Port of Portland
P.O. Box 3529
Portland, Oregon 97208

PROJECT MANUAL

Including Specifications

for

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

Solicitation No. 2026-14655

EAN 2025D018

October 2026



DOCUMENT 000107
APPROVALS

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

Project Manager: Andy Jeffrey Digitally signed by Andy Jeffrey DN: C=US, E=n-andy.jeffrey@portofportland.com, O=Port of Portland, CN=Andy Jeffrey Date: 2026.09.30 11:13:41-07'00'

Project Engineer: DIGITALLY SIGNED Jay Ostlund 2026.09.30 13:34:16-07'00'

Architectural Consultant MWA Architects 501 S.E. 14th Avenue, Suite 103 Portland, OR 97214 (503) 973-5151 	Civil Consultant KPFF 111 S.W. 5th Avenue, Suite 2400 Portland, OR 97204 (503) 227-3251 
Structural Consultant KPFF 111 S.W. 5th Avenue, Suite 2600 Portland, OR 97204 (503) 227-3251  09/11/2026	

DOCUMENT 000110
TABLE OF CONTENTS

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP

Document 000107 Approvals 000107-1

Document 001100 Invitation to Bid 001100-1

Document 002100 Instructions to Bidders 002100-1

Document 004100 Bid Form 004100-1

Document 004335 First-Tier Subcontractor Disclosure Form 004335-1

Document 005200 Agreement 005200-1

Document 006100 Performance Bond 006100-1

Document 006101 Labor and Material Payment Bond 006101-1

Document 007200 General Conditions 007200-1

Document 007300 Supplementary Conditions 007300-1

Document 007346 Wage Rates 007346-1

SPECIFICATIONS GROUP

GENERAL REQUIREMENTS SUBGROUP

DIVISION 1 – GENERAL REQUIREMENTS

Section	011100	Summary of Work
	013100	Project Management and Coordination
	013200	Construction Progress Documentation
	013300	Submittal Procedures
	014500	Quality Control
	015000	Temporary Facilities and Controls
	015719	Environmental Construction Controls
	017000	Execution Requirements
	017419	Construction Waste Recycling
	017700	Closeout Procedures

FACILITY CONSTRUCTION SUBGROUP

DIVISION 2 – EXISTING CONDITIONS

Section	024119	Selective Demolition

DIVISION 3 – CONCRETE

Section	033000	Cast-In-Place Concrete

DIVISION 5 – METALS
Section 051200 Structural Steel Framing

DIVISION 7 – THERMAL AND MOISTURE PROTECTION
Section 075323 Ethylene-Polypropylene-Diene-Monomer (EPDM) System Rehabilitation
079513 Exterior Expansion Joint Cover Assemblies

SITE AND INFRASTRUCTURE SUBGROUP

DIVISION 32 – EXTERIOR IMPROVEMENTS
Section 320113 Bio-Based Asphalt Rejuvenator
320117 Pavement Repair

DRAWINGS

PDX 2026-514

DOCUMENT 001100
INVITATION TO BID

THE PORT OF PORTLAND

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

Solicitation No. 2026-14655

Bids for the Portland International Airport Terminal Upper Roadway Joint Replacement project will be received electronically through the Port's online bidding system until, but not after, 2 p.m. on November 3, 2026. Bid results will be publicly available in the Port's online bidding system immediately after the scheduled time for receipt of bids. See the Instructions to Bidders for more information on electronic submission.

The work includes but is not limited to:

> Providing and repairing roadway joints on the terminal upper roadway at Portland International Airport. The work also includes providing a bio-based asphalt rejuvenator.

Prequalification is not required for this work.

The contractor or a subcontractor need not be licensed for asbestos work under ORS 468A.720.

A pre-bid meeting will be held via Microsoft Teams at 11 a.m. on October 14, 2026, to discuss all phases of the work. To attend, bidders must RSVP through the Port's online bidding system no later than 24 hours before the pre-bid meeting. A Microsoft Teams meeting invite will be sent to all bidders who RSVP, with instructions on attending the meeting remotely.

Contractors, subcontractors, consultants, and suppliers are strongly encouraged to register through the Port's online bidding system, which can be accessed at https://www.planetbids.com/portal/portal.cfm?CompanyID=15598. All firms can view current business opportunities. Registered firms may receive electronic notification of Port solicitations, and have access to view or download solicitations, addenda, and solicitation-holders lists.

Questions must be submitted electronically using the "Q&A" feature in the Port's online bidding system.

Hard copies of drawings and specifications are not available directly from the Port. Registered firms may download the project manual and drawings through the Port's online bidding system.

The Port may reject bids that do not comply with applicable public contracting procedures and requirements. The Port may reject for good cause any or all bids if the Port finds that doing so is in the public interest. Bidder compliance for this project includes the following:

A. Bids must be on the Port's bid form and must be accompanied by bid security made payable to The Port of Portland in an amount equal to at least 10 percent of the total amount bid.

B. In accordance with ORS 279C.370, bidders must submit the enclosed First-Tier Subcontractor Disclosure Form within two working hours after bid opening.

C. The Port will not receive or consider a bid unless the bid contains a statement by the bidder that the bidder will comply with the provisions of ORS 279C.800 to 279C.870 (regarding payment of prevailing wage rates on public works projects over $50,000). Current wage rates determined by the Oregon Bureau of Labor and Industries (BOLI) may be obtained from BOLI's web site at www.boli.state.or.us.

D. Bidders are hereby alerted that public works contractors generally must file a public works bond with the Construction Contractors Board, as provided in ORS 279C.836.

E. No bid will be considered unless the bidder is registered with the State of Oregon Construction Contractors Board to the extent required by ORS Chapter 701, prior to submitting a bid.

F. Bids must identify whether the bidder is a resident bidder, as defined in ORS 279A.120.

Apprentice Opportunities on Port Projects over $500,000: The Port is committed to advancing access to quality jobs through investments in workforce development. This includes encouraging efforts that improve workplaces, create job opportunities, support skill-building, and build career pathways. The Port's overall target for registered apprentice participation is 20 percent of total labor hours.

THE PORT OF PORTLAND

Contracts and Procurement
October 7, 2026

CPD/CON

DOCUMENT 002100
INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

ARTICLE 1 – DESCRIPTION 1

ARTICLE 2 – PRE-BID INTERPRETATION OF CONTRACT DOCUMENTS 1

ARTICLE 3 – RESIDENT BIDDER PREFERENCE 1

ARTICLE 4 – EQUIVALENT MATERIALS, PRODUCTS, OR SERVICES 1

ARTICLE 5 – ESTIMATED QUANTITIES 2

ARTICLE 6 – EXAMINATION OF SITE 2

ARTICLE 7 – OFFICIAL BID DOCUMENTS 2

ARTICLE 8 – BID SECURITY 2

ARTICLE 9 – EXECUTION OF BID 3

ARTICLE 10 – DISCLOSURE OF FIRST-TIER SUBCONTRACTORS 3

ARTICLE 11 – SUBMISSION OF BID 3

ARTICLE 12 – WITHDRAWAL OF BID 4

ARTICLE 13 – OPENING OF BIDS 4

ARTICLE 14 – ACCEPTANCE OR REJECTION OF BIDS 4

ARTICLE 15 – EXECUTION OF AGREEMENT AND BONDS 5

ARTICLE 16 – NOTICE TO PROCEED 6

ARTICLE 17 – PROTESTS 6

ARTICLE 1 – DESCRIPTION

1.1 Provide labor, materials, and other means required by the contract documents to complete the work.

ARTICLE 2 – PRE-BID INTERPRETATION OF CONTRACT DOCUMENTS

2.1 If the bidder finds discrepancies, omissions, or is in doubt as to the true meaning of any part of the contract documents, submit a request for a clarification or interpretation using the "Q&A" feature in the Port's online bidding system no less than five business days prior to the bid submission deadline. The Port may not consider requests submitted outside of the Port's online bidding system.

2.2 The Port will respond to bidder requests for clarification or interpretation using the "Q&A" feature in the Port's online bidding system. Actual changes to the contract documents will be issued by addendum. Consider addenda in the bid.

ARTICLE 3 – RESIDENT BIDDER PREFERENCE

3.1 Each bid shall contain a statement as to whether the bidder is a resident bidder, as defined in ORS 279A.120.

3.2 Under ORS 279A.120(1), a "resident bidder" is a bidder that has paid unemployment taxes or income taxes in this state during the 12 calendar months immediately preceding submission of the bid, has a business address in Oregon, and has stated in the bid whether the bidder is a "resident bidder" pursuant to ORS 279A.120(1).

3.3 Under ORS 279A.120(1), a "non-resident bidder" is a bidder who is not a "resident bidder" as defined in Item 3.2 above.

3.4 Failure to complete the "resident bidder" certification statement of residency or nonresidency contained in the bid form may result in rejection of the bid.

3.5 In determining the lowest responsive bidder, the Port will, for the purpose of awarding the contract, add a percent increase on the bid of a nonresident bidder equal to the percent, if any, of the preference given to that bidder in the state in which the bidder resides.

ARTICLE 4 – EQUIVALENT MATERIALS, PRODUCTS, OR SERVICES

4.1 Specified materials, products, or services are named for the purpose of establishing a standard of quality and characteristics desired. Unless the specification or description indicates that no substitution is permitted, other materials, products, or services of equal quality and characteristics for the purposes intended may be submitted at the appropriate time for approval. The Substitution Request Form is enclosed at the end of these Instructions to Bidders. Substitution requests must be submitted by a prospective bidder; substitution requests received from manufacturers, distributors, or companies that are not bidding the project will not be considered. The Port will be the judge of the equality and suitability of the proposed substitution.

4.2 The following definitions of the phrases stated after materials, products, or services in the Specifications determine the extent to which substitutions may be proposed.

A. "PRE-BID APPROVED EQUAL" materials, products, or services require approval by addendum prior to the bid submission deadline. Materials, products, or services which the bidder proposes to substitute, and which he/she considers equal to those specified, must be submitted by attaching the completed Substitution Request Form to the Q&A submission feature in the Port's online bidding system no less than five business days prior to the bid submission deadline. Requests shall be accompanied by complete technical data and such pertinent

information and/or samples as necessary, or as specified, to fully identify and appraise the material, product, or service. Approval of materials, products, or services deemed equivalent will be issued by addendum prior to the bid submission deadline.

B. "EQUAL" materials, products, or services require approval after contract award. See the General Conditions for requirements.

C. "NO SUBSTITUTION" materials, products, or services are not eligible for substitution requests. See the General Conditions for requirements.

ARTICLE 5 – ESTIMATED QUANTITIES

5.1 Estimated quantities shown in the bid form provide a basis for comparison of bids only. The bidder shall verify the quantity of each bid item prior to submission of its bid. Reference is made to Change of Contract Price in the General Conditions.

ARTICLE 6 – EXAMINATION OF SITE

6.1 Examine the site and conditions thereon. Bids shall take into consideration conditions which may affect the work. No additional compensation or extension of time will be allowed because of any condition of which the bidder could have informed itself either by examination, testing, sampling, review of records, or otherwise. The Port's site study information, if any, will be made available to prospective bidders for review; however, the Port disclaims liability and responsibility for the completeness or accuracy thereof.

ARTICLE 7 – OFFICIAL BID DOCUMENTS

7.1 Bidders may view and download construction design and related documents electronically through the Port's online bidding system. Bidders may only rely on the final construction design documents that the Port makes available through its online bidding system. Bidders are responsible for adjusting hardware and software settings as needed to view and print all bid document content. Guidance for optimal viewing and printing may be provided on the drawings. For the bidders' convenience, the Port may occasionally post copies of studies, reports, permits, assessments, miscellaneous CAD files, reference drawings, manufacturer data, etc., as additional information that may pertain to this solicitation. However, the Port makes no warranties or representations regarding the integrity or completeness of such documents and bidders should use them only at their own risk.

7.2 Those using electronic documents provided by the Port do so at their own risk. The Port makes no warranties or representations regarding the ability to permanently access, or the presence or absence of computer viruses within, the electronic documents the Port provides. All or parts of electronic documents provided by the Port may be copyrighted, and those using them are responsible for determining the existence of copyrights and for obtaining permission to copy copyrighted material.

ARTICLE 8 – BID SECURITY

8.1 The bid shall be accompanied by bid security. The security shall be a certified or cashier's check, an irrevocable letter of credit, or a bid bond made payable to the Port of Portland. Checks shall be drawn on a United States bank. Irrevocable letters of credit shall be issued by a bank as defined in ORS 706.008. Bid bonds shall be executed by a surety company licensed to do business in the State of Oregon. The amount of the check, letter of credit, or bond shall be equal to at least 10 percent of the total amount bid. The check, letter of credit, or bond will be held by the Port as security and a guaranty that the bidder will execute the Agreement, give satisfactory evidence of insurance, and furnish a 100 percent performance bond and a 100 percent labor and material payment bond. A scanned copy of the bid security shall be submitted electronically through the Port's online bidding system along with the bid. The

bidder shall also provide hard copies of the original bid security documentation to the Port immediately if requested.

8.2 The Port may retain the bid security of the three lowest responsive bidders until:

A. all bids are rejected,

B. the fully executed Agreement is delivered to the successful bidder, or

C. expiration of the bids,

at which time the bid security of all bidders will be returned in accordance with Item 8.3 below.

8.3 Bid security in the form of a surety bond or letter of credit will be returned via an email to the bidder confirming release. All forms of bid security will only be physically returned upon request.

ARTICLE 9 – EXECUTION OF BID

9.1 Bids shall be on the bid form provided to prospective bidders.

9.2 When the bid form provides for writing the bid price in words and numerals, the price as written in words governs over the price written in numerals.

9.3 In the case of conflict between the amount bid and the product of the estimated quantity and the unit bid price, the unit bid price prevails and the corrected product will be used in computing the total amount bid. All arithmetic errors apparent on the face of a bid will be corrected in determining the total bid price.

9.4 Complete the bid form requirements, including acknowledgement of receipt of addenda, if applicable; statement of resident status; and any other requirements specifically called for in the bid.

9.5 Execute the bid in the name of the firm followed by the signature of the officer authorized to sign for the firm and the printed or typewritten designation of the officer's name and office held.

9.6 Type or print the address and telephone number of the bidder on the bid form.

ARTICLE 10 – DISCLOSURE OF FIRST-TIER SUBCONTRACTORS

10.1 Within two working hours after the date and time of the bid submission deadline, the bidder shall disclose first-tier subcontractors on Document 004335, First-Tier Subcontractor Disclosure Form.

10.2 Disclosures of first-tier subcontractors shall be submitted by email (popcontracting@portofportland.com), and shall include one file with all the necessary attachments and be named "Bid XXXX-XXXX_Bidder Name_FT." Hard copies will not be accepted.

ARTICLE 11 – SUBMISSION OF BID

11.1 Bids shall be submitted electronically through the Port's online bidding system. Hard copies will not be accepted.

11.2 Bids will be received until the submission deadline stated in the Invitation to Bid.

ARTICLE 12 – WITHDRAWAL OF BID

12.1 Prior to the bid submission deadline, a bidder may withdraw its bid. This will not preclude submission of another bid by such bidder prior to the bid submission deadline. Withdrawal of the bid is the sole responsibility of the bidder through the Port's online bidding system. Contact the service provider (PlanetBids) directly for any technical issues.

ARTICLE 13 – OPENING OF BIDS

13.1 The Port reserves the right to postpone the bid submission deadline.

13.2 At the time and place set for the opening and reading of bids, bids received prior to the bid submission deadline will be publicly opened and read aloud. When opening bids electronically, bids are deemed to be opened publicly when bidder and bid information is made available to the public in the Port's online bidding system.

ARTICLE 14 – ACCEPTANCE OR REJECTION OF BIDS

14.1 The Port may reject any bid not in compliance with all prescribed public bidding procedures and requirements, and may, for good cause, reject any or all bids upon a finding it is in the public interest to do so. In any case where competitive bids are required and all bids are rejected, and the proposed contract is not abandoned, new bids may be called for as in the first instance. The Port may cancel a solicitation at any time before a contract is signed, if the Port determines cancellation is in the Port's best interests. If a solicitation is canceled, the Port will not be liable for any costs incurred by prospective bidders or bidders. If a solicitation is canceled before the bid submission deadline, bids will not be returned electronically. If a solicitation is canceled after the bid submission deadline, the Port will retain the bids.

14.2 The Port may disqualify any bidder if, at any time, it finds:

A. The bidder has been convicted for the commission of a criminal offense as an incident in obtaining or attempting to obtain a public or private contract or subcontract, or in the performance of such contract or subcontract;

B. The bidder has been convicted under state or federal statutes of embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, or any other offense indicating a lack of business integrity or business honesty that currently, seriously, and directly affects the bidder's responsibility as a contractor;

C. The bidder has been convicted under state or federal antitrust statutes; or

D. The bidder has violated a contract provision that is regarded by the Port to be so serious as to justify disqualification. A violation may include, but is not limited to, a failure to perform the terms of a contract or an unsatisfactory performance in accordance with the terms of the contract. However, a failure to perform or an unsatisfactory performance caused by acts beyond the control of the contractor may not be considered to be a basis for disqualification.

14.3 The Port may disqualify an apparent low bidder if, at any time, it finds that the bidder:

A. Does not have available the appropriate financial, material, equipment, facility and personnel resources and expertise, or the ability to obtain the resources and expertise, necessary to meet all contractual responsibilities;

B. Does not hold current licenses that businesses or service professionals operating in Oregon must hold in order to undertake or perform the work specified in the contract;

C. Is not covered by liability insurance and other insurance in amounts the Port requires in the solicitation documents;

D. Does not qualify as a carrier-insured employer or a self-insured employer under ORS 656.407 or, if applicable, has not elected coverage under ORS 656.128;

E. Has not made the first-tier subcontractor disclosure required under ORS 279C.370;

F. Has not completed previous contracts of a similar nature with a satisfactory record of performance;

G. Does not have a satisfactory record of integrity;

H. Is not legally qualified to contract with the Port; or

I. Is otherwise not responsible pursuant to ORS 279C.375 and, if applicable, ORS 200.045, or fails to supply all necessary information in connection with demonstrating such responsibility.

14.4 In determining the low responsive bid, the Port will not consider alternates called for in the bid form.

14.5 The Port reserves the right to reject any irregular bid if rejection is in the best interest of the Port. Irregular bids include, but are not limited to:

A. Bids that are incomplete or conditioned in any way;

B. Bids that contain erasures or alterations;

C. Bids that contain unit prices that are obviously unbalanced;

D. Bids that do not acknowledge receipt of previously issued addenda.

14.6 The Port may waive minor irregularities or technicalities in a bid if such waiver is in the best interest of the Port.

14.7 Acceptance of a bid by the Port and award of the Contract will be made by delivery of the fully executed Agreement to the successful bidder within 50 days after the bid submission deadline (or as modified by Document 004100, Bid Form). The bid may not be revoked by the bidder within this period. Failure by the Port to deliver the fully executed Agreement to the successful bidder within the 50-day period will permit the bidder to withdraw its bid. If withdrawn, the Port will return the bid security in accordance with Item 8.3 above. A bid remains effective until it is withdrawn by an affirmative act of the bidder or until the Port rejects the bid, either expressly or impliedly, by awarding the contract to another bidder.

ARTICLE 15 – EXECUTION OF AGREEMENT AND BONDS

15.1 Within 10 days after issuance of the Port's written notice (or as otherwise requested), the apparent low bidder (Contractor) shall execute and deliver the Agreement, the Performance Bond, and the Labor and Material Payment Bond to the Port. The bonds shall each be for the total amount of the Contract. The company providing the bonds shall be authorized to do business in the State of Oregon. The Agreement and the bonds shall be on the forms provided by the Port.

15.2 The apparent low bidder, if a joint venture/partnership, shall provide a copy of the joint venture agreement or partnership agreement evidencing authority to offer and to enter into the resulting contract that may be awarded, together with corporate resolutions (if applicable) evidencing corporate authority to participate as a joint venture or partner. A contact person must also be designated for purposes of receiving all notices and communications under the contract. All partners and joint venturers will be required to sign the Agreement.

15.3 If the bidder fails to execute the Agreement, give satisfactory evidence of insurance, and furnish the bonds within 10 days after the Port's written notice, the bid security shall be forfeited in accordance with the applicable statute. The Port may extend the time for delivery of the executed contract documents. If the Port extends the time for delivery of the executed contract documents at the successful bidder's request, the Port may:

A. Extend the time (see NOTICE TO PROCEED below) within which to issue a Notice to Proceed by an equivalent number of days, or

B. Reduce the contract duration period (see the Bid and the Agreement) by an equivalent number of days.

ARTICLE 16 – NOTICE TO PROCEED

16.1 Within 45 days after delivery of the fully executed Agreement to the successful bidder, the Port will issue Notice to Proceed. The Notice to Proceed will state the dates: (1) on which the Contractor may begin the work, (2) by which the Contractor is required to attain substantial completion of the work, and (3) by which the Contractor is required to attain final acceptance of the work.

ARTICLE 17 – PROTESTS

17.1 A bidder or prospective bidder who wishes to object to any aspect of this solicitation must deliver a written protest to the Port's Manager of Contracts and Procurement, 7200 N.E. Airport Way, 8th Floor, Portland, Oregon 97218; or P.O. Box 3529, Portland, Oregon 97208; or fax to (503) 548-5812.

17.2 If the protest relates to matters that are apparent on the face of the solicitation documents or that otherwise are known or reasonably ought to be known to the protestor, the protest must be delivered no less than five business days before the deadline for the Port's receipt of offers.

17.3 If the protest relates to other matters, including but not limited to the award of the Contract, it must be delivered as soon as possible, and in no event more than five business days after the protestor knows or reasonably ought to know of the award of the contract, the Port's intent to award the Contract, or the other matters to which the protest is addressed.

17.4 A protest is delivered for the purposes of this article when it actually is received by the Port's Contracts and Procurement staff.

17.5 The Port may decline to review a late protest.

17.6 The protest shall be deemed to include only the documents timely delivered pursuant to this article. It must clearly state all of the grounds for the protest and must include all arguments and evidence in support of the protest. Testimonial evidence may be submitted by affidavit. The Port may investigate as it deems appropriate in reviewing the protest, and will issue a written response to the protest. The Port may proceed with contract award, execution, and performance while a protest is pending.

END OF DOCUMENT

SUBSTITUTION REQUEST

Project: _____ From: _____

To: Port of Portland Date: _____

Specification Title: _____ Specification Section No.: _____

Section Page: _____ Article/ Paragraph: _____

Proposed Substitution: _____

Trade Name: _____ Model No.: _____

Manufacturer: _____ Address: _____ Phone: _____

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.
- Undersigned will pay for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted By: _____

Signature: _____

Address: _____

_____

Telephone: _____

PORT REVIEW AND ACTION

☐ Substitution approved – Make submittals in accordance with the General Conditions and Specification Section 013300.

☐ Substitution approved as noted – Make submittals in accordance with the General Conditions and Specification Section 013300.

☐ Substitution rejected – Use specified materials.

☐ Substitution request received too late – Use specified materials.

Signed by: _____ Date: _____

Supporting Data Attached: ☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ ____

Bidder: _____

DOCUMENT 004100
BID FORM

To The Port of Portland
P.O. Box 3529
Portland, Oregon 97208
Solicitation No. 2026-14655

The bidder warrants that it has carefully examined the contract documents for the Contract described as follows:

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

The bidder further warrants that it has examined, or did not avail itself of the opportunity to examine, the proposed work area independently of the indications in the contract documents and has made, or did not avail itself of the opportunity to make, such investigations as are necessary to determine: (1) the character of the materials to be handled, (2) the probable interferences due to Port operations, and (3) other conditions to be encountered.

The bidder further warrants that if this Bid is accepted, it will contract with The Port of Portland in the form of Agreement hereto annexed and will to the extent of its bid provide all things necessary for the performance of the Contract, including, but not limited to, bonds, labor, material, transportation, and equipment.

The bidder promises that all work under this Contract shall be substantially complete within 170 days from the date specified in the written Notice to Proceed. The bidder agrees to pay, as liquidated damages to the Port for any delay, the sum of $500 per day for each day of delay beyond the substantial completion date so promised.

The bidder further promises that all work under this Contract shall be complete, having gained a successful final inspection and received final acceptance from the Port, within 90 days after substantial completion. Final payment will not be made until the work is judged complete by the Port.

The bidder also agrees to pay Other Damages described in the General Conditions.

The bidder submits and proposes the following lump sum price, to wit:

_____ ($_____)
Written in Words Numerals

Bidder: _____

The bidder hereby acknowledges receipt of Addendum Nos. ____, ____, ____, ____, ____, ____, to these contract documents.

This bid may not be revoked by the bidder for a period of 50 days after the date bids are opened.

Accompanying this bid is an electronic copy of the bid security. The amount is 10 percent of the total amount bid. By submitting a bid under this solicitation the bidder certifies that the electronic copy of the bid security is genuine, and that the bidder will provide hard copies of the original bid security documentation to the Port immediately upon request. It is agreed that if this bid is accepted by the Port's written notice within 50 days after bid opening, and the Contractor executes and delivers the Agreement, including a satisfactory performance bond, and labor and material payment bond, each for the full amount of the Contract, within 10 days after the Port's written notice, said bid security will be returned to the undersigned in accordance with Document 002100, Instructions to Bidders. Otherwise, said bid security may be collected as liquidated damages at the option of the Port.

After the Contractor has delivered the executed Agreement (including a satisfactory performance bond, and labor and material payment bond, each for the full amount of the Contract) and evidence of insurance, the Port will issue Notice to Proceed which will establish the dates by which the Contractor is required to attain substantial completion and final acceptance of the work. If all of the documents are not provided within 10 days, the Port may extend the Notice to Proceed date or reduce the contract duration period, as described in the Instructions to Bidders.

The surety company requested to issue the performance bond, and labor and material payment bond will be _____. The bidder hereby authorizes said surety to disclose to the Port any information concerning the bidder's ability to supply the required bonds.

The bidder agrees to comply with the requirements of ORS 279C.800 to 279C.870 governing the prevailing wage rates.

The bidder acknowledges that this bid takes into account the public works bond that the successful bidder generally must file with the Construction Contractors Board and that the bidder will be entitled to no compensation in addition to the bid price on account of that bond.

The bidder certifies that the bidder has not discriminated and will not discriminate, in violation of ORS 279A.110(1).

The bidder certifies that, under ORS 279A.120, it is a (check one):

☐ Resident Bidder ☐ Nonresident Bidder.

If a nonresident bidder, the bidder certifies residency of (insert name of state where the bidder is a resident):

_____.

Failure to complete the foregoing certification of residency or nonresidency may render the bid nonresponsive. Failure of a nonresident bidder to certify its state of residency also may render the bid nonresponsive.

The bidder acknowledges that the Port has the right to reject any or all bids.

Legal Name of Company (Bidder): _____

Business Address of Bidder: _____

_____

Business Phone Number: _____ Fax Number: _____

E-Mail Address: _____

Signature of Authorized Person: _____

Printed Name of Authorized Person: _____

Title: _____

Date: _____

Name of Primary Contact: _____

Phone Number: _____

E-Mail Address: _____

State of Oregon Construction Contractors Board Registration No. _____
(Required for Bidding).

Bidder's Federal Tax I.D. No. _____ (Required for Bidding).

Include with this bid:
- Bid security

Submit within two working hours of bid opening:
- Document 004335, First-Tier Subcontractor Disclosure Form

DOCUMENT 004335
FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM

PROJECT NAME:
_____

SOLICITATION NO. _____ BIDS DUE: Date: _____ Time: _____

This form must be submitted at the location specified in the Invitation to Bid on the bid due date and within two working hours after the time of the deadline when bids are due.

List below: 1) the name of each subcontractor who will be furnishing labor or will be furnishing labor and materials, and who will have a contract value that is equal to or greater than five percent of the total project bid or $15,000, whichever is greater, or $350,000 regardless of the percentage of the total project bid; 2) the dollar value of the subcontract; and 3) the category of work that the subcontractor will be performing. Enter "NONE" if there are no subcontractors. (ATTACH ADDITIONAL SHEETS IF NEEDED.)

Name, Address, Telephone	Dollar Value	Category of Work

Failure to submit this form by the disclosure deadline will result in a nonresponsive bid. A nonresponsive bid will not be considered for award.

FORM SUBMITTED BY (BIDDER NAME): _____ CONTACT NAME: _____ PHONE: _____
Print or Type

Signature certifies as to the accuracy of the foregoing information: _____ _____
Authorized Signature Date

DOCUMENT 005200
AGREEMENT

THE PORT OF PORTLAND
P.O. BOX 3529
PORTLAND, OREGON 97208

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

THIS AGREEMENT made and entered into on the date of full execution of this Contract by and between The Port of Portland, a port district organized under ORS Chapter 778, hereinafter called "the Port," and _____ of _____, hereinafter called "the Contractor."

W I T N E S S E T H:

That the Contractor in consideration of the covenants, agreements and payments to be performed and made by the Port, hereby covenants and agrees to provide all things necessary for the performance of the Contract, including, but not limited to, bonds, labor, material, transportation, and equipment required to execute, construct and furnish in full compliance with the Contract Documents, in an expeditious, substantial and workmanlike manner, the work and material hereinafter particularly described:

PORTLAND INTERNATIONAL AIRPORT
TERMINAL UPPER ROADWAY JOINT REPLACEMENT

The Contractor agrees that the following are hereby made a part of this Contract and are mutually cooperative therewith: (1) a copy of the Contractor's Bid signed on _____, 20____, including any documentation accompanying the Bid; (2) this Agreement, including any post-Bid documentation attached as an exhibit to this Contract; (3) Performance Bond; (4) Labor and Material Payment Bond; (5) General Conditions; (6) Supplementary Conditions; (7) Wage Rates; (8) Drawings; (9) Specifications; (10) Exhibits; and (11) Addenda.

For satisfactorily completed work under this Contract, the Port will pay the Contractor as provided by the Contract, but in no event more than $_____ without an amendment or change order.

The Contractor promises that all work under this Contract shall be substantially complete within 170 days from the date specified in the written Notice to Proceed. The Contractor agrees to pay, as liquidated damages to the Port for any delay, the sum of $500 per day for each day of delay beyond the substantial completion date so promised.

The Contractor further promises that all work under this Contract shall be complete, having gained a successful final inspection and received final acceptance from the Port, within 90 days after substantial completion. Final payment will not be made until the work is judged complete by the Port.

The Contractor also agrees to pay Other Damages described in the General Conditions.

The Contractor shall obtain the prior written consent of the Port to any proposed assignment of any interest in or part of this Contract. Such consent shall be at the sole discretion of the Port.

Under the same date as this Agreement, the Contractor is furnishing the Port with a performance bond, and a labor and material payment bond with _____ as surety, each in the amount of the full Contract value. These bonds shall ensure complete performance by the Contractor of this Contract in accordance with all of its terms and provisions and payment of all amounts owed by the Contractor to others for work performed or materials provided under this Contract.

The Contractor agrees to diligently prosecute the work to final acceptance and to accept as full payment hereunder the amounts specified in this Contract; and the Port agrees to make payments at the time, in the amount, and upon the terms and conditions specified herein.

The Contractor agrees to comply with all federal and state laws and regulations regarding nondiscrimination in employment, employee benefits, and facilities.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed:

(FULL NAME OF COMPANY)

BY: _____
(Signature)

NAME: _____
(Print)

TITLE: _____

DATE: _____

THE PORT OF PORTLAND

BY: _____
(Signature)

NAME: _____
(Print)

TITLE: _____

DATE: _____

Approved as to Legal Sufficiency for the Port of Portland:

_____
Counsel for The Port of Portland

Approved by Commission on

DOCUMENT 006100
PERFORMANCE BOND

Parties

Principal: _____ (Name)
_____ (Address)
_____
_____ (Telephone)

Surety: _____ (Name)
_____ (Address)
_____
_____ (Telephone)

Obligee: The Port of Portland
7200 N.E. Airport Way
P.O. Box 3529
Portland, Oregon 97208

Agreement

Principal has entered into a contract ("Contract") with Obligee for the following project:

_____
_____. By this reference, the Contract is made a part of this bond.

Subject to the provisions of this bond, Principal and Surety, and their respective heirs, executors, administrators, successors, and assigns, are jointly and severally held and firmly bound unto Obligee, and Obligee's successors or assigns, in an amount equal to the total amount of the Contract, or to the guaranteed maximum price if the Contract is a guaranteed maximum price contract. The foregoing obligation shall be void if Principal promptly, faithfully, and fully performs the Contract including but not limited to warranty and maintenance work required under the Contract.

Surety waives any right it may have to notice of changes in the Contract agreed to by Principal and Obligee, or required by Obligee in accordance with the Contract, including but not limited to changes that increase the total amount of the Contract, or the guaranteed maximum price if the Contract is a guaranteed maximum price contract, and changes that extend the term of the Contract. Surety shall not be released from its obligation under this bond because of Obligee's failure to give Surety prompt notice of a breach or default by Principal.

Signed and sealed this _____day of _____, 20___.

PRINCIPAL

By: _____
Name: _____
Title: _____

SURETY

By: _____
Name: _____
Attorney in Fact

DOCUMENT 006101
LABOR AND MATERIAL PAYMENT BOND

Parties

Principal: _____ (Name)
_____ (Address)
_____
_____ (Telephone)

Surety: _____ (Name)
_____ (Address)
_____
_____ (Telephone)

Obligee: The Port of Portland
7200 N.E. Airport Way
P.O. Box 3529
Portland, Oregon 97208

Agreement

Principal has entered into a contract ("Contract") with Obligee for the following project:

_____
_____. By this reference, the Contract is made a part of this bond.

Subject to the provisions of this bond, Principal and Surety, and their respective heirs, executors, administrators, successors, and assigns, are jointly and severally held and firmly bound unto Obligee, for the use and benefit of claimants as defined below, in an amount equal to the total amount of the Contract, or to the guaranteed maximum price if the Contract is a guaranteed maximum price contract. The foregoing obligation shall be void if Principal promptly pays all claimants for all labor and material supplied for the prosecution of the work provided for in the Contract, including but not limited to warranty and maintenance work required under the Contract.

For the purposes of this bond, a claimant is any person who has a right of action against a payment bond under ORS 279C.600 to 279C.625.

Surety waives any right it may have to notice of changes in the Contract agreed to by Principal and Obligee, including but not limited to changes that increase the total amount of the Contract, or the guaranteed maximum price if the Contract is a guaranteed maximum price contract.

Signed and sealed this _____day of _____, 20____.

