with all applicable Federal, State, or Local laws that apply to Construction Waste Management and material salvage, reuse, recycling and disposal.

B. Disposal Sites, Recyclers and Waste Materials Processors: All facilities utilized for management of any materials covered under this specification must maintain all necessary permits as required by federal, state and local jurisdictions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SOURCE-SEPARATED CDL RECYCLING

A. Provide individual containers for separate types of CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.

3.02 CO-MINGLED CDL RECYCLING

A. Provide containers for co-mingled CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.

3.03 LANDFILL

A. Provide containers for CDL waste that is to be disposed of in a landfill clearly labeled as such.

3.04 REMOVAL OF CDL WASTE FROM PROJECT SITE

A. Transport CDL waste off Port's property and legally dispose of them.

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. Make final changeover of permanent locks and deliver keys to Port
2. Complete startup and testing of systems and equipment
3. Perform preventive maintenance on equipment used prior to Substantial Completion
4. Instruct Port's personnel in operation, adjustment, and maintenance of products, equipment, and systems
5. Advise Port of changeover in heat and other utilities
6. Terminate and remove temporary facilities from Project site
7. Complete final cleaning requirements

D. Submit a written request for inspection to determine Substantial Completion a minimum of 5 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 5 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. Submit Warranties to the Engineer as a submittal, as described in 01 33 00 – Submittal Procedures.

3. Provide additional copies of each warranty in Operation and Maintenance Manuals as described in 01 78 23 – Operation and Maintenance Manuals.

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 SECTION INCLUDES

A. Operation and Maintenance Manual Submittal

1.02 SUBMITTALS

A. Operation and Maintenance Data:

1. For equipment, or component parts of equipment put into service during construction and operated by the Port, submit completed documents within ten days after acceptance.
2. Submit 3 copy of completed documents 5 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
3. Submit 3 sets of revised final documents in final form by Final Completion.

PART 2 - PRODUCTS

2.01 OPERATION AND MAINTENANCE MANUALS

A. For large equipment (such as pumps, generators, machinery),the following information (minimum of 3 printed copies, plus one electronic copy on CD) shall be furnished for all items on the Project requiring operational and/or maintenance procedures and for any additional items indicated by the Engineer. Printed information shall be organized by the Contractor into appropriately sized 3-ring binders (no larger than 3”).The binders shall be sized for material approximately 8-1/2 by 11 inches, and the material in the binders shall not protrude beyond the covers. The binder(s) shall be divided with coversheets for each major item of equipment. The cover sheets shall be typewritten to indicate the name, type of equipment, and location(s) within the Project where installed. A neatly typewritten index shall be provided. Electronic information shall be in PDF format (additional formats where specified) and shall be organized with folders with appropriate file names so information is easily accessible:

1. Equipment Maintenance Summary:
    a. Provide the following information (as applicable, indicate ‘N/A’ where an item does not apply) in Excel spreadsheet format:
        1) Asset Number (to be provided by the Engineer at a later date)
        2) Description
        3) Plan Sheet Number
        4) Parcel Number
        5) Vendor
        6) Manufacturer
        7) Model Year
        8) Serial Number
        9) Warranty – Start Date; Finish Date
        10) Required Preventative Maintenance
        11) Purchase Price
        12) Make

13) Model

14) Fuel Used

15) Capacity

2. Lubrication Information: This shall consist of the manufacturer's recommendations regarding the lubricants to be used and the lubrication schedule to be followed. Lubricants shall be described in detail, including type, recommended manufacturer, and manufacturer's specific compound to be used.
3. Control Diagrams: Diagrams shall show internal and connection wiring and as-built wiring diagrams (where applicable).
4. Start-up Procedures: These instructions consist of equipment manufacturer's recommendations for installation, adjustment, calibration, and troubleshooting.
5. Operating Procedures: These instructions consist of the equipment manufacturer's recommended step-by-step procedures for starting, operating, stopping the equipment under specified modes of operation, and for long-term shut-down (moth-balling).
6. Preventative Maintenance Procedures: These instructions consist of the equipment manufacturer's recommended steps and schedules for maintaining the equipment.
7. Overhaul Instructions: These instructions consist of the manufacturer's directions for the disassembly, repair and reassembly of the equipment and any safety precautions that must be observed while performing the work.
8. Parts List: This list consists of the generic title and identification number of each component part of the equipment. This list shall include weights of individual components of each item of equipment weighing over 100 pounds.
9. Spare Parts List: This list consists of the manufacturer's recommendations of number of parts which should be stored by the Owner and any special storage precautions which may be required.
10. Exploded View: Exploded or cut views of equipment shall be provided if available as a standard item of the manufacturer's information. When exploded or cut views are not available, plan and section views shall be provided with detailed callouts.
11. Specific Information: Where items of information not included in the above list are required, they will be provided as described in the specifications for the equipment.
12. Complete identification, including model and serial numbers.
13. Submittal information, as specified in Section 01 33 00 Submittal Procedures.
14. Warranty Information: This information consists of the name, address, and telephone number of the manufacturer's representative to be contacted for warranty, parts, or service information.
15. Provide DVDs, and audio-visual training materials utilized in the manufacturer's instruction program for the Owner.
16. All operation and maintenance information shall be comprehensive and detailed and shall contain information adequately covering all normal operation and maintenance procedures.
17. All information shall be specific for the items of equipment installed on the project. Material not directly applicable shall be removed, omitted, or clearly marked as inapplicable.

18. If manufacturer’s standard brochures and manuals are used to describe operating and maintenance procedures, such brochures and manuals shall be modified to reflect only the model or series of equipment used on this project.
19. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated. It shall be the responsibility of the Contractor to ensure that all operation and maintenance materials are obtained. Material submitted must meet the approval of the Engineer prior to project final acceptance.

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.

1. 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.

2. The PCT Truck Staging consists of:

a. Excavation, grading and drainage improvements.

b. Placement of asphalt pavement.

c. Installation of chainlink fencing.

d. Installation of electric gate.

e. Installation of manual gates

f. Relocation of utilities.

g. Pavement striping.

h. Stormwater improvements.

i. Lighting installation.

1.02 LOCATION

A. The work is located at:

4215 SR 509 North Frontage Rd

Tacoma, Wa

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 sequence and constraints.

B. The purpose of the milestones, sequence and 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. Activity Regulations

1. Ensure Contractor personnel deployed to the project become familiar with and follow all regulations or restrictions established by the Engineer.

B. Working Facility

1. The Facility will remain in operation for the duration of construction. The Contractor shall conduct all items of the Work in such a manner as to prevent interference with the normal operations of the Facility.

C. Work Site Regulations

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 (phone (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 laydown area at the end of each shift.

1.03 CONSTRAINTS - GENERAL

A. Constraints for Work at Site

1. Other:

a. The adjacent lot is used by auto warehousing for auto storage. The existing driveway off of Alexander Ave. will need to remain usuable at all times.

b. Contractor must coordinate work on driveway with the Engineers representative before commencing any work on driveway.

c. Fencing must remain in place at all times to that site is protected and secure from anauthorized entry.

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 approved Schedule of Values.

1. At the Pre-construction meeting, the Engineer and the Contractor shall agree upon a date each month when 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 including labor, materials and equipment charges to be billed.

1. Prior to the payment application meeting, 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 prior to meeting with Engineer all Force Account back-up documentation as required to process the payment application where Force Account work is being billed. The Engineer and the Contractor shall review the documentation at the payment application meeting to verify quantities and review the work accomplished.

3. The Contractor shall bring a copy of all documentation to the pay application meeting with the Engineer.

C. Following the Engineers' review, the Contractor shall prepare an original pay estimate, in a form approved by the Port or with the Port's supplied form, signed and complete with all supporting documentation attached and submit it electronically using Adobe PDF file format to cpinvoices@portoftacoma.com.

1. With each payment application, the Contractor shall submit a list of all subcontractors (at all tiers) and suppliers on the Port supplied form.

2. An estimated cashflow statement projecting the Contractor's monthly billings on the project shall be submitted with each payment application.

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: PCT STAGING PROJECT - ALL OTHER WORK

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary to construct the project including demolition of the existing fence shown on the Portac plans, clearing and grubbing, striping, bollards, shaker wire conduit, and work that is shown on the PCT Staging plans that is not specifically identified on or included in other bid items described in this section.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.

3. Payment: PCT STAGING PROJECT - ALL OTHER WORK will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

B. Item #2: PORTAC PROJECT - ALL OTHER WORK

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary to construct the project including demolition of the existing fence shown on the Portac plans, clearing and grubbing, striping, bollards, shaker wire conduit,

and work that is shown on the PORTAC plans that is not specifically identified on or included in other bid items described in this section.

2. Measurement: This item will be measured based on a percentage complete for the overall lump sum amount.

3. Payment: PORTAC PROJECT - ALL OTHER WORK will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values.

C. Item #3 THROUGH 4: CHAIN LINK FENCE, 8-FT PVC COATED STANDARD

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals for the installation of the chain link fence for the PCT and Portac plans respectively as per detail 1 on drawing C5.1.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED STANDARD will be paid for at the unit price based on actual quantities for the period being billed.

D. Item #5:CHAIN LINK FENCE, 8-FT PVC COATED SLOPED CONDITION - PORTAC.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the chain link fence as per detail 1 on drawing C5.1.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED SLOPED CONDITION - PORTAC will be paid for at the unit price based on actual quantities for the period being billed.

E. Item #6:CHAIN LINK FENCE, 8-FT PVC COATED BOLTED CONDITION - PORTAC.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the chain link fence as per detail 3 on drawing C12.3.

2. Measurement: This item will be measured by the linear foot of chain link fence installed.

3. Payment: CHAIN LINK FENCE, 8-FT PVC COATED BOLTED CONDITION - PORTAC will be paid for at the unit price based on actual quantities for the period being billed.

F. Item #7: MANUAL CHAIN LINK DOUBLE SWING GATE, 24 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 1 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK DOUBLE SWING GATE, 24 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor’s submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

G. Item #8: MANUAL CHAIN LINK ROLLING GATE, 30 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 2 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK ROLLING GATE, 30 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

H. Item #9: MANUAL CHAIN LINK ROLLING GATE, 17 FT - PCT.

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 2 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK ROLLING GATE, 17 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

I. Item #10: MOTORIZED CHAIN LINK GATE WITH CARD READERS, 24 FT - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 3 on drawing C5.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MOTORIZED CHAIN LINK GATE WITH CARD READERS, 24 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

J. Item #11: MANUAL CHAIN LINK SWING GATE, 12 FT - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 3 on drawing C5.2.

2. Measurement: This item will measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK SWING GATE, 12 FT - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

K. Item #12: MANUAL CHAIN LINK SWING GATE, 24 FT - PORTAC

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 4 on drawing C12.3.

2. Measurement: This item will be measured as a lump sum unit.

3. Payment: MANUAL CHAIN LINK SWING GATE, 12 FT - PORTAC will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

L. Item #13: MOTORIZED CHAIN LINK GATE WITH CARD READER, 20 FT - PORTAC

1. Item Description: The Work of this item includes all labor, materials, tools, equipment and incidentals necessary for the installation of the gate as per detail 1 on drawing C12.3.
2. Measurement: This item will be measured as a lump sum unit.
3. Payment: MOTORIZED CHAIN LINK GATE WITH CARD READER, 20 FT - PORTAC will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. Incremental payment for completed work shall be a percentage, determined by the Engineer, payable in monthly progress payments, proportional to the work completed.

M. Item #14: ASPHALT CLASS 1/2" PG 70-22 - PCT

1. Item Description: The Work of this item includes all labor, materials, tools, equipment associated with the preparation of grade, tack coat, joint seal, street sweeping, and the preparing, furnishing, hauling, placing, spreading, and compacting of the material.
2. Measurement: This item will be measured by the TON of furnished and accepted material calculated from certified weigh tickets and delivery slips collected on site by the Engineer.
3. Payment: ASPHALT CLASS 1/2" PG 70-22 - PCT will be paid for at the unit price indidcated on the bid form and on actual quantities for the period being billed.

N. Item #15: STORMWATER AND UTILITY IMPROVEMENTS - PCT

1. Item Decription: The Work of this item includes all labor, materials, tools, equipment associated with the installation, dewatering, trenching and backfilling, shoring and underpinning, electrical site work, storm drainage utilities, and storm water treatment work as indicated on the drawings.
2. Measurement: This item will be measured as a lump sum unit.
3. Payment: STORMWATER AND UTILITY IMPROVEMENTS - PCT will be paid for at the Contract lump sum price as specified in the Contractor's submitted bid, in accordance with the approved Schedule of Values. 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 - EXEUCTION - 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 performanceWhere 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 63 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 5 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 10 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.

3. No applications for payment or change orders will be processed for the Contractor until labor and equipment rates have been submitted and approved.

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 attached to this section.

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

1. Submit list as required in section 00 73 63 – Security Requirements

B. List of Contractor and Subcontractor Personnel

C. List of Emergency Contacts

D. Submittal Log

E. Health and Safety Plan

F. Spill Prevention, Control and Countermeasure Plan

G. Construction Stormwater Pollution Prevention Plan

H. Waste Management Plan

I. Export Soil Management Plan

J. Detailed CPM Project Schedule

K. Demolition Management Plan

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 potions.

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. Major subcontractors who will engage in the work shall attend.
2. Location of the Pre-Construction Meeting will be held at the Port of Tacoma Administration Building located at One Sitcum Plaza.

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.
    a. The Engineer will approve submitted meeting minutes in writing within 10 working days.
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. Field observations, problems, and decisions.
    d. Identification of problems that impede planned progress.
    e. Maintenance of Progress Schedule (3 weeks ahead; 1 week back).
    f. Corrective measures to regain projected schedules.
    g. Planned progress during succeeding work period.
    h. Coordination of projected progress.
    i. Maintenance of quality and work standards.
    j. Effect of proposed changes on progress schedule and coordination.
    k. Demonstration that the project record drawings are up-to-date.
    l. Other business relating to the work.

1.06 PROJECT SCHEDULE

A. The Work under this Contract will be planned, scheduled, executed and reported by the Contractor using a bar (Gantt) chart schedule prepared utilizing project scheduling software. The schedule shall be a detailed CPM schedule showing milestones, relationships, begin and dates for all tasks.

B. Bar Chart Schedule Requirements

1. The Progress Schedule shall clearly show all holidays and other non-work days.
2. The Progress Schedule shall be in a bar chart format and shall consist of horizontal lines, or bars, plotted along a time scale.

3. The schedule shall have a logical association of predecessor and/or successor ties between the activities.
4. The Contractor shall arrange the chart so as to show the activities which are necessary to fulfill each and every Milestone and Completion Date requirement.
5. The Contractor understands and agrees that its schedule is intended to accurately reflect, at all times, the status of the Work and projected activities. The Contractor also understands and agrees that updating is a key requirment to accomplish this intent and shall comply with the requirment to update.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

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. 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 supplied transmittal form for all submittals and email submittals in a clear PDF document to the Engineer at preyes@portoftacoma.com

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.

C. Product submittals that cannot be accomplished electronically shall be accompanied by a printed version of the transmittal. These submittals will be hand delivered to the Port offices at One Sitcum Plaza, Attention: Engineering Department - Pedro Reyes, 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. The Contractor shall monitor site conditions for indications of identified and other potentially hazardous, dangerous, and/or regulated materials (suspicious material). Indicators of suspicious material include, but are not limited to, refuse, oily sheen or coloring on soil 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. Prior to the start of any Work, the Contractor shall provide a site specific Health and Safety Plan (HASP), which meets all the requirements of local, state and federal laws, rules and regulations. The HASP 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 site(s) illustrating the location of the anticipated hazards and areas of control for those hazards (including containments, exclusion/work zones, and contaminant reduction/decontamination zones).
3. Hazardous material inventory and safety data sheets (SDSs) 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 Hazardous Waste Operations and Emergency Response (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. Suspicious materials and/or unidentified materials;
    b. Confined-space entry (could include dewatering storage tanks, manholes, or other items);
    c. Confined-space rescue;
    d. Odorous conditions and toxic gases.
9. Site housekeeping procedures and personal hygiene practices.
10. Administrative controls.
11. Emergency plan including locations of and route to nearest hospital.
12. Recordkeeping including:

a. Documentation of appropriate employee training (e.g., Hazardous Waste Operations and Emergency Response [HAZWOPER] 40-hour training for staff involved with excavation and handling of soil)

13. Name and qualification of person preparing the HASP and person designated to implement and enforce the HASP.

14. Excavation, stockpiling, and truck loading procedures.

15. Lighting and sanitation.

16. Signatory page for site personnel to acknowledge receipt, understanding, and agreement to comply with the HASP.

B. Prior to the start of any Work, the Contractor shall provide a site specific Spill Prevention, Control and Countermeasures (SPCC) Plan, which meets all the requirements of local, state and federal laws, rules and regulations.

C. Contractor may submit the HASP and SPCC Plan as one comprehensive document or may submit the plans as separate documents.

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 296-843). 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 HASP requirements as noted in WAC 296-901-14010 and 296-843. Workers shall be instructed on basic methods or techniques to assist in detecting suspicious material.

B. Potential Exposures Routes

1. Skin and Eye Contact: Dusts generated during site work activities may settle on the skin or clothing of site workers. Also, workers may contact potentially regulated sediments, or water, in the normal course of their work. Precautions to prevent skin or eye contact with hazardous materials will be included in the HASP.

2. Ingestion: Inadvertent transfer of site contaminants from hands or other objects to the mouth could occur if site workers eat, drink, smoke, chew tobacco, or engage in similar activities in work areas. This could result in ingestion of site contaminants. Precautions to prevent accidental or inadvertent ingestion of hazardous materials will be included in the HASP.

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 HASP.

B. Specific aspects of construction resulting in physical hazards anticipated for this project include, but are not limited to the following:

1. Major hazards associated with earthwork impacts from moving construction vehicles and trucks, noise, thermal stress, contact with unguarded machines, excavation hazards (i.e.,

cave-in, utility, etc.), strains from heavy lifting, and reduced visibility and communications difficulties in work area.

2. Operation of equipment, including excavators, loaders, and related equipment, presenting hazards of entrapment, ensnarement, and being struck by moving parts.

C. Other anticipated physical hazards:

1. Heat stress, such as that potentially caused by impermeable clothing (may reduce the cooling ability of the body due to evaporation reduction).

2. Cold stress, such as that potentially caused during times when temperatures are low, winds are high, especially when precipitation occurs during these conditions.

3. Biological hazards, such as mold, insect stings, or bites, poisonous plants (i.e., poison oak, sumac, etc.).

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 HASP. Equipment and supplies may include but are not limited to:

1. All chemicals to be used on site;

2. A hazardous materials inventory and SDSs 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. Personal protective equipment (hard hats, foot gear, skin, eye, and respiratory protection);

9. First aid equipment;

10. Spill response and spill prevention equipment; and

11. Field documentation logs/supplies

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 regulated materials, equipment, soils and groundwater at the project site.

1. The Contractor shall not proceed with jobsite activities that might result in exposure of employees to hazardous materials, until the HASP is reviewed by the Engineer.

2. In addition, the Engineer will submit a copy of the Contractor's HASP to Ecology for review. Ecology and the Engineer will review but not approve HASP.

C. All Contractor employees expected to work at the jobsite or individuals entering the jobsite shall read the Contractor HASP before they enter the jobsite, and will sign a statement provided by the Contractor that they have read and understand the HASP. A copy of the Contractor's HASP shall be readily available at the site at all times the work is being performed.

D. The Contractor's HASP shall be amended as needed to include special work practices warranted by jobsite conditions actually encountered. Special practices could include provisions for decontamination of personnel and equipment, and the use of special equipment not covered in the initial plan.

E. 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.

F. The Engineer's review of the Contractor's performance does not include an opinion regarding the adequacy of, or approval of, the Contractor's safety supervisor, the site-specific HASP, safety program or safety measures taken in, on, or near the job site.

G. Accidents causing death, injury, or damage must 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.

H. 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, has a minimum current 40-hour HAZWOPER certification (minimum), and trained to use all necessary safety equipment, air monitoring equipment, and gas detectors. The person must be available and/or 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 SPILL PREVENTION AND CONTROL

A. The Contractor shall be responsible for prevention, containment and cleanup of spilling petroleum and other chemicals/hazardous materials used in the Contractor's operations. All such prevention, containment and cleanup costs shall be borne by the Contractor.

B. The Contractor is advised that discharge of oil, fuel, other petroleum, or any chemicals/hazardous materials from equipment or facilities into state waters or onto adjacent land is not permitted under state water quality regulations.

C. In the event of a discharge of oil, fuel or chemicals/hazardous materials into waters, or onto land with a potential for entry into waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of all spilled material and used cleanup materials.

D. The Contractor shall, at a minimum, take the following measures regarding 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 chemical, oil and products' storage tanks shall be diked, contained and/or located so as to prevent spills from escaping into the water. Dikes and containment area surfaces shall be lined with impervious material to prevent chemicals or oil from seeping through the ground and dikes.

   3. All visible floating sheen shall be immediately contained with booms, dikes or other appropriate means and removed from the water prior to discharge into state waters. All visible spills on land shall be immediately contained using dikes, straw bales or other appropriate means and removed using sand, 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 offsite 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

E. The Contractor shall maintain the following materials (as a minimum) at each of the project sites:

   1. Oil-absorbent booms: 100 feet.

   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 SUMMARY

A. This Section discloses procedures to follow if unknown regulated materials are encountered.

1.02 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 specified in this section. Work related to this Section is described in, but not limited to:

1. Section 01 35 29 – Health, Safety, and Emergency Response Procedures
2. Section 01 35 43.19 – Export Soil Management
3. Section 01 74 19 – Waste Management and Disposal

1.03 NOTIFICATION AND SUSPENSION

A. In the event the Contractor detects the presence of potentially regulated materials not previously identified in this specification, the Contractor shall stop work and 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 regulated materials, if warranted. Depending upon the type of materials identified, the Port may suspend work in the vicinity of the discovery under the provisions of General Conditions.