PRINCIPAL

By: _____
Name: _____
Title: _____

SURETY

By: _____
Name: _____
Attorney in Fact

DOCUMENT 007200
GENERAL CONDITIONS

TABLE OF CONTENTS

Title	Page Number
DEFINITIONS	1
ARTICLE 1 - TERMINOLOGY	3
ARTICLE 2 - PRELIMINARY MATTERS	3
Port Representative	3
Contractor's Representative	3
Online Construction Management System	3
Informal Communications	4
Reporting Information	4
Copies of Project Manual and Drawings	4
Commencement of Contract Time	4
Starting the Work	4
Before Starting Construction	4
ARTICLE 3 - CONTRACT DOCUMENTS	6
Intent	6
Reference Standards	6
Reporting Ambiguities	7
Reuse	7
Use of Electronic Documents	7
ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; SURVEY CONTROL	7
Availability of Lands	7
Physical Conditions – Investigations, Reports, and Tests	7
Differing Site Conditions	7
Survey Control	8
ARTICLE 5 - BONDS AND INSURANCE	8
Bonds	8
Workers' Compensation	8
Liability Insurance	8
Builder's Risk Insurance	9
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES	10
Administration and Supervision	10
Labor and Material	10
"Pre-Bid Approved Equals," "Equals," and Substitutes	11
Concerning Subcontractors	13
Patent Fees and Royalties	13
Computer Software and Code Use Rights	13
Permits	13
Laws and Regulations	14
Environmental Responsibilities	19
Taxes	20
Use of Premises	20
Safety and Protection	20
Emergencies	21
Submittals (Shop Drawings, Product Data, Maintenance Data, Samples, Warranty Data, and Other Information)	21
Access to the Work	22
Prosecution of the Work	22
Port's Right to Do the Work	23
Indemnification	23

Prevailing Wage Rates 23
Labor Relations 24
Records and Audits 24
ARTICLE 7 - WORK BY OTHERS 25
ARTICLE 8 - PORT'S STATUS DURING CONSTRUCTION 25
Construction Contract Manager 25
Clarifications and Interpretations 26
Rejection of Defective Work 26
Port Inspectors 26
Limitations on the Port's Responsibilities 26
ARTICLE 9 - CHANGE IN THE WORK 27
ARTICLE 10 - CHANGE OF CONTRACT PRICE 28
Contract Price Adjustment Methods 28
Fixed Price Method 28
Unit Price Method 30
Force Account Method 30
Cost Changes to Bonds and Insurance 33
Rental Rate Blue Book 33
Lump-Sum Breakdown 33
Deleted Work 34
ARTICLE 11 - CHANGE OF CONTRACT TIME 34
ARTICLE 12 - WARRANTY; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK 35
Tests and Inspections 35
Uncovering Work 35
Warranty 36
Correction or Removal of Defective Work 36
Port May Correct Defective Work 36
ARTICLE 13 - PAYMENTS TO THE CONTRACTOR AND COMPLETION 37
Before Request for Progress Payment 37
Request for Progress Payment 37
Retainage 38
Review of Request for Progress Payment 38
Substantial Completion 38
Partial Utilization 39
Final Inspection and Final Acceptance 39
Final Payment 39
Contractor's Continuing Obligation 40
Contractor's Warranty of Title 40
Waiver of Claims 40
Liquidated Damages 40
Other Damages 41
ARTICLE 14 - SUSPENSION OR TERMINATION OF THE WORK 41
Port May Suspend the Work 41
Port May Terminate the Work 42
Port May Terminate the Work for Convenience 43
ARTICLE 15 - DISPUTE RESOLUTION 43
ARTICLE 16 - MISCELLANEOUS 44
Giving Notice 44
Computation of Time 45
Liability Claims 45
Rights and Remedies 45
Commencement of Limitations Period 45
PROJECT-RELATED FORMS AND APPLICATIONS ..... Following General Conditions

DEFINITIONS

For the purposes of this Contract, terms are defined in the Agreement and in this article, and may be defined in the Specifications or Drawings. Terms used in a defined sense normally are capitalized; terms used in a general or undefined sense normally are not capitalized. Unless the context clearly requires otherwise, or the term is expressly defined otherwise for a particular purpose, the following definitions apply throughout this Contract.

Act of God - Any misadventure or casualty caused by the direct, immediate, and exclusive operation of the forces of nature, uncontrolled and uninfluenced by the power of man and without human intervention, which could not have been prevented or escaped by any amount of foresight or prudence, by any reasonable degree of care, or by the aid of any appliances reasonably required under the circumstances. A meteorological event, including but not limited to, cold, heat, rain, snow, wind, flood, or lightning, shall be rebuttably presumed not to be an Act of God if it falls within two standard deviations of the mean of records for that event maintained by the U.S. Weather Bureau for the Portland International Airport at Portland, Oregon.

Addenda - Written or graphic instruments issued prior to bid opening which clarify, correct, or change the bidding documents or this Contract.

Agreement - The written document signed by the parties and incorporating other documents.

Ambiguities - Ambiguities, conflicts, errors, discrepancies, or inconsistencies.

Bid - The offer or proposal of the bidder submitted on the prescribed form setting forth the price(s) for the Work to be performed.

Change Directive - A written order prepared by the Port directing a change in the Work prior to agreement on adjustment, if any, in the Contract Price or Contract Time.

Change Order - A written amendment to this Contract which authorizes an addition, deletion, or revision to the Work described in this Contract, and which may authorize an adjustment in the Contract Price, the Contract Time, or both.

Construction Contract Manager - An individual authorized in writing by the Port to represent the Port with respect to this Contract within the scope of the authority conferred by the written authorization.

Contract - The entire written agreement between the Port and the Contractor establishing their respective rights and obligations concerning the Work.

Contract Documents - The Contract Documents include all documents that make up this Contract, including but not limited to the Contractor's signed Bid; the Agreement; bonds; these General Conditions; the Supplementary Conditions; wage rates; the Specifications; the Drawings; the Notice to Proceed; Addenda; and Change Orders.

Contract Price - The total compensation payable to the Contractor for performing the Work as stated in this Contract and as modified by Change Order.

Contract Time - The number of days between the Work Start Date established by the Notice to Proceed and the date by which Substantial Completion of all work must be achieved under this Contract.

Contractor's Representative - An individual authorized in writing by the Contractor to represent the Contractor with respect to this Contract.

Day or Calendar Day - Any 24-hour period beginning at midnight.

Day, Business - Any Calendar Day other than Saturday, Sunday, or a holiday on which the Port's administrative offices are closed.

Defective - (1) Unsatisfactory, faulty, or deficient, (2) not conforming to this Contract, or (3) not meeting the requirements of any inspection, test, or approval required by this Contract or federal, state, or local law.

Drawings or Plans - The graphic representations which show the character and scope of the Work to be performed, which have been prepared or approved by the Port, and which are expressly incorporated into this Contract.

Final Acceptance - The Port's written acknowledgment that the Work has been fully completed and all Contract-required documentation has been received and accepted.

Law – Any statute, rule, regulation, ordinance, or order of any federal, state, or local government including, but not limited to, ordinances and resolutions adopted by the Board of Commissioners of the Port of Portland, and rules and regulations adopted in accordance with those ordinances and resolutions.

Maintenance Data – Manufacturer's catalog information, Shop Drawings, installation, operation, and maintenance manuals, and other information needed for operating, troubleshooting, preventive maintenance, repair, restoration, or overhaul of materials, products, systems, and equipment furnished or provided by the Contractor.

Notice to Proceed - A written notice given by the Port to the Contractor fixing the Contract Time and designating a date on which the Contractor is authorized to begin the Work.

Owner - The Port of Portland.

Product Data - Pictures, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate a material, product, or system for some portion of the Work.

Samples - Physical examples of material, equipment, or workmanship which demonstrate and establish standards by which the Work will be judged.

Shop Drawings - Diagrams, drawings, illustrations, instructions, and other data submitted by the Contractor to illustrate some portion of the Work.

Specifications - Those portions of this Contract consisting of written technical descriptions of materials, equipment, systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto.

Subcontractor - An individual or firm having a direct contract with the Contractor or with any other Subcontractor at any tier for the performance of a part of the Work.

Substantial Completion - Completion of the Work, or a part of the Work designated by the Port, in accordance with this Contract, to the point where it may be utilized for the purpose for which it was intended.

Work - The labor, material, equipment, and services required by this Contract.

Work Start Date - The day stated in the Notice to Proceed when the Contract Time will begin to run in accordance with this Contract.

ARTICLE 1 - TERMINOLOGY

1.1 Unless stated otherwise in this Contract, words or phrases which have a well-known technical, construction industry, or trade meaning are used in accordance with such recognized meaning.

1.2 Unless stated otherwise in this Contract, all Specifications are directed to the Contractor. This includes statements which have no grammatical subject, as in "Install equipment plumb and level."

1.3 In the interest of brevity, this Contract frequently omits modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

1.4 The following terms are used in this Contract: as allowed, as directed, as ordered, as required, acceptable, proper, reasonable, satisfactory, suitable. These items and any others of like effect or import describe direction, judgment, requirement, or review of the Port. Such use is solely to evaluate the Work for compliance with this Contract unless there is a specific statement otherwise. The use of such terms never indicates the Port has authority to supervise or direct performance of the Work.

1.5 The words, "Furnish," "Install," "Perform," and "Provide" shall have the following meanings for the purposes of this Contract. When such verbs are not used in connection with services, materials, or equipment in a context clearly requiring an obligation on the part of the Contractor, "provide" is implied.

A. Furnish shall mean to supply and deliver services, materials, or equipment to the Work site (or other specified location) ready for use or installation and in usable or operable condition.

B. Install shall mean to put into use or place in final position services, materials, or equipment complete and ready for intended use.

C. Perform or provide shall mean to furnish and install services, materials, or equipment complete and ready for intended use.

ARTICLE 2 - PRELIMINARY MATTERS

Port Representative

2.1 The Port's Engineering Director is authorized to represent the Port with respect to this Contract, provided that their authority to amend this Contract is limited to the amount set by Port policy. The Engineering Director will appoint a Construction Contract Manager in writing to exercise all or part of their authority.

Contractor's Representative

2.2 The Contractor shall authorize the Contractor's Representative to receive communications from the Port and to sign the Contractor's communications to the Port. The Contractor's Representative shall not be replaced without written notice to the Port except under extraordinary circumstances.

Online Construction Management System

2.3 All written forms of communication, including but not limited to submittals, invoices, notices, reports, requests, clarifications, approvals, transmittals, and letters, shall be conducted exclusively through the Port's online construction management system unless otherwise specified or approved by the Port. Email shall not be considered an official repository for these items unless explicitly permitted by the Port.

2.4 The Contractor will receive an invitation to the Port's online construction management system to set up an account with a user name (e-mail address) and password. One login account will initially be granted to the Contractor, but the Port will allow up to two additional login accounts (for a total of three) upon request. The Contractor shall protect credentials, data, and system access consistent with industry best practices.

2.5 The Contractor shall ensure all assigned users complete Port-required training prior to accessing the system.

2.6 Email notifications generated from the system will be considered in effect as of the time the email is sent. The Contractor shall ensure timely entry, response, and status updates in the system in accordance with the Port's schedules and procedures.

2.7 Documents maintained within the system constitute the official project record. Electronic approvals and e-signatures executed therein carry the same force and effect as wet signatures to the extent allowed by law.

Informal Communications

2.8 In addition to the communication between the Port's Representative and the Contractor's Representative noted above, frequent informal communication will take place between Port and Contractor employees to facilitate the Work. These communications may include Contract enforcement and interpretation. If any communication from the Port appears that it will result in a change in Contract Time or Contract Price, the Contractor shall request that the issue be presented in writing.

Reporting Information

2.9 The Port uses an electronic reporting system to collect subcontractor payment utilization reports, workforce utilization reports, and certified payroll reports. This system can be accessed online at www.portofportland.dbesystem.com. The Contractor shall ensure that reports for the Contractor and its subcontractors at all levels are reported in the system at the frequency required per report type. The Contractor shall fill out and submit an "Assignment of Roles" form (provided by the Port) upon Contract execution indicating who will be responsible for these reports on behalf of the Contractor.

Copies of Project Manual and Drawings

2.10 The Port will furnish to the Contractor up to two copies of the project manual and Drawings for execution of the Work. Additional copies may be furnished, upon request, at the cost of reproduction.

Commencement of Contract Time

2.11 The Contract Time will commence to run on the Work Start Date stated in the Notice to Proceed. Unless provided otherwise by the Agreement, the Work Start Date may be any date within 45 days after the Port delivers the executed Contract to the Contractor.

Starting the Work

2.12 The Contractor may start to perform the Work on the Work Start Date stated in the Notice to Proceed.

Before Starting Construction

2.13 Generally, a preconstruction meeting to establish a working understanding among the parties will be held before the Contractor begins the Work. Procedures will be established for operations

coordination and administrative communication for matters such as submittals, clarifications and interpretations, and Change Orders; and for processing applications for payment. At least one week prior to this meeting or as otherwise specified below, the Contractor shall submit to the Port for review a complete list of material suppliers and subcontractors, a preliminary work progress schedule, a preliminary submittal schedule, a preliminary cash flow schedule, and the contractor safety information form.

A. The preliminary work progress schedule shall be finalized and submitted to the Port one week after the preconstruction meeting. Unless specified otherwise, the work progress schedule shall indicate the Contractor's planned progress in increments of not more than 7-day periods. The schedule will be subject to review and comment by the Port. The Contractor shall prepare and submit revisions to match actual and projected progress as requested by the Port, before and during the course of the work, at no added cost to the Port. The Contractor shall adhere to the most recent version of the schedule.

B. The Port will prepopulate the Submittal Register in the Port's online construction management system. The Contractor shall verify that the Submittal Register includes all submittals required by the Contract Documents and then develop a preliminary submittal schedule with target submittal dates that align with the Contractor's approved work progress schedule. The target submittal dates shall factor in time for the Port's review and the Contractor's submission of revised submittals. The submittal schedule shall be in PDF or other format approved by the Port and be submitted at least 10 days prior to the first scheduled submittal date. Once the preliminary submittal schedule is approved by the Port, the Contractor shall enter the target dates in the Submittal Register and be responsible for updating it during the course of the Work.

C. The preliminary cash flow schedule shall be finalized and submitted to the Port one week after the preconstruction meeting. The schedule shall show the estimated dollar amount of each of the Contractor's monthly requests for progress payment and will be used by the Port for financial planning purposes. Payments to the Contractor are not restricted by the amounts given in the cash flow schedule. However, revised work progress and cash flow schedules will be required if amounts paid as monthly progress payments differ greatly from the amounts estimated.

D. Prior to commencement of work, the Contractor shall submit a site-specific safety and health plan in compliance with 29 CFR 1926, and the contractor safety information form for safety planning purposes (form follows these General Conditions). The Port expects that the Contractor will abide by all current federal and state OSHA requirements and the Contract Documents to provide for the safety of the Contractor's employees, Port employees, tenants, and the general public. Work performed by Subcontractors shall be on the form. The Contractor shall also include applicable company policies, procedures, or plans. Safety data sheets (SDS) for chemical products introduced to Port premises shall not be submitted with this information, but shall accompany the Contractor on site and be available to the Port upon request.

2.14 In the case of a lump-sum agreement or lump-sum bid items, the Contractor shall, no later than one week after the date indicated in the Notice to Proceed for commencement of preliminary Work prior to construction, submit to the Port a detailed breakdown of the amount of each item used in the compilation of the Bid. The breakdown format shall be sufficiently detailed to meet the approval of the Port, and to serve as the basis for progress payment requests. The detailed breakdown may be used in the compilation of Change Order prices when such breakdown is determined by the Port to be applicable and consistent with accepted construction practice.

2.15 The Contractor shall, no later than one week after receipt of the Notice to Proceed, submit to the Port a breakdown of the payroll rates for each trade. The Port may use this breakdown when evaluating Contract Price adjustments. The breakdown shall include the base rate, benefits, payroll taxes, and insurance.

2.16 Before undertaking each part of the Work, the Contractor shall carefully study and compare this Contract and check and verify pertinent figures shown therein and all applicable field measurements. The Contractor shall promptly report in writing to the Port any Ambiguities that the Contractor may discover.

ARTICLE 3 - CONTRACT DOCUMENTS

Intent

3.1 This Contract is complementary; what is called for by one element is as binding as if called for by all.

3.2 It is the intent of this Contract to describe the complete Work. Any labor, material, equipment, or service that may be reasonably inferred from this Contract as being required to produce the intended result shall be supplied whether or not it is expressly specified.

3.3 The Contractor is expected to read the entirety of the Contract Documents and to seek clarification from the Port of any Ambiguities found between, among or within the Contract Documents. Absent written clarification from the Port to the contrary, the Contractor shall, in resolving Ambiguities discovered either before or after original procurement and/or installation, provide the better quality of, and the greater quantity of, the Work. The Contractor shall specifically notify all Subcontractors and suppliers of this requirement.

3.4 Clarifications and interpretations of this Contract will be issued by the Port. They will be consistent with or reasonably inferable from the overall scope of this Contract.

3.5 This Contract is unique. Labor, material, equipment, or services approved for other Port work may not necessarily be approved for this Contract.

3.6 Pursuant to ORS 15.320, Oregon law applies to this Contract. In the event ORS 15.320 is deemed invalid or inapplicable, the parties agree that Oregon law applies to this Contract.

3.7 If the Contractor's Bid or Proposal is incorporated into this Contract, any Ambiguities between the bid or proposal and this Contract will be resolved in favor of this Contract. Any limitations of liability, waivers of damages, or disclaimers of warranty or liability contained in the Contractor's Bid or Proposal will not apply to the Work or this Contract.

3.8 If any provision of this Contract is held to be illegal, invalid, or unenforceable under present or future laws effective during the terms of this Contract or in subsequent dispute resolution proceedings, the legality, validity, and enforceability of the remaining provisions of this Contract will not be affected thereby. As to the illegal, invalid or unenforceable clauses, they shall be rendered void only to the extent of such illegal, invalid and unenforceable portions, with the remainder of such clauses given full force and effect.

Reference Standards

3.9 Unless expressly provided otherwise, references to standard specifications, manuals, or codes of any technical society, organization, or association, or to the codes of any governmental authorities, shall mean the latest version or edition in effect on the effective date of this Contract. Such reference may be specific or implied. No provision of any referenced standard specification,

manual, or code shall change the duties and responsibilities of the Port, the Contractor, or any of their employees, contractors, Subcontractors, or agents from those set forth in this Contract.

Reporting Ambiguities

3.10 If, during the performance of the Work, the Contractor discovers any Ambiguities within this Contract, the Contractor shall report it to the Port, in writing, at once. The Contractor shall proceed with the affected Work after receiving clarification or interpretation from the Port. The Contractor shall not be liable to the Port for failure to report any Ambiguities in this Contract unless the Contractor factually knew or reasonably should have known of the Ambiguities.

Reuse

3.11 Neither the Contractor nor any Subcontractor, manufacturer, fabricator, supplier, or distributor shall have or acquire any title to or ownership rights in any of the Drawings, Specifications or other documents, or copies thereof, prepared by or for the Port. They shall not reuse any of them for any purpose unrelated to this Contract without the prior written consent of the Port and of any other person with an intellectual property interest in the documents.

Use of Electronic Documents

3.12 Those using electronic documents provided by the Port do so at their own risk. Electronic documents are subject to data erosion, erasure, and alteration. Because computer software may become obsolete with time, the Port makes no warranties or representations regarding the ability to permanently access electronic documents it provides. The Port makes no warranties or representations regarding the presence or absence of computer viruses in electronic documents it provides; any person using an electronic document provided by the Port should check the document for computer viruses before using it in a manner that might allow the spread of a computer virus. All or parts of electronic documents provided by the Port may be copyrighted, and those using them are responsible for determining the existence of copyrights and for obtaining permission to copy copyrighted material.

ARTICLE 4 - AVAILABILITY OF LANDS; PHYSICAL CONDITIONS; SURVEY CONTROL

Availability of Lands

4.1 The Port will provide access to: (1) lands upon which the Work shall be performed, (2) rights-of-way for access thereto, and (3) such other lands designated in this Contract for the use of the Contractor. Any easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the Port, unless otherwise provided in this Contract. The Contractor shall provide, at no additional cost to the Port, additional lands and access that the Contractor may require for temporary construction facilities or storage of material and equipment.

Physical Conditions – Investigations, Reports, and Tests

4.2 The Port may make investigations, reports, or tests available to the Contractor. However, the Port makes no warranty or representation regarding the accuracy or completeness of any such investigations, reports, or tests unless they have expressly been made a part of this Contract.

Differing Site Conditions

4.3 The Contractor shall promptly notify the Port in writing of any conditions at the site (1) differing materially from those shown in this Contract or (2) that are of an unusual nature, differing materially from conditions ordinarily encountered and generally recognized as inherent in the Work. The Contractor shall, to the extent reasonably possible, provide prompt written notice of such conditions before they are substantially disturbed or altered. The Port will promptly review

those differing conditions and advise the Contractor in writing if further investigation or tests are necessary. The Port will obtain any necessary additional investigations and tests. If the conditions differ materially from those shown in this Contract or from what reasonably could have been anticipated by the Contractor, this Contract may be amended to allow additional compensation, time, or both as reasonably necessary to accommodate the differing conditions.

Survey Control

4.4 Unless otherwise provided in the Contract, the Port will provide engineering surveys and establish those survey control points necessary for the Contractor to lay out the Work. The Contractor shall: (1) lay out the Work, unless otherwise specified in this Contract, (2) protect and preserve the established survey control points, and (3) make no change or relocation of the survey control points without the prior written approval of the Port. The Contractor shall report to the Port whenever any survey control point is lost, destroyed, or requires relocation. At no additional cost to the Port, the Contractor shall be responsible for the accurate replacement or relocation of survey control points lost or destroyed without Port approval. Such replacement shall be by a professional land surveyor licensed by the State of Oregon.

ARTICLE 5 - BONDS AND INSURANCE

Bonds

5.1 The Contractor shall furnish a performance bond, and a labor and material payment bond, each in an amount equal to the Contract Price, as security for the faithful performance of, and payment of, all the Contractor's obligations, responsibilities, and liabilities under this Contract. The bonds shall remain in effect until at least one year after the date of Final Acceptance, except as otherwise provided by Law. The performance bond, and labor and material payment bond shall be on the forms prescribed by the bidding and contract requirements and executed by sureties: (1) licensed to conduct business in the State of Oregon, and (2) named in the current list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department. All bonds signed by an agent shall be accompanied by a power of attorney or other evidence of the agent's authority to act on behalf of the surety.

5.2 The Contractor shall substitute another bond and surety meeting the requirements of Item 5.1 within 5 days after the surety on any bond furnished by the Contractor: (1) is declared bankrupt, (2) becomes insolvent, (3) has its right to do business terminated in any state where any part of the Work is located, or (4) ceases to meet the requirements of Item 5.1.

Workers' Compensation

5.3 The Contractor shall maintain workers' compensation and employer's liability insurance for all employees subject to the workers' compensation laws of the State of Oregon, unless exempt, and any other appropriate jurisdiction. The amount of employer's liability insurance shall not be less than $1,000,000 per accident, and $1,000,000 per employee for disease. In lieu of such insurance, the Contractor may maintain a self-insurance program approved by the State of Oregon and a policy of excess workers' compensation insurance in the amount required by the State, which policy includes coverage for employer's liability. The Contractor shall provide evidence of such insurance and self-insurance to the Port before commencing Work and throughout the term of this Contract.

Liability Insurance

5.4 The Contractor shall maintain the following liability coverages in an amount not less than $1,000,000 per occurrence. The Port shall be given not less than 30 days' written notice prior to

cancellation, non-renewal, or material change of the policy. This insurance shall provide primary coverage and shall not seek any contribution from any insurance or self-insurance carried by the Port. One copy of each policy and a certificate(s) of such insurance, including an additional insured endorsement, shall be delivered to the Port before commencing Work and shall be subject to review and approval by the Port. The Port may defer delivery of the copy of the policy, but such deferral shall not be a waiver of the Port's right to a copy of the policy. In the event the Contractor fails to maintain such insurance, the Port may, without incurring liability to the Contractor for any related costs: (1) immediately suspend the Work until the required insurance is obtained, without any increase in the Contract Price or any extension of the Contract Time, directly or indirectly attributable to the suspension; and/or (2) terminate this Contract as provided for in Item 14.4.

A. The Contractor shall maintain commercial general liability insurance to protect against liability for bodily injury and property damage which may arise out of the Contractor's operations under this Contract. Such insurance shall include coverage for products-completed operations liability, independent contractors, contractual liability (including the tort liability of another assumed under a business contract), and all other standard coverages usually afforded by a commercial general liability policy. Such insurance shall name the Port and its commissioners, employees, and agents as additional insureds, and shall insure the Contractor's obligations under this Contract to indemnify and hold harmless the Port, its commissioners, employees, and agents, provided that the Contractor's insurer shall not be required to indemnify the Port for damages arising out of the death or bodily injury to persons or damage to property caused in whole or in part by the negligence of the Port.

B. The Contractor shall maintain business automobile liability insurance to protect against liability arising from the use, loading, and unloading of all of the Contractor's owned, hired, and non-owned automobiles in connection with this Contract. Such insurance shall cover the Port as an additional insured, provided that the Contractor's insurer shall not be required to indemnify the Port for damages arising out of the death or bodily injury to persons or damage to property caused in whole or in part by the negligence of the Port.

Builder's Risk Insurance

5.5 The Contractor shall obtain and maintain for the benefit of the parties to this Contract, as their interest may appear, all risk builder's risk insurance to the extent of 100 percent of the value of the Work. Coverage shall also include: (1) formwork in place, (2) form lumber and form components on site, (3) temporary structures, (4) equipment, and (5) supplies related to the Work. Such insurance shall be endorsed to allow partial occupancy and/or utilization of the Work by the Port prior to Substantial Completion of all the Work. Coverage shall continue until the Port's Final Acceptance of the Work. The Port shall be named as additional insured and loss payee as its interests may appear. The Port shall be given not less than 30 days' written notice prior to cancellation, non-renewal, or material change of the policy. One copy of the policy and one certificate of such insurance shall be delivered to the Port before commencing Work and shall be subject to review and approval by the Port. The Port may defer delivery of the copy of the policy, but such deferral shall not be a waiver of the Port's right to a copy of the policy. In the event the Contractor fails to maintain such insurance, the Port may, at the Port's sole option, arrange therefor; and any administrative costs and premium incurred shall be reimbursed by the Contractor.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

Administration and Supervision

6.1 The Contractor shall supervise and direct the Work competently and efficiently, applying the skills and expertise as may be necessary to perform the Work in accordance with this Contract. The Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. The Contractor shall be responsible for seeing that the finished Work complies accurately with this Contract.

6.2 The Contractor shall provide a competent project superintendent at the site at all times during work progress. The superintendent shall be responsible for oversight of the work being performed by the Contractor and its Subcontractors. The project superintendent shall not be replaced without written notice to the Port.

6.3 If the Contractor's Representative is not available for project administration, the superintendent shall have the authority to receive direction from the Port on behalf of the Contractor. All communications given to the superintendent shall be as binding as if given to the Contractor. This authority shall include, but not be limited to, receipt of Port-issued documentation, taking action on Port direction not involving changes to this Contract, taking direct action in emergency situations, and implementing stop work orders issued by the Port.

Labor and Material

6.4 The Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work, and to perform construction as required by this Contract. The Contractor shall at all times maintain good discipline and order at the site.

6.5 The Contractor shall give not less than 24 hours' notice to the Port if work is to be performed outside normal day-shift hours or on Saturday, Sunday or any legal holiday. Emergency conditions relating to safety or protection of persons or property are valid exceptions to such notice. Specific work hour restrictions may be described in the Supplementary Conditions or Division 1.

6.6 Unless otherwise specified, the Contractor shall furnish for the execution, required testing, initial operation, and completion of the Work all necessary material, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, and all other facilities and incidentals.

6.7 All material incorporated into the Work shall be new, except as otherwise provided in this Contract. Products containing asbestos or other hazardous material, as defined by ORS 466.605, shall be used only with the Port's prior written approval. If required by the Port, the Contractor shall furnish satisfactory evidence that the kind and quality of material and equipment provided meet Contract requirements. Satisfactory evidence may include test reports.

6.8 The Contractor shall obtain documentation from distributors, fabricators, manufacturers, and suppliers that provide instructions for the application, cleaning, connection, erection, installation, and use of their products. The Contractor shall follow these instructions unless more stringent requirements are provided in this Contract.

6.9 All material provided and normally tested and labeled by an approved testing laboratory, such as Underwriters Laboratories (UL), Canadian Standards Association (CSA), or by a similarly recognized third-party approval authority, shall be so labeled.

"Pre-Bid Approved Equals," "Equals," and Substitutes

6.10 Whenever an item of material or equipment is specified or described in this Contract by using the name of a proprietary item or the name of a particular supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description indicates that no substitution is permitted, other items of material or equipment, or material or equipment of other suppliers, may be submitted to the Port for evaluation under the circumstances described below:

A. "Pre-Bid Approved Equal" Items: Requests for evaluation of "pre-bid approved equal" material, products, or services shall be made prior to submittal of the Bid, in accordance with the Instructions to Bidders.

B. "Equal" Items: If in the Port's sole discretion an item of material or equipment proposed by the Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by the Port as an "equal" item, in which case evaluation and approval of the proposed item may, in the Port's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. Proprietary materials, products, or services that are specified but not followed by the words "or pre-bid approved equal," "or equal," or "no substitution" will be evaluated as if they were followed by the words "or equal." For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

1. It is at least equal in quality, durability, maintainability, appearance, strength, and design characteristics;

2. It will reliably perform at least equally well the function imposed by the design concept of the completed Work as a functioning whole, and;

3. The Contractor certifies that there is no increase in cost to the Port; and that it will conform substantially, even with deviations, to the detailed requirements of the item named in this Contract.

C. Substitute Items:

1. If an item of material or equipment proposed by the Contractor does not qualify as an "equal" item as defined above, it will be considered a proposed substitute item. This determination will be at the Port's sole discretion.

2. The Contractor shall submit sufficient information, as provided below, to allow the Port to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. The Port will not accept requests for evaluation of proposed substitute items of material or equipment from anyone other than the Contractor. The Contractor shall make the request as a submittal.

3. The application shall certify that the proposed substitute item will adequately perform the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified.

4. The application shall state the extent, if any, to which the use of the proposed substitute item will prejudice the Contractor's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in this Contract (or in the provisions of any other affected contract with the Port for work) to adapt the design to the proposed substitute item, and whether or not incorporation or

use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

5. The application shall identify any variations of the proposed substitute item from that specified, and shall identify available engineering, sales, maintenance, repair, and replacement services.

6. The application shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by the Port in evaluating the proposed substitute item.

7. The Port may require the Contractor to furnish additional data beyond that listed above about the proposed substitute item.

8. The Port may require the Contractor to furnish, at the Contractor's expense, a special performance guarantee or other surety with respect to any substitute.

9. No increase in the Contract Price or extension of the Contract Time will be considered when a substitution is not accepted.

D. No Substitution:

1. Materials, products, or services marked "no substitution" have been determined to be 1) manufactured from a single source only or 2) required for the efficient utilization of existing equipment or systems. Requests for substitution will not be considered for these items. Justifications for classifying these products as "no substitution" are on file as brand name exemption items in the Port's Contracts and Procurement Office.

6.11 Contractor Application for Evaluation: The application for evaluation of "equal" or substitute items shall be made using the forms provided by the Port. These forms may be copied.

6.12 Port's Evaluation: Within 10 days, the Port will evaluate each application for "equal" and substitute items. The Port will be the sole judge of acceptability. No "equal" or substitute item shall be ordered, installed, or utilized until the Port's evaluation is complete, which will be evidenced by either a Change Order for a substitute or an approved submittal for an "equal." The Port will advise the Contractor in writing of any negative determination.

6.13 Substitute Construction Methods or Procedures (Value Engineering): If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in, and expressly required by, this Contract, the Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by the Port. The Contractor shall submit sufficient information to allow the Port, in the Port's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by this Contract. The procedure for evaluation by the Port will be similar to that provided for substitute items. The Port will record time required by the Port and the Port's consultants in evaluating the substitute proposed by the Contractor and in making changes to this Contract (or in the provisions of any other affected contract with the Port for work). If the cost of the Work is reduced by the acceptance of any substitute item, after subtracting the reimbursement cost for Port evaluation, the Port agrees to pay 50 percent of the savings to the Contractor via a Change Order. The Port is not obligated to review proposals for substitute construction methods or procedures if the evaluation of such substitution appears more costly than the savings, or if such substitution otherwise appears not to be in the Port's best interests.

Concerning Subcontractors

6.14 All subcontracts shall be subject to the provisions of this Contract insofar as applicable.

6.15 Subcontractors and suppliers shall be subject to disapproval of the Port. If the Port has reasonable objection to any of these, the Contractor shall submit an acceptable substitute. The Contractor will not be required to employ anyone against whom the Contractor has reasonable objection. No subcontract may be awarded at any tier to a Subcontractor determined by the Commissioner of the Bureau of Labor and Industries to be ineligible to receive a contract or subcontract for public works pursuant to ORS 279C.860.

6.16 The Contractor is responsible for: (1) all acts and omissions of its Subcontractors, (2) persons and organizations directly or indirectly employed by its Subcontractors, (3) persons and organizations for whose acts any of its Subcontractors may be liable, and (4) scheduling and coordinating the work of Subcontractors, suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with the Contractor. Nothing in this Contract shall create any contractual relationship between the Port and any Subcontractor or other person or organization having a direct contract with the Contractor. Nothing in this Contract shall create any obligation on the part of the Port to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by Law. The Port may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to the Contractor on account of specific Work completed.

6.17 The divisions and sections of the Specifications and the identifications of any Drawings shall not control the Contractor in dividing the Work among Subcontractors or delineating the work to be performed by any specific trade.

Patent Fees and Royalties

6.18 If any design, device, material, or process covered by letters patent or copyright is used by the Contractor or is provided for the Port's use, the Contractor shall: (1) provide for such use by agreement with the owner of the patent or copyright or a duly authorized licensee of such owner, and (2) defend, indemnify, and hold the Port harmless from all losses and expenses, including, without limitation, legal fees arising from the use of the patented or copyrighted design, device, material, or process.

Computer Software and Code Use Rights

6.19 If the Contract Documents require the Contractor to provide the Port with computer software programs or code as part of the Work, the Contractor shall provide the Port with all documentation and instruments necessary to evidence the Port's right to use such software or code, including but not limited to ownership transfer documentation, software license agreements, subscription agreements, or assignments of intellectual property interests, as applicable.

Permits

6.20 Port-Designed Work

A. The Port will submit to federal, state, and local units of government all calculations and other documentation required for review and checking for purposes of obtaining permits.

B. The Port will obtain, and pay the costs and charges of, general project permits such as building, fill, environmental, and land use.

C. The Contractor shall obtain and pay all costs and charges imposed for permits customarily issued only to a contractor, such as electrical, mechanical, and plumbing.

D. The Contractor shall give all notices necessary for permit-related inspections by third parties.

E. The Contractor shall submit to the Port a legible copy of permits, certificates of approval, and certificates of occupancy issued by the responsible unit of government.

6.21 Contractor-Designed Work

A. The Contractor shall submit to the Port, for review, all calculations and other documentation required for purposes of obtaining permits for Contractor-designed work.

B. After Port review, the Contractor shall submit to federal, state, and local units of government all calculations and other documentation required for obtaining permits. During review by units of government, the Contractor shall notify the Port of proposed deviations from the original permit documentation.

C. The Contractor shall submit to the Port all calculations and other documentation approved by units of government.

D. The Contractor shall pay costs and charges imposed by local units of government for permits issued to the Contractor.

E. The Contractor shall give all notices necessary for permit-related inspections by third parties.

F. The Contractor shall submit to the Port a legible copy of permits, certificates of approval, and certificates of occupancy issued by the responsible unit of government.

Laws and Regulations

6.22 The Contractor shall comply, and shall ensure that its employees and those of its Subcontractors and suppliers at every tier comply, with the most current versions of applicable Laws, rules, regulations, and practices.

6.23 If the Contractor performs any Work knowing or having reason to know that it is contrary to any Law, the Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to the Contractor's performance or the resulting Work. The Contractor shall immediately report to the Port if performance under this Contract would violate any Law in any respect.

6.24 The Contractor shall adhere to the following specific provisions of the Public Contracting Code.

A. The Contractor shall:

1. Make payment promptly, as due, to all persons supplying the Contractor labor or material for the performance of the work provided for in this Contract.

2. Pay all contributions or amounts due the Industrial Accident Fund from the Contractor or any Subcontractor incurred in the performance of this Contract.

3. Not permit any lien or claim to be filed or prosecuted against the Port on account of any labor or material furnished.

4. Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

5. Demonstrate that an employee drug testing program is in place.

B. If this is a public contract for demolition, the Contractor shall salvage or recycle construction and demolition debris, if feasible and cost-effective.

C. If this is a public contract for lawn and landscape maintenance, the Contractor shall compost or mulch yard waste material at an approved site, if feasible and cost-effective.

D. If the Contractor fails, neglects, or refuses to pay promptly a person's claim for labor or services that the person provides to the Contractor or a Subcontractor in connection with this Contract as such claim becomes due, the proper officer that represents the Port may pay the amount of the claim to the person that provides the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of this Contract.

E. If the Contractor or a first-tier Subcontractor fails, neglects, or refuses to pay a person that provides labor or material in connection with this Contract within 30 days after receiving payment from the Port or the Contractor, the Contractor or first-tier Subcontractor owes the person the amount due plus interest charges that begin at the end of the 10-day period within which payment is due under ORS 279C.580(3) or (4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580(5). The rate of interest on the amount due is 9 percent per annum. The amount of interest may not be waived.

F. If the Contractor or a Subcontractor fails, neglects, or refuses to pay a person that provides labor or material in connection with this Contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580(5).

G. Hours of Labor, Pay Equity, and Employee Discussions of Rate of Pay or Benefits:

1. The Contractor and all Subcontractors shall not employ an employee for more than ten hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency, or where the public policy absolutely requires otherwise, and in such cases the Contractor or Subcontractor shall pay the employee at least time and a half pay for:

    a. All overtime in excess of eight hours in any one day or 40 hours in any one week if the work week is five consecutive days, Monday through Friday; or

    b. All overtime in excess of ten hours in any one day or 40 hours in any one week if the work week is four consecutive days, Monday through Friday; and

    c. All work the employee performs on Saturday, Sunday, New Year's Day on January 1, Memorial Day on the last Monday in May, Independence Day on July 4, Labor Day on the first Monday in September, Thanksgiving Day on the fourth Thursday in November, or Christmas Day on December 25, or, if one of those named holidays falls on a Sunday, on the following Monday or, if it falls on a Saturday, on the preceding Friday.

2. The Contractor shall comply with the prohibition set forth in ORS 652.220. Such compliance is a material element of the Contract and a failure to comply is a breach that entitles the Port to terminate the Contract for cause.

3. The Contractor shall not prohibit any of the Contractor's employees from discussing the employee's rate of wage, salary, benefits, or other compensation with another employee or another person and shall not retaliate against an employee who discusses the employee's rate of wage, salary, benefits, or other compensation with another employee or another person.

4. The Contractor and all Subcontractors shall give notice in writing to employees working on this Contract as required by ORS 279C.520(2) and 279C.520(5)(b), either at the time of hire or before work begins on this Contract, or by posting a notice in a location

frequented by employees, of the number of hours per day and days per week that the Contractor or Subcontractor may require the employees to work.

5. The Contractor shall pay employees at least time and a half pay for work the employees perform under this Contract on the legal holidays specified in a collective bargaining agreement or in ORS 279C.540 (1)(b)(B) to (G) and for all time the employees work in excess of 10 hours in any one day or in excess of 40 hours in any one week, whichever is greater.

H. The Contractor shall promptly, as due, make payment to any person, copartnership, association, or corporation furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to the employees of the Contractor, of all sums which the Contractor agrees to pay for such services and all moneys and sums which the Contractor collected or deducted from the wages of employees pursuant to any law, contract, or agreement for the purpose of providing or paying for such service.

I. The Contractor shall comply with the terms of the workers' compensation laws of the State of Oregon, unless exempt, and any other applicable jurisdiction. All subject employers performing work under this Contract are either employers that will comply with ORS 656.017 or employers that are exempt under ORS 656.126.

J. The Contractor shall comply with the following requirements (and, if applicable, prompt payment provisions stated in Document 007301, Supplementary Conditions for Federally Assisted Contracts):

1. The Contractor shall include in each subcontract for property or services the Contractor enters into with a first-tier Subcontractor, including a material supplier, for the purpose of performing this Contract:

a. A payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under the subcontract within 10 days out of amounts the Port pays to the Contractor under this Contract;

b. A clause that requires the Contractor to provide a first-tier Subcontractor with a standard form that the first-tier Subcontractor may use as an application for payment or as another method by which the Subcontractor may claim a payment due from the Contractor;

c. A clause that requires the Contractor, except as otherwise provided in this paragraph, to use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. A Contractor may change the form or the regular administrative procedures the Contractor uses for processing payments if the Contractor:

1) Notifies the Subcontractor in writing at least 45 days before the date on which the Contractor makes the change; and

2) Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.

d. An interest penalty clause that obligates the Contractor, if the Contractor does not pay the first-tier Subcontractor within 30 days after receiving payment from the Port, to pay the first-tier Subcontractor an interest penalty on amounts due in each payment the Contractor does not make in accordance with the payment clause included in the subcontract pursuant to this subsection. The Contractor or first-tier Subcontractor is not obligated to pay an interest penalty if the only reason that the

Contractor or first-tier Subcontractor did not make payment when payment was due is that the Contractor or first-tier Subcontractor had not received payment from the Port or the Contractor when payment was due. The interest penalty:

1) Applies to the period that begins on the day after the required payment date and that ends on the date on which the amount due is paid; and

2) Is computed at the rate specified in ORS 279C.515(2).

2. The Contractor shall include in each of its subcontracts a provision requiring the first-tier Subcontractor to include a payment clause and an interest penalty clause that conforms to the standards of this section in each of its subcontracts and to require each of its Subcontractors to include such clauses in their subcontracts with each lower-tier Subcontractor or supplier.

3. The clauses required by this section do not impair the right of the Contractor or a Subcontractor at any tier to negotiate, and to include in the subcontract, provisions that:

a. Permit the Contractor or a Subcontractor to retain, in the event of a good faith dispute, an amount not to exceed 150 percent of the amount in dispute from the amount due a Subcontractor under the subcontract without incurring any obligation to pay a late payment interest penalty, in accordance with terms and conditions the parties to the subcontract agree upon, giving such recognition as the parties consider appropriate to the ability of a Subcontractor to furnish a performance bond and a payment bond;

b. Permit the Contractor or a Subcontractor to make a determination that part or all of the Subcontractor's request for payment may be withheld in accordance with the subcontract; and

c. Permit such withholdings without incurring any obligation to pay a late payment interest penalty if:

1) A notice that conforms to the standards of ORS 279C.580(8) has been previously furnished to the Subcontractor; and

2) A copy of any notice the Contractor issues pursuant to the foregoing subsection has been furnished to the Port.

d. As used in this subsection, "good faith dispute" means a documented dispute concerning:

1) Unsatisfactory job progress.

2) Defective work not remedied.

3) Third party claims filed or reasonable evidence that claims will be filed.

4) Failure to make timely payments for labor, equipment, and materials.

5) Damage to the Contractor or a Subcontractor.

6) Reasonable evidence that the subcontract cannot be completed for the unpaid balance of the subcontract sum.

6.25 Civil Rights:

A. General Civil Rights Provisions:

1. The Contractor shall comply with pertinent statutes, Executive Orders, and such rules as identified in the Title VI List of Pertinent Nondiscrimination Acts and Authorities (see FAA Order 1400.11A; the "Nondiscrimination Acts and Authorities"), to ensure that no person shall, on the grounds of race, color, national origin, creed, sex, age, or disability be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision binds the Contractor and its Subcontractors from the solicitation period through the completion of the Contract.

B. Compliance with Title VI Nondiscrimination Requirements:

1. During the performance of this Contract, the Contractor agrees as follows: (a) the Contractor will comply with the Title VI List of Pertinent Nondiscrimination Acts and Authorities, as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract; (b) the Contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, creed, sex, age, or disability in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The Contractor will not participate directly or indirectly in the discrimination prohibited by the Nondiscrimination Acts and Authorities, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21 including amendments thereto; (c) in all solicitations, either by competitive bidding or negotiation made by the Contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the Contractor of the contractor's obligations under this contract and the Nondiscrimination Acts and Authorities on the grounds of race, color, or national origin; (d) The Contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Port or the FAA to be pertinent to ascertain compliance with such Nondiscrimination Acts and Authorities and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the Contractor will so certify to the Port or the FAA, as appropriate, and will set forth what efforts it has made to obtain the information; (e) in the event of a Contractor's noncompliance with the non-discrimination provisions of this contract, the Port will impose such contract sanctions as it or the FAA may determine to be appropriate, including, but not limited to: (i) withholding payments to the Contractor under the contract until the Contractor complies; and/or (ii) cancelling, terminating, or suspending a contract, in whole or in part; and (f) the Contractor will include the provisions of paragraphs (a) through (e) in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations, and directives issued pursuant thereto. The Contractor will take action with respect to any subcontract or procurement as the Port or the FAA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the Contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the Contractor may request the Port to enter into any litigation to protect the interests of the Port. In addition, the Contractor may request the United States to enter into the litigation to protect the interests of the United States.

Environmental Responsibilities

6.26 The following federal, state, and local agencies have enacted ordinances or regulations dealing with the prevention of environmental pollution and the preservation of natural resources that affect the performance of this Contract:

A. City and county where the work is to be performed

B. Metro

C. Oregon Environmental Quality Commission

D. Oregon Fish and Wildlife Commission

E. U.S. Environmental Protection Agency

F. U.S. Fish and Wildlife Service

G. National Marine Fisheries Service

6.27 Known conditions at the construction site that may require the Contractor to comply with statutes or with ordinances or regulations enacted by the agencies listed above are specifically referred to at various places in this Contract, including but not necessarily limited to Division 1 of the Specifications.

6.28 The Contractor is solely responsible for (1) considering applicable statutes and the ordinances and regulations enacted by the agencies listed above, (2) considering the known conditions specifically referred to in this Contract, and (3) ensuring that the activities of the Contractor and the Contractor's employees, Subcontractors (including suppliers), agents, and invitees with respect to those conditions do not violate any of those statutes, ordinances, or regulations. Without limiting the foregoing, the Contractor is solely responsible for the following environmental and natural resource risks associated with the performance of this Contract:

A. Air pollution;

B. Water pollution;

C. Contamination of soil, groundwater, or sediment;

D. Filling or destruction of wetlands;

E. Taking of a federally listed threatened or endangered species through habitat destruction, habitat degradation, or otherwise; and

F. Introduction of an invasive species.

6.29 In addition to the foregoing requirements, the Contractor shall manage and conduct all activities related to the performance of this Contract in accordance with all environmental Laws and regulations, and with the requirements of all permits issued under those Laws and regulations of which the Contractor has been given notice or has actual knowledge. "Environmental laws and regulations" means all federal and state statutes, all local ordinances, and all regulations adopted pursuant to those statutes and ordinances, as any of them may be amended from time to time, dealing with the prevention of environmental pollution or the preservation of natural resources, including but not limited to: the Resource Conservation and Recovery Act, the Comprehensive Environmental Response, Compensation and Liability Act, the Toxic Substances Control Act, the Clean Air Act, the Clean Water Act, and Oregon Revised Statutes Chapters 465, 466, 467, 468, 468A, 468B, and 496. If the Contractor believes compliance with a requirement under this

Contract or a direction given by the Port will result in violation of any environmental laws or regulations, the Contractor shall so notify the Port in writing immediately and shall not proceed pursuant to that requirement or direction until the Port directs the Contractor to proceed.

6.30 In the event of a sudden spill or discharge of hazardous material as a result of actions related to this Contract by the Contractor or the Contractor's Subcontractor or agent, the Port may take action, including contracting for control or cleanup of the spill or discharge, unless the Contractor takes immediate appropriate action. If the Port takes action pursuant to this paragraph, the Port may recover from the Contractor all reasonable cost necessarily incurred in effecting the control and cleanup of the spill or discharge. Regardless of who undertakes the cleanup or control of the spill or discharge, the methods used shall be subject to the approval of the Port.

Taxes

6.31 The Contractor shall pay or ensure payment of sales, consumer, use, and other similar taxes required of the Contractor or any Subcontractor under any Law with respect to performance under this Contract. The Contractor shall comply with all Oregon tax Laws and shall submit a certification of such compliance in accordance with ORS 305.385(6).

Use of Premises

6.32 The Contractor shall confine equipment, the storage of material, and the operations of workers to areas permitted by this Contract. The Contractor shall not unreasonably encumber the premises with equipment or material.

6.33 During the progress of the Work, the Contractor shall keep the premises free from accumulations of waste material, rubbish and other debris resulting from the Work. At the completion of the Work, the Contractor shall leave the site clean and ready for occupancy. The Contractor shall restore to their original condition those portions of the site not designated for alteration by this Contract.

6.34 The Contractor shall not permit any part of any structure to be subjected to loads that may endanger its structural stability. The Contractor shall not subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

Safety and Protection

6.35 The Contractor shall comply with all Laws applicable to the safety of persons or property. Damage, injury, or loss to property caused by the Contractor, Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, shall be remedied by the Contractor.

6.36 The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work.

6.37 The Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities shall be the prevention of accidents and the maintenance and supervision of safety precautions and programs. This person shall be the Contractor's project superintendent unless otherwise designated in writing by the Contractor to the Port.

6.38 The Contractor shall report promptly in writing to the Port all recordable accidents and injuries occurring at the site. When the Contractor is required to file an accident report with a public authority, the Contractor shall submit a copy of the report to the Port.

6.39 The Contractor shall inform the Port of the specific requirements of the Contractor's safety program with which the Port's employees and representatives must comply while at the site.

6.40 If the Port deems any part of the Work unsafe, the Port, without assuming responsibility for the Contractor's safety program, may require the Contractor to stop performance of the Work or take corrective measures satisfactory to the Port, or both. If the Contractor does not adopt corrective measures, the Port may perform them and deduct their cost from the Contract Price. The Contractor agrees to make no claim for damages, for an increase in the Contract Price, or for a change in the Contract Time based on the Contractor's compliance with the Port's reasonable request.

6.41 The Contractor shall erect and maintain necessary safeguards for the safety and protection of:

A. Employees on the Work and other persons whose safety may be adversely affected by performance of the Work.

B. The Work and material to be incorporated into the Work, whether in storage on or off the site. If the Contractor fails to protect the Work, the Port may, after giving notice to the Contractor, protect the Work and deduct the resulting cost from payment due the Contractor. The Port's determination of when and to what degree such protection is necessary shall be final.

C. Other property at the site including trees, shrubs, lawn, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement.

D. Adjacent property and utilities when prosecution of the Work may affect them.

6.42 The Contractor's duties and responsibilities for the safety and protection of the Work shall continue until the Contractor has completed all obligations under this Contract.

Emergencies

6.43 In the event of an emergency affecting the safety or protection of persons or the Work or property at, adjacent to, or near the site, the Contractor shall act to prevent threatened damage, injury, or loss. The Contractor may act without special instruction or authorization from the Port. The Contractor shall give the Port written notice within 24 hours of any significant change in the Work or deviation from this Contract caused by the Contractor's acts or omissions.

Submittals (Shop Drawings, Product Data, Maintenance Data, Samples, Warranty Data, and Other Information)

6.44 The Contractor shall check and verify all field measurements associated with the fit and function of supplied equipment, products, and material. The Contractor shall then submit Shop Drawings, Product Data, Maintenance Data, Samples, a warranty outline, and other information required by the Contract or necessary for performance of the Work to the Port for review in accordance with the accepted submittal schedule and with such promptness as to cause no delay in the Work. All submittals shall be identified in the manner required by the Port. All submittals shall be reviewed and stamped with the approval of the Contractor prior to submittal to the Port.

6.45 Shop Drawings, Maintenance Data, Product Data, a warranty outline, and other information required by the Contract or necessary for performance of the Work, including but not limited to substitution requests, certificates, reports, test data, and mix designs, shall be submitted electronically unless otherwise specified by the Port. Data shown in submittal information shall be sufficiently complete with respect to quantities, dimensions, material, and specified performance and design criteria so as to allow the Port to verify conformance with this Contract.

6.46 The Contractor shall submit to the Port for review the specified number of Samples required by this Contract. Samples shall be clearly identified as to material, manufacturer, pertinent catalog numbers, and intended use, and shall include any other information necessary for the Port to complete its review.

6.47 The Contractor shall identify in writing as part of its submittal to the Port any deviations from the requirements of the Contract contained in the Shop Drawings, Product Data, Maintenance Data, Samples, warranty outline, or other information.

6.48 Within 10 business days of actual receipt, the Port will stamp, date, and return each submittal to the Contractor indicating the action to be taken or will notify the Contractor that the Port's review will require more than 10 business days. The Port's review will be only for conformance with the design concept of the Work and for general compliance with this Contract. It will not extend to any other purpose, including but not limited to the means, methods, sequences, techniques, or procedures of construction, safety precautions or programs related thereto, or to the assembly in which an item functions. Under no circumstances will the Port's review of the Contractor's submittals relieve the Contractor of its sole responsibility for performing the Work in accordance with the Contract.

6.49 The Contractor shall make any corrections to its submittals required by the Port and shall proceed according to the Port's stamp and directions. When the Port requires corrections of the Contractor's submittals, the Contractor shall include with its resubmission the number of corrected copies required by the Port and shall resubmit new Samples for review. The Contractor shall direct specific attention in writing to revisions other than the corrections called for by the Port on previous submittals.

6.50 The Contractor's stamp of approval on any submittal shall constitute a representation to the Port that the Contractor has: (1) determined and verified all quantities, dimensions, field construction criteria, material, catalog numbers, and similar data or assumes full responsibility for doing so, and (2) reviewed and coordinated each submittal with the requirements of this Contract.

6.51 When a submittal is required by this Contract, no Work related to the submittal (other than preparation of the submittal) shall be commenced or costs incurred in the performance of the Work until the submittal is approved by the Port. If the Contractor proceeds with performance of the Work related to a submittal before receiving the Port's approval, such Work shall be at the Contractor's sole risk and expense and the Port will have no liability for such unauthorized Work.

6.52 The Port's review of a submittal shall not relieve the Contractor from responsibility for any deviations from this Contract except those called to the Port's attention in writing at the time of submission and accepted in writing by the Port. Changes in the Work shall follow procedures outlined for a Change Order and approval of a submittal shall not constitute approval for a Change Order. Review by the Port shall not relieve the Contractor from responsibility for errors or omissions in the submittal.

6.53 Submittals approved by the Port are binding upon the Contractor upon such approval. The Contractor shall be obligated to perform in accordance with the approved submittal.

Access to the Work

6.54 The Contractor shall provide reasonable and safe access to the Port and inspection authorities for observation, testing, and inspection of the Work including, but not limited to, ladders, lifts, equipment, and tie-off apparatus.

Prosecution of the Work

6.55 The Contractor shall continue performance of the Work in accordance with the work progress schedule during all claims or disputes with the Port. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as the Contractor and the Port may otherwise agree in writing.

Port's Right to Do the Work

6.56 If the Contractor fails to prosecute the Work properly or fails to perform any provision of this Contract, the Port, after a 3-day written notice to the Contractor, may without prejudice to any other remedy it may have, make good such failures. The Port may deduct the cost thereof from any payment due the Contractor. In cases of emergency, the Port may prosecute such Work without notice or delay and may deduct the cost thereof from any payment due the Contractor.

Indemnification

6.57 To the fullest extent allowed by law, the Contractor shall defend (using legal counsel acceptable to the Port), indemnify, reimburse, and hold harmless the Port and the Port's commissioners, employees, contractors, and agents for, from and against any and all actual or alleged claims, damages, losses, expenses, costs, fees (including, but not limited to, attorney, accountant, paralegal, expert, and escrow fees), fines, and/or penalties (collectively "Damages") which may be imposed upon, claimed against or incurred by the Port, to the extent such Damages are caused by any of the following: (a) any act, omission or negligence of the Contractor or the Contractor's partners, officers, directors, agents, employees, invitees or Subcontractors; (b) any use, occupation, management or control of Port property by the Contractor or the Contractor's employees, agents, Subcontractors, or suppliers, whether or not due to the Contractor's own act or omission and whether or not occurring on Port property; (c) any condition created on Port property by the Contractor or the Contractor's employees, agents, Subcontractors, or suppliers, and any accident, injury or damage arising from the condition; (d) any breach, violation or nonperformance of any of the Contractor's obligations under this Contract; (e) any damage caused by the Contractor or the Contractor's employees, agents, Subcontractors, or suppliers on or to Port property. Nothing in the foregoing shall be deemed to require any indemnity made void by ORS 30.140.

Prevailing Wage Rates

6.58 The Contractor shall comply with the prevailing wage rate requirements of ORS 279C.800 to 279C.870.

A. The existing prevailing rates of wage which may be paid to workers in each trade or occupation required for this Work and employed in the performance of this Work by the Contractor, a Subcontractor, or any other person doing or contracting to do all or any part of the Work, may be obtained from BOLI's web site at www.boli.state.or.us. The wage rates and amendments in effect at the time this project is advertised are the rates that shall apply for the duration of the Work.

B. Workers in each trade or occupation required for this Work and employed in the performance of this Work by the Contractor, a Subcontractor, or any other person doing or contracting to do all or any part of the Work, shall be paid not less than the minimum hourly rate of wage specified in the foregoing paragraph. The Contractor shall ensure that each subcontract includes a provision that workers shall be paid not less than the minimum hourly rate of wage specified in the foregoing paragraph. For projects subject to both state and federal (Davis-Bacon) prevailing wage requirements, the Contractor shall ensure that each subcontract includes a provision that workers shall be paid not less than the higher of the applicable state or federal prevailing wage rates.

C. The Contractor shall have a public works bond filed with the Construction Contractors Board, as provided by ORS 279C.836. In every subcontract, the Contractor shall include a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board, unless exempt, as provided by ORS 279C.836.

D. The fee that is required to be paid to the commissioner of the Bureau of Labor and Industries under ORS 279C.825(1) shall be paid under the administrative rule of the commissioner.

Labor Relations

6.59 The Contractor shall be responsible for labor relations and shall seek to resolve disputes between the Contractor and its employees. Any labor dispute arising from this Contract that causes a disruption of the Port's operations shall be to the account of and the responsibility of the Contractor.

Records and Audits

6.60 The Contractor shall retain all records, including but not limited to financial records that pertain to this Contract for at least three years after the Port has made final payment and all other matters related to this Contract are concluded.

6.61 The Port or its designee may, at any time, inspect, audit, and copy any of the Contractor's records retained pursuant to Item 6.60 to the extent necessary to: (1) evaluate and verify the costs incurred by the Contractor in performing the work under this Contract or the accuracy of any invoice, Change Order, payment, or claim submitted under this Contract by the Contractor or the Contractor's payees; (2) ensure that Contract costs are allowable, properly allocated, and reasonable; or (3) evaluate any claim asserted by the Contractor against the Port.

6.62 The Contractor shall provide the Port such assistance as may be required to allow complete access to such records within 10 Business Days from the original request. The Contractor shall make the records available at any time during regular business hours after reasonable advance notice. If records are located outside the city of Portland, Oregon, and cannot be provided to a location within Portland, Oregon, the Contractor agrees to reimburse the Port for expenses incurred in sending representatives to wherever such records are maintained. Such expense reimbursement shall include transportation, lodging, food, and other out-of-pocket expenses resulting from the necessity of leaving Portland, Oregon. The Contractor shall supply a table, a chair, a standard electrical outlet, lighting, and a weatherized space of adequate size at the site of the Contractor's records to allow the inspection, auditing, and copying of records. The Contractor agrees to provide free access to copiers, fax machines, and other needed office equipment. The Port will bear the cost of copying records.

6.63 The Contractor shall allow the Port to interview the Contractor's employees, and shall cooperate with the Port in arranging interviews with the Contractor's employees and former employees, for the purposes of identifying, evaluating, verifying, or auditing the records described in these requirements.

6.64 For the purpose of these requirements, a record may be in any format whatsoever including, but not limited to, paper, photographic, or electronic format. In those situations where the Contractor's records have been generated from computerized data, the Contractor agrees to provide the Port with native data files in a computer readable format on data disks, e-mail with attached files, or suitable alternative computer data exchange formats or devices.

6.65 The Contractor shall require all insurers, material suppliers, and Subcontractors at any tier to comply with these requirements.

6.66 The Contractor shall be entitled to no extra compensation for complying with these requirements.

ARTICLE 7 - WORK BY OTHERS

7.1 The Contractor shall afford utility service companies, other contractors and Port employees reasonable access to the Work. The Contractor shall allow storage of material and execution of work by others. The Contractor shall properly connect and coordinate its Work with work by others.

7.2 Notice will be given to the Contractor prior to the start of any additional work by others not noted in this Contract. If the Contractor believes that the performance of such additional work by the Port or others involves additional expense to the Contractor or requires an extension of the Contract Time, the Contractor shall notify the Port in writing.

7.3 If any part of the Contractor's Work depends upon the work of any other contractor, utility service company, or the Port, the Contractor shall inspect and promptly report to the Port in writing any reasons that render work by others unsuitable. The Contractor's failure to report unsuitability of work by others shall constitute the Contractor's acceptance of the work by others as fit and proper for integration with the Contractor's Work. Latent or non-apparent defects and deficiencies in the work by others shall be reported to the Port in writing promptly upon discovery.

7.4 The Contractor shall do all cutting, fitting, and patching of the Work that may be required to make its parts come together properly and integrate with such other work. The Contractor shall not endanger any work by others. The Contractor shall cut or alter work by others only with the written consent of the Port and those whose work will be affected.

7.5 Unless otherwise specified, the Port shall be the final authority regarding coordination issues between the Contractor and work by others.

ARTICLE 8 - PORT'S STATUS DURING CONSTRUCTION

Construction Contract Manager

8.1 The Port's Construction Contract Manager will be the Port's representative during the construction phase of the Work.

8.2 The Construction Contract Manager will resolve any and all questions which may arise as to Contract compliance. The Contractor shall at all times carry out and fulfill the instructions and directions of the Construction Contract Manager insofar as they concern the Work to be performed under this Contract.

A. The Construction Contract Manager's authority includes, but is not limited to:

1. Determining the quantity, quality, and acceptability of material furnished and Work performed.

2. Reviewing and approving/disapproving the manner of performance and rate of progress of the Work.

3. Stopping the Work whenever such stoppage is deemed necessary.

4. Administering this Contract.

5. Determining acceptable fulfillment of this Contract by the Contractor.

B. Written approval by the Construction Contract Manager signifies favorable opinion and qualified consent. It does not carry with it: (1) certification, (2) assurance of completeness,

(3) assurance of quality, (4) assurance of accuracy concerning details, dimensions, and quantities.

C. Written approval by the Construction Contract Manager will not relieve the Contractor from responsibility for: (1) errors, (2) improper fabrication, (3) nonconformance with requirements, (4) deficiencies within the Contractor's control.

Clarifications and Interpretations

8.3 The Construction Contract Manager will issue with reasonable promptness such written clarifications or interpretations of this Contract as may be necessary. If the Contractor believes that a written clarification or interpretation justifies an increase in the Contract Price or the Contract Time, the Contractor may notify the Port as provided in Article 9.

Rejection of Defective Work

8.4 The Construction Contract Manager is authorized to disapprove or reject Work which is Defective and to require additional inspection or testing of the Work whether or not the Work is fabricated, installed, or completed.

Port Inspectors

8.5 The Port will assign Port inspectors who are authorized to:

A. Inspect the Work as it is performed and all material being furnished. Such inspections may extend to all or any part of the Work and to the preparation, fabrication, or manufacture of the material to be used.

B. Call the attention of the Contractor to any failure of the Work to meet this Contract.

C. Reject material not meeting the requirements of this Contract.

D. Suspend that part of the Work affected by Contract nonconformance until the issue can be referred to and a decision issued by the Construction Contract Manager.

8.6 Port inspectors are not authorized to:

A. Supervise or perform any other duties for the Contractor, or interfere with the Contractor's management of the Work.

B. Give final approval or acceptance of any portion of the Work.

C. Issue instructions or directions contrary to this Contract.

8.7 No act or failure to act on the part of a Port inspector will render the Port liable in any way, nor shall it relieve the Contractor from fulfilling all of the terms and conditions of this Contract.

Limitations on the Port's Responsibilities

8.8 The Port is not responsible for the acts or omissions of the Contractor or the Contractor's employees, Subcontractors, manufacturers, fabricators, suppliers, distributors, or any other persons at the site or otherwise performing any of the Work, or their agents or employees.

8.9 The Port is not responsible for the Contractor's means, methods, procedures, sequences, or techniques of construction, or related safety precautions and programs except as specified in the Contract Documents.

8.10 The Port is not responsible for the Contractor's failure to perform the Work in accordance with this Contract.

ARTICLE 9 - CHANGE IN THE WORK

9.1 Without invalidating this Contract, changes (which may include additions and/or deletions) to the Work may be accomplished after execution of the Contract only by Change Directive or Change Order. All such changed Work shall be executed under the applicable conditions of this Contract.

9.2 No addition to Contract Price or extension of Contract Time will be allowed because of: (a) the acts or omissions of the Contractor or those for whom the Contractor is responsible, and (b) any condition of which the Contractor could have informed itself by examination, testing, sampling, review of records, or otherwise.

9.3 If the Contractor believes that a Change Directive will require a change in the Contract Price or the Contract Time, the Contractor shall so notify the Port in writing. Such notification shall be delivered to the Port within 7 days after the Contractor receives the Change Directive.

9.4 The Contractor shall submit, in the format required by the Port, an itemized cost estimate of any proposed adjustment to the Contract Price, either additive or deductive, resulting from the Change Directive. If applicable, the Contractor shall also submit a work progress schedule analysis or summary which demonstrates the effect of the Change Directive on the Contract Time. The itemized estimate and/or analysis shall be submitted within 15 days of receipt of the Change Directive. The Contractor shall submit such cost estimate or work progress schedule analysis in less than 15 days if so requested by the Port or if so required by work progress schedule limitations.

9.5 The Port may order the Contractor, in writing, to commence the Change Directive Work immediately and account for cost using the force account method if: the Contractor fails to submit the cost estimate within the 15-day period (or earlier if requested); the parties fail to agree as to the cost or schedule impact; or the Port for any reason deems it necessary. If direction to proceed has already been given and the Contractor fails to submit the cost estimate within the 15-day period (or earlier if requested), if the parties fail to agree as to the cost or work progress schedule impact, or if the Port for any reason deems it necessary, the Port may issue a lump sum unilateral change to the Contract Price in accordance with the Port's estimate of cost.

9.6 The Contractor shall proceed with changed Work either upon execution by both the Port and the Contractor of a Change Order or upon receipt of a Change Directive. When changed Work is authorized by Change Directive, the Contractor shall continue performance of the Work, including the change, during the negotiation of the Change Order, even if a dispute arises which delays or prevents agreement on the terms and conditions of the Change Order.

9.7 Any Change Order shall constitute an accord and satisfaction with respect to issues related to changes in the Contract Price or the Contract Time. The Change Order shall be deemed to contain all the costs and credits relating to changes in the Work and effects on the unperformed or unchanged Work. If the Contractor contends that inefficiency and cumulative impacts cannot be accurately assessed at the time the Change Order is to be signed, the Contractor shall give the Port notice of a potential inefficiency or cumulative impact claim as soon as the Contractor suspects grounds for the claim exists, and shall submit evidence thereof at the first reasonable opportunity.

9.8 No payment will be made for changes to the Work until a Change Order has been executed.

9.9 The Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Time for changes in the Work performed prior to receiving written direction from the

Port in a Change Directive or execution of a Change Order. Emergencies, as provided in Item 6.43, are an exception.

ARTICLE 10 - CHANGE OF CONTRACT PRICE

Contract Price Adjustment Methods

10.1 A Contract Price adjustment for the changes in the Work may be made in accordance with one or a combination of the following methods as the Port may elect:

A. Fixed price method as supported by the breakdown of estimated costs. If agreement cannot be reached by the fixed price method, the Port may require the Work to be performed on the basis of force account.

B. Unit price method.

C. Force account method.

Fixed Price Method

10.2 The Contractor shall prepare a fixed price proposal in the following format:

A. Direct Costs

1. Material (itemize)

a. The cost to the Contractor for the material directly required for the performance of the changed Work. Such cost of material may include the cost of transportation. No delivery charges will be allowed unless the delivery is specifically for the changed Work and no other Work.

b. Trade discounts offered by the supplier to the Contractor shall be credited to the Port. If the material is obtained from a source owned wholly or in part by the Contractor, payment thereof will not exceed the current wholesale price for the material. The term “trade discount” includes the concept of cash discounting.

c. If, in the opinion of the Port, the cost of the material is excessive or if the Contractor fails to furnish satisfactory evidence of a cost from the supplier then, in either case, the cost of the material shall be deemed to be the lowest current wholesale price at which similar material is available in the quantities required.

d. The Port reserves the right to furnish such material as it deems advisable and the Contractor shall have no claims for cost or profit on material furnished by the Port.

2. Labor (man-hours, rates by crafts)

a. Payroll costs shall include, but not be limited to, salaries and wages, and fringe benefits including social security contributions, unemployment, excise and payroll taxes, workers’ compensation, health and retirement benefits, sick leave, vacation and holiday pay applicable thereto. The costs for all supervision, including general superintendents and foremen, shall be included in the markups established by this Contract. The only exception to this shall be working foremen who perform manual labor. No labor charges will be accepted for engineering or proposal preparation. These costs shall be included in the markups established by this Contract.

b. Overtime and premium time pricing will be allowed only for labor which is authorized by the Port to be performed after normal working hours, or on Saturday, Sunday, or legal holidays.

3. Equipment (type, size, attachments, hours, rate)

a. The cost to the Contractor for the use of equipment directly required in the performance of the changed Work. No mobilization or demobilization cost will be allowed for equipment already on site.

b. For equipment owned, furnished, or rented by the Contractor, costs allowed shall be the actual usage costs incurred as supported by the Contractor's published standard equipment rates or rental invoices; provided, however, that such rates shall not exceed the rates established by the Rental Rate Blue Book.

c. The amount to be paid to the Contractor for the use of equipment as set forth above will constitute full compensation for the cost of fuel, power, oil, lubricants, supplies, small tools, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators) and any and all costs incidental to the use of the equipment.

4. Direct costs shall not include:

a. Payroll costs and other compensation of the Contractor's officers, executives, principals of partnerships and sole proprietorships, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, superintendents and foremen, and similar administrative personnel. These costs shall be considered administrative costs covered by the Contractor's markup.

b. Expense of the Contractor's principal and branch offices other than the Contractor's office at the site.

c. Any part of the Contractor's capital expenses, interest on the Contractor's capital employed for the Work, or charges against the Contractor for delinquent payments.

d. Costs due to the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be responsible or liable. Negligence costs include but are not limited to those incurred for correction of defective Work, disposal of material wrongly supplied, and making good any damage to property.

e. Other overhead or general expense costs of any kind.

f. Cost of small tools and supplies.

g. Cost of safety programs.

h. Cost of warranty work.

B. Subcontract Costs

1. Direct costs shall be as outlined in Item 10.2, A.

2. Subcontractors' (at any tier) markups for overhead and profit shall not exceed 15 percent of the direct costs.

C. Contractor's Markup

1. The Contractor's markup for overhead and profit shall not exceed the following:

   a. Costs incurred under Item 10.2, A: 15 percent

   b. Costs incurred under Item 10.2, B, 1:
   (No markup allowed on Subcontractor markup)

      1) First $5,000 10 percent

      2) Amount above $5,000 8 percent

   c. In no case shall the total markups be greater than 30 percent of the total direct cost, regardless of the number of subcontract tiers existing. No markup is allowed for costs listed in Item 10.2, A, 4.

2. The amount of credit to the Port for a change which results in a net decrease in cost shall be the amount of the actual net decrease of direct costs plus a deduction in the Contractor's overhead and profit markup by an amount equal to that allowed in the table above.

3. When both additions and credits are involved in any one change, the adjustment in the Contractor's overhead and profit markup shall be computed on the basis of the net change in direct cost.

Unit Price Method

10.3 In the case of unit price bid items:

A. The Port may increase the units of Work without limit or adjustment of unit prices.

B. The Port may decrease the estimated quantity in a major item of Work. A major item of Work is any item in a unit price bid schedule which is equal to or greater than 10 percent of the Contract Price as bid. If the Port decreases the quantity in a major item of Work by more than 25 percent, the Port and the Contractor shall negotiate a reasonable adjustment in the unit price.

C. The Port may decrease the estimated quantity or delete a minor item of Work. A minor item of Work is any item in a unit price bid schedule which is less than 10 percent of the Contract Price as bid. If accumulation of such changes decreases the Contract Price more than 25 percent based on the estimated quantities and prices bid by the Contractor, the Port and the Contractor shall negotiate a reasonable adjustment in the unit prices for the remaining items of Work.

Force Account Method

10.4 The force account method changes the Contract Price in accordance with the sum of all costs reasonably and necessarily incurred and paid by the Contractor in the proper performance of the Work plus overhead and profit. Except as otherwise may be agreed to in writing by the Port, such costs shall be in amounts no higher than those prevailing in the locality of the Work, shall include only the following items, and shall not include any of the costs itemized under Item 2.14. The Contractor and the Port shall compare records of force account costs at the end of each workday. Copies of these records shall be made in duplicate by the Contractor and shall be signed daily by both the Port and the Contractor. Fully itemized force account invoices shall be submitted monthly to the Port. The Contractor's submittal shall be in the format described in Item 10.2.

Payment will be included with regular periodic progress payments upon issuance of a Change Order for the Work. The Contractor shall submit final force account billing within 30 days after completion of that aspect of Work. Force account costs are limited to the following:

A. Cost of all material furnished and incorporated in the Work, in accordance with Item 10.2, A, 1.

B. Labor costs for employees in the direct employment of the Contractor in the performance of the Work in accordance with Item 10.2, A, 2.

C. Cost of equipment furnished and used in performance of the Work in accordance with Item 10.2, A, 3 and the following limitations:

   1. Equipment will be eligible for payment when operated and used on a full-time basis. Equipment is considered to be used full time when the equipment must be manned and ready for use at all times.

   2. When the Port determines that equipment need not remain at the site continuously, payment will be limited to actual hours of use.

   3. Rental rates for equipment retained on the Work for an extended duration will be adjusted to the then-current rate on the anniversary of the Work Start Date.

   4. The hourly operating cost will be allowed for each hour that the equipment is in use. The rate will be the monthly rate divided by 176 hours for single-shift operations. Hourly rates will be adjusted for two- and three-shift operations as recommended by the Rental Rate Blue Book.

   5. Equipment attachments will be included in the rate only when deemed by the Port to be essential to the Work. When multiple attachments are approved for use (tractor with ripper, dozer or tractor with loader and backhoe, etc.) and the attachments are being used interchangeably, only the one attachment having the higher rate will be eligible for payment.

   6. Equipment standby time, when ordered by the Port, will be paid as follows: One-third of the total rate established in Items 10.4, C, 4 and 10.4, C, 5, rounded to the nearest 10 cents. Standby rates which are calculated at less than one dollar per hour will not be paid. No more than 8 hours of standby will be paid during a 24-hour period. No more than 40 hours of standby will be paid during a one-week period. In the event of breakdown, or shutdown by order of the Port, of part or all of the equipment being used, payment for such equipment that is idled shall cease. Labor that is idled and cannot be diverted to other Work will be paid through the one-half shift during which the breakdown or shutdown occurred. No other payment will be made for non-operating hours. Rental will not be allowed for equipment listed in the Shop Tools section of the Rental Rate Blue Book having a daily rate of less than $5 each. Individual pieces of equipment not specifically covered by the Rental Rate Blue Book and having a value of $350 or less shall be considered “small tools and equipment for which no rental is allowed.”

D. Payments made by the Contractor to Subcontractors for Work performed by Subcontractors in accordance with Item 10.2, B. If required by the Port, the Contractor shall obtain competitive bids from Subcontractors acceptable to the Contractor and award to the lowest responsive and responsible bidder. If a subcontract provides that the Subcontractor is to be paid by force account method plus markup, the Subcontractor’s force account costs shall be determined in the same manner as the Contractor’s force account costs.

E. Supplemental costs:

1. Sales, use, or similar taxes (but not Oregon's corporate activity tax) related to the Work, and for which the Contractor is liable, imposed by any governmental authority.

2. Costs for royalty payments, fees, permits, and licenses other than those caused by the negligence of the Contractor or the Contractor's employees, agents, or Subcontractors.

3. Losses, damages, and related expenses sustained by the Contractor in connection with the execution of the Work that are not caused by the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and are not compensated for by insurance recovery. Losses, damages, and related expenses shall include settlements made with the written consent and approval of the Port. No such losses, damages, or related expenses shall be included in the force account cost for the purpose of determining the Contractor's markup for overhead and profit. If, however, any such loss, damage, or related expense requires reconstruction and the Contractor is placed in charge thereof, the Contractor shall be paid for services in accordance with Item 10.4, G.

4. The cost of utilities, fuel, and sanitary facilities at the site.

5. Minor expenses in connection with the Work such as long distance telephone calls, telephone service at the site, expressage, and petty cash items.

6. Rental of all the Contractor-owned and -operated power tools and equipment which the Port approves for use in advance in writing.

F. Force account method costs shall not include:

1. Payroll costs and other compensation of the Contractor's officers, executives, principals of partnerships and sole proprietorships, general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, superintendents and foremen, and similar administrative personnel. These costs shall be considered administrative costs covered by the Contractor's markup.

2. Expense of the Contractor's principal and branch offices other than the Contractor's office at the site.

3. Any part of the Contractor's capital expenses. Interest on the Contractor's capital employed for the Work. Charges against the Contractor for delinquent payments.

4. Costs due to the negligence of the Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Negligence costs include correction of defective Work, disposal of material wrongly supplied, and making good any damage to property.

5. The costs of any item not specifically and expressly included in Items 10.4, A through E.

G. The Contractor's markup for overhead and profit shall not exceed the following:

1. Costs incurred under Items 10.4, A; 10.4, B; and 10.4, C 15 percent
(No markup allowed for Item 10.4, E)

2. Costs incurred under Item 10.4, D less Subcontractor's markup:

a. First $5,000 — 10 percent

b. Amount above $5,000 — 8 percent

3. If a subcontract is based on the force account method plus markup, the maximum allowable to the Subcontractor as markup for overhead and profit will be in accordance with Item 10.4, G, 1.

4. In no case shall the total markups be greater than 30 percent of the direct cost, regardless of the number of subcontract tiers.

Cost Changes to Bonds and Insurance

10.5 When changes in the Work require new or increased premiums on bonds and insurance, the Port will reimburse the Contractor for such costs in the following manner:

A. Costs for new bonds or insurance shall be submitted as part of the Contractor's request for progress payment and supported by invoiced costs from the bond or insurance supplier.

B. Costs for increases to existing bonds or insurance shall be submitted as part of the Contractor's request for final payment and supported by invoiced costs from the bond or insurance supplier.

Rental Rate Blue Book

10.6 Equipment rental rates will be the lowest of: the Contractor's established company rates; actual rental rates; or the rates in effect in each section of the Rental Rate Blue Book on the Work Start Date.

A. When the Rental Rate Blue Book, published by EquipmentWatch, is used to establish equipment rental rates, the following shall apply:

1. For projects of more than one year duration, the rates shall be adjusted annually after the anniversary date of the Work Start Date to reflect published revisions of the Rental Rate Blue Book.

2. The Rental Rate Blue Book denotes discontinued models. Many manufacturers continue the same model number through successive years. In the event the Port and the Contractor are unable to distinguish discontinued models from current models having different rates in the Rental Rate Blue Book, the lower rate shall apply. In the event a rate is not given for either a new model or an older model, a rate for the most similar model in the Rental Rate Blue Book will be used. Such characteristics as manufacturer, capacity, horsepower, and fuel will be used as the basis for selecting a similar model.

3. In the event a rate has not been established for a particular equipment category in the Rental Rate Blue Book, the Contractor shall call the EquipmentWatch company for written documentation of a rental rate on the equipment and present it to the Port for written approval before use of the equipment.

Lump-Sum Breakdown

10.7 The price of changes in a lump-sum agreement or lump-sum bid items will be based on the lump-sum breakdown furnished in accordance with Item 2.14.

Deleted Work

10.8 Deletion of all or any portion of the Work shall not be a waiver of any requirement of this Contract nor invalidate any of its provisions. The Contractor will be paid for all Work performed toward the completion of the portion of the Work prior to its deletion as provided by the force account method. The Port will not be responsible for payment of overhead or profit (including but not limited to anticipated profits) on the deleted portion of the Work. If the deletion of the Work results in surplus material that is not returnable by the Contractor for a credit acceptable to the Port, or if the Port so desires, the material will be purchased from the Contractor by the Port at cost, without allowance for overhead or profit.

ARTICLE 11 - CHANGE OF CONTRACT TIME

11.1 All time limits stated in this Contract are of the essence. Contract Time will be changed only by a Change Order. Any extension in Contract Time will be based on written notice delivered to the Port within 7 days of the occurrence of the event precipitating the request. The Contractor shall deliver a work progress schedule analysis or summary justifying the time extension within 15 days of such occurrence. Failure to deliver any documentation to the Port within the time limits specified above shall completely foreclose consideration of an extension of Contract Time and all rights and remedies arising therefrom.

11.2 Time extensions will be granted only when conditions described in Items 11.3, 11.4, and 11.6 exist and when the Port agrees that the work progress schedule substantiates the need.

A. An adjustment of Contract Time shall be the Contractor's sole remedy for any delay in meeting the specified Substantial Completion, Final Acceptance, or any milestone dates of the Work. Exception shall be to the extent the delay is caused by the acts or omissions of the Port or other contractors performing other work directly for the Port as contemplated in Article 7. To the extent the delay is caused by the acts or omissions of the Port or persons acting for the Port, the Contractor is not precluded from recovery of damages or from an equitable Contract Price adjustment.

11.3 Extension of Contract Time will be determined by the Port and will be an equitable adjustment if all or a part of the Work is hindered, delayed, or suspended by an Act of God, act of war, act of terrorism, or the acts or omissions of the Port or the Port's commissioners, employees, contractors, or agents.

11.4 Requests for extension of Contract Time will not be considered for: (1) contention that insufficient time was specified in this Contract; (2) delays which affect the Contractor's planned early completion but not the specified Contract Time; (3) suspensions made at the request of the Contractor; (4) delays caused by labor disputes involving the Contractor or its Subcontractors; or (5) delays caused by issues known and addressed in this Contract.

11.5 For those contracts which specify a completion date rather than contract duration, the specified Substantial Completion date will be adjusted by the number of days between the anticipated authorization to commence work date shown in the Agreement and the actual date authorizing work commencement shown in the Notice to Proceed, if the actual date is later than that shown in the Agreement. Any such adjustment of the completion date shall meet the requirements specified under Item 11.3 and shall be supported by the Contractor's work progress schedule. The Port may also request acceleration of the Work instead of adjustment of the completion date. If the Port requests acceleration of the Work, the Port will pay an agreed-upon reasonable cost resulting from the directed acceleration of the Work.

11.6 Work covered by a Change Order may require a Contract Time extension or reduction. The amount of time extension or reduction will be agreed upon by the Contractor and the Port as part of the negotiation of the Change Order.

ARTICLE 12 - WARRANTY; TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

Tests and Inspections

12.1 The Port will pay the cost of acceptance inspections, tests, and approvals unless otherwise specified.

12.2 The Contractor shall:

A. Be responsible for compliance with laws, ordinances, rules, regulations, codes, and orders of any public body having jurisdiction over inspection, testing, or approval of the Work. The Contractor shall arrange for, obtain, and pay for such inspections, tests, approvals, and related fees.

B. Give the Port and appropriate inspection and approval authorities timely notice of readiness of the Work for required inspections, tests, or approvals.

C. Furnish the Port the required certificates of inspection, testing, and approval from inspection or approval authorities.

D. Be responsible for inspection or testing required for the Port's acceptance of a manufacturer, fabricator, supplier, or distributor of material and pay related fees.

E. Pay the cost of inspections, tests, and approvals required as a result of failure to pass acceptance testing by the Port, unless otherwise specified.

12.3 The following shall not relieve the Contractor from its obligation to perform the Work in accordance with this Contract: (1) observation by the Port, (2) inspections, (3) tests, (4) approvals by others.

Uncovering Work

12.4 The Contractor, at the Port's request, shall uncover, expose, and reconstruct, or otherwise make available for observation, inspection, testing, or approval, any portion of the Work. The Contractor shall furnish all necessary labor, material, and equipment. The cost shall be allocated as follows:

A. The Contractor shall bear the cost if the Work was covered contrary to the direction of the Port.

B. The Contractor shall bear the cost if the Work was covered without concurrence of the Port unless the Contractor had given the Port timely notice of intent to cover such Work, and the Port did not act with reasonable promptness in response to such notice.

C. The Contractor shall bear the cost if the previously installed Work is found to be Defective.

D. For situations not covered above, the Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, and reconstruction if the Contractor makes a request therefor as provided in Articles 10 and 11.

Warranty

12.5 The Contractor warrants for one year after Substantial Completion, or for any longer period expressly provided by this Contract, provided by any special warranty or extended warranty required by this Contract or by a Subcontractor or supplier, or otherwise provided by Law, that all Work is not Defective for any reason.

A. The Contractor shall pass through to the Port any warranty or maintenance obligation provided by a Subcontractor or supplier in excess of that required by this Contract.

B. In special circumstances where a particular item or area of Work is placed in continuous service before Substantial Completion of all the Work, the warranty period for that item will start to run from the later of the following dates: the date given in the Port's letter confirming Substantial Completion of the part of the Work; the date the Port receives training on the systems and equipment in that part of the Work; the date interim operation and maintenance manuals are approved; or the date the Port takes over operation or use in lieu of issuing a letter confirming Substantial Completion for that part of the Work.

Correction or Removal of Defective Work

12.6 The Contractor shall promptly correct all Defective Work without added cost to the Port, whether or not fabricated, installed, or completed or, at the Port's option, remove it from the site and replace it with Work that meets the Contract requirements. If the Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, the Port may have the Defective Work corrected or removed and replaced, and all direct and indirect costs of such correction or removal and replacement, including compensation for additional professional services, shall be paid by the Contractor or the Contractor's surety.

Port May Correct Defective Work

12.7 If the Contractor fails, within 3 days after written notice from the Port, to proceed to correct, or to remove and replace Defective Work as required by the Port, or if the Contractor fails to perform the Work in accordance with this Contract (including any requirements of the work progress schedule), the Port may correct and remedy any such deficiency. In exercising the rights under this paragraph, the Port will proceed expeditiously. To the extent necessary to complete corrective and remedial action, the Port may: (1) exclude the Contractor from all or part of the site; (2) take possession of all or part of the site; (3) suspend the Contractor's services related thereto; (4) take possession of the Contractor's tools, appliances, construction equipment and machinery at the site; and (5) incorporate in the Work material stored at the site or for which the Port has paid the Contractor but which has been stored elsewhere. The Contractor shall allow the Port's representatives, contractors, agents, and employees such access to the site as may be necessary to exercise the rights under this paragraph. All direct and indirect costs in exercising such rights will be charged against the Contractor. A Change Order will be executed incorporating the necessary revisions to this Contract and a reduction in the Contract Price. Such direct and indirect costs will include, in particular but without limitation: (1) additional professional services required; and (2) repair and replacement of the Work of others destroyed or damaged by correction, removal, or replacement of the Contractor's Defective Work. The Contractor will not be allowed an extension of the Contract Time because of any delay in performance of the Work attributable to the exercise of the Port's rights under this paragraph.

ARTICLE 13 - PAYMENTS TO THE CONTRACTOR AND COMPLETION

Before Request for Progress Payment

13.1 Prior to submitting the first request for progress payment, the Contractor shall submit the following to the Port:

A. Work progress schedule.

B. Final submittal schedule.

C. Cash flow schedule.

D. Lump-sum breakdown of the Work.

E. Warranty outline.

F. Wage certification.

1. If the Contractor is required to file a certified statement under ORS 279C.845, and the certified statement has not been filed as required, the Port will retain 25 percent of any amount earned under this Contract until the certified statement has been filed. The Port will pay the Contractor the amount retained within 14 days after the missing certified statement has been filed. Failure of a Subcontractor to file a certified statement required under ORS 279C.845 will not trigger retainage under this paragraph.

Request for Progress Payment

13.2 Thirty days or more following the Work Start Date, the Contractor may request the first monthly progress payment on Work completed by the date of the request. The request shall be made on the Contractor's Request for Payment form (form is located in the Port's online construction management system) and shall be accompanied by supporting documentation required by this Contract. Requests shall be signed by the Contractor and submitted to the Port for review.

13.3 All progress payment requests, except the first request, shall include the Contractor's Waiver of Claims to Date stating that all of the Contractor's obligations to date relating to the Work have been paid (form follows these General Conditions). Progress payment requests, except the first request, shall also include the Contractor's verification that Subcontractor payment data and workforce data (if applicable) for all tiers have been entered into the Port's online reporting system at www.portofportland.dbesystem.com.

13.4 Material delivered and stored on site but not yet incorporated in the Work may be included in the request for progress payment subject to approval by the Port and the following:

A. No payment will be made for material costing less than $50,000 total.

B. The Port's title to and interest in the material must be clearly established and free of all liens or other encumbrances.

C. Value shall be established by invoice, freight bill, or other document.

D. Payment for stored material will be limited to 90 percent of the net cost invoiced to the Contractor.

E. When there is a bid price on material in place, the Port will estimate the cost of placing. The progress payment will be limited to 90 percent of the bid price less the estimated cost of placing.

F. Risk of loss remains with the Contractor.

13.5 Progress payments shall not be construed as acceptance or approval of the Work or waiver of any defects in the Work.

Retainage

13.6 The Port will withhold from progress payments as follows:

A. The Port will retain 5 percent of the total earned for the work completed. The Contractor shall inform the Port if the Contractor wishes to exercise an option under ORS 279C.560.

Review of Request for Progress Payment

13.7 Within 15 days, the Port will review each request for progress payment and recommend payment or respond in writing to the Contractor with the reasons the Port is requiring resubmittal of the pay request before it can be approved.

13.8 The Port may refuse to make payment, in whole or any part, to the extent:

A. The Work is Defective, or completed Work has been damaged requiring correction or replacement;

B. Written claims have been made against the Port or liens have been filed in connection with the Work;

C. The Port has been required to correct Defective Work or to complete the Work;

D. The Contractor's prosecution of the Work in accordance with this Contract is unsatisfactory;

E. The Contractor has failed to make payments covered by past progress payments to Subcontractors, or for labor or material; or

F. The Contractor is in breach of this Contract.

Substantial Completion

13.9 When the Contractor considers the entire Work ready for its intended use, the Contractor shall certify in writing that the entire Work is Substantially Complete and request a letter confirming Substantial Completion. Within 15 days thereafter, the Contractor and the Port shall make an inspection of the Work to determine the status of completion. If the Port considers the Work Substantially Complete, the Port will, within 15 days of date of inspection, execute and deliver to the Contractor a letter confirming Substantial Completion with a list of items to be completed or corrected. The letter will state the date of Substantial Completion. If the Port does not consider the Work Substantially Complete, the Port will notify the Contractor in writing giving reasons therefor.

A. Final operation and maintenance manuals and warranties shall be submitted for review by the Port and training shall be completed for the Work to be considered Substantially Complete.

13.10 The Port may exclude the Contractor from that part of the Work after the date of Substantial Completion. The Port will allow the Contractor reasonable access to complete or correct items on the list.

13.11 The Contractor may request, in writing, that the Port confirm Substantial Completion for a part of the Work. The Port will only consider confirming Substantial Completion for a part of the Work if the Port desires that part to become operational.

13.12 The Port may allow the Contractor use of equipment installed as part of the Work prior to Substantial Completion, subject to the Contractor:

A. Obtaining the Port's written approval.

B. Maintaining the equipment, and preparing and maintaining a log recording all maintenance activities.

C. Returning equipment to "as-new" condition upon Substantial Completion.

Partial Utilization

13.13 The Port may request, in writing, the use of any part of the Work which may be used without significant interference with construction of other parts of the Work. If the Port requests use of any part of the Work prior to Substantial Completion of all the Work, the Port will issue to the Contractor a letter granting Substantial Completion for that portion of the Work with a list of items to be completed or corrected. The Port will assume responsibility for security, safety, operation, maintenance, and utilities for that part of the Work while it is being used by or under the control of the Port.

Final Inspection and Final Acceptance

13.14 When the Contractor considers the entire Work, or an agreed-upon portion thereof, to be complete, the Contractor shall certify, in writing, that the Work is complete and request a letter granting Final Acceptance. Within 30 days after receipt of the Contractor's certification, the Port will inspect the Work and will notify the Contractor, in writing, of Final Acceptance or of all particulars in which this inspection reveals that the Work is incomplete or Defective. The Contractor shall immediately take such measures as are necessary to remedy such deficiencies and allow an additional 30 days for the Port to complete another inspection of the Work. The Contractor's certification shall be preceded or accompanied by all documentation called for in this Contract including but not limited to:

A. Redline Drawings for creating record drawings.

B. Final operation and maintenance manuals, including warranty documentation.

C. Bonds, if any.

D. Software or code use rights documentation.

E. Certificates of inspection from jurisdictional authorities.

F. Releases, waivers, or exoneration of all liens arising out of or filed in connection with the Work.

G. The Contractor's Waiver of Claims To Date form certifying that all payrolls and material bills and other indebtedness connected with the Work for which the Port might in any way be responsible have been paid or otherwise satisfied.

H. Consent of surety, if any, to final payment.

Final Payment

13.15 The Contractor may request final payment after receipt of Final Acceptance. The Contractor shall request final payment following the procedure for progress payments.

13.16 Upon receipt of the Contractor's request for final payment, the Port will, within 15 days, review the request and recommend payment or respond in writing to the Contractor with the reasons the Port is requiring resubmittal of the request before it can be approved. The Contractor shall make the necessary corrections and resubmit the request.

Contractor's Continuing Obligation

13.17 The Contractor's obligation to perform and complete the Work in accordance with this Contract shall be absolute and cannot be waived in whole or in part by the Port except by express written instrument signed by an authorized Port representative. Any such waiver will specifically identify the Work that the Port is willing to accept and the manner in which that Work fails to meet the original requirements of the Contract. Accordingly, and by way of example only, none of the following will constitute acceptance of Work not in accordance with this Contract or release the Contractor from obligation to perform the Work in accordance with this Contract, regardless of whether any defect, deficiency, or damage is patent or latent:

A. Any act of acceptance by the Port except in an express written instrument as described above.

B. Any correction by the Port of Defective Work.

C. Use, operation, or occupancy of the Work or any part of the Work by the Port.

D. Recommendation by Port staff for any progress or final payment.

E. Payment by the Port to the Contractor.

F. Issuance of a letter of Substantial Completion.

G. Issuance of a letter of Final Acceptance.

Contractor's Warranty of Title

13.18 The Contractor warrants that title to all Work and material covered by any request for payment, whether incorporated in the Work or not, will pass to the Port at the time of payment. Title shall be free and clear of all liens, claims, security interests, and encumbrances.

Waiver of Claims

13.19 The acceptance of final payment will constitute a waiver of all claims by the Contractor against the Port other than those previously made in writing and still unsettled.

Liquidated Damages

13.20 The Contractor acknowledges that the Port will incur significant damages if the Work is not completed within the Contract Time, including without limitation, damages in the form of: inability to use the Work and all related facilities (i.e., "Loss of Use") as well as other delay damages, including but not limited to, delay costs for delayed or resequenced portions of the Work, related work or related projects to be performed or constructed by the Port or the Port's separate contractors; or delay costs comprised of extended or additional services of the Port's project management staff, engineering or design staff, any outside construction management firms, any separate contractors, designers, and consultants, and others performing Work or services related to the project. In consideration of the factors set out in this paragraph, the Contractor acknowledges and agrees that time is particularly of the essence in the Contractor's performance of the Work in accordance with the agreed date of commencement of the Work, the agreed dates of Substantial Completion and Final Acceptance of the Work, and the approved Contractor construction schedule.

13.21 The Port and the Contractor acknowledge and agree that if Substantial Completion of the Work is not achieved by the Contract Time for Substantial Completion, the amount of the Port's actual Loss of Use damages (as described above) will be difficult, impractical, or impossible to determine. Accordingly, the parties agree that if Substantial Completion is not achieved by the agreed date of Substantial Completion as may be adjusted pursuant to the Contract Documents, the Contractor shall pay to the Port as liquidated damages for the Loss of Use of the Work the amount indicated in the Agreement for each partial day or full day of delay beyond the deadline for Substantial Completion.

13.22 The parties further acknowledge and agree that the Contractor's obligation to pay liquidated damages under this paragraph shall be in lieu of the obligation to pay actual delay damages for the Loss of Use damages. The parties agree that the daily rate agreed to is reasonable in comparison to the approximate scope of actual delay damages for Loss of Use that the parties anticipate as of the time of execution of the Agreement, and that the payment of such liquidated damages is not intended to be a penalty or forfeiture. The parties further acknowledge that these liquidated damages are meant to reimburse the Port only for Loss of Use delay damages and that the Port reserves the right to claim other types of damages against the Contractor resulting from delays, including but not limited to the other delay damages described in Item 13.20 above.

13.23 The parties further agree that the Port does not waive its right to liquidated damages or actual delay damages by allowing the Contractor to continue and finish all or any part of the Work after the scheduled Substantial Completion date, or after Substantial Completion is actually achieved. The parties also agree that payment of liquidated damages or actual delay damages does not release the Contractor from any duty under this Contract (other than the duty to pay liquidated damages and actual delay damages).

13.24 The Port may withhold liquidated damages and anticipated or incurred actual delay damages from progress payments, or may withhold the full amount of accrued liquidated damages and anticipated or incurred actual damages from final payment.

13.25 In the event, and to the extent, the liquidated damages provided for herein are deemed unenforceable, the Port may proceed to claim and collect from the Contractor the Port's actual damages for Loss of Use and the other delay damages described herein.

Other Damages

13.26 The Port will have the right to recover from the Contractor and, to the extent permitted by Law, to deduct from any payment due the Contractor, the amount of any loss suffered by the Port on account of the failure of the Contractor, Subcontractor, anyone directly or indirectly employed by any of them, and anyone for whose acts any of them may be liable to comply with the rules and regulations referenced or contained in this Contract.

ARTICLE 14 - SUSPENSION OR TERMINATION OF THE WORK

Port May Suspend the Work

14.1 The Port may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice, in writing, to the Contractor. This notice will fix the date on which Work shall stop and the date on which it shall resume. The Contractor shall resume the Work on the date so fixed. The Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to the suspension.

14.2 If the work is Defective, or if the Contractor fails to supply sufficient skilled workers or suitable material or equipment, or if the Contractor fails to perform the Work in such a manner that the

completed Work conforms to this Contract, the Port may order the Contractor to suspend the Work, or any portion thereof, until the cause for such order has been eliminated. However, this right of the Port to suspend the Work shall not give rise to any duty on the part of the Port to exercise this right for the benefit of the Contractor or any other party.

14.3 In the event the Contractor, Subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable fails to comply with the rules and regulations referenced in this Contract, the Port may suspend the Work or any portion thereof. The suspension shall continue until completion of any investigation or evaluation by the Port and full compliance with any corrective measures which the Port may reasonably require. The Port will not be liable to the Contractor for any delay caused by such suspension, nor will there be any adjustment in the Contract Price or Contract Time.

Port May Terminate the Work

14.4 The occurrence of any one or more of the following events will justify termination for cause:

A. The Contractor is adjudged bankrupt or insolvent.

B. The Contractor makes a general assignment for the benefit of creditors.

C. A trustee or receiver is appointed for the Contractor or for any of the Contractor's property.

D. The Contractor files petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar laws.

E. The Contractor fails to supply sufficient skilled workers or suitable material or equipment.

F. The Contractor fails to make prompt payments to Subcontractors or for labor and material.

G. The Contractor disregards Laws, ordinances, rules, regulations, or orders of any public body having jurisdiction including, without limitation, ordinances adopted by the Port and referenced in this Contract, and the rules and regulations adopted by the Port's Executive Director or their designee.

H. The Contractor disregards the authority of the Port.

I. The Contractor otherwise violates in any substantial way any provision of this Contract.

14.5 The Port may, after giving the Contractor and its surety a 7-day written notice: (1) terminate this Contract for default; (2) exclude the Contractor from the site; (3) take possession of the site and the Contractor's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by the Contractor without liability to the Contractor for trespass or conversion; (4) incorporate in the Work material stored at the site or for which the Port has paid the Contractor but which is stored elsewhere; (5) finish the Work as the Port may deem expedient, and (6) obtain an assignment of some or all of the subcontracts and purchase orders relating to the uncompleted Work. By executing this Contract, the Contractor consents to the assignment of those subcontracts and purchase orders in the event of termination of this Contract pursuant to this article. In such case the Contractor will not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess will be paid to the Contractor. If such costs exceed such unpaid balance, the Contractor shall pay the difference to the Port. Such costs incurred by the Port will be verified by the Port and incorporated in a Change Order; but in finishing the Work, the Port will not be required to obtain the lowest figure for the Work performed.

14.6 Where the Contractor's services have been so terminated by the Port, the termination will not affect any rights of the Port against the Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due the Contractor by the Port will not release the Contractor from liability.

Port May Terminate the Work for Convenience

14.7 Upon giving the Contractor a 7-day written notice, the Port may, without cause and without prejudice to any other right or remedy, elect to terminate this Contract for the convenience of the Port. In such case, the Contractor will be paid for the costs of all Work acceptably performed and installed, together with reasonable profit and overhead on those costs, and any justifiable costs actually sustained in the process of termination. The Contractor will not be entitled to overhead or profit on the unperformed Work, and will not be entitled to payments in excess of the amount determined by multiplying the percentage of the Work actually and acceptably completed by the Contract Price, as adjusted. If this Contract is terminated for default and it is subsequently determined through mediation, arbitration, or litigation that the termination was improper, this Contract shall be treated as if it had been terminated for the convenience of the Port, and the Contractor shall be entitled to payment under the provisions of this paragraph.

14.8 In the event of a termination for convenience, the Contractor remains liable for all elements of the Work actually performed by the Contractor or Subcontractors, or those for whom any of them are responsible, regardless of whether: (a) such performance occurred before or after the effective date of termination; or (b) the Port provided an opportunity to cure. The Contractor's liability includes, but is not limited to, liability for having performed all Work according to the Contract Documents, industry standards, and the other standards incorporated in this Contract. The Contractor also remains liable for all representations, warranties, and guarantees to the extent applicable to the Work performed.

ARTICLE 15 - DISPUTE RESOLUTION

15.1 If the Contractor wishes to assert a claim, the Contractor shall submit to the Port a written statement of the claim within 30 Calendar Days after the Contractor first has knowledge of or reason to know of the facts upon which the claim is based. The statement of claim shall recite the facts upon which the claim is based and shall include copies of all documentary evidence in support of the claim. Within 15 Calendar Days after receiving a claim, the Port will respond in writing stating whether the claim is allowed, partially allowed, or denied. If the Contractor disputes the action taken by the Port, the Contractor shall deliver a written notice of dispute to the Port within 15 Calendar Days after the Contractor receives the Port's written response to the claim. The written notice of dispute shall be entitled "Notice of Dispute." A claim shall be barred if the Contractor fails to comply with the foregoing notice of dispute requirement or fails to timely deliver the notice of dispute to the Port.

15.2 The parties shall attempt to resolve all disputes by negotiation. Negotiation shall be initiated at the earliest opportunity. Each party shall freely share unprivileged information requested by the other and shall make a good faith effort to ensure that all relevant issues are fully developed and fairly presented to the other side.

15.3 If a dispute is not resolved through negotiation between the Contractor and the Port, the parties shall submit the dispute to mediation. Either party may request mediation. The requesting party shall suggest an independent mediator with the request for mediation. If the parties cannot agree upon a mediator, either party may apply to the Presiding Judge, Multnomah County Circuit Court, for appointment of a mediator. The parties shall share equally in the fees and costs of the mediator. Mediation shall be at Portland, Oregon, unless the parties agree otherwise.

15.4 If a dispute is not resolved by mediation, the parties may, but are not required to, agree to submit the dispute to binding arbitration. If the parties agree to arbitrate their dispute, it shall be submitted to the Arbitration Service of Portland for hearing in Portland, Oregon. The parties agree to arbitrate pursuant to the Arbitration Service of Portland's Rules, except for the following:

A. For disputes with under $1 million at issue not including attorney fees and legal costs, a single arbitrator shall be selected.

B. For disputes with $1 million to $3 million at issue not including attorney fees and legal costs, at the Port's discretion the Port may require that a panel of three arbitrators be selected.

C. For disputes with over $3 million at issue not including attorney fees and legal costs, a panel of three arbitrators shall be selected.

15.5 If a dispute cannot be resolved by mediation, and the parties do not agree to submit the dispute to arbitration, either party may file a lawsuit to resolve the dispute in a court with proper jurisdiction located in Multnomah County, Oregon.

A. For any such lawsuit, each party to this agreement irrevocably waives any and all right to trial by jury and instead agrees to resolve the dispute in a bench trial decided by a judge.

B. If another involved party will not consent to a bench trial, the Port, in its sole discretion, has the option to elect a consolidated jury trial. It is understood that the purpose of this paragraph is to allow the Port to determine the best means of achieving a single consolidated proceeding that will minimize duplicative processes and minimize the risk of inconsistent results, in the following order of preference: (1) a consolidated bench trial of all significant parties, if possible; or (2) alternatively, and as a last resort, a consolidated jury trial of all significant parties.

15.6 Should any lawsuit, arbitration, or other action be commenced in connection with any dispute arising out of this Contract, the prevailing party shall be entitled to recover its costs and disbursements, investigation costs and fees, expert witness costs and fees, and attorney costs and fees, as the court or arbitrator may adjudge reasonable, incurred in connection with such dispute before trial or arbitration, at trial or arbitration, upon any motion for reconsideration, upon any appeal or petition for review, and upon any collection efforts or proceedings. Only parties to this Contract are entitled to recover their costs and fees under this provision, and the Port does not agree to compensate any third party, including but not limited to design professionals, subcontractors, and suppliers, for costs or fees, whether on a pass-through basis or otherwise.

15.7 Except to the extent performance may be legally excused under the particular circumstances, each party shall continue to perform its duties under this Contract while the resolution of a dispute is pending. Failure to comply with this requirement shall be a material breach of this Contract.

ARTICLE 16 - MISCELLANEOUS

Giving Notice

16.1 When this Contract requires that written notice be given, notice shall be deemed valid if it is delivered to the individual who signed the Contract or to the Port's or the Contractor's Representative. Notice shall be deemed as delivered if it is:

A. Sent through the Port's online construction management system, or

B. Hand-carried to the person to whom it is intended, or

C. Hand-carried to an officer of the firm for which it is intended, or

D. Sent by registered or certified "Return Receipt Requested" mail, postage prepaid, to the last business address known to the giver of the notice.

Computation of Time

16.2 Any period of time referred to in this Contract by days shall be computed to exclude the first and include the last day of such period. If the last day of any time period falls on a Saturday or Sunday or on a day made a legal holiday by the Law of the applicable jurisdiction, such day shall not be included in determining the time period.