1. 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 regulated material, the following alternate methods of operation are foreseen as possible:

a. Contractor to resume work as before the suspension.

b. 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.

c. The Port to direct the Contractor to dispose or treat the material in an approved manner.

d. The Port to terminate or modify the Contract accordingly, for unforeseen conditions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Soils that cannot be reused onsite and are anticipated to be exported to an industrial zoned off-site facility must have a completed soil profile prior to export. Contractor is responsible for collecting the appropriate data that satisfies the requirements of the receiving facility.

B. Soils excavated within the project area, as shown on the drawings, are anticipated to be free of regulated material; however, should the Contractor identify soil that cannot be reused as part of the project, the Contractor shall notify the Engineer to determine if the soil requires special handling.

1. Soil with unexpected regulated material, as identified by visual and/or olfactory methods, shall be segregated from other excavated material until such time as appropriate testing and analysis can be completed by the Port. Upon completion of the soil profile, the Engineer will inform the Contractor of any special handling requirements based on the results.

2. Soil beyond construction excavation limits will not require excavation unless free draining product is observed or other special conditions exist; in which case the Engineer will direct the Contractor in additional excavation. Soils determined to require special handling will be hauled and disposed of at an approved disposal facility.

C. No soil shall be removed from the site without prior notification to the Engineer. The notification shall include:

1. An estimate of the number of truck-trips, the haul destination, and the period in which these trips will be made (e.g., 20 truck-trips to the Waste Management Facility over the two-week period beginning on March 1, 2012).

1.02 DEFINITIONS

A. Olfactory Indications (methods): Of or relating to the sense of smell. Soils containing petroleum and other volatile constituents typically exhibit characteristic odors that can be detected (and sometimes identified) by smell.

B. Regulated Material: Any chemical, physical, biological, or radiological substance that does not occur naturally in the environment, or that occurs at concentrations higher than natural background levels, and is regulated by agencies as to the disposal/recycling facility(ies) the material can and cannot go (i.e., EPA, Department of Ecology, Tacoma-Pierce County Health Department).

C. Soil (waste) Profile: A characterization of the chemical and physical properties of soil material designated for off-site disposal, including the presence of pollutants and their concentrations as measured by approved laboratory analytical methods. A profile is required by the receiving permitted disposal or recycling facility.

D. Special Handling: Refers to hauling and disposal of soils that cannot be reused in place as backfill or as general fill at another (off-site) location due to the presence of pollutants in concentrations above allowable limits. Such soils must be hauled to and managed at a permitted disposal facility.

E. Type A Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that exceed state or federal dangerous or hazardous designations (respectively), or other special Port-determined criteria. Type A Regulated Soil requires disposal at an approved Subtitle C hazardous waste landfill.

F. Type B Regulated Soil: Soil that must be removed from the Project site and has been determined by the Engineer to contain pollutants in concentrations that are below dangerous or hazardous levels, but could negatively impact the quality of air, waters of the state, soils or sediments, or pose a threat to the health of humans or other living organisms, depending on where the soil is disposed. Type B Regulated Soil requires disposal an approved Subtitle D solid waste landfill.

G. Type C Regulated Soil: Soil that must be removed from the Project site and has been determined by Engineer to contain unknown constituent(s) and/or in unknown concentration(s) and requires further analysis and characterization. Type C Regulated soil will require disposal at an approved Subtitle C hazardous waste landfill or Subtitle D solid waste landfill if additional soil characterization indicates special handling is required.

H. Type D Soil: Soil determined by the Engineer not to require special handling with regard to this Contract. Classification of material as Type D Soil by the Port is not a certification nor does it release the Contractor of liability or obligation to meet any disposal or storage facility acceptance or testing requirements.

I. Unexpected Regulated Material: Regulated material unexpectedly found in an excavation or in other locations where there is no prior knowledge, information, or history to indicate possible spills or releases of regulated material.

J. Visual Indications (methods): A preliminary evaluation of the potential presence of contamination based on visual observation. For example, soils containing petroleum are frequently discolored or stained relative to non-petroleum impacted native soils or clean fill.

1.03 HEALTH AND SAFETY

A. The Contractor is required to implement all health and safety provisions as required by Specification 01 35 29 – Health, Safety and Emergency Response. These provisions include any special monitoring, personal protective equipment, or work plans to accommodate regulated soil or material special handling. Use of environmental characterization data may not be appropriate for health and safety purposes.

1.04 SUBMITTALS

A. Prior to excavation of any subsurface materials, the Contractor shall submit a Soils Management Plan to the Engineer. The Soils Management Plan must be approved by the Engineer prior to any excavation of subsurface materials. The Soils Management Plan must include the following:

1. Identification of all soil disposal facilities anticipated to be used for soils that are determined to be Type A or Type B Regulated Soil.

2. Identification of all fill sites, disposal/recycling facilities and/or end uses anticipated to be used for soil determined to be Type D Soil in accordance with paragraph 3.02 of this section.

3. Contingency for delivery and placement of Type C Regulated Soil at an on-site soil stockpile area.

4. Contingency for managing soil/debris encountered during excavation that may disqualify soil for disposal or recycle at the anticipated facilities.

5. General description of how equipment operators, safety staff and other applicable on-site personnel will identify and respond to soil containing potentially regulated material.

6. Contractor shall coordinate with the Engineer to facilitate handling of regulated soil in accordance with this specification.
7. Description of all haul routes to be used on the project.

B. A completed soil profile prior to export to an off-site receiving facility.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 EXCAVATION/TESTING

A. The field-testing for soil to be exported offsite will be performed by the Port and will result in the following classification of material:
   1. Type A Regulated Soil as defined in 1.02(E) of this Section
   2. Type B Regulated Soil as defined in 1.02(F) of this Section
   3. Type C Regulated Soil as defined in 1.02(G) of this Section
   4. Type D Soil as defined in 1.02(H) of this Section

B. Contractor shall give Port no less than one week notice to sample export soil prior to disposal offsite.

C. Laboratory turnaround times may require up to 21 calendar days for analytical results; therefore, Contractor should coordinate with Engineer well in advance of anticipated disposal date. Samples that are required to have “rush” analysis performed due to the Contractor’s failure to disclose the anticipated disposal date shall have the difference in service fees paid by the Contractor, or the Contractor may delay the disposal until the standard analysis turnaround time is complete, at no additional cost to the Port.

3.02 TRANSPORTATION AND OFF-SITE DISPOSAL OF SOILS

A. The Contractor shall be responsible for handling, re-handling, loading, transporting, and legal off-site removal of all waste materials and excavated soils not reused onsite.
   1. Contractor shall ensure that transport truck gross weight meets federal and/or state Department of Transportation (DOT) requirements and the requirements of the receiving facility, whichever is more stringent.
   2. Contractor shall take measures to prevent debris from being spilled from trucks or tracked from the site to local streets. Contractor shall sweep streets adjacent to the site as necessary or as directed by the Engineer.
   3. Contractor shall ensure that any vehicle transporting materials offsite are properly labeled and placarded in accordance with federal and state DOT requirements.

B. Type A Regulated and Type B Regulated Soil shall be hauled to an approved facility by the Contractor for disposal.

C. Type C Regulated Soil is of unknown origin or special circumstances. Type C Regulated Soil shall be hauled to an on-site segregated stockpile area. The Contractor shall protect the material from weather and other disturbances once stockpiled. The Port will inform the Contractor of the soil profile following additional analysis of the suspect material (as needed), and the soil will be categorized as either Type A Regulated, Type B Regulated or Type D Soil and disposed of accordingly.

D. Type D Soil that is not reused onsite shall be hauled by the Contractor to a site determined by the Contractor. If the receiving/disposal facility requires additional testing or certification of this soil, Contractor shall complete these requirements, at no additional cost to the Port. The Port will not certify or declare the material suitable for unrestricted use.

3.03 OTHER REQUIREMENTS

A. Type A, Type B or Type C Regulated Soil may be, upon approval of the Engineer, temporarily stockpiled within the construction area. Contractor shall place an impervious liner beneath the soil and securely cover the stockpile with waterproof covering (e.g., plastic sheeting). Additional measures (e.g., berm, jersey barriers, silt fence, etc.) may be required to minimize soil runoff from the stockpile area. The soil shall be removed prior to completion of Work.

B. Contractor shall provide the Engineer with all hauling receipts (or copies of receipts) from the disposal facility for all Type A, Type B or Type C Regulated Soil at least weekly.

C. The Engineer may shut down excavation activities should unexpected regulated material be encountered during excavation.

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.

1.02 SUBMITTALS

A. Prior to Notice to Proceed, the Contractor shall submit of a list of equipment to be used on the project and certify in writing that all equipment on the list and any additional equipment, including Contractor's, subcontractors or supplier's equipment, shall meet the requirements of 3.01 below.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION

3.01 AIR POLLUTION CONTROL

A. 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

B. The Contractor shall not discharge smoke, dust, and other hazardous materials into the atmosphere that violate local, state or federal regulations.

C. No vehicles can idle for more than 5 consecutive minutes, except as follows:

1. Idling is required to bring or maintain the equipment to operating temperature;

2. Engine idling is necessary to accomplish work for which the equipment was designed (i.e. operating a crane)

3. Idling vehicles being used in an emergency or public safety capacity.

D. The Contractor shall minimize nuisance dust by cleaning, sweeping, vacuum sweeping, sprinkling with water, or other means. Equipment for this operation shall be on the job site or available at all times.

3.02 NOISE CONTROL

A. The Contractor shall comply with all local controls and noise level rules, regulations and ordinances which apply to work performed pursuant to the Contract.

B. All internal combustion engines used on the job shall be equipped with a muffler of a type recommended by the manufacturer.

END OF SECTION

PART 1 - GENERAL

1.01 PERMITS, CODES AND REGULATIONS

A. The following permits/approvals have been applied for (or are on file) and incorporated into the Contract:

1. City of Tacoma Critical Areas Activities Allowed with Staff Review
2. State Environmental Policy Act (SEPA) Exemption
3. City of Tacoma Grading, Excavation, Erosion Control Permit
4. City of Tacoma Work Order Permit
5. City of Tacoma Critical Areas Minor Development Permit

B. Conform with the requirements of listed permits and additional or other applicable permits, codes, and regulations as may govern the Work.

C. Obtain and pay fees for licenses, permits, inspections, and approvals required by laws ordinances, and rules of appropriate governing or approving agencies necessary for proper completion of Work (other than those listed under item 1.01A above and Special Inspections called for by the International Building Code).

D. Conform with current applicable codes, regulations and standards, which is the minimum standard of quality for material and workmanship. Provide labor, materials, and equipment necessary for compliance with code requirements or interpretations, although not specifically detailed in Drawings or specifications. Be familiar with applicable codes and standards prior to bidding.

E. Process through Engineer, request to extend, modify, revise, or renew any of the permits (listed in 1.01.A above). Furnish requests in writing and include a narrative description and adequate Drawings to clearly describe and depict proposed action. Do not contact regulatory agency with requests for permit extensions, modifications, revisions, or renewals without the prior written consent of the Engineer.

1.02 VARIATIONS WITH CODES, REGULATIONS AND STANDARDS

A. Nothing in the Drawings and specifications permits Work not conforming to codes, permits or regulations. Promptly submit written notice of the Engineer of observed variations or discrepancies between the Contract Documents and governing codes and regulations.

B. Appropriate modifications to the Contract Documents will be made by Change Order to incorporate changes to Work resulting from code and/or regulatory requirements. Contractor assumes responsibility for Work contrary to such requirements if Work proceeds without notice.

C. Contractor is not relieved from complying with requirements of Contract Documents which may exceed, but not conflict with requirements of governing codes.

1.03 COORDINATION WITH REGULATORY AGENCIES

A. Coordinate Work with appropriate governing or regulating authorities and agencies.

B. Provide advance notification to proper officials of Project schedule and schedule revisions throughout Project duration, in order to allow proper scheduling of inspection visits at proper stages of Work completion.

C. Regulation coordination is in addition to inspections conducted by Engineer. Notify Engineer at least 48 hours in advance of scheduled inspections involving outside regulating officials, to allow Engineer to be present for inspections.

D. Prior to the Work Order permit being issued by the City of Tacoma the Contractor must submitt a Traffic Control Plan (TCP) and Pedestrian Accessible Route (PAR) to the City. Once the submittal is approved by the City a preconstruction meeting will be scheduled by the City at which Contractor attendance is required.

PART 2 - PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

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 sanitary facilities.

C. Temporary Controls: Barriers, enclosures, and fencing.

D. 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. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.03 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.

1.04 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public to allow for Port's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.05 FENCING

A. Provide 8 ft. (2.4 m) high fence around construction site; equip with vehicular gates with locks.

B. Port property is to remain fenced and secure at all times.

1.06 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.

1.07 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Clean and repair damage caused by installation or use of temporary work.

B. Restore existing facilities used during construction to original condition.

C. 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 SECTION INCLUDES

A. Access roads.

B. Parking.

C. Construction parking controls.

D. Traffic Control

E. Flares and lights.

F. Haul routes.

G. Maintenance.

H. Removal, repair.

I. Mud from site vehicles.

PART 2 - PRODUCTS

2.01 SIGNS, SIGNALS, AND DEVICES

A. Post Mounted and Wall Mounted Traffic Control and Informational Signs, as specified.

B. Traffic Cones and Drums, Flares and Lights: As approved by local jurisdictions.

C. Flag Person Equipment: As required by local jurisdictions.

PART 3 - EXECUTION

3.01 PREPARATION

A. Clear areas, provide surface and storm drainage of road, parking, area premises, and adjacent areas.

3.02 ACCESS TO SITE

A. Contractor shall conduct all business through the gate assigned by the Engineer.

1. The Contractor may be required to relocate entry and related work areas as required by Port Operations.

B. Provide unimpeded access for emergency vehicles. Maintain 20 foot (6 m) width driveways with turning space between and around combustible materials.

C. Provide and maintain access to fire hydrants free of obstructions.

3.03 PARKING

A. All Contractor's employee cars and work vehicles will be parked on-site as designated by the Engineer.

3.04 CONSTRUCTION PARKING CONTROL

A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Port operations.

B. Prevent parking on or adjacent to access roads or in non-designated areas.

3.05 TRAFFIC CONTROL

A. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

B. The Contractor shall erect and maintain all construction signs, warning signs, detour signs, flaggers and other traffic control devices necessary for the safe ingress and egress of the Project Site. Traffic control shall include but is not limited to:

1. The Contractor shall be liable for injuries and damages to persons and property suffered by reason of the Contractor's operations or any negligence in connection therewith.

3.06 FLARES AND LIGHTS

A. Use flares and lights during hours of low visibility to delineate traffic lanes and to guide traffic.

3.07 HAUL ROUTES

A. Confine construction traffic to designated haul routes.

B. Provide traffic control at critical areas of haul routes to regulate traffic, to minimize interference with public traffic.

3.08 MAINTENANCE

A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, Products, mud, snow, and ice.

B. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

3.09 REMOVAL, REPAIR

A. Repair existing facilities damaged by use, to original condition.

B. Repair damage caused by installation.

3.10 PUBLIC STREET AND ONSITE ROADWAY CLEANING

A. The Contractor shall be responsible for preventing dirt and dust escaping from trucks and other vehicles operating on or departing the project site by sweeping, covering dusty loads, washing truck tires and all other reasonable methods.

B. When trucks and other equipment are operating on paved public streets and site roadways/paved surfaces, the Contractor will be required to clean said streets, roadways and other paved surfaces at least daily, and at other times if required by the Engineer.

C. In the event that the above requirements are violated and no action is taken by the Contractor after notification of infraction by the Engineer, the Port reserves the right to have the streets, roadways and other paved surfaces in question cleaned by others and the expense of the operation charged to the Contractor.

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. 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.

C. 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.).

D. Contractor shall read and conform to requirements set forth in Ecology's Phase I Municipal Stormwater Permit.

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,” 2012.
2. Washington Department of Ecology, “Phase I Municipal Stormwater Permit”, 2013.
3. Washington State Department of Transportation, 2012 Standard Specification M41-10, Division 8-01 Erosion Control and Water Pollution Control.
4. City of Tacoma, “Surface Water Management Manual,” Tacoma Public Works, Environmental Services, February 2012.

1.03 SUBMITTALS

A. A Construction Stormwater Pollution Prevention Plan (SWPPP) per the requirements in Section 3.02 of this section.

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

1.04 AUTHORITY OF ENGINEER

A. 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 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 impoundment.

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 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. 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.

B. Contractor shall be solely responsible for all BMP modifications and upgrades to comply with the requirements of this Section, at no additional cost to the Port.

C. 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.

D. 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. Contractor shall prepare and submit a site-specific SWPPP prior to initiating any ground disturbing activities.

1. The SWPPP shall describe the proposed construction activities and all Temporary and Permanent Erosion and Sediment Control measures, pollution prevention measures, inspection/monitoring activities, and recordkeeping that will be implemented during the proposed construction project.

2. The SWPPP shall consist of planning, installing, inspecting, maintaining, and removing TESC BMPs per Ecology's 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. A SWPPP template is available to the Contractor for this purpose. The template was prepared by the Port to meet part of the National Pollution Discharge Elimination System (NPDES) stormwater permit requirements for the project. Contractor may use the applicable Port template to prepare the project SWPPP or prepare their own SWPPP. If the Contractor elects to prepare their own SWPPP, it must meet or exceed the control measures required by the Ecology (reference Ecology's Stormwater Management Manual for Western Washington, 2012).

4. Because this Project will disturb less than 1 acre of land, the Port's short form template will meet the project SWPPP requirements. The SWPPP short form template is attached to the end of this Section.

B. The Contractor shall develop project-specific TESC BMPs and incorporate them into the SWPPP. The 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 are minimum requirements for a TESC Plan. Contractor shall develop and submit a TESC Plan specific to the project and means and methods prior to commencing construction activities and update the TESC Plan as needed for the duration of the project.
3. During the construction period the Contractor shall, at no additional cost to the Port, upgrade TESC measures as needed for storm events, modify TESC measures for changing site conditions (such as relocation of ditches and silt fences, etc.), and update the SWPPP to document all modifications made.

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 TESC measures daily and maintain these measures to ensure continued proper functioning during the project period.
   2. Contractor shall upgrade and/or maintain TESC measures as needed, based on Contractor means and methods, work sequencing, and for storm events, at no additional cost to the Port. Contractor shall modify these measures for changing site conditions and update the SWPPP to document all modifications made.

B. Catch basins must be cleaned when the depth of debris reaches 30% of the sump depth or the debris surface is six (6) inches below the outlet pipe. All catch basins, manholes, and conveyance lines, if present, shall be cleaned by the Contractor at the completion of the project. The cleaning process shall not flush sediment-laden water into any downstream system.

C. Contractor shall ensure that water, or a dust palliative and a dispensing methodology 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 a dispensing subcontractor develops and adheres to the appropriate safety measures, if a dispensing subcontractor is used.

D. Any areas of exposed soils, including embankments, which will not be disturbed for two days during the wet season (October 1 - April 30) or seven days during the dry season (May 1 - September 30), shall immediately be stabilized by Contractor with an Ecology-approved TESC measure (seeding, mulching, plastic covering, etc.).

E. TESC measures in an inactive area shall be inspected and maintained by the Contractor until the area is permanently stabilized.

F. 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.

G. 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. See Section 01 33 00 - Submittal Procedures

B. 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.

C. 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.

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.

3.06 ADJUSTING

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

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

A. This section includes construction waste management requirements.

1.02 DEFINITIONS

A. Co-mingled or Off-site Separation: Collecting all material types into a single bin or mixed collection system and separating the waste materials into recyclable material types at an off-site facility.

B. Construction, Demolition and Land-Clearing (CDL) Waste: Includes all nonhazardous solid wastes resulting from construction, remodeling, alterations, repair, demolition, and land clearing. Includes material that is recycled, reused, salvaged or disposed as garbage. This also includes uncontaminated soils that are designated as geotechnically unsuitable or excess excavation.

C. Hazardous/Dangerous Waste: As defined by Chapter 70.105.010 Revised Code of Washington and 40 Code of Federal Register 261 and by Washington Administrative Code 173-303.

D. Proper Disposal: As defined by the jurisdiction receiving the waste.

E. Recyclable Materials: Products and materials that can be recovered and remanufactured into new products.

F. Recycling: The process of sorting, cleaning, treating and reconstituting materials for the purpose of using the material in the manufacture of a new product. Can be conducted on-site (as in the grinding of concrete).

G. Recycling Facility: An operation that is permitted to accept materials for the purpose of processing the materials into an altered form for the manufacture of a new product.

H. Salvage for Reuse: Existing usable product or material that can be saved and reused in some manner on the project site or other projects off-site.

I. Salvage for Resale: Existing usable product or material that can be saved and removed intact (as is) from the project site to another site for resale to others without remanufacturing.

J. Source-Separated Materials: Materials that are sorted at the site into separate containers for the purpose of reuse or recycling.

K. Sources Separation: Sorting the recovered materials into specific material types with no, or a minimum amount of, contamination on site.

L. Time-Based Separation: Collecting waste during each phase of construction or deconstruction that results in primarily one major type of recovered material. The material is removed before it becomes mixed with the material from the next phase of construction.

M. Garbage: Product or material typically considered to be trash or debris that is unable to be salvaged for resale, salvaged and reused, returned, or recycled.

1.03 SUBMITTALS

A. Waste Management Plan

B. Waste Management Final Report

1.04 PERFORMANCE GOALS

A. General: Divert CDL waste to the maximum extent practicable from the landfill by one or a combination of the following activities:

1. Salvage
2. Reuse
3. Source separated CDL recycling
4. Co-mingled CDL recycling

B. CDL waste materials that can be salvaged, resold, reused or recycled, include, but are not limited to the following:

1. Clean dimensional wood, pallet wood, plywood, OSB, and particleboard
2. Asphalt
3. Concrete and concrete masonry units
4. Ferrous and non-ferrous metals
5. Field office waste paper, aluminum cans, glass, plastic, and cardboard

C. Hazardous/Dangerous Wastes, contaminated soils and other hazardous materials such as paints, solvents, adhesives, batteries, and fluorescent light bulbs and ballasts shall be disposed of at applicable permitted facilities.