Liability Claims

16.3 Should the Port or the Contractor suffer injury or damage to person or property because of any error, omission, or act of the other party or of any of the other party's employees, contractors, or agents or others for whose acts the other party is legally liable, claim shall be made: (1) in writing, and (2) to the other party within a reasonable time of the first observance of such injury or damage.

Rights and Remedies

16.4 These General Conditions impose duties and obligations on the Contract parties and provide for rights and remedies. The rights and remedies available to each party are in addition to, and shall not limit, actions allowed by Law or other parts of this Contract. All representations, warranties, and guaranties made in this Contract shall survive final payment and/or termination (whether for cause or convenience) and/or completion of this Contract. The content of this paragraph shall apply as if repeated specifically in this Contract in connection with each duty, obligation, right, and remedy.

Commencement of Limitations Period

16.5 As to acts, omissions, breaches of contract or warranty, negligence, misrepresentation, strict liability, fraud, or any other improper conduct of the Contractor or those persons or entities for whom the Contractor is responsible, whether occurring prior to or after completion of the Work, all applicable limitations periods shall not commence to run and any alleged cause of action shall not be deemed to have accrued unless and until the Port is aware of all three of the following: (1) the identity of all party(ies) responsible; (2) the actual magnitude of the damage or injury; and (3) the cause(s) of the damage or injury. The discovery rule provided herein applies in lieu of any otherwise applicable statute or case authority.

Port of Portland

APPLICATION NO. _____
PAGE _____ OF _____

WAIVER OF CLAIMS TO DATE

_____ ("the Contractor") and the Port of Portland ("the Port") have entered into an agreement ("the Agreement") for the construction of a certain improvements project at _____ commonly referred to as the _____ Project.

The Agreement provides monthly progress payments, provided, among other things, the Contractor executes and submits this Waiver of Claims to Date with respect to all claims through the end of the period covered by the immediately preceding progress payment.

The date of the request for progress payment with which this Waiver of Claims to Date is submitted ("Current Progress Payment") is _____ ("Current End Date"). The end of the period covered by the immediately preceding progress payment ("Last Progress Payment") was _____ ("Last End Date").

The Contractor certifies that all work covered by the Current Progress Payment is complete.

The Contractor certifies that all subcontractors, laborers, suppliers, and materialmen have been paid in full, less any retainage properly withheld by the Contractor, for all work performed and material provided for which the Contractor received payment in the Last Progress Payment.

The Contractor certifies that no extras have been furnished prior to the Last End Date for which payment has not been received.

The Contractor certifies that no claims are reserved by the Contractor or the Contractor's subcontractors, laborers, suppliers, or materialmen as of the Current End Date.

The Contractor, on behalf of the Contractor and all the Contractor's subcontractors, laborers, suppliers, and materialmen, hereby waives and releases the Port from any mechanic's lien, stop notice, bond right, or other claim related to the Agreement through the Last End Date.

Exceptions, if any:

_____
_____
_____

I declare under penalty of perjury under the laws of the State of Oregon that the foregoing is true and correct.

CONTRACTOR'S REPRESENTATIVE

By: _____
(Signature)

Printed Name: _____

Title: _____

Date: _____

Port of Portland

CONTRACTOR SAFETY INFORMATION

Date: _____ EAN Number: _____

Project Name: _____

Prime Contractor: _____

Known Subcontractors:

_____

_____

_____

_____

_____

The information in this form shall be kept up-to-date on a monthly basis at a minimum. In addition, the information shall be used as part of project safety briefings and posted at the job site.

Scope of Work Summary – Include Location(s):

_____

_____

_____

_____

_____

_____

Potential Work Hazards/Concerns Identified (check ALL that apply). Each hazard checked shall be addressed in Job Hazard Analyses (JHAs).

☐ Fall Exposure	☐ Traffic Control	☐ Scaffolding
☐ Excavation	☐ Chemicals	☐ Ladders
☐ Confined Space Entry	☐ Crane/Rigging	☐ Aerial Lift
☐ Electrical	☐ Demolition	☐ Airborne Contaminants/Dust
☐ Hazardous Energy/Lockout-Tagout	☐ Protection of the Public	☐ High Noise
☐ Asbestos/Lead	☐ Hot Work/Fire Hazard	☐ Painting
☐ Stainless Steel Welding	☐ Compressed Gas	☐ Silica
☐ Work Over/Near Water	☐ _____	☐ _____

Note: Attach any company safety programs, policies, or procedures that will apply to your work at the Port.

Responsible Persons

List onsite Competent Person(s) responsible for monitoring work performed on this project. Note: a "Competent Person" by OSHA definition has the ability to identify hazards and has responsibility and authority to take immediate corrective actions. This includes known subcontractors.

Name:	Competent Area(s):	Training (i.e., OSHA 30, etc.)

A. Personal Protective Equipment (PPE) required for workers at the job site:

☐ Hardhat	☐ High Visibility Clothing	☐ Safety Glasses
☐ Safety Boots	☐ Hearing Protection	☐ Gloves
☐ Respiratory Protection	☐ Welding PPE	☐ Fall Arrest Gear
☐ Personal Floatation Device	☐ _____	☐ _____
☐ _____	☐ _____	☐ _____

B. Mandatory PPE for visitors to the job site:

☐ Hardhat	☐ High Visibility Clothing	☐ Safety Glasses
☐ Safety Boots	☐ Hearing Protection	☐ Gloves
☐ Personal Floatation Device	☐ _____	☐ _____

First Aid/CPR/AED

Contractor or subcontractor person(s) trained and current in first aid/CPR/AED. Mandatory for electrical work per NFPA 70E.

Name:	Date Trained:

Safety Data Sheets (formerly MSDS)

List all known or anticipated products that will be brought onsite that require a Safety Data Sheet (SDS).

Product Name:	Flammable? Y/N If yes, Port Fire Department will review.

Contractor's Project Manager:

Name: _____ Phone: _____

Contractor's Primary Onsite Safety Contact:

Name: _____ Phone: _____

Worksheet Prepared by:

Name: _____ Title: _____ Date: _____

*****PORT USE ONLY*****

Port CCM/Project Manager:

Name: _____ Phone: _____

Lead Inspector(s):

Name: _____ Phone: _____

Name: _____ Phone: _____

Distribution: Safety Department

Port of Portland

APPRENTICE UTILIZATION PLAN

PROJECT NAME _____

PRIME CONTRACTOR _____

CONTACT NAME AND PHONE NUMBER _____

CONTRACT NO. _____ SOLICITATION NO. _____

PRIME CONTRACT AMOUNT $ _____

			ESTIMATED TOTALS		
Projected Start Date (mm/dd/yy)	Name of Contractor/ Subcontractor	Trade/Craft (Scope of Work) (choose from list below)	Apprentice Hours	Journeyman Hours	Total Labor Hours
LIST OF TRADES/CRAFTS Brick and stone masons, cement masons, carpenters, carpet installers, drywall installers, electricians, glaziers, glassworkers, insulation workers, laborers, operating engineers, painters, plasterers, plumbers, pipefitters, roofers, sheet metal workers, truck drivers, welders/cutters		Subtotal This Page			
		Continuation Sheet			
		Grand Total			

Contractor Authorized Signature _____ Print Name _____

Title _____ Date _____

Submit at preconstruction meeting.

DOCUMENT 007300
SUPPLEMENTARY CONDITIONS

1.1 GENERAL

A. These supplements modify, delete from, or add to the General Conditions.

B. Where an article, paragraph, or clause of the General Conditions is modified or deleted by these supplements, the unaltered provisions of that article, paragraph, or clause remain in effect.

1.2 BUILDER'S RISK INSURANCE

A. See General Conditions Item 5.5. Delete in its entirety and replace with the following:

"The Contractor is responsible for all labor, equipment, and materials required to complete the Work until Final Acceptance by the Port, including work in place, equipment, and materials lost or damaged for any reason. The Contractor may choose the method(s) of meeting this responsibility."

1.3 APPRENTICE UTILIZATION PROGRAM AND MONTHLY WORKFORCE REPORTING

A. Contractors awarded construction contracts over $500,000 shall:

1. Submit an apprentice utilization plan to the Port at the preconstruction meeting (form follows these General Conditions). The plan shall be updated and resubmitted as the work progresses.

2. Submit proof of registration with the Bureau of Labor and Industries Apprenticeship and Training Division as a training agent for each trade where apprentices will be employed. The Contractor shall also submit such proof for each Subcontractor employing registered apprentices if the subcontract is greater than $100,000.

3. Enter all labor hours worked using the Port's online reporting system at www.portofportland.dbesystem.com. Labor hours shall include journeyman hours and registered apprentice hours by trade. Include hours worked by registered apprentices of Subcontractors if the subcontract is greater than $100,000.

4. In the event that the Contractor is unable to accomplish the Port's target for registered apprentice participation, the Contractor shall demonstrate that a good faith effort has been made. In fulfilling the good faith effort, the Contractor shall perform and, when appropriate, require its Subcontractors to perform the following steps:

   a. Solicit apprentices from registered or accredited programs.

   b. Document the solicitation and, in the event apprentices are not available, obtain supporting documentation from the registered or accredited programs.

   c. Demonstrate that the plan was updated as required by the Contract Documents.

   d. Submit documentation demonstrating what efforts the Contractor has taken to require Subcontractors to solicit and employ apprentices.

5. In the event that the preceding steps have been followed, the Contractor may also supplement the good faith efforts as follows:

a. Submit documentation demonstrating successful apprentice utilization on previous contracts.

b. Submit documentation indicating company-wide apprentice utilization efforts and percentages of attainment.

Oregon Bureau of Labor and Industries

Prevailing Wage Rates for Public Works Contracts

Current wage rates determined by the Oregon Bureau of Labor and Industries (BOLI) may be obtained from BOLI's web site at https://www.oregon.gov/boli/Pages/index.aspx.

The wage rates and amendments in effect at the time this project is advertised are the rates that shall apply for the duration of the work.

Christina E. Stephenson
Labor Commissioner
Rates Effective September 3, 2026

SECTION 011100 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work includes but is not limited to:

Providing and repairing roadway joints on the terminal upper roadway at Portland International Airport. The work also includes providing a bio-based asphalt rejuvenator.

B. The existing state prevailing rate of wage and, if applicable, the federal prevailing rate of wage required under the Davis-Bacon Act (40 USC 3141 et seq.) apply to this work. See the contract documents for more information.

1.2 WORK AREA RESTRICTIONS

A. Plan and perform the work in accordance with the work area drawings.

1.3 SOILS INFORMATION

A. A record of soil exploration in the vicinity of this work is available in the Port Engineering files for examination by the Contractor upon request. The Port makes no representation as to the completeness or accuracy of this information.

1.4 UNEXPECTED SITE CONDITIONS

A. Suspected Hazardous or Environmentally Sensitive Conditions:
   1. If the Contractor encounters suspected hazardous or environmentally sensitive conditions in the work area beyond those mentioned in these specifications or the drawings, the Contractor shall immediately stop all work in the area of the suspected condition and notify the Port.
   2. The Port will make arrangements for testing and appropriate abatement, if required.
   3. The Contractor shall alert its employees to these facts and shall assure that no operations occur that disturb the suspected hazardous or environmentally sensitive condition.

1.5 REGULATED BUILDING MATERIAL EMERGENCY PROCEDURES

A. In the event of an asbestos or other regulated building material emergency such as an uncontrolled release or suspected release of asbestos fibers, lead dust, or mercury vapor that could impact human health or the environment, do the following:
   1. Notify the PDX Communications Center (503) 460-4000.

2. Evacuate workers from the area and restrict access to the area with barricades, caution tape, etc. If possible, seal the area and post signage warning of potential hazard. Do not allow workers or the public to come in contact with the material.
3. If air handling units serving the area are under the control of the Contractor, turn off the flow of air.
4. Do not attempt to clear up the released material. This will be performed by the Port.

1.6 WELDING, CUTTING, AND BURNING PERMIT

A. Obtain a welding, cutting, and burning permit from the Airport Fire Department prior to the start of any flame welding, cutting, or burning work. In addition, notify the Airport Fire Department prior to beginning each flame welding, cutting, or burning operation.

1.7 INTERNATIONAL BUILDING CODE

A. Work shall conform to the International Building Code (IBC), as amended by the OSSC, State of Oregon and as enforced by the City of Portland Bureau of Development Services.

1.8 SPECIAL INSPECTIONS

A. In accordance with the International Building Code (IBC) Chapter 17, special inspections are required for the following types of work:
   1. Concrete
   2. Bolts Installed in Concrete

B. The Contractor shall be responsible for the timely coordination of all special inspections required. The Port will determine which testing agency or agencies to use and will make arrangements for the testing agency's or agencies' reimbursement.

1.9 WARRANTY REQUIREMENTS

A. The Contractor shall be responsible for compliance with manufacturers' warranty requirements, including inspections.

1.10 PROGRESS MEETINGS

A. Regularly scheduled job meetings will be held between the Contractor and the Port. The Contractor's representative at job meetings shall be the person directly responsible for the work. The time and place of the meetings will be established by the Port.

B. Other unscheduled meetings may be required to resolve specific issues at the work area.

END OF SECTION 011100

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 PORT/TENANT OPERATIONS

A. Work in coordination and cooperation through the Port with airlines, tenants, and other contractors so that normal operations may be carried on without interruption.

B. Port operations may require that certain of the Contractor's operations be scheduled around Port activities. Certain areas of work may be required to be bypassed and accomplished when Port operations permit.

1.2 OTHER CONTRACTORS

A. The Port reserves the right to award other contracts for work in the vicinity of work covered by this contract.

B. Contemplate in planning and work scheduling the following projects which will be in progress in the vicinity during the time of this contract:
   1. Terminal Core Redevelopment (TCORE)
   2. Terminal East Enplaning Curtain Wall and Revolving Door Rehabilitation

C. The various contractors and the Port will mutually establish a schedule of construction for the use of common work areas.

1.3 CONTRACTOR'S COORDINATION

A. The Contractor is responsible for overall coordination of the work.

B. The drawings and specifications are arranged for convenience only and do not necessarily determine which trades perform the various portions of the work.

C. Transmit to the trades doing the work of other divisions the information required for work to be provided under their respective sections in ample time for their installation.

D. Compare the drawings and specifications of the separate trades before proceeding, noting discrepancies and conflicts. Obtain written instructions for changes necessary. Before installation, make provisions to avoid interferences.

END OF SECTION 013100

SECTION 013200 – CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 DESCRIPTION

A. The work progress schedule requirement is established to ensure adequate planning, scheduling, management, and execution of the work by the Contractor, and to enable the Port to evaluate work progress and make contract time adjustments. The work specified in this section consists of submitting a contract schedule, monthly updates, four-week schedules for progress meetings, and a final as-built schedule. The planning, scheduling, management, and execution of the work in accordance with the contract is the responsibility of the Contractor.

1.2 SUBMITTALS

A. Except as modified in this section, the procedures required by Section 013300, Submittal Procedures, shall be observed.

B. Submit a statement of Critical Path Method (CPM) capability within 10 days following the Port's delivery of the fully executed contract, stating that the Contractor has in-house capability, or if not, naming a scheduling subcontractor to be employed by the Contractor to prepare the schedules required. Include with this submittal scheduler's name and list of qualifications demonstrating that the scheduler has performed scheduling for projects of the same magnitude and complexity of this project. Failure to provide this information may result in disqualification of the proposed scheduler.

C. At least one week prior to the preconstruction meeting or sooner if requested by the Port, submit for review by the Port, a work progress schedule meeting the requirements below.

D. Within 5 days of receipt of review comments from the Port, incorporate the Port's comments, finalize, and resubmit the work progress schedule for Port approval.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 CONTRACT SCHEDULE SUBMITTAL REQUIREMENTS

A. Develop the contract schedule submittal in CPM format using Primavera Project Management (P6)®, Microsoft Project®, or equal. It shall include:

1. A CPM Network Diagram:
    a. Time-scaled (by week, starting Monday), grouped by work areas and sorted by early start dates.
    b. The diagram shall be clear, neat, and legible. Each sheet shall contain a title block, a revision block, project name and contract number, Contractor, type of tabulation (initial, update, project status), project duration, scheduled substantial completion date, and a legend explaining the basic notation, terms, and codes used.
    c. Identify critical path activities, including critical paths to contract milestone dates.
    d. Activity durations shall not exceed 10 days. Should an activity require more than 10 days, it shall be subdivided to define appropriate activities. The Port may approve using longer durations on such non-construction activities as the procurement and fabrication of materials and equipment.
    e. All activity descriptions shall clearly define the location and type of work to be performed.
    f. Show schedule critical deliverables (i.e., permits, submittals, etc).
    g. Schedule fabrication and delivery of all materials and equipment.
    h. Scheduled start or completion dates imposed on the schedule by the Contractor shall be consistent with contract milestone dates and other restrictions. Contract milestone dates are the work area starting and completion dates and shall be clearly identified and connected to the appropriate activities.
    i. Schedule shall include contingencies for normal weather delays and seasonal periods of heavy traffic flow.
    j. Schedule shall list resources required to perform work within durations shown. Indicate the estimated quantities of work anticipated where applicable.
    k. Failure to include any element of work required for performance of this contract shall not excuse the Contractor from timely completion of work required to achieve the contract milestones, notwithstanding the acceptance of the contract schedule submittal.
    l. The contract duration shall be the duration specified in the contract documents and awarded by the Port.
    m. Schedules extending beyond the contract completion date will not be accepted.
    n. Schedules showing the work completed in less than the contract duration may be found by the Port to be impractical, requiring resubmittal.
    o. Schedules showing the work completed in less than the contract duration, if practical to the Port, shall be considered to have Float. Float is the time between the scheduled duration of the work and the contract duration. Float is a resource available to both the Contractor and the Port, and is non-compensable. Acceptance of a schedule showing the work completed in less than the contract duration shall not constitute a change to the contract completion date.
    p. Schedule shall be coded by activity identifying shift work, restricted hours, electrical work, etc.
2. Narrative: The contract schedule submittal shall include a "stand-alone" document that conveys, in writing:
    a. The Contractor's schedule assumptions; constraints; critical path/critical activities and why they are critical; permit requirements; coordination required with the Port, airlines, other contractors, utilities or any other parties; and long lead delivery items.
    b. Basis for resources. Include anticipated quantities of work for each activity and the production rates used in determining resource allocation for activities.

3. The contract schedule submittal shall include a compact disc containing a copy of the project files. All data shall be written to disk via the Primavera Project Management (P6)®, Microsoft Project® Backup, or equal utility.

B. The final, accepted work progress schedule shall be the baseline from which changes in duration and logic shall be determined and shall be the basis for planning, scheduling, managing and executing the work.

3.2 MONTHLY UPDATE REPORT

A. No later than 30 days after acceptance of the contract schedule and monthly thereafter, the Contractor shall submit a Monthly Update Report.

B. The Monthly Update Report shall consist of:
   1. An updated CPM Network Diagram of the contract schedule, format as previously specified herein, and a compact disc containing an exact copy of the submittal. All data shall be written to disk via the Primavera Project Management (P6)®, Microsoft Project® Backup, or equal utility.
   2. A narrative which identifies the work actually completed and reflects the progress along the critical path in terms of days ahead of or behind the contract milestone dates. Specific requirements of the narrative are as follows:
      a. If the Monthly Update Report indicates an actual or potential delay to the contract milestone dates, the narrative shall identify the problem, cause, and the activities affected.
      b. The narrative shall also address the following:
         1) A detailed change in duration of any activity and/or logic changes to activities which were performed in a sequence different from the accepted contract schedule.
         2) Activities proposed to be added to or deleted from the contract schedule.
         3) Identification of executed change orders.
   3. Incorporation of all Port-accepted schedule revisions.
   4. The mutually agreed-to Monthly Update Report shall be the basis for evaluating the Contractor's progress. Documents in a single Monthly Update Report shall have the same data date irrespective of the dates of preparation of the individual documents.
   5. If the latest completion time for any required contract milestone date as indicated by the current Monthly Update Report does not fall within the time allowed by the contract, the Contractor shall prepare and submit a plan to recover the lost time.

C. The Port may call for more frequent status meetings (weekly, biweekly, etc.), at no additional cost to the Port, at which the Contractor shall provide the required information.

D. Review of Monthly Update Report:
   1. The Port will review the monthly report and respond within 7 days after receipt.
   2. If necessary, the Contractor shall resubmit within 7 days of receipt of review comments.

E. Applications for Payment: Submission of monthly schedule updates shall accompany applications for progress payments, and will be a condition of payment.

3.3 PROGRESS MEETING SCHEDULES

A. During on-site construction, at each progress meeting, provide a one week back and three-week forward activity schedule. This schedule shall be in Gantt bar chart form and include, but not be limited to, reporting of the following:
   1. Detailed listing of specific work items, duration of work items, actual work hours, resources to be used in accomplishing work items, work area closing and opening dates and times, operational impacts, and other pertinent items.
   2. The weekly progress meeting schedules shall be submitted not less than 24 hours in advance of the scheduled progress meeting.

3.4 SCHEDULE MONITORING

A. If the progress of critical path activities falls behind the time lines shown on the latest, accepted version of the CPM schedule by 7 days, the Contractor shall document the means it will employ to bring work back on schedule.

3.5 CONTRACT SCHEDULE REVISIONS

A. Proposed revisions to the accepted contract schedule shall be submitted to the Port on a separate fragnet for review and acceptance prior to incorporation into the current contract schedule. This fragnet shall clearly outline the impact of the revision within the context of the contract schedule. Each proposed revision shall be submitted with the following minimum components:
   1. A CPM Network Diagram showing revised and affected activities.
   2. An Activity Report and Predecessor/Successor Report for all revised and affected activities.

3.6 CONTRACT TIME ADJUSTMENTS

A. Float is not for the exclusive use or benefit of either the Port or the Contractor. Extensions of time for contract performance as specified in the contract will be granted only to the extent that time adjustments to the affected work items exceed the total float time along the affected path(s) of the contract schedule current at the time of the delay.

3.7 AS-BUILT SCHEDULE AND DOCUMENTATION

A. Within 15 days after substantial completion, the Contractor shall submit for the Port's acceptance a final, as-built CPM Network Diagram.

3.8 SUSPENSION OF PAYMENTS

A. If the Contractor fails at any time to submit a schedule or update as noted above, the Port reserves the right to suspend progress payments wholly or in part until the Contractor submits a schedule which is accepted by the Port.

END OF SECTION 013200

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes administrative and procedural requirements for all types of submittals.

1.2 PROCESS, CONTENT, AND FORMAT – ALL SUBMITTALS

A. Unless specified otherwise in the applicable technical sections, transmit submittals electronically using the Port's online construction management system as described in this section. See the General Conditions for information regarding account set up and system access requirements. The Contractor shall also use Adobe Acrobat X Professional software, Bluebeam, or pre-bid approved equal, as part of this process.

B. Update the Submittal Register and create submittal packages in the Submittals module of the Port's online construction management system.

C. Accepted Submittal Attachment File Types:
   1. PDF: Each file shall be a resolution of 300 dpi or greater.
   2. DOC, DOCX, XLS, XLSX: Convert these file types to PDF format prior to submission. If this is not possible, only one Microsoft Word document and/or one Excel document is allowed for each submittal.
   3. The use of any other file types requires the Port's approval prior to submission.

D. Organize each submittal by specification section and paragraph number as directed by the Port. Do not include items from more than one specification section per submittal package.

E. Include the following information with each submittal:
   1. The names of: The subcontractor, supplier, and manufacturer.
   2. Identification of product or material, with the appropriate specification section and paragraph number marked on each item.
   3. Relation to adjacent critical features of work or materials. A clearly detailed sectional drawing of each system, identifying all components and their method of attachment to supporting structure, adjacent Contractor-designed work, or both.
   4. Field dimensions, clearly identified as such.
   5. Applicable standards.
   6. Identification of deviations from contract documents. Products shall be accompanied by a substitution request form.
   7. The Contractor's stamp.

F. Resubmission Requirements:
   1. Revise initial submittals as directed by the Port and create a revision of the submittal package in the Port's online construction management system to resubmit as specified for the initial submittal.
   2. Indicate on the submittals any changes which have been made to the initial submittal.

G. If the submittal content includes material samples, systems manuals, or operation and maintenance manuals, or if requested by the Port, the following revisions to this article shall apply:
   1. Complete an electronic submittal in the Port's online construction management system, noting in the Comments section that hard copies are being forwarded under separate cover.
   2. Submit three packages of sorted and collated documentation and samples.

1.3 SHOP DRAWINGS

A. Submit complete shop drawings as required by the applicable technical sections.

B. Present data in a clear and thorough manner.
   1. Drawings shall be identified by reference to the specification section and paragraph number when the item is called out in the specifications and by the original sheet and detail number, schedule, or room numbers when the item is shown on the drawings.
   2. Structural items shall be identified by location in the completed structure.

C. Shop drawing quality:
   1. All line work shall be clean and crisp with no feathering or fading.
   2. Line work important to the drawing shall be emphasized by increasing the line weight and density.
   3. Text size shall be a minimum of 1/8 inch in height and shall be Helvetica style font.
   4. Notes shall be clear and concise.
   5. CAD-generated drawings are preferred.

1.4 PRODUCT/MATERIAL DATA AND OTHER INFORMATION

A. Submit for Port review prior to commencement of related on-site work all product/material data and other information required by the applicable technical sections.

B. Product/material data consists of manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other standard descriptive data. Catalog cuts or brochures for items which are standard products 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. Catalog data shall be organized by specification section and paragraph number. Each product/material data item shall be clearly marked and annotated with the appropriate specification section and paragraph number. General catalogs or partial lists will not be accepted.
   1. Clearly mark each copy to identify pertinent product.
   2. Modify manufacturer's standard schematic drawings and diagrams to indicate which information is not applicable.
   3. Supplement standard information to provide information specifically applicable to the work.

1.5 WARRANTY OUTLINE

A. Within 30 days of Notice to Proceed, submit an outline of warranties required in the contract documents. Include a list of associated products and services, and available warranty requirements such as for registration, inspection, installation, etc.

B. See the technical specification sections for specific warranty requirements.

1.6 SAMPLES

A. Office Samples:
   1. Provide samples of sufficient size and quantity to clearly illustrate the item.
   2. Show functional characteristics of product or material, with integrally related parts and attachment devices.
   3. Provide full range of color samples.
   4. After review, samples may be used in the work, if approved by the Port.

B. Where "match sample" is specified, the Contractor's samples shall match the Port's existing sample.

C. Field Samples and Mock-Ups:
   1. Construct, at the work area, at a location acceptable to the Port.
   2. Size or Area: As specified in the respective specification section.

D. Submit the number and type stated in each specification section, or seven copies, whichever is greater.

1.7 REDLINE (AS-CONSTRUCTED) DRAWINGS

A. At the start of construction, the Port will provide the Contractor with a full-sized set of drawings for use in recording changes that develop during construction. These changes shall be shown on the drawings as "redlines" using red pencil or pen to indicate the actual installation where it varies appreciably from the installation shown originally.
   1. Special attention shall be paid to legibility and reproducibility of redline drawings. Give particular attention to information on concealed elements which would be difficult to identify or measure and record later. Items required to be marked include but are not limited to:
      a. Dimensional changes to the original drawings.
      b. Changes to details shown on the original drawings.
      c. Locations and depths of underground utilities (if different by more than 1 inch in depth or more than 1 foot in location).
      d. Changes to routing of piping and conduits (if different by more than 1 foot from where shown).
      e. Changes to electrical circuitry.
      f. Locations of concealed internal utilities (located to within 1 inch).
      g. Details not on original drawings.
   2. Completely and accurately redline contract drawings.
   3. All attached documents to the redline drawings shall reference original drawings and sheet numbers.

4. Redline important additional information which was either shown schematically or omitted from original drawings.
5. Note construction contract change numbers, alternate numbers, change order numbers, RFI numbers, and similar identification.
6. Accurately record information in an understandable drawing technique.
7. Record data as soon as possible after it has been obtained. In the case of concealed installations, record and check the redline prior to concealment.

B. Store the Contractor's redline drawings in the field office, apart from contract documents used for construction. Do not permit redline drawings to be used for construction purposes. Maintain redline drawings in good order, and in a clean, dry, legible condition.

C. The Contractor's redline drawings shall be available at all times for inspection by the Port.

D. As a condition of final acceptance:
1. Submit the final redline drawings in both electronic and hardcopy format for Port review and approval. Revise and resubmit any items noted as deficient.
2. Submit final updated shop drawings.

1.8 APPRENTICE UTILIZATION PROGRAM

A. See the Supplementary Conditions for submittals required under the Port's apprentice utilization program.

END OF SECTION 013300

SECTION 014500 - QUALITY CONTROL

PART 1 - GENERAL

1.1 INSPECTION AND TESTING

A. No work shall commence or be covered until approved by the Port.

B. Unless otherwise specified, the Port will perform acceptance tests (surveys, measurements, or evaluations called for in the specifications or deemed necessary by the Port).

C. Prior to requesting acceptance tests, the Contractor shall perform check tests (monitoring of construction products, methods, and progress to assure work acceptability). Include check testing costs in the price(s) bid; no separate payment will be made for this work.

D. The Port will have the right to perform various types of tests at any time prior to formal acceptance. This may include evaluation of line, elevation, grade, depth, thickness, compaction, density, material, composition, pressure, or other analyses deemed necessary by the Port.

E. Acceptance tests by the Port will be initiated by the Contractor's request for approval.
   1. Acceptance surveys will be performed by the differential leveling method, using a mutually agreed upon grid not to exceed 25-feet transverse by 50-feet longitudinal.

F. The Contractor shall allow sufficient time in its schedule to accommodate Port acceptance testing. No separate payment will be made for delays or standby during this time.

G. Results of the Port's acceptance tests will be made known to the Contractor as soon as practical; however, it remains the responsibility of the Contractor to obtain the specified requirements at all times. Any delay in advising the Contractor of test results shall not act as a waiver of this responsibility.

H. Acceptance tests which fail to meet the specified requirements may be re-checked by the Port after the Contractor takes remedial action. The cost of re-checking shall be borne by the Contractor.

I. Furnish, for approval or evaluation by the Port whenever requested, samples of materials as directed. These samples shall be completely representative of the materials or products proposed to be used in the work. The results will be used as a basis for acceptance or rejection in accordance with the specifications for the particular material(s).

J. Specific testing tasks are specified in individual sections as required.

1.2 WELDING

A. The Port will hire an approved third-party testing agency to provide the inspection and testing of all welds as required by Chapter 17 of the IBC and OSSC.

B. Coordinate the fabrication/erection inspection and testing of all welds through the Port. This inspection and testing will be performed by an AWS-certified welding inspector in the case of visual inspection and by an NDT Level II-certified inspector in the case of nondestructive testing. The inspectors and inspection will be as outlined in AWS D1.1, Clause 6.

C. The Port's designated inspection/testing company will submit original copies of test reports directly to the Port with copies to the Contractor.

D. In addition to the required fabrication/erection inspection, the Port may also provide verification inspection (both visual and NDT) of the Contractor-installed welds. Allow some contingency in the work schedule to allow for Port inspection. No time extensions or standby charges will be allowed in the event that the Port elects to provide additional inspection. Visual, U/T, and magnetic particle inspection methods will be used for pipe piles and fabricated steel inspection.

E. Rejection of any portion of a weld inspected on a less than 100 percent basis shall require inspection of 100 percent of that weld. All welds which do not meet the requirements of the specifications shall be repaired and retested as necessary at no additional expense to the Port. Inspection by the Port shall in no way relieve the Contractor of responsibility for the performance of welding which meets the requirements of said specifications for quality and workmanship.

F. All welders, welding operators, and tackers shall be City of Portland-certified by an independent testing laboratory (approved by the Port) as qualified for the materials, processes, and types of welds being performed. The testing and certification shall be as specified in AWS D1.1. Welds installed using unqualified procedures or welding performed by non-qualified or incorrectly qualified welders shall be rejected, removed, and replaced by the work of properly qualified personnel at no additional expense to the Port.
   1. All welders shall be project-qualified 3G and 4G unless the Contractor can provide documentation that all project-related welding will be performed in either the flat or horizontal positions, in which case 2F and 2G qualifications are acceptable.
   2. Prior to commencement of welding, submit copies of certification for each person who will do welding on the job.

END OF SECTION 014500

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 TEMPORARY UTILITIES

A. The Contractor may use water and electric power from Port-owned facilities at no cost, as available.

1.2 SANITARY FACILITIES

A. Toilet facilities will be available without charge, as designated by the Port.

1.3 TEMPORARY HEAT

A. Furnish and maintain temporary movable heating units where temporary heat is required or requested by the Port. When temporary heat is required in a space for operations such as plastering and painting, provide temporary radiators, fans, piping, etc., and fuel required for same until final acceptance of the building.

1.4 FIRE PROTECTION

A. Provide adequate firefighting equipment to contain an equipment fire. Make available and accessible in the work area.

B. Provide fire protection as required by Oregon Administrative Rules, Division 3, Chapter 437, Subdivision F, for building construction and demolition.

C. Only type B:C dry chemical fire extinguishers shall be used within 500 feet of aircraft parking areas or in the vicinity thereof. Type A:B:C multi-purpose fire extinguishers in these areas are prohibited.

1.5 DIESEL EMISSIONS CONTROLS – VEHICLES AND EQUIPMENT

A. Establish staging areas for diesel-powered vehicles and equipment (collectively, “equipment”) in a location where exhaust emissions have a minimal impact on personnel or nearby communities.

B. Limit idling of diesel-powered equipment to 5 minutes when the equipment is not in use or in motion, except as follows:
   1. When traffic conditions or mechanical difficulties, over which the operator has no control, force the equipment to remain motionless.
   2. When operating the equipment’s heating, cooling, or auxiliary systems using a diesel-powered engine is necessary to accomplish the equipment’s intended use.
   3. To bring the equipment to the manufacturer’s recommended operating temperature.

4. When the outdoor temperature is below 20°F.
5. When needed to repair the equipment.
6. When the safety of job site personnel or visitors may be compromised if diesel equipment is turned off; for example, where the equipment protects workers that are working in a trench.
7. When the equipment meets the most stringent EPA emissions standards or has been retrofitted with a diesel particulate filter (DPF).
8. Under other circumstances specifically authorized by the Port.

C. The Contractor shall post "Five Minute Diesel Idling Limit" signs in high foot-traffic areas of the job site, visible to equipment operators and site workers.

1.6 EXTERIOR DUST CONTROL

A. If conditions exist that cause dust or soil to become windblown or otherwise entrained in the air by vehicular traffic or equipment activities, employ methods to control and abate nuisance dust conditions including, but not limited to:
1. Cleaning, sweeping, or vacuuming areas to remove the dust source.
2. Removing or relocating dust-creating materials or activities to other areas that will eliminate the dust problem.
3. Applying dust control agents such as water, or water misting, to the dust source. Application of any wetting agents other than water require the written approval of the Port prior to use.
    a. Application of dust control agents is not acceptable for materials that will dissolve in water or become friable.
    b. Materials that will dissolve in water or become friable when wetted shall be stored only on impervious surfaces, field-installed ground sheeting, or other barriers.
    c. Run-off from wetted materials shall be controlled to prevent contamination of other portions of the site.

B. The Contractor shall take precautions to contain the particulate matter from sandblasting operations and provide covered storage of the spent abrasive materials. Sandblasting shall be managed as hazardous or solid waste in accordance with applicable state, federal, and local regulations.

1.7 INTERIOR DUST CONTROL

A. Submit a dust control plan when work includes demolition, removal of materials, or other building interior activities that could create dust or other small airborne particles.