1.05 WASTE MANAGEMENT PLAN

A. Submit to the Engineer a Waste Management Plan narrative in accordance with these specifications. Provide a Waste Management Plan in a format as approved by the Engineer.

B. The Waste Management Plan shall include the following:

1. Name of designated Recycling Coordinator
2. A list of waste materials that will be salvaged for resale, salvaged for reuse, recycled, and disposed.
3. Identify waste handling methods to be used, including one or more of the following:
    a. Method 1 - Contractor or subcontractor(s) hauls recyclable materials to an approved recycling facility.
    b. Method 2 - Contracting with diversion/recycling hauler to haul recyclable material to an approved recycling or material recovery facility.
    c. Method 3 - Recyclable material reuse on-site.
    d. Method 4- Recyclable material salvage for resale.
4. Identification of each recycling or material recovery facility to be utilized, including name, address and types of materials being recycled at each facility
5. Description of the method to be employed in collecting, and handling, waste materials.
6. Description of methods to communicate Waste Management Plan to personnel and subcontractors.

1.06 WASTE MANAGEMENT FINAL REPORT

A. Provide a Waste Management Final Report, in a format approved by the Engineer. The Waste Management Final Report shall list the following for the project:

1. A record of each waste material type and quantity recycled, reused, salvaged, or disposed from the Project. Include total quantity of waste material removed from the site and hauled to a landfill.

2. Percentage of total waste material generated that was recycled, reused, or salvaged.

B. Quantities shall be reported by weight (tons) unless otherwise approved by the Engineer.

C. Submit copies of manifests, weight tickets, recycling/disposal receipts or invoices, which validate the calculations or a signed certification of completeness and accuracy of the final quantities reported.

1.07 QUALITY ASSURANCE

A. Regulatory Requirements: The Contractor shall maintain compliance with all applicable Federal, State, or Local laws that apply to Construction Waste Management and material salvage, reuse, recycling and disposal.

B. Disposal Sites, Recyclers and Waste Materials Processors: All facilities utilized for management of any materials covered under this specification must maintain all necessary permits as required by federal, state and local jurisdictions.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.01 SOURCE-SEPARATED CDL RECYCLING

A. Provide individual containers for separate types of CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.

3.02 CO-MINGLED CDL RECYCLING

A. Provide containers for co-mingled CDL waste to be recycled, clearly labeled with a list of acceptable and unacceptable materials.

3.03 LANDFILL

A. Provide containers for CDL waste that is to be disposed of in a landfill clearly labeled as such.

3.04 REMOVAL OF CDL WASTE FROM PROJECT SITE

A. Transport CDL waste off Port's property and legally dispose of them.

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. Make final changeover of permanent locks and deliver keys to Port
2. Complete startup and testing of systems and equipment
3. Perform preventive maintenance on equipment used prior to Substantial Completion
4. Instruct Port's personnel in operation, adjustment, and maintenance of products, equipment, and systems
5. Advise Port of changeover in heat and other utilities
6. Terminate and remove temporary facilities from Project site
7. Complete final cleaning requirements

D. Submit a written request for inspection to determine Substantial Completion a minimum of 5 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 5 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. Submit Warranties to the Engineer as a submittal, as described in 01 33 00 – Submittal Procedures.

3. Provide additional copies of each warranty in Operation and Maintenance Manuals as described in 01 78 23 – Operation and Maintenance Manuals.

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 SECTION INCLUDES

A. Operation and Maintenance Manual Submittal

1.02 SUBMITTALS

A. Operation and Maintenance Data:

1. For equipment, or component parts of equipment put into service during construction and operated by the Port, submit completed documents within ten days after acceptance.
2. Submit 3 copy of completed documents 5 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Engineer comments. Revise content of all document sets as required prior to final submission.
3. Submit 3 sets of revised final documents in final form by Final Completion.

PART 2 - PRODUCTS

2.01 OPERATION AND MAINTENANCE MANUALS

A. For large equipment (such as pumps, generators, machinery),the following information (minimum of 3 printed copies, plus one electronic copy on CD) shall be furnished for all items on the Project requiring operational and/or maintenance procedures and for any additional items indicated by the Engineer. Printed information shall be organized by the Contractor into appropriately sized 3-ring binders (no larger than 3”).The binders shall be sized for material approximately 8-1/2 by 11 inches, and the material in the binders shall not protrude beyond the covers. The binder(s) shall be divided with coversheets for each major item of equipment. The cover sheets shall be typewritten to indicate the name, type of equipment, and location(s) within the Project where installed. A neatly typewritten index shall be provided. Electronic information shall be in PDF format (additional formats where specified) and shall be organized with folders with appropriate file names so information is easily accessible:

1. Equipment Maintenance Summary:
    a. Provide the following information (as applicable, indicate ‘N/A’ where an item does not apply) in Excel spreadsheet format:
        1) Asset Number (to be provided by the Engineer at a later date)
        2) Description
        3) Plan Sheet Number
        4) Parcel Number
        5) Vendor
        6) Manufacturer
        7) Model Year
        8) Serial Number
        9) Warranty – Start Date; Finish Date
        10) Required Preventative Maintenance
        11) Purchase Price
        12) Make

13) Model

14) Fuel Used

15) Capacity

2. Lubrication Information: This shall consist of the manufacturer's recommendations regarding the lubricants to be used and the lubrication schedule to be followed. Lubricants shall be described in detail, including type, recommended manufacturer, and manufacturer's specific compound to be used.
3. Control Diagrams: Diagrams shall show internal and connection wiring and as-built wiring diagrams (where applicable).
4. Start-up Procedures: These instructions consist of equipment manufacturer's recommendations for installation, adjustment, calibration, and troubleshooting.
5. Operating Procedures: These instructions consist of the equipment manufacturer's recommended step-by-step procedures for starting, operating, stopping the equipment under specified modes of operation, and for long-term shut-down (moth-balling).
6. Preventative Maintenance Procedures: These instructions consist of the equipment manufacturer's recommended steps and schedules for maintaining the equipment.
7. Overhaul Instructions: These instructions consist of the manufacturer's directions for the disassembly, repair and reassembly of the equipment and any safety precautions that must be observed while performing the work.
8. Parts List: This list consists of the generic title and identification number of each component part of the equipment. This list shall include weights of individual components of each item of equipment weighing over 100 pounds.
9. Spare Parts List: This list consists of the manufacturer's recommendations of number of parts which should be stored by the Owner and any special storage precautions which may be required.
10. Exploded View: Exploded or cut views of equipment shall be provided if available as a standard item of the manufacturer's information. When exploded or cut views are not available, plan and section views shall be provided with detailed callouts.
11. Specific Information: Where items of information not included in the above list are required, they will be provided as described in the specifications for the equipment.
12. Complete identification, including model and serial numbers.
13. Submittal information, as specified in Section 01 33 00 Submittal Procedures.
14. Warranty Information: This information consists of the name, address, and telephone number of the manufacturer's representative to be contacted for warranty, parts, or service information.
15. Provide DVDs, and audio-visual training materials utilized in the manufacturer's instruction program for the Owner.
16. All operation and maintenance information shall be comprehensive and detailed and shall contain information adequately covering all normal operation and maintenance procedures.
17. All information shall be specific for the items of equipment installed on the project. Material not directly applicable shall be removed, omitted, or clearly marked as inapplicable.

18. If manufacturer's standard brochures and manuals are used to describe operating and maintenance procedures, such brochures and manuals shall be modified to reflect only the model or series of equipment used on this project.
19. Extraneous material shall be crossed out neatly or otherwise annotated or eliminated. It shall be the responsibility of the Contractor to ensure that all operation and maintenance materials are obtained. Material submitted must meet the approval of the Engineer prior to project final acceptance.

PART 3 - EXECUTION - NOT USED

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The extent and location of the demolition work is indicated on the Drawings and in the Specifications. The work includes, but is not limited to:

1. The requirements for the removal, wholly or in part, and satisfactory disposal of, subgrade materials, pavements, fencing, storm drainage, utility pole, stop sign(s), fire hydrant, miscellaneous site debris, and other obstructions which are designated to be demolished on the Drawings or within these Specifications.

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.

4. Backfilling and compaction of holes, voids, trenches or pits that result from such removal.

B. All demolition items not identified for salvage by the Engineer shall become the property of the Contractor. Disposal of all demolition items shall be in accordance with these Specifications, local, state and federal requirements.

1.02 SUBMITTALS

A. Demolition Management Plan (DMP)

1. The DMP shall provide the procedures proposed for the complete accomplishment of the demolition work and management of the demolition wastes and documentation. The procedures shall provide for safe conduct of the work, careful removal and disposition of materials specified to be salvaged or disposed, protection of property to remain undisturbed, and coordination with other work in progress. The procedures shall include a detailed description of the methods, staff, and equipment to be used for each operation, the sequence of operations, and quality control measures to ensure compliance with the Contract and regulatory requirements.

2. Submittal requirements in Section 01 35 43.19 – “Export Soil Management Plan” and Section 01 74 19 – “Waste Management Plan” may be included as part of DMP or submitted separately.

PART 2 - PRODUCTS

2.01 SALVAGE MATERIALS FOR REINSTALLATION WITHIN THE PROJECT

A. All material designated for removal, salvage and reinstallation within the project shall be placed within Contractor Laydown area(s) as indicated on the Drawings or adjacent to the location of reinstallation. All salvaged material shall be stacked on Contractor supplied pallets where practical, or stored by blocking larger items on Contractor supplied dunnage in a neat and orderly manner.

B. The following materials shall be salvaged for reinstallation:

1. Light fixture

2. Ecology Blocks

PART 3 - EXECUTION

3.01 PREPARATION

A. Utility locates shall be performed prior to start of demolition. Coordinate and resolve with the Engineer 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 DISPOSAL AND DISPOSITION OF MATERIALS

A. Disposition of Materials

1. All materials and equipment removed, and not reused or salvaged, shall become the property of the Contractor and shall be removed from Port property.

2. The Contractor assumes full responsibility for the proper disposal of all demolition materials under this Contract in a manner that meets the requirements of federal, state and local regulations for protecting the health and safety of employees, the public, and for protecting the environment.

3. Excavated base course and excavated soil to be disposed of offsite in accordance with Section 01 35 43.19 – “Export Soil Management”.

B. Cleanup:

1. Haul route and paved site areas will be swept to remove any construction debris or soil tracked out by construction equipment and vehicles.

2. There shall be no debris, rubble or litter left at the site from any of the demolition operations and the site shall be clean.

END OF SECTION

PART 1 — GENERAL

1.01 DESCRIPTION OF WORK:

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

1.02 QUALITY ASSURANCE:

A. QUALIFICATIONS OF WORKMEN:

1. Provide at least one (1) person who shall be present at all times during execution of this portion of the Work and who shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and who shall direct all work performed under this section.

B. REFERENCE STANDARDS:

1. ACI 318, Building Code Requirements for Rein-forced Concrete
2. ACI 315, Manual of Standard Practice for Detail-ing Rein-forced Concrete Structures
3. ACI 301, Specifications for Structural Concrete for Buildings
4. Washington State Department of Transportation (WSDOT) Standard Specifications, 2016 Edition
5. American Welding Society (AWS) D1.4 Structural Welding Code - Reinforcing Steel
6. Concrete Steel Reinforcing Institute (CRSI), Manual of Standard Practice, 27th Edition.
7. WABO Standard No. 27-13, “WABO Welder and Welding Operator Performance Qualification Standard for Structural Steel, Sheet Steel, and Reinforcing Steel”.

1.03 SUBMITTALS:

A. Before materials are delivered to the job site, submit the following items to the Engineer in accordance with Section 01 33 00 - "Submittal Procedures."

1. Submit complete shop drawings for the Engineer's review, prior to fabrication.
2. Submit mill certificates for each heat of steel, indicating Specification compliance regarding strength and chemistry of steel to be furnished.

1.04 PRODUCT HANDLING:

A. PROTECTION:

1. Protect reinforcement before, during, and after installation and protect the installed work and materials of other trades.
2. Store in a manner to prevent fouling with dirt, grease, and other bond-breaking coatings.
3. Use all necessary precautions to maintain identification after the bundles are broken.

B. REPLACEMENTS:

1. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer at no additional cost to the Port.

PART 2 — PRODUCTS

2.01 REINFORCEMENT:

A. All reinforcement material shall be new and free from rust.

B. All reinforcing bars, except as noted below shall be deformed billet steel bars, conforming to ASTM A 615, Grade 60.

C. Spiral reinforcing bars shall be undeformed plain bars or wire conforming to ASTM A 615, Grade 60, ASTM A 706, or ASTM A 82 as indicated on the Drawings.

D. Mechanical splices for reinforcing bars shall be Lenton Standard Couplers or approved equivalent. Couplers shall develop 125 percent of the minimum yield strength of reinforcing bar.

E. Mechanical anchors for reinforcing bars shall be Lenton Terminator or approved equivalent. Anchor shall develop the yield strength of the reinforcement without damaging the concrete.

2.02 OTHER MATERIALS:

A. All other materials not specifically described but required for a complete and proper installation of reinforcement, shall be as selected by the Contractor, subject to the approval of the Engineer.

PART 3 — EXECUTION

3.01 GENERAL:

A. Prior to installation of this Section, carefully inspect the installed work of other trades and verify that such work is complete to the point where this installation may properly commence.

B. 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 CRSI detailing practice. Do not order material until such lists and bending diagrams have been approved.

1. 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. FABRICATION:

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 except as indicated on the Drawings or as approved by the Engineer. Make bends and hooks in accordance with the applicable portions of the Concrete Reinforcing Steel Institute.

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 shall be in accordance with ACI 315 and ACI 318 unless otherwise noted on the Drawings.

3. Distance from the forms shall be maintained by means of stays, blocks, ties, hangers, or other approved supports. Blocks for holding reinforcement from contact with the forms

shall be pre-cast mortar blocks of not less than 3750 psi compressive strength, of approved shape and dimensions, or approved metal chairs. Metal chairs which are in contact with the exterior surface of the concrete shall be plastic coated. Layers of bars shall be separated by spacer bars, plastic-coated chairs, precast mortar blocks of not less than 3750 psi compressive strength or other equally suitable devices.

4. In the event that conduits, piping, inserts, sleeves, or other items interfere with placing reinforcement as indicated on the Drawings or as otherwise required, immediately consult the Engineer and obtain approval of new procedure before placing concrete.

3.03 SPLICING:

A. All reinforcement, except as noted below, shall be furnished in the full lengths as indicated on the Drawings. Splicing of bars, except when indicated on the Drawings, will not be permitted without written approval of the Engineer.

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 or reduce bond between steel and concrete.

3.05 INSPECTION:

A. Reinforcement in any member shall be placed and then inspected by the Port before the placing of concrete may begin. Concrete placed in violation of this provision may be rejected, and the Contractor will be required to remove the rejected concrete at no additional cost to the Port.

B. The Contractor shall notify the Engineer at least 24 hours in advance of any concrete pour, to allow for proper inspection.

END OF SECTION

PART 1 — GENERAL

1.01 DESCRIPTION OF WORK

A. The extent and location of the cast-in-place concrete work are indicated on the Drawings. The Work includes furnishing of all labor, material, and equipment for providing cast-in-place concrete and associated work, all as indicated in the Drawings and this Specification.

1.02 GENERAL

A. All concrete work shall conform to the requirements of ACI 301 unless otherwise noted in the Drawings and/or this Specification.

1.03 QUALITY ASSURANCE

A. INSPECTION AND TESTING

1. The Port will provide for necessary inspection and testing as required. The Contractor shall provide all necessary assistance in carrying out such inspections and tests, including sufficient mixed concrete and constituent materials required for testing and inspection, at no additional cost to the Port.

B. QUALIFICATION OF WORKMEN

1. Provide at least one person who shall be present at all times during execution of this portion of the Work, who shall be thoroughly trained and experienced in concrete work, and who shall direct all work performed under this section.

2. Trained and experienced journeyman concrete finishers shall be responsible for finishing of exposed surfaces.

C. REFERENCE STANDARDS

1. ACI 318, Building Code Requirements for Reinforced Concrete

2. ACI 301, Specification for Structural Concrete for Buildings

3. ACI 302, Concrete Floor and Slab Construction

4. ACI 305, Hot Weather Concreting

5. ACI 306, Cold Weather Concreting

6. ACI 308, Standard Practice for Curing Concrete

7. ACI 315, Manual of Standard Practice for Detailing Reinforced Concrete Structures.

8. International Building Code (IBC), 2003, as amended and adopted by the City of Tacoma.

1.04 SUBMITTALS

A. All cast-in-place concrete shall be proportioned on the basis of field experience or laboratory trial mixtures.

B. The following documents shall be submitted to and approved by the Port, in accordance with Section 01 33 00 - "Submittal Procedures," before any concrete can be placed on the job:

1. Certificates of Specification compliance for materials to be used.

2. Proposed concrete design mix, indicating constituent material contents per cubic yard of concrete.

3. Test certificates for compressive strength, yield, air content, and slump of the proposed concrete mix. As a minimum, compressive strength test results at seven, 14, and 28-days shall be provided in accordance with ACI 318 5.3.
4. Manufacturer's name and Specifications and certificates of compliance with applicable standards shall be provided for all admixtures, concrete bonding agents, curing compounds, etc., proposed for use on the job.
5. Manufacturer’s data for pre-fabricated construction joint systems and hardware.

PART 2 — PRODUCTS

2.01 GENERAL

A. All concrete, unless specifically permitted by the Port, shall be ready-mix. Batching, mixing, transportation, and delivery of ready-mix concrete shall conform to ASTM C 94.

2.02 MATERIALS

A. Portland cement for use in mixes without fly ash shall be Type I-II or Type II conforming to ASTM C 150 and ASTM C 595. Upon written authorization of the Port, Type III cement may be used for mixes without fly ash.

1. The C3A content of the cement shall be no less than four percent nor more than ten percent. Portland cement for use in mixes with fly ash shall be Type I or Type I-II conforming to ASTM C 150. If fly ash is used, it shall meet the requirements of ASTM C 618, Type F, with the added provisions that the loss on ignition shall not exceed one percent, and that the fly ash is stored in a separate silo from that of cement. Split bins are not acceptable.

B. All coarse and fine aggregate shall consist of hard, tough, durable, particles free from foreign materials, and shall be stored in such a manner as to prevent segregation, excessive breakage, and the introduction of foreign material. Aggregate shall conform to ASTM C 33 and additionally shall have a minimum of two fractured face. The maximum size of coarse aggregate shall not be larger than three fourths of the minimum clear spacing between reinforcing steel bars and/or between bars and side forms and/or between bars and top or bottom surface of the concrete. Lightweight aggregate or aggregate larger than 1-1/2 inch shall not be used without written permission from the Port. The maximum size of coarse aggregate for "pea gravel" concrete shall be 3/8-inch.

C. Water-reducing admixtures shall be used and conform to the requirements of ASTM C 494. Dosage rates shall be in accordance with the manufacturer's recommendations.

D. 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. The air-entraining admixture shall be added directly to the concrete materials either before or during mixing.

2.03 OTHER MATERIALS

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

2.04 MIX PROPORTIONS AND STRENGTH

A. The proportions of aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the forms, around reinforcement and

embedded items, with the least possible segregation of the material and preventing excess free water to collect on the surface.

B. The mix proportions shall be selected in accordance with ACI 318. Test data representing 30 recent consecutive tests for each mix shall be submitted to establish the standard deviation used in Section 5.3.1. The criteria for acceptance of submitted tests shall be in accordance with Section 5.3.1.1. 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. Where no previous data are available, the mix or mixes shall be overdesigned in accordance with Section 5.3.2.2. When consecutive test data have representing compliance under these Specifications has been established during this project, the overdesign may be relaxed in accordance with Section 5.5 at the discretion of the Engineer. Deviation from any reviewed design mix without written authorization of the Engineer will not be permitted.

C. All concrete, except as otherwise noted in the Drawings, shall develop a minimum compressive strength of 4000 psi in 28-days and shall meet the following requirements:

1. Minimum Cementitious Material

   a. Concrete without fly ash — 611 lbs/cy

   b. Concrete with fly ash — 517 lbs/cy and

2. Maximum Water/Cement Ratio
   (by weight, including free moisture on aggregate)
   0.40*

   * If fly ash is used, the water/cement ratio shall be calculated as the weight of water divided by the weight of cement plus the weight of the fly ash.

3. Air Content — 5% + 1 1/2%

4. Water-reducer admixture shall be Type A, D, F, or G. The amount shall be such to control the desired workability and water/cement ratio of the mix.

5. Slump: three to five-inches with Type A or D admixtures, four to eight-inches with Type F or G admixtures. The slump shall be chosen to enhance workability without violating the specified maximum water/cement ratio.

PART 3 — EXECUTION

3.01 PREPARATORY WORK

A. INSPECTION

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly 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 clearance for reinforcement.

B. General

1. All areas in which concrete is to be placed shall be thoroughly cleaned to remove all wood debris, sawdust, tie wire cuttings, and all deleterious materials. Existing concrete or concrete from a previous pour shall be cleaned and roughened to provide a bondable

surface. Concrete forms which have not been treated with oils, waxes, or other bond breakers shall be thoroughly wet prior to placing concrete.

2. All transporting and handling equipment shall be cleaned of all hardened concrete.

C. Notification

1. Notify the Engineer at least 24-hours in advance of concrete placement.

3.02 TRANSPORTING AND PLACING CONCRETE

A. Concrete shall be placed as soon as possible after mixing and shall be plastic and readily workable when placed in the forms. Partially set concrete shall not be retempered for use.

B. The method and manner of placing concrete shall avoid segregation of the aggregate, or displacement of reinforcement.

C. Conveyor belts, when used, shall be limited to approximately 300-feet in length to prevent segregation and shall be covered to protect the concrete from sun or rain.

D. Aluminum conduits or tremies shall not be used for pumping or placing concrete.

E. Concrete shall be placed in continuous horizontal layers not exceeding 18-inches, and so compacted that there will be no line of separation between layers. Care shall be taken to fill each part of the form by depositing concrete directly to or as near the final position as possible.

F. When concrete must be dropped more than five-feet into the forms, it shall be deposited through an approved conduit (tremie). The tremie conduit shall also be used to place concrete in sloping forms or in other locations, as directed, to prevent concrete from segregation caused by sliding around reinforcing or other embedments.

G. In general, the method of depositing and compacting concrete shall be conducted so as to form a compact, dense, impervious concrete with the required surface finish without rock-pockets, and a minimum of segregation. Defective concrete shall be removed at the Contractor's expense.

H. Concrete shall not be placed where other work in the area, such as driving piling or sheets, or other vibratory action will adversely affect the initial set or strength of the concrete. To the maximum extent possible, cast-in-place concrete shall not be placed within 100-feet of concrete or sheet pile driving.

I. Mechanical vibrators shall not be used for transporting concrete.

J. Water shall not be added to concrete on-site without approval of the Engineer.

K. Contractor shall ensure that washout of concrete trucks is performed with all applicable codes and regulations. Contractor may establish a contained truck washout area using washout pans or perform washout at an existing offsite washout and disposal facility. Washout area shall be sealed to prevent discharge of concrete, slurry or residuals to waters of the State. Wash out concrete truck chutes, pumps, and internals into formed areas only. Do not wash out concrete trucks onto the ground, or into storm drains, open ditches, streets, or streams. Return unused concrete remaining in the truck and pump to the originating batch plant for recycling. Do not dump excess concrete on site, except in designated concrete washout areas. At the completion of work the Contractor shall remove all washout debris from the site and restore the washout area to preconstruction condition.

3.03 CONSTRUCTION JOINTS

A. Joints and stoppages, except as specifically shown on the Drawings, shall generally conform to ACI 318. Joints shall be located so as not to significantly impair the strength of the structure

and only as approved by the Port. Thoroughly clean all joints to remove all loose concrete and laitance. Roughen joint surface to a 1/4-inch amplitude. Unless otherwise noted, wet and coat all cleaned joints with neat cement bond grout immediately before placing fresh concrete.

B. Pre-fabricated construction jointing systems and products shall be submitted for review and approval by the Port prior to use.

3.04 COLD/HOT WEATHER CONCRETING

A. Do not place concrete when the atmospheric temperature drops below 40°F or rises above 90°F, unless special procedures are followed. Procedures for production, delivery, placing, curing, inspection, and testing of concrete under hot or cold weather conditions shall follow the recommendations of ACI 305, “Hot Weather Concreting” or ACI 306, “Cold Weather Concreting”.

B. If concrete is placed during cold or hot weather conditions, the Contractor shall submit documentation to the Port demonstrating how the procedures described in the above referenced ACI documents will be followed. The Contractor’s documentation shall be received by the Port no later than 72 hours prior to concrete placement. The Port’s review of this documentation does not relieve the Contractor’s responsibility to provide concrete per the Contract Documents.

3.05 CONSOLIDATING CONCRETE

A. The Contractor shall 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 be not less than 7000 impulses per minute when in actual operation.

B. Vibration shall be such that the concrete becomes uniformly plastic. Vibrators shall be inserted to a depth sufficient to vibrate the bottom of each layer effectively, but shall not be allowed to penetrate partially hardened concrete. The vibrators shall not be applied directly to steel which extends into partially hardened concrete. The intervals between points of insertion shall not be less than two-feet nor more than three-feet.

C. Vibration shall not continue in any one spot to the extent that pools of grout are formed. In vibrating and finishing top surfaces which are exposed to weather or wear, extreme care shall be exercised to 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. Vibrators shall not be used to transport or move concrete inside the form.

D. The Contractor shall supply a sufficient number of vibrators to effectively vibrate all of the concrete placed. Hand tamping shall be required wherever necessary to secure a smooth and dense concrete on the outside surfaces.

3.06 CURING CONCRETE

A. Refer to ACI 308 for recommended practices for curing concrete.

B. Concrete (other than high-early strength) shall be maintained above 50°F and in a moist condition for at least the first seven days after placement.

C. High-early strength concrete shall be maintained above 50°F and in a moist condition for at least the first three days after placement.

D. All concrete shall be protected from mechanical injury and accelerated drying. No fire or excessive heat shall be permitted near the concrete at any time.

E. Accelerated curing methods, if used, must be approved by the Port.

3.07 FINISHING CONCRETE

A. General:

1. All permanently exposed surfaces, unless specifically noted otherwise, shall be free from local bulging and all unsightly ridges or lips shall be removed to leave a smooth, flat surface. Excessive rubbing will not be permitted. Patching mortar, if used, shall be of the same color as the surrounding concrete. White Portland cement shall be added to patching mortar for color matching purposes.

B. Walls and Vertical Surfaces:

1. Immediately after removal of form or absorptive form lining, concrete surfaces shall be inspected for defects. All defects, voids, defective concrete, and tie rod holes shall be repaired immediately after the forms are removed unless otherwise directed by the Port. All exposed tie wire shall be removed (chipped out) and patched. The concrete used for repairing shall be of such quality that it can be thoroughly bonded to the adjacent concrete.

2. All defects shall be repaired no later than 48-hours after form removal.

C. Horizontal Surfaces:

1. All horizontal surfaces that will carry additional concrete shall be thoroughly roughened to an amplitude of 1/4-inch and cleaned of all laitance and unsatisfactory concrete.

2. Other horizontal surfaces that will not receive any additional concrete shall have a smooth wood float finish except for the top of the bullrail which shall have a broom finish. The broom strip shall be approximately 1/16-inch.

D. Protection of Finish:

1. Every precaution shall be taken by the Contractor to protect finished surfaces from stains or abrasions. Surfaces or edges likely to be injured during the construction period shall be properly protected.

3.08 TESTING

A. Testing of concrete material will be done by the Port. Methods of sampling, testing, evaluation, and acceptance will conform to ACI 301. All fresh concrete samples intended for testing will be taken at the point of deposit into the formwork.

B. Testing, as described above, will be at Port’s discretion and in no way relieves the Contractor of any obligations.

C. Tests will be performed at no cost to the Contractor, except as noted. The following services shall be performed, when necessary, at Contractor's cost:

1. Additional testing and inspection required because of changes in materials, proportions, and procedures requested by the Contractor.

2. Additional testing of materials or concrete occasioned by their failure by test or inspection to meet Specification requirements.

D. Any delivered load of concrete that is rejected shall be completely disposed of off-site. Any truck rejected shall not be permitted to return to the project site for the duration of the workday.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. 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.

1.02 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. American Society for Testing and Materials (ASTM):

a. D877 Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes.

2. Insulated Cable Engineers Association (ICEA):

a. S-68-516 Ethylene-Propylene-Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.

3. National Electrical Manufacturers Association (NEMA):

a. WC8 Ethylene-Propylene-Rubber Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy. (ICEA S-68-516)

4. Institute of Electrical and Electronic Engineers (IEEE):

a. 81 Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Ground System.

b. 400 Guide for Making High-Direct-Voltage Tests on Power Cable Systems in the Field.

5. National Electrical Code – NEC

6. American National Standards Institute - ANSI

7. National Fire Protection Association - NFPA

8. Occupational Safety and Health - OSHA 29CFR Part 1910.269

9. International Electrical Testing Association – NETA

10. Nationally Recognized Testing Laboratory Approved - NRTL

11. State and Local Codes and Ordinances

1.03 WORK INCLUDED:

A. 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 & References for Tests:

1. All inspections and tests shall be in accordance with the following applicable codes and standards except as provided otherwise herein.

2. National Electrical Code - NEC

3. National Electrical Manufacturer's Association - NEMA

4. American Society for Testing and Materials - ASTM
5. Institute of Electrical and Electronic Engineers - IEEE
6. National Electrical Testing Association - NETA
7. American National Standards Institute - ANSI
8. State and Local Codes and Ordinances
9. Insulated Cable Engineers Association - ICEA
10. Association of Edison Illuminating Companies - AEIC

1.04 CIRCUIT TESTS:

A. The Contractor shall perform routine insulation resistance, continuity and grounding tests for all distribution and utilization equipment prior to their connection and energization. A standard megger-type instrument shall be used to demonstrate that 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.

B. System defects, indicated by the circuit tests, shall be corrected. Tests shall be repeated until satisfactory results are obtained.

1.05 GROUNDING TEST:

A. Measure the ohmic value of the Electrical Service Entrance "System Ground" with reference to "Earth Ground" using multiple terminal, fall of potential methods and suitable test instruments.

B. Maximum resistance to ground shall be less than 10 ohms. Notify the Port of Tacoma if this resistance value is not obtained for the initially installed system; and then provide corrective measures as required to reduce ground resistance to less than 10 ohms.

1.06 PHASE BALANCE TESTS:

A. Verify the balance of the electrical system's phase currents. Re-assign load connections necessary to obtain a balance that is acceptable to the Port of Tacoma.

1.07 PHOTOMETRIC LIGH TLEVEL TESTS

A. See Section 26 56 36 Lighting Fixtures.

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.

B. Field test meters used to check installed power system instrument calibration must have an accuracy higher than that of the instrument being checked.

2.02 TEST INSTRUMENTS AND CALIBRATION

A. The Testing Firm shall have a calibration program which assures that 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. Battery-powered portable telephone sets

2. Multimeter (Volts-Ohms-Millimeter) rated 20k ohms per volt or higher.

3. Three-phase rotation meter, 60-Hz.

4. Commercial model three-point earth ground test set that reads directly in ohms.

5. Miscellaneous cable, test leads, jumpers, test lights, buzzers, bells, switches, plugs, receptacles, and other test equipment as required.

6. Insulation Tester (Megger): 2,000 Megohms.

7. Clamp-on Ammeter.

8. Circuit Breaker Current Injections Test Set.

2.03 TEST REPORT

A. Include the following:

1. Summary of Project.

2. Description of equipment tested.

3. Description of test.

4. Test results.

5. Analysis and recommendations.

6. Appendix, including appropriate test forms.

7. List of test equipment used and calibration date.

B. Furnish 5 copies of the completed report to the Engineer no later than thirty days after substantial completion of the project.

2.04 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.

PART 3 - EXECUTION

3.01 TESTING

A. General requirements: Test all wire, cable, and electrical equipment installed and connected by the Contractor to assure proper installation, setting, connection, and function as indicated or to conform to Contract Documents and manufacturer’s instructions. As an exception to requirements stated elsewhere in the Contract, give the Engineer at least 7 calendar days’

notice of the dates and times scheduled for tests (except megger tests) so Engineer may witness the tests.

B. After the installation has been completed, the Contractor shall conduct an operating test demonstrating that all equipment and devices operate in accordance with the requirements of the plans and specifications.

1. Perform tests recommended by the equipment manufacturer.
2. Perform additional tests issued by the Port which are required due to field conditions.
3. Be responsible for all damage to equipment or material due to improper test procedures or test apparatus handling.

END OF SECTION

PART 1 - GENERAL

1.01 GENERAL CONDITIONS:

A. Bidding documents including Division 1 General Conditions, Supplementary General Conditions, Published Addenda and related work in other Divisions form an integral part of these Specifications.

1.02 DEFINITIONS:

A. The term "provide" shall mean furnish, install and connect equipment and materials complete in operating condition.

B. The term "approved" as used herein shall mean the written approval of the Engineer.

C. NEC means National Electrical Code.

D. 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 equipment, materials, devices 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, equipment, tools, etc. to complete the electrical work.

B. This site will be fully occupied during construction. The Contractor for this project is required to coordinate work for this project with the engineer and tenants.

C. All metal fabrications are to be steel, as indicated on the Drawings. Provide metal fabrications as 316 stainless steel and powder coat painted where identified as such. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, PVC coating, painting, and erecting metal fabrications, all in accordance with the Drawings, notes, and this specification.

D. 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, concrete vaults, switches, panels, auxiliary wood poles, disconnects 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 concrete vaults, raceways, outlets, wood poles and the like, from those shown on the Plans, shall be made without extra charge if so directed before installation.

C. Contractor is required to take all working dimensions from field measurments. Do not scale electrical Drawings.

D. Contractor shall be aware existing fencing in these work areas shall reamain. Trenching, backfill, compaction, hand digging, and repairs are required as part of this project.

1.05 MANUFACTURERS' RECOMMENDATIONS:

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

1.06 SUPERVISION AND COORDINATION:

A. Coordinate work with Engineer and tenants to ensure compliance with their specific requirements.

B. Contact Electrical Inspection, Tacoma Public Utilities (253-502-8541), obtain and pay for electrical permit before starting work.

C. Contact Tacoma Public Utilities (Dan Lovato – (253) 502-8368) and coordinate new electrical service to the site.

D. 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 that may be 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. NBFU National Board of Fire Underwriters
3. NEC National Electrical Code
4. --- State Electrical Code
5. NESC National Electrical Safety Code
6. NEMA National Electric Manufacturers Association
7. NFPA National Fire Protection Association
8. UL Underwriters Laboratories, Inc.
9. ICEA Insulated Cable Engineers Association
10. CBM Certified Ballast Manufacturers
11. --- Federal, State and Local Building Codes
12. ETL Electrical Testing Laboratories
13. --- Local Electrical Code
14. --- Service Policies of the Serving Electrical Utility and Telephone Company

B. Nothing in these Drawings and Specifications shall be construed as permitting work not conforming with 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.

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.

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 rated life in the prevailing environmental conditions where they are being installed. They 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.

2.02 TECHNICAL DATA:

A. Technical information contained herein relies entirely on tests and ratings provided by manufacturers who are solely responsible for their accuracy. The Port of Tacoma using this information in no way implies they have tested or otherwise verified the results of published manufacturer's information.

2.03 AS-SPECIFIED EQUIPMENT:

A. This specification generally lists only one make and model number for each item of equipment or material required for the project. This is not intended to be restrictive but is intended to indicate the standard of quality, design and features required.

B. In addition, the listed product is the basis of the design regarding physical size, electrical power requirements and performance. The product so identified is designated "as specified."

2.04 COMPLETE SYSTEMS:

A. All systems specified herein and shown on the Drawings shall be complete and operational in every detail. Mention of certain materials in bidding documents shall not be construed as releasing the Contractor from furnishing additional materials required by the manufacturer, installation methods, codes and performing all labor required to provide a complete and operable system.

2.05 SUBMITTALS:

A. Submittal items: Submittals shall include, but not be limited to the following items:

1. Panels
2. Raceways
3. Wires (600V)
4. Grounding Equipment
5. Wood Poles
6. Light Fixtures
7. Wiring Devices

8. Nameplates
9. Unit Sub
10. Stainless Steel Tie Wrap
11. Pre-cast Concrete Vaults/Covers with Calculations
12. Pre-cast Concrete Handholes/Covers with Calculations
13. Items Requested by the Port of Tacoma

PART 3 - EXECUTION

3.01 PROTECTION OF WORK:

A. Protect all work, wire, materials and equipment 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 conduit prior to installation of wire or pull string for empty conduits. 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 nor pulled into conduit embedded in concrete until after the concrete is placed and forms are removed.

3.02 CUTTING AND PATCHING:

A. Obtain permission from the Engineer prior to cutting. Cut carefully and only the minimum amount necessary. Cut concrete with diamond core drills or saws except where space limitations prevent the use of such equipment.

B. 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.

3.03 PAINTING:

A. Equipment scratched or marred in shipment or installation shall be refinished to the satisfaction of the Engineer.

3.04 LABELING:

A. Clearly and properly label the complete electrical system, as specified herein, to indicate the loads served or the function of each item of equipment connected under this contract. All labels shall be stamped Brass/Aluminum type. Seton or equal.

B. Stamped Brass/Aluminum tags shall have source end point, circuit breaker, fused switch, equipment name or equipment ID. Labels shall be provided in all power and signal manholes for all wires, cables and pull ropes provided under this contract.

C. All vaults (covers and frames) shall be field stamped the same as labeled on record drawings.

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. Provide all wire and terminations for a complete installation

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 centrigrade 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:

1. 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:

1. Spade, insulated type to be tool applied.

C. Terminator lugs for No. 10 wire or larger:

1. 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 un-terminated cable ends.

3.06 TERMINATIONS - COPPER CONDUCTORS 600 VOLTS:

A. Control and special systems wires shall be terminated with a crimped on lug when terminating at a screw connection.

B. All screw and 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.

C. 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 WORK INCLUDED:

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

B. All metal fabrications are to be steel, as indicated on the Drawings. Provide metal fabrications as 316 stainless steel where identified as such. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, galvanizing, and erecting metal fabrications, all in accordance with the Drawings, notes, and this specification.

PART 2 - PRODUCTS

2.01 CONDUITS:

A. Polyvinyl Chloride (PV) Coated Rigid Steel Conduit, Thick Wall (PVRSC).

B. Non-metallic, polyvinyl chloride (PVC), schedule 80.

C. Flexible Metal Conduit with polyvinyl chloride jacket.

2.02 FITTINGS:

A. PVRSC fittings shall have threaded connections.

B. Flexible Metal Conduit: "Super Liquid-Tight" with external ground lug.

C. PVC Schedule 80 fittings shall be solvent welded type.

D. Expansion Couplings: Type EX with ground jumper.

2.03 EXPOSED RACEWAY IDENTIFICATION:

A. Provide sign or stencil on all raceway(s) that are intended to contain conductors above 208 volts. The stencil or sign shall have minimum ½” high red letters indicating voltage.

PART 3 - EXECUTION

3.01 GENERAL:

A. Install raceways concealed in new construction or below grade.

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. Pull a properly sized mandrel through each conduit prior to installation of conductors or pull-lines to remove any materials trapped within the conduit run. Conduits embedded in concrete shall have a mandrel pulled within 24 hours of concrete pour.

E. All PVC elbows shall be factory made.

F. Field made elbows are not acceptable for PVRSC conduits. Bends that show conduit flattened, damage to PVC coating or other deformation are unacceptable and shall be replaced.

G. Conduits shall maintain a minimum 12" clearance from any high temperature surface.

H. The conduit layout shall be carefully planned by the contractor to ensure neat and workmanlike installation.

I. Provide bell ends for all conduits entering and leaving precast concrete manholes, vaults and pull boxes.

J. 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, although thinner insulation types are permitted in some cases. Conduit size shall not be reduced if large size is specified on the drawing. Minimum conduit size shall be 3/4" trade diameter for above grade and 2” trade diameter for below grade.

3.03 PVRSC:

A. Install PVRSC for all conduits where conduit is exposed above grade, on wood poles or surface mounted on wharf.

3.04 FLEXIBLE CONDUIT:

A. Provide liquid tight flexible metal conduit connection to equipment. Provide flexible conduit connection(s) at each pole base to allow for a maximum of 6” settlement. Provide bonding jumper when required by N.E.C.

3.05 PVC CONDUIT SCHEDULE 80:

A. PVC conduit Schedule 80 may be used underground. Field bends, when necessary, shall be formed with factory recommended bending equipment. Offsets and bends shall not exceed 22 degrees without engineers field review and approval. Contractor shall field stake bends for engineers review.

B. PVC conduit Schedule 80 may be used where surface mounted on wood poles. Provide expansion couplings at pole base, every 20’ and at pole top.

3.06 CONTINUITY OF CONDUIT SYSTEM:

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

3.07 PULL-LINES:

A. Provide 150 pound plastic pull-lines, with numbered distance marks at one-foot increments in all conduit-only systems and spare conduits to facilitate future conductor installation. Provide labels on source and end point of all pull lines

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

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

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.

1.02 REFERENCES

A. ANSI/IEEE C2 - National Electrical Safety Code.

B. NFPA 70 (National Fire Protection Association) – National Electrical Code.

1.03 QUALITY ASSURANCE

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

B. Comply with ANSI C2.

1.04 SUBMITTALS

A. Product Data for each type of product specified.

B. 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.

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. Conductor Identification:

1. Conductors to be Extended in the Future: Indicate source and circuit numbers.

2. Multiple 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.

D. Warning, Caution, and Instruction Signs:

1. Install warning, caution, and instruction signs where indicated or required to ensure safe operation and maintenance of electrical systems and of items to which they connect.

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED

A. Provide all panelboard equipment complete. All equipment shall be 316 stainless steel, rated Nema 4X, dead front type, door in door construction and shall bear the U.L. label. Nema 4X panels with interior equipment mounting hardware protruding through exterior can are not acceptable. Load centers will not be acceptable.

B. All panels provided for service entrance locations as defined by the NEC shall be provided with a UL label, “Suitable for Use as Service Entrance Equipment” (SUSE).

C. All metal fabrications are to be steel, as indicated on the Drawings. Provide metal fabrications as 316 stainless steel where identified as such. The work shall consist of furnishing all materials, labor, and equipment for fabricating and/or repairing, and erecting metal fabrications, all in accordance with the Drawings, notes, and this specification.

1.02 SHOP DRAWINGS

A. Prepare and submit for review prior to manufacture. Include front view, dimensions, device sizes and layout, list of nameplates and all other information required to demonstrate conformance with contract documents.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Siemens

B. General Electric

C. Square D

D. Cutler Hammer

2.02 PANELBOARD DESCRIPTION

A. Voltage, arrangement, and capacity of bus and overcurrent protective devices shall be as shown on the drawings. Bus shall extend behind all spaces ready for future overcurrent protective devices.

B. Buss bars shall be plated aluminum or copper with ampere density not-to-exceed 1200/1000 amperes per square inch.

C. Bussing shall be 3 phase, 4 wire, 100 percent neutral, braced to match the interrupting rating of the breakers.

D. Provide multiple lugs where parallel or "feed-through" connections are shown on drawings.

E. Provide separate neutral and ground buses at the bottom of each panelboard.

2.03 OVERCURRENT PROTECTIVE DEVICES

A. The AIC rating of the panel and circuit breakers shall be as specified on the drawings.

B. Mount breakers in all panelboards so breaker handles operate in a horizontal plane. Provide common trip on all multiple pole breakers.

C. All circuit breakers shall be bolt-in type.

D. Circuit Breakers rated 15A through 30A shall be U.L. rated for 60/75 degree centigrade wire. Breakers 35A and larger shall be rated for 75 degree centigrade. Ground and provide handle ties for all single pole breakers utilizing a shared neutral wire.