B. The dust control plan shall include, but not be limited to, the following:
1. Measures to be implemented before, during, and after any dust generating activity for the duration of the work.
2. Measures to ensure there are no visible dust emissions in the air or collecting on surfaces outside the work area.
3. Measures to prevent tracking of dust into non-work areas by feet or equipment.
4. Measures for clean-up of settled or tracked dust found outside the work area.

C. Do not proceed with the work until the Port has approved the plan. Perform dust control in accordance with the approved plan.

D. Excessive airborne particles within the work area may require that the Contractor cover smoke detectors during that portion of the work and then uncover them when opening the area for use at the end of the work shift.

E. If plastic sheeting is used for containment of dust, it shall be fire-retardant treated sheeting.

F. Do not allow general nuisance dust outside the work area to exceed the American Conference of Governmental Industrial Hygienists guideline of 10 mg/m3. The Port reserves the right to perform dust level monitoring to ensure there is no violation of this limit.

1.8 CONTROL OF SILICA IN CONCRETE

A. When coring, cutting, breaking up, grinding, or removing concrete or performing other such activities, control the release of dust from concrete that contains or has the possibility to contain silica that could be released with the dust in levels greater than those allowed under the OR-OSHA Silica Rule, OAR-437-002-0382, Table Z3. Control measures shall comply with Table 1 of the new OR-OSHA silica rule, OAR-437-002-1057.

1.9 NOISE CONTROL

A. Comply with the requirements of OAR 437, Division 2/G, 1910.95, Occupational Noise Exposure.

B. Where the public and tenants are exposed to construction noise that is harmful or disruptive, take steps to mitigate the noise level. Adequate mitigation may require performing some items of work outside of normal working hours. Coordinate with the Port.

1.10 SOLID WASTE MANAGEMENT

A. The Contractor shall be solely responsible for determining the proper disposition of all solid waste, including documentation showing that the solid waste and recyclables are not regulated as hazardous waste in accordance with state and federal regulations. Upon request, this documentation shall be made available to the Port.

B. Receptacles:
   1. All drop boxes, bins, totes, and cans located in areas exposed to wind or precipitation shall be equipped with metal, canvas, or plastic covers. Drop boxes, bins, totes, and cans shall be kept closed at all times, except when adding waste material.
   2. Where possible, large receptacles such as drop boxes, bins, and totes shall be placed on impervious areas such as concrete or asphalt pavement at locations away from public traffic, storm drain inlets, ditches, and other conveyances.
   3. If any receptacle is observed to be leaking any liquid, it shall be considered a solid waste leachate. The Contractor shall immediately take action to contain the leakage.
   4. Discarding of aerosol cans, used oil, paints, solvents, fluorescent light tubes, or any hazardous waste into the receptacle is strictly prohibited.

5. Receptacles larger than 33-gallon capacity used for recyclables and general solid waste and portable toilets shall not be located within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland.
6. Ensure that all recyclable and solid waste receptacles are kept closed, are not overfilled, are not leaking, and general housekeeping is performed in the area.
7. All recyclable and general solid waste hauled from the Port shall be secured prior to leaving the work site so that no waste material blows out, falls out, or leaks out during transportation to the designated offsite location.

1.11 DISPOSAL

A. Dispose of waste material off Port property and in accordance with applicable state, federal, and local regulations.

B. Burning or burying of waste material within Port property is not permitted.

C. Disposal of waste material within the area cleared, a river, stream, wetland, or other waterway or waterfront is not permitted.

1.12 OWNERSHIP OF MATERIAL REMOVED FROM PORT PROPERTY

A. Unless directed otherwise in the specifications, the Contractor accepts ownership of material removed from Port property under this contract, and accepts all costs and liability associated with its handling, transportation, removal, and disposal. The Contractor releases the Port from any claims, actions, proceedings, damages, liabilities, and expenses of every kind, whether known or unknown, resulting from or arising out of such material.

1.13 PDX TERMINAL DELIVERIES

A. Schedule the delivery of major system components with the Port at least one 24-hour business day in advance.

1.14 MOVEMENT AND PROTECTION

A. Movement of construction tools, materials, supplies, fixtures, and demolition debris through the building shall be performed in accordance with the following restrictions:
1. The Port will determine route and time restrictions, as well as time windows for material movement or work that may disturb building occupants.
2. Do not block or prevent public use of building areas without the Port's approval.
3. Use of hand trucks or carts with metal, plastic, or hard rubber wheels/casters will not be permitted. Only pneumatic tires will be allowed.
4. Handle with care to prevent damage to equipment and to property. Should soiling or damage occur, items will be cleaned/repaired by the Port at the Contractor's expense. (Exercise special care to protect carpeting, terrazzo, ceramic tile, wall surfaces, elevator surfaces, and doors.)
5. Packing and debris shall be transported in enclosed containers or carts and disposed of off Port property.

6. Clean up any dirt or debris dropped while moving items and equipment through the building.

1.15 STAGING, PARKING, AND WORK AREA

A. Access to and from staging, parking, and work areas shall be as shown on the drawings.

B. Confine parking, loading, and unloading of vehicles and equipment to within the work area.

C. Perform operations and movement within the staging, parking, and work areas in strict conformance with Port rules and regulations.

D. The area around the terminal building is extremely congested. The Port will attempt to accommodate the Contractor's requests for use of perimeter areas; however, the Port will make the final determination for use of space.

E. Where the Contractor's lock is used for access through Port gates, mark the lock to identify the Contractor. Place the lock in series with existing locks. Take care to assure that no existing lock is omitted from the series. Remove the Contractor's lock upon completion of the work. Failure to adhere to these requirements will result in the Contractor's lock being removed by the Port.

1.16 STORAGE AND PROTECTION OF MATERIAL AND EQUIPMENT

A. The Port will designate the area in which the Contractor may store material and equipment.

B. Protect materials and equipment from damage, pilfering, etc., and fully relieve the Port of this responsibility.

C. Upon completion of the work, remove unused materials and equipment and restore the area to original condition, including any grading necessary to restore drainage patterns and surface smoothness.

D. Store materials to be salvaged by the Contractor in the staging area.

E. Store materials and equipment at least 10 feet from the airport security fence.

1.17 EXTERIOR WARNING SIGNS AND BARRICADES

A. Before starting work, provide and have available all signs, flaggers, escort vehicles and drivers, barricades, and lights necessary for protection of the work.

B. Install and maintain adequate warning signs and lighted barricades to protect property and personnel in the work area. Barricades shall be weighted or anchored to prevent overturning from wind.

C. Barricade design shall conform to recommendations in the Manual on Uniform Traffic Control Devices, Type II barricade, minimum. Mount a Type A barricade warning light flasher on top of each barricade. Keep flashers visible and operating at all times.

D. Space barricades a maximum of 20 feet apart unless directed otherwise by the Port.

E. Relocate barricades, at the direction of the Port, whenever required to maintain protection of the work area or when changing work areas.

F. Open trenches, excavations, or obstructions not being actively worked shall be marked with lighted and weighted barricades which can be seen from a reasonable distance.

1.18 TRANSPORTATION OF MATERIAL

A. If shipments of hazardous material (including hazardous debris, contaminated soil or water, and hazardous waste) will be unloaded onto or loaded from Port property, the Contractor shall have a qualified person available onsite when shipments are received or made who is current with U.S. Department of Transportation (DOT) approved training for the transportation of hazardous materials. The storage and shipment of hazardous waste shall also comply with the requirements of these specifications.

B. Ensure that hazardous goods and material delivered to or from the construction site meet applicable DOT labeling and placarding requirements.

C. Properly characterize and manifest waste material leaving Port property for disposal.

D. Minimize and abate the creation of nuisance dust conditions during the loading and unloading of vehicles used to haul debris, rubble, soil, trash, or other material that may create dust during loading or unloading operations.

E. Before leaving the loading area, adequately secure and cover vehicles used to haul debris, rubble, soil, trash, or other material that may be blown or fall during transportation onsite or over public thoroughfares.

F. In areas that may result in the tracking of soil, sediments, or hazardous materials on the wheels of hauling equipment outside areas that are enclosed by erosion and silt/sediment control devices, the Contractor shall provide the means and methods to remove these materials prior to the vehicle exiting the controlled area. If water wash stations are used, the Contractor shall provide systems for the collection, treatment, and disposal of wheel wash water and accumulated sediment.

1.19 TRAFFIC CONTROL

A. The work is in areas where there will be traffic involved in terminal activities and cargo handling. Make arrangements for the safe handling of traffic in the work area, and coordinate the work with the Port.

B. Construct and maintain bridges across trenches and/or temporary access ways to carry appropriate traffic in a safe manner. Mark open trenches, excavations, or obstructions with lighted and weighted barricades which can be seen from a reasonable distance. Plan for traffic interruption in the work progress schedule.

C. Schedule and phase work to maintain movement of traffic through the work area. Provide signing, barricades, markers, flaggers, and other traffic regulation to maintain safe and efficient

control of traffic around or through the work area. Types of devices and their use shall conform to Part VI of the Manual on Uniform Traffic Control Devices for Streets and Highways - USDOT/FHWA.

D. Submit traffic control plan to the Port for approval. Demonstrate how traffic will be handled. Include dates, times, location, traffic control devices, and a brief description of the work operations to occur.

E. Keep pavement surfaces free and clear of dirt, mud, and debris.

F. Keep a minimum of one lane of traffic open at all times. Provide flaggers to control congestion. At the end of each workday, open all lanes to traffic.

G. Backfill excavation and provide an all-weather topping (crushed aggregate is not acceptable), or cover with steel plates capable of handling H-25 loading, minimum. Openings greater than 4 feet in width may require thicker steel plating and/or addition of steel beams. Verify loading requirements with the Port prior to ordering steel plate or beams. If loading requirements cannot be met, the opening shall be backfilled prior to plating. If plating thicker than 1 inch is required, plates shall be constructed as a ramp where each step is no greater than 1 inch thick and each plate is offset 12 inches for every 1 inch in plate thickness.

1.20 HAUL ROUTE CONSTRUCTION AND MAINTENANCE

A. The term “haul route” applies to any designated paved or unpaved road used by the Contractor for travel of construction equipment.

B. Construction equipment shall follow agreed-upon haul routes.

C. Do not cross electrical or communication cables unless protected by approved means.

D. Equipment operated on haul routes over existing pavements shall conform to legal load limits for public highways unless approved protection is provided. Keep pavement areas free of material spillage and foreign matter at all times. Continuously clean pavement surfaces with regenerative-air vacuum sweepers.

E. Maintain haul routes over unpaved areas in good usable condition during the course of the work. Sprinkle roads as necessary to prevent dust.

F. Restore paved roads to original condition at the conclusion of construction and prior to final acceptance. Remove haul roads over unpaved areas by scarifying and smooth grading in conformance with existing drainage patterns.

G. Construct, maintain, and restore haul routes to the satisfaction of the Port. Cost shall be considered an incidental item.

1.21 HARD HATS AND SAFETY CLOTHING

A. Wear hard hats and high visibility clothing that comply with current ANSI requirements. All safety equipment shall be in good repair.

1.22 CONFINED SPACES

A. Performance of contract work will require workers to enter confined spaces. The Contractor is solely responsible for ensuring compliance with proper applicable confined space entry and working procedures in accordance with state and federal OSHA regulations. The Port may review those procedures and perform its own tests for the limited purpose of ensuring the safety of its own employees.

B. The Contractor shall request and, if available, have a copy of any Port history on the confined space prior to entry.

C. Currently, all confined spaces at Portland International Airport are categorized as "Permit-Required Confined Space."

D. At the end of each month, submit the following:
   1. A copy of all entry permits generated in the course of the work for the Port's use in building history of the confined space.

1.23 SIGN POLICY

A. Policy for Contractor identification signs at Portland International Airport:
   1. Sign, and all aspects of installation, shall have prior approval of the Port.
   2. Displayed sign shall be for the prime Contractor only.
   3. Exterior sign shall not exceed 3 feet by 5 feet. The size of an interior sign shall be approved by the Port prior to use.
   4. Sign shall be professionally prepared.
   5. Signing is allowed only at work area.
   6. No lighted sign permitted.
   7. Sign shall be removed upon completion of work.

END OF SECTION 015000

SECTION 015719 - ENVIRONMENTAL CONSTRUCTION CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes required environmental practices for construction work on Port property.

1.2 SUBMITTALS

A. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response that includes a map indicating storage site locations.

B. If total petroleum product storage, including fuels and oil (e.g. drummed lubricants), exceeds 1,320 gallons, obtain special approval from the Port and submit a Spill Prevention Control and Countermeasures (SPCC) plan in accordance with federal regulations (40 CFR 112). Total storage is equal to the sum of all drums, receptacles, tanks, etc. equal to or greater than 55 gallons, including mobile storage tanks that are parked on site.

C. Submit a monthly written report that provides:
   1. A complete inventory of all hazardous waste generated that month;
   2. The current inventory of Contractor-generated hazardous waste stored on Port property; and
   3. The date(s) the waste was placed into onsite storage.

1.3 EMERGENCY CONTACT AND NOTIFICATION INFORMATION

A. Provide a notification sign with Contractor's appropriate emergency contact information, and including the Port's emergency dispatch number, in the following locations:
   1. Areas where fuel, hazardous waste, or hazardous liquid products are dispensed or stored.
   2. Areas where more than 42 gallons of hazardous materials are stored.
   3. On-board mobile motor fueling equipment. (If the mobile fueling equipment leaves Port property, the Port emergency dispatch notification sign shall be removed prior to leaving.)
   4. Tank farms on Port property.
   5. Asphalt or concrete plants on Port property.

1.4 RELEASE OF CONTAMINANTS

A. Protect against the entry of petroleum products and other contaminants into a waterway (including river, stream, slough, wetland, etc.), other drainage system (including stormwater collection systems) or overland to any drainage ditch or swale.

B. In the event of a spill outside a containment area:
   1. Notify the Port immediately if a spill occurs or if contamination is discovered which indicates a release of petroleum products or other contaminants to the environment.
   2. Immediately contain and remove the spilled material.
   3. If contaminants enter a waterway, immediately begin containment and cleanup.

C. Notify the appropriate regulatory agencies and provide written follow-up. Submit to the Port copies of all reports, written follow-ups, documentations, and agencies responses.

D. All cleanup costs, reporting requirements, fines, and fees shall be the sole responsibility of the Contractor.

1.5 SPILL KITS

A. A clearly labeled spill kit shall be located within 50 feet of the following:
   1. Fueling areas.
   2. Liquid products storage and dispensing areas.
   3. Hazardous materials storage areas.
   4. Vehicle and equipment maintenance areas.
   5. Tank farm areas on Port property.
   6. Asphalt or concrete plant areas on Port property.
   7. Any surface water if work is being performed in the vicinity.

B. Spill kits shall contain an ample supply of oil-absorbent ground booms, socks, pads, bagged sorbents, flat-blade shovels, salvage drums suitable for collection of spilled materials and absorbents, provisions for preventing spilled materials from entering any storm drain inlet or conveyance, supplies to protect at least two storm drain inlets, and personnel protective equipment suitable for the quantity and type of hazardous substances handled.

C. Provide spill kits as described above for the following types of mobile equipment:
   1. Mobile fueling, maintenance, and storage equipment.
   2. Mobile equipment service vehicles (including oilers).
   3. Mobile tanker equipment (e.g. tanker vehicles used to apply bituminous tack material) and hazardous material transport vehicles.

1.6 HAZARDOUS MATERIAL MANAGEMENT

A. General:
   1. Minimize the volume and number of locations where hazardous material is used and stored by the Contractor on Port property.
   2. Minimize the type and volume of material used onsite that will be regulated as hazardous waste when the material becomes spent or unfit for further use.
   3. Ensure that any hazardous material or hazardous substance for which the use, storage, or disposal is regulated under federal, state, or local requirements is handled and managed in accordance with the requirements applicable to those substances.
   4. The use of degreasing or cleaning products containing chlorinated solvents such as 1,1,1-trichloroethane, perchloroethylene, and methylene chloride is prohibited unless approved by the Port.

5. Immediately clean up hazardous material spilled outside any designated secondary containment system in accordance with Oregon DEQ, U.S. EPA, or Oregon OSHA requirements. Clean up, as soon as possible, any hazardous materials spilled inside a secondary containment system.
6. Where hazardous materials or products are stored in quantities of 42 gallons or more, submit a spill response plan including a map indicating storage site locations.
7. Ensure that every hazardous material container is clearly labeled with its contents or original product label. Indicate the Contractor's name and contact number on the side of every container greater than 5 gallons in size with legible size lettering. If hazardous material is transferred into a secondary container (i.e., any container used to transfer material from a storage location to a point of use or storage prior to use, including but not limited to buckets, pails, pans, drums, bottles, cans, etc.), this container shall also be labeled with the contents, the Contractor's name, and contract number.
8. Storage of flammable or reactive hazardous material/waste on Port property or within 50 feet of the Port property line is not permitted unless stored inside a building or other portable device approved by the Fire Marshal (or airport fire department within the PDX security fence).
9. Keep an up-to-date file or notebook of Safety Data Sheets (SDS) for all hazardous materials located by the Contractor on Port property. Upon request, this information shall be made available to the Port.
10. All containers used for storing, dispensing, or accumulating hazardous materials shall be placed inside a structure or under cover whenever possible. All containers not inside a structure shall be equipped with secondary containment.
11. Do not locate fuel and hazardous substances storage and dispensing areas where runoff flows from nearby roof drains.

B. Onsite Storage of Petroleum Products:
1. Do not install or use underground storage tanks (USTs) on Port property.
2. Storage racks and vehicles shall be equipped with drip collection devices and enclosures.
3. Provide an emergency dispenser shut-off switch. Switch shall be located at least 15 feet from tanks or the minimum distance approved by the Fire Marshal (or airport fire department within the PDX security fence), whichever is greater.
4. Use bollards or other vehicle restraint devices (e.g., Jersey barriers) to prevent vehicles from damaging tanks and containment area.
5. Tanks, containment areas, and dispensing pads shall be under cover or under a temporary shelter to minimize contact with, or accumulation of, precipitation, unless otherwise approved by the Port.

C. Large Containers (20 Gallons or More):
1. Store containers of hazardous liquids on an impervious surface (i.e., concrete, asphalt, or field-erected system [heavy plastic ground sheeting] capable of withstanding normal wear and tear from construction equipment and other traffic throughout the course of the work) and inside or under cover in a location that does not have any storm drain inlets or floor drains within 50 feet of the storage location.
2. For containers of liquids that are not, or cannot, be stored inside a structure, equip the storage area with some form of secondary containment. Acceptable secondary containment devices may include, but are not limited to:
    a. Field constructed secondary containment area such as a perimeter berm with impervious interior surface; or

b. Movable pallet systems with integrated secondary containment and covers (these systems are available in one, two, and four drum capacities).

3. Secondary containment systems shall have sufficient capacity to contain 10 percent of the total volume of hazardous material containers stored, or 110 percent of the volume of the largest container, whichever volume is greater.
4. Dispense from liquid-filled containers using a manually operated pump. Do not dispense from gravity feed spigots. Containers shall be used in an upright vertical position.

D. Small Containers (Less Than 20 Gallons):
1. Store containers of flammable liquids in National Fire Protection Association (NFPA) Code 30 approved safety cabinets, or equal.
2. Store containers of non-flammable liquids in cabinets or other devices equipped with secondary containment.

E. Empty Containers:
1. A container is deemed empty when all possible material has been removed using normal practices (e.g. pouring, pumping, aspirating, etc.) and no more than 1 inch of residue remains on the bottom of the container or inner liner.
2. Transferring of the liquid heel at the bottom of containers into other containers shall be done only in areas equipped with secondary containment.
3. Do not store empty containers upside down, although they may be stored in a horizontal position if the bungs/lids are securely fastened.
4. Do not rinse empty containers on the work site.
5. Manage empty or unwanted containers as solid waste in accordance with the requirements of this section.
6. Do not offer empty containers to employees or the public on Port property.

1.7 HAZARDOUS WASTE MANAGEMENT

A. General:
1. Obtain the necessary generator identification numbers from the Oregon Department of Environmental Quality (DEQ). Perform required characterization tests to determine if waste material produced is regulated as hazardous waste. Manage, transport, and dispose or recycle such waste in accordance with state and federal regulations.
2. In addition to that required by federal or state regulations, the storage of containers containing hazardous waste shall be in accordance with the requirements described elsewhere in this section.
3. Disposal of hazardous waste down any floor drain, sink, storm drain inlet, onto the ground, or into any water conveyance is strictly prohibited by state and federal law.
4. Submit a monthly written report to the Port that provides:
   a. A complete inventory of all hazardous waste generated that month;
   b. The current inventory of Contractor-generated hazardous waste stored on Port property; and
   c. The date(s) the waste was placed into onsite storage.
5. Keep all required hazardous waste documentation, including, but not limited to, testing records, inspection logs, manifests, and contingency plans onsite during the course of the work. Upon request, the Contractor shall make this information available to the Port.
6. Loading and transportation of hazardous waste from Port property shall be in accordance with the requirements described elsewhere in this section.

1.8 VIOLATION OF STORM WATER SYSTEM REQUIREMENTS

A. The Contractor is responsible for reviewing Port Ordinance 361, Storm Water Regulation, available at https://cdn.portofportland.com/pdfs/Ordinance%20361_%20Storm%20Water%20Regulation.pdf or from the Port upon request, and the Port's Storm Water System Enforcement Rules adopted in accordance with Ordinance 361 (also available upon request). Violation of Ordinance 361 and the Storm Water System Enforcement Rules will be considered acts or omissions for purposes of the Contractor's indemnification obligation set forth in the Contract Documents, and will represent a material breach of the Contract for which the Port may exercise all remedies available at law or under this Contract, including but not limited to the enforcement mechanisms and penalties provided for under such ordinance and rules. Such enforcement mechanisms and penalties may include, but not be limited to:

1. Suspension or revocation of a permit or other authorization to engage in a particular activity on Port property; and
2. Issuance of a citation punishable by a fine as authorized under ORS 777.990(2) and 778.990.

1.9 WASHDOWNS

A. The washdown or hosing of hazardous material storage areas, refueling areas, or tank farm and containment areas is prohibited unless the Contractor provides for the collection and disposal of the washdown liquids.

B. Limit washdown of vehicle and equipment service pads and other work areas. Limit steam cleaning and high pressure or other types of washing of vehicles and equipment. Liquids from these activities shall be collected, managed as contaminated wastewater, and properly disposed.

1.10 APPLICATION AND MANAGEMENT OF COATING SYSTEMS

A. General:

1. Onsite storage, dispensing, and management of coating systems, paints, solvents, thinners, and related products that contain hazardous materials shall be in accordance with the requirements of this section.
2. Unless otherwise specified by the Port, make all reasonable attempts to use low volatile organic compound (VOC) content coating systems in the course of the work.
3. Minimize the use of aerosol spray products containing VOCs or VOC propellants.
4. Do not dispose of aerosol spray product containers as general solid waste unless the can has been depressurized and all liquid contents drained into a waste container outfitted with a device specifically designed to puncture aerosol cans. The waste container shall also be outfitted with a carbon filter apparatus to minimize the loss of VOCs into the air and managed as solid or hazardous waste in accordance with the requirements of this section.
5. Take all reasonable steps to minimize public exposure to VOCs and nuisance odors.
6. Waste generated from painting operations such as scrap paint and solvents may be regulated as hazardous waste. Manage these materials in accordance with the requirements of this section.
7. If a spray booth is used at the work site for the application of coating systems, ensure that the spray booth is properly serviced, maintained, and operated in accordance with local, state, and federal worker safety and environmental regulations, including permitting.

8. Containers with small amounts of residual paint or solvent, unapproved paints, bad batches, or dirty cleaning solvents shall not be allowed to evaporate in open air. All liquids shall be poured, pumped, aspirated, or otherwise placed into a waste container, reused, or returned to the vendor.
9. The mixing and dispensing of all coating systems and paints for use, as well as the cleaning of coating system and painting equipment, shall be conducted over an impervious surface at least 50 feet from the nearest storm drain inlet, drainage ditch, surface water, or wetland. Any spill shall be immediately cleaned up.
10. Other Conditions: If sandblasting operations are performed, take all reasonable precautions to prevent particulate matter from becoming airborne. Reasonable precautions include, but are not limited to, providing temporary enclosed shelters for sandblasting operations and providing covers or containment for the storage of spent abrasive materials. Sandblasting waste shall be collected and managed as hazardous or solid waste.
11. Disposal of any latex paint or washwater down any drain, onto the ground, or into any stormwater conveyance system is prohibited.
12. Manage empty containers in accordance with the requirements of this section.

B. Coating Systems, Paints, and Solvents Containing VOCs:
1. Take all reasonable precautions to minimize VOC emissions to the environment during the storage and use of these products, including, but not limited to:
   a. Keeping all product and waste containers tightly closed, except when dispensing or filling the container.
   b. Using airless sprayers to the maximum extent practicable.
   c. Assuring that the spray nozzles are appropriately sized for the application.
   d. Minimizing the use of thinners to the amount recommended by the manufacturer for the specific application.
   e. Minimizing the volume of coating systems and paints that is premixed for use, but may not be immediately applied.
   f. Not spraying cleaning solvents through spray equipment to clean buckets, lines, guns, and nozzles into the open air. Spray cleaning solvents into a container to capture and reuse as much cleaning solvent as possible.

C. Latex Paints:
1. Take all reasonable precautions to prevent latex paint emissions to the environment during the storage and use of these products, including, but not limited to:
   a. Keeping product and waste containers tightly closed, except when dispensing or filling the container.
   b. Minimizing the use of solvents, water, and detergents for the cleanup of latex painting equipment.
   c. Not spraying cleaning solvents or water through spray equipment to clean buckets, lines, guns, and nozzles into the open air. Spray cleaning solvents or water into a container to capture and reuse as much cleaning solvent as possible.

1.11 EQUIPMENT FUELING AND MAINTENANCE

A. Ultra Low Sulfur Diesel (ULSD) Fuel:
1. All diesel-powered off-road vehicles and equipment used on the project site for three consecutive days or more shall be fueled with ultra low sulfur diesel. This includes

vehicles with engine horsepower ratings of 50 HP and above, and internal combustion engines used to power generators, compressors, and similar equipment.

2. The ULSD fuel shall contain no more than 15 parts per million sulfur.
3. If sufficient quantities of ULSD are not available, or if the price of ULSD is at least 3 percent greater than diesel fuel with a sulfur content in excess of 15 parts per million, the Port may allow the use of higher sulfur fuel. Such exceptions will be made on a case-by-case basis.

B. Fueling Operations:
1. Do not top off vehicle tanks when fueling on Port property.
2. Where practicable, fuel and liquid product dispensing shall be done over an impervious surface such as a concrete pad or field-constructed temporary pad (e.g. an aggregate pad with membrane bottom and side liner), at least 50 feet from the nearest storm drain inlet, drainage ditch, surface water, wetland, or other drainage conveyance. Install temporary impervious covers over storm drain inlets. Provide storm drainage diversion away from drainage ditches, surface water, wetlands, or other drainage conveyances.

C. Equipment and Vehicle Maintenance Operations:
1. Comply with requirements specified elsewhere in this section regarding onsite storage and use of hazardous material and management of hazardous or solid waste produced during the course of the work.
2. Perform daily equipment checks for leaking oil and fluids. Visible spills shall be immediately cleaned up.
3. Equipment with leaking oil or fluids shall be repaired prior to being operated on Port property.
4. To the extent practicable, park vehicles and equipment indoors, under a roof, or on an impervious surface to prevent stormwater contact in the area.
5. If a vehicle or equipment is known to be leaking oil or other fluids, and service cannot be completed that day, install a drip pan or absorbent materials to contain the leak until service and repair is completed.

D. Equipment Maintenance Areas:
1. To the extent practicable, vehicle and equipment servicing shall be done indoors or under cover.
2. Perform vehicle and equipment maintenance over an impervious floor or pad (concrete, chemical-resistant coated asphalt, or other field-erected system). Ensure that contaminated liquids including, but not limited to, contaminated stormwater are not discharged to any storm drain inlet, drainage ditch, swale, or other surface water conveyance.
3. For equipment that cannot practicably be moved to an equipment service area, take all reasonable precautions to prevent chemical spills onto the ground or into water. Use protective ground sheeting or absorbent materials beneath and around equipment areas that may be vulnerable to chemical spills.
4. Contaminated stormwater from vehicle and equipment maintenance areas shall not be allowed to discharge into the stormwater collection system, discharge onto the ground, or run overland to any drainage ditch or swale.
5. Solvent or caustic parts washing stations shall not be used outdoors, unless the area is covered and equipped with appropriate secondary containment as described elsewhere in this section.

E. Mobile Equipment Service Vehicles (Including Oilers):
   1. Multi-purpose mobile equipment maintenance vehicles (oilers) that are equipped with multiple tanks or containers of lubricants, fuels, hydraulic fluids, greases, chemicals, etc., may be used on Port property under the following conditions:
      a. The vehicle is equipped with a spill kit.
      b. The vehicle is equipped with a sufficient supply of containers for the collection of fluids that may be removed from the equipment being serviced (e.g. used oil, waste antifreeze, chemicals, etc.).
   2. If equipment service is performed within 50 feet of a storm drain inlet, drainage ditch, surface water, or wetland, the Contractor shall install a flexible storm drain cover over the storm drain inlet or place oil absorbent booms or socks around the inlet or other drainage conveyance prior to commencing work.
   3. Mobile tanker, mobile fueling, or equipment service personnel shall be appropriately trained in spill response techniques. At least one spill response-trained person shall be present at all times where fueling, fuel staging, or fuel transfers are made.
   4. Mobile motor fueling equipment shall be equipped with an emergency dispenser shutoff switch located in the cab or on the opposite side of the vehicle or trailer from the pump(s).
   5. Overnight/weekend parking of mobile equipment service vehicles shall not occur within 50 feet of the nearest storm drain inlet, drainage ditch, surface water, or wetland area unless the storm drain inlet, ditch, and all drainage conveyances leading to the surface water or wetland have been equipped with oil absorbent booms or pads.

F. Storage and Handling of Waste Oil, Fluids, and Filters:
   1. The Contractor shall determine whether or not waste oil, fluids, filters, and other materials generated from onsite maintenance activities are regulated as hazardous waste under state and federal regulations.
   2. Regardless of the regulatory status of waste oil, fluids, filters, and other material, if the waste material is accumulated and stored on Port property, the Contractor shall provide proper storage.

END OF SECTION 015719

SECTION 017000 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 INSPECTION OF WORK AREA

A. Examine the work area and become satisfied as to the conditions of the work involved and the quantities of materials required for the performance of the work.

B. Prior to any drilling, coring, or cutting of existing floor slabs, use ground-penetrating radar or similar to identify location of embedded items such as utilities, conduit raceways, prestressing/post-tensioning cables, reinforcing steel, etc.

C. Address penetrations through new or existing structures as indicated in the contract documents. Where the contract documents do not cover the conditions encountered, submit a coordinated plan showing penetration sizes and locations required by all trades for Port approval prior to proceeding with the work.

1.2 NOTIFICATION TO PORT

A. Notify the Port at least 48 hours before intent to commence work. Do not start work until authorized to do so by the Port.

1.3 VERIFICATION OF MEASUREMENTS

A. Verify that elevations and measurements shown on the drawings match the actual conditions and submit discrepancies to the Port before proceeding with the work. The Contractor will not receive extra compensation for verification of elevations and measurements or for labor or material expended on account of differences that the Contractor could have, but did not, properly verify.

1.4 EXISTING UTILITIES

A. Notify the Oregon Utility Notification Center (OUNC), and owners of underground utilities within the construction area or within affected public rights-of-way or easements, via the "one-call" notification system (1-800-332-2344) in advance of the commencement of excavation activities, as prescribed in Oregon Revised Statutes (ORS) 757.541 to 757.571, Excavation Regulations.

B. Notify the Port when the "one-call" request is being initiated.

C. Protect existing utilities, and other public and private facilities and improvements which are to remain in place, from damage in the course of the work.

D. Perform any shutdown of utilities only when such shutdown will not interfere with Port or tenant operations. Schedule shutdowns through the Port, allowing time for adequate coordination.

E. In the event of interruption to field-located utility services as a result of the work, promptly notify the Port first, and then the proper authority. Cooperate with said authority in restoring service as promptly as possible. If required, the Contractor shall install suitable temporary service until permanent repair is completed and bear the cost of repair and temporary service.

F. Unless noted as abandoned, expose utilities only by hand excavation.

G. Notify the Port of all utilities exposed. Do not disrupt or cut utilities until identified and the Port has approved the cut.

H. Repair damages that result from execution of the work at no additional cost to the Port. Repairs shall be subject to approval of the Port.

END OF SECTION 017000

SECTION 017419 - CONSTRUCTION WASTE RECYCLING

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes recycling goals for construction and demolition work on Port property.

B. The Contractor shall salvage, reuse, recycle, compost, mulch, or use for energy recovery as many construction, demolition, and yard waste materials as is feasible and cost-effective. The Contractor shall coordinate all salvaging and recycling operations.

C. Unless specified elsewhere in this contract, salvaged and/or recycled material shall be removed from Port property in accordance with local, state, and federal regulations.

1.2 PROJECT-SPECIFIC RECYCLING

A. Items to be recycled on this project may include, but are not limited to:
   1. Concrete.
   2. Metals (ferrous and non-ferrous).
   3. Corrugated cardboard.
   4. Plastics.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Section 024119, Selective Demolition

1.4 SUBMITTALS

A. Initial Pre-Construction Estimate:
   1. Before site work begins, submit a completed site waste recycling form for work performed on this project.
   2. Use the form attached at the end of this section.
   3. The initial form submitted shall identify the types of construction or demolition materials that are expected to be recycled, salvaged, or disposed of over the duration of the work and the destination of the material.

B. Monthly Reports: Submit updated site waste recycling forms on a monthly basis. The updates shall include the actual amounts of construction and demolition materials recycled, salvaged, or disposed of during the previous period.
   1. Report quantities of materials in tons, based on weight slips, bills of lading, etc. If actual quantity of material is unknown, provide an estimate calculated to the nearest 0.5 ton.
   2. Use the form attached at the end of this section.

C. Closeout Project Summary: Prior to contract closeout, submit a final site waste recycling form that records the total amount of construction or demolition materials recycled, salvaged, or disposed of during the duration of the project. Use the form attached at the end of this section. Attach the following information to the form:
   1. Summary statement identifying and explaining any discrepancies between the amounts originally estimated and the actual amounts.
   2. Copies of receipts, weight slips, bills of lading, etc. for all materials.

1.5 QUALITY ASSURANCE

A. Comply with applicable regulations pertaining to collection, management, hauling, and disposal of waste or recyclable materials.

B. Use facilities properly permitted by appropriate jurisdictions.

1.6 RECYCLING PROCESSORS AND FACILITIES

A. Contact Metro (503-234-3000) for a comprehensive list of recyclable materials and recycling facilities in the Portland area.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 GENERAL

A. Provide handling, containers, storage, signage, transportation, and other items as required to facilitate the recycling process during the duration of the work.

B. Designate a “waste coordinator” who shall be responsible for coordinating the Contractor’s recycling measures and verifying the accuracy of the recycling information submitted.

C. Train employees, subcontractors, and suppliers on proper recycling procedures, as appropriate for the work.

D. Conduct recycling operations to ensure minimum interference with roads, streets, walkways, and other adjacent occupied and used facilities.

E. Do not sell or distribute recycled or salvaged items to the public from Port property.

3.2 ON-SITE MATERIALS SORTING

A. Coordinate with recycling and salvage vendors to determine if materials targeted for recycling will be source-separated or co-mingled on site. Space or other site-specific factors shall be considered.