E. Circuit breakers intended for switching 120 volt loads shall be switching duty rated (SWD).

F. Provide "Spare" overcurrent devices, where noted on the drawings, complete and ready for future circuit connections.

G. Provide "Space" for future overcurrent devices, where noted on the drawings. Space shall include all bussing and device mounting hardware. Provide approved coverplates or overcurrent devices in all spaces. Open spaces in the panel are not permitted.

2.04 ENCLOSURE GENERAL CONSTRUCTION

A. Provide cabinets of sufficient dimensions to allow future expansion and addition of overcurrent devices within the panelboards.

B. All electrical distribution equipment locks shall be keyed identically.

C. Fasten panelboard front with machine screws with oval counter-sunk heads, finish hardware quality, with escutcheons or approved trim clamps. Clamps accessible only when dead front door is open are acceptable.

2.05 POLE MOUNT MINI-POWER CENTER-NEMA 3R:

A. Units shall be designed, manufactured, and tested in accordance with the latest applicable ANSI, NEMA, IEEE and UL standards, and shall be UL listed and bear the UL label.

B. Each mini-power center shall include a main primary breaker with an interrupting rating of 8 kA at 277/480 volts; an encapsulated dry-type transformer and secondary panelboard with main breaker rated 10 kA interrupting rating at 120/240 volts.

1. All interconnecting wiring between the primary breaker and transformer, secondary main breaker and transformer, and distribution section shall be factory installed. Main primary, secondary and feeder breakers shall be enclosed with a padlockable hinged door.

2. The secondary distribution section shall accommodate one-inch, plug-in breakers with 10 kA interrupting capacity.

C. The enclosure shall be made of painted 304 stainless steel. Mini-power centers shall be equipped with wiring compartment suitable for conduit entry and large enough to allow convenient wiring. The maximum temperature on top of the enclosure shall not exceed 90°C. The core of the transformer shall be grounded to the enclosure. Unit shall be totally enclosed, non-ventilated, NEMA 3R, with lifting eyes.

D. Sound levels shall not exceed 40 decibels.

E. Units shall be rated 5KVA, 480V primary , 120/240V secondary with main breakers (primary and secondary) and minimum six (6) 20/1P branch breakers.

PART 3 - EXECUTION

3.01 GENERAL INSTALLATION

A. Secure panelboards in place with top of cabinet at 6'-0", above finished grade. Top of cabinet and trim shall be level; trim and door shall fit neatly without gaps, openings or distortion.

B. Top edges of adjacent panels shall be even.

C. Provide concrete bases, 3” galvanized rigid conduit, threaded caps, hot dipped galvanized steel channel support framing, stainless steel bolts, washers and nuts where panelboard is free standing. All conduit and steel channel shall be field painted two (2) coats safety yellow.

3.02 CIRCUIT INDEX

A. Each panelboard shall be provided with a typewritten index listing each circuit in the panel by number, with its proper designation. Listing shall match circuit breaker arrangements, typically with odd numbers on the left and even numbers on the right. Mount index with a transparent protective cover inside the cabinet door.

3.03 PANELBOARD NAMEPLATE:

A. Provide phenolic engraved nameplate for each panelboard. Adhesive only, do not screw to panel face.

END OF SECTION

PART 1 - GENERAL

1.01 WORK INCLUDED:

A. Provide all wiring devices and plates for a complete installation.

PART 2 - PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS:

A. Hubbell

B. G.E. Wiring Devices

C. Leviton

D. Pass & Seymour

2.02 MATERIALS:

A. Wiring devices shall be specification grade, and the product of a nationally recognized manufacturer regularly engaged in their production.

B. All wiring devices specified in this section shall be the product of one manufacturer. Each type shall have identical appearance and characteristics.

2.03 RECEPTACLES:

A. Duplex 20A, 125V where indicated GFCI, provide with trip indicator light.

B. Receptacle covers shall be Nema 3R “In Use”.

PART 3 - EXECUTION

3.01 MOUNTING:

A. Rigidly fasten each device to auxiliary pole or non-metallic strut.

3.02 RECEPTACLE GROUNDING:

A. Provide bare bonding wire between receptacle grounding terminal and box.

END OF SECTION

PART 1 - GENERAL

1.01 RELATED DOCUEMNTS

A. 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

1.02 WORK INCLUDED:

A. Alternate #1 – Provide 775 watt, pulse start metal halide high mast, full cut off light fixtures mounted on manufactured ring attached to 80’ wood poles.

B. Alternate #2 – Provide LED high mast light fixtures mounted on manufactured ring attached to 80’ wood poles.

C. Light fixture manufacturer shall provide contractor with a computer generated photometric plan (initial and maintained) for site along with aming coordinates.

1.03 LIGHTING PERFORMANCE:

A. The lighting fixture manufacturer shall supply lighting equipment and computer generated point by point analysis(s) to meet the following:

1. Point By Point Analysis

a. Computer Models - Test Stations

1) Field test stations for the horizontal field measurements shall consist of points on an equally spaced 20' by 20' grid.

2) Light fixture manufacturer shall provide a written guarantee of the light levels submitted.

3) All photometric calculations shall include light loss factors used.

B. All information above shall be provided for Engineers review and approval along with light fixture, lamp and ballast catalog data.

PART 2 - PRODUCTS

2.01 LIGHTING PERFORMANCE AND MEASUREMENTS:

A. Contractor Field Test and Measurement Procedures

1. All testing will be done with entire facility illuminated.

2. Horizontal footcandle readings shall be taken with the meter positioned horizontal 36 inches above grade. Maximum footcandles shall be taken with the test cell positioned 36 inches above grade and aimed at the brightest light source.

3. Ambient light levels shall be measured prior to new lighting testing at the specified test stations. Maximum ambient footcandle level explored in all planes for each test station shall be recorded. Once the maximum spill light readings as defined have been recorded, subtract the ambient light readings from the respective footcandle readings recorded for new lighting measurements at each test station.

4. Testing equipment for measurement of footcandle levels shall be a calibrated Gossen Panalux Electronic 2 light meter or an approved equal. For final approval of the project the manufacturer shall provide a final report from the test results that shall provide the following items:

a. Identification of number and location of the test stations.

b. Actual horizontal footcandle readings taken at each test station.

c. Actual spill/glare footcandle readings taken at each test station.

d. Total of hours of operation for the lighting system at the time of test readings.

B. In event the measured values do not meet specified levels predicted for initial levels, then Contractor/Manufacturer after reviewing the light levels as calculated and the measured results, shall generate a new solution or add light fixtures to the satisfaction of the Engineer to achieve the guaranteed light levels. Contractor shall provide new light fixtures at no additional cost to the Port.

2.02 LIGHT FIXTURES

A. Lighting Fixture Alternate #1

1. The luminaire shall be Holophane catalog number HMAOCP75MP48S9PS or equal. Its effective projected area (EPA shall not exceed 1.34 square feet. Fixture shall be UL listed for wet locations. 40°C ambient temperatures and be CUL Certified.

2. Housing: Shall be die cast aluminum, including a seven stage pre-treatment and finished with 2 to 4 mil of polyester powder paint. The bracket arm clamp shall attach to a 15mm (2") nominal schedule 40 pipe and allow ±3° adjustment for leveling the luminaire. A stainless steel lamp clamp lined with woven glass cloth shall be attached to the reflector housing assembly for standard 775 watt metal halide lamps. The fixture shall pass a vibration fatigue test per ANSI standards for Roadway Lighting Equipment- Luminaire Vibration.

3. Ballast: Shall be copper wound with factor 90%. It shall have a published ballast factor of 1 to ensure full output of the lamp. All ballast components shall be completely removable as a unitized quick disconnect assembly for maintenance. A terminal block shall be provided to simplify wiring and provide positive electrical connections. A protected starter shall sense an inoperative or missing metal halide lamp and automatically shut down to prevent runaway operation, shortened life and damage to secondary ballast windings.

4. Optical Assembly: The optical assembly shall consist of highly specular enhanced aluminum hermetically sealed between a spun aluminum cover and an open ventilated borosilicate glass piece and/or prismatic re-factor or an internal reflector system. The exposed smooth glass inner surface shall be continuously cleaned by the chimney effect of flow through air and subject to no permanent deterioration. The lamp shall be operated in the vertical position for maximum life and lumen maintenance. There shall be no glass bottom enclosure to scatter light above the horizon, to collect dirt or to reduce luminaire efficiency.

5. Photometric Performance: The luminaire shall provide Full Cutoff distributions. Luminaire dirt depreciation shall be less than 5% (LDD 0.95).

B. Lighting Fixture Alternate #2

1. General Construction: Low copper content cast aluminum 356 alloy electrical and optical housing. Two bolt horizontal arm mount with +/- 3 degree vertical adjustment. Two captive bolts disengage top electrical cover for easy access to LED drivers, surge protection, and terminal block. Vibration rated to 3G applications per ANSI C136.31-+2001. External perforated aluminum environmental guard protects against dirt and debris infiltration. Finish shall pass 1000 hour salt fog test per ASTMB117 and D1654.D. IP66 rated LED modules, IP 55 electrical per IEC60068-2-3. UL 1598 safety listed, 25C wet location.

2. Electrical: Quick connectors for ease of installation and maintenance. Surge protection meets 10KV/5KA per ANSI/IEEEC62.41. Twist off photo control receptacle is adjustable without tools and is ROAM Compatible. 90% driver power factor. Driver meets maximum total harmonic distortion (THD) of 20% and is ROHS compliant. DTL photo control for solid-state lighting (available with PCS option) meets ANSIC136.10 criteria.
3. Optical: Multi die LED chip on board (COB) technology, color temperature options of 4000K and 5000K with CRI of 65 minimum. Prismatic glass optics in both asymmetric and symmetric distributions. Zero up light optics reduces sky glow and meets Dark Sky requirements. Prismatic glass optics provides overlapping pattern on application space eliminating dark spots. Prismatic glass optics minimizes direct view of LED reducing glare. Rotatable optic assembly to align asymmetric to roadway.
4. Thermal Management: Thermal management achieved by combination of a cold forged aluminum heat sink with convection and conduction methology.
5. Testing Compliance: Luminaire shall conform to following standards: .
    a. ANSI/IEEE C62.41:2002 – Surge Protection
    b. ANSI C82.77:2002 – Harmonic Distortion
    c. ANSI C136.31:2001 – Luminaire Vibration
    d. ASTM B 117:2003 – Salt Spray Test
    e. FCC Title 47 CFR Part 18 – Federal Communications Commission
    f. IEC 60068 – Environmental Testing
    g. IEC 60529:1999 – Degrees of protection provided by enclosure (IP)
    h. IEC 61000 0 Electromagnetic Compatibility Testing (EMC)
    i. IEEE 519 – Harmonic Control in Electrical Power Systems.
    j. UL-1598, 25C, Wet Location – Safety Listing
6. Manufacturing: Test 100% electrical of all luminaires before shipment. No less than five (5) years experience in manufacturing LED based products.
7. Warranty: Five year limited warranty.

2.03 LAMP SPECIFICATION:

A. General:

1. The lamp shall be 1000 watt high pressure sodium or light emitting diode as tested by manufacturer for photometric data.

PART 3 - EXECUTION

3.01 SETTING POLES:

A. All pole bases shall be carefully set to within 2 feet of designated spot.

B. Luminaire poles shall be installed plumb.

END OF SECTION

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. The work includes excavation, subgrade preparation, backfilling, grading, and compaction.

B. Excess soil and aggregate generated as a result of the Work may be re-used on-site if the material meets the requirements for Fill or Backfill. If the material does not meet the aggregate gradation for Fill or Backfill, the material may be exported off-site and disposed of, or may be blended with additional aggregates to meet the grading requirements for Fill or Backfill. Use of on-site material as Fill or Backfill is subject to approval by the Engineer as described in these Specifications. Physical and/or chemical characterization of excess materials will be required and will be provided by the Port as determined by the Engineer.

1.02 QUALITY ASSURANCE

A. The Port will provide testing and inspection service to the satisfaction of the Engineer unless otherwise specified. 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 at no cost. Tests conducted for the sole benefit of the Contractor shall be at the Contractor's expense.

1.03 SUBMITTALS

A. The Contractor shall perform and pay for and submit test reports for all imported materials as specified in Paragraphs 2.03, 2.04, and 2.05. Submit test reports for all field tests to determine in-place density as specified in Paragraph 3.05B.

1.04 SITE CONDITIONS

A. Existing Utilities: The Contractor shall verify the location of existing utilities at the site as described in Section 02 41 13 – “Selective Site Demolition”. Those utilities which are to remain shall be protected from damage. Damage to utilities which are to remain shall be repaired by the Contractor at no cost to the Port.

PART 2 – PRODUCTS

2.01 FILL AND BACKFILL

A. Material used for fill and backfill shall be clean, free-draining, sandy gravel or gravelly sand obtained from natural deposits or from excess soils generated during site construction activities. Individual particles shall be free from all objectionable coating. The material shall contain no organic matter or soft friable particles considered objectionable by the Engineer.

B. Material used for backfill shall be one of the following:

1. Material from trench excavation or other on-site borrow soils generated during construction at the site, as approved by the Engineer in accordance with Paragraph 2.04, free from organic matter, demolition debris, or other deleterious substances, and containing no rocks or lumps over six inches in greatest dimension, except where otherwise approved by the Engineer. “Nesting” of rock pieces that will create voids will not be permitted. Characterization of on-site common borrow materials shall be completed by the Port as directed by the Engineer.

2. Imported fill material consisting of bank run gravel for trenches meeting the requirements of Washington State Department of Transportation Standard Specifications, 2016 Edition, Section 9-03.19. The amount of fines shall not exceed five percent based on the minus

3/4-inch fraction. Off-site borrow materials shall be characterized as specified in Paragraphs 2.03 and 2.05 at the Contractor's expense.

C. Material shall be graded between the limits specified below:

SIEVE SIZE	PERCENT PASSING (BY WEIGHT)
8-INCH	100
4-INCH	95-100
3/4-INCH	60-90
U.S. NO. 10	25-65
U.S. NO. 40	10-40
U.S. NO. 200	0-4

The moisture content of fill material shall be within minus two percent to plus one percent of the optimum moisture content at the time of compaction.

2.02 GRAVEL BACKFILL FOR PIPE ZONE BEDDING

A. Gravel backfill for pipe zone bedding shall consist of crushed, processed or naturally occurring granular material. It shall be free from various types of wood waste or other extraneous or objectionable materials. It shall have such characteristics of size and shape that it will compact and shall meet the following specifications for grading and quality:

Sieve Size	Percent Passing
1-1/2" square	100
1" square	75-100
5/8" square	50-100
U.S. No. 4	20-80
U.S. No. 40	3-24
U.S. No. 200	10.0 Max.
Sand Equivalent	35 min.

B. Imported bedding material shall be characterized as specified in Paragraphs 2.03 and 2.05 at the Contractor's expense.

2.03 OFF-SITE BORROW SOURCE CHARACTERIZATION

A. Off-site borrow source characterization shall be performed by the Contractor as specified in Paragraph 2.05 to assure that imported materials are natural, native, virgin materials, free of contaminants, including debris or recycled materials, and meet the requirements of the Contract Documents.

B. Characterization requirements described in Paragraph 2.05 may be waived by the Engineer if the Contractor demonstrates that the material is from a known source of natural origin and supplied by a commercial material supplier that certifies in writing that the material is free of chemical contaminants and provides certified laboratory data results representative of the source material.

C. 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.

D. General

1. Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein. The Contractor shall submit a characterization of any and all imported material prior to any on-site placement. The characterization will include source identification, analyses of a material source sample, and a source inspection report. The material shall not be imported to the site until approved by the Engineer. Once approved and imported to the site, the Contractor shall perform an on-site inspection of the material to verify that it is the material sampled for characterization and approval.

2. Source Identification

a. The Contractor shall provide documentation of the origin of imported materials and maps identifying specific location(s) of material source(s). Physical and chemical characterization reports available from the material supplier shall be provided to the Engineer.

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 are likely to 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. Off-site borrow materials shall be in accordance with the requirements of Paragraph 2.05 unless waived by the Engineer.

5. Inspection of Materials at the Jobsite

a. The Contractor shall visually inspect 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 tested according to Paragraph 2.05 at the Engineer's discretion. Material may be rejected due to the presence of deleterious substances or as a result of substandard test results.

2.04 ON-SITE BORROW SOURCE CHARACTERIZATION

A. Excess soils generated during site activities may be used as on-site common borrow for backfill and other fills associated with the work, as approved by the Engineer. Characterization of excess materials generated during site activities and proposed for reuse as on-site common borrow material may be performed by the Port as determined by the Engineer to assure that on-site borrow materials are free of contaminants, including debris and meet the requirements of the Contract Documents. The Engineer maintains the right to reject any materials that have been determined to be substandard for any reason. One or more of the tests listed in Paragraph 2.05 of these Specifications may be required by the Engineer for characterization prior to acceptance. The Contractor shall provide representative sample(s) of the material if requested.

B. General

1. Materials shall be of the quality, size, shape, gradation, or equal to that manufacture as specified herein or as approved by the Engineer. The Contractor shall submit a written request for approval for use of on-site common borrow materials at least three weeks prior to any on-site placement. The request shall identify the source of the material, proposed onsite use and quantity of material to be used. The Engineer may request that the Contractor provide samples of the material for physical and/or chemical characterization. The material shall not be reused at the site until approved by the Engineer. Once approved for site use, the Contractor shall perform an on-site inspection of the material to verify that it is the material sampled for characterization and approval.

C. Inspection of Source

1. The Contractor shall visually inspect excess materials generated from on-site construction proposed to be reused. 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 tested according to Paragraph 2.05 at the Engineer's discretion. Material may be rejected due to the presence of deleterious substances or as a result of substandard test results.

2.05 CHARACTERIZATION TESTING, REPORTING, AND CERTIFICATION OF OFF-SITE MATIERAL

A. The Contractor shall provide characterization and testing as described below for all off-site borrow materials. Testing results shall meet the Port of Tacoma Import Material Screening Criteria to be considered acceptable.

B. The Contractor shall provide test sample(s) of excess materials to be reused and/or exported. The sample data shall be provided at least one week before proposed use or export of the materials.

C. The Contractor is responsible for all testing costs associated with characterization of off-site borrow materials. The Port is responsible for testing costs associated with on-site borrow materials and excess materials to be exported.

D. The Contractor shall provide the following information with each sample submitted:

1. Material Source
2. Proposed On-site Use
3. Sampling dates
4. Chain of custody
5. Sampling locations
6. Contractor's certification that the samples submitted are representative of the materials that shall be reused at the site.

E. Characterization Testing shall include:

1. Physical Properties:
    a. Grain Size Distribution (ASTM D 422-63)
    b. Maximum Dry Density (ASTM D1557)
2. Metals and Chemicals:

a. Import Material Screening Criteria as indicated in Table 31 00 00 - 1 – Import Material Screening Criteria

b. Petroleum Hydrocarbons (NWTPH-Gx (Gasoline) and –Dx (Diesel/Oil))

3. Table 31 00 00 - 1 – Import Material Screening Criteria

Chemical / Metal Name	Gravel/Rock Criteria (mg/kg)	Soil Criteria (mg/kg)
Volatile Organic Compounds (EPA Method 8260)		
Benzene	-	0.03
Ethylbenzene	-	6.0
Toluene	-	7.0
Xylenes	-	9.0
Tetrachloroethylene (PCE)	-	0.05
Semi-Volatile Organic Compounds (EPA Method 8270)		
acenaphthene		99.8
anthracene		2,284
benzo[a]anthracene		0.9
benzo[a]pyrene		0.1
benzo[b]fluoranthene		1.4
benzo[k]fluoranthene		13.7
benzoic acid	-	385
benzyl alcohol	-	8,000
bis(2-ethylhexyl)	-	13.9
phthalate	-	12.9
butyl benzyl phthalate	-	95.5
cresol;o-	-	3.1
cresol;p-	-	8,000
dibenzo[a,h]anthracene	-	0.1
dibenzofuran	-	80
di-butyl phthalate	-	59.7
dichlorobenzene;1,2-	-	9.9
dichlorobenzene;1,4-	-	0.2
diethyl phthalate	-	97.8
dimethylphenol;2,4-	-	1.6

di-n-octyl phthalate	-	800
fluoranthene	-	632
fluorene	-	102
hexachlorobenzene	-	0.09
hexachlorobutadiene	-	0.6
indeno[1,2,3-cd]pyrene	-	1.4
methyl naphthalene;2-	-	320
naphthalene	-	5.0
nitrosodiphenylamine;N-	-	0.6
pentachlorophenol	-	0.004
phenol	-	15.8
pyrene	-	656
trichlorobenzene;1,2,4-	-	0.06
Pesticides / PCBs (EPA Method 8081/8082)		
ddd	-	0.3
dde	-	0.4
ddt	-	3.0
Polychlorinated biphenyls (PCBs)	-	1.0
Metals (EPA Method 6010/6020/7041)		
Arsenic	13.8	13.8
Cadmium	2.0	2.0
Chromium (total)	2,000	2,000
Chromium (VI)	-	19
Copper	143	143
Lead	250	250
Mercury	2.0	2.0
Nickel	418	418
Zinc	5,981	5,981

PART 3 – EXECUTION

EXCAVATING AND GRADING WHICH IS PART OF THIS CONTRACT, SHALL BE COMPLETED WITHIN THE TOLERANCES ESTABLISHED OR WITHIN REASONABLY CLOSE CONFORMITY WITH THE ALIGNMENT GRADE AND CROSS SECTIONS INDICATED ON THE DRAWINGS OR AS ESABLISHED WITHIN THESE SPECIFICATIONS.

3.01 EXCAVATION AND GRADING

A. Excavation: Shall be the naturally occurring earth, sand, gravel, clays, or mixtures of the above, required to be moved for the construction of roadways, slopes, approaches, parking areas, and

associated work. Excavation material shall be moved with the use of mechanical equipment, such as shovels, loaders, bulldozers, graders, rippers, etc., but shall not require drilling and blasting or drilling and line breaking. Excavation by sluicing method will not be permitted unless specifically approved by the Engineer. In general, excavation shall be removed in horizontal layers in such a way that the resulting material will be a reasonable blend of the naturally occurring materials.