B. Separate recyclables from non-recyclable waste materials, trash, and debris.

C. Provide one or more appropriately marked containers or bins for collecting and managing recyclable waste until it is removed from the work site.
   1. Post list of acceptable and unacceptable materials at each container and bin.
   2. Inspect containers and bins for contamination and remove contaminated materials if found.

END OF SECTION 017419

Port of Portland

Application No: _____
Page _____ of _____

SITE WASTE RECYCLING

CONTRACTOR: _____
PROJECT TITLE: _____
PROJECT NO: _____
LOCATION: _____

☐ Initial Pre-Construction Estimate ☐ Monthly Report (from: _____ to _____, 20____) ☐ Closeout Project Summary*

RECYCLED MATERIAL	Not generated at this site	Collected for offsite recycling (tons)	Collected for salvage/reuse (tons)	Collected for disposal (tons)	Destination (facility name and location)	Comments
Concrete						
Asphalt						
Metals (ferrous)						
Metals (non-ferrous)						
Land-Clearing Debris						
Wood						
Corrugated Cardboard						
Plastics						
Electronics and Electrical Components						
Other (specify)						
Other (specify)						

* For closeout project summary, include copies of documentation (receipts, bills of lading, etc.) with this report.

_____ Signature of Waste Coordination Certifying Accuracy of this Report

_____ Title

_____ Date

_____ Print Name

_____ Contact Telephone Number

See reverse for instructions and additional information.

Submit with Contractor's Monthly Request for Payment to Construction Contract Manager.

INSTRUCTIONS FOR COMPLETING SITE WASTE RECYCLE FORM

This form is to be used multiple times throughout the project as shown in the examples below.

MATERIAL SUMMARY ☒ Initial Pre-Construction Estimate

RECYCLED MATERIAL	Not generated at this site	Collected for offsite recycling (tons)	Collected for salvage/ reuse (tons)	Collected for disposal (tons)	
Concrete		X			**Pre-Construction Estimate:** Prior to beginning work at the site, submit a completed form that indicates the TYPES (not amounts) of site materials expected to be recycled, salvaged, or disposed of. Do this by marking the appropriate columns for each material as shown.
Asphalt	X				
Metals (ferrous)	X				
Metals (non-ferrous)	X				
Land-Clearing Debris		X			
Wood			X		
Corrugated Cardboard	X				
Plastics		X			
Electronics and Electrical Components	X				
Other (specify)				X	

MATERIAL SUMMARY ☒ Monthly Report (from: 4/1 to 4/30 , 2005)

RECYCLED MATERIAL	Not generated at this site	Collected for offsite recycling (tons)	Collected for salvage/ reuse (tons)	Collected for disposal (tons)	
Concrete		35			**Monthly Report:** Each month, submit a completed form that indicates both the TYPES and QUANTITIES (to the nearest 0.5 ton) of site materials that were actually recycled, salvaged, or disposed of during the monthly reporting period. Do this by marking the appropriate columns for each material as shown.
Asphalt	X				
Metals (ferrous)	X				
Metals (non-ferrous)	X				
Land-Clearing Debris		15			
Wood			1.5		
Corrugated Cardboard	X				
Plastics					
Electronics and Electrical Components	X				
Other (specify)				X	

MATERIAL SUMMARY ☒ Closeout Project Summary

RECYCLED MATERIAL	Not generated at this site	Collected for offsite recycling (tons)	Collected for salvage/ reuse (tons)	Collected for disposal (tons)	
Concrete		35			**Closeout Summary:** After all site work is completed, submit a completed form that indicates both the TYPES and QUANTITIES (to the nearest 0.5 ton) of site materials that were actually recycled, salvaged, or disposed of during the monthly reporting period. Do this by marking the appropriate columns for each material as shown. IN ADDITION, include documentation (weight receipts, bills of lading, etc.) that support the numbers reported.
Asphalt	X				
Metals (ferrous)	X				
Metals (non-ferrous)	X				
Land-Clearing Debris		65			
Wood			4.5		
Corrugated Cardboard	X				
Plastics		.5			
Electronics and Electrical Components	X				
Other (specify)				6.5	

- **Forms shall be filled out completely and legibly. All amounts shall be reported in tons.**

SAMPLE

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 REDLINE DRAWINGS

A. Upon completion of the work, and as a requirement of final acceptance, submit to the Port a drawing set showing all as-constructed changes and information.

B. See Section 013300, Submittal Procedures, for requirements.

1.2 CLEANUP

A. Remove debris from the staging and work area(s).

B. Thoroughly sweep paved areas prior to final acceptance.

C. Areas to be opened for aircraft operations shall be thoroughly swept clean and approved by the Port prior to opening.

1.3 CERTIFICATES OF FINAL APPROVAL

A. Submit originals or clearly readable copies of certificates of approval from the inspection authority prior to application for final payment.

END OF SECTION 017700

SECTION 024119 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes the following:
   1. Demolition and removal of selected horizontal joints, sealants, and backer rods, related to upper and lower terminal east roadway repair.

1.2 REFERENCES

A. ANSI: American National Standards Institute
   1. ANSI/ A10.6: Safety Requirements for Demolition Operations

B. NFPA: National Fire Protection Association
   1. NFPA 241: Standard for Safeguarding Construction, Alteration, and Demolition Operations

1.3 SUBMITTALS

A. Schedule of Selective Demolition Activities. Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
   2. Interruption of utility services. Indicate how long utility services will be interrupted.
   3. Coordination for shutoff, capping, and continuation of utility services.
   4. Use of elevator and stairs.
   5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
   6. Coordination of continuing occupancy of portions of existing building and of partial occupancy of completed work so that operations continue uninterrupted.
   7. Means of protection for items to remain and items in path of waste removal from building.

B. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.

C. Pre-Demolition Photographs or Videotapes: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations. Submit before work begins.

1.4 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI A10.6 and NFPA 241.

D. Pre-Demolition Meeting: Conduct meeting at project site to review methods and procedures related to selective demolition including, but not limited to, the following:
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
   5. Review areas where existing construction is to remain and requires protection.

1.5 PROJECT CONDITIONS

A. The areas of selective demolition are within an existing building with ongoing occupant activities. Conduct selective demolition so ongoing operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by the building occupants as far as practical.

C. Provide notification of discrepancies between existing conditions and drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the work.
   1. Known hazardous materials will be removed by the Port before start of the work.
   2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify the Port and tenant. The Port will remove hazardous materials under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

1.6 PROTECTION OF EXISTING WARRANTIES

A. Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report.

E. Engage a professional engineer to survey condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during selective demolition operations.

F. Perform surveys as the work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
   1. The Port will arrange to shut off indicated services/systems when requested by the Contractor.
   2. Arrange to shut off indicated utilities with utility companies.
   3. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
   4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.
      a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

A. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent areas to remain.
   1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
4. Cover and protect furniture, furnishings, and equipment that have not been removed.
5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified elsewhere.

B. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.

3.4 GENERAL SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated on the drawings. Use methods required to complete the work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. See Division 1 for fire suppression requirements and for welding, cutting, and burning permit.
5. Maintain adequate ventilation when using cutting torches.
6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. Comply with requirements in Division 1 regarding solid waste management and construction waste management.

B. Removed and Salvaged Items:
1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to the Port.
4. Transport items to the Port’s storage area.
5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:
   1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
   2. Pack or crate items after cleaning and repairing. Identify contents of containers.
   3. Protect items from damage during transport and storage.
   4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted, items may be removed to a suitable, protected storage location during selective demolition, cleaned, and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Except for items or materials indicated to be recycled, reused, salvaged, or reinstalled, remove demolished materials from project site and legally dispose of them in an EPA-approved landfill.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, finishes, and the following related materials:

1. Waterstops.
2. Vapor retarders.
3. Structural foam fill (geofoam).

1.2 DEFINITIONS

A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.

B. Form-Facing Material: Temporary structure or mold for the support of concrete while the concrete is setting and gaining sufficient strength to be self-supporting.

C. Formwork: The total system of support of freshly placed concrete, including the mold or sheathing that contacts the concrete, as well as supporting members, hardware, and necessary bracing.

D. W/C Ratio: The ratio by weight of water to cementitious materials.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Before submitting design mixtures, review concrete design mixture and examine procedures for ensuring quality of concrete materials. Require representatives of each entity directly concerned with cast-in-place concrete to attend, including the following:

a. Contractor's superintendent.
b. Ready-mix concrete manufacturer.
c. Concrete Subcontractor.
d. The Port.

2. Review the following items:

a. Mockups.
b. Special inspection and testing and inspecting agency procedures for field quality control.
c. Forms and form removal limitations.

d. Steel reinforcement installation.
e. Anchor placement and installation tolerances.
f. Cold- and hot-weather concreting procedures, and placement methods.
g. Curing procedures and materials.
h. Construction joints, control joints, isolation joints and joint fillers.
i. Penetrations and perimeter conditions, including expansion joint filler requirements.
j. Methods for achieving specified floor and slab flatness and levelness; floor and slab flatness and levelness measurement
k. Concrete repair procedures.
l. Concrete protection.
m. Bonding agents
n. Expansion Joints

1.4 SUBMITTALS

A. Product Data: For each type of product.

B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1. Reference General Structural Notes for mixing water to be withheld for later addition at Project site.

C. Steel Reinforcement Shop Drawings: For fabrication and installation.

1. Requirements:
   a. Provide details of fabrication, bending, and placement, prepared according to ACI SP-66 “ACI Detailing Manual.” Include special reinforcement required for openings through concrete structures.
   b. Shop Drawings shall contain sufficient detail and information to allow complete fabrication, bending, and placement of steel reinforcement without reference to the contract drawings either on the fabrication shop floor or at the project site.
   c. The detailer shall generate all shop drawings including fabrication and installation details from the structural and architectural drawings and specifications. The use of reproductions or photocopies of the contract drawings are not permitted. When CAD or REVIT files are provided, it is the responsibility of the detailers to remove all information not directly relevant to the creation of the placing drawings as well as all references to the outside sources of the files.
   d. Re-submittals shall clearly identify all revisions to previous submittals.
      1) Heavy ink clouded outlines (revision clouds) shall be drawn around revised areas of individual sheets.
      2) Architect/Engineer will not review information outside of revision clouds on resubmitted drawings.

2. Include plans for all slabs and elevations for all concrete beams, walls, and columns to show bar arrangement. Plans and elevations to include special reinforcement required for openings through concrete structures.

3. Show bar arrangement identifying size, shape, grade, and location of steel reinforcement. Include bar material, grade, sizes, lengths, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical and welded connections, tie spacing, hoop spacing, and supports for concrete reinforcement.

D. Formwork Shop Drawings: Prepared by, and signed and sealed by, a qualified professional engineer responsible for their preparation, detailing fabrication, assembly, and support of forms.

1. For exposed vertical concrete walls, indicate dimensions and form tie locations.
2. Indicate dimension and locations of construction and movement joints required to construct the structure in accordance with ACI 301.

    a. Locations of all exposed joint types are subject to approval of the Port.

3. Indicate chamfers, reveals and rustification strips.

E. Finish Schedule Shop Drawings: For each exposed concrete finish specified.

1. Include information on other shop drawings required as applicable, or separately, with plans and elevations as required to verify scope of finishes.
2. Show the following:

    a. Formed Surface Finish designation and final finish.
    b. Final finish for floors, including surface finish and tolerances.
    c. Curing process.
    d. Floor treatment.

3. Drawing Format: Use of Drawings is acceptable where PDF-writer is used. Hand drawing is prohibited.

F. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

1. Location of construction joints is subject to approval of the Port.

G. Qualification Data: For the following:

1. Installer: Include copies of applicable ACI certificates.

    a. Include installer’s project references with name of project and project architect. Include photos of finishes and documentation of floor finish tolerances achieved.

2. Ready-mixed concrete manufacturer.
3. Testing agency: Include copies of applicable ACI certificates.

H. Welding certificates.

I. Material Certificates: For each of the following, signed by manufacturers:

1. Cementitious materials.
2. Admixtures.
3. Form materials and form-release agents.

4. Steel reinforcement and accessories.
5. Curing compounds.
6. Floor and slab treatments.
7. Bonding agents.
8. Adhesives.
9. Joint-filler strips.
10. Repair materials.

J. Floor surface flatness and levelness measurements report, indicating compliance with specified tolerances.

K. Research Reports:

1. For concrete admixtures in accordance with ICC's Acceptance Criteria AC198.
2. For sheet vapor retarder/termite barrier, showing compliance with ICC AC380.

L. Field quality-control reports.

M. Minutes of preinstallation conference.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

1. Installer shall have a minimum five years' experience installing cast-in-place concrete similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Ready-Mix Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C94 requirements for production facilities and equipment.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

1. Store reinforcement to avoid contact with earth.

B. Structural Foam Fill: Store foam fill under cover to protect from sunlight according to manufacturer's recommendations.

1.7 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 301 and ACI 306.1 and as follows.

1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
2. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
3. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
4. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and ACI 305.1, and as follows:

1. Maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to furnish replacement sheet vapor retarder/termite barrier material and accessories for sheet vapor retarder/ termite barrier and accessories that do not comply with requirements or that fail to resist penetration by termites within specified warranty period.

1. Warranty Period: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Concrete Formwork: Design, engineer, erect, shore, brace, and maintain formwork, shores, and reshores in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design wood panel forms in accordance with APA's "Concrete Forming Design/Construction Guide."
2. Design formwork to limit deflection of form-facing material to 1/240 of center-to-center spacing of supports.

B. Design, engineer, erect, shore, brace, and maintain insulating concrete forms in accordance with ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads, so that resulting concrete conforms to the required shapes, lines, and dimensions.

1. Design cross ties to transfer the effects of the following loads to the cast-in-place concrete core:

    a. Wind Loads: As indicated on Drawings.

        1) Horizontal Deflection Limit: Not more than 1/360 of the wall height.

2.2 CONCRETE, GENERAL

A. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301.
2. ACI 117.

2.3 FORM-FACING MATERIALS

A. Smooth-Formed Finished Concrete: Form-facing panels that provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.

1. Plywood, metal, or other approved panel materials.
2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:

B. Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. Provide lumber dressed on at least two edges and one side for tight fit.

C. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.

D. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.

1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

E. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic or metal form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

2.4 STEEL REINFORCEMENT AND ACCESSORIES

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 60 percent.

B. Reinforcing Bars: Types indicated on Drawings.

C. Joint Dowel Bars: ASTM A615, Grade 60, plain-steel bars, cut true to length with ends square and free of burrs.

D. Steel Tie Wire: Plain finished, ASTM A1064, annealed steel, not less than 0.0508 inch in diameter.

E. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete.

1. Use CRSI Class 1 plastic-protected steel wire, CRSI Class 2 stainless-steel bar supports or precast dobies.

F. Mechanical Splice Couplers: ACI 318 Type 1, same material of reinforcing bar being spliced; form saver type tension-compression type.

G. Welded wire reinforcement (WWR/WWM) shall be plain steel wire conforming to ASTM A185. The mesh style shall be as shown in drawings. Yield strength shall be a minimum of 65,000 psi (450 MPa)

2.5 CONCRETE MATERIALS

A. Source Limitations:

1. Obtain all concrete mixtures from a single ready-mixed concrete manufacturer for entire Project.
2. Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant.
3. Obtain aggregate from single source.
4. Obtain each type of admixture from single source from single manufacturer.

B. Cementitious Materials:

1. Portland Cement: ASTM C150, Type I/II
2. Fly Ash: ASTM C618, [Class F or C.
3. Slag Cement: ASTM C989, Grade 100 or 120.
4. Blended Hydraulic Cement: ASTM C595, Type IS (<70) (Portland blast-furnace slag), Type IP (Portland-pozzolan), Type IL (Portland-limestone), Type IT (S<70) (ternary blended) cement.

C. Norma-Weight Aggregates: ASTM C33.

1. Maximum Coarse-Aggregate Size: As indicated on the Drawings.
2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.

D. Lightweight Aggregate: ASTM C330; size as indicated on the Drawings.

E. Air-Entraining Admixture: ASTM C260.

F. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.

1. Water-Reducing Admixture: ASTM C494, Type A.
2. Retarding Admixture: ASTM C494, Type B.
3. Water-Reducing and Retarding Admixture: ASTM C494, Type D.
4. High-Range, Water-Reducing Admixture: ASTM C494, Type F.
5. High-Range, Water-Reducing and Retarding Admixture: ASTM C494, Type G.
6. Plasticizing and Retarding Admixture: ASTM C1017, Type II.
7. Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete and complying with ASTM C494, Type C.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

        1) BASF Corp. - Construction Chemicals.
        2) Euclid Chemical Company (The); an RPM company.
        3) GCP Applied Technologies Inc. (formerly Grace Construction Products).
        4) Sika Corporation.
        5) Or equal.

8. Non-Set-Accelerating Corrosion-Inhibiting Admixture: Commercially formulated, non-set-accelerating, anodic inhibitor or mixed cathodic and anodic inhibitor; capable of forming a protective barrier and minimizing chloride reactions with steel reinforcement in concrete.

    a. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

        1) BASF Corp. - Construction Chemicals.
        2) Euclid Chemical Company (The); an RPM company.
        3) GCP Applied Technologies Inc. (formerly Grace Construction Products).
        4) Sika Corporation.
        5) Or equal.

G. Water: ASTM C94 and potable and ASTM C1602.

2.6 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. when dry.

B. Moisture-Retaining Cover: ASTM C171, polyethylene film or white burlap-polyethylene sheet.

C. Water: Potable.

D. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C309, Type 1, Class B, dissipating.

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

    a. BASF Corp. - Construction Chemicals.
    b. ChemMasters, Inc.
    c. Dayton Superior.
    d. Euclid Chemical Company (The); an RPM company.
    e. L&M Construction Chemicals, Inc.
    f. W.R. Meadows, Inc.
    g. Or equal.

2.7 RELATED MATERIALS

A. Bonding Agent: ASTM C1059, Type II, nonredispersible, acrylic emulsion or styrene butadiene.

B. Epoxy Bonding Adhesive: ASTM C881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:

1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

2.8 REPAIR MATERIALS

A. Repair Underlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/8 inch and that can be feathered at edges to match adjacent floor elevations.

1. Cement Binder: ASTM C150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of underlayment manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by underlayment manufacturer.
4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C109.

B. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch and that can be filled in over a scarified surface to match adjacent floor elevations.

1. Cement Binder: ASTM C150, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C219.
2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch or coarse sand as recommended by topping manufacturer.

4. Compressive Strength: Not less than 5000 psi at 28 days when tested according to ASTM C109.

2.9 CONCRETE MIXTURES, GENERAL

A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.

1. Reference the General Structural Notes for compressive strength, maximum W/C ratio, and air content.

B. Cementitious Materials: Refer to General Structural Notes.

C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.

D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use admixtures indicated on Drawings, and as required for placement and workability
    a. Use water-reducing admixture in concrete, for placement and workability.
    b. Use water-reducing admixture in pumped concrete
2. Use high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
3. Use-retarding admixture and water reducing when required by high temperatures, low humidity, or other adverse placement conditions.
4. Use corrosion-inhibiting admixture in concrete mixtures where indicated.
5. Use permeability-reducing admixture in concrete mixtures where indicated.

2.10 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

2.11 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C94, and furnish batch ticket information.

1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verification of Conditions:

1. Before placing concrete, verify that installation of concrete forms, accessories, and reinforcement, and embedded items is complete and that required inspections have been performed.

2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 FORMWORK INSTALLATION

A. Design, erect, shore, brace, and maintain formwork, according to ACI 301 and approved formwork drawings, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.

B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.

C. Limit concrete surface irregularities, designated by ACI 347 and ACI 117 as abrupt or gradual, as follows:

1. Class A, Surface Finish-3.0: 1/8 inch
2. Class B, Surface Finish-2.0: 1/4 inch.
3. Class C: 1/2 inch.
4. Class D, Surface Finish-1.0: 1 inch.

D. Construct forms tight enough to prevent loss of concrete mortar.

E. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.

1. Install keyways, reglets, dovetail slots, recesses, and the like, for easy removal.
2. Do not use rust-stained steel form-facing material.

F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.

H. Do not chamfer exterior corners and edges of permanently exposed concrete unless shown in the drawings.

I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.

J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.

K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.

L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

3.3 EMBEDDED ITEM INSTALLATION

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete.

1. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
2. Install anchor rods, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
3. Clean embedded items immediately prior to concrete placement.

B. Penetrating Items: Expansion joint material at penetrations.

1. Place expansion joint material where indicated. Refer to “Isolation Joints” in “Joints” Article below.
2. All plumbing piping, HVAC and sewerage piping penetrating concrete slabs and shall have expansion joint material at interface with concrete. No piping shall be embedded in concrete without expansion joint material.

3.4 REMOVING AND REUSING FORMS

A. Refer to General Structural Notes for removal time.

B. Clean and repair surfaces of forms to be reused in the Work.

1. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces.
2. Apply new form-release agent.

C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints.

1. Align and secure joints to avoid offsets.
2. Do not use patched forms for exposed concrete surfaces unless approved by the Port.

3.5 STEEL REINFORCEMENT INSTALLATION

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.

C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.

1. Weld reinforcing bars according to AWS D1.4, where indicated.

D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

E. Install welded-wire reinforcement in longest practicable lengths on bar supports spaced to minimize sagging. Lap edges and ends of adjoining sheets at least one mesh spacing. Offset laps of adjoining sheet widths to prevent continuous laps in either direction. Lace overlaps with wire.

3.6 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by the Port.

1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete and complying with cover requirements indicated.
3. Locate joints for beams, slabs, joists, and girders in the middle third of spans and at approved locations where exposed. Offset joints in girders a minimum distance of twice the beam width from a beam-girder intersection.
4. Space vertical joints in walls as indicated on Drawings. Unless otherwise indicated on Drawings, locate vertical joints beside piers integral with walls, near corners, and in concealed locations where possible.
5. Locate horizontal joints in walls and columns at underside of floors, slabs, beams, and girders and at the top of footings or floor slabs.
6. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

C. Contraction Joints in Slabs-on-Grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth as indicated.

1. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch-wide joints into concrete when cutting action does not tear, abrade, or otherwise damage surface and before concrete develops random contraction cracks.
2. Grooved Joints: Form control joints after initial floating by grooving and finishing each edge of joint to a radius of 1/8 inch. Repeat grooving of control joints after applying surface finishes. Eliminate groover tool marks on concrete surfaces.

D. Isolation Joints in Slabs-on-Grade: After removing formwork, install joint-filler strips at slab junctions with vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

1. Install joint-filler strips in lengths as long as practicable. Where more than one length is required, lace or clip sections together.
2. Extend joint-filler strips full width and depth of joint, terminating flush with finished concrete surface unless otherwise indicated on Drawings.
3. Terminate full-width joint-filler strips not less than 1/2 inch or more than 1 inch below finished concrete surface, where joint sealants, specified in Section 07 92 00 "Joint Sealants," are indicated.

E. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

3.7 CONCRETE PLACEMENT

A. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness.

1. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
2. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
3. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301.
    a. Do not use vibrators to transport concrete inside forms.
    b. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches into preceding layer.
    c. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity.
    d. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.

C. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.

1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
2. Maintain reinforcement in position on chairs during concrete placement.
3. Screed slab surfaces with a straightedge and strike off to correct elevations.
4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface.
6. Do not further disturb slab surfaces before starting finishing operations.

3.8 FINISHING FORMED SURFACES

A. As-Cast Concrete Finishes: As-cast concrete texture imparted by form-facing material, as follows:

1. Rough-Formed Finish: ACI 301 Surface Finish SF-1.0.

    a. Finish: As-cast. Tie holes patched.
    b. Remove fins and other projections larger than 1-inch that exceed specified limits on formed-surface irregularities.
    c. Surface Tolerance: ACI 117, Class C or D.
    d. Application: Apply to concrete surfaces not exposed to public view.

2. Smooth-Formed Finish: ACI 301 Surface Finish SF-2.0 and SF-3.0.

    a. Finish: Panel joints and tie-hole arranged in an orderly and symmetrical manner with a minimum seams. Minimize surface imperfections.
    b. Repair and patch tie holes and defects with materials and methods approved by the Port.
    c. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
    d. Surface Tolerance by Application:

        1) ACI 117 Class A: Where exposed to public view.
        2) ACI 117 Class B: At other finishes are scheduled or covering directly placed on concrete.

B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.9 FINISHING FLOORS AND SLABS

A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Scratch Finish:

1. While still plastic, texture concrete surface that has been screeded and bull-floated or darbied.
2. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
3. Apply scratch finish to surfaces as indicated

C. Float Finish:

1. Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats.

2. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture complying with ACI 117 for conventional concrete.
3. Apply float finish to surfaces to receive trowel finish

D. Trowel Finish:

1. After applying float finish, apply first troweling and consolidate concrete by hand or power-driven trowel.
2. Continue troweling passes and restraighten until surface is free of trowel marks and uniform in texture and appearance.
3. Grind smooth any surface defects that would telegraph through applied coatings or floor coverings. Revise locations of trowel finish in first subparagraph below to suit Project.
4. Apply a trowel finish to surfaces exposed to view [or] [to be covered with resilient flooring, carpet, ceramic or quarry tile set over a cleavage membrane, paint, or another thin-film-finish coating system] <Insert locations>.
5. Finish surfaces to the following tolerances, according to ASTM E1155, for a randomly trafficked floor surface:

    a. Suspended Slabs:

        1) Finish and measure surface so gap at any point between concrete surface and an unleveled, freestanding, 10-ft.-long straightedge resting on two high spots and placed anywhere on the surface does not exceed 1/8 inch.

E. Trowel and Fine-Broom Finish: Apply a first trowel finish to surfaces indicated. While concrete is still plastic, slightly scarify surface with a fine broom.

1. Comply with flatness and levelness tolerances for trowel-finished floor surfaces.

F. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.

1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with the Port before application.

G. Slip-Resistive Finish: Before final floating, apply slip-resistive aluminum granule finish where indicated and to concrete stair treads, platforms, and ramps. Apply according to manufacturer's written instructions and as follows:

1. Uniformly spread 25 lb/100 sq. ft of dampened slip-resistive aluminum granules over surface in one or two applications. Tamp aggregate flush with surface, but do not force below surface.
2. After broadcasting and tamping, apply float finish.
3. After curing, lightly work surface with a steel wire brush or an abrasive stone and water to expose slip-resistive aluminum granules.

3.10 MISCELLANEOUS CONCRETE ITEM INSTALLATION

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

3.11 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
   1. Comply with ACI 301 and ACI 306.1 for cold-weather protection and ACI 305.1 for hot-weather protection during curing.
   2. Maintain moisture loss no more than 0.2 lb/sq. ft. x h before and during finishing operations.

B. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.

C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.

D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:

   1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:

      a. Water.
      b. Continuous water-fog spray.
      c. Absorptive cover, water saturated and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

   2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches, and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

      a. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive floor coverings.
      b. Moisture cure or use moisture-retaining covers to cure concrete surfaces to receive penetrating liquid floor treatments.
      c. Cure concrete surfaces to receive floor coverings with either a moisture-retaining cover or a curing compound that the manufacturer certifies does not interfere with bonding of floor covering used on Project.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

    a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

3.12 TOLERANCES

A. Conform to ACI 117.

3.13 JOINT FILLING

A. Prepare, clean, and install joint filler according to manufacturer's written instructions.

1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.

B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joints clean and dry.

C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

3.14 CONCRETE SURFACE REPAIRS

A. Defective Concrete:

1. Repair and patch defective areas when approved by the Port.
2. Remove and replace concrete that cannot be repaired and patched to the Port's approval.
3. Prior to repairing defective areas, Contractor shall provide mockup for the Port’s review of materials and methods for matching.

B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 sieve, using only enough water for handling and placing.

C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.

1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.

2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by the Port.

D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.

1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
2. After concrete has cured at least 14 days, correct high areas by grinding.
3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

E. Perform structural repairs of concrete, subject to the Port's approval and Structural Engineer of Record’s review, using epoxy adhesive and patching mortar.

F. Repair materials and installation not specified above may be used, subject to Port's approval.

3.15 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.

1. Steel reinforcement placement.
2. Steel reinforcement welding.
3. Headed bolts and studs.
4. Verification of use of required design mixture.
5. Concrete placement, including conveying and depositing.
6. Curing procedures and maintenance of curing temperature.
7. Verification of concrete strength before removal of shores and forms from beams and slabs.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and to submit reports.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C172/C172M shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional **150** cu. yd. or fraction thereof.

    a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.

2. Slump: ASTM C143/C143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
3. Slump Flow: ASTM C1611; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
4. Air Content: ASTM C231, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
5. Concrete Temperature: ASTM C1064; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
6. Compression Test Specimens: ASTM C31.

    a. Cast and laboratory cure four standard cylinder specimens for each composite sample.
    b. Cast and field cure additional cylinder specimens for each composite sample as required by Contractor’s sequence, including but not limited to **[**cold or hot weather concreting. Contractor is responsible for determining number of additional specimens required.

7. Compressive-Strength Tests: ASTM C39; test one laboratory-cured specimen at 7 days and three specimens at 28 days.

    a. Test one field-cured specimens at 7 days and three specimens at 28 days.
    b. A compressive-strength test shall be the average compressive strength from a set of three specimens obtained from same composite sample and tested at age indicated.

8. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

9. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
10. Test results shall be reported in writing to the Port, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
11. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by the Port but will not be used as sole basis for approval or rejection of concrete.
12. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by the Port. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42 or by other methods as directed by the Port.
13. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
14. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

END OF SECTION 033000

SECTION 051200 - STRUCTURAL STEEL FRAMING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Structural steel.
2. Grout.
3. Shear stud connectors

1.2 DEFINITIONS

A. Structural Steel: Elements of the structural frame as described in ANSI/AISC 303 and indicated on the Structural Drawings.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: Show fabrication of structural steel.
1. Requirements:
a. The steel detailer shall generate all Shop Drawing fabrication and installation details from the Contract Documents, including both Structural and Architectural Drawings (collectively referred to as Drawings) and the Specifications.
b. The use of, reproductions or photocopies of the Drawings is not permitted.
c. Shop Drawings shall contain sufficient detail and information for complete fabrication and erection without reference to the Drawings either in fabrication or in erection on-site.

d. Where CAD, REVIT or other digital files are provided, it is the responsibility of the detailer to remove all information not directly relevant to the creation of Shop Drawings including the removal all references to files sources.
e. Resubmittals: Clearly identify all revisions to previous submittals.
1) Draw clouded outlines (revision clouds) around revised items or areas of individual sheets.
2) Information outside of revision clouds will not be reviewed.

2. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld.
4. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
5. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
6. Identify members not to be shop primed.
7. Show orientation of hollow structural steel members that are exposed to view for locating seams.

C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs):

1. Provide in accordance with AWS D1.1 for each welded joint qualified by testing, including the following:

a. Power source (constant current or constant voltage).
b. For heavy sections, applicable manufacturer's certifications that the filler metal meets the supplemental notch toughness requirements, as applicable.

D. Delegated-Design Submittal: For structural steel elements and connections indicated on Drawings as delegated, or deferred, include analysis data signed and sealed a qualified Professional Engineer, as defined in "Quality Assurance" Article responsible for their preparation.

E. Design Calculations: Submit design calculations, signed and sealed by a qualified Professional Engineer as defined in "Quality Assurance" Article, employed by the Contractor, for the following:

1. Connections that differ from that indicated in the contract documents.
2. Requests for substitution of member sizes or material grades.
3. Modification of the strength or configuration of structural framing for the convenience to accommodate the erection sequence, construction equipment, and/or material availability.

F. Structural Steel Over Occupied Space: Provide erection plan detailing sequence and methods of erection.

1. The Contractor shall provide a comprehensive engineering analysis, signed and sealed by a qualified Professional Engineer as defined in "Quality Assurance" Article, verifying that the structure erected over occupied space will comply with the current edition of the applicable, governing building code during all phases of construction.

G. Qualification Data: For firms and persons specified in the “Quality Assurance” Article to demonstrate their capabilities and experience. If requested, include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

H. Welding Certificates.

I. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.

J. Mill test reports for structural steel materials, including chemical and physical properties.

K. Product Test Reports: Signed by manufacturers certifying that the following products comply with requirements:

1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
2. Direct-tension indicators.
3. Tension-control, high-strength bolt-nut-washer assemblies.
4. Shear stud connectors.
5. Shop primers.
6. Grout.

L. Source quality-control test reports.

M. Field quality-control test reports.

N. Survey of existing conditions

O. Surveys: Submit certified copies of each survey conducted by a registered land surveyor, showing elevations and locations of base plates and anchor bolts to receive structural steel, and final elevations and locations for major members. Indicate discrepancies between actual installation and Contract Documents.

P. Quality Assurance Agency Documents: The Agency responsible for quality assurance for members part of the SFRS shall submit QA documents as outlined in AISC 341 Chapter J.

1.6 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category BU or is accredited by the IAS Fabricator Inspection Program for Structural Steel (Acceptance Criteria 172).

B. Installer Qualifications: The installer shall have at least five years’ experience in similar type and size of project.

C. Shop-Painting Applicators: Qualified in accordance with AISC's Sophisticated Paint Endorsement P1 or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."

D. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.1.

1. Welding and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.

E. Inspection and Nondestructive Testing Personnel: Visual welding inspection, and NDT (including ultrasonic testing technicians) shall be conducted by personnel qualified in accordance with AWS D1.8.

F. Professional Engineer Qualifications: A structural engineer who is licensed in the Project jurisdiction (State) and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for projects with structural steel similar in material, design, and extent to those indicated for the Project.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.

2. Clean and relubricate bolts and nuts that become dry or rusty before use.

3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F3125, Grade F1852 bolt assemblies and for retesting bolt assemblies after lubrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Comply with provisions of the following specifications and documents using the edition referenced in the applicable building code or current edition where no edition is referenced:

1. AISC 303 "Code of Standard Practice for Steel Buildings and Bridges"
2. AISC 360 "Specification for Structural Steel Buildings”
3. RCSC's "Specification for Structural Joints Using High-Strength Bolts."
4. AISC 358 “Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications.”

2.2 STRUCTURAL-STEEL MATERIALS

A. Structural Steel Shapes and Bars: Refer to the General Structural Notes.

B. Welding Electrodes: Comply with AWS requirements and as indicated on Drawings.

2.3 BOLTS AND CONNECTORS

A. High-Strength A325 and A490 Bolts, Nuts, and Washers: ASTM F3125, Grade A325 and A490 respectively, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers; with plain finish.

1. Direct-Tension Indicators: ASTM F959, Type 325-1/ Type 490-1 respectively, compressible-washer type with plain finish.

B. Zinc-Coated High-Strength A325 Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.
2. Direct-Tension Indicators: ASTM F959, Type 325-1, compressible-washer type with mechanically deposited zinc coating finish.

C. Tension-Control, High-Strength Bolt-Nut-Washer Assemblies: ASTM F3125, Grade F1852, Type 1, heavy-hex head assemblies, consisting of steel structural bolts with splined ends; ASTM A563, Grade DH, heavy-hex carbon-steel nuts; and ASTM F436, Type 1, hardened carbon-steel washers.

1. Finish: Mechanically deposited zinc coating.

D. Shear Stud Connectors: ASTM A108, AISI C-1015 through C-1020, headed-stud type, cold-finished carbon steel; AWS D1.1, Type B.

E. Threaded Shear Stud Connectors: ASTM A29, grades 1010 through 1020, fully threaded externally.

2.4 RODS

A. Threaded Rods: As indicated on the drawings.

1. Nuts: ASTM A563 heavy hex carbon steel.
2. Washers: ASTM A36 carbon steel.
3. Finish: Plain**.**

2.5 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and non-staining, mixed with water to consistency suitable for exterior and interior applications and a 30-minute working time.