3.02 EXCAVATION FOR STRUCTURES, AND TRENCHING FOR UTILITIES

A. Excavate as necessary for structures to lines and grades indicated on the Drawings.

B. Excavation below the designed depth, except as directed by the Port, shall be backfilled with quarry spalls, or other suitable backfill material as approved by the Engineer and compacted as specified, at no extra cost to the Port.

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. Water level shall be kept below the bottom of concrete pours before, during, and for a minimum of three days thereafter.

E. Protect excavated material, stockpiled for use as backfill, from contamination by other materials and from damage by weather by covering with waterproof sheeting or other suitable means.

F. 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 Gravel Backfill or Gravel Backfill for Pipe Zone Bedding per Paragraph 2.01 or 2.0, respectively, as directed by the Engineer.

2. Unsuitable materials, excess material and excavated material not approved by the Port for use as fill or backfill shall be transported off-site by the Contractor in accordance with Section 01 35 43.19 –“Export Soil Management”.

3.03 FILL AND BACKFILL FOR STRUCTURES AND UTILITIES

A. All underground structures including manholes, catch basins, vaults, and/or other structures, shall be over excavated by one foot. The subgrade shall be prepared, and a minimum of 12-inches of Aggregate Base Course shall be placed and compacted.

B. Place backfill and structural backfill to lines and grades indicated on the Drawings.

C. Remove water from excavated areas, by pumping or other means, before placing any fill material.

D. Compact subgrade, as specified in Paragraph 3.04, before placing any fill or backfill material.

E. Do not place any fill against concrete walls/structures until the concrete has attained its specified design strength and/or certain other construction sequence criteria, if noted on the Drawings, are met, or as specifically approved by the Port.

F. Place fill in layers not exceeding 12-inches (loose thickness) and compact to at least 95% of dry density (ASTM D 1557).

3.04 COMPACTION

A. Compaction shall be performed with approved compaction equipment suited to the soil and the area being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Each lift of material placed shall be uniformly compacted to the density indicated for the specific material and use set forth in these Specifications. The percent of density required is in relation to the maximum density obtainable at optimum moisture content (Compaction Control Density) as determined in Paragraph 3.05.

3.05 COMPACTION CONTROL TESTS

A. Laboratory and field tests shall be performed in accordance with the applicable provisions of these Specifications.

B. 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 percent of dry density for Select Fill and Backfill and no less than 98 percent of dry density for Base Course Material.

C. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D1556, D2167, or D2922.

3.06 PREPARATION FOR BASE COURSE OR GRAVEL SURFACING:

A. Preparation of Subgrade: Immediately prior to placement of surfacing materials, clean the entire width of the area of all debris and dispose of as directed by the Engineer. All depressions or ruts which contain storm water shall be drained.

1. Shape the entire subgrade to a smooth uniform surface, true to line, grade, and cross section as staked by the Engineer. Compact the roadbed material for a depth of six-inches below the subgrade to 95% of the maximum density as determined by compaction tests ASTM Designation D1557. 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.

2. Remove and dispose of excess material which cannot be disposed of by normal drifting to low spots during blading and shaping operations or by placing in subgrade areas deficient in materials or by wasting, all as directed by the Engineer. Subgrade areas deficient in materials shall be brought to grade by importing suitable materials from other subgrade areas or other sources as directed by the Engineer. Materials added to subgrade areas deficient in materials shall be watered and compacted as necessary to yield a true finished subgrade as described above.

3. Once it is prepared, maintain the subgrade for surfacing in the finished condition until the first course of surfacing has been placed.

B. Finishing Subgrades: Before any paving or base 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.

1. Compact the subgrade for pavement to 95 percent of maximum density as defined for Compaction Control Density, Article "Compaction Control Tests" these Specifications, to a minimum depth of six-inches.

C. Subgrade Protection: 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. Equipment used for hauling over the prepared subgrade which, in the opinion of the Engineer, is causing undue damage to the prepared subgrade or to the underlying materials, shall be removed from the work at the request of the Engineer. Repair at the Contractor's expense all cuts, ruts and breaks in the surface of the subgrade prior to placing surfacing, treated base, or paving materials. 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 a completely satisfactory condition.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This work includes all necessary measures to keep excavations and pipe trenches dry during construction. The work covered by this Specification consists of providing all supervision, labor, materials, and equipment required to dewater excavations and trenches.

1.02 QUALITY CONTROL

A. 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 objectionable settlement and subsidence.

B. All dewatering operations shall be adequate to ensure the integrity of the finished Project and shall be the responsibility of the Contractor.

1.03 SUBMITTALS

A. The Contractor shall submit a Dewatering Plan which addresses the methods proposed in dewatering trenches and handling the dewatering discharge.

B. The Contractor shall be required to obtain all necessary permits for disposing of the dewatering discharge. Permits required shall be addressed in the Contractor's Dewatering Plan.

PART 2 - PRODUCTS

2.01 GENERAL

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

2.02 EQUIPMENT

A. The Contractor shall have available on this site of work sufficient pumping equipment and/or other machinery to ensure that the operation of the dewatering system can be maintained.

PART 3 - EXECUTION

2.01 GENERAL

A. Site work for excavations and pipe trenches shall be kept free from water to facilitate fine grading, construction of structures, the proper laying and joining of pipe and appurtenances, and placement of backfill material. Adequate pumping equipment shall be provided to handle and dispose of the water without damage to adjacent property. Trenches shall be dewatered if, at the decision of the Engineer, the quantity of water present prevents the proper installation of pipes. Water in pipe trenches shall not be allowed to flow through the pipe.

B. The Contractor shall provide and maintain at all times during construction, ample 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. No piping shall be laid in water, nor shall water be allowed to rise over them until the concrete or mortar has set at least 24-hours or until the pipeline has been adequately backfilled to prevent buoyancy. No embankment material shall be placed in standing water. The Contractor shall be responsible for obtaining all water discharge permits as required. No water shall be discharged to areas or work built or under construction.

C. Water shall be disposed of in such a manner as not to be a nuisance or menace to the public health. Water shall be disposed of in such a manner as not to violate any water quality standards of city, state or federal regulations.

D. Written permission shall be secured from the Port 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 dewatering well, line, or trench drains left in place within the excavation limits be filled with concrete or grout as herein specified, and shown on the Record Drawings.

E. Dewatering of excavations must be controlled to prevent damage from settlement due to possible lowering of the adjacent groundwater table.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. Work herein generally covers trenching, bedding, backfilling and compaction required for installation of site utilities and site storm drainage. Trench excavation and backfill shall include all excavation, backfilling, disposal of surplus and unsuitable material and all other work incidental to the construction of trenches.

1.02 SITE CONDITIONS

A. The Contractor should not anticipate the presence of groundwater at or near the existing ground surface for much of the project site. The groundwater elevation varies depending upon proximity to the shoreline, tidal conditions and weather.

1.03 SUBMITTALS

A. For each off-site source of material, submit test reports for the following:

1. Grain Size Distribution, ASTM D 422-63.
2. Weight per unit volume of uncompacted material, ASTM C-29.
3. Specific gravity of material as determined from absolute volume, in accordance with ASTM No. D854.

PART 2 - PRODUCTS

2.01 BEDDING MATERIAL

A. Refer for Section 31 00 00 – “Earthwork”.

2.02 BACKFILL MATERIAL

A. Refer to Section 31 00 00 – “Earthwork”.

2.03 UNDERGROUND MARKING TAPE

A. Underground marking tape shall consist of inert polyethylene plastic, four-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. Color coding of the tape shall be as follows:

Utility	Tape Color
Stormwater	Green
Electrical	Red
Communications/Fiber Optic	Orange

C. The width of the tape shall be as recommended by the manufacturer for the depth of installation and detection.

PART 3 - EXECUTION

3.01 STOCKPILING AND DISPOSAL

A. All excavated material shall be stock piled beside the trench as it is removed and shall be backfilled from this position or wasted offsite. The disposal of excess material shall be performed in accordance with Section 31 00 00 – “Earthwork”.

3.02 TRENCH EXCAVATION

A. The Contractor shall maintain, at all times during the execution of this work, safe and stable excavations. All trench excavation and preparation shall comply with Section 7-08.3(1) of the Washington State Department of Transportation Standard Specifications, 2016 edition.

B. Unsuitable materials encountered during trench excavation shall be handled as specified in Section 31 00 00 – “Earthwork”.

3.03 BEDDING AND BACKFILLING

A. Backfill trenches with bedding material as specified and as called for on the Drawings. Fine-grade the bedding material to the required slope and excavate to accommodate bell and spigot joints so the entire length of each pipe will be uniformly supported. Trench backfill shall be common material placed in horizontal layers not to exceed eight inches in loose thickness and carefully compacted by the use of small vibratory or mechanical compactors until the cover is one (1) foot above the top of the pipe. Subsequent layers of trench backfill shall not exceed eight inches in loose thickness but may be compacted by any method, which will not exceed the allowable stresses for the pipe. Compaction testing will be performed in conformance with Section 31 00 00 – “Earthwork”.

B. Backfill utility structures with structural backfill as specified in Section 31 00 00 – “Earthwork” and as called for on the Drawings.

3.04 COMPACTION

A. Compaction shall be performed with approved compaction equipment suited to the soil and the area being compacted. Moisten or aerate material as necessary to provide the moisture content that will readily facilitate obtaining the specified compaction with the equipment used. Each lift of material placed shall be uniformly compacted to the density indicated for the specific material and use set forth in these Specifications.

B. The Contractor shall properly place and compact all bedding and backfill materials to at least 90 percent of dry density (ASTM D 1557) in the bedding zone and 95 percent of dry density in trench backfill zone, and shall correct any deficiencies resulting from insufficient or improper compaction of such materials throughout the contract period.

3.05 COMPACTION CONTROL TESTS

A. Laboratory and field tests shall be performed in accordance with the applicable provisions of these Specifications.

B. 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.

C. Field tests to determine in-place compliance with required densities as specified, shall be performed in accordance with ASTM D1556, D2167, or D2922.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. This Section describes the work necessary to furnish, place, maintain and remove shoring required for all structure and trench excavations greater than four (4) feet deep. Shoring shall be provided in accordance with Section 2-09.3(3)D Shoring and Cofferdams of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, 2016 Edition, and applicable local, State and Federal safety codes.

B. Design, approvals, and construction of all shoring are the exclusive responsibility of the Contractor. A Professional Engineer, licensed in the State of Washington, shall be used to design all aspects of the shoring.

1.02 SITE CONDITIONS

A. The Contractor should anticipate encountering groundwater in excavations at much of the project site. The groundwater elevation varies depending upon proximity to the shoreline, tidal conditions and weather.

B. The Contractor shall ascertain to his own satisfaction the extent and method in which shoring will be required to meet all required safety codes based on the nature of the material in which it will appear, and the extent to which such occurrence of water shall affect his bid.

1.03 SUBMITTALS

A. Submit plans in accordance with Section 01 33 00 – “Submittal Procedures”, seven working days prior to beginning excavation, showing proposed shoring methods and construction details.

PART 2 - PRODUCTS

2.01 GENERAL

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

PART 3 - EXECUTION

3.01 GENERAL

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.

B. Damages resulting from improper support or from failure to support excavations shall be the sole responsibility of the Contractor.

C. In trenching operations, the use of horizontal strutting below the barrel of pipe or the use of pipe as support for trench bracing will not be permitted.

D. Sheet piling and timbers in trench excavations shall be withdrawn in a manner so as to prevent subsequent settlement of the pipe or additional backfill loading which might overload the pipe.

E. That portion of cribbing or sheeting extending below the springline of pipe shall be left in place unless satisfactory means of reconsolidating bedding or side support disturbed by cribbing or sheeting removal can be demonstrated.

F. If a movable box is used in lieu of cribbing or sheeting, and the bottom cannot be kept above the spring line of the pipe, the bedding or side support shall be carefully reconsolidated behind the movable box prior to placing initial backfill.

END OF SECTION

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. The extent of "Aggregate Base Courses" 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.

1.02 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:

B. Sieve analyses for all materials specified in accordance with ASTM C 136.

C. Maximum Dry Density (ASTM D1557).

PART 2 – PRODUCTS

2.01 AGGREGATE BASE COURSE

A. Material used for base course shall be of the following mixture:

B. Imported aggregate base course complying with Section 9-03.9(3) of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, 2016 Edition.

PART 3 – EXECUTION

3.01 EQUIPMENT

A. All equipment necessary for the satisfactory installation of base courses shall meet the requirements of Section 4-04.3(1) of the Washington State Department of Transportation Standard Specifications for Road, Bridge and Municipal Construction, 2016 Edition, 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” and obtain approval of the Engineer before placing base course materials.

3.03 PLACEMENT OF BASE COURSE AGGREGATES

A. Prior to placement Contractor shall blend the various source materials to create a homogenous, well graded, mixture.

B. Equipment necessary for the satisfactory performance of this construction shall be on the project and approved by the Engineer prior to beginning work. If central-mix-plant methods are used, the central mixing plant shall comply with the applicable portions Section 4-04.3(3) of the WSDOT Standard Specifications, 2016 Edition.

C. Prepare subgrades as specified above and obtain approval of the Engineer before placing base course or surfacing materials.

D. 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 directed by the Engineer to facilitate mixing and compacting.

E. 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 directed by the Engineer. Material shall be placed in layers not exceeding six inches.

F. Shaping and Compacting: Immediately following spreading and shaping, compact each layer to at least ninety five percent (95%) of the maximum dry density determined in accordance with ASTM D-1557 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.

G. 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.

H. 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 DESCRIPTION OF WORK

A. The extent of Hot Mix Asphalt (HMA) Pavement Class 1/2" PG 70-22 "Asphalt Paving" 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.

1.02 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" and Section 01 33 00 – "Submittal Procedures" 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 2016 Edition.

1.03 SUBMITTALS

A. The Contractor shall also submit certificates of Specification compliance for materials to be used.

1. HMA mix design taking into account the specific plan and equipment to be used.
2. Material data sheets for asphalt materials, certificates of compliance for asphalt materials and aggregates.
3. Gradation and material test results for aggregates used for HMA, including Los Angeles Wear, Degradation Factor, and fracture requirements.
4. Name, contact information and current accreditation documentation for AASHTO accredited independent testing agency.
5. Acceptance testing results.

1.04 ACCEPTANCE TESTING REQUIREMENTS

A. Acceptance sampling and testing of Hot Mix Asphalt shall be performed at the Contractor's expense by an independent AASHTO accredited testing and inspection agency. Testing agency shall be accredited by AASHTO for the specific testing methods to be performed. Acceptance testing shall be provided under non-statistical evaluation on up to three samples when ordered by the Engineer.

B. Sampling shall be performed in accordance with Washington State Department of Transportation Test Method T 716.

C. The Contractor shall perform sampling in the presence of the Engineer and in accordance with WSDOT FOP for WAQTC/AASHTO T 168.

D. Testing Methods:

1. Testing of HMA for compliance of asphalt binder content shall be by WSDOT FOP for AASHTO T308.
2. Testing of HMA for compliance of gradation shall be by WAQTC FOP for AASHTO T27/T11.

E. The results of all acceptance testing shall be provided to the Engineer.

PART 2 – PRODUCTS

2.01 ASPHALT CONCRETE PAVEMENT

A. Asphalt concrete pavement shall be Hot Mix Asphalt Class 1/2" PG 70-22 as defined in the WSDOT Standard Specifications, 2016 Edition. Materials shall be proportioned according to Section 9-03.8(6) of WSDOT Standard Specifications, 2016 Edition.

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, 2016 Edition.

B. Asphalt shall be PG 70-22 conforming to AASHTO Specification M 320.

C. Joint sealer shall be paving asphalt 70-22 conforming to AASHTO Specification M 320.

D. Tack coat shall be emulsified asphalt, CSS-1, conforming to Section 9-02.1(6) of the WSDOT Standard Specifications, 2016 Edition.

2.03 ASPHALT MIXING

A. Mixing plant for preparing asphalt concrete shall conform to the specific requirements of Section 5-04.3 of Washington State Department of Transportation Standard Specifications, 2016 Edition, and related Sections.

PART 3 — EXECUTION

3.01 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, 2016 Edition. Delivery of materials to the site shall meet said WSDOT Standard Specifications, 2016 Edition.

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 two lifts of equal thickness over the crushed surfacing course as shown in the Drawings. Lifts shall not exceed two inches and a tack coat shall be applied as needed in between. Specific construction requirements of Section 5-04.3 of WSDOT Standard Specifications, 2016 Edition, shall be followed.

D. Paved slopes and paved ditch sections shall be shaped and thoroughly compacted to avoid spalling at the edges.

3.02 TACK COAT

A. Tack coat of emulsified asphalt shall be applied to all surfaces on which any course of HMA is to be applied, including pavement, catch basins, manholes and other structures. Rate of application shall be 0.10 gallon per square yard. Tack coat requirement between lifts may be waived by the Engineer if the base course surface is kept thoroughly clean and the time lag between placement of base and wearing course is small.

3.03 COMPACTION

A. Compaction of the asphalt concrete pavement shall conform to the requirements of WSDOT Standard Specifications, 2016 Edition, Section 5-04.3(10). Density of the pavement in place

shall be a minimum of 91 percent or the reference maximum density as determined by WSDOT Test Method 716. 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.

3.04 JOINT SEAL

A. Apply joint sealer to the edges of new paving joints, catch basins, manholes, at the meet lines to concrete structures and as directed by the Engineer.

3.05 SURFACE SMOOTHNESS

A. Surface smoothness of completed pavement shall conform to the specific requirements of WSDOT Standard Specification, 2016 Edition, Section 5-04.3(13).

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The work includes the requirements for providing and installing traffic lane striping and pavement markings as indicated on the Drawings. This work includes all labor, materials, and equipment to fabricate and install signs indicated on the Drawings.

1.02 QUALITY ASSURANCE

A. Employ at least one person who shall be present at all times during execution of this portion of the work, shall be thoroughly familiar with the type of materials being installed and the best methods for their installation and shall direct all work performed under this section.

1.03 SUBMITTALS

A. Submit in accordance with Section 01 33 00 – “Submittal Procedures”, the following:

1. Manufacturer’s current technical specifications and installation instructions.
2. Material certificates signed by material supplier and Contractor, certifying that each material item complies with or exceeds specified reference standards.

PART 2 - PRODUCTS

2.01 PAVEMENT MARKING PAINT

A. Pavement marking paint shall be no heat, low VOC waterborne paint, top dressed with glass beads. Pavement marking paint shall be white or as depicted on the Plans. Paint shall not be used if there is evidence of heavy caking or settling in the original container or if the paint has been stored for more than one year from the date of manufacture.

2.02 THERMOPLASTIC PAVEMENT MARKINGS

A. Thermoplastic pavement markings shall be Type A – Liquid Hot Applied Thermoplastic according to Washington State Department of Transportation Standard Specification Section 9-34.3(1). Pavement marking paint shall be white in color or as noted on the Plans. Paint shall not be used if there is evidence of heavy caking or settling in the original container or if the paint has been stored for more than one year from the date of manufacture.

2.03 SIGNING

A. Signing materials and fabrication shall be completed according to the Washington State Department of Transportation (WSDOT) Standard Specification, 2016 Edition, Section 9-28 Signing Materials and Fabrication. The sign shall be a sheet aluminum sign conforming to WSDOT Standard Specification 9-28.8, and hardware per Standard Specification 9-28.11, and reflective sheeting per Standard Specification 9-28.12 and timber sign posts shall be constructed per Drawings and WSDOT Standard Specification 9-28.14(1).

B. Signs located in the City of Tacoma right-of-way signs shall comply with the Manual on Uniform Traffic Control Devices, 2009 Edition.

PART 3 - EXECUTION

3.01 GENERAL

A. Install parking striping, lane striping, no driving area striping, traffic letters, pavement markings and signage as indicated on the Drawings and as directed by the Engineer.

3.02 SURFACE PREPARATION

A. Sweep and clean surface to eliminate loose material and dust. All contaminants within the areas to receive pavement markings shall be removed. Large areas of tar, grease or foreign materials may require sandblasting, steam cleaning or power brooming to accomplish complete removal.

3.03 THERMOPLASTIC MARKING APPLICATION

A. Apply thermoplastic markings in accordance with Washington State Department of Transportation Standard Specifications, 2016 Edition, Section 8-22.3(3). Application thickness shall be per Section 8-22.3(F). A manufacturer's representative shall be present to approve installation procedures and conditions of surface prior to application.

3.04 PAINT APPLICATION

A. Apply paint with mechanical equipment to produce uniform straight edges. All materials shall be applied in accordance with Washington State Department of Transportation Standard Specifications, 2016 Edition, Section 8-22.3(3). A manufacturer's representative shall be present to approve installation procedures and conditions of surface prior to application.

3.05 GLASS BEADS

A. All paint markings shall be top dressed with beads. The application rate on painted markings shall be seven pounds of beads per gallon of paint. The bead application system shall provide a uniform bead distribution over the entire surface of the marking. Beads shall be applied to paint markings at the same time the paint is applied to the roadway and shall be dispensed by a pressurized bead gun system.

3.06 SIGNING

A. All permanent signing located within 30 feet from edge of the lane shall be turned out approximately three degrees from the pavement edge of oncoming traffic lanes. All sign post shall be plumb and signs level.

END OF SECTION

PART 1 – GENERAL

1.01 DESCRIPTION OF WORK

A. The extent and location of "fence" work is indicated on the Drawings. The work includes the requirements for furnishing and installing all items and components of a completed fence system in conformance with these Specifications and the dimensions and sections indicated on the drawings or as established by the Engineer.

1.02 SUBMITTALS

A. Submit supplier's certificate certifying that products meet or exceed specified requirements.

B. The Contractor shall submit shop drawings of fencing, gates, gate operators and appurtenances. Shop drawings must be approved by the Engineer prior to fabrication or installation.

1.03 SITE CONDITIONS

A. Clearing of the fence line will be required. Clearing shall consist of the removal and disposal of all vegetation measuring more than one inch in diameter or higher than 15 inches above the ground. The clearing width shall be approximately ten feet for chain-link-type fences and approximately three feet for wire-type fences, or as otherwise indicated on the Drawings.

B. Grading of the fence line shall be accomplished to eliminate abrupt changes in ground contours. Grubbing incidental to grading shall be accomplished as required. Vegetation resulting from grubbing activities shall be disposed of as cleared material. Boulders, rocks, or excess excavation shall be graded along the fence line or placed adjacent to the clearing on Port property as directed by the Engineer.

PART 2 – PRODUCTS

2.01 CHAIN LINK FENCE

The fence shall be chain link fabric supported on a steel frame, the posts of which are embedded in concrete foundations or bolted as depicted on the Drawings. Barbed wire supported on brackets above the fabric portion shall be installed as indicated on the Drawings. Materials shall be polymer coated heavy industrial chain link fencing in accordance with ASTM F1043, with the additional requirements as follows:

A. General: All steel fabric, framework and fittings shall be hot-dipped galvanized and black polymer coated in accordance with the applicable ASTM specification.

B. Fabric: Fence fabric height shall be eight feet and shall be black PVC or polyolefin elastomer coated, 7 mil to 15 mil thickness, thermally fused to zinc-coated steel core wire per ASTM F668 Class 2b, and the wire shall be No. 9 gage and the fabric shall be twisted and barbed on both selvages.

C. Framework:

1. Posts, rails and braces shall be in accordance with ASTM F1043, hot dip galvanized with minimum average 1.8 oz zinc coverage per square foot of coated surface area, with black PVC-coated finish of 10 to 15 mils, thermally fused.

   a. Line posts shall be 2.375-inch O.D., Schedule 40 pipe @ 3.65 pounds per foot, or "C" section @ 2.10 pounds per foot.

   b. End, corner, or pull posts shall be 2.875-inch O.D., Schedule 40 pipe @ 5.79 pounds per foot.

c. Swing gate posts shall be sized according to the following tabulation. Pipe sizes are nominal O.D. for Schedule 40 pipe.

Swing Gate Opening (2-in Frames)	Gate Post	Weight, Pounds per Linear Ft
Single Pedestrian (6 ft max)	2-7/8 in. O.D.	5.79
Double (12 ft and over)	8-5/8 in.O.D.	24.70

d. Top rails and post braces shall be 1.66 inch O.D., schedule 40 pipe @ 2.27 pounds per foot, or Type II "C" section as detailed on the drawings @ 1.35 pounds per foot.

Rolling Gate Opening (2-in Frames)	Gate Post	Weight, Pounds per Linear Ft
Single 12 ft and over	8-5/8 in. O.D.	24.70

e. Rolling gate post shall be sized according the following tabulation. Pipe sizes are nominal O.D. for Schedule 40 pipe.

f. Cantilever gate post shall be sized according to the following tabulation. Pipe sizes are nominal O.D. for Schedule 40 pipe.

Cantilever Gate Opening (2-in Frames)	Gate Post	Weight, Pounds per Linear Ft
Single 12 ft and over	8-5/8 in. O.D.	24.70

2. Tension Wire shall be No. 7 gage, coil spring, high tensile strength wire, Marcelled, and coated with not less than 0.80 oz. of zinc per square foot of uncoated wire surface and coated with thermally-fused black PVC or polyolefin elastomer in accordance with ASTM F1665.

3. Ties shall be No. 9 guage thermally fused black polymer coated galvanized steel meeting the requirements of ASTM F626.

D. Fittings: All fittings, accessories and hardware for Class 2b thermally fused black polymer coated galvanized chain link fence shall conform to the requirements of ASTM Designation F626 and other ASTM Designations listed therein.

E. Gates

1. Chain link gates shall be constructed with chain link fabric fastened to the end bars of the gate frame by tension bars and fabric bands, and to the top and bottom bars of the gate frames by tie wires in the same manner as specified for the chain link fence fabric.

2. Gate frames shall be constructed in accordance with ASTM F-900. The corners of the gate frame shall be welded and coated with two coats of GALVACON or approved equal and two coats of manufacturer approved black polymer coating.

a. Cross-trussing shall be 3/8-inch galvanized steel adjustable rods, galvanize and having class 2b thermally fused black PVC or polyolefin elastomer coating.

b. Each gate shall be provided complete with necessary hinges, gate keeper for each swing leaf, latch and drop bar locking device designed for the type of gate, posts and lock used.

c. Gates shall have positive-type latching devices with provisions for padlocking. Padlocks will be furnished by the Port of Tacoma.

F. Other Materials

1. Barbed Wire: Perimeter (Coast Guard) Fences: Each barbed wire shall conform to the requirements of ASTM F1665 and shall consist of two strands of 12-1/2-gauge having 0.007-inch minimum of class 2b thermally fused black PVC coating over 0.3-oz. of zinc coating per square foot of wire, twisted with 4-point, 14-gage barbs with the barbs spaced no more than five inches apart.

2. Concrete used in anchorage of posts shall be shall be Class B as specified in Section 03 30 00 – “Cast-in-Place Concrete”.

3. Barbed wire supporting arms (Coast Guard Perimeter Fences): Shall be black polyvinyl chloride-coated, minimum thickness of 0.006 inch, maximum thickness of 0.015 inch of the single, 45 degree outward angle 4-strand arm type and of the design required for the post furnished. Secure arms by top rail.

4. Gate Operators, Controllers and Motors:

a. The gate operators, motor assemblies, and card reader systems shall be provided by the same manufacturer. All motor operators and controllers shall be contained in an enclosure suitable for the environment in which equipment is installed, and shall be weatherproofed when exposed to weather. Underground conduits, wiring, sensors, and appurtenances shall be installed per the manufacturers recommendations.

b. Gate fabric shall be polyvinyl coated to match the chain link security fence or black polyester powder coated.

c. The gate operators shall be either a cantilever or swing gate including radio controls, electomechanical locks, single and three button control stations, digital keypads, coded cards, telephone entry system, and revenue control equipment. Gate operators shall utilize 230 Volt AC single phase power and control voltage is 5 Volt DC.

d. Swing gate operator shall be variable speed gate operator with linear drive arm, soft start/stop capability, solid state controls, integrated entrapment alarm and motion warning beeper. Operator controls and drive mechanism shall be housed in a weather resistant, powder coated, post mount cabinet. Control cabinet shall be provided with an exterior stop/rest button and exterior power on/off button.

e. Swing gate operator shall be heavy duty, commercial grade, rated for continuous duty cycle and the operation of gate of the type and size indicated on the Plans, Linear VS-GSWG Series, or approved equal.

f. Slide or cantilever gate operator shall be variable speed gate operator with programmable speed control, soft start/stop capability, solid state controls, integrated entrapment alarm and motion warning beeper. Operator controls and drive mechanism shall be housed in a weather resistant, powder coated, post mount cabinet. Control cabinet shall be provided with an exterior stop/rest button and exterior power on/off button.

g. Side gate operator shall be heavy duty, commercial grade, rated for continuous duty cycle and the operation of gate of the type and size indicated on the Plans, Linear VS-GSLG Series, or approved equal

h. Each gate operator shall include an integrated radio receiver, and surge protection.

i. Each gate operator shall be rated appropriately for the gate weight and shall be verified by the manufacturer prior to installation.

j. Each gate operator shall be UL 325 compliant.

k. Operation shall be by the means of a 1 hp single phase instant reversing motor with thermal overload protection in 230 VAC.

l. Each slide gate operator shall open the gate at a rate of up to 24 inches per second. Each swing gate operator shall rotate the gate 90 degrees in 18 to 22 seconds.

m. Each chain drive shall be #50 or approved equal and coated with “Armor Coat” corrosive resistant chain coating.

n. Each motor cover shall be a UV-stabilized polyethylene one piece cover which is fully removable and lockable or approved equal.

o. Contractor shall provide owners manual, training demonstration, and necessary codes to operate each gate.

PART 3 – EXECUTION

3.01 GENERAL

A. The location and alignment of the fence corners and gates is indicated on the Drawings. The Contractor shall locate all intermediate line posts.

3.02 INSTALLATION

A. Fencing, gates and appurtenances shall be erected and installed by an organization regularly engaged in this business, employing labor skilled in this type of work to provide a complete security fencing system.

B. Gates shall be fabricated to withstand wind and swing loads. They shall have locking bars to seat into keepers that are set in concrete in ground locations which will hold the gate rigidly in position when closed. Stops which will hold the gate open shall be provided and set in concrete at the location designated by the Engineer. Hinges shall be provided which will allow the gate to swing the entire arc indicated on the Drawings. Install gates on gate posts only, do not install on buildings.

C. Fabric shall be fastened to posts, the top rail and the bottom wire, with wire ties spaced as indicated on the Drawings.

D. Top rails shall be continuous. The Contractor shall provide for expansion or contraction of the continuous rail. Expansion and contraction spring couplings shall be installed at intervals of 100 feet maximum.

E. Posts shall be installed vertically in concrete or bolted, as depicted on the Drawings, with a minimum depth of embedment indicated on the Drawings and at the spacing specified for the type of posts approved for the Project. In unpaved areas, the concrete shall be struck off two inches above the surrounding grade. In paved areas it shall be struck off flush with the paving. The top of the concrete shall be trowelled smooth, with a slight slope away from the posts.

F. Minor damage to galvanizing of fabric and fence appurtenances shall be repaired by thorough cleaning of the damaged surfaces and the application of "GALVACON," or approved equal, in strict accordance with the manufacturer's recommendations.

1. Minor damage to PVC coating of fabric and fence appurtenances shall be repaired by thorough cleaning of the damaged surfaces and the application of PVC coating per Section 2.01 B, and in strict accordance with the manufacturer's recommendations.

G. Upon completion of the fence, the Contractor shall clean the fence of all soiled places and repair marred or abraided areas.

END OF SECTION

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

A. The location and extent of the "Storm Drainage Utilities" work is indicated on the Drawings. The work includes the requirements for furnishing and installing storm drain pipes, and storm drain structures.

1.02 QUALITY ASSURANCE

A. Except as specified in Section 3.06, the Port will provide testing and inspection service to the satisfaction of the Engineer. The Contractor may obtain test results from the office of the Resident Engineer at no cost. Tests conducted for the sole benefit of the Contractor, or before a product is approved, shall be at the Contractor's expense.

B. Qualification of Workmen: Employ at least one person who shall be present at all times during execution of this portion of the work, shall have all portions of the Drawings and Specifications applicable to that portion of the contract, shall be thoroughly familiar with the type of materials being installed and the best methods for their installation, and shall direct all work performed under this Section.

C. Qualifications of Land Surveyor: Responsible for layout of alignment and grade of site drainage piping.

D. Codes and Standards: The Contractor shall comply with the applicable provisions of all pertinent codes and regulations. References made herein for manufactured materials such as pipes, fittings, and specialties refer to designations for the latest edition of materials published by the American Association of State Highway and Transportation Officials (AASHTO), the American Society for Testing Materials (ASTM), the American Public Works Association (APWA) Standard Specification for Municipal Public Works Construction, and the WSDOT/APWA 2016 Standard Specifications for Road, Bridge and Municipal Construction.

1.03 SUBMITTALS

A. Submit the following in accordance with Section 01 33 00 – “Submittal Procedures” for the following products:

1. Manufacturer's literature on pipe and fitting materials.
2. Manufacturer’s certificates of compliance for pipe and fitting materials.
3. Manufacturer’s literature on the metal castings for manholes and catch basins.
4. Loading criteria per Plans.
5. Shop drawings for precast catch basins and manholes.

PART 2 - PRODUCTS

2.01 STORM DRAINAGE PIPE

A. Polyvinyl chloride (PVC) storm drainage pipe, couplings and fittings shall comply with ASTM D 3034. PVC pipe shall have integral bell joints complying with ASTM D 3212 and gaskets conforming to ASTM F477.

2.02 MANHOLES AND CATCH BASINS

A. Catch Basins shall be of precast concrete and shall be made up from the components indicated on the Drawings and shall be per Washington State Department of Transportation Standard

Plans for Road, Bridge and Municipal Construction, 2016 Edition, for dimensions and functionality. Loading criteria shall be as listed in Paragraph 1.03.

B. Metal frame and grate or cover for catch basins and manholes shall be ductile iron of the size and style indicated on the Drawings and capable of supporting the maximum loading criteria listed in Paragraph 1.03.

C. Ladders and other steel components and hardware shall be coated with HDPE.

D. Mortar shall be mixed 1:1; Type I cement and sand.

PART 3 - EXECUTION

3.01 GENERAL

A. It shall be the Contractor's responsibility to verify the actual locations (horizontal and vertical) of all utilities prior to beginning trench excavation. If utilities are to remain in place, provide protection from damage during construction operations.

3.02 EARTHWORK

A. Excavation, bedding, and backfilling shall be as specified in Section 31 00 00 - "Earthwork", of these Specifications.

3.03 SURVEYS

A. Layout of alignment and grade of site drainage piping shall be established by a Land Surveyor State licensed in Washington. Check the line and grade during installation to ensure that the Work is within the following allowable tolerances:

1. Fine-grade and prepare bedding so the pipe can be initially placed with a variation from true line or grade, measured at each joint, of not more than 1/32 inch per inch diameter or 1/2 inch maximum, provided that:

a. A resulting level or backsloping length of pipe does not occur; and

b. No more than one-half of the permissible variation shall be accumulated between successive joints.

c. Pipe laid within these tolerances shall not be subjected to any further adjustment. Measurement for grade shall be taken at the pipe invert, NOT TOP OF PIPE. Eccentricity of pipe barrels, with respect to jointing surfaces, shall not produce grade interruption adverse to flow of more than 1/4 inch maximum.

3.04 INSTALLATION OF UNDERGROUND PIPE

A. Furnish all necessary machinery for the work and pump, bail, or otherwise remove any water which accumulates in the trench. Perform all work necessary to keep the trench clear of water while the foundation and the masonry are being constructed or the pipe is being laid.

B. Placing: Place the pipe from downstream to upstream with the bells pointing upstream in appropriate bedding graded to conform with the grades and alignment indicated on the Drawings and prepared as specified. Ensure that the pipe has a full, solid bearing along its entire length. Provide small depressions for pipe bells when utilized. Make minor adjustments to line and grade by scraping away, or filling in with, bedding material. Do not support pipes on blocks or mounds of any nature.

C. Jointing: Take care to properly align the pipe and clean the bell and spigot or tongue of the pipe. Gaskets must be straight, properly lubricated and without twist. The pipe shall be partially supported by hand, sling, or crane, as required, to minimize lateral pressure on the gasket and

to maintain concentricity until the pipe has been forced into final longitudinal position in accordance with the manufacturer's recommendations. Pipe handling, after the gasket has been affixed, shall be carefully controlled to avoid bumping the gasket and, thus, knocking it out of position or loading it with dirt or other foreign material. Gaskets so disturbed shall be removed, cleaned, relubricated and replaced before the joint is attempted.

D. Apply sufficient restraint to the line to ensure that the joints, once home, are held so by tamping fill material under and alongside the pipe. At the end of the day's work, block the last pipe in such a manner as may be required to prevent creep during down time.

3.05 INSTALLATION OF MANHOLES AND CATCH BASINS

A. Furnish all necessary labor, materials, or equipment to pump, bail, or otherwise dewater the trench or pit for the duration of the construction and backfill period.

B. Manholes/Catch Basins

1. Place manholes/catch basins at the elevation and location indicated on the Drawings upon the appropriate bedding prepared in accordance with Section 31 00 00 – “Earthwork”.

2. Carefully place precast manholes/catch basins on the quarry spall and structural fill bedding so as to be fully and uniformly supported in true alignment, making sure that all entering pipes can be inserted on proper grade.

3. All lift holes and all joints between precast elements shall be thoroughly wetted and then completely filled with mortar, smoothed and point both inside and out, to ensure watertightness.

4. Place precast sections and align to provide vertical sides and vertical alignment of the ladder rungs. The completed catch basin shall be rigid, true to dimensions and watertight.

5. In precast manhole/catch basin sections where steel loops have been provided in lieu of lift holes, remove the loops flush with the inside wall surface after the catch basin has been completed. No sharp cutoff protrusions will be permitted. If concrete spalling occurs as a result of the loop removal, restore the spalled area with mortar to a uniformly smooth surface.

C. Grade Adjustment: The manhole/catch basin casting frame or casting ring may be either cast into a concrete collar or set flange down on pre-cast concrete adjustment rings and mortared, as directed by the Engineer. It shall not, in any case, be grouted to final grade until the final elevation of the pavement in which it is to be placed has been established and permission has been given by the Engineer to grout the casting in place. Provide not less than eight inches or more than 16-inches between the top of the cone or slab and the underside of the manhole casting ring for adjustment of the casting ring to grade. Bricks for grade adjustment shall not be used. Location of manholes/catch basins will be staked by the Contractor.

D. Pipe Connections: Place all pipes entering or leaving the structure on firmly compacted bedding, particularly within the area of the structure excavation, which normally is deeper than that of the sewer trench. All openings in the walls of catch basins constructed with precast sections for the insertion of pipe connections and outlet trap castings shall, after pipe or castings have been placed to their final position, be grouted tight in place to present a smooth uniform surface inside and outside. Pipe placed through walls to which connections will be made shall be so placed that the socket end of the pipe is backed against the outside surface of the catch basin as closely as practicable for the angle of entrance. The spigot end of the pipe shall be cut square with the last point of contact with the inside wall surface. Provide flexible joints within 12-inches of the catch basin structure.

E. Backfill: Hand-place backfill around the manhole, extending at least one pipe length into each trench and tamp with selected material up to an elevation of six inches above the crown of all entering pipes. Conform to the applicable provisions of Section 31 00 00 – “Earthwork”.

3.06 ACCEPTANCE TESTING

A. After completion of the following, authorization from the Engineer shall be required before the Contractor can perform acceptance testing:

1. Acceptable placement of applicable pipe, bedding, and backfill material.

2. Acceptable completion of all applicable manhole channels and grout work.

3. Acceptable debris removal, cleaning, and flushing of all applicable pipes and structures.

B. Contractor shall perform testing as required by Section 7-04.3(1) Cleaning and Testing of the WSDOT Standard Specifications for Road Bridge and Municipal Construction, 2016 Edition. Infiltration Testing shall be required where the pipe is installed below the ground water table.

C. Before final acceptance, the Contractor shall inspect all drainage lines by the use of a television camera, utilizing a Port approved independent inspection service company. The television inspection requirements shall include the provisions of:

1. A color analog/digital camera with pan and tilt capacity in order to view all main lines, lateral lines, and structures including channels.

2. A dye solution to be introduced in sufficient quantity to travel from the structure that is the highest point of inspection to the downstream terminus of the inspection limits. Red or purple dye shall be used for PVC pipe and green dye for ductile iron and concrete pipe.

3. A one-inch reference ball to be mounted to the camera in order to drag along the bottom of the pipe during the entire inspection procedure.

4. Linear measure references to be measured from the center of the beginning structure to the center of the next inline structure and include the direction of flow. The locations of lateral pipes and all distinctive pipe conditions shall be referenced to the centerline of the beginning structure. All structure references shall utilize the designated structure reference numbers shown on the Drawings.

D. The following television inspection information shall be provided to the Port:

1. A clear movie format on DVD which encompasses the limits of the inspection area and including all reference data as described herein. A tape reference time and date for the start of each run shall also be indicated.

2. A written report shall be provided corresponding to the taped inspection and including all reference data as described herein. The report shall consist of a written narrative of all distinctive pipe conditions including ponding areas in excess of 1/4 inch.

END OF SECTION

PART 1 GENERAL

1.01 DESCRIPTION OF WORK

A. The location and extent of the "Storm Water Treatment" work is indicated on the Drawings. The work includes the requirements for furnishing and installing all items and components of a completed Storm Water Treatment System as follows:

B. Description

1. The Contractor shall furnish and install modular stormwater biofiltration systems, complete and operable as shown on the Plans and as specified herein, in accordance with the requirements of the plans and contract documents.

a. Modular stormwater biofiltration systems shall consist of a pretreatment chamber containing filtration cartridges, a horizontal flow biofiltration chamber with a peripheral void area and a centralized and vertically extending underdrain, the biofiltration chamber containing a sorptive media mix which does not contain any organic material and a layer of plant establishment media, and a discharge chamber containing an orifice control structure.

b. Modular stormwater biofiltration systems shall be approved by Washington State Department of Ecology with a General Use Level Designation for basic, enhanced and total phosphorous treatment requirements.

1.02 QUALITY ASSURANCE

A. Qualification of Workmen: Employ at least one person who shall be present at all times during execution of this portion of the work, shall have all portions of the Drawings and Specifications applicable to that portion of the contract, shall be thoroughly familiar with the type of materials being installed and the best methods for their installation, and shall direct all work performed under this Section.

B. Codes and Standards: The Contractor shall comply with the applicable provisions of all pertinent codes and regulations. References made herein for manufactured materials such as pipes, fittings, and specialties refer to designations for the latest edition of materials published by the American Association of State Highway and Transportation Officials (AASHTO), the American Society for Testing Materials (ASTM), the American Public Works Association (APWA) Standard Specification for Municipal Public Works Construction, and the WSDOT/APWA 2016 Standard Specifications for Road, Bridge and Municipal Construction.

C. The quality of materials, the process of manufacture, and the finished sections shall be subject to inspection by the Engineer. Such inspection may be made at the place of manufacture, or on the work site after delivery, or at both places, and the sections shall be subject to rejection at any time if material conditions fail to meet any of the specification requirements, even though sample sections may have been accepted as satisfactory at the place of manufacture. Sections rejected after delivery to the site shall be marked for identification and shall be removed from the site at once. All sections that have been damaged beyond repair during delivery will be rejected and, if already installed, shall be repaired to the Engineer’s acceptance level, if permitted, or removed and replaced, entirely at the manufacturer’s expense.

1.03 SUBMITTALS

A. The Contractor shall design and provide vaults including grade rings, frames, and covers for the following criteria:

1. Loading Criteria per Plans.

a. Allowable soil bearing capacity of 2,500 PSF.

b. Submit design calculations, shop drawings, and product information for each wheel loading condition and all items related to the concrete vault and manhole structure fabrications and installations. Calculations and construction shall include compensation to prevent buoyancy assuming groundwater at eight feet below grade.

c. Shop Drawings and calculations shall be stamped by a structural engineer registered in the State of Washington shall be submitted and approved by the Engineer prior to fabrication.