2.6 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel according to ASTM A6 and maintain markings until structural steel framing has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.
6. Sandblast all exposed surfaces of weathering steel. Sandblasting shall be performed in accordance with SSPC-SP6 “Commercial Blast Cleaning” SSPC’s Steel Structures Painting Manual. The appearance of the blast cleaned surface shall approximate Pictorial Standard Sa 2 of SSPC-VIS 1, “Pictorial Surface Preparation Standards for Painting Steel Surfaces” except no mill scale particles shall be allowed; only rust or mill scale stains down in the profile will be allowed. The use of acids to remove scale and stains in the field will not be permitted.

    a. Exposed surfaces of steel contaminated with stains, oil, or foreign material after the above sand blasting cleaning process shall be promptly cleaned as directed by the Owner to preserve conditions for uniform weathering of steel.

7. Store weathering steel in a location which will prevent uneven weathering. Store on blocking to prevent contact with ground.

B. Re-Entrant Corners: Provide 1/2-inch radius at all re-entrant corners, unless noted otherwise.

C. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.

D. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

E. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

F. Cleaning: Clean and prepare steel surfaces that are to remain unpainted in accordance with SSPC-SP 1.

G. Holes: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members.

1. Cut, drill, or punch holes perpendicular to steel surfaces. Do not enlarge holes by burning. Thermal cutting of holes is permitted with a surface roughness profile not exceeding 1,000 mico-inches as defined in ASME B46.1.
2. Base-Plate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

2.7 SHOP CONNECTIONS

A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using High Strength Bolts" for type of bolt and type of joint specified.

B. Weld Connections: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work.

1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

2. Continuously seal joined members exposed to weather by continuous welds.

C. Erection Connections: Place holes, plates, or other attachments required by the Erector so as not to interfere with or cause any other detrimental effect to structural members or their connections.

2.8 GALVANIZING

A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel in accordance with ASTM A123.

1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

2. Weep holes shall be provided at exterior closed sections where moisture may accumulate. Sizes shall be in accordance with ASTM A123.

3. Galvanize assemblies outside the weather barrier.

4. Materials for galvanizing shall be geometrically suitable for galvanizing as specified in ASTM A384 and A385. For built-up members, assemblies shall be fabricated as required to limit warping and distortion.

B. Bolts, nuts and washers, and iron and steel hardware components shall be galvanized by the hot-dip process in accordance with ASTM A153.

C. Surface Preparation: Steel shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products, and other foreign matter: Clean steel in accordance with Steel Structures Painting Council (SSPC) SSPC-SP-6, “Commercial Blast Cleaning.”

D. Coating Requirements:

1. Weight: The weight of the galvanized coating shall conform to Table 2 of ASTM A123 or Table 1 of ASTM A153, as appropriate.

2. Surface Finish: The galvanized coating shall be continuous, adherent, as smooth and evenly distributed as possible, and free from any defect that is detrimental to the stated end use of the coated article.
   a. Determine the integrity of the coating by visual inspection and coating thickness measurements.
   b. Where slip factors are required for slip-critical connections, these shall be obtained after galvanizing by suitable treatment of the faying surfaces in accordance with the latest edition of the Specification for Structural Joints Using ASTM A325 or A490 bolts as approved by the Research Council on Structural Connections of the Engineering Foundation.

3. Adhesion: The galvanized coating shall be sufficiently adherent to withstand normal handling during transport and erection.

E. Touch-Up and Repair

1. Mechanical Damage: Repair areas damaged by welding; flame cutting; or during handling, transport, or erection in accordance with ASTM A780 by one of the following methods:

   a. Cold Galvanizing Compound (zinc-rich paint): Per Part 2, "Primer" Article, in accordance with ASTM A780, Annex A2.

      1) Spray- or brush-apply the touch-up paint in multiple coats to a dry film that matches the hot-dip galvanizing thickness. Provide minimum thickness of at least 6 mils (4 mils for material less than 1/4-inch thick). Apply a finish coat of aluminum paint to provide a color blend with the surrounding galvanizing.
      2) Verify coating thickness by measurements with a magnetic or electromagnetic gauge.

   b. Zinc-Based Solder: In accordance with ASTM A780, Annex A1.

      1) Apply the zinc-based solder that matches the hot-dip galvanizing thickness. Provide a minimum thickness of 4 mils (3 mils for material less than 1/4-inch thick).
      2) Verify coating thickness by measurements with a magnetic or electromagnetic gauge.

   c. Flame-Sprayed Zinc (metalizing): In accordance with ASTM A780, Annex A3.

      1) Apply sprayed zinc coating that matches the hot-dip galvanizing thickness with a minimum thickness of 4 mils (3 mils for material less than 1/4-inch thick).

2. Wet Storage Stain:

a. Remove any wet storage stain if formed and discovered prior to leaving the galvanizer's plant unless late pick up or acceptance of delivery has necessitated the material being stored in unfavorable conditions. Remove wet storage stain before installation so that premature failure of the coating will not occur. Remove wet storage stain as follows:

1) Arrange the object so that their surfaces dry rapidly.
2) Remove light deposits by means of a stiff bristle (not wire) brush. Heavier deposits are to be removed by brushing with a 5 percent solution of sodium or potassium dichromate with the addition of 0.1 percent by volume of concentrated sulfuric acid. Apply with a stiff bristle brush, and leave for approximately 30 seconds before thoroughly rinsing and drying.
3) Alternatively, a proprietary product, which is intended for this purpose, may be used according to manufacturer's recommendations.
4) Check coating thickness in the affected areas to ensure that the zinc coating remaining after the removal of wet storage stain is sufficient to meet or exceed the requirements of the specification.

2.9 SHOP PRIMING

A. Steel Primer(s):
1. Insert proprietary primers if required as part of special coating or painting system. Coordinate primer selection with surface preparation and topcoats, requirements for slip-critical joints, and limitations of sprayed fire-resistive materials. Insert color if required.

2. SSPC-Paint 23, latex primer.

3. Fabricator's standard, fast-curing, lead- and chromate-free, nonasphaltic, rust-inhibiting primer complying with MPI#79 and compatible with topcoat.
   a. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
4. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments that is resistant to flash rusting when applied to cleaned steel, complying with MPI#107 and compatible with topcoat.
5. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

B. Shop prime steel surfaces except the following:

1. Surfaces embedded in and in direct contact with concrete, mortar or grout. Extend priming of partially embedded members to a depth of 2 inches.
2. Surfaces to be field welded.
3. Faying surfaces of slip-critical connections to be high-strength bolted.
4. Surfaces to receive sprayed fire-resistive materials.
5. Galvanized surfaces.
6. Corrosion-resisting (weathering) steel surfaces.
7. Surfaces enclosed in interior construction.

C. Surface Preparation: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards:

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."
3. SSPC-SP 7 (WAB)/NACE WAB-4, "Brush-Off Blast Cleaning."
4. SSP C-SP 14 (WAB)/NACE WAB-8, "Industrial Blast Cleaning."
5. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."
6. SSPC-SP 6 (WAB)/NACE WAB-3, "Commercial Blast Cleaning."
7. SSPC-SP 10 (WAB)/NACE WAB-2, "Near-White Blast Cleaning."
8. SSPC-SP 5 (WAB)/NACE WAB-1, "White Metal Blast Cleaning."
9. SSPC-SP 8, "Pickling."

D. Surface Preparation of Galvanized Steel: Prepare galvanized-steel surfaces for shop priming by thoroughly cleaning steel of grease, dirt, oil, flux, and other foreign matter, and treating with etching cleaner or in accordance with SSPC-SP 16.

E. Priming: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5 mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces.

1. Stripe paint corners, crevices, bolts, welds, and sharp edges.
2. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

2.10 SOURCE QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspection agency to inspect shop welds and high-strength bolted connections and tests, and to prepare test reports as indicated in the Drawings and in accordance with “Testing and Inspection” in Part 3.

B. Fabrication Inspection: When approved by the Building Official, the Port, full-time special inspection in the fabrication shop by the Owner's Testing Agency may be waived, subject to the following:

1. The Fabricator participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant.
2. All shop inspection is provided by the Contractor, per the requirements herein, and is documented. Reports and test results are to be available for the Owner's Inspector to review.
3. A specific quality control plan for this project shall be developed and submitted to the Port for approval prior to the prefabrication/pre-erection meeting.
4. Periodic inspection by the Owner's Inspection Agency is allowed by the Fabricator.
5. Certified Plants: Continuous plant inspection is not required at plants producing prefabricated steel products which are certified by the Building Official.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify, with certified steel erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of existing conditions. Include bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place, unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction and structural-steel framing until cast-in-place concrete has attained its design compressive strength.

3.3 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.

B. Baseplates Bearing Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.

2. Weld plate washers to top of baseplate.

3. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.

4. Promptly pack shrinkage-resistant grout solidly between bearing surfaces and plates, so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for grouting.

C. Maintain erection tolerances of structural steel within ANSI/AISC 303.

D. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.

1. Level and plumb individual members of structure. Slope roof framing members to slopes indicated on Drawings.

2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection, unless it conforms to the requirements of AISC 360 Specification Sections M2.2 and M2.5, and is approved by the Pot. Finish thermally cut sections within smoothness limits in AWS D1.1.

G. Do not enlarge unfair holes in members by burning or using drift pins.

H. Reaming: Light drifting will be permitted to draw the parts together, but drifting to match unfair holes will not be permitted. Any enlargement of holes necessary to make connections in the field shall be done by reaming with twist drills, care being taken not to weaken the adjoining metal. If, in the judgement of the Port, the extent of the reaming is such that holes cannot be properly filled or accurately adjusted after reaming, the faulty member shall be discarded and replaced with a new one, and all costs and expenses resulting therefrom shall be paid by the Contractor.

I. Cutting and Fitting: No cutting of sections, either flanges, webs, stems or angles shall be done by the Contractor without the consent of the Port, unless this cutting is particularly specified or shown on the drawings.

J. Shear Stud Connectors: Prepare steel surfaces as recommended by manufacturer of shear stud connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1 and manufacturer's written instructions.

K. Corrective Measures

1. Any errors in locations or inaccuracies in the setting of anchor bolts, base plates, bearing plates, or other items of attachment or support for steel work shall be reported to the Port, and shall be corrected in a manner subject to the approval of the Port.

2. Any misfits due to errors in fabrication shall be reported immediately to the Port, along with proposed method of correction of same and Port approval obtained before proceeding with corrective measures.

3. No members shall be cut or burned without specific approval in writing.

4. Bolted or welded connections, joints, or fastenings, which are classified as defective in the opinion of the Port, shall be corrected by the Contractor in a manner subject to the Port’s approval.

3.4 FIELD CONNECTIONS

A. High-Strength Bolts: Install high-strength bolts in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts" for bolt and joint type specified.

B. Weld Connections: Comply with AWS D1.1 for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

1. Comply with ANSI/AISC 303 and ANSI/AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.

2. Remove backing bars or runoff tabs, unless noted otherwise, back gouge, and grind steel smooth.

3. Assemble and weld built-up sections by methods that maintain true alignment of axes without exceeding tolerances in ANSI/AISC 303 for mill material.

C. Erection Connections, etc: Place holes, plates, or other attachments required by the Erector so as not to interfere with or cause any other detrimental effect to structural members or their connections.

1. Holes and attachments are not permitted in the “Protected Zone” as defined herein, and in the Drawings.

3.5 FIELD QUALITY CONTROL

A. All structural steel is subject to special inspection.

B. Testing and Inspection Agency: Owner will engage a qualified independent testing and inspecting agency to provide inspection and required tests, and to prepare test reports as indicated in the Drawings.

C. Testing and Inspecting Agency Requirements:

1. Special Inspector: Testing Agency shall provide qualified "Special Inspector" who will perform the inspection services.
2. Testing agency will conduct and interpret tests, and state in each report whether test specimens comply with or deviate from requirements.
3. Testing agency will notify the Owner immediately of discrepancies in the work which are time-critical or affect the construction progress.
4. Personnel inspecting connections part of the SFRS shall be qualified per AISC 341.

D. Contractor Responsibilities Related to Shop and Field Inspections:

1. Maintain complete records of all quality control and testing performed by the Contractor.
2. Furnish all electrical power, turning or moving of members, hoisting, staging, and other facilities required for inspection.
3. Provide testing agency with access to places where structural steel work is being fabricated and erected so required inspection and testing can be accomplished.

4. Correct deficiencies in, or remove and replace structural steel that inspections and test reports indicate do not comply with specified requirements.
5. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected work with specified requirements.
6. Grant Inspectors full authority to inspect all material and work that fails to conform in every respect to these specifications.
7. When required by Owner's Independent Testing Agency or Contractor's engaged inspection organization, make adequate platforms available to the Inspector for the purpose of checking high-strength bolts and welds. Scaffolding shall be provided to ensure safe performance of this operation.

E. Shop and Field Tests and Inspections: Inspections and testing shall be performed as indicated in the Contract Documents. Additional requirements are as follows:

1. Bolted Connections: Inspect (and test as required) bolted connections in accordance with RCSC's "Specification for Structural Joints Using High-Strength Bolts."

2. Welded Connections: Visually inspect field welds in accordance with AWS D1.1.

a. In addition to visual inspection, test and inspect field welds in accordance with AWS D1.1 and the following inspection procedures, at testing agency's option:

1) Liquid Penetrant Inspection: ASTM E165.
2) Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
3) Radiographic Inspection: ASTM E94 and ASTM E142; minimum quality level "2-2T."
4) Ultrasonic Inspection: ASTM E164.

b. Provide testing and inspection of welds for all connections part of the SFRS in accordance with AISC 341 and AWS D1.8.

3.6 REPAIRS

A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing, and repair galvanizing to equivalent thickness of galvanized finish and complying with ASTM A780.

B. Touchup, Primers: Immediately after erection, clean exposed areas where primer is damaged or missing, and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-primed surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

END OF SECTION 051200

SECTION 075323 - ETHYLENE-PROPYLENE-DIENE-MONOMER (EPDM) SYSTEM REHABILITATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Accessories and installation materials for EPDM system rehabilitation.
2. EPDM System (Gutter) Rehabilitation: clean, flush, and water test the gutters (typically when opened from above during expansion joint replacement work) to check for leaks, and seal any leaks found.

1.2 PREINSTALLATION MEETINGS

A. Preliminary EPDM System Conference: Before joint demolition, conduct conference at Project site.

1. Meet with the Port representative, testing and inspecting agency representative, EPDM system Installer, and installers whose work interfaces with or affects EPDM system.
2. Review methods and procedures related to EPDM system rehabilitation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, EPDM system rehabilitation Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review existing conditions for compliance with system rehabilitation requirements.
5. Review temporary protection requirements during and after EPDM system rehabilitation.
6. Review joint observation and EPDM system rehabilitation procedures after joint installation.
7. Discuss contractor’s plans for cleaning and flushing the gutter and downspout systems prior to final acceptance.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product used in rehabilitation of the EPDM system.

B. Qualification Statements: For EPDM system rehabilitation Installer.

1.4 QUALITY ASSURANCE

A. EPDM System Rehabilitation - Installer Qualifications: A qualified firm that is approved, authorized, or licensed to install manufacturer's product.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver system rehabilitation materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

1.6 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit system to be installed in accordance with manufacturer's written rehabilitation instructions.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

A. Obtain components for EPDM system rehabilitation from manufacturers approved by existing EPDM membrane manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: EPDM system rehabilitation to withstand thermally induced movement. EPDM system and flashings to remain watertight.

1. Accelerated Weathering: EPDM system rehabilitation to withstand 2000 hours of exposure when tested in accordance with ASTM G152, ASTM G154, or ASTM G155.
2. Impact Resistance: EPDM membrane rehabilitation to resist impact damage when tested in accordance with ASTM D3746/D3746M, ASTM D4272/D4272M, or the Resistance to Foot Traffic Test in FM Approvals 4470.

B. Material Compatibility: EPDM system rehabilitation materials to be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by EPDM system manufacturer based on testing and field experience.

2.3 ACCESSORY EPDM SYSTEM REHABILITATION MATERIALS

A. General: Accessory materials for rehabilitation as recommended in writing by EPDM system manufacturer for intended use and compatible with other system components.

1. Cover Strip Flashing: Uncured, nonreinforced EPDM laminated to a cured EPDM based adhesive tape, minimum 75-mil thick, minimum 6-inches wide.
2. Splice Materials:
   a. Splice Tape: Cured EPDM based butyl adhesive tape, 30-mils minimum thickness, as approved by Manufacturer.

b. Splice Primer: Synthetic polymer based, black adhesive, as recommended and approved by Manufacturer.
c. Splice Adhesive: Synthetic polymer based, black adhesive, as recommended and approved by Manufacturer.

B. Lap Sealant: Manufacturer's standard, single-component sealant.

C. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.

D. Miscellaneous Accessories: As recommended in writing by membrane manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with system Installer present, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to system installation in accordance with system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging drains and conductors and from spilling or migrating onto surfaces of other construction. Remove drain plugs when no work is taking place or when rain is forecast.

C. Gutter downspouts to be inspected, cleaned and flushed but not replaced. Notify Port representative if damage or leaks are found to any downspout system inspected.

3.3 REHABILITATION OF EPDM SYSTEM

A. Adhesive Seam Installation: Clean both faces of splice areas and apply splicing cement.

1. Firmly roll side and end laps of overlapping membrane to ensure a watertight seam installation.
2. Apply lap sealant and seal exposed edges of terminations.
3. Apply a continuous bead of in-seam sealant before closing splice if required by system manufacturer.

B. Tape Seam Installation: Clean and prime both faces of splice areas and apply splice tape.

1. Firmly roll side and end laps of overlapping membrane to ensure a watertight seam installation.

2. Apply lap sealant and seal exposed edges of terminations.

3.4 FIELD QUALITY CONTROL

A. Final Inspection: Arrange for Port representative to inspect rehabilitation on completion, in presence of Port and Envelope Consultant, and to prepare inspection report.

1. Notify Port representative 48 hours in advance of date and time of inspection.

B. Rehabilitate or remove and replace components of EPDM system where inspections indicate that they do not comply with specified requirements.

C. Prior to final acceptance, the Contractor will clean, flush and water test the repaired gutters to check for leaks. Repair gutter at any leak locations.

D. Prior to final acceptance, the gutter downspouts are to be cleaned and flushed to remove any impediments and/or blockages.

E. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.5 PROTECTING AND CLEANING

A. Protect system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger the system, inspect system for deterioration and damage, describing its nature and extent in a written report, with copies to Port and Port representative.

B. Correct deficiencies in system that do not comply with requirements, to a condition free of damage and deterioration at time of Substantial Completion.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 075323

SECTION 079513 - EXTERIOR EXPANSION JOINT COVER ASSEMBLIES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Exterior horizontal expansion joint assembly system.
2. Exterior expansion joint covers.

1.2 ACTION SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for expansion joint cover assemblies.

1. Exterior expansion joint covers.
2. Provide joint assembly profiles, profile dimensions, and anchorage devices.

B. Samples for Verification: For each type of expansion joint cover assembly, full width by 6 inches long in size.

C. Shop Drawings: Indicate joint and splice locations, miters, layout of the work, affected adjacent construction, anchorage locations.

D. Manufacturer’s Installation Instructions: Indicate rough-in sizes; provide templates for cast-in or placed frames or anchors; required tolerances for item placement.

E. Expansion Joint Cover Assembly Schedule: Prepared by or under the supervision of the supplier. Include the following information in tabular form:

1. Manufacturer and model number for each expansion joint cover assembly.
2. Expansion joint cover assembly location cross-referenced to Drawings.
3. Nominal, minimum, and maximum joint width.
4. Materials, colors, and finishes.

1.3 REFERENCES

A. ASTM: ASTM International

1. ASTM B221: Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
2. ASTM B308: Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles
3. ASTM D2240: Standard Test Method for Hardness of Rubber, Thermoplastic

Elastomers, and Plastics Using Durometer
4. ASTM D412: Standard Test Method for Evaluating Tensile Properties of Vulcanized Rubber and Thermoplastic Elastomers
5. ASTM D395 Method B: Measures Permanent Deformation of Rubber Materials
6. ASTM D695: Standard Test Method for Determining Compressive Properties of Rigid Plastics
7. ASTM C190: Standard for Determining the Oil Content of Petroleum Waxes
8. ASTM D2734: Standard Test Methods for Void Content of Reinforced Plastics

PART 2 - PRODUCTS

2.1 ASSEMBLY DESCRIPTION

A. Furnish units in longest practicable lengths to minimize field splicing.

B. Include factory-fabricated closure materials and transition pieces, T-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous expansion joint cover assemblies.

2.2 MANUFACTURERS

A. Horizontal Expansion Joint Cover Assemblies:

1. Sika Emseal USA.
2. InPro.
3. MM Systems.
4. Pre-bid approved equal.

B. Roadway Joint:

1. Product: Sika Emseal, WaboCrete Membrane Gen II.
2. Pre-bid approved equal.

2.3 HORIZONTAL EXPANSION JOINT COVER ASSEMBLIES AND SYSTEMS

A. Roadway Joint Assemblies

1. General: Factory fabricated and assembled; designed to completely fill joint openings; sealed to prevent passage of air, dust, water, smoke; suitable for vehicular and pedestrian traffic.

a. Joint Dimensions and Configurations: As indicated on drawings and verified in field by Contractor.
b. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.

2. Exterior Horizontal Metal Joint Cover System

a. Surface mount frame system.
b. Existing construction applications.
c. Furnish units in longest practicable lengths to minimize field splicing.
d. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
e. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.

3. Extruded Gland System

a. Standard Nominal Joint applications: See structural.

4. Gland System Traits:

a. Heavy-duty preformed thermoplastic rubber profile incorporating integral serrated flanges and heavy-duty integral solid rubber bulkheads embedded in elastomeric nosing.
b. Gland: profile design incorporates symmetrical cellular cavities and integral serrated side flanges with factory punched holes that interlocks the profile into the elastomeric concrete header material.
c. Nosing: ambient cure, 100% solids, two component polyurethane with pregraded aggregate mix exhibiting the physical properties listed in the 2.4, A.3.
d. Bonding Agent: Provide manufacturer's two component, 100 percent solids bonding agent and apply to the sides and base of the preformed blockouts prior to placement of elastomeric header.

2.4 HORIZONTAL EXPANSION JOINT – MATERIALS

A. Roadway Assemblies

1. Cover Plate:

a. Stainless Steel: Alloy Type 304 for plates and strips.
b. Width: Varies by location.

1) Extend cover as indicated in structural drawings on either side of elastomeric nosing and allow for cover anchorage to be fully in concrete.

c. Finish: Sandblasted non-slip finish.

2. Rubberized Glands:

a. Shore A hardness: 63, tested to ASTM D 2240.
b. Tensile strength: Minimum 986 PSI, tested to ASTM D 412.
c. Ultimate elongation, Minimum 570 percent, tested to ASTM D 412.
d. 100% Modulus: 363 PSI
e. Tear strength: average 29.0 kN/m, tested to ASTM D 395B.
f. Compression set: 22 hours, 17% @ 23 degrees C; tested to ASTM D 395B
g. Color: Black

3. Elastomeric cured binder and aggregate:

    a. Compressive strength: Minimum 2,200 PSI, tested to ASTM D 695.
    b. Resilience at 5% deflection: Minimum 90, tested to ASTM D 695.
    c. Adhesion to primed concrete: tested to ASTM C 190.

        1) Dry bond 400
        2) Wet Bond 250

    d. Impact resistance: tested to ASTM D 2734.

        1) At -20 deg F no cracks at 5 ft
        2) At 32 deg F no cracks at 5 ft
        3) At 158 deg F no cracks at 5 ft; no cracking at 19 inches

    e. Color: Gray

2.5 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Expansion joint cover assemblies shall withstand the effects of earthquake motions as shown in structural drawings.

B. Expansion Joint Design Criteria: as shown in structural drawings.

2.6 ACCESSORIES

A. Moisture Barriers: Manufacturer's standard continuous, waterproof membrane within joint and attached to substrate on sides of joint.

1. Provide where indicated on Drawings.

B. Manufacturer's standard attachment devices. Include anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.7 FABRICATION

A. Field assembles components provided in standard lengths with pre-packaged fasteners and accessories whenever possible.

B. Fabricate special transitions and corner fittings as required. Miter and heat weld elastomeric seals for monolithic splices and transitions.

C. For Roadway Joint Assembly:

1. Joint Seal Directional Changes: At all horizontal and vertical changes in direction provide seals with factory heat welded splices such as 90-degree corners, tees and crosses.

a. The seal shall extend a minimum of 2’-0” in each direction from the factory splice.

2. Only straight, butt splice connections shall be allowed on the jobsite following manufacturers written instructions utilizing specialty heat fusing equipment or the manufacturer’s specialty splicing primer and adhesive.

3. All factory and field fused conditions shall incorporate bonding of the complete seal profile. This includes fusing of all internal and external web configurations.

a. Undercutting or back cutting seal profiles will not be permitted.

4. Elastomeric Concrete Header: Activator packaged in one-half gallon containers (Part A), resin packaged in gallon containers (Part B) and 60-pound containers of aggregate (Part C) on shipped wooden pallets, shrink wrapped.

5. Provide premanufactured ‘T’ intersections where shown on structural drawings.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces where expansion joint cover assemblies will be installed for installation tolerances and other conditions affecting performance of the Work.

B. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

C. Notify the Port representative where discrepancies occur that will affect proper expansion joint cover assembly installation and performance.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean joints thoroughly; remove loose and foreign matter that could impair adhesion or performance.

B. Prepare substrates according to expansion joint cover assembly manufacturer's written instructions.

C. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion joint cover assemblies. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion joint cover assemblies.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for storing, handling, and installing expansion joint cover assemblies and materials unless more stringent requirements are indicated.

B. Cover Assemblies: Perform cutting, drilling, and fitting required to install expansion joint cover assemblies per manufacturer’s recommendations.

1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Install frames in continuous contact with adjacent surfaces.

    a. Shimming is not permitted.

5. Locate anchors at interval recommended by manufacturer, but not less than 3 inches from each end and not more than 24 inches on center.

C. Elastomeric Seals: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with minimum number of end joints.

1. Provide in continuous lengths for straight sections.
2. Seal transitions. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
3. Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.

D. Moisture Barrier Drainage: If indicated, provide drainage fitting and connect to drains.

3.4 PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

B. Protect the installation from damage by work of other Sections.

END OF SECTION 079513

SECTION 320113 – BIO-BASED ASPHALT REJUVENATOR

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes furnishing and applying a bio-based asphalt rejuvenator.

1.2 REFERENCES

A. AASHTO: American Association of State Highway and Transportation Officials

B. ASTM: American Society for Testing and Materials

1.3 SUBMITTALS

A. The manufacturer's certification of source and properties of the rejuvenator.

B. Technical data on proposed application procedures and equipment.

C. Technical data of product on asphalt surfaces. Data showing permeability of surface before and after product is applied.

1.4 STORAGE AND HANDLING

A. Store and handle products in accordance with manufacturers' recommendations.

PART 2 - PRODUCTS

2.1 BIO-BASED ASPHALT REJUVENATOR

A. The rejuvenator product must have a proven life cycle extension of 3 to 5 years depending on traffic volumes.

B. The rejuvenation of surface courses shall be by spray application of an agriculture based rejuvenating agent composed of soy oil derivatives and polymers. It shall be a bio-based material with a minimum of 75% content.

C. Existing traffic striping and markings remain clearly visible after application of asphalt rejuvenator over striping and markings.

D. Products for pervious asphalt: RePLAY by BioSpan Technologies or pre-bid approved equal.
   1. The product shall be supported by the manufacturer for use on existing pervious asphalt.

E. Products for impervious asphalt: RePLAY by BioSpan Technologies, BioRestor by Bio Based Spray Systems LLC, or pre-bid approved equal.

F. The product shall have the following properties:
1. pH range: 3.1-7.0 (ACS Methods of Analysis)
2. Specific Gravity: 0.86-0.90 at 20°C (70 °F) (ASTM Certified Hydrometers)
3. Density: 7.4 pounds/gallon at 20°C
4. Solubility in Water: immiscible
5. Boiling Point: 330°F (ACS Methods of Analysis)
6. Tag Closed Cup (TCC) 211.6°F, (ASTM Method 56)
7. Polymer Penetration Depth: 1.5 cm Minimum at 10 minutes on 64/22 cores with an application rate of 0.015 gallons per square yard (Wet extraction– ASTM)
8. Marshall Stability: >1000 kg. (ASTM D1559), at 60°C
9. Retained Stability %: >80% (ASTM D1075) at 60°C, 24-hour immersion (stripping resistance)
10. Tensile Strength Ratio (TSR) >80% (ASSHTO T283 and ASTM 4867)
11. Dynamic Creep < 65%, Accumulated strain ,3600 cycles
12. Binder Recovery (Abson Method) (ASTM D2172, ASTM D1856)
13. Penetration Treated vs untreated cores >25% increase at 25°C
14. Softening Point Treated vs untreated cores, min.10% reduction
15. Ductility (27°C, cm) Treated vs Untreated Cores> 30% increase
16. Residual Polymer Measured at 1": 5% increase (TX 533C)
17. Saybolt Viscosity at 77 F (25 C): 5-20 SEC (ASTM D-244)
18. ASTM Sand Patch Test: 15% or greater increase (ASTM E 965)
19. Global warming REDUCTION: -400Kg CO2 eq. (LCA, BEE'S Analysis, USDA)
20. No runoff 30 minutes after application, no residual runoff from rain.
21. Residue by distillation, or evaporation (3): 12% minimum, 18% maximum

PART 3 - EXECUTION

3.1 EQUIPMENT

A. All equipment used in the performance of the work shall be subject to Port approval and shall be maintained in satisfactory working condition at all times.

B. Equipment for surface cleaning shall be capable of effectively removing oil, grease, dust, dirt, or other objectionable materials from the pavement surface prior to application of the rejuvenator.

C. Application equipment shall be designed and equipped to distribute the rejuvenator uniformly on variable width of surface and controlled rates as recommended by the manufacturer.

3.2 SURFACE PREPARATION

A. Thoroughly clean all pavement surfaces with a regenerative-air vacuum sweeper before application of the rejuvenator and legally dispose of material in a location off of Port property.

B. Sweep pavement free of loose material, dirt, stones, dust, sand, and other objectionable material that might adversely affect bonding of the rejuvenator.

C. Skid resistance test of the existing asphalt may be conducted by the Port prior to application of rejuvenator. The Contractor shall coordinate with the Port.

3.3 APPLICATION

A. The Contractor shall be responsible for the layout of the project planning and sequencing as required by the Port. The Contractor shall receive approval of the project planning and sequencing prior to beginning work.

B. The rejuvenator shall be applied uniformly at a width and rate recommended by the manufacturer. Apply only to clean and dry surface.
   1. A test strip may be requested by the Port to confirm recommended application rate. The test strip shall be applied at a minimum width of 6ft for a length of 50ft at a rate recommended for that pavement section. Multiple tests may be requested for the different pavement sections.

C. Do not apply sand.

D. Upon completion of rejuvenator placement, keep all traffic off the surface for a duration not less than recommended by the manufacturer or as directed by the Port.

3.4 WEATHER LIMITATIONS

A. Minimum atmospheric temperature shall be 40^{o}F and rising, or as recommended by the manufacturer, whichever is greater.

B. Minimum pavement surface temperature shall be 32^{o}F, or as recommended by the manufacturer, whichever is greater.

C. Do not apply asphalt rejuvenator to wet pavement surfaces, during rainy or damp weather, or when rain is anticipated within 2 hours after application is completed, or as recommended by the manufacturer, whichever is greater.

END OF SECTION 320113

SECTION 320117 – PAVEMENT REPAIR

PART 1 - GENERAL

1.1 DESCRIPTION

A. This section describes replacement of damaged pavement.

1.2 REFERENCES

A. AASHTO: American Association of State Highway and Transportation Officials
   1. AASHTO MP1: Standard Specification for Performance-Graded Asphalt Binder
   2. AASHTO T099: Standard Method of Test for Moisture-Density Relations of Soils Using a 2.5-kg (5.5-lb) Rammer and a 305-mm (12-in.) Drop
   3. AASHTO T180: Standard Method of Test for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18-in.) Drop

B. ASTM: American Society for Testing and Materials
   1. ASTM D2041: Standard Test Method for Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
   2. ASTM D2397: Standard Specification for Cationic Emulsified Asphalt

C. ODOT: Oregon Department of Transportation – Standard Specifications
   1. ODOT Section 00745: Hot Mixed Asphalt Concrete (HMAC)
   2. ODOT Section 02630.10: Open-Graded Aggregate
   3. ODOT Section 02680

1.3 SUBMITTALS

A. At least 14 days prior to beginning material placement, submit documentation confirming that materials and mix designs for aggregate base, and hot mix asphalt concrete meet the requirements specified herein.

PART 2 - PRODUCTS

2.1 AGGREGATE BASE

A. Aggregate shall consist of clean, sound, durable particles of crushed stone or gravel free from coatings of clay, silt, vegetation, or other objectionable materials.

B. Materials shall be 1"-0" or 3/4"-0" in accordance with ODOT Section 02630.10.

2.2 HOT MIX ASPHALT CONCRETE (HMAC)

A. HMAC shall consist of a mixture of crushed stone or gravel and bituminous cement mixed at an approved commercial plant.

B. Mixture shall be 3/4-inch dense in accordance with ODOT Section 00745 for Level 4. Aggregate materials shall meet the requirements of ODOT Section 02680. Reclaimed asphalt pavement (RAP) will not be allowed.

2.3 TACK COAT

A. Tack coat shall be an emulsified asphalt, Type CSS-1 or CSS-1h, and meet the requirements of ASTM D2397.

PART 3 - EXECUTION

3.1 GENERAL

A. Place HMAC materials on a dry, unfrozen surface when the air temperature is at least 35ºF and rising, unless otherwise directed by the Port.

B. Transport mixtures in appropriate vehicles meeting industry standards.

3.2 AGGREGATE BASE

A. Obtain the Port's acceptance of the subgrade before beginning aggregate base placing and spreading operations.

B. Place aggregate base course material in 6-inch, maximum, compacted layers. In multi-layer construction, place in approximately equal depth layers.

C. Compact to 98 percent of the maximum dry density as determined by AASHTO T-180.

3.3 ASPHALT CONCRETE SURFACING

A. Obtain the Port's acceptance of the base before beginning surface placement.

B. Where adjacent surface pavement has been undermined, saw cut the edges back to a firm base course. Where adjacent surface pavement edges have been rolled over, are irregular, or otherwise damaged, saw cut the pavement back to expose a clean, sound surface.

C. Tack coat pavement surfaces that will be in contact with new asphalt concrete.

D. Place asphalt concrete surface material in 3-inch, maximum, compacted layers. In multi-layer construction, place in approximately equal depth layers.

E. Allow surface temperature of each lift to cool to 160ºF before placing the next lift.

F. Compact to a minimum of 92 percent of laboratory density as determined by ASTM D2041 (Rice).

G. Asphalt and sand seal all edges where new asphalt concrete meets existing pavement.

H. The finished joint between new and existing pavement surfaces shall be within 1/4 inch when tested with a 6-foot straightedge. Patch shall be removed and replaced if any area exceeds 3/8 inch or area fails to drain properly as a result of patch.

I. Sweep up and properly dispose of loose material off Port property.

END OF SECTION 320117

FOR PORT USE ONLY

2025D018 **TERMINAL UPPER ROADWAY JOINT REPLACEMENT** *9/29/2026*

Location:	**PDX**	**PM:**	**JEFFRA**	**CCM:**	**MOEG**	**Type:**	**Const.**
Proj. No.:	**102970**	**PE:**	**OSTLUJ**	**SW:**	**DOHERC**		