B. Shop and installation drawings shall include all dimensions, filter placement, location of piping and vault foundation.

C. Manufacturer's literature on the modular stormwater biofiltration treatment system that includes information on the performance and operation of the units, materials of construction, dimensions, hydraulic capacity calculations including flow and head-loss data.

D. Submit (4) copies of the Operation and Maintenance Manuals for modular stormwater biofiltration units upon completion of installation.

PART 2 PRODUCTS

2.01 MODULAR BIOFILTRATION INTERNAL COMPONENTS

A. All water transfer system components shall conform with the following;

1. Filter netting shall be 100 percent polyester with a number 16 sieve size, and strength tested per ASTM D 3787.

2. Drainage cells shall be manufactured of lightweight injection-molded plastic and have a minimum compressive strength test of 6,000 pounds per square inch (psi) and a void area along the surface making contact with the filter media of 75 percent or greater. The cells shall be at least two-inches in thickness and allow water to freely flow in all four directions.

B. Filter cartridges shall operate at a loading rate not to exceed three gallons per minute per square foot surface area.

C. Drain down system shall include a pervious floor that allows water to drain into the underdrain pipe that is connected to the discharge chamber.

D. Media shall consist of ceramic material produced by expanding and vitrifying select material in a rotary kiln. Media must be produced to meet the requirements of ASTM C330, ASTM C331, and AASHTO M195. Aggregates must have a minimum 24-hour water absorption of 10.5 percent mass. Media shall not contain any organic material. Flow through media shall be horizontal from the outer perimeter of the chamber toward the centralized and vertically extending underdrain. The retention time in the media shall be at least three minutes. Downward flow filters are not acceptable alternatives. The thickness of the media shall be at least 19” from influent end to effluent end. The loading rate on the media shall not exceed 1.1 gallons per minute per square foot surface area. Media must be contained within structure that spaces the surface of the media at least two-inch from all vertically extending walls of the concrete structure.

E. The discharge device shall house a flow control orifice plate that restricts flows greater than the treatment flow rate. All piping components shall be made of a high –density polyethylene.

2.02 PRECAST CONCRETE VAULT

A. Pre-cast concrete vault shall be provided according to ASTM C857 and C858. Loading criteria shall be as listed in Paragraph 1.04.

B. Vault joint sealant shall be Conseal CS-101 or approved equal.

C. If interior concrete baffle walls are provided, baffle walls shall be sealed to the interior vault walls and floor with a polyurethane construction sealant rated for use below the waterline, SikaFlex 1a or equal. Contractor to provide sealant material and installation unless completed prior to shipment.

D. Metal frame and grate or cover for catch basins and manholes shall be ductile iron of the size and style indicated on the Drawings and capable of supporting the maximum loading criteria listed in Paragraph 1.04.

E. Steps shall be constructed of copolymer polypropylene conforming to ASTM D-4101. Steps shall be driven into preformed or drilled holes once concrete is cured. Steps shall meet the requirements of ASTM C-478 and AASHTO M199. The 1/2-inch Grade 60 deformed reinforcing bar shall meet ASTM A-615.

F. Ladders shall be constructed of aluminum and steel reinforced copolymer polypropylene conforming to ASTM D-4101. Ladder shall bolt in place. Ladder shall meet all ASTM C-497 load requirements. Ladders provided upon request or where required.

2.03 OTHER COMPONENTS

A. All contractor-provided components shall meet the requirements of this section, the plans specifications and contract documents. In the case of conflict, the more stringent specification shall apply.

1. Silicone Sealant shall be pure RTV silicone conforming to Federal Specification Number TT S001543A or TT S00230C or Engineer approved.

2. Grout shall be non-shrink grout meeting the requirements of Corps of Engineers CRD-C588. Specimens molded, cured and tested in accordance with ASTM C-109 shall have minimum compressive strength of 6,200 psi. Grout shall not exhibit visible bleeding.

PART 3 EXECUTION

3.01 GENERAL

A. It shall be the Contractor’s responsibility to verify the actual locations (horizontal and vertical) of all utilities prior to beginning excavation. If utilities are to remain in place, provide protection from damage during construction operations.

3.02 EARTHWORK

A. Excavation, bedding, and backfilling shall be as specified in Section 31 00 00 – “Earthwork” of these Specifications.

3.03 PRECAST CONCRETE VAULTS

A. Set pre-cast vaults on aggregate base material that has been placed in maximum 12-inch lifts, loose thickness, and compacted to at least 95-percent of the maximum dry density as determined by the standard Proctor compaction test, ASTM D698, at moisture content of +/- two percent of optimum water content.

B. Outlet pipes shall be stubbed in and connected to pre-cast concrete vault shown on the Drawings. If grout is used, Contractor to grout all outlet pipes flush with or protruding up to two inches into interior of vault.

3.04 CLEAN UP

A. Remove all excess materials, rocks, roots, or foreign material, leaving the site in a clean, complete condition approved by the Engineer. All filter components shall be free of any foreign materials including concrete and excess sealant.

3.05 FILTER CARTRIDGES

A. Filter cartridges shall be delivered with the vault. Contractor shall take appropriate action to protect the cartridges from sediment and other debris during construction. Methods for protecting the cartridges include but are not limited to:

1. Remove cartridges from vaults and store appropriately. Cartridges shall be reinstalled to operate according to 3.05 B (see below).

2. If vault is equipped with underdrain bypass piping, Contractor may leave cartridges in the vault and allow stormwater entering collection system to bypass filter bay through underdrain bypass piping.

3. Leave cartridges in the vaults and plug inlet and outlet pipe to prevent storm water from entering the vault.

4. The method ultimately selected shall be at Contractor’s discretion and Contractor’s risk.

B. Filter cartridges shall not be placed in operation until the vault is clean and the project site is clean and stabilized. The project site includes any surface that contributes storm drainage to the filter. All impermeable surfaces shall be clean and free of dirt and debris. All catch basins, manholes and pipes shall be free of dirt and sediments. Contact Manufacturer to assist with system activation and/or inspect the system for proper installation once site is clean and stabilized.

END OF SECTION

PART 1 - GENERAL

1.01 SUMMARY

A. This Section includes the requirements for trenching, backfilling and installation of underground conduits, ducts, ductbanks, and the design, fabrication, delivery and installation of handholes vaults, and manholes.

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.

1.02 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.

1.03 QUALITY ASSURANCE

A. Listing and Labeling: Provide products 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 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 metal accessories for manholes and handholes, conduit and duct, duct bank materials, and miscellaneous components.

2. Shop drawings showing details and design calculations for precast manholes and handholes, including reinforcing steel. Provide stamped drawings and calculations with State of Washington seal of registered professional structural engineer.

3. Certificate for concrete and steel used in underground precast concrete utility structures, according to ASTM C 858.

4. Inspection report for factory inspections, according to ASTM C 1037.

5. Record Documents: Show dimensioned locations of underground ducts, handholes, and manholes 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.

C. Handhole: An underground junction box in a duct or duct bank.

D. Manhole: An underground utility structure, with facilities for installing and maintaining cables.

E. Vault: An underground utility structure, large enough for a person to enter, with facilities for installing, operating, and maintaining equipment and wiring.

1.06 COORDINATION

A. Coordinate layout and installation of ducts, manholes, vaults, and handholes with final arrangement of other utilities as determined by field verification. Revise locations and elevations from those indicated as required to suit field conditions and ensure that duct runs drain to manholes and handholes.

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.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Store precast concrete units at site as recommended by manufacturer to prevent physical damage. Arrange so identification markings are visible.

B. Lift and support precast concrete units only at designated lifting or supporting points.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Manholes, Handholes and Vaults: Subject to compliance with requirements, provide products by one of the following:

1. Utility Vault Company - Custom
2. Hanson - Custom

2.02 CONDUIT AND DUCTS

A. Metallic Conduit: PVC Coated Rigid Steel Conduit (PVRSC): Nema 1 – RN 1 – 2005.

1. Use for below grade transition of PVC Schedule 80 to above grade exposed conduit.

B. Nonmetallic conduit:

1. Rigid Plastic Conduit: NEMA TC 2, UL 651A, Schedule 80 PVC, rated for use with 90°C conductors under all installation conditions and labeled for underground use.

2.03 CONDUIT FITTINGS

A. Steel Fittings: PVC-coated, cast malleable, ferrous metal, threaded fittings, with neoprene cover gasket on each fitting installed outdoors.

B. PVC Conduit and Tubing Fittings: NEMA TC 3.

C. “Mogul Fittings”: Provide “Mogul” size fittings for all conduit.

D. Hubs: Appleton “Hub” or “Hub-U” series or Thomas & Betts “370” series hub on each conduit terminating in a box where a hub was not previously provided.

E. Unions: Appleton Type “EC” or Thomas & Betts “Erickson Coupling” conduit unions where necessary.

2.04 DUCT SUPPORTS

A. Rigid PVC spacers for duct banks stacked two (2) or more conduits high, selected to provide minimum NEC 2008 duct spacings.

2.05 HANDHOLES

A. General: Precast concrete or structural plastic, as indicated on Drawings, with the following standard features:

1. Cover with insert or other device to facilitate lifting.
2. Cover with locking devices similar to REA or FARGO.
3. Drain hole in base, 2-inch minimum diameter.
4. Knockouts in sides of adequate number and spacing to accommodate ductbank shown.

B. Handhole Covers: Cast iron, capable of supporting designed loads. Cast iron cover with cast-in legend “ELECTRIC” or “COMM” as appropriate. Machine cover-to-frame bearing surfaces.

2.06 MANHOLES AND VAULTS

A. Precast Concrete Units: Interlocking, mating sections, complete with accessory items, hardware, and features as indicated on Drawings. Include concrete knockout panels for conduit entrances and sleeves for ground rods.

B. Design structure (H30) according to ASTM C 858.

C. Joint Sealant: Continuous extrusion of asphaltic butyl material with adhesion, cohesion, flexibility, and durability properties necessary to withstand the maximum hydrostatic pressures at the installation location with the ground water level at grade.

D. Source Quality Control: Inspect structures according to ASTM C 1037. Units shall be capable of supporting designed loads.

E. Manhole Covers: Cast iron, capable of supporting designed loads. Cast iron cover with cast-in legend “ELECTRIC” or “COMM” as appropriate. Machine cover-to-frame bearing surfaces.

F. All vault covers shall be square with hinged and locking covers. All vaults shall be set level on 12” of pea gravel except where otherwise specifically directed by the Engineer. Tops of vaults shall be 1” above adjacent final finished grade and shall be sloped up evenly to vault with the slope beginning a minimum of 10’ from the vault. Contractor shall be responsible for measuring and calculating elevations which will result in top of vault flush with final grade. In the event the vault installation does not conform to the forging criteria, the contractor shall remove the vault and the surrounding area shall be re-graded in accordance with the forgoing criteria, all at no additional cost to the owner. If the vault is installed low, the contractor shall provide precast vault riser section custom manufactured for the specific height required by the manufacturer of the vault and load rating. Raising the vault top section and blocking with brick and/or grout will not be accepted. The contractor shall perform the above at no additional cost to the owner.

2.07 ACCESSORIES

A. Duct Supports: Rigid PVC spacers selected to provide 3 1/2” minimum duct spacings.

B. Manhole and Vault Lifting Means

1. Pulling Eyes in Walls: Eyebolt with reinforcing bar fastening insert. 2-inch diameter eye, 1-inch by 4-inch bolt. Working load with 6 inch embedment in 4000 psi concrete: 13,000 pounds minimum tension.

2. Pulling and Lifting Irons in Floor: 7/8-inch-diameter, hot-dipped galvanized, bent steel rod, stress relieved after forming, and fastened to reinforced rod. Exposed triangular opening. Ultimate yield strength: 40,000 pounds shear and 60,000 pounds tension.

C. Bolting Inserts for Cable Racks: Flared, threaded inserts of noncorrosive, chemical resistant, nonconductive thermoplastic material 3'-0" on center; 1/2-inch internal diameter by 2-3/4 inches deep, flared to 1-1/4 inch minimum at base. Tested ultimate pull-out strength: 12,000 pounds minimum.

D. Expansion Anchors for Installation After Concrete is Cast: Zinc-plated carbon steel wedge type with stainless-steel expander clip, 1/2-inch bolt size, 5300-pound rated pull-out strength, and 6800-pound rated shear strength minimum.

E. Duct Sealing Compound: Non-hardening, safe for human skin contact, not deleterious to cable insulation, workable at temperatures as low as 35°F withstands temperature of 300°F without slump, and adheres to clean surfaces of plastic ducts, metallic conduits, conduit coatings, concrete, masonry, lead, cable sheaths, cable jackets, insulation materials, and the common metals.

2.08 BACKFILL MATERIAL

A. Direct-Burial Conduit

1. Initial Bedding: 3" of sand below conduits.

2. Secondary Bedding: Unsaturated excavated earth free of rocks, broken concrete and debris 2" and larger, and compacted to 6" minimum above conduits.

3. Areas Not Under Pavement: Select Native Fill.

a. Unsaturated excavated earth free of rocks, broken concrete and debris 6" and larger, and compacted in 12" lifts to prevent settlement.

b. Warning Tape: Provide plastic warning tape, 4-mil thickness reading "Caution – Buried Electrical Line Below" in trench at 12" below grade.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine site to receive ducts and manholes for compliance with installation tolerances and other conditions affecting performance of the underground ducts and manholes. 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 EARTHWORK

A. Trenching:

1. Comply with OSHA/WISHA safety standards for trenching, including stable slope and shoring requirements.

2. Depth: Correct points of over excavation using mechanically-compacted backfill to form a smooth trench bottom.

3. Width: Excavate to minimum width consistent with stability of sides.

4. Slope: Slope trenches so that conduit and ducts drain toward manholes and handholes and away from buildings and equipment.

5. Muck Excavation: Where muck or unstable material is encountered, over excavate and backfill to attain proper grade with coarse sand, gravel, or Controlled Density Fill.
6. Pile backfill material in an orderly manner; a sufficient distance from the trench to avoid overloading trench banks.
7. Bedding: The entire bottom of the excavation is to be firm, stable, and at uniform density.
8. Contractor may only excavate what can be filled in the same day.

B. Excavating for Handholes, Manholes and Vaults: Provide 12” minimum clearance between outer surfaces of unit and embankment or timber used for shoring.

3.03 RACEWAY APPLICATIONS

A. Refer to Specifications and Drawings for raceway materials. Where not specified otherwise, use PVC coated rigid steel conduit above and underground.

B. Nonmetallic conduit: PVC Schedule 80, use underground only.

1. Underground Direct Burial: For medium-voltage and low-voltage applications. Use Schedule 80 Rigid Plastic Conduit as standard. Use PVC coated rigid steel conduit on turns 40° or greater.

C. Use PVC fittings for PVC conduit and suitable water-tight connections where PVC conduit connects to galvanized steel conduit.

3.04 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 manholes and handholes and away from buildings and equipment. Slope ducts from a high point in runs between manholes/vaults to drain in both directions.

C. Curves and Bends: Use manufactured PVC coated rigid steel elbows for stub-ups at equipment and at building entrances with a minimum radius of 36 inches. Use manufactured long sweep bends with a minimum radius of 25 feet both horizontally and vertically at other locations. Do not exceed 20 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 30 degrees.

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 Manholes and Vaults: Space end bells approximately 10 inches on center for 4-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. Grout end bells into walls from both sides to provide watertight entrances.

F. Separation Between Direct-Buried, Non-Encased Ducts: Provide 3 inches minimum separation for like services, and 12 inches minimum between power and signal ducts.

G. Stub-Ups: Use PVC coated rigid steel conduit for stub-ups through concrete to equipment. Install insulated grounding bushings at the conduit terminations.

H. Use PVC coated rigid steel for all exposed conduit for equipment mounted on outdoor.

I. Sealing: Provide temporary closure at all duct terminations in manholes and vaults installed in this Project. Use sealing compound and plugs to withstand a minimum of 15 psi hydrostatic pressure.

J. Pulling Cord: Install 150-pound- test nylon cord with distance markings in installed conduits, including spares.

3.05 BACKFILLING

A. Backfill only after all necessary inspections and tests have been performed.

B. Remove all debris, rocks, broken concrete, and formwork before backfilling trenches.

C. Deposit backfill in layers. Uniformly spread and compact backfill with suitable power tampers to the density of the adjacent soil and in such a manner so as not to disturb the alignment of the conduit. If settlement occurs, refill, compact and smooth off to conform to the surface of the ground.

D. Restore surface features at areas disturbed by excavation, and reestablish original grades.

1. Restore all areas disturbed by trenching, storing of dirt, cable laying, and other work.

3.06 VAULT, MANHOLE AND HANDHOLE INSTALLATION

A. Install as indicated on Drawings, according to manufacturer’s written instructions and ASTM C 891.

1. Install units plumb and level and with orientation and depth coordinated with arrangement of connecting ducts to minimize bends and deflections required for proper entrances.

2. Support units on a level bed of crushed stone or gravel, graded from the 1-inch sieve to the No. 4 sieve and compacted to the same density as the adjacent undisturbed earth.

3. Drainage: Where manholes/vaults have drain holes in the bottom, provide sixteen inches minimum of crushed stone below the manhole/vault.

B. Train cables neatly around corners and secure to cable racks using nylon wire ties.

3.07 IDENTIFICATION

A. Identify raceways, cables and equipment.

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.

D. Manhole, vault lids and frames. Provide field stamped identification corresponding to Drawing ID on final As-Built Drawings.

3.08 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, manholes and handholes, including sump.

B. Duct Integrity: Swab out ducts with a mandrel 1/4 inch smaller in diameter than internal diameter of ducts.

END OF SECTION

PART 1 - GENERAL

1.01 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.

1.02 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.

1.03 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.

E. Comply with IEEE C2 for overhead-line construction and medium-voltage underground construction.

1.04 SUBMITTALS

A. Submit product data for the following:

1. Grounding conductors and cables.
2. Grounding connectors.
3. Grounding electrodes.
4. Ground bus.

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. Raco, Inc.; Division of Hubbell.
    l. Thomas & Betts, Electrical.
2. Grounding Connectors and Rods:
    a. Erico.
    b. ILSCO.
    c. Lyncole XIT Grounding.
    d. O-Z/Gedney.
    e. Raco, Inc.; Division of Hubbell.
    f. Thomas & Betts

2.02 GROUNDING CONDUCTORS

A. For insulated conductors, comply with Division 26, Section “Low Voltage Electrical Power Conductors and Cables.”

B. Material: Copper.

C. Equipment Grounding Conductors: Insulated with green-colored insulation.

D. Grounding Electrode Conductors: Stranded cable.

E. Underground Conductors: Bare, tinned, stranded.

F. Bare Copper Conductors: Assembly of stranded conductors, ASTM B 8.

G. 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.

H. Bonding Straps: Soft copper.

I. Grounding Bus: Bare, annealed copper bars of rectangular cross section, with insulators.

2.03 CONNECTORS

A. Pressure Connectors: High-conductivity-plated units.

B. Bolted Connectors: Heavy-duty, bolted-pressure-type.

C. Welded Connectors: Exothermic-welded type, in kit form, and selected per manufacturer's written instructions.

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. Exothermic-Welded Connections: Use for connections to structural steel, rail, rebar and for underground connections.

D. Equipment Grounding Conductor Terminations: Use bolted pressure clamps.

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. Busway Supply Circuits: Install insulated equipment grounding conductor from the grounding bus in the switchgear, switchboard, or distribution panel to equipment grounding bar terminal on busway.

D. 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: For service entrance locations install at least three rods spaced at least one-rod length from each other and located at least the same distance from other grounding electrodes.

1. Drive ground rods until tops are 2 inches below finished floor or final grade.

2. Interconnect ground rods with grounding electrode conductors. Use exothermic welds. Make connections without exposing steel or damaging copper coating.

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 exothermic-welded connectors for outdoor locations, unless a disconnect-type connection is required; then, 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. Exothermic-Welded Connections: Comply with manufacturer's written instructions. Welds that are puffed up or that show convex surfaces indicating improper cleaning are not acceptable.

C. 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.

D. 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 non-continuous conduits at entrances and exits with grounding bushings and bare grounding conductors, unless otherwise indicated.

E. Tighten screws and bolts for grounding and bonding connectors and terminals according to manufacturer's published torque-tightening values.

F. 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.

G. 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.

3.06 FIELD QUALITY CONTROL

A. Testing: Perform the following field quality-control testing:

1. After installing grounding system but before permanent electrical circuitry has been energized, test for compliance with requirements.
    a. Measure ground resistance without the soil being moistened by any means other than natural drainage or seepage and without chemical treatment or other artificial means of reducing natural ground resistance.
    b. Test by one of the following methods for resistance measurement:
        1) Perform fall of potential test per IEEE Standard No. 81, Section 9.04 on the main grounding electrode or system for each substation and building.
        2) Perform the two-point method test per IEEE No.81 Section 9.03 to determine the ground resistance between the main grounding system and all major electrical equipment frames, system neutral and/or derived neutral points.
        3) Alternate Method: Perform ground continuity test between main ground system and equipment frame, system neutral and/or derived neutral point. Conduct test by passing a minimum of ten amperes dc current between ground reference system and the ground point to be tested. Measure voltage drop and calculate resistance by voltage drop method.
    c. Test Requirements:
        1) Equipment Rated 500 kVA and Less: 10 ohms.
        2) Equipment Rated 500 to 1000 kVA: 5 ohms.
        3) Equipment Rated More Than 1000 kVA: 3 ohms.
        4) Substations and Pad-Mounted Switching Equipment: 5 ohms.
        5) Manhole Grounds: 10 ohms.
    d. Excessive Ground Resistance: If resistance to ground exceeds specified values, notify Engineer promptly and include recommendations to reduce ground resistance.
2. Record test results on a Ground Resistance Test Report form for inclusion with O & M Manuals.

B. Provide drawings locating each ground rod and ground rod assembly and other grounding electrodes.
1. Identify each ground rod by letter in alphabetical order, and key to the record of tests and observations.
2. Include the number of rods driven and their depth at each location and include observations of weather and other phenomena that may affect test results.

END OF SECTION